



Operation and Maintenance Manual

304, 305 SR, 305 CR, and 305.5 CR Excavator

AX6 1-UP (305.5 CR)
AX5 1-UP (305 SR)
AN4 1-UP (304)
5G5 1-UP (305 CR)
5C5 1-UP (305 CR)
5X5 1-UP (305 CR)

Language: Original Instructions



Scan to find and purchase genuine Cat® parts and related service information.



Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards, including human factors that can affect safety. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you verify that you are authorized to perform this work, and have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.



The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by "NOTICE" labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that you are authorized to perform this work, and that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.

NOTICE

When replacement parts are required for this product Caterpillar recommends using original Caterpillar® replacement parts.

Other parts may not meet certain original equipment specifications.

When replacement parts are installed, the machine owner/user should ensure that the machine remains in compliance with all applicable requirements.

In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.

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Foreword

California Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.



WARNING – This product can expose you to chemicals including ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to:

www.P65Warnings.ca.gov

Do not ingest this chemical. Wash hands after handling to avoid incidental ingestion.



WARNING – This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information go to:

www.P65Warnings.ca.gov

Wash hands after handling components that may contain lead.

Literature Information

This manual should be stored in the operator's compartment in the literature holder or seat back literature storage area.

This manual contains safety information, operation instructions, transportation information, lubrication information, and maintenance information.

Some photographs or illustrations in this publication show details or attachments that can be different from your machine. Guards and covers might have been removed for illustrative purposes.

Continuing improvement and advancement of product design might have caused changes to your machine which are not included in this publication. Read, study, and keep this manual with the machine.

Whenever a question arises regarding your machine, or this publication, please consult your Cat dealer for the latest available information.

Safety

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the machine.

Read and understand the basic precautions listed in the safety section before operating or performing lubrication, maintenance, and repair on this machine.

Operation

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, machine controls, attachment controls, transportation, and towing information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating, and stopping the machine.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the machine and its capabilities.

Maintenance

The maintenance section is a guide to equipment care. The Maintenance Interval Schedule (MIS) lists the items to be maintained at a specific service interval. Items without specific intervals are listed under the "When Required" service interval. The Maintenance Interval Schedule lists the page number for the step-by-step instructions required to accomplish the scheduled maintenance. Use the Maintenance Interval Schedule as an index or "one safe source" for all maintenance procedures.

Maintenance Intervals

Use the service hour meter to determine servicing intervals. Calendar intervals shown (daily, weekly, monthly, etc.) can be used instead of service hour meter intervals if the calendar intervals provide more convenient servicing schedules and approximate the indicated service hour meter reading. Perform the recommended service at the interval that occurs first.

Under severe, dusty, or wet operating conditions, more frequent lubrication than is specified in the maintenance intervals chart might be necessary.

Perform service on items at multiples of the original requirement. For example, at every 500 service hours or 3 months, also service those items listed under every 250 service hours or monthly and every 10 service hours or daily.

Certified Engine Maintenance

Proper maintenance and repair are essential to keep the engine and machine systems operating correctly. As the heavy-duty off-road diesel engine owner, you are responsible for the performance of the required maintenance listed in the Owner Manual, Operation and Maintenance Manual, and Service Manual.

It is prohibited for any person engaged in the business of repairing, servicing, selling, leasing, or trading engines or machines to remove, alter, or to render inoperative, any emission-related device or element of design installed on or in an engine or machine that is in compliance with all applicable regulations of the intended country to which it has been shipped. Certain elements of the machine and engine such as the exhaust system, fuel system, electrical system, intake air system, and cooling system may be emission-related and should not be altered unless approved by Caterpillar.

Machine Capacity

Additional attachments or modifications may exceed machine design capacity which can adversely affect performance characteristics. Included would be stability and system certifications such as brakes, steering, and rollover protective structures (ROPS). Contact your Cat dealer for further information.

Product Identification Number

Effective First Quarter 2001 the Product Identification Number (PIN) has changed from 8 to 17 characters. To provide uniform equipment identification, construction equipment manufacturers are moving to comply with the latest version of the product identification numbering standard. Non-road machine PINs are defined by ISO 10261. The new PIN format will apply to all machines and generator sets. The PIN plates and frame marking will display the 17 character PIN. The new format will look like the following:

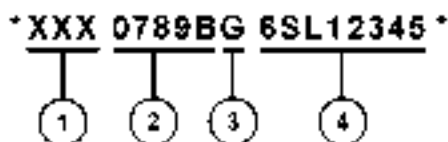


Illustration 1

g03891925

Where:

1. World Manufacturing Code (characters 1-3)

2. Machine Descriptor (characters 4-8)

3. Check Character (character 9)

4. Machine Indicator Section (MIS) or Product Sequence Number (characters 10-17). These were previously referred to as the Serial Number.

Machines and generator sets produced before First Quarter 2001 will maintain their 8 character PIN format.

Components such as engines, transmissions, axles, and work tools will continue to use an 8 character Serial Number (S/N).

Safety Section

i09402429

Safety Messages

SMCS Code: 7000; 7405

There are several specific safety messages on this machine. The exact location of the hazards and the description of the hazards are reviewed in this section. Become familiar with all safety messages.

Make sure that all the safety messages are legible. Clean the safety messages or replace the safety messages if you cannot read the words. Replace the illustrations if the illustrations are not legible. When you clean the safety messages, use a cloth, water, and soap. Do not use solvent, gasoline, or other harsh chemicals to clean the safety messages. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the safety message. Loose adhesive will allow the safety message to fall.

Replace any safety message that is damaged, or missing. If a safety message is attached to a part that is replaced, install a new safety message on the replacement part. Any Cat[®] dealer can provide new safety messages.

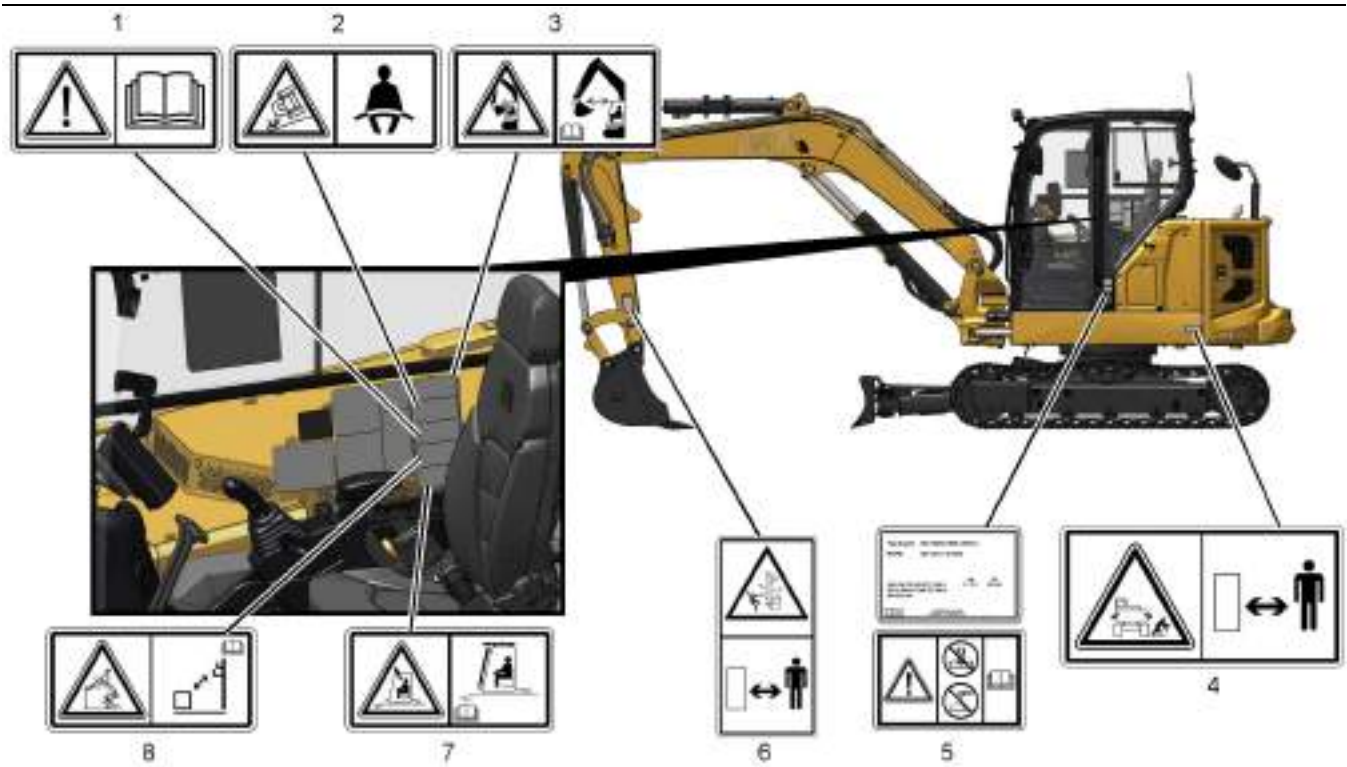


Illustration 2

g06344381

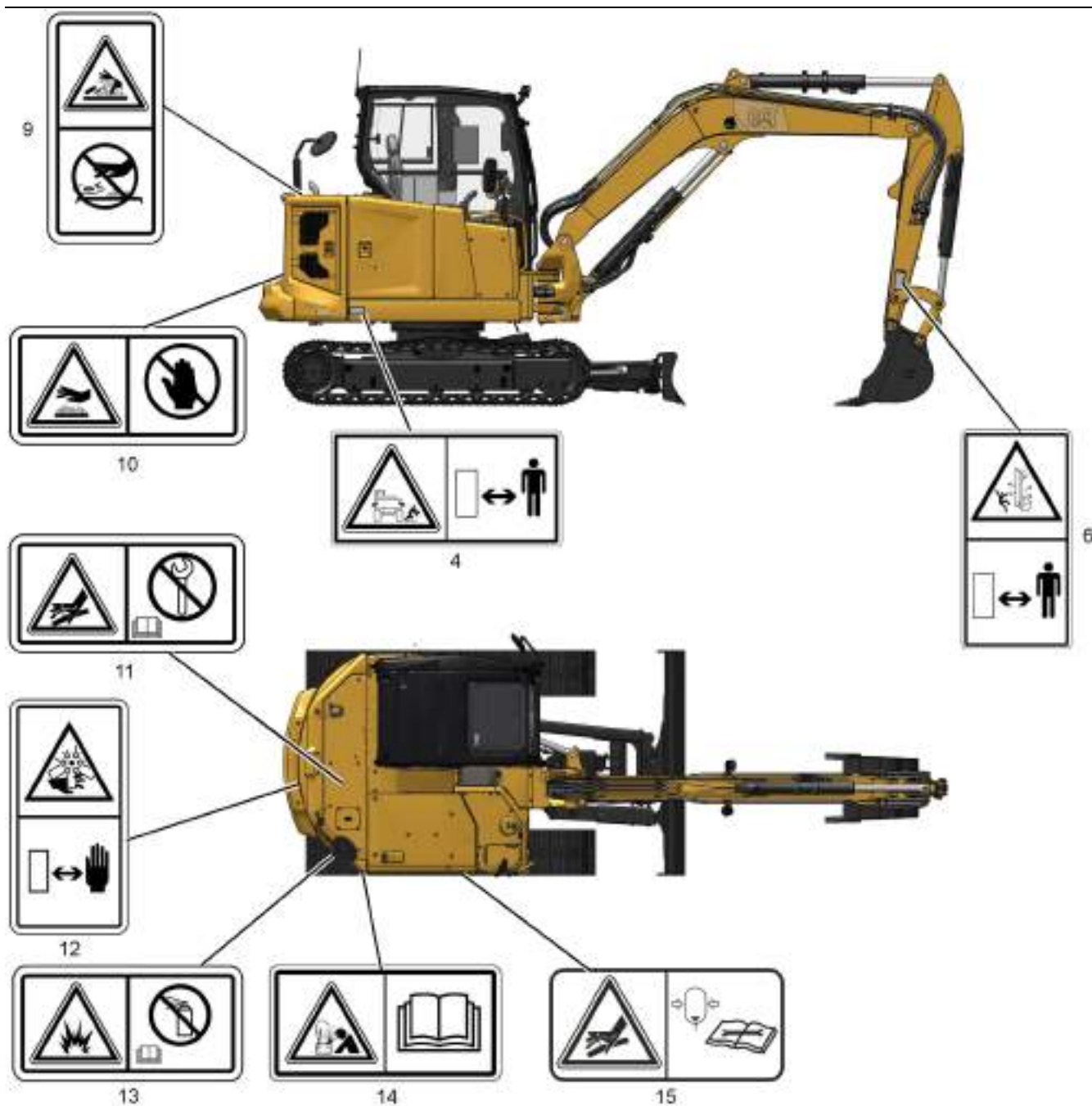


Illustration 3

g06350442

Do Not Operate (1)

WARNING

Do not operate or work on this equipment unless you have read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Cat dealer for replacement manuals. Proper care is your responsibility.



Illustration 4

g01370904

This safety message is located in the cab on the right side window.

Seat Belt (2)

WARNING

A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.



Illustration 5

g01370908

This safety message is located in the cab on the right side window.

Crushing Hazard (3)

WARNING

Crushing Hazard! Certain machine front linkage combinations (boom, stick, quick coupler, work tool) may require keeping the work tool away from the cab during operation. Personal injury or death may result if the work tool contacts the cab during operation.



Illustration 6

g01373971

This safety message is located in the cab on the right side window.

Crushing Hazard (4)

WARNING

Machine swings. Stay back. Crushing hazard could cause serious injury or death.

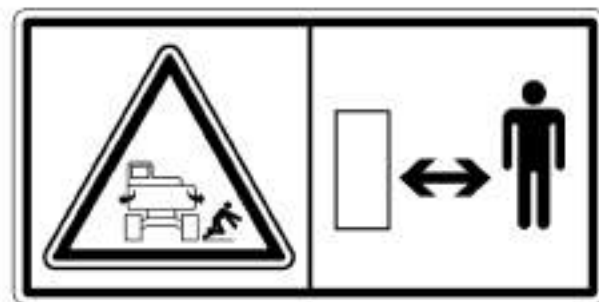


Illustration 7

g01374060

This safety message is on the rear of each side of the machine.

Do Not Weld or Drill Roll Over Protective Structure (ROPS) (5)

WARNING

Structural damage, an overturn, modification, alteration, or improper repair can impair this structure's protection capability thereby voiding this certification. Do not weld on or drill holes in the structure. This will void the certification. Consult your Cat dealer to determine this structure's limitations without voiding its certification.



Illustration 8

g06344390

This safety message is on the left side of the machine near the cab door.

Certification for Rollover Protective Structure (ROPS) and for Falling Object Protective Structure (FOPS)

The unaltered ROPS or the FOPS structure meets the following standards for the ROPS at the time of installation: "ISO 3471-2008" and "GB/T 17922-2014". Also, the FOPS canopy meets the following standards at the time of installation: "ISO 3449-2005 LEVEL II" and "GB/T 17771-2010 LEVEL II".

Refer to "Plate Locations and Film Locations" for further information.

Crushing Hazard (6)

**WARNING**

A crushing hazard exists when the stick and boom are in motion and when the machine is being used in object handling applications. Failure to stay clear of the stick and boom when the machine is in operation can result in personal injury or death. Stay clear of the stick and boom when the machine is in operation.



Illustration 9

g01385579

This safety message is on both sides of the stick.

Crushing Hazard (7)

**WARNING**

The impact from objects that strike the front of the cab or the top of the cab could result in a crushing hazard with the potential for personal injury or death.

The front guard and the top guard should be installed on the cab for applications where the hazard of falling objects exist. Read the Operation and Maintenance Manual.



Illustration 10

g01374048

This safety message is located in the cab on the right side window.

Refer to “Guards” for further information.

Electrical Power Lines (8)

DANGER

Electrocution Hazard! Keep the machine and attachments a safe distance from electrical power. Stay clear 3 m (10 ft) plus twice the line insulator length. Read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions and warnings will cause serious injury or death



Illustration 11

g01374045

This safety message is located in the cab on the right side window.

Refer to “Specifications” for further information.

Pressurized System (9)

WARNING

Pressurized system! Hot coolant can cause serious burns, injury or death. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure. Read and understand the Operation and Maintenance Manual before performing any cooling system maintenance.



Illustration 12

g01378799

This safety message is on the radiator cap access cover at the right rear corner of the machine.

Refer to “Cooling System Coolant Level - Check” for further information.

Hot Surface (10)

WARNING

Hot parts or hot components can cause burns or personal injury. Do not allow hot parts or components to contact your skin. Use protective clothing or protective equipment to protect your skin.



Illustration 13

g01372256

This safety message is located bottom rear door of counterweight.

High-Pressure Fuel Lines (11)

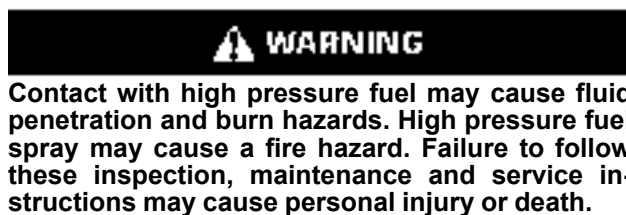


Illustration 14

g01381180

If equipped, this safety message is installed at the fuel line.

Rotating Fan (12)

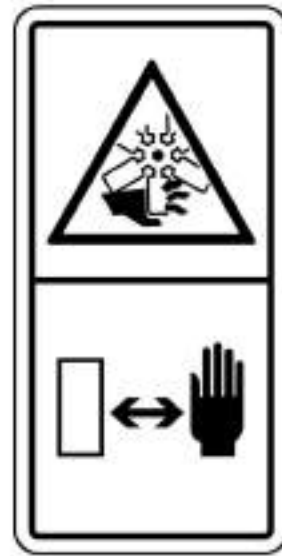


Illustration 15

g02793868

This safety message is located near the engine fan.

Aerosol Starting Aid (13)



Illustration 16

g01372254

This safety message is on the air cleaner housing.

Refer to “Engine Starting” for further information.

Improper Connections For Jump-Start Cables (14)

WARNING

Explosion Hazard! Improper jumper cable connections can cause an explosion resulting in serious injury or death. Batteries may be located in separate compartments. Refer to the Operation and Maintenance Manual for the correct jump starting procedure.

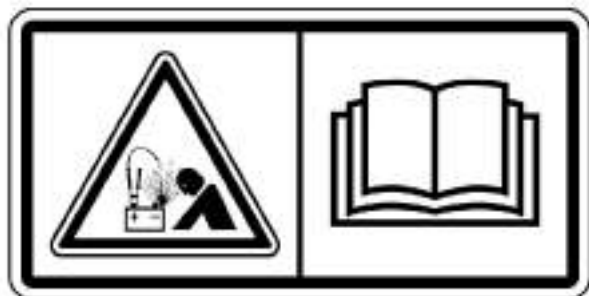


Illustration 17

g01370909

This safety message is located next to the battery.

Refer to “Engine Starting with Jump Start Cables” for further information.

High-Pressure Gas (15)

WARNING

This system contains high pressure gas. Failure to follow the instructions and warnings could cause an explosion, resulting in possible injury or death.

Do not expose to fire. Do not weld. Do not drill. Relieve pressure before discharging.

See Operation and Maintenance Manual for charging and discharging. See your Caterpillar Dealer for tools and detailed information.



Illustration 18

g06275274

This safety message is on the accumulator.

Refer to “Equipment Lowering with Engine Stopped” for further information.

i08506987

Additional Messages

SMCS Code: 7000; 7405

There are several specific messages on this machine. The exact location of the messages and the description of the information are reviewed in this section. Become familiar with all messages.

Make sure that all the messages are legible. Clean the messages or replace the messages if you cannot read the words. Replace the illustrations if the illustrations are not legible. When you clean the messages, use a cloth, water, and soap. Do not use solvent, gasoline, or other harsh chemicals to clean the messages. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the messages. Loose adhesive will allow the messages to fall.

Replace any message that is damaged, or missing. If a message is attached to a part that is replaced, install a message on the replacement part. Any Cat® dealer can provide new messages.

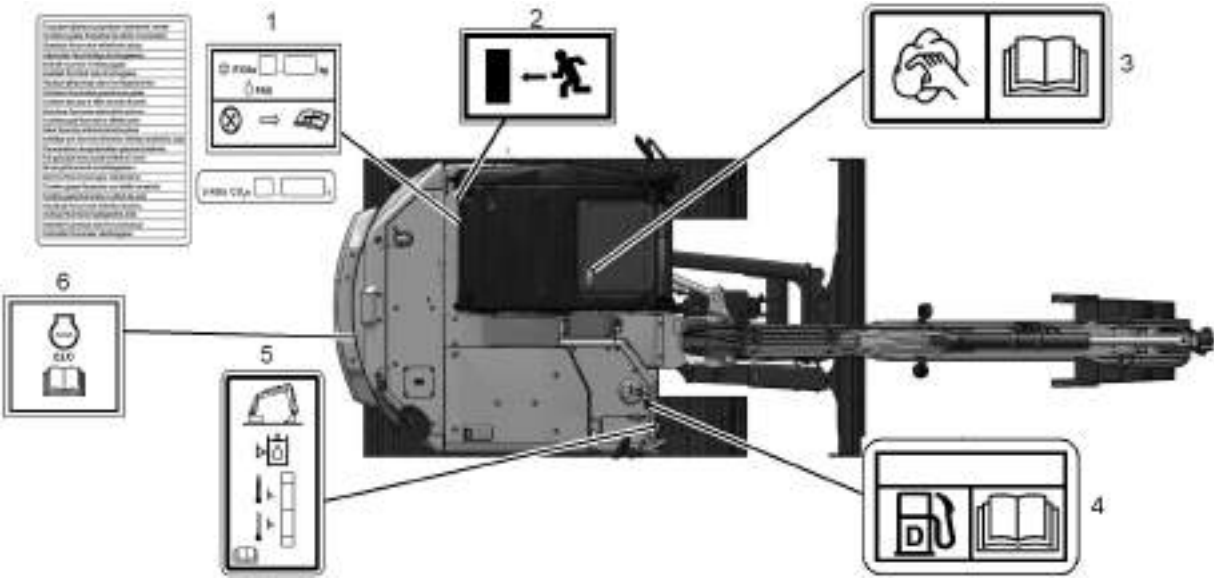


Illustration 19

g06690103

Air Conditioner (1)

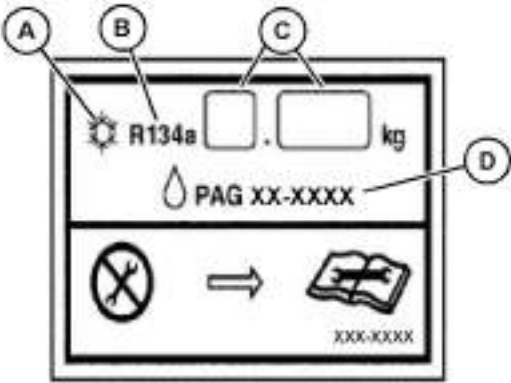


Illustration 20

g06650123

- (A) Air conditioning symbol
- (B) R134a (Refrigerant type common name)
- (C) Refrigerant quantity
- (D) PAG (polyalkylene glycol) lubricating oil part number

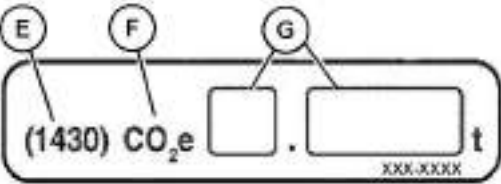


Illustration 21

g06650124

If equipped, this plate provides the below additional greenhouse gas information.

- (E) (1430) - This value is the Global Warming Potential of R134a
- (F) CO₂ equivalent
- (G) CO₂ equivalent in metric tonne based on quantity of charged R134a



Illustration 22

g06685232

- (H) If equipped, this film provides the required language translations of the text "Contains fluorinated greenhouse gases"

These messages are located on the left door behind the cab.

These messages for the air conditioner system have the appropriate information for the following services: the air conditioner lubricant, the refrigerant charge, and the refrigerant capacity. Refer to “Air Conditioning and Heating Control” for more information.

Alternate Exit (2)



Illustration 23

g06189112

This message is located on the rear window of the cab in the lower left-hand corner.

Refer to “Alternate Exit” for more information.

Cleaning Windows (3)

NOTICE

Clean windows with a wet cloth or sponge. Dry cloth or sponge may scratch window material.

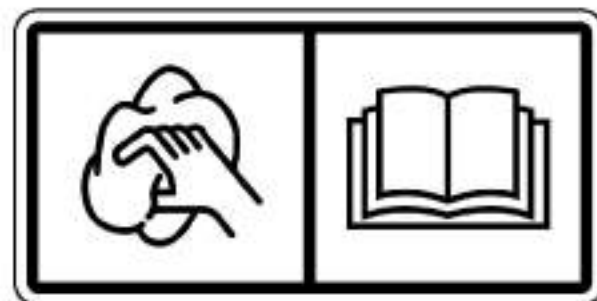


Illustration 24

g01134495

This message is located on the cab on the polycarbonate skylight. Refer to “Windows - Clean” for more information.

Diesel Fuel Requirements (4)

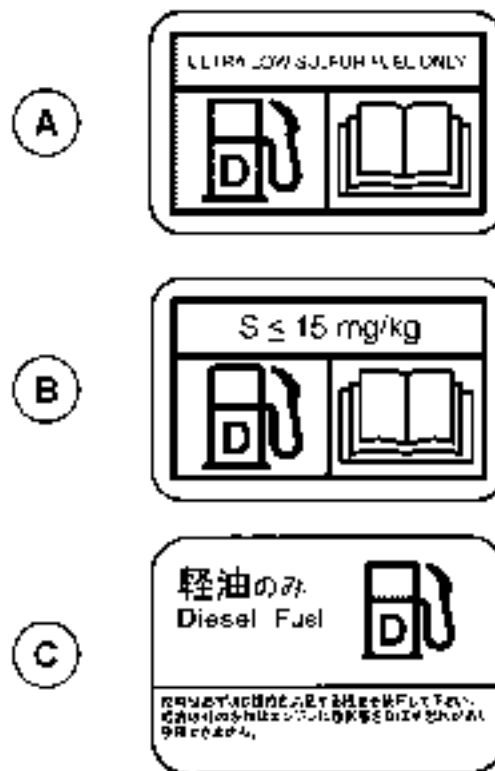


Illustration 25

g03218956

- (A) North America film
- (B) Europe, Africa, Middle East film
- (C) Japan film

This message is located by the fuel tank.

Hydraulic Oil Level Check (5)

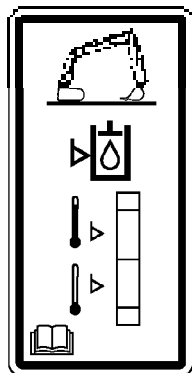


Illustration 26

g01069075

This message is located in the right access compartment next to the sight gauge for the hydraulic oil .

Check hydraulic oil level daily. Refer to "Hydraulic System Oil Level - Check" for more information.

Cat® Extended Life Coolant (ELC) (6)

This message is located on the underside of the radiator cap access cover on top of the engine compartment.

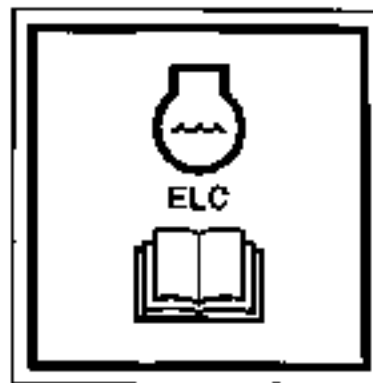


Illustration 27

g01132922

Refer to "Cooling System Coolant (ELC) - Change" for more information.

i08313103

General Hazard Information

SMCS Code: 7000

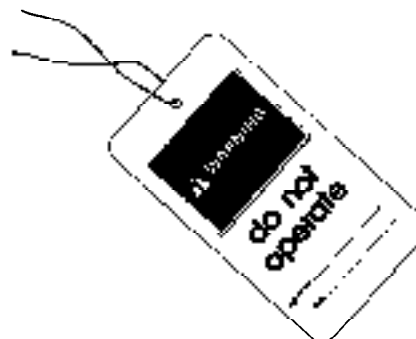


Illustration 28

g00104545

Typical example

Attach a "Do Not Operate" warning tag or a similar warning tag to the start switch or to the controls. Attach the warning tag before you service the equipment or before you repair the equipment. Warning tag SEHS7332 is available from your Cat dealer.



Operating the machine while distracted can result in the loss of machine control. Use extreme caution when using any device while operating the machine. Operating the machine while distracted can result in personal injury or death.

Know the width of your equipment to maintain proper clearance when you operate the equipment near fences or near boundary obstacles.

Be aware of high-voltage power lines and power cables that are buried. If the machine comes in contact with these hazards, serious injury or death may occur from electrocution.

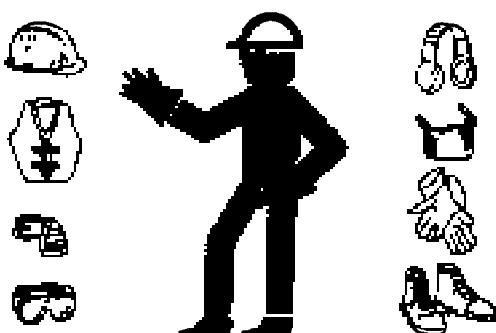


Illustration 29

g00702020

Wear a hard hat, protective glasses, and other protective equipment, as required.

Do not wear loose clothing or jewelry that can snag on controls or on other parts of the equipment.

Make sure that all protective guards and all covers are secured in place on the equipment.

Keep the equipment free from foreign material. Remove debris, oil, tools, and other items from the deck, from walkways, and from steps.

Secure all loose items such as lunch boxes, tools, and other items that are not a part of the equipment.

Know the appropriate work site hand signals and the personnel that are authorized to give the hand signals. Accept hand signals from one person only.

Do not smoke when you service an air conditioner. Also, do not smoke if refrigerant gas may be present. Inhaling the fumes that are released from a flame that contacts air conditioner refrigerant can cause bodily harm or death. Inhaling gas from air conditioner refrigerant through a lighted cigarette can cause bodily harm or death.

Never put maintenance fluids into glass containers. Drain all liquids into a suitable container.

Obey all local regulations for the disposal of liquids.

Use all cleaning solutions with care. Report all necessary repairs.

Do not allow unauthorized personnel on the equipment.

Unless you are instructed otherwise, perform maintenance with the equipment in the servicing position. Refer to Operation and Maintenance Manual for the procedure for placing the equipment in the servicing position.

When you perform maintenance above ground level, use appropriate devices such as ladders or man lift machines. If equipped, use the machine anchorage points and use approved fall arrest harnesses and lanyards.

Pressurized Air and Water

Pressurized air and/or water can cause debris and/or hot water to be blown out. The debris and/or hot water could result in personal injury.

When pressurized air and/or pressurized water is used for cleaning, wear protective clothing, protective shoes, and eye protection. Eye protection includes goggles or a protective face shield.

The maximum air pressure for cleaning purposes must be reduced to 205 kPa (30 psi) when the nozzle is deadheaded and the nozzle is used with an effective chip deflector and personal protective equipment. The maximum water pressure for cleaning purposes must be below 275 kPa (40 psi).

Avoid direct spraying of water on electrical connectors, connections, and components. When using air for cleaning, allow the machine to cool to reduce the possibility of fine debris igniting when re-deposited on hot surfaces.

Trapped Pressure

Pressure can be trapped in a hydraulic system. Releasing trapped pressure can cause sudden machine movement or attachment movement. Use caution if you disconnect hydraulic lines or fittings. High-pressure oil that is released can cause a hose to whip. High-pressure oil that is released can cause oil to spray. Fluid penetration can cause serious injury and possible death.

Fluid Penetration

Pressure can be trapped in the hydraulic circuit long after the machine has been stopped. The pressure can cause hydraulic fluid or items such as pipe plugs to escape rapidly if the pressure is not relieved correctly.

Do not remove any hydraulic components or parts until pressure has been relieved or personal injury may occur. Do not disassemble any hydraulic components or parts until pressure has been relieved or personal injury may occur. Refer to the Service Manual for any procedures that are required to relieve the hydraulic pressure.

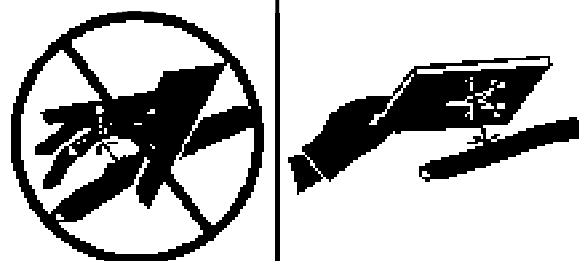


Illustration 30

g00687600

Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

Containing Fluid Spillage

Care must be taken in order to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the equipment. Prepare to collect the fluid with suitable containers before opening any compartment or disassembling any component that contains fluids.

Refer to Special Publication, NENG2500, "Cat dealer Service Tool Catalog" for the following items:

- Tools that are suitable for collecting fluids and equipment that is suitable for collecting fluids
- Tools that are suitable for containing fluids and equipment that is suitable for containing fluids

Obey all local regulations for the disposal of liquids.

Inhalation



Illustration 31

g02159053

Exhaust

Use caution. Exhaust fumes can be hazardous to your health. If you operate the machine in an enclosed area, adequate ventilation is necessary.

Asbestos Information

Cat equipment and replacement parts that are shipped from Caterpillar are asbestos free. Caterpillar recommends the use of only genuine Cat replacement parts. Use the following guidelines when you handle any replacement parts that contain asbestos or when you handle asbestos debris.

Use caution. Avoid inhaling dust that might be generated when you handle components that contain asbestos fibers. Inhaling this dust can be hazardous to your health. The components that may contain asbestos fibers are brake pads, brake bands, lining material, clutch plates, and some gaskets. The asbestos that is used in these components is bound in a resin or sealed in some way. Normal handling is not hazardous unless airborne dust that contains asbestos is generated.

If dust that may contain asbestos is present, there are several guidelines that should be followed:

- Never use compressed air for cleaning.
- Avoid brushing materials that contain asbestos.
- Avoid grinding materials that contain asbestos.
- Use a wet method in order to clean up asbestos materials.
- A vacuum cleaner that is equipped with a high efficiency particulate air filter (HEPA) can also be used.

- Use exhaust ventilation on permanent machining jobs.
- Wear an approved respirator if there is no other way to control the dust.
- Comply with applicable rules and regulations for the work place. In the United States, use Occupational Safety and Health Administration (OSHA) requirements. These OSHA requirements can be found in "29 CFR 1910.1001". In Japan, use the requirements found in the "Ordinance on Prevention of Health Impairment due to Asbestos" in addition to the requirements of the Industrial Safety and Health Act.
- Obey environmental regulations for the disposal of asbestos.
- Stay away from areas that might have asbestos particles in the air.

Hexavalent Chromium Information

Cat equipment and replacement parts comply with applicable regulations and requirements where originally sold. Caterpillar recommends the use of only genuine Cat replacement parts.

Hexavalent chromium has occasionally been detected on exhaust and heat shield systems on Cat engines. Although lab testing is the only accurate way to know if hexavalent chromium is, in fact, present, the presence of a yellow deposit in areas of high heat (for example, exhaust system components or exhaust insulation) may be an indication of the presence of hexavalent chromium.

Use caution if you suspect the presence of hexavalent chromium. Avoid skin contact when handling items that you suspect may contain hexavalent chromium, and avoid inhalation of any dust in the suspect area. Inhalation of, or skin contact with, hexavalent chromium dust may be hazardous to your health.

If such yellow deposits are found on the engine, engine component parts, or associated equipment or packages, Caterpillar recommends following local health and safety regulations and guidelines, utilizing good hygiene, and adhering to safe work practices when handling the equipment or parts. Caterpillar also recommends the following:

- Wear appropriate personal protective equipment (PPE).
- Wash your hands and face with soap and water prior to eating, drinking, or smoking, and also during rest room breaks, to prevent ingestion of any yellow powder.
- Never use compressed air for cleaning areas suspected of containing hexavalent chromium.

- Avoid brushing, grinding, or cutting materials suspected of containing hexavalent chromium.
- Obey environmental regulations for the disposal of all materials that may contain or have come into contact with hexavalent chromium.
- Stay away from areas that might have hexavalent chromium particles in the air.

Dispose of Waste Properly

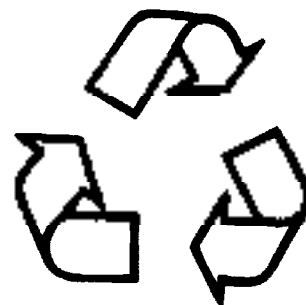


Illustration 32

g00706404

Improperly disposing of waste can threaten the environment. Potentially harmful fluids should be disposed of according to local regulations.

Always use leakproof containers when you drain fluids. Do not pour waste onto the ground, down a drain, or into any source of water.

i01359664

Crushing Prevention and Cutting Prevention

SMCS Code: 7000

Support the equipment properly before you perform any work or maintenance beneath that equipment. Do not depend on the hydraulic cylinders to hold up the equipment. Equipment can fall if a control is moved, or if a hydraulic line breaks.

Do not work beneath the cab of the machine unless the cab is properly supported.

Unless you are instructed otherwise, never attempt adjustments while the machine is moving or while the engine is running.

Never jump across the starter solenoid terminals in order to start the engine. Unexpected machine movement could result.

Whenever there are equipment control linkages the clearance in the linkage area will change with the movement of the equipment or the machine. Stay clear of areas that may have a sudden change in clearance with machine movement or equipment movement.

Stay clear of all rotating and moving parts.

If it is necessary to remove guards in order to perform maintenance, always install the guards after the maintenance is performed.

Keep objects away from moving fan blades. The fan blade will throw objects or cut objects.

Do not use a kinked wire cable or a frayed wire cable. Wear gloves when you handle wire cable.

When you strike a retainer pin with force, the retainer pin can fly out. The loose retainer pin can injure personnel. Make sure that the area is clear of people when you strike a retainer pin. To avoid injury to your eyes, wear protective glasses when you strike a retainer pin.

Chips or other debris can fly off an object when you strike the object. Make sure that no one can be injured by flying debris before striking any object.

i07746334

Burn Prevention

SMCS Code: 7000

Do not touch any part of an operating engine. Allow the engine to cool before any maintenance is performed on the engine. Relieve all pressure in the air system, in the oil system, in the lubrication system, in the fuel system, or in the cooling system before any lines, fittings, or related items are disconnected.

Coolant

When the engine is at operating temperature, the engine coolant is hot. The coolant is also under pressure. The radiator and all lines to the heaters or to the engine contain hot coolant.

Any contact with hot coolant or with steam can cause severe burns. Allow cooling system components to cool before the cooling system is drained.

Check the coolant level only after the engine has been stopped.

Ensure that the filler cap is cool before removing the filler cap. The filler cap must be cool enough to touch with a bare hand. Remove the filler cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Alkali can cause personal injury. Do not allow alkali to contact the skin, the eyes, or the mouth.

Oils

Hot oil and hot components can cause personal injury. Do not allow hot oil to contact the skin. Also, do not allow hot components to contact the skin.

Remove the hydraulic tank filler cap only after the engine has been stopped. The filler cap must be cool enough to touch with a bare hand. Follow the standard procedure in this manual to remove the hydraulic tank filler cap.

Batteries

The liquid in a battery is an electrolyte. Electrolyte is an acid that can cause personal injury. Do not allow electrolyte to contact the skin or the eyes.

Do not smoke while checking the battery electrolyte levels. Batteries give off flammable fumes which can explode.

Always wear protective glasses when you work with batteries. Wash hands after touching batteries. The use of gloves is recommended.

i07746336

Fire Prevention and Explosion Prevention

SMCS Code: 7000



Illustration 33

g00704000

General

All fuels, most lubricants, and some coolant mixtures are flammable.

To minimize the risk of fire or explosion, Caterpillar recommends the following actions.

Always perform a Walk-Around Inspection, which may help you identify a fire hazard. Do not operate a machine when a fire hazard exists. Contact your Cat dealer for service.

Understand the use of the primary exit and alternative exit on the machine. Refer to Operation and Maintenance Manual, "Alternative Exit".

Do not operate a machine with a fluid leak. Repair leaks and clean up fluids before resuming machine operation. Fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire. A fire may cause personal injury or death.

Remove flammable material such as leaves, twigs, papers, trash, and so on. These items may accumulate in the engine compartment or around other hot areas and hot parts on the machine.

Keep the access doors to major machine compartments closed and access doors in working condition in order to permit the use of fire suppression equipment, in case a fire should occur.

Clean all accumulations of flammable materials such as fuel, oil, and debris from the machine.

Do not operate the machine near any flame.

Keep shields in place. Exhaust shields (if equipped) protect hot exhaust components from oil spray or fuel spray in case of a break in a line, in a hose, or in a seal. Exhaust shields must be installed correctly.

Do not weld or flame cut on tanks or lines that contain flammable fluids or flammable material. Empty and purge the lines and tanks. Then clean the lines and tanks with a nonflammable solvent prior to welding or flame cutting. Ensure that the components are properly grounded in order to avoid unwanted arcs.

Dust that is generated from repairing nonmetallic hoods or fenders may be flammable and/or explosive. Repair such components in a well ventilated area away from open flames or sparks. Use suitable Personal Protection Equipment (PPE).

Inspect all lines and hoses for wear or deterioration. Replace damaged lines and hoses. The lines and the hoses should have adequate support and secure clamps. Tighten all connections to the recommended torque. Damage to the protective cover or insulation may provide fuel for fires.

Store fuels and lubricants in properly marked containers away from unauthorized personnel. Store oily rags and flammable materials in protective containers. Do not smoke in areas that are used for storing flammable materials.



Illustration 34

g03839130

Use caution when you are fueling a machine. Do not smoke while you are fueling a machine. Do not fuel a machine near open flames or sparks. Do not use cell phones or other electronic devices while you are refueling. Always stop the engine before fueling. Fill the fuel tank outdoors. Properly clean areas of spillage.

Avoid static electricity risk when fueling. Ultra low sulfur diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with a higher sulfur content. Avoid death or serious injury from fire or explosion. Consult with your fuel or fuel system supplier to ensure that the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

Never store flammable fluids in the operator compartment of the machine.

Battery and Battery Cables



Illustration 35

g03839133

Caterpillar recommends the following in order to minimize the risk of fire or an explosion related to the battery.

Do not operate a machine if battery cables or related parts show signs of wear or damage. Contact your Cat dealer for service.

Follow safe procedures for engine starting with jump-start cables. Improper jumper cable connections can cause an explosion that may result in injury. Refer to Operation and Maintenance Manual, "Engine Starting with Jump Start Cables" for specific instructions.

Do not charge a frozen battery. This may cause an explosion.

Gases from a battery can explode. Keep any open flames or sparks away from the top of a battery. Do not smoke in battery charging areas. Do not use cell phones or other electronic devices in battery charging areas.

Never check the battery charge by placing a metal object across the terminal posts. Use a voltmeter in order to check the battery charge.

Daily inspect battery cables that are in areas that are visible. Inspect cables, clips, straps, and other restraints for damage. Replace any damaged parts. Check for signs of the following, which can occur over time due to use and environmental factors:

- Fraying

- Abrasion
- Cracking
- Discoloration
- Cuts on the insulation of the cable
- Fouling
- Corroded terminals, damaged terminals, and loose terminals

Replace damaged battery cable(s) and replace any related parts. Eliminate any fouling, which may have caused insulation failure or related component damage or wear. Ensure that all components are reinstalled correctly.

An exposed wire on the battery cable may cause a short to ground if the exposed area comes into contact with a grounded surface. A battery cable short produces heat from the battery current, which may be a fire hazard.

An exposed wire on the ground cable between the battery and the disconnect switch may cause the disconnect switch to be bypassed if the exposed area comes into contact with a grounded surface. This may result in an unsafe condition for servicing the machine. Repair components or replace components before servicing the machine.

WARNING

Fire on a machine can result in personal injury or death. Exposed battery cables that come into contact with a grounded connection can result in fires. Replace cables and related parts that show signs of wear or damage. Contact your Cat dealer.

Wiring

Check electrical wires daily. If any of the following conditions exist, replace parts before you operate the machine.

- Fraying
- Signs of abrasion or wear
- Cracking
- Discoloration
- Cuts on insulation
- Other damage

Make sure that all clamps, guards, clips, and straps are reinstalled correctly. This will help to prevent vibration, rubbing against other parts, and excessive heat during machine operation.

Attaching electrical wiring to hoses and tubes that contain flammable fluids or combustible fluids should be avoided.

Consult your Cat dealer for repair or for replacement parts.

Keep wiring and electrical connections free of debris.

Lines, Tubes, and Hoses

Do not bend high-pressure lines. Do not strike high-pressure lines. Do not install any lines that are bent or damaged. Use the appropriate backup wrenches in order to tighten all connections to the recommended torque.

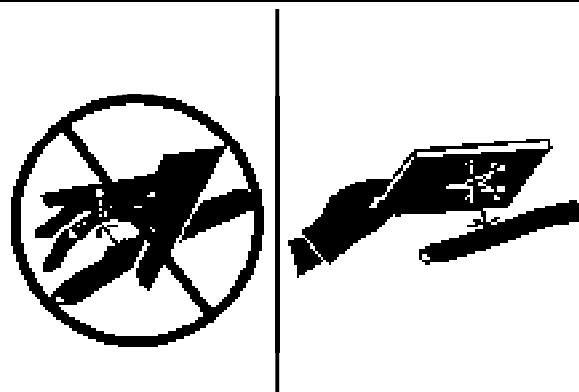


Illustration 36

g00687600

Check lines, tubes, and hoses carefully. Wear Personal Protection Equipment (PPE) in order to check for leaks. Always use a board or cardboard when you check for a leak. Leaking fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. A pin hole leak can cause severe injury. If fluid is injected into your skin, you must get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.

Replace the affected parts if any of the following conditions are present:

- End fittings are damaged or leaking.
- Outer coverings are chafed or cut.
- Wires are exposed.
- Outer coverings are swelling or ballooning.
- Flexible parts of the hoses are kinked.
- Outer covers have exposed embedded armoring.
- End fittings are displaced.

Make sure that all clamps, guards, and heat shields are installed correctly. During machine operation, this will help to prevent vibration, rubbing against other parts, excessive heat, and failure of lines, tubes, and hoses.

Do not operate a machine when a fire hazard exists. Repair any lines that are corroded, loose, or damaged. Leaks may provide fuel for fires. Consult your Cat dealer for repair or for replacement parts. Use genuine Cat parts or the equivalent, for capabilities of both the pressure limit and temperature limit.

Ether

Ether (if equipped) is commonly used in cold-weather applications. Ether is flammable and poisonous.

Only use approved Ether canisters for the Ether dispensing system fitted to your machine, do not spray Ether manually into an engine, follow the correct cold engine starting procedures. Refer to the section in the Operation and Maintenance Manual with the label "Engine Starting".

Use ether in ventilated areas. Do not smoke while you are replacing an ether cylinder.

Do not store ether cylinders in living areas or in the operator compartment of a machine. Do not store ether cylinders in direct sunlight or in temperatures above 49° C (120.2° F). Keep ether cylinders away from open flames or sparks.

Dispose of used ether cylinders properly. Do not puncture an ether cylinder. Keep ether cylinders away from unauthorized personnel.

Fire Extinguisher

As an additional safety measure, keep a fire extinguisher on the machine.

Be familiar with the operation of the fire extinguisher. Inspect the fire extinguisher and service the fire extinguisher regularly. Follow the recommendations on the instruction plate.

Consider installation of an aftermarket Fire Suppression System, if the application and working conditions warrant the installation.

i01122596

i07946707

Fire Extinguisher Location

SMCS Code: 7000; 7419



Illustration 37

g06286985

Make sure that a fire extinguisher is available. Be familiar with the operation of the fire extinguisher. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instruction plate.

The recommended location for mounting the fire extinguisher is on the rear of the cab, on the left-hand side.

Note: Fire extinguisher cannot exceed 10 kg (22 lb).

i01329108

Track Information

SMCS Code: 4170; 7000

Track adjusting systems use either grease or oil under high pressure to keep the track under tension.

Grease or oil under high pressure coming out of the relief valve can penetrate the body causing injury or death. Do not watch the relief valve to see if grease or oil is escaping. Watch the track or track adjustment cylinder to see if the track is being loosened.

The pins and bushings in a dry track pin joint can become very hot. It is possible to burn the fingers if there is more than brief contact with these components.

Electrical Storm Injury Prevention

SMCS Code: 7000

When lightning is striking in the vicinity of the machine, the operator should never attempt the following procedures:

- Mount the machine.
- Dismount the machine.

If you are in the operator's station during an electrical storm, stay in the operator's station. If you are on the ground during an electrical storm, stay away from the vicinity of the machine.

i01186721

Before Starting Engine

SMCS Code: 1000; 7000

Start the engine only from the operator's compartment. Do not short across the battery terminals and do not short across the battery. Bypassing the engine neutral start system can damage the electrical system.

Inspect the condition of the seat belt and the condition of the mounting hardware. Replace any damaged parts or worn parts. Regardless of appearance, replace the seat belt after three years of use. Do not use an extension for a seat belt on a retractable seat belt.

Adjust the seat so that full pedal travel can be achieved. Adjust the seat so that full lever travel can be achieved. Make sure that your back is against the back of the seat.

Make sure that the machine is equipped with a lighting system that is adequate for the job conditions. Make sure that all lights are working properly.

Make sure that the hydraulic control console is in the RAISED position. When the hydraulic control console is in the RAISED position, the hydraulic controls will be deactivated.

 WARNING

Deactivation of the hydraulic controls does not prevent the blade, boom swing, or auxiliary circuit functions from moving under gravity or other external forces. Gravity or other external forces can move the blade, boom swing, or auxiliary circuit functions suddenly if a hydraulic control lever is moved.

Personal injury or death may occur from sudden machine movement.

Put the cover on the control pedal for the swinging boom. Put the cover on the auxiliary hydraulic control.

Before you start the engine and before you move the machine, make sure that no personnel are underneath the machine, around the machine, or on the machine. Make sure that the area is free of personnel.

i08473852

Visibility Information

SMCS Code: 7000

Before you start the machine, perform a walk-around inspection to ensure that there are no hazards around the machine.

While the machine is in operation, constantly survey the area around the machine to identify potential hazards as hazards become visible around the machine.

Your machine may be equipped with visual aids. Some examples of visual aids are Closed Circuit Television (CCTV) and mirrors. Before operating the machine, ensure that the visual aids are in proper working condition and that the visual aids are clean. Shut down the machine until damaged or nonfunctional visual aid(s) are repaired (if applicable) or until appropriate job site organization is used to minimize hazards that are caused by any resulting restricted visibility. Adjust the visual aids using the procedures that are located in this Operation and Maintenance Manual. If equipped, the Work Area Vision System shall be adjusted according to Operation and Maintenance Manual, SEBU8157, "Work Area Vision System". If equipped, the Cat Detect Object Detection shall be adjusted according to the Operation and Maintenance Manual, "Cat Detect Object Detection" for your machine.

It may not be possible to provide direct visibility on large machines to all areas around the machine. Appropriate job site organization is required to minimize hazards that are caused by restricted visibility. Job site organization is a collection of rules and procedures that coordinates machines and people that work together in the same area. Examples of job site organization include the following:

- Safety instructions
- Controlled patterns of machine movement and vehicle movement
- Workers that direct safe movement of traffic
- Restricted areas
- Operator training
- Warning symbols or warning signs on machines or on vehicles
- A system of communication
- Communication between workers and operators prior to approaching the machine

Modifications of the machine configuration by the user that result in a restriction of visibility shall be evaluated.

i03562260

Engine Starting

SMCS Code: 1000; 7000

If a warning tag is attached to the engine start switch or to the controls, do not start the engine. Also, do not move any controls.

Make sure that you are seated before you start the engine.

Move all hydraulic controls to the HOLD position before you start the engine. Move the hydraulic lockout control to the LOCKED position. For further details on this procedure, refer to Operation and Maintenance Manual, "Operator Controls".

Diesel engine exhaust contains products of combustion which can be harmful to your health. Always run the engine in a well ventilated area. If you are in an enclosed area, vent the exhaust to the outside.

Briefly sound the horn before you start the engine.

i01340061

Before Operation

SMCS Code: 7000

Clear all personnel from the machine and from the area.

Clear all obstacles from the machine's path. Beware of hazards (wires, ditches, etc).

Be sure that all windows are clean. Secure the doors and the windows in the open position or in the shut position.

Adjust the rearview mirrors (if equipped) for the best visibility close to the machine. Make sure that the horn, the travel alarm (if equipped), and all other warning devices are working properly.

Fasten the seat belt securely.

Warm up the engine and the hydraulic oil before operating the machine.

Before moving the machine, check the position of the undercarriage. The normal travel position is with the idler wheels to the front under the cab and the drive sprockets to the rear. When the undercarriage is in the reversed position, the directional controls must be operated in opposite directions.

i04159629

Work Tools

SMCS Code: 6700

Only use work tools that are recommended by Caterpillar for use on Cat machines.

Use of work tools, including buckets, which are outside of Caterpillar's recommendations or specifications for weight, dimensions, flows, pressures, and so on, may result in less-than-optimal vehicle performance, including but not limited to reductions in production, stability, reliability, and component durability. Caterpillar recommends appropriate work tools for our machines to maximize the value our customers receive from our products. Caterpillar understands that special circumstances may lead a customer to use tools outside of our specifications. In these cases, customers must be aware that such choices can reduce vehicle performance and will affect their ability to claim warranty in the event of what a customer may perceive as a premature failure.

Work tools and work tool control systems, that are compatible with your Cat machine, are required for safe machine operation and/or reliable machine operation. If you are in doubt about the compatibility of a particular work tool with your machine, consult your Cat dealer.

Make sure that all necessary guarding is in place on the host machine and on the work tool.

Keep all windows and doors closed on the host machine. A polycarbonate shield must be used when the host machine is not equipped with windows and when a work tool could throw debris.

Do not exceed the maximum operating weight that is listed on the ROPS certification.

If your machine is equipped with an extendable stick, install the transport pin when you are using the following work tools: hydraulic hammers, augers and compactors

Always wear protective glasses. Always wear the protective equipment that is recommended in the operation manual for the work tool. Wear any other protective equipment that is required for the operating environment.

To prevent personnel from being struck by flying objects, ensure that all personnel are out of the work area.

While you are performing any maintenance, any testing, or any adjustments to the work tool stay clear of the following areas: cutting edges, pinching surfaces and crushing surfaces.

Never use the work tool for a work platform.

i08481684

Operation

SMCS Code: 7000

Sound the horn and allow adequate time for bystanders to clear the area before moving the machine into a restricted visibility area. Follow local practices for your machine application. For more information refer to Operation and Maintenance Manual, Restricted Visibility.

Machine Operating Temperature Range

The machine must function satisfactorily in the anticipated ambient temperature limits that are encountered during operation. The standard machine configuration is intended for use within an ambient temperature range of -18 °C (0 °F) to 43 °C (109 °F). Special configurations for different ambient temperatures may be available. Consult your Cat dealer for additional information on special configurations of your machine.

Limiting Conditions and Criteria

Limiting conditions are immediate issues with this machine that must be addressed prior to continuing operation.

The Operation and Maintenance Manual, Safety Section describes limiting condition criteria for replacing items such as safety messages, seat belt and mounting hardware, lines, tubes, hoses, battery cables and related parts, electrical wires, and repairing any fluid leak.

The Operation and Maintenance Manual, Maintenance Interval Schedule describes limiting condition criteria that require repair or replacement for items (if equipped) such as alarms, horns, braking system, steering system, and rollover protective structures.

The Operation and Maintenance Manual, Monitoring System (if equipped) provides information on limiting condition criteria, including a Warning Category 3 that requires immediate shutdown of the engine.

Critical Failures

The following table provides summary information on several limiting conditions found in this Operation and Maintenance Manual. The table provides criteria and required action for the limiting conditions listed. Each System or Component in this table, together with the respective limiting condition, describes a potential critical failure that must be addressed. Not addressing limiting conditions with required actions may, in conjunction with other factors or circumstances, result in a risk of personal injury or death. If an accident occurs, notify emergency personnel and provide location and description of accident.

Table 1

System or Component Name	Limiting Condition	Criteria for Action	Required Action
Line, tubes, and hoses	End fittings are damaged or leaking. Outer coverings are chafed or cut. Wires are exposed. Outer coverings are swelling or ballooning. Flexible parts of the hoses are kinked. Outer covers have exposed embedded armoring. End fittings are displaced.	Visible corrosion, loose, or damaged lines, tubes, or hoses. Visible fluid leaks.	Immediately repair any lines, tubes, or hoses that are corroded, loose, or damaged. Immediately repair any leaks as these may provide fuel for fires.
Electrical Wiring	Signs of fraying, abrasion, cracking, discoloration, cuts on the insulation	Visible damage to electrical wiring	Immediately replace damaged wiring
Battery cable(s)	Signs of fraying, abrasion, cracking, discoloration, cuts on the insulation of the cable, fouling, corroded terminals, damaged terminals, and loose terminals	Visible damage to battery cable(s)	Immediately replace damaged battery cables
Operator Protective Structure	Structures that are bent, cracked, or loose. Loose, missing, or damaged bolts.	Visible damage to structure. Loose, missing, or damaged bolts.	Do not operate machine with damaged structure or loose, missing, or damaged bolts. Contact your Cat dealer for inspection and repair or replacement options.
Seat Belt	Worn or damaged seat belt or mounting hardware	Visible wear or damage	Immediately replace parts that are worn or damaged.
Seat Belt	Age of seat belt	Three years after date of installation	Replace seat belt three years after date of installation

(continued)

Safety Section Operation

(Table 1, contd)

System or Component Name	Limiting Condition	Criteria for Action	Required Action
Safety Messages	Appearance of safety message	Damage to safety messages making them illegible	Replace the illustrations if illegible.
Audible Warning Device(s) (if equipped)	Sound level of audible warning	Reduced or no audible warning present	Immediately repair or replace audible warning devices not working properly.
Camera(s) (if equipped)	Dirt or debris on camera lens	Dirt or debris obstructing camera view	Clean camera before operating machine.
Cab Windows (if equipped)	Dirt, debris, or damaged windows	Dirt or debris obstructing operator visibility. Any damaged windows.	Clean windows before operating machine. Repair or replace damaged windows before operating machine.
Mirrors (if equipped)	Dirt, debris, or damaged mirror	Dirt or debris obstructing operator visibility. Any damaged mirrors.	Clean mirrors before operating machine. Repair or replace damaged mirrors before operating machine.
Braking System	Inadequate braking performance	System does not pass Braking System - Test(s) included in Maintenance Section or in the Testing and Adjusting Manual	Contact your Cat dealer to inspect and, if necessary, repair the brake system.
Cooling System	The coolant temperature is too high.	Monitoring System displays Warning Category 3	Stop the engine immediately. Check the coolant level and check the radiator for debris. Refer to Operation and Maintenance Manual, Cooling System Coolant Level - Check. Check the fan drive belts for the water pump. Refer to Operation and Maintenance Manual, Belts - Inspect/Adjust/ Replace. Make any necessary repairs.
Engine Oil System	A problem has been detected with the engine oil pressure.	Monitoring System displays Warning Category 3	If the warning stays on during low idle, stop the engine and check the engine oil level. Perform any necessary repairs as soon as possible.
Engine system	An engine fault has been detected by the engine ECM.	Monitoring System displays Warning Category 3	Stop the engine immediately. Contact your Cat dealer for service.
Fuel System	A problem has been detected with the fuel system.	Monitoring System displays Warning Category 3	Stop the engine. Determine the cause of the fault and perform any necessary repairs.
Hydraulic Oil System	The hydraulic oil temperature is too high.	Monitoring System displays Warning Category 3	Stop the engine immediately. Check the hydraulic oil level and check the hydraulic oil cooler for debris. Perform any necessary repairs as soon as possible.
Steering System	A problem has been detected with the steering system. (If equipped with steering system monitoring.)	Monitoring System displays Warning Category 3	Move machine to a safe location and stop the engine immediately. Contact your Cat dealer to inspect and, if necessary, repair the steering system.
Overall Machine	Machine service is required.	Monitoring System displays Warning Category 3	Stop the engine immediately. Contact your Cat dealer for service.

Machine Operation

Only operate the machine while you are in a seat. The seat belt must be fastened while you operate the machine. Only operate the controls while the engine is running.

Check for proper operation of all controls and of all protective devices while you operate the machine slowly in an open area.

When the machine is moving watch the clearance of the boom. Uneven ground can cause the boom to move in all directions.

Make sure that no personnel will be endangered before you move the machine. Do not allow riders on the machine unless the machine has an additional seat with a seat belt.

Report any machine damage that was noted during machine operation. Make any necessary repairs.

Never use the work tool for a work platform.

Hold attachments approximately 40 cm (15 inches) above ground level while you drive the machine. Do not drive the machine close to an overhang, to the edge of a cliff, or to the edge of an excavation.

If the machine begins to sideslip on a grade, immediately dump the load and turn the machine downhill.

Be careful to avoid any ground condition which could cause the machine to tip. Tipping can occur when you work on hills, on banks, or on slopes. Tipping can also occur when you cross ditches, ridges, or other unexpected obstructions.

When possible, operate the machine up slopes and down slopes with the final drive sprockets facing down the slope. Avoid operating the machine across the slope. Place the heaviest end of the machine uphill when you are working on an incline.

Keep the machine under control. Do not overload the machine beyond capacity.

Avoid changing the direction of travel on a slope. Changing the direction of travel on a slope could result in tipping or side slipping of the machine.

Bring the load close to the machine before traveling any distances.

Bring the load close to the machine before swinging the load.

Lifting capacity decreases as the load is moved further from the machine.

Make sure that the towing eyes and the towing devices are adequate for your needs.

Only connect trailing equipment to a drawbar or to a hitch.

Never straddle a wire cable. Never allow other personnel to straddle a wire cable.

When you maneuver in order to connect the equipment, make sure that no personnel are between the machine and trailing equipment. Block up the hitch of the trailing equipment in order to align the equipment with the drawbar.

Check the local regulations, state codes, and/or directives of the job site for a specific minimum distance from obstacles.

Before you operate the machine, check with local utilities for the locations of underground pipes and for the locations of buried cables.

Know the maximum dimensions of your machine.

Watch the load at all times.

Do not operate the machine without the counterweight. The machine can tip when the boom is over the side.

The clamshell, the grapple, or the magnet can swing in all directions. Move the joysticks in a continuous motion. Failure to move the joysticks in a continuous motion can cause the clamshell, the grapple, or the magnet to swing into the cab or into a person in the work area. This will result in personal injury.

Certain machine front linkage combinations (boom, stick, quick coupler, work tool) can allow the work tool to contact the machine undercarriage, swing frame, boom, boom hydraulic cylinder and or the cab. Be aware of the position of the work tool while you operate the machine.

Shut down the machine until damaged or non-functioning visibility aid(s) is repaired (if applicable) or until appropriate job site organization is used to minimize hazards that are caused by any resulting restricted visibility.

Machine Operation when the Machine is not Completely Assembled

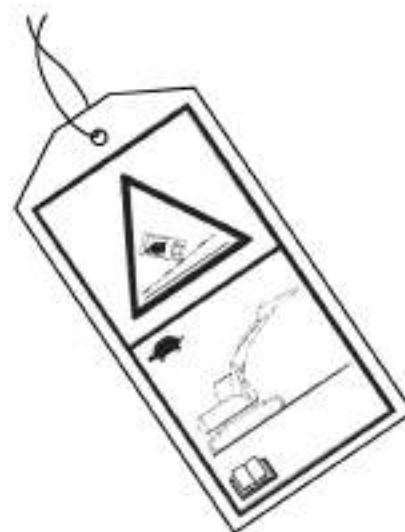


Illustration 38

g02202544

Attach the tag to the controls of the machine. When the tag is attached to the controls, operate the machine as described below.

If the machine needs to be operated without the boom, stick, and/or counterweight being installed, the machine should be operated slowly on flat, stable ground or pavement by qualified operators. Avoid any machine operations which could affect machine stability, including the swing function. The ROPS structural certification depends on the support of the boom, stick, and counterweight in the event of a machine tip over or a machine rollover incident.

i06299648

Engine Stopping

SMCS Code: 1000; 7000

Do not stop the engine immediately after the machine has been operated under load. Stopping the engine immediately can cause overheating and accelerated wear of engine components.

After the machine is parked and the parking brake is engaged, allow the engine to run at low idle for 5 minutes before shutdown. Running the engine allows hot areas of the engine to cool gradually.

i08482864

Lifting Objects

SMCS Code: 7000

There may be local regulations and/or government regulations that govern the use of machines which lift heavy objects. Obey all local and government regulations.

Regional regulations may require the use of an overload warning device and boom and stick lowering control valves when used to lift objects.

If this machine is used to lift objects within Japan, Japanese regulations require the machine to be equipped with a shovel crane configuration.

Contact your Cat dealer for additional information.

i08482613

Demolition

SMCS Code: 6700

There maybe local regulations and/or government regulations that govern the use of machines which are designed and used as demolition machinery.

Note: Obey all local and government regulations.

Demolition machinery is designed for demolishing by pushing or pulling, or fragmenting. Demolition is done by crushing or shearing, buildings and/or other civil engineering structures and component parts and/or separating the resultant debris.

If this machine is used for demolition, regional regulations may require the machine to be equipped with:

- Rollover Protective Structure (ROPS, not required for demolition excavators)
- Boom Lowering Control Valve (BLCV) / Stick Lowering Control Valve (SLCV)
- Top Guard / Front Guard
- Bottom / Motor / Swivel Guard
- EN 356 class P5A front window glass
- If a roof window is used to provide visibility to the working area, then roof window shall be equipped with motorized windscreen wipers and washers.

Demolition applications may generate flying debris. Ensure that there are no personnel in the area around the machine where flying debris may travel.

Demolition applications may generate airborne dust that can be hazardous to your health. If you operate the machine in a dust generating applications, use appropriate safeguarding or adequate ventilation to minimize risk.

i07318756

Parking

SMCS Code: 7000

The hydraulic system controls remain pressurized if the accumulator is charged. This condition is true even when the engine is not running. The hydraulic control system pressure should decrease in a short time (approximately 1 minute). While the hydraulic controls maintain a charge, the hydraulic work tools and machine controls remain functional.

There can be residual pressure within the hydraulic system even when the accumulator is empty. Refer to this Operation and Maintenance Manual, "System Pressure Relief" before any service is performed to the hydraulic system.

Machine movement that is sudden and unexpected will occur if any of the controls are moved. Machine movement that is sudden and unexpected, can cause personal injury or death.

Always move the hydraulic lockout control to the LOCKED position before you shut off the engine or immediately after the engine stops running.

Park the machine on a hard, level surface. If you must park the machine on a grade, chock the tracks of the machine.



Illustration 39

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Place the machine in the servicing position.

Note: Make sure that all work tools are in the recommended servicing position before servicing the machine.

Stop the engine.

Turn the engine start switch to the OFF position.

Turn the battery disconnect switch to the OFF position, if you do not intend on operating the machine for an extended period. This practice will prevent drainage of the battery. A battery short circuit, any current draw from certain components, and vandalism can cause drainage of the battery.

Note: Do not turn off the battery disconnect switch until 5 seconds have elapsed after turning the engine start switch to the OFF position. Do not turn off the battery disconnect switch while the "Lock Security?" screen is displayed on the monitor.

Install barriers or lighting as required to prevent interference in road traffic.

Select places free of danger by flooding and other water damage.

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Slope Operation

SMCS Code: 7000

Machines that are operating safely in various applications depend on these criteria: the machine model, configuration, machine maintenance, operating speed of the machine, conditions of the terrain, fluid levels, and tire inflation pressures. The most important criteria are the skill and judgment of the operator.

A well trained operator that follows the instructions in the Operation and Maintenance Manual has the greatest impact on stability. Operator training provides a person with the following abilities: observation of working and environmental conditions, feel for the machine, identification of potential hazards and operating the machine safely by making appropriate decisions.

When you work on side hills and when you work on slopes, consider the following important points:

Speed of travel – At higher speeds, forces of inertia tend to make the machine less stable.

Roughness of terrain or surface – The machine may be less stable with uneven terrain.

Direction of travel – Avoid operating the machine across the slope. When possible, operate the machine up the slopes and operate the machine down the slopes. Place the heaviest end of the machine uphill when you are working on an incline.

Mounted equipment – Balance of the machine may be impeded by the following components: equipment that is mounted on the machine, machine configuration, weights, and counterweights.

Nature of surface – Ground that has been newly filled with earth may collapse from the weight of the machine.

Surface material – Rocks and moisture of the surface material may drastically affect the machine's traction and machine's stability. Rocky surfaces may promote side slipping of the machine.

Slippage due to excessive loads – This may cause downhill tracks or downhill tires to dig into the ground, which will increase the angle of the machine.

Width of tracks or tires – Narrower tracks or narrower tires further increase the digging into the ground which causes the machine to be less stable.

Implements attached to the drawbar – This may decrease the weight on the uphill tracks. This may also decrease the weight on the uphill tires. The decreased weight will cause the machine to be less stable.

Height of the working load of the machine – When the working loads are in higher positions, the stability of the machine is reduced.

Operated equipment – Be aware of performance features of the equipment in operation and the effects on machine stability.

Operating techniques – Keep all attachments or pulled loads low to the ground for optimum stability.

Machine systems have limitations on slopes – Slopes can affect the proper function and operation of the various machine systems. These machine systems are needed for machine control.

Note: Operators with lots of experience and proper equipment for specific applications are also required. Safe operation on steep slopes may also require special machine maintenance. Refer to Lubricant Viscosities and Refill Capacities in this manual for the proper fluid level requirements and intended machine use. Fluids must be at the correct levels to ensure that systems will operate properly on a slope.

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Equipment Lowering with Engine Stopped

SMCS Code: 7000-II

Before lowering any equipment with the engine stopped, clear the area around the equipment of all personnel. The procedure to use will vary with the type of equipment to be lowered. Keep in mind most systems use a high pressure fluid or air to raise or lower equipment. The procedure will cause high pressure air, hydraulic, or some other media to be released in order to lower the equipment. Wear appropriate personal protective equipment and follow the established procedure in the Operation and Maintenance Manual, "Equipment Lowering with Engine Stopped" in the Operation Section of the manual.

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Sound Information and Vibration Information

SMCS Code: 7000

Sound Level Information

Hearing protection may be needed when the machine is operated with an open operator station, in a noisy environment, with a cab that is not properly maintained, or when the doors and windows are open for extended periods.

Table 2

Sound Level		Test Method
Operator Sound Pressure Level	72 dB(A)	"ISO 6396:2008" ⁽¹⁾
Exterior Sound Power Level	99 dB(A)	"ISO 6395:2008" ⁽²⁾

⁽¹⁾ The measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.

⁽²⁾ The measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

The sound levels listed above include both measurement uncertainty and uncertainty due to production variation. Typical measurement uncertainty for this type of machinery is 2 dB(A) in accordance with "ISO 4871".

Sound Level Information for Machines Required by the Applicable Regional Regulations

- European Union Countries

- United Kingdom
- Eurasian Economic Union Countries
- Ukraine
- Countries that Adopt the "EU Directives"

The information below applies to only the machine configurations that contain regional product marking on or near the Product Identification Plate noted in the "Regional Product Marking" section of this manual.

Table 3

Declared Dynamic Operator Sound Pressure Level		
Region	Sound Level	Test Method
European Union	72 dB(A)	"ISO 6396:2008" ⁽¹⁾
United Kingdom	72 dB(A)	"ISO 6396:2008" ⁽¹⁾
Eurasian Economic Union	72 dB(A)	"ISO 6396:2008" ⁽¹⁾

⁽¹⁾ The measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.

Table 4

Declared Exterior Sound Power Level		
Region	Sound Level	Test Method
European Union	99 dB(A)	"ISO 6395:1988" ⁽¹⁾
United Kingdom	99 dB(A)	"ISO 6395:1988" ⁽¹⁾
Eurasian Economic Union	99 dB(A)	"ISO 6395:2008" ⁽¹⁾
Ukraine	99 dB(A)	"ISO 6395:1988" ⁽¹⁾

⁽¹⁾ The measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

The declared sound levels listed above include both measurement uncertainty and uncertainty due to production variation.

The machine sound power level meets the criteria that are specified in the applicable regional regulation. For example:

- "European Directive 2000/14 EC" amended by "2005/88/EC"
- "United Kingdom 2001 No. 1701" amended by "2005 No. 3525"
- "Ukraine Technical Regulation of the Noise Emission in the Environment by Equipment for Use Outdoors"

The criteria are specified on the certificate of the conformance and the accompanying labels.

Vibration Information Applicable to Regional Regulations

- “European Union Directive: 2002/44/EC - Physical Agents (Vibration) ”
- “United Kingdom: 2005 No. 1093 - The Control of Vibration at Work Regulation 2005 ”

Vibration Data for Track Type Excavator

Information Concerning Hand/Arm Vibration Level

When the machine is operated according to the intended use, the hand/arm vibration of this machine is below 2.5 meter per second squared.

Information Concerning Whole Body Vibration Level

This section provides vibration data and a method for estimating the vibration level for track type excavators.

Note: Vibration levels are influenced by many different parameters. Many items are listed below.

- Operator training, behavior, mode, and stress
- Job site organization, preparation, environment, weather, and material
- Machine type, quality of the seat, quality of the suspension system, attachments, and condition of the equipment

It is not possible to get precise vibration levels for this machine. The expected vibration levels can be estimated with the information in Table 5 to calculate the daily vibration exposure. A simple evaluation of the machine application can be used.

Estimate the vibration levels for the three vibration directions. For typical operating conditions, use the average vibration levels as the estimated level. With an experienced operator and smooth terrain, subtract the Scenario Factors from the average vibration level to obtain the estimated vibration level. For aggressive operations and severe terrain, add the Scenario Factors to the average vibration level to obtain the estimated vibration level.

Note: All vibration levels are in meter per second squared.

Table 5

"ISO Reference Table A - Equivalent vibration levels of whole body vibration emission for earthmoving equipment."							
Machine Type	Typical Operating Activity	Vibration Levels			Scenario Factors		
		X axis	Y axis	Z axis	X axis	Y axis	Z axis
Track Type Excavators	excavating	0.44	0.27	0.30	0.24	0.16	0.17
	hydraulic breaker application	0.53	0.31	0.55	0.30	0.18	0.28
	mining application	0.65	0.42	0.61	0.21	0.15	0.32
	transfer	0.48	0.32	0.79	0.19	0.20	0.23

Note: Refer to "ISO/TR 25398 Mechanical Vibration - Guideline for the assessment of exposure to whole body vibration of ride on operated earthmoving machines" for more information about vibration. This publication uses data that is measured by international institutes, organizations, and manufacturers. This document provides information about the whole body exposure of operators of earthmoving equipment.

The Caterpillar suspension seat meets the criteria of "ISO 7096". This represents vertical vibration level under severe operating conditions. EAEU typical measurement uncertainty for this type of machinery is 1.25 m/s² (4.101 ft/s²) in accordance with "EN 12096".

Guidelines for Reducing Vibration Levels on Earthmoving Equipment

Properly adjust machines. Properly maintain machines. Operate machines smoothly. Maintain the conditions of the terrain. The following guidelines can help reduce the whole body vibration level:

1. Use the right type and size of machine, equipment, and attachments.
2. Maintain machines according to the manufacturer recommendations.
 - a. Tire pressures
 - b. Brake and steering systems
 - c. Controls, hydraulic system, and linkages
3. Keep the terrain in good condition.
 - a. Remove any large rocks or obstacles.
 - b. Fill any ditches and holes.
 - c. Provide machines and schedule time to maintain the conditions of the terrain.
4. Use a seat that meets "ISO 7096". Keep the seat maintained and adjusted.
 - a. Adjust the seat and suspension for the weight and the size of the operator.

- b. Inspect and maintain the seat suspension and adjustment mechanisms.

5. Perform the following operations smoothly.

- a. Steer
- b. Brake
- c. Accelerate.
- d. Shift the gears.

6. Move the attachments smoothly.

7. Adjust the machine speed and the route to minimize the vibration level.

- a. Drive around obstacles and rough terrain.
- b. Slow down when driving over rough terrain.

8. Minimize vibrations for a long work cycle or a long travel distance.

- a. Use machines that are equipped with suspension systems.
- b. Use the ride control system on track type excavators.
- c. If no ride control system is available, reduce speed to prevent bounce.
- d. Haul the machines between workplaces.

9. Less operator comfort may be caused by other risk factors. The following guidelines can be effective to provide better operator comfort:

- a. Adjust the seat and adjust the controls to achieve good posture.
- b. Adjust the mirrors to minimize twisted posture.
- c. Provide breaks to reduce long periods of sitting.
- d. Avoid jumping from the cab.
- e. Minimize repeated handling of loads and lifting of loads.

- f. Minimize any shocks and impacts during sports and leisure activities.

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Sources

The vibration information and the calculation procedure are based on "ISO/TR 25398 Mechanical Vibration - Guideline for the assessment of exposure to whole body vibration of ride on operated earthmoving machines". Harmonized data is measured by international institutes, organizations, and manufacturers.

This literature provides information about assessing the whole body vibration exposure of operators of earthmoving equipment. The method is based on measured vibration emission under real working conditions for all machines.

Check the original directive. This document summarizes part of the content of the applicable law. This document is not meant to substitute the original sources. Other parts of these documents are based on information from the United Kingdom Health and Safety Executive.

Consult your local Cat[®] dealer for more information about machine features that minimize vibration levels. Consult your local Cat[®] dealer about safe machine operation.

Use the following web site to find your local dealer:

Caterpillar, Inc.
www.cat.com

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Operator Station

SMCS Code: 7300; 7301; 7325

Any modifications to the inside of the operator station should not project into the operator space or into the space for the companion seat (if equipped). The addition of a radio, fire extinguisher, and other equipment must be installed so that the defined operator space and the space for the companion seat (if equipped) is maintained. Any item that is brought into the cab should not project into the defined operator space or the space for the companion seat (if equipped). A lunch box or other loose items must be secured. Objects must not pose an impact hazard in rough terrain or in the event of a rollover.

Guards (Operator Protection)

SMCS Code: 7000; 7150

There are different types of guards that are used to protect the operator. The machine and the machine application determine the type of guard that should be used.

A daily inspection of the guards is required in order to check for structures that are bent, cracked, or loose. Never operate a machine with a damaged structure.

The operator becomes exposed to a hazardous situation if the machine is used improperly or if poor operating techniques are used. This situation can occur even though a machine is equipped with an appropriate protective guard. Follow the established operating procedures that are recommended for your machine.

Rollover Protective Structure (ROPS), Falling Object Protective Structure (FOPS) or Tip Over Protection Structure (TOPS)

The ROPS/FOPS Structure (if equipped) on your machine is specifically designed, tested and certified for that machine. Any alteration or any modification to the ROPS/FOPS Structure could weaken the structure. This places the operator into an unprotected environment. Modifications or attachments that cause the machine to exceed the weight that is stamped on the certification plate also place the operator into an unprotected environment. Excessive weight may inhibit the brake performance, the steering performance and the ROPS. The protection that is offered by the ROPS/FOPS Structure will be impaired if the ROPS/FOPS Structure has structural damage. Damage to the structure can be caused by an overturn, a falling object, a collision, etc.

Do not mount items (fire extinguishers, first aid kits, work lights, etc) by welding brackets to the ROPS/FOPS Structure or by drilling holes in the ROPS/FOPS Structure. Welding brackets or drilling holes in the ROPS/FOPS Structures can weaken the structures. Consult your Cat dealer for mounting guidelines.

The Tip Over Protection Structure (TOPS) is another type of guard that is used on mini hydraulic excavators. This structure protects the operator in the event of a tipover. The same guidelines for the inspection, the maintenance and the modification of the ROPS/FOPS Structure are required for the Tip Over Protection Structure.

Other Guards (If Equipped)

Protection from flying objects and/or falling objects is required for special applications. Logging applications and demolition applications are two examples that require special protection.

A front guard needs to be installed when a work tool that creates flying objects is used. Mesh front guards that are approved by Caterpillar or polycarbonate front guards that are approved by Caterpillar are available for machines with a cab or an open canopy. On machines that are equipped with cabs, the windows should also be closed. Safety glasses are recommended when flying hazards exist for machines with cabs and machines with open canopies.

If the work material extends above the cab, top guards and front guards should be used. Typical examples of this type of application are listed below:

- Demolition applications
- Rock quarries
- Forestry products

Additional guards may be required for specific applications or work tools. The Operation and Maintenance Manual for your machine or your work tool will provide specific requirements for the guards. Refer to Operation Maintenance manual, "Demolition" for additional information. Consult your Cat dealer for additional information.

Product Information Section

General Information

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Specifications

SMCS Code: 7000

Intended Use

The intended use of this machine is for excavating with a bucket or working with approved work tools. The machine should be operated with the undercarriage in a stationary position since the upper structure is normally capable of 360 degrees swing with mounted equipment. This machine can be used in object handling applications that are within the lift capacity of the machine. When this machine is used in object handling applications, ensure that the machine is properly configured and operated properly. Obey any local governmental regulations and regional governmental regulations. Only lift objects from approved lifting points and with approved lifting devices.

Expected Life

The expected life, defined as total machine hours of this machine is dependent upon many factors. These factors include the machine owner desire to rebuild the machine back to factory specifications. The expected life interval of this machine is 8000 service hours. The expected life interval corresponds to the service hours to engine overhaul or replacement. Service hours to engine overhaul or replacement may vary based on overall machine duty cycle. At the expected life interval, remove the machine from operation. Consult your Cat® dealer for inspect, repair, rebuild, install remanufactured, install new components, or disposal options and to establish a new expected life interval. If a decision is made to remove this machine from service, refer to "Decommissioning and Disposal".

The following items are required to obtain an economical specified useful life of this machine:

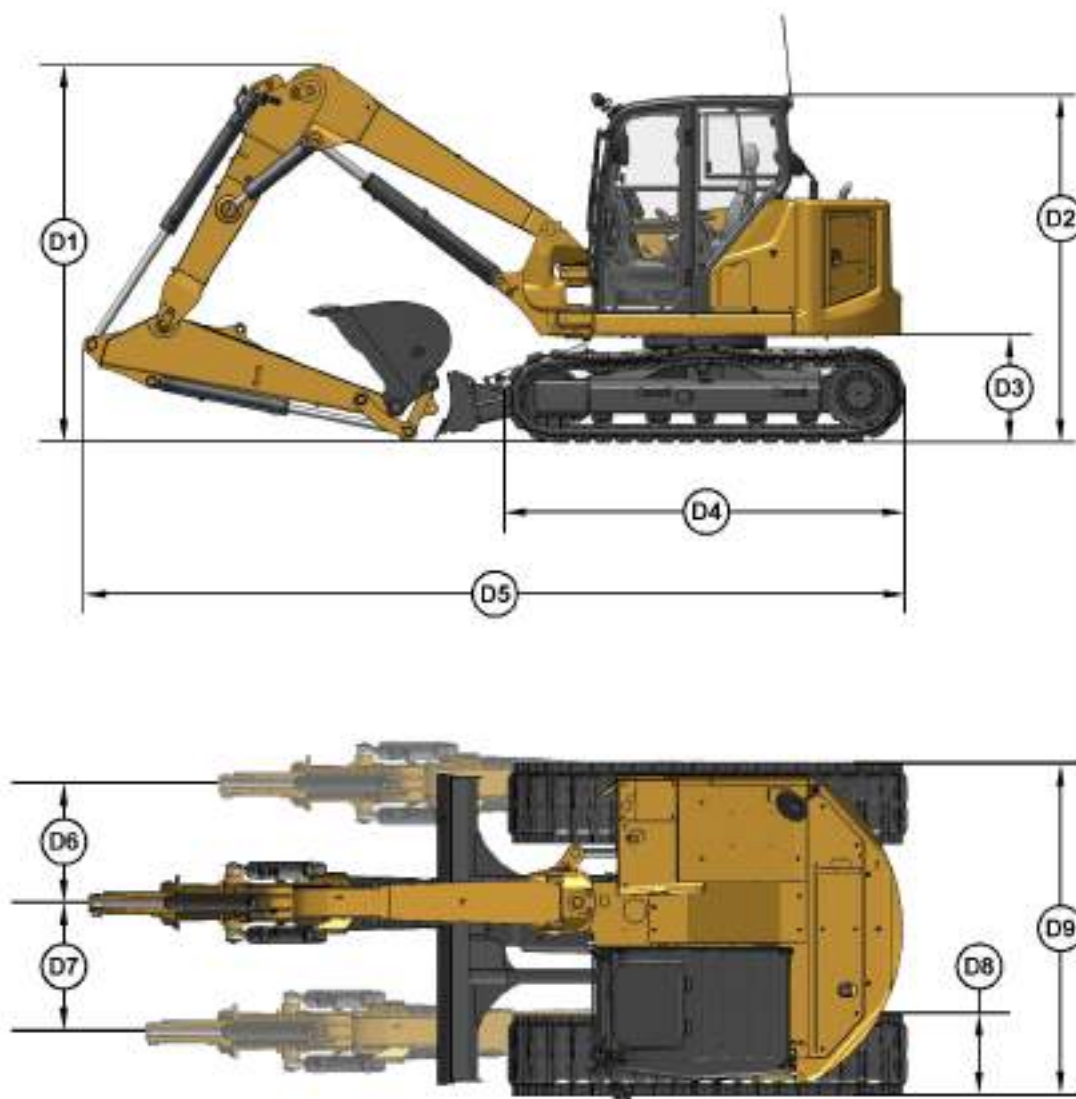
- Ensure that all service letters are addressed in the time intervals described in the letters.
 - Ensure that machine application conditions comply with Caterpillar recommendations.
 - Ensure that the operating weight does not exceed limits set by manufacturer.
- Perform regular preventive maintenance procedures as described in the Operation and Maintenance Manual.
 - Perform machine inspections as described in the Operation and Maintenance Manual and correct any problems discovered.
 - Perform system testing as described in the Operation and Maintenance Manual and correct any problems discovered.

- Ensure that all frame cracks are identified, inspected, and repaired to prevent further development.

Application/Configuration Restrictions

The operator station is Roll Over Protective Structure (ROPS) certified per "ISO 12117-2:2008".

Specification Data



304 Excavator

Table 6

Stick Options	Standard Stick		
Bucket Options	0.12 m³ (0.15 yd³)		
Blade Options	Standard Blade		
Operating Weight of Cab Machines	4100 kg (9039 lb)		
Additions to Operating Weight	Long Stick	Optional Counterweight	Angle Blade
	33 kg (72 lb)	250 kg (551 lb)	155 kg (341 lb)
Boom Height in Shipping Position (D1)	1910 mm (75.2 in)		
Overall Shipping Height (D2)	2500 mm (98.4 in)		
Swing Bearing Height (D3)	557 mm (21.9 in)		
Overall Undercarriage Length (D4)	2210 mm (87.1 in)		
Overall Shipping Length (D5)	4950 mm (194.8 in)		
Boom Swing Right (D6)	730 mm (28.7 in)		
Boom Swing Left (D7)	530 mm (20.8 in)		
Track Belt / Shoe Width (D8)	350 mm (13.7 in)		
Overall Track Width (D9)	1700 mm (66.9 in)		

305 CR Excavator

Table 7

Stick Options	Standard Stick		
Bucket Options	0.17 m³ (0.22 yd³)		
Blade Options	Standard Blade		
Operating Weight of Cab Machines	5212 kg (11490 lb)		
Additions to Operating Weight	Long Stick	Optional Counterweight	Angle Blade
	38 kg (83 lb)	240 kg (529 lb)	160 kg (352 lb)
Boom Height in Shipping Position (D1)	1895 mm (74.6 in)		
Overall Shipping Height (D2)	2550 mm (100.4 in)		
Swing Bearing Height (D3)	619 mm (24.4 in)		
Overall Undercarriage Length (D4)	2585 mm (101.7 in)		
Overall Shipping Length (D5)	5400 mm (212.5 in)		
Boom Swing Right (D6)	865 mm (34.1 in)		
Boom Swing Left (D7)	615 mm (24.2 in)		
Track Belt / Shoe Width (D8)	400 mm (15.7 in)		
Overall Track Width (D9)	1980 mm (77.9 in)		

305 CR Excavator For Inside Japan (ISJ) and South East Asia (SEA) Region

Table 8

Stick Options	Standard Stick	
Bucket Options	0.16 m³ (0.21 yd³)	
Blade Options	Standard Blade	
Operating Weight of Cab Machines	4840 kg (10670 lb)	
Operating Weight of Canopy Machines	4735 kg (10438 lb)	
Additions to Operating Weight	Long Stick	Optional Counterweight
	38 kg (83 lb)	240 kg (529 lb)
Boom Height in Shipping Position (D1)	1720 mm (67.7 in)	
Overall Shipping Height (D2) for Cab Machines	2550 mm (100.4 in)	
Overall Shipping Height (D2) for Canopy Machines	2535 mm (99.8 in)	
Swing Bearing Height (D3)	620 mm (24.4 in)	
Overall Undercarriage Length (D4)	2590 mm (102.0 in)	
Overall Shipping Length (D5)	5400 mm (212.5 in)	
Boom Swing Right (D6)	870 mm (34.3 in)	
Boom Swing Left (D7)	615 mm (24.1 in)	
Track Belt / Shoe Width (D8)	400 mm (15.7 in)	
Overall Track Width (D9)	1980 mm (78.0 in)	

305.5 CR Excavator For Inside Japan (ISJ)

Table 9

Stick Options	Standard Stick	
Bucket Options	0.16 m³ (0.21 yd³)	
Blade Options	Standard Blade	
Operating Weight of Canopy Machines	4930 kg (10869 lb)	
Operating Weight of Cab Machines	5035 kg (11100 lb)	
Additions to Operating Weight	Long Stick	Optional Counterweight
	38 kg (83 lb)	240 kg (529 lb)
Boom Height in Shipping Position (D1)	1670 mm (65.7 in)	
Overall Shipping Height (D2) for Cab Machines	2550 mm (100.4 in)	
Overall Shipping Height (D2) for Canopy Machines	2535 mm (99.8 in)	
Swing Bearing Height (D3)	620 mm (24.4 in)	
Overall Undercarriage Length (D4)	2590 mm (102.0 in)	
Overall Shipping Length (D5)	5665 mm (223.0 in)	
Boom Swing Right (D6)	870 mm (34.3 in)	
Boom Swing Left (D7)	615 mm (24.1 in)	
Track Belt / Shoe Width (D8)	400 mm (15.7 in)	
Overall Track Width (D9)	1980 mm (78.0 in)	

305 SR Excavator

Table 10

Stick Options	Standard Stick
Bucket Options	0.22 m³ (0.29 yd³)
Blade Options	Standard Blade
Operating Weight of Canopy Machines	5250 Kg (11574 lb)
Operating Weight of Cab Machines	5370 Kg (11838 lb)
Boom Height in Shipping Position (D1)	2060 mm (81.1 in)
Overall Shipping Height (D2) for Canopy Machine	2580 mm (101.6 in)
Overall Shipping Height (D2) for Cab Machine	2560 mm (100.8 in)
Swing Bearing Height (D3)	620 mm (24.4 in)
Overall Undercarriage Length (D4)	2590 mm (102.0 in)
Overall Shipping Length (D5)	5220 mm (205.5 in)
Boom Swing Right (D6)	815 mm (32.1 in)
Boom Swing Left (D7)	950 mm (37.4 in)
Track Belt / Shoe Width (D8)	400 mm (15.7 in)
Overall Track Width (D9)	1980 mm (78.0 in)

Working Ranges

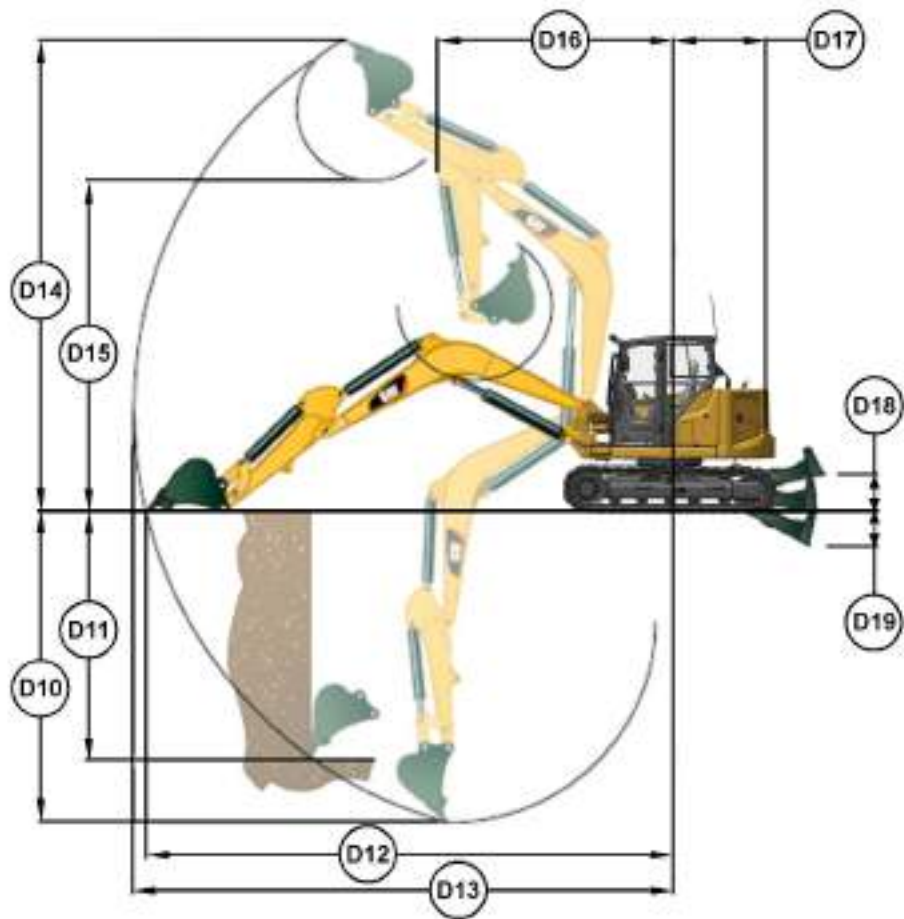


Illustration 41

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304 Excavator

Note: All dimensions are approximate and may vary depending on bucket selection.

Table 11

304 Excavator		
Boom Options	Standard Boom 2500 mm (98.4 in)	
Stick Options	Standard Stick 1395 mm (54.9 in)	Long Stick 1695 mm (66.7 in)
Blade Options	Straight Blade	
Maximum Digging Depth (D10)	3210 mm (126.4 in)	3501 mm (137.8 in)
Maximum Vertical Wall Digging Depth (D11)	2395 mm (94.3 in)	2535 mm (99.8 in)

(continued)

(Table 11, contd)

304 Excavator		
Boom Options	Standard Boom 2500 mm (98.4 in)	
Stick Options	Standard Stick 1395 mm (54.9 in)	Long Stick 1695 mm (66.7 in)
Blade Options	Straight Blade	
Maximum Reach at Ground Level (D12)	5200 mm (204.7 in)	5445 mm (214.7 in)
Maximum Reach (D13)	5330 mm (209.8 in)	5570 mm (219.3 in)
Maximum Dig Height (D14)	5040 mm (198.4 in)	5125 mm (201.7 in)
Maximum Dump Clearance (D15)	3645 mm (143.5 in)	3740 mm (147.2 in)
Boom in Reach (D16)	2255 mm (88.7 in)	2340 mm (92.1 in)
Tail Swing with Counterweight (D17)	1070 mm (42.1 in)	1070 mm (42.1 in)
Tail Swing without Counterweight (D17)	975 mm (38.4 in)	975 mm (38.4 in)
Maximum Blade Height (D18)	420 mm (16.5 in)	
Maximum Blade Depth (D19)	475 mm (18.7 in)	

Table 12

304 Excavator		
Boom Options	Standard Boom 2500 mm (98.4 in)	
Stick Options	Standard Stick 1395 mm (54.9 in)	Long Stick 1695 mm (66.7 in)
Blade Options	Angle Blade	
Maximum Digging Depth (D10)	3210 mm (126.4 in)	3501 mm (137.8 in)
Maximum Vertical Wall Digging Depth (D11)	2395 mm (94.3 in)	2535 mm (99.8 in)
Maximum Reach at Ground Level (D12)	5200 mm (204.7 in)	5445 mm (214.7 in)
Maximum Reach (D13)	5330 mm (209.8 in)	5570 mm (219.3 in)
Maximum Dig Height (D14)	5040 mm (198.4 in)	5125 mm (201.7 in)
Maximum Dump Clearance (D15)	3645 mm (143.5 in)	3740 mm (147.2 in)
Boom in Reach (D16)	2255 mm (88.7 in)	2340 mm (92.1 in)
Tail Swing with Counterweight (D17)	1070 mm (42.1 in)	1070 mm (42.1 in)
Tail Swing without Counterweight (D17)	975 mm (38.4 in)	975 mm (38.4 in)
Maximum Blade Height (D18)	442 mm (17.4 in)	
Maximum Blade Depth (D19)	573 mm (22.6 in)	

305 CR Excavator Outside Japan Region

Note: All dimensions are approximate and may vary depending on bucket selection.

Product Information Section
Specifications

Table 13

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1351 mm (53.2 in)	Long Stick 1601 mm (63.0 in)
Blade Options	Straight Blade	
Maximum Digging Depth (D10)	3420 mm (134.6 in)	3670 mm (144.5 in)
Maximum Vertical Wall Digging Depth (D11)	2335 mm (91.9 in)	2560 mm (100.7 in)
Maximum Reach at Ground Level (D12)	5590 mm (220.1 in)	5835 mm (229.7 in)
Maximum Reach (D13)	5755 mm (226.5 in)	5990 mm (235.8 in)
Maximum Dig Height (D14)	5215 mm (205.3 in)	5355 mm (210.8 in)
Maximum Dump Clearance (D15)	3700 mm (145.6 in)	3845 mm (151.4 in)
Boom in Reach (D16)	2270 mm (89.4 in)	2580 mm (101.6 in)
Tail Swing with Counterweight (D17)	1200 mm (47.2 in)	1200 mm (47.2 in)
Tail Swing without Counterweight (D17)	1095 mm (43.1 in)	1095 mm (43.1 in)
Maximum Blade Height (D18)	385 mm (15.2 in)	
Maximum Blade Depth (D19)	595 mm (23.4 in)	

Table 14

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1351 mm (53.2 in)	Long Stick 1601 mm (63.0 in)
Blade Options	Angle Blade	
Maximum Digging Depth (D10)	3420 mm (134.6 in)	3670 mm (144.5 in)
Maximum Vertical Wall Digging Depth (D11)	2335 mm (91.9 in)	2560 mm (100.7 in)
Maximum Reach at Ground Level (D12)	5590 mm (220.1 in)	5835 mm (229.7 in)
Maximum Reach (D13)	5755 mm (226.5 in)	5990 mm (235.8 in)
Maximum Dig Height (D14)	5215 mm (205.3 in)	5355 mm (210.8 in)
Maximum Dump Clearance (D15)	3700 mm (145.6 in)	3845 mm (151.4 in)
Boom in Reach (D16)	2270 mm (89.4 in)	2580 mm (101.6 in)
Tail Swing with Counterweight (D17)	1200 mm (47.2 in)	1200 mm (47.2 in)
Tail Swing without Counterweight (D17)	1095 mm (43.1 in)	1095 mm (43.1 in)
Maximum Blade Height (D18)	398 mm (15.7 in)	
Maximum Blade Depth (D19)	740 mm (29.1 in)	

305 CR Excavator Inside Japan Region

Note: All dimensions are approximate and may vary depending on bucket selection.

Table 15

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1475 mm (58.1 in)	Long Stick 1875 mm (73.8 in)
Blade Options	Straight Blade	
Maximum Digging Depth (D10)	3540 mm (139.4 in)	3940 mm (155.1 in)
Maximum Vertical Wall Digging Depth (D11)	2860 mm (112.5 in)	3270 mm (128.7 in)
Maximum Reach at Ground Level (D12)	5885 mm (231.7 in)	6280 mm (247.2 in)
Maximum Reach (D13)	6040 mm (237.8 in)	6420 mm (252.8 in)
Maximum Dig Height (D14)	5690 mm (224.0 in)	5690 mm (224.0 in)
Maximum Dump Clearance (D15)	3920 mm (154.3 in)	4190 mm (164.9 in)
Boom in Reach (D16)	2335 mm (91.9 in)	2580 mm (101.6 in)
Tail Swing with Counterweight (D17)	1075 mm (42.3 in)	1075 mm (42.3 in)
Tail Swing without Counterweight (D17)	990 mm (38.9 in)	990 mm (38.9 in)
Maximum Blade Height (D18)	400 mm (15.7 in)	
Maximum Blade Depth (D19)	650 mm (25.5 in)	

Table 16

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1475 mm (58.1 in)	Long Stick 1875 mm (73.8 in)
Blade Options	Angle Blade	
Maximum Digging Depth (D10)	3540 mm (139.4 in)	3940 mm (155.1 in)
Maximum Vertical Wall Digging Depth (D11)	2860 mm (112.5 in)	3270 mm (128.7 in)
Maximum Reach at Ground Level (D12)	5885 mm (231.7 in)	6280 mm (247.2 in)
Maximum Reach (D13)	6040 mm (237.8 in)	6420 mm (252.8 in)
Maximum Dig Height (D14)	5690 mm (224.0 in)	5690 mm (224.0 in)
Maximum Dump Clearance (D15)	3920 mm (154.3 in)	4190 mm (164.9 in)
Boom in Reach (D16)	2335 mm (91.9 in)	2580 mm (101.6 in)
Tail Swing with Counterweight (D17)	1075 mm (42.3 in)	1075 mm (42.3 in)
Tail Swing without Counterweight (D17)	990 mm (38.9 in)	990 mm (38.9 in)
Maximum Blade Height (D18)	398 mm (15.7 in)	
Maximum Blade Depth (D19)	740 mm (29.1 in)	

305 CR Excavator Europe Region

Note: All dimensions are approximate and may vary depending on bucket selection.

Product Information Section
Specifications

Table 17

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1351 mm (53.2 in)	Long Stick 1601 mm (63.0 in)
Blade Options	Straight Blade	
Maximum Digging Depth (D10)	3420 mm (134.6 in)	3670 mm (144.4 in)
Maximum Vertical Wall Digging Depth (D11)	2335 mm (91.9 in)	2560 mm (100.8 in)
Maximum Reach at Ground Level (D12)	5590 mm (220.1 in)	5835 mm (229.7 in)
Maximum Reach (D13)	5755 mm (226.6 in)	5990 mm (235.8 in)
Maximum Dig Height (D14)	5215 mm (205.3 in)	5355 mm (210.8 in)
Maximum Dump Clearance (D15)	3700 mm (145.7 in)	3845 mm (151.3 in)
Boom in Reach (D16)	2270 mm (89.4 in)	2580 mm (101.9 in)
Tail Swing with Counterweight (D17)	1200 mm (47.2 in)	1200 mm (47.2 in)
Tail Swing without Counterweight (D17)	1095 mm (43.1 in)	1095 mm (43.1 in)
Maximum Blade Height (D18)	400 mm (15.7 in)	
Maximum Blade Depth (D19)	650 mm (25.6 in)	

Table 18

305 CR Excavator		
Boom Options	Standard Boom 2716 mm (106.9 in)	
Stick Options	Standard Stick 1351 mm (53.2 in)	Long Stick 1601 mm (63.0 in)
Blade Options	Angle Blade	
Maximum Digging Depth (D10)	3420 mm (134.6 in)	3670 mm (144.4 in)
Maximum Vertical Wall Digging Depth (D11)	2335 mm (91.9 in)	2560 mm (100.8 in)
Maximum Reach at Ground Level (D12)	5590 mm (220.1 in)	5835 mm (229.7 in)
Maximum Reach (D13)	5755 mm (226.6 in)	5990 mm (235.8 in)
Maximum Dig Height (D14)	5215 mm (205.3 in)	5355 mm (210.8 in)
Maximum Dump Clearance (D15)	3700 mm (145.7 in)	3845 mm (151.3 in)
Boom in Reach (D16)	2270 mm (89.4 in)	2580 mm (101.9 in)
Tail Swing with Counterweight (D17)	1200 mm (47.2 in)	1200 mm (47.2 in)
Tail Swing without Counterweight (D17)	1095 mm (43.1 in)	1095 mm (43.1 in)
Maximum Blade Height (D18)	398 mm (15.7 in)	
Maximum Blade Depth (D19)	740 mm (29.1 in)	

305.5 CR Excavator Inside Japan (ISJ)

Note: All dimensions are approximate and may vary depending on bucket selection.

Table 19

305.5 CR Excavator		
Boom Options	Standard Boom	
Stick Options	Standard Stick 1580 mm (62.2 in)	Long Stick 1980 mm (77.9 in)
Maximum Digging Depth (D10)	3815 mm (150.2 in)	4215 mm (165.9 in)
Maximum Vertical Wall Digging Depth (D11)	3050 mm (120.1 in)	3430 mm (135.0 in)
Maximum Reach at Ground Level (D12)	6190 mm (243.7 in)	6570 mm (258.6 in)
Maximum Reach (D13)	6335 mm (249.4 in)	6705 mm (263.9 in)
Maximum Dig Height (D14)	5945 mm (234.1 in)	6190 mm (243.7 in)
Maximum Dump Clearance (D15)	4180 mm (164.5 in)	4425 mm (174.2 in)
Boom in Reach (D16)	2455 mm (96.6 in)	2570 mm (101.2 in)
Tail Swing with Counterweight (D17)	1075 mm (42.3 in)	1075 mm (42.3 in)
Tail Swing without Counterweight (D17)	990 mm (38.9 in)	990 mm (38.9 in)
Maximum Blade Height (D18)	400 mm (15.7 in)	400 mm (15.7 in)
Maximum Blade Depth (D19)	650 mm (25.6 in)	650 mm (25.6 in)

305 SR Excavator

Note: All dimensions are approximate and may vary depending on bucket selection.

Table 20

305 SR Excavator	
Boom Options	Standard Boom
Stick Options	Standard Stick 1580 mm (62.2 in)
Maximum Digging Depth (D10)	4000 mm (157.5 in)
Maximum Vertical Wall Digging Depth (D11)	2780 mm (109.4 in)
Maximum Reach at Ground Level (D12)	5660 mm (222.8 in)
Maximum Reach (D13)	5770 mm (227.2 in)
Maximum Dig Height (D14)	6400 mm (252.0 in)
Maximum Dump Clearance (D15)	4670 mm (164.5 in)
Boom in Reach (D16)	1020 mm (40.2 in)
Tail Swing with Counterweight (D17)	990 mm (39.0 in)
Maximum Blade Height (D18)	380 mm (15.0 in)
Maximum Blade Depth (D19)	490 mm (19.3 in)

305.5 CR Excavator for Inside Japan (ISJ) Shovel Crane

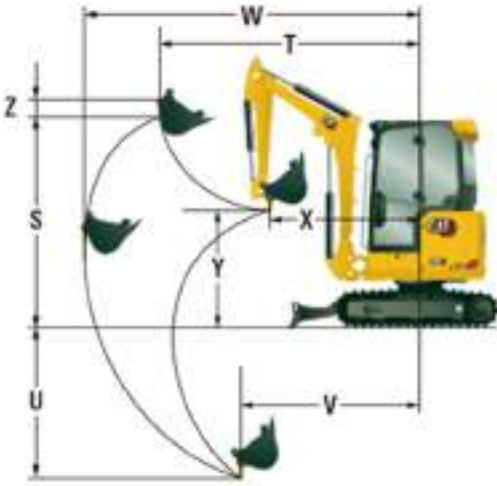


Illustration 42

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Note: All dimensions are approximate and may vary depending on bucket selection.

Table 21

305.5 CR Excavator	
Stick Options	Standard Stick for ISJ Shovel Crane
Maximum Lifting Height (S)	3420 mm (134.6 in)
Maximum Reach at Maximum Lifting Height (T)	4360 mm (171.6 in)
Maximum Lowering Height (U)	3285 mm (129.3 in)
Maximum Reach at Maximum Lowering Height (V)	2380 mm (93.7 in)
Maximum Reach (W)	5510 mm (216.9 in)
Minimum Reach (X)	2405 mm (94.7 in)
Lifting Height at Minimum Reach (Y)	1800 mm (70.9 in)
Length of Crane Hook (Z)	220 mm (8.7 in)

Table 22

305 SR Excavator	
Stick Options	Standard Stick for ISJ Shovel Crane
Maximum Lifting Height (S)	3610 mm (142.1 in)
Maximum Reach at Maximum Lifting Height (T)	3040 mm (119.7 in)
Maximum Lowering Height (U)	3210 mm (126.4 in)
Maximum Reach at Maximum Lowering Height (V)	2650 mm (104.3 in)

(continued)

(Table 22, contd)

305 SR Excavator	
Stick Options	Standard Stick for ISJ Shovel Crane
Maximum Reach (W)	4930 mm (194.1 in)
Minimum Reach (X)	1630 mm (64.2 in)
Lifting Height at Minimum Reach (Y)	2170 mm (85.4 in)
Length of Crane Hook (Z)	220 mm (8.7 in)

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Boom/Stick/Bucket Combinations

(304 Excavator without Extra Counterweight)

SMCS Code: 6000; 6700

This machine can be equipped with various boom-stick-bucket combinations to meet the needs of various applications.

As a rule, use a bucket with a smaller capacity when you are using a longer stick and/or a longer boom. Conversely, use a bucket with a larger capacity when you are using a shorter stick and/or a shorter boom. This rule ensures better machine stability and protection against structural machine damage.

Note: The selection of a compatible boom-stick-bucket combination is a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on machine performance. The operator is responsible for being aware of these effects.

Consult your Cat® dealer for information on selecting the correct boom-stick-bucket combination.

The following tables show various compatible boom-stick-bucket combinations. Select an optimum combination according to the working conditions and according to the type of work that is being done.

304 Excavator without Extra Counterweight

Table 23

304 Mini Hydraulic Excavator Digging Buckets (Heavy Duty) ⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9900	305 mm (12.1 inch)	65 kg (141.8 lb)	0.05 m ³ (0.061 yd ³)	11052	10292	9941	9181	9868	9108	8760	8000
464 - 9901	406 mm (16.2 inch)	74 kg (162.2 lb)	0.07 m ³ (0.093 yd ³)	7766	7223	6972	6429	6920	6377	6128	5585
464 - 9902	457 mm (18.0 inch)	82 kg (180.3 lb)	0.08 m ³ (0.110 yd ³)	6695	6220	6000	5525	8075	5480	5262	4787
464 - 9903	508 mm (19.9 inch)	87 kg (192.1 lb)	0.09 m ³ (0.125 yd ³)	5896	5473	5278	4856	5238	4816	4622	4200
464 - 9904	610 mm (23.9 inch)	98 kg (216.1 lb)	0.12 m ³ (0.211 yd ³)	4330	4013	3867	3550	3837	3520	3375	3058
464 - 9905	762 mm (29.9 inch)	117 kg (258.1 lb)	0.16 m ³ (0.211 yd ³)	3129	2891	2781	2544	2759	2521	2412	2175
464 - 9906	914 mm (36.4 inch)	133 kg (293.2 lb)	0.20 m ³ (0.263 yd ³)	2423	2233	2145	1955	2127	1937	1850	1660

⁽¹⁾ Max Material Density 1800 kg/m³

Table 24

304 Mini Hydraulic Excavator Digging Buckets (Standard Duty) ⁽¹⁾ Fill Factor = 100% Bolt on Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb

(continued)

(Table 24, contd)

279 - 4312	300 mm (12.1 inch)	53 kg (117.8 lb)	0.05 m ³ (0.061 yd ³)	11292	10532	10181	9421	10108	9348	9000	8240
281 - 3824	400 mm (16.2 inch)	59 kg (130.2 lb)	0.07 m ³ (0.093 yd ³)	7980	7437	7186	6643	7135	6592	6343	5800
279 - 4320	460 mm (18.0 inch)	64 kg (141.3 lb)	0.08 m ³ (0.110 yd ³)	6920	6445	6225	5750	8075	5705	5487	5012
279 - 4313	500 mm (19.9 inch)	69 kg (152.1 lb)	0.09 m ³ (0.125 yd ³)	6096	5673	5478	5056	5438	5016	4822	4400
281 - 1551	600 mm (23.9 inch)	77 kg (216.1 lb)	0.12 m ³ (0.151 yd ³)	4505	4188	4042	3725	4012	3695	3550	3233
279 - 4321	750 mm (29.9 inch)	88 kg (194.1 lb)	0.16 m ³ (0.211 yd ³)	3310	3073	2963	2725	2940	2703	2594	2356

(1) Max Material Density 1800 kg/m³

Table 25

304 Mini Hydraulic Excavator Digging Buckets (High Capacity)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
303 - 1330	300 mm (12.1 inch)	83 kg (183.8 lb)	0.08 m ³ (0.110 yd ³)	6683	6208	5988	5513	5943	5468	5250	4775
303 - 1331	400 mm (16.2 inch)	92 kg (203.2 lb)	0.11 m ³ (0.143 yd ³)	4778	4433	4273	3928	4240	3895	3736	3391
303 - 1332	450 mm (18.0 inch)	102 kg (225.3 lb)	0.12 m ³ (0.160 yd ³)	4297	3980	3834	3517	5383	3487	3342	3025
303 - 1333	500 mm (19.9 inch)	111 kg (245.1 lb)	0.14 m ³ (0.191 yd ³)	3619	3347	3222	2950	3196	2924	2800	2528
303 - 1334	600 mm (23.9 inch)	125 kg (275.1 lb)	0.18 m ³ (0.241 yd ³)	2737	2526	2428	2217	2408	2197	2100	1889
303 - 1335	750 mm (29.9 inch)	146 kg (321.1 lb)	0.24 m ³ (0.312 yd ³)	1965	1807	1733	1575	1718	1560	1487	1329
303 - 1336	900 mm (36.4 inch)	169 kg (372.2 lb)	0.30 m ³ (0.390 yd ³)	1495	1369	1310	1183	1298	1171	1113	987

(1) Max Material Density 1800 kg/m³

Product Information Section
304 Excavator without Extra Counterweight

Table 26

304 Mini Hydraulic Excavator Ditch Cleaning Buckets⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279-4322	1000 mm (40.2 inch)	107 kg (236.2 lb)	0.11 m ³ (0.143 yd ³)	4600	4258	4099	3757	4067	3725	3567	3225
279-4323	1200 mm (46.9 inch)	101 kg (222.1 lb)	0.14 m ³ (0.182 yd ³)	3827	3545	3415	3134	3388	3107	2978	2696
282-9315	1400 mm (55.4 inch)	113 kg (249.2 lb)	0.16 m ³ (0.212 yd ³)	3174	2935	2824	2585	2801	2562	2453	2214

⁽¹⁾ Max Material Density 1800 kg/m³

Table 27

304 Mini Hydraulic Excavator Tilting Ditch Cleaning Buckets⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
249-4182	1200 mm (47.2 inch)	194 kg (428.2 lb)	0.13 m ³ (0.170 yd ³)	3185	2899	2767	2481	2740	2454	2323	2037
279-4235	1200 mm (46.9 inch)	198 kg (437.1 lb)	0.17 m ³ (0.221 yd ³)	2513	2285	2180	1952	2158	1931	1826	1599

⁽¹⁾ Max Material Density 1800 kg/m³

Table 28

304 Mini Hydraulic Excavator Mud/Grading Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
388-9663	1200 mm (47.2 inch)	173 kg (381.2 lb)	0.23 m ³ (0.301 yd ³)	1933	1768	1691	1526	1676	1511	1435	1269

⁽¹⁾ Max Material Density 1800 kg/m³

Table 29

304 Mini Hydraulic Excavator S-type Buckets ⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS4 Pin-on	TRS4 + S-Type Coupler	TRS4 + S-Type Coupler + Thumb	TRS4 PG Pin-on	TRS4 PG Pin-on + Thumb	TRS4 PG + PG Coupler	TRS4 PG + PG Coupler + Thumb	TRS4 Pin-on + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler + Thumb
586-5942	320 mm (13.2 inch)	78 kg (172.-3 lb)	0.08 m ³ (0.101 yd ³)	6208	5513	5308	4770	4075					4833	4295	3600
586-5947	1100 mm (42.8 inch)	116 kg (256.-8 lb)	0.15 m ³ (0.202 yd ³)	3057	2687	2577	2291	1920					2324	2037	1667
586-5954	630 mm (24.8 inch)	117 kg (258.-1 lb)	0.17 m ³ (0.221 yd ³)	2773	2437	2337	2076	1740					2107	1846	1509
586-5961	600 mm (24.0 inch)	108 kg (238.-2 lb)	0.17 m ³ (0.221 yd ³)	2828	2491	2392	2131	1794					2161	1901	1564
303-1331	400 mm (16.7 inch)	92 kg (203.-3 lb)	0.11 m ³ (0.144 yd ³)						3687	3182	3396	2891			

⁽¹⁾ Max Material Density 1800 kg/m³

Table 30

304 Mini Hydraulic Excavator S-type Buckets ⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Long Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS4 Pin-on	TRS4 + S-Type Coupler	TRS4 + S-Type Coupler + Thumb	TRS4 PG Pin-on	TRS4 PG Pin-on + Thumb	TRS4 PG + PG Coupler	TRS4 PG + PG Coupler + Thumb	TRS4 Pin-on + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler + Thumb
586-5942	320 mm (13.2 inch)	78 kg (172.-3 lb)	0.08 m ³ (0.101 yd ³)	5468	4775	4568	4030	3337					4093	3555	2862
586-5947	1100 mm (42.8 inch)	116 kg (256.-8 lb)	0.15 m ³ (0.202 yd ³)	2663	2293	2183	1896	1527					1929	1643	1273
586-5954	630 mm (24.8 inch)	117 kg (258.-1 lb)	0.17 m ³ (0.221 yd ³)	2415	2079	1978	1718	1382					1748	1487	1151
586-5961	600 mm (24.0 inch)	108 kg (238.-2 lb)	0.17 m ³ (0.221 yd ³)	2469	2133	2033	1772	1436					1803	1542	1206
303-1331	400 mm (16.7 inch)	92 kg (203.-3 lb)	0.11 m ³ (0.144 yd ³)						3149	2645	2858	2354			

(1) Max Material Density 1800 kg/m³

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Boom/Stick/Bucket Combinations (304 Excavator with Extra Counterweight)

SMCS Code: 6000; 6700

This machine can be equipped with various boom-stick-bucket combinations to meet the needs of various applications.

As a rule, use a bucket with a smaller capacity when you are using a longer stick and/or a longer boom. Conversely, use a bucket with a larger capacity when you are using a shorter stick and/or a shorter boom. This rule ensures better machine stability and protection against structural machine damage.

Note: The selection of a compatible boom-stick-bucket combination is a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on machine performance. The operator is responsible for being aware of these effects.

Consult your Cat[®] dealer for information on selecting the correct boom-stick-bucket combination.

The following tables show various compatible boom-stick-bucket combinations. Select an optimum combination according to the working conditions and according to the type of work that is being done.

304 Excavator with Extra Counterweight

Table 31

304 Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (Heavy Duty) ⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9900	305 mm (12.1 inch)	65 kg (141.8 lb)	0.05 m ³ (0.061 yd ³)	12895	12135	11783	11023	11596	10836	10487	9727
464 - 9901	406 mm (16.2 inch)	74 kg (162.2 lb)	0.07 m ³ (0.093 yd ³)	9082	8539	8288	7745	8154	7612	7362	6820
464 - 9902	457 mm (18.0 inch)	82 kg (180.3 lb)	0.08 m ³ (0.110 yd ³)	7847	7372	7152	6677	8075	6560	6342	5867
464 - 9903	508 mm (19.9 inch)	87 kg (192.1 lb)	0.09 m ³ (0.125 yd ³)	6919	6497	6302	5880	6198	5776	5582	5160
464 - 9904	610 mm (23.9 inch)	98 kg (216.1 lb)	0.12 m ³ (0.211 yd ³)	5098	4781	4635	4318	4557	4240	4095	3778
464 - 9905	762 mm (29.9 inch)	117 kg (258.1 lb)	0.16 m ³ (0.211 yd ³)	3705	3467	3357	3120	3299	3061	2952	2715
464 - 9906	914 mm (36.4 inch)	133 kg (293.2 lb)	0.20 m ³ (0.263 yd ³)	2884	2694	2606	2416	2559	2369	2282	2092

⁽¹⁾ Max Material Density 1800 kg/m³

Table 32

304 Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (Standard Duty) ⁽¹⁾ Fill Factor = 100% Bolt on Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb

(continued)

Product Information Section
304 Excavator with Extra Counterweight

(Table 32, contd)

279 - 4312	300 mm (12.1 inch)	53 kg (117.8 lb)	0.05 m ³ (0.061 yd ³)	13135	12375	12023	11263	11836	11076	10727	9967
281 - 3824	400 mm (16.2 inch)	59 kg (130.2 lb)	0.07 m ³ (0.093 yd ³)	9296	8753	8502	7960	8369	7826	7577	7034
279 - 4320	460 mm (18.0 inch)	64 kg (141.3 lb)	0.08 m ³ (0.110 yd ³)	8072	7597	7377	6902	8075	6785	6567	6092
279 - 4313	500 mm (19.9 inch)	69 kg (152.1 lb)	0.09 m ³ (0.125 yd ³)	7119	6697	6502	6080	6398	5976	5782	5360
281 - 1551	600 mm (23.9 inch)	77 kg (216.1 lb)	0.12 m ³ (0.151 yd ³)	5273	4956	4810	4493	4732	4415	4270	3953
279 - 4321	750 mm (29.9 inch)	88 kg (194.1 lb)	0.16 m ³ (0.211 yd ³)	3886	3648	3539	3301	3480	3243	3134	2896

(1) Max Material Density 1800 kg/m³

Table 33

304 Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (High Capacity)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
303 - 1330	300 mm (12.1 inch)	83 kg (183.8 lb)	0.08 m ³ (0.110 yd ³)	7834	7359	7140	6665	7023	6548	6330	5855
303 - 1331	400 mm (16.2 inch)	92 kg (203.2 lb)	0.11 m ³ (0.143 yd ³)	5616	5270	5111	4765	5026	4680	4522	4176
303 - 1332	450 mm (18.0 inch)	102 kg (225.3 lb)	0.12 m ³ (0.160 yd ³)	5064	4748	4601	4285	5383	4207	4061	3745
303 - 1333	500 mm (19.9 inch)	111 kg (245.1 lb)	0.14 m ³ (0.191 yd ³)	4277	4005	3880	3608	3813	3541	3417	3145
303 - 1334	600 mm (23.9 inch)	125 kg (275.1 lb)	0.18 m ³ (0.241 yd ³)	3249	3037	2940	2729	2888	2677	2580	2369
303 - 1335	750 mm (29.9 inch)	146 kg (321.1 lb)	0.24 m ³ (0.312 yd ³)	2349	2191	2117	1959	2078	1920	1847	1689
303 - 1336	900 mm (36.4 inch)	169 kg (372.2 lb)	0.30 m ³ (0.390 yd ³)	1802	1676	1617	1491	1586	1459	1401	1275

(1) Max Material Density 1800 kg/m³

Table 34

304 Mini Hydraulic Excavator with Extra Counterweight Ditch Cleaning Buckets⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279-4322	1000 mm (40.2 inch)	107 kg (236.2 lb)	0.11 m ³ (0.143 yd ³)	5430	5088	4929	4587	4845	4503	4346	4003
279-4323	1200 mm (46.9 inch)	101 kg (222.1 lb)	0.14 m ³ (0.182 yd ³)	4509	4228	4098	3816	4028	3747	3618	3336
282-9315	1400 mm (55.4 inch)	113 kg (249.2 lb)	0.16 m ³ (0.212 yd ³)	3753	3514	3404	3165	3345	3106	2996	2757

⁽¹⁾ Max Material Density 1800 kg/m³

Table 35

304 Mini Hydraulic Excavator with Extra Counterweight Tilting Ditch Cleaning Buckets⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
249-4182	1200 mm (47.2 inch)	194 kg (428.2 lb)	0.13 m ³ (0.170 yd ³)	3878	3592	3460	3174	3390	3104	2973	2687
279-4235	1200 mm (46.9 inch)	198 kg (437.1 lb)	0.17 m ³ (0.221 yd ³)	3064	2837	2732	2504	2675	2448	2344	2116

⁽¹⁾ Max Material Density 1800 kg/m³

Product Information Section
304 Excavator with Extra Counterweight

Table 36

304 Mini Hydraulic Excavator with Extra Counterweight Mud/Grading Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
388-9663	1200 mm (47.2 inch)	173 kg (381.2 lb)	0.23 m ³ (0.301 yd ³)	2334	2168	2092	1927	2051	1886	1810	1645

⁽¹⁾ Max Material Density 1800 kg/m³

Table 37

304 Mini Hydraulic Excavator with Extra Counterweight S-type Buckets ⁽¹⁾ Fill Factor = 100%														
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)										
				S-Type Coupler	S-Type Coupler + Thumb	TRS4 Pin-on	TRS4 + S-Type Coupler	TRS4 + S-Type Coupler + Thumb	TRS4 PG Pin-on	TRS4 PG Pin-on + Thumb	TRS4 PG + PG Coupler	TRS4 PG + PG Coupler + Thumb	TRS4 Pin-on + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler + Thumb
586-5942	320 mm (13.2 inch)	78 kg (172.-3 lb)	0.08 m ³ (0.101 yd ³)	7359	6665	6459	5922	5227					5984	5447
586-5947	1100 mm (42.8 inch)	116 kg (256.-8 lb)	0.15 m ³ (0.202 yd ³)	3672	3301	3192	2905	2534					2938	2652
586-5954	630 mm (24.8 inch)	117 kg (258.-1 lb)	0.17 m ³ (0.221 yd ³)	3332	2995	2895	2635	2298					2665	2404
586-5961	600 mm (24.0 inch)	108 kg (238.-2 lb)	0.17 m ³ (0.221 yd ³)	3386	3050	2950	2689	2353					2720	2459
303-1331	400 mm (16.7 inch)	92 kg (203.-3 lb)	0.11 m ³ (0.144 yd ³)						4525	4020	4234	3729		

⁽¹⁾ Max Material Density 1800 kg/m³

Table 38

304 Mini Hydraulic Excavator with Extra Counterweight S-type Buckets ⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Long Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS4 Pin-on	TRS4 + S-Type Coupler	TRS4 + S-Type Coupler + Thumb	TRS4 PG Pin-on	TRS4 PG Pin-on + Thumb	TRS4 PG + PG Coupler	TRS4 PG + PG Coupler + Thumb	TRS4 Pin-on + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler	TRS4 + S-Type Coupler + GPL Coupler + Thumb
586-5942	320 mm (13.2 inch)	78 kg (172.-3 lb)	0.08 m ³ (0.101 yd ³)	6548	5855	5648	5110	4417					5173	4635	3942
586-5947	1100 mm (42.8 inch)	116 kg (256.-8 lb)	0.15 m ³ (0.202 yd ³)	3239	2869	2759	2472	2102					2505	2219	1849
586-5954	630 mm (24.8 inch)	117 kg (258.-1 lb)	0.17 m ³ (0.221 yd ³)	2938	2602	2502	2241	1905					2272	2011	1675
586-5961	600 mm (24.0 inch)	108 kg (238.-2 lb)	0.17 m ³ (0.221 yd ³)	2993	2657	2556	2296	1960					2326	2065	1730
303-1331	400 mm (16.7 inch)	92 kg (203.-3 lb)	0.11 m ³ (0.144 yd ³)						3935	3431	3644	3140			

(1) Max Material Density 1800 kg/m³

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Boom/Stick/Bucket Combinations (305 CR Excavator with Extra Counterweight)

SMCS Code: 6000; 6700

This machine can be equipped with various boom-stick-bucket combinations to meet the needs of various applications.

As a rule, use a bucket with a smaller capacity when you are using a longer stick and/or a longer boom. Conversely, use a bucket with a larger capacity when you are using a shorter stick and/or a shorter boom. This rule ensures better machine stability and protection against structural machine damage.

Note: The selection of a compatible boom-stick-bucket combination is a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on machine performance. The operator is responsible for being aware of these effects.

Consult your Cat[®] dealer for information on selecting the correct boom-stick-bucket combination.

The following tables show various compatible boom-stick-bucket combinations. Select an optimum combination according to the working conditions and according to the type of work that is being done.

305 CR Excavator with Extra Counterweight

Table 39

305 CR Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (Heavy Duty)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9907	300 mm (12.1 inch)	70 kg (154.8 lb)	0.06 m ³ (0.070 yd ³)	11401	10476	10252	9327	10252	9327	9103	8178
464 - 9908	400 mm (16.2 inch)	78 kg (172.2 lb)	0.08 m ³ (0.111 yd ³)	8451	7757	7589	6895	7589	6895	6727	6033
464 - 9909	450 mm (18.0 inch)	87 kg (192.3 lb)	0.09 m ³ (0.110 yd ³)	7412	6795	6646	6029	7178	6029	5880	5263
464 - 9910	500 mm (19.9 inch)	97 kg (212.1 lb)	0.10 m ³ (0.132 yd ³)	6571	6016	5881	5326	5881	5326	5192	4637
464 - 9911	600 mm (23.9 inch)	106 kg (239.1 lb)	0.13 m ³ (0.170 yd ³)	4985	4558	4455	4028	4455	4028	3924	3497
464 - 9912	750 mm (29.9 inch)	127 kg (279.1 lb)	0.17 m ³ (0.234 yd ³)	3689	3362	3283	2956	3283	2957	2877	2551
464 - 9913	900 mm (36.4 inch)	148 kg (325.2 lb)	0.22 m ³ (0.283 yd ³)	2755	2503	2441	2189	2442	2189	2128	1876

⁽¹⁾ Max Material Density 1800 kg/m³

Table 40

305 CR Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (Standard Duty)⁽¹⁾ Fill Factor = 100% Bolt on Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb

(continued)

(Table 40, contd)

276 - 7370	300 mm (12.1 inch)	76 kg (168.8 lb)	0.06 m ³ (0.081 yd ³)	11301	10376	10152	9227	10152	9227	9003	8078
276 - 7378	400 mm (16.2 inch)	77 kg (170.2 lb)	0.08 m ³ (0.111 yd ³)	8463	7769	7601	6908	7602	6908	6740	6046
279 - 4283	450 mm (18.0 inch)	82 kg (181.3 lb)	0.09 m ³ (0.110 yd ³)	7467	6851	6701	6084	7178	6085	5935	5319
279 - 4287	500 mm (19.9 inch)	89 kg (196.1 lb)	0.10 m ³ (0.134 yd ³)	6651	6096	5961	5406	5961	5406	5272	4717
249 - 4260	600 mm (23.9 inch)	99 kg (218.1 lb)	0.13 m ³ (0.172 yd ³)	5039	4612	4508	4082	4509	4082	3978	3551
279 - 4291	750 mm (29.9 inch)	114 kg (251.1 lb)	0.17 m ³ (0.232 yd ³)	3765	3439	3359	3033	3360	3033	2954	2627
279 - 4295	900 mm (36.1 inch)	138 kg (304.1 lb)	0.22 m ³ (0.281 yd ³)	2800	2548	2487	2235	2487	2235	2174	1921

(1) Max Material Density 1800 kg/m³

Table 41

305 CR Mini Hydraulic Excavator with Extra Counterweight Digging Buckets (High Capacity)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9914	300 mm (12.1 inch)	83 kg (183.8 lb)	0.08 m ³ (0.110 yd ³)	8388	7694	7526	6833	7527	6833	6665	5971
464 - 9915	400 mm (16.2 inch)	92 kg (203.2 lb)	0.11 m ³ (0.143 yd ³)	6019	5514	5392	4887	5392	4888	4765	4261
464 - 9916	450 mm (18.0 inch)	102 kg (225.3 lb)	0.12 m ³ (0.160 yd ³)	5434	4971	4859	4397	5383	4397	4285	3822
464 - 9917	500 mm (19.9 inch)	111 kg (245.1 lb)	0.14 m ³ (0.191 yd ³)	4593	4197	4101	3704	4101	3705	3608	3212
464 - 9918	600 mm (23.9 inch)	125 kg (275.1 lb)	0.18 m ³ (0.241 yd ³)	3495	3186	3112	2803	3112	2804	2729	2420

(continued)

Product Information Section
305 CR Excavator with Extra Counterweight

(Table 41, contd)

464 - 9919	750 mm (29.9 inch)	146 kg (321.1 lb)	0.24 m ³ (0.312 yd ³)	2534	2302	2246	2015	2246	2015	1959	1728
464 - 9920	900 mm (36.4 inch)	169 kg (372.2 lb)	0.30 m ³ (0.390 yd ³)	1950	1765	1720	1535	1720	1535	1419	1306

(1) Max Material Density 1800 kg/m³

Table 42

305 CR Mini Hydraulic Excavator with Extra Counterweight Ditch Cleaning Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279 - 4326	1000 mm (40.2 inch)	121 kg (267.2 lb)	0.17 m ³ (0.221 yd ³)	3814	3479	3398	3064	3398	3064	2983	2649
279 - 4327	1300 mm (50.9 inch)	122 kg (269.1 lb)	0.22 m ³ (0.292 yd ³)	2860	2609	2548	2297	2548	2297	2236	1985
279 - 4328	1600 mm (63.4 inch)	144 kg (317.2 lb)	0.29 m ³ (0.374 yd ³)	2126	1932	1885	1692	1886	1692	1645	1452

(1) Max Material Density 1800 kg/m³

Table 43

305 CR Mini Hydraulic Excavator with Extra Counterweight Tilting Ditch Cleaning Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279 - 9022	1600 mm (62.9 inch)	275 kg (606.1 lb)	0.28 m ³ (0.372 yd ³)	1717	1518	1470	1271	1470	1271	1223	1024

(1) Max Material Density 1800 kg/m³

Table 44

305 CR Mini Hydraulic Excavator with Extra Counterweight Mud/Grading Buckets⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
388-9664	1200 mm (47.2 inch)	186 kg (410.2 lb)	0.23 m ³ (0.301 yd ³)	2185	1971	1920	1706	1920	1706	1655	1441
388-9665	1500 mm (59.2 inch)	223 kg (490.2 lb)	0.33 m ³ (0.434 yd ³)	1609	1441	1400	1232	1400	1232	1191	1023

(1) Max Material Density 1800 kg/m³

Table 45

305 CR Mini Hydraulic Excavator with Extra Counterweight S-type Buckets⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS6 Pin-on	TRS6 + S-Type Coupler	TRS6 + S-Type Coupler + Thumb	TRS6 PG Pin-on	TRS6 PG Pin-on + Thumb	TRS6 PG + PG Coupler	TRS6 PG + PG Coupler + Thumb	TRS6 Pin-on + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler + Thumb
586-5943	320 mm (13.2 inch)	97 kg (213.-3 lb)	0.12 m ³ (0.161 yd ³)	5104	4529	3979	3604	3029					3654	3191	2617
586-5948	1200 mm (47.8 inch)	156 kg (343.-8 lb)	0.21 m ³ (0.273 yd ³)	2633	2305	1990	1776	1448					1805	1540	1212
586-5955	680 mm (26.8 inch)	188 kg (415.-1 lb)	0.24 m ³ (0.312 yd ³)	2170	1883	1608	1420	1133					1445	1214	927
586-5962	620 mm (24.0 inch)	161 kg (354.-2 lb)	0.24 m ³ (0.312 yd ³)	2285	1998	1723	1535	1248					1560	1329	1042

(continued)

Product Information Section

305 CR Excavator with Extra Counterweight

(Table 45, contd)

601-1133	720 mm (28.0 inch)	184 kg (405.-2 lb)	0.29 m ³ (0.371 yd ³)	1843	1601	1370	1212	970					1233	1038	796
601-1134	800 mm (31.0 inch)	209 kg (460.-2 lb)	0.29 m ³ (0.371 yd ³)	1756	1514	1282	1124	882					1145	950	708
601-1137	1300 mm (51.0 inch)	171 kg (377.-2 lb)	0.25 m ³ (0.332 yd ³)	2152	1876	1612	1432	1156					1456	1234	958
601-1140	1200 mm (47.7 inch)	174 kg (383.-3 lb)	0.21 m ³ (0.274 yd ³)						1859	1531	1595	1267			

(1) Max Material Density 1800 kg/m³

Table 46

305 CR Mini Hydraulic Excavator with Extra Counterweight S-type Buckets⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Long Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS6 Pin-on	TRS6 + S-Type Coupler	TRS6 + S-Type Coupler + Thumb	TRS6 PG Pin-on	TRS6 PG Pin-on + Thumb	TRS6 PG + PG Coupler	TRS6 PG + PG Coupler + Thumb	TRS6 Pin-on + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler + Thumb
586-5943	320 mm (13.2 inch)	97 kg (213.-3 lb)	0.12 m ³ (0.161 yd ³)	4529	3955	3404	3029	2455					3079	2617	2042
586-5948	1200 mm (47.8 inch)	156 kg (343.-8 lb)	0.21 m ³ (0.273 yd ³)	2305	1977	1662	1448	1119					1476	1212	884
586-5955	680 mm (26.8 inch)	188 kg (415.-1 lb)	0.24 m ³ (0.312 yd ³)	1883	1596	1321	1133	846					1158	927	639
586-5962	620 mm (24.0 inch)	161 kg (354.-2 lb)	0.24 m ³ (0.312 yd ³)	1998	1711	1436	1248	961					1273	1042	754
601-1133	720 mm (28.0 inch)	184 kg (405.-2 lb)	0.29 m ³ (0.371 yd ³)	1602	1360	1128	970	728					991	796	554

(continued)

(Table 46, contd)

601 - 1134	800 mm (31.0 inch)	209 kg (460.-2 lb)	0.29 m ³ (0.371 yd ³)	1514	1272	1040	882	640					903	709	467
601 - 1137	1300 mm (51.0 inch)	171 kg (377.-2 lb)	0.25 m ³ (0.332 yd ³)	1876	1600	1336	1156	880					1180	958	682
601 - 1140	1200 mm (47.7 inch)	174 kg (383.-3 lb)	0.21 m ³ (0.274 yd ³)						1531	1203	1267	938			

(1) Max Material Density 1800 kg/m³

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Boom/Stick/Bucket Combinations

(305 CR Excavator without Extra Counterweight)

SMCS Code: 6000; 6700

This machine can be equipped with various boom-stick-bucket combinations to meet the needs of various applications.

As a rule, use a bucket with a smaller capacity when you are using a longer stick and/or a longer boom. Conversely, use a bucket with a larger capacity when you are using a shorter stick and/or a shorter boom. This rule ensures better machine stability and protection against structural machine damage.

Note: The selection of a compatible boom-stick-bucket combination is a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on machine performance. The operator is responsible for being aware of these effects.

Consult your Cat[®] dealer for information on selecting the correct boom-stick-bucket combination.

The following tables show various compatible boom-stick-bucket combinations. Select an optimum combination according to the working conditions and according to the type of work that is being done.

305 CR Excavator without Extra Counterweight

Table 47

305 CR Mini Hydraulic Excavator Digging Buckets (Heavy Duty)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9907	300 mm (12.1 inch)	70 kg (154.8 lb)	0.06 m ³ (0.070 yd ³)	9899	8974	8750	7825	8838	7913	7688	6763
464 - 9908	400 mm (16.2 inch)	78 kg (172.2 lb)	0.08 m ³ (0.111 yd ³)	7324	6630	6462	5768	6528	5835	5666	4973
464 - 9909	450 mm (18.0 inch)	87 kg (192.3 lb)	0.09 m ³ (0.110 yd ³)	6410	5794	5644	5028	7178	5086	4937	4320
464 - 9910	500 mm (19.9 inch)	97 kg (212.1 lb)	0.10 m ³ (0.132 yd ³)	5669	5114	4980	4425	5033	4478	4343	3788
464 - 9911	600 mm (23.9 inch)	106 kg (239.1 lb)	0.13 m ³ (0.170 yd ³)	4292	3865	3761	3334	3802	3375	3272	2845
464 - 9912	750 mm (29.9 inch)	127 kg (279.1 lb)	0.17 m ³ (0.234 yd ³)	3158	2832	2753	2426	2784	2457	2378	2052
464 - 9913	900 mm (36.4 inch)	148 kg (325.2 lb)	0.22 m ³ (0.283 yd ³)	2345	2093	2032	1779	2056	1804	1742	1490

⁽¹⁾ Max Material Density 1800 kg/m³

Table 48

305 CR Mini Hydraulic Excavator Digging Buckets (Standard Duty)⁽¹⁾ Fill Factor = 100% Bolt on Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb

(continued)

(Table 48, contd)

276 - 7370	300 mm (12.1 inch)	76 kg (168.8 lb)	0.06 m ³ (0.081 yd ³)	9799	8874	8650	7725	8738	7813	7588	6663
276 - 7378	400 mm (16.2 inch)	77 kg (170.2 lb)	0.08 m ³ (0.111 yd ³)	7337	6643	6475	5781	6541	5847	5679	4985
279 - 4283	450 mm (18.0 inch)	82 kg (181.3 lb)	0.09 m ³ (0.110 yd ³)	6466	5849	5700	5083	7178	5142	4992	4376
279 - 4287	500 mm (19.9 inch)	89 kg (196.1 lb)	0.10 m ³ (0.134 yd ³)	5749	5194	5060	4505	5113	4558	4423	3868
249 - 4260	600 mm (23.9 inch)	99 kg (218.1 lb)	0.13 m ³ (0.172 yd ³)	4346	3919	3815	3388	3856	3429	3325	2899
279 - 4291	750 mm (29.9 inch)	114 kg (251.1 lb)	0.17 m ³ (0.232 yd ³)	3235	2908	2829	2503	2860	2534	2455	2128
279 - 4295	900 mm (36.1 inch)	138 kg (304.1 lb)	0.22 m ³ (0.281 yd ³)	2391	2138	2077	1825	2101	1849	1788	1535

(1) Max Material Density 1800 kg/m³

Table 49

305 CR Mini Hydraulic Excavator Digging Buckets (High Capacity)⁽¹⁾ Fill Factor = 100% J200 Tip											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
464 - 9914	300 mm (12.1 inch)	83 kg (183.8 lb)	0.08 m ³ (0.110 yd ³)	7262	6568	6400	5706	6466	5772	5604	4910
464 - 9915	400 mm (16.2 inch)	92 kg (203.2 lb)	0.11 m ³ (0.143 yd ³)	5199	4695	4573	4068	4621	4116	3994	3489
464 - 9916	450 mm (18.0 inch)	102 kg (225.3 lb)	0.12 m ³ (0.160 yd ³)	4683	4220	4108	3646	5383	3690	3578	3115
464 - 9917	500 mm (19.9 inch)	111 kg (245.1 lb)	0.14 m ³ (0.191 yd ³)	3950	3553	3457	3061	3495	3098	3002	2606
464 - 9918	600 mm (23.9 inch)	125 kg (275.1 lb)	0.18 m ³ (0.241 yd ³)	2994	2686	2611	2303	2640	2332	2257	1949

(continued)

Product Information Section
305 CR Excavator without Extra Counterweight

(Table 49, contd)

464 - 9919	750 mm (29.9 inch)	146 kg (321.1 lb)	0.24 m ³ (0.312 yd ³)	2158	1927	1871	1639	1893	1662	1605	1374
464 - 9920	900 mm (36.4 inch)	169 kg (372.2 lb)	0.30 m ³ (0.390 yd ³)	1650	1465	1420	1235	1438	1253	1208	1023

(1) Max Material Density 1800 kg/m³

Table 50

305 CR Mini Hydraulic Excavator Ditch Cleaning Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279 - 4326	1000 mm (40.2 inch)	121 kg (267.2 lb)	0.17 m ³ (0.221 yd ³)	3271	2936	2855	2521	2887	2553	2472	2137
279 - 4327	1300 mm (50.9 inch)	122 kg (269.1 lb)	0.22 m ³ (0.292 yd ³)	2452	2201	2140	1889	2164	1913	1852	1601
279 - 4328	1600 mm (63.4 inch)	144 kg (317.2 lb)	0.29 m ³ (0.374 yd ³)	1812	1618	1571	1378	1590	1396	1350	1156

(1) Max Material Density 1800 kg/m³

Table 51

305 CR Mini Hydraulic Excavator Tilting Ditch Cleaning Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
279 - 9022	1600 mm (62.9 inch)	275 kg (606.1 lb)	0.28 m ³ (0.372 yd ³)	1394	1195	1147	948	1166	967	919	720

(1) Max Material Density 1800 kg/m³

Table 52

305 CR Mini Hydraulic Excavator Mud/Grading Buckets ⁽¹⁾ Fill Factor = 100%											
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)				Long Stick (kg/m ³)			
				No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler	No Coupler	Coupler
				No Thumb	No Thumb	Thumb	Thumb	No Thumb	No Thumb	Thumb	Thumb
388-9664	1200 mm (47.2 inch)	186 kg (410.2 lb)	0.23 m ³ (0.301 yd ³)	1838	1625	1573	1360	1593	1380	1328	1115
388-9665	1500 mm (59.2 inch)	223 kg (490.2 lb)	0.33 m ³ (0.434 yd ³)	1336	1168	1127	959	1143	975	934	766

(1) Max Material Density 1800 kg/m³

Table 53

305 CR Mini Hydraulic Excavator S-type Buckets ⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Standard Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS6 Pin-on	TRS6 + S-Type Coupler	TRS6 + S-Type Coupler + Thumb	TRS6 PG Pin-on	TRS6 PG Pin-on + Thumb	TRS6 PG + PG Coupler	TRS6 PG + PG Coupler + Thumb	TRS6 Pin-on + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler + Thumb
586-5943	320 mm (13.2 inch)	97 kg (213.-3 lb)	0.12 m ³ (0.161 yd ³)	4353	3778	3228	2853	2278					2903	2440	1866
586-5948	1200 mm (47.8 inch)	156 kg (343.-8 lb)	0.21 m ³ (0.273 yd ³)	2204	1876	1561	1347	1078					1375	1111	783
586-5955	680 mm (26.8 inch)	188 kg (415.-1 lb)	0.24 m ³ (0.312 yd ³)	1795	1507	1232	1045	757					1070	838	551
586-5962	620 mm (24.0 inch)	161 kg (354.-2 lb)	0.24 m ³ (0.312 yd ³)	1910	1622	1347	1160	872					1185	953	666

(continued)

Product Information Section

305 CR Excavator without Extra Counterweight

(Table 53, contd)

601 - 1133	720 mm (28.0 inch)	184 kg (405.-2 lb)	0.29 m ³ (0.371 yd ³)	1527	1285	1053	896	654					917	722	480
601 - 1134	800 mm (31.0 inch)	209 kg (460.-2 lb)	0.29 m ³ (0.371 yd ³)	1439	1197	966	808	566					829	634	392
601 - 1137	1300 mm (51.0 inch)	171 kg (377.-2 lb)	0.25 m ³ (0.332 yd ³)	1791	1516	1251	1071	796					1095	873	598
601 - 1140	1200 mm (47.7 inch)	174 kg (383.-3 lb)	0.21 m ³ (0.274 yd ³)						1430	1102	1166	838			

(1) Max Material Density 1800 kg/m³

Table 54

305 CR Mini Hydraulic Excavator S-type Buckets⁽¹⁾ Fill Factor = 100%															
Bucket Part Number	Width of Bucket	Weight	Capacity (ISO)	Long Stick (kg/m ³)											
				S-Type Coupler	S-Type Coupler + Thumb	TRS6 Pin-on	TRS6 + S-Type Coupler	TRS6 + S-Type Coupler + Thumb	TRS6 PG Pin-on	TRS6 PG Pin-on + Thumb	TRS6 PG + PG Coupler	TRS6 PG + PG Coupler + Thumb	TRS6 Pin-on + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler	TRS6 + S-Type Coupler + GPL Coupler + Thumb
586-5943	320 mm (13.2 inch)	97 kg (213.-3 lb)	0.12 m ³ (0.161 yd ³)	3822	3248	2697	2322	1748					2372	1910	1335
586-5948	1200 mm (47.8 inch)	156 kg (343.-8 lb)	0.21 m ³ (0.273 yd ³)	1901	1572	1258	1044	715					1072	808	480
586-5955	680 mm (26.8 inch)	188 kg (415.-1 lb)	0.24 m ³ (0.312 yd ³)	1529	1242	967	779	492					804	573	286
586-5962	620 mm (24.0 inch)	161 kg (354.-2 lb)	0.24 m ³ (0.312 yd ³)	1644	1357	1082	894	607					919	688	401
601 - 1133	720 mm (28.0 inch)	184 kg (405.-2 lb)	0.29 m ³ (0.371 yd ³)	1304	1062	830	672	430					693	498	257

(continued)

(Table 54, contd)

601-1134	800 mm (31.0 inch)	209 kg (460.-2 lb)	0.29 m ³ (0.371 yd ³)	1216	974	742	584	342					606	411	169
601-1137	1300 mm (51.0 inch)	171 kg (377.-2 lb)	0.25 m ³ (0.332 yd ³)	1537	1261	997	817	541					841	619	343
601-1140	1200 mm (47.7 inch)	174 kg (383.-3 lb)	0.21 m ³ (0.274 yd ³)						1127	799	863	534			

(1) Max Material Density 1800 kg/m³

i08423537

Lifting Capacities (305CR Excavator Equipped with Canopy)

SMCS Code: 7000

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based upon a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools. The weight of a work tool must be subtracted from the lift capacity. Consult your Cat[®] dealer regarding the lifting capacities for specific work tools.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Consult your Cat[®] dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 55

Configuration Identification		
Component	Configuration	Ab- brevi- ation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

(1) Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track type excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm) **Measurements are provided in millimeters and inches**
(inch)



Lift Capacities are provided in kilograms and pounds



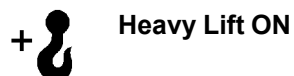
*** Load is limited by hydraulic lifting capacity rather than by a tipping load**



Lift point radius



Lift point height



305CR canopy, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													3650
157											* 1058	* 1058	151
3000							1083	890			* 953	691	4550
118							2388	1896			* 2181	1524	179
2000					1609	1281	1051	830			762	604	4090
79					3659	2825	2318	1830			1661	1331	193
1000					1060	1191	1012	793			703	579	4060
39					3480	2626	2232	1749			1616	1276	195
0					1022	1156	967	770			797	604	4770
0					3555	2549	2177	1698			1692	1331	188
-1000	* 2995	* 2995	* 3557	2262	1025	1159	967	770			899	704	4290
-39	* 6362	* 6362	* 7843	4988	3962	2556	2177	1698			1562	1153	169
-2000	* 4491	* 4401	3504	2324	1097	1197					1352	1045	3000
-79	* 5794	* 5704	7265	5125	3455	2640					2581	2093	130

Illustration 43

g06664144

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
 													
4000											* 1058	* 1058	3830
157											* 2332	* 2332	151
3000							* 1361	944			* 365	760	4550
118							* 3601	2082			* 2101	1676	179
2000					* 2117	1417	* 1614	914			* 950	888	4850
79					* 4985	3124	* 3558	2215			* 2094	1453	193
1000					* 2961	1924	* 1937	876			* 1020	838	4960
39					* 6529	2920	* 4271	1933			* 2348	1409	195
0					* 3260	1288	* 2152	859			* 1191	867	4770
0					* 7189	2641	* 4701	1881			* 2626	1472	188
1000	* 2885	* 2885	* 3557	2571	* 3099	1291	* 2046	653			* 1609	779	4280
39	* 4362	* 4362	* 7843	5669	* 6833	2647	* 4512	1880			* 3548	1718	169
2000	* 4401	* 4401	* 4012	2636	* 2326	1331					* 1934	1159	3060
79	* 6704	* 6704	* 8847	5813	* 5128	2934					* 4264	2593	190

Illustration 44

g06664511

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1058	* 1058	3830
157											* 2332	* 2332	181
3000							* 1291	370			* 993	785	4050
118							* 3001	2196			* 2181	1731	179
2000					* 2117	1442	1180	940			* 950	690	4890
79					* 4868	3181	2623	2073			* 2094	1521	133
1000					1705	1352	1141	894			831	663	4360
39					3870	2581	2517	1952			1852	1462	135
0					1717	1317	1117	885			879	692	4770
0					3765	2504	2452	1941			1918	1526	588
-1000	* 2885	* 2885	* 3557	2569	1720	1320	1118	880			1017	805	4280
-39	* 6362	* 6362	* 7843	5651	3792	2910	2452	1941			2242	1776	169
-2000	* 4491	* 4491	* 4012	2825	1762	1356					1521	1186	3000
-79	* 9734	* 9704	* 8847	5787	3995	2995					3053	2515	130

Illustration 45

g06664512

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
4000													
157													
3000							* 1361	1089					
118							* 3001	2336					
2000					* 2117	1587	* 1614	1020					
79					* 4868	3426	* 3555	2269					
1000					* 2961	1434	* 1937	992					
39					* 6529	3295	* 4271	2187					
0					* 3260	1456	* 2132	968					
0					* 7169	3215	* 4701	2135					
-1000	* 2995	* 2690	* 3557	2995	* 3089	1451	* 2049	968					
-39	* 6362	* 6362	* 7843	6363	* 6635	3222	* 4512	2134					
-2000	* 4431	* 4401	* 4012	2990	* 2526	1501							
-79	* 3734	* 3704	* 3847	3527	* 6126	3309							

Illustration 46

g06664517

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) (ft)	1000 33		2000 79		3000 118		4000 137		5000 197				(mm) (ft)
													
4000							* 1196	896			* 833	* 803	4190
157							* 2637	1666			* 1666	* 1666	553
3000							* 1197	853			* 776	679	4810
118							* 2633	1661			* 1715	1364	589
2000					* 1637	1283	1641	819	734	370	* 776	545	5130
79					* 4060	2830	2236	1606	1696	1257	* 1716	1281	283
1000					1502	1181	997	778	708	355	696	522	5200
39					9422	2656	2198	1716	1661	1223	1466	1190	265
0			* 1637	* 1637	1437	1131	966	748	627	544	493	341	5020
0			* 3510	* 3510	3902	3495	2130	1650	1536	1200	1027	1193	198
-1000	* 2497	* 2407	* 3165	2206	1491	1126	959	743			796	620	4560
-39	* 5338	* 5306	* 6847	4864	3086	2483	2114	1636			1755	1368	180
-3000	* 3645	* 3645	3235	2363	1522	1154					1111	860	3690
-79	* 8037	* 8037	7133	4989	3067	2545					3449	1895	145

Illustration 47

g06664520

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	341			* 803	* 803	4150
157							* 2637	2076			* 1686	* 1686	163
3000							* 1197	398			* 776	* 776	4810
118							* 2639	2067			* 1715	* 1715	189
2000					* 1837	1426	* 1471	993	* 1299	830	* 776	603	5190
79					* 4060	3131	* 3243	1962	* 2964	1990	* 1716	1329	262
1000					* 2768	1815	* 1825	861	* 1499	615	* 828	578	5200
39					* 6070	2889	* 4020	1686	* 3285	1305	* 1826	1276	205
0			* 1637	* 1637	* 3194	1264	* 2073	831	* 1988	684	* 954	601	5020
0			* 3610	* 3610	* 7043	2787	* 4570	1683	* 2399	1332	* 2103	1334	196
-1000	* 2407	* 2407	* 3160	2513	* 3152	1256	* 2079	834			* 1241	689	4560
39	* 5338	* 5306	* 6847	5541	* 6960	2774	* 4583	1618			* 2737	1518	180
-3000	* 3645	* 3645	* 4577	2572	* 2665	1287					* 1814	364	3690
-79	* 8037	* 8037	* 10062	5672	* 5722	2838					* 4886	2193	145

Illustration 48

g06664521

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		119		157		197				
													
4000							* 1196	967			* 893	* 893	4150
157							* 2637	2131			* 1990	* 1990	163
3000							* 1197	963			* 778	* 778	4810
118							* 2639	2124			* 1715	* 1715	189
2000					* 1837	1445	1171	929	821	654	* 778	628	3130
79					* 4050	3186	2581	2049	1810	1442	* 1710	1390	202
1000					1747	1342	1126	888	866	638	* 628	602	6200
39					3852	2990	2480	1958	1774	1406	* 1020	1327	205
0			* 1637	* 1637	1832	1293	1086	899	759	628	789	624	5020
0			* 3610	* 3610	3732	2650	2416	1893	1749	1384	1740	1377	190
-1000	* 2407	* 2407	* 3100	2506	1886	1287	1086	852			905	714	4560
-39	* 1508	* 1508	* 6847	5526	3718	2638	2066	1679			1995	1574	180
-2000	* 3645	* 3645	3632	2569	1717	1316					1255	982	3668
-79	* 8037	* 8037	8036	5601	3787	2501					2757	2165	145

Illustration 49

g06664522

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
4000							* 1186	* 1186			* 885	* 853	4150
157							* 2637	* 2637			* 1880	* 1880	163
3000							* 1197	* 1197			* 778	* 778	4810
118							* 2639	* 2639			* 1715	* 1715	189
2000					* 1837	* 1837	* 1471	1019	* 1299	717	* 778	* 778	5130
79					* 4090	* 4090	* 3245	2246	* 2864	1882	* 1710	* 1710	202
1000					* 2759	1481	* 1825	976	* 1488	702	* 828	662	5200
39					* 6070	3274	* 4025	2152	* 3288	1548	* 1826	1499	205
0			* 1937	* 1937	* 3194	1434	* 2079	947	* 1988	891	* 854	687	9020
0			* 3610	* 3610	* 7043	3162	* 4870	2087	* 2399	1534	* 2103	1515	199
-1000	* 2407	* 2407	* 3165	* 3165	* 3152	1428	* 2079	940			* 1241	786	4560
-39	* 5308	* 5308	* 6847	* 6847	* 6950	3149	* 4585	2072			* 2737	1733	180
-2000	* 3645	* 3645	* 4577	2697	* 2995	1457					* 1814	1082	3690
-79	* 6037	* 6037	* 10092	6367	* 8722	3213					* 4000	2388	145

Illustration 50

g06664523

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) (ft)	1000 39		2000 79		3000 118		4000 137		5000 157				(mm) (ft)
													
4000											* 1858	* 1009	3830
157											* 2332	* 2332	151
3000							1120	894			* 950	720	4550
118							2476	1972			* 2101	1589	179
2000					1720	1332	1091	864			799	631	4090
79					3792	2936	2405	1906			1749	1390	193
1000					1620	1241	1032	820			703	605	4060
39					3673	2737	2319	1820			1683	1334	195
0					1562	1206	1027	805			799	631	4170
0					3469	2692	2265	1774			1762	1392	188
-1000	* 2095	* 2885	* 3557	2356	1565	1209	1027	804			935	736	4280
-39	* 6362	* 6362	* 7843	5195	3495	2888	2265	1774			2042	1623	969
-2000	* 4401	* 4401	3425	2435	1627	1247					1404	1099	3300
-79	* 9704	* 9704	7555	5332	3688	2750					3095	2491	130

Illustration 51

g06664544

Lift chart above: canopy, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		118		157		197				
4000													
157													
3000							* 1261	1004					
118							* 3001	2215					
2000					* 2117	1495	1220	974					
79					* 4668	3292	2690	2145					
1000					1815	1402	1181	938					
30					8003	5692	4634	3669					
0					1771	1267	1137	815					
0					3918	2815	2350	2017					
-1000	* 2385	* 2060	* 3557	2556	1780	1270	1158	915					
-30	* 6362	* 6362	* 7843	5857	3925	3021	2558	2017					
-2000	* 4431	* 4401	* 4012	2718	1822	1409							
-79	* 9734	* 9704	* 8847	5994	4018	3106							

Illustration 53

g06664546

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
4000													
157											* 1858	* 1058	3830
3000							* 1261	1097			* 2332	* 2092	181
118							* 3001	2416			* 550	* 553	4050
2000					* 2117	1642	* 1614	1066			* 2101	* 2101	179
79					* 4668	3621	* 3658	2361			* 2894	1729	191
1000					* 2961	1549	* 1937	1029			* 1828	766	4960
39					* 6525	3416	* 4271	2269			* 2348	1996	195
0					* 8260	4113	* 2132	1006			* 1191	790	4770
0					* 7189	3327	* 4701	2217			* 2626	1741	188
-1000	* 2085	* 2865	* 3557	3000	* 3099	1516	* 2048	1025			* 1608	819	4260
-39	* 6362	* 6362	* 7843	6515	* 6833	3343	* 4512	2217			* 3548	3026	569
-2000	* 4401	* 4401	* 4212	3065	* 2328	1556					* 1834	1054	5000
-79	* 9734	* 6704	* 8847	6759	* 5125	3438					* 4264	2996	130

Illustration 54

g06664547

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	891			* 883	* 883	4190
157							* 2637	1664			* 1898	* 1898	663
3000							* 1197	887			* 776	* 776	4810
118							* 2639	1666			* 1715	* 1715	589
2000					* 1837	1334	1081	854	754	598	* 776	* 776	5130
79					* 4060	2941	2384	1882	1682	1315	* 1715	* 1715	202
1000					1612	1232	1037	812	738	561	994	* 547	5200
39					3666	2715	2286	1790	1627	1291	1531	* 1205	265
0			* 1637	* 1637	1557	1182	1006	783	727	578	722	* 567	3020
0			* 3632	* 3610	3434	2606	2218	1726	1602	1267	1593	* 1230	199
-1000	* 2407	* 2407	* 3183	2289	1551	1176	888	776			820	* 620	4560
-39	* 5098	* 5308	* 6847	5070	3421	2593	2202	1711			1828	* 1432	183
-3000	* 5645	* 5645	3557	2356	1565	1205					1155	* 896	3690
-79	* 8037	* 8037	7402	5196	3489	2654					2547	* 1979	145

Illustration 55

g06664548

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
4000													
157							* 1196	379			* 833	* 833	4190
3000							* 2637	2158			* 1888	* 1888	953
118							* 1197	375			* 776	* 776	4810
2000							* 2639	2150			* 1715	* 1715	589
79					* 1857	1475	* 1471	941	* 1299	859	* 776	630	5130
1000					* 4060	3255	* 3243	2074	* 2964	1452	* 1716	1389	283
39					* 2753	1370	* 1825	888	* 1498	643	* 828	605	5200
0					* 6070	3821	* 4025	1981	* 3285	1418	* 1628	1335	265
0			* 1637	* 1637	* 3194	1319	* 2073	868	* 1988	832	* 954	629	5020
0			* 3510	* 3510	* 7045	2906	* 4570	1910	* 2999	1394	* 2103	1386	198
-1800	* 2497	* 2407	* 3165	2618	* 3152	1313	* 2079	862			* 1241	720	4560
-39	* 5338	* 5308	* 6847	5772	* 6960	2896	* 4593	1900			* 2737	1588	180
-2000	* 3645	* 3645	* 4577	2679	* 2985	1542					* 1614	995	3690
-79	* 8037	* 8037	* 10092	5904	* 5722	2960					* 4808	2195	145

Illustration 56

g06664550

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1500		2000		3000		4506		5000				(mm) (in)
	30		79		118		157		197				
4000													4150
15°							* 1136	1001			* 833	* 833	163
3000							* 2637	2307			* 1880	* 1880	4830
118							* 1137	997			* 778	* 778	189
2000							* 2639	2199			* 1715	* 1715	5130
79					* 1837	1495	1210	964	850	680	* 778	651	202
1000					* 4050	3296	2669	2125	1875	1499	* 1710	1435	5230
39					1807	1393	1166	922	834	665	* 828	627	205
0					3985	3071	2571	2033	1840	1465	* 1626	1381	8020
0			* 1637	* 1637	1752	1343	1138	893	823	654	* 819	650	156
-1000	* 2497	* 2497	* 3610	* 3610	3964	2961	2500	1969	1815	1442	1805	1454	4590
-39	* 5386	* 5386	* 6847	5732	3851	2949	2487	1954			2059	1639	160
-2000	* 3645	* 3645	3754	2657	1778	1366					1298	1020	3690
-79	* 8037	* 8037	8278	5688	3929	3012					2899	2249	145

Illustration 57

g06664551

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

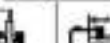
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		119		157		187				
4000							* 1196	* 1196			* 833	* 833	4150
157							* 2637	* 2637			* 1886	* 1886	163
3000							* 1197	* 1197			* 778	* 778	4010
118							* 2639	* 2639			* 1715	* 1715	169
3000					* 1837	* 1837	* 1471	1056	* 1299	746	* 778	* 778	3130
79					* 4050	* 4050	* 3245	2326	* 2864	1644	* 1715	* 1715	202
1000					* 2758	1545	* 1825	1014	* 1490	730	* 628	* 628	5200
30					* 6070	3396	* 4025	2235	* 3285	1610	* 1828	1818	205
0			* 1637	* 1637	* 3154	1489	* 2073	954	* 1088	719	* 504	* 715	3020
0			* 3610	* 3610	* 7043	3283	* 4570	2170	* 2599	1586	* 2103	1578	198
-1000	* 2407	* 2407	* 3195	* 3195	* 5152	1483	* 2079	977			* 1241	818	4560
.39	* 5308	* 5308	* 6847	* 6847	* 8960	3271	* 4585	2154			* 2737	1693	160
-2000	* 3645	* 3645	* 4577	3002	* 2895	1512					* 1814	1123	3690
.75	* 8037	* 8037	* 10050	8819	* 5722	3335					* 4938	3477	145

Illustration 58

g06664553

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

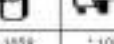
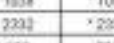
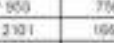
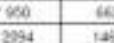
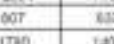
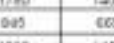
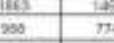
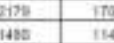
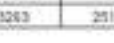
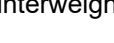
(mm) (ft)	1000		2000		3000		4000		5000				(mm) (ft)
	39		79		118		157		197				
4000													3830
157													151
3000													4550
118													179
2000					1607	1395	1149	906					4090
79					3665	3071	2534	1956					193
1000					1706	1302	1110	870					4060
39					3755	2872	2448	1917					195
0					1670	1267	1005	840					4770
0					3662	2795	2393	1866					188
-1000					1670	1270	1005	840					4280
-39					3666	2801	2393	1866					969
-2000					1715	1328							3300
-79					3781	2886							130

Illustration 59

g06664576

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		116		157		187				
4000													3820
157													151
3000													4550
116													179
2000													4890
79													193
1000													4960
39													195
0													4770
0													188
-1000													4290
-39													169
-2000													3360
-79													130

Illustration 60

g06664578

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (ft)	1000		2000		3000		4000		5000				(mm) (ft)
	39	79	118	157	197								
													
4000													
157													
3000							* 1351	1048					
118							* 3001	2307					
2000					* 2117	1054	1276	1016					
79					* 4668	3427	2819	2241					
1000					1903	1484	1239	980					
39					4196	3227	2735	2188					
0					1895	1429	1216	907					
0					4112	3190	2679	2109					
-1000	* 2885	* 2885	* 3957	2779	1898	1431	1216	908					
-39	* 6362	* 6362	* 7843	6109	4118	3156	2678	2109					
-2000	* 4491	* 4491	* 4012	2833	1910	1470							
-79	* 9704	* 9704	* 8847	6246	4211	3281							

Illustration 61

g06664579

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

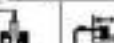
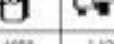
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000											* 1658	* 1058	3830
157											* 2332	* 2332	151
3000							* 1361	1142			* 953	* 853	4550
118							* 8001	2516			* 2101	* 2101	179
2000					* 2117	1709	* 1614	1112			* 950	* 850	4890
79					* 4868	3768	* 3553	2451			* 2094	* 2094	193
1000					* 2961	1916	* 1937	1074			* 1520	790	4960
39					* 6529	3563	* 4271	2369			* 2348	1742	185
0					* 3260	1580	* 2132	1051			* 1191	828	4770
0					* 7169	3464	* 4701	2317			* 2628	1821	188
-1000	* 2995	* 2980	* 3557	* 3557	* 3668	1583	* 2049	1080			* 1609	960	4280
-39	* 6362	* 6362	* 7843	* 7843	* 6835	3490	* 4912	2516			* 3548	2117	169
-2000	* 4431	* 4401	* 4012	3192	* 2326	1822					* 1834	1412	3390
-79	* 9734	* 9704	* 8847	7939	* 6128	3677					* 4354	3115	130

Illustration 62

g06664580

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

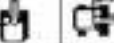
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	33		79		118		157		197				
4000							* 1196	833			* 853	* 853	4150
157							* 2637	2057			* 1886	* 1886	963
3000							* 1197	829			* 778	* 778	4010
118							* 2639	2046			* 1715	* 1715	389
2000					* 1857	1385	1139	896	797	628	* 778	601	5130
79					* 4050	3076	2512	1975	1758	1365	* 1716	1325	202
1000					1700	1255	1098	854	761	613	* 828	677	5200
30					3748	2851	2415	1880	1725	1351	* 1626	1272	305
0			* 1837	* 1837	1645	1243	1064	825	770	682	768	609	5020
0			* 3610	* 3610	3628	2741	2346	1819	1698	1327	1688	1320	196
-1000	* 2497	* 2407	* 3185	2414	1639	1237	1057	818			879	685	4060
-30	* 5396	* 5306	* 6847	5322	3614	2729	2338	1804			1657	1311	180
-2000	* 3643	* 3645	3536	2471	1670	1286					1220	944	3690
-79	* 8037	* 8037	7797	5448	3683	2791					2660	2062	145

Illustration 63

g06664583

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(ft) (m)	1000 39		2000 79		3000 118		4000 157		5000 197				(ft) (m)
													
4000							* 1196	1024			* 855	* 855	4150
167							* 2637	2267			* 1880	* 1880	163
3000							* 1197	1020			* 776	* 776	4810
116							* 2639	2249			* 1715	* 1715	189
2000					* 1837	1542	* 1471	986	* 1259	693	* 776	* 663	5130
79					* 4090	3339	* 3243	2174	* 2864	1627	* 1710	* 1462	282
1900					* 2753	1437	* 1825	845	* 1490	677	* 826	* 618	5200
39					* 6070	3188	* 4025	2080	* 3265	1493	* 1826	* 1437	266
0			* 1637	* 1837	* 3154	1386	* 2073	914	* 1888	696	* 554	* 663	5020
0			* 3810	* 3810	* 7043	3655	* 4670	2015	* 2366	1466	* 2103	* 1461	198
-1000	* 2407	* 2407	* 3165	* 3165	* 3152	1386	* 2079	987			* 1241	* 756	4560
-39	* 6308	* 6308	* 6847	* 6847	* 6950	3043	* 4583	2000			* 2737	* 1672	180
-2000	* 3645	* 3645	* 4577	* 2805	* 2395	1425					* 1814	* 1046	3690
-79	* 8037	* 6037	* 10092	6154	* 6722	3107					* 4800	* 2305	145

Illustration 64

g06664584

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		75		118		157		197				
4000													4100
157							* 1196	* 1196			* 803	* 855	563
3000							* 2637	* 2637			* 1888	* 1880	163
118							* 1197	* 1197			* 776	* 778	4810
2000							* 2639	* 2639			* 1715	* 1715	589
75					* 1857	1554	* 1471	1004	894	712	* 776	* 776	5130
1000					* 4050	3432	* 3040	2216	1971	1559	* 1718	* 1710	202
39					1895	1454	1224	964	678	496	* 626	657	5200
0					4178	3204	2700	2126	1936	1535	* 1826	1449	205
0			* 1837	* 1637	1840	1404	1190	930	667	488	* 954	682	3020
0			* 3610	* 3610	4056	3096	2621	2062	1911	1512	* 2103	1594	598
-1000	* 2407	* 2407	* 3195	* 3103	1834	1399	1180	920			987	779	4560
-30	* 5398	* 5306	* 6847	* 6667	4844	3584	2615	2047			2177	1717	580
-2000	* 3645	* 3645	3935	2771	1865	1427					1365	1096	3690
-75	* 8037	* 8037	8872	6130	4113	3147					3050	2351	545

Illustration 65

g06664585

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	* 1196			* 893	* 893	4150
167							* 2637	* 2637			* 1680	* 1680	163
3000							* 1197	* 1197			* 778	* 778	4610
118							* 2639	* 2639			* 1715	* 1715	169
2000					* 1837	* 1837	* 1471	1191	* 1299	780	* 778	* 778	3130
79					* 4050	* 4050	* 3243	3436	* 2964	1720	* 1710	* 1710	202
1000					* 2755	1607	* 1825	1889	* 1490	764	* 828	* 828	5200
39					* 8070	9543	* 4025	2334	* 3285	1685	* 1626	* 1626	205
0			* 1637	* 1637	* 3184	1554	* 2079	1829	* 1088	754	* 964	* 748	5020
0			* 3610	* 3610	* 7043	3430	* 4570	2289	* 2595	1681	* 2103	1652	198
-1000	* 2407	* 2467	* 3100	* 3100	* 3152	1559	* 2079	1822			* 1241	806	4560
-39	* 7008	* 7398	* 6847	* 6847	* 6950	3438	* 4563	2254			* 2737	1687	180
-2000	* 3645	* 3645	* 4577	3129	* 2995	1579					* 1814	1174	3660
-79	* 8037	* 8037	* 10092	6999	* 5722	3482					* 4000	2098	145

Illustration 66

g06664587

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

305CR cab, angle blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35		75		115		157		197				
4000													* 1058
157													* 1058
3000													* 2332
110													* 2332
2000													* 355
75													720
1000													* 2101
35													1587
0													179
0													1629
-1000													1330
-35													1091
-0													864
-1000													2275
-35													1904
-0													992
-1000													827
-35													716
-0													604
-1000													1583
-35													1333
-0													195
-1000													1431
-35													1205
-0													987
-1000													804
-35													2130
-0													1772
-1000													1656
-35													1391
-0													188
-1000													600
-35													735
-0													4260
-1000													1941
-35													1621
-0													169
-1000													1325
-35													1098
-0													3566
-1000													2622
-35													2398
-0													130

Illustration 67

g06664605

Lift chart above: canopy, rubber belts, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 3858	* 1058	3830
157											* 2334	* 2332	181
3000							* 1364	390			* 550	791	4550
118							* 3005	2161			* 2101	1744	179
2000					* 2121	1475	* 1618	850			* 900	854	4890
79					* 4677	3241	* 3564	2094			* 2094	1830	133
1000					* 2965	1377	* 1839	912			* 1819	667	4960
39					* 6534	3036	* 4275	2012			* 2347	1470	195
0					* 5260	1341	* 2132	899			* 1198	896	4770
0					* 7189	2557	* 4701	1960			* 2625	1590	188
-1000	* 2885	* 2880	* 3558	2670	* 3667	1344	* 2045	899			* 1608	812	4280
-39	* 6362	* 6362	* 7845	5989	* 6825	2964	* 4510	1960			* 3545	1791	169
-2000	* 4492	* 4491	* 4083	2735	* 2322	1384					* 1938	1204	5000
-79	* 9706	* 9704	* 8827	6332	* 6116	3051					* 4356	2655	130

Illustration 68

g06664607

Lift chart above: canopy, rubber belts, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (ft)	1000 33		2500 79		3000 118		4000 131		5000 157				(mm) (ft)
													
4000											* 1658	* 1058	3890
137											* 2332	* 2332	151
3000							* 1361	1004			* 953	814	4550
118							* 3001	2213			* 2101	1794	179
2000					1624	1492	1199	974			* 950	716	4090
79					4021	3289	2558	2147			* 2054	1579	193
1000					1734	1401	1121	937			815	669	4960
39					3603	3060	2472	2056			1798	1519	195
0					1606	1366	1098	914			854	719	4770
0					3718	3013	2417	2015			1882	1586	188
-1000	* 2885	* 2065	* 3557	2654	1609	1369	1098	914			999	806	4290
-39	* 6362	* 6362	* 7843	5853	3734	3019	2417	2015			2201	1844	165
-2000	* 4401	* 4401	* 4012	2716	1731	1406					1494	1229	3300
-79	* 3734	* 2704	* 8847	5999	3617	3104					3294	2710	130

Illustration 69

g06664608

Lift chart above: canopy, rubber belts, standard stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

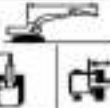
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	33		79		118		157		197				
4000													
167													
3000							* 1364	1085					
118							* 3006	2415					
2000					* 2123	1639	* 1616	1085					
79					* 4677	3815	* 5564	2548					
1000					* 2963	1547	* 1939	1028					
39					* 6534	3411	* 4275	2266					
0					* 3266	1511	* 2192	1004					
0					* 7189	3332	* 4701	2214					
-1000	* 2095	* 2885	* 3558	2994	* 3697	1514	* 2045	1004					
-39	* 4952	* 6962	* 7845	6901	* 6629	3338	* 4510	2214					
-2000	* 4492	* 4401	* 4093	3059	* 2322	1553							
-79	* 9796	* 9764	* 8827	6745	* 5119	3425							

Illustration 70

g06664611

Lift chart above: canopy, rubber belts, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		75		118		157		197				
													
4000							* 1196	890			* 803	* 855	4100
157							* 2637	1563			* 1888	* 1890	563
3000							* 1197	867			* 776	845	4010
118							* 2639	1665			* 1715	1423	585
2000					* 1857	1335	1021	853	709	598	* 776	569	5130
75					* 4000	2935	2251	1681	1093	1013	* 1718	1255	292
1000					1521	1230	977	811	690	580	652	548	5200
39					3054	2713	2153	1789	1527	1280	1437	1204	295
0			* 1637	* 1637	1467	1181	948	792	662	570	679	566	5020
0			* 3610	* 3610	3034	2603	2085	1725	1503	1256	1494	1249	588
-1000	* 2407	* 2407	* 3105	2297	1461	1175	938	775			779	649	4560
-39	* 5308	* 5308	* 6847	5906	3020	2591	2069	1710			1718	1431	580
-2000	* 3645	* 3645	3172	2354	1492	1204					1088	897	3690
-75	* 8037	* 8037	6365	5191	3289	2654					2349	1978	345

Illustration 71

g06664612

Lift chart above: canopy, rubber belts, long stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4300							* 1200	877			* 858	* 855	4150
157							* 2646	2154			* 1882	* 1860	163
3000							* 1200	873			* 278	* 778	4810
118							* 2647	2147			* 6716	* 1710	189
2000					* 1841	1473	* 1474	939	* 1298	858	* 278	629	3138
79					* 4040	3247	* 3249	2071	* 2883	1450	* 1710	1387	202
1000					* 2756	1368	* 1827	897	* 1491	642	* 828	605	5260
39					* 6076	3016	* 4028	1678	* 3287	1416	* 1825	1333	205
0			* 1637	* 1637	* 3194	1317	* 2073	867	* 1607	631	* 903	628	5820
0			* 3610	* 3610	* 7343	2903	* 4571	1912	* 2397	1382	* 2102	1384	198
-1000	* 2407	* 2457	* 3106	2612	* 3153	1311	* 2077	861			* 1240	713	4560
-39	* 5308	* 5358	* 6850	5700	* 6945	2831	* 4561	1887			* 2734	1586	180
-2000	* 3646	* 3646	* 4067	2672	* 2891	1346					* 1811	394	3590
-79	* 8039	* 8037	* 15071	5892	* 5713	2255					* 3993	2192	145

Illustration 72

g06664614

Lift chart above: canopy, rubber belts, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
-4000							* 1200	* 1199			* 883	* 883	4150
-157							* 2846	* 2837			* 1882	* 1880	163
-3000							* 1200	* 1197			* 776	* 775	4610
-118							* 2647	* 2639			* 1716	* 1715	189
-2000					* 1841	* 1837	* 1474	1054	* 1296	745	* 776	* 776	5130
-79					* 4060	* 4000	* 3249	2325	* 2883	1642	* 1710	* 1710	202
-1000					* 2756	1537	* 1827	1512	* 1491	729	* 828	888	5280
-39					* 6075	3399	* 4829	2231	* 3287	1606	* 1625	1016	205
0			* 1637	* 1637	* 3154	1487	* 2079	982	* 1087	718	* 965	714	5020
0			* 3610	* 3610	* 7043	3279	* 4571	2155	* 2397	1084	* 2102	1075	198
-1000	* 2407	* 2407	* 3100	* 3105	* 3150	1481	* 2077	976			* 1280	817	4560
-39	* 1308	* 1308	* 6850	* 6847	* 6945	3265	* 4561	2151			* 2734	1893	180
-2000	* 3646	* 3645	* 4667	2925	* 2391	1510					* 1811	1122	3668
-79	* 8039	* 8037	* 10671	6605	* 5713	3330					* 3993	2474	145

Illustration 73

g06664615

Lift chart above: canopy, rubber belts, long stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1200	* 1198			* 803	* 803	4190
157							* 2646	* 2637			* 1882	* 1880	963
3000							* 1200	* 1199			* 776	* 776	4810
118							* 2647	* 2639			* 1716	* 1715	589
2000					* 1841	* 1837	* 1474	1054	* 1299	745	* 376	* 376	5130
79					* 4060	* 4050	* 3249	2525	* 2863	1642	* 1718	* 1710	202
1000					* 2706	1537	* 1827	1012	* 1491	729	* 628	688	5200
39					* 6076	3396	* 4029	2251	* 3287	1608	* 1825	1516	205
0			* 1637	* 1637	* 3194	1487	* 2073	992	* 1087	718	* 953	714	3020
0			* 3632	* 3610	* 7043	3279	* 4571	2156	* 2397	1584	* 2102	1575	139
-1000	* 2407	* 2407	* 3196	* 3105	* 3150	1481	* 2077	976			* 1248	817	4560
-38	* 5008	* 5308	* 6250	* 6847	* 6845	3265	* 4581	2151			* 2734	1891	580
-2000	* 3646	* 3645	* 4567	2995	* 2591	1516					* 1811	1122	3690
-79	* 8039	* 8037	* 10071	6625	* 5713	3330					* 3993	2474	145

Illustration 74

g06664616

Lift chart above: canopy, rubber belts, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	59		79		110		157		187				
4000													3030
187													181
3000							1102	328					4550
110							2431	2045					179
2000					1889	1351	1071	896					4896
79					3724	3045	2561	1980					193
1000					1890	1290	1032	861					4560
30					3505	2845	2275	1890					125
0					1851	1255	1007	858					4770
0					3420	2765	2220	1845					188
-1000	* 2885	* 2885	* 3657	2445	1854	1258	1007	858					4260
-35	* 6362	* 6362	* 7843	5597	3427	2774	2220	1845					169
-2000	* 4401	* 4401	3364	2510	1896	1297							3360
-79	* 9704	* 9704	7417	5594	3520	2855							130

Illustration 75

g06664646

Lift chart above: canopy, triple grouser tracks, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305CR Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000											* 3558	* 1058	3630
157											* 2334	* 2332	151
3000							* 1364	1017			* 993	* 893	4550
118							* 3006	2245			* 2101	* 2101	179
2000					* 2121	1525	* 1616	887			* 990	* 723	4890
79					* 4677	3362	* 3564	2176			* 2094	* 1594	193
1000					* 2963	1432	* 1939	930			* 1819	* 896	4960
39					* 6834	3156	* 4275	2064			* 2347	* 1833	825
0					* 3260	1396	* 2132	826			* 1196	* 726	4770
0					* 7169	3079	* 4701	2045			* 2625	* 1691	188
-1000	* 2890	* 2880	* 3558	2775	* 3897	1399	* 2045	326			* 1608	* 846	4280
-39	* 6362	* 6362	* 7845	6179	* 6829	3085	* 4510	2042			* 3545	* 1896	169
-2000	* 4432	* 4401	* 4993	2840	* 2322	1439					* 1939	* 1252	3300
-79	* 9706	* 9704	* 8827	6369	* 6116	3172					* 4356	* 2761	130

Illustration 76

g06664648

Lift chart above: canopy, triple grouser tracks, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1858	* 1058	3530
167											* 2332	* 2332	151
3900							* 1361	1038			* 865	* 865	4350
118							* 3001	2269			* 2101	* 2101	178
2000					* 2117	1542	1200	1008			* 860	* 743	4890
79					* 4885	3400	2648	2220			* 2594	1838	183
1000					1785	1432	1161	872			845	715	4090
39					3935	3201	2590	2142			1864	1577	159
0					1748	1417	1136	848			850	747	4770
0					3856	3124	2505	2091			1852	1647	188
-1030	* 2885	* 2885	* 3557	2746	1749	1419	1136	848			1034	866	4280
-35	* 6362	* 6362	* 7843	6555	3857	3135	2505	2091			2281	1914	189
-2000	* 4401	* 4401	* 4512	2816	1791	1458					1548	1273	3300
-79	* 9704	* 9704	* 8847	8136	2955	3214					3450	2807	130

Illustration 77

g06664652

Lift chart above: canopy, triple grouser tracks, standard stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1500 59		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1008	* 1008	3830
157											* 2304	* 2332	151
3000							* 1384	* 1102			* 955	* 953	4550
118							* 3006	3497			* 2101	* 2101	179
2000					* 2121	1694	* 1816	* 1102			* 956	* 812	4890
79					* 4677	3736	* 3564	3430			* 2094	1791	199
1000					* 2963	1602	* 1939	1003			* 1019	783	4960
39					* 6534	3532	* 4275	2348			* 2047	1727	195
0					* 3200	1566	* 2132	1021			* 1100	818	4770
0					* 7189	3453	* 4701	2296			* 2625	1605	188
-1000	* 2885	* 2885	* 3058	* 3557	* 3097	1569	* 2045	1041			* 1009	952	4280
-39	* 8362	* 8362	* 7845	* 7845	* 6829	3459	* 4810	2296			* 3545	2099	169
-2000	* 4402	* 4402	* 4003	3164	* 2322	1609					* 1930	1400	3380
-79	* 3756	* 3754	* 3627	6976	* 5119	3546					* 4256	3066	130

Illustration 78

g06664653

Lift chart above: canopy, triple grouser tracks, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
-4000							* 1158	324			* 853	* 853	4158
157							* 2637	2038			* 1860	* 1860	163
3000							* 1157	921			* 778	* 778	4818
118							* 2638	2031			* 1715	* 1715	189
2000					* 1837	1383	1061	667	739	622	* 778	595	3138
79					* 4050	3049	2336	1956	1629	1371	* 1710	1311	202
1000					1881	1281	1016	846	722	606	680	571	3288
39					3487	2624	2241	1855	1593	1337	1499	1258	205
0			* 1637	* 1637	1527	1201	985	816	711	596	707	592	3028
0			* 3610	* 3610	3367	2714	2173	1800	1568	1314	1550	1306	198
-1000	* 2467	* 2467	* 3105	2591	1921	1225	978	810			813	678	4268
-39	* 3306	* 3306	* 6647	5272	3353	2702	2157	1785			1732	1490	180
-2000	* 3645	* 3645	3295	2446	1952	1254					1152	935	3698
-79	* 8037	* 8037	7265	5398	3422	2765					2497	2062	145

Illustration 79

g06664655

Lift chart above: canopy, triple grouser tracks, long stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1300		2000		3000		4000		5000				(mm) (in)
	30		70		118		157		197				
4000													
157							* 1200	1014			* 853	* 853	4150
5000							* 2646	2257			* 1882	* 1882	163
118							* 1200	1011			* 778	* 778	4810
2000							* 2647	2229			* 1716	* 1716	166
70					* 1841	1526	* 1474	977	* 1228	886	* 778	686	3130
1000					* 4060	3368	* 3249	2153	* 2863	1912	* 1710	1447	303
30					* 2786	1423	* 1827	934	* 1491	870	* 828	632	5200
0					* 6076	3137	* 4029	2060	* 3287	1479	* 1625	1382	306
0			* 1637	* 1637	* 3194	1372	* 2073	969	* 1987	860	* 953	858	6020
0			* 3610	* 3610	* 7943	3025	* 4571	1995	* 2397	1454	* 2102	1446	136
-1000	* 2437	* 2407	* 3186	* 3186	* 3150	1386	* 2077	899			* 1240	791	4590
30	* 5388	* 6308	* 6850	* 6847	* 6946	3012	* 4591	1960			* 2734	1855	186
-2000	* 3646	* 3646	* 4567	2777	* 2591	1386					* 1811	1835	3690
30	* 4039	* 6037	* 10071	6123	* 5719	3077					* 8883	2283	145

Illustration 80

g06664657

Lift chart above: canopy, triple grouser tracks, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1500		2000		3000		4000		5000				(mm) (in)
	39		79		116		157		197				
-4000							* 1196	* 1196			* 853	* 853	4193
157							* 2637	* 2637			* 1890	* 1890	163
3000							* 1197	1031			* 778	* 778	4810
116							* 2638	2274			* 1715	* 1715	189
2000					* 1837	1544	1190	997	835	705	* 778	* 778	3193
79					* 4080	3405	2624	2199	1842	1556	* 1710	* 1710	202
1000					1776	1442	1146	956	819	690	* 828	851	3299
39					3917	3179	2526	2106	1806	1522	* 1626	1435	205
0			* 1637	* 1837	1723	1392	1115	927	888	679	803	675	3029
0			* 3610	* 3610	3797	3070	2458	2043	1782	1498	1772	1490	198
-1000	* 2467	* 2467	* 3105	* 3105	1718	1307	1108	920			821	772	4262
-39	* 5326	* 5326	* 6647	* 6647	3783	3057	2442	2028			2031	1701	180
-2000	* 3645	* 3645	3692	2748	1747	1415					1277	1057	3698
-79	* 8037	* 8037	8143	6040	3852	3120					3915	2301	145

Illustration 81

g06664658

Lift chart above: canopy, triple grouser tracks, long stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	33		79		118		157		197				
4000													4150
167							* 1200	* 1196			* 893	* 893	163
3000							* 2645	* 2637			* 1882	* 1880	163
118							* 1200	* 1197			* 376	* 376	4810
2000							* 2647	* 2639			* 1716	* 1716	689
79					* 1841	* 1837	* 1474	1082	* 1295	773	* 778	* 778	3130
1000					* 4060	* 4050	* 3289	2407	* 2863	1704	* 1718	* 1710	202
33					* 2758	1582	* 1827	1045	* 1491	757	* 628	* 628	5200
0					* 6076	3511	* 4029	2514	* 3287	1670	* 1825	* 1826	205
0			* 1637	* 1637	* 3184	1542	* 2073	1020	* 1087	747	* 953	743	5020
0			* 3610	* 3610	* 7043	3399	* 4571	2249	* 2997	1646	* 2102	1637	198
-1000	* 2407	* 2407	* 3109	* 3103	* 3150	1534	* 2077	1013			* 1248	648	4560
-33	* 5008	* 5008	* 6850	* 6847	* 6845	3387	* 4581	2234			* 2734	1870	585
-2000	* 5645	* 5645	* 4567	3100	* 2551	1565					* 1811	1163	3690
-79	* 8039	* 8037	* 10071	6836	* 5713	3451					* 3893	2545	145

Illustration 82

g06664660

Lift chart above: canopy, triple grouser tracks, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1200	* 1196			* 853	* 853	4150
157							* 2646	* 2637			* 1882	* 1890	563
3000							* 1200	* 1197			* 778	* 778	4010
118							* 2647	* 2639			* 1716	* 1715	589
2000					* 1841	* 1837	* 1474	1112	* 1295	788	* 778	* 778	3130
79					* 4060	* 4050	* 3249	2452	* 2863	1758	* 1718	* 1710	202
1000					* 2758	1822	* 1827	1065	* 1491	773	* 828	* 828	5200
39					* 6076	3577	* 4029	2556	* 3287	1703	* 1825	* 1825	205
0			* 1637	* 1637	* 3194	1571	* 2073	1040	* 1087	762	* 953	756	5020
0			* 3510	* 3610	* 7043	3485	* 4571	2295	* 2997	1660	* 2102	1671	199
-1000	* 2407	* 2407	* 3196	* 3105	* 3150	1598	* 2077	1000			* 1248	865	4560
-39	* 5908	* 5908	* 6850	* 6847	* 6845	3452	* 4581	2276			* 2734	1998	580
-2000	* 3646	* 3645	* 4367	3157	* 2591	1595					* 1811	1186	3690
-79	* 8039	* 8037	* 10071	6961	* 5713	3517					* 3893	2514	145

Illustration 83

g06664683

Lift chart above: canopy, triple grouser tracks with pads, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1058	* 1058	3830
157											* 2334	* 2092	651
3000							* 1264	1062			* 990	* 893	4050
118							* 3008	2343			* 2101	* 2101	579
2000					* 2121	1591	* 1616	1032			* 990	758	4890
79					* 4677	3506	* 3564	2276			* 2094	1671	193
1000					* 2868	1499	* 1939	895			* 1619	730	4960
39					* 6534	3354	* 4275	2154			* 2347	1999	195
0					* 3260	1463	* 2132	871			* 1198	762	4770
0					* 7186	3225	* 4701	2142			* 2625	1691	588
-1000	* 2095	* 2865	* 3558	2902	* 3857	1486	* 2045	871			* 1608	868	4260
-39	* 6362	* 6362	* 7845	6399	* 6829	3232	* 4510	2142			* 3545	1957	569
-2000	* 4402	* 4401	* 4093	2907	* 2322	1505					* 1838	1310	3000
-79	* 9706	* 8704	* 8827	6542	* 5119	3318					* 4256	2899	530

Illustration 84

g06664691

Lift chart above: canopy, triple grouser tracks with pads, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1500		2000		3000		4000		5000				(mm) (in)
	50		79		118		157		197				
-4000											* 1058	* 1058	3650
-157											* 2332	* 2332	151
-3000							* 1561	1040			* 953	* 953	4550
-118							* 3601	3381			* 2101	* 2101	179
-2000					* 2117	1603	1258	1050			* 958	775	4890
-79					* 4988	3535	2774	2315			* 2094	1710	193
-1000					1873	1513	1210	1013			* 1020	747	4860
-39					4129	3306	2688	2235			* 2248	1648	195
-0					1834	1478	1194	990			951	780	4770
-0					4044	3259	2634	2184			2054	1721	188
-1000	* 2885	* 2885	* 3057	2662	1837	1481	1194	990			1058	906	4280
-39	* 6362	* 6362	* 7823	6311	4851	3265	2633	2183			2388	1996	169
-2000	* 4401	* 4401	* 4012	2924	1879	1519					1622	1327	3300
-79	* 5704	* 5704	* 5547	6488	4144	3393					3577	2926	130

Illustration 85

g06664694

Lift chart above: canopy, triple grouser tracks with pads, standard stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
4000													
157											* 1058	* 1058	3850
3000							* 1364	* 1381			* 2304	* 2302	121
118							* 3008	* 3001			* 953	* 955	4050
2000					* 2121	1761	* 1616	1147			* 2101	* 2101	179
79					* 4677	3883	* 3564	3579			* 950	* 950	4850
1000					* 2963	1968	* 1939	1110			* 2094	* 2094	193
39					* 6534	3678	* 3075	2447			* 1049	817	4960
0					* 3260	1632	* 2132	1086			* 2347	1822	185
0					* 7189	3600	* 4701	2396			* 1395	854	4770
-1000	* 2885	* 2885	* 3558	* 3557	* 3097	1835	* 2045	1086			* 3625	1864	188
-39	* 6362	* 6362	* 7845	* 7845	* 6825	3606	* 2510	2395			* 1805	395	4280
-2000	* 4402	* 4401	* 4003	3290	* 2322	1875					* 3545	2190	169
-79	* 9706	* 9704	* 8827	7355	* 5119	3093					* 1830	1458	3300
											* 4256	3216	130

Illustration 86

g06664698

Lift chart above: canopy, triple grouser tracks with pads, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	90		79		118		157		197				
4000													
157							" 1186	366			" 853	" 853	4158
3000							" 2637	2131			" 1880	" 1880	163
118							" 1197	363			" 778	" 778	4818
2000							" 2638	2123			" 1715	" 1715	189
79					" 8837	1484	1119	929	782	654	" 776	628	3138
1000					" 4050	3185	2458	2048	1725	1441	" 1710	1379	202
38					1883	1342	1075	867	708	638	" 828	601	3288
0			" 1637	" 1837	3681	2959	2370	1857	1608	1407	" 1626	1326	205
0			" 3610	" 3810	1815	1292	1044	858	758	628	751	624	8028
-1000	" 2457	" 2457	" 3100	2505	3568	2849	2301	1893	1665	1384	1055	1376	198
-39	" 5368	" 5368	" 6847	5524	3547	2837	2288	1878			989	1578	180
-2000	" 3645	" 3645	3474	2582	1648	1315					1197	981	3888
-79	" 8037	" 8037	7699	5686	3838	2500					2940	2164	145

Illustration 87

g06664709

Lift chart above: canopy, triple grouser tracks with pads, long stick, angle blade, no optional counterweight, no bucket, blade UP.

Product Information Section
305CR Excavator Equipped with Canopy

(mm) (in)	1000 39		2300 79		3600 118		4000 157		5000 197				(mm) (in)
													
4000							* 1200	* 1159			* 853	* 853	4150
157							* 2646	* 2637			* 1882	* 1880	663
3000							* 1200	* 1157			* 776	* 778	4810
118							* 2647	* 2639			* 1716	* 1715	589
2000					* 1841	* 1837	* 1474	1022	* 1299	720	* 776	* 778	5130
79					* 4060	* 4050	* 3249	2255	* 2963	1567	* 1716	* 1710	202
1000					* 2756	1488	* 1827	979	* 1491	754	* 628	664	5200
39					* 6076	3284	* 4029	2156	* 3287	1553	* 1823	1454	205
0			* 1637	* 1607	* 3154	1438	* 2073	990	* 1087	694	* 933	890	5020
0			* 3630	* 3610	* 7043	3171	* 4571	2094	* 2997	1529	* 2332	1521	598
-1000	* 2407	* 2407	* 3106	* 3105	* 3150	1433	* 2077	943			* 1245	765	4960
-39	* 5309	* 5306	* 6850	* 6847	* 6845	3159	* 4581	2079			* 2734	1739	180
-2000	* 3645	* 3645	* 4357	2903	* 2891	1462					* 1811	1096	3690
-79	* 8039	* 8037	* 10071	6802	* 5713	3223					* 2593	2394	545

Illustration 88

g06664714

Lift chart above: canopy, triple grouser tracks with pads, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2300 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1190	* 1190			* 803	* 803	4150
167							* 2637	* 2637			* 1688	* 1688	163
3000							* 1197	* 1197			* 778	* 778	4810
118							* 2639	* 2639			* 1715	* 1715	589
2000					* 1837	* 1837	1248	1035	819	737	* 778	* 778	5130
79					* 4050	* 4050	2753	2292	1938	1626	* 1715	* 1715	202
1000					1864	1503	1204	998	868	722	* 828	* 828	5200
39					4111	3315	2695	2200	1902	1592	* 1828	* 1828	205
0			* 1637	* 1637	1810	1453	1173	983	852	711	* 954	* 954	5020
0			* 3610	* 3610	3990	3288	2686	2196	1878	1568	* 2193	* 2193	198
-1000	* 2407	* 2407	* 3193	* 3193	1804	1448	1166	962			970	807	4560
.35	* 5908	* 5908	* 6847	* 6847	3977	3193	2573	2121			2115	1793	583
-2000	* 5645	* 5645	3871	2862	1635	1476					1542	1193	3690
.75	* 8037	* 8037	8836	6312	4046	3288					2566	2434	545

Illustration 89

g06664719

Lift chart above: canopy, triple grouser tracks with pads, long stick, angle blade, optional counterweight, no bucket, blade UP.

Product Information Section

Lifting Capacities

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4200							* 1200	* 1199			* 883	* 883	4150
157							* 2646	* 2637			* 1682	* 1680	163
3000							* 1200	* 1199			* 778	* 778	4810
118							* 2647	* 2638			* 1716	* 1715	169
2000					* 1841	* 1837	* 1474	* 1472	* 1299	807	* 778	* 778	5150
79					* 4060	* 4050	* 3249	2556	* 2863	1779	* 1710	* 1710	202
1000					* 2756	1639	* 1827	1094	* 1491	791	* 628	* 628	3260
39					* 6076	3658	* 4029	2415	* 3287	1745	* 1625	* 1625	205
0			* 1637	* 1637	* 3194	1608	* 2073	1065	* 1067	781	* 953	778	3820
0			* 3610	* 3610	* 7043	3546	* 4571	2348	* 2397	1721	* 2102	1712	198
-1000	* 2407	* 2407	* 3106	* 3106	* 3150	1602	* 2077	1066			* 1240	886	4560
-39	* 5309	* 5308	* 6850	* 6847	* 6945	3533	* 4581	2333			* 2734	1954	180
-2000	* 3646	* 3645	* 4567	3227	* 2591	1632					* 1811	1213	3686
-79	* 8039	* 8037	* 10071	7115	* 5713	3598					* 3993	2675	145

Illustration 90

g06664723

Lift chart above: canopy, triple grouser tracks with pads, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

i08424971

Lifting Capacities (304 Excavator Equipped with Canopy)

SMCS Code: 7000

S/N: AN41-Up

S/N: 5C51-Up

S/N: AX51-Up

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based upon a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools. The weight of a work tool must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Consult your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 56

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(continued)

(Table 56, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track type excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine



Heavy Lift ON

304 Excavator with Standard Stick

(mm) (in)	1000		2000		3000		4000				(mm) (in)		
	39		79		118		157						
													
4000					* 984	* 984			* 818	* 818	3230		
157					* 2170	* 2170			* 1799	* 1799	127		
3000					* 941	* 941	785	680	* 698	* 698	4090		
118					* 2076	* 2076	1732	1500	* 1540	* 1540	161		
2000													
79					* 1947	* 1947	* 1276	1030	775	670	* 684	558	4500
1000					* 4293	* 4293	* 2617	2271	1709	1478	* 1507	1231	177
39							1146	973	753	650	611	529	4820
0							2528	2145	1861	1432	1347	1166	182
0					* 1617	* 1617	1111	939	737	634	634	548	4460
-1000	* 2070	* 2070			* 3564	* 3564	2449	2071	1626	1398	1399	1208	176
-39													
-2000	* 4565	* 4565											
-79	* 3391	* 3391											
					</								

Illustration 91

g06661102

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	727	* 698	* 698	4090
118					* 2076	* 2076	* 2068	1803	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	717	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1881	* 1807	* 1807	177
1000					* 1752	1045	* 1255	896	* 727	586	4620
39					* 3862	2305	* 2766	1534	* 1604	1249	162
0			* 1617	* 1617	* 2006	1011	* 1359	680	* 846	567	4460
0			* 3664	* 3664	* 4423	2230	* 2996	1800	* 1866	1294	176
-1000	* 2070	* 2070	* 3094	1694	* 1925	1037			* 1144	682	4000
-39	* 4565	* 4565	* 6821	4177	* 4244	2222			* 2522	1505	157
-2000	* 3391	* 3391	* 2293	1941	* 1295	1038			* 1259	1021	3040
-79	* 7477	* 7477	* 5055	4280	* 2656	2288			* 2775	2252	120

Illustration 92

g06661103

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2179	* 2179			* 1799	* 1799	127
3000					* 941	* 941	* 947	781	* 898	* 898	4090
118					* 2076	* 2076	* 2098	1723	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	888	771	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	1958	1701	* 1507	* 1507	177
1000					1313	1118	868	751	* 727	614	4620
39					2695	2466	1910	1655	* 1604	1353	182
0			* 1617	* 1617	1277	1085	850	735	* 646	636	4460
0			* 3584	* 3584	2816	2382	1875	1621	* 1868	1403	176
-1000	* 2070	* 2070	2474	1998	1273	1081			853	738	4006
-39	* 4565	* 4565	5456	4406	2807	2364			1880	1626	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1111			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	2449			* 2775	* 2775	120

Illustration 93

g06661104

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 696	* 696	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	821	* 664	* 664	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1811	* 1507	* 1507	177
1000					* 1752	1197	* 1255	800	* 727	* 727	4620
39					* 3862	2639	* 2768	1764	* 1604	* 1604	182
0			* 1617	* 1617	* 2096	1163	* 1339	784	* 846	675	4460
0			* 3584	* 3584	* 4423	2563	* 2996	1729	* 1898	1496	178
-1000	* 2070	* 2070	* 3094	2170	* 1925	1159			* 1144	787	4000
-39	* 4565	* 4565	* 6821	4785	* 4244	2555			* 2632	1735	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 94

g06661105

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 818	* 818	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	714	* 698	* 698	4080
118					* 2076	* 2076	* 2088	1574	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	1078	815	704	* 684	587	4500
79			* 4393	* 4393	* 2817	2377	1798	1552	* 1597	1298	177
1000					1206	1021	794	683	* 727	557	4620
39					2659	2251	1750	1506	* 1694	1228	182
0			* 1617	* 1617	1170	967	778	668	669	577	4460
0			* 3664	* 3664	2580	2177	1715	1472	1476	1273	178
-1000	* 2070	* 2070	2272	1823	1166	984			780	670	4000
-39	* 4565	* 4565	5010	4019	2571	2169			1720	1477	157
-2000	* 3381	* 3381	* 2293	1868	* 1295	1013			* 1259	997	3040
-79	* 7477	* 7477	* 5055	4119	* 2858	2234			* 2778	2199	120

Illustration 95

g06661122

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2176	* 2176			* 1799	* 1799	127
3000					* 941	* 941	* 947	762	* 898	* 898	4060
118					* 2076	* 2076	* 2068	1681	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1084	752	* 884	* 884	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1859	* 1507	* 1507	177
1000					* 1752	1097	* 1255	731	* 727	598	4820
39					* 3862	2419	* 2768	1613	* 1604	1314	182
0			* 1617	* 1617	* 2008	1063	* 1359	716	* 846	616	4480
0			* 3584	* 3584	* 4423	2344	* 2996	1578	* 1868	1363	176
-1000	* 2970	* 2970	* 5094	1989	* 1925	1059			* 1144	718	4000
-39	* 4565	* 4565	* 6821	4385	* 4244	2335			* 2522	1583	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1069			* 1259	1072	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	3402			* 2775	2364	120

Illustration 96

g06661123

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	815	* 698	* 698	4000
118					* 2076	* 2076	* 2088	1798	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	928	806	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	2047	1775	* 1807	* 1807	177
1000					1372	1167	907	784	* 727	* 727	4620
39					3026	2572	1999	1729	* 1604	* 1604	182
0			* 1617	* 1617	1338	1133	891	769	* 848	886	4480
0			* 3564	* 3564	2947	2498	1964	1685	* 1866	1488	176
-1000	* 2070	* 2070	2567	2085	1332	1129			893	771	4000
-39	* 4565	* 4565	5704	4597	2938	2490			1970	1700	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5065	* 5065	* 2866	* 2866			* 2775	* 2775	120

Illustration 97

g06661124

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2176	* 2176			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 898	* 898	4060
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1084	857	* 884	* 884	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1889	* 1507	* 1507	177
1000					* 1752	1248	* 1255	836	* 727	* 727	4620
39					* 3862	2753	* 2768	1843	* 1604	* 1604	182
0			* 1617	* 1617	* 2006	1214	* 1359	820	* 846	709	4460
0			* 3584	* 3584	* 4423	2677	* 2996	1808	* 1868	1564	176
-1000	* 2970	* 2970	* 5094	3264	* 1925	1211			* 1144	822	4000
-39	* 4565	* 4565	* 6821	4993	* 4244	2689			* 2522	1614	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 98

g06661125

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	769	709	* 698	* 698	4090
118					* 2076	* 2076	1695	1563	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	1071	758	689	* 684	583	4500
79			* 4293	* 4293	* 2617	2361	1672	1541	* 1507	1286	177
1000					1122	1014	737	676	597	553	4620
39					2473	2235	1624	1495	1316	1219	182
0			* 1617	* 1617	1066	960	720	663	620	573	4480
0			* 3564	* 3564	2394	2161	1589	1461	1366	1263	176
-1000	* 2070	* 2070	2113	1810	1062	978			723	665	4000
-39	* 4565	* 4565	4658	3991	2366	2153			1594	1486	157
-2000	* 3391	* 3391	* 2293	1855	1114	1006			* 1259	990	3040
-79	* 7477	* 7477	* 5055	4090	2456	2218			* 2775	2163	120

Illustration 99

g06661140

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	756	* 698	* 698	4090
118					* 2076	* 2076	* 2088	1688	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	746	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1644	* 1507	* 1507	177
1000					* 1752	1067	* 1255	725	* 727	591	4620
39					* 3662	2367	* 2766	1596	* 1604	1302	162
0			* 1617	* 1617	* 2006	1053	* 1359	709	* 648	612	4460
0			* 3564	* 3564	* 4423	2322	* 2996	1563	* 1696	1350	176
-1000	* 2070	* 2070	* 3094	1968	* 1925	1049			* 1144	711	4000
-39	* 4565	* 4565	* 6821	4340	* 4244	2313			* 2522	1569	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1079			* 1259	1062	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2666	2380			* 2775	2342	120

Illustration 100

g06661141

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 964	* 964			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	810	* 698	* 698	4090
118					* 2076	* 2076	* 2088	1785	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	871	800	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	1921	1764	* 1507	* 1507	177
1000					1288	1159	850	779	* 727	* 727	4620
39					2640	2557	1673	1718	* 1604	* 1604	182
0			* 1617	* 1617	1252	1128	833	764	718	661	4460
0			* 3564	* 3564	2761	2482	1838	1684	1553	1458	176
-1000	* 2070	* 2070	2428	2072	1248	1122			836	766	4000
-39	* 4565	* 4565	5353	4568	2752	2474			1843	1689	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2656	* 2656			* 2775	* 2775	120

Illustration 101

g06661143

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	850	* 664	* 664	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1874	* 1507	* 1507	177
1000					* 1752	1238	* 1255	829	* 727	* 727	4620
39					* 3862	2730	* 2768	1827	* 1604	* 1604	182
0			* 1617	* 1617	* 2096	1204	* 1339	813	* 846	703	4460
0			* 3584	* 3584	* 4423	2654	* 2998	1793	* 1898	1551	176
-1000	* 2070	* 2070	* 3094	3243	* 1925	1200			* 1144	816	4000
-39	* 4565	* 4565	* 6821	4946	* 4244	2646			* 2632	1796	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2656	* 2656			* 2775	* 2775	120

Illustration 102

g06661145

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1790	* 1790	127
3000					* 941	* 941	809	742	* 698	* 698	4090
118					* 2076	* 2076	1784	1636	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	799	732	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	1761	1615	* 1507	* 1507	177
1000					1181	1062	777	711	* 727	581	4620
39					2604	2342	1713	1569	* 1604	1281	162
0			* 1617	* 1617	1345	1028	761	698	655	602	4480
0			* 3664	* 3664	2525	2267	1678	1535	1444	1327	176
-1000	* 2070	* 2070	2225	1897	1141	1025			763	698	4000
-39	* 4565	* 4565	4907	4182	2517	2259			1683	1540	157
-2000	* 3391	* 3391	* 2293	1942	* 1295	1054			* 1259	1036	3040
-79	* 7477	* 7477	* 5055	4281	* 2856	2325			* 2775	2288	120

Illustration 103

g06661162

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	791	* 698	* 698	4090
118					* 2076	* 2076	* 2088	1745	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	781	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1723	* 1507	* 1507	177
1000					* 1752	1139	* 1255	760	* 727	620	4620
39					* 3862	2511	* 2768	1676	* 1604	1368	182
0			* 1617	* 1617	* 2006	1104	* 1359	745	* 846	643	4460
0			* 3564	* 3564	* 4423	2435	* 2996	1642	* 1886	1419	176
-1000	* 2070	* 2070	* 3094	2062	* 1925	1101			* 1144	747	4000
-39	* 4565	* 4565	* 6621	4547	* 4244	2427			* 2522	1647	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 104

g06661163

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1790	* 1790	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	912	833	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	2010	1837	* 1807	* 1807	177
1000					1347	1268	890	813	* 727	* 727	4620
39					2971	2663	1962	1792	* 1604	* 1604	162
0			* 1617	* 1617	1312	1174	874	797	* 646	691	4480
0			* 3664	* 3664	2892	2588	1927	1757	* 1866	1523	176
-1000	* 2070	* 2070	2540	2158	1308	1170			876	799	4000
-39	* 4565	* 4565	5601	4759	2884	2581			1932	1763	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2656	* 2656			* 2775	* 2775	120

Illustration 105

g06661164

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade UP.

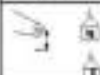
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4000
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	885	* 684	* 684	4500
79			* 4293	* 4293	* 2617	* 2617	* 2412	1952	* 1807	* 1807	177
1000					* 1752	1290	* 1255	864	* 727	* 727	4620
39					* 3662	2644	* 2766	1906	* 1604	* 1604	182
0			* 1617	* 1617	* 2006	1255	* 1359	849	* 846	* 846	4460
0			* 3564	* 3564	* 4423	2760	* 2996	1871	* 1666	* 1666	176
-1000	* 2070	* 2070	* 5094	2337	* 1925	1252			* 1144	851	4000
-39	* 4565	* 4565	* 6821	5153	* 4244	2760			* 2522	1877	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5065	* 5065	* 2666	* 2666			* 2775	* 2775	120

Illustration 106

g06661165

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade DOWN.

304 Excavator with Long Stick

(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	678	* 689	585	4370
118							* 1927	1496	* 1540	1289	172
2000					* 1080	* 1080	765	663	583	504	4750
79					* 2362	* 2362	1884	1462	1286	1111	187
1000					1140	965	741	637	553	477	4860
39					2514	2128	1635	1405	1220	1052	191
0			* 1710	* 1710	1091	919	719	616	570	490	4710
0			* 3770	* 3770	2466	2027	1586	1356	1257	1081	185
-1000	* 1770	* 1770	2108	1688	1078	907	713	610	651	558	4280
-39	* 3903	* 3903	4649	3722	2377	2000	1573	1346	1434	1231	169
-2000	* 2942	* 2942	2152	1727	1096	925			906	771	3430
-79	* 6266	* 6266	4744	3607	2420	2040			1967	1700	135

Illustration 107

g06661106

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade UP.

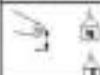
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	725	* 699	* 699	4370
118							* 1927	1599	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	709	* 894	540	4750
79					* 2382	* 2382	* 2157	1564	* 1831	1191	187
1000					* 1589	1038	* 1166	683	* 743	512	4860
39					* 3504	2290	* 2571	1507	* 1637	1129	191
0			* 1710	* 1710	* 1835	992	* 1313	662	* 661	527	4710
0			* 3770	* 3770	* 4262	2186	* 2895	1460	* 1898	1162	185
-1000	* 1770	* 1770	* 2781	1845	* 1956	979	* 1299	656	* 1138	600	4280
-39	* 3903	* 3903	* 6133	4069	* 4313	2159	* 2863	1447	* 2509	1322	169
-2000	* 2842	* 2842	* 2706	1885	* 1572	998			* 1237	829	3430
-79	* 6268	* 6268	* 5966	4157	* 3467	2200			* 2727	1826	135

Illustration 108

g06661107

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 899	* 899	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	784	* 894	586	4750
79					* 2382	* 2382	* 2157	1685	* 1631	1292	187
1000					1306	1111	854	738	* 743	557	4860
39					2661	2450	1864	1628	* 1637	1228	191
0			* 1710	* 1710	1257	1065	832	717	662	573	4710
0			* 3770	* 3770	2773	2348	1835	1581	1460	1264	185
-1000	* 1770	* 1770	* 2781	1950	1344	1053	826	711	754	651	4280
-39	* 3903	* 3903	* 6133	4299	2744	2321	1822	1568	1663	1436	169
-2000	* 2642	* 2642	* 2706	1986	1264	1071			1044	893	2430
-79	* 6268	* 6268	* 5966	4384	2767	2362			2302	1970	135

Illustration 109

g06661108

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	814	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1794	* 1531	* 1531	187
1000					* 1589	1190	* 1188	788	* 743	594	4880
39					* 3504	2623	* 2571	1737	* 1637	1310	191
0			* 1710	* 1710	* 1833	1143	* 1313	766	* 661	612	4710
0			* 3770	* 3770	* 4262	2520	* 2895	1880	* 1899	1360	185
-1000	* 1770	* 1770	* 2781	2121	* 1956	1130	* 1299	760	* 1138	896	4280
-39	* 3903	* 3903	* 6133	4877	* 4313	2493	* 2863	1877	* 2509	1534	169
-2000	* 2842	* 2842	* 2706	2161	* 1572	1149			* 1237	956	3430
-79	* 6268	* 6268	* 5986	4785	* 3487	2534			* 2727	2107	135

Illustration 110

g06661109

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

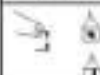
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3800
157									* 1724	* 1724	142
3000							* 874	712	* 899	* 899	4370
118							* 1827	1569	* 1540	* 1540	172
2000					* 1080	* 1080	809	696	* 694	531	4750
79					* 2382	* 2382	1783	1535	* 1531	1171	187
1000					1200	1014	782	671	585	504	4860
39					2645	2235	1724	1479	1290	1110	191
0			* 1710	* 1710	1150	967	780	649	603	516	4710
0			* 3770	* 3770	2537	2133	1675	1432	1329	1142	185
-1000	* 1770	* 1770	2221	1775	1137	955	754	644	688	589	4280
-39	* 3903	* 3903	4897	3913	2508	2106	1662	1419	1516	1298	169
-2000	* 2842	* 2842	2264	1813	1157	974			955	811	3430
-79	* 6268	* 6268	4992	3998	2551	2147			2108	1789	135

Illustration 111

g06661126

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		78		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	745	* 694	569	4750
78					* 2382	* 2382	* 2157	1643	* 1831	1264	187
1000					* 1589	1090	* 1166	719	* 743	540	4860
39					* 3504	2404	* 2571	1566	* 1637	1191	191
0			* 1710	* 1710	* 1895	1043	* 1313	698	* 861	556	4710
0			* 3770	* 3770	* 4262	2300	* 2895	1538	* 1899	1226	185
-1000	* 1770	* 1770	* 2781	1940	* 1956	1031	* 1299	692	* 1138	832	4280
-39	* 3903	* 3903	* 6133	4277	* 4313	2273	* 2863	1525	* 2509	1395	169
-2000	* 2842	* 2842	* 3706	1979	* 1572	1049			* 1237	872	3430
-78	* 6268	* 6268	* 6986	4365	* 3467	2314			* 2727	1623	135

Illustration 112

g06661127

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

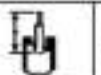
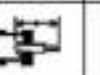
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3800
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	797	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1758	* 1531	* 1531	187
1000					1366	1159	895	772	* 743	583	4860
39					3012	2556	1973	1701	* 1637	1267	191
0			* 1710	* 1710	1317	1113	873	750	695	601	4710
0			* 3770	* 3770	2904	2455	1924	1655	1532	1326	185
-1500	* 1770	* 1770	* 2781	2036	1304	1101	867	745	791	682	4280
-39	* 3903	* 3903	* 6133	4490	2875	2428	1911	1642	1744	1503	169
-2000	* 2842	* 2842	* 2706	2075	1323	1119			* 1237	934	3430
-79	* 6266	* 6266	* 5966	4575	2918	2468			* 2727	2059	135

Illustration 113

g06661128

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 762	* 762	3000
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	* 978	* 694	* 694	4750
79					* 2382	* 2382	* 2157	* 2157	* 1531	* 1531	187
1000					* 1589	1241	* 1186	823	* 743	622	4880
39					* 3604	2737	* 2571	1816	* 1637	1372	191
0			* 1710	* 1710	* 1933	1195	* 1313	802	* 861	641	4710
0			* 3770	* 3770	* 4262	2634	* 2895	1768	* 1899	1414	165
-1000	* 1770	* 1770	* 2781	2215	* 1956	1182	* 1299	796	* 1138	728	4280
-39	* 3903	* 3903	* 6133	4885	* 4313	2606	* 2663	1755	* 2509	1608	169
-2000	* 2642	* 2642	* 2706	2255	* 1572	1201			* 1237	999	3430
-79	* 6266	* 6266	* 5966	4973	* 3487	2648			* 2727	2203	135

Illustration 114

g06661129

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	707	* 699	* 699	4370
118							* 1927	1558	* 1540	* 1540	172
2000					* 1080	* 1080	752	691	570	527	4750
79					* 2382	* 2382	1857	1524	1256	1162	187
1000					1115	1006	725	666	540	500	4860
39					2459	2219	1598	1488	1191	1101	191
0			* 1710	* 1710	1068	960	703	644	556	514	4710
0			* 3770	* 3770	2351	2117	1549	1421	1227	1133	185
-1000	* 1770	* 1770	2061	1782	1053	948	697	639	635	584	4280
-39	* 3903	* 3903	4546	3884	2323	2090	1536	1408	1400	1288	169
-2000	* 2842	* 2842	2105	1800	1073	966			885	805	3430
-79	* 6268	* 6268	4641	3969	2366	2131			1951	1775	135

Illustration 115

g06661146

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3000
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	738	* 694	564	4750
79					* 2382	* 2382	* 2157	1626	* 1531	1243	187
1000					* 1589	1080	* 1166	712	* 743	535	4880
39					* 3504	2381	* 2571	1571	* 1637	1180	191
0			* 1710	* 1710	* 1933	1033	* 1313	691	* 881	551	4710
0			* 3770	* 3770	* 4262	2276	* 2895	1524	* 1898	1214	185
-1000	* 1770	* 1770	* 2781	1919	* 1958	1021	* 1299	685	* 1138	826	4280
-39	* 3803	* 3903	* 6133	4232	* 4313	2251	* 2863	1511	* 2509	1381	169
-2000	* 2842	* 2842	* 2706	1959	* 1572	1039			* 1237	884	3430
-79	* 6266	* 6266	* 8966	4320	* 3487	2292			* 2727	1906	135

Illustration 116

g06661147

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

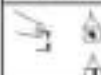
(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 782	* 782	3800
157									* 1734	* 1734	142
3000							* 874	* 874	* 899	* 899	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	792	* 894	* 894	4750
79					* 2382	* 2382	* 2157	1747	* 1531	* 1531	187
1000					1282	1152	838	767	629	579	4860
39					2826	2540	1847	1660	1386	1278	191
0			* 1710	* 1710	1233	1106	816	745	646	597	4710
0			* 3770	* 3770	2718	2439	1798	1644	1429	1316	185
-1500	* 1770	* 1770	2376	2023	1220	1094	810	746	739	677	4280
-39	* 3903	* 3903	5240	4482	2689	2412	1785	1631	1629	1493	169
-2000	* 2842	* 2842	* 2706	2062	1239	1112			1023	828	3430
-79	* 6288	* 6288	* 5986	4547	2732	2452			2258	2045	135

Illustration 117

g06661148

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade UP.

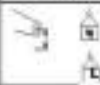
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				(mm) (in)
											
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 689	* 689	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1050	* 1050	* 978	843	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1858	* 1531	* 1531	187
1000					* 1589	1231	* 1196	816	* 743	617	4860
39					* 3504	2714	* 2571	1800	* 1637	1361	191
0			* 1710	* 1710	* 1933	1184	* 1313	795	* 861	636	4710
0			* 3770	* 3770	* 4262	2611	* 2698	1793	* 1899	1402	185
-1000	* 1770	* 1770	* 2781	2194	* 1956	1172	* 1299	786	* 1136	722	4280
-39	* 3903	* 3903	* 6133	4838	* 4313	2584	* 2863	1740	* 2509	1592	169
-2000	* 2842	* 2842	* 2708	2234	* 1572	1190			* 1237	991	3430
-79	* 6266	* 6266	* 5986	4926	* 3467	2625			* 2727	2184	135

Illustration 118

g06661149

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	740	* 699	* 699	4370
118							* 1927	1632	* 1540	* 1540	172
2000					* 1080	* 1080	792	725	* 694	554	4750
79					* 2382	* 2382	1746	1598	* 1531	1222	187
1000					1175	1055	765	699	572	526	4860
39					2591	2325	1667	1541	1261	1160	191
0			* 1710	* 1710	1126	1009	743	678	589	541	4710
0			* 3770	* 3770	2462	2224	1636	1495	1299	1193	185
-1000	* 1770	* 1770	2174	1848	1113	996	737	672	672	615	4280
-39	* 3903	* 3903	4794	4076	2454	2197	1625	1482	1482	1356	169
-2000	* 2842	* 2842	2217	1887	1132	1015			934	846	3430
-79	* 6266	* 6266	4889	4161	2497	2237			2060	1865	135

Illustration 119

g06661167

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	774	* 694	592	4750
79					* 2382	* 2382	* 2157	1706	* 1631	1306	187
1000					* 1589	1131	* 1186	748	* 743	563	4860
39					* 3504	2495	* 2571	1649	* 1637	1241	191
0			* 1710	* 1710	* 1933	1065	* 1313	727	* 661	580	4710
0			* 3770	* 3770	* 4262	2392	* 2895	1902	* 1899	1278	185
-1000	* 1770	* 1770	* 2781	2013	* 1956	1072	* 1299	721	* 1138	659	4280
-39	* 3903	* 3903	* 6133	4439	* 4313	2364	* 2863	1589	* 2509	1453	169
-2000	* 2842	* 2842	* 2706	2053	* 1572	1091			* 1237	807	3430
-79	* 6266	* 6266	* 5966	4527	* 3467	2405			* 2727	2000	135

Illustration 120

g06661169

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade DOWN.

Product Information Section
304 Excavator Equipped with Canopy

(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 899	* 899	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	826	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1821	* 1531	* 1531	187
1000					1341	1200	878	600	* 743	606	4860
39					2957	2647	1936	1764	* 1637	1336	191
0			* 1710	* 1710	1282	1154	856	779	651	624	4710
0			* 3770	* 3770	2849	2545	1887	1718	1502	1376	185
-1000	* 1770	* 1770	* 2781	2110	1279	1142	850	773	776	708	4280
-39	* 3903	* 3903	* 6133	4653	2620	2518	1874	1705	1710	1561	169
-2000	* 2642	* 2642	* 2706	2149	1299	1160			* 1237	968	3430
-79	* 6266	* 6266	* 5986	4738	2663	2559			* 2727	2136	135

Illustration 121

g06661170

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	* 978	* 694	* 694	4750
79					* 2382	* 2382	* 2157	* 2157	* 1531	* 1531	187
1000					* 1589	1262	* 1166	852	* 743	* 743	4860
39					* 3504	2828	* 2571	1879	* 1637	* 1637	191
0			* 1710	* 1710	* 1933	1236	* 1313	831	* 861	665	4710
0			* 3770	* 3770	* 4262	2725	* 2895	1831	* 1899	1466	165
-1000	* 1770	* 1770	* 2781	2288	* 1956	1223	* 1299	825	* 1138	755	4280
-39	* 3903	* 3903	* 6133	5045	* 4313	2697	* 2863	1819	* 2509	1664	169
-2000	* 2642	* 2642	* 2706	2528	* 1572	1242			* 1237	1034	3430
-79	* 6266	* 6266	* 5966	5133	* 3467	2738			* 2727	2279	135

Illustration 122

g06661172

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade DOWN.

i08425018

Lifting Capacities (304 Excavator Equipped with Cab)

SMCS Code: 7000

S/N: AN41-Up

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based on a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools and attachments. The weight of a work tool attachment must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools and attachments.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration. Consult your Cat® dealer for additional information.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Contact your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 57

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(Table 57, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height

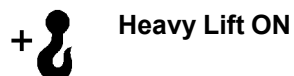


Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

(continued)



Heavy Lift ON

304 Excavator with Standard Stick

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	811	701	* 698	* 698	4090
118					* 2076	* 2076	1787	1548	* 1540	* 1540	181
2000			* 1947	* 1947	* 1278	1060	800	681	* 684	577	4500
79			* 4293	* 4293	* 2817	2337	1765	1525	* 1507	1271	177
1000					1184	1003	779	671	* 727	546	4620
39					2610	2211	1717	1479	* 1604	1205	182
0			* 1817	* 1817	1148	969	782	655	656	588	4480
0			* 3564	* 3564	2631	2137	1681	1445	1447	1249	176
-1000	* 2070	* 2070	2230	1791	1144	966			765	657	4000
-39	* 4565	* 4565	4917	3948	2522	2129			1687	1450	157
-2000	* 3391	* 3391	* 2293	1836	* 1295	895			* 1259	990	3040
-79	* 7477	* 7477	* 5055	4048	* 2896	2195			* 2775	2160	120

Illustration 123

g06661110

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	749	* 898	* 898	4090
118					* 2076	* 2076	* 2088	1651	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	739	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1629	* 1507	* 1507	177
1000					* 1752	1077	* 1255	718	* 727	685	4620
39					* 3862	2376	* 2768	1583	* 1604	1289	182
0			* 1617	* 1617	* 2006	1043	* 1359	702	* 848	606	4480
0			* 3564	* 3564	* 4423	2300	* 2996	1548	* 1896	1337	176
-1000	* 2070	* 2070	* 3084	1953	* 1925	1039			* 1144	704	4000
-39	* 4565	* 4565	* 6821	4305	* 4244	2292			* 2522	1553	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1070			* 1259	1053	3040
-79	* 7477	* 7477	* 5065	* 5065	* 2856	2358			* 2775	2321	129

Illustration 124

g06661112

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	802	* 698	* 698	4090
118					* 2076	* 2076	* 2088	1769	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	913	792	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	2014	1747	* 1507	* 1507	177
1000					1350	1149	892	772	* 727	* 727	4620
39					2976	2533	1966	1701	* 1604	* 1604	182
0			* 1617	* 1617	1314	1115	875	756	* 646	655	4480
0			* 3564	* 3564	2897	2499	1930	1667	* 1666	1444	176
-1000	* 2070	* 2070	2545	2052	1310	1111			876	759	4000
-39	* 4565	* 4565	5611	4526	2889	2451			1936	1673	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 125

g06661113

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	843	* 684	* 684	4500
79			* 4283	* 4283	* 2817	* 2817	* 2412	1859	* 1507	* 1507	177
1000					* 1752	1229	* 1255	822	* 727	* 727	4620
39					* 3862	2709	* 2768	1813	* 1604	* 1604	182
0			* 1617	* 1617	* 2006	1194	* 1359	806	* 846	697	4460
0			* 3564	* 3564	* 4423	2634	* 2896	1778	* 1686	1638	176
-1000	* 2670	* 2670	* 3094	2228	* 1925	1191			* 1144	809	4006
-39	* 4565	* 4565	* 6821	4913	* 4244	2626			* 2522	1783	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 3856			* 2775	* 2775	120

Illustration 126

g06661115

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	735	* 698	* 698	4000
118					* 2076	* 2076	* 2088	1620	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	841	726	* 684	* 684	4500
79			* 4293	* 4293	* 2617	* 2617	1854	1598	* 1807	* 1807	177
1000					1243	1051	819	704	* 727	575	4620
39					2741	2318	1808	1552	* 1604	1267	182
0			* 1617	* 1617	1207	1018	803	689	691	595	4480
0			* 3564	* 3564	2662	2244	1770	1518	1526	1313	176
-1000	* 2070	* 2070	2342	1877	1203	1014			805	691	4000
-39	* 4565	* 4565	5165	4139	2653	2236			1776	1523	157
-2000	* 3391	* 3391	* 2293	1922	* 1295	1043			* 1259	1027	3040
-79	* 7477	* 7477	* 5065	4239	* 2866	2301			* 2775	2265	120

Illustration 127

g06661130

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	784	* 698	* 698	4000
118					* 2076	* 2076	* 2088	1730	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	774	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1708	* 1807	* 1807	177
1000					* 1752	1129	* 1255	753	* 727	615	4620
39					* 3862	2490	* 2768	1661	* 1604	1355	182
0			* 1617	* 1617	* 2006	1095	* 1359	738	* 848	637	4480
0			* 3564	* 3564	* 4423	2414	* 2996	1627	* 1866	1406	176
-1000	* 2070	* 2070	* 3094	2047	* 1925	1091			* 1144	740	4000
-39	* 4565	* 4565	* 6821	4513	* 4244	2406			* 2522	1632	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 128

g06661131

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	181
2000			* 1947	* 1947	* 1278	* 1278	* 1084	826	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1821	* 1507	* 1507	177
1000					1459	1197	932	805	* 727	* 727	4820
39					3167	2639	2055	1775	* 1604	* 1604	182
0			* 1817	* 1817	1373	1163	918	790	* 846	684	4480
0			* 3564	* 3564	3028	2565	2019	1741	* 1886	1508	176
-1000	* 2070	* 2070	2657	2139	1349	1160			916	792	4000
-39	* 4565	* 4565	5859	4718	3020	2557			2025	1748	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 129

g06661132

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 696	* 696	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	879	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1938	* 1507	* 1507	177
1000					* 1752	1260	* 1255	856	* 727	* 727	4620
39					* 3882	2823	* 2768	1891	* 1604	* 1604	182
0			* 1617	* 1617	* 2006	1246	* 1359	842	* 848	729	4480
0			* 3564	* 3564	* 4433	2746	* 2996	1856	* 1888	1607	176
-1000	* 2970	* 2070	* 3094	2322	* 1926	1242			* 1144	844	4000
-39	* 4565	* 4565	* 6621	5121	* 4244	2740			* 2522	1862	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 130

g06661133

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade DOWN.

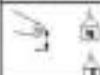
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	794	730	* 698	* 698	4000
118					* 2076	* 2076	1750	1609	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	1101	784	720	* 684	* 684	4500
79			* 4293	* 4293	* 2817	2428	1728	1587	* 1507	* 1507	177
1000					1159	1044	782	699	618	570	4620
39					2665	2302	1680	1541	1363	1256	182
0			* 1617	* 1617	1123	1010	746	684	642	591	4480
0			* 3564	* 3564	2476	2228	1644	1507	1415	1303	176
-1000	* 2070	* 2070	2183	1984	1119	1007			746	686	4000
-39	* 4565	* 4565	4513	4111	2467	2220			1650	1512	157
-2000	* 3391	* 3391	* 2293	1909	* 1295	1036			* 1259	1020	3040
-79	* 7477	* 7477	* 5065	4210	* 2866	2285			* 2775	2249	120

Illustration 131

g06661152

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 818	* 818	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	776	* 696	* 696	4090
118					* 2076	* 2076	* 2088	1715	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	* 1094	788	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1893	* 1507	* 1507	177
1000					* 1752	1119	* 1255	747	* 727	609	4620
39					* 3862	2467	* 2766	1646	* 1604	1343	182
0			* 1617	* 1617	* 2006	1085	* 1359	731	* 846	632	4480
0			* 3564	* 3564	* 4423	2392	* 2996	1612	* 1866	1393	176
-1000	* 2070	* 2070	* 3094	2026	* 1925	1081			* 1144	733	4000
-39	* 4565	* 4565	* 6821	4468	* 4244	2383			* 2622	1617	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1111			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	2450			* 2775	* 2775	120

Illustration 132

g06661154

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 818	* 818	3230
157					* 2176	* 2176			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 898	* 898	4060
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1278	* 1278	897	821	* 884	* 884	4500
79			* 4293	* 4293	* 2817	* 2817	1977	1810	* 1507	* 1507	177
1000					1325	1190	875	800	* 727	* 727	4620
39					2922	2623	1929	1764	* 1604	* 1604	182
0			* 1617	* 1617	1269	1156	859	785	* 846	680	4460
0			* 3584	* 3584	2843	2549	1893	1730	* 1868	1488	176
-1000	* 2970	* 2970	3498	3126	1265	1152			861	787	4000
-39	* 4565	* 4565	5508	4688	2634	2541			1899	1735	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 133

g06661155

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				(mm) (in)
											
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	872	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	1922	* 1507	* 1507	177
1000					* 1752	1270	* 1255	851	* 727	* 727	4620
39					* 3862	2800	* 2768	1876	* 1604	* 1604	182
0			* 1617	* 1617	* 2006	1236	* 1359	835	* 846	723	4460
0			* 3584	* 3584	* 4423	2725	* 2996	1841	* 1898	1593	176
-1000	* 2070	* 2070	* 3094	2301	* 1925	1232			* 1144	838	4000
-39	* 4565	* 4565	* 6821	5074	* 4244	2716			* 2522	1847	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 6055	* 6055	* 2656	* 2656			* 2775	* 2775	120

Illustration 134

g06661156

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	763	* 698	* 698	4000
118					* 2076	* 2076	* 2088	1683	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	824	733	* 684	* 684	4500
79			* 4293	* 4293	* 2617	* 2617	1617	1661	* 1607	* 1607	177
1000					1216	1092	802	732	* 727	598	4620
39					2666	2406	1769	1615	* 1604	1320	182
0			* 1617	* 1617	1182	1059	786	717	677	620	4460
0			* 3564	* 3564	2607	2334	1733	1581	1492	1366	176
-1000	* 2070	* 2070	2295	1951	1178	1055			766	719	4000
-39	* 4565	* 4565	5061	4302	2599	2326			1739	1586	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	1065			* 1259	1066	3040
-79	* 7477	* 7477	* 5065	* 5065	* 2666	2361			* 2775	2354	120

Illustration 135

g06661173

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		78		118		157				
											(mm) (in)
4000					* 864	* 864			* 616	* 616	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	813	* 698	* 698	4090
118					* 2076	* 2076	* 2088	1793	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	803	* 684	* 684	4500
78			* 4293	* 4293	* 2617	* 2617	* 2412	1771	* 1507	* 1507	177
1000					* 1752	1170	* 1255	782	* 727	* 727	4620
39					* 3662	2561	* 2766	1725	* 1604	* 1604	162
0			* 1617	* 1617	* 2006	1138	* 1359	766	* 646	663	4460
0			* 3564	* 3564	* 4423	2506	* 2896	1680	* 1866	1461	176
-1000	* 2070	* 2070	* 3094	2120	* 1925	1132			* 1144	769	4000
-39	* 4565	* 4565	* 6821	4675	* 4244	2497			* 2522	1695	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-78	* 7477	* 7477	* 6065	* 6065	* 3866	* 2656			* 2776	* 2776	120

Illustration 136

g06661174

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade DOWN.

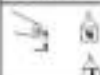
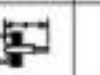
(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000					* 984	* 984			* 818	* 818	3230
157					* 2176	* 2176			* 1769	* 1769	127
3000					* 941	* 941	* 947	* 947	* 898	* 898	4090
118					* 2076	* 2076	* 2068	* 2068	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	937	854	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	2068	1884	* 1507	* 1507	177
1000					1365	1238	915	833	* 727	* 727	4820
39					3053	2730	2018	1838	* 1604	* 1604	182
0			* 1617	* 1617	1349	1204	889	818	* 648	709	4460
0			* 3584	* 3584	2974	2656	1982	1804	* 1868	1563	176
-1000	* 2070	* 2070	2610	2213	1345	1201			902	820	4006
-39	* 4585	* 4585	5756	4879	2965	2647			1958	1809	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2856	* 2856			* 2775	* 2775	120

Illustration 137

g06661175

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

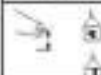
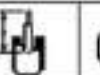
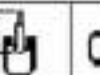
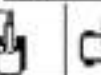
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000					* 984	* 984			* 816	* 816	3230
157					* 2170	* 2170			* 1799	* 1799	127
3000					* 941	* 941	* 947	* 947	* 698	* 698	4090
118					* 2076	* 2076	* 2088	* 2088	* 1540	* 1540	161
2000			* 1947	* 1947	* 1276	* 1276	* 1094	907	* 684	* 684	4500
79			* 4293	* 4293	* 2817	* 2817	* 2412	2001	* 1507	* 1507	177
1000					* 1752	1321	* 1295	886	* 727	* 727	4620
39					* 3662	2914	* 2766	1954	* 1604	* 1604	162
0			* 1617	* 1617	* 2006	1267	* 1359	871	* 848	* 848	4460
0			* 3564	* 3564	* 4423	2838	* 2996	1920	* 1666	* 1666	176
-1000	* 2070	* 2070	* 3094	2395	* 1925	1283			* 1144	873	4000
-39	* 4565	* 4565	* 6821	5261	* 4244	2630			* 2522	1925	157
-2000	* 3391	* 3391	* 2293	* 2293	* 1295	* 1295			* 1259	* 1259	3040
-79	* 7477	* 7477	* 5055	* 5055	* 2656	* 2656			* 2775	* 2775	120

Illustration 138

g06661176

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade DOWN.

304 Excavator with Long Stick

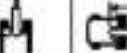
(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
4000											3600
157									* 782	* 782	142
3000							* 874	899	* 899	* 899	4370
118							* 1927	1542	* 1540	* 1540	172
2000					* 1080	* 1080	754	684	* 604	521	4750
79					* 2382	* 2382	1750	1508	* 1531	1149	187
1000					1177	996	767	658	573	494	4560
39					2596	2195	1880	1451	1264	1089	191
0			* 1710	* 1710	1126	950	745	637	591	508	4710
0			* 3770	* 3770	2488	2094	1842	1405	1302	1119	185
+1000	* 1770	* 1770	2179	1742	1115	937	739	631	674	577	4280
-39	* 3903	* 3903	4804	3842	2459	2067	1628	1392	1485	1273	169
-2000	* 2842	* 2842	2222	1781	1135	956			936	796	3430
-79	* 6266	* 6266	4899	3927	2502	2107			2085	1756	135

Illustration 139

g06661117

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	747	* 699	* 699	4370
118							* 1927	1647	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	731	* 894	558	4750
79					* 2382	* 2382	* 2157	1813	* 1831	1230	187
1000					* 1589	1070	* 1188	705	* 743	529	4860
39					* 3504	2360	* 2571	1556	* 1637	1167	191
0			* 1710	* 1710	* 1833	1023	* 1313	684	* 861	545	4710
0			* 3770	* 3770	* 4262	2257	* 2895	1508	* 1899	1201	185
-1000	* 1775	* 1770	* 2781	1954	* 1956	1011	* 1299	678	* 1138	620	4280
-39	* 3903	* 3903	* 6133	4197	* 4313	2229	* 2863	1495	* 2509	1367	169
-2000	* 2842	* 2842	* 2706	1843	* 1572	1030			* 1237	856	3430
-79	* 6268	* 6268	* 5988	4285	* 3487	2270			* 2727	1887	135

Illustration 140

g06661119

Lift chart above : Undercarriage with rubber belts, no optional counterweight, blade, no bucket, blade DOWN.

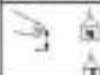
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	785	* 894	* 894	4750
79					* 2382	* 2382	* 2157	1731	* 1831	* 1831	167
1000					1344	1141	880	759	* 743	574	4860
39					2962	2517	1940	1674	* 1637	1265	191
0			* 1710	* 1710	1294	1095	858	738	682	591	4710
0			* 3770	* 3770	2854	2415	1891	1627	1505	1302	185
-1000	* 1770	* 1770	* 2781	2004	1281	1083	852	732	777	670	4280
-39	* 3903	* 3903	* 6133	4419	2626	2388	1878	1615	1714	1478	169
-2000	* 2842	* 2842	* 2706	2043	1301	1101			* 1237	919	3430
-79	* 6268	* 6268	* 5966	4504	2869	2429			* 2727	2026	135

Illustration 141

g06661120

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 899	* 899	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	836	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1843	* 1531	* 1531	187
1000					* 1589	1222	* 1166	810	* 743	612	4860
39					* 3604	2694	* 2571	1785	* 1637	1349	191
0			* 1710	* 1710	* 1833	1175	* 1313	788	* 861	630	4710
0			* 3770	* 3770	* 4282	2590	* 2895	1738	* 1899	1389	185
-1000	* 1770	* 1770	* 2781	2179	* 1956	1162	* 1299	782	* 1138	716	4280
-39	* 3903	* 3903	* 6133	4805	* 4313	2563	* 2863	1725	* 2509	1578	169
-2000	* 2642	* 2642	* 2706	2219	* 1572	1101			* 1237	982	3430
-79	* 6266	* 6266	* 5986	4893	* 3487	2604			* 2727	2166	135

Illustration 142

g06661121

Lift chart above : Undercarriage with rubber belts, optional counterweight, blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				(mm) (in)
											
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 674	733	* 699	* 699	4370
118							* 1927	1818	* 1540	* 1540	172
2000					* 1080	* 1080	834	717	* 694	548	4750
79					* 2382	* 2382	1839	1582	* 1531	1208	187
1000					1237	1044	807	692	605	520	4880
39					2727	2362	1779	1525	1333	1147	191
0			* 1710	* 1710	1168	998	785	670	623	535	4710
0			* 3770	* 3770	2619	2260	1731	1478	1375	1160	185
-1000	* 1770	* 1770	2291	1829	1175	985	779	665	711	606	4280
-39	* 3903	* 3903	5052	4033	2590	2173	1717	1466	1567	1341	169
-2000	* 2842	* 2842	* 2706	1868	1194	1054			985	837	3430
-79	* 6266	* 6266	* 5966	4118	2633	2213			2174	1845	135

Illustration 143

g06661134

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1060	* 1060	* 978	767	* 894	587	4750
79					* 2382	* 2382	* 2157	8891	* 1831	1284	187
1000					* 1589	1122	* 1166	741	* 743	557	4860
39					* 3504	2474	* 2571	8634	* 1637	1229	191
0			* 1710	* 1710	* 1833	1075	* 1313	720	* 861	574	4710
0			* 3770	* 3770	* 4262	2371	* 2895	1887	* 1899	1266	185
-1000	* 1770	* 1770	* 2781	1996	* 1956	1063	* 1299	714	* 1138	853	4280
-39	* 3903	* 3903	* 6133	4405	* 4313	2343	* 2863	1574	* 2509	1439	169
-2000	* 2842	* 2842	* 2706	2038	* 1572	1061			* 1237	899	3430
-79	* 6268	* 6268	* 5966	4493	* 3467	2384			* 2727	1982	135

Illustration 144

g06661136

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, blade, no bucket, blade DOWN.

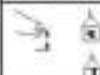
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 976	818	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1904	* 1531	* 1531	187
1000					* 1589	1190	920	793	* 743	600	4860
39					* 3504	2623	2029	1746	* 1637	1323	191
0			* 1710	* 1710	1354	1144	896	771	715	618	4710
0			* 3770	* 3770	2985	2521	1980	1701	1577	1363	185
-1000	* 1770	* 1770	* 2781	2091	1341	1131	892	766	814	701	4280
-39	* 3903	* 3903	* 6133	4610	2956	2494	1967	1686	1795	1546	169
-2000	* 2842	* 2842	* 2706	2129	* 1572	1150			* 1237	959	3430
-79	* 6266	* 6266	* 5986	4695	* 3467	2536			* 2727	2115	135

Illustration 145

g06661137

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1060	* 1060	* 978	* 978	* 694	* 694	4750
79					* 2382	* 2382	* 2157	* 2157	* 1531	* 1531	187
1000					* 1589	1273	* 1166	845	* 743	640	4060
39					* 3504	2808	* 2571	1864	* 1637	1411	191
0			* 1710	* 1710	* 1935	1226	* 1313	824	* 881	659	4710
0			* 3770	* 3770	* 4262	2704	* 2895	1817	* 1899	1454	185
-1000	* 1770	* 1770	* 2781	2274	* 1956	1214	* 1299	818	* 1138	749	4280
-39	* 3903	* 3903	* 6133	5013	* 4313	2677	* 2863	1804	* 2509	1650	169
-2000	* 2842	* 2842	* 2706	2313	* 1572	1233			* 1237	1026	3430
-79	* 6268	* 6268	* 5966	5101	* 3467	2718			* 2727	2263	135

Illustration 146

g06661138

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, blade, no bucket, blade DOWN.

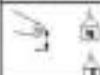
(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 762	* 762	3600
157									* 1724	* 1724	142
3000							* 874	726	* 699	* 699	4370
118							* 1927	1605	* 1540	* 1540	172
2000					* 1080	* 1080	777	712	690	544	4750
79					* 2382	* 2382	1713	1571	1301	1199	167
1000					1152	1037	750	687	560	516	4860
39					2541	2266	1653	1514	1234	1138	191
0			* 1710	* 1710	1103	991	726	665	577	531	4710
0			* 3770	* 3770	2433	2184	1605	1467	1272	1171	185
-1000	* 1770	* 1770	2132	1816	1090	978	722	660	658	604	4280
-39	* 3903	* 3903	4700	4004	2404	2157	1591	1454	1451	1331	169
-2000	* 2642	* 2642	2175	1815	1110	997			916	831	3430
-79	* 6266	* 6266	4796	4089	2447	2197			2019	1832	135

Illustration 147

g06661157

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		78		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	760	* 694	581	4750
78					* 2382	* 2382	* 2157	1677	* 1831	1262	187
1000					* 1589	1112	* 1166	734	* 743	552	4860
39					* 3504	2452	* 2571	1619	* 1637	1216	191
0			* 1710	* 1710	* 1893	1065	* 1313	713	* 861	569	4710
0			* 3770	* 3770	* 4262	2348	* 2895	1572	* 1899	1254	185
-1000	* 1770	* 1770	* 2781	1977	* 1956	1053	* 1299	707	* 1138	647	4280
-39	* 3903	* 3903	* 6133	4360	* 4313	2321	* 2863	1559	* 2509	1426	169
-2000	* 2842	* 2842	* 3706	2017	* 1572	1071			* 1237	891	3430
-78	* 6268	* 6268	* 6995	4448	* 3467	2362			* 2727	1864	135

Illustration 148

g06661159

Lift chart above : Undercarriage with rubber belts, no optional counterweight, angle blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3800
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1050	* 1050	* 978	813	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1793	* 1531	* 1531	187
1000					1319	1182	863	788	* 743	596	4680
39					2906	2607	1903	1737	* 1637	1314	191
0			* 1710	* 1710	1270	1136	841	766	669	614	4710
0			* 3770	* 3770	2800	2506	1854	1690	1475	1353	185
-1000	* 1770	* 1770	* 2781	2078	1257	1124	835	761	762	696	4280
-39	* 3903	* 3903	* 6133	4582	2771	2478	1841	1677	1680	1536	169
-2000	* 2842	* 2842	* 2706	2118	1276	1142			1054	953	3430
-79	* 6266	* 6266	* 5966	4667	2614	2519			2324	2101	135

Illustration 149

g06661160

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		78		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	* 978	* 694	* 694	4750
78					* 2382	* 2382	* 2157	* 2157	* 1831	* 1831	187
1000					* 1589	1263	* 1166	838	* 743	634	4860
39					* 3504	2784	* 2571	1849	* 1637	1399	191
0			* 1710	* 1710	* 1893	1216	* 1313	817	* 861	654	4710
0			* 3770	* 3770	* 4262	2681	* 2895	1802	* 1899	1441	185
-1000	* 1770	* 1770	* 2781	2252	* 1956	1203	* 1299	811	* 1138	742	4280
-39	* 3903	* 3903	* 6133	4968	* 4313	2654	* 2863	1759	* 2509	1637	169
-2000	* 2842	* 2842	* 3706	2292	* 1572	1222			* 1237	1017	3430
-78	* 6268	* 6268	* 6986	5054	* 3467	2696			* 2727	2243	135

Illustration 150

g06661161

Lift chart above : Undercarriage with rubber belts, optional counterweight, angle blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 782	* 782	3600
157									* 1734	* 1734	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	817	748	* 694	571	4750
79					* 2382	* 2382	1802	1644	* 1531	1259	187
1000					1212	1085	790	720	592	543	4880
39					2672	2392	1742	1588	1304	1196	191
0			* 1710	* 1710	1163	1039	768	689	610	558	4710
0			* 3770	* 3770	2584	2291	1694	1541	1344	1231	185
-1000	* 1770	* 1770	2244	1903	1150	1027	762	693	605	634	4280
-39	* 3903	* 3903	4949	4195	2535	2263	1660	1526	1333	1399	169
-2000	* 2842	* 2842	2286	1941	1169	1045			965	871	3430
-79	* 6268	* 6268	5044	4280	2578	2304			2128	1921	135

Illustration 151

g06661177

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade UP.

Product Information Section
304 Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
										(mm) (in)	
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	796	* 694	* 694	4750
79					* 2382	* 2382	* 2157	1755	* 1531	* 1531	187
1000					* 1589	1163	* 1166	770	* 743	580	4860
39					* 3504	2565	* 2571	1897	* 1837	1279	191
0			* 1710	* 1710	* 1935	1118	* 1313	748	* 861	598	4710
0			* 3770	* 3770	* 4282	2462	* 2895	1650	* 1899	1318	185
-1500	* 1770	* 1770	* 2781	2071	* 1956	1104	* 1299	743	* 1138	679	4280
-39	* 3903	* 3903	* 6133	4567	* 4313	2434	* 2863	1637	* 2509	1496	169
-2000	* 2842	* 2842	* 2708	2111	* 1572	1123			* 1237	934	3430
-79	* 6288	* 6288	* 5960	4854	* 3467	2475			* 2727	2059	135

Illustration 152

g06661178

Lift chart above : Undercarriage with triple grouser track shoes, no optional counterweight, angle blade, no bucket, blade DOWN.

(mm) (in)	1000		2000		3000		4000				
	39		79		118		157				
											(mm) (in)
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	* 978	* 694	* 694	4750
79					* 2382	* 2382	* 2157	* 2157	* 1531	* 1531	187
1000					* 1569	1231	903	821	* 743	623	4860
39					* 3504	2713	1992	1810	* 1637	1373	191
0			* 1710	* 1710	1329	1185	881	800	702	641	4710
0			* 3770	* 3770	2931	2612	1943	1784	1547	1414	185
-1000	* 1770	* 1770	* 2781	2154	1316	1172	875	794	798	727	4280
-39	* 3903	* 3903	* 6133	4773	2902	2585	1930	1751	1761	1604	169
-2000	* 2842	* 2842	* 2708	2203	1338	1181			* 1237	994	3430
-79	* 6266	* 6266	* 5966	4858	2945	2625			* 2727	2191	135

Illustration 153

g06661179

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000				(mm) (in)
	39		79		118		157				
											
4000									* 782	* 782	3600
157									* 1724	* 1724	142
3000							* 874	* 874	* 699	* 699	4370
118							* 1927	* 1927	* 1540	* 1540	172
2000					* 1080	* 1080	* 978	* 978	* 694	* 694	4750
79					* 2382	* 2382	* 2157	* 2157	* 1531	* 1531	187
1000					* 1569	1314	* 1166	874	* 743	* 743	4860
39					* 3504	2898	* 2571	1927	* 1637	* 1637	191
0			* 1710	* 1710	* 1933	1267	* 1313	853	* 661	683	4710
0			* 3770	* 3770	* 4282	2795	* 2695	1880	* 1899	1506	185
-1000	* 1770	* 1770	* 2781	2346	* 1956	1295	* 1299	647	* 1138	775	4280
-39	* 3903	* 3903	* 6133	5173	* 4313	2767	* 2663	1867	* 2509	1708	169
-2000	* 2842	* 2842	* 2708	* 2708	* 1572	1274			* 1237	1060	3430
-79	* 6268	* 6268	* 5966	* 5966	* 3467	2888			* 2727	2338	135

Illustration 154

g06661180

Lift chart above : Undercarriage with triple grouser track shoes, optional counterweight, angle blade, no bucket, blade DOWN.

i08437838

Lifting Capacities (305CR Excavator Equipped with Cab)

SMCS Code: 7000



Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based upon a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools. The weight of a work tool must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Consult your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 58

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

(Table 58, contd)

(1) Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track type excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height

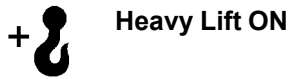


Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

(continued)



305CR cab, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													
157											* 1858	* 1058	3830
3000											* 2332	* 2332	151
118							1083	880			* 500	691	4550
2000							2388	1896			* 2101	1524	179
79					1659	1281	1051	830			792	604	4890
1000					3859	2825	2318	1830			1881	1331	150
39					1560	1181	1012	798			733	579	4990
0					3440	2628	2232	1745			1818	1278	190
0					1522	1156	987	770			767	604	4770
0					3356	2545	2177	1698			1802	1331	188
1000	* 2865	* 2880	* 3057	2262	1525	1159	987	770			899	704	4290
39	* 6362	* 6362	* 7643	4988	3382	2556	2177	1698			1582	1155	169
2000	* 4401	* 4401	3304	2324	1567	1197					1352	1045	3300
79	* 9704	* 9704	7285	5125	3455	2640					2581	2300	170

Illustration 155
Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP. g06709382

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
-4000											* 1058	* 1058	3810
-157											* 2332	* 2332	151
3000							* 1161	964			* 865	777	4550
118							* 3501	2126			* 2101	1714	179
2000					* 2117	1447	* 1614	934			* 950	861	4890
79					* 4668	3190	* 3556	2055			* 2994	1993	193
3000					* 2961	1334	* 1857	897			* 1020	854	4040
39					* 6529	2988	* 4971	1977			* 2348	1443	195
0					* 3260	1318	* 2152	873			* 1191	884	4770
0					* 7189	2905	* 4701	1925			* 2625	1597	189
-1000	* 2885	* 2885	* 3557	2625	* 3099	1321	* 2046	873			* 1009	796	4280
-39	* 6362	* 6362	* 7943	5794	* 6833	2913	* 4512	1925			* 3548	1739	69
-2000	* 4401	* 4401	* 4012	2635	* 2325	1395					* 1934	1184	3360
-79	* 9706	* 9706	* 8847	5008	* 8128	3000					* 4264	2610	130

Illustration 156

g06664527

Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4300											* 1058	* 1058	3820
157											* 2332	* 2332	151
3000							* 1361	989			* 655	861	4550
118							* 3001	2180			* 2101	1767	179
2000					* 2117	1478	1205	959			* 950	764	4890
79					* 4668	3241	2658	2114			* 2994	1953	193
1000					1731	1380	1166	922			850	677	4940
39					3853	3042	2572	2034			1873	1494	195
0					1754	1345	1142	899			890	707	4770
0					3868	2965	2517	1983			1961	1560	188
-1000	* 2885	* 2885	* 3557	2614	1757	1347	1141	899			1038	823	4280
-39	* 6362	* 6362	* 7943	5764	3875	2971	2517	1982			2292	1814	169
-2000	* 4401	* 4401	* 4012	2676	1808	1395					1553	1210	3380
-79	* 9704	* 9704	* 8947	5901	3948	3056					3425	2668	130

Illustration 157

g06664532

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)		
															
4000													* 1056	* 1056	3930
157													* 2332	* 2332	151
3000								* 1391	1080				* 393	* 393	4590
118								* 3031	2381				* 2101	* 2101	179
2000					* 2117	1617	* 1614	1049					* 300	771	4890
79					* 4668	3668	* 3558	2313					* 2094	1700	100
1000					* 2961	1524	* 1937	1012					* 1020	742	4590
39					* 6529	3360	* 4271	2231					* 2248	1637	155
0					* 3260	1488	* 2132	988					* 1191	776	4770
0					* 7189	3281	* 4701	2179					* 2626	1711	168
-1000	* 2845	* 2845	* 5557	2852	* 3099	1491	* 2046	988					* 1609	903	4290
-39	* 4342	* 4342	* 7843	5509	* 6833	3287	* 4012	2179					* 3548	1591	169
-2000	* 4431	* 4431	* 4012	3017	* 2326	1530							* 1934	1332	3300
-79	* 9734	* 9704	* 8647	6652	* 5128	3374							* 4264	2597	130

Illustration 158

g06664535

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1156	870			* 883	* 893	4190
157							* 2637	930			* 1880	* 1880	163
3000							* 1157	872			* 778	934	4810
118							* 2638	932			* 1715	1067	189
2000					* 1837	1311	1066	838	743	564	* 779	858	5130
79					* 4090	2891	2351	1848	1638	1285	* 1710	1231	202
1000					1590	1209	1022	796	728	569	684	535	5290
39					3505	2665	2205	1758	1602	1255	1508	1180	205
0			* 1637	* 1637	1335	1159	991	767	715	558	711	555	9020
0			* 3610	* 3610	3384	2956	2185	1892	1577	1231	1568	1224	158
-1000	* 2407	* 2407	* 3105	2257	1529	1153	904	701			617	636	4500
-39	* 5358	* 5358	* 6847	4877	3371	2543	2168	1677			1802	1403	180
-2000	* 3645	* 3645	3511	2514	1968	1102					1138	880	3690
-79	* 8037	* 8037	7301	5102	3443	2006					2510	1941	145

Illustration 159

g06664538

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	363			* 883	* 883	4190
157							* 2637	2120			* 1898	* 1898	663
3000							* 1197	358			* 776	* 776	4810
118							* 2639	2112			* 1715	* 1715	589
2000					* 1837	1456	* 1471	924	* 1299	646	* 776	* 617	5130
79					* 4660	3197	* 3245	2056	* 2864	1424	* 1718	* 1361	202
1000					* 2758	1345	* 1825	881	* 1490	638	* 828	* 568	5200
39					* 6670	2966	* 4025	1948	* 3285	1389	* 1828	* 1388	265
0			* 1637	* 1637	* 3194	1294	* 2073	851	* 1088	618	* 954	* 616	3020
0			* 3632	* 3610	* 7548	2832	* 4670	1678	* 2999	1365	* 2303	* 1358	198
-1000	* 2407	* 2407	* 3188	2570	* 3152	1286	* 2079	845			* 1241	* 706	4560
-36	* 5008	* 5308	* 6847	5996	* 6850	2848	* 4583	1862			* 2737	* 1556	583
-3000	* 5645	* 5645	* 4577	2629	* 2885	1317					* 1814	* 975	3690
-79	* 8037	* 8037	* 10000	5798	* 5722	2904					* 4908	* 2153	145

Illustration 160

g06664539

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000							* 1196	385			* 653	* 853	4150
197							* 2637	2173			* 1888	* 1880	163
3000							* 1197	382			* 778	* 778	4810
118							* 2639	2166			* 1715	* 1715	589
2000					* 1837	1472	1198	348	839	858	* 778	840	5130
79					* 4050	3246	2036	2091	1881	1873	* 1718	1410	202
1000					1780	1370	1101	307	828	853	* 628	818	3200
30					3035	3021	2538	1990	1818	1409	* 1828	1357	205
0			* 1637	* 1637	1730	1328	1120	878	812	842	807	638	3020
0			* 3610	* 3610	3615	2811	2470	1935	1791	1416	1780	1498	136
-1080	* 2407	* 2407	* 3105	2557	1724	1315	1113	871			926	730	4560
.35	* 5308	* 5308	* 6847	5539	3801	2899	2454	1920			2041	1899	580
-2090	* 3645	* 3645	3788	2914	1755	1343					1283	1093	3690
.75	* 8037	* 8037	8177	6765	5870	2991					3639	2211	545

Illustration 161

g06664541

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1500		2000		3000		4300		5000				(mm) (in)
	39		79		118		157		197				
4000													4150
157							* 1196	* 1196			* 853	* 853	163
3000							* 2637	* 2637			* 1880	* 1880	4570
118							* 1197	* 1197			* 778	* 778	189
2000							* 2639	* 2639			* 1715	* 1715	5130
79					* 1837	* 1837	* 1471	1039	* 1228	733	* 1710	* 1710	202
1000					* 4050	* 4050	* 3243	2291	* 2864	1818	* 1626	* 1626	8200
39					* 2753	1515	* 1825	958	* 1436	717	* 528	678	205
Ø					* 6070	3340	* 4825	3197	* 3285	1981	* 1626	1491	8020
Ø					* 3154	1464	* 2973	367	* 1588	706	* 954	702	196
-1000	* 2487	* 2407	* 3165	* 3165	* 3152	1458	* 2979	360			* 2105	1549	4360
-39	* 8388	* 6308	* 6847	* 6847	* 6960	3215	* 4983	2116			* 2737	1771	180
-2000	* 3645	* 3645	* 4577	2563	* 2995	1487					* 1814	1104	3890
-79	* 8937	* 6037	* 10982	6512	* 5722	3279					* 4050	2435	145

Illustration 162

g06664543

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													
157											* 1058	* 1058	3830
3000											* 2332	* 2332	591
118							1148	913			* 653	737	4550
2000							2531	2013			* 2101	1634	179
79					1757	1329	1116	883			812	645	4096
1000					3674	2997	2450	1947			1791	1423	593
39					1656	1269	1077	847			782	619	4960
0					3656	2794	2374	1867			1724	1386	195
0					1619	1234	1052	823			819	646	4770
0					3571	2726	2320	1816			1885	1425	188
-1000	* 2885	* 2885	* 3557	3407	1622	1237	1052	823			958	755	4280
+39	* 6362	* 6362	* 7843	5308	3577	2726	2320	1815			2112	1681	969
-2000	* 4401	* 4401	* 4012	3459	1865	1275					1436	1113	3300
+79	* 9704	* 9704	* 8547	5445	3671	2811					3187	2454	130

Illustration 163

g06664556

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1056	* 1056	3850
15°											* 2332	* 2332	151
3000							* 1361	1002			* 993	609	4550
118							* 3001	2209			* 2101	1784	179
2000					* 2117	1502	* 5614	371			* 990	710	4890
79					* 4608	3312	* 3558	2142			* 2094	1567	100
1000					* 2961	1409	* 1837	934			* 1020	683	4380
39					* 6529	3107	* 4271	2060			* 2248	1586	105
0					* 3260	1273	* 2132	911			* 1191	714	4770
0					* 7189	3528	* 4701	2009			* 2626	1575	168
-1000	* 2885	* 2885	* 3557	2739	* 3099	1376	* 2046	919			* 1609	932	4280
-39	* 6362	* 6362	* 7843	6026	* 6833	3534	* 4512	2007			* 3548	1834	169
-2000	* 4491	* 4491	* 4012	2798	* 2026	1416					* 1634	1232	3390
-79	* 9724	* 9724	* 8847	8178	* 5126	3121					* 4264	2716	130

Illustration 164

g06664559

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				
	39		79		118		157		197				
													(mm) (in)
4000											* 1058	* 1058	3830
167											* 2332	* 2332	161
3000							* 1361	1823			* 993	* 993	4580
118							* 3801	2256			* 2101	* 2101	179
2000					* 2117	1529	1245	993			* 993	731	4890
79					* 4888	3352	2745	2190			* 2094	1612	193
1000					1855	1438	1206	957			* 1020	704	4960
39					4888	3153	2659	2110			* 2348	1552	195
0					1814	1395	1181	954			921	735	4770
0					4891	3076	2605	2089			2031	1620	188
-1000	* 2865	* 2885	* 3537	2708	1817	1398	1181	953			4076	854	4280
-39	* 4362	* 4382	* 7843	5970	4887	3082	2606	2088			2372	1894	189
-2000	* 4401	* 4421	* 4012	2770	1868	1436					1695	1254	3060
-79	* 6704	* 6724	* 8847	6107	4191	3167					3540	2765	190

Illustration 165

g06664562

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)		
	39		79		118		157		197						
															
4000													* 1058	* 1058	3850
157													* 2332	* 2332	151
3000								* 1361	1117				* 953	* 953	4550
118								* 3001	2463				* 2101	* 2101	179
2000						* 2117	1672	* 1614	1067				* 950	800	4890
79						* 4868	3687	* 3553	2306				* 2094	1754	193
1000						* 2901	1979	* 1937	1049				* 1028	771	4960
39						* 6529	3483	* 4271	2314				* 2248	1750	185
0						* 3280	1543	* 2132	1020				* 1131	806	4770
0						* 7169	3403	* 4701	2262				* 2628	1777	188
-1000	* 2985	* 2665	* 3557	3957	* 3099	1546	* 2046	1020					* 1609	937	4280
-39	* 6352	* 6362	* 7843	8741	* 6835	3409	* 4912	2261					* 3548	2367	169
-2000	* 4491	* 4401	* 4912	9122	* 2526	1586							* 1934	1380	3300
-79	* 9704	* 9704	* 8847	8884	* 6126	3456							* 4354	3044	130

Illustration 166

g06664564

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

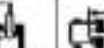
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													4190
157							* 1195	310			* 803	* 803	950
3000							* 2637	2006			* 1888	* 1888	950
118							* 1197	998			* 778	861	4810
2000							* 2639	1996			* 1715	1457	589
79					* 1832	1381	* 1106	872	712	611	* 376	584	5130
1000					* 4060	3602	2439	1924	1703	1346	* 1718	1287	202
39					1600	1258	1002	831	706	593	7+2	560	5200
0					3836	2775	2341	1852	1688	1312	1070	1235	205
0			* 1637	* 1637	1595	1208	1001	802	745	583	7+1	561	5020
-1000			* 3532	* 3510	3517	2667	2273	1759	1643	1269	1034	1282	139
-38	* 2407	* 2407	* 3103	2351	1589	1204	1024	795			851	666	4560
-2000	* 5008	* 5308	* 6847	5183	3503	2654	2207	1753			1875	1468	580
-79	* 8037	* 8037	7571	5309	3672	2717					1185	919	5090
											2668	2025	145

Illustration 167

g06664568

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		119		157		197				
4000													
157							* 1196	399			* 833	* 853	4150
3000							* 2637	2202			* 1886	* 1890	663
119							* 1197	393			* 778	* 778	4810
2000							* 2639	2154			* 1715	* 1715	589
79					* 1837	1826	* 1471	961	* 1299	674	* 776	845	5130
1000					* 4850	3316	* 3245	2110	* 2864	1800	* 1715	1422	202
30					* 2758	1408	* 1825	319	* 1490	658	* 628	620	5200
0					* 6070	3987	* 4025	2025	* 3285	1481	* 1828	1367	205
0			* 1637	* 1637	* 3154	1549	* 2073	889	* 1088	547	* 504	844	5020
0			* 3810	* 3810	* 7043	2974	* 4570	1960	* 2599	1428	* 2103	1430	198
-1000	* 2407	* 2407	* 3195	2675	* 5152	1543	* 2079	892			* 1241	737	4560
-30	* 5308	* 5308	* 6847	5936	* 8960	2951	* 4585	1945			* 2737	1628	580
-2000	* 3645	* 3645	* 4577	2735	* 2895	1372					* 1814	1018	3690
-75	* 8037	* 8037	* 10050	6030	* 5722	3024					* 4938	2244	145

Illustration 168

g06664569

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	1020			* 603	* 853	4120
157							* 2637	2249			* 1885	* 1980	943
3000							* 1197	1016			* 778	* 778	4810
118							* 2639	2241			* 1715	* 1715	589
2000					* 1837	1523	1235	983	869	694			5130
79					* 4000	3327	2724	2167	1916	1531	* 1715	1466	203
1000					1845	1420	1191	941	803	679	* 628	640	5200
39					4068	3132	2626	2075	1881	1497	* 1826	1412	225
0			* 1637	* 1637	1790	1371	1160	912	842	668	* 954	865	5020
0			* 3610	* 3610	3847	3022	2558	2011	1856	1473	* 2103	1465	594
-1000	* 2407	* 2407	* 3155	2951	1784	1365	1153	905			929	759	4560
-39	* 5308	* 5308	* 6847	5586	3934	3010	2542	1994			2115	1674	583
-2000	* 3640	* 3640	3831	2709	1618	1293					1327	1041	3690
-79	* 8037	* 8037	8447	5971	4002	3072					2827	2295	545

Illustration 169

g06664571

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		119		157		197				
4000													
157							* 1196	* 1196			* 853	* 853	4150
3000							* 2637	* 2637			* 1885	* 1885	763
119							* 1197	* 1197			* 778	* 778	4810
2000							* 2639	* 2639			* 1715	* 1715	689
79					* 1837	* 1837	* 1471	1076	* 1299	781	* 778	* 778	3130
1000					* 4050	* 4050	* 3245	2373	* 2864	1678	* 1715	* 1715	202
30					* 2758	1575	* 1825	1034	* 1490	745	* 628	765	5200
0					* 6070	3402	* 4025	2279	* 3285	1644	* 1828	1891	205
0			* 1837	* 1837	* 3154	1818	* 2073	1004	* 1088	735	* 504	721	3020
0			* 3810	* 3810	* 7043	3348	* 4570	2214	* 2599	1620	* 2103	1611	198
-1000	* 2407	* 2407	* 3195	* 3195	* 5152	1513	* 2079	997			* 1241	835	4560
-30	* 5308	* 5308	* 6847	* 6847	* 8960	3336	* 4585	2159			* 2737	1541	580
-2000	* 3645	* 3645	* 4577	3059	* 2895	1542					* 1814	1148	3690
-75	* 8037	* 8037	* 10050	8744	* 5722	3421					* 4808	2527	145

Illustration 170

g06664573

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35		79		118		157		197				
4000													
157													
3000							* 1393	955			* 993	772	4550
118							* 3031	2106			* 2101	1783	179
2000					* 2117	1429	1174	925			* 909	878	4890
79					* 4668	3132	2588	2040			* 2094	1495	103
1000					1748	1330	1138	888			838	651	4590
95					3849	2933	2503	1999			1821	1436	195
8					1707	1295	1118	865			845	680	4770
0					3765	2856	2448	1908			1907	1499	166
-1000	* 2848	* 2880	* 3557	2521	1718	1298	1118	865			1011	792	4290
-35	* 6362	* 6362	* 7843	5568	3771	2862	2448	1907			2229	1745	169
-2000	* 4481	* 4491	* 4012	2584	1752	1336					1512	1167	3390
-75	* 9734	* 9704	* 8647	5667	3954	2946					3395	2572	130

Illustration 171

g06664588

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1858	* 1058	3830
157											* 2332	* 2092	181
3000							* 1361	1047			* 950	* 955	4050
118							* 3001	2308			* 2101	* 2101	179
2000					* 2117	1589	* 1614	1016			* 950	746	4890
79					* 4668	3435	* 3558	2241			* 2094	1644	199
1000					* 2961	1476	* 1937	879			* 1826	717	4960
39					* 6529	3254	* 4271	2155			* 2348	1582	195
0					* 3260	1445	* 2132	856			* 1191	750	4770
0					* 7189	3175	* 4701	2157			* 2626	1653	188
-1000	* 2885	* 2885	* 3557	2900	* 3099	1443	* 2046	925			* 1608	873	4260
-39	* 6362	* 6362	* 7943	6306	* 6833	3181	* 4512	2157			* 3548	1925	169
-2000	* 4401	* 4401	* 4212	2325	* 2326	1482					* 1934	1290	3000
-79	* 9734	* 9734	* 8847	6450	* 7126	3258					* 4254	2844	130

Illustration 172

g06664590

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				
	39		79		118		157		197				
4000													(mm) (in)
4000											* 1058	* 1058	3830
157											* 2302	* 2302	151
3000							* 1381	1665			* 851	* 851	4550
118							* 3001	2348			* 2101	* 2101	179
2000					* 2117	1582	1305	1635			* 858	* 858	4850
79					* 4668	3487	2874	2265			* 2094	* 1684	191
1000					1941	1491	1264	999			* 1020	* 788	4960
39					4279	3288	2788	2202			* 2248	* 1623	135
0					1802	1456	1240	975			867	* 788	4770
0					4195	3211	2735	2151			2133	* 1695	188
-1000	* 2885	* 2885	* 3557	2822	1905	1459	1239	975			1129	893	4280
-39	* 6362	* 6362	* 7843	6222	4201	3217	2735	2150			2489	1968	399
-2000	* 4401	* 4401	* 4012	2884	1948	1497					* 1934	* 1308	3000
-79	* 5704	* 5704	* 8847	6359	4294	3302					* 4264	* 2884	130

Illustration 173

g06664592

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				
	39		79		118		157		197				(mm) (in)
4000											* 1058	* 1058	3830
157											* 2302	* 2302	151
3000							* 1381	1665			* 851	* 851	4550
118							* 3001	2348			* 2101	* 2101	179
2000					* 2117	1582	1305	1535			* 858	* 858	4850
79					* 4668	3487	2874	2265			* 2094	* 1684	191
1000					1941	1491	1264	999			* 1020	* 738	4960
39					4279	3288	2788	2202			* 2248	* 1623	135
0					1802	1456	1240	975			867	* 788	4770
0					4195	3211	2735	2151			2133	* 1695	188
-1000	* 2885	* 2885	* 3557	2822	1905	1459	1239	975			1129	* 893	4280
-39	* 6362	* 6362	* 7843	6222	4201	3217	2735	2150			2489	* 1968	399
-2000	* 4401	* 4401	* 4012	2884	1948	1497					* 1934	* 1308	3000
-79	* 5704	* 5704	* 8847	6359	4294	3302					* 4264	* 2884	130

Illustration 174

g06664594

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													4150
327							* 1196	892			* 853	* 853	163
3000							* 2637	2096			* 1880	* 1880	4810
118							* 1197	848			* 776	* 776	189
2000							* 2639	2090			* 1715	* 1715	5190
79					* 1857	1425	1354	914	816	842	* 776	615	262
1000					* 4050	3137	2957	2016	1799	1416	* 1710	1355	5200
39					1736	1320	1120	873	600	627	* 628	591	205
0					3691	2911	2470	1924	1754	1392	* 1826	1382	3020
0			* 1837	* 1837	1685	1271	1089	844	789	618	794	613	198
-1000	* 2407	* 2407	* 3185	2489	1677	1285	1082	837			699	701	4900
-39	* 5338	* 5306	* 8847	5435	3697	2789	2385	1645			1983	1546	180
-2000	* 9545	* 9545	3613	2522	1706	1295					1248	965	3090
-79	* 8037	* 8037	7966	5561	3766	2852					2752	2126	145

Illustration 175

g06664597

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							" 1190	" 1190			" 855	" 853	4190
157							" 2637	" 2637			" 1980	" 1980	193
3000							" 1197	" 1197			" 776	" 776	4010
118							" 2639	" 2639			" 1715	" 1715	185
2000					" 1827	1871	" 1471	1006	" 1259	708	" 776	" 776	3130
79					" 4090	3455	" 3243	2216	" 2464	1561	" 1710	" 1710	262
1000					" 2753	1498	" 1825	964	" 1480	692	" 828	853	5200
39					" 6070	3234	" 4025	2125	" 3385	1527	" 1826	1439	265
0			" 1637	" 1637	" 3194	1415	" 2073	934	" 1988	882	" 954	878	5020
0			" 3610	" 3610	" 7043	3121	" 4570	2000	" 2366	1505	" 2103	1495	198
-1000	" 2407	" 2407	" 3185	" 3185	" 3152	1418	" 2073	827			" 1241	775	4560
39	" 5308	" 5308	" 6847	" 6847	" 6950	3198	" 4583	2044			" 2737	1713	180
-2000	" 3640	" 3640	" 4577	2861	" 2595	1439					" 1814	1068	3690
-79	" 8037	" 8037	" 10092	6310	" 5722	3173					" 4000	2555	145

Illustration 176

g06664598

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	* 1196			* 603	* 603	4190
157							* 2637	* 2637			* 1686	* 1686	163
3000							* 1197	* 1197			* 776	* 776	4810
118							* 2639	* 2639			* 1715	* 1715	169
2000					* 1837	* 1837	* 1471	1020	913	728	* 776	* 776	9130
79					* 4050	* 4050	* 3243	2289	2012	1601	* 1710	* 1710	202
1000					1509	1482	1245	983	897	711	* 828	671	5200
39					4261	3267	2759	2167	1977	1567	* 1628	1479	205
0			* 1637	* 1637	1678	1432	1218	954	880	760	* 904	696	9020
0			* 3610	* 3610	4141	3157	2699	2100	1952	1544	* 2109	1535	198
-1000	* 2497	* 2407	* 3185	* 3103	1672	1426	1211	947			1066	795	4560
-39	* 5938	* 5306	* 6847	* 6847	4127	3145	2670	2066			2223	1752	186
-2000	* 3645	* 2645	* 4577	3832	1909	1455					1392	1067	9690
-79	* 8037	* 6037	* 10092	6223	4196	3207					3070	2367	145

Illustration 177

g06664601

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	* 1196			* 803	* 803	4100
157							* 2637	* 2637			* 1686	* 1686	163
3000							* 1197	* 1197			* 776	* 776	4810
118							* 2638	* 2638			* 1715	* 1715	186
2000					* 1637	* 1637	* 1471	1121	* 1299	755	* 776	* 776	5130
79					* 4050	* 4050	* 3243	2473	* 2864	1753	* 1716	* 1716	292
1000					* 2753	1637	* 1823	1079	* 1498	780	* 828	* 828	5200
39					* 6070	3659	* 4020	2679	* 3281	1719	* 1626	* 1626	205
0			* 1637	* 1637	* 3194	1585	* 2073	1049	* 1988	769	* 954	765	5020
0			* 3510	* 3510	* 7045	3486	* 4570	2314	* 2399	1595	* 2103	1586	198
-1500	* 2497	* 2497	* 3165	* 3165	* 3152	1580	* 2079	1042			* 1241	673	4560
-36	* 5338	* 5306	* 6847	* 6847	* 6860	3483	* 4583	2398			* 2737	1525	189
-3000	* 3645	* 3645	* 4577	3186	* 2595	1620					* 1614	1196	3690
-79	* 8037	* 8037	* 10092	7824	* 5722	3546					* 4606	2617	145

Illustration 178

g06664602

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

305CR cab, angle blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													3030
137											* 1558	* 1058	181
3000							1087	912			* 953	736	4550
118							2398	2012			* 2181	1823	179
2000					1606	1358	1056	882			766	645	4890
79					2674	2484	2228	1946			1688	1422	593
1000					1567	1288	1017	846			737	619	4980
39					3455	2785	2282	1865			1624	1364	585
0					1529	1233	992	823			771	646	4770
0					3571	2718	2187	1814			1700	1424	588
-1000	* 2095	* 2095	* 3557	2405	1532	1235	992	822			903	752	4280
-39	* 6362	* 6362	* 7843	5304	3577	2724	2187	1813			1591	1359	569
-2000	* 4401	* 4401	3318	2497	1574	1274					1388	1112	3300
-79	* 5704	* 5704	7318	5441	3470	2809					2564	2452	130

Illustration 179

g06664620

Lift chart above: cab, rubber belts, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

(mm) (ft)	1000 33		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
4000											* 1028	* 1038	3830
157											* 2334	* 2332	151
3000							* 1264	1000			* 953	808	4330
118							* 3008	2265			* 2191	1782	179
2000					* 2121	1489	* 1918	970			* 900	709	4890
79					* 4677	3506	* 3564	2158			* 2094	1564	153
1000					* 2960	1407	* 1939	833			* 1219	682	4990
30					* 6534	3102	* 4275	2056			* 2347	1564	195
0					* 3260	1371	* 2132	899			* 1190	713	4770
0					* 7189	3523	* 4701	2050			* 2625	1571	168
-1000	* 2885	* 2885	* 3558	2727	* 3067	1574	* 2045	899			* 1686	831	4290
-30	* 6362	* 6362	* 7845	4812	* 6829	3829	* 4510	2054			* 3545	1832	169
-2000	* 4432	* 4401	* 4883	2792	* 2522	1413					* 1938	1238	3300
-79	* 9795	* 9704	* 8827	4156	* 5119	3116					* 4256	2712	130

Illustration 180

g06664622

Lift chart above: cab, rubber belts, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
													
-4000													
157													
3000													
118													
2000													
79													
1000													
39													
0													
0													
-1000													
-39													
-2000													
-79													

Illustration 181

g06664625

Lift chart above: cab, rubber belts, standard stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1500 59		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1058	* 1058	3839
157											* 2334	* 2332	151
3000							* 1364	1115			* 953	* 953	4550
118							* 3808	2439			* 2101	* 2101	179
2000					* 2121	1609	* 1616	1085			* 958	738	4890
79					* 4677	3690	* 3564	2332			* 2094	1761	193
1000					* 2963	1576	* 1939	1048			* 1019	773	4900
39					* 6534	3476	* 4375	2310			* 2347	1696	195
0					* 3280	1541	* 2132	1024			* 1190	900	4770
0					* 7189	3397	* 4701	2258			* 2625	1774	188
-1000	* 2885	* 2885	* 3558	3000	* 3037	1544	* 2345	1024			* 1008	935	4282
-39	* 8362	* 6362	* 7645	6726	* 6829	3404	* 4910	2258			* 3545	2064	169
-2000	* 4462	* 4481	* 4003	3115	* 2322	1583					* 1930	1378	3300
-79	* 3706	* 2704	* 8627	6670	* 9119	3491					* 4256	3039	130

Illustration 182

g06664627

Lift chart above: cab, rubber belts, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		119		157		197				
													
4000							* 1196	309			* 893	* 893	4150
157							* 2637	2034			* 1990	* 1990	163
3000							* 1197	305			* 778	950	4510
119							* 2639	1996			* 1715	1456	189
2000					* 1837	1393	1046	872	727	610	* 778	583	3130
79					* 4050	2993	2306	1822	1604	1345	* 1710	1296	202
1000					1886	1258	1002	830	711	553	669	560	5200
39					3437	2774	2208	1830	1508	1311	1476	1234	205
0			* 1837	* 1837	1894	1208	971	801	700	584	656	581	5020
0			* 3610	* 3610	3317	2684	2140	1766	1544	1286	1535	1280	190
1000	* 2407	* 2407	* 3105	2349	1498	1203	963	794			600	665	4560
39	* 1508	* 1508	* 6847	5179	3383	2652	2124	1751			1754	1495	190
2000	* 3645	* 3645	3249	2406	1529	1231					1116	918	3668
75	* 8037	* 8037	7164	5305	3372	2714					2490	2024	145

Illustration 183

g06664632

Lift chart above: cab, rubber belts, long stick, angle blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1200	397			* 893	* 893	4150
157							* 2646	2199			* 1882	* 1880	163
3000							* 1258	394			* 778	* 778	4518
118							* 2647	2191			* 1716	* 1715	189
2000					* 8841	1502	* 1474	959	* 1298	673	* 778	644	3130
79					* 4080	3312	* 3248	2198	* 2865	1484	* 1710	1420	202
1000					* 2759	1397	* 1827	917	* 1491	657	* 828	619	3208
39					* 6076	3081	* 4829	2022	* 3287	1445	* 1625	1365	205
0			* 1637	* 1637	* 3194	1348	* 2879	887	* 1687	647	* 988	643	8028
0			* 3610	* 3610	* 7043	2969	* 4571	1957	* 2597	1426	* 2102	1418	199
-1000	* 2457	* 2457	* 3100	2669	* 3150	1341	* 2877	881			* 1240	736	4568
-39	* 1356	* 1356	* 6850	5664	* 6945	2556	* 4561	1942			* 2734	1623	180
-2000	* 3646	* 3646	* 4567	2729	* 2991	1370					* 1811	1016	3698
-79	* 8059	* 8037	* 13071	6016	* 5713	3021					* 3993	2241	145

Illustration 184

g06664636

Lift chart above: cab, rubber belts, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1195	1015			* 893	* 853	4150
157							* 2637	2247			* 1885	* 1880	663
3000							* 1197	1015			* 778	* 775	4810
118							* 2509	2236			* 1715	* 1715	589
2000					* 1837	1521	1179	862	624	854	* 778	884	3130
79					* 4050	3355	2591	2155	1817	1530	* 1715	1485	202
1000					1754	1419	1131	940	808	678	* 628	540	5200
39					887	7129	2493	2073	1782	1486	* 1828	1410	285
0			* 1637	* 1637	1689	1368	1100	811	797	668	792	664	5020
0			* 3810	* 3810	3747	3020	2425	2000	1757	1472	1747	1464	198
-1000	* 2407	* 2407	* 3183	2549	1685	1364	1090	904			909	758	4560
-36	* 5308	* 5308	* 6847	5841	3735	3037	2409	1984			2063	1672	583
-2000	* 3645	* 3645	3646	2706	1724	1392					1260	1040	3690
-79	* 8037	* 8037	8836	6967	3802	3070					3779	2293	145

Illustration 185

g06664639

Lift chart above: cab, rubber belts, long stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		119		157		187				
4000													4150
157							* 1200	* 1196			* 883	* 855	163
3000							* 2646	* 2637			* 1882	* 1860	4510
116							* 1200	* 1197			* 778	* 775	189
2000							* 2647	* 2639			* 1716	* 1715	5130
79					* 1841	* 1837	* 1474	1575	* 1298	790	* 778	* 778	202
1000					* 4980	* 4050	* 3249	2369	* 2865	1676	* 1710	* 1710	5250
39					* 2756	1967	* 1827	1032	* 1491	744	* 828	752	205
0			* 1637	* 1637	* 6076	3456	* 4029	2278	* 3287	1641	* 1829	1548	9020
0			* 3610	* 3610	* 3194	1516	* 2073	1003	* 1087	734	* 963	730	196
-1000	* 2407	* 2487	* 3106	* 3106	* 7543	3343	* 4571	2211	* 2597	1618	* 2102	1609	4560
-39	* 5306	* 5306	* 6850	* 6847	* 6945	3331	* 4561	2196			* 2734	1836	180
-2000	* 3646	* 3645	* 4067	3052	* 2391	1548					* 1811	1144	3660
-79	* 8039	* 8037	* 10071	8730	* 8711	8395					* 3993	2623	145

Illustration 186

g06664643

Lift chart above: cab, rubber belts, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				
	29		79		118		157		187				(mm) (in)
4000											* 3858	* 1058	3830
197											* 2332	* 2332	151
3000							1127	347			* 993	765	4550
118							2486	2067			* 2101	1687	179
2000					1726	1408	1095	817			797	672	4890
79					3607	3105	2616	2021			1757	1481	193
1000					1627	1318	1036	880			767	645	4960
30					3586	2906	2330	1841			1690	1422	125
0					1569	1283	1032	857			803	673	4770
0					3605	2829	2275	1880			1770	1485	188
-1000	* 2880	* 2880	* 3557	2499	1582	1286	1032	857			939	764	4280
-30	* 6362	* 6362	* 7843	6510	5510	3835	2275	1880			2071	1729	169
-2000	* 4801	* 4401	3448	2591	1634	1324					1418	1158	3900
-75	* 9704	* 5704	7566	6647	3605	2925					3189	2549	130

Illustration 187

g06664661

Lift chart above: cab, triple grouser tracks, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

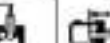
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000											* 1058	* 1058	3850
157											* 2334	* 2332	181
3000							* 1954	1038			* 993	* 993	4050
118							* 3005	2266			* 2181	* 2181	179
2000					* 2121	1554	* 1616	1007			* 990	* 736	4890
79					* 4677	3427	* 3564	2321			* 2094	* 1628	193
1000					* 2963	1462	* 1939	970			* 1819	* 711	4960
39					* 6534	3025	* 4275	2130			* 2247	* 1567	185
0					* 3260	1426	* 2132	948			* 1196	* 742	4770
0					* 7169	3144	* 4701	2087			* 2825	* 1637	188
-1000	* 2893	* 2890	* 3558	3832	* 3697	1429	* 2045	948			* 1668	* 860	4280
-39	* 6362	* 6362	* 7545	6244	* 6629	3151	* 4510	2087			* 3545	* 1997	169
-2000	* 4492	* 4491	* 4089	2897	* 2922	1466					* 1936	* 1278	3000
-79	* 9796	* 9704	* 8827	6388	* 6119	3236					* 4256	* 2818	130

Illustration 188

g06664662

Lift chart above: cab, triple grouser tracks, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000											* 1056	* 1058	3830
157											* 2332	* 2332	151
3000							* 1361	1667			* 953	* 953	4000
118							* 3001	2330			* 2101	* 2101	179
2000					* 2117	1570	1225	1027			* 950	757	4890
79					* 4668	3461	2701	2264			* 2054	1670	193
1000					1622	1479	1186	990			884	730	4960
99					4018	3262	2515	2164			1906	1699	195
0					1784	1444	1161	967			995	762	4770
0					3933	3184	2590	2133			1996	1690	188
-1000	* 2885	* 2005	* 3557	2709	1767	1447	1161	967			1037	865	4290
-39	* 6362	* 6262	* 7843	6172	3940	3190	2598	2132			2331	1952	169
-2000	* 4401	* 4401	* 4212	2851	1629	1485					1579	1297	3300
-79	* 9794	* 9704	* 8847	6309	4000	3275					3481	2840	130

Illustration 189

g06664666

Lift chart above: cab, triple grouser tracks, standard stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	29		79		119		157		197				
4000											* 1558	* 1058	3000
157											* 2334	* 2332	151
3000							* 1364	1153			* 903	* 853	4550
119							* 3005	2542			* 2101	* 2101	179
2000					* 2121	1724	* 1616	1122			* 950	* 850	4890
79					* 4677	3802	* 3564	2475			* 2094	* 2094	193
1000					* 2963	1932	* 1939	1085			* 1519	758	4960
50					* 8834	3597	* 4275	2380			* 2247	1760	625
0					* 3260	1896	* 2132	1062			* 1195	858	4770
0					* 7189	3519	* 4701	2341			* 2625	1890	588
-1000	* 2090	* 2880	* 3558	* 3907	* 3897	1999	* 2040	1061			* 1908	970	4280
-30	* 6362	* 6362	* 7845	* 7845	* 6829	3525	* 4510	2340			* 3545	2140	169
-2000	* 4402	* 4401	* 4003	3220	* 2322	1638					* 1938	1426	3300
-75	* 5706	* 5704	* 5827	7101	* 5119	3612					* 4358	3145	130

Illustration 190

g06664668

Lift chart above: cab, triple grouser tracks, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	59		79		110		157		187				
4000													4150
157							* 1196	943			* 853	* 853	163
3000							* 2837	2080			* 3990	* 1880	4610
118							* 1197	940			* 778	* 778	189
2000							* 2639	2072			* 1715	* 1715	5130
79					* 1837	1411	1086	806	757	636	* 778	829	202
3000					* 4050	3115	2394	1998	1670	1403	* 1710	1342	5200
30					1619	1308	1041	854	741	621	606	585	205
0					2570	2885	2296	1906	1634	1369	1338	1289	5020
0			* 1637	* 1637	1864	1258	1010	850	730	610	726	667	196
-1000	* 2407	* 2407	* 3105	2442	3449	2775	2228	1842	1610	1346	980	1338	4560
-35	* 5306	* 5306	* 6847	5396	3438	2763	2212	1827			838	1530	160
-2000	* 3645	* 3645	3371	2499	1989	1281					1190	956	3660
-75	* 8057	* 8057	7434	5511	3605	2625					2558	2109	145

Illustration 191

g06664671

Lift chart above: cab, triple grouser tracks, long stick, angle blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
													
4000							* 1200	* 1198			* 803	* 803	4100
157							* 2646	* 2637			* 1882	* 1880	563
3000							* 1200	1601			* 776	* 775	4810
118							* 2647	2270			* 1716	* 1715	589
2000					* 1841	1557	* 1474	997	* 1299	751	* 776	* 776	5130
79					* 4060	3434	* 3249	2196	* 2063	1548	* 1718	* 1710	202
1000					* 2756	1452	* 1827	954	* 1481	688	* 828	545	5200
39					* 6075	3201	* 4029	2104	* 3287	1512	* 1825	1425	205
0			* 1637	* 1637	* 3194	1402	* 2073	825	* 1087	475	* 953	671	5030
0			* 3512	* 3610	* 7043	3099	* 4571	2039	* 2397	1488	* 2102	1480	199
-1000	* 2407	* 2407	* 3106	* 3105	* 3150	1396	* 2077	918			* 1248	768	4560
-36	* 1508	* 1508	* 4850	* 6847	* 6845	3573	* 4581	2024			* 2734	1693	180
-2000	* 3646	* 3645	* 4587	2533	* 2591	1425					* 1811	1058	3606
-79	* 8039	* 8037	* 10071	6248	* 5713	3142					* 3993	2333	545

Illustration 192

g06664673

Lift chart above: cab, triple grouser tracks, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1199	* 1199			* 803	* 803	4100
157							* 2637	* 2637			* 1686	* 1686	163
3000							* 1197	* 1197			* 776	* 776	4810
118							* 2639	* 2639			* 1715	* 1715	186
2000					* 1637	1572	1215	1016	854	729	* 776	* 776	5130
79					* 4066	3466	2679	2241	1883	1607	* 1716	* 1716	292
1000					1814	1489	1171	975	830	704	* 828	* 828	5200
39					4000	3240	2591	2148	1847	1553	* 1626	* 1626	265
0			* 1637	* 1637	1759	1420	1148	946	827	704	* 822	* 822	5020
0			* 3616	* 3616	3880	3121	2513	2085	1823	1590	1813	1521	198
-1000	* 2497	* 2497	* 3195	* 3195	1753	1414	1132	939			942	766	4560
-39	* 5339	* 5339	* 6847	* 6847	3866	3118	2497	2070			2077	1737	185
-2000	* 3645	* 3645	3768	2809	1704	1445					1305	1078	3690
-79	* 8037	* 8037	8309	6173	3935	3181					2677	2377	145

Illustration 193

g06664676

Lift chart above: cab, triple grouser tracks, long stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1200	* 1196			* 853	* 853	4150
157							* 2646	* 2637			* 1882	* 1890	563
3000							* 1200	* 1197			* 778	* 778	4010
118							* 2647	* 2639			* 1716	* 1715	589
2000					* 1841	* 1837	* 1474	1112	* 1295	788	* 778	* 778	3130
79					* 4060	* 4050	* 3249	2452	* 2863	1758	* 1718	* 1710	202
1000					* 2758	1822	* 1827	1065	* 1491	773	* 828	* 828	5200
39					* 6076	3577	* 4029	2556	* 3287	1703	* 1825	* 1825	205
0			* 1637	* 1637	* 3194	1571	* 2073	1040	* 1087	762	* 953	756	5020
0			* 3510	* 3510	* 7043	3485	* 4571	2295	* 2997	1660	* 2102	1671	199
-1000	* 2407	* 2407	* 3196	* 3105	* 3150	1598	* 2077	1000			* 1248	865	4560
-39	* 5908	* 5908	* 6850	* 6847	* 6845	3452	* 4581	2276			* 2734	1998	580
-2000	* 3646	* 3645	* 4367	3157	* 2591	1595					* 1811	1186	3690
-79	* 8039	* 8037	* 10071	6961	* 5713	3517					* 3893	2514	145

Illustration 194

g06664681

Lift chart above: cab, triple grouser tracks, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
													
4000											* 1058	* 1058	3830
157											* 2332	* 2332	151
3000							* 1361	889			* 505	881	4550
118							* 3601	2155			* 2301	1766	179
2000					1814	1476	1158	959			* 906	764	4896
79					4891	3249	2544	2114			* 2994	1950	193
1000					1715	1373	1118	922			811	677	4040
39					3782	3041	2458	2033			1787	1493	195
0					1677	1344	1090	899			849	707	4770
0					3667	2954	2404	1982			1871	1559	188
-1000	* 2885	* 2885	* 3557	2610	1886	1547	1090	899			562	422	4280
-39	* 6362	* 6362	* 7843	5762	3764	2970	2403	1982			2188	1814	169
-2000	* 4401	* 4401	* 4012	2676	1722	1385					1486	1210	3360
-79	* 9704	* 9704	* 8847	5909	3797	3055					3276	2667	130

Illustration 195

g06664725

Lift chart above: cab, triple grouser tracks with pads, standard stick, angle blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	99		79		118		157		197				
4000													
157											* 3058	* 1058	3830
3000							* 1364	1083			* 3334	* 2332	151
118							* 8005	2387			* 2101	* 2101	179
2000					* 2121	1621	* 1616	1062			* 960	773	4890
79					* 4877	3574	* 3564	2320			* 2094	1705	593
1000					* 2963	1528	* 1939	1615			* 1819	745	4960
30					* 6534	3370	* 4275	2256			* 2347	1643	535
0					* 3260	1492	* 2132	891			* 1196	778	4770
0					* 7169	3291	* 4701	2186			* 2625	1717	588
-1000	* 2880	* 2880	* 3558	2936	* 3697	1495	* 2045	991			* 1808	806	4280
-30	* 6362	* 6362	* 7845	6523	* 6829	3297	* 4510	2186			* 3545	1998	569
-2000	* 4402	* 4401	* 4083	3024	* 2322	1535					* 1936	1396	3300
-75	* 5706	* 5704	* 8827	8967	* 6116	3354					* 4356	2546	530

Illustration 196

g06664729

Lift chart above: cab, triple grouser tracks with pads, standard stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

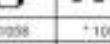
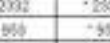
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
4000													
157													
3000							* 1561	1699					
118							* 3601	3423					
2000					* 2117	1631	1283	1066					
79					* 4668	3596	2629	2367					
1000					1916	1548	1244	1032					
39					4212	3397	2743	2276					
0					1672	1503	1219	1009					
0					4127	3320	2689	2225					
-1000	* 2085	* 2885	* 3557	2915	1673	1508	1219	1009					
39	* 4362	* 4352	* 7643	6434	4134	3325	2666	2225					
-2000	* 4401	* 4421	* 4012	2975	1917	1547							
179	* 6704	* 6754	* 8647	6561	4227	3410							

Illustration 197

g06664732

Lift chart above: cab, triple grouser tracks with pads, standard stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4200											* 3008	* 1068	3820
157											* 2334	* 2352	151
3000							* 1564	* 1391			* 568	* 353	4560
118							* 3006	* 3301			* 2101	* 2101	179
2000					* 2123	1791	* 1619	1167			* 960	* 892	4890
79					* 4677	9348	* 3564	2574			* 2094	* 2094	193
1000					* 2969	1698	* 1909	1130			* 1019	839	4960
39					* 6534	3744	* 4275	2492			* 2347	1836	195
0					* 3260	1602	* 2132	1197			* 1190	871	4770
0					* 7189	3655	* 4701	2446			* 2625	1920	188
-1000	* 2665	* 2863	* 3058	* 3257	* 3457	1665	* 2045	1196			* 1608	1012	4280
-39	* 6362	* 4362	* 7945	* 7943	* 6829	3671	* 4510	2446			* 3545	2251	169
-2000	* 4402	* 4481	* 4003	3567	* 2322	1705					* 1930	1464	3360
-79	* 9706	* 8734	* 6627	7380	* 5116	3758					* 4256	3273	130

Illustration 198

g06664735

Lift chart above: cab, triple grouser tracks with pads, standard stick, angle blade, optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

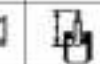
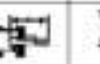
(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
4000							* 1196	960			* 853	* 853	4150
157							* 2837	2172			* 5890	* 1660	163
3000							* 1197	962			* 778	* 778	4810
118							* 2639	2165			* 1715	* 1715	189
2000					* 1837	1472	1144	948	801	658	* 776	638	5130
79					* 4350	3245	2525	2090	1796	1478	* 1710	1410	303
3000					1707	1379	1100	906	755	623	* 628	615	5200
39					3764	3020	2425	1998	1730	1439	* 1826	1356	205
0			* 1637	* 1637	1632	1320	1060	877	774	642	769	638	5020
0			* 3610	* 3610	3643	2910	2356	1934	1706	1415	996	1400	106
-1000	* 2407	* 2427	* 3105	2551	1946	1514	1061	870			862	730	4560
-35	* 5306	* 5356	* 6847	5637	3636	2895	2340	1919			1946	1699	180
-2000	* 3648	* 3648	3598	2913	1877	1343					1225	1002	3680
-79	* 8037	* 8037	7828	6763	3698	2985					2792	2210	145

Illustration 199

g06664736

Lift chart above: cab, triple grouser tracks with pads, long stick, angle blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1500		2000		3000		4500		5000				(mm) (in)
	30		79		118		157		197				
4000							* 1200	* 1196			* 883	* 883	4190
157							* 2646	* 2637			* 1862	* 1860	163
3000							* 1200	* 1197			* 778	* 778	4830
118							* 2647	* 2639			* 1716	* 1715	169
2000					* 3841	* 1837	* 1474	3042	* 1298	730	* 778	* 778	5130
79					* 4060	* 4050	* 3249	2297	* 2865	1621	* 1710	* 1710	202
1000					* 2758	1519	* 1827	999	* 1491	720	* 828	679	5230
39					* 6076	3949	* 4025	2304	* 5287	1587	* 1625	1496	205
0			* 1637	* 1637	* 3194	1469	* 2873	970	* 1687	709	* 883	705	5020
0			* 3610	* 3610	* 7043	3237	* 4571	2139	* 2367	1563	* 2102	1554	198
-1000	* 2497	* 2497	* 3106	* 3106	* 3150	1482	* 2877	868			* 1240	896	4590
-39	* 5366	* 5398	* 6850	* 6847	* 6945	3224	* 4561	2124			* 2794	1777	180
-2000	* 3646	* 3645	* 4567	2966	* 2991	1492					* 1611	1106	3690
-79	* 8039	* 8037	* 10071	6027	* 6713	3289					* 3998	2443	145

Illustration 200

g06664742

Lift chart above: cab, triple grouser tracks with pads, long stick, angle blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section
305CR Excavator Equipped with Cab

(RRT) (ft)	1000		2000		3000		4000		5000				(mm) (in)
	35		79		118		157		197				
4000													
157							* 1196	* 1196			* 603	* 853	4150
3000							* 2637	* 2637			* 1880	* 1860	163
118							* 1197	* 1187			* 778	* 778	4810
2000							* 2639	* 2639			* 1715	* 1715	189
79					* 1837	* 1837	* 1471	1058	897	752	* 776	* 776	3130
1000					* 4050	* 4050	* 3243	2333	1979	1657	* 1710	* 1710	202
39					1902	1531	1229	1017	861	736	* 828	835	5260
0					4194	3375	2710	2241	1943	1620	* 1626	1532	205
0			* 1637	* 1637	1847	1481	1190	967	870	726	* 904	723	3020
0			* 3610	* 3610	4573	3265	2641	2177	1819	1620	* 2103	1591	199
-1000	* 2407	* 2467	* 3105	* 3105	1641	1478	1191	961			991	823	4560
-39	* 5308	* 5308	* 6847	* 6847	4866	3253	2626	2162			2185	1815	180
-2000	* 3648	* 3648	* 4577	2914	1872	1504					1378	1128	3890
-79	* 8037	* 8037	* 10080	6425	4128	3316					3020	2490	145

Illustration 201

g06664743

Lift chart above: cab, triple grouser tracks with pads, long stick, angle blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1500		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		127				
													
4000							* 1259	* 1136			* 853	* 853	4193
157							* 2646	* 2637			* 1882	* 1660	165
3000							* 1259	* 1136			* 778	* 778	4810
118							* 2647	* 2639			* 1716	* 1716	189
2000					* 1841	* 1637	* 1474	1157	* 1259	822	* 778	* 778	3130
79					* 4060	* 4060	* 3246	2551	* 2868	1615	* 1710	* 1710	202
1000					* 2756	1699	* 1827	1115	* 1491	807	* 828	* 828	5299
39					* 6076	3720	* 4829	2458	* 3287	1779	* 1625	* 1625	205
0			* 1637	* 1837	* 3184	1639	* 2973	1085	* 1667	796	* 953	* 792	3029
0			* 3610	* 3610	* 7043	3611	* 4571	2392	* 2597	1735	* 2102	1745	199
1000	* 2467	* 2467	* 3106	* 3195	* 3150	1632	* 2977	1078			* 1280	963	4560
39	* 5306	* 5306	* 6650	* 6847	* 6945	3099	* 4581	2377			* 2754	1992	180
2000	* 3646	* 3646	* 4667	3285	* 2391	1661					* 1811	1256	3099
79	* 8039	* 8037	* 19071	7346	* 5713	3663					* 3993	2725	145

Illustration 202

g06664747

Lift chart above: cab, triple grouser tracks with pads, long stick, angle blade, optional counterweight, no bucket, blade DOWN.

i08585986

Lifting Capacities (305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy)

SMCS Code: 7000

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based upon a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools. The weight of a work tool must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Consult your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 59

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(continued)

(Table 59, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track type excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



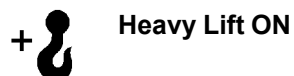
Lift point height



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine



305.5CR ISJ canopy, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													3320
197													131
4000							1067	774					4050
157							2363	1797					176
3000							963	757	655	513	840	501	5000
118							2122	1670	1444	1131	1411	1105	106
2000					1452	1107	918	715	641	500	559	442	5370
79					3202	2441	2023	1576	1413	1103	1254	975	211
1000					1335	1001	889	669	621	491	548	422	6430
39					2944	2207	1916	1475	1368	1080	1204	932	214
0					1295	964	838	641	607	487	566	435	5260
0					2855	2125	1849	1413	1328	1031	1245	980	207
-1000			2784	1918	1297	967	833	636			639	493	4830
-39			6136	4228	2661	2131	1837	1401			1410	1085	186
-2000			2847	1979	1330	966	839	660			849	653	4040
-79			6277	4344	2632	2196	1895	1456			1872	1440	159
-3000													0
-118													0

Illustration 203

g06713409

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1189	3520
197											* 2621	* 2621	131
4000							* 1007	859			* 1138	706	4460
157							* 2353	1895			* 2532	1567	176
3000							* 1155	842	* 1145	574	* 1118	560	3060
118							* 2547	1857	* 2526	1205	* 2494	1236	199
2000					* 1063	1242	* 1414	799	* 1214	580	* 1135	497	3370
79					* 4327	2739	* 3117	1762	* 2677	1236	* 2503	1090	211
1000					* 2659	1133	* 1897	752	* 1525	541	* 1223	475	5430
39					* 5893	2468	* 3743	1850	* 2921	1192	* 2694	1050	214
0					* 2854	1066	* 1850	723	* 1382	527	* 1287	491	5260
0					* 6283	2414	* 4098	1595	* 3047	1163	* 2837	1063	207
-1000			* 3247	2218	* 2699	1098	* 1920	718			* 1348	555	4830
-39			* 7160	4866	* 5952	2420	* 4012	1583			* 2973	1225	190
-2000			* 3618	2273	* 2210	1126	* 1427	743			* 1398	735	4040
-79			* 7978	5612	* 4872	2487	* 3147	1638			* 3079	1620	109
-3000													0
-118													0

Illustration 204

g06713410

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) 197	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1189	3326
197											* 2021	* 2021	131
4000							* 1007	825			888	888	4480
157							* 2353	1842			1914	1517	176
3000							* 1155	818	700	580	893	547	5080
118							* 2547	1805	1553	1234	1528	1205	199
2000					1551	1195	890	770	650	545	618	485	5370
79					3442	2638	2182	1711	1532	1205	1363	1089	211
1000					1444	1090	941	730	675	527	595	485	5438
39					3184	2404	2075	1610	1487	1162	1312	1024	214
0					1403	1053	911	702	661	514	615	479	5260
0					3988	2323	2009	1546	1457	1133	1357	1056	207
-1000			* 3247	2564	1406	1056	908	697			898	541	4830
-39			* 7160	4504	3501	2328	1995	1536			1534	1193	190
-2500			3069	2136	1439	1085	932	722			828	713	4048
-79			6765	4710	3172	2393	2054	1591			2029	1573	159
-3000													0
-118													0

Illustration 205

g06713413

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1500		2000		3000		4000		5000				(mm) (in)
	38		79		118		157		197				
5000													3320
197											* 1189	* 1189	131
4000							* 1067	* 1067			* 1138	762	4860
157							* 2353	* 2353			* 2510	1681	578
3000							* 1155	896	* 1145	622	* 1118	888	5060
118							* 2547	1698	* 2526	1372	* 2464	1341	199
2000					* 1963	1337	* 1814	863	* 1214	609	* 1135	541	5370
79					* 4327	2947	* 3117	1903	* 2677	1343	* 2503	1194	211
1000					* 2859	1227	* 1897	818	* 1325	589	* 1222	520	5430
39					* 5863	3797	* 3743	1800	* 2921	1299	* 2894	1147	214
0					* 2854	1190	* 1859	787	* 1362	576	* 1287	537	5260
0					* 8253	2623	* 4098	1736	* 3847	1270	* 2837	1194	207
-1000			* 3247	2599	* 2869	1192	* 1820	782			* 1348	866	4830
-39			* 7160	5287	* 5952	2629	* 4012	1725			* 2973	1336	190
-2000			* 3638	2453	* 2210	1222	* 1427	886			* 1398	798	4040
-79			* 7978	5409	* 4872	2896	* 3147	1781			* 3079	1700	159
-3000													0
-118													0

Illustration 206

g06713414

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) mm	1000 30		2000 79		3000 115		4000 157		5000 197				(mm) (in)
													
5000											* 1000	775	3970
197											* 2255	1740	156
4000							* 852	* 852			675	530	4020
157							* 1878	* 1878			1481	1188	194
3000							* 963	783	696	513	554	430	5470
115							* 2124	1683	1447	1132	1222	948	215
2000					* 1588	1135	921	716	635	463	407	382	5740
79					* 3498	2503	2030	1579	1401	1088	1097	843	228
1500					1344	1008	852	681	609	468	478	365	5800
30					2983	2219	1801	1458	1242	1032	1053	805	224
0					1271	941	820	622	589	448	490	373	5650
0					2803	2074	1609	1372	1286	968	1080	822	222
-1000	* 2107	* 2187	* 2703	1630	1254	928	804	667	582	442	543	413	5200
-38	* 4843	* 4843	* 6070	4042	2773	2046	1774	1339	1282	975	1197	912	207
-2000	* 3271	* 3271	2748	1885	1279	947	816	618			880	519	4560
-79	* 7212	* 7212	6059	4153	2825	2089	1800	1393			1406	1144	183
-3000			* 2016	1980	* 1540	1000					* 1304	887	3280
-115			* 5768	4379	* 3395	2224					* 2670	1955	129

Illustration 207

g06713415

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
6000											* 1000	* 1000	3930
597											* 2205	* 2205	156
4000							* 852	* 852			* 994	502	4020
157							* 1878	* 1878			* 2193	1300	194
3000							* 983	* 983	* 587	574	* 673	484	5470
118							* 2124	* 2124	* 2175	1286	* 2140	1067	215
2000					* 1588	1272	* 1235	801	* 1092	554	* 986	433	5740
79					* 3408	2804	* 2724	1785	* 2408	1222	* 2175	954	226
1000					* 2388	1136	* 1557	745	* 1233	528	* 1051	414	5850
39					* 5261	2511	* 3433	1642	* 2720	1165	* 2318	913	226
0					* 2737	1071	* 1780	700	* 1338	598	* 1152	424	3650
0					* 6123	2363	* 3602	1554	* 2950	1121	* 2539	935	222
-1000	* 2197	* 2197	* 2753	2138	* 2769	1058	* 1831	890	* 1329	582	* 1214	489	5260
-30	* 4843	* 4843	* 6070	4897	* 6105	2334	* 4037	1521	* 2928	1107	* 2678	1035	207
-2000	* 3271	* 3271	* 4280	2183	* 2438	1078	* 1629	701			* 1280	587	4580
-79	* 7212	* 7212	* 8438	4814	* 5575	2378	* 3502	1545			* 2823	1205	180
-5000			* 2815	* 2815	* 1540	1142					* 1301	1001	3290
-118			* 5786	* 5786	* 3385	2517					* 2879	2207	129

Illustration 208

g06713417

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

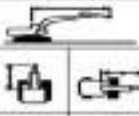
(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1908	837	3970
197											* 2205	1848	156
4000							* 852	* 852			731	577	4020
157							* 1878	* 1878			1613	1273	194
3000							* 963	824	710	580	609	472	5470
118							* 2124	1818	1596	1234	1329	1040	215
2000					* 1588	1224	965	777	680	545	543	422	5740
79					* 3498	2700	2189	1714	1520	1190	1187	930	228
1000					1452	1066	904	722	663	514	523	404	5800
39					3203	2415	2090	1593	1401	1134	1152	891	228
0					1380	1030	893	693	642	495	536	413	5050
0					3043	2271	1908	1506	1415	1090	1182	911	222
-1000	* 2197	* 2197	* 2753	1989	1399	1017	877	698	630	489	594	457	5260
-30	* 4843	* 4843	* 6070	4458	3013	2243	1933	1474	1401	1077	1309	1038	207
-2000	* 3271	* 3271	2969	2349	1388	1037	866	679			741	571	4560
-79	* 7212	* 7212	6547	4519	3090	2286	1959	1498			1633	1299	180
-3000			* 2815	2152	* 1540	1066					* 1306	968	3260
-118			* 5786	4745	* 3385	2421					* 2879	2130	129

Illustration 209

g06713420

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
													
5000											* 1000	* 1000	3970
197											* 2265	* 2265	956
4000							* 862	* 862			* 904	942	4020
157							* 1878	* 1878			* 2190	1415	194
3000							* 963	* 963	* 987	623	* 973	527	5470
118							* 2124	* 2124	* 2175	1373	* 2146	1183	215
2000					* 1580	1366	* 1235	865	* 1002	603	* 980	474	5740
79					* 3498	3012	* 2724	1907	* 2408	1329	* 2175	1044	226
1000					* 2386	1204	* 1957	869	* 1223	577	* 1051	455	5800
39					* 5261	2720	* 3433	1794	* 2720	1272	* 2316	1003	228
0					* 2777	1166	* 1783	788	* 1336	557	* 1152	466	5690
0					* 6123	2571	* 3932	1690	* 2950	1227	* 2530	1027	222
-1000	* 2197	* 2197	* 2703	2510	* 2769	1153	* 1831	754	* 1328	551	* 1214	515	5260
-39	* 4843	* 4843	* 6070	5095	* 6105	2543	* 4937	1662	* 2928	1214	* 2678	1136	207
-2000	* 3271	* 3271	* 4280	2563	* 2438	1173	* 1629	765			* 1280	642	4660
-79	* 7212	* 7212	* 9438	5211	* 6375	2586	* 3592	1697			* 2823	1415	180
-3000			* 2615	* 2615	* 1540	1298					* 1306	1085	1280
-118			* 5768	* 5768	* 3365	2720					* 2870	2391	129

Illustration 210

g06713423

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

305.5CR ISJ canopy, blade

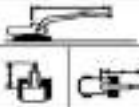
(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
5000													
197													
4000							* 9087	810					
157							* 2353	1800					
3000							* 1155	799	667	545			
118							* 2547	1763	1515	1201	1481	1173	199
2000					1519	1169	961	757	673	532	598	471	5376
79					3348	2578	2120	1689	1485	1172	1319	1039	211
1000					1402	1065	912	711	653	512	576	451	5430
39					3091	2344	2012	1586	1440	1129	1289	984	214
0					1391	1026	862	683	639	489	595	465	5260
0					3001	2262	1945	1525	1410	1100	1312	1025	207
-1000			* 3247	2937	1364	1029	877	677			673	525	4830
-39			* 7160	4450	3007	2266	1933	1494			1484	1158	190
-2000			2986	2396	1396	1058	903	702			692	554	4040
-79			6584	4806	3079	2330	1991	1548			1967	1531	159
-3000													0
-118													0

Illustration 211

g06713445

Lift chart above: canopy, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
													
5000											* 1180	* 1180	3320
19T											* 2621	* 2621	131
4000							* 1067	802			* 1138	743	4490
15T							* 2355	1809			* 2510	1639	175
3000							* 1155	885	* 1145	605	* 1118	592	5090
119							* 2547	1951	* 2526	1335	* 2464	1365	199
2000					* 1963	1305	* 1414	841	* 1214	602	* 1135	526	5370
79					* 4327	2678	* 3117	1835	* 2677	1386	* 2503	1180	211
1000					* 2656	1106	* 1807	795	* 1525	673	* 1222	505	5430
39					* 5863	2637	* 5743	1752	* 2621	1283	* 2464	1113	214
0					* 2854	1158	* 1858	766	* 1382	559	* 1267	521	5290
0					* 6293	2553	* 4696	1636	* 3647	1233	* 2637	1149	207
-1000			* 3247	2342	* 2999	1101	* 1826	760			* 1340	589	4830
-39			* 7190	5163	* 5952	2559	* 4812	1677			* 2973	1298	100
-2000			* 3618	2397	* 2210	1191	* 1427	786			* 1386	777	4040
-79			* 7978	5285	* 4872	2626	* 3147	1732			* 3079	1712	159
-3000													0
-118													0

Illustration 212

g06713447

Lift chart above: canopy, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1189	3320
497											* 2621	* 2621	131
4000							* 1007	878			906	725	4490
397							* 2353	9935			1998	1598	175
3000							* 1105	861	741	591	725	578	5080
299							* 2547	9898	1635	1384	1599	1274	199
2000					1628	1256	1034	818	728	578	648	514	5370
199					3589	2776	2279	1804	1604	1275	1428	1133	211
1000					1511	1152	985	772	707	559	624	493	5430
99					3331	2542	2171	1703	1559	1232	1377	1098	214
0					1470	1118	854	744	693	540	646	509	5290
0					3242	2400	2105	1640	1529	1260	1424	1122	207
-1000			* 3247	2205	1473	1118	949	736			730	574	4830
-39			* 7160	4981	3248	2406	2092	1629			1609	1266	100
-2000			* 3818	2257	1505	1148	975	764			963	755	4040
-79			* 7678	4978	3320	2531	2151	1684			2124	1694	159
-5000													0
-518													0

Illustration 213

g06713450

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)	
	29		79		118		157		197					
														
5000												* 1189	* 1189	3320
197												* 2621	* 2621	131
4000							* 1067	* 1067				* 1138	790	4440
157							* 2355	* 2353				* 2510	1763	176
3000							* 1155	649	* 1145	654		* 1118	640	5085
118							* 2547	2893	* 2526	1443		* 2464	1411	199
2000					* 1063	1400	* 1414	800	* 1214	641		* 1135	571	5370
79					* 4327	3087	* 3117	1997	* 2677	1413		* 2503	1259	211
1000					* 2659	1291	* 1807	859	* 1325	621		* 1222	549	5430
39					* 5863	2847	* 3743	1894	* 2921	1370		* 2694	1211	214
0					* 2854	1253	* 1856	830	* 1382	630		* 1267	567	5280
0					* 6263	2763	* 4086	1830	* 3047	1341		* 2637	1250	267
-1000			* 3247	2523	* 2689	1258	* 1820	825				* 1340	639	4830
-39			* 7180	9563	* 5652	2768	* 4012	1848				* 2573	1410	190
-2000			* 3818	2579	* 2210	1286	* 1427	650				* 1396	543	4040
-79			* 7678	9685	* 4872	2836	* 3147	1874				* 3079	1852	156
-3000														0
-118														0

Illustration 214

g06713451

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
5000													
197													* 9000 818 3670
4000							* 852	* 852					* 2205 1804 156
157							* 1878	* 1878					710 562 4020
3000							* 963	805	880	545	583	458	5470
118							* 2124	1776	1518	1201	1288	1011	215
3000					* 1586	1108	964	756	688	525	525	488	5740
79					* 3468	2641	2126	1671	1472	1157	1157	962	238
9000					1410	1009	906	703	641	500	505	391	5800
39					3109	2355	1966	1551	1414	1101	1113	883	228
0					1338	1003	864	664	620	490	518	400	5650
0					2950	2211	1905	1494	1308	1058	1141	882	222
-1000	* 2167	* 2167	* 2753	1953	1324	990	848	649	614	474	573	443	5280
-39	* 4843	* 4843	* 6070	4305	2919	2183	1875	1431	1354	1045	1254	977	297
-2000	* 3271	* 3271	2867	2003	1345	1009	800	660			717	554	4500
-79	* 7212	* 7212	6365	4417	2995	2225	1896	1455			1586	1222	180
-3000			* 2815	2198	* 1540	1071					* 1308	941	3280
-118			* 5786	4644	* 3395	2361					* 2879	2079	129

Illustration 215

g06713452

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
100											* 1000	* 1000	3070
4000							* 852	* 852			* 2205	* 2205	158
157							* 1878	* 1878			* 2103	1378	194
3000							* 963	* 963	* 987	608	* 973	512	5470
118							* 2124	* 2124	* 2175	1330	* 2146	1130	215
2000					* 1080	1335	* 1235	843	* 1092	588	* 996	456	5740
79					* 3498	2043	* 2724	1858	* 2408	1292	* 2175	1013	226
1000					* 2088	1202	* 1552	787	* 1233	560	* 1051	441	9800
39					* 5201	2651	* 3433	1738	* 2720	1235	* 2318	672	228
0					* 2777	1135	* 1763	747	* 1338	540	* 1152	451	9090
0					* 6123	2502	* 3932	1647	* 2900	1191	* 2539	965	222
-3000	* 2197	* 2197	* 2753	2254	* 2709	1122	* 1831	732	* 1328	534	* 1214	489	5200
-30	* 4843	* 4843	* 6070	4870	* 6105	2473	* 4037	1614	* 2928	1178	* 2676	1131	267
-2000	* 3271	* 3271	* 4280	2307	* 2438	1141	* 1629	743			* 1280	623	4980
-79	* 7212	* 7212	* 9438	5887	* 5375	2517	* 3502	1636			* 2423	1374	180
-3000			* 2615	* 2615	* 1540	1205					* 1308	1057	3280
-118			* 5766	* 5766	* 3395	2657					* 2870	2190	129

Illustration 216

g06713456

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1500 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1000	* 1000	3670
197											* 2205	* 2205	155
4000							* 852	* 852			765	610	4020
157							* 1878	* 1878			1695	1344	184
3000							* 963	* 963	743	591	632	500	5470
118							* 2124	* 2124	1638	1304	1303	1103	215
2000					* 1586	1287	1037	819	722	571	570	449	5740
79					* 3498	2839	2286	1807	1562	1280	1257	989	226
1000					1510	1184	978	765	695	546	550	430	5800
39					3350	2554	2157	1686	1535	1204	1212	949	228
0					1447	1092	886	725	674	526	564	440	5850
0					3160	2426	2035	1590	1487	1190	1244	971	222
-1000	* 2197	* 2197	* 2753	2120	1435	1086	920	710	608	520	624	487	5260
-36	* 4843	* 4843	* 6070	4675	3160	2351	2030	1595	1473	1147	1376	1074	207
-2000	* 3271	* 3271	3109	2170	1454	1099	902	721			777	605	4560
-79	* 7212	* 7212	6955	4786	3207	2423	2056	1591			1714	1337	180
-3000			* 2615	* 2615	* 1540	1101					* 1306	1021	3290
-118			* 5766	* 5766	* 3365	2559					* 2876	2251	129

Illustration 217

g06713457

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	20	70	70	138	157	157	197						
													
5000												* 1000	39.37
197												* 2205	86.9
4000							* 852	* 852				* 664	26.1
157							* 1878	* 1878				* 2193	86.3
3000							* 963	* 963	* 987	985		* 673	26.5
118							* 2124	* 2124	* 2175	1444		* 2148	84.6
2000					* 1586	* 1586	* 1235	907	* 1092	635		* 986	38.8
79					* 3468	* 3468	* 2724	2001	* 2409	1599		* 2175	85.8
1000					* 2388	1297	* 1557	852	* 1233	629		* 925.1	36.4
39					* 5201	2060	* 3433	1678	* 2723	1543		* 2318	91.3
0					* 2777	1229	* 1783	811	* 1338	569		* 1152	45.3
0					* 6123	2711	* 3902	1788	* 2953	1268		* 2539	100.0
-1000	* 2197	* 2197	* 2753	* 2753	* 2769	1217	* 1831	796	* 1329	583		* 1214	47.8
-39	* 4843	* 4843	* 6070	* 6070	* 6105	2662	* 4037	1756	* 2928	1285		* 2678	105.5
-2000	* 3271	* 3271	* 4260	2488	* 2438	1236	* 1829	808				* 1288	50.7
-79	* 7212	* 7212	* 9438	5485	* 5375	2726	* 3992	1781				* 2623	103.3
-5000			* 2615	* 2615	* 1540	1300						* 1308	51.5
-118			* 5766	* 5766	* 3395	2886						* 2879	113.3

Illustration 218

g06713459

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

305.5CR ISJ canopy, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000											* 1189	* 1189	3320
197											* 2621	* 2621	131
4000							* 1007	* 1007			* 1538	793	4490
157							* 2353	* 2353			* 2510	1726	176
3000							* 1155	600	* 1145	640	* 1118	628	5090
118							* 2547	2090	* 2526	1411	* 2464	1379	109
2000					* 1963	1372	* 1414	887	* 1214	627	* 1135	557	5370
79					* 4327	3025	* 3117	1955	* 2677	1381	* 2503	1229	211
1000					* 2859	1283	* 1697	840	* 1325	807	* 1222	538	5430
39					* 5863	2784	* 3743	1852	* 2921	1338	* 2694	1182	214
0					* 2854	1225	* 1858	811	* 1362	593	* 1287	553	5290
0					* 6293	2706	* 4096	1798	* 3047	1359	* 2837	1220	207
-1000			* 3247	3499	* 2699	1227	* 1620	800			* 1348	624	4830
-39			* 7190	5444	* 5952	2706	* 4012	1776			* 2973	1377	100
-2000			* 3616	2524	* 2210	1258	* 1427	691			* 1399	623	4040
-79			* 7978	5596	* 4872	2773	* 3147	1532			* 3079	1811	159
-3000													0
-118													0

Illustration 219

g06713477

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1189	3320
197											* 2621	* 2621	131
4000							* 1007	* 1007			* 1538	783	4490
157							* 2353	* 2353			* 2510	1726	176
3000							* 1155	100	* 1145	640	* 1118	621	5090
118							* 2547	2090	* 2526	1411	* 2464	1379	199
2000					* 1063	1372	* 1414	887	* 1214	627	* 1135	557	5370
79					* 4327	3025	* 3117	1955	* 2677	1381	* 2503	1229	211
1000					* 2859	1263	* 1807	840	* 1325	807	* 1222	536	5430
39					* 5863	2784	* 3743	1852	* 2621	1338	* 2494	1182	214
0					* 2854	1225	* 1858	811	* 1382	593	* 1287	553	5290
0					* 6293	2706	* 4096	1798	* 3047	1359	* 2837	1220	207
-1000			* 3247	2499	* 2689	1227	* 1820	806			* 1348	624	4830
-39			* 7190	5444	* 5802	2706	* 4012	1776			* 2873	1377	100
-2000			* 3818	2524	* 2210	1258	* 1427	851			* 1396	825	4040
-79			* 7978	5596	* 4872	2773	* 3147	1832			* 3079	1811	158
-3000													0
-118													0

Illustration 220

g06713479

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
6000											* 1389	* 1180	3320
197											* 2621	* 2621	131
4000							* 1067	920			956	761	4460
157							* 2353	2026			2139	1878	176
3000							* 1155	903	785	623	766	600	5060
118							* 2547	1960	1731	1374	993	1343	199
2000					* 1963	1326	1082	890	771	610	668	543	5370
79					* 4327	2912	2408	1867	1700	1345	1095	1198	211
1000					1699	1214	1040	814	751	591	664	522	1430
39					3525	2477	2300	1795	1655	1362	1483	1151	214
0					1558	1177	1013	788	737	577	687	539	5260
0					3435	2586	2233	1733	1625	1273	1514	1188	207
-1000			* 3247	2319	1581	1180	1007	781			775	607	4830
-39			* 7180	5113	3442	2601	2221	1721			1799	1339	190
-2000			* 3618	2372	1583	1206	1034	800			1021	799	4040
-79			* 7978	5229	3513	2666	2270	1776			2251	1756	159
-3000													0
-118													0

Illustration 221

g06713480

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)	
	39		79		118		157		197					
														
5000												* 1189	* 1189	3320
197												* 2821	* 2821	131
4000							* 1007	* 1007				* 1138	830	4460
157							* 2353	* 2353				* 2510	1849	176
3000							* 1155	894	* 1145	889		* 1118	873	5060
118							* 2547	2182	* 2526	1518		* 2484	1495	189
2000					* 1063	1467	* 1414	951	* 1214	875		* 1135	802	5370
79					* 4327	3235	* 3117	2087	* 2677	1489		* 2503	1328	211
1000					* 2659	1358	* 1997	904	* 1325	655		* 1222	580	5430
39					* 5863	2504	* 3743	1804	* 2921	1445		* 2694	1279	214
0					* 2854	1320	* 1858	875	* 1382	642		* 1287	509	5260
0					* 6293	2910	* 4098	1930	* 3047	1418		* 2837	1321	207
-1000			* 3247	2650	* 2699	1322	* 1820	870				* 1348	675	4830
-39			* 7160	5843	* 5852	2915	* 4012	1918				* 2973	1488	190
-2000			* 3618	2756	* 2210	1353	* 1427	895				* 1386	685	4040
-79			* 7978	5965	* 4872	2965	* 3147	1574				* 3078	1951	159
-3000														0
-118														0

Illustration 222

g06713481

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1000	850	3600
197											* 2205	1897	156
4000							* 852	* 852			754	594	4020
157							* 1878	* 1878			9953	1311	194
3000							* 963	* 963	732	577	622	487	5470
118							* 2124	* 2124	1614	1271	5372	1074	215
2000					* 1586	1254	1020	800	711	557	561	436	5740
79					* 3488	2776	2255	1784	1598	1228	1238	962	226
1000					1408	1130	964	745	645	521	541	418	5860
39					3503	2491	2126	1643	1510	1172	1193	922	228
Ø					1426	1084	922	706	644	511	565	428	5650
Ø					3144	2346	2034	1556	1404	1126	1224	943	222
-1000	* 2197	* 2197	* 2753	2097	1412	1051	906	691	658	500	614	473	5260
-39	* 4843	* 4843	* 6070	4558	3113	2318	1998	1523	1450	1115	1354	1043	207
-2000	* 3271	* 3271	3066	2117	1430	1070	918	702			766	590	4560
-79	* 7212	* 7212	6760	4909	3100	2360	2024	1548			9588	1301	180
-3000			* 2815	2229	* 1540	1132					* 1308	996	3260
-118			* 5766	4896	* 3305	2467					* 2879	2196	129

Illustration 223

g06713483

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	38		79		118		157		187				
5000													
197											* 1000	* 1000	3970
4000							* 652	* 852			* 2205	* 2205	156
157							* 1878	* 1878			* 994	660	4620
3000							* 963	* 963	* 967	840	* 2103	1454	194
118							* 2124	* 2124	* 2175	1412	* 2146	1188	215
2000					* 1995	* 1995	* 1235	888	* 1062	620	* 990	488	5740
79					* 3498	* 3498	* 2724	1958	* 2408	1307	* 2175	1077	226
1000					* 2386	1289	* 1557	832	* 1233	594	* 1061	469	5900
38					* 6261	2798	* 3433	1830	* 2720	1311	* 2018	1035	228
0					* 2777	1201	* 1785	792	* 1338	574	* 1152	481	5890
0					* 8123	2649	* 3832	1747	* 2950	1288	* 2530	1060	222
-1000	* 2197	* 2197	* 2753	* 2753	* 2709	1188	* 1831	777	* 1328	568	* 1214	532	5280
-38	* 4843	* 4843	* 6070	* 6070	* 6105	2620	* 4837	1714	* 2928	1253	* 2678	1172	257
-2000	* 3271	* 3271	* 4280	2434	* 2438	1209	* 1829	788			* 1280	661	4590
-79	* 7212	* 7212	* 9438	5367	* 5375	2654	* 3560	1739			* 2823	1458	188
-3000			* 2015	* 2015	* 1940	1272					* 1308	1118	3280
-118			* 5706	* 5766	* 3395	2604					* 2878	2480	129

Illustration 224

g06713484

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1800	* 1000	3970
197											* 2205	* 2205	156
4000							* 852	* 852			809	642	4020
157							* 1878	* 1878			1764	1418	194
3000							* 663	* 663	786	823	671	529	3470
118							* 2124	* 2124	1734	1374	1479	1186	215
2000					* 1586	1349	* 1235	901	765	663	607	476	5740
79					* 3498	2974	* 2724	1890	1688	1330	1338	1049	226
1500					987	1219	1036	807	739	578	588	467	5800
39					3543	2689	2285	1778	1629	1274	1262	1008	228
0					1535	1154	895	767	718	556	602	468	5050
0					3384	2544	2160	1692	1583	1231	1327	1032	222
-1000	* 2167	* 2167	* 2753	2234	1521	1141	979	702	712	562	695	517	5290
-30	* 4843	* 4843	* 6070	4927	3354	2516	2158	1659	1559	1218	1466	1140	207
-2000	* 3271	* 3271	3088	2385	1542	1160	990	763			828	642	4590
-79	* 7212	* 7212	7249	5637	3406	2558	2154	1683			1822	1418	180
-3000			* 2615	* 2615	* 1540	1222					* 1306	1075	3290
-118			* 5766	* 5766	* 3395	2695					* 2879	2371	129

Illustration 225

g06713486

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (ft)	1925 79		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
5000													3670
4000							* 852	* 852					4020
3000							* 1870	* 1870					194
2000													5740
1925													215
157													5740
118													215
79													5740
39													228
0													5800
0													228
-1000													5260
-39													207
-2000													4560
-79													160
-3000													3280
-118													129

Illustration 226

g06713488

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

i08586007

Lifting Capacities (305.5CR Excavator Inside Japan (ISJ) Equipped with Cab)

SMCS Code: 7000



Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based upon a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools. The weight of a work tool must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Consult your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 60

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

(Table 60, contd)

(1) Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track type excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

(continued)



Heavy Lift ON

305.5CR ISJ cab, blade

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
5000													3320
4000							* 1087	792			* 2621	* 2621	131
3000							* 2353	1747			827	850	4480
2000							067	776	673	527	822	1434	176
1000							2177	1710	1484	1162	658	514	6060
0											1450	1134	199
-1000											559	514	5370
-2000											1296	1003	211
-3000											503	435	5430
-4000											1240	959	214
-5000											625	481	5200
-6000											1283	989	207
-7000											658	507	4630
-8000											1451	1118	190
-9000											673	671	4040
-10000											1925	1479	159
-11000													0
-12000													0

Illustration 227

g06713427

Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1180	3320
497											* 2021	* 2021	131
4000							* 1067	879			* 1138	723	4490
357							* 2353	1838			* 2510	1595	175
3000							* 1155	862	* 1145	589	* 1118	575	5040
118							* 2547	1990	* 2526	1298	* 2494	1268	159
2000					* 1063	1271	* 1414	818	* 1214	575	* 1135	510	5370
79					* 4327	2802	* 3117	1935	* 2677	1288	* 2503	1128	211
1000					* 2850	1162	* 1697	772	* 1325	558	* 1222	490	5430
39					* 5863	2562	* 3743	1702	* 2521	1225	* 2094	1080	214
0					* 2854	1124	* 1856	743	* 1382	542	* 1287	505	5290
0					* 6293	2478	* 4096	1838	* 3047	1196	* 2837	1114	207
-1000			* 3247	2279	* 2666	1128	* 1820	738			* 1348	571	4830
-30			* 7190	5011	* 5652	2484	* 4012	1826			* 2973	1259	100
-2000			* 3818	2328	* 2210	1157	* 1429	763			* 1398	754	4040
-79			* 7978	5133	* 4872	2551	* 3147	1882			* 3079	1663	159
-3000													0
-118													0

Illustration 228

g06713430

Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1180	* 1180	3320
4000							* 1007	854			* 2621	* 2621	131
3000							* 2353	1882			880	704	4460
2000							* 1155	837	727	573	1990	1552	175
1000							* 2547	1845	1033	1264	1567	1235	199
0					1597	1223	1014	794	713	580	655	496	5370
-1000					3522	2696	2230	1751	1572	1235	1399	1097	211
-2000					1481	1117	965	748	669	541	611	477	5430
-3000					3265	2462	2128	1650	1527	1192	1348	1052	214
-4000					1440	1086	935	720	679	528	632	492	5260
-5000					3175	2381	2021	1587	1497	1154	1394	1065	207
-6000			* 3247	2133	1440	1082	929	715			715	555	4830
-7000			* 7160	4703	3181	2387	2048	1576			1576	1224	180
-8000			* 3616	2185	1475	1112	956	740			944	731	4940
-9000			* 7978	4818	3253	2452	2108	1631			2092	1612	159
-10000													0
-11000													0

Illustration 229

g06713431

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1189	* 1189	3520
197											* 2621	* 2621	131
4000							* 1007	* 1007			* 1138	779	4460
157							* 2353	* 2353			* 2510	1718	176
3000							* 1155	826	* 1145	837	* 1118	823	5060
118							* 2547	2042	* 2526	1805	* 2494	1373	199
2000					* 1063	1366	* 1414	883	* 1214	824	* 1135	555	5370
79					* 4327	3611	* 3157	1646	* 2877	1375	* 2503	1224	211
1000					* 2660	1256	* 1897	836	* 1325	864	* 1223	534	5430
39					* 5883	2776	* 3743	1843	* 2921	1332	* 2694	1170	214
0					* 2854	1216	* 1858	897	* 1382	591	* 1287	551	5260
0					* 6203	2667	* 4098	1779	* 3947	1303	* 2837	1215	207
-1000			* 3247	2453	* 2699	1221	* 1820	892			* 1348	621	4850
-39			* 7160	5406	* 5952	2662	* 4012	1766			* 2973	1370	190
-2000			* 5818	2506	* 2210	1251	* 1427	827			* 1396	817	4040
-79			* 1978	5530	* 4872	2759	* 3147	1624			* 3079	1902	109
-3000													0
-118													0

Illustration 230

g06713434

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (ft)	1555		2000		3000		4000		5000						
	30		70		118		157		197				(mm) (ft)		
															
5000													* 1000	794	3070
197													* 2205	1750	158
4000								* 852	* 852				685	544	4020
157								* 1878	* 1878				1532	1199	194
3000								* 903	781	674	527		571	442	5470
118								* 2124	1720	1487	1182		1258	975	215
2000						* 1566	1192	945	734	653	507		513	394	5740
70						* 3498	2581	2083	1619	1441	1118		1130	899	226
1000						1380	1033	886	686	627	482		489	376	5880
30						3043	2277	1955	1498	1382	1082		1087	830	228
0						1308	967	845	640	606	462		565	385	5650
0						2684	2132	1862	1412	1336	1016		1114	848	222
-1000	* 2197	* 2197	* 2753	1882	1294	954	829	635	600	456	340		540	426	5260
-30	* 4843	* 4843	* 6070	4151	2653	2105	1827	1379	1322	1005	790		1230	940	207
-2000	* 3271	* 3271	2822	1939	1315	974	840	636					790	534	4580
-70	* 7212	* 7212	6223	4261	2900	2147	1853	1403					1544	1178	180
-3000			* 2615	2035	* 1540	1035							* 1308	910	3280
-118			* 5768	4487	* 3365	2283							* 2879	2007	129

Illustration 231

g06713436

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 3000	* 1000	3670
197											* 2205	* 2205	156
4000							* 852	* 852			* 994	907	4020
157							* 1870	* 1870			* 2193	1339	194
3000							* 963	* 963	* 987	589	* 873	497	5470
118							* 2124	* 2124	* 2175	1299	* 2148	1090	215
2000					* 1588	1300	* 1235	820	* 1092	560	* 986	445	5740
79					* 3498	2867	* 2724	1808	* 2408	1254	* 2175	981	228
1000					* 2386	1188	* 1557	764	* 1233	543	* 1051	427	5860
39					* 5261	2575	* 3633	1886	* 2720	1190	* 2318	941	258
0					* 2777	1100	* 1783	724	* 1338	523	* 1152	437	5650
0					* 6123	2426	* 3932	1597	* 2950	1153	* 2538	963	222
-1000	* 2197	* 2197	* 2753	2185	* 2769	1087	* 1831	709	* 1329	517	* 1214	483	5260
-30	* 4843	* 4843	* 6070	4818	* 6105	2396	* 4037	1564	* 2928	1140	* 2578	1066	207
-2000	* 3271	* 3271	* 4280	2238	* 2438	1107	* 1629	720			* 1288	864	4560
-79	* 7212	* 7212	* 9438	4935	* 5375	2441	* 3592	1589			* 2823	1332	180
-3000			* 2815	* 2815	* 1540	1170					* 1308	1028	5280
-118			* 5766	* 5766	* 3395	2581					* 2878	2263	129

Illustration 232

g06713437

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				
	39		79		118		157		197				(mm) (in)
5000													
197													* 1800 850 3970
4000							* 852	* 852					* 2205 1886 156
157							* 1878	* 1878					750 591 4020
3000							* 983	* 985	728	573	819	484	5470
118							* 2124	* 2124	1008	1264	1365	1066	215
2000					* 1580	1251	1017	795	797	553	558	434	5740
79					* 3498	2759	2242	1754	1560	1220	1231	955	225
1000					1489	1122	909	741	681	528	538	415	5900
39					3283	2474	2114	1833	1501	1165	1166	918	228
0					1417	1056	917	701	680	508	552	425	5650
0					3124	2329	2021	1548	1455	1121	1217	937	222
-1000	* 2197	* 2197	* 2753	2048	1403	1044	801	680	554	552	611	470	5200
-39	* 4843	* 4843	* 6070	4517	3093	2301	1665	1514	1441	1108	1346	1037	287
-2000	* 3271	* 3271	3043	2099	1424	1083	913	697			791	580	4590
-79	* 7212	* 7212	6710	4827	3143	2344	2012	1538			1678	1293	180
-3000			* 2815	2201	* 1540	1125					* 1306	969	3290
-118			* 5766	4353	* 3395	2480					* 2879	2181	129

Illustration 233

g06713438

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (ft)	1900 39		2000 79		3050 118		4000 157		5050 197				(mm) (ft)
													
5000											* 1000	* 1000	3280
197											* 2205	* 2205	156
4000							* 852	* 852			* 894	857	4020
157							* 1878	* 1878			* 2193	1448	194
3000							* 903	* 903	* 987	637	* 973	541	5470
118							* 2124	* 2124	* 2175	9436	* 2146	1162	215
2000					* 1586	* 1586	* 1235	884	* 1802	617	* 986	486	5740
79					* 3468	* 3468	* 2724	1950	* 2408	1361	* 2175	1072	228
1000					* 2386	1262	* 1957	829	* 1233	562	* 1061	467	5800
39					* 5261	2783	* 3433	1627	* 2728	1305	* 2318	1030	228
0					* 2777	1395	* 1783	789	* 1336	571	* 1152	479	5650
0					* 6123	2835	* 3602	1739	* 2850	1260	* 2539	1055	222
-1000	* 2197	* 2197	* 2793	2395	* 2769	1182	* 1831	773	* 1326	566	* 1214	529	5260
-39	* 4843	* 4843	* 6070	5216	* 6105	2808	* 4037	1705	* 2926	1247	* 2678	1168	207
-2000	* 3271	* 3271	* 4280	2418	* 2436	1202	* 1629	785			* 1280	658	4560
-79	* 7212	* 7212	* 9438	5332	* 5375	2656	* 3502	1730			* 2623	1451	160
-3000			* 2615	* 2615	* 1540	1205					* 1306	1110	3280
-118			* 5766	* 5766	* 3365	2789					* 2879	2448	129

Illustration 234

g06713441

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

305.5CR ISJ cab, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39	79	79	118	157	197							
													
5000											* 1189	* 1189	3320
997											* 2021	* 2021	131
4000							* 1067	830			894	687	4460
357							* 2353	1840			1890	1515	175
3000							* 1195	818	705	599	600	548	5080
118							* 2547	1803	1555	1232	1521	1203	199
2000					1555	1198	948	775	662	545	615	484	5370
79					8429	2637	2173	1709	1525	1203	1356	1067	211
1000					1438	1096	937	720	671	528	502	484	5430
39					3172	2423	2090	1606	1482	1160	1335	1022	214
0					1306	1053	906	701	657	513	612	479	5260
0					3082	2321	1999	1545	1450	1131	1350	1054	207
-1000			* 3247	2067	1400	1055	961	690			662	540	4830
-30			* 7160	4803	3088	2327	1980	1534			1526	1190	190
-2000			3061	2149	1433	1085	927	721			916	712	4640
-79			6749	4719	3160	2392	2045	1580			2020	1570	159
-3000													0
-118													0

Illustration 235

g06713462

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	30	79	79	158	158	157	157	157	157	157	157	157	
5000													3320
107													131
4000							* 5007	* 1007					4460
157							* 2353	* 2353					176
3000							* 1155	904	* 1145	621	* 1118	607	3060
118							* 2547	1004	* 2526	1388	* 2484	1337	199
2000					* 1063	1534	* 1414	801	* 1214	607	* 1135	540	5370
79					* 4327	2042	* 3117	1660	* 2877	1339	* 2503	1190	211
1000					* 2059	1225	* 1897	814	* 1525	587	* 1222	518	5430
39					* 5953	2701	* 3743	1795	* 2921	1285	* 2694	1143	214
0					* 2854	1187	* 1858	795	* 1302	574	* 1287	535	5260
0					* 6293	2617	* 4098	1732	* 3047	1266	* 2837	1190	207
-1000			* 3247	2187	* 2099	1190	* 1820	790			* 1348	604	4830
-39			* 7160	5285	* 5052	2625	* 4012	1720			* 2973	1332	190
-2000			* 3618	2452	* 2210	1220	* 1427	805			* 1388	756	4040
-79			* 7878	5407	* 4872	2690	* 3147	1776			* 3079	1755	159
-3000													0
-118													0

Illustration 236

g06713465

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)			
	30	79	79	118	118	157	157	197	197	197	197					
																
5000													* 1189	* 1189	5020	
197													* 2621	* 2621	121	
4000								* 9057	898					927	741	4460
157								* 2353	1876					2044	1633	175
3000								* 1155	879	790	665			743	582	5060
118								* 2547	1938	1675	1335			1638	1305	199
2000						1864	1286	1958	837	740	562			864	527	5370
79						3670	2635	2333	1844	1644	1306			1465	1181	211
1000						1547	1180	1028	791	725	573			641	506	5430
39						3412	2601	2225	1743	1590	1263			1413	1125	214
0						1507	1143	879	762	712	560			693	522	5260
0						3323	2519	2158	1681	1569	1234			1462	1151	207
-1000			* 3247	2205		1510	1145	873	757					749	586	4830
-39			* 7160	4671		3329	2525	2146	1669					1651	1298	190
-2000			* 3818	2307		1542	1175	1008	782					967	773	4040
-79			* 7978	5067		3400	2590	2204	1724					2177	1704	159
-3000																0
-118																0

Illustration 237

g06713468

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1030 39		2000 79		3000 118		4000 157		5000 197						
													(mm) (in)		
5000													* 1000	835	3500
197													* 2205	1844	156
4000							* 852	* 852					728	570	4920
157							* 1878	* 1878					1696	1270	184
3000							* 903	824	707	559			600	471	3470
118							* 2124	1816	1558	1232			1322	1058	215
2000					* 1566	1224	980	776	666	539			540	421	3740
79					* 3498	2706	2180	1712	1512	1188			1191	928	228
1000					1447	1095	930	722	650	513			520	403	3860
39					3190	2415	2051	1591	1454	1132			1148	888	228
0					1374	1029	888	682	638	484			535	412	3650
0					3031	2279	1950	1504	1409	1086			1170	908	222
-1000	* 2197	* 2197	* 2753	2993	1301	1917	872	667	632	488			580	450	3280
-39	* 4843	* 4843	* 6070	4416	3000	2242	1924	1471	1394	1075			1332	1000	207
-2000	* 3271	* 3271	2901	2853	1382	1938	884	678					737	570	4560
-79	* 7212	* 7212	6530	4527	3047	2284	1950	1486					1025	1250	180
-3000			* 2815	2158	* 1540	1098							* 1308	995	3260
-118			* 5766	4754	* 3365	2420							* 2870	2128	129

Illustration 238

g06713470

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (ft)	1900 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
5000													* 1000
197													* 2205
4000							* 852	* 852					* 984
157							* 1878	* 1878					* 2193
3000							* 903	* 903	* 987	621			* 973
118							* 2124	* 2124	* 2175	1369			* 2140
2000					* 1566	1364	* 1235	883	* 1002	601			* 996
79					* 3498	3007	* 2724	1902	* 2458	1325			* 2175
1000					* 2386	1231	* 1567	897	* 1233	575			* 1061
39					* 5261	2715	* 3433	1779	* 2729	1268			* 2318
0					* 2777	1184	* 1783	787	* 1336	555			* 1152
0					* 6123	2586	* 3932	1691	* 2950	1224			* 2539
-1000	* 2197	* 2197	* 2793	2309	* 2769	1151	* 1831	752	* 1328	549			* 1214
-39	* 4843	* 4843	* 6070	5092	* 6105	2537	* 4037	1657	* 2926	1210			* 2678
-2000	* 3271	* 3271	* 4280	2362	* 2436	1178	* 1629	703					* 1290
-79	* 7212	* 7212	* 9438	5209	* 5375	2581	* 3592	1662					* 2823
-3000			* 2615	* 2615	* 1540	1234							* 1306
-118			* 5766	* 5766	* 3365	2721							* 2879

Illustration 239

g06713471

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													(mm) (in)
5000											* 3028	* 1000	3670
197											* 2205	* 2205	156
4000							* 852	* 852			783	824	4020
157							* 1878	* 1878			1727	1375	184
3000							* 863	* 863	761	885	649	513	5470
118							* 2124	* 2124	1678	1305	1429	1131	215
2000					* 1586	1514	1901	838	740	585	586	461	5740
79					* 3498	2866	2339	1647	1632	1291	1291	1015	225
1000					1556	1165	1003	783	713	580	585	442	5800
39					3431	2613	2211	1726	1573	1295	1245	975	228
0					1484	1110	961	744	680	540	580	452	5650
0					3271	2466	2118	1640	1527	1191	1278	968	222
-1000	* 2197	* 2197	* 2753	2178	1670	1106	945	729	686	534	641	500	5260
-39	* 4843	* 4843	* 6070	4785	3241	2440	2083	1607	1513	1179	1414	1103	207
-2000	* 3271	* 3271	3164	2228	1491	1126	857	740			798	622	4560
-79	* 7212	* 7212	7020	4896	3287	2482	2108	1631			1759	1371	180
-3000			* 2615	* 2615	* 1540	1187					* 1306	1045	3260
-118			* 5766	* 5766	* 3395	2616					* 2878	2304	129

Illustration 240

g06713473

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
5000											* 1000	* 1000	3070
197											* 2205	* 2205	199
4000							* 852	* 852			* 994	* 990	4020
157							* 1878	* 1878			* 2193	1520	194
3000							* 965	* 963	* 987	870	* 1073	969	3470
118							* 2124	* 2124	* 2175	1476	* 2148	1256	215
2000					* 1588	* 1588	* 1235	937	* 1062	849	* 1060	513	5740
79					* 3498	* 3498	* 2724	2044	* 2408	1432	* 2175	1132	226
1000					* 2386	1326	* 1657	871	* 1239	624	* 1051	494	1600
39					* 5261	2624	* 3433	1621	* 2720	1375	* 2318	1089	228
0					* 2777	1256	* 1783	831	* 1338	804	* 1152	508	1660
0					* 6123	2775	* 3932	1833	* 2950	1331	* 2539	1116	222
-1000	* 2187	* 2187	* 2753	* 2753	* 2769	1246	* 1831	818	* 1326	598	* 1214	559	5200
-39	* 4843	* 4843	* 6070	* 6070	* 6105	2746	* 4037	1799	* 2928	1318	* 2978	1233	207
-3000	* 3271	* 3271	* 4280	2543	* 2438	1285	* 1629	827			* 1289	694	4500
-79	* 7212	* 7212	* 9438	5908	* 5375	2796	* 3992	1824			* 2823	1531	180
-3000			* 2015	* 2015	* 1540	* 1540					* 1308	* 1300	3290
-118			* 5796	* 5796	* 3365	* 3365					* 2879	* 2870	129

Illustration 241

g06713475

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (ft)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
5000											* 1189	* 1189	3320
197											* 2621	* 2621	131
4000							* 1067	858			804	708	4460
157							* 2353	1882			1971	1560	176
3000							* 1155	841	731	577	715	583	5060
118							* 2547	1855	1611	1271	1576	1242	199
2000					1606	1231	1020	799	717	503	638	500	5370
79					3542	2714	2248	1761	1581	1242	1407	1103	211
1000					1490	1124	871	753	697	544	615	480	1430
39					3284	2479	2140	1600	1536	1190	1356	1058	214
0					1449	1087	940	724	683	531	636	495	5260
0					3195	2396	2073	1597	1506	1170	1402	1091	207
-1000			* 3247	2152	1452	1090	935	719			719	559	4630
-39			* 7190	4744	3201	2403	2001	1586			1585	1232	190
-3000			* 9018	2204	1484	1119	961	744			950	735	4040
-79			* 7979	4900	3273	2468	2120	1641			2094	1622	159
-3000													0
-118													0

Illustration 242

g06713476

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

305.5CR ISJ cab, blade

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
5000													
107													
4000							* 6087	870					
157							* 2353	1603					
3000							* 1155	890	749	580			
118							* 2547	1885	1652	1302	1615	1272	199
2000					1643	1257	1644	817	735	577	655	513	5370
79					3623	2773	2302	1802	1621	1273	1444	1131	211
1000					1526	1151	665	771	715	558	631	492	5430
39					3395	2538	2194	1700	1576	1290	1362	1086	214
0					1488	1114	985	743	701	545	653	508	5260
0					3276	2456	2127	1638	1546	1201	1440	1120	207
-1000			* 3247	2201	1488	1117	859	738			739	573	4830
-39			* 7160	4854	3282	2462	2115	1626			1627	1264	190
-2000			* 3618	2254	1521	1146	966	762			974	754	4040
-79			* 7878	4978	3354	2527	2173	1681			2147	1692	159
-5000													0
-118													0

Illustration 243

g06713490

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39	79	79	158	157	157	197						
													
5000											* 1189	* 1189	3320
167											* 2521	* 2521	131
4000							* 1067	* 1067			* 1138	806	4499
157							* 2353	* 2353			* 2540	1766	176
3000							* 1155	950	* 1145	855	* 1118	845	5099
118							* 2547	2094	* 2526	1664	* 2484	1612	169
2000					* 1983	1401	* 1414	906	* 1214	841	* 1135	571	5379
79					* 4527	3089	* 3117	1998	* 2677	1634	* 2583	1259	211
1000					* 2959	1292	* 1697	889	* 1325	822	* 1222	548	5430
39					* 5863	2648	* 3743	1895	* 2621	1371	* 2084	1211	214
0					* 2854	1254	* 1858	830	* 1382	806	* 1287	567	5299
0					* 6293	2764	* 4096	1831	* 3047	1341	* 2837	1251	207
-1000			* 3247	2524	* 2699	1256	* 1620	825			* 1348	648	4830
-39			* 7160	5566	* 5952	2770	* 4012	1820			* 2973	1411	160
-2000			* 3618	2580	* 2210	1287	* 1427	851			* 1396	841	4040
-79			* 7978	5686	* 4972	2637	* 3147	1870			* 3079	1654	150
-3000													0
-118													0

Illustration 244

g06713494

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)		
	39		79		118		157		197						
															
5000											* 1189	* 1189	3320		
997											* 2021	* 2021	131		
4000							* 1067	* 1067					978	777	4460
157							* 2353	* 2353					2150	1714	175
3000							* 1185	921	803	837			786	623	5040
118							* 2547	2031	1771	1405			1733	1374	199
2000					* 1063	1347	1116	878	780	624			704	556	5370
79					* 4327	2971	2481	1697	1740	1376			1553	1226	211
1000					1635	1241	1067	833	769	604			680	535	5430
39					3600	2736	2353	1836	1695	1333			1590	1179	214
0					1585	1204	1037	804	755	591			704	552	5260
0					3516	2650	2287	1773	1695	1304			1552	1217	207
-1000			* 3247	2389	1587	1208	1031	799					794	622	4830
-30			* 7160	5223	3522	2666	2274	1762					1751	1371	190
-2000			* 3818	2421	1630	1236	1058	824					1045	814	4040
-79			* 7678	5339	3694	2725	2330	1816					2304	1796	159
-5000															0
-118															0

Illustration 245

g06713497

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

(mm) (ft)	1500 30		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
5000											* 1189	* 1189	3320
197											* 2621	* 2621	131
4000							* 1067	* 1067			* 1138	896	4460
157							* 2353	* 2353			* 2510	1887	176
3000							* 1155	* 1155	* 1145	700	* 1118	888	5060
118							* 2547	* 2547	* 2526	1551	* 2464	1517	199
2000					* 1063	1496	* 1414	971	* 1214	690	* 1135	616	5370
79					* 4327	3299	* 3117	2140	* 2677	1522	* 2503	1358	211
1000					* 2650	1387	* 6997	924	* 1326	670	* 1222	593	1400
39					* 5863	3058	* 3743	2037	* 2821	1478	* 2694	1309	214
0					* 2804	1346	* 1859	895	* 1362	657	* 1287	613	1260
0					* 6293	2674	* 4098	1973	* 3647	1449	* 2837	1352	207
-1000			* 3247	2705	* 2699	1351	* 1820	860			* 1348	691	4830
-39			* 7190	5965	* 5862	2980	* 4012	1981			* 2973	1523	190
-2000			* 3618	2761	* 2210	1382	* 1427	915			* 1396	904	4040
-79			* 7928	6387	* 4872	3647	* 3147	2017			* 3079	1694	159
-3000													0
-118													0

Illustration 246

g06713499

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) [in]	1000		2000		3000		4000		5000				(mm) [in]
	38		79		118		157		197				
5000													3970
197													156
4000													4020
157													154
3000									790	590			5470
118									1654	1302			215
2000									729	571			5740
79									1656	1258			226
1000									703	545			5800
38									1550	1202			228
0									682	525			5650
0									1554	1158			222
-1000									676	519			5280
-38									1554	1145			207
-2000													4580
-79													180
-3000													3280
-118													129

Illustration 247

g06713502

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

(mm) 190	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) 30
													(mm) 30
5000											* 1000	* 1000	3920
197											* 2205	* 2205	156
4000							* 852	* 852			* 664	675	4020
157							* 1878	* 1878			* 2193	1488	194
3000							* 963	* 963	* 687	655	* 673	590	3470
118							* 2124	* 2124	* 2175	1440	* 2146	1227	215
2000					* 1566	* 1566	* 1235	908	* 1002	635	* 886	501	3740
79					* 3498	* 3498	* 2724	2062	* 2408	1400	* 2175	1105	228
1000					* 2586	1264	* 1567	952	* 1233	809	* 1051	482	5860
39					* 5261	2862	* 3433	1879	* 2720	1543	* 2318	1062	228
0					* 2777	1230	* 1700	812	* 1338	588	* 1152	494	5650
0					* 6123	2713	* 3602	1791	* 2550	1299	* 2538	1069	222
-1000	* 2197	* 2197	* 2753	* 2753	* 2769	1217	* 1831	797	* 1328	583	* 1214	540	5280
-30	* 4843	* 4843	* 6070	* 6070	* 6105	2684	* 4037	1757	* 2928	1286	* 2678	1203	207
-2000	* 3271	* 3271	* 4260	2489	* 2438	1237	* 1629	808			* 1280	678	4560
-79	* 7212	* 7212	* 8436	5489	* 5375	2728	* 3592	1762			* 2623	1405	180
-3000			* 2615	* 2615	* 1540	1301					* 1308	* 1306	3280
-118			* 5766	* 5766	* 3305	2868					* 2870	* 2870	120

Illustration 248

g06713503

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305.5CR Excavator Inside Japan (ISJ) Equipped with Cab

(mm) (ft)	1925 79		2000 79		3000 118		4000 157		5000 197				(mm) (ft)
													
5000											* 1000	* 1000	3970
197											* 2205	* 2205	156
4000							* 852	* 852			828	828	4620
157							* 1875	* 1875			1825	1447	194
3000							* 963	* 963	804	637	687	541	5470
118							* 2124	* 2124	1774	1405	1510	1194	215
2000					* 1566	* 1566	* 1235	890	794	617	622	489	5740
79					* 3498	* 3498	* 2724	1939	1726	1381	1372	1075	226
1000					1844	1248	1081	825	757	502	601	469	5800
39					3624	2748	2339	1819	1669	1305	1305	1034	228
0					1571	1180	1019	795	736	572	617	490	5850
0					3465	2603	2247	1732	1623	1261	1361	1058	222
-1000	* 2197	* 2197	* 2753	2284	1558	1188	1003	771	730	566	582	530	5260
-39	* 4843	* 4843	* 6070	5037	3434	2575	2212	1699	1600	1248	1504	1169	207
-2000	* 3271	* 3271	3362	2534	1579	1187	1015	792			847	658	4560
-79	* 7212	* 7212	7414	5147	3481	2617	2238	1723			1867	1450	180
-3000			* 2615	* 2615	* 1540	1249					* 1306	1099	3280
-118			* 5766	* 5766	* 3365	2754					* 2879	2423	129

Illustration 249

g06713505

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35	70	70	110	110	157	157	157	157	157	157	157	
5000													3975
3975													156
4000							* 852	* 852					4020
157							* 1878	* 1878					194
3000							* 983	* 983	* 987	704			5470
118							* 2124	* 2124	* 2175	1552			215
2000					* 1588	* 1588	* 1235	972	* 1092	684			5740
79					* 3498	* 3498	* 2724	2144	* 2408	1507			226
1000					* 2288	1392	* 1557	918	* 1233	658			5860
38					* 5261	3071	* 3433	2021	* 2720	1451			226
0					* 2737	1328	* 1789	876	* 1338	638			3650
0					* 6123	2922	* 3602	1932	* 2950	1406			222
-1000	* 2197	* 2197	* 2753	* 2753	* 2769	1312	* 1831	861	* 1329	632			5260
-30	* 4843	* 4843	* 6070	* 6070	* 6105	2893	* 4037	1899	* 2928	1393			207
-2000	* 3271	* 3271	* 4280	2871	* 2438	1332	* 1629	872					4560
-79	* 7212	* 7212	* 8438	5889	* 5375	2937	* 3502	1824					180
-5000			* 2815	* 2815	* 1540	* 1540							3280
-118			* 5786	* 5786	* 2065	* 3395							129

Illustration 250

g06713506

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

i08785739

Lifting Capacities

(305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab)

SMCS Code: 7000

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based on a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165.0 lb) operator

Lifting capacities will vary with different work tools and attachments. The weight of a work tool attachment must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools and attachments.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration. Consult your Cat® dealer for additional information.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Contact your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 61

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(Table 61, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

(continued)



Heavy Lift ON

305CR ISJ cab, blade

(mm) (in)	1800		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
													
5000													0
187													0
4000							626	730			960	707	4070
157							2048	1610			1985	1560	160
3000							925	726			689	540	4740
118							2039	1602			1539	1190	187
2000					1413	1879	880	893	619	483	665	472	5870
79					3116	2378	1961	1629	1365	1065	1335	1040	200
1000					1311	985	848	655	605	460	581	480	5130
39					2890	2173	1871	1444	1334	1036	1281	993	202
0					1271	949	823	631			555	457	4950
0					2602	2093	1814	1391			1333	1031	195
-1000			* 3120	1873	1273	952	820	628			659	539	4490
-38			* 6879	4130	2608	2096	1809	1366			1541	1189	177
-2000			2784	1931	1310	965					957	764	3590
-79			8139	4257	2888	2171					2198	1684	141
-3000													0
-118													0

Illustration 251

g06713846

Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

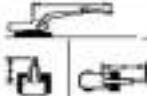
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							* 1353	813			* 1145	788	4070
157							* 2963	1793			* 2525	1737	160
3000							* 1383	800			* 1062	604	4740
118							* 3050	1784			* 2342	1332	187
2000					* 2199	1211	* 1647	770	* 1371	542	* 1074	530	5070
79					* 4848	2669	* 3631	1710	* 3023	1199	* 2367	1168	200
1000					* 3003	1115	* 1860	736	* 1055	528	* 1161	507	5130
39					* 6521	2458	* 4319	1623	* 3428	1165	* 2558	1118	202
0					* 3255	1078	* 2132	712			* 1358	527	4950
0					* 7178	2376	* 4702	1566			* 2993	1162	195
-1000			* 3120	2167	* 3056	1080	* 2843	709			* 1676	608	4490
-39			* 6879	4777	* 6738	2381	* 4505	1564			* 3696	1348	177
-2000			* 3867	2228	* 2344	1114					* 1731	860	3590
-79			* 8527	4812	* 5168	2456					* 3818	1896	141
-3000													0
-118													0

Illustration 252

g06713850

Lift chart above: cab, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							1001	791			971	767	4070
157							2207	1745			2140	1692	160
3000							997	787			747	589	4740
118							2198	1736			1646	1300	187
2000					1522	1168	952	754	673	529	658	517	5070
79					3356	2575	2121	1664	1484	1167	1452	1141	200
1000					1418	1075	921	716	609	516	633	496	5130
39					3138	2370	2030	1579	1453	1137	1396	1092	202
0					1386	1039	895	692			699	514	4950
0					3042	2290	1973	1525			1454	1134	195
-1000			+ 3120	2839	1392	1041	892	690			761	592	4490
-39			+ 6879	4496	3048	2295	1968	1526			1678	1306	177
-2000			3005	2087	1415	1074					1001	834	3590
-79			6627	4623	3128	2368					2383	1839	141
-3000													0
-118													0

Illustration 253

g06713852

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35	79	79	118	118	157	157	157	157	157	157	157	
5000													0
157													0
4000							* 1353	877			* 1145	851	4070
157							* 2883	1934			* 2525	1875	100
3000							* 1383	873			* 1062	656	4740
118							* 3660	1826			* 2342	1445	187
2000					* 2199	1305	* 1647	840	* 1371	590	* 1074	577	5070
79					* 4848	2878	* 3631	1851	* 3023	1382	* 2367	1273	206
1000					* 3003	1209	* 1969	800	* 1656	677	* 1161	564	5130
39					* 6621	2967	* 4319	1765	* 3428	1272	* 2668	1222	202
0					* 3255	1172	* 2132	776			* 1368	576	4950
0					* 7178	2585	* 4702	1710			* 2983	1279	195
-1000			* 3120	2347	* 3856	1175	* 2943	773			* 1676	663	4490
-39			* 6879	5175	* 6738	2598	* 4505	1705			* 3696	1462	177
-2000			* 3867	3408	* 2344	1208					* 1731	634	3690
-79			* 8527	5309	* 5168	2065					* 3818	2059	141
-3000													0
-118													0

Illustration 254

g06713853

Lift chart above: cab, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

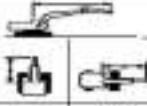
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	922	3480
4000							* 1062	745			* 2610	2033	137
157							* 2385	1643			740	581	4670
3000							933	733	629	482	1633	1280	180
118							2058	1616	1388	1084	593	462	5190
2000											1309	1019	203
79					1442	1103	893	695	616	475	529	409	5450
1000					3181	2433	1969	1533	1358	1056	1166	902	215
39					1326	802	844	649	596	489	508	390	5510
0					2910	2106	1660	1431	1312	1012	1120	861	217
0					1253	801	807	616	679	444	624	401	5350
0					2762	2052	1780	1386	1277	978	1155	885	211
-1000	* 1948	* 1948	* 2576	1803	1239	919	796	603			589	461	4930
-39	* 4296	* 4296	* 5678	3875	2733	2026	1753	1330			1300	995	194
-2000	* 3013	* 3013	2696	1854	1262	939	812	620			769	589	4190
-79	* 6643	* 6643	5945	4087	2783	2071	1791	1386			1697	1296	164
-3000											* 1657	1275	2590
-118											* 3434	2810	102

Illustration 255

g06713855

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	* 1184	3480
4000							* 1082	829			* 2610	* 2610	137
157							* 2385	1827			* 868	649	4570
3000							* 1157	816	* 1228	551	* 2136	1430	180
118							* 2551	1800	* 2708	1215	* 810	519	5180
2000					* 1777	1237	* 1440	776	* 1314	538	* 2007	1145	203
79					* 3819	2726	* 3187	1715	* 2896	1187	* 817	481	5450
1000					* 2608	1122	* 1805	731	* 1488	618	* 2022	1017	215
39					* 6846	2473	* 3990	1611	* 3214	1142	* 578	442	5510
0					* 3175	1959	* 2061	896	* 1557	502	* 2195	975	217
0					* 7801	2335	* 4544	1535	* 3433	1198	* 1112	455	5350
-1000	* 1948	* 1948	* 2575	2094	* 3161	1947	* 2093	684			* 2453	1003	211
-39	* 4296	* 4296	* 5678	4617	* 6970	2306	* 4615	1508			* 1397	511	4930
-2000	* 3013	* 3013	* 4263	2148	* 2856	1868	* 1739	701			* 3081	1127	194
-79	* 6643	* 6643	* 9396	4735	* 6950	2356	* 3834	1545			* 1592	685	4160
-3000											* 3510	1467	164
-118											* 1557	* 1557	2580
											* 3474	* 3474	102

Illustration 256

g06713856

Lift chart above: cab, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1800		2000		3000		4000		5000					
	39		79		118		157		197					
													(mm) (in)	
5000											* 1184	995	3480	
197											* 2610	2194	137	
4000							* 1082	886				861	633	4570
157							* 2385	1778				1796	1395	180
3000							* 1157	794	683	538		645	507	5180
118							* 2551	1751	1507	1188		1423	1118	203
2000					* 1777	1193	968	796	670	525		877	451	5450
79					* 3819	2636	2128	1667	1478	1158		1273	994	215
1000					1426	1081	916	710	649	506		656	432	5510
39					3190	2383	2019	1665	1432	1114		1226	952	217
0					1362	1020	860	676	633	490		574	444	5360
0					3002	2249	1940	1491	1396	1080		1265	975	211
-1000	* 1948	* 1948	* 2575	1969	1348	1008	867	664				644	498	4930
-39	* 4296	* 4296	* 5678	4341	2973	2223	1912	1465				1421	1099	194
-2000	* 3013	* 3013	2917	2020	1371	1029	885	681				838	647	4160
-79	* 8643	* 8643	6432	4453	3623	2268	1956	1601				1847	1426	164
-3000												* 1507	* 1557	2580
-118												* 3434	* 3434	102

Illustration 257

g06713859

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	* 1184	3480
4000							* 1062	893			* 969	703	4670
157							* 2385	1968			* 2136	1550	180
3000							* 1157	890	* 1229	880	* 910	566	5190
118							* 2551	1941	* 2709	1322	* 2607	1248	203
2000					* 1777	1331	* 1445	842	* 1314	587	* 917	505	5450
79					* 3919	2935	* 3187	1856	* 2898	1294	* 2622	1114	215
1000					* 2698	1216	* 1806	795	* 1488	867	* 978	485	5510
39					* 6949	2682	* 3860	1752	* 3214	1249	* 2156	1070	217
0					* 3175	1154	* 2061	700	* 1657	581	* 1112	500	5350
0					* 7001	2544	* 4544	1676	* 3433	1215	* 2453	1182	211
-1000	* 1948	* 1948	* 2576	* 2575	* 3161	1141	* 2885	748			* 1387	561	4930
-39	* 4295	* 4295	* 5678	* 5678	* 6970	2517	* 4615	1650			* 3681	1236	194
-2000	* 3013	* 3013	* 4261	2328	* 2958	1163	* 1739	765			* 1592	726	4190
-79	* 6643	* 6643	* 8396	5133	* 5950	2584	* 3834	1686			* 3510	1681	184
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	102

Illustration 258

g06713860

Lift chart above: cab, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

305CR ISJ cab, blade

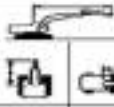
(mm) (in)	1800		2000		3000		4000		5000				(mm) (in)
	38		79		118		157		197				
5000													0
197													0
4000							967	765			937	742	4070
157							2133	1688			2067	1635	160
3000							963	762			719	568	4740
118							2124	1679			1586	1253	187
2000					1472	1131	938	728	648	509	633	498	5370
79					3245	2494	2048	1606	1428	1123	1396	1097	200
1000					1369	1038	887	690	633	496	688	476	5130
39					3018	2288	1955	1521	1397	1093	1341	1049	202
0					1329	1001	861	696			633	494	4950
0					2931	2208	1898	1468			1397	1089	196
-1000			* 3120	1974	1322	1004	859	693			732	570	4490
-39			* 6879	4353	2936	2213	1893	1463			1614	1256	177
-2000			2907	2032	1368	1037					1041	804	3590
-79			6409	4481	3016	2288					2296	1773	161
-3000													0
-118													0

Illustration 259

g06713861

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1500		2000		3000		4000		5000				
	39		79		118		157		197				(mm) (in)
5000													0
197													0
4000							* 1353	848			* 1145	822	4070
157							* 2983	1870			* 2525	1813	160
3000							* 1383	844			* 1062	832	4740
118							* 3050	1861			* 2342	1393	187
2000					* 2199	1263	* 1847	810	* 1371	568	* 1074	556	5070
79					* 4848	2785	* 3631	1787	* 3023	1253	* 2367	1225	200
1000					* 3903	1957	* 1959	771	* 1888	584	* 1161	833	5130
39					* 6621	2673	* 4318	1700	* 3428	1222	* 2559	1174	202
0					* 3255	1138	* 2132	746			* 1358	553	4950
0					* 7178	3491	* 4702	1646			* 2993	1220	195
-1000			* 3120	2269	* 3056	1132	* 2043	744			* 1670	639	4490
-39			* 6879	5004	* 6738	2496	* 4505	1641			* 3696	1456	177
-2000			* 3867	2530	* 2344	1188					* 1731	900	3590
-79			* 6527	5139	* 5188	2571					* 3818	1585	141
-3000													0
-118													0

Illustration 260

g06713863

Lift chart above: cab, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

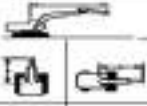
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
6000													0
597													0
4000							1040	827			* 1145	802	4070
157							2292	1823			* 2525	1768	1693
3000							1035	823			777	618	4740
118							2283	1815			1714	1362	1987
2000					1581	1221	1060	790	702	556	696	544	5070
79					3485	2692	2265	1742	1547	1236	1514	1199	200
1000					1476	1127	959	751	687	542	681	521	5130
39					3259	2486	2115	1657	1516	1196	1457	1145	202
0					1438	1091	933	727			688	541	4050
0					3171	2406	2058	1603			1517	1193	195
-1000			* 3120	2141	1441	1093	931	725			794	623	4490
-39			* 6879	4722	3177	2411	2055	1598			1751	1373	177
-2000			3120	2199	1477	1127					1125	875	3590
-79			6899	4950	3257	2484					2462	1929	141
-3000													0
-5188													0

Illustration 261

g06713864

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1300		2000		3000		4000		5000				
	39		79		118		157		197				(mm) (in)
5000													0
197													0
4000							* 1353	912			* 1145	885	4070
157							* 2983	2612			* 2525	1952	160
3000							* 1383	908			* 1062	684	4748
118							* 3050	2003			* 2342	1508	187
2000					* 2199	1358	* 1647	875	* 1371	617	* 1074	603	5070
79					* 4545	2994	* 3631	1929	* 3023	1390	* 2367	1331	200
1000					* 3003	1262	* 1959	836	* 1688	883	* 1161	580	5130
39					* 6621	2792	* 4319	1642	* 3428	1330	* 2559	1276	202
0					* 3255	1225	* 2132	811			* 1358	603	4958
0					* 7178	2709	* 4702	1786			* 2993	1329	195
-1000			* 3120	2450	* 3055	1227	* 2043	808			* 1676	693	4490
-39			* 6879	5403	* 6736	2705	* 4505	1783			* 3696	1529	177
-2000			* 3867	2512	* 2344	1261					* 1731	974	3590
-79			* 6527	5538	* 5168	2786					* 3818	2149	141
-3000													0
-118													0

Illustration 262

g06713865

Lift chart above: cab, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

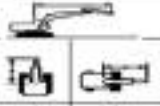
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		187				
6000													* 1184 964 3480
597													* 2619 2127 137
4000							* 1082 780						773 516 4570
157							* 2385 1721						1783 1346 180
3000							871 768	658 518					621 488 5160
118							2142 1693	1451 1142					1369 1075 203
2000					1501 1156		931 730	645 505					554 433 5450
79					3310 2548		2053 1610	1421 1114					1223 954 215
1000					1378 1044		882 684	624 485					533 414 5510
39					3636 2801		1945 1508	1375 1070					1176 913 217
0					1311 863		846 650	607 479					550 426 5350
0					3891 2167		1865 1433	1340 1030					1213 938 211
-1000	* 1948	* 1048	* 2575	1904	1236	871	833	638					618 478 4930
-39	* 4290	* 4296	* 5678	4198	2861	2140	1837	1407					1364 1054 196
-2000	* 3013	* 3013	2818	1955	1320	891	851	613					806 622 4160
-79	* 6643	* 6643	6214	4311	2912	2185	1878	1443					1776 1371 164
-3000													* 1887 1340 2590
-118													* 3434 2955 102

Illustration 263

g06713866

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

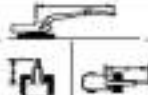
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)	
	39	79	79	118	118	157	157	197	197	236	236			
														
5000											* 1184	* 1184	3480	
197											* 2610	* 2610	137	
4000							* 1062	864			* 998	678	4570	
157							* 2385	1994			* 2136	1455	180	
3000							* 1157	851	* 1228	977	* 910	544	5190	
118							* 2551	1877	* 2708	1273	* 2607	1280	263	
2000						* 1777	1289	* 1445	813	* 1314	564	* 917	485	5450
79						* 3919	2842	* 3187	1792	* 2896	1245	* 2622	1069	215
1000						* 2698	1174	* 1806	765	* 1488	544	* 978	465	5510
39						* 6943	2988	* 3880	1686	* 3214	1200	* 2156	1026	217
0						* 3175	1111	* 2861	731	* 1657	829	* 1112	479	5350
0						* 7001	2450	* 4544	1612	* 3433	1166	* 2453	1056	211
-1000	* 1948	* 1948	* 2575	2186	* 3161	1099	* 2885	719			* 1387	538	4930	
-39	* 4296	* 4296	* 5678	4843	* 6970	2423	* 4515	1585			* 3861	1166	154	
-2000	* 3013	* 3013	* 4261	2250	* 2698	1120	* 1739	736			* 1582	698	4190	
-79	* 6643	* 6643	* 8396	4962	* 5950	2470	* 3834	1622			* 3510	1540	164	
-3000											* 1857	* 1857	2590	
-118											* 3434	* 3434	102	

Illustration 264

g06713867

Lift chart above: cab, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1184	* 1184	3480
197											* 2610	* 2610	137
4000							* 1082	842			833	862	4570
157							* 2385	1896			1837	1481	188
3000							* 1157	829	712	565	673	535	5160
118							* 2551	1829	1570	1245	1484	1174	203
2000					* 1777	1246	1004	792	699	552	603	475	1450
79					* 3919	2740	2213	1745	1541	1217	1350	1047	215
1000					1487	1134	954	745	678	532	581	455	5510
39					3279	2499	2104	1643	1495	1173	1281	1004	217
0					1420	1073	918	711	652	517	600	469	5260
0					3131	2365	2024	1569	1459	1139	1322	1033	211
-1000	* 1948	* 1948	* 2575	2071	1407	1051	905	680			673	525	4930
-39	* 4296	* 4296	* 5678	4567	3102	2339	1996	1542			1485	1159	194
-2000	* 3013	* 3013	3848	2122	1436	1081	923	716			874	680	4160
-79	* 6643	* 6643	6704	4679	3152	2384	2035	1579			1926	1500	164
-3000											* 1557	* 1557	2580
-118											* 3434	* 3434	102

Illustration 265

g06713868

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

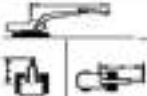
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													3480
197											* 1164	* 1164	137
4000							* 1062	928			* 959	733	4570
157							* 2385	2046			* 2136	1615	188
3000							* 1157	915	* 1228	626	* 940	591	5160
118							* 2551	2019	* 2708	1390	* 2007	1364	203
2000					* 1777	1384	* 1445	877	* 1314	613	* 917	529	5450
79					* 3919	3051	* 3187	1934	* 2696	1352	* 2022	1166	215
1000					* 2858	1269	* 1805	830	* 1458	555	* 978	509	5510
39					* 5949	2798	* 3960	1830	* 3214	1387	* 2156	1121	217
0					* 3175	1206	* 2061	795	* 1557	577	* 1112	524	5360
0					* 7901	2608	* 4544	1753	* 3435	1273	* 2453	1155	211
-1000	* 1948	* 1948	* 2575	* 2575	* 3161	1794	* 2993	783			* 1397	587	4930
-39	* 4296	* 4296	* 5678	* 5678	* 6970	2632	* 4815	1727			* 3081	1295	194
-2000	* 3013	* 3013	* 4261	2431	* 2698	1215	* 1739	860			* 1592	789	6100
-79	* 6543	* 6543	* 8396	5361	* 5960	2679	* 3834	1764			* 3510	1674	164
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	192

Illustration 266

g06713870

Lift chart above: cab, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

305CR ISJ cab, blade

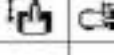
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							1031	814			* 1145	799	4070
157							2273	1795			* 2525	1740	160
3000							1027	810			770	607	4740
118							2264	1786			1698	1339	187
2000					1567	1202	981	777	695	546	680	534	5070
79					3456	2650	2186	1713	1533	1204	1499	1177	200
1000					1465	1109	940	738	681	533	654	512	5130
39					3230	2444	2095	1620	1501	1174	1443	1120	202
0					1425	1072	924	714			681	531	4950
0					3142	2355	2038	1575			1503	1172	195
-1000			* 3120	2106	1427	1075	922	712			795	612	4490
-39			* 6879	4645	3148	2370	2033	1570			1734	1348	177
-2000			3102	2165	1464	1108					1115	860	3550
-79			6839	4773	3228	2443					2459	1896	141
-3000													0
-118													0

Illustration 267

g06713871

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
6000													0
59°													0
4000							* 1353	961			* 1145	874	4670
157							* 2983	1996			* 2525	1928	1993
3000							* 1383	857			* 1682	674	4740
118							* 3058	1977			* 2342	1457	587
2000					* 2199	1340	* 1647	865	* 1371	866	* 1074	596	5070
79					* 4848	2959	* 3631	1903	* 3023	1340	* 2367	1311	208
1000					* 3003	1244	* 1989	824	* 1858	894	* 1161	571	5130
39					* 6621	2784	* 4318	1816	* 3428	1310	* 2889	1288	202
0					* 3255	1207	* 2132	799			* 1568	604	4990
0					* 7178	2962	* 4762	1762			* 2990	1399	195
-1000			* 3128	2417	* 3056	1210	* 2043	787			* 1676	663	4490
-39			* 6879	5330	* 6738	2667	* 4586	1757			* 3696	1595	177
-2000			* 3967	2479	* 2344	1244					* 1731	961	3690
-79			* 8527	5465	* 5168	2742					* 3818	2119	141
-3000													0
-118													0

Illustration 268

g06713872

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000													0
197													0
4000							1103	875			* 1145	869	4070
157							2432	1930			* 2526	1873	160
3000							1099	871			828	657	4740
118							2423	1922			1826	1449	167
2000					1677	1292	1064	838	749	593	733	580	5070
79					3697	2848	2345	1849	1632	1307	1617	1279	260
1000					1674	1198	1023	800	735	579	707	567	5130
39					3478	2642	2265	1794	1621	1277	1558	1228	202
0					1534	1162	987	776			736	579	4950
0					3383	2663	2198	1710			1623	1276	186
-1000			* 3120	2274	1537	1164	994	773			849	665	4490
-39			* 6879	5613	3388	2568	2190	1795			1871	1466	177
-2000			3324	2332	1673	1198					1199	931	3590
-79			7329	5142	3458	2641					2644	2052	141
-3000													0
-118													0

Illustration 269

g06713874

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							* 1363	965			* 1148	907	4070
157							* 2963	2126			* 2525	2045	168
3000							* 1383	961			* 1062	726	4740
118							* 3050	2119			* 2342	1862	187
2000					* 2169	1435	* 1847	927	* 1371	657	* 1074	643	5070
79					* 4848	3365	* 3631	2645	* 3023	1448	* 2367	1417	200
1000					* 3803	1339	* 1959	988	* 1555	643	* 1161	618	5130
39					* 6621	2953	* 4319	1958	* 3428	1417	* 2559	1363	202
0					* 3255	1302	* 2132	863			* 1368	643	4950
0					* 7178	2871	* 4702	1904			* 2993	1418	195
-1000			* 3120	2598	* 3868	1505	* 2843	861			* 1678	739	4490
-39			* 6879	5729	* 6738	2877	* 4505	1895			* 3696	1829	177
-2000			* 3867	3889	* 2344	1339					* 1731	1035	3590
-79			* 8527	5904	* 5168	2953					* 3618	2282	141
-3000													0
-118													0

Illustration 270

g06713875

Lift chart above: cab, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

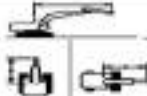
(mm) (in)	1800		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	* 1184	3486
4000							* 1082	829			* 2610	* 2610	137
157							* 2385	1828			826	852	4570
3000							* 1157	817	798	958	1821	1437	180
118							* 2551	1801	1556	1224	687	823	5180
2000					* 1777	1227	986	779	893	542	1470	1154	203
79					* 3919	2786	2193	1717	1526	1196	597	486	5450
1000					1674	1116	946	732	671	622	1337	1027	215
39					3250	2458	2085	1615	1480	1152	675	447	5510
0					1407	1054	809	698	656	507	1259	985	217
0					3102	2324	2005	1540	1444	1117	584	460	5350
-1000	* 1948	* 1948	* 2575	2036	1394	1042	897	687			1309	1013	211
-39	* 4296	* 4296	* 5678	4489	3073	2257	1977	1514			667	516	4930
-2000	* 3013	* 3013	3313	2087	1416	1062	914	783			1470	1137	194
-79	* 8643	* 8643	6645	4602	3123	2343	2018	1550			866	688	4180
-3000											1909	1473	164
-118											* 1587	* 1587	2590
											* 3434	* 3434	102

Illustration 271

g06713876

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
5000													5890
197													137
4000							* 1882	916					4070
157							* 2385	2020					180
3000							* 1157	904	* 1228	617	* 910	583	5190
118							* 2551	1993	* 2708	1361	* 2607	1285	203
2000					* 1777	1366	* 1445	865	* 1314	664	* 917	521	5450
79					* 3919	3013	* 3187	1906	* 2896	1332	* 2622	1148	215
1000					* 2698	1251	* 1806	818	* 1458	584	* 978	501	5510
39					* 5949	2759	* 3880	1804	* 3216	1288	* 2156	1194	217
0					* 3175	1189	* 2061	783	* 1657	568	* 1112	816	5390
0					* 7001	2621	* 4544	1727	* 3433	1263	* 2453	1137	211
-1000	* 1948	* 1948	* 2675	* 3575	* 3161	1176	* 2665	771			* 1397	678	4920
-39	* 4295	* 4295	* 5678	* 5678	* 6970	2694	* 4615	1701			* 3681	1275	194
-2000	* 3013	* 3013	* 4261	2386	* 2698	1199	* 1739	788			* 1592	749	4190
-79	* 6643	* 6643	* 8396	5288	* 5950	2641	* 3834	1736			* 3510	1650	164
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	102

Illustration 272

g06713878

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Cab

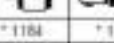
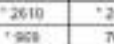
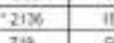
(mm) (in)	1900		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													3480
197											* 1184	* 1184	137
4000											* 2610	* 2610	137
157											* 968	* 968	4570
3000											* 2136	* 2136	180
118											* 719	* 719	5150
2000											* 1584	* 1584	203
79											* 646	* 646	5450
1000											* 1424	* 1424	215
39											* 623	* 623	5510
0											* 1374	* 1374	217
0											* 643	* 643	5350
0											* 1419	* 1419	211
-1000	* 1948	* 1948	* 2676	2200	1503	1132	868	748			722	963	4930
-39	* 4296	* 4296	* 5678	4658	3313	2495	2136	1649			1582	1241	194
-2000	* 3013	* 3013	3236	2254	1526	1162	896	794			934	726	4180
-79	* 6643	* 6643	7135	4671	3364	2541	2175	1686			2060	1502	154
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	102

Illustration 273

g06713880

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39	79	79	118	118	157	157	197	197	197	197	197	
5000													3380
197											* 1184	* 1184	137
4000							* 1082	* 1082			* 998	777	4570
157							* 2385	* 2385			* 2136	1713	180
3000							* 1157	968	* 1228	668	* 910	630	5190
118							* 2551	2134	* 2708	1468	* 2607	1388	203
2000					* 1777	1461	* 1445	930	* 1314	653	* 917	565	5450
79					* 3919	3222	* 3187	2050	* 2896	1480	* 2622	1245	215
1000					* 2698	1346	* 1806	882	* 1488	633	* 978	544	5510
39					* 6943	2969	* 3880	1946	* 3214	1395	* 2156	1199	217
0					* 3175	1284	* 2861	848	* 1657	617	* 1112	561	5350
0					* 7001	2831	* 4544	1869	* 3433	1360	* 2453	1236	211
-1000	* 1948	* 1948	* 2575	* 2575	* 3181	1271	* 2885	836			* 1387	628	4930
-39	* 4295	* 4295	* 5678	* 5678	* 6970	2803	* 4515	1843			* 3861	1384	194
-2000	* 3013	* 3013	* 4261	2579	* 2698	1293	* 1739	852			* 1582	809	4190
-79	* 6643	* 6643	* 8396	5688	* 5950	2850	* 3834	1880			* 3510	1785	184
-3000											* 1857	* 1857	2590
-118											* 3434	* 3434	102

Illustration 274

g06713881

Lift chart above: cab, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

i08785742

Lifting Capacities

(305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy)

SMCS Code: 7000



Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based on a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165.0 lb) operator

Lifting capacities will vary with different work tools and attachments. The weight of a work tool attachment must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools and attachments.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration. Consult your Cat® dealer for additional information.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Contact your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 62

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(Table 62, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height

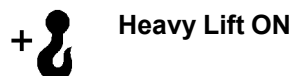


Lifting capacity over the front of the machine



Lifting capacity over the side of the machine

(continued)



305CR ISJ canopy, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							904	712			876	689	4070
157							1664	1570			1931	1520	166
3000							900	700			689	525	4740
118							1985	1561			1475	1158	187
2000					1376	1052	885	675	681	469	587	458	5070
79					3034	2319	1907	1488	1325	1034	1295	1010	200
1000					1273	959	824	636	588	455	563	437	5130
39					2808	2114	1817	1403	1293	1064	1241	963	302
0					1234	922	798	612			586	453	4050
0					2720	2034	1760	1350			1292	999	195
-1000			2639	1823	1236	905	790	610			678	523	4490
-39			5619	4328	2726	2039	1754	1345			1495	1154	177
-2000			2708	1881	1273	968					968	742	3690
-79			5972	4147	2806	2112					2135	1637	141
-3000													0
-118													0

Illustration 275

g06713922

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

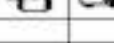
(mm) (in)	1300		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							* 1353	793			* 1145	768	4070
157							* 2983	1749			* 2525	1695	160
3000							* 1383	799			* 1062	589	4740
118							* 3050	1740			* 2342	1296	187
2000					* 2199	1181	* 1647	756	* 1371	527	* 1074	515	5370
79					* 4948	2605	* 3631	1686	* 3023	1362	* 2367	1135	200
1000					* 3003	1081	* 1959	716	* 1588	513	* 1161	493	5130
39					* 6621	2393	* 4319	1560	* 3428	1131	* 2559	1086	202
0					* 3255	1048	* 2132	692			* 1358	512	4950
0					* 7178	2312	* 4702	1525			* 2993	1128	195
-1000			* 3120	2111	* 3056	1051	* 2043	699			* 1676	591	4490
-39			* 6879	4654	* 6736	2317	* 4505	1520			* 3696	1362	177
-2000			* 3867	2172	* 2344	1085					* 1731	837	3590
-79			* 8527	4789	* 5188	2392					* 3818	1845	141
-3000													0
-118													0

Illustration 276

g06713923

Lift chart above: canopy, rubber belts, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

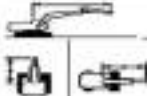
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							975	773			946	749	4070
157							2153	1784			2067	1652	160
3000							972	769			727	574	4740
118							2144	1686			1603	1267	187
2000					1485	1141	937	736	655	515	640	504	5070
79					3274	2516	2066	1623	1344	1136	1412	1111	200
1000					1382	1049	896	698	640	522	615	492	5130
39					3048	2310	1876	1536	1412	1106	1356	1062	202
0					1343	1012	870	673			641	500	4950
0					2960	2231	1919	1485			1412	1103	195
-1000			+ 3120	1980	1345	1014	898	671			740	576	4490
-39			+ 6879	4385	2968	2236	1914	1480			1631	1271	177
-2000			2930	2647	1381	1047					1052	813	3590
-79			6460	4513	3046	2309					2320	1792	141
-3000													0
-118													0

Illustration 277

g06713926

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

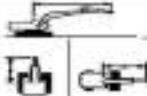
(mm) (in)	1500		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							* 1353	857			* 1145	831	4070
157							* 2983	1890			* 2525	1833	160
3000							* 1383	853			* 1062	840	4748
118							* 3050	1882			* 2342	1410	187
2000					* 2199	1276	* 1647	820	* 1371	575	* 1074	563	5070
79					* 4848	2813	* 3631	1807	* 3023	1269	* 2367	1241	200
1000					* 3003	1188	* 1959	781	* 1888	562	* 1161	540	5130
39					* 6621	2602	* 4318	1721	* 3428	1238	* 2559	1190	202
0					* 3255	1143	* 2132	756			* 1358	561	4958
0					* 7178	2520	* 4702	1667			* 2593	1237	195
-1000			* 3120	2291	* 3056	1145	* 2043	754			* 1676	646	4490
-39			* 6879	5052	* 6736	2525	* 4505	1662			* 3696	1424	177
-2000			* 3867	2352	* 2344	1179					* 1731	911	3590
-79			* 8527	5186	* 5168	2608					* 3818	2508	141
-3000													0
-118													0

Illustration 278

g06713928

Lift chart above: canopy, rubber belts, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1184	900	3480
157											* 2610	1944	137
4000							922	727			720	565	4670
157							2032	1602			1587	1245	198
3000							908	714	611	478	576	449	5160
118							2003	1575	1347	1053	1269	989	203
2000					1405	1078	898	677	598	465	512	396	5450
79					3099	2373	1915	1482	1318	1035	1130	874	215
1000					1282	965	819	630	577	445	482	378	5510
39					2828	2127	1606	1390	1272	981	1094	834	217
0					1216	904	783	597	541	430	507	388	5390
0					2680	1993	1726	1315	1236	947	1118	857	211
-1000	* 1948	* 1948	* 2575	1753	1202	892	770	566			571	437	4930
-39	* 4296	* 4296	* 5678	3865	2651	1956	1696	1289			1258	964	194
-2000	* 3013	* 3013	2520	1804	1226	913	788	601			746	571	4160
-79	* 6643	* 6643	5778	3977	2701	2012	1737	1326			1645	1259	954
-3000											* 1557	1241	2590
-118											* 3434	2737	102

Illustration 279

g06713929

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1500		2000		3000		4000		5000				
	39	79	79	118	157	197	197						
												(mm) (in)	
5000											* 1184	1002	3480
197											* 2610	2210	137
4000							* 1082	809			* 968	632	4570
157							* 2385	1783			* 2136	1393	180
3000							* 1157	796	* 1228	536	* 910	505	5150
118							* 2551	1756	* 2708	1182	* 2007	1113	203
2000					* 1777	1207	* 1445	758	* 1314	523	* 917	448	5450
79					* 3919	2862	* 3187	1671	* 2898	1154	* 2022	988	215
1000					* 2098	1092	* 1806	711	* 1488	563	* 978	429	5530
39					* 5949	2409	* 3900	1567	* 3214	1109	* 2156	945	217
0					* 3175	1038	* 2061	676	* 1557	487	* 1112	441	5350
0					* 7081	2271	* 4544	1491	* 3433	1075	* 2453	973	211
-1000	* 1948	* 1948	* 2575	2030	* 3151	1017	* 2099	654			* 1397	496	4930
-39	* 4296	* 4296	* 5678	4494	* 6970	2244	* 4615	1454			* 3081	1094	194
-2000	* 3013	* 3013	* 4261	2082	* 2958	1038	* 1739	681			* 1592	546	4160
-79	* 6643	* 6643	* 9096	4612	* 5950	2291	* 3834	1501			* 3510	1425	164
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	102

Illustration 280

g06713932

Lift chart above: canopy, rubber belts, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

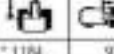
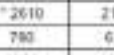
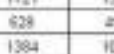
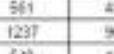
(mm) (in)	1900		2000		3000		4000		5000				(mm) (in)
	39	79	79	79	118	118	157	157	197	197			
5000													3480
197											* 1184	973	137
4000							* 1002	788			* 2610	2145	4570
157							* 2305	1737			790	617	180
3000							881	776	665	524	1721	1360	5150
118							2162	1710	1466	1195	628	493	203
2000					1514	1195	940	738	652	511	1384	1080	5450
79					3339	2570	2074	1627	1437	1127	561	438	215
1000					3391	1054	891	692	631	481	1237	966	5510
39					3668	2324	1965	1525	1391	1084	540	419	217
0					1324	993	855	688	615	476	1190	925	5350
0					2820	2190	1805	1450	1355	1096	557	431	211
-1000	* 1948	* 1948	* 2675	1919	1311	901	842	646			1227	951	4930
-39	* 4295	* 4295	* 5670	4231	2891	2163	1657	1424			626	484	194
-2000	* 3013	* 3013	2942	1970	1334	1002	860	662			1300	1060	4180
-79	* 6543	* 6543	6205	4343	2941	2205	1896	1460			814	629	154
-3000											1796	1367	2590
-118											* 1557	* 1557	102
											* 3434	* 3434	

Illustration 281

g06713934

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade UP.

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)		
	39		79		118		157		197						
															
5000													* 1154	* 1154	3480
197													* 2610	* 2610	137
4000								* 1682	873				* 969	586	4570
157								* 2385	1925				* 2136	1513	188
3000								* 1157	860	* 1228	586		* 910	551	5100
118								* 2551	1897	* 2708	1289		* 2607	1216	293
2000						* 1777	1302	* 1445	822	* 1314	572		* 917	492	5450
79						* 3919	2876	* 3187	1812	* 2896	1261		* 2022	1084	215
1000						* 2599	1187	* 1805	775	* 1458	552		* 978	472	5510
39						* 6949	2517	* 3960	1709	* 3214	1216		* 2156	1048	217
0						* 3175	1124	* 3861	740	* 1557	536		* 1112	486	5290
0						* 7001	2479	* 4544	1632	* 3433	1182		* 2453	1071	211
-1000	* 1948	* 1948	* 2575	2218	* 3161	1112	* 2593	728					* 1397	545	4930
-39	* 4296	* 4296	* 5678	4891	* 6970	2452	* 4515	1606					* 3081	1262	184
-2000	* 3613	* 3613	* 4261	2272	* 2698	1133	* 1739	745					* 1582	707	4160
-79	* 6643	* 6643	* 6396	5818	* 5950	2495	* 3834	1643					* 3510	1559	164
-3000													* 1557	* 1557	2590
-118													* 3434	* 3434	102

Illustration 282

g06713936

Lift chart above: canopy, rubber belts, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

305CR ISJ canopy, blade

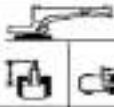
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							942	747			913	724	4070
157							2076	1647			2014	1595	160
3000							938	743			700	553	4740
118							2069	1638			1543	1220	167
2000					9434	1104	993	710	629	495	615	484	5070
79					3192	2434	1591	1565	1387	1092	1356	1067	200
1000					3332	1010	862	671	615	482	590	462	5130
39					2936	2228	1901	1480	1356	1062	1302	1019	200
0					1292	874	836	647			615	480	4950
0					2848	2148	1844	1427			1365	1056	196
-1000			° 3120	1524	1294	876	834	645			711	553	4490
-39			° 6879	4241	2854	2153	1838	1422			1567	1220	177
-2000			2631	1962	1331	1010					1013	783	3590
-79			6242	4370	2934	2226					2230	1726	141
-3000													0
-118													0

Illustration 283

g06713938

Lift chart above: canopy, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1900		2000		3000		4000		5000				(mm) (in)
	39	79	79	79	118	118	157	157	197	197	39	79	
5000													0
197													0
4000							* 1363	828			* 1145	803	4070
157							* 2983	1826			* 2625	1770	160
3000							* 1383	834			* 1062	696	4748
118							* 3050	1817			* 2342	1358	187
2000					* 2199	1233	* 1547	790	* 1371	553	* 1074	541	5070
79					* 4848	2728	* 3631	1743	* 3023	1219	* 2367	1192	200
1000					* 3063	1127	* 1959	751	* 1688	539	* 1161	518	5138
39					* 6821	2504	* 4319	1856	* 3428	1389	* 2559	1142	202
0					* 3255	1308	* 2132	726			* 1358	538	4968
0					* 7178	2426	* 4702	1882			* 2993	1167	196
-1000			* 3120	2213	* 3056	1303	* 2043	724			* 1676	621	4490
-39			* 6879	4880	* 6738	2431	* 4505	1597			* 3696	1368	177
-2000			* 3867	2274	* 2344	1137					* 1731	877	3598
-79			* 8527	5015	* 5168	2506					* 3818	1934	141
-3000													0
-118													0

Illustration 284

g06713939

Lift chart above: canopy, triple grouser tracks, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

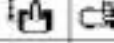
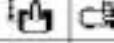
(mm) (in)	1800		2000		2600		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							1015	808			964	784	4070
157							2238	1782			2170	1728	160
3000							1011	804			757	603	4740
118							2229	1774			1670	1329	187
2000					1543	1194	975	771	693	542	668	530	5670
79					3403	2632	2151	1701	1506	1194	1474	1169	200
1000					1441	1100	804	733	609	528	643	507	5130
39					3177	2426	2068	1616	1475	1165	1417	1119	202
0					1401	1054	808	708			669	527	4950
0					2069	2346	2003	1562			1476	1162	195
-1000			* 3120	2091	1403	1066	806	706			773	607	4490
-39			* 6879	4610	3095	2351	1998	1557			1704	1338	177
-2000			3853	2149	1440	1089					1097	853	3590
-79			6731	4738	3175	2424					2418	1882	141
-3000													0
-118													0

Illustration 285

g06713940

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

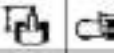
(mm) (in)	1000		2300		3000		4000		5000				(mm) (in)
	35		79		118		157		197				
5000													0
157													0
4000							* 1353	892			* 1145	865	4070
157							* 2983	1965			* 2525	1969	105
3000							* 1385	888			* 1062	868	4740
118							* 3660	1959			* 2342	1472	187
2000					* 2199	1328	* 1647	855	* 1371	602	* 1074	589	5070
79					* 4848	2929	* 3631	1995	* 3623	1327	* 2367	1298	206
1000					* 3803	1232	* 1959	916	* 1655	599	* 1161	565	5130
39					* 6621	2737	* 4319	1796	* 3428	1295	* 2659	1245	202
0					* 3255	1195	* 2132	781			* 1368	587	4890
0					* 7178	2635	* 4702	1744			* 2983	1255	195
-1000			* 3120	2394	* 3956	1197	* 2843	789			* 1676	676	4490
-39			* 6879	5279	* 6738	2646	* 4505	1735			* 3696	1491	177
-2000			* 3867	2455	* 2344	1231					* 1731	951	3590
-79			* 8527	5414	* 5168	2715					* 3818	2059	141
-3000													0
-118													0

Illustration 286

g06713942

Lift chart above: canopy, triple grouser tracks, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

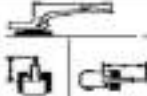
(mm) (in)	1900		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	942	3480
4000							* 1002	762			* 2610	2077	137
157							* 2305	1680			752	695	4570
3000							847	749	639	584	603	474	5150
118							2088	1653	1410	1111	1330	1045	203
2000					1464	1129	986	712	626	491	528	420	5450
79					3227	2488	1999	1569	1380	1083	1186	926	215
1000					1341	1017	857	665	606	471	517	401	5510
39					2956	2281	1890	1467	1234	1039	1140	885	217
0					1274	986	821	631	589	458	523	413	5350
0					2808	2107	1810	1392	1296	1095	1175	910	211
-1000	* 1948	* 1948	* 2676	1853	1260	944	808	620			690	464	4930
-39	* 4296	* 4296	* 5678	4066	2779	2091	1782	1366			1322	1023	194
-2000	* 3013	* 3013	2742	1904	1283	964	826	636			782	604	4180
-79	* 6643	* 6643	6047	4199	2829	2126	1821	1402			1725	1332	164
-3000											* 1557	1306	2590
-118											* 3434	2881	102

Illustration 287

g06713949

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade UP.

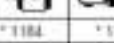
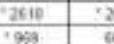
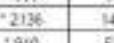
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													3490
197											* 2610	* 2610	137
4000							* 1062	844			* 998	661	4570
157							* 2385	1860			* 2136	1458	180
3000							* 1157	831	* 1228	562	* 910	530	5190
118							* 2551	1833	* 2708	1240	* 2607	1168	203
2000					* 1777	1259	* 1445	793	* 1314	549	* 917	471	5450
79					* 3919	2777	* 3187	1746	* 2896	1211	* 2622	1639	215
1000					* 2698	1144	* 1808	745	* 1488	529	* 978	482	5510
39					* 5949	2523	* 3980	1644	* 3216	1167	* 2156	998	217
0					* 3175	1082	* 2061	711	* 1657	513	* 1112	465	5350
0					* 7001	2585	* 4844	1887	* 3433	1132	* 2453	1036	211
-1000	* 1948	* 1948	* 2575	2140	* 3161	1069	* 2663	699			* 1307	622	4930
-39	* 4295	* 4295	* 5678	4719	* 6970	2358	* 4615	1541			* 3681	1152	194
-2000	* 3013	* 3013	* 4261	2184	* 2698	1091	* 1739	716			* 1582	679	4190
-79	* 6643	* 6643	* 8396	4838	* 5950	2405	* 3834	1578			* 3510	1498	154
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	102

Illustration 288

g06713952

Lift chart above: canopy, triple grouser tracks, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000											* 1164	9115	3490
197											* 2610	2248	137
4000							* 1062	823			813	647	4570
157							* 2385	1815			1792	1426	188
3000							* 1157	811	884	551	655	519	5160
118							* 2551	1788	1529	1214	1444	1144	293
2000					* 1777	1218	979	773	680	538	586	462	5450
79					* 3919	2686	2158	1735	1500	1186	1293	919	215
1000					1450	1106	929	727	659	518	565	443	5510
39					3197	2439	2050	1602	1454	1142	1245	975	217
0					1383	1045	893	693	643	502	583	455	5360
0					3049	2305	1970	1527	1418	1188	1285	1005	211
-1000	* 1948	* 1948	* 2575	2038	1369	1033	881	681			655	511	4930
-39	* 4296	* 4296	* 5678	4455	3620	2779	1942	1501			1443	1127	184
-2000	* 3013	* 3013	2964	2072	1382	1054	898	697			881	663	6160
-79	* 6543	* 6543	6537	4968	3070	2324	1981	1538			1876	1461	954
-3000											* 1557	* 1557	2590
-118											* 3434	* 3434	192

Illustration 289

g06713953

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

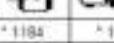
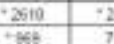
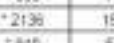
(mm) (in)	1800		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													3480
197											* 1184	* 1184	137
4000							* 1082	998			* 868	* 868	4570
157							* 2385	2002			* 2610	* 2610	180
3000							* 1157	895	* 1228	611	* 810	* 810	5180
118							* 2551	1975	* 2708	1347	* 2007	* 2007	203
2000					* 1777	1354	* 1440	857	* 1314	598	* 817	* 817	5450
79					* 3819	2986	* 3187	1890	* 2896	1319	* 2022	* 2022	215
1000					* 2608	1239	* 1805	818	* 1488	678	* 578	* 578	5510
39					* 5845	2733	* 3990	1786	* 3214	1274	* 2195	* 2195	217
0					* 3175	1177	* 2061	775	* 1557	562	* 1112	* 1112	5350
0					* 7801	2595	* 4544	1709	* 3433	1238	* 2453	* 2453	211
-1000	* 1948	* 1948	* 2575	* 2575	* 3161	1184	* 2093	763			* 1397	* 1397	4930
-39	* 4296	* 4296	* 5678	* 5678	* 6970	2567	* 4615	1683			* 3081	* 3081	194
-2000	* 3013	* 3013	* 4263	2375	* 2856	1186	* 1739	780			* 1592	* 1592	4160
-79	* 6643	* 6643	* 9396	5237	* 8950	2614	* 3834	1720			* 3510	* 3510	164
-3000											* 1557	* 1557	2580
-118											* 3474	* 3474	102

Illustration 290

g06713954

Lift chart above: canopy, triple grouser tracks, long stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

305CR ISJ canopy, blade

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39	79	118	157	197								
													
6000													0
197													0
4000							1006	795			975	771	4070
157							2218	1754			2151	1700	168
3000							1002	792			750	592	4740
118							2209	1745			1655	1306	167
2000					1530	1175	967	758	677	532	962	520	5070
79					3374	2591	2131	1672	1492	1173	1459	1147	209
1000					1427	1081	926	720	662	518	636	498	5130
39					3147	2384	2041	1587	1461	1143	1403	1098	202
0					1386	1045	900	696			663	517	4050
0					3060	2305	1984	1534			1461	1140	195
-1000			* 1120	2056	1390	1047	897	695			765	595	4490
-39			* 6879	4633	3065	2316	1979	1529			1687	1313	177
-2000			3626	2114	1427	1081					1087	839	3690
-79			6672	4951	3146	2383					2396	1849	141
-3000													0
-118													0

Illustration 291

g06713957

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000 39		2900 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000													0
157													0
4000							* 1353	881			* 1145	884	4070
157							* 2983	1942			* 2525	1883	168
3000							* 1383	877			* 1062	858	4740
118							* 3050	1933			* 2542	1451	187
2000					* 2199	1311	* 1647	843	* 1371	593	* 1074	580	5070
79					* 4848	2891	* 3631	1859	* 3623	1387	* 2367	1278	306
1000					* 3003	1215	* 1859	804	* 1855	879	* 1161	585	5130
39					* 6621	2679	* 4319	1772	* 3428	1277	* 2689	1227	202
0					* 3255	1178	* 2132	779			* 1368	678	4950
0					* 7178	2897	* 4702	1718			* 2993	1275	196
-1000			* 3120	2301	* 3056	1188	* 2043	777			* 1676	666	4490
-39			* 6879	5206	* 6738	2602	* 4505	1713			* 3686	1488	177
-2000			* 3867	3422	* 2344	1214					* 1731	939	3590
-79			* 8527	5341	* 5168	2677					* 3818	2068	141
-3000													0
-118													0

Illustration 292

g06713958

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

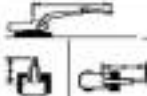
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													0
197													0
4000							1078	857			* 1145	831	4070
157							2378	1889			* 2525	1833	160
3000							1074	853			808	642	4740
118							2369	1881			1762	1416	187
2000					1039	1205	1039	820	731	579	715	560	5070
79					3614	2789	2291	1886	1611	1270	1577	1248	200
1000					1537	1171	998	781	716	565	699	543	5130
39					3398	2582	2200	1723	1590	1246	1519	1198	202
0					1497	1135	972	757			717	564	4950
0					3300	2503	2143	1669			1582	1244	195
-1000			* 3120	2225	1499	1137	970	795			827	649	4490
-39			* 6879	4962	3308	2508	2138	1664			1624	1430	177
-2000			3248	2281	1536	1170					1170	909	3590
-79			7162	5630	3386	2581					2581	2065	141
-3000													0
-118													0

Illustration 293

g06713960

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000 39		2900 79		3000 118		4000 157		5000 197				(mm) (in)
													
5000													0
157													0
4000							* 1353	945			* 1145	917	4070
157							* 2983	2084			* 2525	2022	168
3000							* 1385	941			* 1062	710	4740
118							* 3050	2075			* 2542	1568	187
2000					* 2199	1408	* 1647	907	* 1371	641	* 1074	626	5070
79					* 4848	3308	* 3631	2091	* 3623	1414	* 2367	1384	306
1000					* 3003	1318	* 1859	868	* 1855	626	* 1161	604	5130
39					* 6621	2888	* 4319	1914	* 3428	1384	* 2659	1331	202
0					* 3255	1272	* 2132	843			* 1568	626	4950
0					* 7178	2806	* 4702	1899			* 2993	1384	196
-1000			* 3120	2542	* 3056	1275	* 2043	841			* 1676	722	4490
-39			* 6879	5905	* 6738	2811	* 4505	1855			* 3686	1591	177
-2000			* 3867	2903	* 2344	1308					* 1731	6912	3590
-79			* 8527	5749	* 5168	2886					* 3818	2231	141
-3000													0
-118													0

Illustration 294

g06713962

Lift chart above: canopy, triple grouser tracks with pads, standard stick, blade, optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

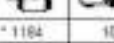
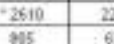
(mm) (in)	1300		2000		3000		4000		5000				(mm) (in)
	39		79		118		157		197				
5000													
197											* 1184	1000	3480
4000							* 1082	810			* 2510	2206	127
157							* 2385	1787			985	636	4570
3000							* 1157	798	687	541	1775	1402	180
118							* 2551	1760	1515	1192	649	510	5150
2000					* 1777	1204	978	760	674	528	1431	1124	203
79					* 3919	2645	2139	1676	1485	1164	581	453	5450
1000					1436	1098	921	714	603	508	1290	999	215
39					3167	2398	2030	1574	1438	1120	559	438	5510
0					1358	1027	884	690	637	493	1232	957	217
0					3620	2254	1950	1499	1404	1086	577	447	5350
-1000	* 1948	* 1948	* 2575	1885	1356	1015	872	698			1272	985	211
-39	* 4296	* 4296	* 5678	4378	2990	2237	1922	1473			648	501	4930
-2000	* 3013	* 3013	2938	2037	1379	1035	889	685			1429	1105	194
-79	* 8643	* 8643	6477	4491	3841	2283	1961	1509			842	650	4180
-3000											1858	1434	164
-118											* 1557	* 1557	2590
											* 3434	* 3434	102

Illustration 295

g06713965

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade UP.

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000 39		2000 79		3000 118		4000 157		5000 197				(mm) (in)
5000													3490
197													137
4000							* 1082	896					4570
157							* 2385	1876					180
3000							* 1167	884	* 1238	482	* 910	648	5160
118							* 2551	1949	* 2708	1328	* 2607	1263	203
2000					* 1777	1397	* 1445	845	* 1314	589	* 917	507	5450
79					* 3919	2948	* 3187	1864	* 2896	1299	* 2822	1118	215
1000					* 2698	1222	* 1805	798	* 1458	569	* 978	487	5510
39					* 5949	2694	* 3860	1760	* 3214	1254	* 2156	1074	217
0					* 3175	1159	* 2061	763	* 1657	653	* 1112	502	5350
0					* 7001	2556	* 4544	1685	* 3633	1220	* 2453	1167	211
-1000	* 1948	* 1948	* 2575	* 2575	* 3161	1167	* 2895	701			* 1307	543	4930
-39	* 4296	* 4296	* 5678	* 5678	* 6970	2529	* 4815	1657			* 3681	1241	194
-2000	* 3013	* 3013	* 4261	2342	* 2698	1168	* 1739	768			* 1582	729	4190
-79	* 6643	* 6643	* 6366	5164	* 5950	2576	* 3834	1684			* 3510	1686	164
-3000											* 1657	* 1557	2590
-118											* 3434	* 3434	102

Illustration 296

g06713967

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, no optional counterweight, no bucket, blade DOWN.

Product Information Section

305 Excavator Inside Japan (ISJ) and 305 Excavator for South East Asia (SEA) Region Equipped with Canopy

(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35	75	75	118	118	157	157	157	157	157	1184	1184	
5000											* 1184	* 1184	3480
157											* 2610	* 2610	137
4000							* 1062	872			* 999	888	4670
157							* 2385	1922			* 2136	1517	188
3000							* 1157	889	741	587	791	585	5160
118							* 2651	1895	1634	1295	1545	1223	203
2000					* 1777	1285	1042	822	728	575	629	495	5450
79					* 3919	2843	2296	1812	1605	1267	1387	1062	215
1000					1546	1177	993	775	707	568	607	476	5510
39					3408	2596	2190	1700	1559	1223	1338	1049	217
0					1479	1116	957	741	691	539	626	490	5350
0					3260	2462	2110	1635	1523	1189	1361	1080	211
-1000	* 1948	* 1948	* 2575	2183	1465	1104	944	729			793	540	4930
-39	* 4296	* 4296	* 5678	4747	3231	2435	2062	1698			1690	1210	184
-2000	* 3013	* 3013	3160	2204	1486	1125	962	746			911	709	6190
-79	* 6543	* 6543	6967	4909	3281	2481	2121	1645			2009	1563	954
-3000											* 1667	* 1667	2690
-118											* 3434	* 3434	952

Illustration 297

g06713968

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade UP.

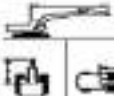
(mm) (in)	1000		2000		3000		4000		5000				(mm) (in)
	35		75		118		157		157				
5000													
157											* 1184	* 1184	3480
4000							* 1062	* 1062			* 999	760	4870
157							* 2385	* 2385			* 2136	1675	188
3000							* 1157	948	* 1226	661	* 910	615	5160
118							* 2551	2090	* 2706	1435	* 2007	1356	203
2000					* 1777	1432	* 1445	910	* 1514	656	* 917	551	5450
75					* 3919	3157	* 3187	2095	* 2896	1486	* 2022	1215	215
1000					* 2698	1317	* 1806	962	* 1458	618	* 978	530	5510
39					* 5849	2904	* 3980	1902	* 3214	1362	* 2156	1179	217
0					* 3175	1254	* 2061	828	* 1657	602	* 1112	547	5350
0					* 7901	2768	* 4544	1825	* 3435	1327	* 2453	1288	211
-1000	* 1948	* 1948	* 2575	* 2575	* 3161	1242	* 2693	816			* 1397	612	4930
-39	* 4296	* 4296	* 5678	* 5678	* 6970	2738	* 4815	1799			* 3061	1350	184
-2000	* 3013	* 3013	* 4261	2623	* 2698	1263	* 1739	832			* 1592	790	4190
-75	* 6543	* 6543	* 8396	5963	* 5960	2785	* 3834	1836			* 3510	1743	954
-3000											* 1657	* 1657	2690
-118											* 3434	* 3434	102

Illustration 298

g06713969

Lift chart above: canopy, triple grouser tracks with pads, long stick, blade, optional counterweight, no bucket, blade DOWN.

i09725945

Lifting Capacities

(305 SR Excavator Inside Japan (ISJ) Equipped with Cab)

SMCS Code: 7000

S/N: AX51-Up

WARNING

Failure to comply to the rated load can cause possible personal injury or property damage. This includes the risk of unintended boom lowering. Review the rated load of a particular work tool before performing any operation. Make adjustments to the rated load as necessary for non-standard configurations.

There may be local regulations and/or government regulations that govern the use of excavators which lift heavy objects. Obey all local and government regulations.

Lifting capacities should be used as a guide. Work tools, uneven ground conditions, soft ground conditions, or poor ground conditions have effects on lifting capacities. The operator is responsible for being aware of these effects.

The lifting capacities are defined by "ISO 10567 2007". The lifting capacities are defined as the lower value of 75% of the static tipping capacity or 87% of the hydraulic lift capacity.

Note: Lifting capacities are based on a standard machine with the following conditions:

- Lift point: Stick nose without bucket
- Lubricants full
- Fuel tank full
- Steel track
- Complete cab with a 75 kg (165 lb) operator

Lifting capacities will vary with different work tools and attachments. The weight of a work tool attachment must be subtracted from the lift capacity. Consult your Cat® dealer regarding the lifting capacities for specific work tools and attachments.

This machine may be equipped with various sticks. Lifting capacities may vary between the different sticks. Measure the distance on the stick between the boom hinge pin and the work tool hinge pin. This distance will inform you of the size of the stick that is equipped on the machine.

Use the lifting eye that is provided on the linkage to lift objects. When the lifting eye is used, the connection must be made with a sling or shackle.

Note: Japan regulations require a shovel crane configuration to lift certain objects. A shovel crane has a rated load capacity, therefore, the lift capacities discussed below do not apply to a shovel crane configuration. Consult your Cat® dealer for additional information.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Contact your Cat® dealer for additional information.

Configuration Identification

Note: Each component has a stamp to identify the configuration affecting lifting capacity.

The owner will need to check the machine configuration to identify the correct lifting capacity.

The configuration identifier will be located with the part number stamped on the component. Refer to the following table for the abbreviation of the configuration.

Table 63

Configuration Identification		
Component	Configuration	Abbreviation
Front	Reach Boom	R
	Mass Boom	M
	Variable Angle Boom	VA
	Super Long Reach Boom	SLR
	Standard	STD
	Heavy Duty	HD
	Extreme Special	ES
	Thumb Ready Stick	TR
Undercarriage	Short Undercarriage (Crawler)	STD
	Long Undercarriage (Crawler)	LC
	Long Narrow Undercarriage (Crawler)	LN

(continued)

(Table 63, contd)

Configuration Identification		
Component	Configuration	Abbreviation
Cylinder	Standard	-
	Heavy Lift	HL
Counterweight	Metric Ton (tonne)	t ⁽¹⁾

⁽¹⁾ Counterweight stamp indicates metric ton. (example 1.0 t = 1000 kg)

Symbols Found in the Lifting Capacity Charts

Below are symbols that are commonly found on lifting capacity charts for track excavators.

Note: Depending on the machine configuration, some symbols may not be used.

(mm)
(inch) **Measurements are provided in millimeters and inches**



Lift Capacities are provided in kilograms and pounds



Load is limited by hydraulic lifting capacity rather than by a tipping load



Lift point radius



Lift point height



Lifting capacity over the front of the machine



Lifting capacity over the side of the machine



Heavy Lift ON

Lifting Capacities of 305 SR Excavator

[illegible]

Illustration 299

q07567431

Machine with canopy, rubber shoe and blade in UP position.

Product Information Section

305 SR Excavator Inside Japan (ISJ) Equipped with Cab

Model (Break)	800 34"	900 35"	1000 36"	1200 38"	1500 40"	1800 42"	2000 44"	2200 46"	2400 48"	2600 50"	2800 52"	3000 54"	3200 56"	3400 58"	3600 60"	3800 62"	4000 64"	4200 66"	4400 68"	4600 70"	4800 72"	5000 74"	5200 76"	5400 78"	5600 80"	5800 82"	6000 84"	6200 86"	6400 88"	6600 90"	6800 92"	7000 94"	7200 96"	7400 98"	7600 100"	7800 102"	8000 104"	8200 106"	8400 108"	8600 110"	8800 112"	9000 114"	9200 116"	9400 118"	9600 120"	9800 122"	10000 124"	10200 126"	10400 128"	10600 130"	10800 132"	11000 134"	11200 136"	11400 138"	11600 140"	11800 142"	12000 144"	12200 146"	12400 148"	12600 150"	12800 152"	13000 154"	13200 156"	13400 158"	13600 160"	13800 162"	14000 164"	14200 166"	14400 168"	14600 170"	14800 172"	15000 174"	15200 176"	15400 178"	15600 180"	15800 182"	16000 184"	16200 186"	16400 188"	16600 190"	16800 192"	17000 194"	17200 196"	17400 198"	17600 200"	17800 202"	18000 204"	18200 206"	18400 208"	18600 210"	18800 212"	19000 214"	19200 216"	19400 218"	19600 220"	19800 222"	20000 224"	20200 226"	20400 228"	20600 230"	20800 232"	21000 234"	21200 236"	21400 238"	21600 240"	21800 242"	22000 244"	22200 246"	22400 248"	22600 250"	22800 252"	23000 254"	23200 256"	23400 258"	23600 260"	23800 262"	24000 264"	24200 266"	24400 268"	24600 270"	24800 272"	25000 274"	25200 276"	25400 278"	25600 280"	25800 282"	26000 284"	26200 286"	26400 288"	26600 290"	26800 292"	27000 294"	27200 296"	27400 298"	27600 300"	27800 302"	28000 304"	28200 306"	28400 308"	28600 310"	28800 312"	29000 314"	29200 316"	29400 318"	29600 320"	29800 322"	30000 324"	30200 326"	30400 328"	30600 330"	30800 332"	31000 334"	31200 336"	31400 338"	31600 340"	31800 342"	32000 344"	32200 346"	32400 348"	32600 350"	32800 352"	33000 354"	33200 356"	33400 358"	33600 360"	33800 362"	34000 364"	34200 366"	34400 368"	34600 370"	34800 372"	35000 374"	35200 376"	35400 378"	35600 380"	35800 382"	36000 384"	36200 386"	36400 388"	36600 390"	36800 392"	37000 394"	37200 396"	37400 398"	37600 400"	37800 402"	38000 404"	38200 406"	38400 408"	38600 410"	38800 412"	39000 414"	39200 416"	39400 418"	39600 420"	39800 422"	40000 424"	40200 426"	40400 428"	40600 430"	40800 432"	41000 434"	41200 436"	41400 438"	41600 440"	41800 442"	42000 444"	42200 446"	42400 448"	42600 450"	42800 452"	43000 454"	43200 456"	43400 458"	43600 460"	43800 462"	44000 464"	44200 466"	44400 468"	44600 470"	44800 472"	45000 474"	45200 476"	45400 478"	45600 480"	45800 482"	46000 484"	46200 486"	46400 488"	46600 490"	46800 492"	47000 494"	47200 496"	47400 498"	47600 500"	47800 502"	48000 504"	48200 506"	48400 508"	48600 510"	48800 512"	49000 514"	49200 516"	49400 518"	49600 520"	49800 522"	50000 524"	50200 526"	50400 528"	50600 530"	50800 532"	51000 534"	51200 536"	51400 538"	51600 540"	51800 542"	52000 544"	52200 546"	52400 548"	52600 550"	52800 552"	53000 554"	53200 556"	53400 558"	53600 560"	53800 562"	54000 564"	54200 566"	54400 568"	54600 570"	54800 572"	55000 574"	55200 576"	55400 578"	55600 580"	55800 582"	56000 584"	56200 586"	56400 588"	56600 590"	56800 592"	57000 594"	57200 596"	57400 598"	57600 600"	57800 602"	58000 604"	58200 606"	58400 608"	58600 610"	58800 612"	59000 614"	59200 616"	59400 618"	59600 620"	59800 622"	60000 624"	60200 626"	60400 628"	60600 630"	60800 632"	61000 634"	61200 636"	61400 638"	61600 640"	61800 642"	62000 644"	62200 646"	62400 648"	62600 650"	62800 652"	63000 654"	63200 656"	63400 658"	63600 660"	63800 662"	64000 664"	64200 666"	64400 668"	64600 670"	64800 672"	65000 674"	65200 676"	65400 678"	65600 680"	65800 682"	66000 684"	66200 686"	66400 688"	66600 690"	66800 692"	67000 694"	67200 696"	67400 698"	67600 700"	67800 702"	68000 704"	68200 706"	68400 708"	68600 710"	68800 712"	69000 714"	69200 716"	69400 718"	69600 720"	69800 722"	70000 724"	70200 726"	70400 728"	70600 730"	70800 732"	71000 734"	71200 736"	71400 738"	71600 740"	71800 742"	72000 744"	72200 746"	72400 748"	72600 750"	72800 752"	73000 754"	73200 756"	73400 758"	73600 760"	73800 762"	74000 764"	74200 766"	74400 768"	74600 770"	74800 772"	75000 774"	75200 776"	75400 778"	75600 780"	75800 782"	76000 784"	76200 786"	76400 788"	76600 790"	76800 792"	77000 794"	77200 796"	77400 798"	77600 800"	77800 802"	78000 804"	78200 806"	78400 808"	78600 810"	78800 812"	79000 814"	79200 816"	79400 818"	79600 820"	79800 822"	80000 824"	80200 826"	80400 828"	80600 830"	80800 832"	81000 834"	81200 836"	81400 838"	81600 840"	81800 842"	82000 844"	82200 846"	82400 848"	82600 850"	82800 852"	83000 854"	83200 856"	83400 858"	83600 860"	83800 862"	84000 864"	84200 866"	84400 868"	84600 870"	84800 872"	85000 874"	85200 876"	85400 878"	85600 880"	85800 882"	86000 884"	86200 886"	86400 888"	86600 890"	86800 892"	87000 894"	87200 896"	87400 898"	87600 900"	87800 902"	88000 904"	88200 906"	88400 908"	88600 910"	88800 912"	89000 914"	89200 916"	89400 918"	89600 920"	89800 922"	90000 924"	90200 926"	90400 928"	90600 930"	90800 932"	91000 934"	91200 936"	91400 938"	91600 940"	91800 942"	92000 944"	92200 946"	92400 948"	92600 950"	92800 952"	93000 954"	93200 956"	93400 958"	93600 960"	93800 962"	94000 964"	94200 966"	94400 968"	94600 970"	94800 972"	95000 974"	95200 976"	95400 978"	95600 980"	95800 982"	96000 984"	96200 986"	96400 988"	96600 990"	96800 992"	97000 994"	97200 996"	97400 998"	97600 1000"	97800 1002"	98000 1004"	98200 1006"	98400 1008"	98600 1010"	98800 1012"	99000 1014"	99200 1016"	99400 1018"	99600 1020"	99800 1022"	100000 1024"	100200 1026"	100400 1028"	100600 1030"	100800 1032"	101000 1034"	101200 1036"	101400 1038"	101600 1040"	101800 1042"	102000 1044"	102200 1046"	102400 1048"	102600 1050"	102800 1052"	103000 1054"	103200 1056"	103400 1058"	103600 1060"	103800 1062"	104000 1064"	104200 1066"	104400 1068"	104600 1070"	104800 1072"	105000 1074"	105200 1076"	105400 1078"	105600 1080"	105800 1082"	106000 1084"	106200 1086"	106400 1088"	106600 1090"	106800 1092"	107000 1094"	107200 1096"	107400 1098"	107600 1100"	107800 1102"	108000 1104"	108200 1106"	108400 1108"	108600 1110"	108800 1112"	109000 1114"	109200 1116"	109400 1118"	109600 1120"	109800 1122"	110000 1124"	110200 1126"	110400 1128"	110600 1130"	110800 1132"	111000 1134"	111200 1136"	111400 1138"	111600 1140"	111800 1142"	112000 1144"	112200 1146"	112400 1148"	112600 1150"	112800 1152"	113000 1154"	113200 1156"	113400 1158"	113600 1160"	113800 1162"	114000 1164"	114200 1166"	114400 1168"	114600 1170"	114800 1172"	115000 1174"	115200 1176"	115400 1178"	115600 1180"	115800 1182"	116000 1184"	116200 1186"	116400 1188"	116600 1190"	116800 1192"	117000 1194"	117200 1196"	117400 1198"	117600 1200"	117800 1202"	118000 1204"	118200 1206"	118400 1208"	118600 1210"	118800 1212"	119000 1214"	119200 1216"	119400 1218"	119600 1220"	119800 1222"	120000 1224"	120200 1226"	120400 1228"	120600 1230"	120800 1232"	121000 1234"	121200 1236"	121400 1238"	121600 1240"	121800 1242"	122000 1244"	122200 1246"	122400 1248"	122600 1250"	122800 1252"	123000 1254"	123200 1256"	123400 1258"	123600 1260"	123800 1262"	124000 1264"	124200 1266"	124400 1268"	124600 1270"	124800 1272"	125000 1274"	125200 1276"	125400 1278"	125600 1280"	125800 1282"	126000 1284"	126200 1286"	126400 1288"	126600 1290"	126800 1292"	127000 1294"	127200 1296"	127400 1298"	127600 1300"	127800 1302"	128000 1304"	128200 1306"	128400 1308"	128600 1310"	128800 1312"	129000 1314"	129200 1316"	129400 1318"	129600 1320"	129800 1322"	130000 1324"	130200 1326"	130400 1328"	130600 1330"	130800 1332"	131000 1334"	131200 1336"	131400 1338"	131600 1340"	131800 1342"	132000 1344"	132200 1346"	132400 1348"	132600 1350"	132800 1352"	133000 1354"	133200 1356"	133400 1358"	133600 1360"	133800 1362"	134000 1364"	134200 1366"	134400 1368"	134600 1370"	134800 1372"	135000 1374"	135200 1376"	135400 1378"	135600 1380"	135800 1382"	136000 1384"	136200 1386"	136400 1388"	136600 1390"	136800 1392"	137000 1394"	137200 1396"	137400 1398"	137600 1400"	137800 1402"	138000 1404"	138200 1406"	138400 1408"	138600 1410"	138800 1412"	139000 1414"	139200 1416"	139400 1418"	139600 1420"	139800 1422"	140000 1424"	140200 1426"	140400 1428"	140600 1430"	140800 1432"	141000 1434"	141200 1436"	141400 1438"	141600 1440"	141800 1442"	142000 1444"	142200 1446"	142400 1448"	142600 1450"	142800 1452"	143000 1454"	143200 1456"	143400 1458"	143600 1460"	143800 1462"	144000 1464"	144200 1466"	144400 1468"	144600 1470"	144800 1472"	145000 1474"	145200 1476"	145400 1478"	145600 1480"	145800 1482"	146000 1484"	146200 1486"	146400 1488"	146600 1490"	146800 1492"	147000 1494"	147200 1496"	147400 1498"	147600 1500"	147800 1502"	148000 1504"	148200 1506"	148400 1508"	148600 1510"	148800 1512"	149000 1514"	149200 1516"	149400 1518"	149600 1520"	149800 1522"	150000 1524"	150200 1526"	150400 1528"	150600 1530"	150800 1532"	151000 1534"	151200 1536"	151400 1538"	151600 1540"	151800 1542"	152000 1544"	152200 1546"	152400 1548"	152600 1550"	152800 1552"	153000 1554"	153200 1556"	153400 1558"	153600 1560"	153800 1562"	154000 1564"	154200 1566"	154400 1568"	154600 1570"	154800 1572"	155000 1574"	155200 1576"	155400 1578"	155600 1580"	155800 1582"	156000 1584"	156200 1586"	156400 1588"	156600

[illegible]

Illustration 301

q07567440

Machine with canopy, steel shoe and blade in UP position.

305 SR Excavator Inside Japan (ISJ) Equipped with Cab

[illegible]

q07567441

Machine with canopy, steel shoe and blade in DOWN position.

mm (inch)	500 24"		600 23"		700 28"		800 24"		900 35"		1000 39"		1100 43"		1200 47"		1300 51"		1400 55"		1500 59"		1600 63"		1700 67"		1800 71"		1900 75"		2000 79"		2100 83"		2200 87"		2300 91"		2400 95"		2500 99"		2600 103"		2700 107"		2800 111"		2900 115"		3000 119"		3100 123"		3200 127"		3300 131"		3400 135"		3500 139"		3600 143"		3700 147"		3800 151"		3900 155"		4000 159"		4100 163"		4200 167"		4300 171"		4400 175"		4500 179"		4600 183"		4700 187"		4800 191"		4900 195"		5000 199"		5100 203"		5200 207"		5300 211"		5400 215"		5500 219"		5600 223"		5700 227"		5800 231"		5900 235"		6000 239"		6100 243"		6200 247"		6300 251"		6400 255"		6500 259"		6600 263"		6700 267"		6800 271"		6900 275"		7000 279"		7100 283"		7200 287"		7300 291"		7400 295"		7500 299"		7600 303"		7700 307"		7800 311"		7900 315"		8000 319"		8100 323"		8200 327"		8300 331"		8400 335"		8500 339"		8600 343"		8700 347"		8800 351"		8900 355"		9000 359"		9100 363"		9200 367"		9300 371"		9400 375"		9500 379"		9600 383"		9700 387"		9800 391"		9900 395"		10000 399"		10100 403"		10200 407"		10300 411"		10400 415"		10500 419"		10600 423"		10700 427"		10800 431"		10900 435"		11000 439"		11100 443"		11200 447"		11300 451"		11400 455"		11500 459"		11600 463"		11700 467"		11800 471"		11900 475"		12000 479"		12100 483"		12200 487"		12300 491"		12400 495"		12500 499"		12600 503"		12700 507"		12800 511"		12900 515"		13000 519"		13100 523"		13200 527"		13300 531"		13400 535"		13500 539"		13600 543"		13700 547"		13800 551"		13900 555"		14000 559"		14100 563"		14200 567"		14300 571"		14400 575"		14500 579"		14600 583"		14700 587"		14800 591"		14900 595"		15000 599"		15100 603"		15200 607"		15300 611"		15400 615"		15500 619"		15600 623"		15700 627"		15800 631"		15900 635"		16000 639"		16100 643"		16200 647"		16300 651"		16400 655"		16500 659"		16600 663"		16700 667"		16800 671"		16900 675"		17000 679"		17100 683"		17200 687"		17300 691"		17400 695"		17500 699"		17600 703"		17700 707"		17800 711"		17900 715"		18000 719"		18100 723"		18200 727"		18300 731"		18400 735"		18500 739"		18600 743"		18700 747"		18800 751"		18900 755"		19000 759"		19100 763"		19200 767"		19300 771"		19400 775"		19500 779"		19600 783"		19700 787"		19800 791"		19900 795"		20000 799"		20100 803"		20200 807"		20300 811"		20400 815"		20500 819"		20600 823"		20700 827"		20800 831"		20900 835"		21000 839"		21100 843"		21200 847"		21300 851"		21400 855"		21500 859"		21600 863"		21700 867"		21800 871"		21900 875"		22000 879"		22100 883"		22200 887"		22300 891"		22400 895"		22500 899"		22600 903"		22700 907"		22800 911"		22900 915"		23000 919"		23100 923"		23200 927"		23300 931"		23400 935"		23500 939"		23600 943"		23700 947"		23800 951"		23900 955"		24000 959"		24100 963"		24200 967"		24300 971"		24400 975"		24500 979"		24600 983"		24700 987"		24800 991"		24900 995"		25000 999"		25100 1003"		25200 1007"		25300 1011"		25400 1015"		25500 1019"		25600 1023"		25700 1027"		25800 1031"		25900 1035"		26000 1039"		26100 1043"		26200 1047"		26300 1051"		26400 1055"		26500 1059"		26600 1063"		26700 1067"		26800 1071"		26900 1075"		27000 1079"		27100 1083"		27200 1087"		27300 1091"		27400 1095"		27500 1099"		27600 1103"		27700 1107"		27800 1111"		27900 1115"		28000 1119"		28100 1123"		28200 1127"		28300 1131"		28400 1135"		28500 1139"		28600 1143"		28700 1147"		28800 1151"		28900 1155"		29000 1159"		29100 1163"		29200 1167"		29300 1171"		29400 1175"		29500 1179"		29600 1183"		29700 1187"		29800 1191"		29900 1195"		30000 1199"		30100 1203"		30200 1207"		30300 1211"		30400 1215"		30500 1219"		30600 1223"		30700 1227"		30800 1231"		30900 1235"		31000 1239"		31100 1243"		31200 1247"		31300 1251"		31400 1255"		31500 1259"		31600 1263"		31700 1267"		31800 1271"		31900 1275"		32000 1279"		32100 1283"		32200 1287"		32300 1291"		32400 1295"		32500 1299"		32600 1303"		32700 1307"		32800 1311"		32900 1315"		33000 1319"		33100 1323"		33200 1327"		33300 1331"		33400 1335"		33500 1339"		33600 1343"		33700 1347"		33800 1351"		33900 1355"		34000 1359"		34100 1363"		34200 1367"		34300 1371"		34400 1375"		34500 1379"		34600 1383"		34700 1387"		34800 1391"		34900 1395"		35000 1399"		35100 1403"		35200 1407"		35300 1411"		35400 1415"		35500 1419"		35600 1423"		35700 1427"		35800 1431"		35900 1435"		36000 1439"		36100 1443"		36200 1447"		36300 1451"		36400 1455"		36500 1459"		36600 1463"		36700 1467"		36800 1471"		36900 1475"		37000 1479"		37100 1483"		37200 1487"		37300 1491"		37400 1495"		37500 1499"		37600 1503"		37700 1507"		37800 1511"		37900 1515"		38000 1519"		38100 1523"		38200 1527"		38300 1531"		38400 1535"		38500 1539"		38600 1543"		38700 1547"		38800 1551"		38900 1555"		39000 1559"		39100 1563"		39200 1567"		39300 1571"		39400 1575"		39500 1579"		39600 1583"		39700 1587"		39800 1591"		39900 1595"		40000 1599"		40100 1603"		40200 1607"		40300 1611"		40400 1615"		40500 1619"		40600 1623"		40700 1627"		40800 1631"		40900 1635"		41000 1639"		41100 1643"		41200 1647"		41300 1651"		41400 1655"		41500 1659"		41600 1663"		41700 1667"		41800 1671"		41900 1675"		42000 1679"		42100 1683"		42200 1687"		42300 1691"		42400 1695"		42500 1699"		42600 1703"		42700 1707"		42800 1711"		42900 1715"		43000 1719"		43100 1723"		43200 1727"		43300 1731"		43400 1735"		43500 1739"		43600 1743"		43700 1747"		43800 1751"		43900 1755"		44000 1759"		44100 1763"		44200 1767"		44300 1771"		44400 1775"		44500 1779"		44600 1783"		44700 1787"		44800 1791"		44900 1795"		45000 1799"		45100 1803"		45200 1807"		45300 1811"		45400 1815"		45500 1819"		45600 1823"		45700 1827"		45800 1831"		45900 1835"		46000 1839"		46100 1843"		46200 1847"		46300 1851"		46400 1855"		46500 1859"		46600 1863"		46700 1867"		46800 1871"		46900 1875"		47000 1879"		47100 1883"		47200 1887"		47300 1891"		47400 1895"		47500 1899"		47600 1903"		47700 1907"		47800 1911"		47900 1915"		48000 1919"		48100 1923"		48200 1927"		48300 1931"		48400 1935"		48500 1939"		48600 1943"		48700 1947"		48800 1951"		48900 1955"		49000 1959"		49100 1963"		49200 1967"		49300 1971"		49400 1975"		49500 1979"		49600 1983"		49700 1987"		49800 1991"		49900 1995"		50000 1999"		50100 2003"		50200 2007"		50300 2011"		50400 2015"		50500 2019"		50600 2023"		50700 2027"		50800 2031"		50900 2035"		51000 2039"		51100 2043"		51200 2047"		51300 2051"		51400 2055"		51500 2059"		51600 2063"		51700 2067"		51800 2071"		51900 2075"		52000 2079"		52100 2083"		52200 2087"		52300 2091"		52400 2095"		52500 2099"		52600 2103"		52700 2107"		52800 2111"		52900 2115"		53000 2119"		53100 2123"		53200 2127"		53300 2131"		53400 2135"		53500 2139"		53600 2143"		53700 2147"		53800 2151"		53900 2155"		54000 2159"		54100 2163"		54200 2167"		54300 2171"		54400 2175"		54500 2179"		54600 2183"		54700 2187"		54800 2191"		54900 2195"		55000 2199"		55100 2203"		55200 2207"		55300 2211"		55400 2215"		55500 2219"		55600 2223"		55700 2227"		55800 2231"		55900 2235"		56000 2239"		56100 2243"		56200 2247"		56300 2251"		56400 2255"		56500 2259"		56600 2263"		56700 2267"		56800 2271"		56900 2275"		57000 2279"		57100 2283"		57200 2287"		57300 2291"		57400 2295"		57500 2299"		57600 2303"		57700 2307"		57800 2311"		57900 2315"		58000 2319"		58100 2323"		58200 2327"		58300 2331"		58400 2335"		58500 2339"		58600 2343"		58700 2347"		58800 2351"		58900 2355"		59000 2359"		59100 2363"		59200 2367"		59300 2371"		59400 2375"		59500 2379"		59600 2383"		59700 2387"		59800 2391"		59900 2395"		60000 2399"		60100 2403"		60200 2407"		60300 2411"		60400 2415"		60500 2419"		60600 2423"		60700 2427"		60800 2431"		60900 2435"		61000 2439"		61100 2443"		61200 2447"		61300 2451"		61400 2455"		61500 2459"		61600 2463"		61700 2467"		61800 2471"		61900 2475"		62000 2479"		62100 2483"		62200 2487"		62300 2491"		62400 2495"		62500 2499"		62600 2503"		62700 2507"		62800 2511"		62900 2515"		63000 2519"		63100 2523"		63200 2527"		63300 2531"		63400 2535"		63500 2539"		63600 2543"		63700 2547"		63800 2551"		63900 2555"		64000 2559"		64100 2563"		64200 2567"		64300 2571"		64400 2575"		64500 2579"		64600 2583"		64700 2587"		64800 2591"		64900 2595"		65000 2599"		65100 2603"		65200 2607"		65300 2611"		65400 2615"		65500 2619"		65600 2623"		65700 2627"		65800 2631"		65900 2635"		66000 2639"		66100 2643"		66200 2647"		66300 2651"		66400 2655"		66500 2659"		66600 2663"		66700 2667"		66800 2671"		66900 2675"		67000 2679"		67100 2683"		67200 2687"		67300 2691"		67400 2695"		67	

Product Information Section

305 SR Excavator Inside Japan (ISJ) Equipped with Cab

Level (inch)	200 24"	250 32"	300 36"	350 44"	400 48"	450 56"	500 64"	550 72"	600 80"	650 88"	700 96"	750 104"	800 112"	850 120"	900 128"	950 136"	1000 144"	1050 152"	1100 160"	1150 168"	1200 176"	1250 184"	1300 192"	1350 200"	1400 208"	1450 216"	1500 224"	1550 232"	1600 240"	1650 248"	1700 256"	1750 264"	1800 272"	1850 280"	1900 288"	1950 296"	2000 304"	2050 312"	2100 320"	2150 328"	2200 336"	2250 344"	2300 352"	2350 360"	2400 368"	2450 376"	2500 384"	2550 392"	2600 400"	2650 408"	2700 416"	2750 424"	2800 432"	2850 440"	2900 448"	2950 456"	3000 464"	3050 472"	3100 480"	3150 488"	3200 496"	3250 504"	3300 512"	3350 520"	3400 528"	3450 536"	3500 544"	3550 552"	3600 560"	3650 568"	3700 576"	3750 584"	3800 592"	3850 600"	3900 608"	3950 616"	4000 624"	4050 632"	4100 640"	4150 648"	4200 656"	4250 664"	4300 672"	4350 680"	4400 688"	4450 696"	4500 704"	4550 712"	4600 720"	4650 728"	4700 736"	4750 744"	4800 752"	4850 760"	4900 768"	4950 776"	5000 784"	5050 792"	5100 800"	5150 808"	5200 816"	5250 824"	5300 832"	5350 840"	5400 848"	5450 856"	5500 864"	5550 872"	5600 880"	5650 888"	5700 896"	5750 904"	5800 912"	5850 920"	5900 928"	5950 936"	6000 944"	6050 952"	6100 960"	6150 968"	6200 976"	6250 984"	6300 992"	6350 1000"	6400 1008"	6450 1016"	6500 1024"	6550 1032"	6600 1040"	6650 1048"	6700 1056"	6750 1064"	6800 1072"	6850 1080"	6900 1088"	6950 1096"	7000 1104"	7050 1112"	7100 1120"	7150 1128"	7200 1136"	7250 1144"	7300 1152"	7350 1160"	7400 1168"	7450 1176"	7500 1184"	7550 1192"	7600 1200"	7650 1208"	7700 1216"	7750 1224"	7800 1232"	7850 1240"	7900 1248"	7950 1256"	8000 1264"	8050 1272"	8100 1280"	8150 1288"	8200 1296"	8250 1304"	8300 1312"	8350 1320"	8400 1328"	8450 1336"	8500 1344"	8550 1352"	8600 1360"	8650 1368"	8700 1376"	8750 1384"	8800 1392"	8850 1400"	8900 1408"	8950 1416"	9000 1424"	9050 1432"	9100 1440"	9150 1448"	9200 1456"	9250 1464"	9300 1472"	9350 1480"	9400 1488"	9450 1496"	9500 1504"	9550 1512"	9600 1520"	9650 1528"	9700 1536"	9750 1544"	9800 1552"	9850 1560"	9900 1568"	9950 1576"	10000 1584"	10050 1592"	10100 1600"	10150 1608"	10200 1616"	10250 1624"	10300 1632"	10350 1640"	10400 1648"	10450 1656"	10500 1664"	10550 1672"	10600 1680"	10650 1688"	10700 1696"	10750 1704"	10800 1712"	10850 1720"	10900 1728"	10950 1736"	11000 1744"	11050 1752"	11100 1760"	11150 1768"	11200 1776"	11250 1784"	11300 1792"	11350 1800"	11400 1808"	11450 1816"	11500 1824"	11550 1832"	11600 1840"	11650 1848"	11700 1856"	11750 1864"	11800 1872"	11850 1880"	11900 1888"	11950 1896"	12000 1904"	12050 1912"	12100 1920"	12150 1928"	12200 1936"	12250 1944"	12300 1952"	12350 1960"	12400 1968"	12450 1976"	12500 1984"	12550 1992"	12600 2000"	12650 2008"	12700 2016"	12750 2024"	12800 2032"	12850 2040"	12900 2048"	12950 2056"	13000 2064"	13050 2072"	13100 2080"	13150 2088"	13200 2096"	13250 2104"	13300 2112"	13350 2120"	13400 2128"	13450 2136"	13500 2144"	13550 2152"	13600 2160"	13650 2168"	13700 2176"	13750 2184"	13800 2192"	13850 2200"	13900 2208"	13950 2216"	14000 2224"	14050 2232"	14100 2240"	14150 2248"	14200 2256"	14250 2264"	14300 2272"	14350 2280"	14400 2288"	14450 2296"	14500 2304"	14550 2312"	14600 2320"	14650 2328"	14700 2336"	14750 2344"	14800 2352"	14850 2360"	14900 2368"	14950 2376"	15000 2384"	15050 2392"	15100 2400"	15150 2408"	15200 2416"	15250 2424"	15300 2432"	15350 2440"	15400 2448"	15450 2456"	15500 2464"	15550 2472"	15600 2480"	15650 2488"	15700 2496"	15750 2504"	15800 2512"	15850 2520"	15900 2528"	15950 2536"	16000 2544"	16050 2552"	16100 2560"	16150 2568"	16200 2576"	16250 2584"	16300 2592"	16350 2600"	16400 2608"	16450 2616"	16500 2624"	16550 2632"	16600 2640"	16650 2648"	16700 2656"	16750 2664"	16800 2672"	16850 2680"	16900 2688"	16950 2696"	17000 2704"	17050 2712"	17100 2720"	17150 2728"	17200 2736"	17250 2744"	17300 2752"	17350 2760"	17400 2768"	17450 2776"	17500 2784"	17550 2792"	17600 2800"	17650 2808"	17700 2816"	17750 2824"	17800 2832"	17850 2840"	17900 2848"	17950 2856"	18000 2864"	18050 2872"	18100 2880"	18150 2888"	18200 2896"	18250 2904"	18300 2912"	18350 2920"	18400 2928"	18450 2936"	18500 2944"	18550 2952"	18600 2960"	18650 2968"	18700 2976"	18750 2984"	18800 2992"	18850 3000"	18900 3008"	18950 3016"	19000 3024"	19050 3032"	19100 3040"	19150 3048"	19200 3056"	19250 3064"	19300 3072"	19350 3080"	19400 3088"	19450 3096"	19500 3104"	19550 3112"	19600 3120"	19650 3128"	19700 3136"	19750 3144"	19800 3152"	19850 3160"	19900 3168"	19950 3176"	20000 3184"	20050 3192"	20100 3200"	20150 3208"	20200 3216"	20250 3224"	20300 3232"	20350 3240"	20400 3248"	20450 3256"	20500 3264"	20550 3272"	20600 3280"	20650 3288"	20700 3296"	20750 3304"	20800 3312"	20850 3320"	20900 3328"	20950 3336"	21000 3344"	21050 3352"	21100 3360"	21150 3368"	21200 3376"	21250 3384"	21300 3392"	21350 3400"	21400 3408"	21450 3416"	21500 3424"	21550 3432"	21600 3440"	21650 3448"	21700 3456"	21750 3464"	21800 3472"	21850 3480"	21900 3488"	21950 3496"	22000 3504"	22050 3512"	22100 3520"	22150 3528"	22200 3536"	22250 3544"	22300 3552"	22350 3560"	22400 3568"	22450 3576"	22500 3584"	22550 3592"	22600 3600"	22650 3608"	22700 3616"	22750 3624"	22800 3632"	22850 3640"	22900 3648"	22950 3656"	23000 3664"	23050 3672"	23100 3680"	23150 3688"	23200 3696"	23250 3704"	23300 3712"	23350 3720"	23400 3728"	23450 3736"	23500 3744"	23550 3752"	23600 3760"	23650 3768"	23700 3776"	23750 3784"	23800 3792"	23850 3800"	23900 3808"	23950 3816"	24000 3824"	24050 3832"	24100 3840"	24150 3848"	24200 3856"	24250 3864"	24300 3872"	24350 3880"	24400 3888"	24450 3896"	24500 3904"	24550 3912"	24600 3920"	24650 3928"	24700 3936"	24750 3944"	24800 3952"	24850 3960"	24900 3968"	24950 3976"	25000 3984"	25050 3992"	25100 4000"	25150 4008"	25200 4016"	25250 4024"	25300 4032"	25350 4040"	25400 4048"	25450 4056"	25500 4064"	25550 4072"	25600 4080"	25650 4088"	25700 4096"	25750 4104"	25800 4112"	25850 4120"	25900 4128"	25950 4136"	26000 4144"	26050 4152"	26100 4160"	26150 4168"	26200 4176"	26250 4184"	26300 4192"	26350 4200"	26400 4208"	26450 4216"	26500 4224"	26550 4232"	26600 4240"	26650 4248"	26700 4256"	26750 4264"	26800 4272"	26850 4280"	26900 4288"	26950 4296"	27000 4304"	27050 4312"	27100 4320"	27150 4328"	27200 4336"	27250 4344"	27300 4352"	27350 4360"	27400 4368"	27450 4376"	27500 4384"	27550 4392"	27600 4400"	27650 4408"	27700 4416"	27750 4424"	27800 4432"	27850 4440"	27900 4448"	27950 4456"	28000 4464"	28050 4472"	28100 4480"	28150 4488"	28200 4496"	28250 4504"	28300 4512"	28350 4520"	28400 4528"	28450 4536"	28500 4544"	28550 4552"	28600 4560"	28650 4568"	28700 4576"	28750 4584"	28800 4592"	28850 4600"	28900 4608"	28950 4616"	29000 4624"	29050 4632"	29100 4640"	29150 4648"	29200 4656"	29250 4664"	29300 4672"	29350 4680"	29400 4688"	29450 4696"	29500 4704"	29550 4712"	29600 4720"	29650 4728"	29700 4736"	29750 4744"	29800 4752"	29850 4760"	29900 4768"	29950 4776"	30000 4784"	30050 4792"	30100 4800"	30150 4808"	30200 4816"	30250 4824"	30300 4832"	30350 4840"	30400 4848"	30450 4856"	30500 4864"	30550 4872"	30600 4880"	30650 4888"	30700 4896"	30750 4904"	30800 4912"	30850 4920"	30900 4928"	30950 4936"	31000 4944"	31050 4952"	31100 4960"	31150 4968"	31200 4976"	31250 4984"	31300 4992"	31350 5000"	31400 5008"	31450 5016"	31500 5024"	31550 5032"	31600 5040"	31650 5048"	31700 5056"	31750 5064"	31800 5072"	31850 5080"	31900 5088"	31950 5096"	32000 5104"	32050 5112"	32100 5120"	32150 5128"	32200 5136"	32250 5144"	32300 5152"	32350 5160"	32400 5168"	32450 5176"	32500 5184"	32550 5192"	32600 5200"	32650 5208"	32700 5216"	32750 5224"	32800 5232"	32850 5240"	32900 5248"	32950 5256"	33000 5264"	33050 5272"	33100 5280"	33150 5288"	33200 5296"	33250 5304"	33300 5312"	33350 5320"	33400 5328"	33450 5336"	33500 5344"	33550 5352"	33600 5360"	33650 5368"	33700 5376"	33750 5384"	33800 5392"	33850 5400"	33900 5408"	33950 5416"	34000 5424"	34050 5432"	34100 5440"	34150 5448"	34200 5456"	34250 5464"	34300 5472"	34350 5480"	34400 5488"	34450 5496"	34500 5504"	34550 5512"	34600 5520"	34650 5528"	34700 5536"	34750 5544"	34800 5552"	34850 5560"	34900 5568"	34950 5576"	35000 5584"	35050 5592"	35100 5600"	35150 5608"	35200 5616"	35250 5624"	35300 5632"	35350 5640"	35400 5648"	35450 5656"	35500 5664"	35550 5672"	35600 5680"	35650 5688"	35700 5696"	35750 5704"	35800 5712"	35850 5720"	35900 5728"	35950 5736"	36000 5744"	36050 5752"	36100 5760"	36150 5768"	36200 5776"	36250 5784"	36300 5792"	36350 5800"	36400 5808"	36450 5816"	36500 5824"	36550 5832"	36600 5840"	36650 5848"	36700 5856"	36750 5864"	36800 5872"	36850 5880"	36900 5888"	36950 5896"	37000 5904"	37050 5912"	37100 5920"	37150 5928"	37200 5936"	37250 5944"	37300 5952"	37350 5960"	37400 5968"	37450 5976"	37500 5984"	37550 5992"	37600 6000"	37650 6008"	37700 6016"	37750 6024"	37800 6032"	37850 6040"	37900 6048"	37950 6056"	38000 6064"	38050 6072"	38100 6080"	38150 6088"	38200 6096"	38250 6104"	38300 6112"	38350 6120"	38400 6128"	38450 6136"	38500 6144"	38550 6152"	38600 6160"	38650 6168"	38700 6176"	38750 6184"	38800 6192"	38850 6200"	38900 6208"	38950 6216"	39000 6224"	39050 6232"	39100 6240"	39150 6248"	39200 6256"	39250 6264"	39300 6272"	39350

Height (ft/inch)	800 25'	900 27'	1000 30'	1100 33'	1200 36'	1300 39'	1400 42'	1500 45'	1600 48'	1700 51'	1800 54'	1900 57'	2000 60'	2100 63'	2200 66'	2300 69'	2400 72'	2500 75'	2600 78'	2700 81'	2800 84'	2900 87'	3000 90'	3100 93'	3200 96'	3300 99'	3400 102'	3500 105'	3600 108'	3700 111'	3800 114'	3900 117'	4000 120'	4100 123'	4200 126'	4300 129'	4400 132'	4500 135'	4600 138'	4700 141'	4800 144'	4900 147'	5000 150'	5100 153'	5200 156'	5300 159'	5400 162'	5500 165'	5600 168'	5700 171'	5800 174'	5900 177'	6000 180'	6100 183'	6200 186'	6300 189'	6400 192'	6500 195'	6600 198'	6700 201'	6800 204'	6900 207'	7000 210'	7100 213'	7200 216'	7300 219'	7400 222'	7500 225'	7600 228'	7700 231'	7800 234'	7900 237'	8000 240'	8100 243'	8200 246'	8300 249'	8400 252'	8500 255'	8600 258'	8700 261'	8800 264'	8900 267'	9000 270'	9100 273'	9200 276'	9300 279'	9400 282'	9500 285'	9600 288'	9700 291'	9800 294'	9900 297'	10000 300'	10100 303'	10200 306'	10300 309'	10400 312'	10500 315'	10600 318'	10700 321'	10800 324'	10900 327'	11000 330'	11100 333'	11200 336'	11300 339'	11400 342'	11500 345'	11600 348'	11700 351'	11800 354'	11900 357'	12000 360'	12100 363'	12200 366'	12300 369'	12400 372'	12500 375'	12600 378'	12700 381'	12800 384'	12900 387'	13000 390'	13100 393'	13200 396'	13300 399'	13400 402'	13500 405'	13600 408'	13700 411'	13800 414'	13900 417'	14000 420'	14100 423'	14200 426'	14300 429'	14400 432'	14500 435'	14600 438'	14700 441'	14800 444'	14900 447'	15000 450'	15100 453'	15200 456'	15300 459'	15400 462'	15500 465'	15600 468'	15700 471'	15800 474'	15900 477'	16000 480'	16100 483'	16200 486'	16300 489'	16400 492'	16500 495'	16600 498'	16700 501'	16800 504'	16900 507'	17000 510'	17100 513'	17200 516'	17300 519'	17400 522'	17500 525'	17600 528'	17700 531'	17800 534'	17900 537'	18000 540'	18100 543'	18200 546'	18300 549'	18400 552'	18500 555'	18600 558'	18700 561'	18800 564'	18900 567'	19000 570'	19100 573'	19200 576'	19300 579'	19400 582'	19500 585'	19600 588'	19700 591'	19800 594'	19900 597'	20000 600'	20100 603'	20200 606'	20300 609'	20400 612'	20500 615'	20600 618'	20700 621'	20800 624'	20900 627'	21000 630'	21100 633'	21200 636'	21300 639'	21400 642'	21500 645'	21600 648'	21700 651'	21800 654'	21900 657'	22000 660'	22100 663'	22200 666'	22300 669'	22400 672'	22500 675'	22600 678'	22700 681'	22800 684'	22900 687'	23000 690'	23100 693'	23200 696'	23300 699'	23400 702'	23500 705'	23600 708'	23700 711'	23800 714'	23900 717'	24000 720'	24100 723'	24200 726'	24300 729'	24400 732'	24500 735'	24600 738'	24700 741'	24800 744'	24900 747'	25000 750'	25100 753'	25200 756'	25300 759'	25400 762'	25500 765'	25600 768'	25700 771'	25800 774'	25900 777'	26000 780'	26100 783'	26200 786'	26300 789'	26400 792'	26500 795'	26600 798'	26700 801'	26800 804'	26900 807'	27000 810'	27100 813'	27200 816'	27300 819'	27400 822'	27500 825'	27600 828'	27700 831'	27800 834'	27900 837'	28000 840'	28100 843'	28200 846'	28300 849'	28400 852'	28500 855'	28600 858'	28700 861'	28800 864'	28900 867'	29000 870'	29100 873'	29200 876'	29300 879'	29400 882'	29500 885'	29600 888'	29700 891'	29800 894'	29900 897'	30000 900'	30100 903'	30200 906'	30300 909'	30400 912'	30500 915'	30600 918'	30700 921'	30800 924'	30900 927'	31000 930'	31100 933'	31200 936'	31300 939'	31400 942'	31500 945'	31600 948'	31700 951'	31800 954'	31900 957'	32000 960'	32100 963'	32200 966'	32300 969'	32400 972'	32500 975'	32600 978'	32700 981'	32800 984'	32900 987'	33000 990'	33100 993'	33200 996'	33300 999'	33400 1002'	33500 1005'	33600 1008'	33700 1011'	33800 1014'	33900 1017'	34000 1020'	34100 1023'	34200 1026'	34300 1029'	34400 1032'	34500 1035'	34600 1038'	34700 1041'	34800 1044'	34900 1047'	35000 1050'	35100 1053'	35200 1056'	35300 1059'	35400 1062'	35500 1065'	35600 1068'	35700 1071'	35800 1074'	35900 1077'	36000 1080'	36100 1083'	36200 1086'	36300 1089'	36400 1092'	36500 1095'	36600 1098'	36700 1101'	36800 1104'	36900 1107'	37000 1110'	37100 1113'	37200 1116'	37300 1119'	37400 1122'	37500 1125'	37600 1128'	37700 1131'	37800 1134'	37900 1137'	38000 1140'	38100 1143'	38200 1146'	38300 1149'	38400 1152'	38500 1155'	38600 1158'	38700 1161'	38800 1164'	38900 1167'	39000 1170'	39100 1173'	39200 1176'	39300 1179'	39400 1182'	39500 1185'	39600 1188'	39700 1191'	39800 1194'	39900 1197'	40000 1200'	40100 1203'	40200 1206'	40300 1209'	40400 1212'	40500 1215'	40600 1218'	40700 1221'	40800 1224'	40900 1227'	41000 1230'	41100 1233'	41200 1236'	41300 1239'	41400 1242'	41500 1245'	41600 1248'	41700 1251'	41800 1254'	41900 1257'	42000 1260'	42100 1263'	42200 1266'	42300 1269'	42400 1272'	42500 1275'	42600 1278'	42700 1281'	42800 1284'	42900 1287'	43000 1290'	43100 1293'	43200 1296'	43300 1299'	43400 1302'	43500 1305'	43600 1308'	43700 1311'	43800 1314'	43900 1317'	44000 1320'	44100 1323'	44200 1326'	44300 1329'	44400 1332'	44500 1335'	44600 1338'	44700 1341'	44800 1344'	44900 1347'	45000 1350'	45100 1353'	45200 1356'	45300 1359'	45400 1362'	45500 1365'	45600 1368'	45700 1371'	45800 1374'	45900 1377'	46000 1380'	46100 1383'	46200 1386'	46300 1389'	46400 1392'	46500 1395'	46600 1398'	46700 1401'	46800 1404'	46900 1407'	47000 1410'	47100 1413'	47200 1416'	47300 1419'	47400 1422'	47500 1425'	47600 1428'	47700 1431'	47800 1434'	47900 1437'	48000 1440'	48100 1443'	48200 1446'	48300 1449'	48400 1452'	48500 1455'	48600 1458'	48700 1461'	48800 1464'	48900 1467'	49000 1470'	49100 1473'	49200 1476'	49300 1479'	49400 1482'	49500 1485'	49600 1488'	49700 1491'	49800 1494'	49900 1497'	50000 1500'	50100 1503'	50200 1506'	50300 1509'	50400 1512'	50500 1515'	50600 1518'	50700 1521'	50800 1524'	50900 1527'	51000 1530'	51100 1533'	51200 1536'	51300 1539'	51400 1542'	51500 1545'	51600 1548'	51700 1551'	51800 1554'	51900 1557'	52000 1560'	52100 1563'	52200 1566'	52300 1569'	52400 1572'	52500 1575'	52600 1578'	52700 1581'	52800 1584'	52900 1587'	53000 1590'	53100 1593'	53200 1596'	53300 1599'	53400 1602'	53500 1605'	53600 1608'	53700 1611'	53800 1614'	53900 1617'	54000 1620'	54100 1623'	54200 1626'	54300 1629'	54400 1632'	54500 1635'	54600 1638'	54700 1641'	54800 1644'	54900 1647'	55000 1650'	55100 1653'	55200 1656'	55300 1659'	55400 1662'	55500 1665'	55600 1668'	55700 1671'	55800 1674'	55900 1677'	56000 1680'	56100 1683'	56200 1686'	56300 1689'	56400 1692'	56500 1695'	56600 1698'	56700 1701'	56800 1704'	56900 1707'	57000 1710'	57100 1713'	57200 1716'	57300 1719'	57400 1722'	57500 1725'	57600 1728'	57700 1731'	57800 1734'	57900 1737'	58000 1740'	58100 1743'	58200 1746'	58300 1749'	58400 1752'	58500 1755'	58600 1758'	58700 1761'	58800 1764'	58900 1767'	59000 1770'	59100 1773'	59200 1776'	59300 1779'	59400 1782'	59500 1785'	59600 1788'	59700 1791'	59800 1794'	59900 1797'	60000 1800'	60100 1803'	60200 1806'	60300 1809'	60400 1812'	60500 1815'	60600 1818'	60700 1821'	60800 1824'	60900 1827'	61000 1830'	61100 1833'	61200 1836'	61300 1839'	61400 1842'	61500 1845'	61600 1848'	61700 1851'	61800 1854'	61900 1857'	62000 1860'	62100 1863'	62200 1866'	62300 1869'	62400 1872'	62500 1875'	62600 1878'	62700 1881'	62800 1884'	62900 1887'	63000 1890'	63100 1893'	63200 1896'	63300 1899'	63400 1902'	63500 1905'	63600 1908'	63700 1911'	63800 1914'	63900 1917'	64000 1920'	64100 1923'	64200 1926'	64300 1929'	64400 1932'	64500 1935'	64600 1938'	64700 1941'	64800 1944'	64900 1947'	65000 1950'	65100 1953'	65200 1956'	65300 1959'	65400 1962'	65500 1965'	65600 1968'	65700 1971'	65800 1974'	65900 1977'	66000 1980'	66100 1983'	66200 1986'	66300 1989'	66400 1992'	66500 1995'	66600 1998'	66700 2001'	66800 2004'	66900 2007'	67000 2010'	67100 2013'	67200 2016'	67300 2019'	67400 2022'	67500 2025'	67600 2028'	67700 2031'	67800 2034'	67900 2037'	68000 2040'	68100 2043'	68200 2046'	68300 2049'	68400 2052'	68500 2055'	68600 2058'	68700 2061'	68800 2064'	68900 2067'	69000 2070'	69100 2073'	69200 2076'	69300 2079'	69400 2082'	69500 2085'	69600 2088'	69700 2091'	69800 2094'	69900 2097'	70000 2100'	70100 2103'	70200 2106'	70300 2109'	70400 2112'	70500 2115'	70600 2118'	70700 2121'	70800 2124'	70900 2127'	71000 2130'	71100 2133'	71200 2136'	71300 2139'	71400 2142'	71500 2145'	71600 2148'	71700 2151'	71800 2154'	71900 2157'	72000 2160'	72100 2163'	72200 2166'	72300 2169'	72400 2172'	72500 2175'	72600 2178'	72700 2181'	72800 2184'	72900 2187'	73000 2190'	73100 2193'	73200 2196'	73300 2199'	73400 2202'	73500 2205'	73600 2208'	73700 2211'	73800 2214'	73900 2217'	74000 2220'	74100 2223'	74200 2226'	74300 2229'	74400 2232'	74500 2235'	74600 2238'	74700 2241'	74800 2244'	74900 2247'	75000 2250'	75100 2253'	75200 2256'	75300 2259'	75400 2262'	75500 2265'	75600 2268'	75700 2271'	75800 2274'	75900 2277'	76000 2280'	76100 2283'	76200 2286'	76300 2289'	76400 2292'	76500 2295'	76600 2298'	76700 2301'	76800 2304'	76900 2307'	77000 2310'	77100 2313'	77200 2316'	77300 2319'	77400 2322'	77500 2325'	77600 2328'	77700 2331'	77800 2334'	77900 2337'	78000 2340'	78100 2343'	78200 2346'	78300 2349'	78400 2352'	78500 2355'	78600 2358'	78700 2361'	78800 2364'	78900 2367'	79000 2370'	79100 2373'	79200 2376'	79300 2379'	79400 2382'	79500 2385'	79600 2388'	79700 2391'	79800 2394'	799

305 SR Excavator Inside Japan (ISJ) Equipped with Cab

[illegible]

q07567450

Machine with cab, steel shoe and blade in DOWN position.

Identification Information

i09728696

Plate Locations and Film Locations

SMCS Code: 1000; 7000

The Product Identification Number (PIN) will be used to identify a powered machine that is designed for an operator to ride.

Serial Numbers will be used to identify engines, transmissions, and major attachments.

For quick reference, record the identification numbers in the spaces that are provided below the illustration.

Product Identification Number (PIN) Plate



Illustration 307

g06276619

PIN plate location

The PIN plate is positioned on the front of the machine, close to the operator compartment.

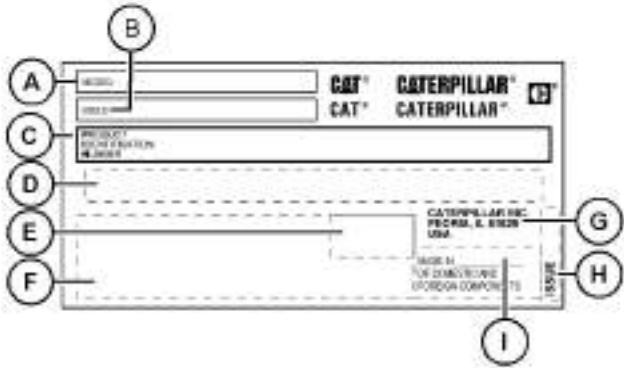


Illustration 308

g06201159

PIN plate

Model (A) _____

Build (B) _____

Product Identification Number (C) _____

Bar Code (D) _____

Month and/or Year of Manufacture Plate (If Required) (E) _____

Regional Certification Plate (If Required) (F) _____

Address of Manufacturer (G) _____

Issue (H) _____

Country of Origin Info Plate (If Required) (I) _____

Local regulation may require documentation of the Month and/or Year of Manufacture in the Operation and Maintenance Manual. Comply with these regulations.

Regional Product Marking (If Equipped)



Illustration 309

g06650998

Regional marking plate

This plate is positioned on the bottom left side of the PIN plate or near the PIN plate.

Note: The regional marking plate or plates are installed on machines that meet the applicable requirements that were effective at that time and may differ from the one shown above.

Regional product marking may include one or more of the following:



CE mark



UKCA mark



EAC mark



Gulf Standardization Organization (GSO) mark



Ukraine mark

The following information may be stamped onto the regional product marking plate. For quick reference, record this information in the spaces that are provided below:

- Engine Power Primary Engine (kW)_____
- Engine Power for Additional Engine (If Equipped)_____
- Typical Machine Operating Weight (kg)_____
- Month and/or Year of Manufacture_____
- Machine Type_____

Eurasian Economic Union

Manufacturer Information

Manufacturer:

Caterpillar Inc.,
100 N.E. Adams Street
Peoria, Illinois 61629, USA

Entity authorized by the manufacturer at the territory of Eurasian Economic Union:

Caterpillar Central Asia LLP
77, Kunaev Str., Almaty,
Medeu district, 050000, Republic of Kazakhstan

Machine Specification Film

The machine specification film is on machines that are going into Japan.

The Japanese Industrial Safety and Health Act requires machine specifications to be displayed on a film that can easily be seen by the operator.

If equipped, this film will be on the cab door.

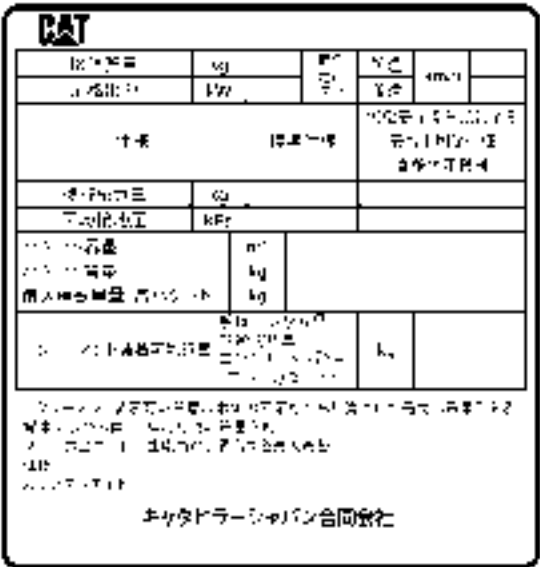


Illustration 310 g06178867

Typical example

Electromagnetic Emissions

Note: This label is on machines that are going into Canada.

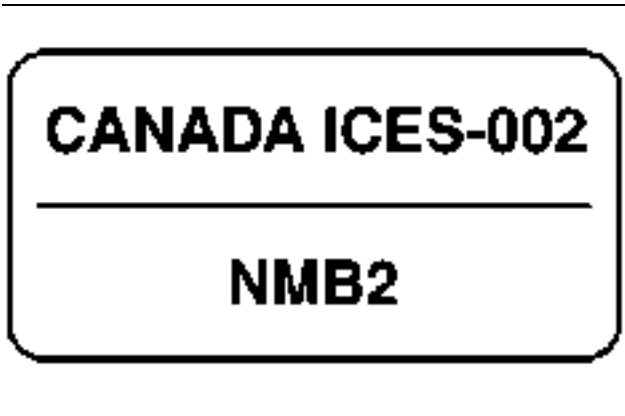


Illustration 311 g06063443

If equipped, this label is located next to the PIN plate. This label verifies that the product meets the requirements of ICES-002 Issue 6. Compliance to ICES-002 Issue 6 is accomplished by meeting electromagnetic emissions industry standard CISPR-12.

Roll Over Protective Structure (ROPS) / Falling Object Protective Structure (FOPS) Film

**WARNING**

Structural damage, an overturn, modification, alteration, or improper repair can impair this structure's protection capability thereby voiding this certification. Do not weld on or drill holes in the structure. This will void the certification. Consult your Cat dealer to determine this structure's limitations without voiding its certification.

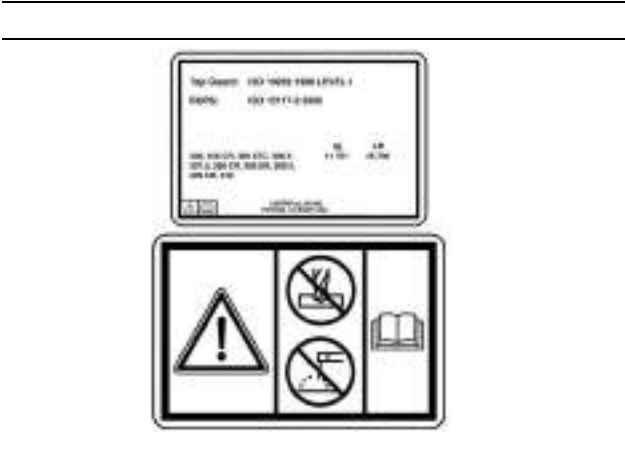


Illustration 312 g06344390

This safety message is on the left side of the machine near the cab door.

Certification for Rollover Protective Structure (ROPS) and for Falling Object Protective Structure (FOPS)

The unaltered ROPS or the FOPS structure meets the following standards for the ROPS at the time of installation: "ISO 3471-2008" and "GB/T 17922-2014". Also, the FOPS canopy meets the following standards at the time of installation: "ISO 3449-2005 LEVEL II" and "GB/T 17771-2010 LEVEL II".

The maximum mass of the machine, which includes the operator and the attachments without a payload, should not exceed the mass on the certification label.

Engine Serial Number

This label is on the engine.

Engine Serial Number _____

Sound Certification

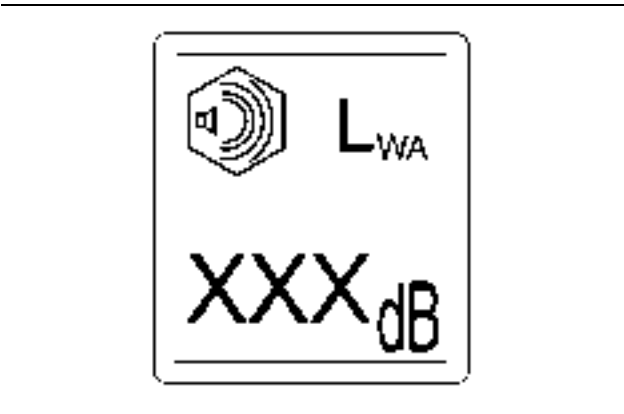


Illustration 313 g06675270
Sound certification film

A typical example of this film is shown.

A certification film is used to verify the environmental sound certification on machines that are certified to the regional requirements. A film installed on your machine will have a value. The value that is listed on the film indicates the guaranteed exterior sound power level (L_{wa}) at the time of manufacture for the conditions that are specified in the following sound test procedures:

- "ISO 6395"
- "European Union 2000/14/EC"
- "United Kingdom 2005 No. 1093"

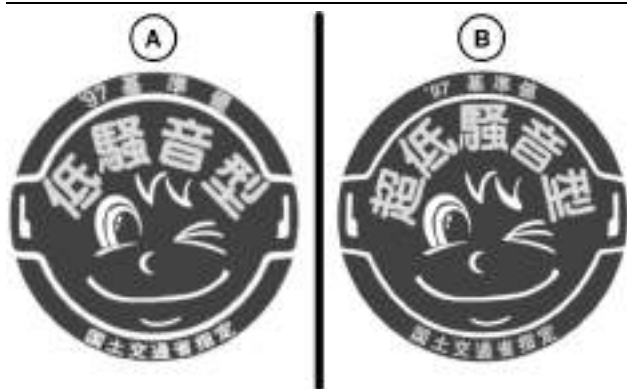


Illustration 314

g03105800

(A) Low Noise Film
(B) Super Low Noise Film

If equipped, these certification labels are used to verify the Japan Ministry of Land, Infrastructure, Transportation, and Tourism (MLIT) noise designation according to the Japan “Designation Rule of Low Noise Type Construction Machine” .

Low Noise (A) – Verifies that the Japan “MLIT” designates the machine as a “Low Noise” type construction machine.

Super Low Noise (B) – Verifies that the Japan “MLIT” designates the machine as a “Super Low Noise” type construction machine.

i08756279

Emissions Certification Film

SMCS Code: 1000; 7000; 7405

Consult your Cat dealer for an Emission Control Warranty Statement.

The emission certification film is located on the engine or inside the engine enclosure.

Declaration of Conformity (European Union)

SMCS Code: 1000; 7000

Table 64

An EU Declaration of Conformity document was provided with the machine if it was manufactured to comply with specific requirements for the European Union. In order to determine the details of the applicable Directives, review the complete EU Declaration of Conformity provided with the machine. The extract shown below from an EU Declaration of Conformity for machines that are declared compliant to "2006/42/EC" applies only to those machines originally "CE" marked by the manufacturer listed and which have not since been modified.

ORIGINAL EU DECLARATION OF CONFORMITY

Manufacturer: Caterpillar Inc., 100 N.E. Adams Street, Peoria, Illinois 61629, USA

Person authorized to compile the Technical File and to communicate relevant part (s) of the Technical File to the Authorities of European Union Member States on request:

Standards & Regulations Manager, Caterpillar France S.A.S 40,
Avenue Leon-Blum, B.P. 55, 38041 Grenoble Cedex 9, France

I, the undersigned, _____, hereby certify that the construction equipment specified hereunder

Description:	Generic Denomination:	Earth-moving Equipment
	Function:	Hydraulic Excavator
	Model/Type:	304, 305CR, 305.5CR.
	Serial Number:	
	Commercial Name:	Caterpillar

Fulfills all the relevant provisions of the following Directives

Directives	Notified Body	Document No.
2000/14/EC amended by 2005/88/EC, Note (1)		
2006/42/EC	N/A	
2014/30/EU	N/A	

Note (1) Guaranteed Sound Power Level - ____ dB (A) Annex VI
Representative Equipment Type Sound Power Level - ____ dB (A)
[Engine Power per ISO 14396 - ____ kW, Rated engine speed - ____ rpm
Technical Documentation accessible through person listed above authorized to compile the Technical File
Harmonised standards taken into consideration: EN 474-1: 2006+A4 :2013+AC:2014;
EN 474-5: 2006+A3: 2013
EN 13309: 2010

Done at:

Signature

Date:

Name/Position

Note: The above information was correct as of **July 2021**, but may be subject to change, please refer to the individual declaration of conformity issued with the machine for exact details.

Declaration of Conformity (Great Britain)

SMCS Code: 1000; 7000

Table 65

A Declaration of Conformity document was provided with the machine if it was manufactured to comply with specific requirements for the Great Britain. In order to determine the details of the applicable legislation, review the complete Declaration of Conformity provided with the machine. The extract shown below from a Great Britain Declaration of Conformity for machines that are declared compliant to 2008 No. 1597 applies only to those machines originally "UKCA" marked by the manufacturer listed and which have not since been modified.

DECLARATION OF CONFORMITY

Manufacturer: Caterpillar Inc., 100 N.E. Adams Street, Peoria, Illinois 61629, USA

Person authorized to compile the Technical File and to communicate relevant part (s) of the Technical File to the Authorities on request:

Standards & Regulations Manager Caterpillar France SAS
40 Avenue Leon-Blum 38000 Grenoble, France

I, the undersigned, _____, hereby certify that the construction equipment specified hereunder

Description:	Generic Denomination:	Earth - moving Equipment
	Function:	Hydraulic Excavator
	Model/Type:	304, 305CR, 305.5CR.
	Serial Number:	
	Commercial Name:	Caterpillar

Fulfills all the relevant provisions of these regulations and/or other enactments as listed below:

Legislation	Approved Body	Document No.
2008 No. 1597		
2016 No. 1091		
2001 No. 1701 amended by 2005 No. 3525, Note (1)	Note (2)	

Note (1) Schedule - _____ Guaranteed Sound Power Level - _____ dB (A)
Representative Equipment Type Sound Power Level - _____ dB (A)
Engine Power per _____ - _____ kW Rated engine speed - _____ rpm
Technical Documentation accessible through person listed above authorized to compile the Technical File

Note (2) If applicable, information related to Approved Body.

Done at:

Signature

Date:

Name/Position

Note: The above information was correct as of July 2021, but may be subject to change, please refer to the individual declaration of conformity issued with the machine for exact details.

Operation Section

Before Operation

i07317232

Mounting and Dismounting

SMCS Code: 6700; 7000

Illustration 315

g06278943

Typical example

Mount the machine and dismount the machine only at locations that have steps and/or handholds. Before you mount the machine, clean the steps and the handholds. Inspect the steps and handholds. Make all necessary repairs.

Face the machine whenever you get on the machine and whenever you get off the machine.

Maintain a three-point contact with the steps and with the handholds.

Note: Three-point contact can be two feet and one hand. Three-point contact can also be one foot and two hands.

Do not mount a moving machine. Do not dismount a moving machine. Never jump off the machine. Do not carry tools or supplies when you try to mount the machine or when you try to dismount the machine. Use a hand line to pull equipment onto the platform. Do not use any controls as handholds when you enter the operator compartment or when you exit the operator compartment.

Machine Access System Specifications

The machine access system has been designed to meet the intent of the technical requirements in "ISO 2867 Earth-moving Machinery – Access Systems". The access system provides for operator access to the operator station and to conduct the maintenance procedures described in Maintenance section.

Alternate Exit

Machines that are equipped with cabs have alternate exits. For additional information, see Operation and Maintenance Manual, "Alternate Exit".

i09597026

Daily Inspection

SMCS Code: 1000; 6319; 6700; 7000

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

WARNING

Personal injury or death can result from escaping fluid under pressure.

Escaping fluid under pressure, even a very small pin-hole size leak, can penetrate body tissue and cause serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

Always use a board or cardboard when checking for a leak.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the cooling system pressure cap is cool enough to touch with your bare hand.

Remove the cooling system pressure cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

NOTICE

Accumulated grease and oil on a machine is a fire hazard. Remove this debris with steam cleaning or high pressure water, at least every 1000 hours or each time any significant quantity of oil is spilled on a machine.

For maximum service life of the machine, perform a thorough walk-around inspection before you mount the machine and before you start the engine.

Initial 100 Hours

Daily, perform the procedures that are applicable to your machine:

- “Boom and Stick Linkage - Lubricate”
- “Blade Linkage - Lubricate”

Severe Applications

Daily, perform the procedures that are applicable to your machine:

- “Boom and Stick Linkage - Lubricate”
- “Blade Linkage - Lubricate”

Daily Basis

Daily, perform the procedures that are applicable to your machine:

- “Bucket Lifting Eye - Inspect”
- “Fuel Tank Water and Sediment - Drain”
- “Hydraulic System Oil Level - Check”
- “Indicators and Gauges - Test”

- “Seat Belt - Inspect”
- “Track Adjustment - Adjust”
- “Travel Alarm - Test”
- “Undercarriage - Check”

Refer to Operation and Maintenance Manual, “Maintenance Interval Schedule” for all maintenance recommendations.

Note: Watch closely for leaks. If you observe a leak, find the source of the leak and correct the leak. If you suspect a leak or you observe a leak, check the fluid levels more frequently.

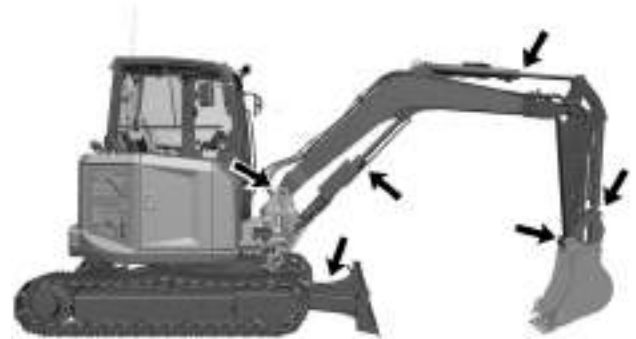


Illustration 316

g06779612

305 CR Excavator inspection points (cylinders)

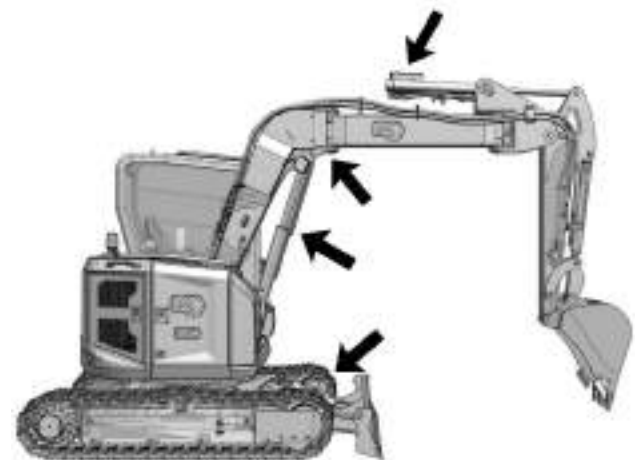


Illustration 317

g06779539

305 SR Excavator inspection points (cylinders)

Inspect the attachment control linkage, attachment cylinders, and attachment for damage or excessive wear. Make any necessary repairs.

Inspect the lights for broken bulbs and for broken lenses. Replace any broken bulbs and any broken lenses.

Inspect the engine compartment for any trash buildup. Remove any trash buildup from the engine compartment.

Inspect the cooling system for any leaks, for faulty hoses and for any trash buildup. Correct any leaks. Remove any trash from the radiator.

Inspect all the belts for the engine attachments. Replace any belts that are worn, frayed, or broken.



Illustration 318

g06779613

305 CR Excavator inspection points (hydraulic system)

Inspect the hydraulic system for leaks. Inspect the tank, cylinder rod seals, hoses, tubes, plugs, connections, and fittings. Correct any leaks in the hydraulic system.

Inspect the tubes and hoses along the boom and stick for wear and leaks. Replace any hoses or tubes that are worn or leak.

Inspect the differential and the final drives for leaks. Make any necessary repairs.

Inspect the swing drive for leaks.

Make sure that all covers and guards are securely attached. Inspect the covers and the guards for damage.



Illustration 320

g06779614

305 CR Excavator inspection points (covers and guards)

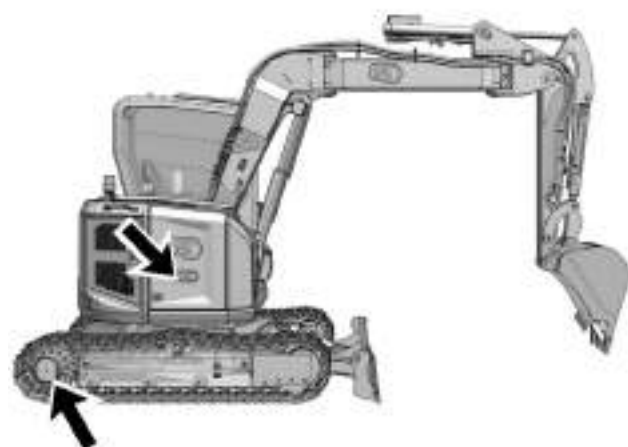


Illustration 319

g06779544

305 SR Excavator inspection points (hydraulic system)

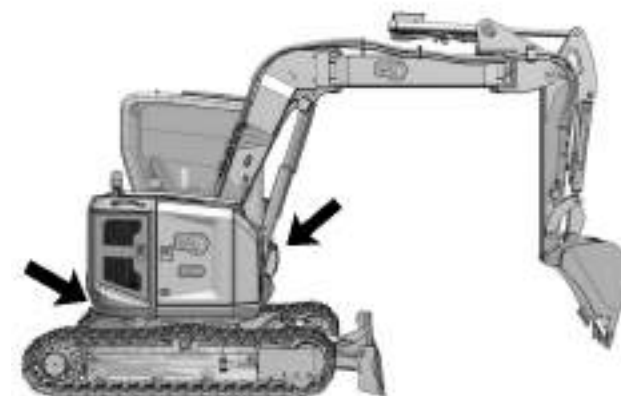


Illustration 321

g06779559

305 SR Excavator inspection points (covers and guards)

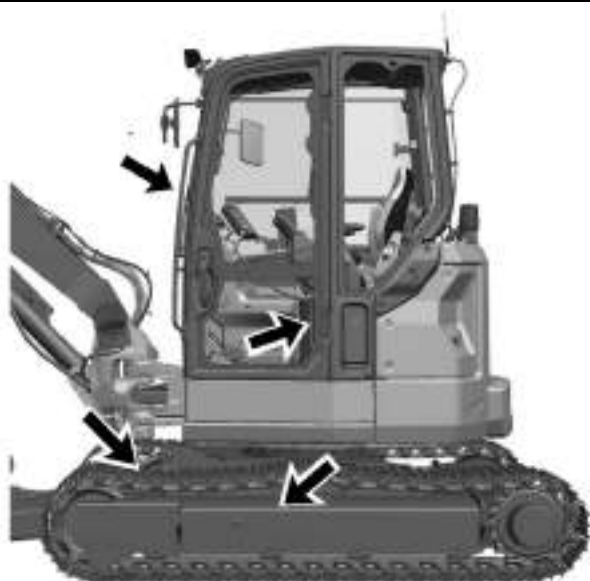


Illustration 322

g06779615

305 CR Excavator inspection points (walkways and handholds)

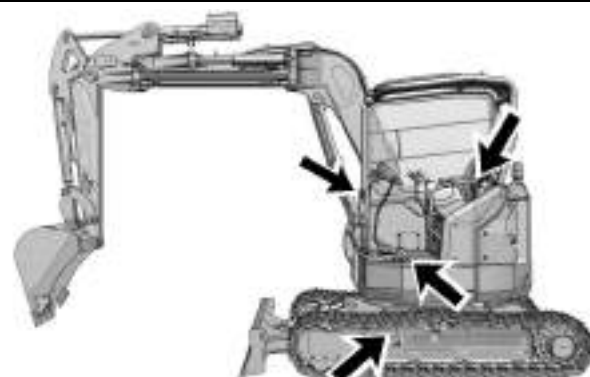


Illustration 323

g06779587

305 SR Excavator inspection points (walkways and handholds)

Inspect the steps, the walkways, and the handholds.
Clean the steps, the walkways, and the handholds.
Make any necessary repairs.

Inspect the operator compartment for trash buildup.
Check for trash buildup under the floorplate and on
the crankcase guard. Keep these areas clean.

Adjust the mirrors to achieve the best visibility. Refer
to "Mirror" for more information.

Machine Operation

i08289019

Alternate Exit

SMCS Code: 7310

i07291771



Illustration 324

g06276524



Alternate Exit – The rear window serves as an alternate exit.



Break Glass – Perform the following procedure to exit through the rear window. A hammer is mounted on the rear of the cab. Strike the rear window with the hammer to break the glass. Climb through the opening of the rear window to exit the cab.

Note: Do not use the alternate exit except in an emergency situation.

Seat

SMCS Code: 5258-025; 7312-025; 7324; 7327

Standard Seat



Illustration 325

g06285915

- (1) Recline Lever
(2) Seat Fore and Aft Lever

Comfort Level Seat (If Equipped)



Illustration 326

g06276793

- (1) Recline Lever
- (2) Weight Adjustment Lever (or knob)
- (3) Seat Fore and Aft Lever

Use lever (1) to change the angle of the backrest.

To adjust for your weight, turn lever or knob (2) on the front of the seat.

Lift on fore and aft lever (3) to release the seat from the locked position. Adjust the seat forward or rearward to the desired position and then release the lever to lock the seat.

i07092308

Seat Belt

SMCS Code: 7327

Note: This machine was equipped with a seat belt when the machine was shipped from Caterpillar. At the time of installation, the seat belt and the instructions for installation of the seat belt meet the SAE J386 and ISO 6683 standards. Consult your Cat dealer for all replacement parts.

Always check the condition of the seat belt and the condition of the mounting hardware before you operate the machine.

Seat Belt Adjustment for Retractable Seat Belts

Fastening The Seat Belt



Illustration 327

g06223891

Pull seat belt (2) out of retractor (1) in a continuous motion.

Fasten seat belt catch (3) into buckle (4). Make sure that the seat belt is placed low across the lap of the operator.

The retractor will adjust the belt length and the retractor will lock in place. The comfort ride sleeve will allow the operator to have limited movement.

Releasing The Seat Belt



Illustration 328

g06223894

Push the release button on the buckle to release the seat belt. The seat belt will automatically retract into the retractor.

Extension of the Seat Belt

WARNING

When using retractable seat belts, do not use seat belt extensions, or personal injury or death can result.

The retractor system may or may not lock up depending on the length of the extension and the size of the person. If the retractor does not lock up, the seat belt will not retain the person.

Longer, non-retractable seat belts and extensions for the non-retractable seat belts are available.

Caterpillar requires only non-retractable seat belts to be used with a seat belt extension.

Consult your Cat dealer for longer seat belts and for information on extending the seat belts.

i08785729

Diesel Particulate Filter Regeneration (If Equipped)

SMCS Code: 108F

General Information

Regeneration is the removal of soot from the Diesel Particulate Filter (DPF). The DPF traps both soot and ash. Soot is removed during regeneration, but ash cannot be removed and will remain in the DPF. The DPF on the C1.7 engine has been sized such that an ash service will not be required before an engine overhaul under normal operating conditions.

Regeneration occurs when the temperatures in the DPF are favorable. This typically happens during normal running and no operator action is required. Low speed and load applications will have lower exhaust temperatures and continuous operation in these conditions may require changes in operation to allow regeneration to occur. There may be a slight change in the exhaust noise during an active regeneration. The regeneration may take between 15 and 45 minutes to complete. Normal operation can continue unless warnings indicate otherwise.

Note: When regeneration is required, the engine may automatically elevate the idle speed to 1200 RPM to improve regeneration conditions in the DPF. This is part of the normal operation and will only occur when hydraulic lockout control lever is in the LOCKED position.

Under certain conditions, the Diesel Particulate Filter Indicator may appear. This indicates that conditions have not been favorable for regeneration to occur under the current operation, and that a change in machine operation is needed. In this case, either increase the engine speed and load and avoid short durations of operation or place the hydraulic lockout control lever in the LOCKED position and allow the engine to elevate idle until the Diesel Particulate Filter Indicator Lamp has extinguished.

Note: In conditions where the Diesel Particulate Filter Indicator lamp has appeared, the engine will elevate idle to 2000 RPM when it safe to do so. This requires the hydraulic lockout control lever to be in the LOCKED position.

Note: Failure to allow the DPF to complete regeneration will lead to a reduction in engine performance and could lead to premature failure of the aftertreatment system.

Air Conditioning (AC) /Heater Fan – Elevated engine temperatures are required for regeneration. In colder ambient conditions, the AC/heater fan speed may be limited to as low as fan speed. Speed is reduced to reduce the amount of heat removal from the engine by the Heating, ventilation, and Air Conditioning heater core (HVAC heater core). This is to ensure that the engine maintains sufficient heat to complete the regeneration cycle. The fan speed reduction is variable and changes based on the ambient temperature and machine operating conditions.

Engine Emissions Notifications



1- Diesel Particulate Filter Lamp – This indicator appears on the Liquid Crystal Display (LCD) screen on the monitor.



2- Engine Malfunction Indicator – This indicator appears on the lower right side of the dash.



3- Action Lamp – This indicator appears on the center top position of the dash.



4- Action Audible Alarm – Repetitive alarm inside the cab.

Some conditions and applications may not provide favorable conditions in the DPF for regeneration to occur during normal operation. If regeneration has not been possible during normal operation, this will be indicated to the operator through the warning lamps shown.

Note: Additional pop-up messages may be displayed and will provide the operator with additional information or instructions.

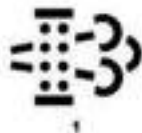
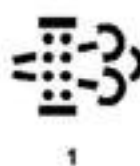


Illustration 329

g06710763

(1) Diesel Particulate Filter Lamp

If the Diesel Particulate Filter Lamp (1) is illuminated and solid or flashing, then regeneration has been unable to be completed and action needs to be taken. If possible, operate at higher engine speed and load and avoid short periods of engine running. If this is not possible, place the machine in a safe location, place the hydraulic lockout control lever in the LOCKED position, and allow the engine to elevate speed to 2000 RPM until regeneration has been completed. When Diesel Particulate Filter Lamp has extinguished and engine speed has returned to idle, the machine can resume normal operation. Action should be taken at this stage to avoid increased escalation of the warning system.



1



2



3

Illustration 330

g06710764

(1) Diesel Particulate Filter Lamp
(2) Engine Malfunction Indicator
(3) Action Lamp

If a soot regeneration has not been completed successfully, and the soot level has increased further, the following lamps will be displayed. Diesel Particulate Filter Lamp (1) is illuminated and flashing, Engine Malfunction Indicator (2) is on solid and Action Lamp (3) is flashing. In this condition the operator must take action to protect the hardware and avoid a further increase in soot. Place the machine in a safe location, place the hydraulic lockout control lever in the LOCKED position, and allow the engine to elevate speed to 2000 RPM until regeneration has been completed. When warning lights have extinguished and engine speed has returned to idle, the machine can be operated again. Failure to do so will activate an engine power derate.



Illustration 331

g06710765

- (1) Diesel Particulate Filter Lamp
- (2) Engine Malfunction Indicator
- (3) Action Lamp
- (4) Audible Alarm

If the soot level continues to increase the following lamps will be displayed. Diesel Particulate Filter Lamp (1) is illuminated and flashing, Engine Malfunction Indicator (2) is solid, Action Lamp (3) is flashing and an Audible Alarm (4) is pulsing. In this condition regeneration of the DPF by the control software is no longer possible and a controlled regeneration by a Caterpillar Service Technician using a Caterpillar Electronic Technician Software tool will be required. In this state, park the machine in a safe condition and contact your Caterpillar Dealer for troubleshooting in order to return the machine to an operational condition.

Note: Failure to do so will result in a significant reduction in engine performance and may lead to permanent damage to the aftertreatment system.

Engine Emission Alert

The following chart describes the alert indicators and actions the operator needs to perform to allow an active regeneration.

Table 66

Warning Symbol	Machine Action	Operator Action
No Lights	Regeneration process will begin automatically when required with no impact to machine functionality. A change in the engine and hydraulic noise signatures may be noted.	No action required.
Diesel Particulate Filter Lamp (1) - Solid/ Flashing	The regeneration process will continue, though higher speeds and/or loads are required. Engine speed may elevate to 2000 rpm when the arm bar is raised.	Increase the throttle dial to high idle if possible, otherwise park the machine in a safe location, raise the arm bar and allow the engine to elevate idle.
Diesel Particulate Filter Lamp (1) - Flashing Engine Malfunction Indicator (2) - Solid	The engine has been unable to successfully regenerate during operation. A ramping engine power derate will be applied until a regeneration completes successfully.	Park the machine in a safe location, raise the arm bar and allow the engine to elevate idle.

(continued)

(Table 66, contd)

Action Lamp (3) - Flashing		
Diesel Particulate Filter Lamp (1) - Flashing	An engine power derate will be applied. Re-generation can only be done through Cat [®] Electronic Technician (ET), by an authorized Cat [®] dealer.	Consult your local Cat [®] dealer. If the engine is run through these warning indicators, the DPF will require servicing and may require replacement.
Engine Malfunction Indicator (2) - Solid		
Action Lamp (3) - Flashing		
Audible Alarm (4) - Audible Alarm		

Carbon Dioxide (CO₂) Emissions Statement

Emissions regulations require that the value of the CO₂ emissions be reported to the end user. For this engine, 799 g/kWh was determined to be the CO₂ value during the European Union (EU) type approval process. This value was recorded in EU type approval certificate. This CO₂ measurement results from testing over a fixed test cycle, under laboratory conditions, with a parent engine representative of the engine family. This value shall not imply or express any guarantee of the performance of a particular engine.

EU Stage V Emissions Control System (European Union)

Operation and Maintenance of the Stage V Emissions Control System

The engine, including the emissions control system, shall be operated, used, and maintained in accordance with the instructions provided to the end users to maintain the emissions performance of the engine within the requirements applicable to the engine category.

No deliberate tampering with or misuse of the engine emissions control system should take place. In particular regarding deactivating (or not maintaining) an Exhaust Gas Recirculation (EGR) or a reagent dosing system if equipped.

Taking prompt action to rectify any incorrect operation, use or maintenance of the emissions control system in accordance with the rectification measures indicated by the unique warning diagnostic codes outlined below is essential.

Engine Manufacturer Contact Information (C1.7 Engine)

Manufacturer:

Caterpillar Inc.
100 N.E. Adams Street
Peoria, Illinois 61629
USA

Entity authorized by the manufacturer at the territory of Eurasian Economic Union:

Caterpillar Eurasia LLC
75, Sadovnicheskaya Emb.
Moscow 115035
Russia

i09248025

Operator Controls

SMCS Code: 7300; 7301; 7451

Note: Your machine may not be equipped with all the controls that are described in this topic.

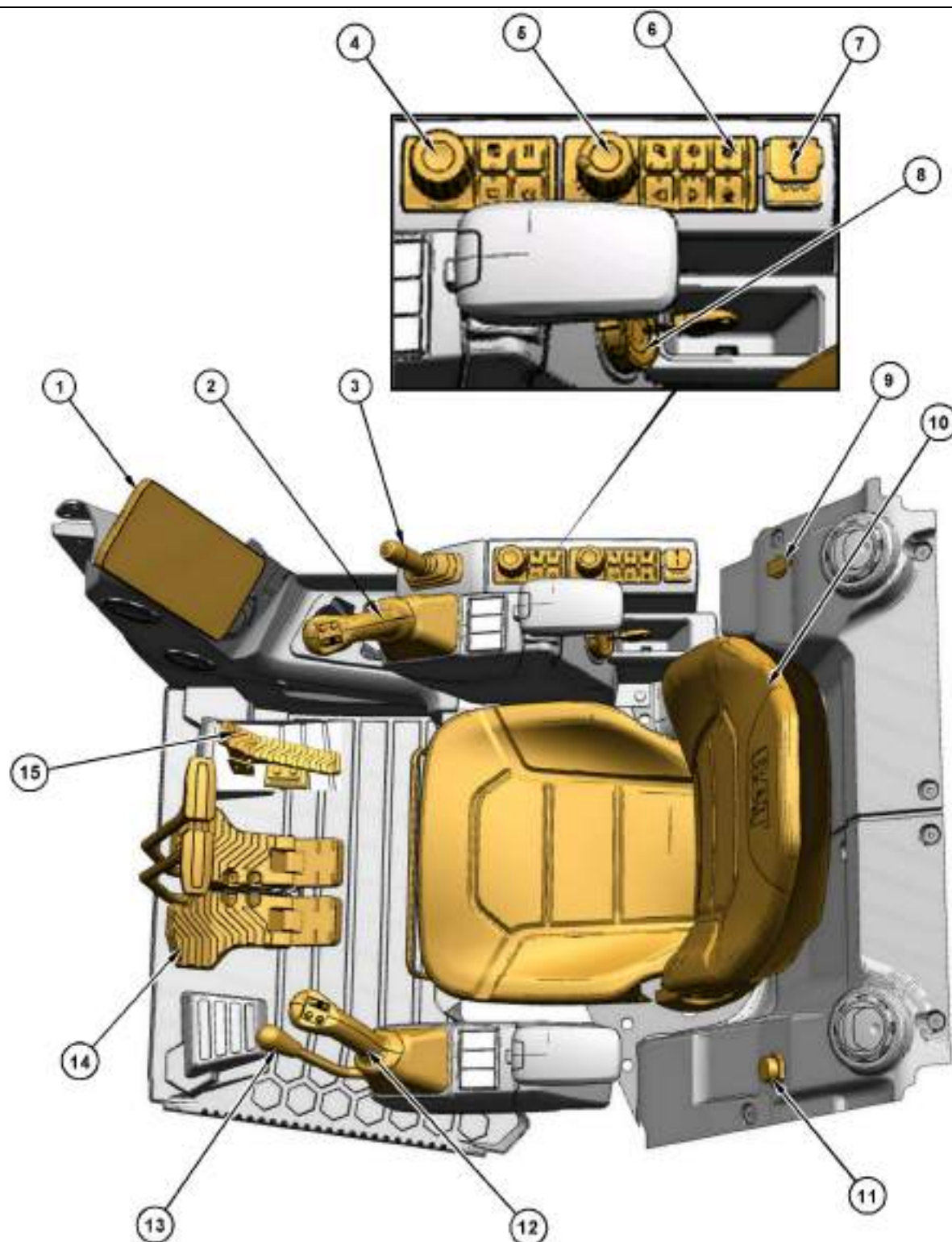


Illustration 332

g07197165

- (1) Monitor
- (2) Right side joystick controls
- (3) Dozer blade lever (if equipped)
- (4) Jog dial
- (5) Engine speed dial
- (6) Right side switch panel

- (7) Universal Serial Bus (USB) port (if equipped)
- (8) Engine start switch
- (9) Power outlet (12V)
- (10) Operator seat

- (11) Diagnostic Port - Cat® Electronic Technician
- (12) Left side joystick controls
- (13) Hydraulic lockout control
- (14) Travel control lever (if equipped)
- (15) Auxiliary control pedal (if equipped)

Monitor (1)

Monitor – Monitor (1) is used to display various operating information of the machine. For more information on the operation of monitor (1), refer to “Monitoring System”.

Right Side Joystick Controls (2)

Right Side Joystick – Right side joystick controls (2) are used to control the functions of the machine implements. For more information on the individual functions of the joysticks, refer to “Joystick Controls”.

Dozer Blade Lever (3) (If Equipped)



Float – Push dozer blade lever (3) fully forward. The blade will lower to the ground. The blade will float with the contour of the ground. Dozer blade lever (3) will return to the HOLD position.



Lower – Push dozer blade lever (3) forward to lower the blade. Dozer blade lever (3) will return to the HOLD position when the operator release dozer blade lever (3). The blade will remain in the selected position.

Hold – Dozer blade lever (3) will return to the HOLD position when dozer blade lever (3) is released from the RAISED position or LOWERED position.



Raise – Pull dozer blade lever (3) backward to raise the blade. Dozer blade lever (3) will return to the HOLD position when the operator releases dozer blade lever (3). The blade will remain in the selected position.

High-Speed Travel Switch (3A) (If Equipped)



Illustration 333

(3A) High-speed travel switch

High-speed travel switch (3A) is on dozer blade lever (3). Use high-speed travel switch (3A) to change the travel speed.

Push the switch again to make the machine travel in high speed. The indicator light on the instrument panel is active when the machine is in the high-speed mode. Push the switch again to return to low speed.

Always travel at slow speeds on slopes and rough ground.

Jog Dial (4)

Jog Dial – Turn jog dial (4) to choose the desired item in the monitor and depress jog dial (4) to activate the selection. Refer to “Monitoring System” for more information.

Engine Speed Dial (5)

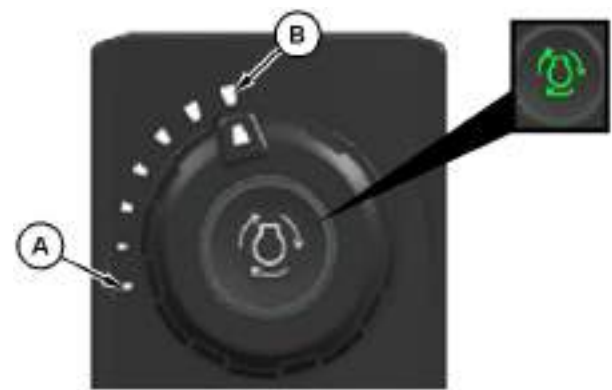


Illustration 334

g07264243

(A) Low engine idle
(B) High engine idle

Turn engine speed dial (5) to control the engine speed (engine rpm). Select desired position from the seven positions that are available. Turn engine speed dial (5) counterclockwise to decrease the engine speed (engine rpm). Turn engine speed dial (5) clockwise to increase the engine speed (engine rpm).

Low Engine Idle (A) – The engine operates in the low rpm range.

High Engine Idle (B) – The engine operates in the high rpm range.

Pressing the center of the engine speed dial can change the engine operation mode from “Power On Demand” mode to “Standard” mode (if equipped). A green illuminator on the center of the throttle dial indicates if the “Power On Demand” mode is active.

g06277194

In addition to the green illuminator on the dial, a "SMART" Mode indicator, which is the indicator for "Power On Demand", will illuminate on the monitor. When the machine is in "Standard" Mode, the "Power On Demand" Mode indicator will not be illuminated on the monitor.

The default state of "Power On Demand" at key on can be changed in Cat® Electronic Technician (ET) by changing The Engine Speed Power Mode Power Up Default Configuration. Three settings are available:

ON – Will always default to the ON position when the key is turned on (this is the default state from the factory). Power on demand can be cycled ON or OFF by pressing the center of the engine speed dial.

OFF – Will always default to the OFF position when the key is turned on. Power on demand can be cycled ON or OFF by pressing the center of the engine speed dial.

ALWAYS ON – Forced to ON position all the time, pressing the center of the engine speed dial does nothing.

Note: Some machines may prohibit toggling of the "Power On Demand" mode.

Note: The default power mode setting can be set within the monitor. For more information, refer to "Monitoring System".

Right Side Switch Panel (6)



Illustration 335

g06285454

- (6A) Heating ventilation air conditioning (HVAC) control button
- (6B) Display menu shortcut button
- (6C) Work light control button
- (6D) Window washer control button
- (6E) Travel alarm cancel control button
- (6F) Radio control button
- (6G) Home screen control button
- (6H) Overload warning or shovel crane ON and OFF control button
- (6J) Window wiper control button
- (6K) Radio mute button

Heating Ventilation Air Conditioning (HVAC) Control Button (6A)



HVAC – Press this button to bring up the air conditioning and heating menu. The indicator light will illuminate when the heating and cooling system is active. The jog dial (4) can be used to make selections. If equipped with a touch screen, the selections can be made by touching the monitor. Refer to "Air Conditioning and Heating Control" for more information.

Display Menu Shortcut Button (6B)



Display Menu – Pressing display menu shortcut button (6B) navigates to the display menu in the monitor. Refer to "Monitoring System" for more information.

Work Light Control Button (6C)



Lights – Pressing work lights control button (6C) once turns on all work lights. Pressing the work light button again turns off all work lights.

Window Washer Control Button (6D)

NOTICE

If the wiper does not operate with the switch in the ON position, turn the switch off immediately. Check the cause. If the switch remains on, motor failure can result.

NOTICE

If the washer is used continuously for more than 20 seconds or used when no washer solution comes out, motor failure can result.



Window Washer – Push window washer control button (6D) to activate the window washer. The LED will illuminate while window washer control button (6D) is pressed. Two wiper cycles will be completed after releasing window washer control button (6D).

Travel Alarm Cancel Control Button (6E)



Travel Alarm Cancel – LED will illuminate while travel alarm is canceled. Travel alarm cancel control button (6E) must be pressed every time travel command is initiated to mute the travel alarm.

Note: The travel alarm will sound when the travel levers or the travel pedals are activated.

Radio Control Button (6F)



Radio Control – Pressing radio control button (6F) will navigate the monitor to display the relevant screen for radio controls. Refer to “Radio” for more information.

Home Screen Control Button (6G)



Home Screen – Press home screen control button (6G) to return back to the home menu on the monitor. Refer to “Monitoring System” for more information.

Overload Warning or Shovel Crane ON and OFF Control Button (6H)



Overload Warning or Shovel Crane ON and OFF – If equipped with Overload Warning control button (6H), this feature functions as the ON / OFF button for that feature. When ON, the overload warning system activates if the boom pressure exceeds a threshold. If equipped with Shovel Crane, this feature functions as the ON / OFF button for that feature. When ON, the machine will display the actual load and load limit. If the actual load approaches or exceeds the limit, a warning is activated.

ON – When the LED is lit, the overload warning or shovel crane feature is ON.

OFF – When the LED is not lit, the overload warning or shovel crane feature is OFF.

Refer to “Shovel Crane Control” for more information.

Window Wiper Control Button (6J)



Window Wiper – Pressing window wiper control button (6J) once turns the wiper ON with a 6 second delay. Pressing window wiper control button (6J) again changes the delay to 3 seconds. Pressing window wiper control button (6J) turns on the wiper continuously. Pressing window wiper control button (6J) again turns OFF the wiper. If the front window is open, the wipers will not turn ON. If the window is opened while the wiper is ON, the wiper will stop until the window is closed.

No LEDs – Wipers are OFF

1 LED – 6 second intermittent delay

2 LEDs – 3 second intermittent delay

3 LEDs – Full ON

Radio Mute Button (6K)



Radio Mute – Press radio mute button (6K) to mute the radio. The indicator lamp will turn ON while the radio is muted.

USB Port (7) (If Equipped)



USB – USB port (7) is available to charge compatible electronic devices.

Note: the port is for charging purposes only.

Engine Start Switch (8)

NOTICE

The engine start switch must be in the ON position and the engine must be running in order to maintain electrical functions and hydraulic functions. This procedure must be followed in order to prevent serious machine damage.

Note: Always place the hydraulic lockout lever in the RAISED position while starting the engine. Engine start switch (8) will not function if the left hydraulic control is in the LOWERED position.

Key Switch (If Equipped)

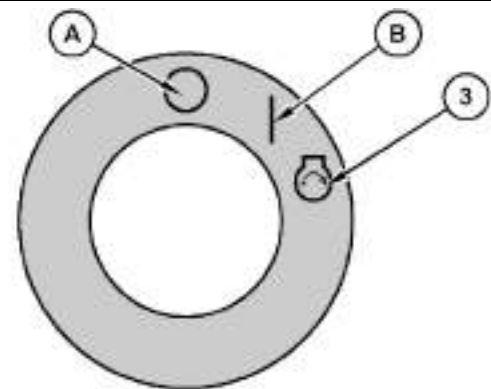


Illustration 336

g07264238

(A) OFF position
(B) ON position
(C) Start position



OFF – Insert the engine start switch key only while engine start switch (8) is in the OFF position (A). Remove the engine start switch key only while engine start switch (8) is in the OFF position (A). Turn engine start switch (8) to the OFF position (A) before the operator attempts to restart the engine. Turn engine start switch (8) to the OFF position to stop the engine (A). Refer to “Stopping the Engine” for more information.



ON – To activate the electrical circuits in the cab, turn the key clockwise to the ON position (B). Refer to “Engine Starting” for more information.



START – To start the tractor engine, turn the key clockwise to the START position (C). After the engine starts, release the key. The key will return to the ON position (B).

Note: If the engine fails to start, return engine start switch key to the OFF position (A). Return the engine start key to the start position before the operator attempts to start the engine again.

Refer to “Engine Starting” for more information.

Push to Start (If Equipped)

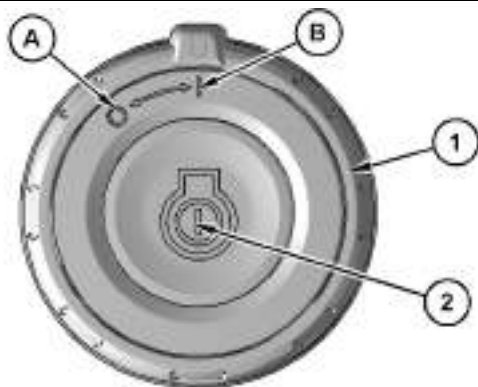


Illustration 337

g07264235

- (A) Off
- (B) On
- (1) Engine start ring
- (2) Start button

Note: The Bluetooth key must be inside the cab to activate the electrical circuits.



OFF – Turn engine start ring (1) to the OFF position (A) to stop the engine. Refer to “Stopping the Engine” for more information.



ON – To activate the electrical circuits in the cab and enable engine starting, turn the engine start ring (1) clockwise to the ON position (B). Refer to “Engine Starting” for more information.



START – To start the engine, enter pass code in the monitor (only required if machine security is enabled). Press start button (2). After the engine starts, release the button. Refer to “Engine Starting” for more information.

Push to Start with Bluetooth Key Fob

If the machine is equipped with push to start and the Bluetooth key fob system, the machine will attempt to detect a Bluetooth key fob when the machine is turned on. If an authorized key fob is detected, the display will immediately proceed to the home screen and the engine will be allowed to start.

Note: the Bluetooth key can be detected when it is outside the cab if it is near the machine. Ensure that the Bluetooth key is in a sufficient distance from the machine when not in use to prevent unauthorized access to the machine.

Note: The Bluetooth key fob features a sleep mode to preserve battery life. If the key detects no movement for 90 seconds, it will go into sleep mode and stop communicating. While in sleep mode, it cannot be used to access a machine. The Bluetooth key will exit sleep mode and begin communicating after movement of the key is detected. When not in sleep mode, the Bluetooth key communicates every 5 seconds.

Note: If multiple key fobs are present, the first valid key fob detected by the transceiver will be read. If the machine is not able to detect a key fob when it is turned on, the display will prompt the user to enter a 4-digit numerical passcode.

If the voltage of the Bluetooth key fob used to access the machine is low (below 2.5V), a pop-up message will appear on the display indicating the low battery condition and recommend battery replacement. If this message appears, replace the battery within the Bluetooth key fob to ensure proper functionality of the key.



Illustration 338

g07264239

Indication in monitor for low battery condition

Power Outlet (12V) (9)



12V Power Outlet – Power outlet (9) can be used to power automotive electrical equipment or accessories. Power outlet (9) only operates when engine start switch (8) is in the ON position.

Operator Seat (10)

Operator Seat – Operator seat (10) has various adjustments to meet a wide range of operators. For more information, refer to “Seat”.

Diagnostic Port - Cat® Electronic Technician (11)



Cat® Electronic Technician (ET) – This service port allows service personnel to connect a laptop computer to the machine electronics using the Cat® Electronic Technician (Cat® ET) Service Tool. This connection will allow service personnel to interrogate the machine systems and engine systems.

Consult with your Cat® dealer for additional information.

Left Side Joystick Controls (12)

Left side joystick – Left side joystick controls (12) are used to control the functions of the machine implements. For more information on the individual functions of the joysticks, refer to “Joystick Controls” for more information.

Hydraulic Lockout Control (13)



Deactivation of the hydraulic controls does not prevent the blade, boom swing, or auxiliary circuit functions from moving under gravity or other external forces. Gravity or other external forces can move the blade, boom swing, or auxiliary circuit functions suddenly if a hydraulic control lever is moved.

Personal injury or death may occur from sudden machine movement.

The lever for hydraulic lockout control (13) is at the left side of the machine.



Locked – Move the travel levers/pedals and move the joysticks to the HOLD (center) position. Move the lever for the hydraulic lockout control (13) backward to the LOCKED position. All the factory installed hydraulic controls will become inoperable.

Note: Make sure that the lever for the hydraulic lockout control (13) is in the LOCKED position before attempting to start the engine. If the lever is in the UNLOCKED position, the engine start switch will not function.



Unlocked – Move the lever for the hydraulic lockout control (13) forward to the UNLOCKED position. All the factory installed hydraulic controls will become operable.



Tilt – For machines equipped with the tilt-up console, pull the lever to the rear most position to release the console lock and tilt the console upward for easier exit and entry.

Travel Lever Controls (If Equipped) (14)



Illustration 339

g06349484

Position for normal travel

- (A) Rear of machine
- (B) Final drive
- (C) Idler

During travel, make sure that final drive (B) sprockets are under rear of the machine (A).

Stop – Release the travel levers/pedals to stop the machine. When the operator releases the travel levers/pedals from any position, the travel levers/pedals will return to the CENTER position. The travel brakes will be applied.

Move both of the travel levers or both of the travel pedals equally in the same direction to travel straight.

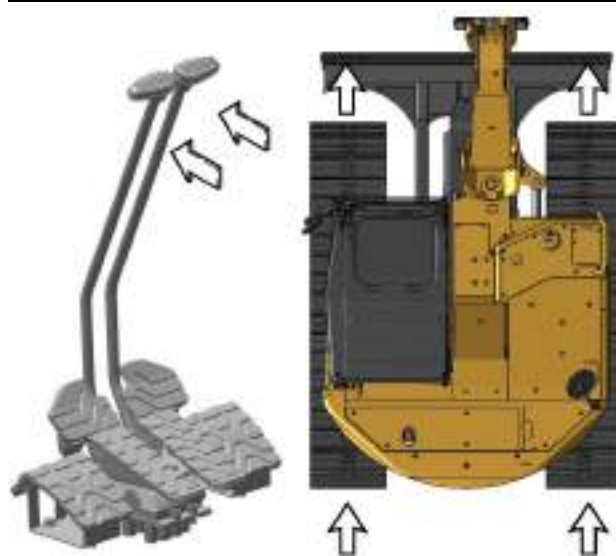


Illustration 340

g06338693

FORWARD travel

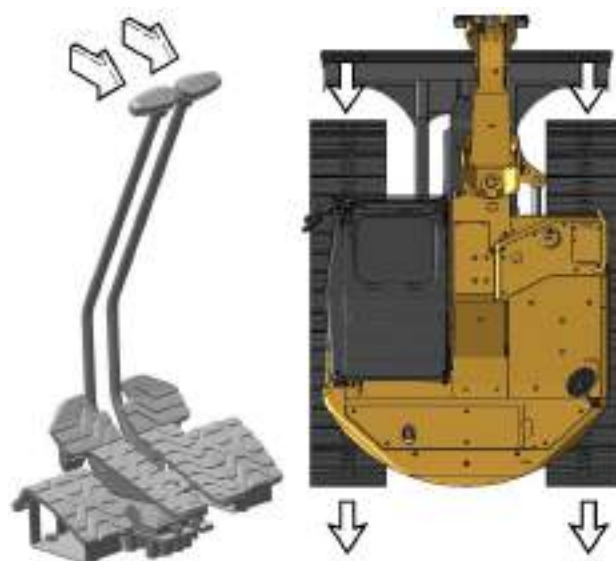


Illustration 341

g06338696

REVERSE travel

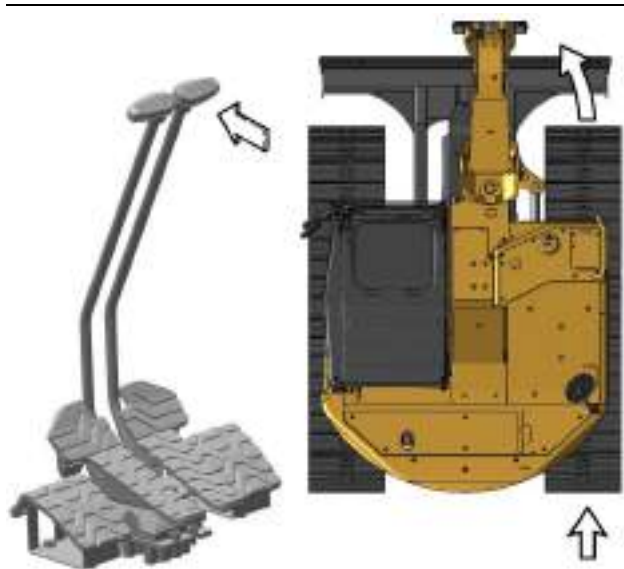


Illustration 342

g06338702

Pivot left turn (FORWARD)

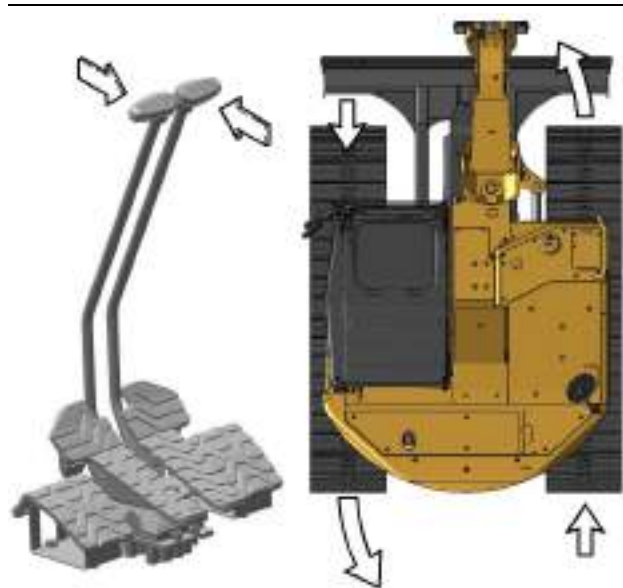


Illustration 344

g06338709

Counter rotate turn (LEFT)

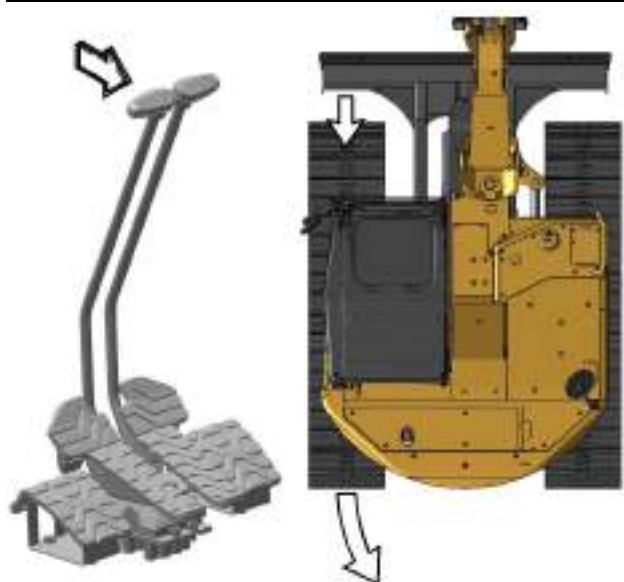


Illustration 343

g06338705

Pivot Left Turn (REVERSE)

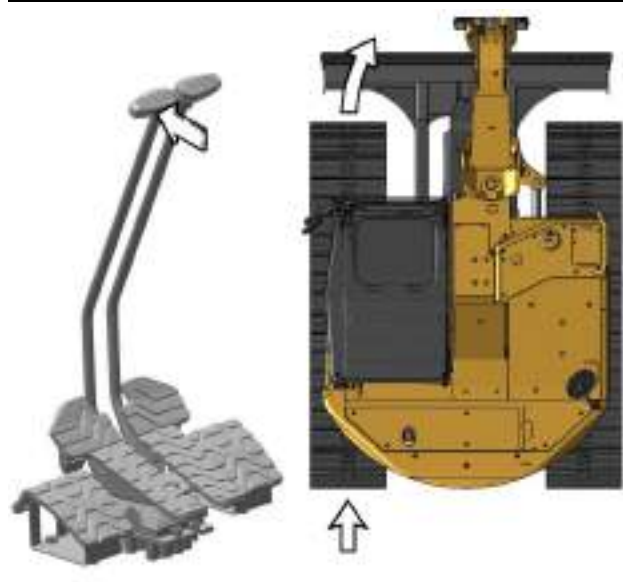


Illustration 345

g06338713

Pivot right turn (FORWARD)

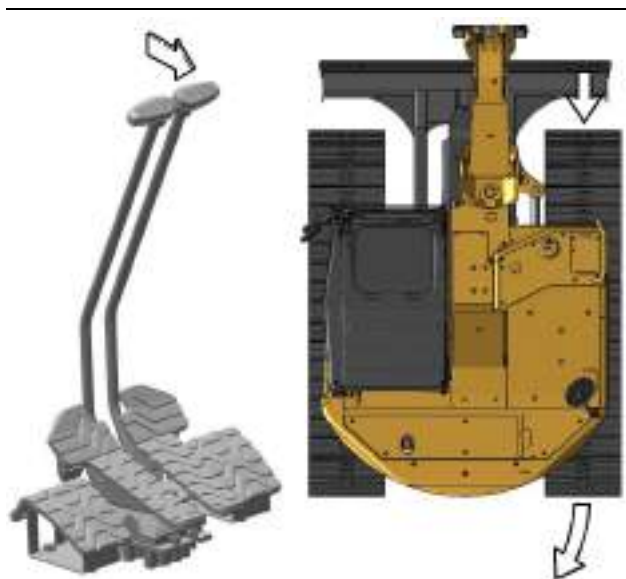


Illustration 346

g06338716

Pivot right turn (REVERSE)

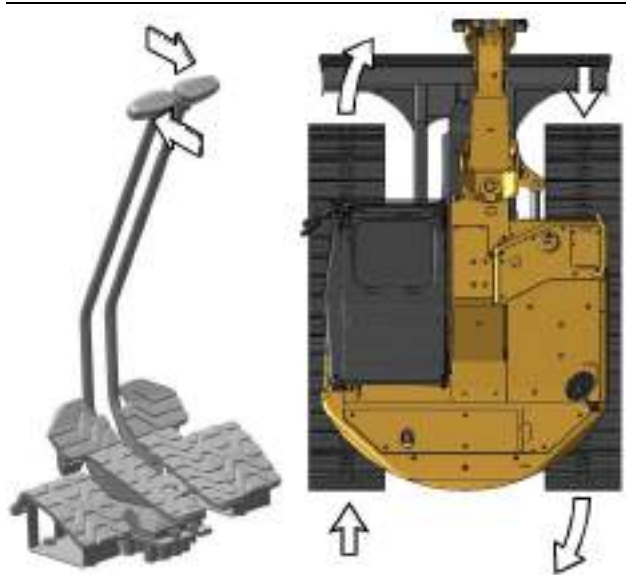


Illustration 347

g06338735

Counter rotate turn (RIGHT)

Auxiliary Control Pedal (15) (If Equipped)

The auxiliary control pedal is used to control the work tools. For more information on the auxiliary controls, refer to "Work Tool Control".

The auxiliary control pedal can also be used to control the variable angle boom (if equipped). Refer to "VA Boom Controls" within this manual for more information.

i09603786

Product Link

SMCS Code: 7490; 7606

Note: Your machine may be equipped with the Cat[®] Product Link[™] system.

The Cat Product Link communication device utilizes cellular and/or satellite technology to communicate equipment information. This information is communicated to Caterpillar, Cat dealers, and Caterpillar customers. The Cat Product Link communication device uses Global Positioning System (GPS) satellite receivers.

The capability of two-way communication between the equipment and a remote user is available with the Cat Product Link communication device. The remote user can be a dealer or a customer.

Data Broadcasts

Data concerning this machine, the condition of the machine, and the operation of the machine is being transmitted by Cat Product Link to Caterpillar and/or Cat dealers. The data is used to serve the customer better and to improve upon Cat products and services. The information transmitted may include: machine serial number, machine location, and operational data, including but not limited to: fault codes, emissions data, fuel usage, service meter hours, software, and hardware version numbers and installed attachments.

Caterpillar and/or Cat dealers may use this information for various purposes. Refer to the following list for possible uses:

- Providing services to the customer and/or the machine
- Checking or maintaining Cat Product Link equipment
- Monitoring the health of the machine or performance
- Helping maintain the machine and/or improve the efficiency of the machine
- Evaluating or improving Cat products and services
- Complying with legal requirements and valid court orders
- Performing market research

- Offering the customer new products and services

Caterpillar may share some or all the collected information with Caterpillar affiliated companies, dealers, and authorized representatives. Caterpillar will not sell or rent collected information to any other third party and will exercise reasonable efforts to keep the information secure. Caterpillar recognizes and respects customer privacy. For more information, please contact your local Cat dealer.

Operation in a Blast Site for Product Link Radios

WARNING

This equipment is equipped with a Cat® Product Link communication device. When electric detonators are being used for blasting operations, radio frequency devices can cause interference with electric detonators for blasting operations which can result in serious injury or death. The Product Link communication device should be deactivated within the distance mandated under all applicable national or local regulatory requirements. In the absence of any regulatory requirements Caterpillar recommends the end user perform their own risk assessment to determine safe operating distance.

Refer to your products Operation and Maintenance Manual Supplement, "Regulatory Compliance Information" for more information.

For information regarding the methods to disable the Cat Product Link communication device, please refer to your specific Cat Product Link manual listed below:

- Operation and Maintenance Manual, SEBU8142, "Product Link - PL121, PL321, PL522, and PL523"
- Operation and Maintenance Manual, SEBU8832, "Product Link PLE702, PLE602, PLE601, PL641, PL631, PL542, PL240, PL241, PL243, PL141, PL131, PL161, PL083 and PL042 Systems"

Note: If no radio disable switch is installed and the equipment will be operating near a blast zone, a Product Link radio disable switch may be installed on the equipment. The switch will allow the Cat Product Link communication device to be shut off by the operator from the equipment control panel. For more details and installation procedures, refer to the following:

- Special Instruction, REHS7339, "Installation Procedure for Product Link PLE640 Systems"
- Special Instruction, REHS8850, "Installation Procedure for the Elite Product Link PLE601, PLE641, and PLE631 Systems"

- Special Instruction, SEHS0377, "Installation Procedure for the Product Link PL131, PL141, and PL161 Systems"
- Special Instruction, REHS9111, "Installation Procedure for the Pro Product Link PL641 and PL631 Systems"
- Special Instruction, M0098124, "Installation Procedure for Pro Product Link PL243 Cellular Radio Systems"
- Special Instruction, M0109130, "Installation Procedure for the Elite Product Link PLE602, PLE602p, PLE702, PLE643, PLE643p, and PL743 Systems"
- Special Instruction, M0111437, "Installation Procedure for the Elite Product Link PLE602, PLE602p, PLE702, PLE683, PLE683p, and PL783 Systems"

i08709746

Monitoring System

SMCS Code: 7451; 7490

WARNING

A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.

The monitoring system alerts the operator of a problem or of an impending problem. The monitoring panel is designed to alert the operator of faulty machine systems. When powering on the panel, there will be an LED test for the first 2 seconds (all LEDs on). The monitoring system consists of the following components:

- Display (with numerous screens and menus)
- Indicators

Two display options are available :

- Performance : Analog gauges and LCD with push-button interface.
- Premium : Full LCD with touchscreen interface.

Most display images in this document are from the performance display. However, the navigation and general functionality is common between two displays for most features. When the functionality is different, supplemental screen images and details are provided.

Reference: For more information on the monitor functions, refer to Systems Operation, M0090757, "Monitoring System" "Performance Display".

Reference: For more information on the monitor functions, refer to Systems Operation, M0091327, "Monitoring System" "Premium Display".

Performance Display



Illustration 348

g06347988

- (1) Action Lamps
- (2) Status Indicator Area
- (3) Gauge Area
- (4) Status Information Area
- (5) Cabin Status Area
- (6) Navigation Buttons

Action Lamps (1)

The action lamps illuminate to show that a problem has occurred with the machine.

Status Indicators (2)

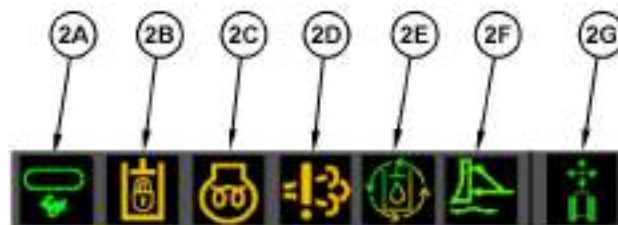


Illustration 349

g06274544

Travel Speed Indicator (2A)



(2A) Travel Speed – If the travel speed switch is moved to the high-speed position, the high-speed travel indicator illuminates.

Hydraulic Pilot Supply Solenoid Status Indicator (2B)



(2B) Hydraulic Pilot Supply Solenoid – Indicator (2B) will illuminate when the hydraulic system is locked out (left arm bar raised).

Glow Plug Indicator (2C)



(2C) Glow Plug – The alert indicator will illuminate when the engine start switch key is turned to the RUN position. After the glow plugs warm up, the LED will go out and the engine can be started. Refer to Operation and Maintenance Manual, "Engine Starting". If the alert indicator does not turn off, consult your Cat® dealer.

Engine Emission System Indicator (2D)



(2D) Engine Emission System Malfunction – Indicator (2D) will illuminate when there is a fault with the engine emission system.

Continuous Flow (2E)



(2E) Continuous Flow – Indicator (2E) will illuminate in amber color when continuous hydraulic oil flow is ENABLED. The icon will appear green when continuous flow is active.

Blade Float Indicator (2F)

(2F) Blade Float – Indicator (2F) will illuminate when the blade float feature is **ACTIVE**.

Joystick Steering Indicator (2G)

(2G) Joystick Steering Control – Indicator (2G) will illuminate when joystick steering control status is **ACTIVE**. This indicator is located between the gauges in area (3).

Gauge Area (3)

Illustration 350

g06274545

Fuel Level (3A)

Fuel Level – This gauge indicates the amount of fuel that is remaining in the fuel tank. When the fuel gauge is in the red range, add fuel immediately.

Engine Coolant Temperature (3B)

Engine Coolant Temperature – This gauge indicates the temperature of the engine coolant. The normal operating range is when the indicator is below the red area and not resting in the full left position. Refer to **Operation and Maintenance Manual, “Engine and Machine warmup”**. If the gauge reaches the red range, stop the machine and investigate the cause of the problem.

Status Information Area (4)

Illustration 351

g06346172

(4A) Service Hour meter

There are seven icon locations to the right of service hour meter (4A). All possible indicators for each location are shown below.

Service Hour Meter (4A)

(4A) Service Hour Meter – Shows the total operating hours of the engine. Use the display to determine the service-hour maintenance intervals.

Location (4B)

(4B) Cruise Control – ON



(4B) Cruise Control – SET

Location (4C)

(4C) Throttle Dial Position – Indicates the engine speed dial setting.



(4C) Auto Idle Control – Auto Idle Control has lowered the engine speed.



(4C) Auto Idle Control – Auto Idle Control is enabled, but not currently active.

Auto Idle Control – Automatically reduce the engine speed to low idle when no active commands are given for 3 seconds. Turn ON or turn OFF this feature using the monitor.

The auto idle control feature allows the operator to reduce the rpm without touching the engine speed dial. Auto idle control is useful when operator wants to reduce the engine speed to talk to someone or while operator is waiting for truck.

Location (4D)

(4D) Security System Immobilizer – This indicator will cover the smart code icon if a security system immobilizer request has been received from product link.



(4D) Smart Mode – This indicator shows that the machine is set to operate in Power On Demand (POD).

Location (4E)

(4E) Thumbwheel Mode – This indicator will illuminate when this feature is ACTIVE.



(4E) Hammer – This indicator will illuminate when this work tool is chosen.



(4E) User Defined – This indicator will illuminate when this work tool is chosen.



(4E) Tilt Bucket – This indicator will illuminate when this work tool is chosen.



(4E) Auger – This indicator will illuminate when this work tool is chosen.



(4E) Thumb – This indicator will illuminate when this work tool is chosen.

Location (4F)

(4F) – In Call



(4F) – Bluetooth Connected



(4F) – Bluetooth Enabled

Location (4G)

(4G) – Boom Swing – This icon appears if this function is controlled with the left thumbwheel.



(4G) – Swing Valve – This icon appears if this function is controlled with the left thumbwheel.



(4G) – Auxiliary Valve 2 – This icon appears if this function is controlled with the left thumbwheel.

Location (4H)

(4H) Joystick Pattern – This icon position combines Pattern Changer and Joystick Steering Pattern. The number on the upper left represents the Pattern Changer. The number in the upper left portion of the icon indicates if an alternate control pattern is selected. The letter in the upper right corner reflects the joystick steer control pattern for the right joystick. Refer to “Joystick Controls” and “Joystick Controls Alternate Patterns” sections for more information.

Cabin Status (5)

Depending upon installed features various information is available in this area. Use of the jog dial can also scroll information between the various available screens.



Illustration 352

g06390246

View of status area

With and without Radio and HVAC installed

Radio Volume (5A)

Radio Volume (5A) – The radio volume function displays the current volume.

Air Conditioning Fan Speed (5B)

Air Conditioning Fan Speed (5B) – The air conditioning fan speed function displays the current fan speed.

Radio Display (5C)

Radio Display (5C) – The radio display area will display radio station, Bluetooth audio, Aux audio input, or DAB information.

Air Temperature (5D)

Air Temperature (5D) – The air temperature function controls the temperature of the air coming out of the vents.

Hydraulic Temperature (5E)

Hydraulic Temperature (5E) – The current temperature of the machine hydraulic oil.

Battery Voltage (5F)

Note: The hydraulic temperature gauge and battery voltage are accessible on the machines with a radio and heat / air conditioning. To access, either highlight the heat / air conditioning on the cabin status screen and use the jog dial to jog to the right. Highlight the radio on the cabin status screen and use the jog dial to jog to the left.

Battery Voltage (5F) – The current voltage of the machine battery.

Clock (5G)

Clock (5G) – If equipped, will display the time of day.

Note: A product link elite system with network manager must be installed on the machine for the clock to be available.

Navigation Buttons (6)

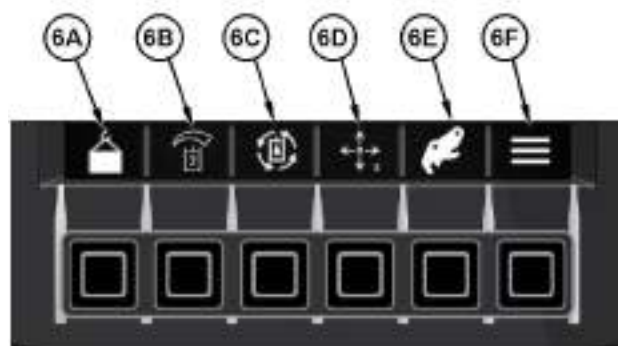


Illustration 353

g06330261

Navigation buttons (6A) through (6E) are programmable shortcuts. The shortcuts will be automatically populated based on how the machine is configured. To view the complete list or change a shortcut, navigate to the “Shortcut Settings” under the “Display Settings” menu on the monitor. Button (6F) accesses the main menu options available in the Monitoring System. The following sections detail the available options.

Main Menu

The following sections detail available options within the menu structure of the display.

Machine Settings

Machine settings adjust various options which control machine functions. Certain settings may require the engine to be OFF for adjustment.

Included in machine settings are the following:

- Control Mode
- Aux/Work Tool
- Auto Idle Control
- Machine Lighting
- Factory Defaults
- Job Clock

Control Mode

Control mode contains several settings that affect machine operation.

Included in this subsection is descriptions of Pattern Changer, Joystick Steering Pattern, Engine Idle Shutdown (if equipped), Implement Speed, Joystick Response, Cruise Control, Forward Travel Trim, and Reverse Travel Trim.

Pattern Changer

The pattern changer allows the selection of various control patterns for the left and right joystick. Refer to “Joystick Controls Alternate Patterns” for details of available patterns.

Joystick Steering Pattern

Joysticks steering Pattern allows for the selection of desired function of the right joystick lever while in Stick-Steer mode. Refer to “Joystick Controls” for more details.

Implement Speed

Implement speed allows the operator to adjust the joystick sensitivity and function maximum speeds. This parameter is adjusting both the joystick sensitivity and speed of the boom, stick, bucket, and swing together. The Advanced settings menu allows for individual adjustment.

To access the Implement Speed options, press the “Menu” button, select “Machine Settings”, “Control Mode”, then “Implement Speed” .

Select the desired option using the up and down arrows, then press “OK” .

Advanced

To access the Advanced options, press the “Menu” button, select “Machine Settings”, “Control Mode”, “Implement Speed”, then “Advanced” .



Illustration 354 g06333802

Select the desired option using the up and down arrows, then press “OK” .

The following are the options within each:

- Normal
- Fast
- Slow

Joystick Response

Joystick response allows the operator to adjust the implement response to the joystick inputs. This parameter is adjusting the joystick response of the boom, stick, bucket, and swing together. The Advanced settings menu allows for individual adjustment.

Adjusting the implement response rate will change how abrupt the implements start and stop, affecting the smoothness of operation of the machine.

To access the Joystick Response options, press the “Menu” button, select “Machine Settings”, “Control Mode”, then “Joystick Response” .

Select the desired option using the up and down arrows, then press “OK” .

Advanced

To access the Advanced options, press the “Menu” button, select “Machine Settings”, “Control Mode”, “Joystick Response”, then “Advanced” .



Illustration 355 g06333802

Select the desired option using the up and down arrows, then press “OK” .

The following are the options within each:

- Normal
- Slow
- Fast

Cruise Control

To enable the cruise control feature in the monitor press “Menu” button, select “Machine settings”, “Control mode”, “Cruise control”, then press “OK”. Once enabled, cruise control can be activated as indicated in the “Joystick controls” section.

The cruise control can be added to the shortcut menu in the monitor if desired. Each time the machine is powered ON, the cruise control feature must be enabled.



WARNING

A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.

Do not mount a moving machine. Do not dismount a moving machine. Never jump off the machine. Do not carry tools or supplies when you try to mount the machine or when you try to dismount the machine. Use a hand line to pull equipment onto the platform. Do not use any controls as handholds when you enter the operator compartment or when you exit the operator compartment.

Forward Travel Trim

Forward travel trim allows operator to make fine adjustments between left and right track speed in FORWARD direction to correct any drift or wandering.

To access the Forward Travel Trim options, press the “Menu” button, select “Machine Settings”, “Control Mode”, then “Forward Travel Trim”.



Illustration 356

g06333952

To adjust the forward travel trim, use the right and left arrows.

If your machine drifts RIGHT, then move the arrow to the LEFT.

Reverse Travel Trim

Reverse travel trim allows operator to make fine adjustments between left and right track speed in REVERSE direction to correct any drift or wandering.

To access the Reverse Travel Trim options, press the “Menu” button, select “Machine Settings”, “Control Mode”, then “Reverse Travel Trim”.



Illustration 357

g06333956

To adjust the reverse travel trim, use the right and left arrows.

If your machine drifts RIGHT, then move the arrow to the LEFT.

Engine Idle Shutdown (If Equipped)

Engine Idle Shutdown feature automatically shuts off the engine when the following conditions are met for 3 to 15 minutes :

- Arm bar is raised
- Coolant temperature is above 50° C (122° F)
- Work lights are OFF
- Auto idle control feature is enabled
- Throttle dial position is less than seven

The engine idle shutdown feature must be enabled for the function to be active. To enable, press the "Menu" button, select "Service Mode", "Machine", "Engine Idle Shutdown", then press OK.

Once enabled, the timer can be adjusted by pressing the "Menu" button, "Machine Settings", "Control Mode", then "Engine Idle Shutdown". The idle time is adjustable from 3 to 15 minutes in increment of 1 minute. Press OK to confirm the selection.

Aux/Work Tool

The Aux/Work Tool submenu allows for configuration of the auxiliary hydraulics of the machine.

Included in this subsection is descriptions of Continuous Flow, Quick Coupler, Aux Flow 1 (if equipped), Aux Flow 1 Balance (if equipped), Aux Flow 1 Direction (if equipped), Aux Flow 2 (if equipped), Aux Flow 2 Balance (if equipped), Tiltrotator(if equipped) and Work Tool Select.

Continuous Flow

To enable the continuous flow feature in the monitor press the "Menu" button, select "Machine Settings", "Aux / Work Tool", "Continuous Flow" then "OK". Once enabled, continuous flow can be activated as indicated in the "Continuous Flow" section.

The continuous flow enable can be added to the shortcut menu in the monitor if desired. Each time the machine is powered on, the continuous flow feature must be enabled.

Quick Coupler (If Equipped)

This menu allows for activation of a hydraulic quick coupler. Two types of couplers are supported including dual lock and single lock couplers. Dual lock couplers will show two screens indicating the status of each individual locking mechanism. Single lock couplers have only a single screen allowing for lock and unlock functions of the coupler.

To access the Hydraulic Quick Coupler in the monitor press the "Menu" button, "Machine Settings", "Aux / Work Tool", then "Quick Coupler". The Single Lock or Dual Lock quick coupler screen will be selected automatically based on which quick coupler the machine is configured with.

The quick coupler control screen can be added to the shortcut menu in the monitor if desired.

Tilt rotator (If Equipped)

The Tilt rotator is a specialized worktool that can be purchased for the machine. Refer to the Tiltrotator Operation and Maintenance Manual for more details or contact your dealer for information.

Aux Flow 1 (If Equipped)

Aux 1 Flow allows for metering the flow provided to the auxiliary 1 circuit. To adjust the aux 1 flow press the "Menu" button, select "Machine settings", "Aux / Work Tool", "Aux flow 1" then adjust the flow rate. The flow is adjustable from 10% to 100% in increments of 10 percent.

The aux flow 1 can be added to the shortcut menu in the monitor if desired.

Aux Flow 1 Balance (If Equipped)

Aux Flow 1 Balance allows for reducing flow to aux 1 A port or aux 1 B port. Flow is reduced for work tools that require different flow rates in each direction.

To adjust the aux flow 1 balance press the "Menu" button, select "Machine settings", "Aux / Work Tool", "Aux Flow 1 Balance" then adjust the balance as desired. When the slider is in the middle position, the supply flow rate is in the same for both ports. Adjusting the slider to the LEFT will reduce the flow rate to the right (aux 1 A) port but maintain same flow rate to the left (aux 1 B) port. Adjusting the slider to the RIGHT will reduce the flow rate to the left (aux 1 B) port but maintain the same flow rate to the right (aux 1 A) port.

Aux Flow 1 Direction (If Equipped)

Certain machines may not have one-way flow valves to limit aux flow to one direction. On these machines, Aux 1 Flow Direction is used to allow flow commands to only the B port of the machine.

To access the Aux Flow 1 Direction options, press the "Menu" button, select "Machine Settings", "Aux / Work Tool", then "Aux Flow 1 Direction". To adjust the Aux Flow 1 Direction, use the up and down arrows. Press "OK" to confirm the selection.

Note: Depending upon the work tool one way flow or two way flow can be selected. One way would be selected for a Hammer type work tool.

Aux Flow 2 (If Equipped)

Aux 2 Flow allows for metering the flow provided to the auxiliary 2 circuit. To adjust the aux 2 flow press the "Menu" button, select "Machine settings", "Aux / Work Tool", "Aux Flow 2" then adjust the flow rate. The flow is adjustable from 10 percentage to 100 percentage in increments of 10 percent.

The Aux flow 2 can be added to the shortcut menu in the monitor if desired.

Aux Flow 2 Balance (If Equipped)

Aux Flow 2 balance allows for reducing the flow to the aux 2 A port or aux 2 B port. Flow is reduced for work tools that require different flow rates in each direction.

To adjust the aux flow 2 balance press the "Menu" button, select "Machine settings", "Aux / Work Tool", "Aux Flow 2 balance" then adjust the balance as desired. When the slider is in the middle position, the supply flow rate is in the same to both ports. Adjusting the slider to the LEFT will reduce the flow rate to the right (aux 2 A) port but maintain same flow rate to the left (aux 2 B) port. Adjusting the slider to the RIGHT will reduce the flow rate to the left (aux 2 B) port but maintain the same flow rate to the right (aux 2 A) port.

Work Tool Select

Toggling the work tool select, various work tools are available. Selecting the work tool attached to the machine will pick default settings for Aux 1 Flow metering.

To select the work tool press the "Menu" button, select "Machine Settings", "Aux / Work Tool", "Work Tool Select" then select the desired tool.

The work tool select can be added to the shortcut menu in the monitor if desired.

Auto Idle Control

Auto idle control automatically reduces engine speed to low idle after no implement commands have been issued for 3 seconds. To enable, press the "Menu" button, select "Machine settings", "Auto idle control", then press "OK". Auto idle control can be added to the shortcut menu in the monitor if desired.

Machine Lighting

Courtesy Light – Courtesy light allows the machine lighting to stay ON after turning the key switch OFF. Courtesy lights illuminate if the work lights were ON when the key was switched OFF. Press the "Menu" button, select "Machine Settings", "Machine Lighting", "Courtesy Light". The timer is adjustable from 0 to 100 seconds in increment of 5 seconds. Press OK to confirm the selection.

Job Clock

The job clock displays the number of engine running hours that have been accumulated since the last reset. To reset the job clock back to zero, press the "Menu" button, "Machine Settings", "Job Clock", press the RESET button (icon with two parallel lines at a 45 degree angle).

Job Clock can be added to the shortcut menu in the monitor if desired.

Reset Factory Default

Restores factory default settings for the parameters such as joystick response, implement speed, auxiliary flow 1, auxiliary flow 1 balance, auxiliary flow 2, auxiliary flow 2 balance, courtesy light timer, work tool select, automatic engine idle control, cruise control, joystick steering pattern. To reset, press the "Menu" button, select "Machine settings", "Reset factory default", then "OK".

Display Settings

Display settings configure the monitoring system on the machine. To access the display settings press the “Menu” button, select “Display Settings”, then select the desired display setting to be adjusted. Available settings include Show Camera (if equipped), Brightness, Clock Adjust (if equipped), Language, Units, Clock Format (if equipped), and Shortcut Settings

Shortcut Settings – Shortcut settings are configurable allowing for direct access to submenu options on the monitoring system using the Navigation Buttons. The following shortcut settings such as pattern changer, quick coupler, performance, camera, auto idle, continuous flow, work tool select, aux flow 1, aux flow 2, HVAC, radio, audio source, bluetooth, tilt rotator, cruise control, joystick steering pattern, job clock can be selected.

To access the display settings, press the “Menu” button, select “Display settings”, then select the desired display setting to be adjusted.

HVAC (If Equipped)

Accesses the cab climate control system. Refer to the Air Conditioning and Heating Control section for more information.

Radio (If Equipped)

Accesses the radio controls of the machine. Refer to the Radio section for more details on how to operate.

Information

Accesses the performance and ECM summary submenus.

Performance – Displays sensor parameters available on the machine such as engine speed and pump pressure.

ECM Summary – To access the ECM summary press the “Menu” button, select “Information”, then “ECM summary”

Service

Includes submenus showing diagnostics and service mode.

Contact your dealer for more information about menu items not disclosed in this manual.

Diagnostics

Reports fault code information used for troubleshooting.

Maintenance Intervals

The Maintenance feature allows the tracking of machine running hours on various routine service items on the machine. The number of machine running hours since the last reset is accumulated individually for each service item.



Illustration 358

g06711006

To access the Maintenance options, press the “Menu” button, select “Service”, then “Maintenance”.

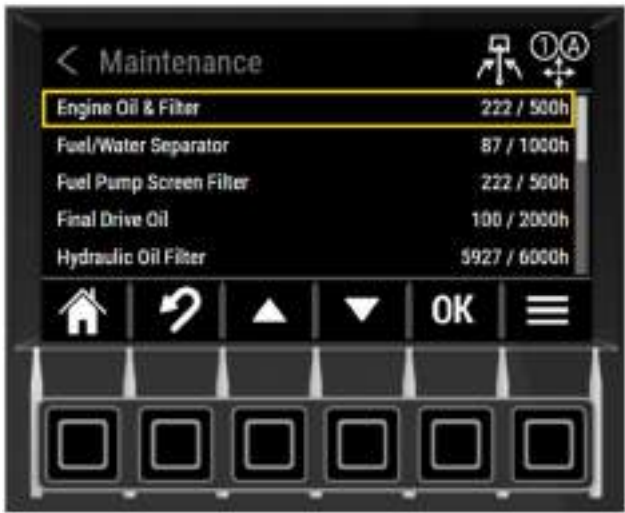


Illustration 359

g06711007

The Maintenance menu shows the various service items along with the total machine running hours accumulated since last reset on the left and the recommended service interval on the right.

When any of maintenance items are within 20 hours of being due, there will be a “Maintenance Due” popup alerting the operator. The pop up will appear every time the key is turned on. Once cleared, it will not appear again until the key is turned on again.

When any of the maintenance items are past due, there will be a “Maintenance Past Due” popup alerting the operator. The pop up will appear every time the key is turned on. Once cleared, it will not appear again until the key is turned on again.



Illustration 360

g06711008

To reset a maintenance item, highlight the desired item in the menu and press “OK” . Within the screen for that items is a reset option (button with two parallel lines). Select the reset button.



Illustration 361 g06711012

Press “OK” to confirm the reset. After pressing “OK” , the number of machine running for that item will be set to 0.

Note: If machine security is enabled, you must be logged in as a Master user to reset a maintenance item. If logged in as a Standard user, a Master Level Access Required message will appear when pressing “OK” and the value will not be reset.

Service Mode

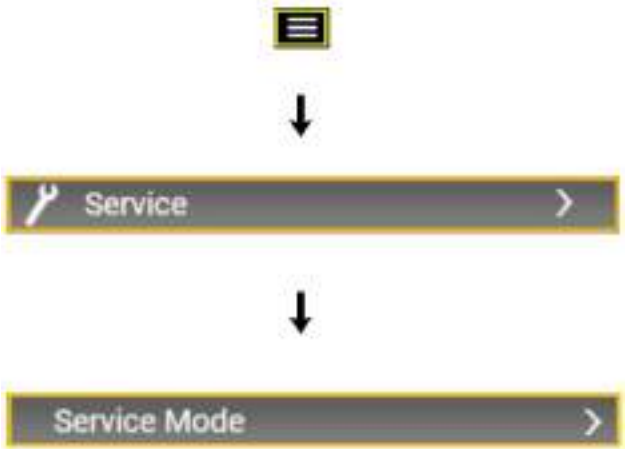


Illustration 362 g06334877

To access the Service Mode Menu options, press the “Menu” button, select “Service” , then “Service Mode” .

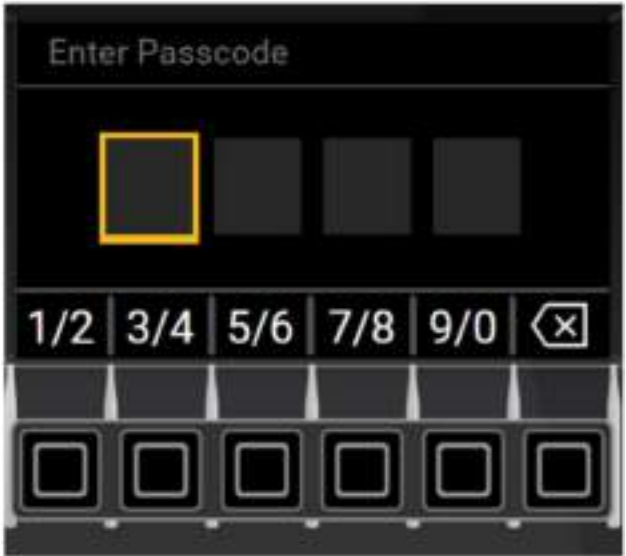


Illustration 363 g06334880

Enter the four-digit service entry password.

Note: Factory set default code is 1234 or 1925.

Thumbwheel Mode

Thumbwheel Mode allows stick to toggle to right thumb roller when in sticks steer mode. Refer to Operation and Maintenance Manual, “Joystick Controls” for more information.

This parameter must be ENABLED for the joystick thumbwheel controls to be used.

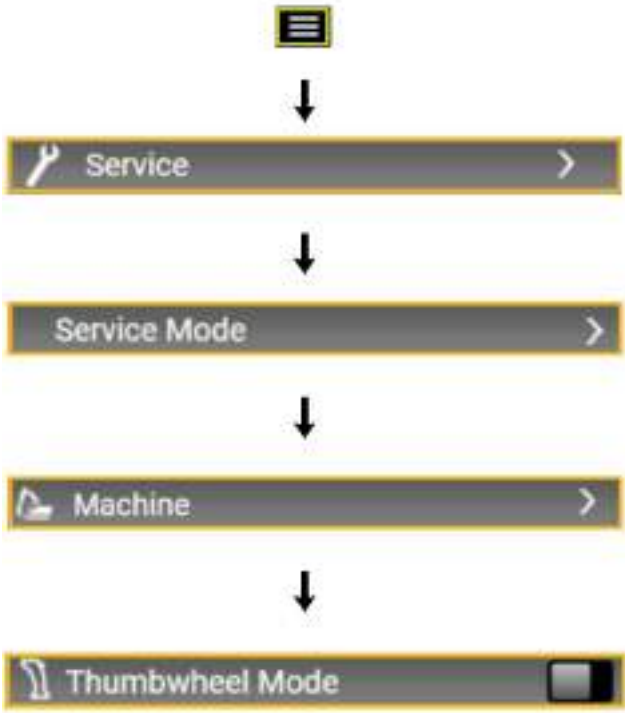


Illustration 364 g06334888

To access the Thumbwheel Mode options, press the “Menu” button, select “Service”, “Service Mode”, “Machine”, then “Thumbwheel Mode” .



Illustration 365 g06334998

To enable the Thumbwheel Mode function, select “Thumbwheel Mode” and press “OK” .

Note: When the indicator is green and the slide is to the right, the feature is activated.

Auxiliary Flow Command Direction Inversion

Auxiliary Invert allows the Aux 1 and Aux 2 commands to be inverted so that rolling the thumbweel up will send flow to the A port (right side of stick) and rolling to the thumbwheel down will send flow to the B port (left side of stick).

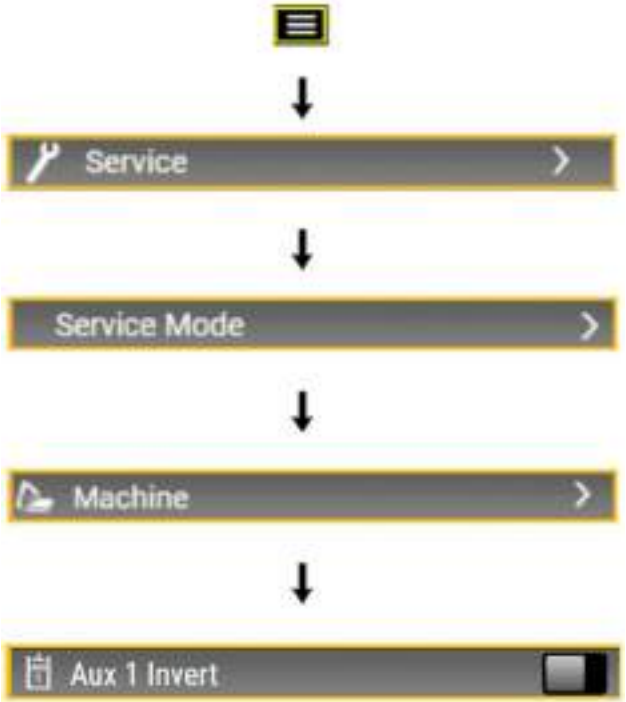


Illustration 366 g06711017

To access the Auxiliary Invert options, press the “Menu” button, select “Service”, “Service Mode”, “Machine”, then “Aux 1 Invert” or “Aux 2 Invert” .



Illustration 367 g06711019

To enable the Auxiliary Inversion, select “Aux 1 Invert” or “Aux 2 Invert” and press “OK” .

Note: When the indicator is green and the slide is to the right, the feature is activated.

Security

Machine security can be configured to prevent unregistered access to your machine. Additional security features can be configured using the Monitoring System. Press the “Menu” button, select “service” , “service mode” , then “security” . If security is disabled or a standard security level passcode or bluetooth key was used to access the machine, you will be prompted to enter a master security level passcode when accessing the security screens. The default master passcode from the factory is “1 1 1” . This default passcode can be removed after creating a new master passcode.

If security is enabled and a master security level passcode or bluetooth key was used to access the machine, it will proceed directly to the security screens.

Security Enable

Toggleing this setting will turn the security system ON or OFF.

Grace Period

This setting is used to set the duration after key off that the registered user stays logged on to the machine. If the machine is turned ON within this time range, the machine will bypass security access without the use of a Bluetooth key or passcode.

Users / Keys

The Users / Keys category from the Security Menu allows the owner / technician to enter unique passcodes (PINs) and/or Bluetooth keys (each with a unique ID) which allow those authorized users to start and operate the machine. Also, the owner or authorized technician can delete passcode PINs and Bluetooth key IDs of authorized keys and users.



Illustration 368 g06334983

To access the User / Keys options, press the “Menu” button, select “Service” , “Service Mode” , “Security” , then “Users / Keys” .



Illustration 369

g06390456

Add PIN



Illustration 370

g06345288

To add new 4-digit PIN to the passcode list of authorized users, select “Add PIN” from the “Users / Keys” menu.



Illustration 371

g06345290

Only a user with a “Master” passcode can enter new “Standard” passcodes.

Note: Standard passcodes are for operators and technicians - Master passcodes are intended for owners or authorized personnel

Multiple Master passcodes can be added to the Master Passcode list. The default master passcode from the factory is “1 1 1 1” . This default passcode can be removed after creating a new master passcode.

This same strategy applies to the Bluetooth system, with a Master Bluetooth key used to add or remove Bluetooth keys from respective lists.

Passcode PINs and Bluetooth key IDs can also be added or removed from respective lists using Cat ET.

Note: A maximum total of 25 passcodes and keys can be added to the machine.



Illustration 372

g06345300

From the Add PIN entry screen, use the number buttons to enter a unique 4-digit passcode number.

Note: Each button can enter two numbers. To enter the number two (2), press the left-most “1/2” button twice, then the highlight will move to the next entry field to the right.

Each time a number is entered, the highlight will automatically move to the next space to the right.

Once all four numbers have been entered, the new passcode will be added to the list of authorized PINs. The display will then return to the Keys/Users Menu.

In the example above, when the operator turns the key start switch to ON, the monitor will display the startup passcode entry screen. When the operator enters “1111”, the MSS will allow the engine to be started.

Remove PIN



Illustration 373

g06345316

To remove a 4-digit PIN to the passcode list of authorized users, select “Remove PIN” from the “Users / Keys” menu.

From the “Remove PIN” entry screen, use the number buttons to enter the 4-digit passcode number that you wish to remove if equipped with the Performance display or select the 4-digit passcode number you wish to remove if equipped with the Premium display.

Press the “OK” button or tap the center of the Jog Dial (if equipped) to remove the 4-digit passcode number from the list of authorized passcodes.

Add Bluetooth Key



Illustration 374 g06345355

To add new Bluetooth key ID to the list of authorized Bluetooth keys, select “Add Bluetooth Key” from the “Users / Keys” menu.

From the “Users / Keys” menu, use the arrow buttons to highlight the “Add Bluetooth Key” option, then press the “OK” button. The “Add Bluetooth Key” confirmation screen will appear.



Illustration 375 g06345356

Use the arrow buttons to highlight the “Standard” or “Master” option, then press the “OK” button. The “Add Bluetooth Key” screen will be displayed.



Illustration 376 g06345359

Use a combination of number buttons and Jog Dial Module (if equipped) to enter the unique 12-digit alpha-numeric ID assigned to Bluetooth key chip.

The “Add Bluetooth Key” screen is first displayed with all 12 ID spaces blank and the left-most space highlighted. Use the arrow buttons scroll up and down through the numbers 0-9, then alpha characters A-F, which are displayed in the space. When the desired character is displayed in the highlighted space, move to the next space.

Note: The highlight can also be moved left to change a number previously entered.

Repeat this process for all 12 spaces. When all 12 spaces have been filled with the unique 12-digit Bluetooth key ID, press the “OK” button or tap the center of the Jog Dial (if equipped) to enter the Bluetooth key ID to the list of authorized Bluetooth IDs.

The display will return to the “Users / Keys” Menu.

Remove Bluetooth Key



Illustration 377

g06345381

To remove a 12-digit Bluetooth key ID from the list of authorized Bluetooth key IDs, select "Remove Bluetooth Key" from the "Users / Keys" menu.

Enter the unique 12-digit alpha-numeric ID assigned to the Bluetooth key ID that you wish to remove if equipped with the Performance display or select the Bluetooth Key ID that you wish to remove if equipped with the Premium display.

Press the "OK" button or tap the center of the Jog Dial (if equipped) to remove the Bluetooth key ID from the list of authorized Bluetooth IDs.

The display will return to the "Users / Keys" Menu.

Display System Mode

The Display System Mode can be changed between Normal and Simplified. When the mode is set to Normal, all available display settings are shown and available for adjustment. When the mode is set to Simplified, the display settings below are hidden and not available for adjustment:

- All joystick response settings
- Advanced implement speed settings (overall setting still available)
- Forward travel trim
- Reverse travel trim
- Auxiliary 1 flow balance
- Auxiliary 2 flow balance

- Job clock
- ECM summary
- Machine configurations within service mode

The Simplified Display System Mode is intended for customers who want to limit the adjustability of the machine.

To access the Display System Mode options, press the "Menu" button, select "Service", "Service Mode", then "Display System Mode".

Seat Belt Reminder System (If Equipped)

If the machine is fitted with the operator presence seat belt assembly and the "Operator Seat Belt Monitor Installation Status" configuration is set to "Installed" in Cat® ET, the seat belt reminder system will be active on the machine.

The red seat belt warning symbol is always present on the top status bar when the seat belt is not fastened. Once the seat belt is fastened, the red seat belt warning symbol disappears and there will be no other seat belt notifications while the seat belt remains fastened.



Illustration 378

g06751792

Seat Belt Indicator in Monitor

If the belt is not fastened while the engine is running and the arm bar is lowered, there will be a pulsing audible tone for 10 seconds every minute and a pop-up message stating “Seat Belt Unfastened – Fasten Belt”. The audible tone can be configured to be snoozed after 5 minutes by setting the “Operator Seat Belt Audible Alarm Snooze Enable Status” to ENABLED in Cat® ET. If DISABLED, the tone will continue for 10 seconds every minute while the engine is running, arm bar is lowered and seat belt is not fastened.



Illustration 379 g06721427

If the operator seat belt unfastened while machine is not idle event enable status is configured as ENABLED in Cat® ET, the operator seat belt unfastened while machine is not idle event will be logged if the seat belt is not fastened while the engine is running and the arm bar is lowered for 5 minutes. If Disabled, there will not be an event logged.

Monitor Wake-up Feature

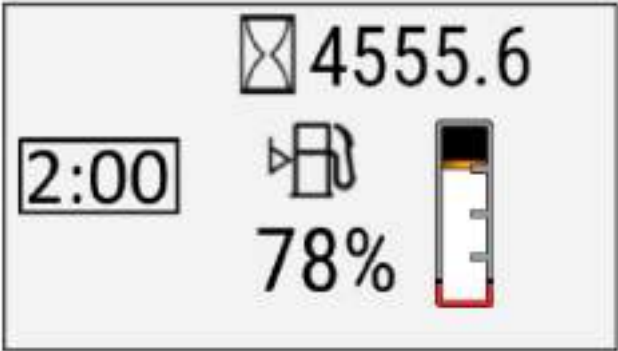


Illustration 380 g06366070

Monitor wake-up screen example

Pressing any navigation button on the monitor will display the service hours of the machine and actual fuel level for 2 minutes. This feature will function when the key is in the OFF position and the battery disconnect switch is in the ON position.

Note: This feature can also be activated by pressing the monitor wake-up button located below the cup holder in the cab (if equipped).

i09596974

Radio

SMCS Code: 7338

(If Equipped)

The radio is integrated into the monitoring system. All the radio controls are adjusted using the monitor. Refer to “Monitoring System” for more information. The actual radio amplifier module is located in the headliner behind the operator seat.

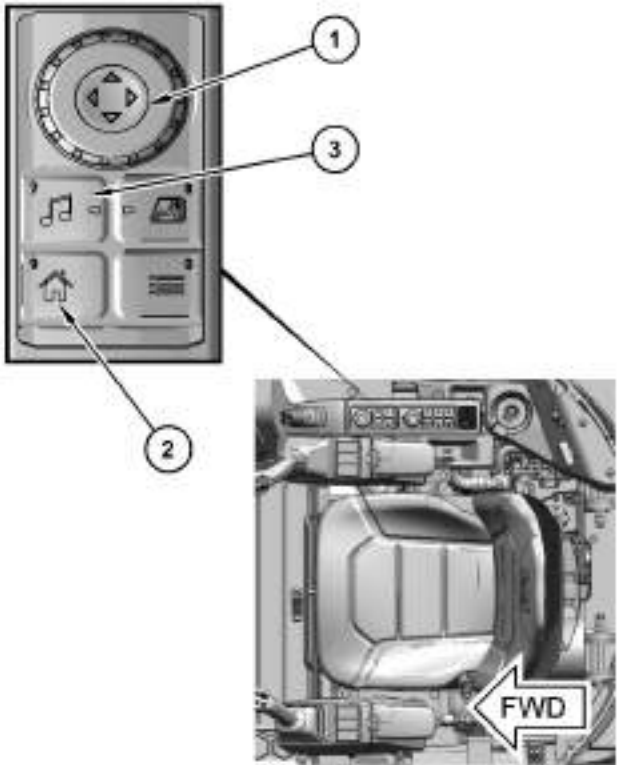


Illustration 381 g06644125

- (1) Jog dial
- (2) Home button
- (3) Radio button

The audio menu can be directly accessed by pressing radio button (3) on the right side switch panel. Input selections can be made using jog dial (1) or using the monitor navigation buttons. Home button (2) can be used to return to the main screen.



Illustration 382

g06348419

(4) Home screen

Pressing radio button (3) will go directly to the radio screen.

Using jog dial (1), select the radio portion of home screen (4) and press jog dial (1) inward to navigate to the radio screen.



Illustration 383

g06334467

To navigate to the radio screen from the main screen, press the menu button and select "Radio".



Illustration 384

g06334464

Radio screen

- (5) Station
- (6) Seek
- (7) "Source" list menu
- (8) "Scan"
- (9) Preset stations
- (10) "Settings" menu
- (11) Volume control

Station (5) – Identifies the current station setting.

Seek (6) – Seek (6) is used to automatically find the next radio station with a strong/clear signal.

Source list menu (7) – Allows the user to change the source of input. (Amplitude Modulation (AM), Frequency Modulation (FM), Auxiliary (AUX), Digital Audio Broadcasting (DAB) (if equipped), or Bluetooth)

Scan (8) – Automatically sweeps through the broadcast frequencies looking for signal.

Preset stations (9) – Preset stations (9) store favorite radio stations for the operator. To set a station, tune to the desired station. Press and hold the preset number you want to assign to that station. Once a beep is heard, release the button. The button will indicate the preset frequency.

Radio settings menu (10) – Pressing this button leads to the radio "Settings" menu.

Volume control (11) – Volume control (11) is used to raise or lower the audio volume.

Radio Settings Menu

To access the radio settings menu, select "Settings" (10) from the radio screen.

The following selections are available in the radio settings menu:

- Equalizer
- Bluetooth (Audio)



Illustration 385

g06334476

The “Equalizer” menu consists of the following items:

Treble – Allows the user to adjust the treble.

Bass – Allows the user to adjust the bass.

Balance – Allows the user to adjust the balance between speakers.

Bluetooth

Includes setup option for pairing devices to your machine radio.

Toggle switch enables bluetooth for audio pairing.

Pairing

This setting makes the machine radio discoverable for pairing on Bluetooth devices.

A maximum of 8 user devices can be paired to the machine.

Paired Devices

This setting provides a list of previously paired devices supported by your machine. The previously paired devices can also be removed using this menu option.

Selection Method

Most settings can be made using the monitor screen or by using jog dial (1). Some radio and some air conditioning/heating controls can only be performed using the jog dial. When using the monitor screen, simply touch the button below the icon you want to select. When using jog dial (1), rotate the dial to switch to different selections within the screen. Press jog dial (1) downward to choose a selection.

When using jog dial (1) to set the volume or tuner, rotate the dial clockwise to increase and counter-clockwise to decrease. Press inward on jog dial (1) to enter the desired setting.

AUX Operation

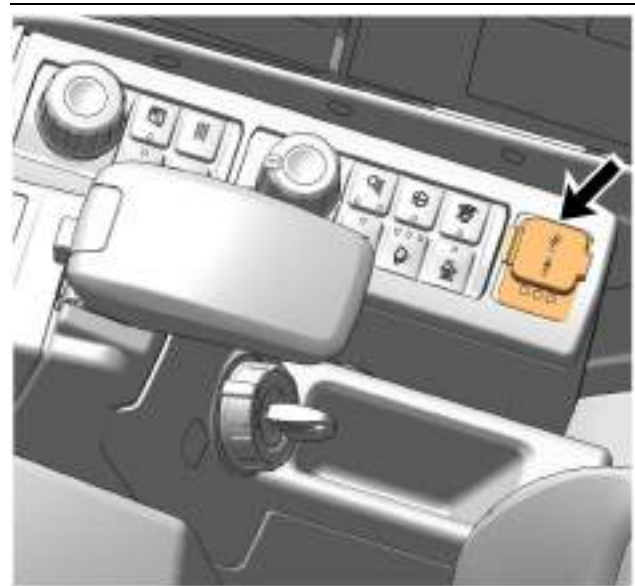


Illustration 386

g06277738

1. To play music from a device such as an MP3 player or a phone, connect the device using an auxiliary cable.
2. Select AUX to play the music from the device. The music should be playing over the radio speakers if properly connected. Adjust the volume as necessary.

Note: The USB port is for charging purposes only.

i08259327

Air Conditioning and Heating Control

SMCS Code: 7304; 7320; 7337

Refer to Maintenance Interval Schedule for Periodic Maintenance of the heating and air conditioning system.



Illustration 387 g06348804

- (1) Jog dial
- (2) Heating and air conditioning button
- (3) Home button

Air conditioning and heating functions are controlled through the monitor. The heating and cooling menu can be directly accessed by pressing button (2) on the right side switch panel. Input selections can be made using jog dial (1) or using the monitor. Home button (3) can be used to return to the main screen.



Illustration 388 g06348808

Press the Air Conditioning and Heating button (2) to go directly to the air conditioner screen.

To navigate to the air conditioner screen from the main screen, press menu button (4).



Illustration 389 g06334491

Access the screen by selecting the "HVAC" box on the display screen. The jog dial is standard on any machine with HVAC or radio since those functions require the jog dial to operate them.

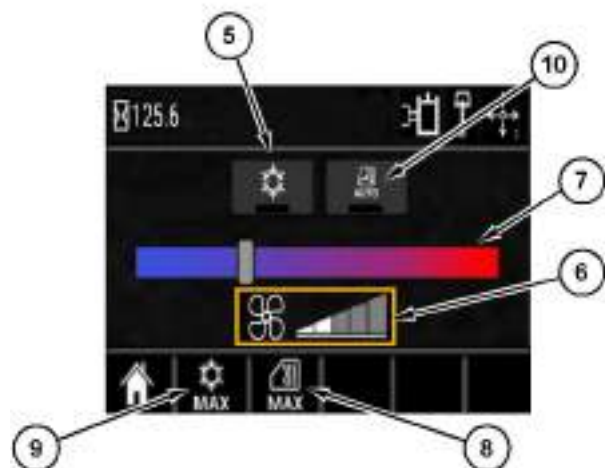


Illustration 390

g06605342

Air conditioner screen

- (5) Air Conditioning indicator
- (6) Fan blower speed control
- (7) Temperature control
- (8) Maximum defrost
- (9) Maximum A/C
- (10) Auto temperature control

Air Conditioning indicator (5) – Illuminates when the air conditioning system is ON.

Fan blower speed control (6) – The blower control is used to increase or decrease the desired blower speed.

Temperature control (7) – The temperature control is used to raise or lower the air temperature coming out of the vents.

Maximum Defrost(8) – Pressing this button sets the blower fan to max speed, turns the air conditioning on and changes the temperature to the hottest setting. Use this setting to remove steam and frost from the windows.

Maximum A/C (9) – Pressing this button sets the blower fan to max speed, turns the air conditioner on and changes the temperature to the coldest setting.

Auto temperature control (10) – Illuminates when the automatic temperature control feature is active.

Automatic Temperature Control

The control will automatically adjust the air conditioner, heater, and fan control to achieve the desired temperature. The fan can be adjusted manually while in this mode by adjusting the setting using the jog dial, while the system will still control the heater and air conditioning settings.



Illustration 391

g06348812

When automatic temperature control is active, the digital temperature setting is displayed.

Selection Method

Most settings can be made using the display screen or by using the jog dial. Some radio and some air conditioning/heating controls can only be performed using the jog dial.. When using the display screen, simply press the button below the icon you want to select. When using the jog dial, rotate the dial to switch to different selections within the screen. Press the jog dial downward to choose a selection.

When using the jog dial to set the temperature or blower speed, rotate the dial clockwise to increase and counter-clockwise to decrease. Press downward on the dial to enter the desired setting.

Air Vent Locations

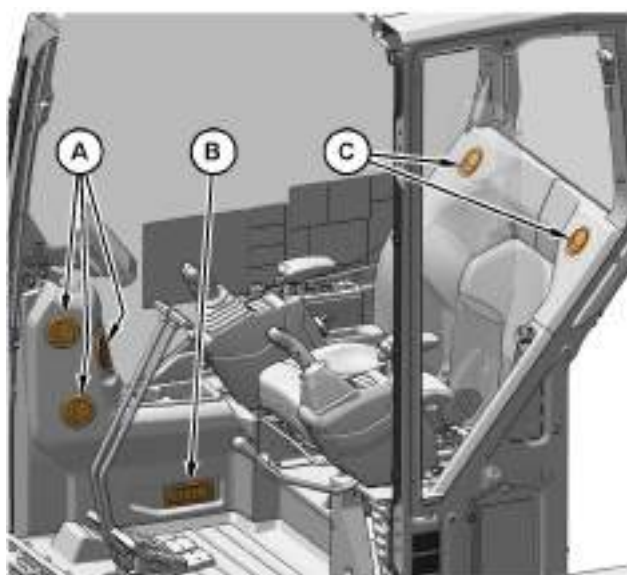


Illustration 392

g06278002

- (A) Front air vents
- (B) Floor air vents
- (C) Rear air vents

Redirect the louvers for air outlets (A), (B), and (C) by hand to the desired direction.

i08355660

Mirror

SMCS Code: 7319



Adjust all mirrors as specified in the Operation and Maintenance Manual. Failure to heed this warning can lead to personal injury or death.

Note: Your machine may not be equipped with all the mirrors that are described in this topic.

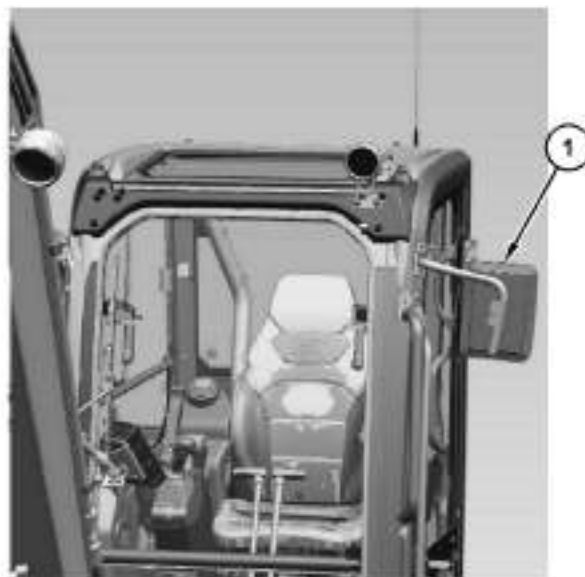


Illustration 393

g06656241

- (1) Cab mirror

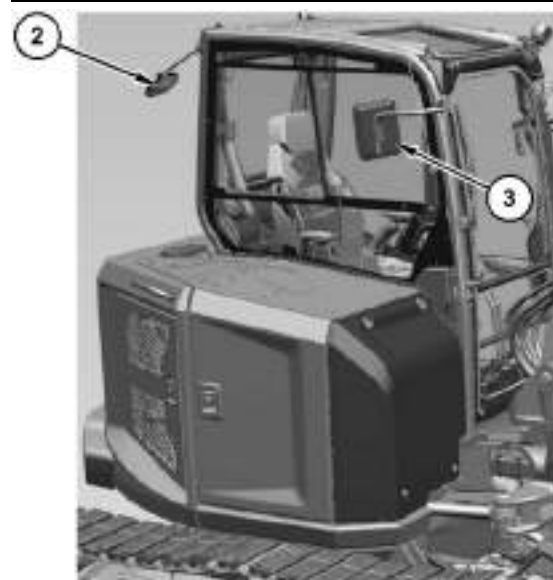


Illustration 394

g06656245

- (2) Rear mirror
- (3) Right side mirror

Mirrors provide additional visibility around your machine. Make sure that the mirrors are in proper working condition and that the mirrors are clean. Adjust all mirrors at the beginning of each work period and adjust the mirrors when you change operators.

Modified machines or machines that have additional equipment or attachments may influence your visibility.

Mirror Adjustment

- Park the machine on a level surface.
- Lower the work tool to the ground.
- Move the hydraulic lockout control to the LOCKED position. For further details on this procedure, refer to Operation and Maintenance Manual, "Operator Controls".
- Stop the engine.
- Adjust rear view mirrors to provide visibility behind the machine at a maximum distance of 30 m (98 ft) from the rear corners of the machine.

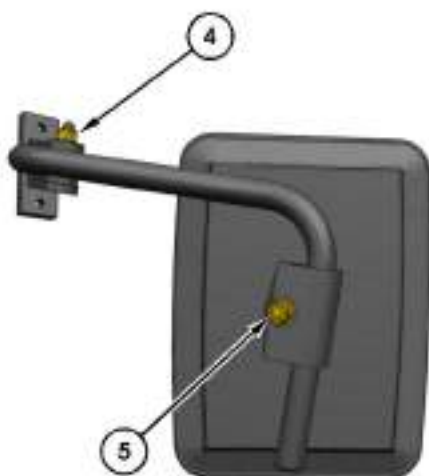


Illustration 395

g06636951

- (4) Bolt closer to the cab
(5) Bolt on back of the mirror

Periodically tightening the mirror mounting bolts may be necessary. Tighten bolt closer to the cab (4) to $23 \pm 2 \text{ N}\cdot\text{m}$ ($17 \pm 1.5 \text{ lb ft}$).

Tighten bolt on back of the mirror (5) to $3.5 \text{ N}\cdot\text{m}$ (2.9 lb ft).

Left Side View Mirror on the Cab (1)



Illustration 396

g06223279

If equipped, adjust the left side view mirror on the cab (1). Adjust the mirror so the left side of the cab, access door, and rear of left track can be seen from the operator seat. A view of at least 1 m (3.3 ft) from the side of the machine should be seen from the operator seat. Also, provide as much visibility to the rear as possible.

Rear Mirror (2)



Illustration 397

g06656249

Cab-mounted mirror (If Equipped)

If equipped, adjust the rear mirror on the cab (2) so the right track can be seen from the operator seat. A view of at least 1 m (3.3 ft) from the rear of the machine should be seen from the operator seat.

i07307697

Window (Front)

SMCS Code: 7310-FR

To provide full ventilation inside the cab, the upper window and the lower window can be fully opened.

WARNING

Crushing Hazard! Stay clear (extremities, clothing) of the window run and of the window. Always open and close the front window using both handles. Always make sure the window locks into the recesses as the window is open and closed. Be careful not to hit the front window with your head as the front window is opened and closed.

Stop the engine before opening or closing the front window in order to avoid any unintentional operation or movement of the machine.

WARNING

When opening or closing the windows, be extra careful to prevent any personal injury. The hydraulic lockout control must be in the LOCKED position in order to prevent any possibility of sudden movement of the machine due to inadvertent contact with the hydraulic control(s).

Do not change the position of the window until the following items have been done:

- Park the machine on a level surface.
- Lower the work tool to the ground.
- Move the hydraulic lockout control to the LOCKED position.
- Stop the engine.

Perform the following procedure to vent the upper window.

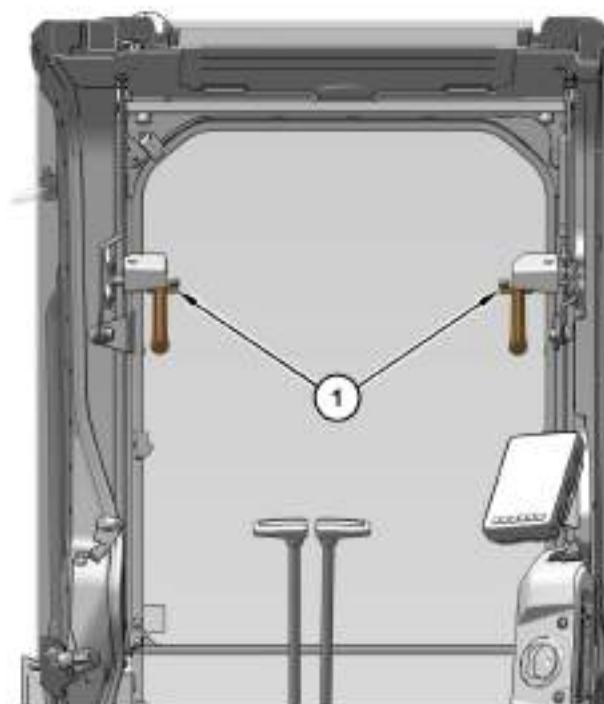


Illustration 398

g06278182

(1) Release lever

1. Release the auto-lock latches by pulling release levers (1) on the window handles.
2. Holding both handles on the window frame, pull the window upward.
3. Hold both handles and move the window into the storage position until the auto-lock latches near the ceiling are engaged.

Perform the following procedure to close the upper window.

1. Release the auto-lock latches by pulling release levers (1) on the window handles.
2. Holding both handles on the window frame, pull the window downward.
3. Hold both handles and move the window into the closed position until the auto-lock latches near the front of the machine engage.

Perform the following procedure to vent the lower window.

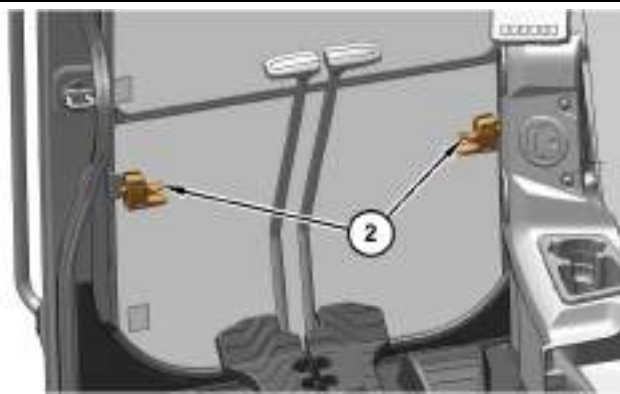


Illustration 399

g06278187

(2) Release lever

1. Release the auto-lock latches by pushing release levers (2) on the window handles.
2. Holding both handles on the window frame, pull the window upward.
3. Hold both handles and move the window into the storage position until the auto-lock latches near the top window are engaged.

Perform the following procedure to close the upper window.

1. Release the auto-lock latches by pulling release levers (2) on the window handles.
2. Holding both handles on the window frame, pull the window downward.
3. Hold both handles and move the window into the closed position until the auto-lock latches near the front of the machine engage.

i08369595

Shovel Crane Control (If Equipped)

SMCS Code: 7451

WARNING

Do not perform a lifting operation with the shovel crane on a slope greater than 5 degrees. Lifting on a slope greater than 5 degrees may cause the machine to become unstable or roll over. Lifting with the shovel crane on a slope greater than 5 degrees may result in property damage, personal injury, or death.

WARNING

Do not operate the shovel crane with a hook that has cracks or deformities. Failure to follow these instructions may cause the load to fall and result in injury or death. Replace the shovel crane hook if there are any signs of cracks or deformities.

WARNING

Do not operate the bucket without securing the shovel crane hook. Operating the bucket without properly securing the hook may result in personal injury or machine damage.

NOTICE

Do not perform a lifting operation if the monitors external display light does not come on. Do not perform a lifting operation if the monitor does not display the suspended load information.

NOTICE

Lifting capacities are different than rated load capacities. Lifting capacities should not be used to determine the rated load of the shovel crane function. Only use the rated load capacities found in Operation and Maintenance Manual, "Specifications" to determine the rated load capacity for the shovel crane function.

NOTICE

Do not operate the shovel crane if the beacon light does not function properly. Before operation, check that the beacon light is flashing/rotating properly.

Note: Check the joystick control pattern before activating the shovel crane to ensure that the load can be controlled to maintain machine stability. The control pattern is changed when Joystick Steering Control mode is ON. Refer to Operation and Maintenance Manual, "Joystick Controls" for more information.

In some regions, regulations require a shovel crane configuration to lift certain objects. Always obey the local regulations in your region.

Refer to "Shovel Crane Operation" for additional information regarding the operation of the shovel crane.

Operate the machine according to the rated load table for your machine. Refer to Operation and Maintenance Manual, "Specifications (Shovel Crane Specifications)" for more information.

Activating the Shovel Crane



Illustration 400

g06394071

On machines with the shovel configuration, "Shovel Crane Mode" can be activated/deactivated by pressing the button on the key pad.

On the monitor, navigate to the "Control Mode" menu within "Machine Settings". Once in the "Control Mode" menu, select "Shovel Crane".



Shovel Crane Indicator

Activation with overload warning of shovel crane can also be done by selecting the short cut from the home screen if applied.

Inspect the shovel crane hook for damage. Refer to "Shovel Crane - Inspect".

2. Move the hydraulic lockout control to the UNLOCKED position. Start the engine. Refer to Operation and Maintenance Manual, "Engine Starting".



Illustration 402

g06390954

3. Follow the on-screen instructions for enabling the shovel crane feature.

Hold Bucket Rack to Enable Shovel Crane.

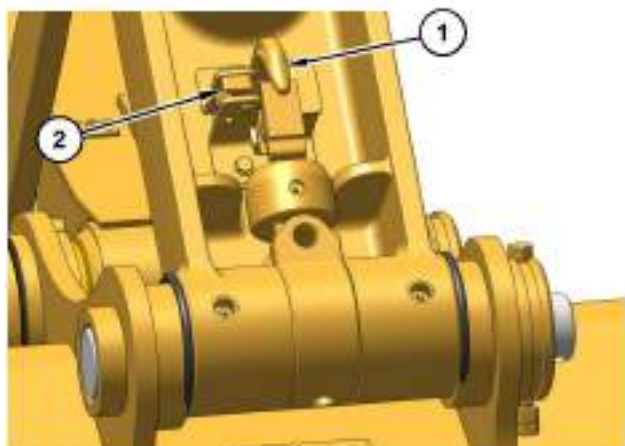


Illustration 401

g06334844

- (1) Shovel crane hook
- (2) Shovel crane latch

1. Release shovel crane latch (2). Lower shovel crane hook (1) into operating position.



Illustration 403

g06390955

Once in the crane mode, the monitor displays the actual load and rated load, and the beacon warning lamp on the top of the cab comes on.

The following functions are also limited while shovel crane is active:

- Bucket dump commands are disabled
- Throttle is limited to 3
- Travel speed is limited to LOW
- Swing speed is reduced

Note: The rated load icon will turn yellow and a track will appear when the machine is traveling.

Note: If the hydraulic lockout control is moved to the LOCKED position, the shovel crane will become inoperable.

Refer to “Shovel Crane Operation” for additional information regarding the operation of the shovel crane.

Deactivating the Shovel Crane



Illustration 404

g06191883

“Shovel Crane Mode” can be disabled by pressing the button on the key pad or selecting “Shovel Crane” in the display. Once disabled, the following functionality is restored:

- Bucket dump commands are enabled
- Throttle no longer limited
- Travel speed no longer limited
- Swing speed no longer reduced

Position the stick so that the stick is perpendicular to the ground and slowly lower the boom until the bucket contacts the ground.

Return the hook to the stored position and latch the hook.

Indicators and Warnings

Below is a list of indicators and warnings that may appear on the monitor during the shovel crane operation.

Actual Load over 90% of Rated Load – If the suspended load is 90% of the rated load, the monitor will display this warning and an alarm will sound continuously. If this warning occurs, stop operation until the machine center of gravity becomes stable or reduce the suspended load.

Actual Load over 100% of Rated Load – If the suspended load is 100% of the rated load, the monitor will display this warning and an alarm will sound continuously. If this warning occurs, stop operation until the machine center of gravity becomes stable or reduce the suspended load.

Load Interfering with Bucket. Adjust Linkage – When the bucket interferes with the lift, the monitor will display this warning. If this warning is present, stop lifting and adjust the linkage.

Lower Boom – When the boom cylinder is extended to the point near stroke end, the monitor will display this warning. If this warning is present, lower the boom.

i08787184

Joystick Controls

SMCS Code: 5705

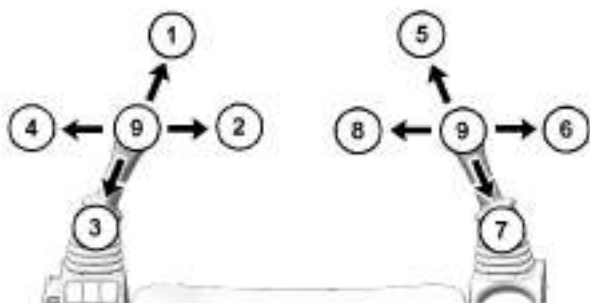


Illustration 405

g06180324

- (1) STICK OUT
- (2) SWING RIGHT
- (3) STICK IN
- (4) SWING LEFT
- (5) BOOM LOWER
- (6) BUCKET DUMP
- (7) BOOM RAISE
- (8) BUCKET CLOSE
- (9) HOLD

When you release the joysticks from any position, the joysticks will return to HOLD position (9). Movement of the upper structure will stop.

Two functions may be performed at the same time by moving a joystick diagonally.

The machine control pattern is initially set at the factory to the excavator pattern, as shown. The pattern on the left pertains to the left joystick and the pattern on the right pertains to the right joystick.

The machine control pattern can be varied. Refer to "Joystick Controls Alternate Patterns" for more information.

Joystick Configurations

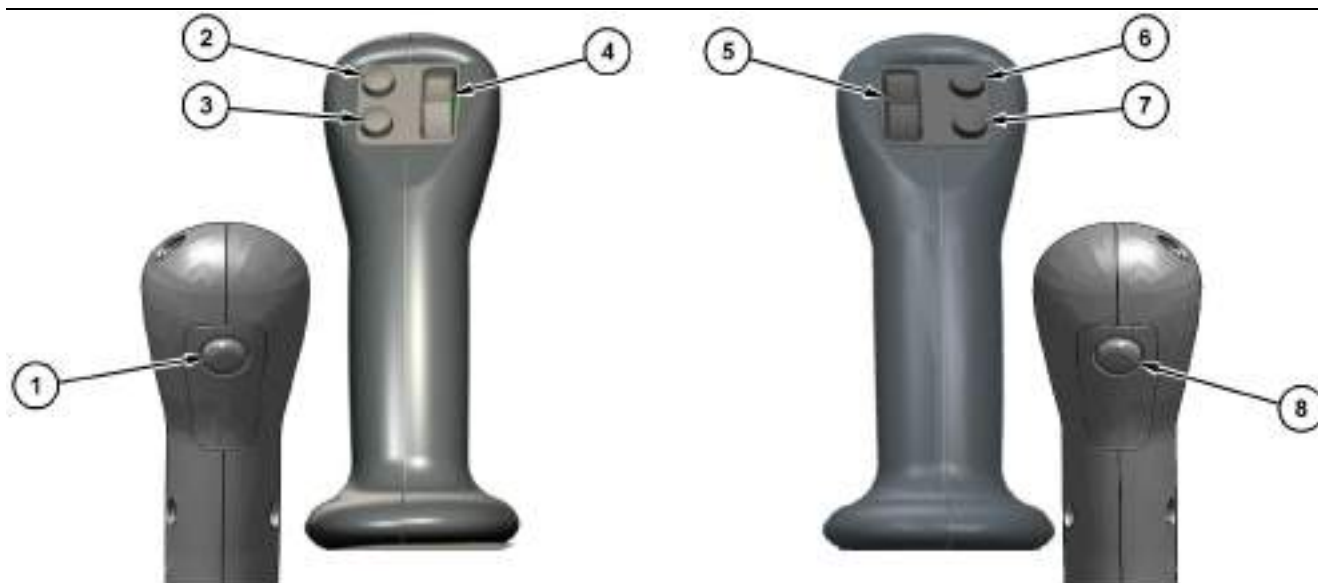


Illustration 406

g06285624

Vertical Slider Joystick Controls

(1) Left joystick trigger switch
(2) Left joystick switch 1
(3) Left joystick switch 2

(4) Left joystick thumbwheel
(5) Right joystick thumbwheel
(6) Right joystick switch 1

(7) Right joystick switch 2
(8) Right joystick trigger switch

Table 67

Joystick Configurations		
Switch Location	Machine Configuration	
	Joystick Steering Mode OFF	Joystick Steering Mode ON
1	Inactive	Cruise Control
2	Boom Swing or Boom Offset/ Aux 2 Select	House Swing / Aux 2 Select
3	Joystick Steering Mode On/Off	Joystick Steering Mode On/Off
4	Boom Swing or Boom Offset/ Aux 2 Flow Control	House Swing / Aux 2 Flow Control
5	Aux 1 Flow Control	Aux 1 Flow Control / Stick Control (Configurable)
6	Horn	Horn
7	Travel Speed	Travel Speed
8	Inactive	Inactive / Blade Float / Thumbwheel (5) toggle
Left Joystick	Stick / Swing	Travel
Right Joystick	Boom / Bucket	Boom / Bucket / Blade (Configurable)

Note: Joystick controls alternate patterns are not available when joystick steer mode is ON. Blade control on right joystick when “joystick steering mode” ON is not available on machines equipped with shovel crane.

Left Joystick Controls

Trigger Switch (1)

Button (1) will only function in Joystick Steering Mode. When in Joystick Steering Mode this button activates cruise control. Cruise control maintains forward or reverse ground speed when the joystick is in the hold position.

Cruise control is available using the Monitor (see "Monitoring System" for details). Cruise control must first be enabled using the monitoring system.



WARNING

A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.

Do not mount a moving machine. Do not dismount a moving machine. Never jump off the machine. Do not carry tools or supplies when you try to mount the machine or when you try to dismount the machine. Use a hand line to pull equipment onto the platform. Do not use any controls as handholds when you enter the operator compartment or when you exit the operator compartment.

Cruise control is disabled by any of the following:

- moving the left joystick forward or reverse after placing the joystick in the hold position.
- pressing button (1).
- moving the travel pedals.
- pressing button (3).
- hydraulic lockout control lever is raised to the lockout position.

Boom Swing or Boom Offset/ 2nd Auxiliary Button (2)

Button (2) will determine which function thumb wheel (4) controls.

The default setting of thumb wheel (4) is boom swing function.

Joystick Steering Mode Button (3)

Push button (3) to activate Joystick Steering Mode, then press the confirmation button on the monitoring system using the jog dial or touch screen (if equipped). The confirmation process must be completed after every key cycle of the machine.

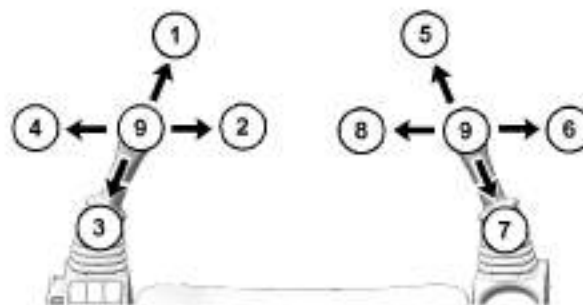


Illustration 407

g06180324

Joystick Steering Pattern A

- (1) TRAVEL FORWARD
- (2) COUNTER-ROTATE CLOCKWISE
- (3) TRAVEL REVERSE
- (4) COUNTER-ROTATE COUNTERCLOCKWISE
- (5) BOOM LOWER
- (6) BUCKET DUMP
- (7) BOOM RAISE
- (8) BUCKET CLOSE
- (9) HOLD

Once activated, the joystick steering light will illuminate as defined in the "Monitor System" section. The left joystick functionality is modified as shown in Illustration 407. This control pattern is identified as Joystick Steering Pattern A.

Note: Refer to Table 67 for additional control changes.

In Joystick Steering Mode, machine swing is available on the left thumb roller in place of boom swing (if equipped). Machine swing and aux 2 (if equipped) can toggle function control on the left thumbwheel while in Joystick Steering Mode.

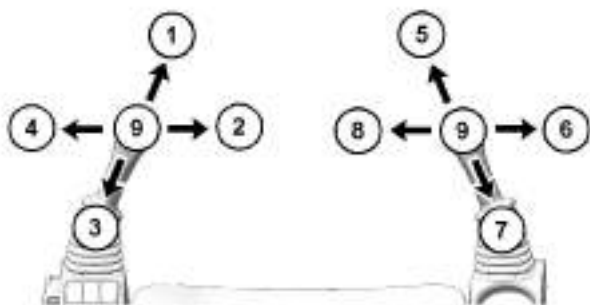


Illustration 408

g06180324

Joystick Steering Pattern B

- (1) TRAVEL FORWARD
- (2) COUNTER-ROTATE CLOCKWISE
- (3) TRAVEL REVERSE
- (4) COUNTER-ROTATE COUNTERCLOCKWISE
- (5) BLADE LOWER
- (6) BLADE TILT CLOCKWISE
- (7) BLADE RAISE
- (8) BLADE TILT COUNTERCLOCKWISE
- (9) HOLD

While in Joystick Steering Mode, changing an alternate control pattern for the right joystick is possible. This pattern is identified as joystick steering pattern B. The following image details the control of the machine using blade control on the right joystick lever.

To change the joystick steering pattern between A and B, press the “Menu” button, select “Machine Settings”, “Control Mode”, “Joystick Steering Pattern”. Excavator (pattern A) or Blade (pattern B) can be selected.

While in joystick steering mode with pattern B, the blade can be placed into float by moving the right joystick FORWARD and then pressing the right joystick trigger switch (8) while the right joystick is still FORWARD. The blade will remain in float after returning the right joystick to the HOLD position. Pressing the right joystick trigger switch again, moving the right joystick out of HOLD or moving the dozer blade lever out of HOLD will disable blade float.

Note: Joystick steer pattern B is not available on machines equipped with shovel crane.

Advanced Joystick Steering Mode: An advanced control pattern is available in Joystick Steering Mode using the service mode of the display (see “Monitoring System – Thumbwheel Mode” for setup details). When Thumbwheel Mode is set to enabled and Joystick Steering Pattern A is selected, the trigger on the right joystick can allow for toggling between aux 1 and stick function on the right joystick thumbwheel.

Boom Swing or Boom Offset/ 2nd Auxiliary Flow Control (4)

If thumb wheel (4) is changed to second auxiliary control, the thumb wheel is used to operate work tools such as a grapple. Refer to “Work Tool Control” for more information.

The boom swing or offset control is used to swing the boom to the right or to the left.



Swing or Offset Left – Pull downward on the left thumbwheel to swing or offset the boom to the LEFT.



Swing or Offset Right – Push upward on the left thumbwheel to swing or offset the boom to the RIGHT.

Note: Operate the boom swing thumbwheel carefully until you become familiar with how boom swing reacts to the controls.

Right Joystick Controls

Note: If the machine is equipped with shovel crane, the right joystick will always control the boom/bucket when joystick steer is ACTIVE. Joystick steer pattern B is not available on machines equipped with shovel crane.

Primary Auxiliary Control (5)

The primary auxiliary control thumb wheel is used to control the work tools. For more information on the auxiliary controls, refer to “Work Tool Control”.

This thumbwheel can be toggled to activate the stick using button (8) while in Joystick Steering Mode if right joystick is configured to Boom/ Bucket.

Horn (6)

Horn (6) – The horn button is on the right side joystick. Depress the horn button to sound the horn. Use the horn before starting the engine, or for alerting or signaling personnel.

Travel Speed Control (7)

Depress the travel speed button to change between low and high travel speed. When high travel speed is selected, the high-speed indicator will illuminate on the monitor.

i08786707

Work Tool Control

SMCS Code: 6700

WARNING

Unintended operation of the switch for the Auxiliary Control can cause injury or death.

To prevent unintended activation of the switch for the Auxiliary Control while traveling or whenever the auxiliary line is not being used, make sure that the thumb is not placed on or near the switch for the Auxiliary Control.

Auxiliary lines are equipped with coupler assemblies. Wipe all coupler assemblies before connecting the work tools. The auxiliary lines must be relieved of pressure to connect the coupler assemblies to the work tool. Refer to "System Pressure Release" for more information.

Note: Pressure can build up in the auxiliary lines if the work tool is not coupled/uncoupled immediately after the pressure has been released.

One-Way Flow

The following information pertains to work tools that require hydraulic oil flow in one direction. Hydraulic hammers are an example of work tools that require hydraulic oil flow in one direction.

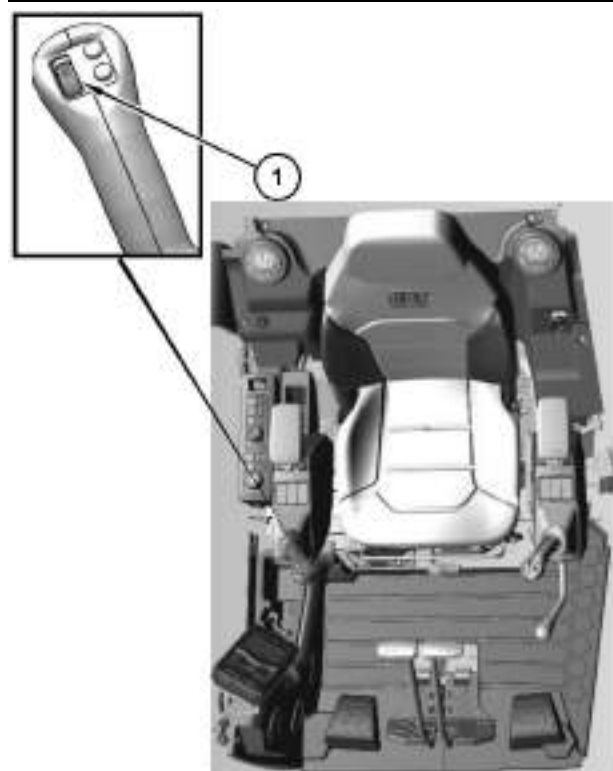


Illustration 409

g06786043

Interior of the machine

(1) Right joystick thumb wheel

Variable Speed – Move right joystick thumb wheel (1) upward to activate the work tool. Move right joystick thumb wheel (1) further to increase the speed of the work tool.

Hammer Control

Hydraulic Hammer ON – Move right joystick thumb wheel (1) upward to activate the hydraulic hammer.

Hydraulic Hammer OFF – Move right joystick thumb wheel (1) downward to deactivate the hydraulic hammer.

Two-Way Flow

The following information pertains to work tools that require hydraulic oil flow in two directions. These work tools can also be equipped with a rotate circuit. Hydraulic shears, pulverizers, crushers, and grapples are examples of work tools that require hydraulic oil flow in two directions.

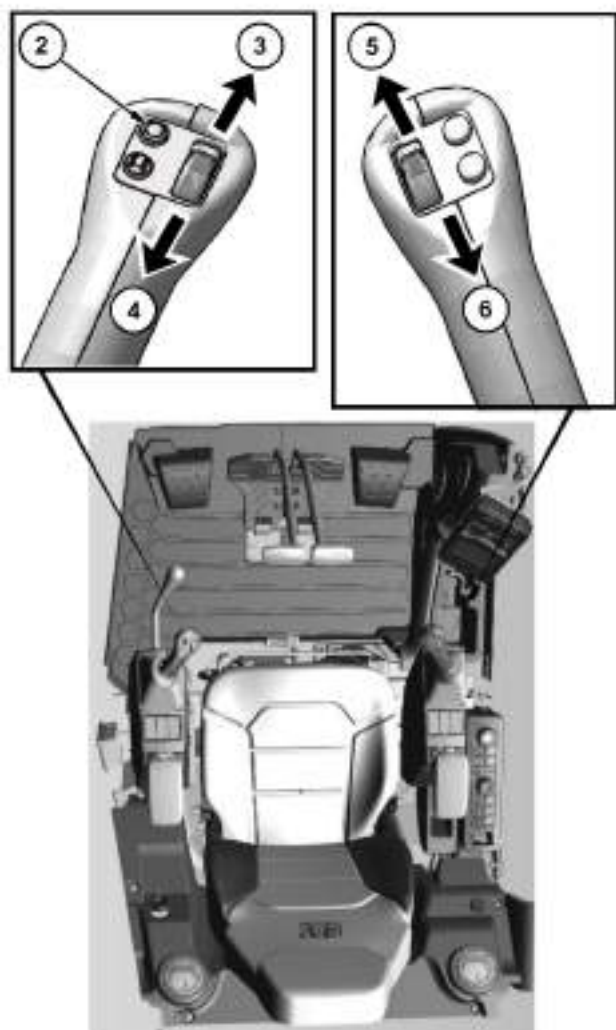


Illustration 410

g06786047

Interior of the machine

(2) Button

(3) Upward movement of left joystick thumb wheel

(4) Downward movement of left joystick thumb wheel

(5) Upward movement of right joystick thumb wheel

(6) Downward movement of right joystick thumb wheel

Primary Auxiliary Hydraulic Circuit (AUX 1)

Variable Speed – Move right joystick thumb wheel (1) in the direction of desired flow to activate the work

tool. Upward movement of right joystick thumb wheel (5) : Aux 1B. Downward movement of right joystick thumb wheel (6) : Aux 1A. Move right joystick thumb wheel (1) further to increase the speed of the work tool. Release right joystick thumb wheel (1) to stop the work tool.

Secondary Auxiliary Hydraulic Circuit (AUX 2)

Variable Speed – Press button (2) in left joystick once to activate the secondary auxiliary flow control. Press button (2) in left joystick again to deactivate the secondary auxiliary flow control to engage boom swing (default if equipped). The secondary auxiliary flow control must be activated to operate the circuit.

1. Move left joystick thumb wheel in the direction of desired flow to activate the work tool.
2. Upward movement of left joystick thumb wheel (3) : Aux 2B.
3. Downward movement of left joystick thumb wheel (4) : Aux 2A.
4. Move left joystick thumb wheel further to increase the speed of the work tool.
5. Release left joystick thumb wheel to stop the work tool.

Note: Refer to “Joystick Controls” for more information.

Primary Auxiliary Hydraulic Circuit (AUX 1)



Unexpected operation of the auxiliary control circuit can cause injury or death.

A RAISED hydraulic lock lever does not mean that the auxiliary control function is locked out.

In order to prevent unexpected operation of the auxiliary control circuit, make sure that the foot is not placed on or near the work tool control pedal.

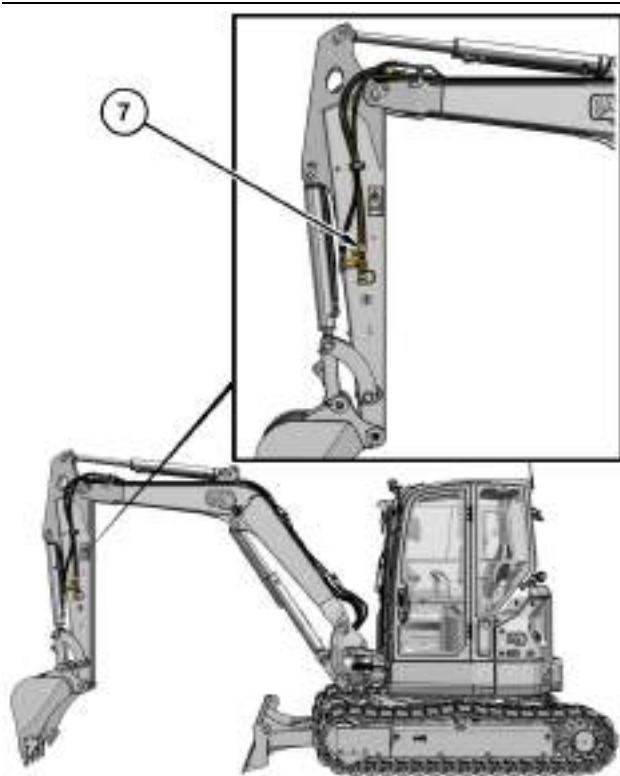


Illustration 411

g06779856

305 CR Excavator
Left side view of stick

(7) Primary auxiliary line on left side of stick

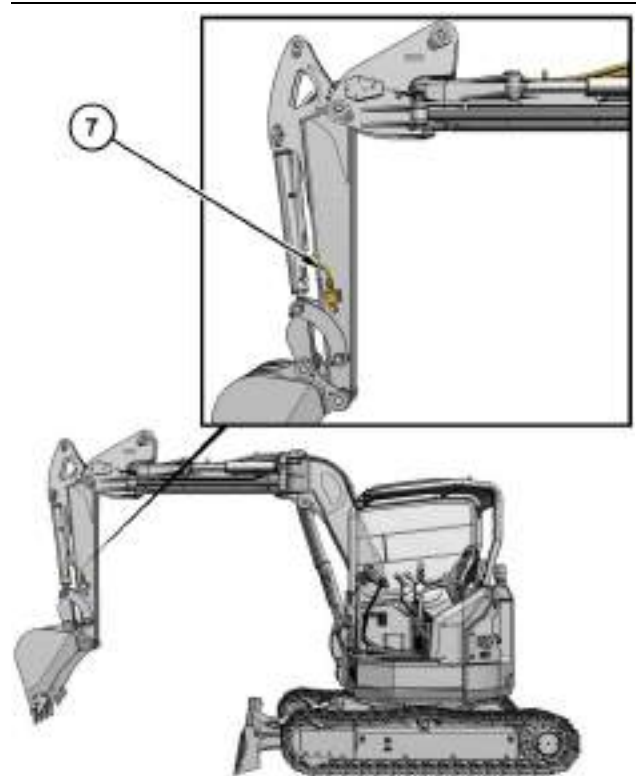


Illustration 412

g06779756

305 SR Excavator
Left side view of stick

(7) Primary auxiliary line on left side of stick

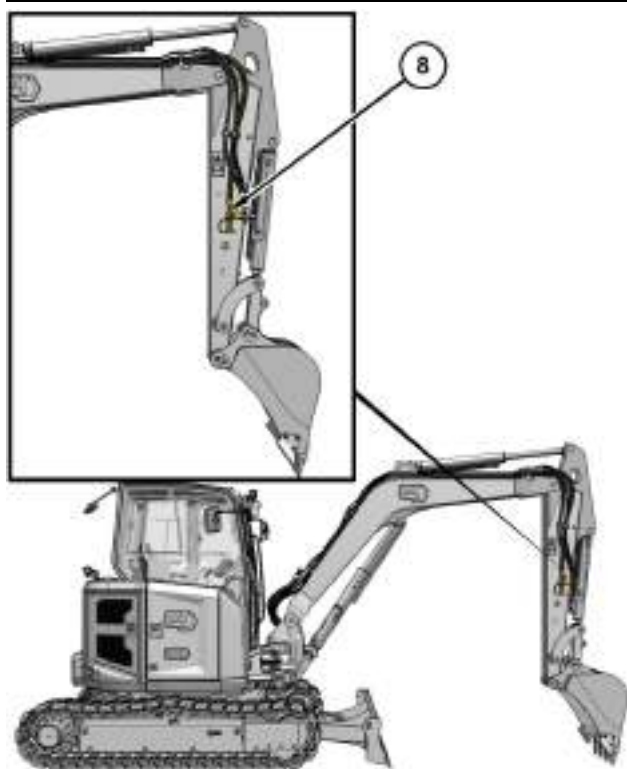


Illustration 413

g06779862

305 CR Excavator

Right side view of stick

(8) Primary auxiliary line on right side of stick

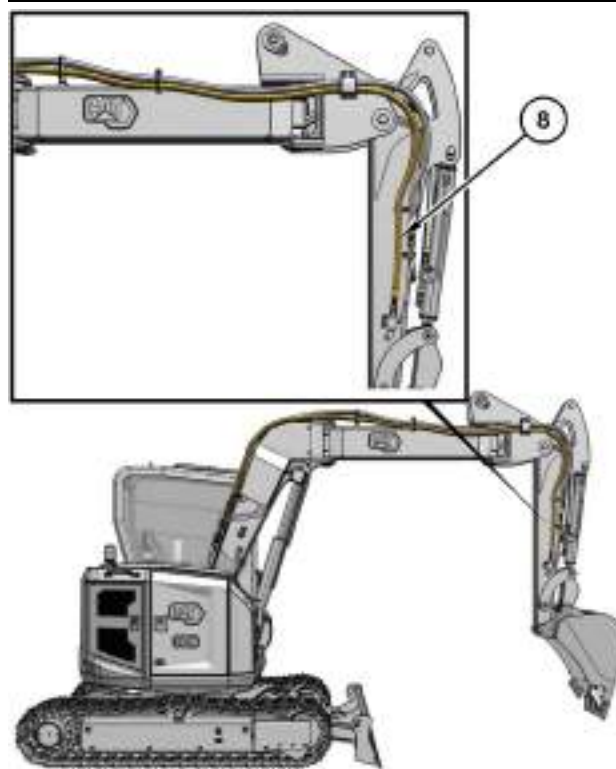


Illustration 414

g06779760

305 SR Excavator

Right side view of stick

(8) Primary auxiliary line on right side of stick

There are two primary auxiliary lines that are routed to the stick.

Primary auxiliary line on left side of stick (7) is an oil feed line. Primary auxiliary line on right side of stick (8) is an oil return line.

The primary auxiliary lines can be equipped with coupler assemblies. Wipe all coupler assemblies before connecting the work tools.

The primary auxiliary lines must be relieved of pressure to connect the coupler assemblies to the work tool. Refer to "System Pressure Release" for more information. Relieve the pressure in the primary auxiliary hydraulic lines by performing the following steps:

1. Turn the engine start switch key to the ON position with the engine OFF. Refer to "Engine Starting" for more information.
2. Lower the hydraulic lockout control lever. Refer to "Operator Controls" for more information.
3. Move the control levers and thumb wheels in both directions repeatedly. Refer to for more information.

Note: The hydraulic accumulator must have pressure to relieve a circuit. If needed, start engine and engage the hydraulic lockout control lever for 5 seconds to charge the accumulator. After the accumulator has been pressurized, repeat Steps 1 through 3.

4. Uncouple the work tool immediately after the pressure has been released.

Note: Pressure can build up in the primary auxiliary lines if the work tool is not coupled or uncoupled immediately after the pressure has been released.

Secondary Auxiliary Hydraulic Circuit (AUX 2) (If Equipped)

WARNING

Unexpected operation of the secondary auxiliary control circuit can cause injury or death.

In order to prevent unexpected operation of the secondary auxiliary control circuit, make sure that the thumb is not placed on or near the switch on the left joystick.

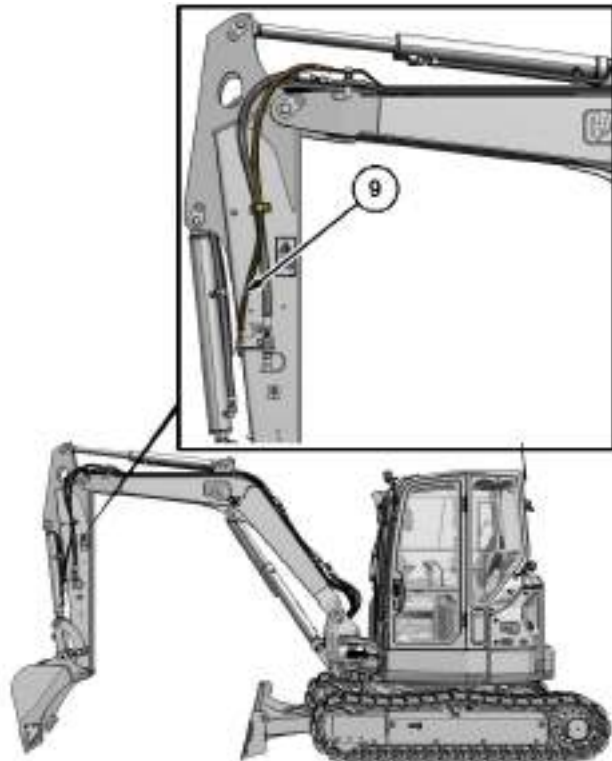


Illustration 415

305 CR Excavator
Left side view of stick

(9) Secondary auxiliary line on left side of stick

g06779881

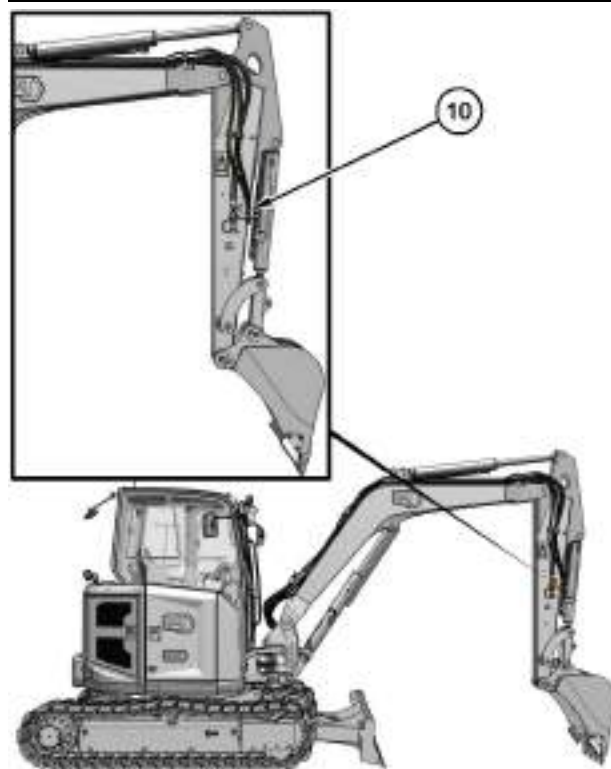


Illustration 416

305 CR Excavator
Right side view of stick

(10) Secondary auxiliary line on right side of stick

g06779866

There are two secondary auxiliary lines that are routed to the stick.

Secondary auxiliary line on left side of stick (9) is an oil feed line. Secondary auxiliary line on right side of stick (10) is an oil return line.

The secondary auxiliary lines are equipped with coupler assemblies. Wipe all coupler assemblies before you connect the work tools.

The secondary auxiliary lines must be relieved of pressure to connect the coupler assemblies to the work tool. Refer to "System Pressure Release" for more information. Relieve the pressure in the secondary auxiliary hydraulic lines by performing the following steps:

1. Turn the engine start switch key to the ON position with the engine OFF. Refer to "Engine Starting" for more information.
2. Using button (2) on the joystick, change the mode from Boom Swing to Aux 2. Refer to "Joystick Controls" for more information.
3. Lower the hydraulic lockout control lever. Refer to "Operator Controls" for more information.

4. Move the control levers and thumb wheels in both directions repeatedly. Refer to “Joystick Controls” for more information.

Note: The hydraulic accumulator must have pressure to relieve a circuit. If needed, start engine and engage the hydraulic lockout control lever for 5 seconds to charge the accumulator. After the accumulator has been pressurized, repeat Steps 1 through 4.

5. Uncouple the work tool immediately after the pressure has been released.

Note: Pressure can build up in the primary auxiliary lines if the work tool is not coupled or uncoupled immediately after the pressure has been released.

Auxiliary Tool Case Drain (if equipped)

The case drain is necessary for certain tools with hydraulic motors such as mulchers and flail mowers.

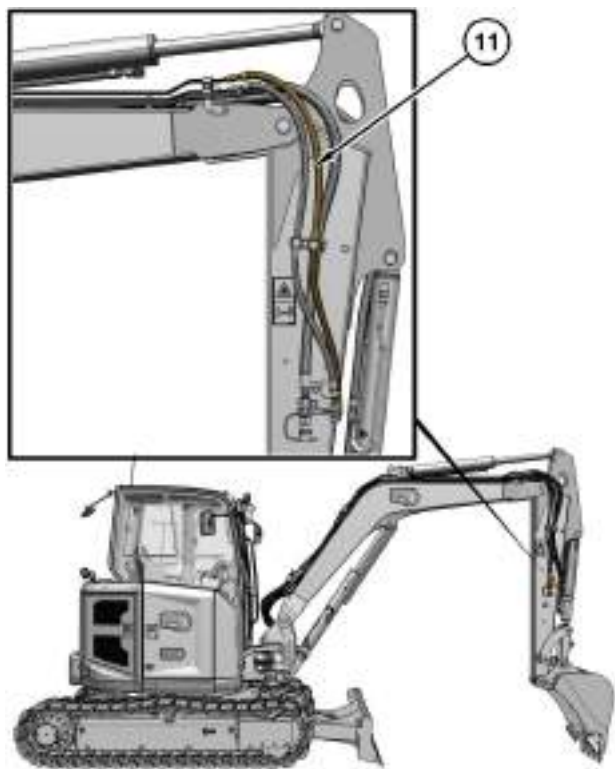


Illustration 417
305 CR Excavator
Right side view of stick
(11) Case drain coupling

g06779868

Wipe and clean the quick connectors before attaching case drain coupling (11) to the machine.

Continuous Flow

Note: Enable the continuous flow feature in monitor. Refer to “Monitoring System” for additional information.

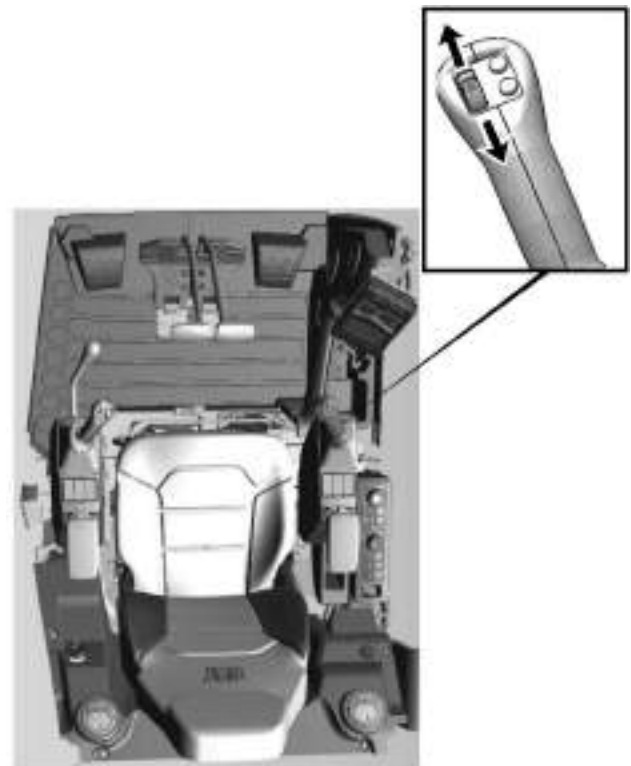


Illustration 418
Interior of the machine

g06786050

1. The operator controls the hydraulic flow rate with right joystick thumb wheel (1) on the right-hand joystick.
2. To set continuous flow, first set the continuous flow feature to ON in monitor. Refer to “Monitoring System” for additional information.
3. Use right joystick thumb wheel (1) to command Aux 1 until the desired hydraulic flow rate is achieved.
4. Hold right joystick thumb wheel (1) at the desired command for 2.5 seconds. After 2.5 seconds, the continuous flow indicator on the monitor will turn green indicating that continuous flow is ACTIVE.
5. Once the continuous flow begins, release right joystick thumb wheel (1).

6. Continuous flow will stop operating when right joystick thumb wheel (1) is moved or the hydraulic lockout is lifted or when the machine is turned OFF.

Work Tool Flow Mode Control



Illustration 419

g06710236

305 CR Excavator

Right side view of the machine

(12) Right side access door



Illustration 420

g06779767

305 SR Excavator

Right side view of the machine

(12) Right side access door

Open right side access door (12) to gain access to manual flow control valve. Refer to "Access Door and Cover Locations" for more information.

One-Way Flow

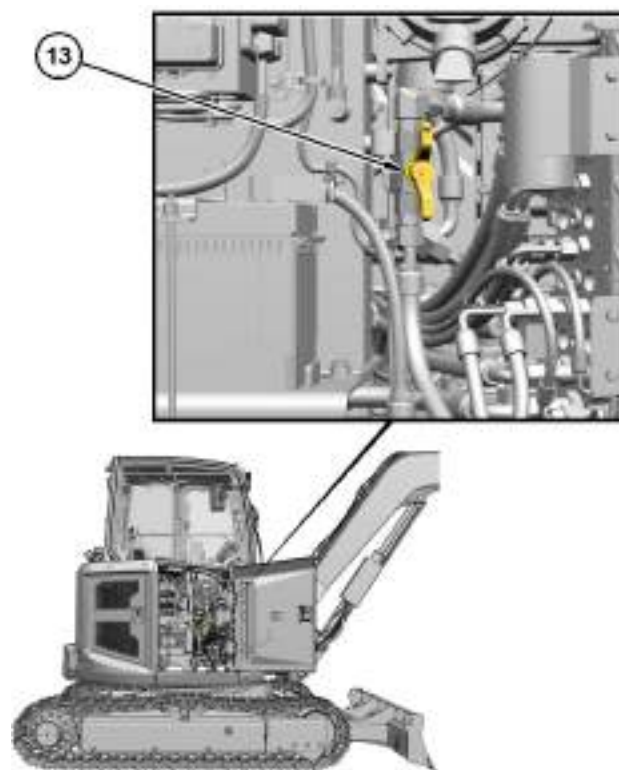


Illustration 421

g06710019

305 CR Excavator

Some components removed for better clarity

(13) One-way flow in manual flow control valve

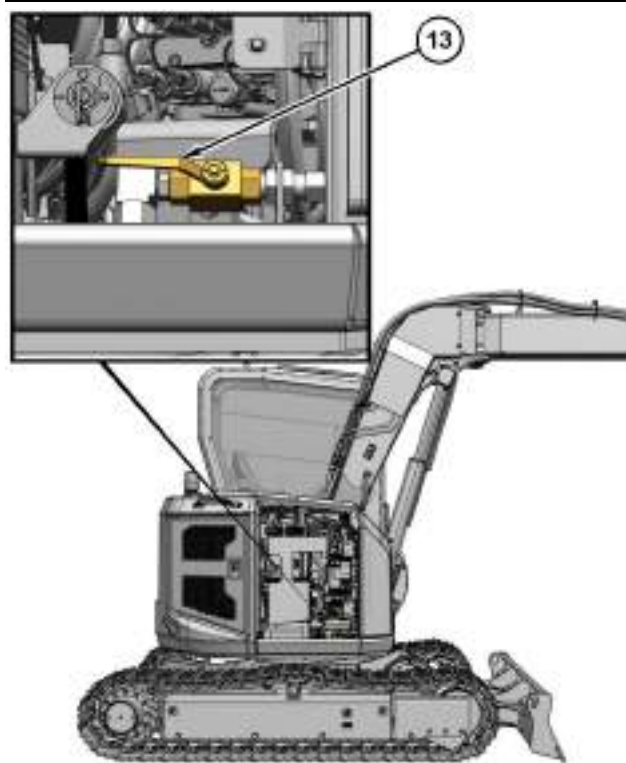


Illustration 422

g06779775

305 SR Excavator

Some components removed for better clarity

(13) One-way flow in manual flow control valve

The flow control manual valve is located next to the battery. Refer to Illustration 421 and 422 for the position of manual flow control valve to attain one-way flow in manual flow control valve (13) .

Two-Way Flow

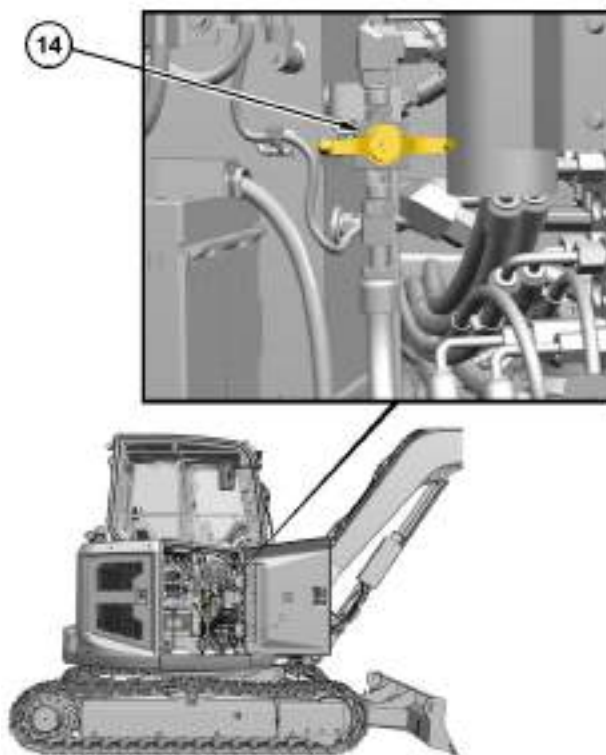


Illustration 423

g06710027

305 CR Excavator

Some components removed for better clarity

(14) Two-way flow in manual flow control valve

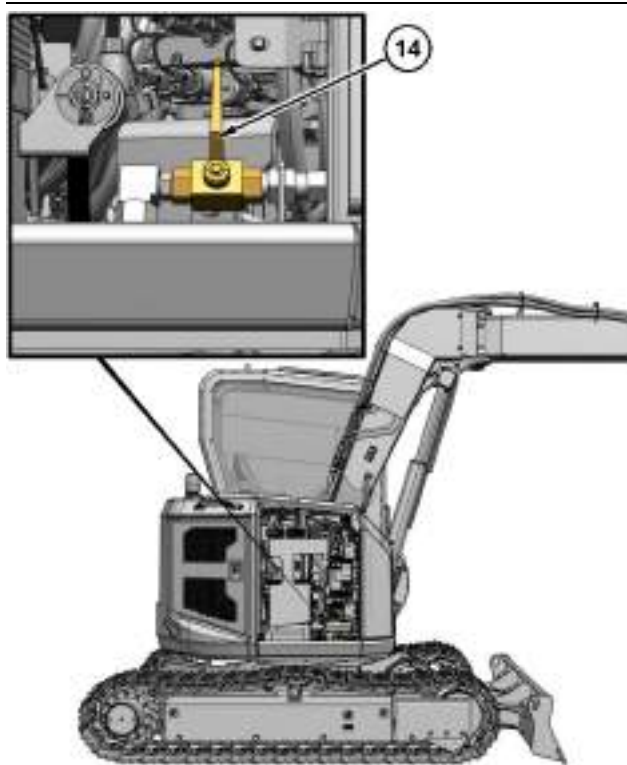


Illustration 424

g06779785

305 SR Excavator

Some components removed for better clarity

(14) Two-way flow in manual flow control valve

The flow control manual valve is located next to the battery. Refer to Illustration 423 and 424 for the position of manual flow control valve to attain two-way flow in manual flow control valve (14).

Close right side access door (12). Refer to "Access Door and Cover Locations" for more information.

Adjustable Primary Auxiliary Valves

This feature enables the ability to adjust pressures allowing for customized and improved performance of work tools.

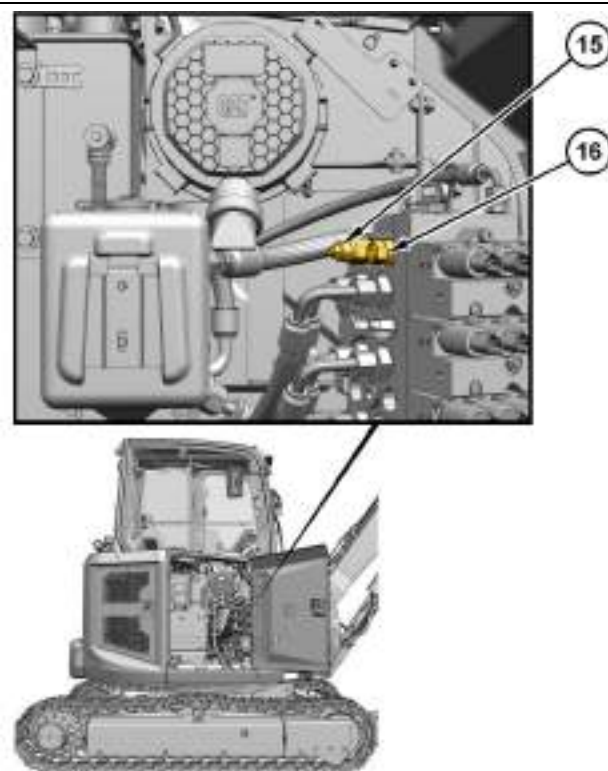


Illustration 425

g06709945

305 CR Excavator

Some components removed for better clarity

(15) Adjustable Relief Valve for Aux 1B

(16) Adjustable Relief Valve for Aux 1A

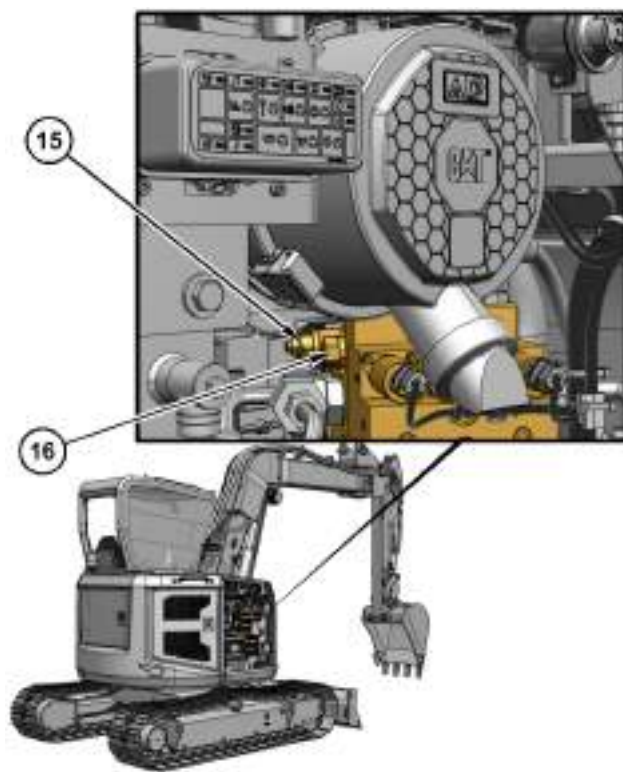


Illustration 426

g06779788

305 SR Excavator

Some components removed for better clarity

(15) Adjustable Relief Valve for Aux 1B
(16) Adjustable Relief Valve for Aux 1A

1. Open right side access door (12) to gain access to adjustable primary auxiliary valves. Refer to "Access Door and Cover Locations" for more information.
2. Adjustable Relief Valve for Aux 1B (15) and adjustable Relief Valve for Aux 1A (16) are on the main control valve.

3. Close right access door (12). Refer to "Access Door and Cover Locations" for more information.

Auxiliary Control Pedal (AUX 1) (Two-Way Flow) (If Equipped)

WARNING

Unintended operation of the Auxiliary Control pedal can cause injury or death. A **RAISED** hydraulic lock lever does not mean that the auxiliary line is locked out.

To Prevent unintended activation of the Auxiliary Control pedal while traveling or whenever the auxiliary line is not being used, make sure the foot is not placed on or near the Auxiliary Control pedal.

Note: Operate the Auxiliary Control pedal carefully until you become familiar with how AUX 1 reacts to the controls. Refer to "Joystick Controls" for more information.

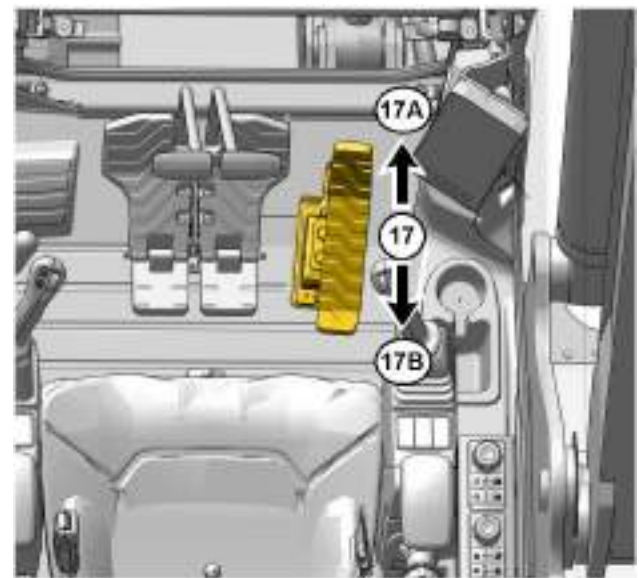


Illustration 427

g06656639

Interior of the machine(17) Right auxiliary control pedal
(17A) Front of right auxiliary control pedal
(17B) Rear of right auxiliary control pedal

1. Right Auxiliary Control pedal (17) controls the two-way flow auxiliary line circuit (AUX 1).
2. To pressurize the line that is connected to the left-hand side of the stick, apply pressure to front of right auxiliary control pedal (17A).

3. To pressurize the line that is connected to the right-hand side of the stick, apply pressure to rear of right auxiliary control pedal (17B)

i08586070

Joystick Controls Alternate Patterns

SMCS Code: 5059; 5137

WARNING

Check if control pattern 1 (Standard) or control pattern 2 (Alternate) is selected before operating the machine.

Refer to Operation and Maintenance Manual.

Failure to understand control functions could result in injury or death.

Note: Joystick Controls Alternate Patterns are not available when the joystick steer mode is ON.

To access the pattern changer screen, press the "Menu" button, select "Machine Settings", "Control Mode", then "Pattern Changer".

The Joystick-Mapping Installation Status configuration must be set to installed in Cat® Electronic Technician (ET) and the Pattern Changer must be configured as Enabled in the display for the Pattern Changer to be available. Then modifying the Machine Application Configuration and the Joystick Mapping Group Selection in Cat ET will impact the available patterns as summarized below.

When the Machine Application Configuration is set to Standard and the Joystick Mapping Group Selection is configured as Two Way, the following pattern changer selections are available:

- Excavator
- Backhoe

When the Machine Application Configuration is set to Inside Japan (ISJ) Common and the Joystick Mapping Group Selection is configured as Disabled or Two Way, the following pattern changer selections are available:

- Excavator
- SCM

When the Machine Application Configuration is set to Standard or ISJ Common and the Joystick Mapping Group Selection is configured as Four Way, the following pattern changer selections are available:

- Excavator

- "SCM"
- "MHI"
- "KOB"

Backhoe Joystick Pattern

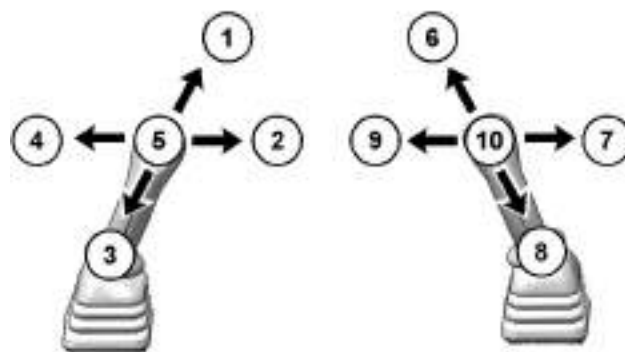


Illustration 428

g06349078



BOOM LOWER (1) – Move the joystick to this position to lower the boom.



SWING RIGHT (2) – Move the joystick to this position to swing the upper structure to the right.



BOOM RAISE (3) – Move the joystick to this position to raise the boom.



SWING LEFT (4) – Move the joystick to this position to swing the upper structure to the left.

HOLD (5) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.



STICK OUT (6) – Move the joystick to this position to move the stick outward.



BUCKET DUMP (7) – Move the joystick to this position to dump the bucket or the work tool.



STICK IN (8) – Move the joystick to this position to move the stick inward.



BUCKET CLOSE (9) – Move the joystick to this position to close the bucket or the work tool.

HOLD (10) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.

Two functions may be performed at the same time by moving the joysticks diagonally.

SCM Joystick Pattern

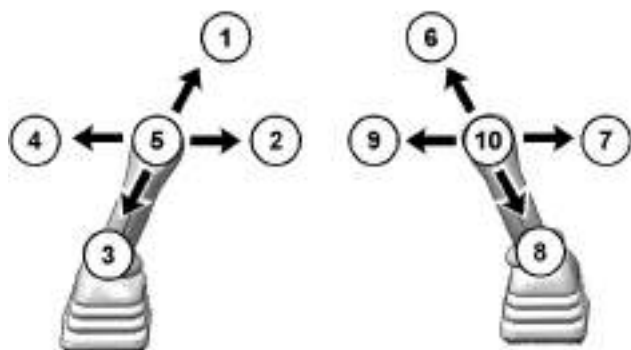


Illustration 429

g06349078



SWING RIGHT (1) – Move the joystick to this position to swing the upper structure to the right.



STICK IN (2) – Move the joystick to this position to move the stick inward.



SWING LEFT (3) – Move the joystick to this position to swing the upper structure to the left.



STICK OUT (4) – Move the joystick to this position to move the stick outward.

HOLD (5) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.



BOOM LOWER (6) – Move the joystick to this position to lower the boom.



BUCKET DUMP (7) – Move the joystick to this position to dump the bucket or the work tool.



BOOM RAISE (8) – Move the joystick to this position to raise the boom.



BUCKET CLOSE (9) – Move the joystick to this position to close the bucket or the work tool.

HOLD (10) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.

Two functions may be performed at the same time by moving the joysticks diagonally.

“MHI” (Mitsubishi) Joystick Pattern

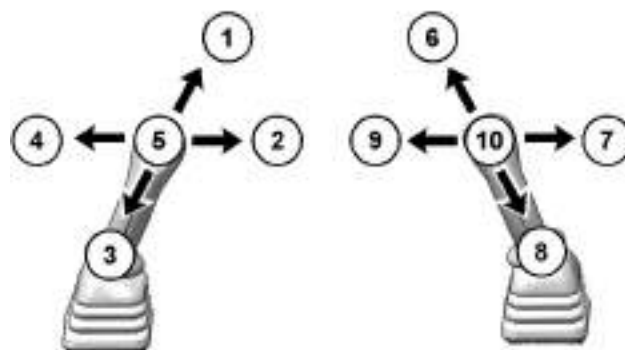


Illustration 430

g06349078



BOOM LOWER (1) – Move the joystick to this position to lower the boom.



BUCKET CLOSE (2) – Move the joystick to this position to close the bucket or the work tool.



BOOM RAISE (3) – Move the joystick to this position to raise the boom.



BUCKET DUMP (4) – Move the joystick to this position to dump the bucket or the work tool.

HOLD (5) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.



STICK IN (6) – Move the joystick to this position to move the stick inward.



SWING RIGHT (7) – Move the joystick to this position to swing the upper structure to the right.



STICK OUT (8) – Move the joystick to this position to move the stick outward.



SWING LEFT (9) – Move the joystick to this position to swing the upper structure to the left.

HOLD (10) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.

Two functions may be performed at the same time by moving the joysticks diagonally.

“KOB” (Shin-Ko) Joystick Pattern

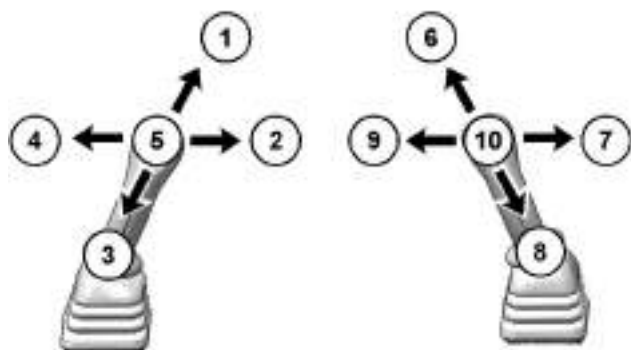


Illustration 431

g06349078



BOOM LOWER (1) – Move the joystick to this position to lower the boom.



BUCKET CLOSE (2) – Move the joystick to this position to close the bucket or the work tool.



BOOM RAISE (3) – Move the joystick to this position to raise the boom.



BUCKET DUMP (4) – Move the joystick to this position to dump the bucket or the work tool.

HOLD (5) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.



STICK OUT (6) – Move the joystick to this position to move the stick outward.



SWING RIGHT (7) – Move the joystick to this position to swing the upper structure to the right.



STICK IN (8) – Move the joystick to this position to move the stick inward.



SWING LEFT (9) – Move the joystick to this position to swing the upper structure to the left.

HOLD (10) – When you release the joystick from any position, the joystick will return to the HOLD position. Movement of the structure will stop.

Two functions may be performed at the same time by moving the joysticks diagonally.

Engine Starting

i08330440

Engine Starting

SMCS Code: 1000; 1090; 1456; 7000

WARNING

Do not spray ether into engine when using thermal starting aid to start engine. Personal injury and machine damage could result. Follow procedure in the Operation and Maintenance Manual.

NOTICE

The engine start switch must be in the ON position and the engine must be running in order to maintain electrical functions and hydraulic functions. This procedure must be followed in order to prevent serious machine damage.

1. Move the hydraulic lockout control (lever) to the LOCKED position.
2. Move the joysticks to the HOLD position.
3. Turn the engine start switch to the ON position.
During cold weather, leave the engine start switch in the ON position until the glow plug lamp on the display turns OFF to preheat the glow plugs.

Note: It is not necessary to preheat the glow plugs on a warm engine.

4. All the indicators on the monitor panel should be activated and the action alarm should sound for approximately 2.5 seconds. If any of the indicators are not activated or if the action alarm does not sound, check the electrical system. Make any necessary repairs before you start the engine.

Note: For more information on the monitoring system, refer to Operation and Maintenance Manual, "Monitoring System".

If any fluid levels are too low, add the corresponding fluid to the specified level. Add the fluid before you start the engine.

5. Before you start the engine, check for the presence of bystanders or maintenance personnel. Ensure that all personnel are clear of the machine. Briefly sound the horn before you start the engine.

NOTICE

If the engine fails to start after 10 seconds, disengage the starter. Wait 30 seconds before cranking again.

Do not crank the engine for more than 20 seconds. Cranking the engine for more than 20 seconds may cause damage to the engine and/or hydraulic system.

6. Turn the engine start switch to the START position.
7. Release the engine start switch key after the engine starts.
8. If the engine does not start, turn the key to the OFF position. Repeat step 6 and step 7.

i08330438

Engine and Machine Warm-Up

SMCS Code: 1000; 7000

NOTICE

Always run the engine at low idle for at least ten minutes before performing any other operations in cold conditions or each time the engine oil and oil filter are changed in order to protect your engine and hydraulic components.

NOTICE

Depending on the ambient temperature, in order to prevent the machine operation with high speed without sufficient lubrication at the turbo bearing, the engine speed may be set to low speed and the hydraulic power minimized for a pre-determined time after the engine starts. Refer to turbo protection feature.

To accelerate engine and hydraulic warmup in cold ambient temperature or high altitude for an extended time, the engine may automatically change speeds when the machine is stationary and the implements are LOCKED. During this warmup the hydraulic system will activate a warmup process that will cause hydraulic oil to flow through the valve to heat the hydraulic system. All accelerated warmup processes are automatic and will disable when the machine has warmed or the operator places the implements in the UNLOCKED position.

Hydraulic System

WARNING

When you cycle the machine controls, the machine can move suddenly. Contact between the machine and external objects or ground personnel can result in serious injury or death. Before you cycle the machine controls, the machine should be located in an unobstructed, hazard-free work area that is away from external objects and ground personnel.

1. Make sure that the area is clear of personnel and equipment.

Note: The hydraulic lockout control must be in the UNLOCKED position before the hydraulic controls will function.

2. Allow the engine to warmup at low idle for at least 5 minutes.

Note: Leave the implements LOCKED during this warmup process.

When you idle the machine for warmup, observe the following recommendations:

- If the temperature is greater than 0°C (32°F), warm up the engine for approximately 15 minutes.
- If the temperature is less than 0°C (32°F), warm up the engine for approximately 30 minutes.
- If the temperature is less than – 18°C (0°F) or if hydraulic functions are sluggish, additional time may be required.

NOTICE

The hydraulic oil temperature should be higher than 25 °C (77 °F) before performing work with the machine. Make sure that the warm-up procedure is performed.

If the hydraulic oil temperature is less than 25 °C (77 °F) and the machine is operated abruptly, serious damage to the hydraulic components may occur.

Note: The recommended operating temperature of the hydraulic fluid for this machine is 55 °C (131 °F).

3. To warmup the hydraulic oil, turn the engine speed dial to the medium engine speed.
4. Run the engine for approximately 5 minutes and continually cycle the stick from fully extended to fully retracted at maximum command.

5. Turn the engine speed dial to the maximum engine speed and repeat Step 4.
6. Cycle all controls to circulate warm oil through all hydraulic cylinders and all hydraulic lines, and through the swing motor and travel motors.
7. Observe the gauges and the indicators frequently during the operation.

Turbo Protection



Turbo Protection Power Derate – After an engine start, the engine speed will be set to low speed and the hydraulic power limited for a time period. To protect the turbo, the engine speed may be slow to respond while the engine warms (maximum time to engine speed changes is 5 minutes). After the turbo bearing lubrication is sufficient, the engine speed goes to the setting dial speed.

Operation

i08530325

Operation Information

SMCS Code: 7000

WARNING

The bucket can interfere with the cab on machines equipped with a VA boom or a one piece boom with a long stick.

Know the machine's linkage movement extremes. Keep bucket and other work tools away from the cab at all times to avoid personal injury.

Some work tools can swing in all directions. Personal injury may result if the work tool swings into the cab or into a person in the work area.

The VA cylinder can interfere with the raised stabilizer. Know the linkage movement extremes and keep the VA cylinder away from raised stabilizers at all times to avoid possible personal injury.

Know the maximum height and reach of your machine. Serious injury or death by electrocution can occur if the machine or the work tools are not kept a safe distance from electrical power lines. Keep the distance at least 3000 mm (118 inch) plus an additional 10 mm (0.4 inch) for each 1000 volts over 50000 volts.

Note: The machine must function satisfactorily in the anticipated ambient temperature limits that are encountered during operation. The standard machine configuration is intended for use within an ambient temperature range of -18 °C (0 °F) to 43 °C (109 °F). Special configurations for different ambient temperatures may be available. Consult your Caterpillar dealer for additional information on special configurations of your machine.

Make sure that no personnel are on the machine or near the machine to prevent any personal injury. Always keep the machine under control to prevent injury.

Reduce the engine speed when you maneuver the machine in tight quarters and when you drive over an incline.

Select the necessary travel speed range before you drive downgrade. Do not change the travel speed range while you drive downhill.

Use the same travel speed on a downgrade and on an upgrade.

When you travel for any distance, keep the stick inward and carry the boom in a low position.

When you drive up a steep grade, keep the boom as close to the ground as possible.

When you travel uphill or you travel downhill, keep the boom on the uphill side of the machine.

1. Adjust the operator seat.
2. Fasten the seat belt.



Illustration 432

g06181515

3. Turn the engine speed dial to the desired operating range.
4. Move the hydraulic lockout control to the UNLOCKED position.

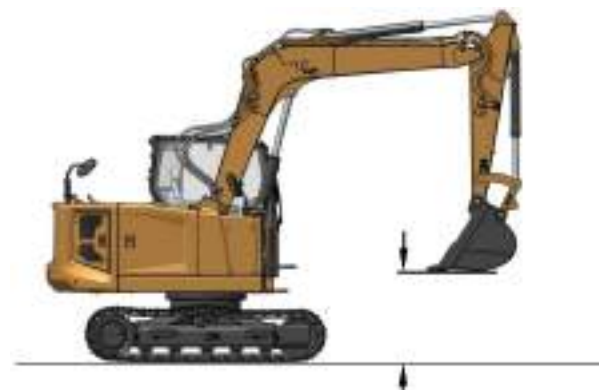


Illustration 433

g06278743

5. Raise the boom enough to provide sufficient ground clearance.
6. Select the desired travel speed by operating the travel speed control switch.
7. Make sure that the position of the upper structure and of the undercarriage is known before you move the machine. The drive sprockets should be at the rear of the machine.

Note: The directional steering controls will operate normally if the drive sprockets are at the rear of the machine and the idlers are at the front of the machine and under the cab. When the sprockets are under the cab, the travel controls will operate backward.

8. Turn the engine speed dial to increase the engine speed (rpm) to the desired speed.
9. Push both travel levers forward at the same time to travel forward. If both travel levers are pushed farther, the travel speed at the selected engine speed (rpm) will be faster.

Note: If the machine does not operate or if the machine does not travel in a straight line, consult your Caterpillar dealer.

10. See Operation and Maintenance Manual, "Operator Controls" for information about spot turning and about pivot turns.
11. When you make turns in soft material, travel in a forward direction occasionally to clear the tracks.
12. Slowly move both of the travel levers or both of the travel pedals to the CENTER position to stop the machine.

Lifting Objects

Regional regulations may require the use of an overload warning device and boom and stick lowering control valves when used to lift objects.

The overload warning device (if equipped) must be adjusted for the bucket linkage and bucket size that is installed on the machine. Adjust the overload warning device for proper operation.

The setting for the overload warning device (if equipped) should be checked by an authorized dealer.

Contact your Cat dealer for additional information.

i07310673

Frozen Ground Conditions

SMCS Code: 7000



Illustration 434

g06278746

To free the tracks from frozen ground, swing the boom to the front of the machine. Use boom down pressure to free the idler end of the machine.

Swing the boom to the rear of the machine. Use boom down pressure to free the sprocket end of the machine.

i08581613

Equipment Lowering with Engine Stopped

SMCS Code: 7000

Machines without a Boom Lowering Control Valve

To lower the boom, place the hydraulic activation control lever in the UNLOCKED position. Move the joystick to the BOOM LOWER position. If the accumulator is still charged, the boom will lower.

If the boom does not lower, the accumulator has been depleted. Use the following method to lower the boom.

WARNING

Be sure no one is under or near the work tools before manually lowering the boom. Keep all personnel away from the boom drop area when lowering the boom with the engine stopped in order to avoid possible personal injury.

WARNING

Personal injury can result from oil under high pressure.

DO NOT allow high pressure oil to contact skin.

Wear appropriate protective equipment while working with high pressure oil systems.

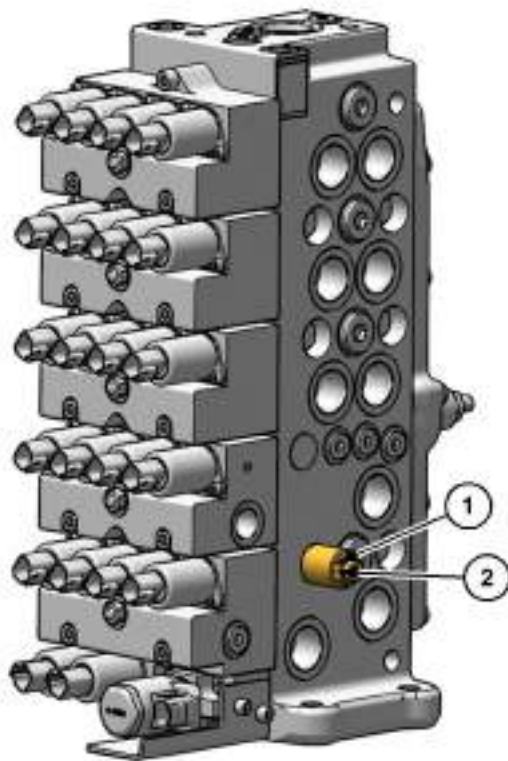


Illustration 435

g06711426

- (1) Locknut
(2) Valve

1. Open the access door on the right side of the machine.
2. While holding valve (2), loosen lock nut (1).
3. Slowly turn boom manual lowering valve (2) to lower the boom.
4. Make sure that the work tool has lowered all the way to the ground. Tighten boom manual lowering valve (2) and lock nut (1).
5. Make the necessary repairs before you operate the machine.

6. Close the access door.

Machines with a Boom Lowering Control Valve

If the engine or the hydraulic system is disabled and the boom is up, the boom can be lowered manually. The boom lowering control valve allows the boom to be manually lowered. The boom lowering control valve is on the head end port on the boom cylinder. Use the following procedure if the machine is equipped with a boom lowering control valve:

WARNING

Boom load may cause cylinder oil pressure to reach relief pressure of the boom lowering control device when the boom is supported by one cylinder. Boom can lower suddenly, causing possible injury or death.

To avoid possible injury or death, be sure no one is under or near the work tool before manually lowering the boom.

Keep all personnel away from the boom drop area when lowering the boom with the engine stopped.

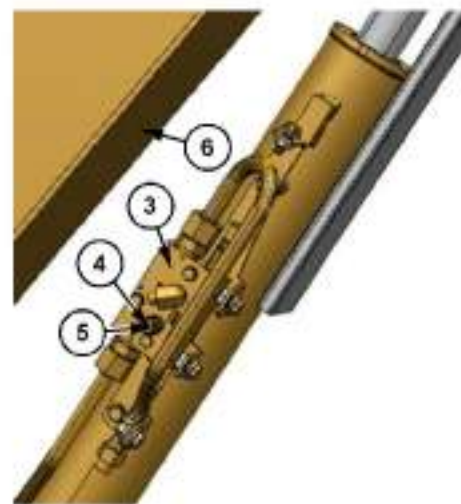


Illustration 436

g06711430

- (3) Boom lowering control valve
(4) Locknut
(5) Set screw
(6) Boom

Note: The boom lowering control valve is at the base of the boom cylinder. The boom lowering control device allows the operator to manually lower the boom if the engine is stopped. The boom lowering control device also prevents a sudden drop of the boom if there is an oil leak in the hydraulic line of the boom.

1. Release the pressure in the hydraulic system.
Refer to Operation and Maintenance Manual, "System Pressure Release" for instructions.
2. Loosen locknut (4).
3. Slowly, turn set screw (5) counterclockwise until the boom begins to lower onto the ground.

Note: Once the boom begins to lower, stop turning set screw (5).

4. After the boom has lowered completely onto the ground, turn set screw (5) back to the original position.
5. Tighten locknut (4).
6. Make any necessary repairs before placing the excavator back into service.

Note: For further information, consult your Cat dealer.

Blade (If Equipped)

To lower the blade, place the hydraulic lockout control in the UNLOCKED position. Move the blade control lever to the BLADE LOWER position. If the accumulator is still charged, the blade will lower.

If the blade does not lower, the accumulator is empty. The blade will need to be blocked in the raised position until the engine can be started again.

Additional instructions can be found in the service manual and/or consult your Cat dealer.

Operating Techniques

i07310863

Operating Technique Information

SMCS Code: 7000

WARNING

Know the maximum height and the maximum reach of your machine. Serious injury or death by electrocution can occur if the machine or the work tools are not kept a safe distance from electrical power lines. Keep a distance of at least 3000 mm (118 inch) plus an additional 10 mm (0.4 inch) for each 1000 volts over 50000 volts.

For safety, one of the following may require a greater distance:

- Local codes
- State codes
- Requirements of the job site

NOTICE

When swinging into a ditch, do not use the ditch to stop the swinging motion. Inspect the machine for damage if the boom is swung into a bank or an object.

Repeated stopping by an object can cause structural damage if the boom is swung into a bank or an object.

With certain boom-stick-bucket combinations, the bucket or worktool can hit the cab and/or the front structure of the machine. Always check for interference when first operating a new bucket or a new work tool. Keep the bucket or work tool away from the cab and away from the front structure during operation.

Whenever the tracks of the machine raise off the ground while digging, lower the machine back to the ground smoothly. **DO NOT DROP OR CATCH IT WITH THE HYDRAULICS.** Damage to the machine can result.

With certain combinations of work tools, the third pedal can have different functions. Always check the function of the third pedal before you use the third pedal.

Know the location of any buried cables. Mark the locations clearly before you dig.

Consult your Cat dealer for special work tool tips that are available for use in severe applications.

Move the machine whenever the position for operating the machine is not efficient. The machine can be moved forward or backward during the operating cycle.

When you operate the machine in close places, utilize the bucket or the other work tool to perform the following functions:

- Pushing the machine
- Pulling the machine
- Lifting the tracks

Use a comfortable travel speed while you operate the machine.

Operating efficiency can be increased by using more than one machine control to perform a task.

Never swing a load over a truck cab or workers.

Position the truck so that material can be loaded from the rear of the truck or from the side of the truck. Load the truck evenly so that the rear axles are not overloaded.

An oversize bucket or a bucket that is equipped with side cutters should not be used in rocky material. These types of buckets slow down the cycle. Damage to the bucket and to other machine components could result.

Coaching Tips



Illustration 437

g06223763

Digging with a stable machine increases productivity. Create a stable work platform.

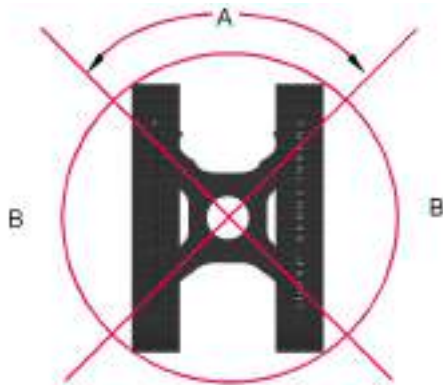


Illustration 438

g06210141

- (A) Most stable dig
(B) Dump

For improved stability: Do not dig over the drives or perpendicular to the tracks.

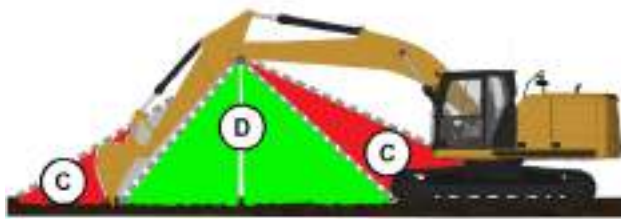


Illustration 439

g06212328

- (C) Weak crowd force
(D) Ideal crowd force

Dig from the top down in layers. Try to have a full bucket by the time the stick is vertical, but do not reach too far with the stick. The most crowd force is generated with the stick +/- 30 degrees from vertical.

Minimize unneeded movement. Only curl/dump the bucket as much as required to hold/dump material.

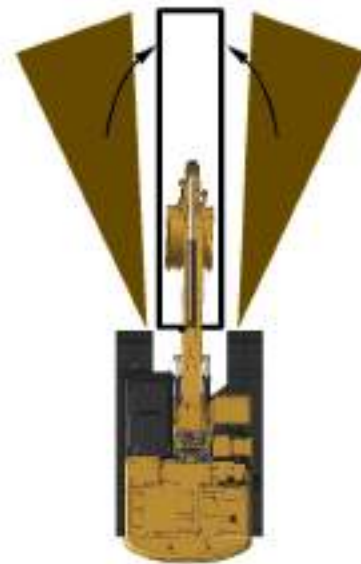


Illustration 440

g06210334

Minimize unneeded movement. During backfilling, start with the material closest to the trench.

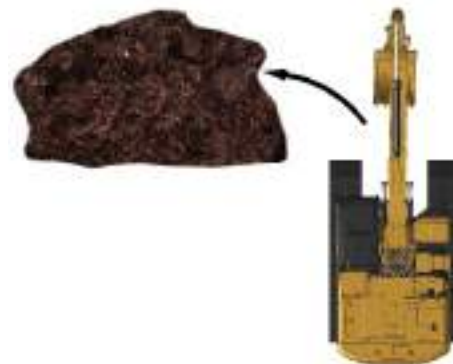


Illustration 441

g06210343

Watch your surroundings. Swing left to dump material for better visibility.

Watch the bucket. The bucket can contact the tracks or the cab.

Concentrate on being smooth, speed will come with practice.

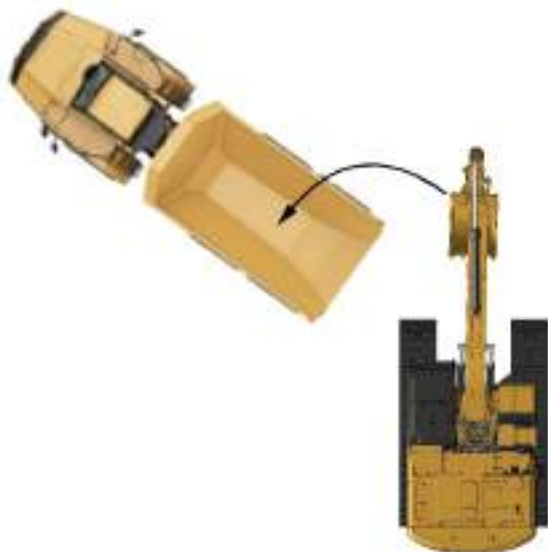


Illustration 442

g06212604

Truck placement will affect efficiency: 45 degree truck loading is more efficient than 90 degree. Spotting the truck too far from the excavator causes excessive motion.

Load from a bench when possible. Bench loading is more efficient.

Restricted Operation



Illustration 443

g06222487

Do not use the swing force to perform the following operations:

- Soil compaction
- Ground breaking
- Demolition

Do not swing the machine while the bucket tips are in the soil.

These operations will damage the boom, the stick, and the work tool and the operations will reduce the life of the equipment.



Illustration 444

g06212594

Do not use the dropping force of the bucket or work tool as a hammer. This action will bring excessive force on the rear of the machine. Possible damage to the machine could result.



Illustration 445

g06222492

If the cylinder is operated at the end of the stroke during operations, excessive force will occur on the stopper on the inside of the cylinder. This practice will reduce the life of the cylinder and structures. To avoid this problem, always leave a small margin of play when the cylinder is operated.



Illustration 446

g06222498

If the stick IN function is operated at full speed with a fully loaded bucket or heavy work tool attachment to the end of the cylinder stroke, excessive force will occur inside the stick cylinder. This action will reduce the life of the stick cylinder. To avoid this problem, always operate a stick IN function with moderate speed towards the end of cylinder stroke.



Illustration 448

g06222505

Do not use the dropping force of the rear of the machine for excavation. This operation will damage the machine.

Operating Precaution



Illustration 447

g06222500

While the bucket is in the ground, do not use the travel force for any excavation. This operation will cause excessive force on the rear of the machine.



Illustration 449

g06222507

NOTICE

Do not allow the machine to swing from the force of traveling when you use the bucket, the stick, or the boom to assist in travel. If the force from traveling causes the machine to swing, damage may occur to the swing motor and to the swing drive.

Do not use the force of the bucket, the stick, or the boom to assist in turning the machine while the machine is traveling. This technique is referred to as "jump steering". This technique will damage the swing motor and the swing brake.



Illustration 450

g06222509

When deep holes are dug, do not lower the boom so that the bottom side of the boom touches the ground.

When deep holes are dug, do not allow the boom to interfere with the tracks.

i07310866

Travel in Water and Mud

SMCS Code: 7000-V6

NOTICE

When working in or around any body of water, around a stream or river, or in conditions of heavy mud, be careful that the swing bearing, the swing drive gear, and the swivel joint do not dip into water, mud, sand, or gravel. If the swing bearing dips into water, mud, sand, or gravel, immediately grease the swing bearing until the used grease leaks from the outer circle of the swing bearing. Failure to carry out this procedure may cause premature wear in the swing bearing.



Illustration 451

g06223764

Depth of water to the center of the track carrier roller.

The following guidelines pertain to travel across water and travel through mud, sand, or gravel.

The machine can travel across a river only under the following conditions:

- The bed of the river is flat.
- The flow of the river is slow.
- The machine dips into the water only to the center of the track carrier roller (dimension A).

NOTICE

Do not allow the fan on the engine to contact the water while the machine travels through the water. Do not allow the fan on the engine to contact the water during a swing while the machine is in the water. Damage to the fan may occur if the fan contacts the water.

While you cross the river, carefully confirm the depth of the water with the bucket. Do not move the machine into an area that has a water depth that is greater than Dimension A.

The machine may sink gradually on soft ground. Therefore, you should frequently check the height of the undercarriage from ground level and the depth of water on the ground.

Check the swing gear by looking through the port for inspection that is on the upper frame. If there is water in the swing gear, contact your Cat dealer for the required maintenance on the swing gear.

After you travel through water, carefully clean the machine to remove any salt, sand, or other foreign matter.

Procedure for Removing the Machine from Water or Mud

NOTICE

Do not allow the machine to swing from the force of traveling when you use the bucket, the stick, or the boom to assist in travel. If the force from traveling causes the machine to swing, damage may occur to the swing motor and to the swing drive.



Illustration 452

g06222519

1. You may not be able to move the machine by using the travel controls only. In this case use both the travel control levers/pedals and the stick to pull the machine out of the water or ground.



Illustration 453

g06222525

2. The machine may slip because of a steep slope. The procedure in Step 1 may not work. In this case, first rotate the upper structure by 180°. Then use both the travel control levers/pedals and the stick to move the machine up the slope.



Illustration 454

g06212337

3. It may be impossible to travel because the bottom of the frame comes into contact with the ground or the undercarriage is clogged with mud or gravel. In this case, operate the boom and the stick together. Raise the track and rotate the track forward and backward to remove the mud and the gravel.

i08530323

Boom, Stick and Bucket Operation

SMCS Code: 7000

Digging



Illustration 455

g06212506

1. Position the stick at a 70 degree angle to the ground.



Illustration 456

g06212513

2. Position the bucket cutting edge at a 120 degree angle to the ground. Maximum breakout force can now be exerted with the bucket.



Illustration 457

g06222533

3. Move the stick toward the cab and keep the bucket parallel to the ground.



Illustration 458

g06222535

4. If the stick stops due to the load, raise the boom and/or perform a curl to adjust the depth of the cut.

5. To apply the greatest force at the cutting edge, decrease the down pressure as you move the stick toward the cab.

6. Maintain a bucket attitude that ensures a continuous flow of material into the bucket.

7. Continue the pass in a horizontal direction so that material peels into the bucket.



Illustration 459

g06222538

8. Close the bucket and raise the boom when the pass has been completed.



Illustration 460

g06223077

9. Engage the swing control when the bucket is clear of the excavation.



Illustration 461

g06223078

10. To dump a load, move the stick outward and open the bucket in a smooth motion.

Lifting Objects

WARNING

To prevent injury, do not exceed the rated load capacity of the machine. If the machine is not on level ground, load capacities will vary.

NOTICE

Damage to bucket cylinder, bucket or linkage could result if slings are placed incorrectly.

There may be local regulations and/or government regulations that govern the use of machines which lift heavy objects. Obey all local and government regulations.

Note: Regional regulations may require the use of an overload warning device and boom and stick lowering control valves during object handling applications.

Contact your Cat dealer for additional information.

Short slings will prevent excessive load swing.



Illustration 462

g06212526

Use the lifting eye that is provided on the linkage to lift objects.

If the lifting eye is used, the connection must be made with a sling or with a shackle.



Illustration 463

g06212532

An unstable condition can exist if a load exceeds the machine load rating or if a heavy load is swung over an end or over a side.



Illustration 464

g06212530

The most stable lifting position is over a corner of the machine.

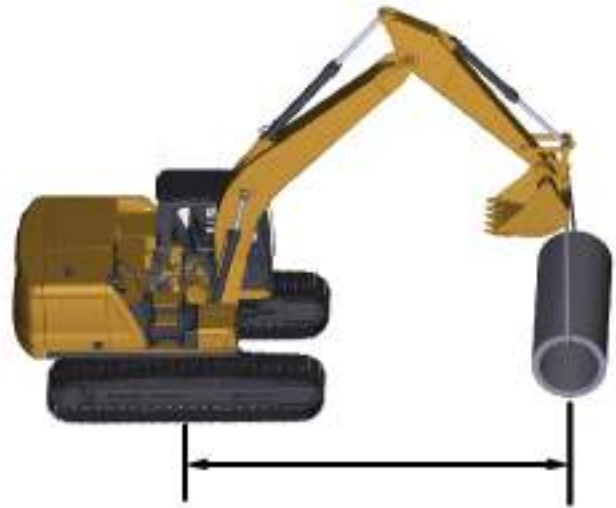


Illustration 466

g06212539

Lift capacity decreases as the distance from the swing centerline is increased.

Machines that are Equipped with a Long Reach Configuration

Machines with a long reach configuration require larger swing drift than standard machines when stopping, because inertial force in time of swing is large. Taking this into account, adjustments are made in timing for applying the swing brakes and speed of swinging.

Machines with a long reach configuration could be damaged and stability of the machine would be adversely affected if a control was suddenly operated, because inertial force of work tool is large.

i07310871



Illustration 465

g06212535

For the best stability, carry a load close to the machine and to the ground.

Shovel Crane Operation

SMCS Code: 6500

WARNING

Operating the machine using the correct method when performing a lifting operation is important. Incorrectly operating the machine may result in serious injury or death. Be sure to observe the following precautions.

Refer to this Operation and Maintenance Manual, "Shovel Crane Control" for additional information regarding machine controls for the shovel crane.

Operate the machine according to the rated load table of your machine. Refer to Operation and Maintenance Manual, "Lifting Capacities (Shovel Crane)" for more information.

Traveling with a Suspended Load



Illustration 467

g06222543

The rated load when traveling while suspending a load is limited to 50 percent of a stationary suspension. Make sure that the suspending load weight is within this limit before starting to move.

When traveling while suspending a load:

1. Make sure that the load is in the front of the machine, and operate within the maximum operating radius of 70° or less.
2. The height below the suspended load shall be 30 cm (12 inch) or less above ground.
3. The traveling speed shall be 3 km/h or less.
4. The traveling ground shall be level and of firm ground.

Traveling while suspending a swinging load may cause the machine to roll over. Wait until the load stops swinging before starting to move.

Dragging of load is prohibited.

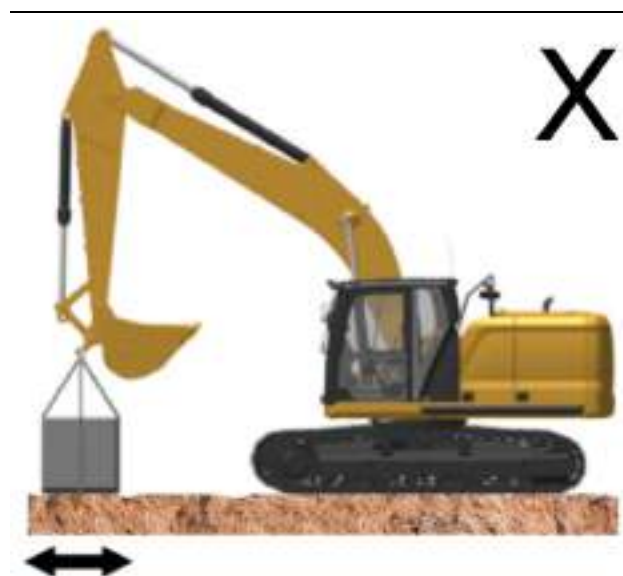


Illustration 468

g06222544

Horizontally, vertically or diagonally dragging a load may cause the machine to roll over, the wire rope to break, or the load to collapse, resulting in personal injuries.

Be sure to lift the load directly above.

Lifting operation on a slope is prohibited.



Illustration 469

g06222549

Performing an operation on a slope of 5° or more and on a soft ground may cause the machine to roll over or the load to collapse, resulting in personal injuries. Make sure that the machine is on level and firm ground before performing the operation.

Place an iron plate or other appropriate material on a soft ground.

Use in non-standard specification conditions is prohibited.



Illustration 470

g06222553

Use of the machine in non-standard specification conditions is prohibited as the lifting load and the operation range cannot be accurately displayed.

Sudden lifting operation is prohibited.



Illustration 471

g06222555

WARNING

Suddenly lifting a suspended load will apply an abnormal force on the hook and cause the hook to break, resulting in serious injuries or death. Never perform such an operation.

Sudden swinging operation while suspending a load is prohibited.



Illustration 472

g06222561

WARNING

Never perform a swinging operation suddenly while suspending a load. Doing so may cause the suspended load to be pulled with a centrifugal force, causing the machine to roll over.

Never suddenly swing, and stop or lower the hook suddenly, as doing so may cause the wire rope to come off the hook latch.

Factors that cause the wire rope to come off

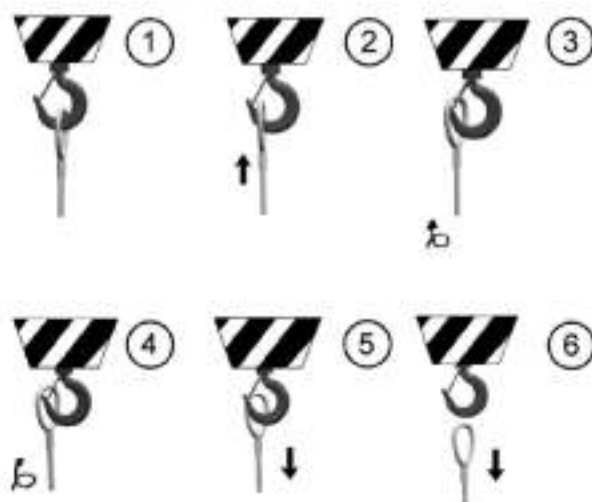


Illustration 473

g06222768

(1) Wire rope in normal condition.

- (2) The wire rope gets raised when the hook is lowered too suddenly.
- (3) If the wire rope gets twisted and gets untwisted in the direction of the arrow, the wire rope will go beyond the tip of the hook.
- (4) The wire rope goes around the back of the hook.
- (5) The hook goes up or the wire rope goes down.
- (6) The wire rope simply falls off.

Diagonal dragging operation is prohibited.



Illustration 474

g06222769

WARNING

Diagonal dragging operation applies an abnormal force on the hook and may cause the hook to break, resulting in serious injuries or death. Never perform such an operation.

Leaving the seat while suspending a load is prohibited.



Illustration 475

g06222773

Do not leave the operator seat while a load is being suspended. The load may fall, resulting in personal injuries. Do not allow a slinging operator or another worker under the load.

Temporarily stopping the lifting operation.



Illustration 476

g06191918

When there is a large area to stop the machine, fully retract the stick cylinder and slowly lower the boom until the bucket contacts the ground.

Note: Make sure that the lifting tool does not get caught under the bucket.



Illustration 477

g06191883

When there is small area to stop the machine, press the shovel crane button on the switch panel in order to disable the operation. Position the stick so that it is perpendicular to the ground and slowly lower the boom until the bucket contacts the ground.

Note: Make sure that the lifting tool does not get caught under the bucket.

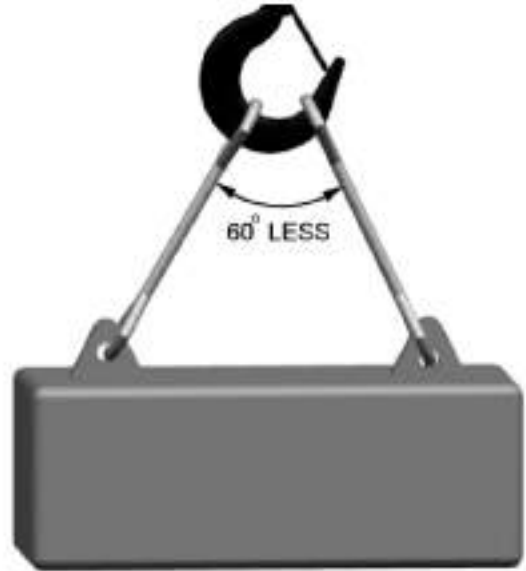


Illustration 479

g06222775

As a rule, try to set the wire rope suspension angle at 60° or below.

Keep out of the area under a suspended load.



Illustration 478

g06191925

Hook in latched position

Be sure to store the hook during a bucket use. Otherwise, the bucket, the hook, and other parts may be damaged.

Wire rope suspension angle



Illustration 480

g06222777

Never allow anyone to enter an area under a suspended load.

Lifting operation with a quick coupler device is prohibited.

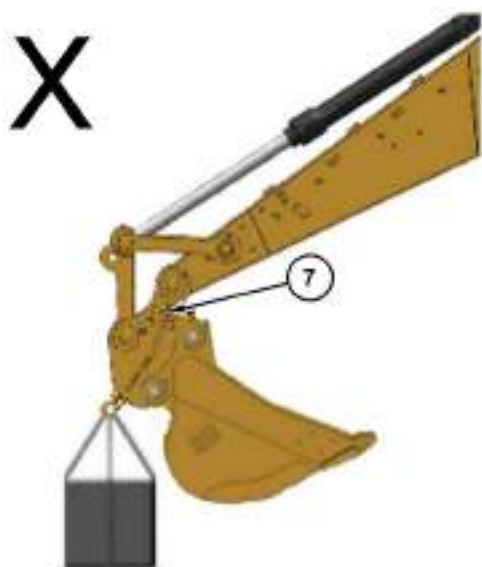


Illustration 481

g06222779

(7) Quick Coupler

Accurate lifting load and operation range cannot be displayed in a lifting operation equipped with a quick coupler. Furthermore, never perform a lifting operation with a quick coupler attached, as doing so causes the hook to contact the quick coupler, applies an abnormal force on the hook, and causes the hook to become damaged and/or the machine to roll over.

i07329624

Quick Coupler Operation (Pin Lock (If Equipped))

SMCS Code: 6129; 6522; 7000

Installation

NOTICE

The vibration caused by extensive use of a hydraulic hammer as well as the added weight of certain demolition tools such as shears, crushers, and pulverizers may cause premature wear and decreased service life of the coupler.

Be sure to inspect the coupler daily for cracks, bent components, or wear when operating with any of the above work tools.

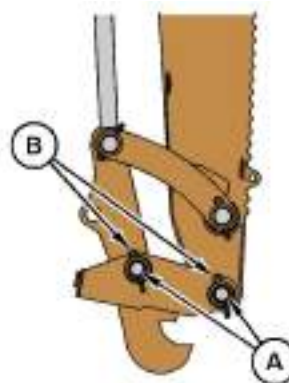


Illustration 482

g06286231

1. The quick coupler comes with two linkage pins (A) for installation on the machine. Lubricate the linkage pins (A) and pin bores before assembly on the machine.
2. Install the coupler and the linkage pins (A).
3. Install the cotter pins (B).

Securing the Work Tool

WARNING

Improper attachment of work tools could result in injury or death.

Do not operate this machine until you have positive indication that the coupler pins are fully engaged. Check for engagement by:

1. Position the work tool on the ground.
2. Apply slight down pressure on the work tool.
3. Retract and extend the stick cylinder in order to push the work tool against the ground. Visually confirm that there is no movement between the coupler and the work tool.

Position the work tool on a level surface.

1. Start the engine.

Operation Section
Pin Lock (If Equipped)

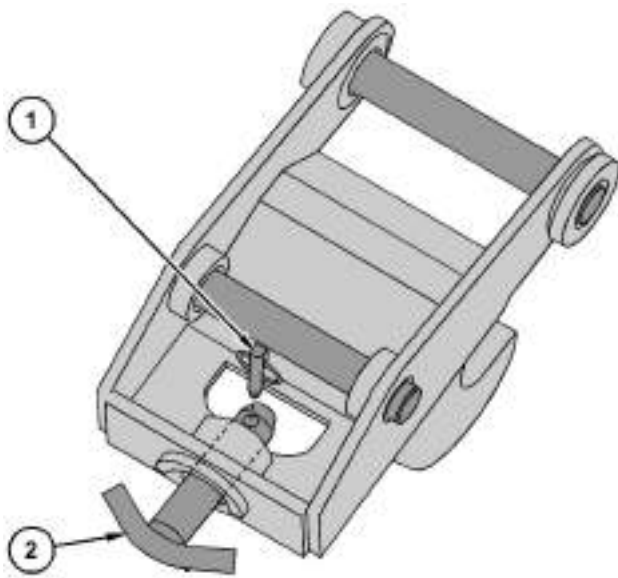


Illustration 483

g06286235

2. Remove the lock pin (1) and quick coupler pin (2) from the quick coupler.
3. Retract the work tool cylinder. Position the open hook on the quick coupler over the top pivot pin of the work tool.

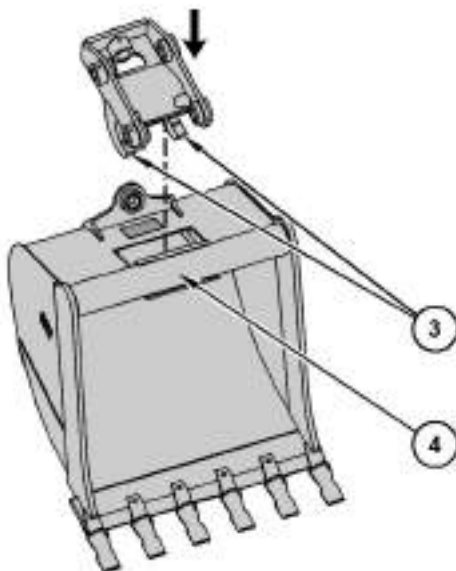


Illustration 484

g06286248

4. Move the stick inward and lower the stick until the hooks (3) engage the top pivot pin (4) of the work tool.

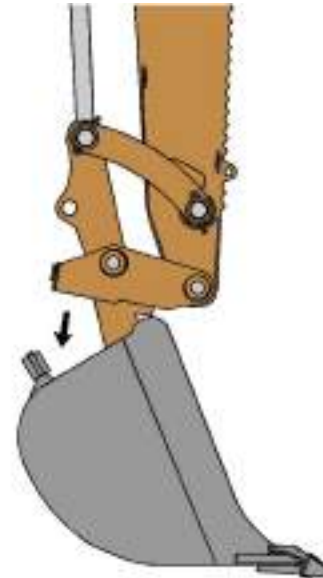


Illustration 485

g06286262

5. Extend the work tool cylinder to rotate the quick coupler toward the work tool. Line up the pin receiver of the work tool with the pin receiver of the quick coupler. Stop the engine.
6. Fully insert the quick coupler pin (2) into the pin receiver of the quick coupler and the work tool.

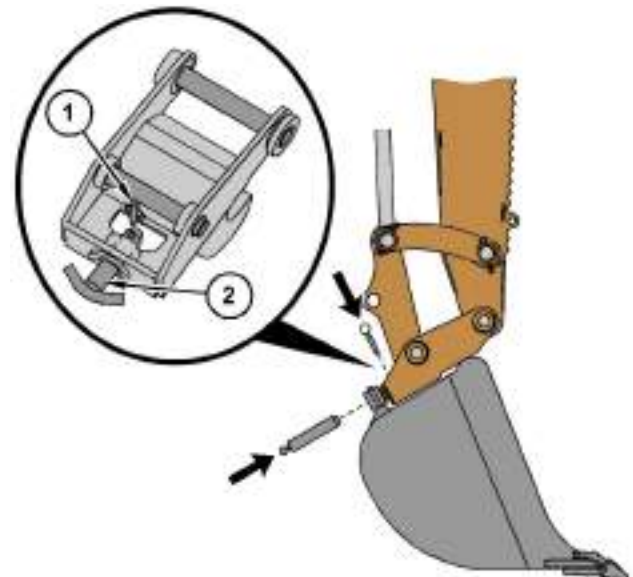


Illustration 486

g06286266

7. Fully insert the lock pin (1) into the quick coupler pin (2).
8. To verify the engagement of the work tool, perform the following procedure.

- Start the engine. Retract and extend the stick cylinder to push the work tool against the ground.
- Ensure that there is no movement between the work tool and the quick coupler.
- Visually confirm the engagement of the work tool.

Releasing the Work Tool



WARNING

Disengaging the coupler pins will release the work tool from control of the operator.

Serious injury or death may result from disengaging the work tool when it is in an unstable position or carrying a load.

Place the work tool in a safe position before disengaging the coupler pins.

- Lower the work tool onto a level surface. Make sure that the work tool is in full contact with the ground.
- Remove the lock pin from the quick coupler pin.
- Remove the quick coupler pin from the quick coupler.
- Rotate the quick coupler out of the top pivot pin of the work tool.

i07329727

Quick Coupler Operation (Mechanical Pin Grabber Quick Coupler (If Equipped))

SMCS Code: 6129; 6522; 7000

NOTICE

The vibration caused by extensive use of a hydraulic hammer as well as the added weight of certain demolition tools such as shears, crushers, and pulverizers may cause premature wear and decreased service life of the coupler.

Be sure to inspect the coupler daily for cracks, bent components, or wear when operating with any of the above work tools.

General Operation

The quick coupler is used to change work tools, with minimal effort on the operators part. The quick coupler can be used with a broad range of buckets and work tools. Each work tool must have a set of pins in order for the quick coupler to work properly.

The work tools are held onto the quick coupler by two independent locking mechanisms. The work tool rear pin locking mechanism consists of a wedge that is actuated by a mechanical threaded actuator. This actuator provides a positive lock and is adjustable to ensure a rigid, tight interface between the work tool and the quick coupler. Additionally, a fully independent locking system exists on the front pin of the work tool. This system is spring applied, ensuring that the work tool is locked immediately after the front pin of the work tool is seated. Always ensure that both locking mechanisms are working properly before using the quick coupler.

Installation

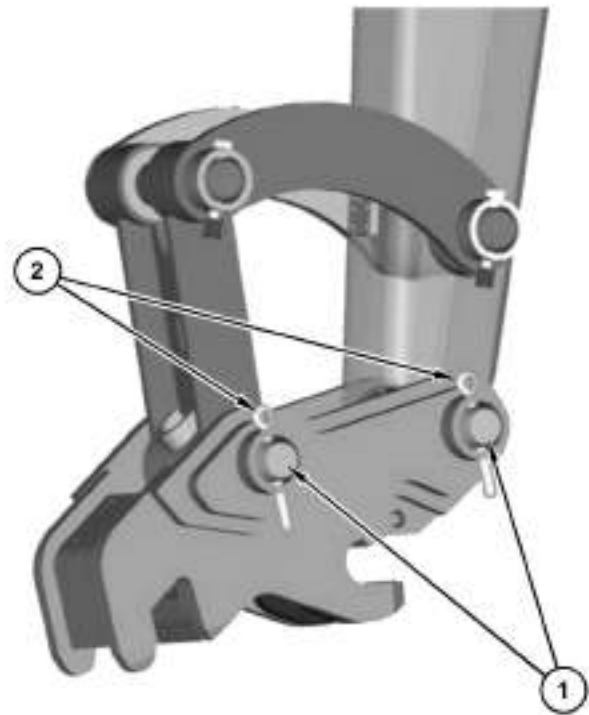


Illustration 487

g06286309

- The quick coupler comes with two linkage pins (1) for installation on the machine. Lubricate the linkage pins (1) and pin bores before assembly on the machine.
- Install the coupler and the linkage pins (1).

3. Install the cotter pins (2).

Coupling the Work Tool

WARNING

Improper attachment of work tools could result in serious injury or death.

Do not operate this machine until you have positive indication that the locking mechanisms are fully engaged. Check for engagement by:

- Visually confirm the engagement of the work tool. Ensure that both the front and rear pin locking mechanisms for the work tool are locked and secure the work tool to the quick coupler.
- Visually confirm positive indication of the ISO Engagement indicator, if equipped.
- Retract the bucket cylinder and drag the work tool on the ground.
- Visually confirm that there is no movement between the work tool and the quick coupler.

WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

NOTICE

With certain work tool combinations, including quick couplers, the work tool can hit the cab or the front of the machine. Always check for interference when first operating a new work tool.

1. Start the engine. Retract the bucket cylinder, positioning the quick coupler front locking mechanism over the front pin of the work tool.

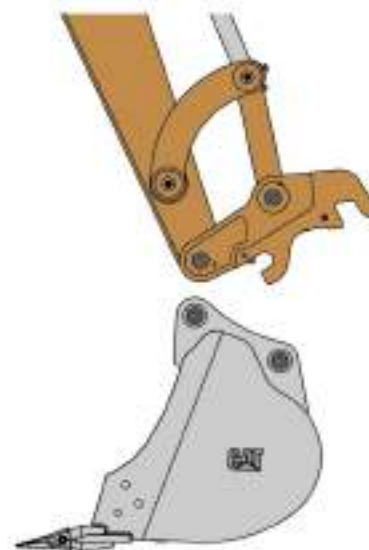


Illustration 488

g06286320

2. Align the quick coupler front locking mechanism over the front pin of the work tool. Extend the stick cylinder until the automatic front locking mechanism of the quick coupler engages and secures the front pin of the work tool.



Illustration 489

g06286326

3. Extend the bucket cylinder to rotate the quick coupler toward the work tool until the quick coupler contacts the rear pin of the work tool. Position the work tool so that the work tool is slightly above the ground, with the front pin of the work tool higher than the rear pin of the work tool. If the work tool is a bucket, verify that the cutting edge is slightly higher than the bottom of the bucket. Stop the engine.

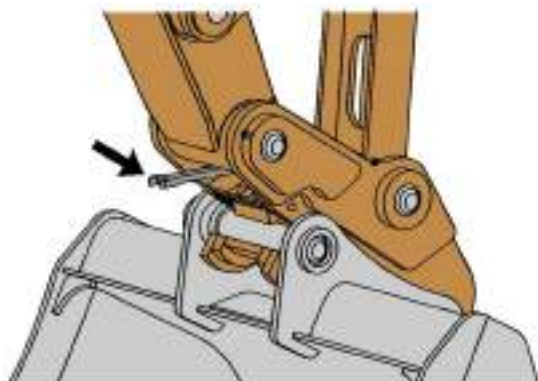


Illustration 490

g06286366

4. Using the supplied wrench, if equipped, and insert the ratcheting end onto the hex drive mechanism. Turn the ratchet in a clockwise direction to tighten the rear locking mechanism.
5. To verify the engagement of the work tool, perform the following procedure:
 - a. Visually confirm the engagement of the work tool. Ensure that both the work tool front and rear pin locking mechanisms are locked and securing the work tool to the coupler.
 - b. Retract the bucket cylinder and drag the work tool on the ground.
 - c. Visually confirm that there is no movement between the work tool and the quick coupler.

Uncoupling the Work Tool

WARNING

Place the work tool or bucket in a safe position before disengaging the coupler. Disengaging the coupler will release the work tool or bucket from control of the operator.

Serious injury or death may result from disengaging the work tool or bucket when it is in an unstable position or carrying a load.

NOTICE

Auxiliary hoses for work tools must be disconnected before the Hydraulic Quick Coupler is disengaged.

Pulling the work tool with the auxiliary hoses could result in damage to the host machine or the work tool.



Illustration 491

g06286326

1. To unlock the coupler, position the work tool so that the work tool is slightly above the ground, with the front pin of the work tool higher than the rear pin of the work tool. If the work tool is a bucket, verify that the cutting edge is slightly higher than the bottom of the bucket. Other work tools may need to be lowered to the ground. Stop the engine.

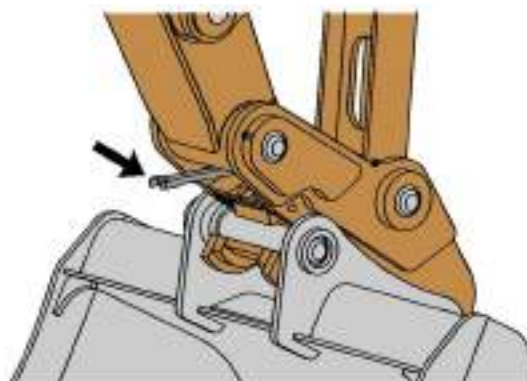


Illustration 492

g06286366

2. Using the supplied wrench, if equipped, and insert the ratcheting end onto the hex drive mechanism. Turn the wrench in a counterclockwise direction to release the rear locking mechanism.

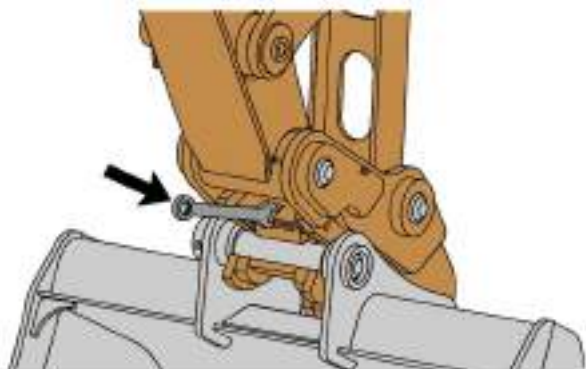


Illustration 493

g06286373

3. Using the supplied wrench, if equipped, and insert the open wrench end onto the front lock actuator. Push down on the wrench to rotate the front lock into an unlocked, detent position.
4. Start the engine. Lower the work tool to the ground.
5. Retract the bucket cylinder to rotate the quick coupler away from the work tool until the quick coupler disengages the rear pin of the work tool.
6. Move the stick away from the work tool to release the quick coupler from the front pin of the work tool. The front locking mechanism will automatically reset. The quick coupler is now ready to engage the next work tool.

Quick Coupler use with a Bucket that is Reversed

NOTICE

When some Cat buckets are used in the reverse position, it can be more difficult to couple the bucket and uncouple the bucket than in the normal position.

Care must be taken to ensure that the position of the boom, stick, and bucket are aligned to ensure smooth coupling. The coupler must be in position between the bucket bosses.



Illustration 494

g06286375

1. Follow the same steps for coupling and uncoupling the work tool to operate the coupler with a bucket that is reversed. Refer to "Coupling the Work Tool" and "Uncoupling the Work Tool" for the proper procedure.

i07330204

Quick Coupler Operation (Dual Lock Tilt Coupler (If Equipped))

SMCS Code: 6129; 6522; 7000

The quick coupler is used to change work tools while the operator remains in the cab. The quick coupler can be used with a broad range of buckets and work tools. Each work tool must have a set of pins in order for the quick coupler to work properly. The Dual Lock Tilt Quick Coupler also allows the work tool to rotate through a 180 degree arc.

The work tools are held onto the quick coupler by two independent locking mechanisms. The work tool rear pin locking mechanism consists of a hydraulically driven wedge. If pressure is lost, a check valve in the hydraulic cylinder traps oil to ensure that the lock remains in place. Additionally, a fully independent locking system exists on the front pin of the work tool. This system is spring applied and hydraulically released, ensuring that the work tool is locked immediately after the front pin of the work tool is seated. Always ensure that the hydraulic system and the locking mechanisms are working properly before using the quick coupler.

⚠ WARNING

Improper attachment of work tools could result in serious injury or death.

Do not operate this machine until you have positive indication that the locking mechanisms are fully engaged. Check for engagement by:

- **Visually confirm the engagement of the work tool. Ensure that both the front and rear pin locking mechanisms for the work tool are locked and secure the work tool to the quick coupler.**
- **Visually confirm positive indication of the ISO Engagement indicator, if equipped.**
- **Retract the bucket cylinder and drag the work tool on the ground.**
- **Visually confirm that there is no movement between the work tool and the quick coupler.**

⚠ WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

⚠ WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

NOTICE

Before beginning installation, operating of machine, or repair of the Dual Lock Tilt Coupler:

The Dual Lock Tilt Coupler should only be used to perform tasks for which it was designed. Abusing the product and/or using it for purposes for which it was not intended can expose the operator and others to hazards as well as result in damage to the Dual Lock Tilt Coupler, carrier and/or other attachments.

Modification to the Dual Lock Tilt Coupler is done at the owner's risk and may void warranty.

NOTICE

The buzzer will not sound when the switch is in the lock position. The position of the switch does not confirm that the quick coupler locking system is properly engaged with the attachment pins. Visually confirm positive indication of the ISO Engagement Indicator, if equipped. A physical test is required by dragging the work tool on the ground to confirm that the coupler pins are engaged.

NOTICE

Always confirm that the buzzer sounds when the switch is in the unlock position. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer.

NOTICE

With certain work tool combinations, including quick couplers, the work tool can hit the cab or the front of the machine. Always check for interference when first operating a new work tool.

Quick Coupler Operation

Refer to Operation and Maintenance Manual, "Quick Coupler Operation (Hydraulic Pin Grabber Quick Coupler)" for coupling and uncoupling the work tools.



Illustration 495

g06286461

Actuate Tilt Coupler to the Right (1) – Push the thumb wheel on the right joystick upward to tilt the coupler to the right.

Actuate Tilt Coupler to the Left (2) – Push the thumb wheel on the right joystick downward to tilt the coupler to the left.

DO NOT actuate angling of the coupler while in the process of digging. Angle actuation should be performed while the coupler is in the air and not engaged in material.

DO NOT operate the Dual Lock Tilt Coupler unless it is fully connected to a host machine. Auxiliary lines must be connected at all times to provide pressure relief.

i07518343

Quick Coupler Operation (Hydraulic Pin Grabber Quick Coupler (If Equipped))

SMCS Code: 6129; 6522; 7000

NOTICE

The vibration caused by extensive use of a hydraulic hammer as well as the added weight of certain demolition tools such as shears, crushers, and pulverizers may cause premature wear and decreased service life of the coupler.

Be sure to inspect the coupler daily for cracks, bent components, or wear when operating with any of the above work tools.

General Operation

The quick coupler is used to change work tools while the operator remains in the cab. The quick coupler can be used with a broad range of buckets and work tools. Each work tool must have a set of pins in order for the quick coupler to work properly.

The work tools are held onto the quick coupler by two independent locking mechanisms. The locks are controlled through a menu on the monitor system. Refer to Operation and Maintenance, "Monitoring System" for more information. The work tool rear pin locking mechanism consists of a hydraulically driven wedge. If pressure is lost, a check valve in the hydraulic cylinder traps oil to ensure that the lock remains in place. Additionally, a fully independent locking system exists on the front pin of the work tool. This system is spring applied and hydraulically released, ensuring that the work tool is locked immediately after the front pin of the work tool is seated. Always ensure that the hydraulic system and the locking mechanisms are working properly before using the quick coupler.

Installation

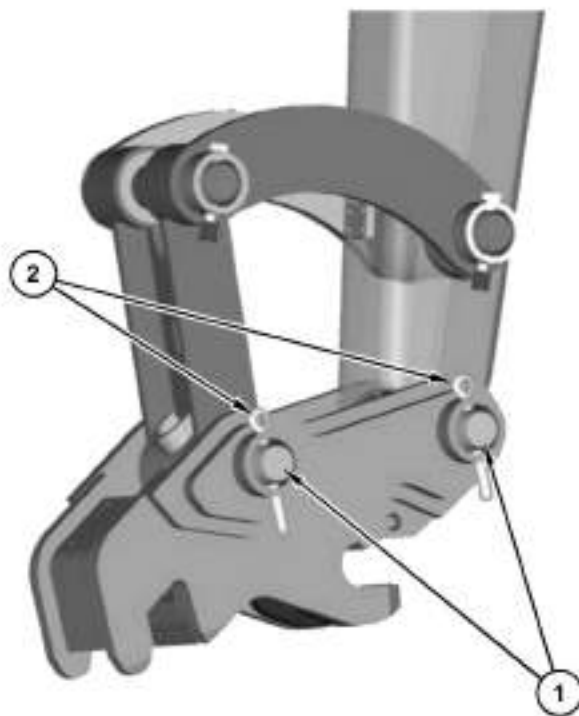


Illustration 496

g06286309

1. The quick coupler comes with two linkage pins (1) for installation on the machine. Lubricate the linkage pins (1) and pin bores before assembly on the machine.
2. Install the coupler and the linkage pins (1).

3. Install the cotter pins (2).

Quick Coupler Operation

Coupling the Work Tool

WARNING

Improper attachment of work tools could result in serious injury or death.

Do not operate this machine until you have positive indication that the locking mechanisms are fully engaged. Check for engagement by:

- Visually confirm the engagement of the work tool. Ensure that both the front and rear pin locking mechanisms for the work tool are locked and secure the work tool to the quick coupler.
- Visually confirm positive indication of the ISO Engagement indicator, if equipped.
- Retract the bucket cylinder and drag the work tool on the ground.
- Visually confirm that there is no movement between the work tool and the quick coupler.

WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

NOTICE

The buzzer will not sound when the switch is in the lock position. The position of the switch does not confirm that the quick coupler locking system is properly engaged with the attachment pins. Visually confirm positive indication of the ISO Engagement Indicator, if equipped. A physical test is required by dragging the work tool on the ground to confirm that the coupler pins are engaged.

NOTICE

Always confirm that the buzzer sounds when the switch is in the unlock position. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer.

NOTICE

With certain work tool combinations, including quick couplers, the work tool can hit the cab or the front of the machine. Always check for interference when first operating a new work tool.

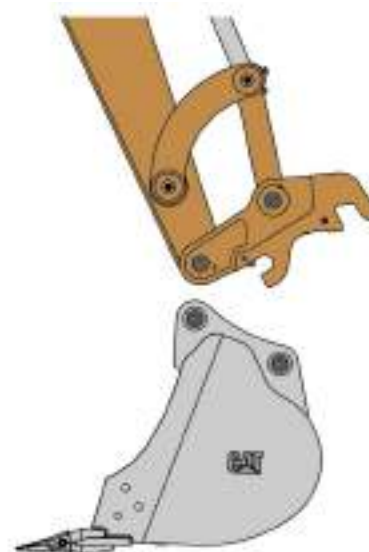


Illustration 497

g06286320

1. Align the quick coupler front locking mechanism over the front pin of the work tool. Extend the stick cylinder until the automatic front locking mechanism of the quick coupler engages and secures the front pin of the work tool.



Illustration 498

g06286326

2. Select "UNLOCK WEDGE" on the monitor display and confirm that the buzzer is sounding with an intermittent pattern of one beep per second. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer. Extend the bucket cylinder until the rear of the quick coupler is rotated toward the work tool and contacts the work tool rear pin. Position the work tool so that it is slightly above the ground, with the front pin of the work tool higher than the rear pin of the work tool. If the work tool is a bucket, verify that the cutting edge is slightly higher than the bottom of the bucket.
3. Select "LOCK WEDGE" on the monitor display and the beep will stop and the rear lock (wedge) will slide back into place. The monitor will return to the home screen.

WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

4. To verify the engagement of the work tool, perform the following procedure:

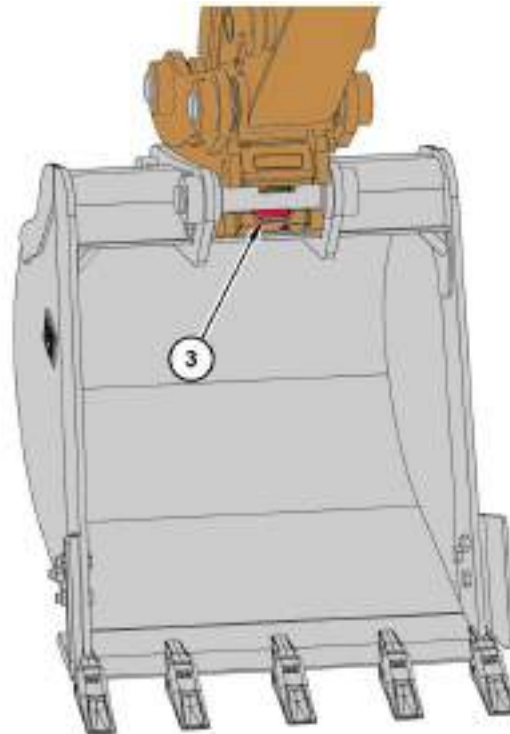


Illustration 499

g06286450

- a. Visually confirm the engagement of the work tool. Ensure that both the work tool front and rear pin locking mechanisms are locked and securing the work tool to the coupler.
- b. Visually confirm positive indication of the ISO Engagement indicator (3), if equipped.
- c. Retract the bucket cylinder and drag the work tool on the ground.
- d. Visually confirm that there is no movement between the work tool and the quick coupler.

NOTICE

Back drag the work tool on the ground to ensure the quick coupler is properly locked.

Do Not strike the work tool on the ground to ensure the quick coupler is properly locked. Striking the work tool on the ground will result in damage to the coupler cylinder.

Uncoupling the Work Tool

WARNING

Place the work tool or bucket in a safe position before disengaging the coupler. Disengaging the coupler will release the work tool or bucket from control of the operator.

Serious injury or death may result from disengaging the work tool or bucket when it is in an unstable position or carrying a load.

NOTICE

Auxiliary hoses for work tools must be disconnected before the Hydraulic Quick Coupler is disengaged.

Pulling the work tool with the auxiliary hoses could result in damage to the host machine or the work tool.

NOTICE

Always confirm that the buzzer sounds when the switch is in the unlock position. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer.



Illustration 500

g06286326

1. To unlock the coupler, position the work tool so that it is slightly above the ground, with the front pin of the work tool higher than the rear pin of the work tool. If the work tool is a bucket, verify that the cutting edge is slightly higher than the bottom of the bucket.
2. Press the button for the "UNLOCK WEDGE" . Confirm that the buzzer is sounding with an intermittent pattern of one beep per second. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer.

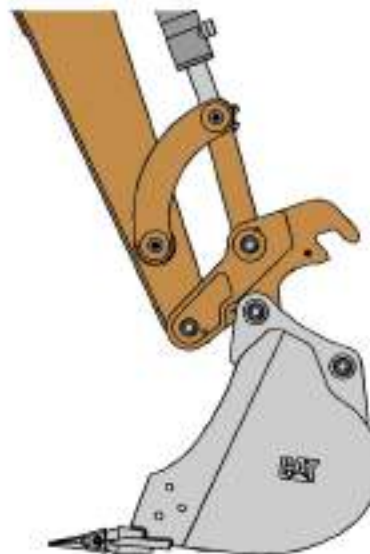


Illustration 501

g06286443

3. Retract the bucket cylinder, ensuring that the work tool rear pin locking mechanism is unlocked. The rear of the quick coupler should be rotated away from the work tool. Place the work tool in a stable and safe position on the ground.
4. Select "UNLOCK FRONT" on the monitor display. Confirm that the buzzer is sounding with an intermittent pattern of two beeps per second. The work tool front pin locking mechanism will unlock. This locking mechanism will remain unlocked for 10 seconds.



Illustration 502

g06286320

5. Within the 10-second time period, retract the stick cylinder until the quick coupler is disengaged from the work tool. Ensure that the work tool is in a stable and safe storage position on the ground.
6. Select "LOCK WEDGE" on the monitor display and the beep will stop and the rear lock (wedge) will slide back into place. The monitor will return to the home screen.

Coupling a Bucket that is Reversed

NOTICE

When some Cat buckets are used in the reverse position, it can be more difficult to couple the bucket and uncouple the bucket than in the normal position.

Care must be taken to ensure that the position of the boom, stick, and bucket are aligned to ensure smooth coupling. The coupler must be in position between the bucket bosses.



Illustration 503

g06286375

1. Follow the same steps for coupling and uncoupling the work tool to operate the coupler with a bucket that is reversed. Refer to "Coupling the Work Tool" and "Uncoupling the Work Tool" for the proper procedure.

i08509311

Quick Coupler Operation (CW (Single Lock) Quick Coupler (If Equipped))

SMCS Code: 6129; 6522; 7000

NOTICE

The vibration caused by extensive use of a hydraulic hammer and the added weight of certain demolition tools such as shears, crushers, and pulverizers may cause premature wear and decreased service life of the coupler.

Be sure to inspect the coupler daily for cracks, bent components, or wear when operating with any work tools.

General Operation

The CW coupler is used to change work tools quickly. The quick coupler can be used with a broad range of buckets and work tools.

Installation Procedure

WARNING

Personal injury or death can result from improperly checking for a leak.

Always use a board or cardboard when checking for a leak. Escaping air or fluid under pressure, even a pin-hole size leak, can penetrate body tissue causing serious injury, and possible death.

If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

Note: Hydraulic oil may be trapped in the lines if the hydraulic lines are plugged or if the hydraulic lines are connected. The trapped oil may be under pressure. Use care when you open the hydraulic lines.

Note: The quick coupler must be controlled by the excavator's hydraulic system.

Perform this procedure as described in the following steps:

Ensure that the quick coupler is compatible with the host machine. For more information, consult your Caterpillar dealer.

To provide a stable operating condition, the host machine must be on flat, level ground. The host machine must be blocked to prevent inadvertent movement.

The quick coupler must be supported to prevent inadvertent movement. Position the quick coupler to prevent unnecessary climbing and unnecessary bending.

Optimum alignment of the bores will prevent the use of unnecessary force when you install the pins. Never check the alignment of the bores with your fingers. Use the proper tools to check the alignment of the bores.

A retaining pin can fly out when the retaining pin is struck with force. The area must be clear of people when you drive retaining pins.

When you strike objects, chips and other debris can fly. Before you strike any object, make sure that no one can be injured by the flying debris. Always wear appropriate PPE, including safety glasses.

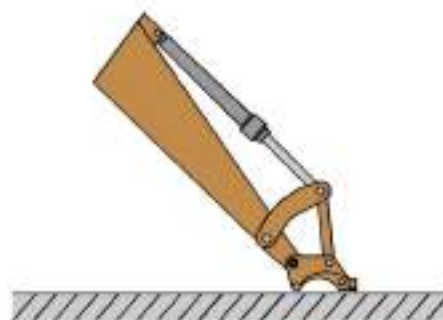


Illustration 504

g06286468

1. Position the quick coupler on the ground in front of the host machine. Make sure that the wedge faces away from the host machine.
2. Install the mounting pins.
3. Lubricate all the mounting points.
4. Connect the hydraulic lines to the quick coupler (if equipped).
5. After mounting the quick coupler on the excavator, or after working on the quick coupler hydraulic system, it is necessary to purge all the air from the cylinder and the control system. Refer to the "Hydraulic System Air Purge" for additional information.

Quick Coupler Removal Procedure

1. Lay the quick coupler flat on the ground.
2. Release the pressure from the hydraulic lines (if equipped).
 - a. Extend the wedge to the UNLOCKED position.
 - b. Stop the engine on the host machine. Turn the ignition to OFF.
 - c. Turn the ignition to the ON position without starting the engine.
 - d. Move the hydraulic control levers repeatedly through the full range of motion. This will release any pressure that may be present in the hydraulic system. Actuate the quick coupler using the machine control monitor. Cycle through locking and unlocking the quick coupler several times to release trapped hydraulic pressure within the quick coupler circuit.
 - e. The wedge should begin to move inward due to the spring force.

- f. Turn the ignition to the OFF position.
- g. Release the pressure in the host machine's hydraulic tank.

WARNING

Personal injury or death can result from improperly checking for a leak.

Always use a board or cardboard when checking for a leak. Escaping air or fluid under pressure, even a pin-hole size leak, can penetrate body tissue causing serious injury, and possible death.

If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

3. Place a suitable container below the hydraulic fittings to catch any hydraulic oil that may escape. Slowly disconnect the hydraulic lines. Plug the ends of the hydraulic lines or connect the hydraulic lines.
4. Dispose of the hydraulic oil in a suitable manner.
5. Remove the pins from the quick coupler.

Daily Inspection

WARNING

Personal injury or death can result from improperly checking for a leak.

Always use a board or cardboard when checking for a leak. Escaping air or fluid under pressure, even a pin-hole size leak, can penetrate body tissue causing serious injury, and possible death.

If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.

NOTICE

Accumulated grease and oil on a work tool is a fire hazard.

Remove debris with steam cleaning or high pressure water at any time a significant quantity of oil is spilled on the work tool.

Note: If major repairs to the quick coupler are required, consult your Caterpillar dealer.

1. For the maximum service life of the work tool, make a thorough daily inspection before you mount a work tool to the host machine.
2. Inspect the quick coupler for the following conditions: loose bolts, oil leaks, broken parts, missing parts and cracked components. Check the overall condition of the quick coupler. Check the overall condition of the hydraulic system.
3. Inspect the warning signs and labels. Replace warning signs or labels that are missing. Replace warning signs or labels when you cannot read the warning signs or labels.
4. If equipped, inspect the condition of the hydraulic lines and the hydraulic fittings.
5. Check the mounting pins for the quick coupler.
6. Inspect the bolts for the wedge when you remove the wedge.
7. Check the lifting device, if equipped. If damage is present, do not use the lifting device. Contact your Caterpillar dealer for repairs.
8. Perform all repairs before you put the quick coupler into service.
9. Perform an UNLOCK and LOCK cycle of the wedge to provide a smooth operation of the wedge. This procedure is for the quick coupler with hydraulic coupling only.

Operation

Coupling the Work Tool

WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

⚠ WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

Reference: For more information on connecting the quick coupler to the host machine, contact your dealer for special instructions.

Quick Coupler with Hydraulic Coupling**⚠ WARNING**

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

NOTICE

The buzzer will not sound when the switch is in the lock position. The position of the switch does not confirm that the quick coupler locking system is properly engaged with the attachment pins. Visually confirm positive engagement of the locking system. A physical test is required by dragging the work tool on the ground to confirm that the coupler is properly engaged with the work tool.

NOTICE

Always confirm that the buzzer sounds when the switch is in the unlock position. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer.

NOTICE

With certain work tool combinations, including quick couplers, the work tool can hit the cab or the front of the machine. Always check for interference when first operating a new work tool.

1. Verify that the wedge is in the unlocked position. If the wedge is not extended, extend the bucket cylinder. Then, extend the wedge.

⚠ WARNING

Ensure that the wedge is extended before coupling the work tool. Severe damage may occur. Failing to extend the wedge before coupling the work tool could result in a poorly coupled work tool or an uncoupled work tool.

Serious injury or death may result from an improperly coupled work tool.

2. Ensure that the mounting bracket of the work tool is in line with the host machine. The work tool must be facing the host machine. The mounting bracket must be at the top of the work tool.

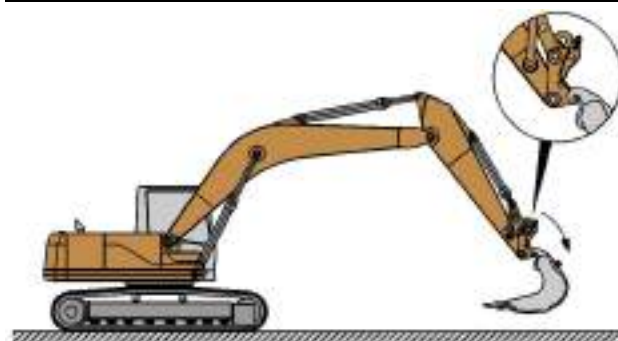
Coupling a Bucket

Illustration 505

g06286473

1. Hook the forward pivot of the quick coupler into the hooks of the mounting bracket.

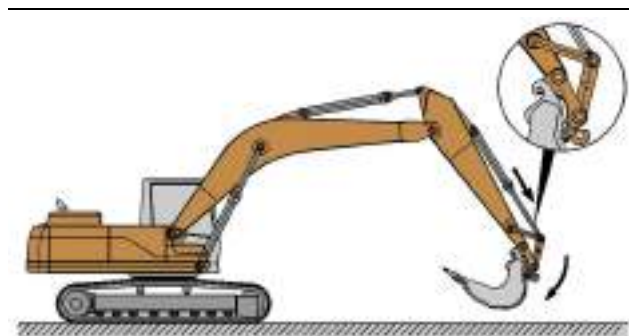


Illustration 506

g06286475

2. Select "UNLOCK" on the monitor display and confirm that the buzzer is sounding with an intermittent pattern of one beep per second. If no sound is heard while in this condition, ensure that the work tool is placed in a stable and safe position. Turn off the engine. Consult your Cat dealer. Extend the bucket cylinder until the coupler contacts the work tool.
3. Select "LOCK" on the monitor display and the beep will stop and the rear lock (wedge) will slide back into place. The monitor will return to the home screen.
4. Visually confirm that the wedge has engaged the work tool hook and is properly locked. If this visual confirmation cannot be performed from the machine cab due to obstruction, lighting, etc., place the machine in a safe state, exit the cab, and visually confirm proper engagement at the quick coupler.

WARNING

Inspect the quick coupler engagement before operating the machine.

Serious injury or death may result from improperly engaged coupler.

NOTICE

Visually confirm that the quick coupler engagement system is properly locked to the work tool. Confirm that the wedge has engaged the work tool hook and is properly locked.

5. Verify the engagement of the quick coupler and the work tool.
 - a. Place the work tool on the ground.

- b. Apply pressure to the work tool against the ground.
- c. Drag the work tool forward and backward.

Quick Coupler with Mechanical Coupling

WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

1. Ensure that the work tool mounting bracket is in line with the host machine. The work tool must be facing the host machine. The mounting bracket must be at the top of the work tool.

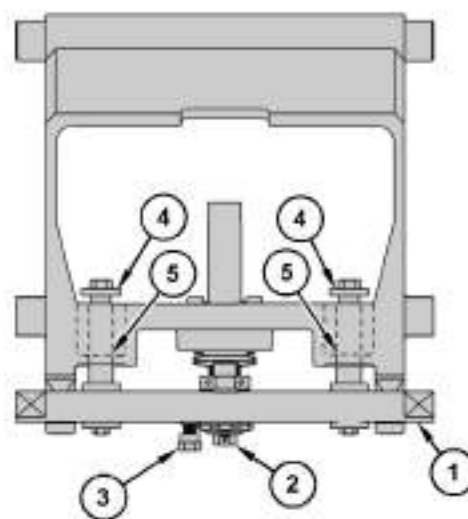


Illustration 507

g06334920

2. To move wedge (1) to the UNLOCKED position, perform the following steps:
3. Loosen lock bolt (3) until you can turn spindle (2).
4. Turn spindle (2) until the bolts (4) lightly contact the coupler (5).
5. Position the coupler with the wedge in an UPWARD position.

Coupling a Bucket

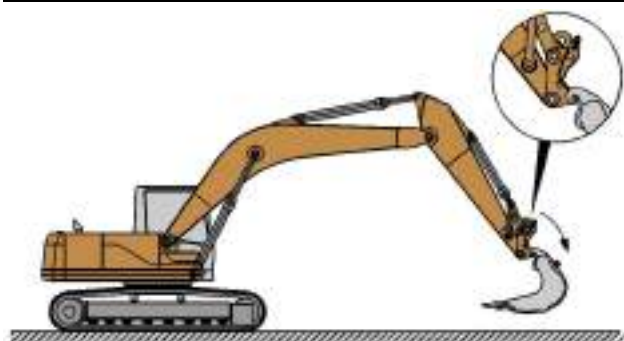


Illustration 508

g06286473

1. Hook the front pivots into the hooks of the mounting bracket on the work tool.

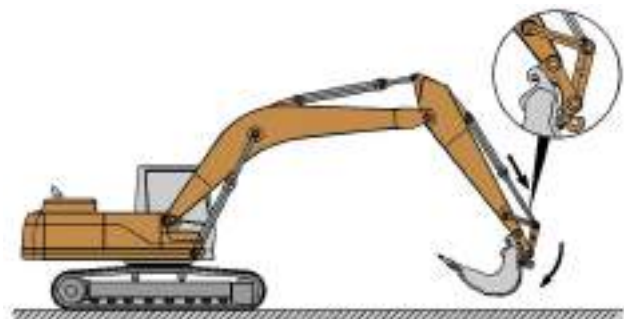


Illustration 509

g06286475

2. Tilt the quick coupler against the work tool by extending the bucket cylinder. Stop the engine of the host machine.
3. Turn the spindle inward. Tighten the spindle.

Note: If necessary, tighten the spindle until the next notch is aligned with the locking bolt.

4. Tighten the locking bolt.

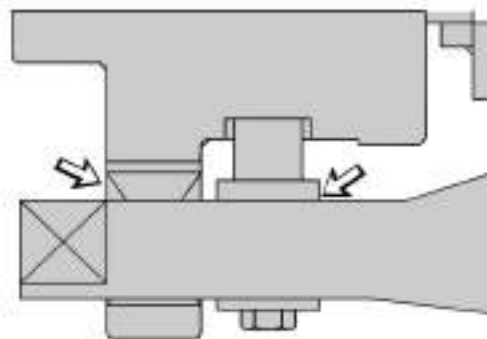


Illustration 510

g06334926

5. Ensure that there is a visible space between the wedge and the quick coupler frame. If there is not a space, the mounting bracket or the quick coupler may be damaged.

WARNING

Inspect the quick coupler engagement before operating the machine.

Serious injury or death may result from improperly engaged coupler.

6. Verify the engagement of the quick coupler and the work tool.
 - a. Place the work tool on the ground.
 - b. Apply pressure to the work tool against the ground.
 - c. Drag the work tool forward and backward.

Uncoupling the Work Tool

Use the following steps to prepare the quick coupler for uncoupling.

NOTICE

Auxiliary hoses for work tools must be disconnected before the Hydraulic Quick Coupler is disengaged.

Pulling the work tool with the auxiliary hoses could result in damage to the host machine or the work tool.

1. Disconnect any auxiliary hoses from the work tool (if equipped).
2. Ensure that the work tool is clear of the ground.
3. Fully extend the bucket cylinder. Extend the stick cylinder until the wedge is pointing downward. The load is now released from the wedge.

Quick Coupler with Hydraulic Coupling

WARNING

Place the work tool or bucket in a safe position before disengaging the coupler. Disengaging the coupler will release the work tool or bucket from control of the operator.

Serious injury or death may result from disengaging the work tool or bucket when it is in an unstable position or carrying a load.

1. Extend the wedge cylinder.
2. Retract the bucket cylinder. The work tool is now suspended by the front pivot.
3. Place the work tool on the ground.
4. Unhook the quick coupler from the mounting bracket.

Quick Coupler with Mechanical Coupling

WARNING

Place the work tool or bucket in a safe position before disengaging the coupler. Disengaging the coupler will release the work tool or bucket from control of the operator.

Serious injury or death may result from disengaging the work tool or bucket when it is in an unstable position or carrying a load.

1. Stop the engine of the host machine.
2. Loosen the locking bolt until you can turn the spindle.
3. Turn the spindle outward. If necessary, strike the wedge with a hammer to release the wedge.
4. Retract the bucket cylinder. The work tool will be suspended by the front pivot.
5. Place the work tool on the ground.
6. Unhook the quick coupler from the mounting bracket.

Lifting Loads

WARNING

Lifting loads with the quick coupler is only permitted when there is no work tool attached. Lifting loads when there is a work tool attached may result in serious injury or death.

NOTICE

If used to lift loads, then the excavator must comply with the requirements for lifting machinery. These are given in standard EN 474-5. For more information, consult your Caterpillar dealer.

Note: When you lift loads with the lifting yoke or the lifting hook, the wedge must be retracted or the wedge must be removed from the coupler.

Lifting Hook (If Equipped)

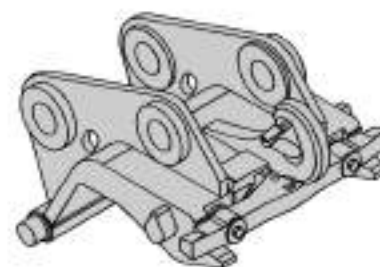


Illustration 511

g06286477

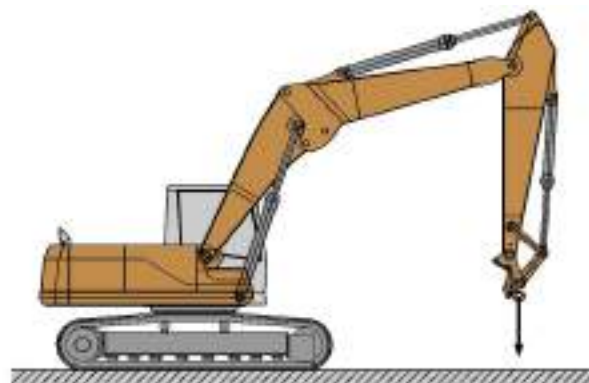


Illustration 512

g06286480

1. Fully extend the bucket cylinder.
2. Make sure that the wedge has been retracted or that the wedge has been removed.

WARNING

Use an appropriate lifting device that is rated for the specific load. Failure to do so can result in serious injury or death.

3. Fasten an appropriate chain, cable, or a lifting strap to the lifting hook. Do not perform any lifting operations if the safety latch is missing. Do not perform any lifting operations if the safety latch is damaged. Contact your supplier.

Lifting Objects

WARNING

To prevent injury, do not exceed the rated load capacity of the machine. If the machine is not on level ground, load capacities will vary.

The quick coupler and attached lifting hook have unique rated load capacities. Each capacity is marked on the corresponding component. Do not exceed the maximum capacity of any component used in a lifting operation. Quick coupler capacities are listed in the table below:

Table 68

Quick Coupler Rated Capacities ⁽¹⁾	
Quick Coupler Model	Rated Capacity
CW05	600 kg (1322 lb)
CW10	1400 kg (3086 lb)

⁽¹⁾ Capacities rated in accordance with EN 474-1:2006+A4:2013 Annex E and ASS 1418.8-2008 standards

Refer to the load charts in the Operation and Maintenance Manual of the host machine. Use the load charts and account for the mass of the work tool. Calculate the load capacity relative to the location of the lifting point on your specific host machine.

Use a sling or a shackle to attach to the lifting point and lift the object. The sling or the shackle must have a rated capacity that is greater than the mass of the load.

Regional regulations may require the use of an overload warning device and boom and stick lowering control valves when used to lift objects.

The overload warning device (if equipped) must be adjusted for the bucket linkage and bucket size that is installed on the machine. Adjust the overload warning device for proper operation.

The setting for the overload warning device (if equipped) should be checked by an authorized dealer.

Contact your Cat dealer for additional information.

The setting for the overload warning device should be checked by an authorized dealer.

i09669089

Quick Coupler Operation (Pin Puller Quick Coupler (If Equipped))

SMCS Code: 6129; 6522; 7000

WARNING

Place the work tool or bucket in a safe position before engaging the quick coupler. Ensure that the work tool or bucket is not carrying a load.

Serious injury or death may result from engaging the work tool or bucket when it is in an unstable position or carrying a load.

WARNING

Inspect the quick coupler engagement before operating the machine.

Serious injury or death may result from improperly engaged coupler.

WARNING

Crush injury. Could cause serious injury or death. Always confirm that the quick coupler is engaged onto the pins. Read the Operator's Manual.

WARNING

Improper attachment of work tools could result in injury or death.

Do not operate this machine until you have positive indication that the coupler pins are fully engaged. Check for engagement by:

1. Position the work tool on the ground.
2. Apply slight down pressure on the work tool.
3. Retract and extend the stick cylinder in order to push the work tool against the ground. Visually confirm that there is no movement between the coupler and the work tool.

WARNING

Inspect the quick coupler engagement before operating the machine.

Verify that the quick coupler is engaged per the procedure in the Operation and Maintenance Manual. Verify prior to operating the machine, after every engine start, and after an extended time of inactivity.

Serious injury or death may result from improperly engaged coupler.

WARNING

Place the work tool or bucket in a safe position before disengaging the coupler. Disengaging the coupler will release the work tool or bucket from control of the operator.

Serious injury or death may result from disengaging the work tool or bucket when it is in an unstable position or carrying a load.

WARNING

Use an appropriate lifting device that is rated for the specific load. Failure to do so can result in serious injury or death.

WARNING

Lifting loads with the quick coupler is only permitted when there is no work tool attached. Lifting loads when there is a work tool attached may result in serious injury or death.

WARNING

To prevent injury, do not exceed the rated load capacity of the machine. If the machine is not on level ground, load capacities will vary.

NOTICE

With certain work tool combinations, including quick couplers, the work tool can hit the cab or the front of the machine. Always check for interference when first operating a new work tool.

NOTICE

Back drag the work tool on the ground to ensure the quick coupler is properly locked.

Do Not strike the work tool on the ground to ensure the quick coupler is properly locked. Striking the work tool on the ground will result in damage to the quick coupler.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Installation of Pin Puller Quick Coupler

Ensure that pin puller quick coupler is compatible with the excavator. Refer to "Caterpillar Approved Work Tools" for more information. Consult your Cat® dealer for more information.

Park the machine on the flat and level surface. The machine must be blocked to prevent inadvertent movement.

The quick coupler must be supported to prevent inadvertent movement. Position the quick coupler to prevent unnecessary climbing and unnecessary bending.

When you strike objects, chips and other debris can fly. Before striking any object, make sure that no one can be injured by the flying debris. Always wear safety glasses.

1. Clean each pin and each pin bore in stick.

Lubricate each pin bore in stick with molybdenum grease. Refer to "Lubricant Viscosities" for more information.



Illustration 513

g07534588

(1) Pin puller quick coupler

2. Position pin puller quick coupler (1) on the ground in front of the host machine. Make sure that the hook is oriented towards the machine. Align pin puller quick coupler (1) with the end of the stick. Refer to Illustration 513 for more information.

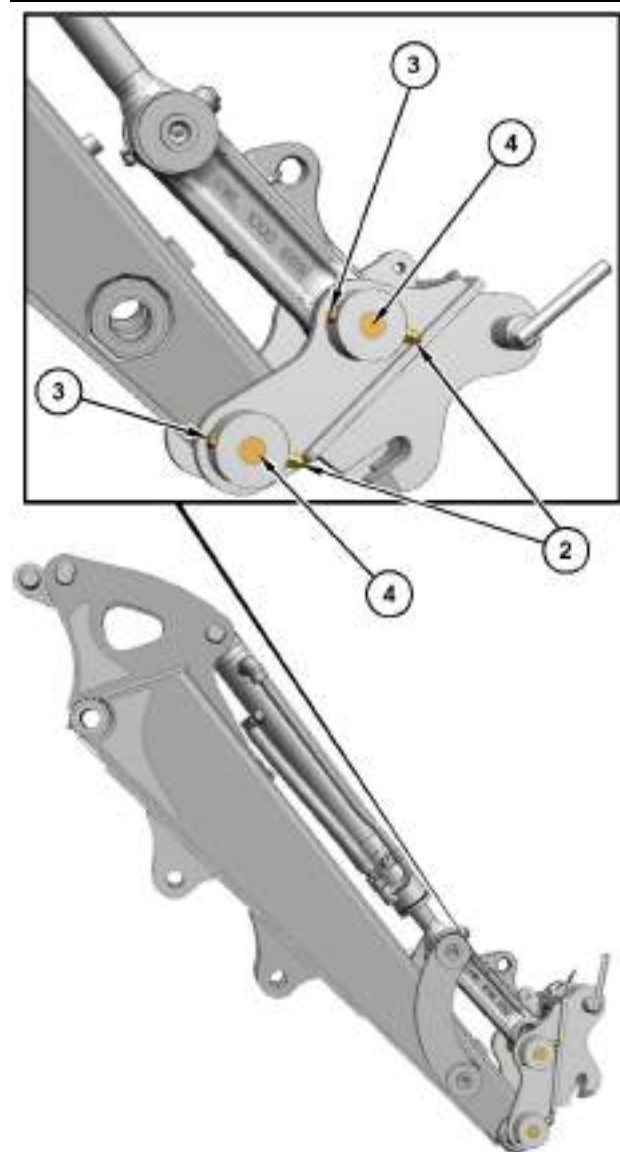


Illustration 514

g07534580

- (2) Nut
- (3) Bolt
- (4) Mounting pin

3. Remove two mounting pins (4), two bolts (3) and four nuts (2) from pin puller quick coupler (1).
4. Secure pin puller quick coupler (1) with stick.

5. Install two mounting pins (4), two bolts (3) and four nuts (2) of pin puller quick coupler (1) with stick. Tighten four nuts (2). Refer to Specifications, SENR3130, "Torque Specifications" for more information on torque values.
6. Lubricate two mounting pins (4) of pin puller quick coupler (1) with a grease gun. Refer to "Lubricant Viscosities" for more information.

Removal of Pin Puller Quick Coupler

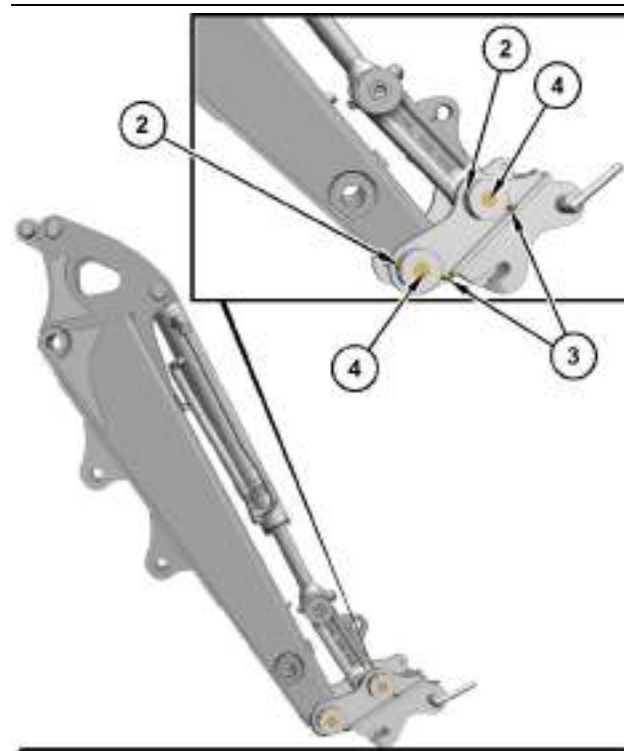


Illustration 515

g07534623

- (2) Nut
- (3) Bolt
- (4) Mounting pin

1. Position pin puller quick coupler (1) on the ground in front of the machine. Refer to Illustration 515 for more information.
2. Remove four nuts (2) and two bolts (3) of pin puller quick coupler (1).
3. Remove two mounting pins (4) to remove pin puller quick coupler (1) from stick.

4. Remove pin puller quick coupler (1) from stick.

Coupling Pin Puller Quick Coupler with Work Tool

Note: Pin puller quick couplers use work tool with pin on attachment.

1. Position pin puller quick coupler (1) on the ground in front of the machine. Refer to Illustration 515 for more information.

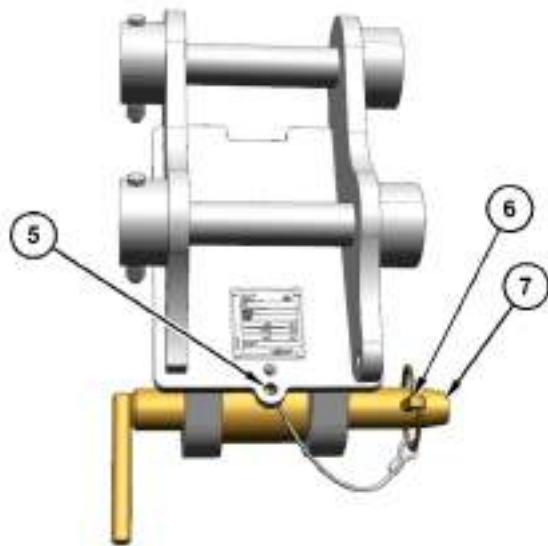


Illustration 516

g07545687

- (5) Integrated holder
(6) Lock pin
(7) Quick coupler engagement pin

2. Ensure lock pin (6) is removed from pin puller quick coupler (1).
3. Remove quick coupler engagement pin (7) from pin puller quick coupler (1).
4. Secure lock pin (6) in integrated holder (5) of pin puller quick coupler (1).
5. Secure quick coupler engagement pin (7) before starting the engine.
6. Start the engine. Refer to "Engine Starting" for more information.

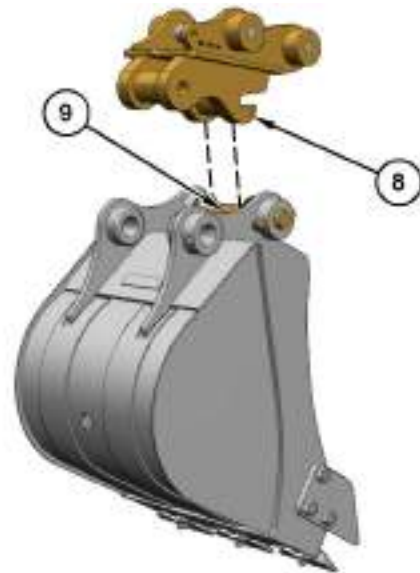


Illustration 517

g07553833

- (8) Hook
(9) Pivot pin

7. Retract the bucket cylinder. Refer to "Joystick Controls" for more information.
8. Position hook (8) of pin puller quick coupler (1) over pivot pin (9) of the work tool. Refer to Illustration 517 for more information.
9. Move the stick inward and lower the stick until hook (8) of pin puller quick coupler (1) engage with pivot pin (9) of the work tool. Refer to "Joystick Controls" for more information on stick movement.

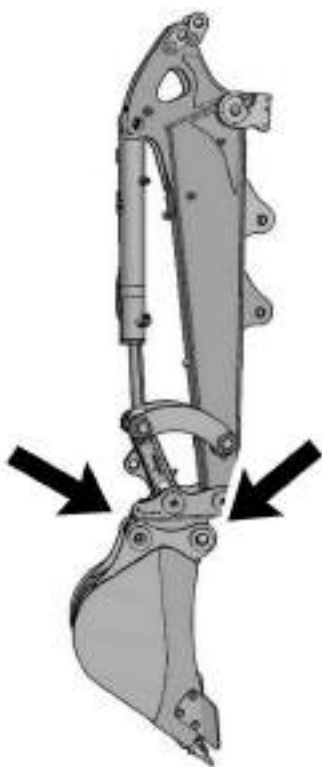


Illustration 518

g07536706

Position of pin puller quick coupler (1) and work tool

- 10.** Extend the bucket cylinder of the machine to rotate pin puller quick coupler (1) towards the work tool. Refer to “Joystick Controls” for more information.

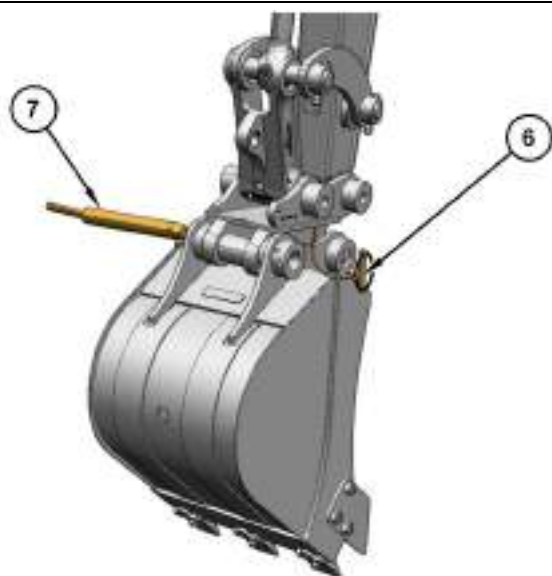


Illustration 519

g07539751

(6) Lock pin
(7) Quick coupler engagement pin

- 11.** Raise the work tool above ground approximately 25 mm (1.0 inch) and ensure that work tool is cradled with hook (8) angled in upward direction.
- 12.** Stop the engine. Refer to “Stopping the Engine” for more information.
- 13.** Remove lock pin (6) from integrated holder (5).
- 14.** Secure pin puller quick coupler (1) with work tool using quick coupler engagement pin (7).

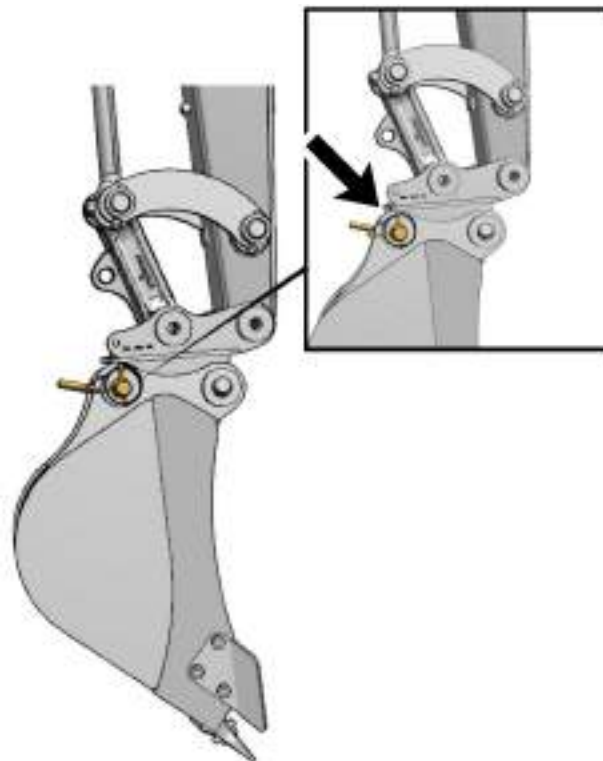


Illustration 520

g07541872

Pin puller quick coupler (1) engaged with work tool

- 15.** Install lock pin (6) in quick coupler engagement pin (7) to secure quick coupler engagement pin (7) with pin puller quick coupler (1). Refer to Illustration 520 for more information.
- 16.** To verify the engagement of pin puller quick coupler (1) with the work tool, perform the following procedure.
- Retract the bucket cylinder and drag the bucket on ground. Refer to “Joystick Controls” for more information.
 - Visually confirm that there is no movement

between the work tool and pin puller quick coupler (1).

Uncoupling Pin Puller Quick Coupler from Work Tool

1. Lower the work tool onto a level surface. Make sure that the work tool is in full contact with the ground.
2. Stop the engine. Refer to Operation and Maintenance Manual, "Stopping the Engine" for more information.

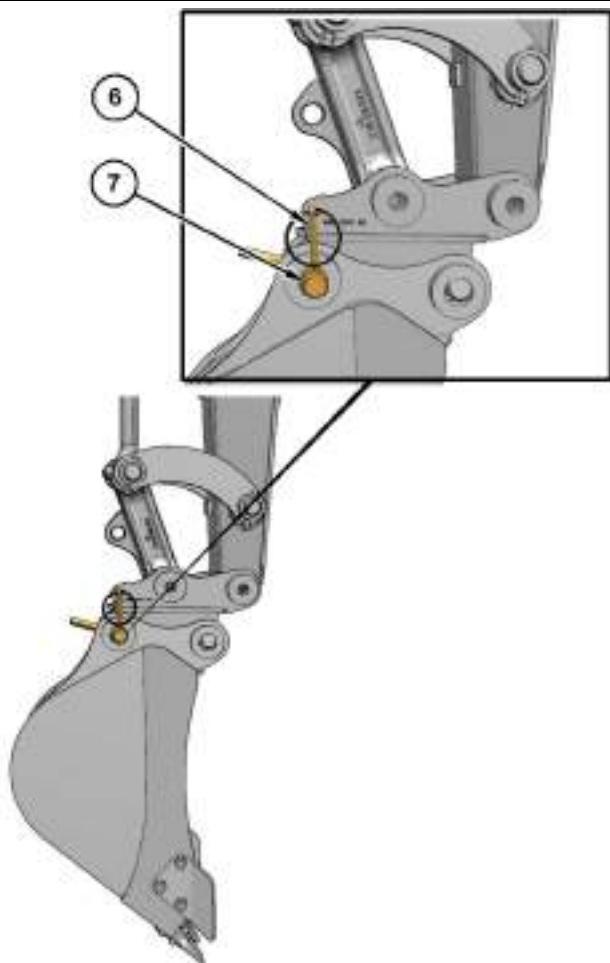


Illustration 521

g07541920

- (6) Lock pin
(7) Quick coupler engagement pin

3. Remove lock pin (6) from quick coupler engagement pin (7) and secure lock pin (6) in integrated holder (5).



Illustration 522

g07539835

Removal of quick coupler engagement pin (7) from pin puller quick coupler (1).

(7) Quick coupler engagement pin

4. Remove quick coupler engagement pin (7) from pin puller quick coupler (1). Refer to Illustration 522 for the direction to remove quick coupler engagement pin (7) from pin puller quick coupler (1).
5. Secure quick coupler engagement pin (7) in a secured location for later usage.
6. Start the engine. Refer to "Engine Starting" for more information.

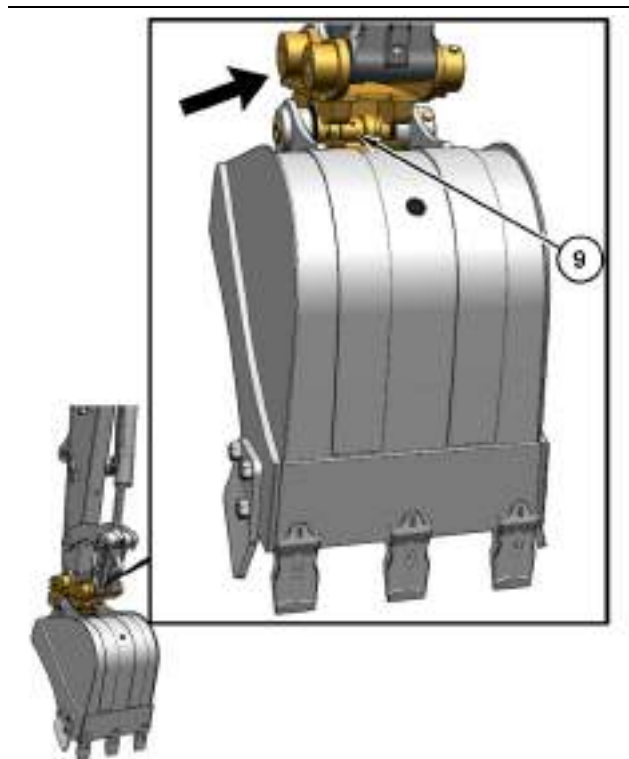


Illustration 523

g07539840

(9) Pivot pin

7. Rotate pin puller quick coupler (1) away from pivot pin (9) of the work tool.
8. Move the machine linkage away from the work tool. Refer to “Joystick Controls” for more information.
9. Remove pin puller quick coupler (1) from the work tool.
10. Install quick coupler engagement pin (7) and lock pin (6) in pin puller quick coupler (1) and secure pin puller quick coupler (1).

Note: If no work tool is to be attached to pin puller quick coupler (1), install quick coupler engagement pin (7) and lock pin (6) in pin puller quick coupler (1) and secure pin puller quick coupler (1) safely by grounding pin puller quick coupler (1). Refer to “Joystick Controls” for more information on grounding pin puller quick coupler (1).

Lifting Loads

NOTICE

If used to lift loads, then the excavator must comply with the requirements for lifting machinery. For more information, refer standard “EN 474-5EN 474-5”, and consult your Cat® dealer.

Lifting Eye

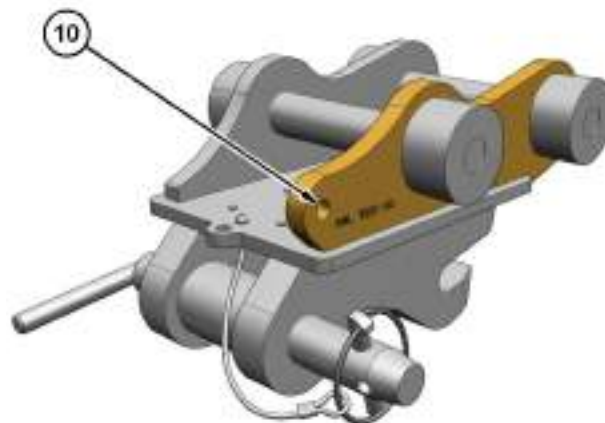


Illustration 524

g07549805

(10) Lifting eye

1. Remove work tool from pin puller quick coupler (1). Refer to “Bucket - Remove and Install” for more information.

Fully extend the bucket cylinder of the excavator. Refer to “Joystick Controls” for more information.
2. Fasten an appropriate lifting shackle to lifting eye (10) of pin puller quick coupler (1). Do not perform any lifting operation if the lifting eye is damaged. Contact your Cat® dealer.

Lifting Objects

Pin puller quick coupler (1) have unique rated load capacities. Each capacity is marked on the corresponding component. Do not exceed the maximum capacity of any component used in a lifting operation.

Table 69

Machine Platform	Mini Hydraulic Excavator (MHE) 1 ton to 2 tons (30mm)	MHE 2 tons (35 mm)	MHE 3 ton to 4 tons (40 mm)	MHE 5 ton to 6 tons (45 mm)	MHE 5 ton to 6 tons (45 mm)	MHE 7 ton to 9 tons (50 mm)	Back Hoe Loader (BHL) (50 / 45 mm)
Attachment Interface	MHE 1 ton to 2 tons (30 mm)	MHE 2 tons (35 mm)	MHE 3 ton to 4 tons (40 mm)	MHE 3 ton to 4 tons (40 mm)	MHE 5 ton to 6 tons (45 mm)	MHE 7 ton to 9 tons (50 mm)	MHE 7 ton to 9 tons (50 mm)
Lift Eye Rating - Kg (lbs)	1000 kg (2204.6 lb)	1500 kg (3306.9 lb)				3250 kg (7165 lb)	
Lift Eye Diameter	11.6 mm (0.46 inch)	13.2 mm (0.52 inch)				19.6 mm (0.77 inch)	

Use the load charts and account for the mass of the work tool. Calculate the load capacity relative to the location of the lifting point on excavator. Refer to table 69 for more information.

Use a sling or a shackle to attach to the lifting point and lift the object. The sling or the shackle must have a rated capacity that is greater than the mass of the load.

Regional regulations may require the use of an overload warning device and boom and stick lowering control valves when used to lift objects.

The overload warning device (if equipped) must be adjusted for the bucket linkage and bucket size that is installed on the machine. Adjust the overload warning device for proper operation.

Refer to “Boom, Stick and Bucket Operation” for information on lifting the objects. Contact your Cat® dealer for additional information.

i01582993

Blade Operation

SMCS Code: 6060

NOTICE

Avoid hitting or moving rocks using the blade. Blade and cylinder damage could occur.

When using the blade as outrigger, be sure to support the machine with the edge of the blade against the ground. When curling the front attachment, do not allow the bucket to hit the blade.

During digging operation, do not allow the boom cylinder to contact the blade edge. When no blade operation is needed, operate with the bucket on the opposite side of the machine from the blade.

Do not swing the upper structure with cab door and/or upper structure covers opened. An opened door and/or cover can hit the blade when the blade is in the raised position while the machine is swinging.

Parking

i07311026

Stopping the Machine

SMCS Code: 7000

WARNING

Leaving the machine unattended when the engine is running may result in personal injury or death. Before leaving the machine operator station, neutralize the travel controls, lower the work tools to the ground and deactivate all work tools, and place the lever for the hydraulic lockout control in the LOCKED position.

Note: There may be regulations that define the requirements for the operator and/or support personnel to be present when the engine is running.

Park on a level surface. If the machine must be parked on a grade, chock the tracks securely.

Note: The swing parking brake is automatically applied when the machine is stopped. The swing parking brake is released when the engine is running and the joystick is activated.

1. Turn the engine speed dial counterclockwise to reduce engine speed.



Illustration 525

g06181402

2. Release the travel levers/pedals to stop the machine.

3. Lower the work tool to the ground. Apply a slight downward pressure.
4. Move the hydraulic lockout control to the LOCKED position.

i07311032

Freezing Conditions

SMCS Code: 7000

If freezing temperatures are expected, remove the mud and the dirt from each track roller frame. Park the machine on wood planks. Use the following procedure to clean each track roller frame.



Illustration 526

g06188791

1. Position the boom over one side of the machine.
2. Use boom down pressure to lift the track on one side off the ground. Operate the track in the forward direction. Then operate the track in reverse. Continue this procedure until the maximum amount of material is thrown off the track.
3. Lower the track onto the wood planks.
4. Repeat the procedure for the other track.
5. Clean the area around the carrier rollers and around the track rollers.
6. Lower the work tool onto a wood plank to prevent the work tool from touching the ground.

i08786758

Stopping the Engine

SMCS Code: 1000; 7000



WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

NOTICE

Stopping the engine immediately after it has been working under load can result in overheating and accelerated wear of engine components.

Refer to the following procedure to allow the engine to cool and to prevent excessive temperatures in the turbocharger housing, which could cause oil coking problems.

NOTICE

Never turn the battery disconnect switch to the OFF position while the engine is running. Serious damage to the electrical system may result.

NOTICE

Perform a walk around inspection after actuation of a shutdown device.

Take necessary corrective action to resolve the cause of the shutdown.

Ensure that no additional damage has been done or could occur before returning to operation.

1. Park the machine on level ground. Refer to "Stopping the Machine" and "Prepare the Machine for Maintenance" for recommended procedures.
2. Move the hydraulic lockout control to the LOCKED position. Refer to "Operator Controls" for more information.
3. While the machine is stopped, run the engine for 5 minutes at low idle. Idling the engine allows hot areas of the engine to cool gradually.
4. Turn the engine start switch to the OFF position. Refer to "Engine Starting" for more information.

Engine Shutdown Switch

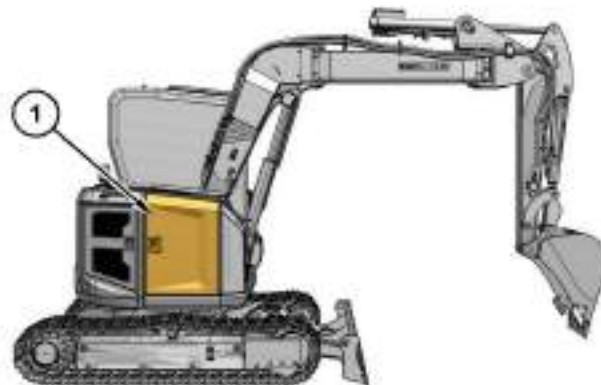


Illustration 527

g06779999

305 SR Excavator

(1) Access door

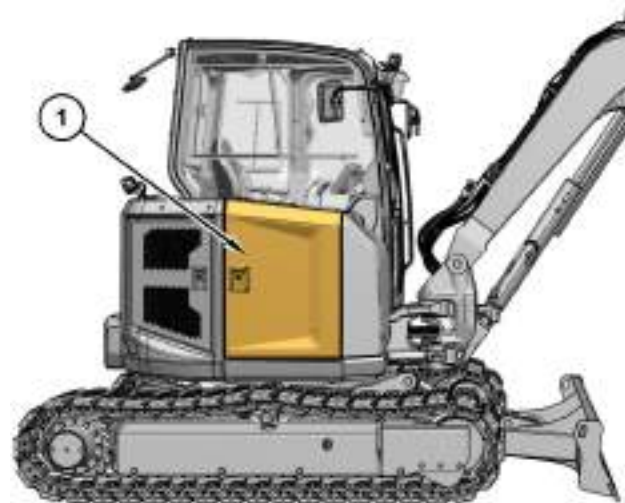


Illustration 528

g06780016

305 CR Excavator

(1) Access door

1. Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

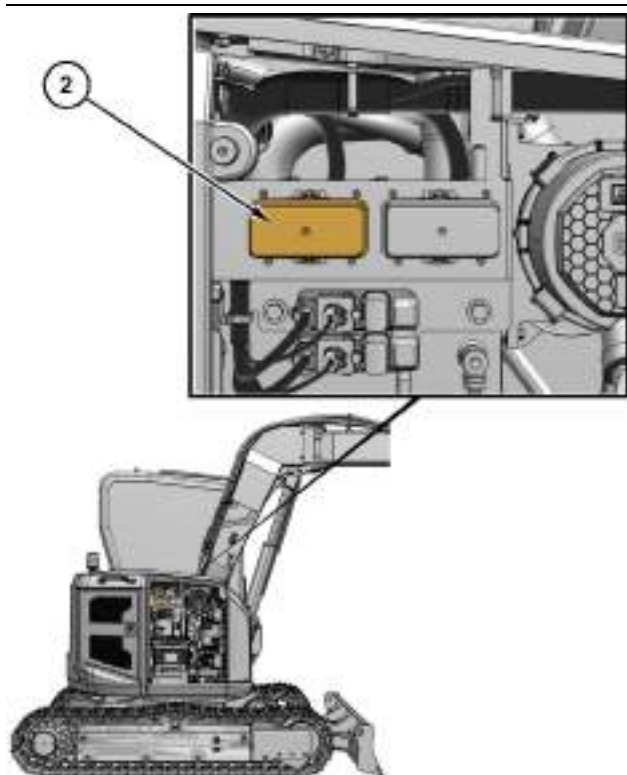


Illustration 529
305 SR Excavator
(2) Cover

g06780005

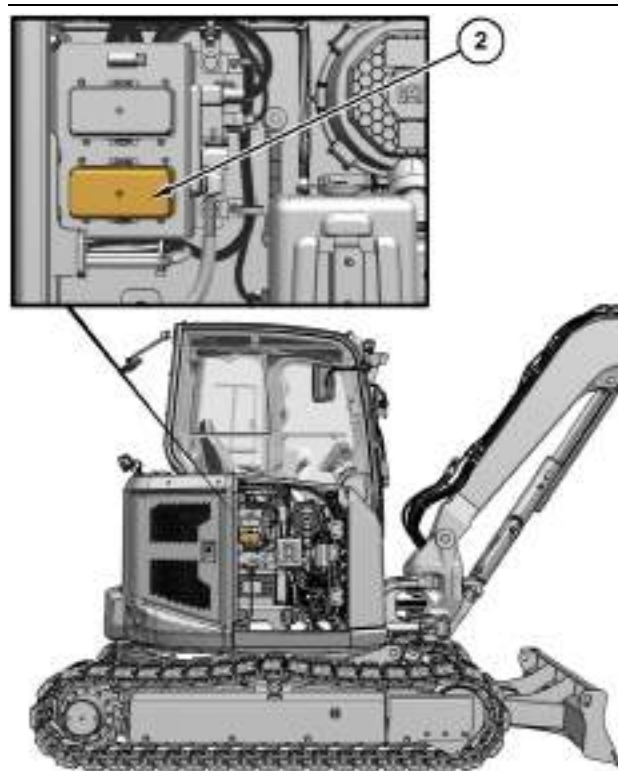


Illustration 530
305 CR Excavator
(2) Cover

g06780021

2. Remove cover (2) from the fuse panel.

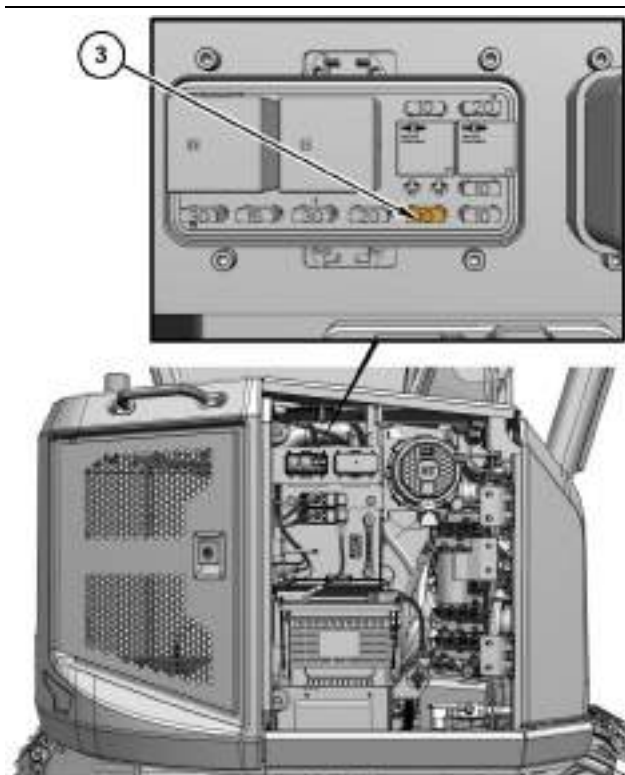


Illustration 531
305 SR Excavator
(3) Fuse

g06780012

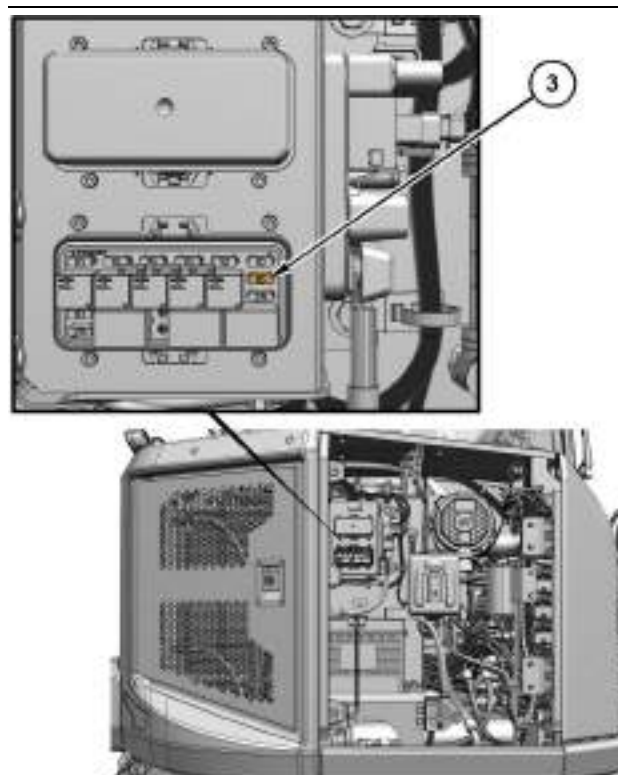


Illustration 532
305 CR Excavator
(3) Fuse

g06780030

3. Remove fuse (3) from the fuse panel.

4. Close access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i07311066

Leaving the Machine

SMCS Code: 7000

Illustration 533

g06278943

1. Use the steps and the hand holds when you dismount. When you dismount, face the machine and use both hands.
2. Inspect the engine compartment for debris. Clean out any debris to avoid a fire hazard.
3. Remove all flammable debris from the front bottom guard through the access doors to reduce a fire hazard. Discard the debris properly.
4. Always turn the battery disconnect switch to the OFF position before leaving the machine (if equipped).
5. If the machine will not be operated for a month or more, remove the battery disconnect switch key (if equipped).
6. Turn off all lights (courtesy lights will remain ON for set time).
7. Lock all compartments.

Machine Storage and Specified Storage Period

SMCS Code: 7000

Machine Storage

The Safety Section of this Operation and Maintenance Manual contains storage information for fuels, lubricants, and ether (if equipped).

The Operation Section of this Operation and Maintenance Manual contains information for short-term storage of this machine, including engine shutdown, parking, and instructions for leaving the machine.

For detailed steps on long-term storage refer to Special Instruction, SEHS9031, "Storage Procedure for Caterpillar Products".

Specified Storage Period

The specified storage period of this machine is 1 year.

After the specified storage period has expired, consult your Cat dealer for inspect, repair, rebuild, install remanufactured, or install new components, and disposal options, and to establish a new specified storage period.

If a decision is made to remove the machine from service, refer to Decommissioning and Disposal for further information.

i07735116

Transportation Information

i07776326

Shipping the Machine

SMCS Code: 7000; 7500

Investigate the travel route for overpass clearances. Make sure that there will be adequate clearance for the machine.

Before you load the machine onto the trailer, remove ice, snow, or other slippery material from the loading dock and from the truck bed. Removal of ice, snow, or other slippery material will prevent the slipping of the machine as you load the machine. Removing ice, snow, or other slippery material will prevent the machine from moving in transit.

NOTICE

Obey all state and local laws governing the weight, width and length of a load.

Make sure the cooling system has proper antifreeze if moving machine to a colder climate.

Observe all regulations governing wide loads.

Do not use a fork lift to lift the machine. Using a fork lift to move your machine can result in property damage.

Choose the flattest ground when you load the machine or when you unload the machine.

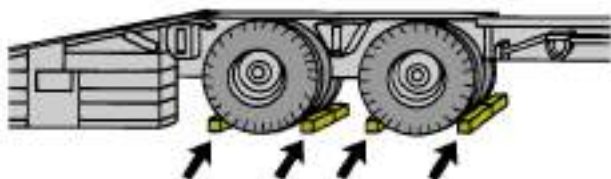


Illustration 534

g06404980

1. Before you load the machine and before you unload the machine, chock the trailer wheels or chock the rail car wheels.

2. When you use loading ramps, make sure that the loading ramps have adequate length, adequate width, and adequate strength. In addition, make sure that the surfaces of the loading ramps are clean. This will help prevent the machine from sliding in all types of weather conditions. This will allow the machine to move on the ramps smoothly.
3. Maintain the slope of the loading ramps within 15 degrees of the ground.
4. Minimize any step between the base of the loading ramps and the ground.
5. Clean the tracks on the machine to prevent any slippage.

Machine With A Long Stick That Has Two Pin Holes (If Equipped)

WARNING

Incorrect pin location of stick cylinder rod could cause the bucket to hit the cab resulting in personal injury or death, or damage to the machine. Please confirm the stick cylinder rod pin location prior to the start of work.

NOTICE

During digging operations with this front linkage, there is a possibility of extending the upper boom cylinder by relief.

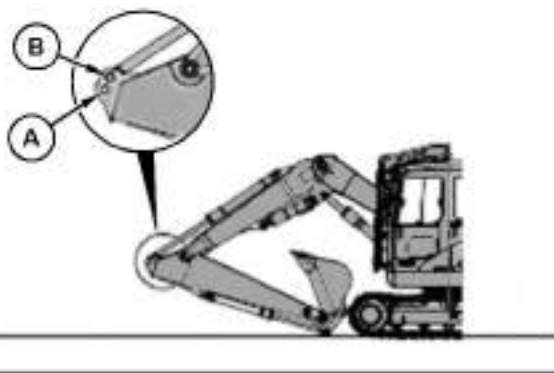


Illustration 535

g06404995

Make the following changes before shipping the machine.

Use pin hole (B) in machine transportation. Use pin hole (A) for machine operation.

NOTICE

Never use pinhole (B) for operation. Incorrect boom longstick-bucket combination could cause the bucket to hit the cab.

Use the following procedure to connect the stick cylinder rod to pin hole (B).

1. Fully extend the stick cylinder and the bucket cylinder. Lower the boom to the ground.
2. Remove the linkage pin from pin hole (A).
3. Align the pin hole of the stick cylinder rod with pin hole (B). Insert the linkage pin into pin hole (B). Use the linkage pin that was removed in Step 2.

Loading The Machine

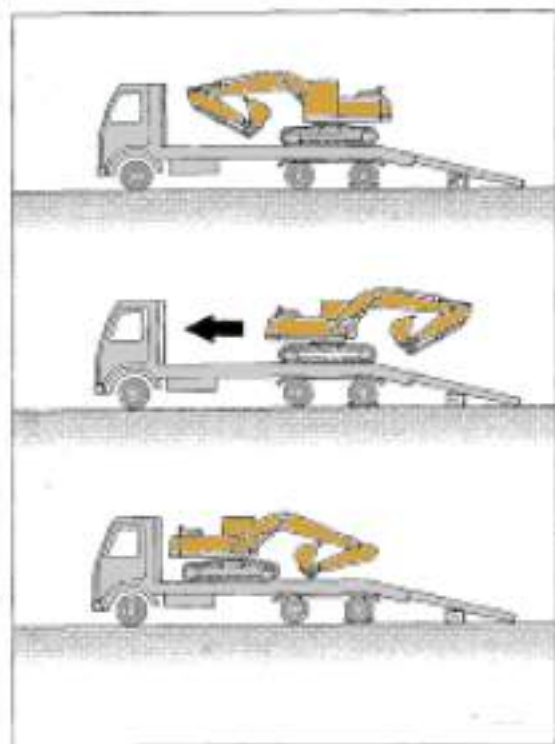


Illustration 536

g06435164

1. Position the machine so that the machine can drive straight up the loading ramps. Position the machine so that the front linkage and the dozer blade will be the first machine components to travel up the loading ramps. Make sure that the dozer blade is raised up.
2. Extend the front linkage forward over the trailer bed to help maintain balance.

3. Use caution when you travel over the areas around the loading ramp joints. Maintain the balance point of the machine.
4. After you load the machine onto the trailer be sure that the machine is properly positioned on the trailer bed.
5. Slowly, swing the upper structure for 180 degrees and carefully move the machine toward the front of the trailer or the rail car.
6. Refer to the Operation and Maintenance Manual, "Lifting and Tying Down the Machine" for information on tying down the machine.

Unloading The Machine

1. Position the machine so that the machine can drive straight down the loading ramps. Position the machine so that the front linkage will be the first machine component to travel down the loading ramps. Position the machine so that the dozer blade will be the last machine component to travel down the loading ramps. Make sure that the dozer blade is raised up.
2. Extend the front linkage forward over the ramps. While you travel down the loading ramps, adjust the front linkage to allow the work tool to remain close to the ground. This will prevent the machine from tipping forward.
3. Use caution when you travel over the areas around the loading ramp joints to maintain the balance point of the machine.

i08026720

Securing the Machine

SMCS Code: 7000

Comply with any laws that govern the characteristics of a load (length, width, height, and weight).

i09726101



Illustration 537

g06278949

1. Move the hydraulic lockout control (lever) to the LOCKED position.
2. Turn the engine start switch to the OFF position to stop the engine. Remove the engine start switch key.
3. Lock the door and the access covers.

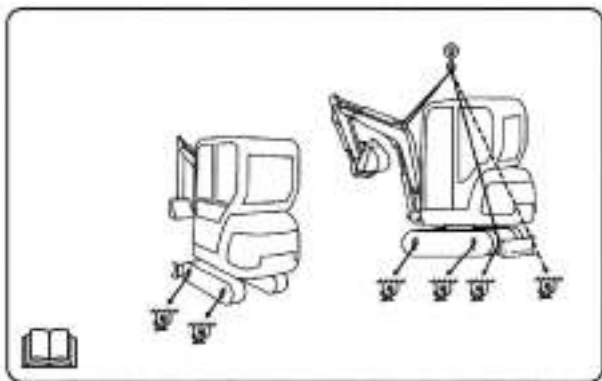


Illustration 538

g06513472

4. Chock the tracks and secure the machine with tie-downs. Make sure that you use the proper rated wire cable.

Use the holes on each end of the blade and on the lower frame.

Install tie-downs on the swing boom to prevent the boom from shifting.

Securely fasten all loose parts and all removed parts to the trailer or to the rail car.

Lifting and Tying Down the Machine

SMCS Code: 7000; 7500

WARNING

Improper lifting and tie-down techniques can allow the load to shift or fail resulting in personal injury or property damage. Use only properly rated cables and slings with lift and tie down points provided on the machine. Keep the deck of the transport vehicle clean and use anti-slip mats on steel decks.

Follow the instructions in Operation and Maintenance Manual, "Lifting and Tying Down the Machine" for the proper technique for securing the machine. Refer to Operation and Maintenance Manual, "Specifications" for specific weight information.

Positioning the Machine for Lifting



Illustration 539

g06702275

- (1) Work tool cylinder
- (2) Stick cylinder
- (3) Boom cylinder
- (4) Blade

1. Raise blade (4) from ground surface and swing the upper structure so blade (4) is to the rear of the machine.
2. Position the boom in a straight ahead position. Refer to Illustration 539 for position of boom.
3. Retract boom cylinder (3), extend stick cylinder (2), and extend work tool cylinder (1) to the end of the stroke.
4. Engage the parking brake in the machine. Refer to "Stopping the Machine" for more information.
5. Stop the engine. Refer to "Stopping the Engine" for more information.
6. Raise the hydraulic lockout control. Refer to "Operator Controls" for more information.
7. Dismount the machine and lock the cab door. Refer to "Mounting and Dismounting" for more information.

Lifting the Machine



Lifting Point – To lift the machine, attach the lifting devices to the lifting points.

Note: The exact position of each lifting point may vary slightly by model. Only utilize locations identified with lifting point films. Do not use any other locations including handles, steps, or work tools to lift the machine.

When lifting the machine, use properly rated cables and properly rated slings to lift the machine. Utilize a spreader bar sufficient in size to prevent the lifting cables or lifting straps from contacting the machine.

Note: The machine shipping weight that is listed in "Specifications" is the weight of the most common configuration of the machine. If attachments have been installed on the machine, the weight of machine and the center of gravity of machine may vary.

Note: Ensure that the undercarriage is fully expanded before lifting the machine. Ensure that an empty standard bucket is installed on the machine.

Note: Obey all local and regional governmental regulations.

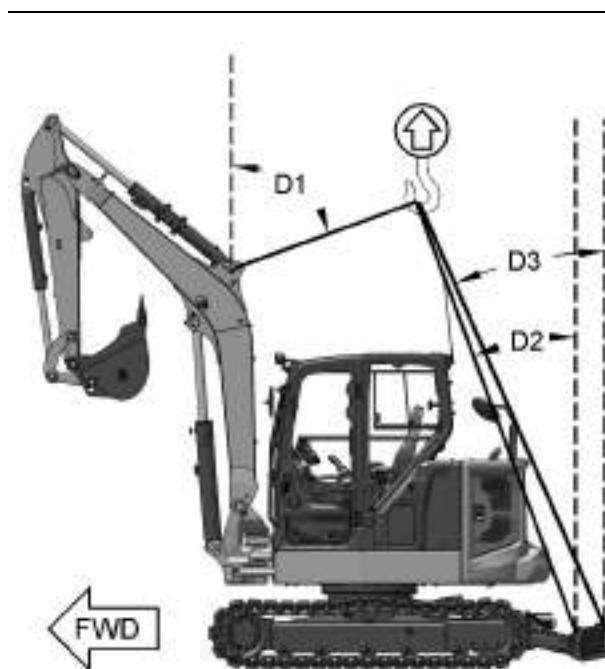


Illustration 540

g06702284

Lifting the machine

- (D1) Sling angle with the boom
- (D2) Sling angle with left side of the blade
- (D3) Sling angle with right side of the blade

Operation Section
Lifting and Tying Down the Machine

Table 70

Lifting Attachment Point	Sling Angle	Proof Load Value	Braking Load Value
Boom (D1)	37.37 degrees	39808.7 N (8949.35 lb)	106156.4 N (23864.91 lb)
Left Side of Blade (D2)	24.37 degrees	34731.9 N (7808.04 lb)	92618.4 N (20821.44 lb)
Right Side of Blade (D3)	24.83 degrees	34859.7 N (7836.81 lb)	92959.2 N (20898.06 lb)

1. Refer to Table 70 for cable capacities and cable orientations limits.
2. Remove any structures that may obstruct the lifting cable routing between the lifting points and spreader bar.

Position the crane or lifting device to lift the machine in a level position.

Do not allow any personnel in the area around the machine.

3. Attach one lifting cable to the boom of the machine. There is one lifting eye on each side of the boom of the machine. Refer to Illustration 540 .
4. Attach two lifting cables to the blade of the machine. There is one eye on each side of the blade of the machine. Refer to Illustration 540 .
5. If equipped, secure any attachments. Refer to "Work Tools" for more information.
6. Lift the machine. Move the machine to the desired position.
7. When the machine is positioned, place the blocks behind the undercarriage.

Lifting the 305 SR Excavator Machine



Lifting Point – To lift the machine, attach the lifting devices to the lifting points.

Note: The exact position of each lifting point may vary slightly by model. Only utilize locations identified with lifting point films. Do not use any other locations including handles, steps, or work tools to lift the machine.

When lifting the machine, use properly rated cables and properly rated slings to lift the machine.

Note: The machine shipping weight that is listed in "Specifications" is the weight of the most common configuration of the machine. If attachments have been installed on the machine, the weight of machine and the center of gravity of machine may vary.

Note: Ensure that the undercarriage is fully expanded before lifting the machine. Ensure that an empty standard bucket is installed on the machine.

Note: Obey all local and regional governmental regulations.

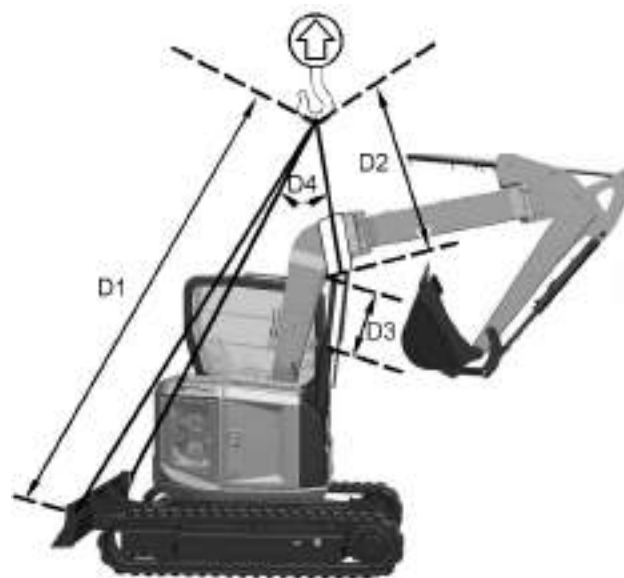


Illustration 541

g07567592

Lifting the machine

- (D1) Sling length between lifting point and blade
(D2) Sling angle between lifting point cushion material
(D3) Sling length of stick cylinder stroke
(D4) Sling angle with the boom

Table 71

Dimension	Specification
(D1)	4300 mm (169.3 inch)
(D2)	2000 mm (78.7 inch)
(D3)	740 ± 10 mm (29.1 ± 0.4 inch)
(D4)	40 degrees

1. Refer to Table 71 for cable capacities and cable orientations limits.
2. Refer to Illustration 541 below for the length/ angle of cables and boom position
3. Remove any structures that may obstruct the lifting cable routing between the lifting points and spreader bar. Position the crane or lifting device to lift the machine in a level position. Do not allow any personnel in the area around the machine.
4. Put fabric cushion material on the boom not to damage the machine or sling belt. Attach one lifting cable to the cushion material on the boom of the machine. Refer to Illustration 541 .
5. Attach two lifting cables to the blade of the machine. There is one eye on each side of the blade of the machine. Refer to the Illustration 541 .
6. If equipped, secure any attachments. Refer to "Work Tools" for more information.
7. When the machine is positioned, place the blocks behind the undercarriage

Note: The machine shipping weight that is listed is the weight of the most common configuration of the machine. If attachments have been installed on machine, the weight of the machine and the center of gravity of machine may vary. Refer to "Specifications" for the dimensions and weight of the machine.

Note: Do not allow anyone in the machine during the transport of the machine.

Tying Down the Machine



Tie Down Point – To tie down the machine, attach the tie-downs to the tie-down points.

There may be more than one way to tie down the machine. Local regulations should be used to determine the best method. Obey all local and regional governmental regulations.

Note: Use only the specified location for tying down the machine. The locations are identified on the machine by a label depicting a tie-down symbol. Do not use any other location including handles, steps, or work tools to tie down the machine.

Secure the machine at the tie-down positions. Use properly rated cables and shackles for tying down the machine. The cables and shackles should not come in contact with the machine. When necessary, use a clevis or corner protection to prevent contact with sharp edges. Install tie downs at all specified positions for your machine.

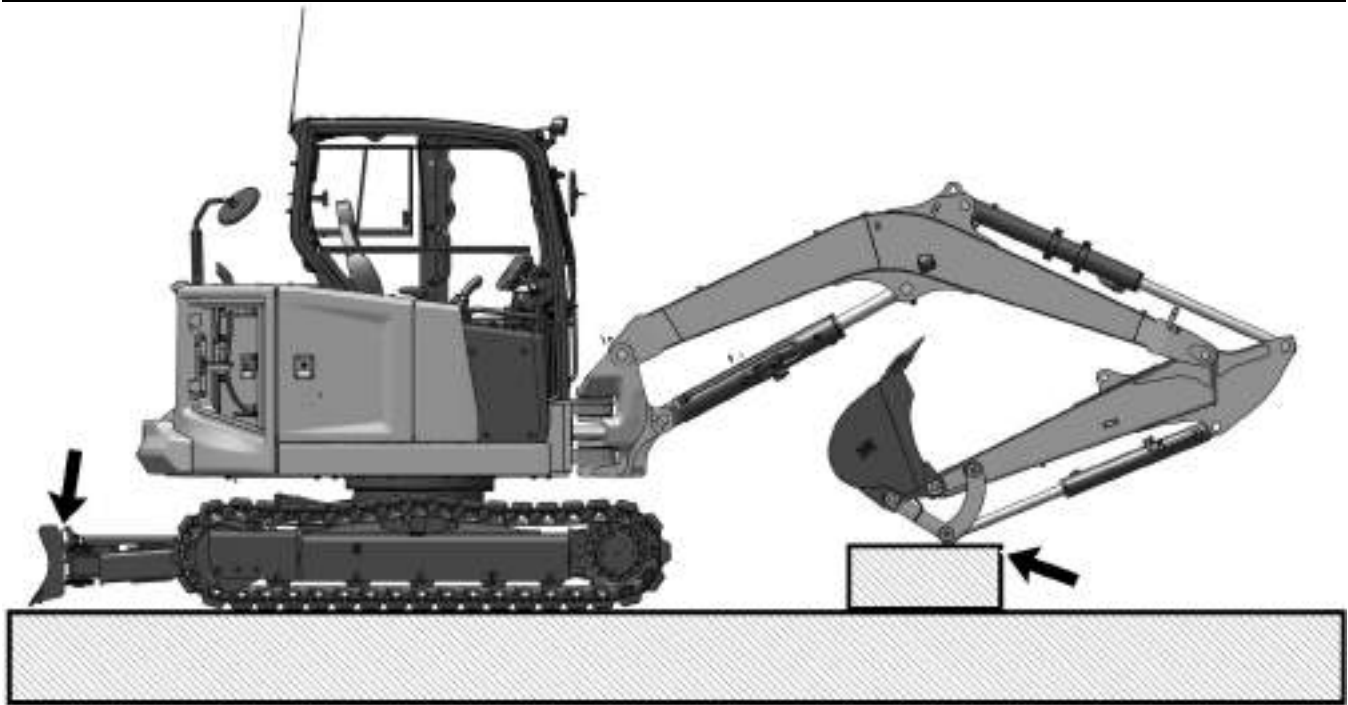


Illustration 542

g06702927

Machine in parking position

1. Lower the blade to the trailer. Refer to “Operator Controls” for more information.
 2. Extend the work tool and stick cylinders to end of the stroke. Refer to Illustration 542 for more information.
 3. Lower the boom slowly to rest the bucket control linkage on a block of wood.
 4. Stop the engine. Refer to “Stopping the Engine” for more information.
 5. Turn the engine start switch key to the ON position. Refer to “Engine Starting” for more information.
 6. Move all the hydraulic control lever to relieve any trapped pressure. Refer to “System Pressure Release” for more information.
 7. Turn the engine start switch key to the OFF position. Refer to “Stopping the Engine” for more information.
 8. Move the hydraulic control to RAISED position. Refer to “Operator Controls” for more information.
 9. Lock the cab door and the access covers. Refer to “Access Door and Cover Locations” for more information.
 10. Chock the tracks and install tie-downs to prevent shifting in machine transit.
- Note:** Use protectors between the machine and the tie-downs.
11. Separately tie down the work tools that will accompany the machine. Refer to “Work Tools” for more information.

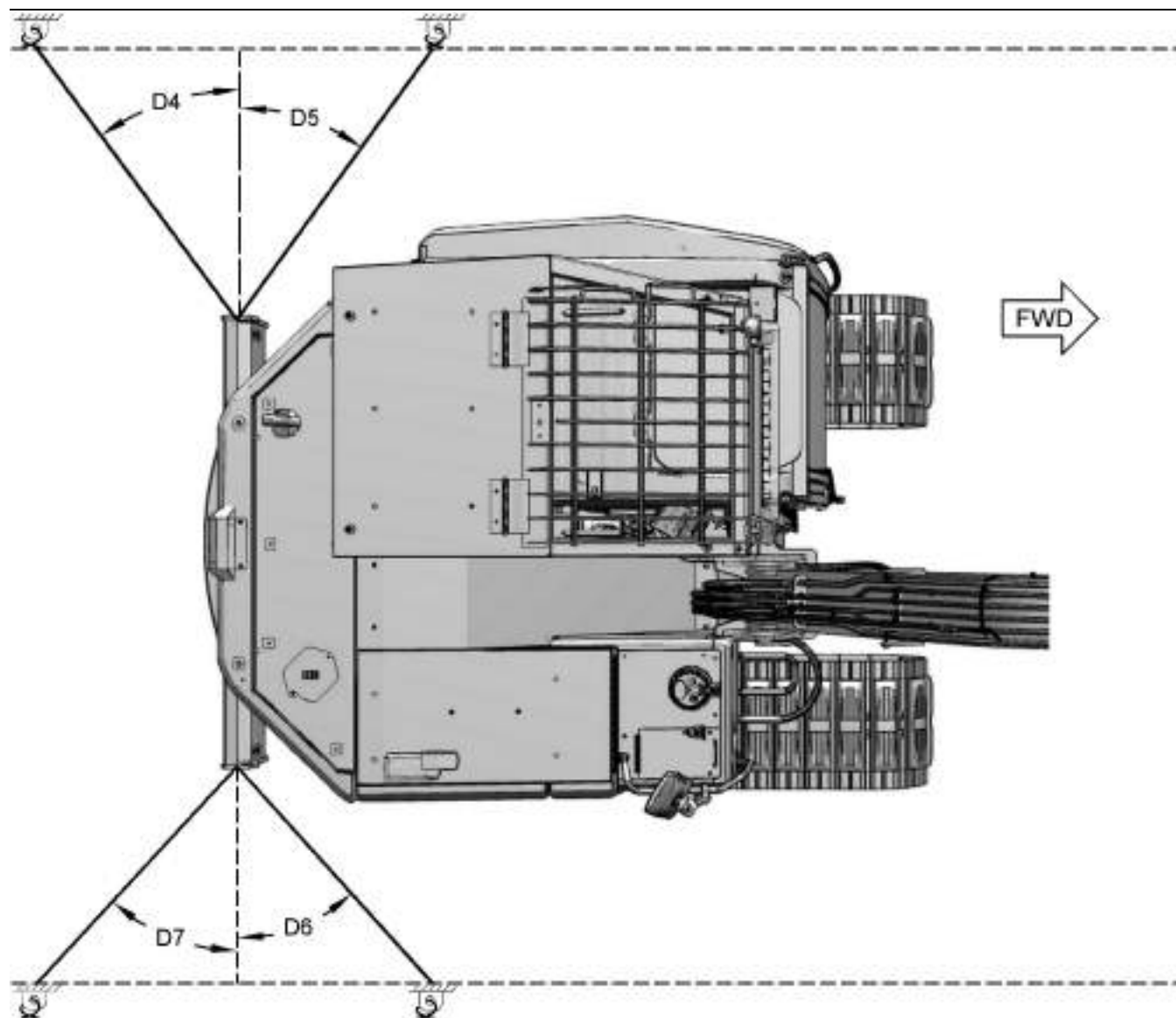
Blade Tie-Down

Illustration 543

g06702337

Top view of the machine

Blade tie-down points

- (D4) Rear blade tie-down on left side of machine
- (D5) Front blade tie-down on left side of machine

- (D6) Front blade tie-down on right side of machine
- (D7) Rear blade tie-down on right side of machine

Operation Section
Lifting and Tying Down the Machine

Table 72

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Rear blade tie-down on left side of machine (D4)	34.6 degrees	33042 N (7428.1 lb)	52868 N (11855.2 lb)
Front blade tie-down on left side of machine (D5)	50 degrees	57559 N (12939.8 lb)	92094 N (20703.6 lb)
Front blade tie-down on right side of machine (D6)	50 degrees	57559 N (12939.8 lb)	92094 N (20703.6 lb)
Rear blade tie-down on right side of machine (D7)	34.5 degrees	33042 N (7428.1 lb)	52868 N (11855.2 lb)

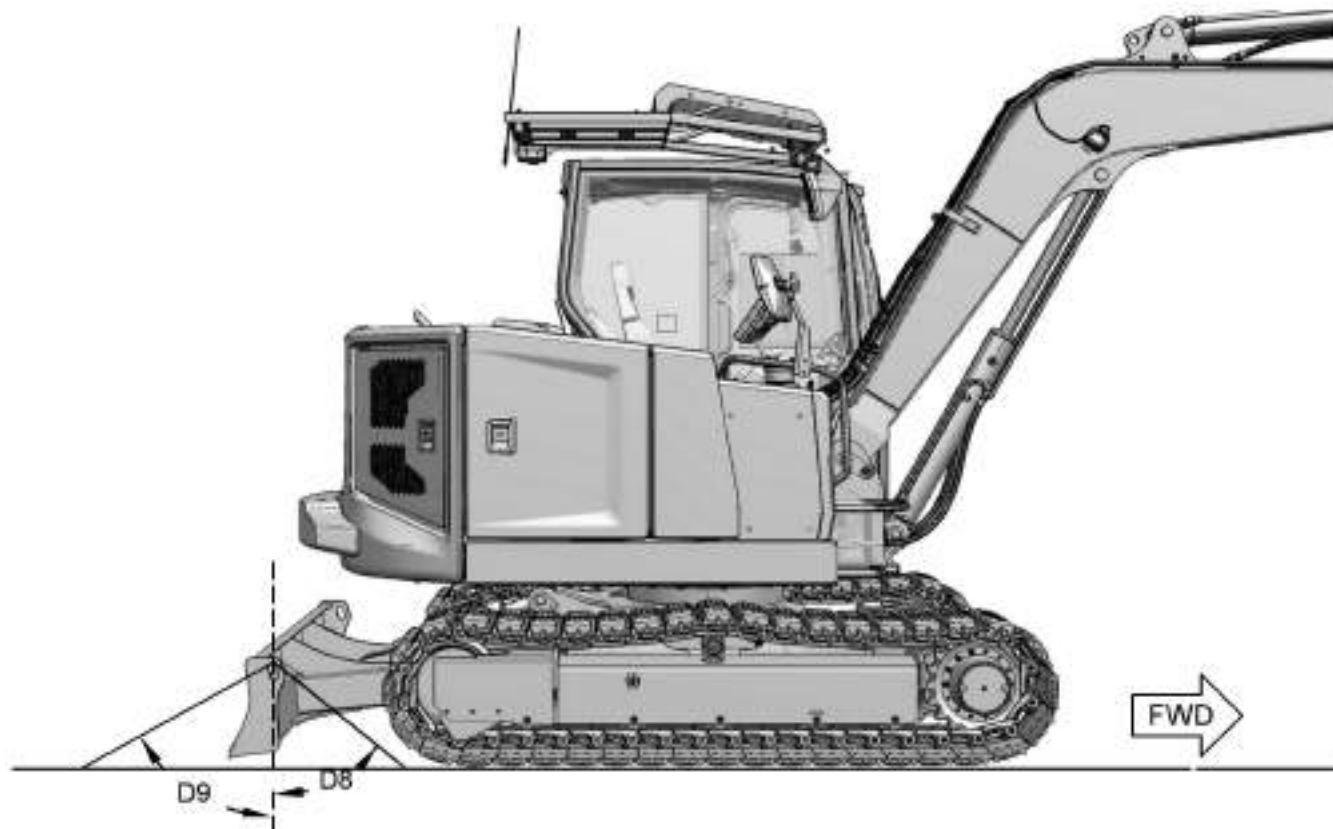


Illustration 544

g06702347

Right side of the machine

(D8) Lateral front tie-down on right side of the machine

(D9) Lateral rear tie-down on right side of the machine

Table 73

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Lateral front tie-down on right side of the machine (D8)	60 degrees	57559 N (12939.8 lb)	92094 N (20703.6 lb)
Lateral rear tie-down on right side of the machine (D9)	30 degrees	33042 N (7428.1 lb)	52868 N (11855.2 lb)

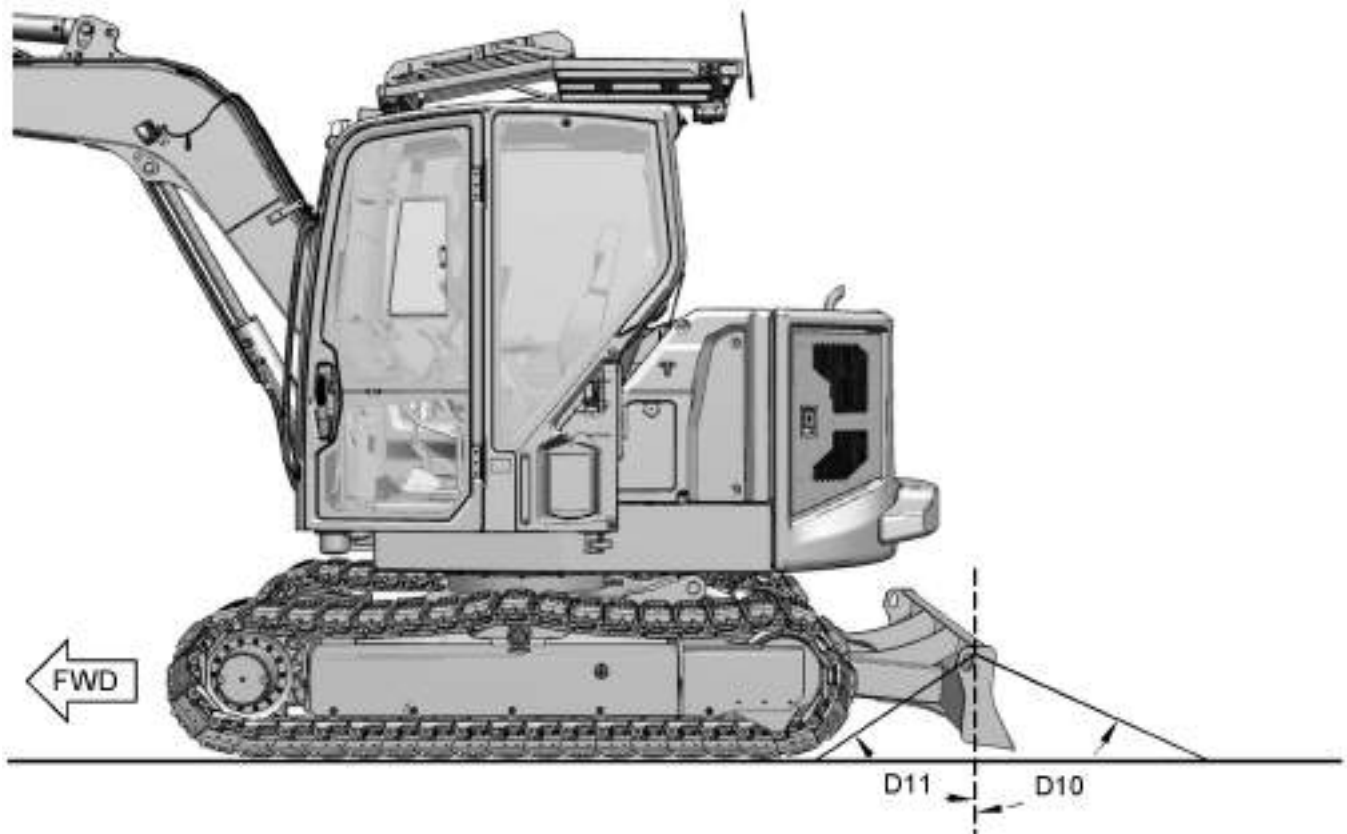


Illustration 545

g06702371

Left side of the machine

(D10) Lateral front tie-down on left side of the machine

(D11) Lateral rear tie-down on left side of the machine

Table 74

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Lateral front tie-down on left side of the machine (D10)	60 degrees	57559 N (12939.8 lb)	92094 N (20703.6 lb)
Lateral rear tie-down on left side of the machine (D11)	30 degrees	33042 N (7428.1 lb)	52868 N (11855.2 lb)

Track Roller Frame Tie-down

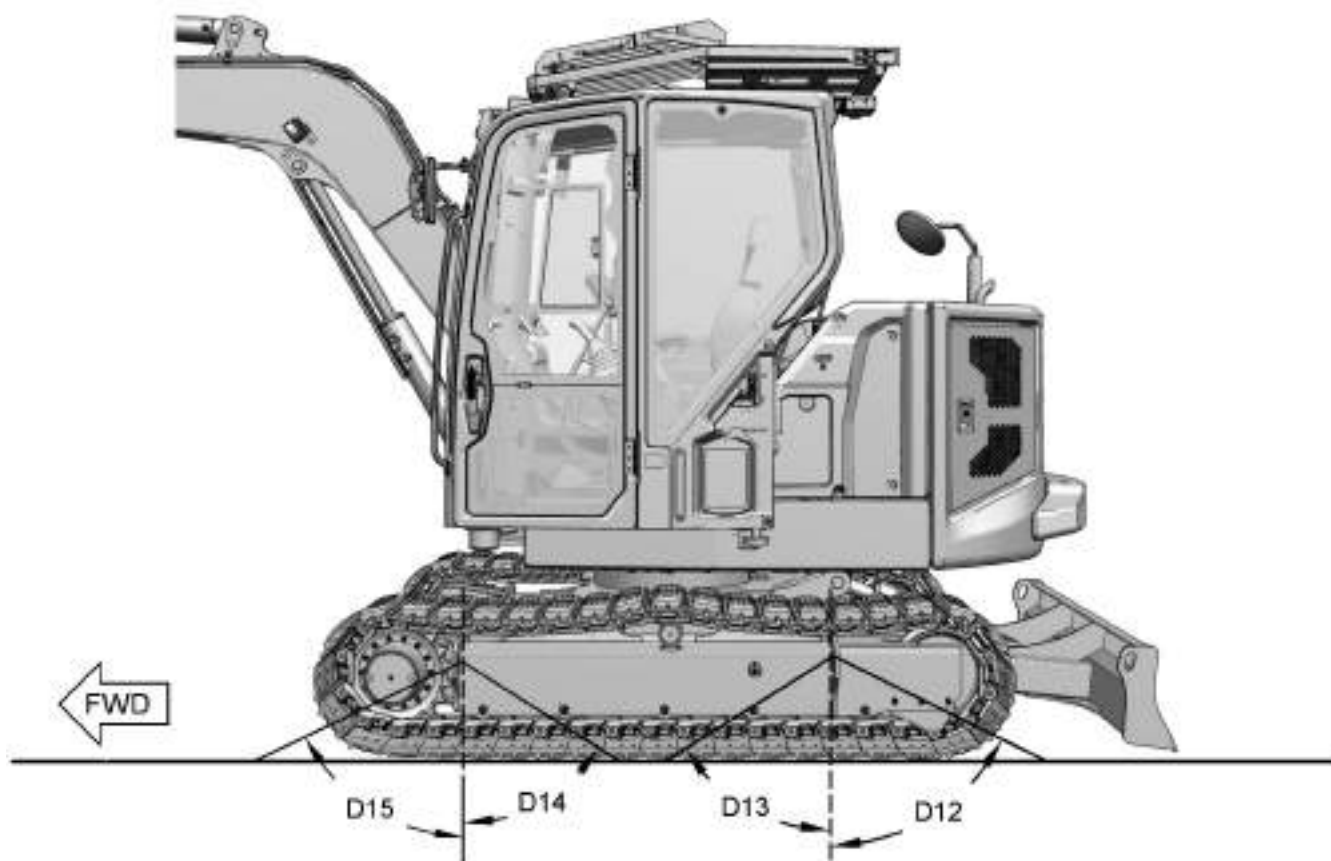


Illustration 546

g06702513

Left side of the machine

(D12) Lateral rear tie-down on rear of track roller frame

(D13) Lateral front tie-down on rear of track roller frame

(D14) Lateral rear tie-down on front of track roller frame

(D15) Lateral front tie-down on front of track roller frame

Table 75

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Lateral rear tie-down on rear of track roller frame (D12)	30 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Lateral front tie-down on rear of track roller frame (D13)	60 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Lateral rear tie-down on front of track roller frame (D14)	60 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Lateral front tie-down on front of track roller frame (D15)	30 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)

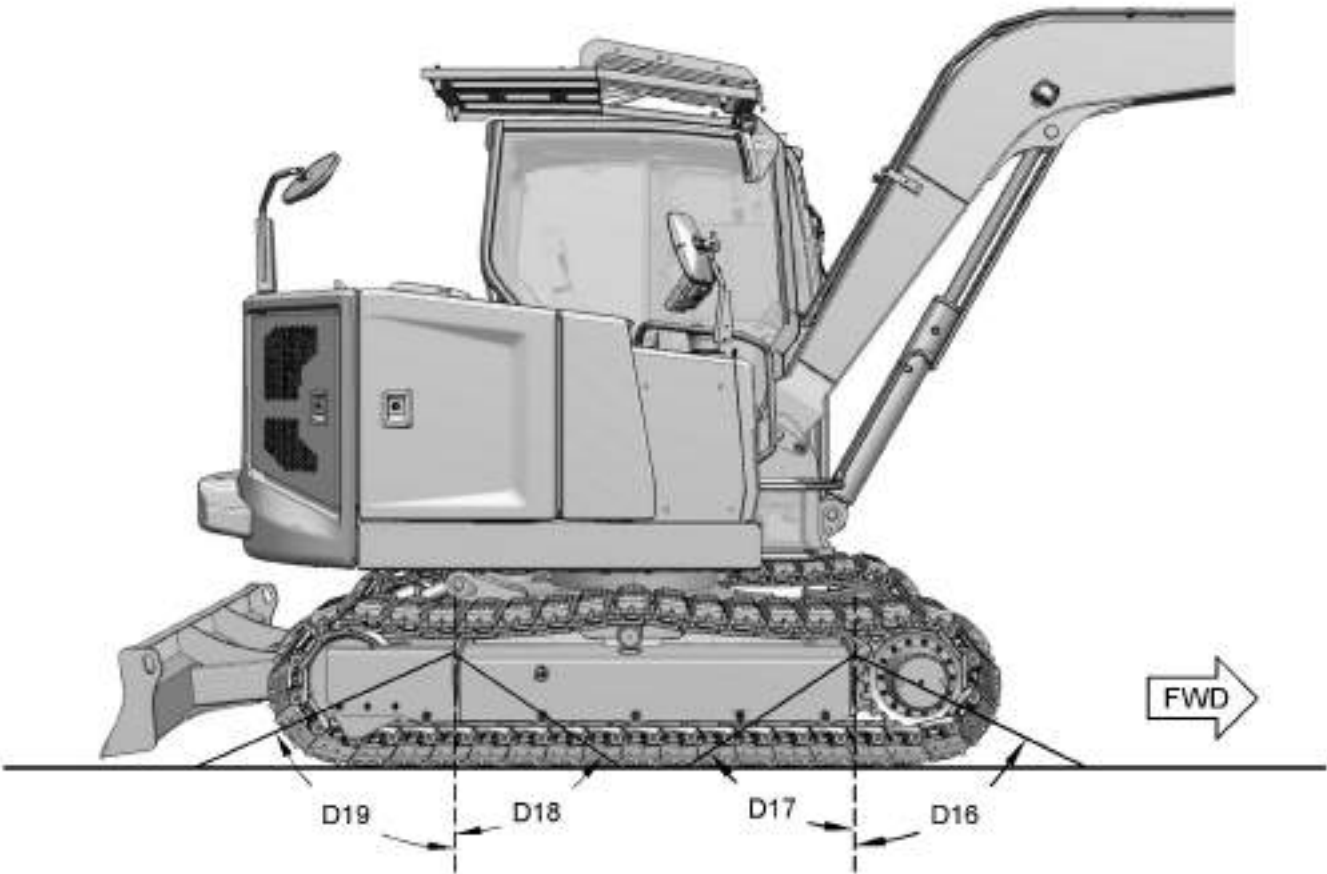


Illustration 547

g06702757

Right side of the machine

- (D16) Lateral front tie-down on front of track roller frame
- (D17) Lateral rear tie-down on front of track roller frame

- (D18) Lateral front tie-down on rear of track roller frame
- (D19) Lateral rear tie-down on rear of track roller frame

Table 76

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Lateral front tie-down on front of track roller frame (D16)	30 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Lateral rear tie-down on front of track roller frame (D17)	60 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Lateral front tie-down on rear of track roller frame (D18)	60 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Lateral rear tie-down on rear of track roller frame (D19)	30 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)

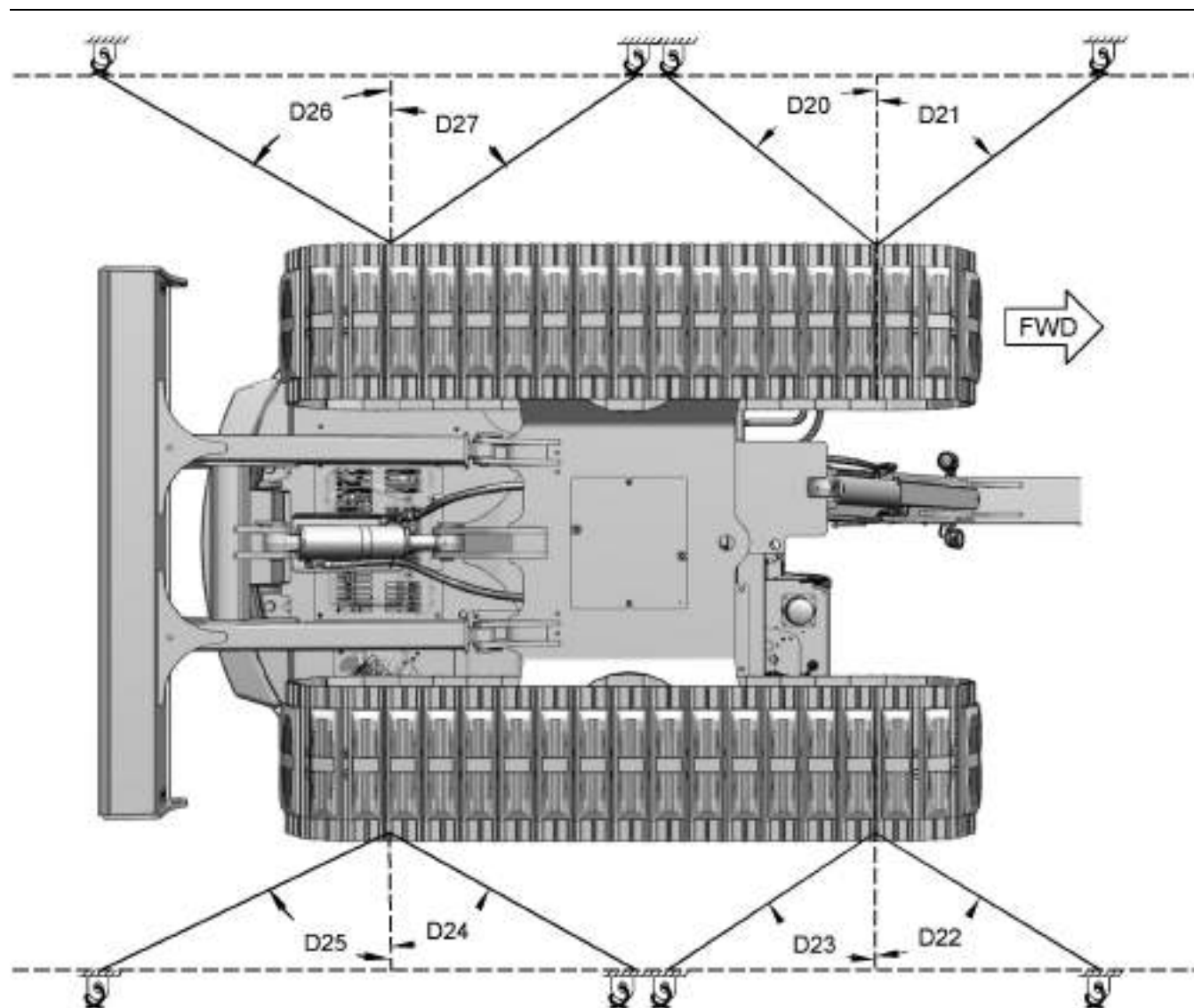


Illustration 548

g06702797

Bottom view of the machine

(D20) Rear tie-down on left side of front of machine
 (D21) Front tie-down on left side of front of machine
 (D22) Front tie-down on right side of front of machine

(D23) Rear tie-down on right side of front of machine
 (D24) Front tie-down on right side of rear of machine
 (D25) Rear tie-down on right side of rear of machine

(D26) Rear tie-down on left side of rear of machine
 (D27) Front tie-down on left side of rear of machine

Table 77

Blade Tie - Down Points	Sling Angle	Proof Load Value	Braking Load Value
Rear tie-down on left side of front of machine (D20)	41.4 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Front tie-down on left side of front of machine (D21)	27 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Front tie-down on right side of front of machine (D22)	41.4 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Rear tie-down on right side of front of machine (D23)	27 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Front tie-down on right side of rear of machine (D24)	41.4 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)
Rear tie-down on right side of rear of machine (D25)	27 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Rear tie-down on left side of rear of machine (D26)	27 degrees	31685 N (7123.1 lb)	50695 N (11396.7 lb)
Front tie-down on left side of rear of machine (D27)	41.4 degrees	53873 N (12111.1 lb)	86197 N (19377.9 lb)

Towing Information

i07486502

Towing the Machine

SMCS Code: 7000



Personal injury or death could result when towing a disabled machine incorrectly.

Block the machine to prevent movement before final drives are disengaged. The machine can roll free if it is not blocked. With final drives disengaged, the machine cannot be stopped or steered.

Follow the recommendations below, to properly perform the towing procedure.

Relieve the hydraulic tank and line pressure before any disassembly.

Even after the machine has been turned off, the hydraulic oil can still be hot enough to burn. Allow the hydraulic oil to cool before draining.

NOTICE

To tow the machine, both final drives must be disengaged.

Do not operate the travel motors with the final drives disengaged. Damage could result.

These towing instructions are for moving a disabled machine for a short distance at low speed. Move the machine at a speed of 2 km/h (1.2 mph) or less to a convenient location for repair. Always haul the machine if long distance moving is required.

Shields must be provided on both machines. This will protect the operator if the tow line or the tow bar breaks.

Do not allow an operator to be on the machine that is being towed.

Before you tow the machine, make sure that the tow line or the tow bar is in good condition. Do not use a wire rope that is kinked, twisted, or damaged. Make sure that the tow line or the tow bar has enough strength for the towing procedure that is involved. The strength of the tow line or of the tow bar should be at least 150 percent of the gross weight of the towed machine. This requirement is for a disabled machine that is stuck in the mud and for being towed on a grade.

Do not use a chain for pulling a disabled machine. A chain link can break. This may cause personal injury. Use a wire rope with ends that have loops or rings. Put an observer in a safe position to watch the pulling procedure. The observer can stop the procedure if the wire rope starts to break. Stop pulling whenever the towing machine moves without moving the towed machine.

During towing, do not allow anyone to step between the towing and the towed machines.

Do not allow the wire rope to be straddled while the machine is being towed.

Keep the tow line angle to a minimum. Do not exceed a 30 degree angle from the straight ahead position.

Avoid towing the machine on a slope.

Quick machine movement could overload the tow line or the tow bar. This could cause the tow line or the tow bar to break. Gradual, steady machine movement will be more effective.

Prior to releasing the brake of the final drive, firmly lock both tracks to prevent the machine from moving suddenly. When the machine is ready to be towed, release the brake of the final drive. Refer to Operation and Maintenance Manual, "Final Drive Ring Gear Removal".

Normally, the towing machine should be as large as the disabled machine. Make sure that the towing machine has enough brake capacity, enough weight, and enough power. The towing machine must be able to control both machines for the grade that is involved and for the distance that is involved.

You must provide sufficient control and sufficient braking when you are moving a disabled machine downhill. This may require a larger towing machine or additional machines that are connected to the rear of the disabled machine. This will prevent the machine from rolling away out of control.

All situation requirements cannot be listed. Minimal towing machine capacity is required on smooth, level surfaces. Maximum towing machine capacity is required on an incline or on a surface that is in poor condition.

Do not tow a loaded machine.

Consult your Cat dealer for the equipment that is necessary for towing a disabled machine.

Retrieval and Towing of Machine



Illustration 549

g06335059

Note: Shackles must be used for towing the machine. The wire rope should be horizontal and straight to the track frame.

Install a properly rated wire rope to the lower frame of the towing machine and the lower frame of the towed machine. The permissible force for the lower frame is 100 percent of the gross weight of the towed machine.

Note: To prevent damage to the wire rope or the lower frame of the machines, use protective sleeves on the corners of the lower frame.

Retrieve the disabled machine carefully. The applied load for each wire rope should be equal. The angle (A) between each wire rope should be 60 degree maximum. Operate the machine at a low speed.

Lightweight Towing



Illustration 550

g06335066

The wire rope should be horizontal and straight to the track frame.

Install a properly rated wire rope to the lower frame of the towing machine and the lower frame of the towed machine. Operate the machine at a low speed.

i07311343

Final Drive Sun Gear Removal

SMCS Code: 4050

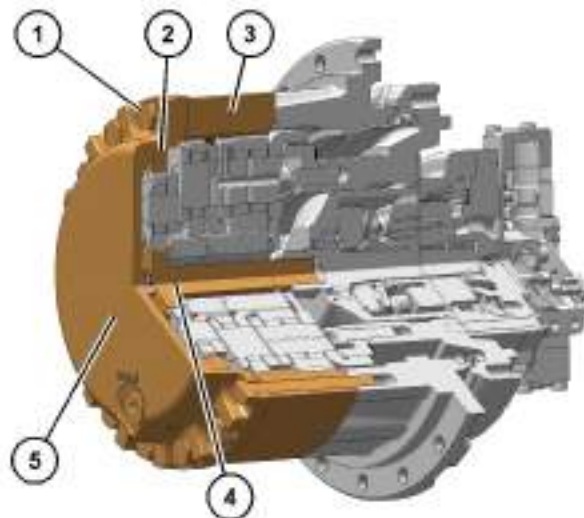


Illustration 551

g06188195

- (1) Bolt
- (2) Ring gear
- (3) Ring gear
- (4) Sun gear
- (5) Final drive cover

WARNING

Without the sun gear in place, the brakes are ineffective. Personal injury or death could result. Provide other means to hold or stop the machine.

1. Thoroughly clean the area around the final drive.
Make sure that you also clean the track shoes that are positioned above the final drive.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on containing fluid spillage.

2. Drain the final drive oil into a suitable container.
See Operation and Maintenance Manual, "Final Drive Oil - Change" for the procedure.
3. Remove 14 of 16 cover bolts (1) from final drive cover (5). Do not leave a bolt in the top hole of the cover.

Operation Section
Final Drive Sun Gear Removal

4. Insert an alignment dowel through the top hole of the cover and into the threads in the final drive housing. This is necessary to support ring gear (2) and ring gear (3) while you are removing the final drive cover.
5. Remove one track shoe to allow access to the face between final drive cover (5) and ring gear (2).
6. Loosen remaining two cover bolts (1).
7. Use a hammer and a wedge to separate final drive cover (5) and ring gear (2). Make sure that ring gear (2) and ring gear (3) stay in place.
8. Remove remaining two cover bolts (1) and final drive cover (5).
9. Remove sun gear (4) from final drive.
10. Install final drive cover (5) and 16 cover bolts (1).
11. Fill the final drive with new oil. See Operation and Maintenance Manual, "Final Drive Oil - Change" for the procedure.
12. Repeat Steps 1 through 11 for the other final drive.
13. Refer to the Service Manual for information on the installation of the final drive sun gear.

Engine Starting (Alternate Methods)

i08787193

Engine Starting with Jump Start Cables (If Equipped)

SMCS Code: 1000; 7000

WARNING

Batteries give off flammable fumes which can explode.

To avoid injury or death, do not strike a match, cause a spark, or smoke in the vicinity of a battery.

WARNING

Failure to properly service the batteries may cause personal injury.

Prevent sparks near the batteries. They could cause vapors to explode. Do not allow the jump start cable ends to contact each other or the machine.

Do not smoke when checking battery electrolyte levels.

Electrolyte is an acid and can cause personal injury if it contacts skin or eyes.

Always wear eye protection when starting a machine with jump start cables.

Improper jump start procedures can cause an explosion resulting in personal injury.

Always connect the battery positive (+) to battery positive (+) and the battery negative (-) to battery negative (-).

Jump start only with an energy source with the same voltage as the stalled machine.

Turn off all lights and accessories on the stalled machine. Otherwise, they will operate when the energy source is connected.

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

NOTICE

When starting from another machine, make sure that the machines do not touch. This could prevent damage to engine bearings and electrical circuits.

Turn on (close) the battery disconnect switch prior to the boost connection to prevent damage to electrical components on the stalled machine.

Severely discharged maintenance free batteries do not fully recharge from the alternator after jump starting. The batteries must be charged to proper voltage with a battery charger. Many batteries thought to be unusable are still rechargeable.

This machine has a 12 volt starting system. Use only the same voltage for jump starting. Use of a welder or higher voltage damages the electrical system.

Refer to Special Instruction, Battery Test Procedure, SEHS7633, available from your Caterpillar dealer, for complete testing and charging information.

NOTICE

Do not allow positive cable clamps to contact any metal except for battery terminals.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

1. Move all controls to the HOLD position in stalled machine. Move the hydraulic lockout control to the LOCKED position in stalled machine. Refer to "Operator Controls" for more information.
2. Turn the engine start switch on the stalled machine to the OFF position. Refer to "Operator Controls" for more information.
3. Turn the battery disconnect switch on the stalled machine to the ON position. Refer to "Battery Disconnect Switch" for more information.
4. Move the machine that is being used as an electrical source near the stalled machine so that the jump-start cables reach the stalled machine. **Do not allow the machines to contact each other.**

5. Stop the engine of the machine that is being used as an electrical source. Refer to “Stopping the Engine” for more information.

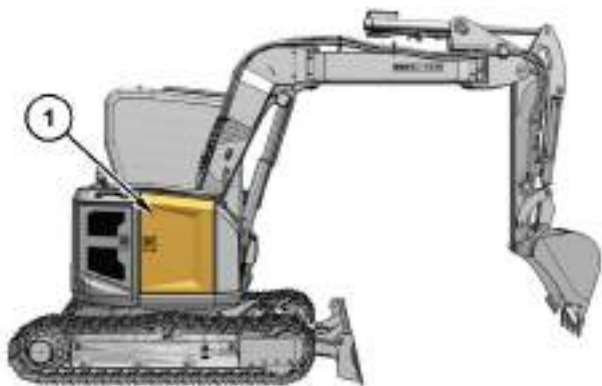


Illustration 552

g06780429

(1) Access door

6. Open access door (1) on right side of the machine. Refer to “Access Door and Cover Locations” for more information.

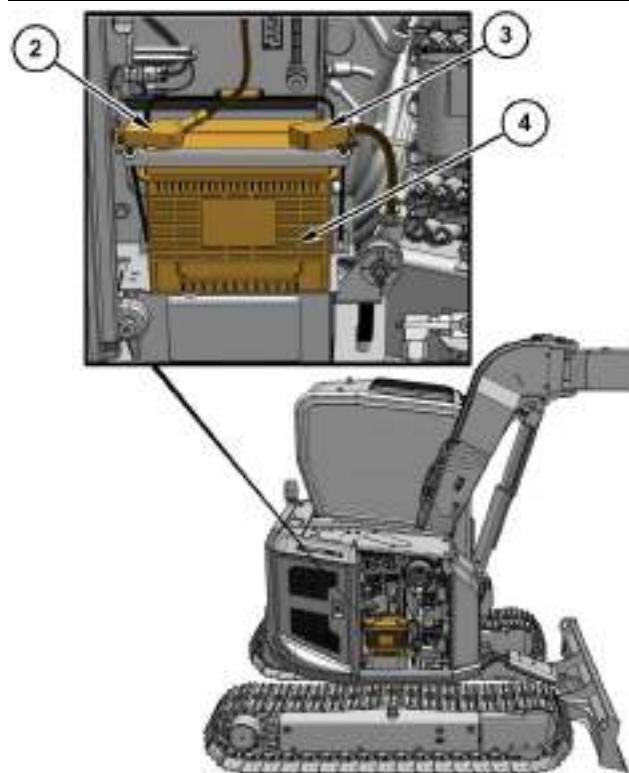


Illustration 553

g06780437

Some components removed for better clarity

- (2) Positive terminal (connects to starter)
(3) Negative terminal (connects to battery disconnect switch)
(4) Battery

7. Ensure that battery caps on both machines are tight and correctly placed. Ensure that battery (4) in the stalled machine are not frozen. Make sure that battery (4) in stalled machine and battery (4) in source machine have enough electrolyte.

Note: Positive terminal (2) of the 12 V system of the source machine and negative terminal (3) of the 12 V system of the source machine must be identified correctly before the jumper cables are connected. Positive terminal (2) of the 12 V system of discharged battery (4) must be identified correctly before the jumper cables are connected.

8. The positive ends of the jump-start cable are red. Connect one positive end of the jump-start cable to positive terminal (3) of discharged battery (4) in stalled machine. Some machines have battery sets.

Note: Batteries that are in series may be in separate compartments. Positive terminal (2) of battery (4) is connected to starter solenoid.

Do not allow the positive cable clamps to contact any metal except for the battery terminals.

9. Connect the other positive end of the jump-start cable to positive terminal (2) in battery (4) of source machine.
10. Connect one negative end of the jump-start cable to negative terminal (3) in battery (4) of source machine.
11. Finally, connect the other negative end of the jump-start cable to the frame of the stalled machine. Do not connect the jump-start cable to the battery post. Do not allow the jump-start cables to contact the battery cables, the fuel lines, the hydraulic lines, or any moving parts.
12. Start the engine of the source machine. Refer to “Engine Starting” for more information.
13. Wait at least 2 minutes before you attempt to start the stalled machine. This pause will allow battery (4) in the stalled machine to charge partially.
14. Attempt to start the stalled engine. Refer to “Engine Starting” for more information.
15. Immediately after you start the stalled engine, disconnect the jump-start cables in reverse order.
16. Close access door (1) on right side of the machine. Refer to “Access Door and Cover Locations” for more information.

Maintenance Section

Maintenance Access

i08808952

Access Door and Cover Locations

SMCS Code: 726A-CH

Engine Access Door

Park the machine on level ground and lower the implements. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".



Illustration 554

g06637438

Location of engine access door

1. Open the engine access door.

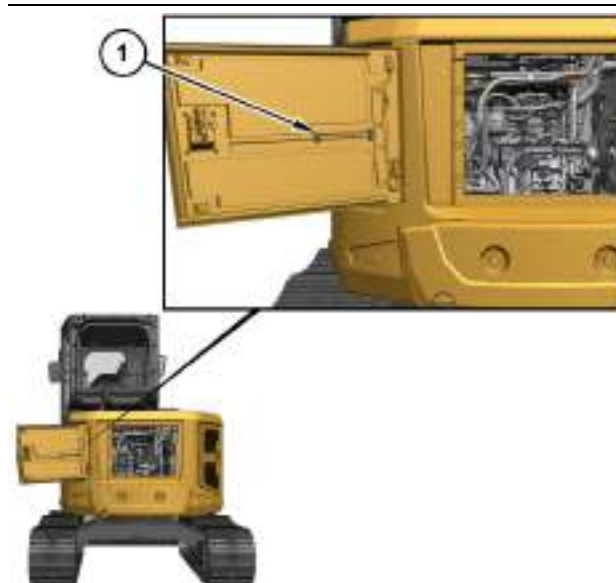


Illustration 555

g06637436

- (1) Lock bar of engine access door

2. Place lock bar of engine access door (1) into the bracket to prevent the engine access door from closing.
3. To close the engine access door, remove lock bar of engine access door (1) from the bracket. Close the engine access door, and firmly press the door towards the machine.

Left Side Cover

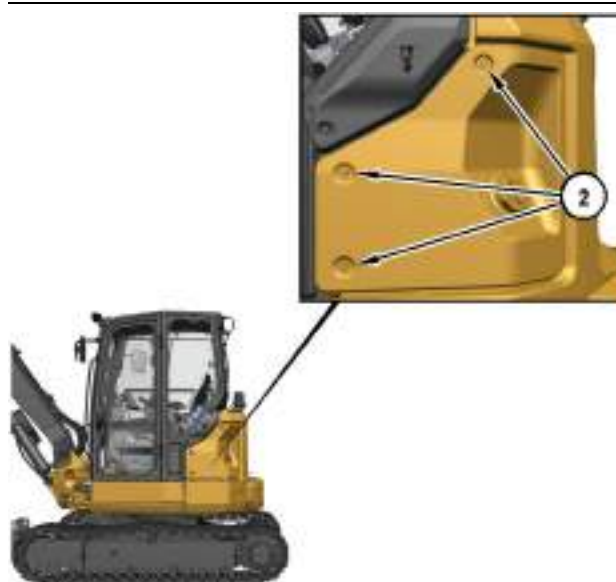


Illustration 556

g06637439

- (2) Screws

1. To remove the left side cover, remove three screws (2).



Illustration 557

g06637441

2. Opening the left side cover enables access to the hydraulic pump.

Right Side Door



Illustration 558

g06637442

Location of right side door

1. Open the right side door.

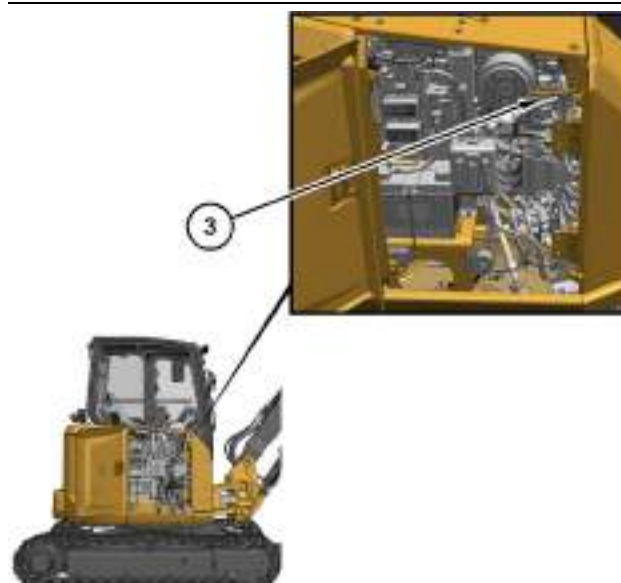


Illustration 559

g06637446

(3) Lock bar of right side access door

2. Place lock bar of right side access door (3) into the bracket to prevent the door from closing.
3. Opening the right rear access door, enables access to batteries and window washer reservoir.

4. To close the right side door, remove lock bar of right side access door (3) from the bracket. Close the door, and firmly press the door towards the machine.

Right Rear Access Door



Illustration 560

g06637444

Location of right rear access door

1. Open the right rear access door.

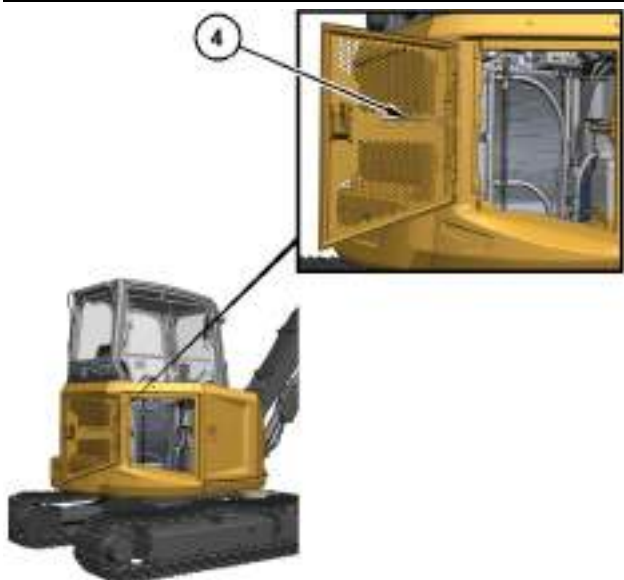


Illustration 561

g06637449

(4) Lock bar of right rear access door

2. Place lock bar of right rear access door (4) into the bracket to prevent the door from closing.
3. Opening the right rear access door, enables access to coolant sample port, coolant drain, cooling cores, and coolant reservoir.
4. To close the right rear access door, remove lock bar of right rear access door (4) from the bracket. Close the door, and firmly press the door towards the machine.

Lubricant Viscosities and Refill Capacities

i09702954

Lubricant Viscosities (Fluids Recommendations)

SMCS Code: 7581

General Information for Lubricants

When you are operating the machine in temperatures below -20°C (-4°F), refer to Operation and Maintenance Manual, SEBU5898, "Cold-Weather Recommendations for All Caterpillar Machines". This publication is available from your Cat[®] dealer.

Refer to the "Lubricant Information" section in the latest revision of the Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for a list of Cat[®] engine oils and for detailed information.

The footnotes are a key part of the tables. Read all footnotes that pertain to the machine compartment in question.

Selecting the Viscosity

To select the proper oil for each machine compartment, refer to the "Lubricant Viscosity for Ambient Temperature" table. Use the oil type and oil viscosity for the specific compartment at the proper ambient temperature.

The proper oil viscosity grade is determined by the minimum ambient temperature (the air in the immediate vicinity of the machine). Measure the temperature when the machine is started and while the machine is operated. To determine the proper oil viscosity grade, refer to the "Min" column in the table. This information reflects the coldest ambient temperature condition for starting a cold machine and for operating a cold machine. Refer to the "Max" column in the table for operating the machine at the highest temperature that is anticipated. Unless specified otherwise in the "Lubricant Viscosities for Ambient Temperatures" tables, use the highest oil viscosity that is allowed for the ambient temperature.

Machines that are operated continuously should use oils that have the higher oil viscosity in the final drives and in the differentials. The oils that have the higher oil viscosity will maintain the highest possible oil film thickness. Refer to "General Information for Lubricants" article, "Lubricant Viscosities" tables, and any associated footnotes. Consult your Cat[®] dealer if additional information is needed.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Engine Oil

Cat[®] oils have been developed and tested to provide the full performance and life that has been designed and built into Cat[®] engines.

Cat[®] DEO-ULS or oils that meet the Cat ECF-3 specification, API CJ-4, and the newer API CK-4, are required for use in the applications listed below. Cat[®] DEO-ULS and oils meeting Cat[®] ECF-3 specification, API CJ-4, the newer API CK-4, and ACEA E9 oil categories have been developed with limited sulfated ash, phosphorus, and sulfur. These chemical limits are designed to maintain the expected aftertreatment devices life, performance, and service interval. If oils meeting the Cat[®] ECF-3 specification, API CJ-4, the newer API CK-4 specifications are not available, oils meeting ACEA E9 may be used. ACEA E9 oils meet the chemical limits designed to maintain aftertreatment device life. ACEA E9 oils are validated using some but not all ECF-3 and API CJ-4 standard engine performance tests. Consult your oil supplier when considering use of an oil that is not Cat[®] ECF-3, API CJ-4, or the newer API CK-4 qualified.

Failure to meet the listed requirements will damage aftertreatment-equipped engines and can negatively impact the performance of the aftertreatment devices. The Diesel Particulate Filter (DPF) if equipped, will plug sooner and require more frequent DPF ash service intervals.

Typical aftertreatment systems may include the following:

- Diesel Particulate Filters (DPF)
- Diesel Oxidation Catalysts (DOC)
- Selective Catalytic Reduction (SCR)
- Lean NOx Traps (LNT)

Other systems may apply.

Oils that are per API CI-4 or prior categories are not allowed. These oils have high ash and are not appropriate for use in engines with aftertreatment devices.

Table 78

Lubricant Viscosities for Ambient Temperatures						
Compartment or System	Oil Type and Performance Requirements	Oil Viscosities	°C		°F	
			Min	Max	Min	Max
Engine Crankcase for all Machines	Cat DEO-ULS Cold Weather	SAE 0W-40	-40	40	-40	104
	Cat DEO-ULS SYN	SAE 5W-40	-30	50	-22	122
	Cat DEO-ULS	SAE 10W-30	-18	40	0	104
		SAE 15W-40	-10	50	14	122
Pump Coupling (If Equipped)	Cat DEO-ULS	SAE 10W-30	-18	40	0	104

Hydraulic Systems

Refer to the “Lubricant Information” section in the latest revision of the Operation and Maintenance Manual, SEBU6250, “Caterpillar Machine Fluids Recommendations” for detailed information.

The following are the preferred oils for use in most Cat[®] machine hydraulic systems:

- Cat[®] HYDO Advanced 10 SAE 10W
- Cat[®] HYDO Advanced 20 SAE 20W
- Cat[®] HYDO Advanced 30 SAE 30
- Cat[®] BIO HYDO Advanced, Multigrade

It is recommended to follow the maintenance interval schedule for oil filter changes and for oil sampling that is stated in the Operation and Maintenance Manual for your particular machine. Consult your Cat[®] dealer for details. When switching to Cat[®] HYDO Advanced fluids, cross contamination with the previous oil should be kept to less than 10%.

Second choice oils are listed below.

- Cat[®] MTO
- Cat[®] DEO
- Cat[®] DEO-ULS
- Cat[®] TDTO
- Cat[®] TDTO Cold Weather
- Cat[®] TDTO-TMS
- Cat[®] DEO-ULS Cold Weather

Note: Oil drain intervals of the oils listed above are less than those of Cat[®] HYDO Advanced oils. An exception is Cat[®] TDTO Cold-Weather oil which allows 6000 hours or higher oil drain interval. Scheduled Oil Sampling (S·O·S) services oil analysis is required when the oils listed above are used in Cat[®] hydraulic system components and hydrostatic transmissions.

Table 79

Lubricant Viscosities for Ambient Temperatures						
Compartment or System	Oil Type and Performance Requirements	Oil Viscosities	°C		°F	
			Min	Max	Min	Max
Hydraulic System	Cat HYDO Advanced 10 Cat TDTO	SAE 10W	-20	40	-4	104
	Cat HYDO Advanced 20 Cat TDTO	SAE 20W	-5	45	23	113
	Cat HYDO Advanced 30 Cat TDTO	SAE 30	10	50	50	122
	Cat BIO HYDO Advanced	"ISO 46" Multi-Grade	-30	50	-22	122
	Cat MTO Cat DEO-ULS Cat DEO	SAE 10W-30	-20	40	-4	104
	Cat DEO-ULS Cat DEO	SAE 15W-40	-15	50	5	122
	Cat TDTO-TMS	Multi-Grade	-15	50	5	122
	Cat DEO-ULS SYN	SAE 5W-40	-25	40	-13	104
	Cat DEO-ULS Cold Weather	SAE 0W-40	-40	40	-40	104
	Cat TDTO Cold Weather	SAE 0W-20	-40	40	-40	104

For applications requiring the use of fire-resistant hydraulic fluids, Cat[®] recommends the use of EcoSafe FR-46. This product is a fully synthetic, non-aqueous hydraulic fluid. Water based and glycol-based hydraulic products are not recommended for use in Cat[®] machine hydraulic systems. EcoSafe FR-46 is an ISO 46 multi-grade product. For more information refer to the product information provided by the manufacturer of EcoSafe hydraulic oil. Refer to your Cat[®] dealer for availability.

Other Fluid Applications

Table 80

Excavators, Front Shovels, Mass Excavators, Demolition Excavators, and Track Material Handlers Lubricant Viscosities for Ambient Temperatures						
Compartment or System	Oil Type and Performance Requirements	Oil Viscosity Grade	°C		°F	
			Min	Max	Min	Max
Final Drives and Swing Drives for Small, Medium, and Large Models Final Drives for 307 and 308 Mini-Excavators	Cat TDTO Cold Weather	SAE 0W-20	-40	0	-40	32
	Cat TDTO	SAE 10W	-30	0	-22	32
		SAE 30 ⁽¹⁾	-30	35	-22	95
		SAE 50	-15	50	5	122
	Cat TDTO-TMS	Multi-Grade	-25	25	-13	77
Track Roller Frame Recoil Spring and Pivot Shaft Bearings	Cat TDTO Cold Weather	SAE 0W-20	-40	0	-40	32
	Cat TDTO	SAE 10W	-30	0	-22	32
		SAE 30 ⁽¹⁾	-20	25	-4	77

(continued)

(Table 80, contd)

Excavators, Front Shovels, Mass Excavators, Demolition Excavators, and Track Material Handlers Lubricant Viscosities for Ambient Temperatures						
Compartment or System	Oil Type and Performance Requirements	Oil Viscosity Grade	°C		°F	
			Min	Max	Min	Max
		SAE 50	0	50	32	122
	Cat TDTO-TMS	Multi-Grade	-25	25	-13	77
Track Idlers and Track Rollers	Cat DEO-ULS Cat DEO	SAE 15W-40 ⁽¹⁾	-10	50	14	122
	Cat DEO Cold Weather	SAE 0W-40	-40	40	-40	104
	Cat DEO-ULS SYN	SAE 5W-40	-35	40	-31	104
	Cat FDAO SYN	Multi-Grade	-30	50	-22	122

⁽¹⁾ Factory fill oil for standard configuration machines.

Special Lubricants

Grease

To use a non-Cat[®] grease, the supplier must certify that the lubricant is compatible with Cat[®] grease.

Each pin joint should be flushed with the new grease. Ensure that all old grease is removed. Failure to meet this requirement may lead to failure of a pin joint.

Table 81

Recommended Grease						
Compartment or System	Grease Type	National Lubricating Grease Institute (NLGI) Grade	°C		°F	
			Min	Max	Min	Max
External Lubrication Points	Cat Prime Application Grease	NLGI Grade 2	-20	140	-4	284
	Cat Extreme Application Grease	NLGI Grade 1	-20	140	-4	284
		NLGI Grade 2	-15	140	+5	284
	Cat Extreme Application Grease-Artic	NLGI Grade 0.5	-50	130	-58	266
	Cat Extreme Application Grease-Desert	NLGI Grade 2	-10	140	+14	284
	Cat Utility Grease	NLGI Grade 2	-20	140	-4	284
	Cat Ball Bearing Grease	NLGI Grade 2	-20	160	-4	320

Diesel Fuel Recommendations

Diesel fuel must meet Caterpillar specification for distillate fuel and the latest revisions of "ASTM D975" and "EN 590" to ensure optimum engine performance. Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for the latest fuel information and for Cat[®] fuel specification.

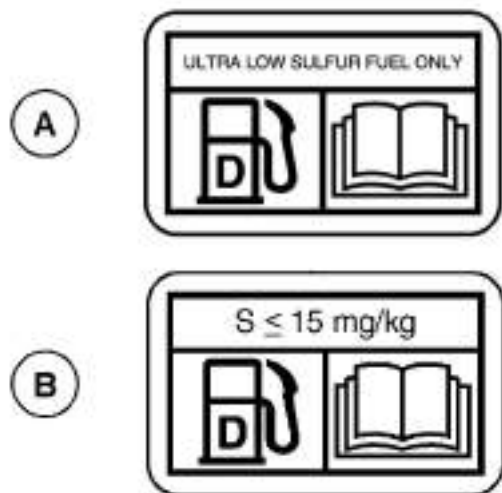


Illustration 562

g06343463

(A) North America film
(B) Europe, Africa, Middle East film

NOTICE

Ultra Low Sulfur Diesel (ULSD) fuel 0.0015 percent (≤ 15 ppm (mg/kg)) sulfur is required by regulation for use in engines certified to nonroad Tier 4 standards (U.S. EPA Tier 4 certified) and that are equipped with exhaust aftertreatment systems.

European/China ULSD 0.0010 percent (≤ 10 ppm (mg/kg)) sulfur fuel is required by regulation for use in nonroad engines type-approved to EU Stage V / China Nonroad Stage IV. Additionally, the Cetane number should not be less than 45, and the bio-diesel content should not be greater than 20% volume/volume.

Misfueling with fuels of higher sulfur level can have the following negative effects:

- **Shorten the time interval between aftertreatment device service intervals (cause the need for more frequent service intervals).**
- **Adversely impact the performance and life of aftertreatment devices (cause loss of performance).**
- **Reduce regeneration intervals of aftertreatment devices.**
- Reduce engine efficiency and durability.
- Increase the wear.
- Increase the corrosion.
- Increase the deposits.

- Lower fuel economy.
- Shorten the time period between oil drain intervals (more frequent oil drain intervals).
- Increase overall operating costs.

Failures that result for the use of improper fuels are not Caterpillar factory defects. Therefore, the cost of repairs would not be covered under a Cat® warranty.

Caterpillar does not require the use of ULSD in non-road and machine applications that are not Tier 4/ Stage IIIB/ Stage IV/ Stage V certified engines and are not equipped with aftertreatment devices. For Tier 4/Stage IIIB/Stage IV/Stage V certified engines, always follow operating instructions to ensure that the correct fuels are used.

Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more details about fuels, lubricants, and Tier 4 requirements.

Fuel Additives

Cat® Diesel Fuel Conditioner and Cat® Fuel System Cleaner are available for use when needed. These products are applicable to diesel and biodiesel fuels. Consult your Cat® dealer for availability.

Biodiesel Fuel Recommendations**NOTICE**

Never use raw vegetable or plant-based oils in place of esterified biodiesel.

The use of oils that are not esterified can lead to engine damage, up to and including engine failure.

Biodiesel is a fuel that can be made from various renewable resources that include vegetable oils, animal fat, and waste cooking oil. These oils and fats are chemically processed (esterified), and filtered to remove water and contaminants.

For biodiesel storage requirements, consult your fuel supplier.

Note: In some regions, biodiesel blends are known as Fatty Acid Methyl Ester (FAME).

Use biodiesel blends that meet national, regional, and local standards.

For more information on biodiesel standards, and to reduce the risks associated with biodiesel usage, refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations".

Biodiesel Blend Limits

NOTICE
The use of biofuel blends above the acceptable limit can lead to higher engine downtime.

Biodiesel blend levels up to B20 are acceptable to use in this product.

The use of higher biodiesel blend levels are acceptable in regions where mandated. Consult your Cat® dealer.

Note: The energy density of biodiesel blends above B20 are noticeably lower than diesel fuel.

Note: For engines equipped with emission aftertreatment devices, biodiesel blends must be blended with U.S. Ultra Low Sulfur Diesel, or European Sulfur Free Diesel.

Coolant Information

The information provided in this “Coolant Recommendation” section should be used with the “Lubricants Information” provided in the latest revision of Operation and Maintenance Manual, SEBU6250, “Caterpillar Machine Fluids Recommendations”.

The following two types of coolants may be used in Cat® diesel engines:

Preferred – Cat® ELC (Extended Life Coolant)

Acceptable – Cat® DEAC (Diesel Engine Antifreeze/Coolant)

NOTICE
Never use water alone as a coolant. Water alone is corrosive at engine operating temperatures. In addition, water alone does not provide adequate protection against boiling or freezing.

i09017656

Capacities (Refill)

SMCS Code: 1000; 7000

S/N: AX51–Up

Table 82

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Fuel Tank	72	19.0	Refer to “Lubricant Viscosities”.
Cooling System	10	2.64	

(continued)

Maintenance Section
Capacities (Refill)

(Table 82, contd)

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Coolant Reservoir	1	0.3	
Engine Crankcase with Filter	5	1.32	
Hydraulic System ⁽¹⁾	75	19.8	
Each Final Drive	1	0.3	
	kg	lbs	
Swing Gear	3.9	8.59	Refer to "Lubricant Viscosities".
Refrigerant ⁽²⁾	0.7	1.54	R-134a
	mL	oz	
Refrigerant Oil ⁽²⁾	200	6.8	Polyalkylene Glycol (PAG) Oil

⁽¹⁾ The amount of hydraulic fluid that is needed to refill the hydraulic system after performing "Hydraulic System Oil - Change"

⁽²⁾ Refer to Combined Manual, SENR5664, "Air Conditioning and Heating R-134a" for additional information

i09705123

Capacities (Refill)

SMCS Code: 1000; 7000

S/N: 5C51–Up

S/N: 5G51–Up

Table 83

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Fuel Tank ⁽¹⁾	68	18.0	Refer to "Lubricant Viscosities"
Cooling System	11	2.9	
Coolant Reservoir	1	0.3	
Engine Crankcase with Filter	5	1.3	
Hydraulic System ⁽²⁾	65	17.2	
Each Final Drive	1	0.3	
	kg	lbs	
Swing Gear	3.9	8.6	Refer to "Lubricant Viscosities"
Refrigerant ⁽³⁾	0.7	1.5	R-134a
	mL	oz	
Refrigerant Oil ⁽³⁾	200	6.8	Polyalkylene Glycol (PAG) Oil

⁽¹⁾ Fuel tank with drain plug

⁽²⁾ The amount of hydraulic fluid that is needed to refill the hydraulic system after performing "Hydraulic System Oil - Change"

⁽³⁾ Refer to Combined Manual, SENR5664, "Air Conditioning and Heating R-134a" for additional information

i09705125

Capacities (Refill)

SMCS Code: 1000; 7000**S/N:** AN41–Up

Table 84

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Fuel Tank ⁽¹⁾	64	16.9	Refer to "Lubricant Viscosities"
Cooling System	14	3.7	
Coolant Reservoir	1	0.3	
Engine Crankcase with Filter	5	1.3	
Hydraulic System ⁽²⁾	39	10.3	
Each Final Drive	1	0.3	
	kg	lbs	
Swing Gear	3.9	8.6	Refer to "Lubricant Viscosities"
Refrigerant ⁽³⁾	0.7	1.5	R-134a
	mL	oz	
Refrigerant Oil ⁽³⁾	200	6.8	Polyalkylene Glycol (PAG) Oil

⁽¹⁾ Fuel tank with drain plug⁽²⁾ The amount of hydraulic fluid that is needed to refill the hydraulic system after performing "Hydraulic System Oil - Change"⁽³⁾ Refer to Combined Manual, SENR5664, "Air Conditioning and Heating R-134a" for additional information

i09705130

Capacities (Refill)

SMCS Code: 1000; 7000**S/N:** 5X51–Up**S/N:** AX61–Up

Table 85

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Fuel Tank ⁽¹⁾	68	18.0	Refer to "Lubricant Viscosities"
Cooling System	11	2.9	
Coolant Reservoir	1	0.3	
Engine Crankcase with Filter	5	1.3	
Hydraulic System ⁽²⁾	65	17.2	
Each Final Drive	1	0.3	
	kg	lbs	
Swing Gear	3.9	8.6	Refer to "Lubricant Viscosities"

(continued)

(Table 85, contd)

Approximate Capacities (Refill)			
Component or System	Liters	US gal	Recommended Type
Refrigerant ⁽³⁾	0.7	1.5	R-134a
	mL	oz	
Refrigerant Oil ⁽³⁾	200	6.8	Polyalkylene Glycol (PAG) Oil

(1) Fuel tank with drain plug

(2) The amount of hydraulic fluid that is needed to refill the hydraulic system after performing "Hydraulic System Oil - Change"

(3) Refer to Combined Manual, SENR5664, "Air Conditioning and Heating R-134a" for additional information

i07445339

S·O·S Information

SMCS Code: 1000; 1348; 3080; 4050; 5050; 7000;
7542-008

S·O·S Services is a highly recommended process for Cat customers to use in order to minimize owning and operating cost. Customers provide oil samples, coolant samples, and other machine information. The dealer uses the data in order to provide the customer with recommendations for management of the equipment. In addition, S·O·S Services can help determine the cause of an existing product problem.

Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluid Recommendations" for detailed information concerning S·O·S Services.

The effectiveness of S·O·S Services is dependent on timely submission of the sample to the laboratory at recommended intervals.

Refer to the Operation and Maintenance Manual, "Maintenance Interval Schedule" for a specific sampling location and a service hour maintenance interval.

Consult your Cat dealer for complete information and assistance in establishing an S·O·S program for your equipment.

Maintenance Support

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Prepare the Machine for Maintenance

SMCS Code: 1000; 7000

Refer to the following procedure before you perform any maintenance to the machine.

WARNING

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the attachments have been lowered, oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

Note: Permit only one operator on the machine. Keep all other personnel away from the machine or in view of the operator.

1. Park the machine on a dry, level, solid surface that is free of any debris.

Note: The surface must be solid enough to support the weight of the machine and any tooling that is used to support the machine.

2. Engage the parking brake. Place wheel blocks in front and behind the wheels or tracks.
3. Lower all work tools to the ground.
4. Stop the engine.

5. Release the pressure in the hydraulic system. Refer to Operation and Maintenance Manual, "System Pressure Release" for more information.

Perform a visual inspection first. If the visual checks are completed but the problem has not been identified, perform operational checks. If the problem has not been identified, perform instrument tests. This procedure will help to identify system problems.

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Service Interval Chart

SMCS Code: 7000

The service interval chart is located inside the operator station.

Refer to the Operation and Maintenance Manual, "Maintenance Interval Schedule" for the correct maintenance intervals and procedures that are specific to your machine.

Maintenance Section
Service Interval Chart

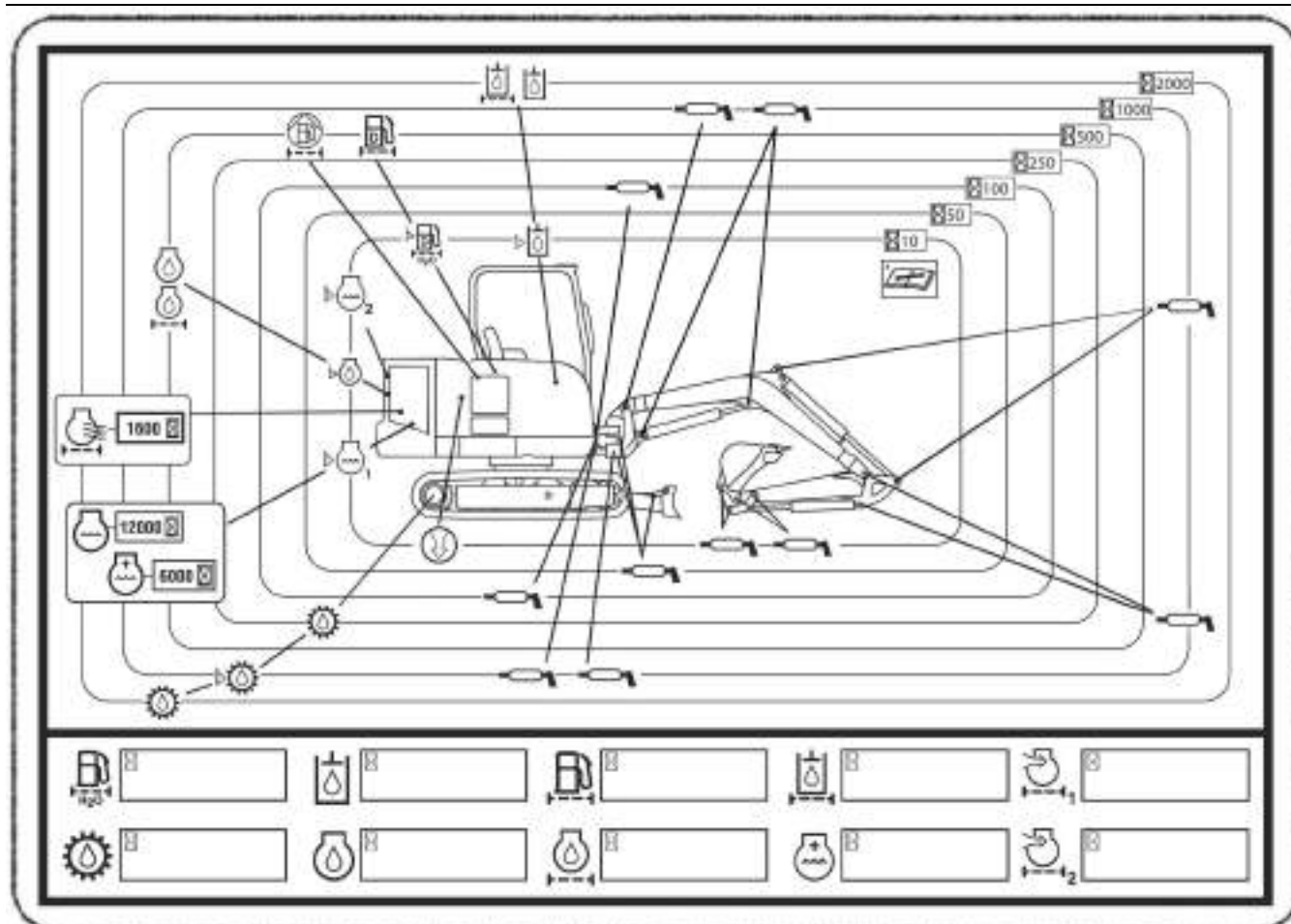


Illustration 563

g06433884



Service hour interval – Hourly interval in which a maintenance procedure should be performed.



Coolant additive – Add cooling system coolant extender (ELC).



Coolant level – Check the coolant level.



Cooling system coolant – Change the ELC (Extended Life Coolant).



Engine air filter primary element – Clean or replace the primary air filter element.



Engine air filter secondary element – Replace the secondary air filter element.



Engine breather element – Replace the engine breather element.



Engine oil level – Check the engine oil level.



Engine oil – Change the engine oil.



Engine oil filter – Change the engine oil filter.



Final drive oil level – Check the final drive oil level.



Final drive oil – Change the final drive oil.



Fuel cap filter – Replace the fuel cap filter.



Fuel level – Check the fuel level.



Fuel system filter – Replace the fuel system filters.



Fuel system water separator – Drain the water separator.



Fuel system water separator element – Replace the fuel system water separator element.



Grease zerk – Lubricate the designated locations.



Hydraulic oil level – Check the hydraulic oil level.



Hydraulic oil – Change the hydraulic oil.



Hydraulic oil filter – Change the hydraulic oil filter.

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System Pressure Release

SMCS Code: 1250-553-PX; 1300-553-PX; 1350-553-PX; 5050-553-PX; 6700-553-PX; 7540-553-PX

WARNING

Personal injury or death can result from sudden machine movement.

Sudden movement of the machine can cause injury to persons on or near the machine.

To prevent injury or death, make sure that the area around the machine is clear of personnel and obstructions before operating the machine.

Coolant System

WARNING

Pressurized system: Hot coolant can cause serious burn. To open cap, stop engine, wait until radiator is cool. Then loosen cap slowly to relieve the pressure.

To relieve the pressure from the coolant system, turn off the machine. Allow the cooling system pressure cap to cool. Remove the cooling system pressure cap slowly to relieve pressure.

Hydraulic System

The release of hydraulic pressure in a hydraulic circuit is required before service is performed to that hydraulic circuit. Release the pressure in the following hydraulic circuits before any hydraulic lines are disconnected or removed from that hydraulic circuit.

- Boom hydraulic circuit
- Stick hydraulic circuit
- Bucket hydraulic circuit
- Swing hydraulic circuit
- Travel hydraulic circuit
- Attachment hydraulic circuits (if equipped)
- Pilot hydraulic circuit
- Return hydraulic circuit

Note: Refer to the Disassembly and Assembly Manual for additional information concerning service of the components of specific hydraulic circuits.

Release of Hydraulic Pressure from the Main Hydraulic System

WARNING

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the work tools have been lowered to the ground, and the oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.

Maintenance Section
System Pressure Release

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

Perform the following steps to release the hydraulic system pressure from the main hydraulic system.

Note: For additional safety, wrap hydraulic joint with material that could absorb/reduce any residual pressure of oil when released. Loosen the joint slowly, pause, and carefully check hydraulic joint for tensions indicating presence of pressure or spring force in lines or components.

1. Position the machine on level ground.



Illustration 564

g06335090

2. Fully retract the stick cylinder rod. Adjust the position of the bucket so that the bucket is parallel to the ground. Lower the boom until the work tool is flat on the ground. Refer to Illustration 564 .

3. Release the system pressure from the implement and swing hydraulic circuits.

Note: Perform Step 3b through Step 3d immediately after the engine is shut off to ensure adequate pilot system pressure is available to release the pressure in the hydraulic circuits.

- a. Shut off the engine.
- b. Turn the engine start switch to the ON position without starting the engine.

- c. Place the hydraulic activation control lever in the UNLOCKED position.

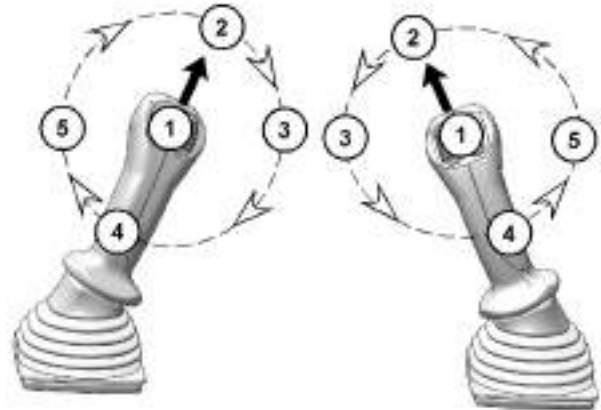


Illustration 565

g06184822

- d. Move both joysticks in a circular motion to the FULL STROKE positions multiple times until the pilot accumulator has been exhausted.

Note: Pilot pressure is required to relieve hydraulic system pressure.

- e. Place the hydraulic activation control lever in the LOCKED position.
- f. Start the engine to recharge the pilot accumulator and place the hydraulic activation control lever in the UNLOCKED position for 10 seconds.

Note: Do not activate any controls when recharging the pilot accumulator.

- g. Shut off the engine.
- h. Repeat Step 3b through Step 3g until the high-pressure lines have been released.

Note: Each time the accumulator is recharged, start the joysticks at different positions or rotate in the reverse direction. Doing so will ensure that the same circuit is not being relieved each time.

Note: You can also move only the joysticks or pedals of the hydraulic circuit that requires service to the full stroke positions after moving joysticks in a circular motion multiple times. This action will release the high pressure only in that single hydraulic circuit. This action will also release any pressure that might be present in the pilot hydraulic circuit.

4. Release hydraulic system pressure in the auxiliary circuits.

- a. Start the engine to charge pilot accumulator and place the hydraulic activation control lever in the UNLOCKED position for 10 seconds.

Note: Do not activate any controls when recharging the pilot accumulator.

- b. Shut off the engine.

Note: Perform Step 4c through Step 4e immediately after the engine is shut off to ensure adequate pilot system pressure is available to release the pressure in the hydraulic circuits.

- c. Turn the engine start switch to the ON position without starting the engine.
- d. Place the hydraulic activation control lever in the UNLOCKED position.
- e. Actuate the auxiliary circuit in both directions several times.
- f. Place the hydraulic activation control lever in the LOCKED position.
- g. Start the engine to recharge pilot accumulator and place the hydraulic activation control lever in the UNLOCKED position for 10 seconds.

Note: Do not activate any controls when recharging pilot accumulator.

- h. Shut off the engine.
- i. Repeat Step 4c through Step 4f for each auxiliary circuit.

5. After releasing the hydraulic pressure in each of the desired hydraulic circuits, place the hydraulic activation control lever in the LOCKED position.**6.** Turn the engine start switch to the OFF position.**7.** Remove the hydraulic oil tank filler cap.**8.** The pressure in the multiple hydraulic circuits that require service is now released and lines and components can be disconnected or removed from those hydraulic circuits.

Note: Pressure can build up in the auxiliary lines if the attachment is not coupled/uncoupled immediately after the pressure has been released.

Note: Refer to the Operation and Maintenance Manual, Equipment Lowering with Engine Stopped for information on lowering the work tool with the engine off.

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Welding on Machines and Engines with Electronic Controls

SMCS Code: 1000; 7000

Do not weld on any protective structure. If it is necessary to repair a protective structure, contact your Cat dealer.

Proper welding procedures are necessary to avoid damage to the electronic controls and to the bearings. When possible, remove the component that must be welded from the machine or the engine and then weld the component. If you must weld near an electronic control on the machine or the engine, temporarily remove the electronic control to prevent heat related damage. The following steps should be followed to weld on a machine or an engine with electronic controls.

1. Turn off the engine. Place the engine start switch in the OFF position.
2. If equipped, turn the battery disconnect switch to the OFF position. If there is no battery disconnect switch, remove the negative battery cable at the battery.

NOTICE

Do NOT use electrical components (ECM or sensors) or electronic component grounding points for grounding the welder.

3. Clamp the ground cable from the welder to the component that will be welded. Place the clamp as close as possible to the weld. Make sure that the electrical path from the ground cable to the component does not go through any bearing. Use this procedure to reduce the possibility of damage to the following components:

- Bearings of the drive train
- Hydraulic components
- Electrical components
- Other components of the machine

4. Protect any wiring harnesses and components from the debris and the spatter which is created from welding.

5. Use standard welding procedures to weld the materials together.

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Maintenance Interval Schedule

SMCS Code: 7000

Ensure that all safety information, warnings, and instructions are read and understood before any operation or any maintenance procedures are performed.

The user is responsible for the performance of maintenance. All adjustments, the use of proper lubricants, fluids, filters, and the replacement of components due to normal wear and aging are included. Failure to adhere to proper maintenance intervals and procedures may result in diminished performance of the product and/or accelerated wear of components.

Products that operate in severe operating conditions or that experience abnormally high fuel consumption may require more frequent maintenance. Refer to the maintenance procedure for any other exceptions that may change the maintenance intervals.

Note: Before each consecutive interval is performed, all maintenance from the previous interval shall be performed.

Note: The after treatment system can be expected to function properly for the useful life of the engine (emissions durability period), as defined by regulation. All prescribed maintenance requirements shall be followed.

The following guidelines should be followed if the service hours are not met:

- Items listed between 10 and 100 service hours should be performed at least every 3 months.
- Items listed between 250 and 500 service hours should be performed at least every 6 months.
- Items listed between 1000 service hours and 2500 service hours should be performed at least every year.

When Required

" Battery or Battery Cable - Inspect/Replace" . . .	509
" Blade Cutting Edges - Inspect/Replace"	513
" Bucket Linkage - Lubricate"	527
" Bucket Tips - Inspect/Replace"	529
" Camera - Clean"	533
" Condenser (Refrigerant) - Clean"	534
" Diesel Particulate Filter - Clean"	559
" Film (Product Identification) - Clean"	576

" Fuel System - Prime"	581
" Fuel Tank Strainer - Clean"	586
" Hydraulic Tank Screen - Clean"	617
" Radiator Core - Clean"	625
" Shovel Crane - Inspect"	628
" Track Adjustment - Adjust"	637
" Window Washer Reservoir - Fill"	640
" Window Wiper - Inspect/Replace"	641
" Windows - Clean"	641

Every 10 Service Hours or Daily for First 100 Hours

" Blade Linkage - Lubricate"	514
" Boom and Stick Linkage - Lubricate"	516
" Boom and Stick Linkage - Lubricate"	518

Every 10 Service Hours or Daily

" Air Cleaner Dust Valve - Clean/Inspect"	508
" Air Conditioner/Cab Heater Filter (Recirculation) - Inspect/Replace"	508
" Blade Linkage - Lubricate"	514
" Cab Air Filter (Fresh Air) - Clean/Replace"	532
" Cooling System Coolant Level - Check"	551
" Cooling System Coolant Level - Check"	554
" Engine Oil Level - Check"	568
" Fuel System Water Separator - Drain"	584
" Fuel Tank Water and Sediment - Drain"	589
" Fuel Tank Water and Sediment - Drain"	587
" Hydraulic System Oil Level - Check"	613
" Indicators and Gauges - Test"	623
" Quick Coupler - Lubricate"	624
" Quick Coupler - Lubricate"	623
" Quick Coupler - Lubricate"	624
" Seat Belt - Inspect"	628
" Thumb - Lubricate"	635
" Track Adjustment - Inspect"	639
" Travel Alarm - Test"	639

“ Undercarriage - Check” 640

Every 10 Service Hours or Daily for Machines Used in Severe Applications

“ Blade Linkage - Lubricate” 514

Every 50 Service Hours

“ Blade Linkage - Lubricate” 514

“ Swing Frame Pin - Lubricate” 633

Every 100 Service Hours

“ Swing Bearing - Lubricate” 632

“ Swing Bearing - Lubricate” 632

“ Swing Gear - Lubricate” 633

“ Swing Gear - Lubricate” 634

Every 100 Service Hours or 2 Weeks for Machines Used in Severe Applications

“ Boom and Stick Linkage - Lubricate” 518

“ Boom and Stick Linkage - Lubricate” 516

Every 250 Service Hours

“ Condenser (Refrigerant) - Clean” 534

“ Cooling System Coolant Sample (Level 1) - Obtain” 558

“ Engine Oil Sample - Obtain” 569

“ Shovel Crane - Lubricate” 631

Initial 500 Service Hours

“ Final Drive Oil - Change” 577

Initial 500 Hours (for New Systems, Refilled Systems, and Converted Systems)

“ Cooling System Coolant Sample (Level 2) - Obtain” 559

Every 500 Service Hours

“ Air Conditioner/Cab Heater Filter (Recirculation) - Inspect/Replace” 508

“ Boom and Stick Linkage - Lubricate” 518

“ Boom and Stick Linkage - Lubricate” 516

“ Boom Swing Cylinder Pins - Lubricate” 515

“ Boom, Stick, and Frame - Inspect” 524

“ Cab Air Filter (Fresh Air) - Clean/Replace” 532

“ Engine Air Filter Primary Element - Replace” . . 562

“ Engine Air Filter Secondary Element - Replace” 562

“ Engine Oil and Filter - Change” 570

“ Final Drive Oil Level - Check” 577

“ Final Drive Oil Sample - Obtain” 578

“ Fuel Lift Pump Strainer - Replace” 579

“ Fuel Lift Pump Strainer - Replace” 579

“ Fuel System Primary Filter (Water Separator) Element - Replace” 582

“ Hydraulic System Oil Sample - Obtain” 616

Every 1000 Service Hours

“ Battery - Clean” 509

“ Battery Hold-Down - Tighten” 509

“ Belts - Inspect/Adjust” 510

“ Belts - Inspect/Adjust” 510

“ Belts - Replace” 513

“ Engine Valve Lash - Check” 576

“ Hydraulic System Oil Filter (Return) - Replace” 609

“ Hydraulic System Oil Filter (Return) - Replace” 606

Every 1500 Service Hours

“ Engine Crankcase Breather - Replace” 563

“ Engine Crankcase Breather - Replace” 565

Every 2000 Service Hours

“ Final Drive Oil - Change” 577

“ Fuel Cap Filter - Replace” 578

“ Hydraulic System Oil Filter (Return) - Replace” 609

“Hydraulic System Oil Filter (Return) -
Replace” 606

“Receiver Dryer (Refrigerant) - Replace” 627

Every 2000 Service Hours of Partial Hammer Use (50% of Service Hours)

“Hydraulic System Oil - Change” 600

Every Year

“Cooling System Coolant Sample (Level 2) -
Obtain” 559

Every 3 Years

“Seat Belt - Replace” 628

Every 6000 Service Hours or 3 Years

“Hydraulic System Oil - Change” 600

Every 12 000 Service Hours or 6 Years

“Cooling System Coolant (ELC) - Change” 534

“Cooling System Coolant (ELC) - Change” 539

i07313721

Air Cleaner Dust Valve - Clean/Inspect

SMCS Code: 1051-571-VL

1. Open the right side rear access door.



Illustration 566

g06279728

2. Check the dust valve after every 10 service hours or at the end of each day. Actuate the valve by squeezing the lips of the valve to remove any accumulated debris. Collect the debris into a suitable container.
3. Close the right side rear access door.

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Air Conditioner/Cab Heater Filter (Recirculation) - Inspect/Replace

SMCS Code: 1054-040-A/C; 1054-510-A/C

NOTICE

An air recirculation filter element plugged with dust will result in decreased performance and service life to the air conditioner or cab heater.

To prevent decreased performance, clean the filter element, as required.

NOTICE

Failure to reinstall the filter element for the air conditioning system will contaminate and damage the system components.

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

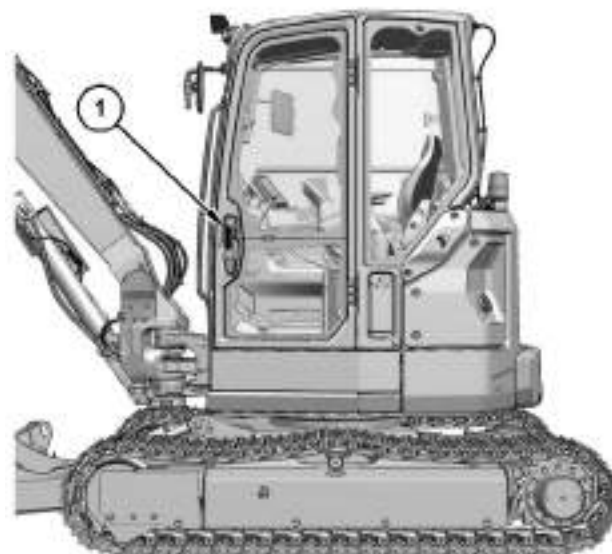


Illustration 567

g06642168

- (1) Cab door

2. Open cab door (1). Refer to "Access Door and Cover Locations" for more information.

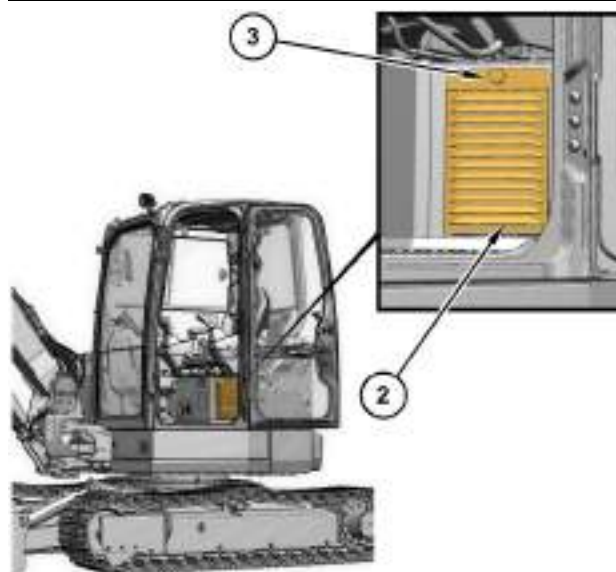


Illustration 568

g06642189

- (2) Vented cover plate
- (3) Thumb screw

3. Loosen and remove thumb screw (3). Remove vented cover plate (2).

i00934864

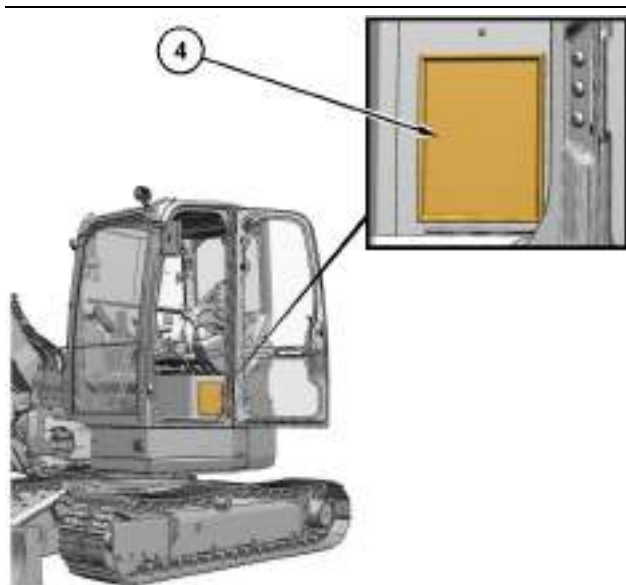


Illustration 569

g06642194

(4) Cab air filter

4. Remove cab air filter (4).

Note: Clean cab air filter (4) frequently in dusty conditions.

Replace cab air filter (4) if the following conditions are noted:

- Rips or tears in cab air filter (4)
- Reduction of air circulation in the operator station

5. Tap cab air filter (4) against palm of the hand of an individual to remove dirt. Do not use compressed air to clean cab air filter (4).**6. After cleaning cab air filter (4), inspect cab air filter (4). If cab air filter (4) is damaged or badly contaminated, use new cab air filter (4). Make sure that cab air filter (4) is dry.****7. Install cab air filter (4).****8. Install vented cover plate (2) and secure vented cover plate (2) using thumbscrew (3).****9. Close cab door (1). Refer to "Access Door and Cover Locations" for more information.**

Battery - Clean

SMCS Code: 1401-070

Clean the battery surface with a clean cloth. Keep the terminals clean and keep the terminals coated with petroleum jelly. Install the post cover after you coat the terminal post with petroleum jelly.

i00934872

Battery Hold-Down - Tighten

SMCS Code: 7257

Tighten the hold-downs for the battery in order to prevent the batteries from moving during machine operation.

i08328609

Battery or Battery Cable - Inspect/Replace

SMCS Code: 1401-040; 1401; 1401-510; 1401-561; 1402-040; 1402-510**WARNING**

Personal injury can result from battery fumes or explosion.

Batteries give off flammable fumes that can explode. Electrolyte is an acid and can cause personal injury if it contacts the skin or eyes.

Prevent sparks near the batteries. Sparks could cause vapors to explode. Do not allow jumper cable ends to contact each other or the engine. Improper jumper cable connections can cause an explosion.

Always wear protective glasses when working with batteries.

Note: If the machine is equipped with product link, turning the disconnect switch to OFF will remove the power from the product link module and it will not be able to communicate.

1. Turn all the switches to the OFF position. Turn the engine start switch key to the OFF position.
2. Turn the battery disconnect switch to the OFF position. Remove the key.
3. Disconnect the negative battery cable at the battery.
4. Disconnect the battery cable at the battery disconnect switch.

5. Disconnect the positive battery cable at the battery.
6. Remove the battery hold-down.
7. Remove the battery.
8. Inspect the battery terminals for corrosion. Clean the battery terminals and the surfaces of the batteries with a clean cloth.
9. Inspect the battery cables for wear or damage.
10. Make any necessary repairs. If necessary, replace the battery cables and/or the battery.
11. Install the battery.
12. Reinstall the battery hold-down. Tighten the hold-down for the battery to prevent the battery from moving during machine operation.
13. Connect the positive battery cable at the battery.
14. Connect the negative battery cable at the battery.
15. Coat the battery terminals with petroleum jelly to prevent corrosion and install the terminal covers.
16. Connect the battery cable at the battery disconnect switch.
17. Install the key and turn the battery disconnect switch ON.

Recycle the Battery

Always recycle a battery. Never discard a battery.

Always return used batteries to one of the following locations:

- A battery supplier
- An authorized battery collection facility
- Recycling facility

i08587597

Belts - Inspect/Adjust (Multi-V Stretch Belt)

SMCS Code: 1357-040; 1357-025; 1397-025; 1397-040

Inspection

The Multi-vee Front End Auxiliary Drive (FEAD) may show signs of belt dusting and reformed solid within pulley and belt grooves under bedding-in where ambient airflow is not sufficient to clear the dusting. This dusting is an expected characteristic, the pulley, and belt should run clear beyond 100 hours.

To maximize the engine performance, inspect the belt for wear and for cracking. Replace a belt that is worn or damaged.

If the belt is too loose, vibration causes unnecessary wear on the belt and pulleys. A loose belt may slip enough to cause overheating.

If a multi-v stretch belt is too loose, the belt must be replaced with a new one.

i08788077

Belts - Inspect/Adjust

SMCS Code: 1357-040; 1357-025; 1397-025; 1397-040

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

For maximum engine performance and maximum utilization of engine, inspect the belts for wear and for cracking. Check the belt tension. Adjust the belt tension to minimize belt slippage. Belt slippage will decrease the belt life. Belt slippage will also cause poor performance of the alternator and of any driven equipment.

If new belts are installed, recheck the belt adjustment after 30 minutes of operation. If two belts or more are required for an application, replace the belts in belt sets. If only one belt of a pair is replaced, the new belt will carry more load as the older belts are stretched. The additional load on the new belt could cause the new belt to break.

Water Pump Belt, Fan Drive Belt, and Alternator Belt

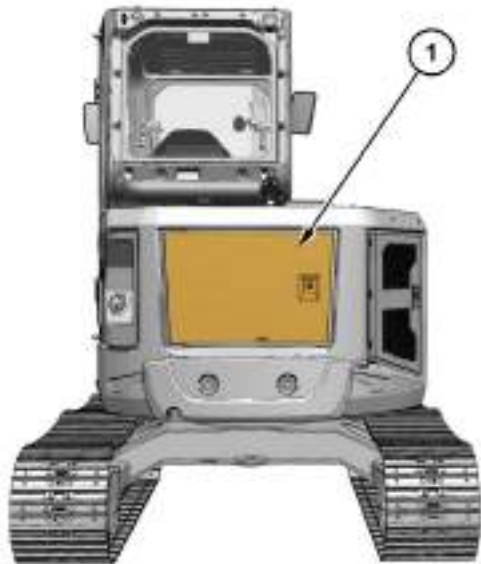


Illustration 570

g06711736

Rear view of machine

(1) Access door

1. Open access door (1) on the rear of the machine. Refer to "Access Door and Cover Locations" for more information.

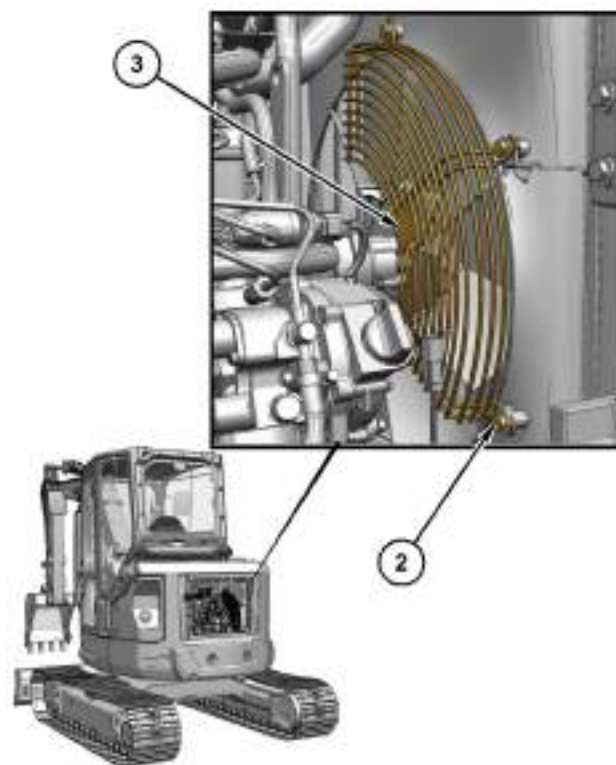


Illustration 571

g06711740

Some components removed for better clarity

(2) Bolt
(3) Fan guard

2. Remove fan guard (3) by removing three bolts (2) that secure fan guard (3).

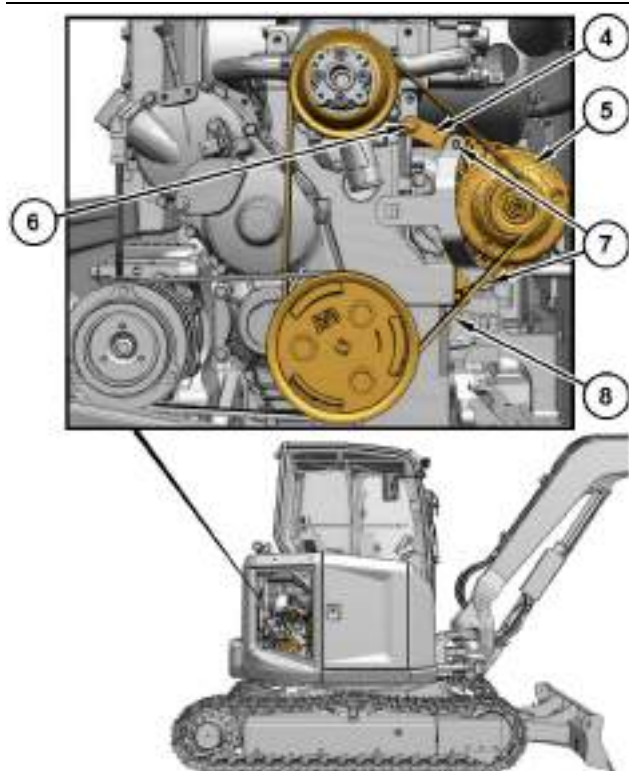


Illustration 572

g06711746

Right side of the machine

Some components are removed for better clarity

- (4) Lever plate
- (5) Alternator
- (6) Adjusting bolt
- (7) Mounting bolt
- (8) Belt

3. Loosen adjusting bolt (6) from lever plate (4).
4. Loosen two mounting bolts (7) from alternator (5).

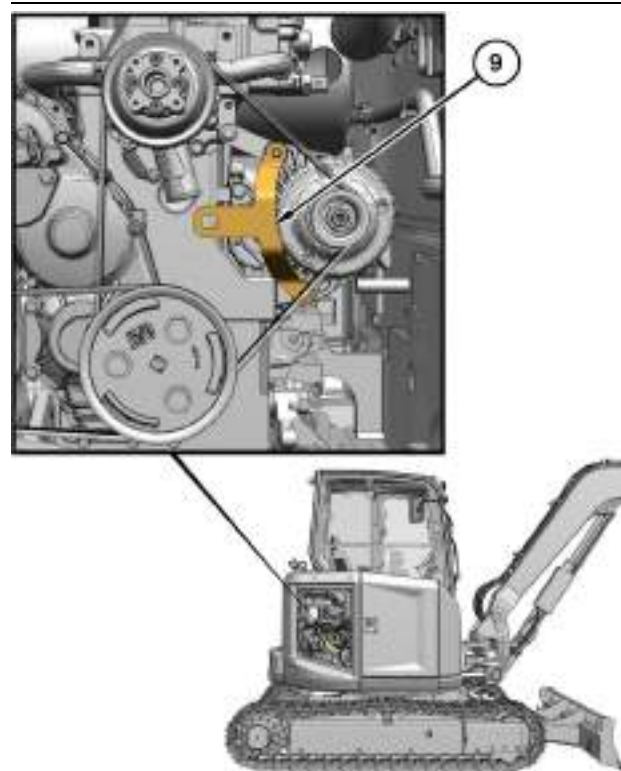


Illustration 573

g06711751

Right side of the machine

Some components are removed for better clarity

- (9) Top plate

5. Rotate top plate (9) counterclockwise using a ratchet until lever plate (4) loosens out of adjusting bolt (6).
6. Move lever plate (4) counterclockwise away from the alternator (5) and remove ratchet from top plate (9).
7. Remove belt (8).
8. Install new belt (8) through alternator (5), fan drive, and water pump. Refer to Illustration 572 for new belt (8) position after installation.
9. Rotate top plate (9) clockwise using a ratchet until lever plate (4) aligns with mounting bolt (7) on alternator (5).
10. Tighten two mounting bolts (7) to torque of $28 \pm 7 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ lb ft}$).
11. Tighten adjusting bolt (6) to torque of $28 \pm 7 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ lb ft}$).
12. Install fan guard (3) and secure fan guard (3) using three bolts (2). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

13. Close access door (1) on the rear of the machine. Refer to "Access Door and Cover Locations" for more information.

Air Conditioner Belt

1. Open access door (1) on the rear of the machine. Refer to "Access Door and Cover Locations" for more information.
2. Remove fan guard (3) by removing three bolts (2) that secure fan guard (3).

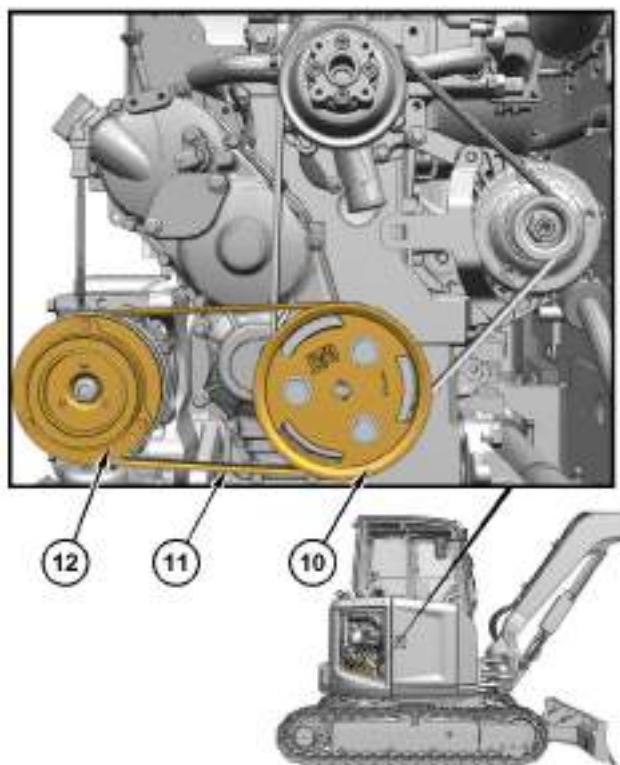


Illustration 574

g06714727

Right side of the machine

Some components are removed for better clarity

- (10) Crankshaft pulley
(11) Air conditioner belt
(12) Compressor

3. Air conditioner belt (11) is mounted between crankshaft pulley (10) and compressor (12).
4. Check the condition of air conditioner belt (11) for any cracks or damage. Replace air conditioner belt (11) if necessary.

Note: Mark the position and rotation of air conditioner belt (11) between crankshaft pulley (10) and compressor (12) before removal of air conditioner belt (11).

5. Remove air conditioner belt (11). Ensure that crankshaft pulley (10) is clean and free from any wear or damage. If necessary, replace crankshaft pulley (10).

6. Install new air conditioner belt (11) through crankshaft pulley (10) and compressor (12). Refer to Illustration 574 for new air conditioner belt (11) position after installation.

Note: Use 385-9415 Installer Tool (Belt) to install the air conditioner belt (11).

7. Install fan guard (3) and secure fan guard (3) using three bolts (2). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.
8. Close access door (1) on the rear of the machine. Refer to "Access Door and Cover Locations" for more information.

i08587604

Belts - Replace

SMCS Code: 1357-510; 1397-510

Remove the used water pump, fan drive, and alternator belt and the air conditioner belt. Install new belts.

After new belts are installed, check the belt tension again after 30 minutes of engine operation at rated rpm.

i08704747

Blade Cutting Edges - Inspect/Replace

SMCS Code: 6801



WARNING

Personal injury or death can result from a falling blade.

Block the blade before changing the cutting edges and the end bits.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

i07527180

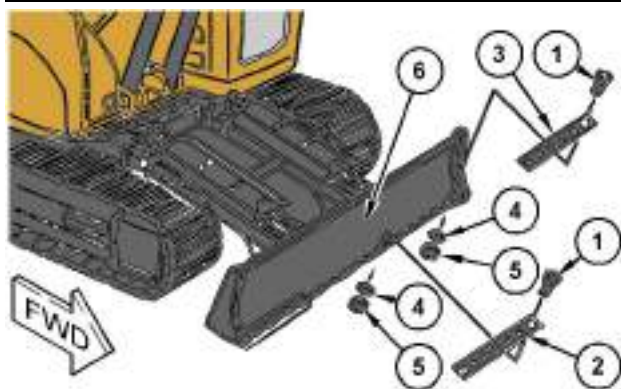


Illustration 575

g06747690

- (1) Bolt
- (2) Cutting edge
- (3) End bit
- (4) Washer
- (5) Nut
- (6) Blade

1. Check cutting edge (2) of blade (6) and end bit (3) of blade (6) for wear. If any of the parts have signs of unusual wear or damage, replace the part.
2. Raise blade (6) and place blocking underneath blade (6). Refer to "Operator Controls" and for more information.
3. Lower blade (6) onto the blocking. Refer to "Operator Controls" and for more information.
4. Remove bolts (1), washers (4), and nuts (5).
5. Remove cutting edge (2) and end bit (3).
6. Clean the surface between cutting edge (2) and end bit (3).
7. Turn cutting edge (2) and end bit (3) upside-down if cutting edge (2) and end bit (3) are not worn.
8. If both sides of cutting edge (2) and end bit (3) are worn, replace cutting edge (2) and end bit (3) with new cutting edge (2) and new end bit (3).
9. Install new cutting edge (2) and new end bit (3) with bolts (1). Tighten bolts (1) to a torque of $135 \pm 20 \text{ N}\cdot\text{m}$ ($100 \pm 15 \text{ lb ft}$).
10. Raise blade (6) and remove the blocking. Refer to "Operator Controls" and for more information.
11. Lower blade (6) to the ground. Refer to "Operator Controls" and for more information.
12. After a few hours of operation, tighten bolts (1) to the torque that is specified in Step 9.

Blade Linkage - Lubricate

SMCS Code: 6060-086

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the blade linkage. Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on molybdenum grease.

Wipe all fittings before you apply lubricant.

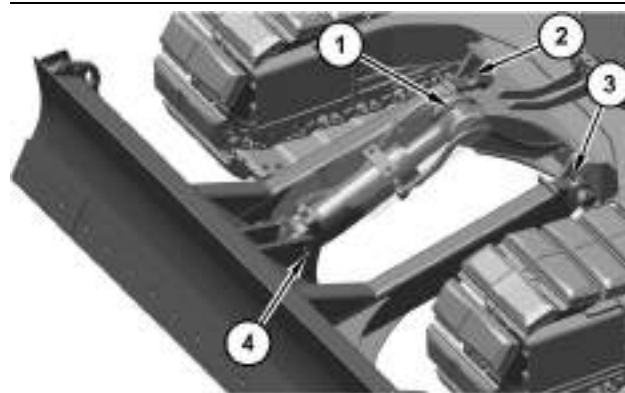


Illustration 576

g06335435

1. Apply lubricant through fitting (1). This fitting is on the rod end of the blade cylinder.
2. Apply lubricant through fitting (4). This fitting is on the head end of the blade cylinder.
3. Apply lubricant through fitting (2) and through fitting (3). These fittings are on the bar that supports the blade.

Angle Blade (If Equipped)

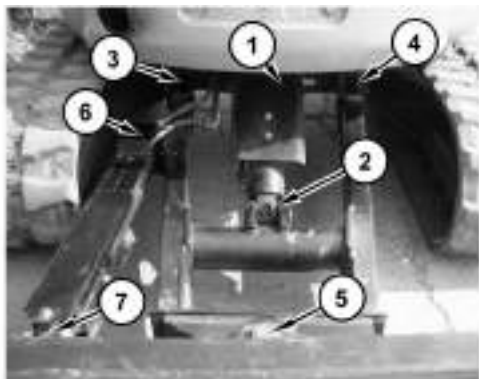


Illustration 577

g01154347

1. Apply lubricant to grease fitting (2) at the head end of the blade cylinder. Apply lubricant to grease fitting (1) at the rod end of the blade cylinder.
2. Apply lubricant to grease fittings (3) and (4) for the blade linkage. Apply lubricant to grease fittings (5) for the center pin of the angle blade.
3. Apply lubricant to grease fitting (6) at the head end of the cylinder of the angle blade. Apply lubricant to grease fitting (7) at the rod end of the cylinder of the angle blade.

i08787314

Boom Swing Cylinder Pins - Lubricate

SMCS Code: 5105-086

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

NOTICE

Improper lubrication can cause damage to machine components.

To avoid damage, make sure that the proper amount of grease is applied to the swing drive.

When the amount of grease in the compartment becomes too large, the agitation loss becomes large, thereby accelerating grease deterioration.

Grease deterioration can cause damage to the pinion gear of the swing drive and swing internal gear.

Not enough grease will result in poor gear lubrication.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Note: Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on grease.

Note: Do not overgrease the boom swing cylinder pins. Do not grease more than the recommended maintenance interval. Refer to "Maintenance Interval Schedule" for more information.

i08787981

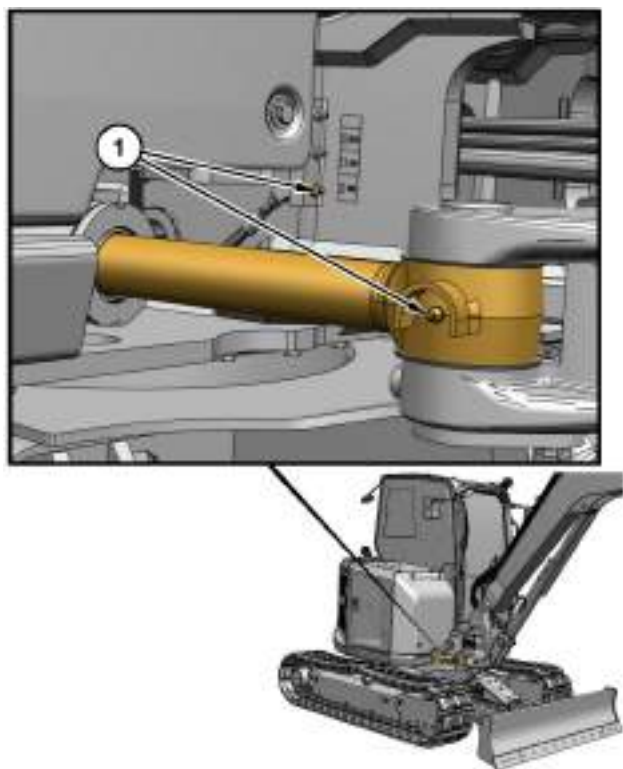


Illustration 578

g06780605

Some components removed for better clarity

(1) Grease fitting

1. Grease fittings (1) are at the head end of the boom swing cylinder and at rod end of the boom swing cylinder. Refer to Illustration 578 for the location of grease fittings (1).

2. Wipe both grease fittings (1) before lubrication.

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

3. Apply lubricant through both grease fittings (1) until the lubricant overflows the bearing seals. Refer to “Lubricant Viscosities” for more information.

Boom and Stick Linkage - Lubricate

SMCS Code: 6501-086; 6502-086

WARNING

Personal injury or death may occur from failure to adhere to the following warnings.

The boom can fall if a control is moved or if a hydraulic component fails.

Do not rely on a hydraulic cylinder to hold the boom.

Support the boom during all service procedures.

WARNING

Boom load may cause cylinder oil pressure to reach relief pressure of the boom lowering control device when the boom is supported by one cylinder. Boom can lower suddenly, causing possible injury or death.

To avoid possible injury or death, be sure no one is under or near the work tool before manually lowering the boom.

Keep all personnel away from the boom drop area when lowering the boom with the engine stopped.

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the boom, and stick linkage. Refer to Operation and Maintenance Manual, SEBU6250, “Caterpillar Machine Fluids Recommendations” for more information on molybdenum grease.

Apply lubricant through all fittings after operation under water.

Wipe all fittings before you apply lubricant.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

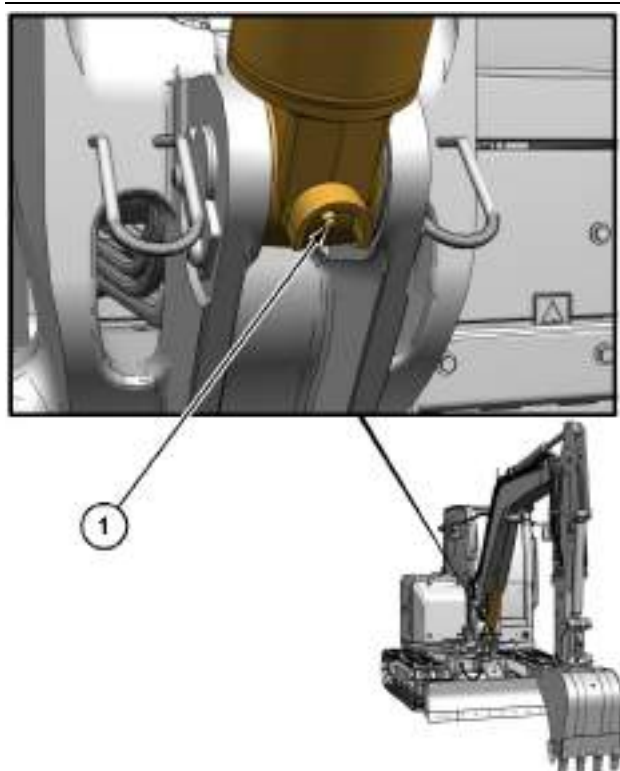


Illustration 579

g06780815

(1) Grease fitting

1. Apply lubricant through grease fitting (1) at the head end of boom cylinder.

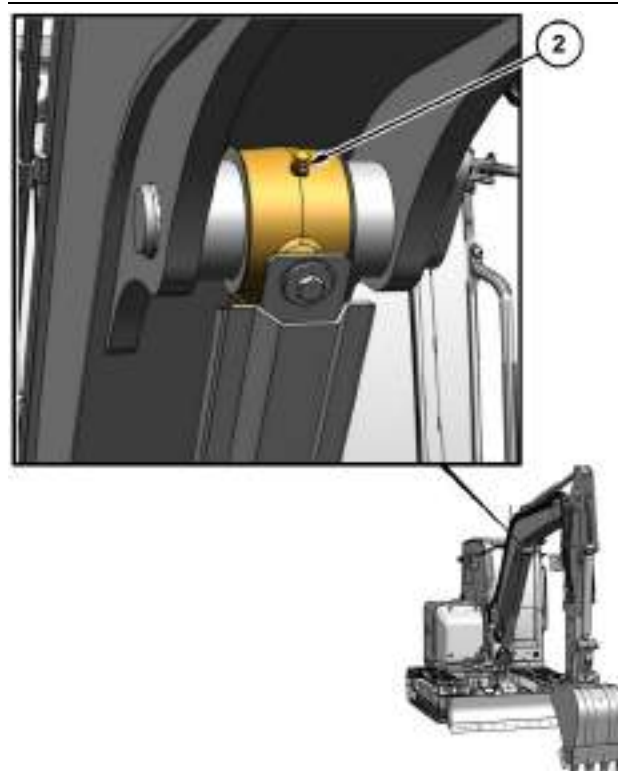


Illustration 580

g06780816

(2) Grease fitting

2. Apply lubricant through grease fitting (2) at the rod end of boom cylinder.

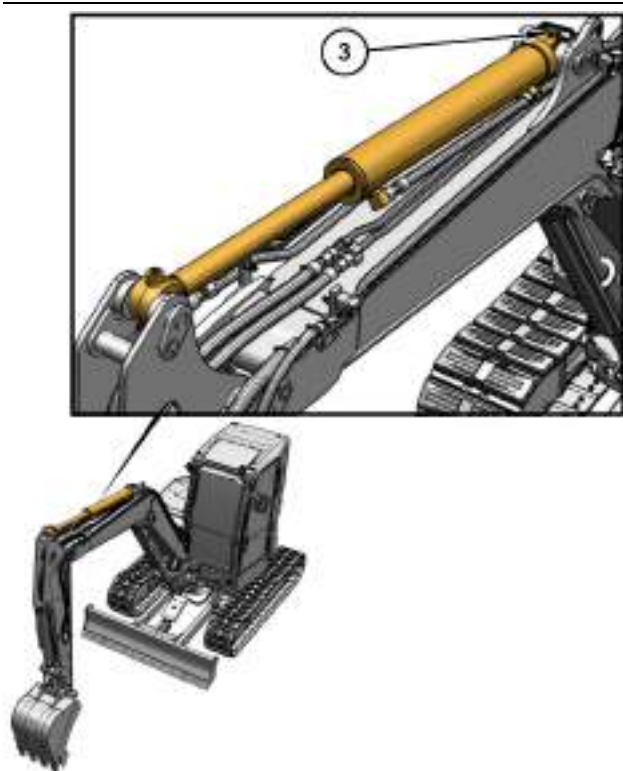


Illustration 581

g06780818

(3) Grease fitting

- 3.** Apply lubricant through grease fitting (3) on the head end of the stick cylinder.

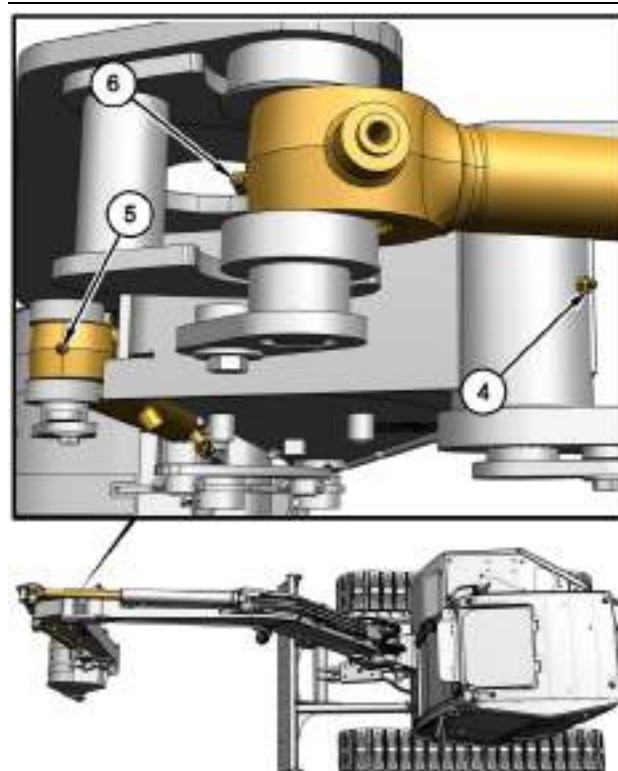


Illustration 582

g06780819

Some components removed for better clarity

- (4) Grease fitting
 (5) Grease fitting
 (6) Grease fitting

- 4.** Apply lubricant through grease fitting (4) at the connection point of the upper boom and the stick.
- Apply lubricant through grease fitting (5) at the head end of bucket cylinder.
- Apply lubricant through grease fitting (6) on the rod end of the stick cylinder.

i08788066

Boom and Stick Linkage - Lubricate

SMCS Code: 6501-086; 6502-086

S/N: 5C51–Up

S/N: AX51–Up

⚠ WARNING

Personal injury or death may occur from failure to adhere to the following warnings.

The boom can fall if a control is moved or if a hydraulic component fails.

Do not rely on a hydraulic cylinder to hold the boom.

Support the boom during all service procedures.

⚠ WARNING

Boom load may cause cylinder oil pressure to reach relief pressure of the boom lowering control device when the boom is supported by one cylinder. Boom can lower suddenly, causing possible injury or death.

To avoid possible injury or death, be sure no one is under or near the work tool before manually lowering the boom.

Keep all personnel away from the boom drop area when lowering the boom with the engine stopped.

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the boom, and stick linkage. Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on molybdenum grease.

Apply lubricant through all fittings after operation under water.

Wipe all fittings before you apply lubricant.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

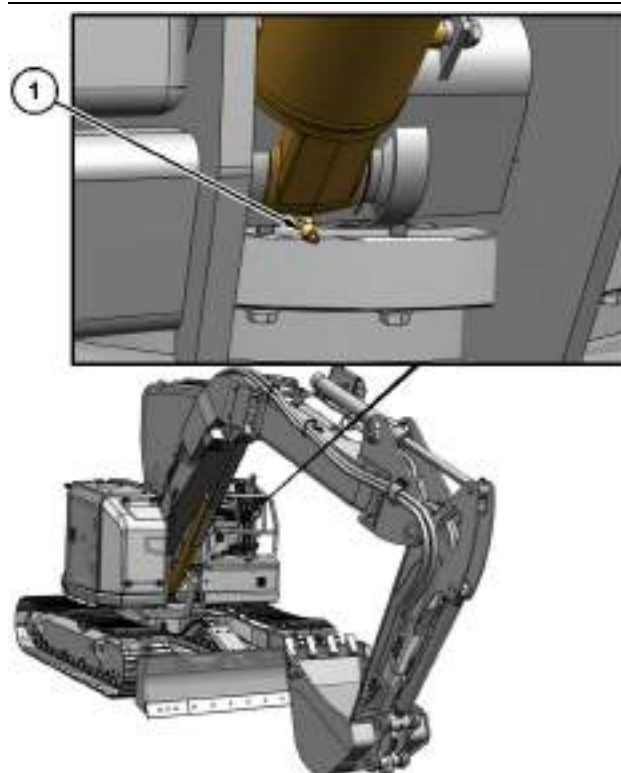


Illustration 584

g06780871

(1) Grease fitting

2. Apply lubricant through grease fitting (1) at the head end of boom cylinder.

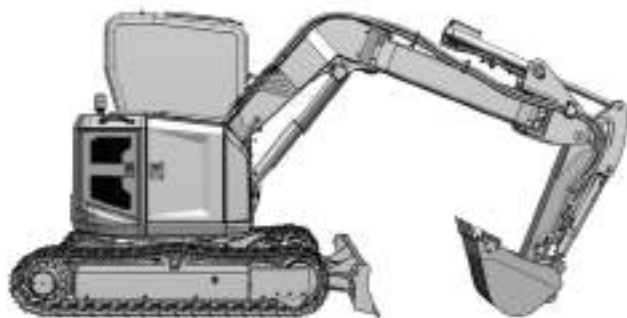


Illustration 583

g06780858

1. Park the machine in a level surface.

Maintenance Section
Boom and Stick Linkage - Lubricate

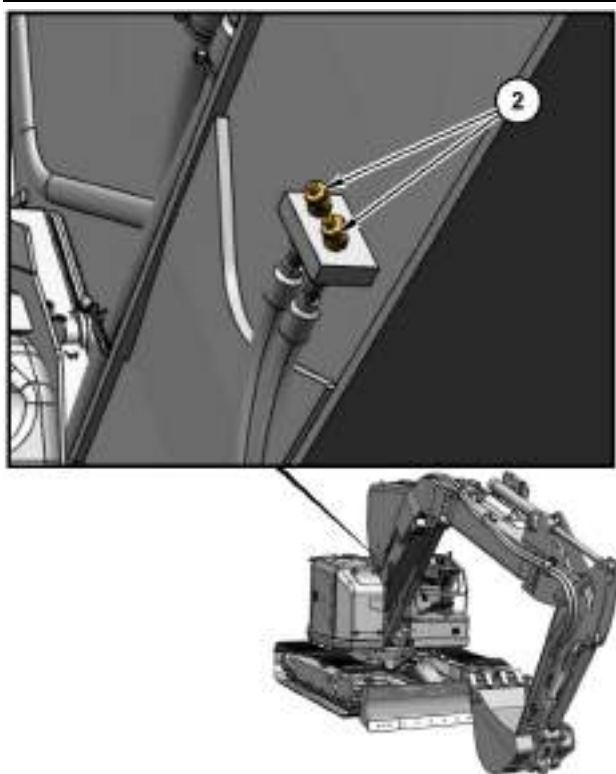


Illustration 585

g06780878

(2) Grease fitting

- 3.** Apply lubricant through two grease fittings (2) at the remote hose to the boom foot pin.

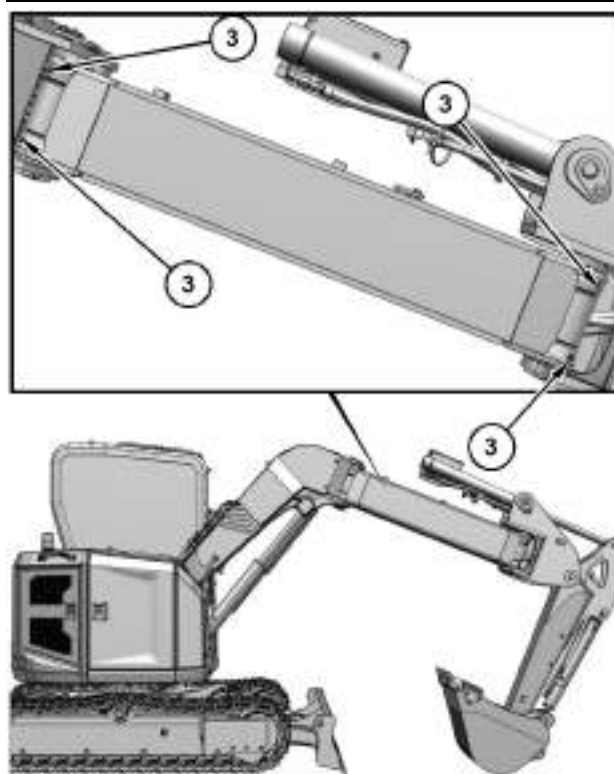


Illustration 586

g06780891

(3) Grease fitting

- 4.** Apply lubricant through four grease fittings (3) at the offset boom.

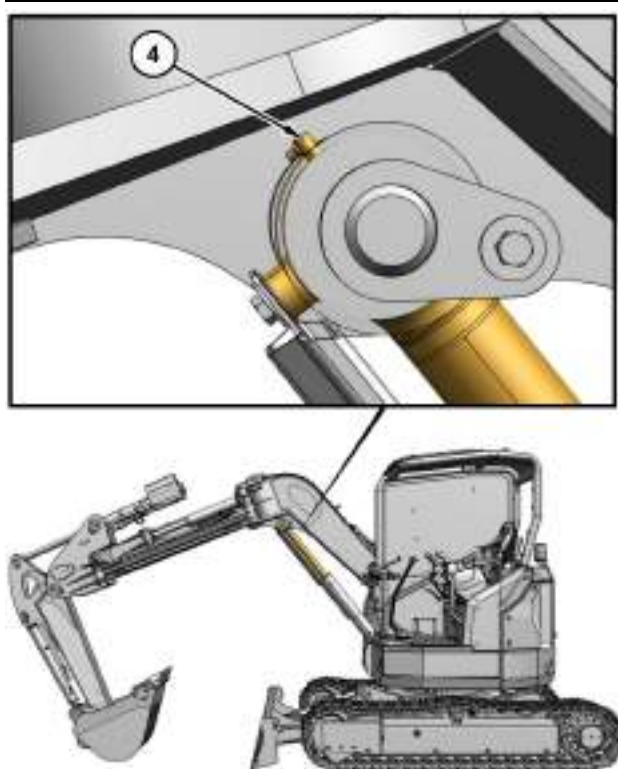


Illustration 587

g06780903

(4) Grease fitting

- 5.** Apply lubricant through grease fitting (4) on the rod end of the base boom.

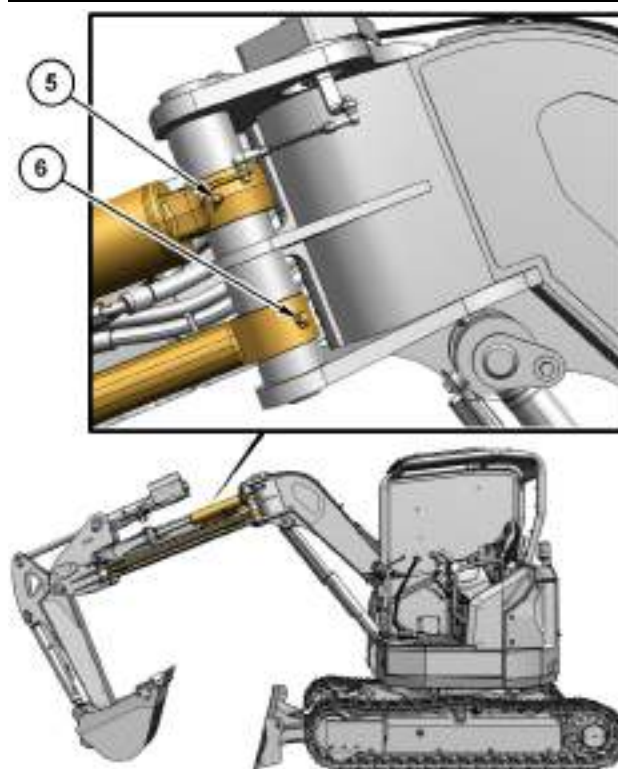


Illustration 588

g06780909

(5) Grease fitting
(6) Grease fitting

- 6.** Apply lubricant through grease fitting (5) on the head end of the offset cylinder.

Apply lubricant through grease fitting (6) on the head end of the offset bar.

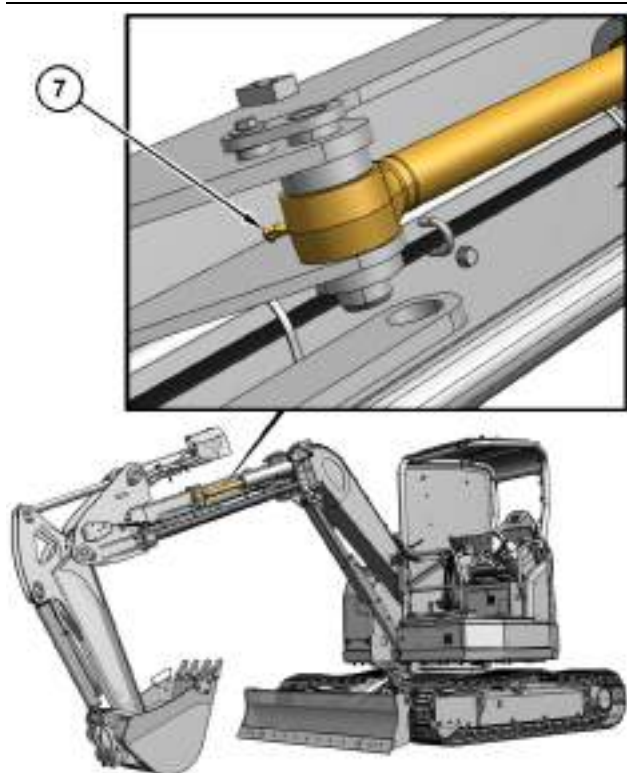


Illustration 589

g06780915

(7) Grease fitting

7. Apply lubricant through grease fitting (7) on the rod end of the offset cylinder.

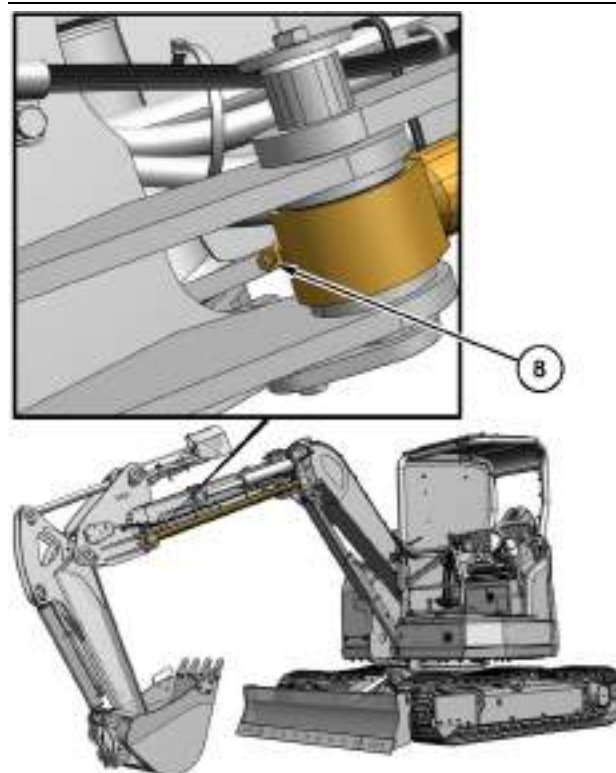


Illustration 590

g06780925

(8) Grease fitting

8. Apply lubricant through grease fitting (8) on the rod end of the offset bar.

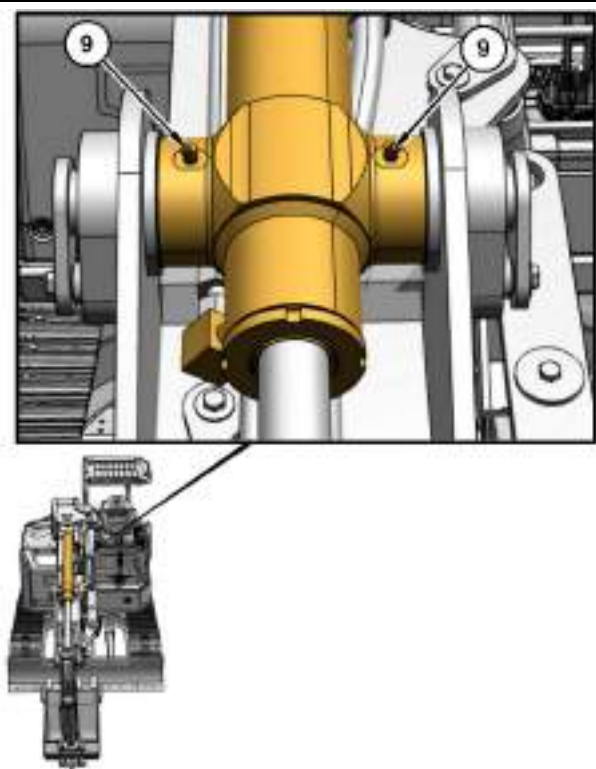


Illustration 591

g06780927

(9) Grease fitting

9. Apply lubricant through grease fitting (9) on the head end of the stick cylinder.

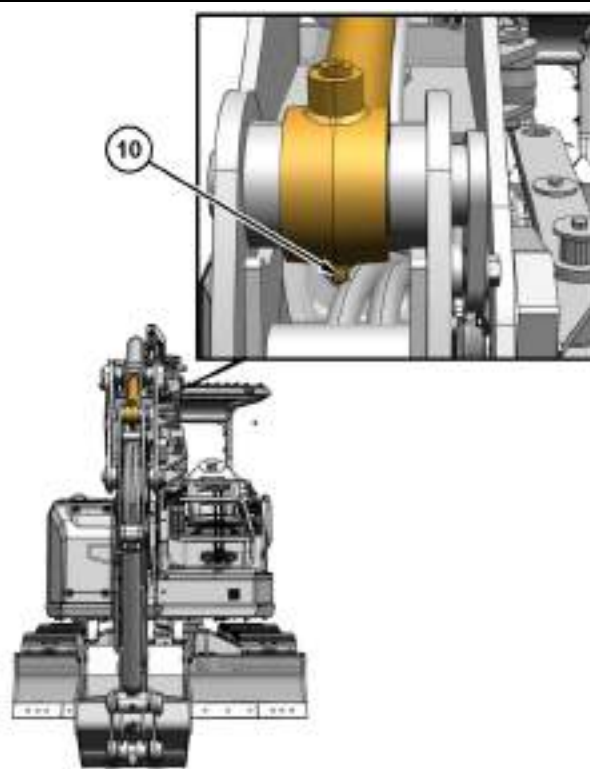


Illustration 592

g06780930

(10) Grease fitting

10. Apply lubricant through grease fitting (10) on the rod end of the stick cylinder.

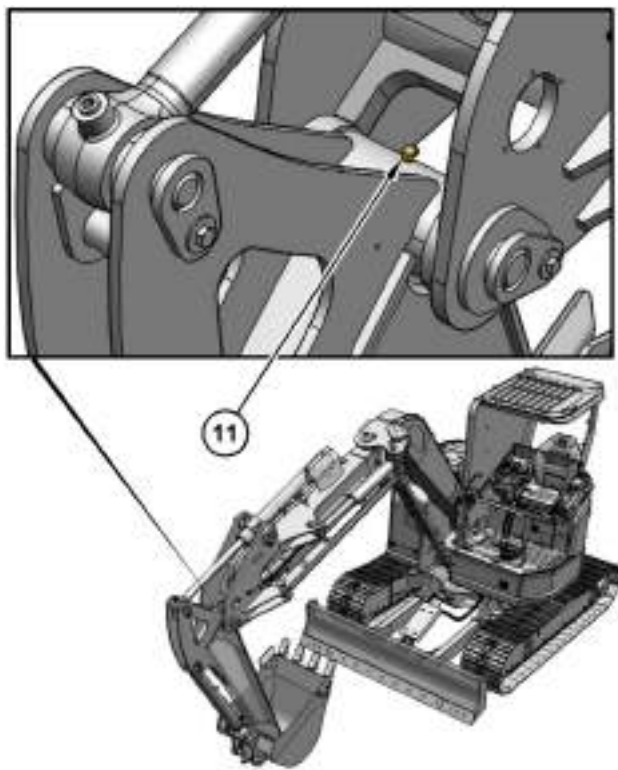


Illustration 593

g06780943

(11) Grease fitting

11. Apply lubricant through grease fitting (11) at the connection point of the offset boom and the stick.

i08017191

Boom, Stick, and Frame - Inspect

SMCS Code: 6501; 6502; 6506

All earth moving equipment is prone to a high degree of wear. Regular inspections for structural damage are necessary.

The interval between these inspections depends on the factors that follow.

- The age of the machine
- The severity of the application
- The loads that have been carried on the machine
- The amount of routine servicing that has been carried out

If the machine has been involved in any accident, the machine must be inspected thoroughly. Inspect the machine regardless of the date of the last inspection.

The machine must be clean before the machine is inspected.

Proper repair of frames and structures requires specific knowledge of the following subjects.

- Materials that have been used to manufacture the frame members
- Frame member construction
- Repair techniques that are recommended by the manufacturer.

Consult your Cat dealer if repairs are necessary. Your Cat dealer is qualified to carry out repairs on your behalf.

All repairs should be carried out by a Cat dealer. If you carry out your own repairs, contact your Cat dealer for advice about proper repair techniques.

Particular attention should be given to all welded structures. The following items should be thoroughly inspected for cracks and for defects:

- Boom
- Stick
- Blade (if equipped)
- Lifting points
- Upper frame
- Lower frame
- Bucket linkage lifting eye

NOTICE

The areas highlighted are of particular importance but other areas must not be neglected. The entire structure must be carefully examined.

Boom



Illustration 594

g06335653

Typical example

Check all welded joints and check the mounting points for the cylinder.

Stick



Illustration 595

g06335661

Typical example

Check all welded joints and check the mounting points for the cylinder.

Blade

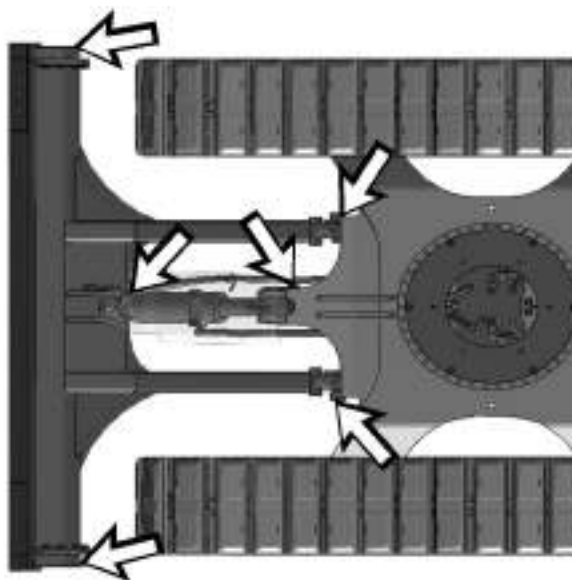


Illustration 596

g06335664

Typical example

If equipped with a blade, check the welded joints and check the mounting points for the cylinder.

Lifting Points

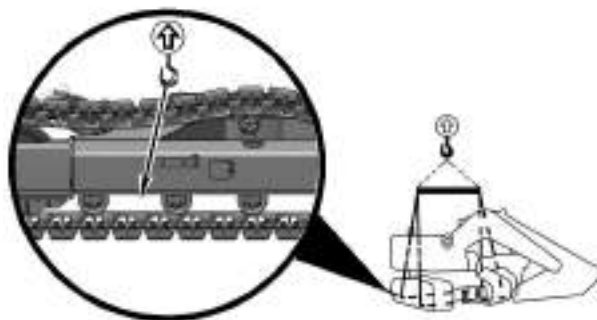


Illustration 597

g06335779

Typical example

Check the approved lifting points carefully. Check the welds. Check that the plates are not excessively bent. Check that the lifting holes are not deformed.

Upper Frame



Illustration 598

g06335782

Typical example

Check for damaged panels. Specifically look for any damage to the cab that might invalidate the certification. The cab is a safety device that must be maintained in good condition. Check for loose hardware or missing hardware.

Lower Frame



Illustration 599

g06335783

Typical example

Check the weld joints in the lower structure. Check for loose hardware or missing hardware. Check the ring of bolts that secure the swing gear.

Bucket Linkage Lifting Eye

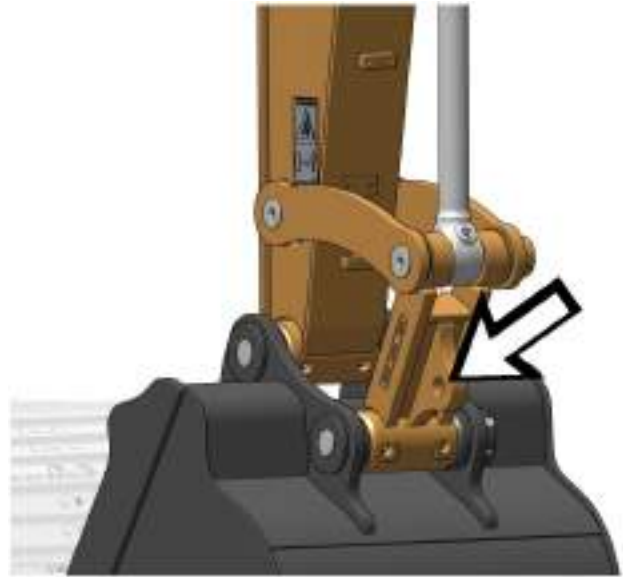


Illustration 600

g06508984

Typical example

Visually inspect the Bucket Linkage Lifting Eye for deformation due to overload or improper lifting, severe corrosion, pitting or metal loss, abrasion from side loading, visible cracks prior to use. If found damaged, replace the part.

i08707939

Bucket Lifting Eye - Inspect

SMCS Code: 1122; 6001

WARNING

Unexpected machine movement can cause injury or death.

To avoid possible machine movement, move the hydraulic lockout control to the LOCKED position and attach a Special Instruction, SEHS7332, "Do Not Operate" or similar warning tag to the hydraulic lockout control.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

i08787954

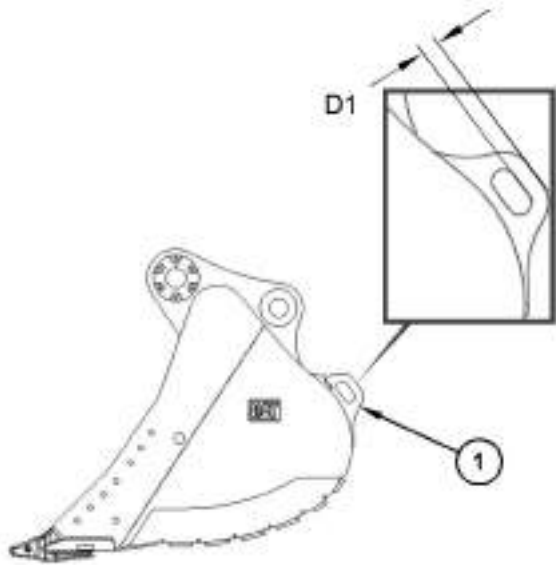


Illustration 601 g06750345

Typical example of bucket
(1) Bucket lifting eye
(D1) Minimum allowable thickness

Table 86

Linkage	Nominal Thickness	Minimum Allowable Thickness (D1)
B	24 mm (0.9 inch)	21 mm (0.8 inch)
CB	29 mm (1.1 inch)	25 mm (1.0 inch)
DB	34 mm (1.3 inch)	29 mm (1.1 inch)
TB	44 mm (1.7 inch)	39 mm (1.5 inch)
VB	49 mm (1.9 inch)	43 mm (1.7 inch)
HB	59 mm (2.3 inch)	51 mm (2.0 inch)

Visually inspect bucket lifting eye (1). If any of the following conditions exist, consult your Cat® dealer.

- Excessive pitting or corrosion
- Excessive nicks or gouges
- Excessive wear or cracking of the welds
- Wall thickness is below minimum allowable thickness (D1). Refer to Table 86 .

Bucket Linkage - Lubricate

SMCS Code: 6513-086

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a “Do Not Operate” or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

NOTICE

Improper lubrication can cause damage to machine components.

To avoid damage, make sure that the proper amount of grease is applied to the swing drive.

When the amount of grease in the compartment becomes too large, the agitation loss becomes large, thereby accelerating grease deterioration.

Grease deterioration can cause damage to the pinion gear of the swing drive and swing internal gear.

Not enough grease will result in poor gear lubrication.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

Note: Refer to Operation and Maintenance Manual, SEBU6250, “Caterpillar Machine Fluids Recommendations” for more information on grease.

Note: Do not overgrease the bucket linkage. Do not grease more than the recommended maintenance interval. Refer to “Maintenance Interval Schedule” for more information.

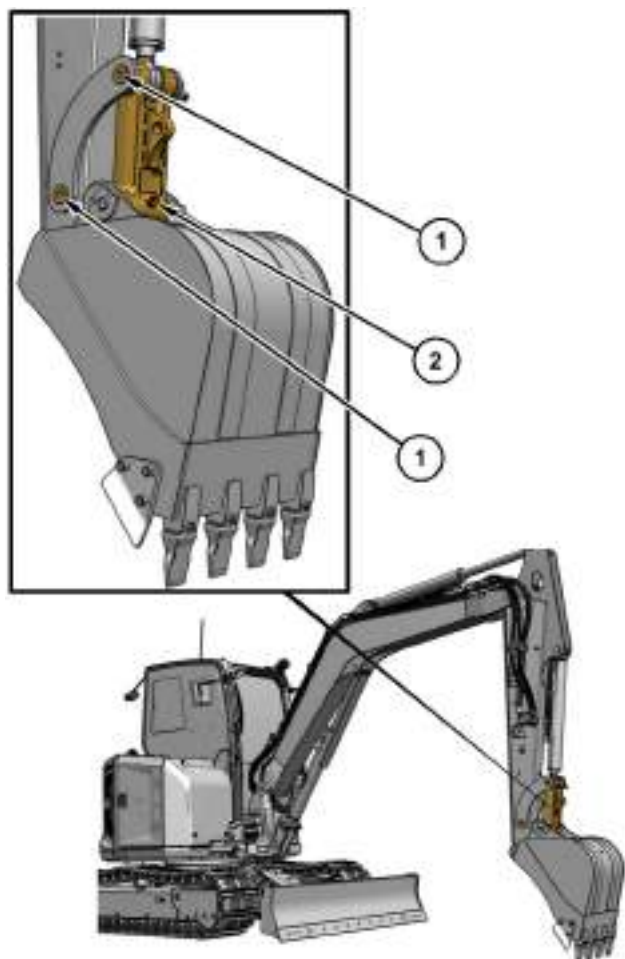


Illustration 602

g06780625

Some components removed for better clarity

- (1) Grease fitting on linkages
- (2) Grease fitting on bucket

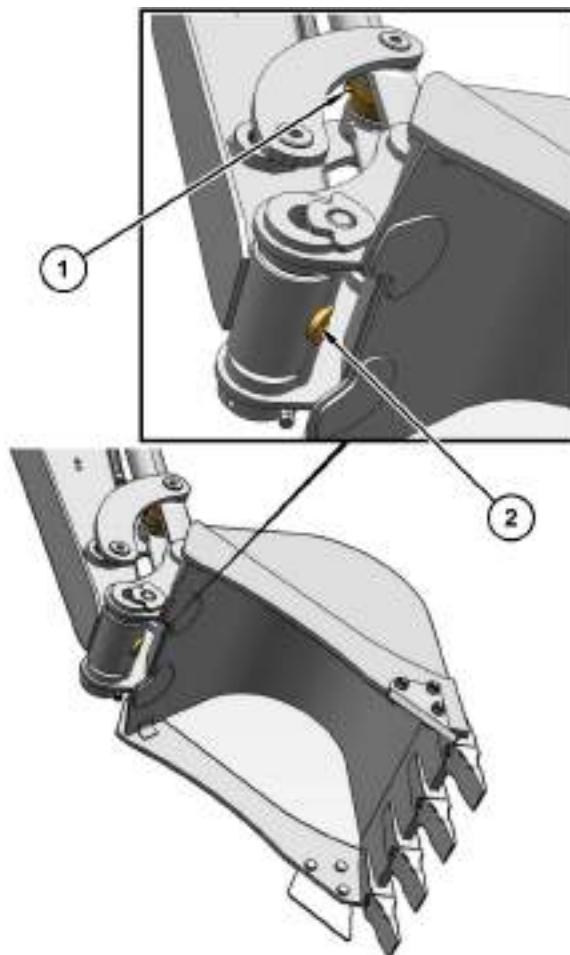


Illustration 603

g06780630

- (1) Grease fitting on linkages
- (2) Grease fitting on bucket

1. Refer to Illustration 602 and 603 for the location of three grease fittings on linkages (1) and two grease fittings on bucket (2).

Note: Completely lubricate grease fittings on linkages (1) and grease fittings on bucket (2) with grease when you initially install a bucket. Refer to "Lubricant Viscosities" for more information.

2. Wipe grease fittings on linkages (1) and grease fittings on bucket (2) before lubrication.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

3. Apply lubricant through three grease fittings on linkages (1) and two grease fittings on bucket (2) until the lubricant overflows the bearing seals.

i07315929

Bucket Tips - Inspect/Replace

SMCS Code: 6805-510; 6805-040

WARNING

Personal injury or death can result from bucket falling.

Block the bucket before changing bucket tips or side cutters.

Bucket Tips

WARNING

Block the bucket before changing the bucket teeth.

To prevent possible injury to the eyes, wear a protective face shield when striking the pin.

The pin, when struck, can fly out and cause injury to nearby personnel.

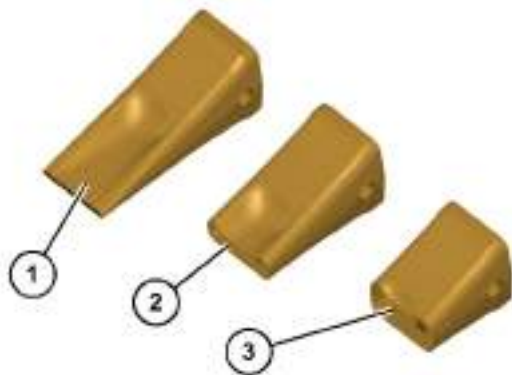


Illustration 604

g06214790

- (1) Usable tip
(2) Replaceable bucket tip
(3) Overworn tip

Check the bucket tips for wear. If the bucket tip has a hole, replace the bucket tip.

1. Remove the pin from the bucket tip. The pin can be removed by one of the following methods.

- Use a hammer and a punch from the retainer side of the bucket to drive out the pin.
- Use a Pin-Master. Follow Step 1a through Step 1c for the procedure.

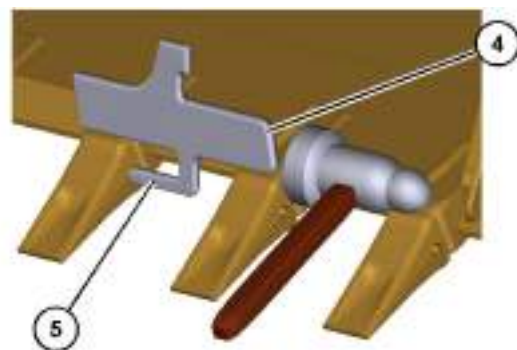


Illustration 605

g06214793

- (4) Back of Pin-Master
(5) Extractor

- Place the Pin-Master on the bucket tip.
- Align extractor (5) with the pin.
- Strike the Pin-Master at the back of the tool (4) and remove the pin.

Note: Discard the old pin and the retainer assembly. When you change tips, use a new pin and a new retainer assembly. Refer to the appropriate parts manual for your machine.

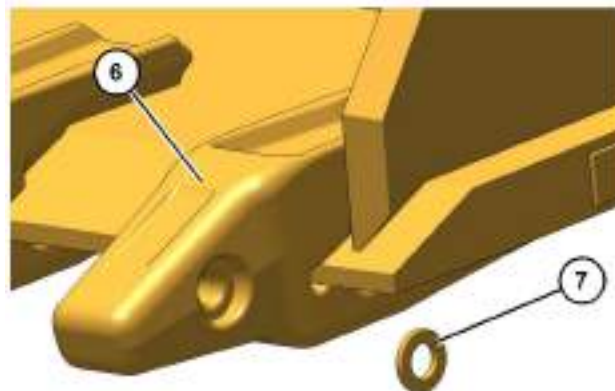


Illustration 606

g06214921

- (6) Retainer assembly
(7) Adapter

2. Clean the adapter and the pin.

Maintenance Section
Bucket Tips - Inspect/Replace

3. Fit retainer assembly (6) into the counterbore that is in the side of adapter (7). Make sure that the face of the retainer assembly with the marking "OUTSIDE" is visible.



Illustration 607

g06214795

4. Install the new bucket tip onto the adapter.

Note: The bucket tips can be rotated by 180 degrees to allow the tip to wear evenly. You may also move the tips from the outside teeth to the inside teeth. Check the tips often. If wear is present on the tips, rotate the tips. The outside teeth generate the most wear.

5. Drive the pin through the bucket tip. The pin can be installed by using one of the following methods:

- From the same side of the retainer, drive the pin through the bucket tip, the retainer assembly, and the adapter.
- Use a Pin-Master. Follow Step 5a through Step 5e for the procedure.

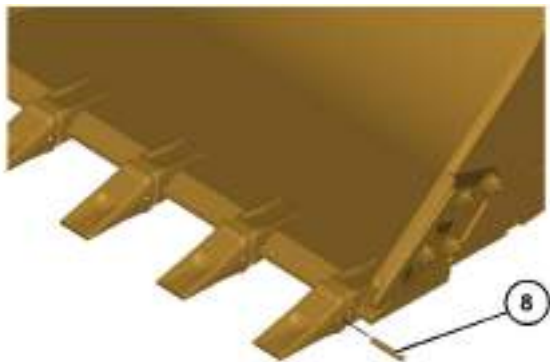


Illustration 608

g06214803

(8) Pin

- a. Insert pin (8) through the bucket tip.

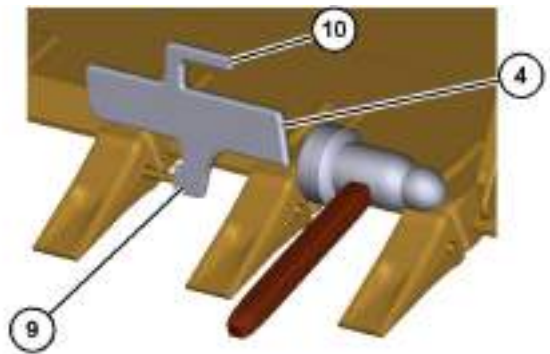


Illustration 609

g06214807

- b. Place the Pin-Master over the bucket tips so that the pin will fit into the counterbore of the pin holder (9).
- c. Strike the Pin-Master with a hammer at the back of the tool (4) to insert the pin.
- d. Slide pin holder (9) away from the pin and rotate the tool slightly to align pin setter (10) with the pin.



Illustration 610

g06214812

Final assembly of pin into bucket tip

- e. Strike the end of the tool until the pin is fully inserted.

Side Cutters

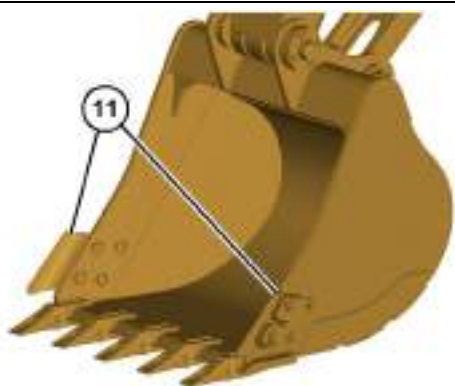


Illustration 611

g06214814

Bucket With Side Cutters

1. Remove the mounting bolts and the side cutters (11).
2. Clean the mounting surface of the side plate on the bucket and of the side cutter. Remove any burrs or protrusions on the mating surfaces.

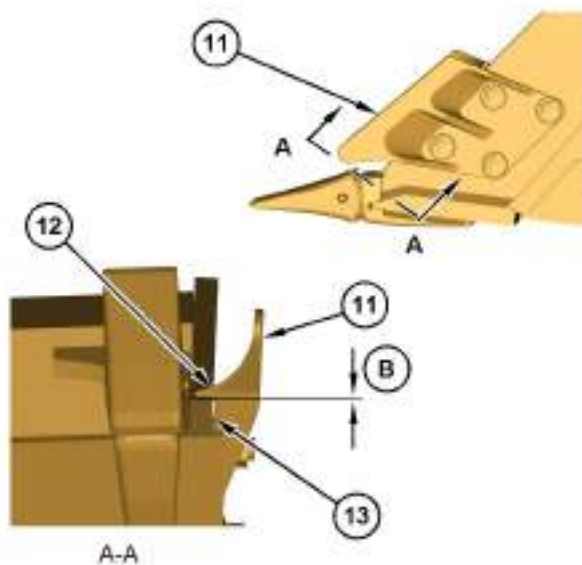


Illustration 612

g06214887

- (12) Shear ledge on a side cutter
(13) Side plate on a bucket
(B) 0.0 mm (0.0 inch)

Note: Some side cutters may be rotated for additional wear.

3. Install the side cutter.

Note: Certain bolts may require thread compound.

4. Hand tighten the bolts.
5. Make sure that there is not a gap between the side plate on the bucket and the shear ledge on the side cutter.
6. Torque the mounting bolts to the correct specification.

Side Protectors (If Equipped)

Inspect the wear of the side protector. When too much wear is present, replace the protector.

Maintenance Section
Cab Air Filter (Fresh Air) - Clean/Replace

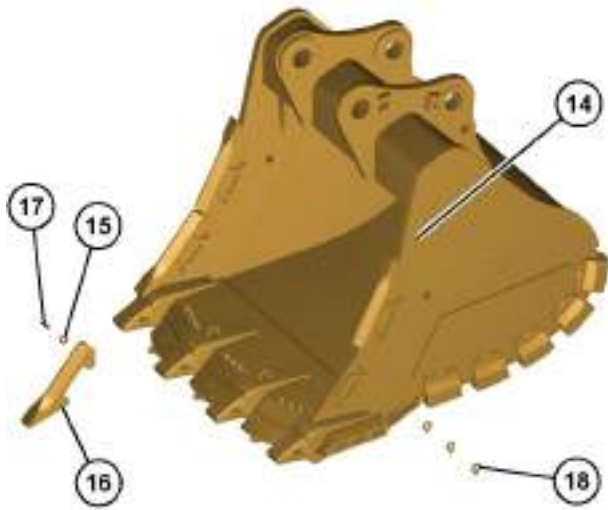


Illustration 613

g06219766

1. Hit pin (17) from the side of the bucket without the retainer to remove side protector (16) from side plate (14).
2. Clean side protector (16), pin (17), retainer (15), and side plate (14) before installation.

Note: Lateral clearance between the side plate and the side protector should not exceed 1 mm (0.04 inch). Shims (18) may be required to decrease the lateral clearance which will decrease movement. Install the shims between the side plate and the side protector on the opposite side of the retainer.

3. Put retainer (15) in side plate (14).
4. Align two pin holes of the new protector and the side plate. Hit the pin from the retainer side of the bucket.

Note: If the pin and/or the retainer are worn, replace the pin and/or the retainer.

i08355636

Cab Air Filter (Fresh Air) - Clean/Replace

SMCS Code: 7342-510; 7342-070

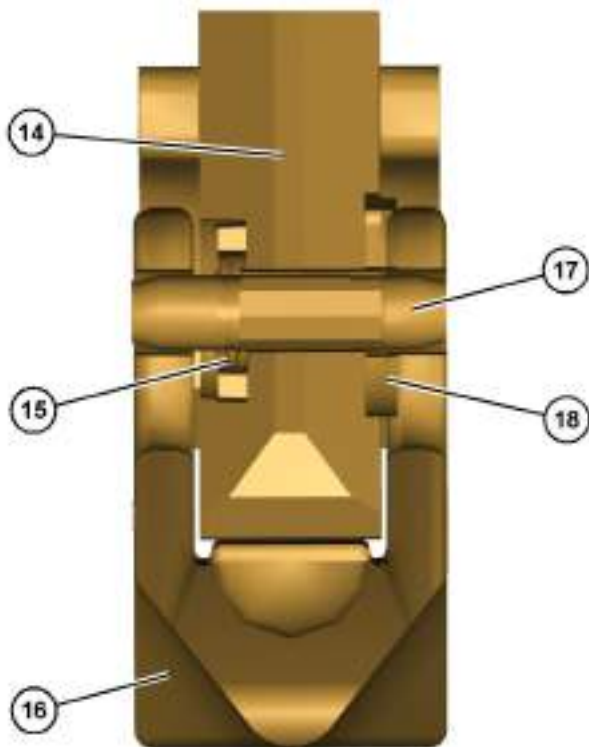


Illustration 614

g06219767

- (14) Side plate
(15) Retainer
(16) Side protector
(17) Pin
(18) Shim



Illustration 615

g06636925

Location of cab air filter

The cab air filter is located rear of the cab door, accessible from the exterior of the machine.

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

i08355612

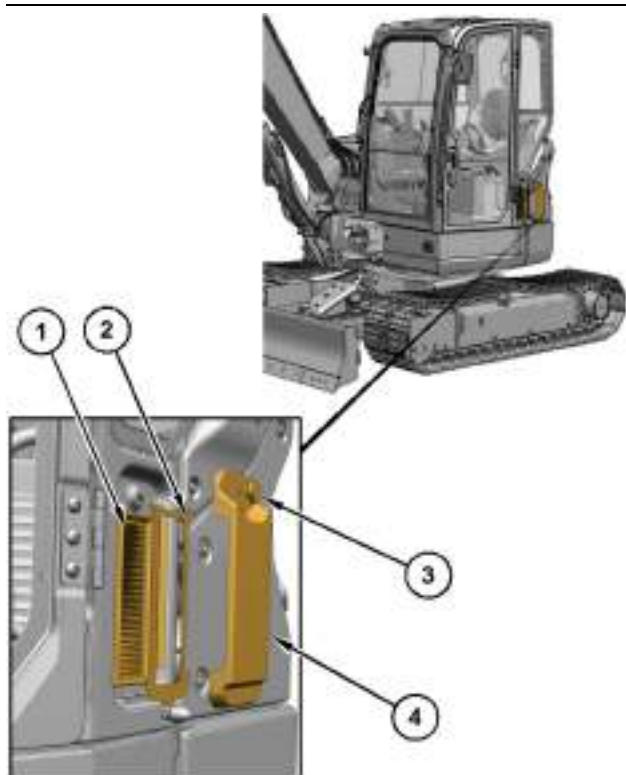


Illustration 616

g06636920

- (1) Cab air filter
- (2) Inner plate
- (3) Thumb screw
- (4) Cover

2. To gain access to cab air filter (1), remove thumb screw (3) and cover (4).
3. Clear the debris around cab air filter (1)
4. Remove inner plate (2) by pulling outward.
5. Remove cab air filter (1).
6. Clean cab air filter (1) by tapping cab air filter (1) and remove the dirt. Do not use compressed air to clean cab air filter (1).
7. After you clean cab air filter (1), inspect cab air filter (1). If cab air filter (1) is damaged or badly contaminated, use new cab air filter (1).
8. Install cab air filter (1) ensuring that cab air filter (1) is seated in the housing appropriately.
9. Install inner plate (2).
10. Install cover (4) and secure cover (4) with thumb screw (3).

Camera - Clean

SMCS Code: 7348-070

WARNING

Failure to use an appropriate external ladder or an appropriate platform for direct access to the rear view camera could result in slipping and falling which could result in personal injury or death. Be sure to use an appropriate external ladder or an appropriate platform for direct access to the rear view camera.

The machine's counterweight and the engine hood are not approved as a maintenance platforms.

WARNING

Unexpected machine movement can cause injury or death.

In order to avoid possible machine movement, move the hydraulic lockout control to the LOCKED position and attach a Special Instruction, SEHS7332, "Do Not Operate" or similar warning tag to the hydraulic lockout control.

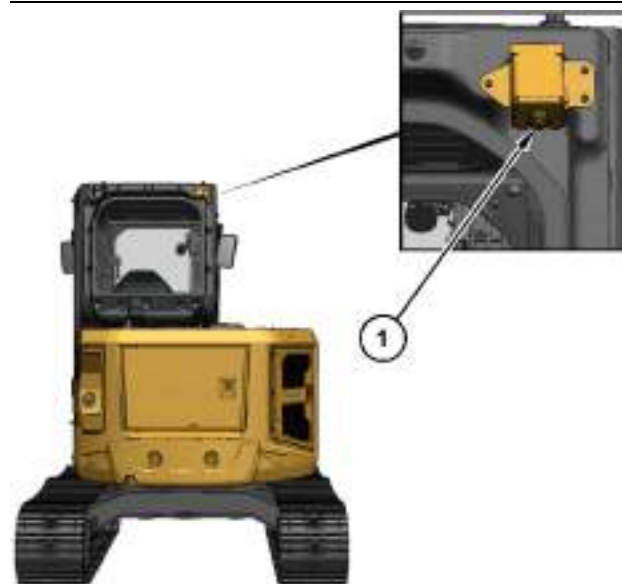


Illustration 617

g06636913

- (1) Rear view camera

Note: When you access rear view camera (1) for cleaning, be sure to observe safe procedures for access. Maintain a three-point contact and/or use a body harness. Refer to "General Hazard Information" for more information.

Maintenance Section
Condenser (Refrigerant) - Clean

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".
2. Rear view camera (1) is mounted on outside of the cab above the right shoulder of operator.
3. Use a damp cloth to clean the glass of rear view camera (1).

Rear view camera (1) is sealed. Rear view camera (1) is not affected by a wash with high-pressure spray.

Note: Alternatively, rear view camera (1) may be cleaned from ground level by using a wash with high-pressure spray or a damp rag on a wand.

i07316168

Condenser (Refrigerant) - Clean

SMCS Code: 1805-070

NOTICE

If excessively dirty, clean condenser with a brush. To prevent damage or bending of the fins, do not use a stiff brush.

Repair the fins if found defective.

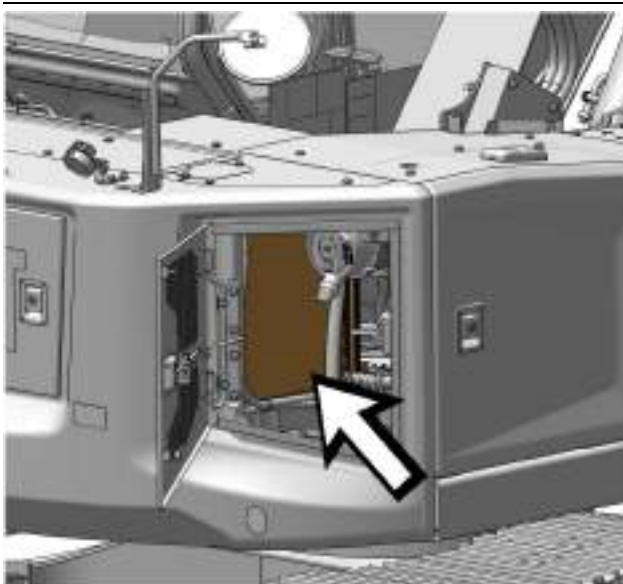


Illustration 618

g06279974

1. Open the access door on the right rear side of the machine. The condenser is located in front of the radiator.
2. Inspect the condenser for debris. Clean the condenser, if necessary.

3. Use clean water to wash off all dust and dirt from the condenser.
4. Close the access door.

i09705107

Cooling System Coolant (ELC) - Change

SMCS Code: 1350-044

S/N: AX51-Up

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

WARNING

Personal injury can result from hot coolant, steam and alkali.

At operating temperature, engine coolant is hot and under pressure. The radiator and all lines to heaters or the engine contain hot coolant or steam. Any contact can cause severe burns.

Remove cooling system pressure cap slowly to relieve pressure only when engine is stopped and cooling system pressure cap is cool enough to touch with your bare hand.

Do not attempt to tighten hose connections when the coolant is hot, the hose can come off causing burns.

Cooling System Coolant Additive contains alkali. Avoid contact with skin and eyes.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

 WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a “Do Not Operate” or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

 WARNING

Personal injury can result from improper handling of chemicals.

Make sure you use all the necessary protective equipment required to do the job.

Make sure that you read and understand all directions and hazards described on the labels and material safety data sheet of any chemical that is used.

Observe all safety precautions recommended by the chemical manufacturer for handling, storage, and disposal of chemicals.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, “Extended Life Coolant (ELC)” under the topic ELC Cooling System Contamination.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Note: This machine was filled at the factory with Cat® Extended Life Coolant.

If the coolant in the machine is changed to extended life coolant from another type of coolant, refer to Special Publication, SEBU6250, “Caterpillar Machine Fluids Recommendations”.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

Refer to “System Pressure Release” for more information.

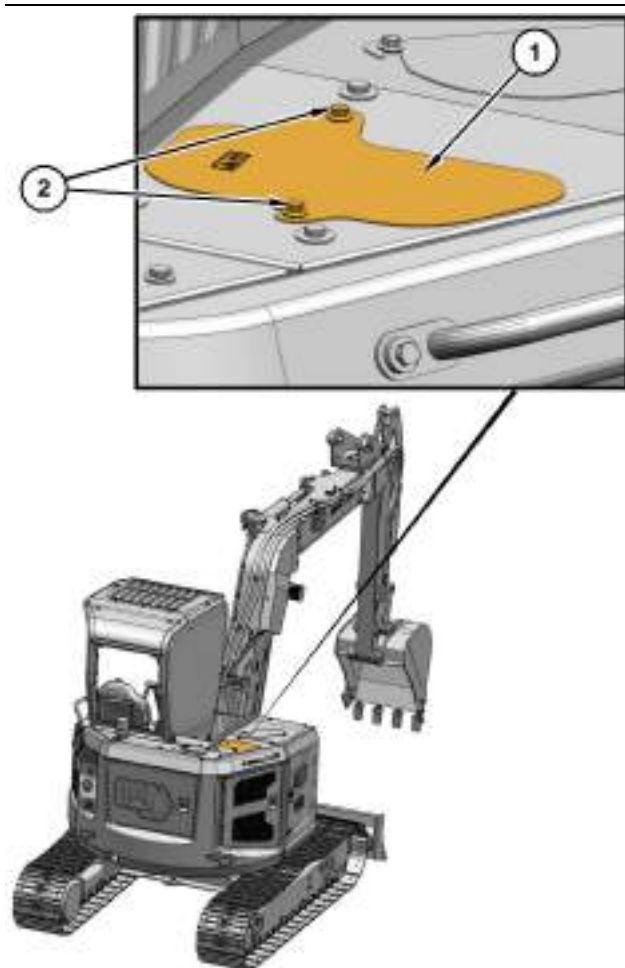


Illustration 619

g06775773

Some components removed for better clarity

- (1) Cover
(2) Bolt

1. Remove two bolts (2) that secure cover (1).
2. Remove cover (1).

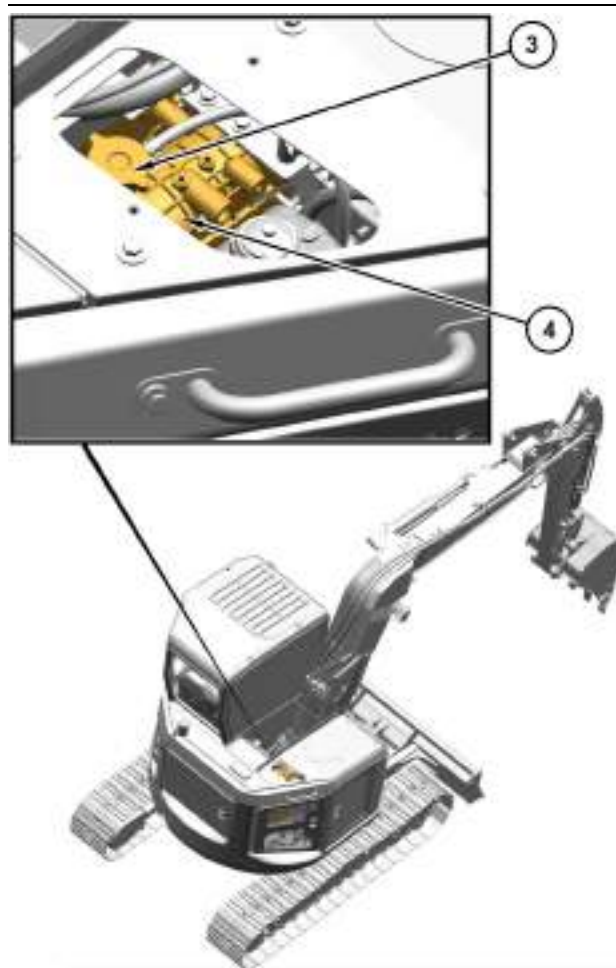


Illustration 620

g06775801

Some components removed for better clarity

- (3) Radiator pressure cap
(4) Radiator

3. Slowly loosen radiator pressure cap (3) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.
4. Remove radiator pressure cap (3).
5. Inspect the gasket on the radiator pressure cap (3). If the gasket is damaged, replace radiator pressure cap (3).

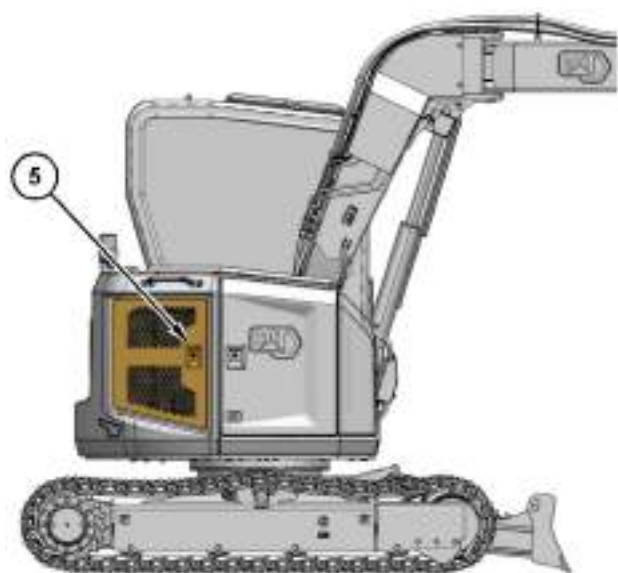


Illustration 621

g06775807

(5) Access door

6. Open access door (5) on the right side of the machine. Refer to “Access Door and Cover Locations” for more information.

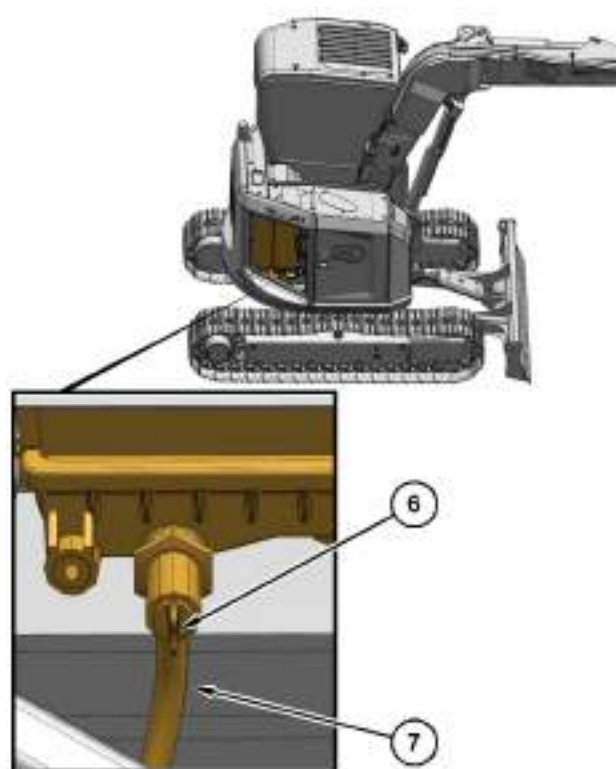


Illustration 622

g06775814

Some components removed for better clarity

- (6) Drain valve
(7) Drain hose

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

7. Connect drain hose (7) with drain valve (6). Open drain valve (6) and allow the coolant to drain into a suitable container. Drain valve (6) is on the bottom of radiator (4).

Note: Discard drained fluids according to local regulations.

8. Flush the cooling system. Follow Step 8a through Step 8i to flush the cooling system.
- Close drain valve (6).
 - Fill radiator (4) with clean water through the opening available due to removal of radiator pressure cap (3).
 - Clean and install radiator pressure cap (3).
 - Start the engine and run the engine until the engine reaches operating temperature. Refer to “Engine Starting” for more information.
 - Stop the engine and allow the engine to cool. Refer to “Stopping the Engine” for more information.

Maintenance Section
Cooling System Coolant (ELC) - Change

- f. Loosen radiator pressure cap (3) slowly to relieve any pressure in the cooling system. Refer to "System Pressure Release" for more information.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- g. Open drain valve (6) that is on the bottom of radiator (4) and allow the coolant to drain into a suitable container.
- h. Discard drained fluids according to local regulations.
- i. Flush radiator (4) with clean water until the draining water is transparent.

9. Close drain valve (6).

10. Add Cat® Extended Life Coolant. Refer to the following topics:

- "Cooling System Coolant Extender (ELC) - Add"
- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"
- "Capacities (Refill)"

11. After the cooling system has been filled, perform the following procedures during initial start-up:

- a. Start the engine without radiator pressure cap (3). Refer to "Engine Starting".
- b. Turn cab heat onto maximum position using Heating Ventilation and Air Conditioning (HVAC) control. Refer to "Operator Controls" for more information.
- . Turn cab heat to open the cab heater valve and that allows the radiator core and radiator lines to be filled with coolant.
- c. Run the engine at low idle for 10 minutes.
- d. Then, increase the engine speed to high idle until the water temperature regulator is open and the coolant level is stabilized. Refer to Disassembly and Assembly, M0127267, "304, 305, and 305.5 Mini Hydraulic Excavator", "Water Temperature Regulator - Remove and Install" for the location of water temperature regulator in the machine.
- e. Maintain the coolant at the proper level as the water temperature regulator opens and air is purged from the system. Refer to "Cooling System Coolant Level - Check" for more information.

12. Install radiator pressure cap (3).

13. Stop the engine. Refer to "Stopping the Engine" for more information.

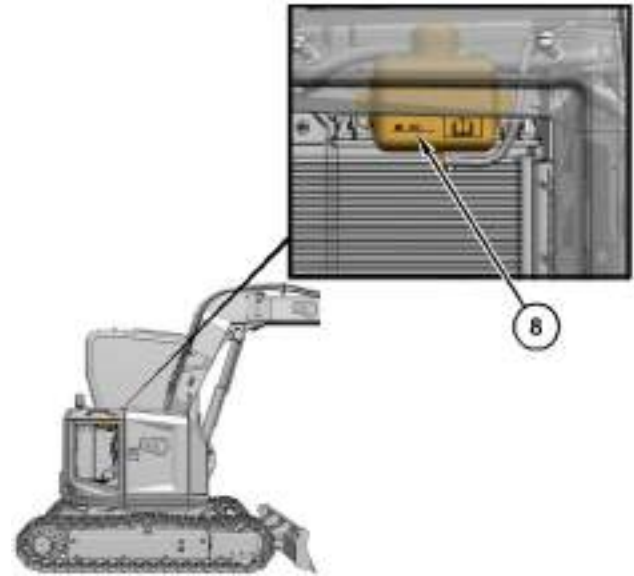


Illustration 623

g06775822

Some components removed for better clarity

(8) Coolant reservoir

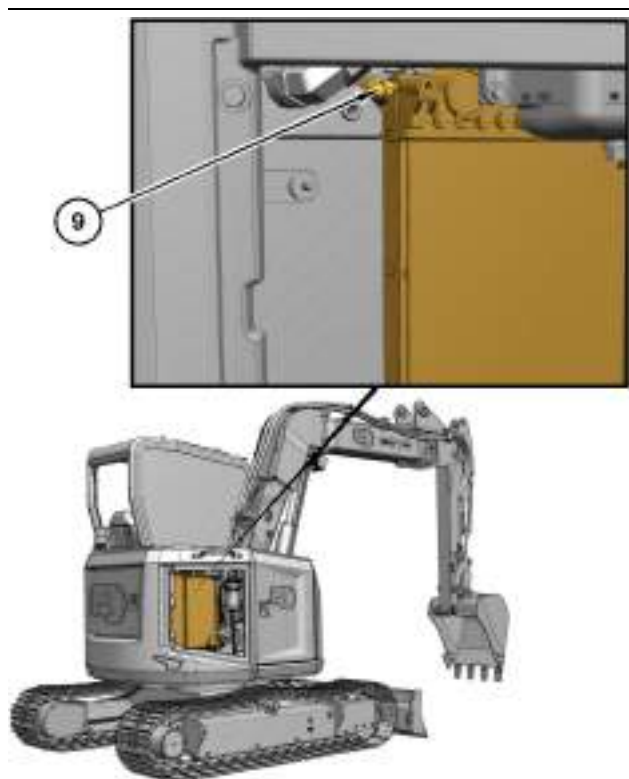


Illustration 624

g06775825

Some components removed for better clarity

(9) Sight gauge

14. Check coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8). Check level of coolant in radiator (4) through sight gauge (9) available on radiator (4). If more coolant is needed, refer to "Cooling System Coolant Extender (ELC) - Add" for more information.
15. Close access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.
16. Position cover (1) on top of the machine.
17. Install two bolts (2) to secure cover (1). Refer to Illustration 619 for more information.

i09734108

Cooling System Coolant (ELC) - Change

SMCS Code: 1350-044

S/N: AN41-Up

S/N: 5C51-Up

S/N: 5G51-Up

S/N: 5X51-Up

S/N: AX61-Up

WARNING

Personal injury can result from hot coolant, steam and alkali.

At operating temperature, engine coolant is hot and under pressure. The radiator and all lines to heaters or the engine contain hot coolant or steam. Any contact can cause severe burns.

Remove cooling system pressure cap slowly to relieve pressure only when engine is stopped and cooling system pressure cap is cool enough to touch with your bare hand.

Do not attempt to tighten hose connections when the coolant is hot, the hose can come off causing burns.

Cooling System Coolant Additive contains alkali. Avoid contact with skin and eyes.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

Maintenance Section
Cooling System Coolant (ELC) - Change

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, "Extended Life Coolant (ELC)" under the topic ELC Cooling System Contamination.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Note: This machine was filled at the factory with Cat® Extended Life Coolant.

If the coolant in the machine is changed to Extended Life Coolant from another type of coolant, refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations".

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

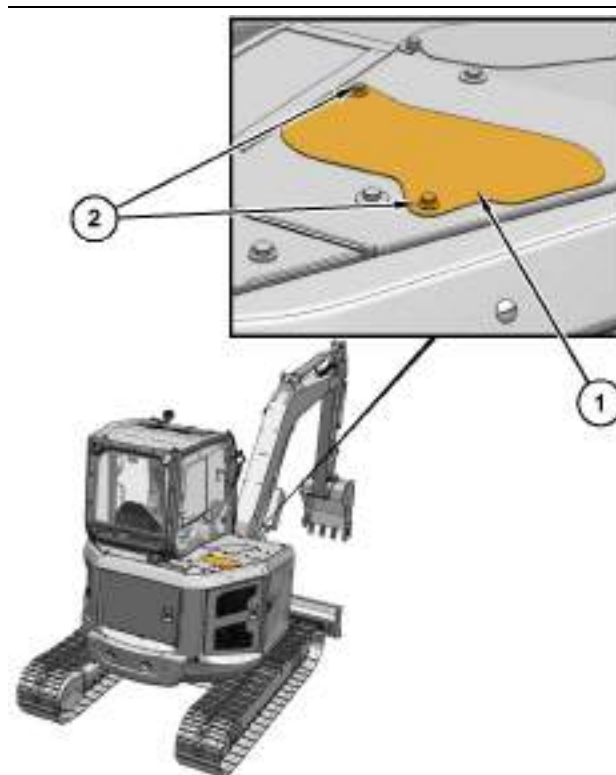


Illustration 625

g06711217

Some components removed for better clarity

- (1) Cover
(2) Bolt

2. Remove two bolts (2) that secure cover (1).
3. Remove cover (1).

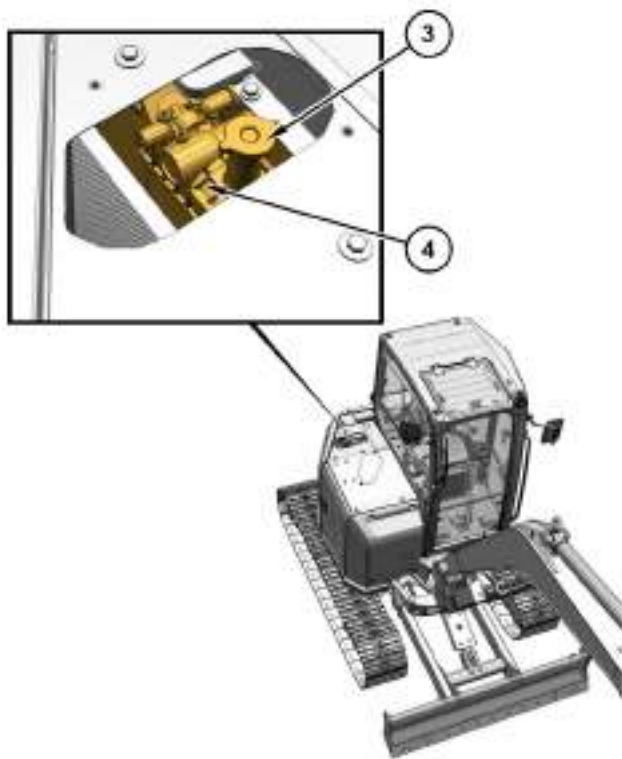


Illustration 626

g06711218

Some components removed for better clarity

- (3) Radiator pressure cap
(4) Radiator

4. Slowly loosen radiator pressure cap (3) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.
5. Remove radiator pressure cap (3) from radiator (4).
6. Inspect the gasket on the radiator pressure cap (3). If the gasket is damaged, replace radiator pressure cap (3).



Illustration 627

g06711220

- (5) Access door

7. Open access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

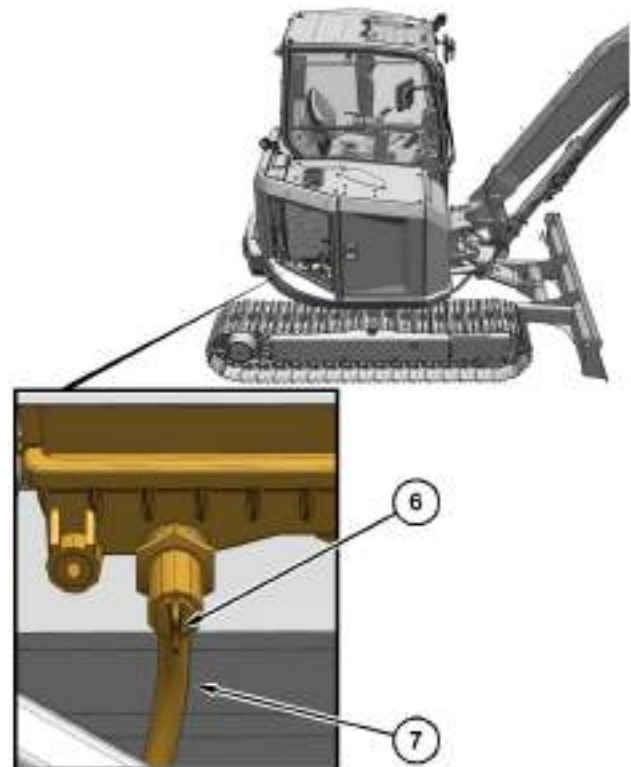


Illustration 628

g06711222

Some components removed for better clarity

- (6) Drain valve
(7) Drain hose

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

Maintenance Section
Cooling System Coolant (ELC) - Change

8. Connect drain hose (7) with drain valve (6). Open drain valve (6) and allow the coolant to drain into a suitable container. Drain valve (6) is on the bottom of radiator (4).

Note: Discard drained fluids according to local regulations.

9. Flush the cooling system. Follow Step 9a through Step 9i to flush the cooling system.
- Close drain valve (6).
 - Fill radiator (4) with clean water through the opening available due to removal of radiator pressure cap (3).
 - Clean and install radiator pressure cap (3).
 - Start the engine and run the engine until the engine reaches operating temperature. Refer to "Engine Starting" for more information.
 - Stop the engine and allow the engine to cool. Refer to "Stopping the Engine" for more information.
 - Loosen radiator pressure cap (3) slowly to relieve any pressure in the cooling system. Refer to "System Pressure Release" for more information.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- Open drain valve (6) that is on the bottom of radiator (4) and allow the coolant to drain into a suitable container.
 - Discard drained fluids according to local regulations.
 - Flush radiator (4) with clean water until the draining water is transparent.
10. Close drain valve (6).

11. Add Cat® Extended Life Coolant. Refer to the following topics:

- "Cooling System Coolant Extender (ELC) - Add"
- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"
- "Capacities (Refill)"

12. After the cooling system has been filled, perform the following procedures during initial start-up:

- Start the engine without radiator pressure cap (3). Refer to "Engine Starting".

- Turn cab heat onto maximum position using Heating Ventilation and Air Conditioning (HVAC) control. Refer to "Operator Controls" for more information.

. Turn cab heat to open the cab heater valve and that allows the radiator core and radiator lines to be filled with coolant.

- Run the engine at low idle for 10 minutes.
- Then, increase the engine speed to high idle until the water temperature regulator is open and the coolant level is stabilized.
- Maintain the coolant at the proper level as the water temperature regulator opens and air is purged from the system. Refer to "Cooling System Coolant Level - Check" for more information.

13. Install radiator pressure cap (3).

14. Stop the engine. Refer to "Stopping the Engine" for more information.

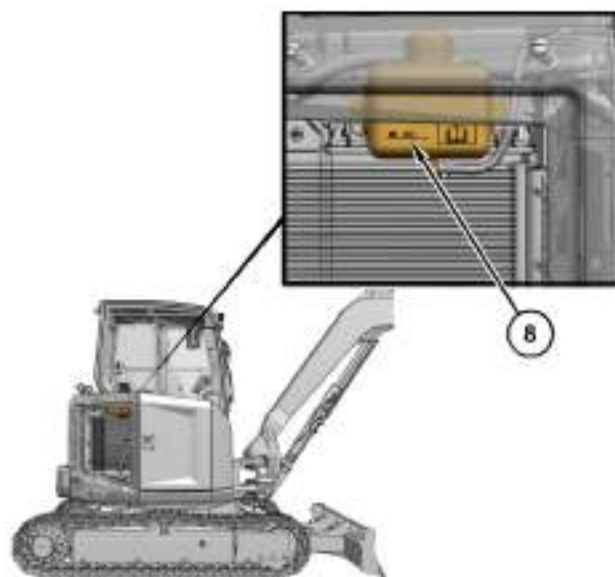


Illustration 629

g06711257

Some components removed for better clarity

(8) Coolant reservoir

i08581751

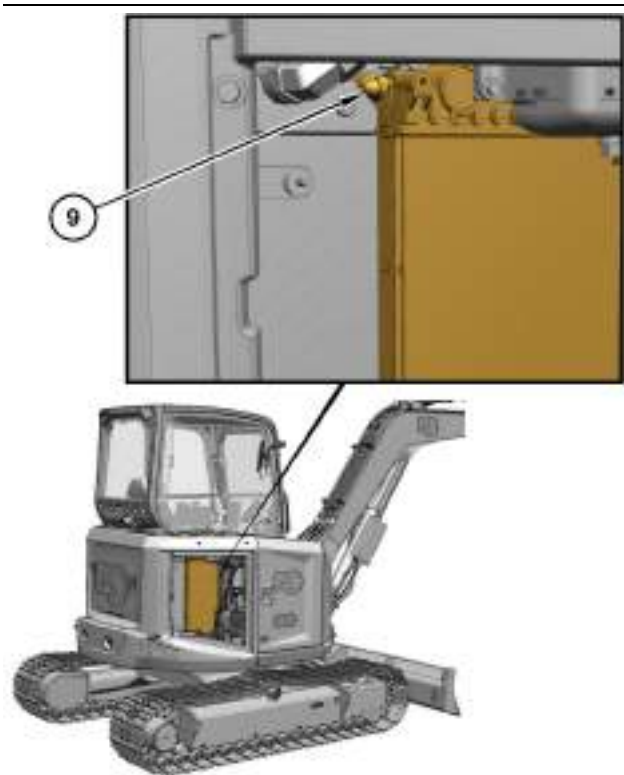


Illustration 630

g06713828

Some components removed for better clarity

(9) Sight gauge

15. Check coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8). Check level of coolant in radiator (4) through sight gauge (9) available on radiator (4). If more coolant is needed, refer to "Cooling System Coolant Extender (ELC) - Add" for more information.
16. If more coolant is necessary, remove radiator pressure cap (3) and add the appropriate coolant solution. Refer to "System Pressure Release", "Lubricant Viscosities", and "Capacities (Refill)" for more information.
17. Install radiator pressure cap (3).
18. Close access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.
19. Position cover (1) on top of the machine.
20. Install two bolts (2) that secure cover (1). Refer to Illustration 625 for more information.

Cooling System Coolant Extender (ELC) - Add

SMCS Code: 1352; 1353; 1395

S/N: AN41–Up

S/N: 5C51–Up

S/N: 5G51–Up

S/N: 5X51–Up

S/N: AX61–Up

WARNING

Personal injury can result from hot coolant, steam and alkali.

At operating temperature, engine coolant is hot and under pressure. The radiator and all lines to heaters or the engine contain hot coolant or steam. Any contact can cause severe burns.

Remove cooling system pressure cap slowly to relieve pressure only when engine is stopped and cooling system pressure cap is cool enough to touch with your bare hand.

Do not attempt to tighten hose connections when the coolant is hot, the hose can come off causing burns.

Cooling System Coolant Additive contains alkali. Avoid contact with skin and eyes.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

⚠ WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a “Do Not Operate” or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, “Extended Life Coolant (ELC)” under the topic ELC Cooling System Contamination.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Note: This machine was filled at the factory with Cat® Extended Life Coolant.

If the coolant in the machine is changed to Extended Life Coolant from another type of coolant, refer to Special Publication, SEBU6250, “Caterpillar Machine Fluids Recommendations”.

1. Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

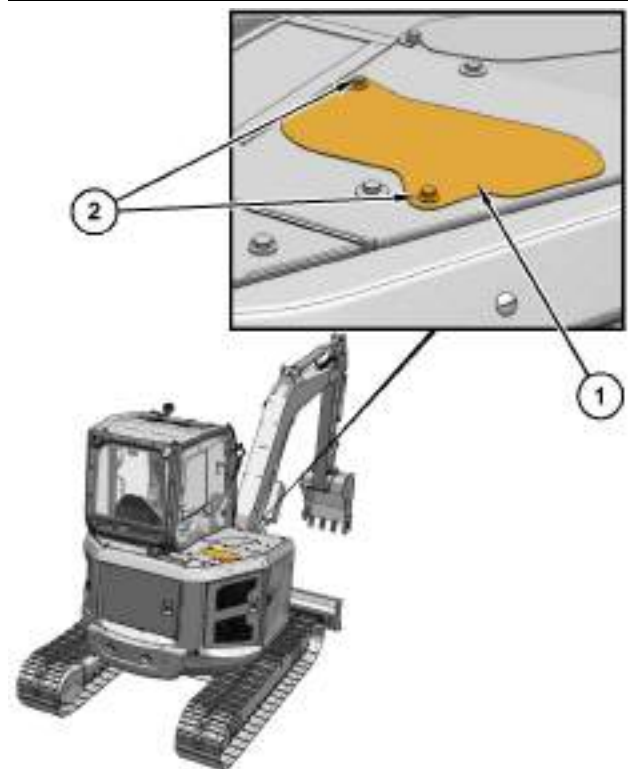


Illustration 631

g06711217

Some components removed for better clarity

- (1) Cover
- (2) Bolt

2. Remove two bolts (2) that secure cover (1).

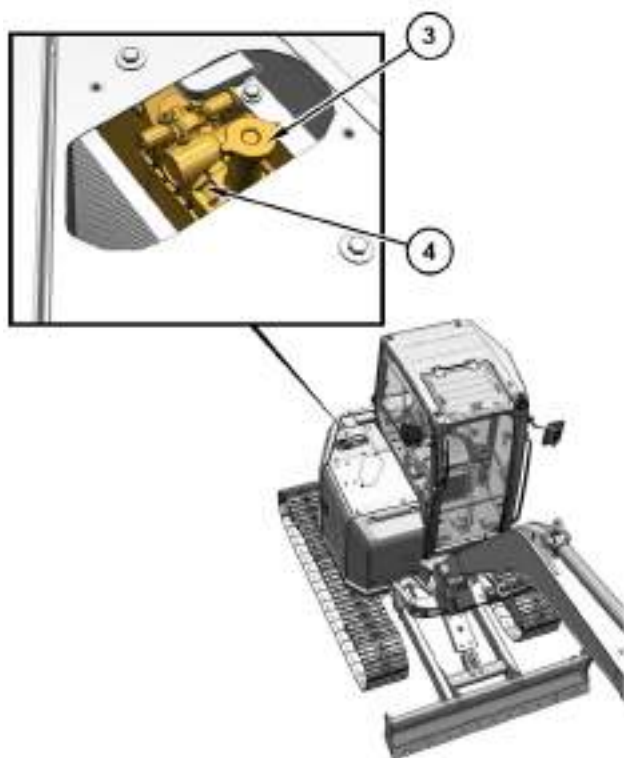


Illustration 632

g06711218

Some components removed for better clarity

- (3) Radiator pressure cap
- (4) Radiator

3. Slowly loosen radiator pressure cap (3) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.
4. Remove radiator pressure cap (3).
5. Inspect the gasket on the radiator pressure cap (3). If the gasket is damaged, replace radiator pressure cap (3).

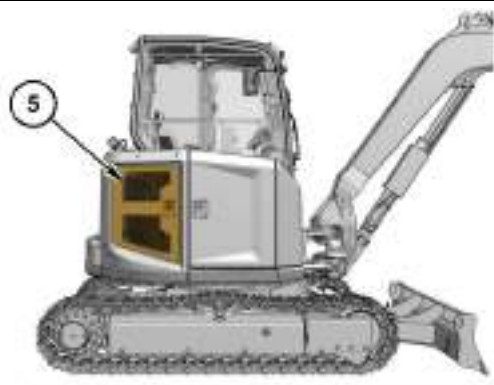


Illustration 633

g06711220

- (5) Access door

6. Open access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

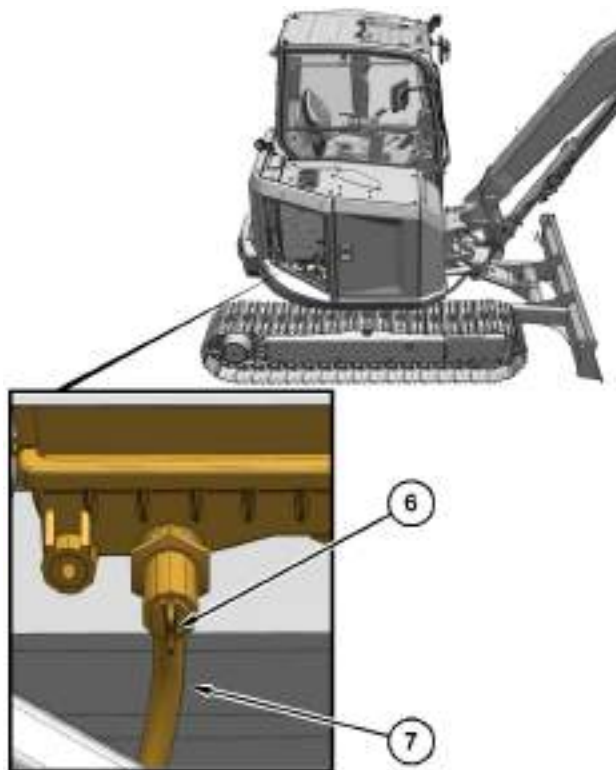


Illustration 634

g06711222

Some components removed for better clarity

- (6) Drain valve
- (7) Drain hose

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

7. Connect drain hose (7) with drain valve (6). Open drain valve (6) and allow the coolant to drain into a suitable container. Drain valve (6) is on the bottom of radiator (4).

Note: Discard drained fluids according to local regulations.

8. Flush the cooling system. Follow Step 8a through Step 8i to flush the cooling system.
 - a. Close drain valve (6).
 - b. Fill radiator (4) with clean water.
 - c. Clean and install radiator pressure cap (3).
 - d. Start the engine and run the engine until the engine reaches operating temperature. Refer to "Engine Starting" for more information.

Maintenance Section

Cooling System Coolant Extender (ELC) - Add

- e. Stop the engine and allow the engine to cool. Refer to "Stopping the Engine" for more information.
- f. Loosen radiator pressure cap (3) slowly to relieve any pressure in the cooling system. Refer to "System Pressure Release" for more information.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- g. Open drain valve (6) that is on the bottom of radiator (4) and allow the coolant to drain into a suitable container.
- h. Discard drained fluids according to local regulations.
- i. Flush radiator (4) with clean water until the draining water is transparent.

9. Close drain valve (6).

10. Add Cat® Extended Life Coolant. Refer to the following topics:

- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"
- "Capacities (Refill)"

11. Install radiator pressure cap (3).

12. Stop the engine. Refer to "Stopping the Engine" for more information.

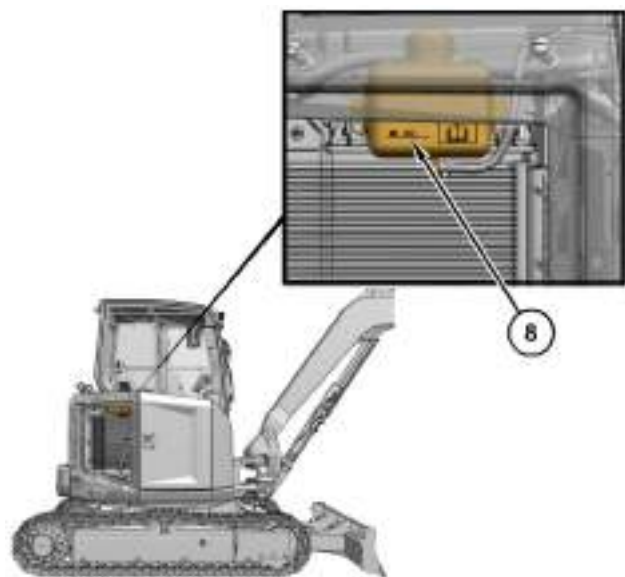


Illustration 635

g06711257

Some components removed for better clarity

(8) Coolant reservoir

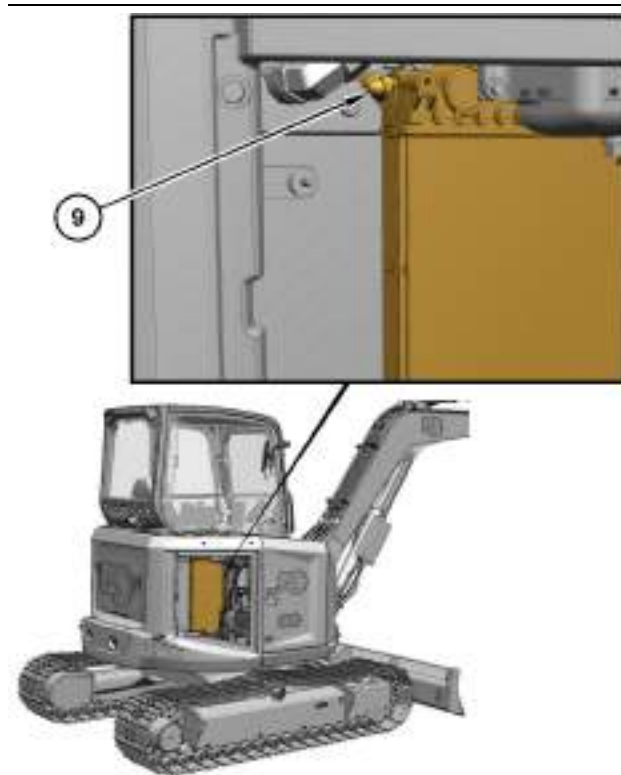


Illustration 636

g06713828

Some components removed for better clarity

(9) Sight gauge

13. Check coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8). Check level of coolant in radiator (4) through sight gauge (9) available on radiator (4).

14. If more coolant is necessary, remove radiator pressure cap (3) and add the appropriate coolant solution. Refer to "System Pressure Release", "Lubricant Viscosities", and "Capacities (Refill)" for more information.

15. Install radiator pressure cap (3).

16. Close access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

17. Install two bolts (2) that secure cover (1). Refer to Illustration 631 for more information.

i08776944

Cooling System Coolant Extender (ELC) - Add

SMCS Code: 1352; 1353; 1395

S/N: AX51–Up

 WARNING**Crush Hazard!**

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

 WARNING

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the fill cap is cool enough to touch with your bare hand.

Remove the fill cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

 WARNING

Pressurized System: Hot coolant can cause serious burns. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

 WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, "Extended Life Coolant (ELC)" under the topic ELC Cooling System Contamination.

Note: This machine was filled at the factory with Cat® Extended Life Coolant.

If the coolant in the machine is changed to extended life coolant from another type of coolant, refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations".

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

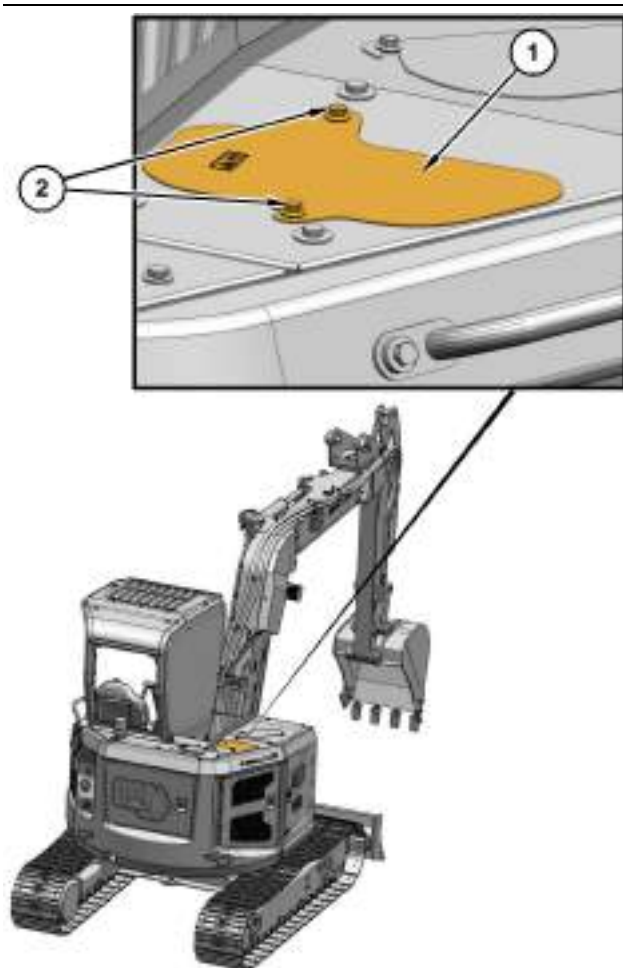


Illustration 637

g06775773

Some components removed for better clarity

- (1) Cover
- (2) Bolt

2. Remove two bolts (2) that secure cover (1).

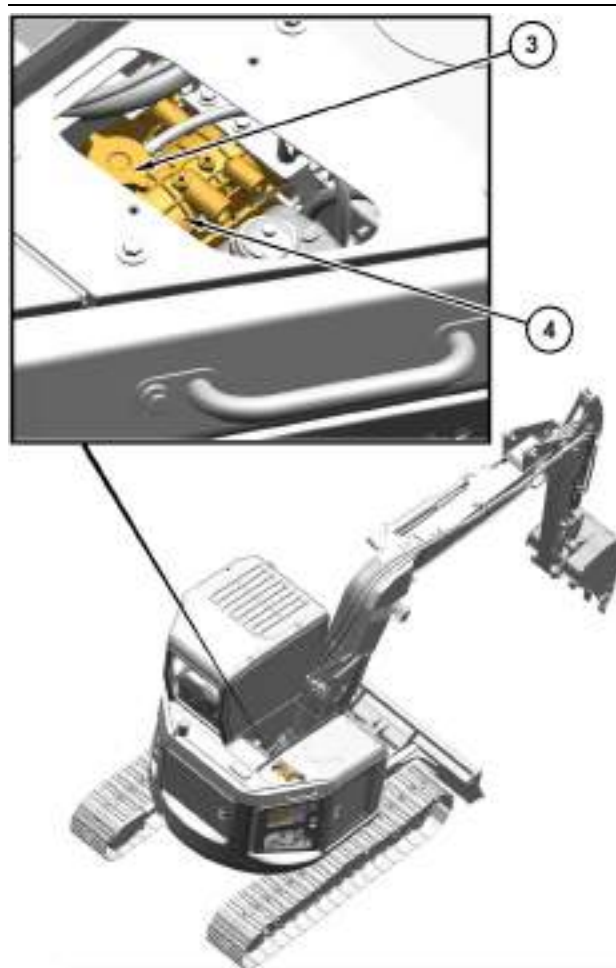


Illustration 638

g06775801

Some components removed for better clarity

- (3) Radiator pressure cap
- (4) Radiator

3. Slowly loosen radiator pressure cap (3) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.

4. Remove radiator pressure cap (3).

5. Inspect the gasket on the radiator pressure cap (3). If the gasket is damaged, replace radiator pressure cap (3).

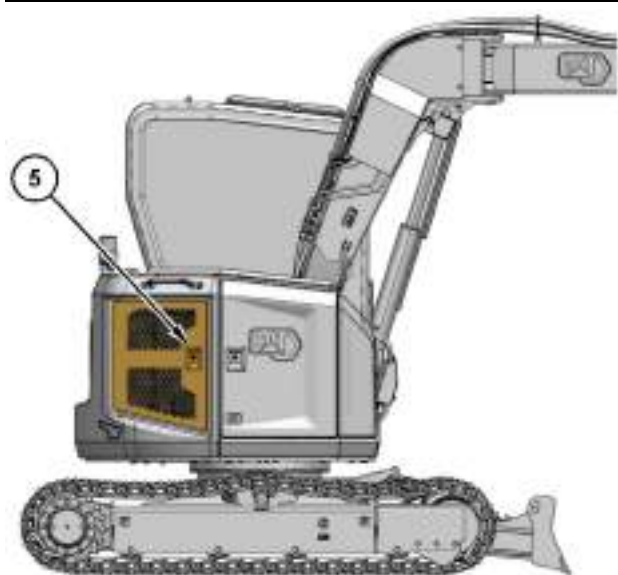


Illustration 639

g06775807

(5) Access door

6. Open access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

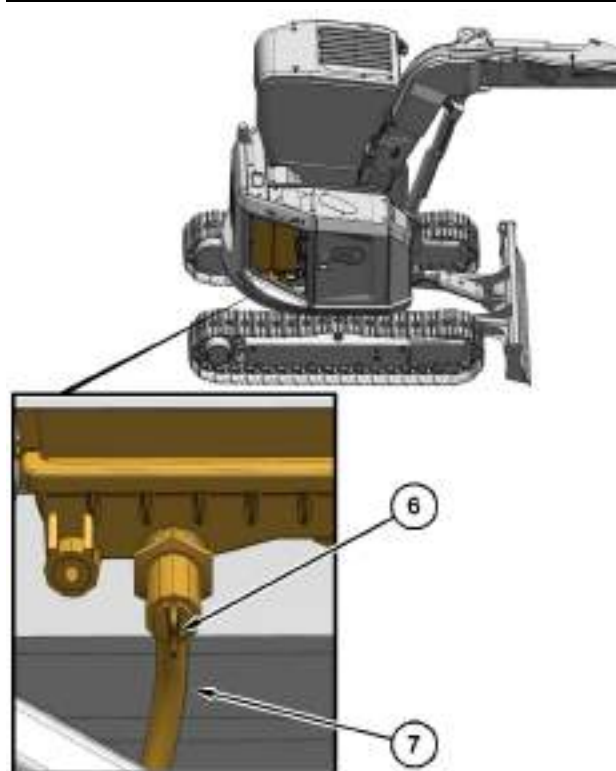


Illustration 640

g06775814

Some components removed for better clarity

(6) Drain valve

(7) Drain hose

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

7. Connect drain hose (7) with drain valve (6). Open drain valve (6) and allow the coolant to drain into a suitable container. Drain valve (6) is on the bottom of radiator (4).

Note: Discard drained fluids according to local regulations.

8. Flush the cooling system. Follow Step 8a through Step 8i to flush the cooling system.
 - a. Close drain valve (6).
 - b. Fill radiator (4) with clean water.
 - c. Clean and install radiator pressure cap (3).
 - d. Start the engine and run the engine until the engine reaches operating temperature. Refer to "Engine Starting" for more information.
 - e. Stop the engine and allow the engine to cool. Refer to "Stopping the Engine" for more information.

Maintenance Section

Cooling System Coolant Extender (ELC) - Add

- f. Loosen radiator pressure cap (3) slowly to relieve any pressure in the cooling system. Refer to "System Pressure Release" for more information.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- g. Open drain valve (6) that is on the bottom of radiator (4) and allow the coolant to drain into a suitable container.
- h. Discard drained fluids according to local regulations.
- i. Flush radiator (4) with clean water until the draining water is transparent.

9. Close drain valve (6).

10. Add Cat® Extended Life Coolant. Refer to the following topics:

- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"
- "Capacities (Refill)"

11. Install radiator pressure cap (3).

12. Stop the engine. Refer to "Stopping the Engine" for more information.

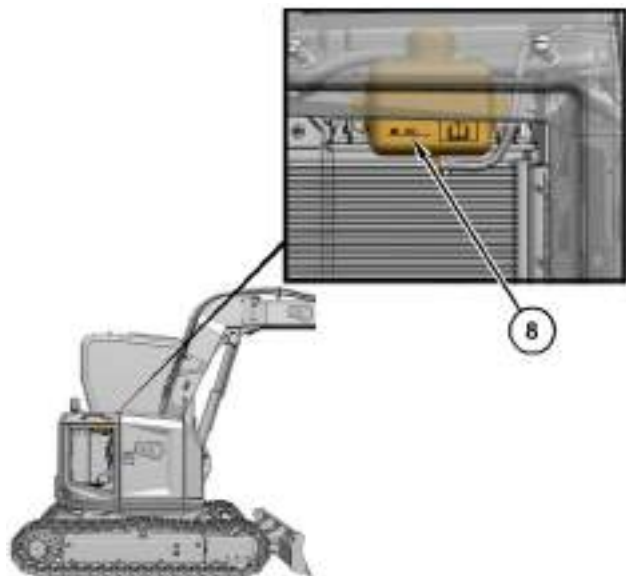


Illustration 641

g06775822

Some components removed for better clarity

(8) Coolant reservoir

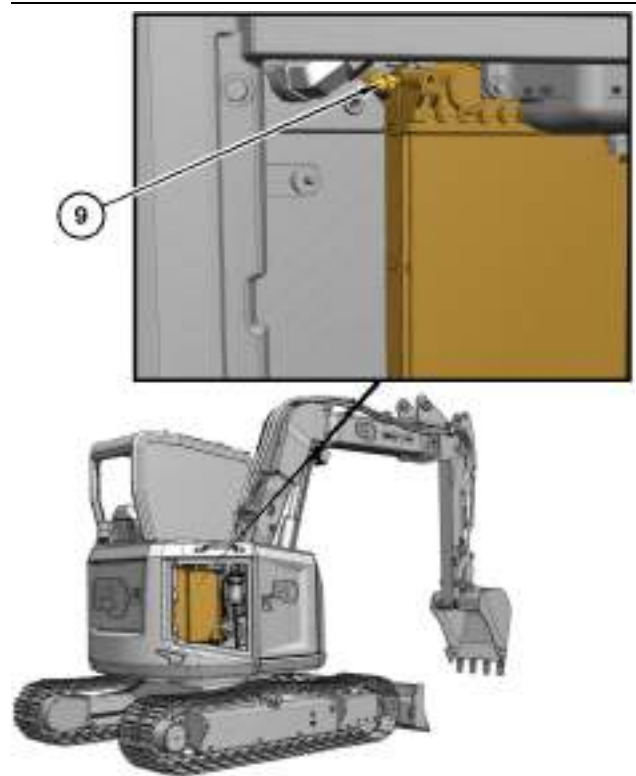


Illustration 642

g06775825

Some components removed for better clarity

(9) Sight gauge

- 13.** Check coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8). Check level of coolant in radiator (4) through sight gauge (9) available on radiator (4).
- 14.** If more coolant is necessary, remove radiator pressure cap (3) and add the appropriate coolant solution. Refer to "System Pressure Release", "Capacities (Refill)", and "Lubricant Viscosities" for more information.
- 15.** Install radiator pressure cap (3).
- 16.** Close access door (5) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.
- 17.** Secure cover (1) by installing two bolts (2). Refer to Illustration 637 for more information.

i08586605

Cooling System Coolant Level - Check

SMCS Code: 1350-040; 1350-535-FLV; 1395-535-FLV

S/N: AN41–Up

S/N: 5C51–Up

S/N: 5G51–Up

S/N: 5X51–Up

S/N: AX61–Up

WARNING

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the fill cap is cool enough to touch with your bare hand.

Remove the fill cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

WARNING

Pressurized System: Hot coolant can cause serious burns. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, “Mounting and Dismounting” topic, for safety information.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, “Extended Life Coolant (ELC)” under the topic ELC Cooling System Contamination.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.



Illustration 643

g06714366

(1) Access door

Maintenance Section

Cooling System Coolant Level - Check

1. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

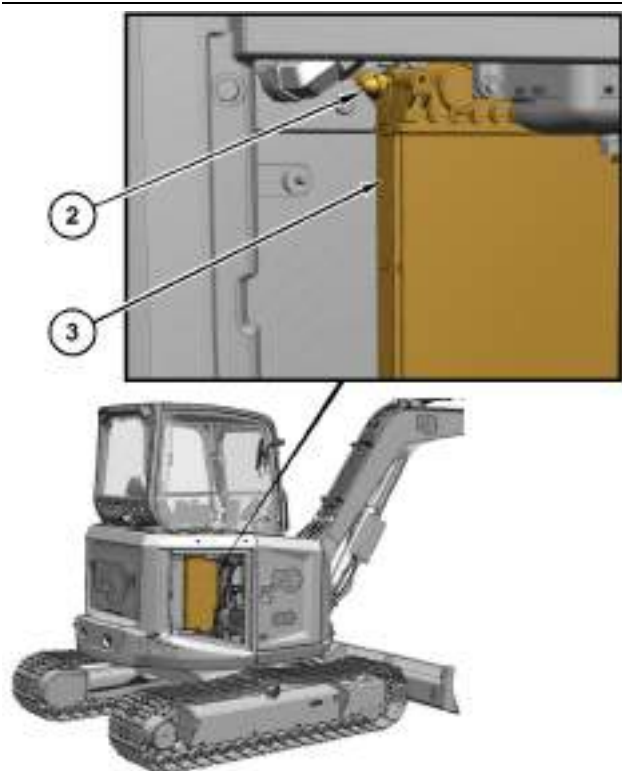


Illustration 644

g06714367

Some components removed for better clarity

- (2) Sight gauge
- (3) Radiator

2. Check level of coolant in radiator (3) through sight gauge (2) available on radiator (3). Follow step 2a through step 2l if the coolant level is LOW.

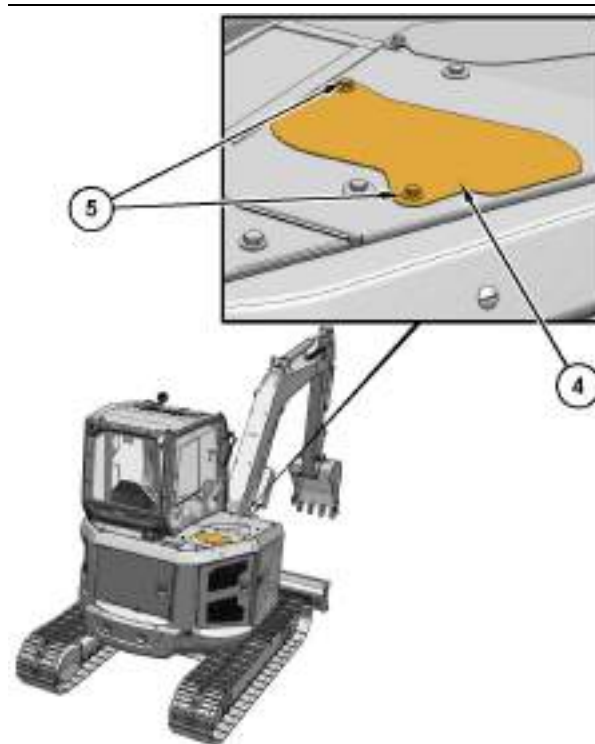


Illustration 645

g06714368

Some components removed for better clarity

- (4) Cover
- (5) Bolt

- a. Remove two bolts (5) that secure cover (4) on top of the machine.

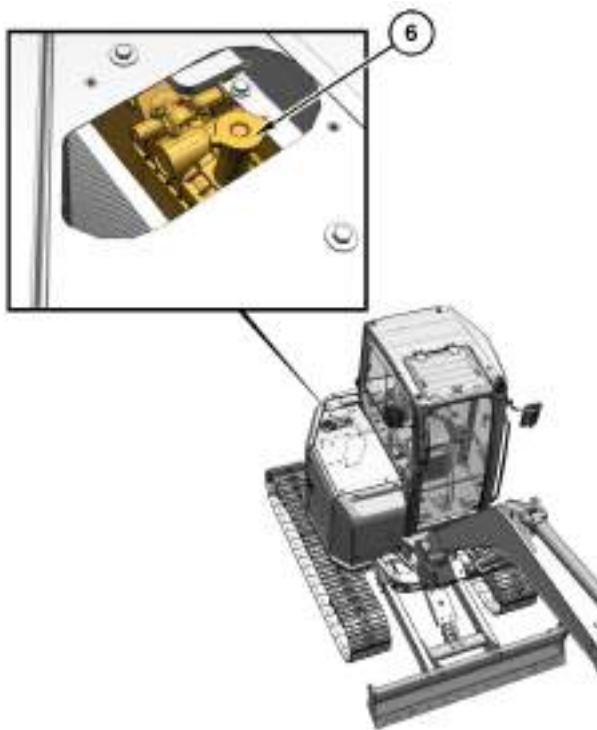


Illustration 646 g06714370

Some components removed for better clarity

(6) Radiator pressure cap

- b. Slowly loosen radiator pressure cap (6) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.
- c. Remove radiator pressure cap (6).
- d. Inspect the gasket on the radiator pressure cap (6). If the gasket is damaged, replace radiator pressure cap (6).
- e. Add appropriate coolant to the cooling system through radiator (3). Refer to the following topics:

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"
- "Capacities (Refill)"
- "Lubricant Viscosities"

- f. Install radiator pressure cap (6).

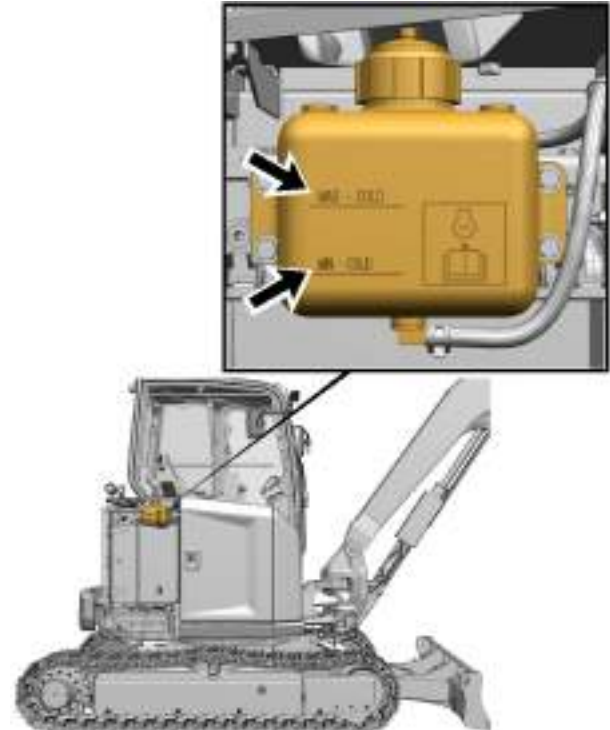


Illustration 647 g06714304

Some components removed for better clarity

Coolant level indicator in coolant reservoir

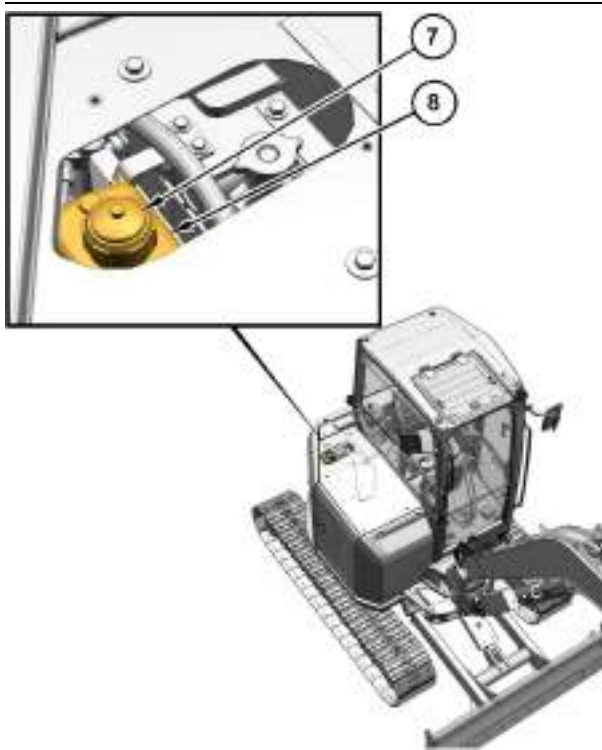


Illustration 648

g06714298

Some components removed for better clarity

- (7) Cap
(8) Coolant reservoir

- g. Check the coolant level in coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8).
- h. Remove cap (7) on coolant reservoir (8).
- i. Add appropriate coolant in coolant reservoir (8). Refer to the following topics:

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

- Special Publication, SEBU6250, “Caterpillar Machine Fluids Recommendations”
 - “Capacities (Refill)”
 - “Lubricant Viscosities”
- j. Inspect cap (7) on coolant reservoir (8). Clean cap (7) on coolant reservoir (8) with a clean cloth. Replace cap (7) if damaged.
 - k. Install cap (7) on coolant reservoir (8).
 - l. Install two bolts (5) that secure cover (4). Refer to Illustration 645 for more information.

3. Close access door (1) on the right side of the machine. Refer to “Access Door and Cover Locations” for more information.

i08776977

Cooling System Coolant Level - Check

SMCS Code: 1350-040; 1350-535-FLV; 1395-535-FLV

S/N: AX51–Up

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

WARNING

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the fill cap is cool enough to touch with your bare hand.

Remove the fill cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

WARNING

Pressurized System: Hot coolant can cause serious burns. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, “Mounting and Dismounting” topic, for safety information.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Do not change the coolant until you read and understand the material in the Cooling System Specifications section.

NOTICE

Mixing Cat® Extended Life Coolant (ELC) with other products reduces the effectiveness of the coolant and shortens coolant life. Use only Cat® products or commercial products that have passed the Cat® EC-1 specifications for premixed or concentrate coolants. Use only Cat® Extender with Cat® ELC. Failure to follow these recommendations could result in the damage to cooling systems components.

If Cat® ELC cooling system contamination occurs, refer to Operation and Maintenance, "Extended Life Coolant (ELC)" under the topic ELC Cooling System Contamination.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

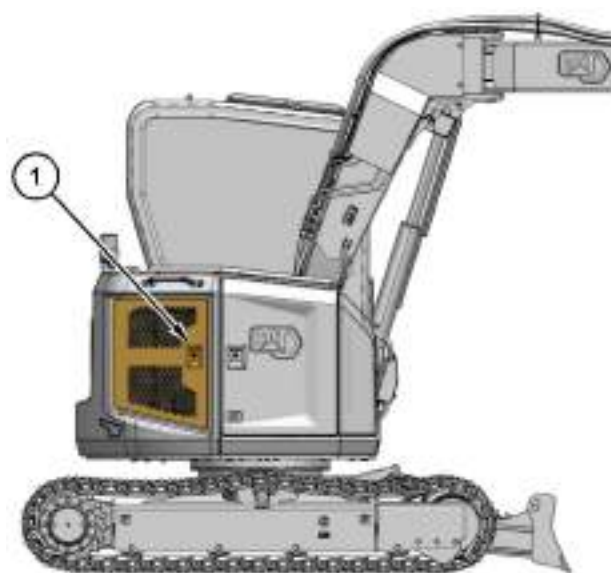


Illustration 649

g06775900

(1) Access door

1. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

Maintenance Section

Cooling System Coolant Level - Check

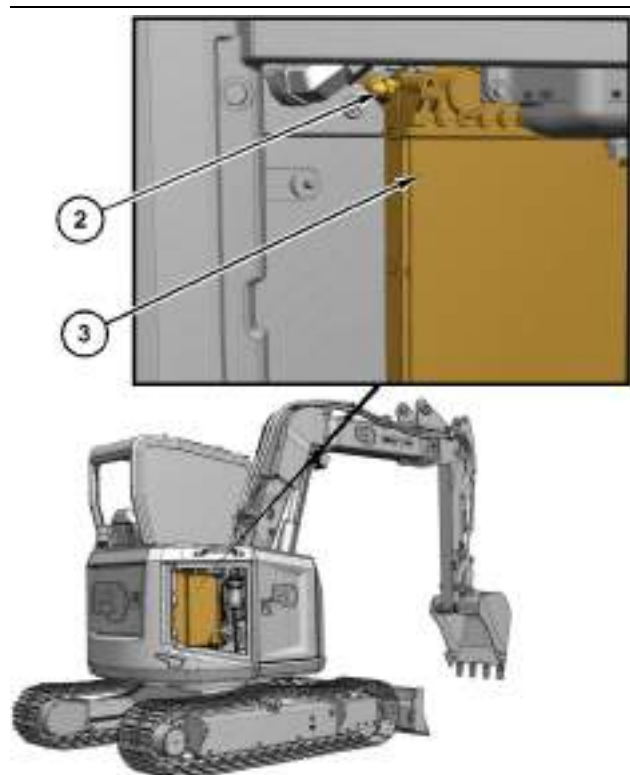


Illustration 650

g06775901

Some components removed for better clarity

- (2) Sight gauge
- (3) Radiator

2. Check level of coolant in radiator (3) through sight gauge (2) available on radiator (3). Follow step 2a through step 2l if the coolant level is LOW.

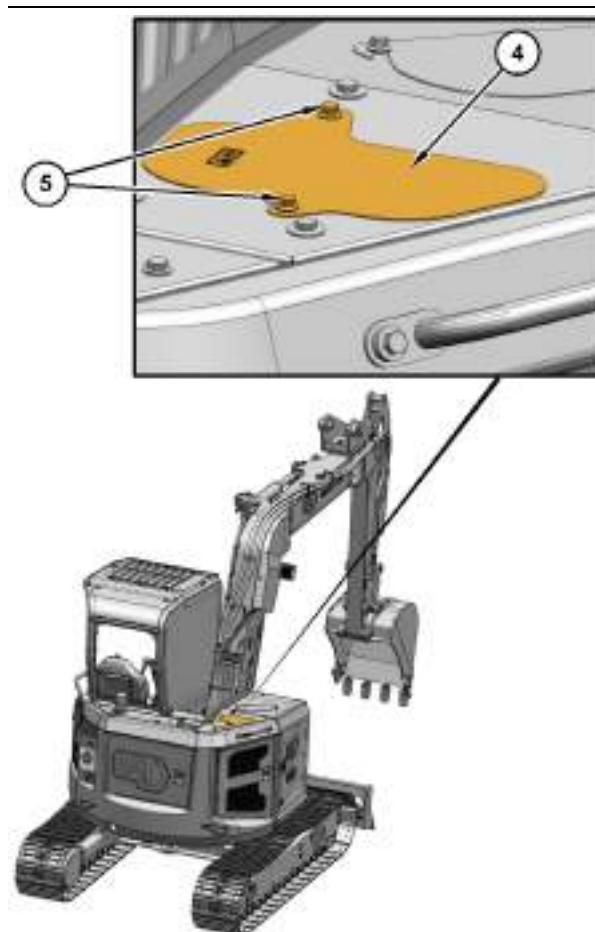


Illustration 651

g06775902

Some components removed for better clarity

- (4) Cover
- (5) Bolt

- a. Remove two bolts (5) that secure cover (4) on top of the machine.

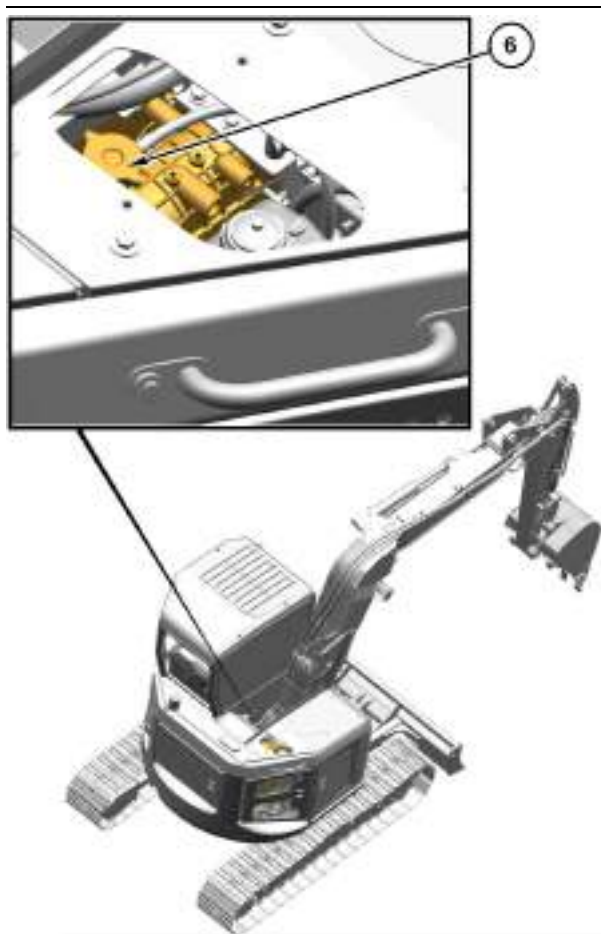


Illustration 652

g06775903

Some components removed for better clarity

(6) Radiator pressure cap

- b. Slowly loosen radiator pressure cap (6) to release pressure from the cooling system. Refer to "System Pressure Release" for more information.
- c. Remove radiator pressure cap (6).
- d. Inspect the gasket on the radiator pressure cap (6). If the gasket is damaged, replace radiator pressure cap (6).
- e. Add appropriate coolant to the cooling system through radiator (3). Refer to the following topics:

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

- Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations"

- "Capacities (Refill)"
- "Lubricant Viscosities"

f. Install radiator pressure cap (6).

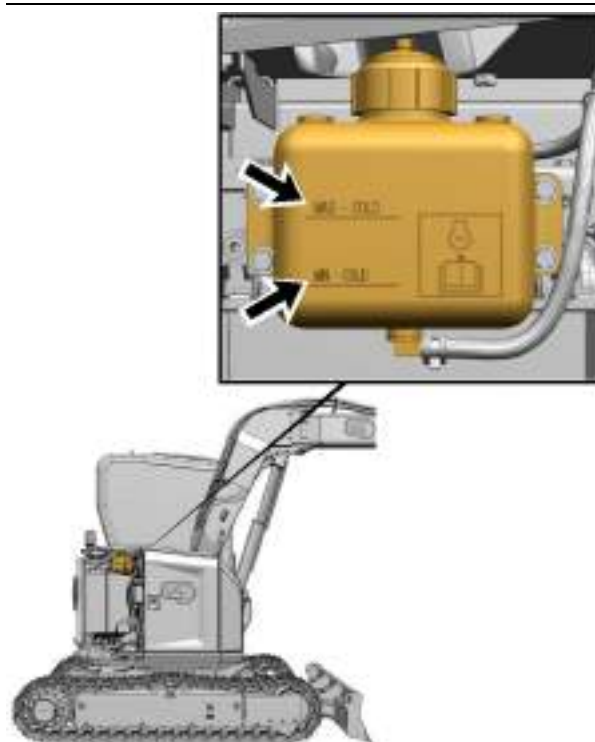


Illustration 653

g06775905

Some components removed for better clarity

Coolant level indicator in coolant reservoir

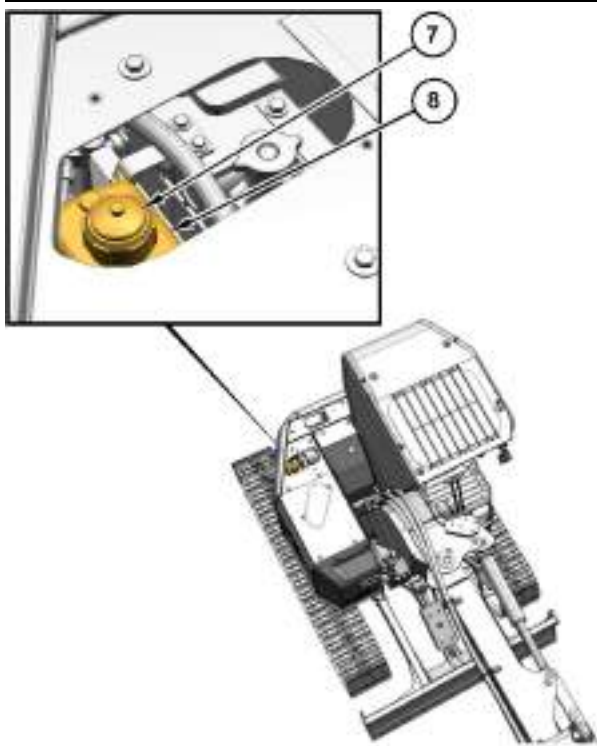


Illustration 654

g06775911

Some components removed for better clarity

- (7) Cap
- (8) Coolant reservoir

- g. Check the coolant level in coolant reservoir (8). Maintain the coolant level between indicated lines on coolant reservoir (8). Refer to Illustration 653 for more information.
- h. Remove cap (7) on coolant reservoir (8).
- i. Add appropriate coolant in coolant reservoir (8). Refer to the following topics:

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

- Special Publication, SEBU6250, “Caterpillar Machine Fluids Recommendations”
 - “Capacities (Refill)”
 - “Lubricant Viscosities”
- j. Inspect cap (7) on coolant reservoir (8). Clean cap (7) on coolant reservoir (8) with a clean cloth. Replace cap (7) if damaged.
 - k. Install cap (7) on coolant reservoir (8).
 - l. Install two bolts (5) that secure cover (4). Refer to Illustration 651 for more information.

- 3. Close access door (1) on the right side of the machine. Refer to “Access Door and Cover Locations” for more information.

i07488559

Cooling System Coolant Sample (Level 1) - Obtain

SMCS Code: 1395-008; 1395-554; 7542

Note: It is not necessary to obtain a Coolant Sample (Level 1) if the cooling system is filled with Cat ELC (Extended Life Coolant). Cooling systems that are filled with Cat ELC should have a Coolant Sample (Level 2) that is obtained at the recommended interval that is stated in the Maintenance Interval Schedule.

Note: Obtain a Coolant Sample (Level 1) if the cooling system is filled with any other coolant instead of Cat ELC. This includes the following types of coolants.

- Commercial long life coolants that meet the Caterpillar Engine Coolant Specification -1 (Caterpillar EC-1)
- Cat Diesel Engine Antifreeze/Coolant (DEAC)
- Commercial heavy-duty antifreeze/coolant solution

NOTICE

Always use a designated pump for oil sampling, and use a separate designated pump for coolant sampling. Using the same pump for both types of samples may contaminate the samples that are being drawn. This contaminate may cause a false analysis and an incorrect interpretation that could lead to concerns by both dealers and customers.

Note: Level 1 results may indicate a need for Level 2 Analysis.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

Obtain the sample of the coolant as close as possible to the recommended sampling interval. The recommended sampling interval for Level 1 Coolant Analysis is every 250 service hours. To receive the full effect of S·O·S analysis, you must establish a consistent trend of data. To establish a pertinent history of data, perform consistent samplings that are evenly spaced. Supplies for collecting samples can be obtained from your Caterpillar dealer.

Use the following guidelines for proper sampling of the coolant:

- Complete the information on the label for the sampling bottle before you begin to take the samples.
- Keep the unused sampling bottles stored in plastic bags.
- Keep the lids on empty sampling bottles until you are ready to collect the sample.
- Place the sample in the mailing tube immediately after obtaining the sample to avoid contamination.
- Never collect samples from expansion bottles.
- Never collect samples from the drain for a system.



Illustration 655

g06335663

WARNING

Pressurized System: Hot coolant can cause serious burns. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

1. The machine needs to be operated to circulate the coolant. Collect the sample after a normal workday. Collect the samples from one to two hours after the engine has been shut off.

2. Start the engine momentarily to circulate the coolant again.
3. Shut off the engine.
4. Carefully remove the radiator cap.
5. Use a vacuum pump and draw the sample. Do not allow dirt or other contaminants to enter the sampling bottle. Fill the sampling bottle three-fourths from the top. Do not fill the bottle completely.
6. Place the sampling bottle with the completed label into the mailing tube.
7. Install the radiator cap.

i07349178

Cooling System Coolant Sample (Level 2) - Obtain

SMCS Code: 1395-008; 1395-554; 7542

Reference: Refer to Operation and Maintenance Manual, "Cooling System Coolant Sample (Level 1) - Obtain" for the guidelines for proper sampling of the coolant.

Obtain the sample of the coolant as close as possible to the recommended sampling interval. Supplies for collecting samples can be obtained from your Cat dealer.

Submit the sample for Level 2 analysis.

Reference: For additional information about coolant analysis, refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" or consult your Cat dealer.

i08778225

Diesel Particulate Filter - Clean (Emission Related Component)

SMCS Code: 108F-070; 1091-070

Prepare the machine for maintenance. Refer to Operation and Maintenance Manual, "Prepare the Machine for Maintenance" for more information.

Consult your Cat dealer when the DPF needs to be cleaned.

The approved Caterpillar DPF maintenance procedure requires that one of the following actions be taken when the DPF needs to be cleaned:

- The DPF from your machine can be replaced with a new DPF

- The DPF from your machine can be replaced with a remanufactured DPF
- The DPF from your machine can be cleaned by your local authorized Cat dealer, or a Caterpillar approved DPF cleaning machine, and reinstalled

Note: To maintain emissions documentation, the DPF that is removed from the machine when the DPF is cleaned must be reinstalled on the same machine.

Note: A specific ash service regeneration must be performed before removing a DPF that will be cleaned. All three scenarios listed above require a reset of the ash monitoring system in the engine ECM.

i08581187

Engine Air Filter Element - Clean/Replace

SMCS Code: 1054-510; 1054-070

WARNING

Personal injury can result from air pressure.

Personal injury can result without following proper procedure. When using pressure air, wear a protective face shield and protective clothing.

Maximum air pressure at the nozzle must be less than 205 kPa (30 psi) for cleaning purposes.

NOTICE

Service the air cleaner only with the engine stopped. Engine damage could result.

NOTICE

Short air filter life can result if the pre-cleaner system malfunctions. If air filter life is drastically reduced from typical for the operating conditions, consult your Cat® dealer.

NOTICE

Caterpillar recommends certified air filter cleaning services available at participating Caterpillar dealers. The Caterpillar cleaning process uses proven procedures to assure consistent quality and sufficient filter life.

Observe the following guidelines if you attempt to clean the filter element:

Do not tap or strike the filter element in order to remove dust.

Do not wash the filter element.

Use low pressure compressed air in order to remove the dust from the filter element. Air pressure must not exceed 205 kPa (30 psi). Direct the air flow up the pleats and down the pleats from the inside of the filter element. Take extreme care in order to avoid damage to the pleats.

Do not use air filters with damaged pleats, gaskets, or seals. Dirt entering the engine will cause damage to engine components.

NOTICE

Do not use the air filter elements longer than 1 year.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

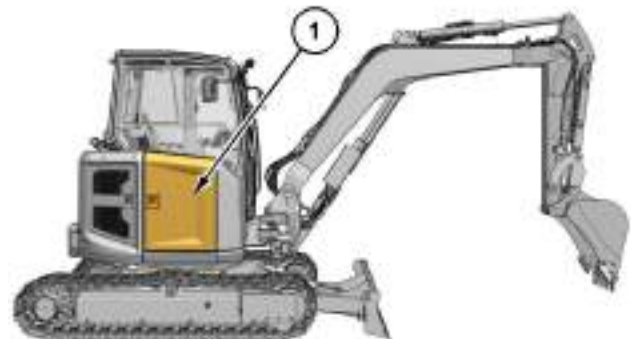


Illustration 656

g06711014

Right side view of the machine

(1) Access door

1. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

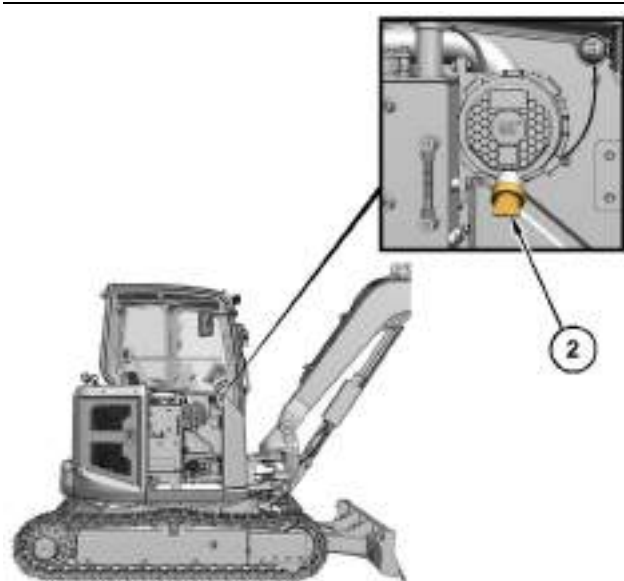


Illustration 657

g06711023

Some components removed for better clarity

(2) Dust valve

2. Squeeze dust valve (2) to purge the dirt from dust valve (2).

Note: Purge the dirt from dust valve (2) every 10 service hours or daily in a dirty environment.

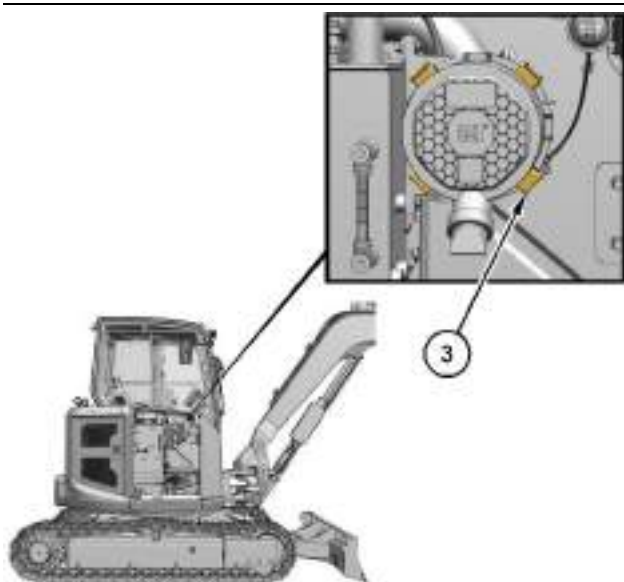


Illustration 658

g06711025

Some components removed for better clarity

(3) Latch

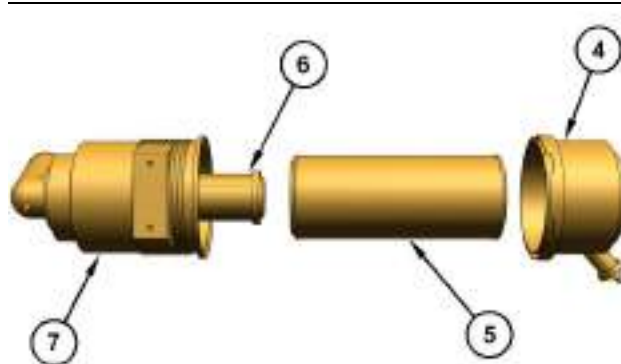


Illustration 659

g06680979

Exploded view of engine air filter

- (4) Cover
- (5) Primary air filter element
- (6) Secondary air filter element
- (7) Engine air filter housing

3. Release four latches (3) that secure cover (4) to engine air filter housing (7).

4. Remove and clean cover (4).

5. Remove primary air filter element (5) by hand.

6. Inspect primary air filter element (5). If the pleats, the gaskets or the seals are damaged, replace primary air filter element (5).

Note: Refer to "General Hazard Information" for more information.

Discard used primary air filter element (5) according to local regulations.

Note: Replace primary air filter element (5) if primary air filter element (5) has been in use for 1 year.

7. Clean inside engine air filter housing (7).

Note: Do not allow any dirt or debris to contact secondary air filter element (6).

8. Without removing secondary air filter element (6), inspect secondary air filter element (6) for damage. Replace secondary air filter element if necessary. Refer to "Engine Air Filter Secondary Element - Replace" for more information.

9. Install primary air filter element (5) by hand.

10. Install cover (4) to engine air filter housing (7) and secure cover (4) with engine air filter housing (7) using four latches (3).

Note: Primary air filter element (5) and secondary air filter element (6) must be installed before cover (4) can be latched. If cover (4) cannot be completely latched, verify that primary air filter element (5) and secondary air filter element (6) are properly seated in engine air filter housing (7).

11. Close access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i07934279

Engine Air Filter Primary Element - Replace

SMCS Code: 1054-510; 1054-510-PY

Remove the used engine air filter primary element. Install a new primary element.

Refer to this Operation and Maintenance Manual, "Engine Air Filter Element - Clean/Replace" for more details.

i07560737

Engine Air Filter Secondary Element - Replace

SMCS Code: 1054-510

NOTICE

Always replace the secondary filter element. Never attempt to reuse the element by cleaning.

The secondary filter element should be replaced at the time the primary element is serviced for the third time.

NOTICE

The filter should be kept in service for no longer than one year.

NOTICE

Always leave the secondary filter element in place while you clean the air cleaner housing.

1. Open the right rear access door.
2. Remove the air cleaner housing cover.
3. Remove the primary filter element. Refer to Operation and Maintenance Manual, "Engine Air Filter Primary Element - Replace".

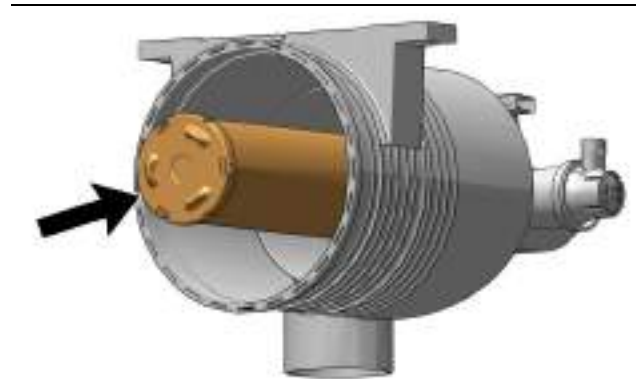


Illustration 660

g06287327

4. Remove the secondary filter element. Pull out to remove the element.
5. Cover the air inlet opening. Clean the inside of the air cleaner housing.
6. Install a new secondary filter element. Push the element firmly to properly seat the element. Write the date on the element.
7. Install the primary filter element and the air cleaner housing cover.
8. Close the right rear access door.

i07316348

Engine Air Filter Service Indicator - Inspect

SMCS Code: 7452-040-DJ

NOTICE

Service the air cleaner only with the engine stopped. Engine damage could result if the air cleaner is serviced while the engine is running.



Illustration 661

g06287255

1. Open the right side access door.
2. Start the engine.
3. Run the engine at high idle.
4. If the piston in the engine air filter service indicator enters the red zone, service the air cleaner.
5. Stop the engine.

Note: See the Operation and Maintenance Manual, "Engine Air Filter Element - Clean/Replace".

6. Close the right side access door.

i09727350

Engine Crankcase Breather - Replace (Closed Crankcase Breather)

SMCS Code: 1317-510

S/N: AN41-1648

S/N: 5C51-Up

S/N: 5G51-2016

S/N: 5X51-Up

S/N: AX51-Up

S/N: AX61-Up

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

Maintenance Section
Closed Crankcase Breather

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

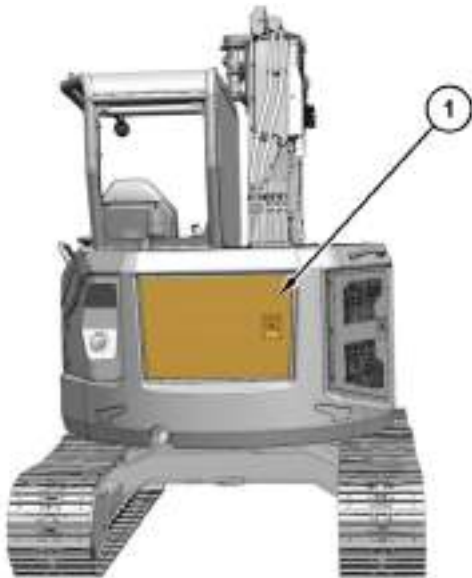


Illustration 662

g07572668

(1) Access door

1. Open access door (1) at the rear of the machine. Refer to "Access Door and Cover Locations".

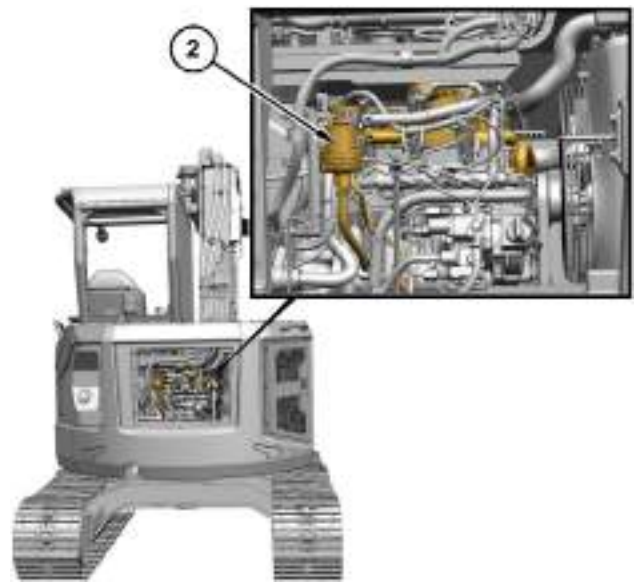


Illustration 663

g07572670

(2) Engine crankcase breather



Illustration 664

g07572706

Exploded view of engine crankcase breather (2)

- (3) Housing
- (4) Filter element
- (5) O-ring seal
- (6) Cover
- (7) Clip
- (8) Drain hose

2. Engine crankcase breather (2) is located in the engine compartment on the right side of engine. A replaceable filter element (4) is located inside engine crankcase breather (2).

3. Remove clip (7) from drain hose (8).

Note: Refer "General Hazard Information" for information that pertains to containing fluid spillage.

4. Remove drain hose (8) from cover (6). Allow the engine oil to drain into suitable container.

Note: Discard drained fluids according to local regulations.

Note: Refer "General Hazard Information" for information that pertains to containing fluid spillage.

5. Remove cover (6) from housing (3).

Note: Refer "General Hazard Information" for information that pertains to containing fluid spillage.

6. Remove filter element (4) from housing (3).

Note: Dispose used filter element (4) according to local regulations.

7. Inspect O-ring seal (5). Replace O-ring seal (5) if wear or damage is evident.

8. Apply thin coat of engine oil to O-ring seal (5).

9. Clean cover (6) and ensure cover (6) is free from damage. Replace cover (6) if wear or damage is evident.

10. Clean housing (3). Replace housing (3) if wear or damage is evident.

11. Install new filter element (4) in housing (3).

12. Install cover (6) on housing (3). Tighten cover (6) to torque of 10 N·m (88 lb in).

13. Install drain hose (8) on cover (6). Secure drain hose (8) with cover (6) using clip (7). Refer to illustration 664 for more information.

14. Close access door (1) at the rear of the machine. Refer to "Access Door and Cover Locations".

i09728047

Engine Crankcase Breather - Replace

(Open Crankcase Breather)

SMCS Code: 1317-510

S/N: AN41649–Up

S/N: 5G52017–Up

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".



Illustration 665

g07572849

(1) Access door

1. Open access door (1) at the rear of the machine. Refer to "Access Door and Cover Locations".

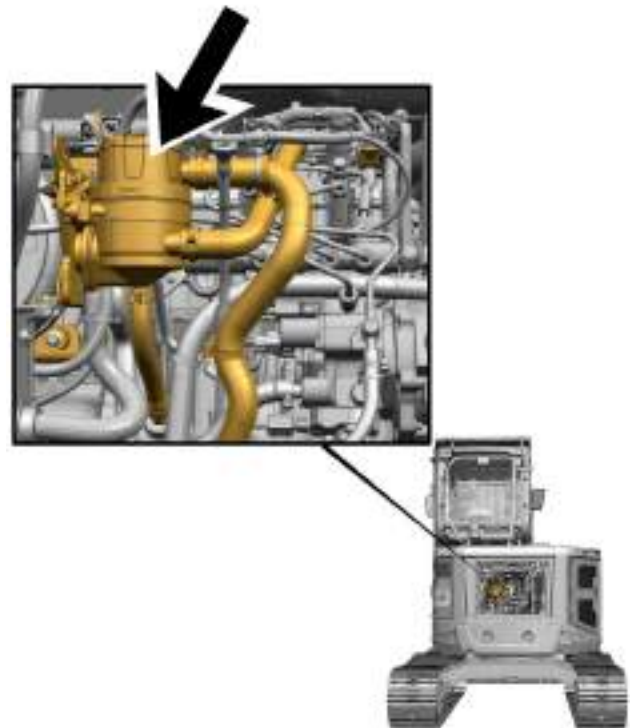


Illustration 666

g07572863

Location of engine crankcase breather in the machine

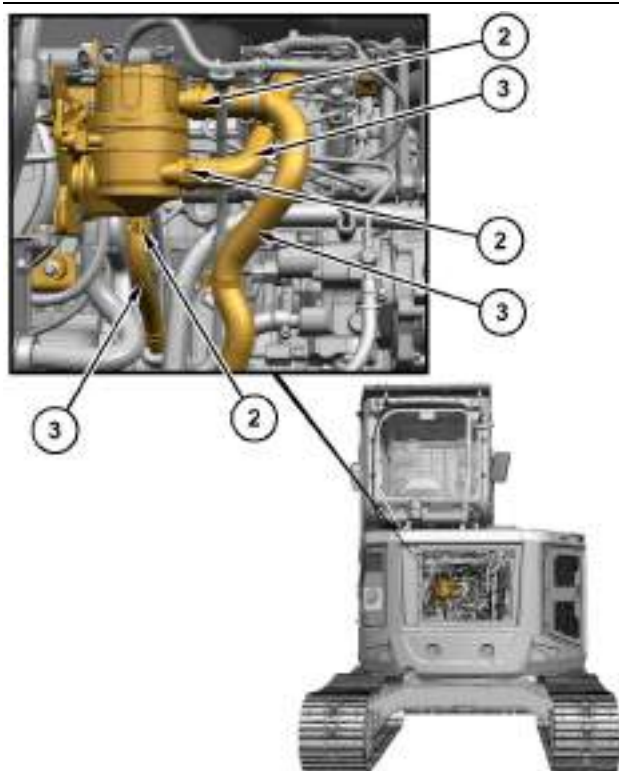


Illustration 667

g07572858

- (2) Hose clamp
(3) Hose

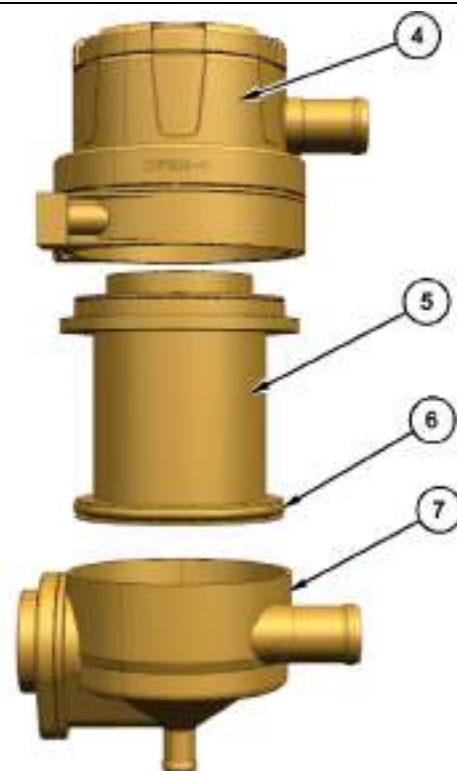


Illustration 668

g07572861

Exploded view of engine crankcase breather

- (4) Cover
(5) Filter element
(6) O-ring seal
(7) Main body

2. Engine crankcase breather is located in the engine compartment on the right side of engine. Refer to illustration 666 for more information. A replaceable filter element (5) is located inside engine crankcase breather. Refer to illustration 668 for more information.

3. Remove three clamps (2) from three hoses (3). Refer to Illustration 667 for more information.

Note: Refer "General Hazard Information" for information that pertains to containing fluid spillage.

4. Remove three drain hoses (3) from engine crankcase breather. Refer to Illustration 667 for more information. Allow the engine oil to drain into suitable container.

Note: Discard drained fluids according to local regulations.

Note: Refer "General Hazard Information" for information that pertains to containing fluid spillage.

5. Remove cover (4) from main body (7) by rotating cover (4) in counterclockwise direction.

Note: Discard drained fluids according to local regulations.

Note: Refer “General Hazard Information” for information that pertains to containing fluid spillage.

6. Remove filter element (5) from main body (7).

Note: Dispose used filter element (5) according to local regulations.

7. Inspect O-ring seal (6). Replace O-ring seal (6) if wear or damage is evident.

8. Apply thin coat of engine oil to O-ring seal (6).

9. Clean main body (7) and ensure main body (7) is free from damage. Replace main body (7) if wear or damage is evident.

10. Clean cover (4). Replace cover (4) if wear or damage is evident.

11. Install new filter element (5) in main body (7).

12. Install cover (4) on main body (7). Tighten cover (4) by rotating cover (4) in clockwise direction.

13. Install three hoses (3) on engine crankcase breather. Secure three hoses (3) with engine crankcase breather using three hose clamps (2). Refer to illustration 667 for more information.

14. Close access door (1) at the rear of the machine. Refer to “Access Door and Cover Locations”.

i09728075

Engine Oil Level - Check

SMCS Code: 1000-535

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Hot engine components can cause injury from burns. Before performing maintenance on the engine, allow the engine and the components to cool.

WARNING

Do not operate or work on this engine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manual. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Caterpillar dealer for replacement manuals. Proper care is your responsibility.

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, “Mounting and Dismounting” topic, for safety information.

NOTICE

Do not overfill the crankcase. Engine damage can result.

NOTICE

Operating your engine when the oil level is above the “H” mark could cause the crankshaft to dip into the oil. This could lead to excessively high oil temperatures which can reduce the lubricating characteristics of the oil, lead to bearing damage, and could result in loss of engine power.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

Check that the oil level after the engine has been stopped for at least 30 minutes. Refer to “Stopping the Engine” for more information.

Do not check the oil level while the engine is running.



Illustration 669

g07573250

Some components removed for better clarity

(1) Access door

1. Open access door (1) on rear of the machine.
Refer to "Access Door and Cover Locations" for more information.

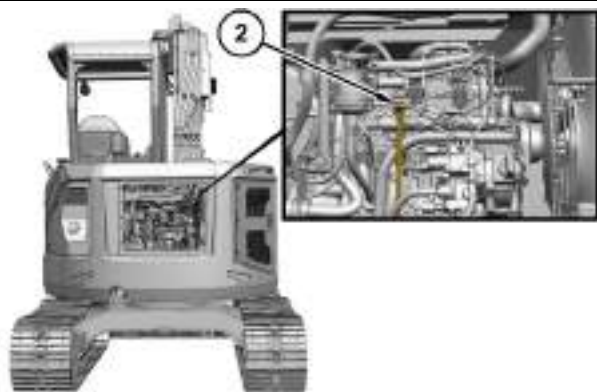


Illustration 670

g07573263

Some components removed for better clarity

(2) Oil level gauge

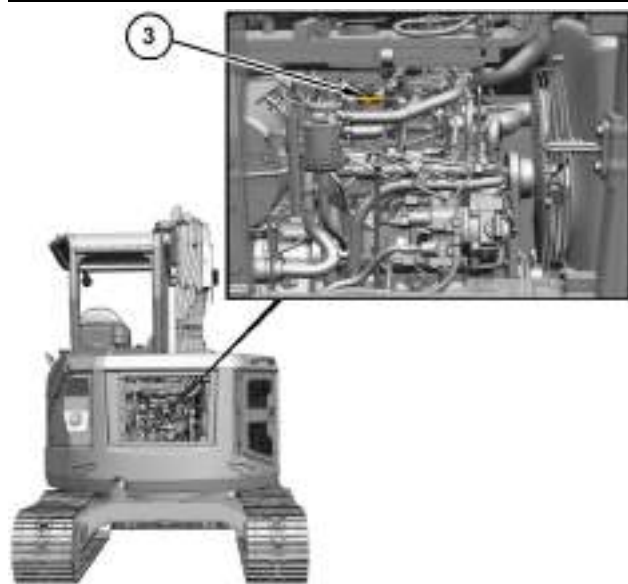


Illustration 671

g07575714

(3) Oil filler cap

2. Remove oil level gauge (2). Wipe the oil off from oil level gauge (2) and reinsert oil level gauge (2).

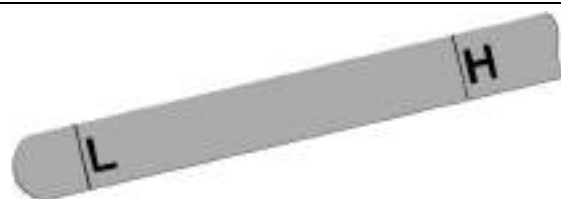


Illustration 672

g06183475

(2) Oil level gauge

3. Remove oil level gauge (2) and check oil level gauge (2). The oil level should be between the "H" mark and the "L" mark.
4. Reinsert oil level gauge (2). Refer Illustration 670 for more information.

Note: Refer to "General Hazard Information" for information on containing fluid spillage.

5. Remove oil filler cap (3) to add oil, if necessary.
Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

Note: If the oil is deteriorated or badly contaminated, change the oil regardless of the maintenance interval.

6. Clean oil filler cap (3). Install oil filler cap (3).
7. Close access door (1) on rear of the machine.
Refer to "Access Door and Cover Locations" for more information.

i09728186

Engine Oil Sample - Obtain

SMCS Code: 1000; 1000-008; 1348-554-SM; 1348-008; 7542-554-OC; 7542-554-SM; 7542-008



Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.



Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Obtain the engine oil sample after the engine has been stopped for at least 30 minutes. Refer to "Stopping the Engine" for more information.

Do not obtain engine oil sample while the engine is running.



Illustration 673

g07573250

Some components removed for better clarity

(1) Access door

1. Open access door (1) on rear of the machine. Refer to "Access Door and Cover Locations" for more information.

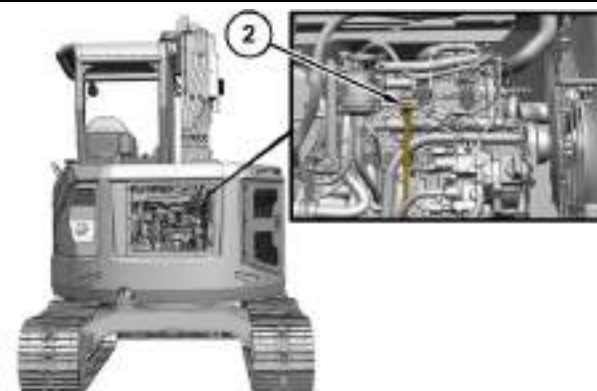


Illustration 674

g07573263

Some components removed for better clarity

(2) Oil level gauge

2. Remove oil level gauge (2). Refer to Illustration 674 for more information.
3. Obtain the engine oil sample through the opening for oil level gauge (2). Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" "S·O·S Oil Analysis" for information that pertains to obtaining a sample of the engine oil.
4. Reinsert oil level gauge (2). Refer to Illustration 674 for more information.
5. Close access door (1) on rear of the machine. Refer to "Access Door and Cover Locations" for more information.

i08581132

Engine Oil and Filter - Change

SMCS Code: 1318-510



WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

 WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Cat does not warrant the quality or performance of non-Cat fluids.

NOTICE

Do not under fill or overfill engine crankcase with oil. Either condition can cause engine damage.

NOTICE

The engine oil and filter change interval for standard service application is every 500 hours or every year when the following requirements are met:

- Utilize Cat Recommended Fluids
- Utilize Cat Filters
- Utilize S·O·S Services at recommended interval
- Altitude does not exceed 2300 m (7545 ft)

When these requirements are not met, the oil and filter change interval should be every 250 hours, or use S·O·S Services oil sampling and analysis program to determine an acceptable oil change interval.

If you select an interval for oil and filter change that is too long, you may damage the engine.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

When operating in any of the conditions or environments outlined in this Operation and Maintenance Manual, Severe Service Application, use S·O·S Services oil analysis to determine the best oil and filter change interval.

When S·O·S Services are not used in severe service applications, the oil and filter change interval should be every 250 hours..

If you select an interval for oil and filter change that is too long, you may damage the engine.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Refer to "Lubricant Viscosities" for more information.

Refer to Operation and Maintenance Manual, "Maintenance Interval Schedule" for more information.

Refer to "Severe Service Application" for more information.

Refer to "S·O·S Information" for more information.

Use the table below to determine the appropriate oil and filter change interval.

Table 87

Selection of Oil and Filter Change Interval				
	Conditions			Interval
	Cat ® Recommended Fluids	Cat ® Filters	S·O·S Services	
Standard Service Application	YES	YES	YES	500 hours
	YES	YES	NO	500 hours
	YES	NO	YES	500 hours
	NO	YES	YES	500 hours
	NO	NO	NO	250 hours
Severe Service Application	NO	NO	NO	250 hours
	YES	YES	NO	250 hours
	YES	YES	YES	Use S·O·S ⁽¹⁾
	YES	NO	YES	Use S·O·S ⁽¹⁾
	NO	YES	YES	Use S·O·S ⁽¹⁾

⁽¹⁾ If operating in any of the conditions or environments outlined in the Severe Service Application, use S·O·S (Scheduled Oil Sampling) Services oil analysis to determine the best oil change interval.

Procedure for Changing Engine Oil and Filter

Note: If the sulfur content in the fuel is greater than 1.5 percent by weight, use an oil that has a Total Base Number (TBN) of 30.

Reduce the oil change interval by one-half.

Note: Drain the crankcase while the oil is warm. Draining while oil is warm allows waste particles that are suspended in the oil to drain. As the oil cools, the waste particles will settle to the bottom of the crankcase. The particles will not be removed by draining the oil and the particles will recirculate in the engine lubrication system with the new oil.

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".



Illustration 675

g06710894

Location of crankcase access cover

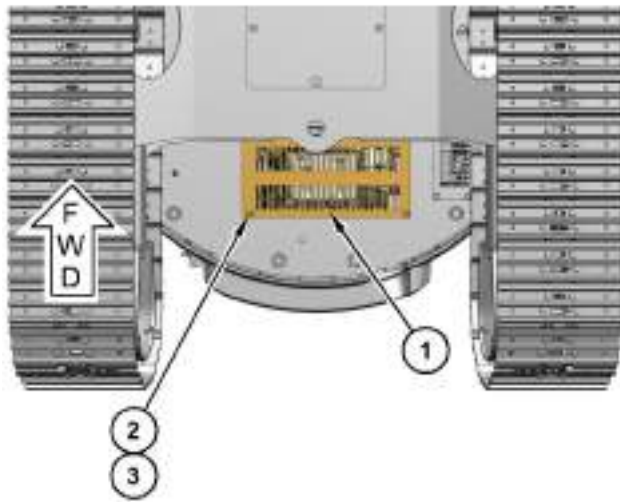


Illustration 676

g06710900

Bottom view of machine

- (1) Cover
- (2) Bolts
- (3) Washer

2. Cover (1) is located in the rear of the machine. Refer to Illustration 675 and Illustration 676 for the location of cover (1).
3. Remove four bolts (2) and four washers (3) that secure cover (2). Remove cover (2) and gain access to the crank case.

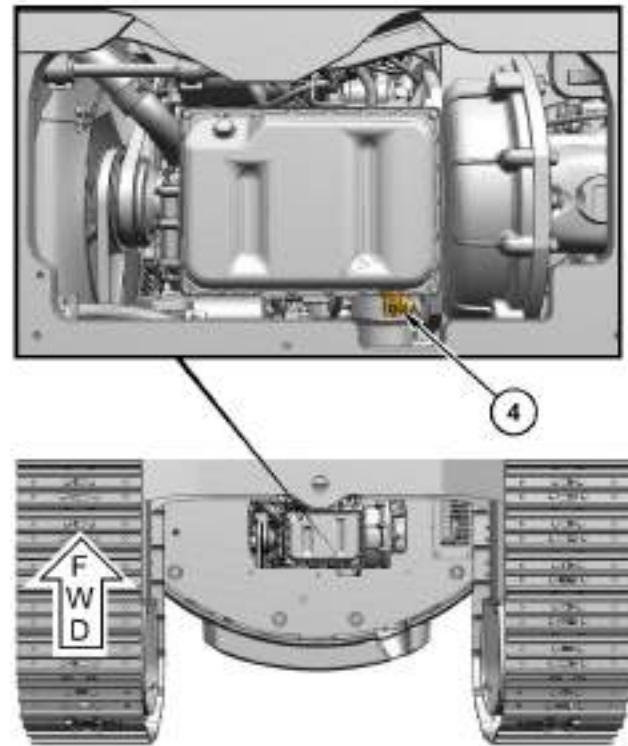


Illustration 677

g06710906

Bottom view of machine

Parts removed for better clarity

- (4) Drain valve

Note: Refer to "General Hazard Information" for information on Containing Fluid Spillage.

4. Open drain valve (4). Allow the oil to drain into a suitable container.

Note: Discard any drained fluids according to local regulations.

5. Close drain valve (4).
6. Install cover (1) and secure cover (1) with four bolts (2) and four washers (3). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

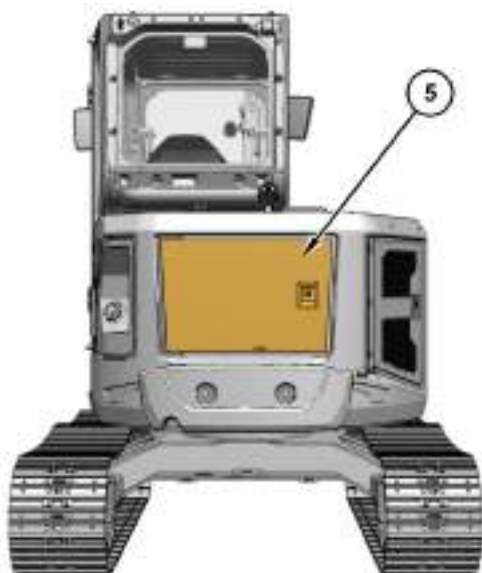


Illustration 678

g06710910

Rear view of machine

(5) Access door

7. Open access door (5) at the rear of the machine. Refer to "Access Door and Cover Locations" for more information.

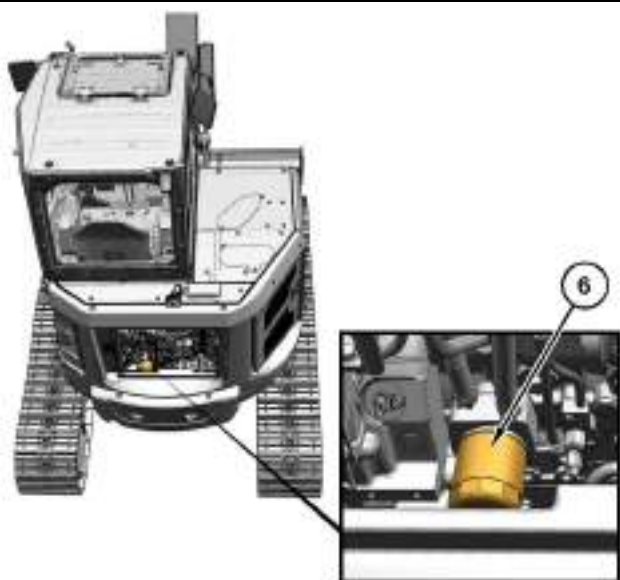


Illustration 679

g06710916

(6) Oil filter

8. Remove oil filter (6) by hand. Discard oil filter (6).

Note: This oil filter (6) is a cartridge type filter. This type of oil filter (6) cannot be reused.

Note: Refer to "General Hazard Information" for information on Containing Fluid Spillage.

Note: Discard any drained fluids according to local regulations.

Note: Discard the used oil filter (6) according to local regulations.

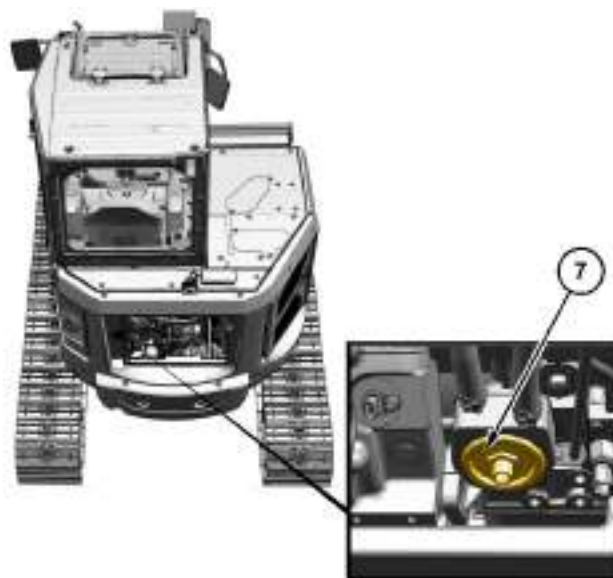


Illustration 680

g06710924

(7) Oil filter housing base

9. Clean oil filter housing base (7) in the machine.



Illustration 681

g06700080

(8) Gasket

10. Apply thin coat of engine oil to gasket (8) of new oil filter (6).
11. Install new oil filter (6) by hand. When gasket (8) contacts oil filter housing base (7), turn new oil filter (6) by additional 270 degrees.

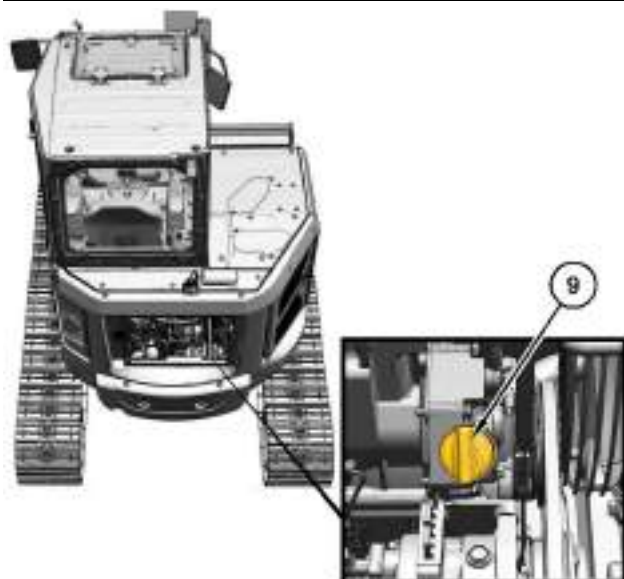


Illustration 682

g06710927

(9) Oil filler cap

12. Clean oil filler cap (9) and area surrounding oil filler cap (9). Remove oil filler cap (9).
13. Fill the crankcase with new oil. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.
14. Clean oil filler cap (9) and install oil filler cap (9).
15. Start the engine and allow the oil to warm. Refer to "Engine Starting" for more information.
16. Check the engine for leak of engine oil.
17. Stop the engine. Refer to "Stopping the Engine" for more information.
18. Wait for 30 minutes to allow the oil to drain back into the crankcase.

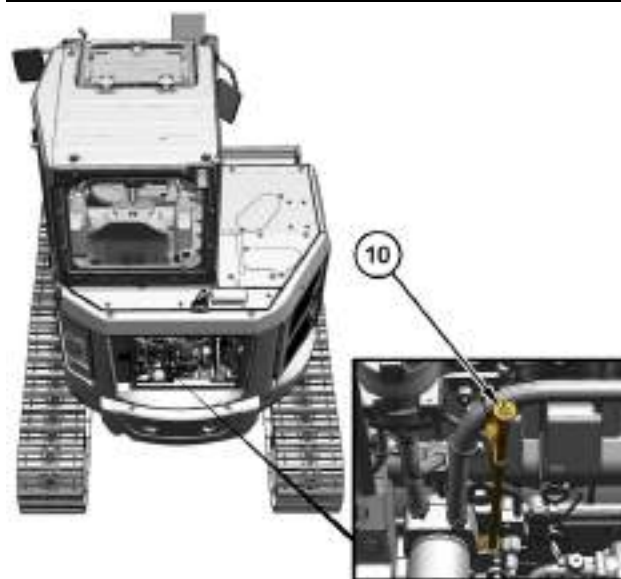


Illustration 683

g06710933

(10) Oil level gauge

19. Clean area around oil level gauge (10). Remove oil level gauge (10) and wipe off the oil.
20. Reinsert oil level gauge (10).
21. Remove oil level gauge (10) and check the oil level on oil level gauge (10).



Illustration 684

g06183475

Oil level gauge

22. Maintain the oil level between the "L" mark and "H" mark on oil level gauge (10). If necessary, add oil. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

23. Close access door (5) on rear of the machine.
Refer to "Access Door and Cover Locations" for more information.

i08376387

Engine Valve Lash - Check

SMCS Code: 1102; 1102-082; 1102-535; 1105-535; 1105-025; 1121-535; 1209; 1209-535; 1209-082; 7527

WARNING

Ensure that the engine cannot be started while this maintenance is being performed. To help prevent possible injury, do not use the starting motor to turn the flywheel.

Hot engine components can cause burns. Allow additional time for the engine to cool before measuring/adjusting valve lash clearance.

NOTICE

Only qualified service personnel should perform this maintenance. Refer to the Systems Operation/Testing and Adjusting Manual, "Valve Lash and Valve Bridge Adjustment" article or consult your Caterpillar dealer for the complete valve lash adjustment procedure.

Operation of Caterpillar engines with improper valve adjustments can reduce engine efficiency. This reduced efficiency could result in excessive fuel usage and/or shortened engine component life.

Refer to Service Manual, M0076974, "C2.4 System Operation and Testing and Adjusting" in order to perform the complete procedure for the valve lash adjustment.

i07786001

Film (Product Identification) - Clean

SMCS Code: 7405-070; 7557-070



Illustration 685

g06435629

Cleaning of the Films

Make sure that all the product identification films are legible. Make sure that the recommended procedures are used to clean the product identification films. Ensure that all the product identification films are not damaged or missing. Clean the product identification films or replace the films.

Hand Washing

Use a wet solution with no abrasive material that contains no solvents and no alcohol. Use a wet solution with a "pH" value between 3 and 11. Use a soft brush, a rag, or a sponge to clean the product identification films. Avoid wearing down the surface of the product identification films with unnecessary scrubbing. Ensure that the surface of the product identification films is flushed with clean water and allow the product identification films to air dry.

Power Washing

Power washing or washing with pressure may be used to clean product identification films. However, aggressive washing can damage the product identification films.

Excessive pressure during power washing can damage the product identification films by forcing water underneath the product identification films. Water lessens the adhesion of the product identification film to the product, allowing the product identification film to lift or curl. These problems are magnified by wind. These problems are critical for the perforated film on windows.

To avoid lifting of the edge or other damage to the product identification films, follow these important steps:

- Use a spray nozzle with a wide spray pattern.
- A maximum pressure of 83 bar (1200 psi)
- A maximum water temperature of 50° C (120° F)
- Hold the nozzle perpendicular to the product identification film at a minimum distance of 305 mm (12 inch).
- Do not direct a stream of water at a sharp angle to the edge of the product identification film.

i05505790

Final Drive Oil - Change

SMCS Code: 4050-044-FLV

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

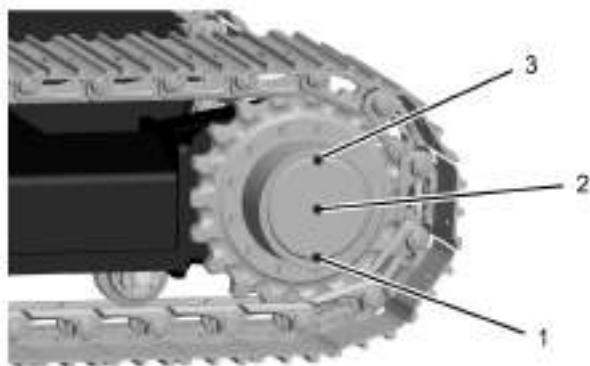


Illustration 686

g03483619

- (1) Oil drain plug
(2) Oil level plug
(3) Oil filler plug

1. Position one final drive so that oil drain plug (1) is at the bottom.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on containing fluid spillage.

2. Remove oil drain plug (1), level plug (2), and filler plug (3). Allow the oil to drain into a suitable container.
3. Clean the plugs and inspect the plugs. Replace a worn plug or a damaged plug.

4. Apply pipe sealant to oil drain plug (1), level plug (2), and filler plug (3).

5. Install drain plug (1).

6. Add oil through the opening of filler plug (3).

Note: Overfilling the final drive will cause the seals to move out of place in the travel motor. Hydraulic oil or water may then enter the final drive and contaminate the final drive.

7. Fill the final drive to the bottom of the opening for level plug (2). Refer to Operation and Maintenance Manual, "Lubricant Viscosities" and Operation and Maintenance Manual, "Capacities (Refill)".

8. Install level plug (2) and filler plug (3).

9. Perform Step 1 to Step 8 on the other final drive. Do not combine the oil for the final drives in the same container. The oil from the final drives must be kept separate for the check that is performed in Step 15.

10. Completely remove any oil that has spilled.

11. Start the engine and allow the final drives to operate through several cycles.

12. Stop the engine.

13. Check the oil level.

14. Maintain the oil level to the bottom of the opening for level plug (2).

15. Check the drained oil for metal chips or for particles. If there are any chips or particles, consult your Caterpillar dealer.

Note: Dispose of drained fluids according to local regulations.

i05505792

Final Drive Oil Level - Check

SMCS Code: 4050-535-FLV

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

Maintenance Section
Final Drive Oil Sample - Obtain

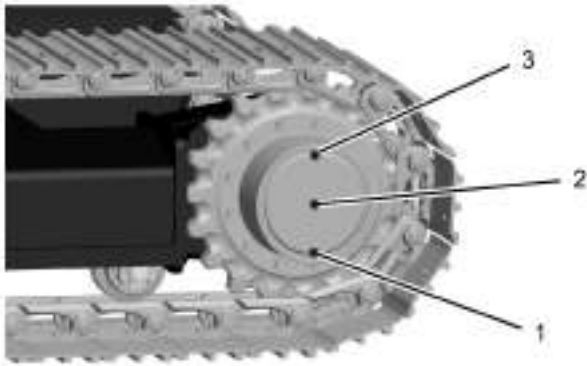


Illustration 687

g03483619

- (1) Oil drain plug
- (2) Oil level plug
- (3) Oil filler plug

1. Position one final drive so that oil drain plug (1) is at the bottom.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

2. Remove oil level plug (2).
3. Check the oil level. The oil should be near the bottom of the opening of level plug (2).
4. Add oil through the opening of filler plug (3), if necessary.

Note: Overfilling the final drive will cause the seals to move out of place in the travel motor. Hydraulic oil or water may then enter the final drive and contaminate the final drive.

5. Clean oil level plug (2) and filler plug (3).
6. Apply pipe sealant to oil level plug (2) and filler plug (3).
7. Install oil level plug (2).
8. Install oil filler plug (3).
9. Repeat the procedure for the other final drive.

i05505794

Final Drive Oil Sample - Obtain

SMCS Code: 4011-008; 4050-008; 4050-SM; 7542-008



WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

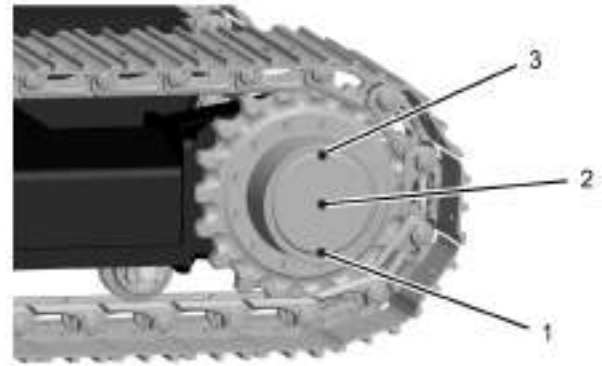


Illustration 688

g03483619

- (1) Oil drain plug
- (2) Oil level plug
- (3) Oil filler plug

1. Position the final drive so that oil drain plug (1) is at the bottom.
2. Remove oil level plug (2).
3. Obtain a sample of the final drive oil through the hole for the oil level plug.
4. Install oil level plug (2).

Refer to Special Publication, SEBU6250, "S·O·S Oil Analysis" for more information on obtaining a sample of the final drive oil. For additional information about taking an oil sample, refer to Special Publication, PEGJ0047, "How To Take A Good Oil Sample".

i07088575

Fuel Cap Filter - Replace

SMCS Code: 1261-510

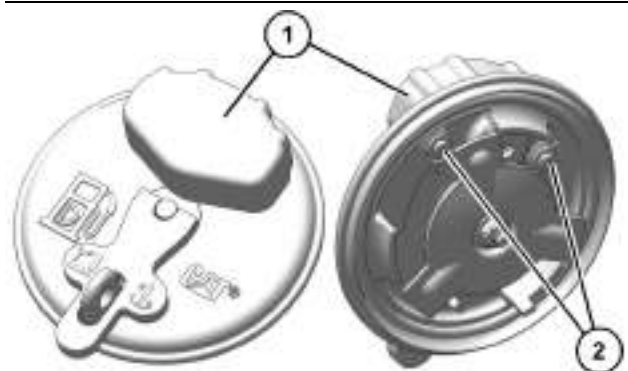


Illustration 689

g06220524

1. Remove the fuel cap.

2. Remove filter element screws (2) from the underside of the fuel cap and remove filter element (1).
3. Install a clean fuel cap filter element.
4. Install the screws to secure the filter element to the fuel cap.
5. Install the fuel tank cap.

i07316376

Fuel Lift Pump Strainer - Replace (In-line Filter)

SMCS Code: 1256-510-STR; 1256**S/N:** AN41–Up**S/N:** 5C51–Up**S/N:** 5G51–Up**S/N:** 5X51–Up**S/N:** AX61–Up

WARNING

Personal injury or death may result from failure to adhere to the following procedures.

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.

Clean up all leaked or spilled fuel. Do not smoke while working on the fuel system.

Turn the disconnect switch OFF or disconnect the battery when changing fuel filters.

NOTICE

Do not fill the fuel filters with fuel before installing the fuel filters. The fuel will not be filtered and could be contaminated. Contaminated fuel will cause accelerated wear to fuel system parts.

The fuel lift pump strainer is located behind the access door on the right side of the machine.

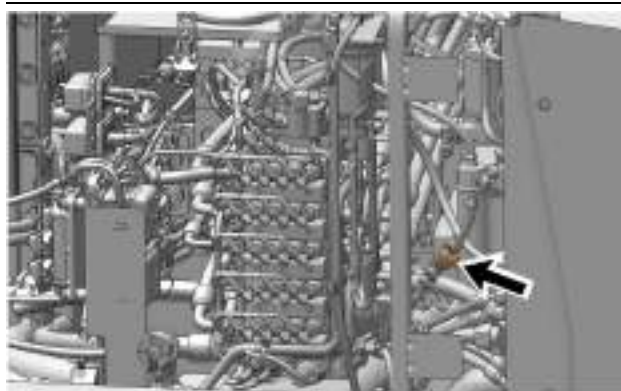


Illustration 690

g06287597

1. Open the right side access door.
2. Disconnect the hoses from the strainer and remove the strainer.
3. Replace the strainer.
4. Reconnect the hoses.
5. Close the access door.

i08779217

Fuel Lift Pump Strainer - Replace

SMCS Code: 1256-510-STR; 1256**S/N:** AX51–Up

WARNING

Personal injury or death may result from failure to adhere to the following procedures.

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.

Clean up all leaked or spilled fuel. Do not smoke while working on the fuel system.

Turn the disconnect switch OFF or disconnect the battery when changing fuel filters.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the start switch off when changing fuel filters or water separator elements. Clean up fuel spills immediately.

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

NOTICE

Do not allow dirt to enter the fuel system. Thoroughly clean the area around a fuel system component that will be disconnected. Fit a suitable cover over any disconnected fuel system components.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Stopping the engine immediately after the engine has been working under load can result in overheating of DEF system components.

Refer to the "Engine Stopping" procedure to allow the engine to cool and to prevent excessive temperatures in the turbocharger housing and the DEF injector.

NOTICE

Allow at least 2 minutes after the engine has stopped before you turn the battery disconnect switch to OFF. Disconnecting the battery power too soon will prevent purging of the DEF lines after the engine is shut down.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

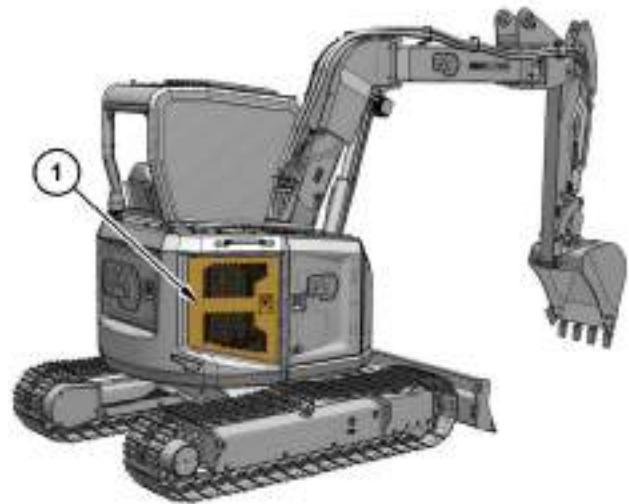


Illustration 691

g06777054

(1) Access door

1. Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

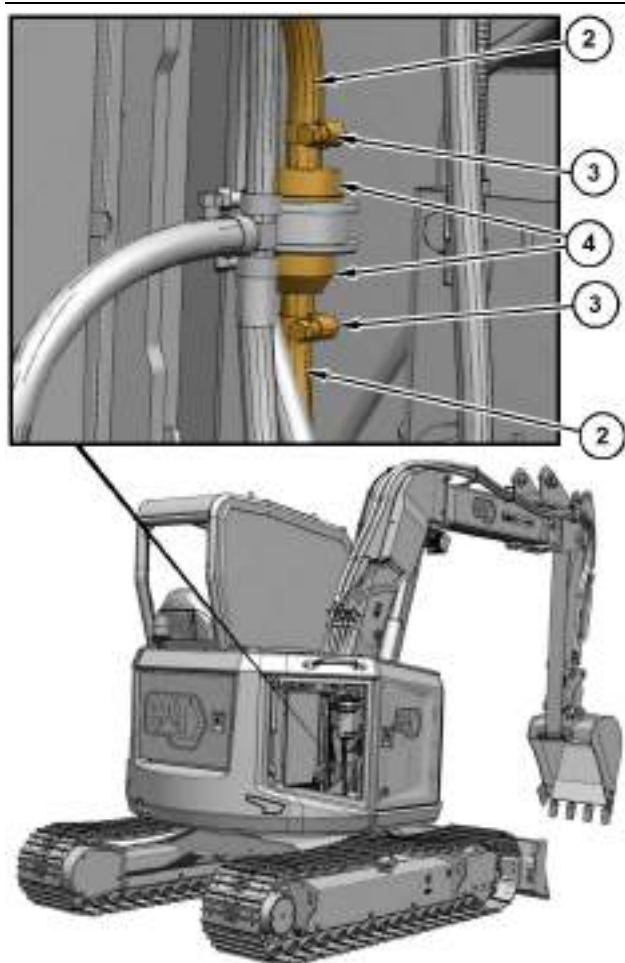


Illustration 692

g06777071

Some Components removed for better clarity

- (2) Hose
- (3) Clamps
- (4) Strainer

Note: Refer to “General Hazard Information” for information on containing fluid spillage.

2. Disconnect two clamps (3) from both sides of strainer (4).
 3. Remove strainer (4) from hose (2).
 4. Allow the fuel to drain into suitable container.
- Note:** Discard any drained fluids according to local regulations.
5. Replace strainer (4).
 6. Reconnect hoses (2) to new strainer (4).
 7. Connect and tighten two clamps (3) at both sides of new strainer (4). Refer to Specifications, SENR3130, “Torque Specifications” for the recommended torque.

8. Close access door (1) on right side of the machine. Refer to “Access Door and Cover Locations” for more information.

i05372885

Fuel System - Prime

SMCS Code: 1250-548

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn off the start switch and let the engine cool down when changing fuel filters or water separator elements. Clean up fuel spills immediately.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Do not loosen the fuel lines at the fuel manifold. The fittings may be damaged and/or a loss of priming pressure may occur when the fuel lines are loosened.

Prime the fuel system in order to fill the fuel filter, and prime the fuel system in order to purge trapped air. The fuel system should be primed under the following conditions:

- The fuel tank is running low.
 - The machine has been stored.
 - The fuel filter is being replaced.
 - The fuel lines have been replaced.
1. Fill the fuel tank. Move the hydraulic lockout lever to the RAISED position. Turn the ignition key to the first position.
 2. Wait 5 minutes while the fuel system primes automatically.

NOTICE

Do not crank the engine continuously for more than 10 seconds. Allow the starting motor to cool for two minutes before cranking the engine again.

3. Start the engine.

4. Check the fuel system for leaks.

5. Run the engine at low idle for 5 minutes.

Note: If the engine runs smoothly, and then stops, or the engine runs rough, more priming may be necessary.

6. If more priming is necessary, turn off the engine.

7. Move the hydraulic lockout lever to the RAISED position.

8. Turn the engine start switch key to the first position.

9. Prime the fuel system again.

Note: If the fuel system does not prime correctly, consult your Cat dealer.

i08581077

Fuel System Primary Filter (Water Separator) Element - Replace

SMCS Code: 1263-510-FQ

WARNING

Personal injury or death may result from failure to adhere to the following procedures.

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.

Clean up all leaked or spilled fuel. Do not smoke while working on the fuel system.

Turn the disconnect switch OFF or disconnect the battery when changing fuel filters.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the start switch off when changing fuel filters or water separator elements. Clean up fuel spills immediately.

NOTICE

Do not allow dirt to enter the fuel system. Thoroughly clean the area around a fuel system component that will be disconnected. Fit a suitable cover over any disconnected fuel system components.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Do not fill the fuel filters with fuel before installing the fuel filters. The fuel will not be filtered and could be contaminated. Contaminated fuel will cause accelerated wear to fuel system parts.

NOTICE

Stopping the engine immediately after the engine has been working under load can result in overheating of DEF system components.

Refer to the Operation and Maintenance Manual, "Engine Stopping" procedure to allow the engine to cool and to prevent excessive temperatures in the turbocharger housing and the DEF injector.

NOTICE

Allow at least 2 minutes after the engine has stopped before you turn the battery disconnect switch to OFF. Disconnecting the battery power too soon will prevent purging of the DEF lines after the engine is shut down.

NOTICE

Drain water from the water separator daily, or every 10 hours. Also, drain water from the fuel tank weekly, or every 50 hours. Failure to do so could result in damage to the fuel system.

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

2. Shut OFF the engine. Refer to "Stopping the Engine" for more information.

3. Turn battery disconnect switch to OFF position. Refer to "Battery Disconnect Switch" for more information.



Illustration 693

g06710254

Right side view of the machine

(1) Access door

4. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

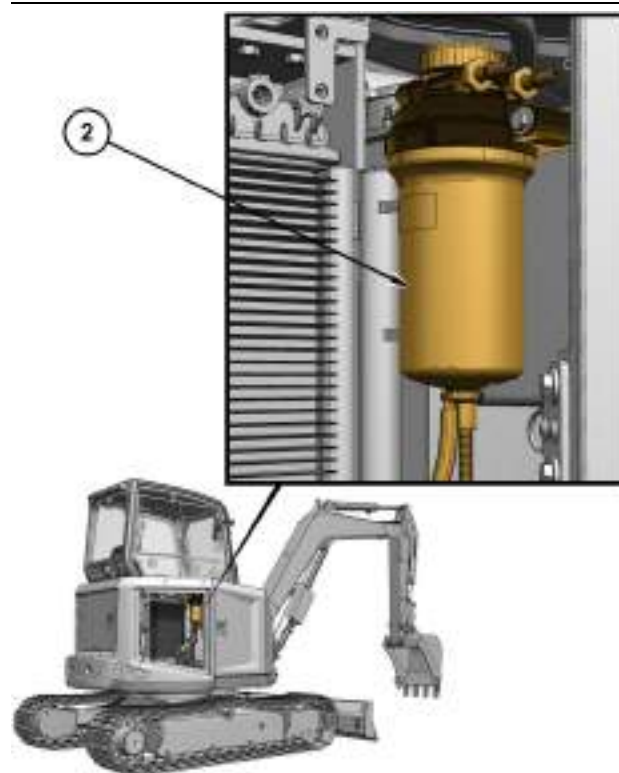


Illustration 694

g06710759

Some components removed for better clarity

(2) Fuel system primary filter

5. Fuel system primary filter (2) is located behind access door (1) on the right side of the machine. Clean fuel system primary filter (2).

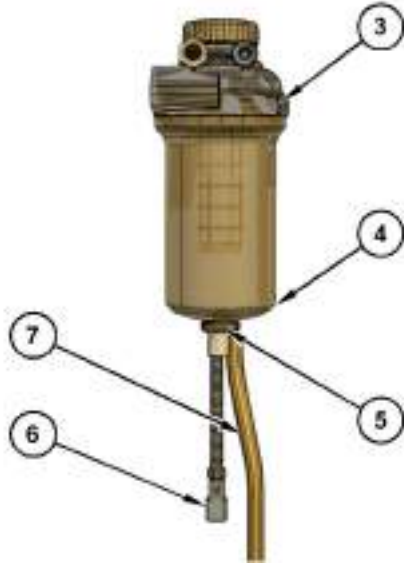


Illustration 695

g06710775

Exploded view of fuel system primary filter

- (3) Filter mounting base
- (4) Sediment bowl
- (5) Drain valve
- (6) Sensor
- (7) Drain hose

6. Attach drain hose (7) to drain valve (5). Place a suitable container beneath the bottom of drain hose (7).

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

7. Turn drain valve (5) counterclockwise to open. Drain valve (5) is at the bottom of fuel system primary filter (2).

8. Drain the water and the sediment into a suitable container.

Note: Dispose used fluids according to local regulations.

9. Close drain valve (5).

10. Disconnect sensor (6) from the wiring harness.

Note: Do not attempt to remove sediment bowl (4) from fuel system primary filter (2). Sediment bowl (4) is permanently attached to fuel system primary filter (2). Attempting to remove will damage sediment bowl (4).

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

11. Remove fuel system primary filter (2) from filter mounting base (3) using hand.

Properly discard the used fuel system primary filter (2) according to local regulations.

Note: Discard drained fluids according to local regulations.

12. Clean filter mounting base (3).

13. Tighten fuel system primary filter (2) to filter mounting base (3) by hand.

14. Ensure that sensor (6) is in the correct position and connect to the wiring harness. If sensor (6) was removed from sediment bowl (4), install sensor (6) and tighten to $2.5 \pm 0.5 \text{ N}\cdot\text{m}$ ($22.13 \pm 4.13 \text{ lb in.}$).

15. Turn battery disconnect switch to ON position. Refer to “Battery Disconnect Switch” for more information.

16. Start the engine. Refer to “Engine Starting” for more information.

17. Prime the fuel system. Refer to “Fuel System - Prime” for more information.

18. Check fuel system primary filter (2) for any leak.

19. Close access door (1) on the right side of the machine. Refer to “Access Door and Cover Locations” for more information.

i08579921

Fuel System Water Separator - Drain

SMCS Code: 1263



Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the start switch off when changing fuel filters or water separator elements. Clean up fuel spills immediately.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

The water separator is not a filter. The water separator separates water from the fuel. The engine should never be allowed to run with the water separator more than half full. Engine damage may result.

NOTICE

The water separator is under suction during normal engine operation. Ensure that the drain valve and vent screw are tightened securely to help prevent air from entering the fuel system.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".



Illustration 696

g06710254

Right side of the machine

(1) Access door

1. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i08775981

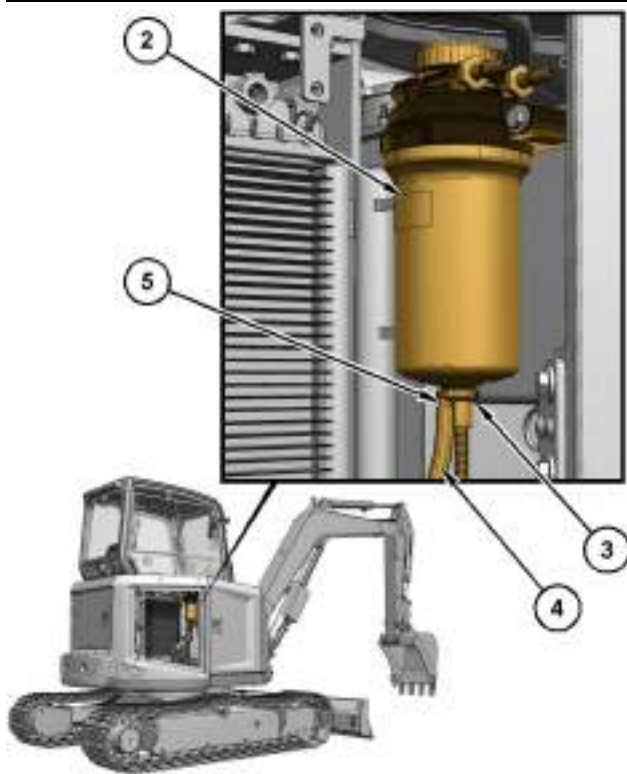


Illustration 697

g06710341

Some components removed for better clarity

- (2) Fuel system primary filter
- (3) Drain valve
- (4) Drain hose
- (5) Drain outlet

2. Attach drain hose (4) to drain outlet (5) of fuel system primary filter (2).
3. Place a container at the end of drain hose (4) to collect the drained fluids.

Note: Refer to “General Hazard Information” for more information that pertains to containing fluid spillage.

4. Loosen drain valve (3) on fuel system primary filter (2). Allow the water and sediment to drain into a suitable container.

Note: Dispose drained fluids and sediments according to local regulations.

Note: One half turn to one full turn will fully open drain valve (3).

5. Tighten drain valve (3) by hand. Do not tighten drain valve (3) with a tool. Damage to drain valve (3) or to seals may occur.
6. Close access door (1) on the right side of the machine. Refer to “Access Door and Cover Locations” for more information.

Fuel Tank Strainer - Clean

SMCS Code: 1273-070-STR

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the start switch off when changing fuel filters or water separator elements. Clean up fuel spills immediately.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, “Dealer Service Tool Catalog” for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance” for more information.

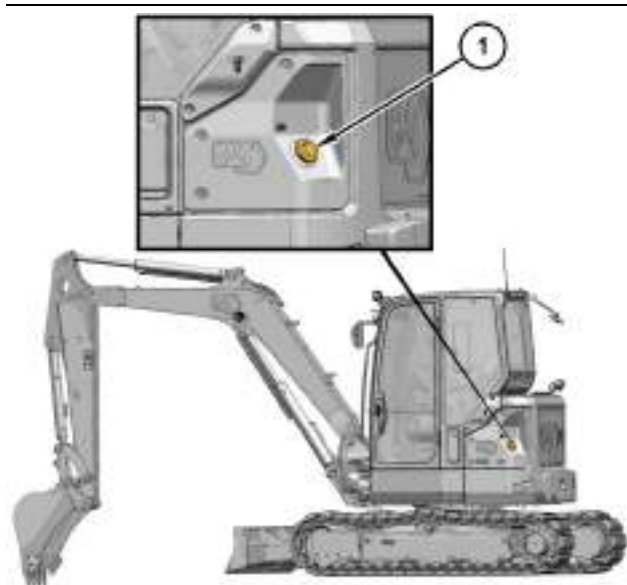


Illustration 698

g06774717

(1) Fuel tank cap

1. Remove fuel tank cap (1) by turning counterclockwise.

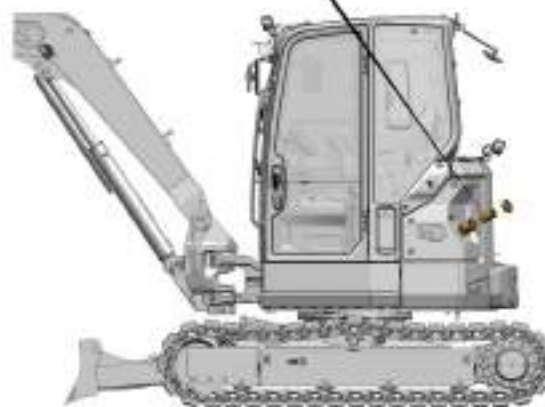
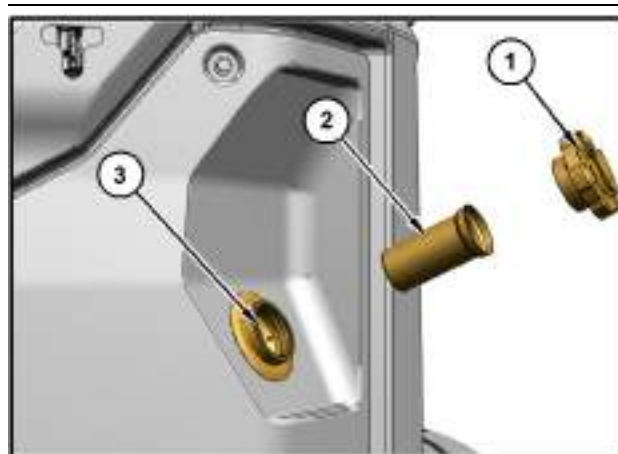


Illustration 699

g06774752

Exploded view of fuel tank

- (1) Fuel tank cap
- (2) Strainer
- (3) Filler housing

Note: Refer to “General Hazard Information” for more information on containing fluid spillage.

2. Remove strainer (2) from filler housing (3).
3. Clean strainer (2) and fuel tank cap (1) with a clean non-flammable solvent.
4. Install strainer (2) into filler housing (3).
5. Install fuel tank cap (1) and tighten fuel tank cap (1) by turning clockwise.

i08723541

Fuel Tank Water and Sediment - Drain

SMCS Code: 1273-543

S/N: AN41–Up

S/N: 5C51–Up

S/N: 5G51–Up

S/N: 5X51–Up

S/N: AX61–Up

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.

Turn the disconnect switch OFF when draining and/or removing any fuel system components.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

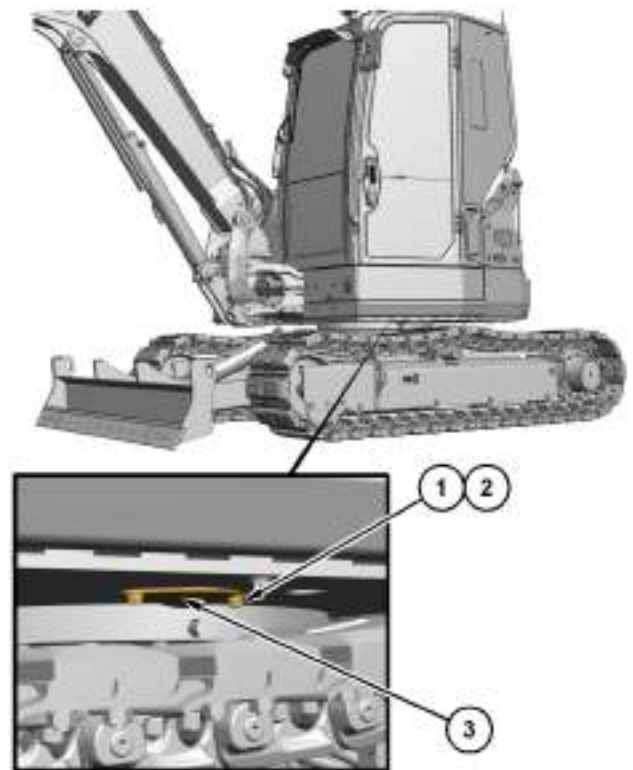


Illustration 700

g06773025

Some components removed for better clarity

- (1) Bolt
- (2) Washer
- (3) Cover

1. Cover (3) is in the left side of the machine. Refer to Illustration 700 for the location of cover (3).

Remove three bolts (1) and three washers (2) that secure cover (3). Remove cover (3).

Note: Refer to "General Hazard Information" for information on containing fluid spillage.

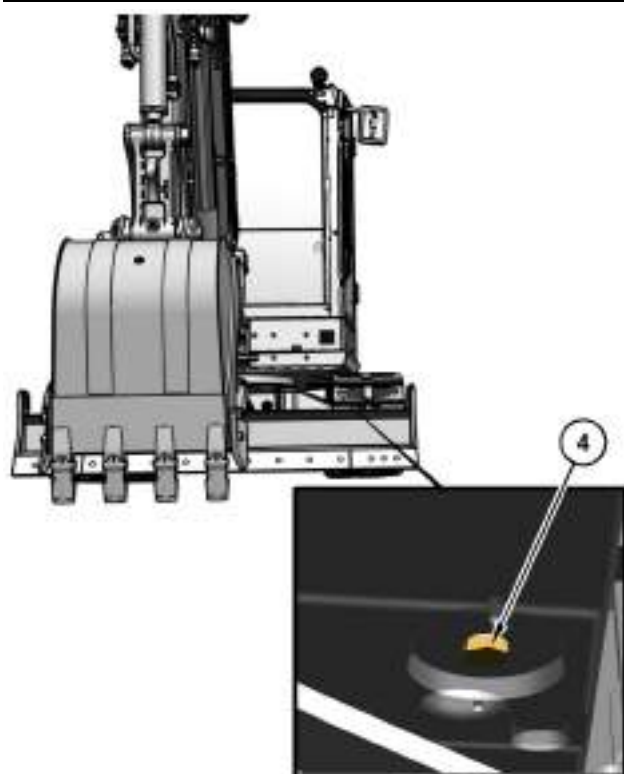


Illustration 701

g06773054

Some components removed for better clarity

(4) Drain plug

2. Place a suitable container at the bottom of drain plug (4). Remove drain plug (4) from fuel tank. Allow the water and the sediment to drain into a suitable container.

Note: Dispose drained fluids according to local regulations.

3. Clean and install drain plug (4). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.
4. Install three bolts (1) and three washers (2) that secure cover (3). Install cover (3). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

i08773380

Fuel Tank Water and Sediment - Drain

SMCS Code: 1273-543

S/N: AX51-Up

WARNING

Accidental machine starting can cause injury or death to personnel working on the machine.

To avoid accidental machine starting, turn the battery disconnect switch to the OFF position and remove the key. If the machine is not equipped with a battery disconnect switch, disconnect the battery cables from the battery and tape the battery clamps.

Place a do not operate tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.

Turn the disconnect switch OFF when draining and/or removing any fuel system components.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

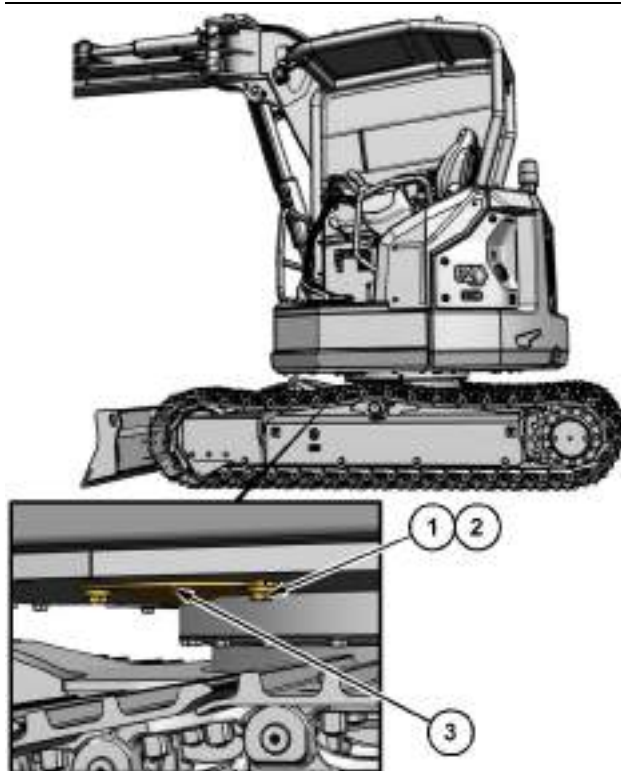


Illustration 702

g06772999

Some components removed for better clarity

- (1) Bolt
- (2) Washer
- (3) Cover

1. Cover (3) is in the left side of the machine. Refer to Illustration 702 for the location of cover (3).

Remove three bolts (1) and three washers (2) that secure cover (3). Remove cover (3).

Note: Refer to “General Hazard Information” for information on containing fluid spillage.

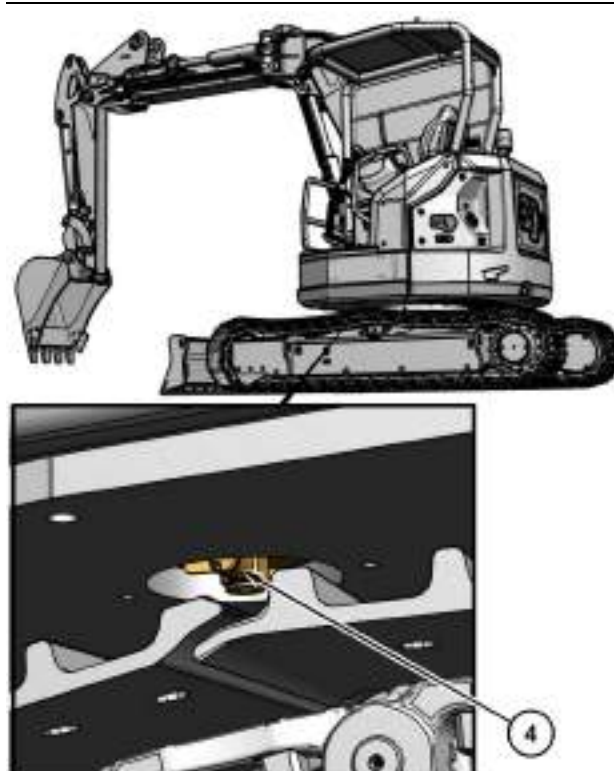


Illustration 703

g06773009

Some components removed for better clarity

- (4) Drain valve

2. Place a suitable container at the bottom of drain valve (4). Open drain valve (4) by turning drain valve (4) counterclockwise. Allow the water and the sediment to drain into a suitable container.

Note: Dispose drained fluids according to local regulations.

3. Clean and close drain valve (4) by turning drain valve (4) clockwise.
4. Install cover (3). Install three bolts (1) and three washers (2) to secure cover (3). Refer to Specifications, SENR3130, “Torque Specifications” for the recommended torque.

i08773389

Fuses - Replace

SMCS Code: 1417-510

S/N: AX51-Up

NOTICE

Always replace fuses with the same type and capacity fuse that was removed. Otherwise, electrical damage could result.

NOTICE

If it is necessary to replace fuses frequently, an electrical problem may exist.

Contact your Cat[®] dealer.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

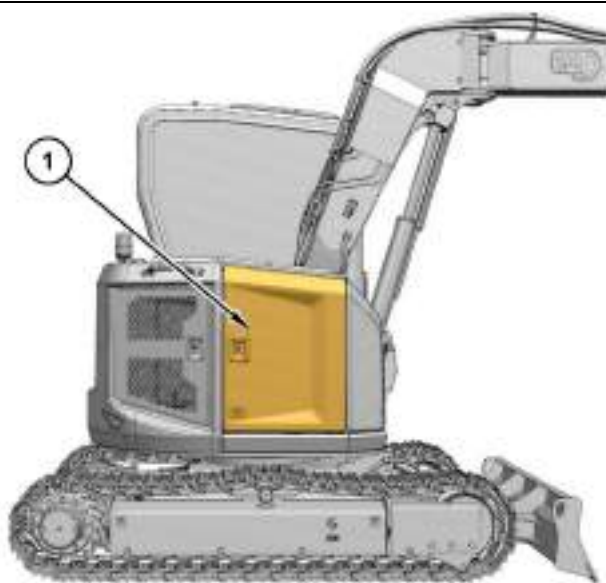


Illustration 704

g06773328

Some components removed for better clarity

(1) Access door

Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

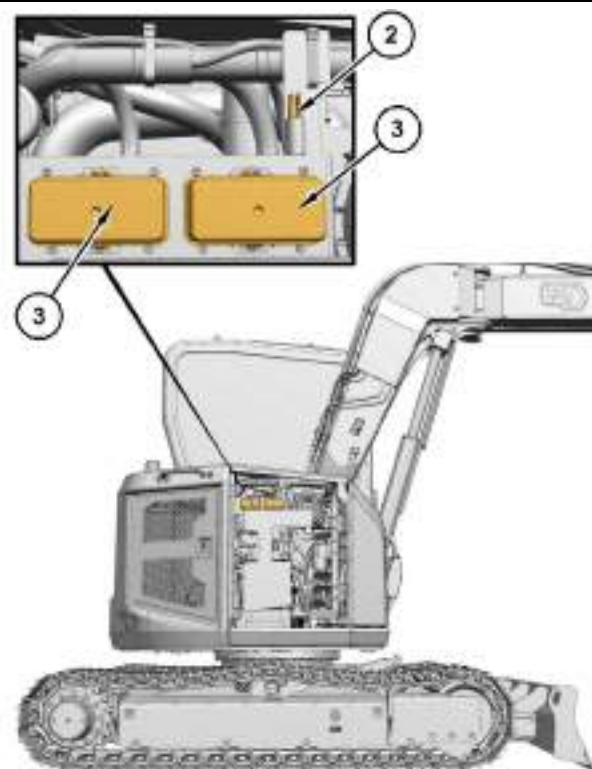


Illustration 705

g06773384

Some components removed for better clarity

(2) Puller

(3) Cover

Remove two covers (3) to access the fuse panel. To replace a fuse, use puller (2) that is stored in the fuse panel.

The following list identifies the circuits that are protected by each fuse. The amperage for each fuse is included with each circuit.



Fuses – Fuses protect the electrical system from damage that is caused by overloaded circuits. Change a fuse if the element separates. If the element of a new fuse separates, check the circuit and/or repair the circuit.

Fuses

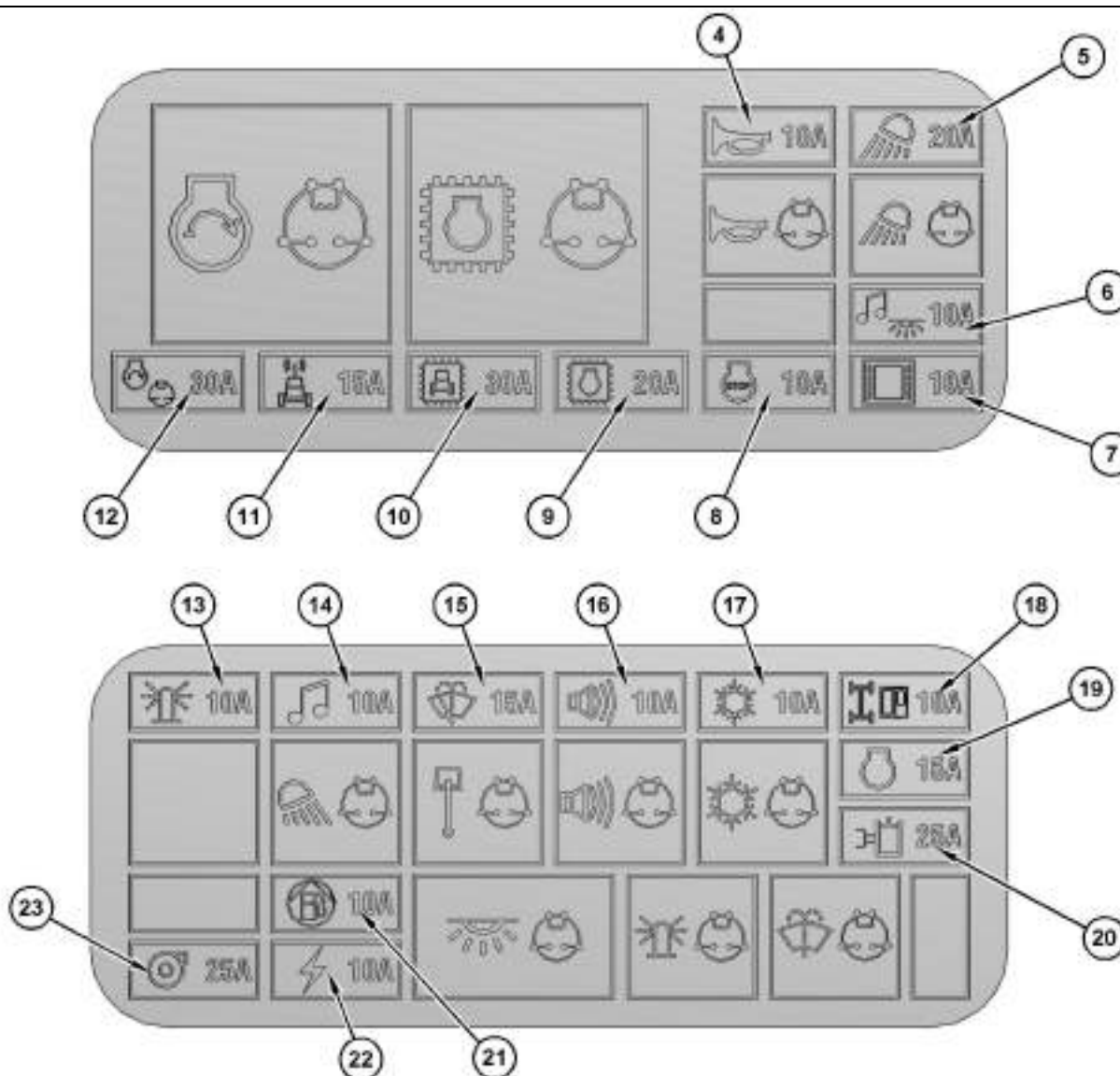


Illustration 706

g06773506

- (4) Horn – 10 Amp**
- (5) Front Lights – 20 Amp**
- (6) Dome Light – 10 Amp**
- (7) Machine Security System (MSS) – 10 Amp**
- (8) Engine Electronic Control Module (ECM) Key On / Secondary Engine Shutdown Method – 10 Amp**
- (9) Engine Electronic Control Module – 20 Amp**
- (10) Machine Electronic Control Module – 30 Amp**
- (11) Product Link Module – 15 Amp**
- (12) Engine Start – 30 Amp**
- (13) Beacon – 10 Amp**
- (14) Radio – 10 Amp**
- (15) Window Wiper and Window Washer – 15 Amp**
- (16) Alarm – 10 Amp**
- (17) Air Conditioner – 10 Amp**
- (18) Chassis and Cab Switched Battery – 10 Amp**
- (19) Engine Heater – 15 Amp**
- (20) Work Tool Auxiliary Circuit – 25 Amp**

(21) Fuel Lifting Pump – 10 Amp

(22) Cab Power Port – 10 Amp

(23) Heater and Air Conditioner Blower Motor – 25
Amp

Relays

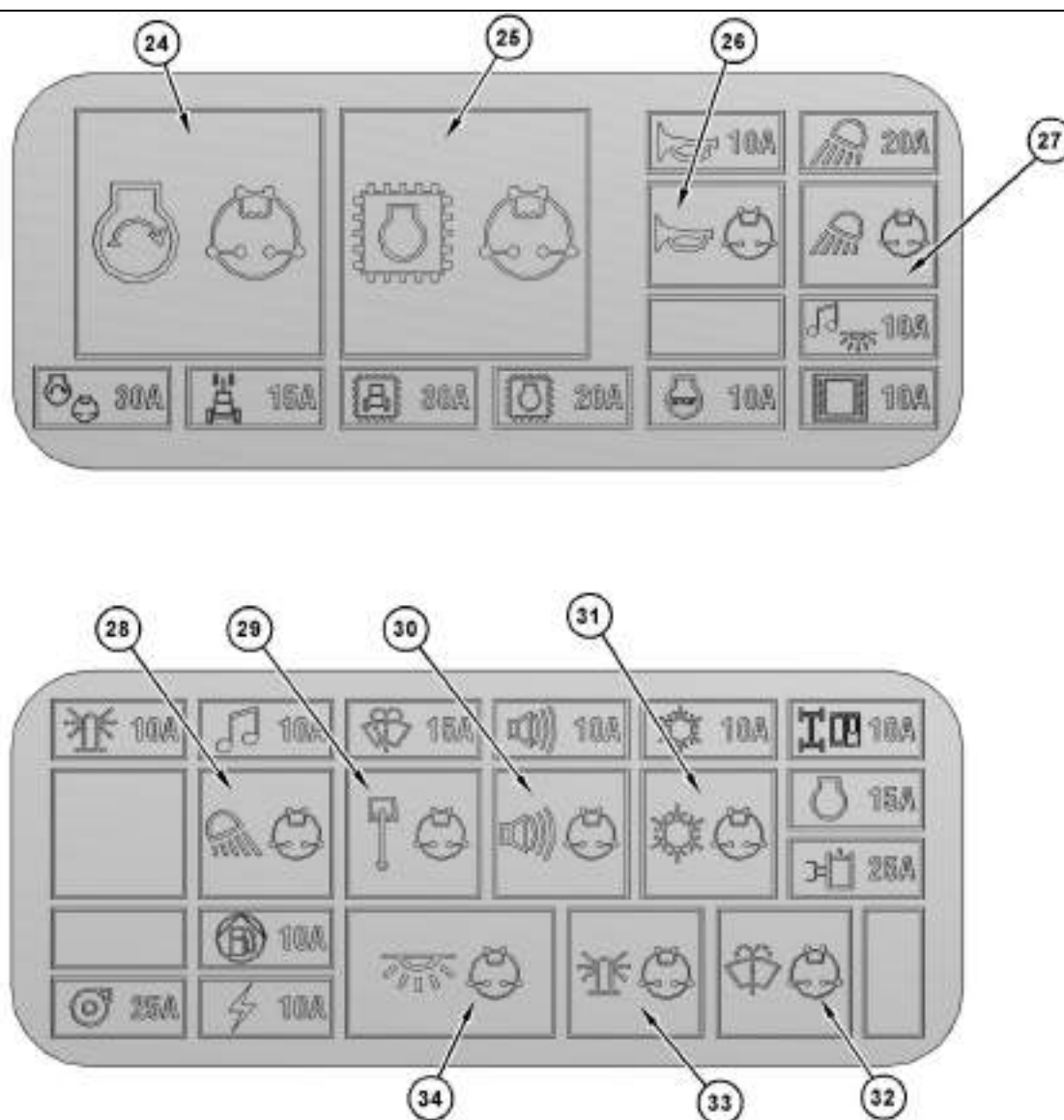


Illustration 707

g06773508

(24) Engine Start – Relay

(25) Engine Electronic Control Module – Relay

(26) Horn – Relay

(27) Front Lights – Relay

(28) Rear Lights – Relay

(29) Spare – Relay

(30) Alarm – Relay

(31) Air Conditioning – Relay

(32) Window Wiper and Window Washer – Relay

(33) Beacon – Relay

(34) Dome Light – Relay

i08773537

Fuses - Replace

SMCS Code: 1417-510

S/N: 5C51–Up

S/N: 5X51–Up

NOTICE

Always replace fuses with the same type and capacity fuse that was removed. Otherwise, electrical damage could result.

NOTICE

If it is necessary to replace fuses frequently, an electrical problem may exist.

Contact your Cat® dealer.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

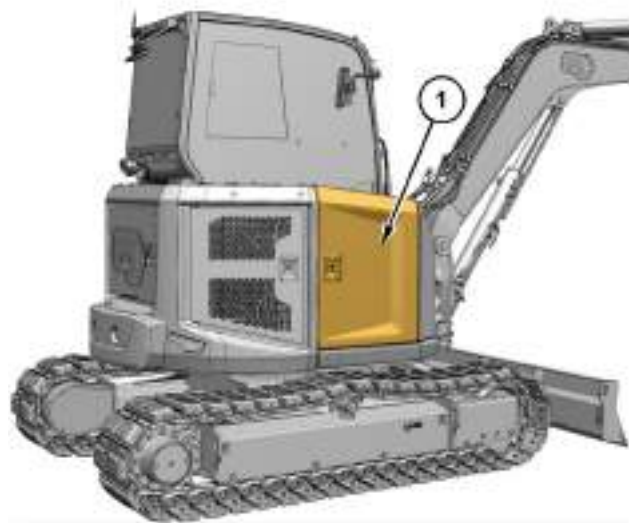


Illustration 708

g06773626

Some components removed for better clarity

(1) Access door

Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

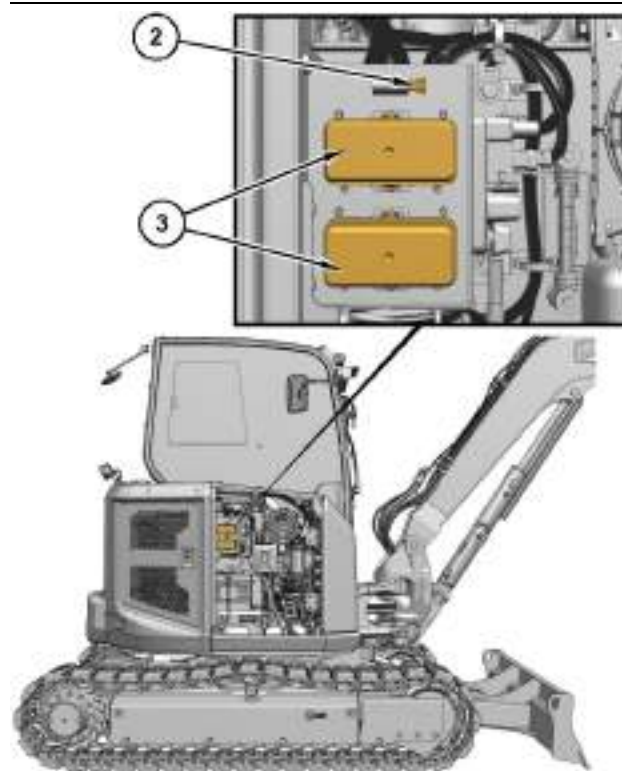


Illustration 709

g06773638

Some components removed for better clarity

(2) Puller

(3) Cover

Remove two covers (3) to access the fuse panel. To replace a fuse, use puller (2) that is stored in the fuse panel.

The following list identifies the circuits that are protected by each fuse. The amperage for each fuse is included with each circuit.



Fuses – Fuses protect the electrical system from damage that is caused by overloaded circuits. Change a fuse if the element separates. If the element of a new fuse separates, check the circuit and/or repair the circuit.

Fuses

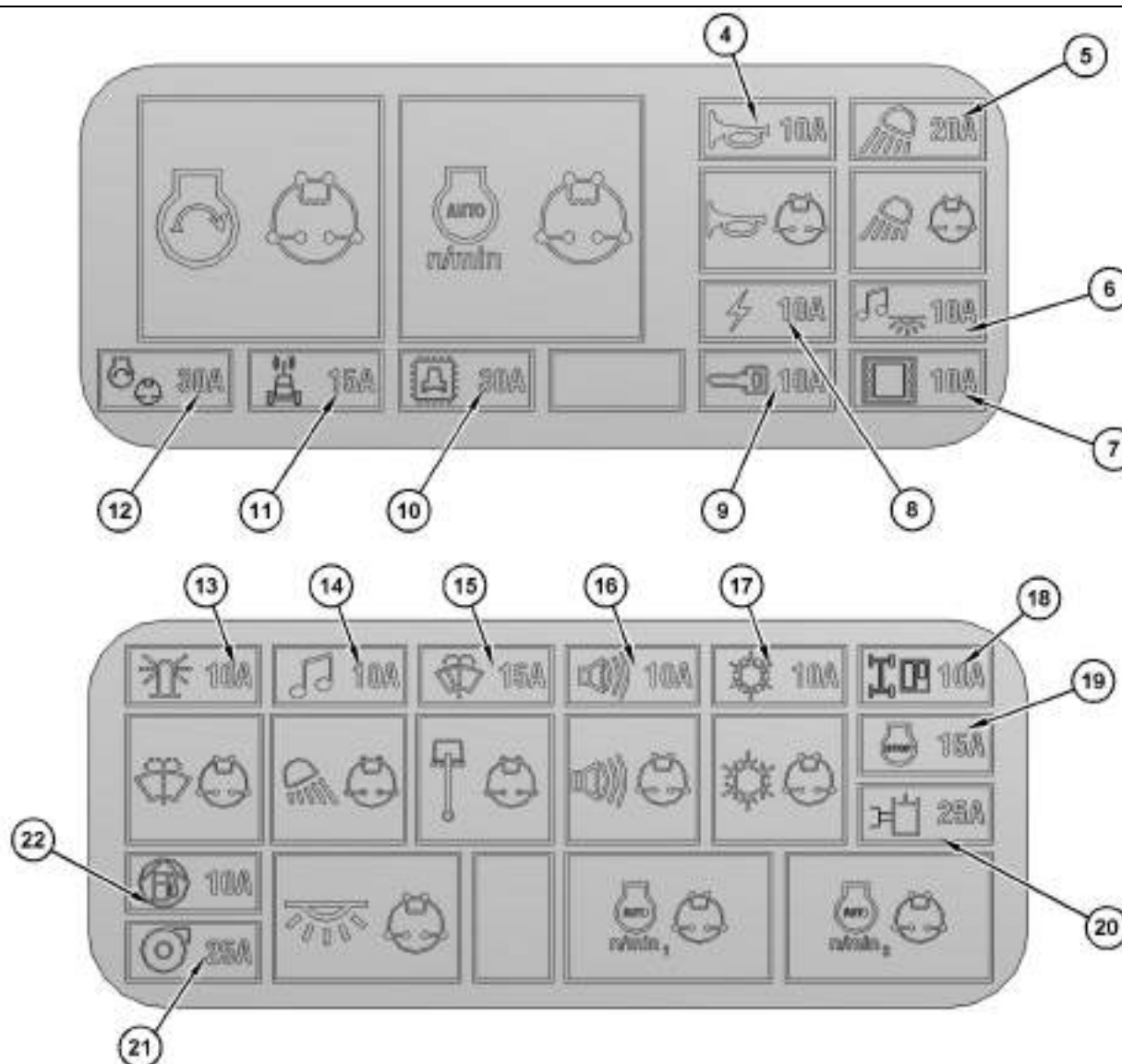


Illustration 710

g06773647

(4) Horn – 10 Amp	(13) Beacon – 10 Amp
(5) Front Lights – 20 Amp	(14) Radio – 10 Amp
(6) Dome Light – 10 Amp	(15) Window Wiper and Window Washer – 15 Amp
(7) Machine Security System (MSS) – 10 Amp	(16) Alarm – 10 Amp
(8) Cab Power Port – 10 Amp	(17) Air Conditioner – 10 Amp
(9) Key – 10 Amp	(18) Chassis and Cab Switched Battery – 10 Amp
(10) Machine Electronic Control Module – 30 Amp	(19) Secondary Engine Shutdown Method – 15 Amp
(11) Product Link Module – 15 Amp	(20) Work Tool Auxiliary Circuit – 25 Amp
(12) Engine Start – 30 Amp	

(21) Heater and Air Conditioner Blower Motor – 25 Amp

(22) Fuel Lifting Pump – 10 Amp

Relays

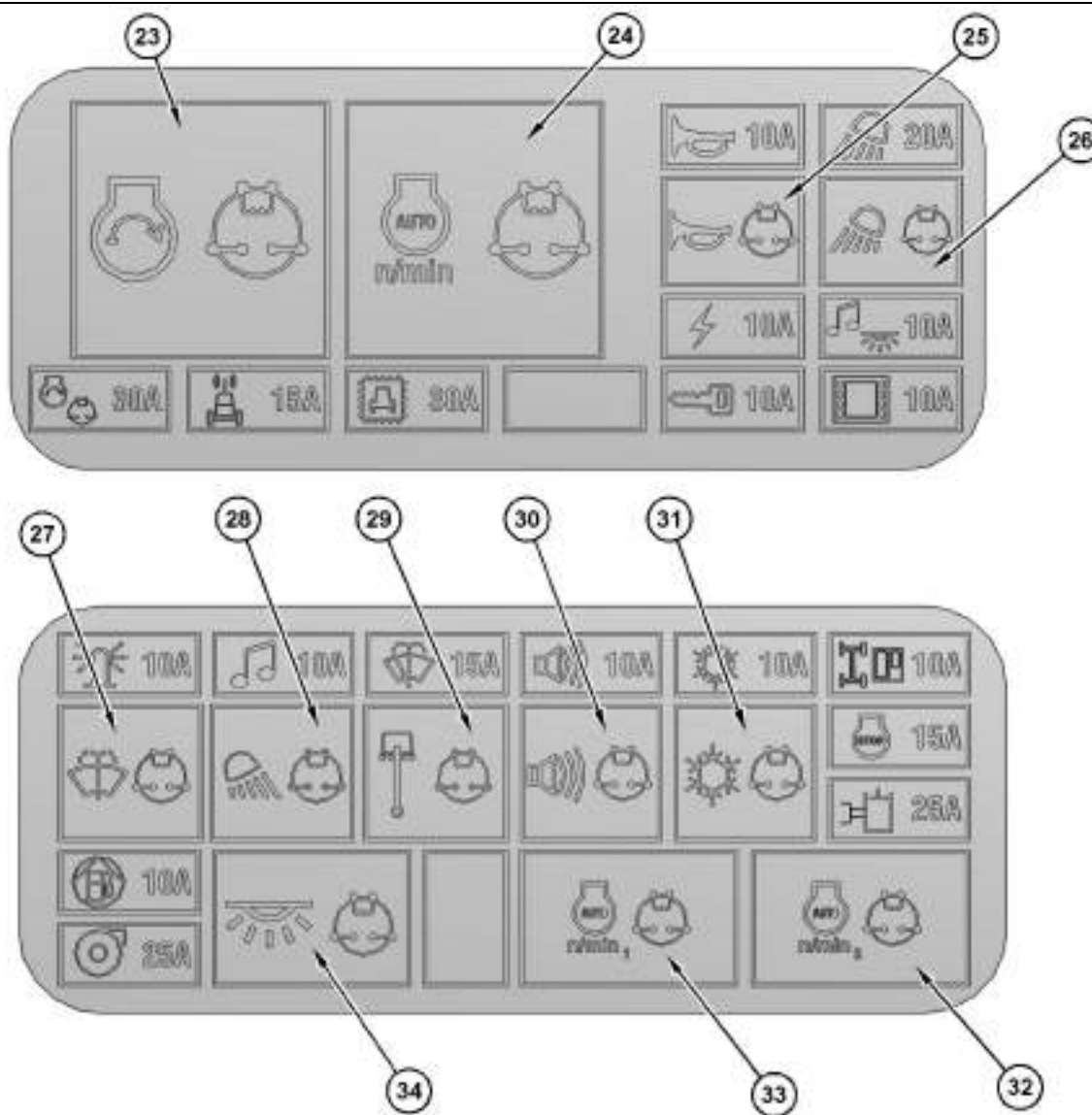


Illustration 711

g06773654

(23) Engine Start – Relay

(24) Engine Electronic Control Module – Relay

(25) Horn – Relay

(26) Front Lights – Relay

(27) Window Wiper and Window Washer – Relay

(28) Rear Lights – Relay

(29) Spare – Relay

(30) Alarm – Relay

(31) Air Conditioning – Relay

(32) Beacon – Relay

(33) Engine Governor Motor – Relay

(34) Dome Light – Relay

i08775654

Fuses - Replace

SMCS Code: 1417-510

S/N: AN41–Up

S/N: 5G51–Up

S/N: AX61–Up

NOTICE

Always replace fuses with the same type and capacity fuse that was removed. Otherwise, electrical damage could result.

NOTICE

If it is necessary to replace fuses frequently, an electrical problem may exist.

Contact your Cat® dealer.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance" for more information.

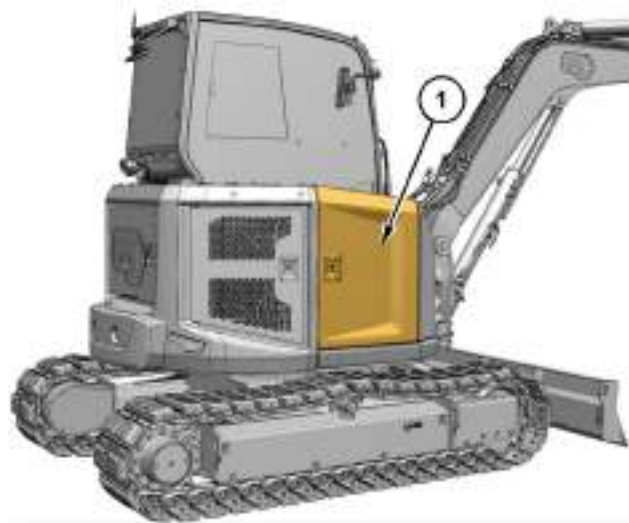


Illustration 712

g06773626

Some components removed for better clarity

(1) Access door

Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

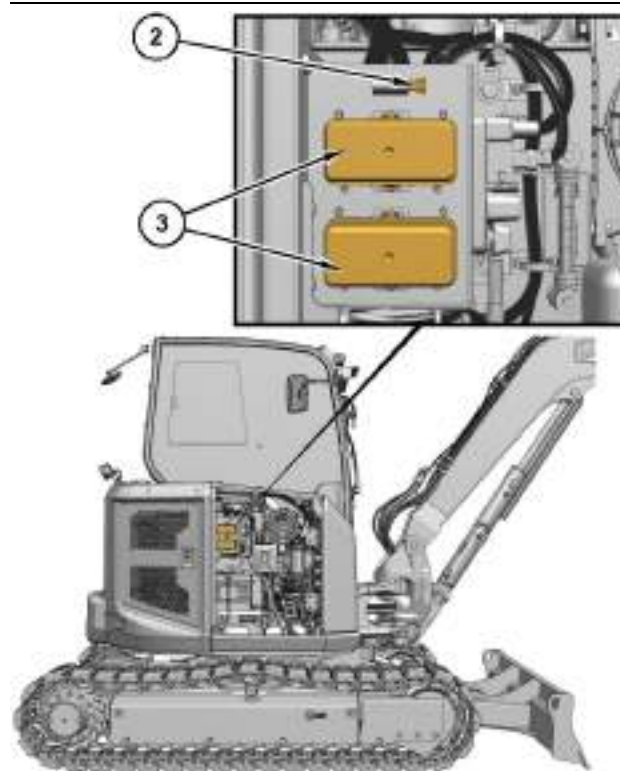


Illustration 713

g06773638

Some components removed for better clarity

(2) Puller
(3) Cover

Remove two covers (3) to access the fuse panel. To replace a fuse, use puller (2) that is stored in the fuse panel.

The following list identifies the circuits that are protected by each fuse. The amperage for each fuse is included with each circuit.



Fuses – Fuses protect the electrical system from damage that is caused by overloaded circuits. Change a fuse if the element separates. If the element of a new fuse separates, check the circuit and/or repair the circuit.

Fuses

To replace a fuse, use the puller that is stored in the fuse panel.

The following list identifies the circuits that are protected by each fuse. The amperage for each fuse is included with each circuit.

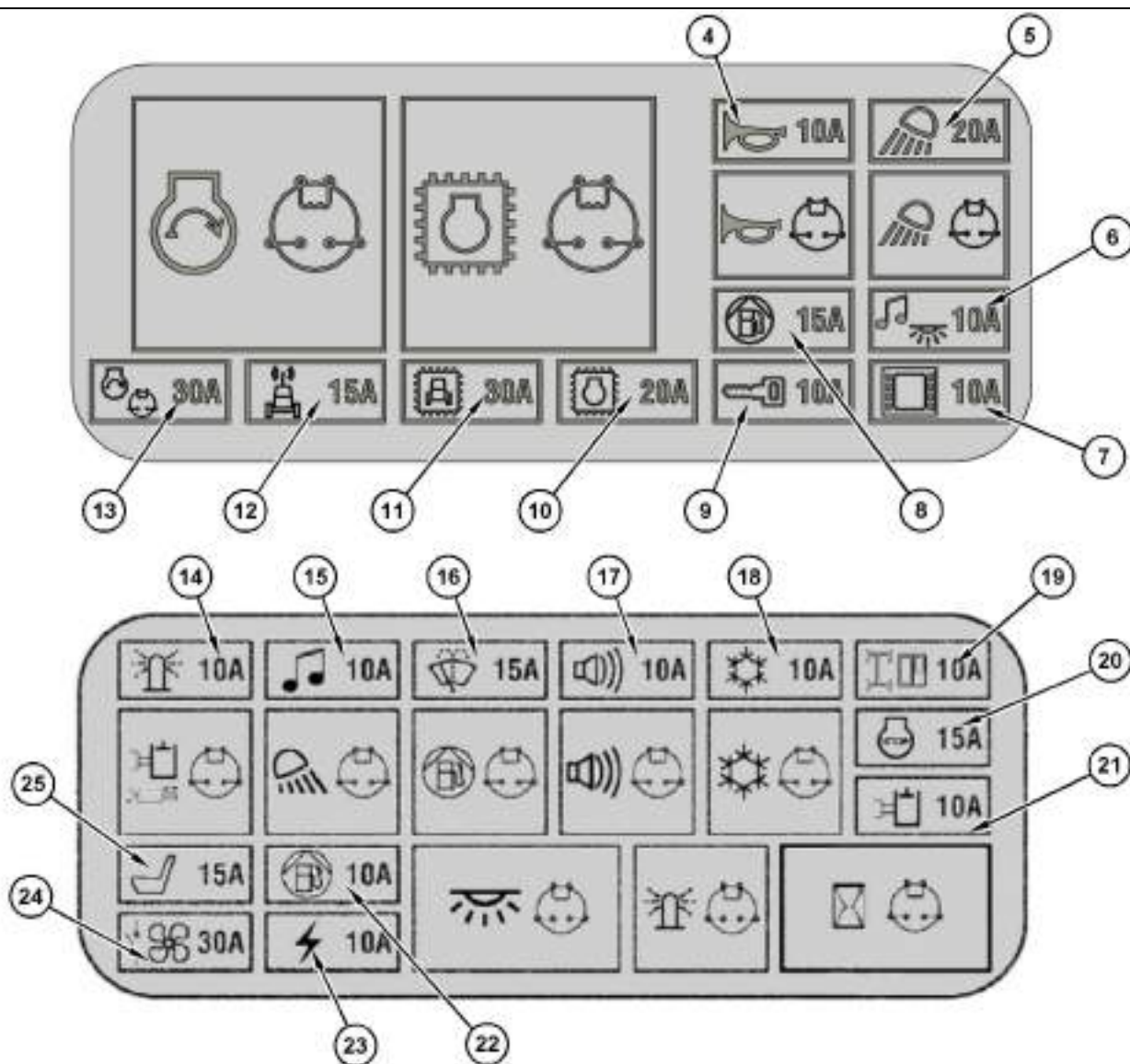


Illustration 714

g06773757

- (4) Horn – 10 Amp
- (5) Front Lights – 20 Amp
- (6) Dome Light – 10 Amp
- (7) Machine Security System (MSS) – 10 Amp
- (8) Electric Refueling Pump – 15 Amp
- (9) Key – 10 Amp
- (10) Engine Electronic Control Module – 20 Amp
- (11) Machine Electronic Control Module – 30 Amp
- (12) Product Link Module – 15 Amp
- (13) Engine Start – 30 Amp
- (14) Beacon – 10 Amp
- (15) Radio – 10 Amp
- (16) Window Wiper and Window Washer – 15 Amp
- (17) Alarm – 10 Amp
- (18) Air Conditioner – 10 Amp
- (19) Chassis and Cab Switched Battery – 10 Amp
- (20) Engine Engine Control Module Key ON / Secondary Engine Shutdown Method – 15 Amp
- (21) Work Tool Auxiliary Circuit – 10 Amp
- (22) Fuel Lifting Pump – 10 Amp
- (23) Cab Power Port – 10 Amp
- (24) Heater and Air Conditioner Blower Motor (Breaker) – 30 Amp
- (25) Heater and Air Conditioner Blower Motor (Breaker) – 30 Amp

**(25) Seat Heater and Air Suspension Seat – 15
Amp**

Relays

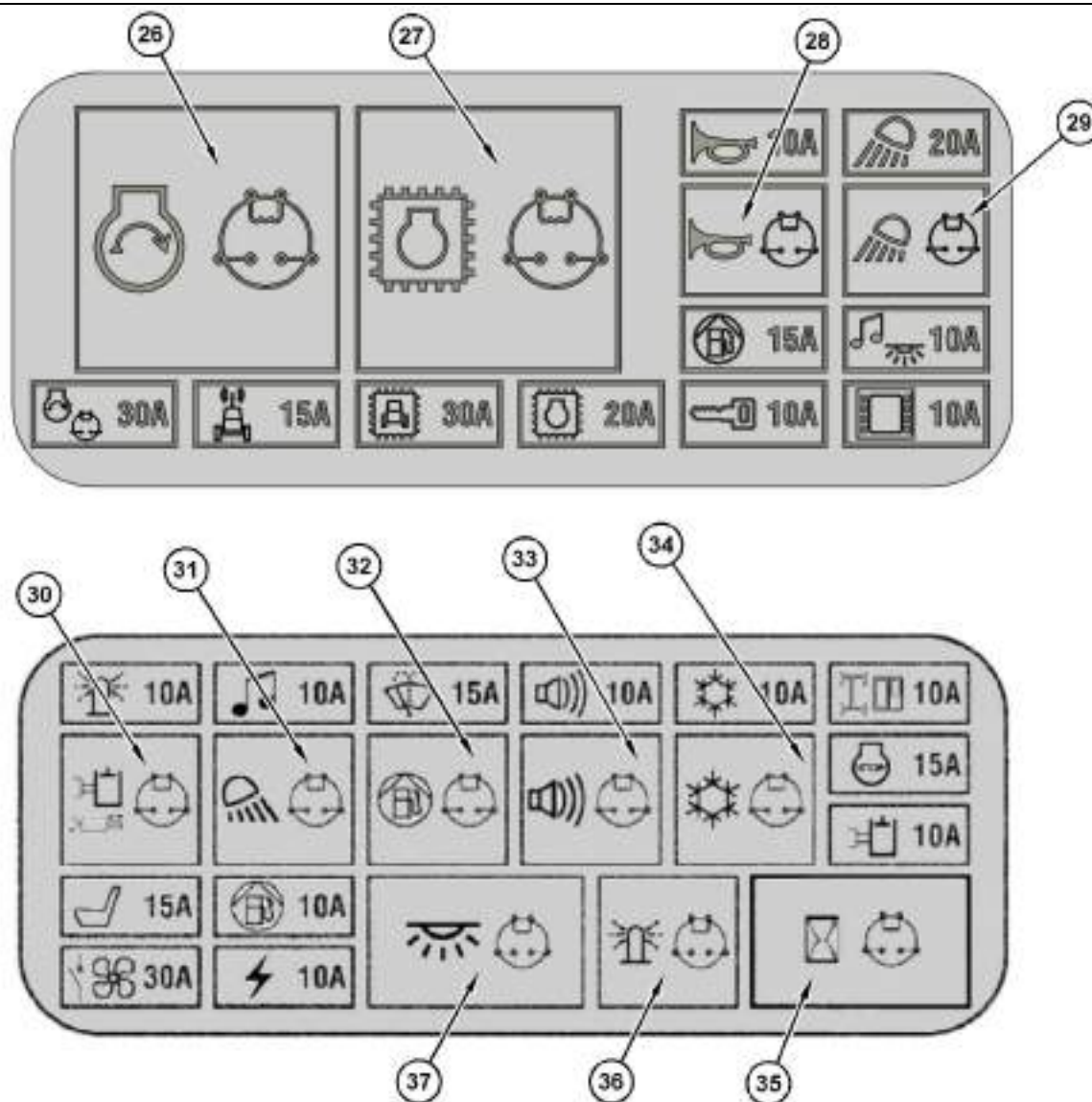


Illustration 715

g06773762

(26) Engine Start – Relay

(27) Engine Electronic Control Module – Relay

(28) Horn – Relay

(29) Front Lights – Relay

(30) XTC Relay – Relay

(31) Rear Light – Relay

(32) Electric Refueling Pump – Relay

(33) Alarm – Relay

(34) Air Conditioning – Relay

(35) Dome Light – Relay

(36) Beacon – Relay

(37) Hour Meter – Relay

i08779600

Hydraulic System Oil - Change

SMCS Code: 5056-044

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Pressurized system!

The hydraulic tank contains hot oil under pressure. To prevent burns from the sudden release of hot oil, relieve the tank pressure with the engine off. Relieve pressure by slowly turning the cap until the cap reaches the secondary stop.

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

CAUTION

Bleed the hydraulic pump after performing a hydraulic oil change and using a vacuum pump - otherwise severe damage to the pump can occur.

NOTICE

If the machine is filled with non-biodegradable hydraulic oil and biodegradable hydraulic oil is wanting to be used, consult a Cat dealer. Biodegradable hydraulic oil can NOT be added to the system by performing an ordinary hydraulic oil change. Damage to the hydraulic system can occur.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Never remove the fill/vent plug from the hydraulic tank if the oil is hot.

Air can enter the system and cause pump damage.

Cat® HYDO Advanced 10 Oil Change Interval

The standard Cat® HYDO Advanced 10 oil change interval is every 6000 service hours or 3 years. But a 6000 service hour or 3 years maintenance interval for hydraulic oil (change) is recommended with Scheduled Oil Sampling (S·O·S) monitoring of the hydraulic oil after 3000 service hours. The interval for S·O·S monitoring is every 500 hours. The oil change is recommended when the oil deterioration or contamination is detected. The maintenance interval for the hydraulic oil filter is not changed.

Machines with hammers are not included in the 6000 service hour or 3 years maintenance interval. Machines with hammers must use the intervals that are listed in the maintenance interval schedule. Machines that are used in severe conditions are not included in the 6000 service hour or 3 years maintenance interval. Machines that are used in severe conditions must use the interval in the maintenance interval schedule.

Hydraulic Hammer Use

The use of hydraulic hammers shortens the life of hydraulic oil. If a hydraulic hammer is used, the maintenance interval is shortened, refer to Table 88 for the intervals.

Table 88

Percentage of Hammer Use	Hydraulic System Oil - Change
50%	Every 1000 service hours
100%	Every 600 service hours

Procedure to Change the Hydraulic Oil

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

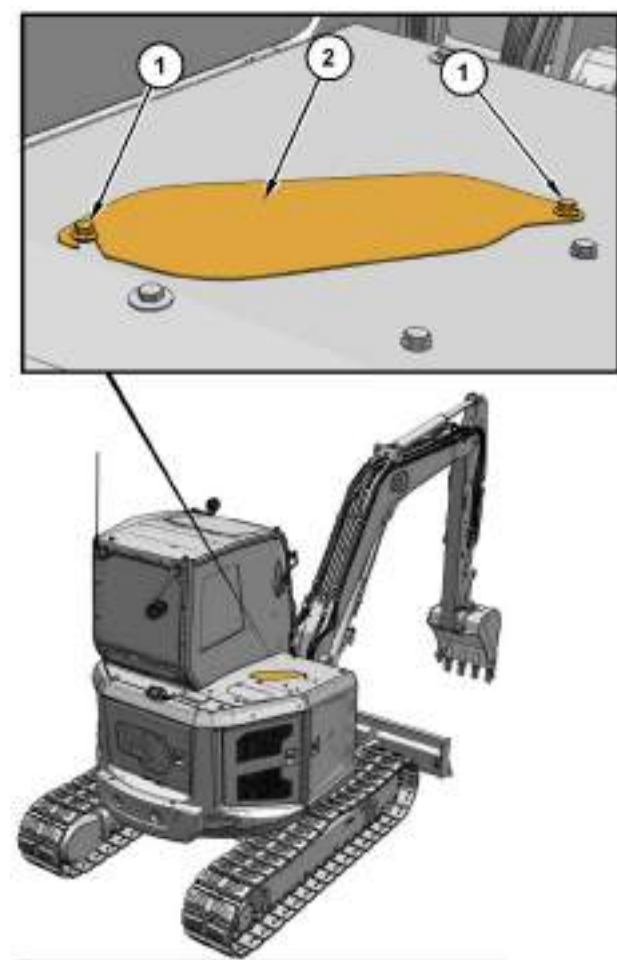


Illustration 716

g06777155

Some components removed for better clarity

- (1) Bolt
(2) Access cover

1. Remove two bolts (1) that secure access cover (2).
2. Remove access cover (2).

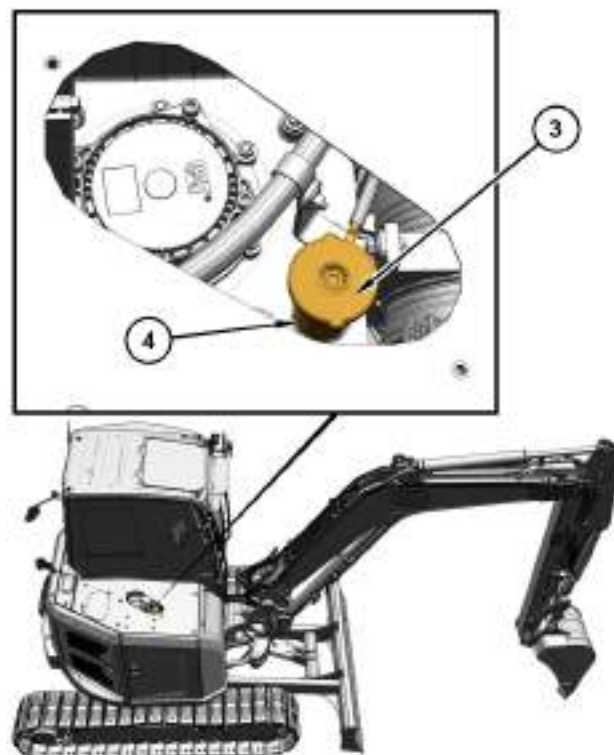


Illustration 717

g06777181

Some components removed for better clarity

- (3) Breather cap
(4) Breather

3. Clean the area thoroughly to keep dirt out of breather (4). Slowly loosen breather cap (3) to relieve system pressure. Refer to "System Pressure Release" for more information.
4. Close breather cap (3) after system pressure is completely relieved.



Illustration 718

g06777204

Location of drain valve access cover

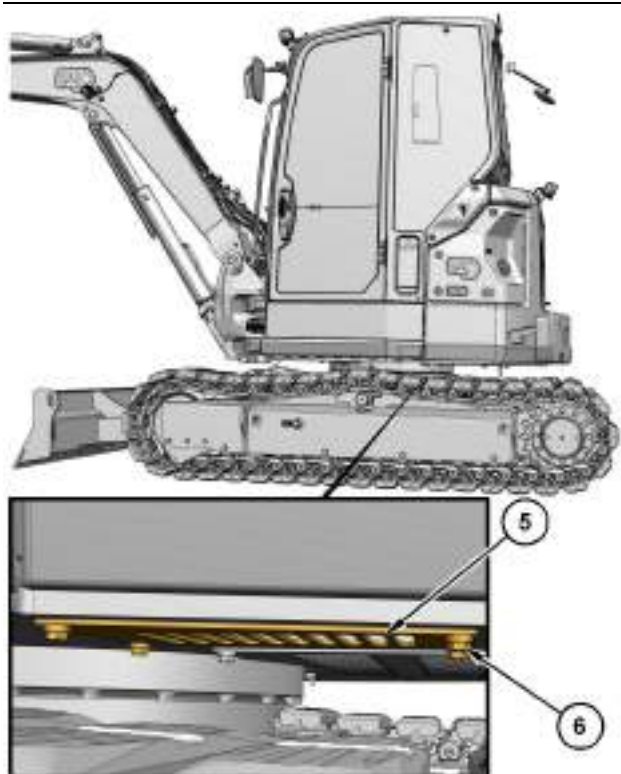


Illustration 719

g06777208

(5) Cover
(6) Bolt

5. Remove four bolts (6) that secure cover (5).
6. Remove cover (5) at the bottom of the machine to gain access to the drain valve.

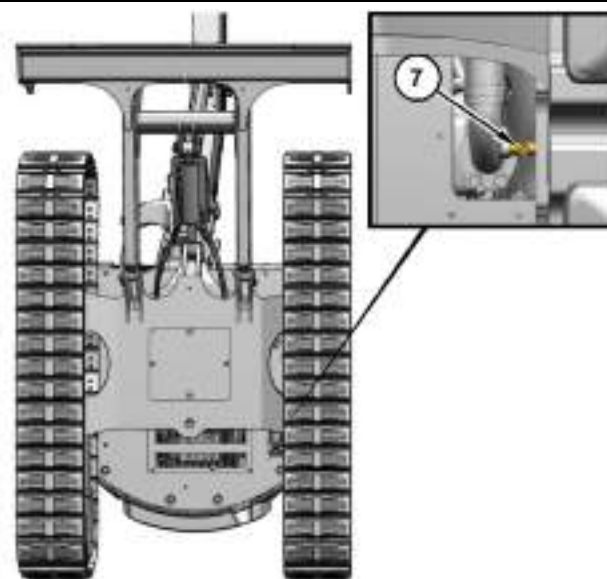


Illustration 720

g06777217

Some components removed for better clarity
Bottom view of the machine

(7) Drain valve

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

7. Open drain valve (7) and allow the hydraulic oil to drain into a suitable container.

Note: Dispose drained fluids according to local regulations.

8. Clean and close drain valve (7).
9. Install cover (5) and secure cover (5) with four bolts (6). Refer to Specifications, SENR3130, “Torque Specifications” for the recommended torque.

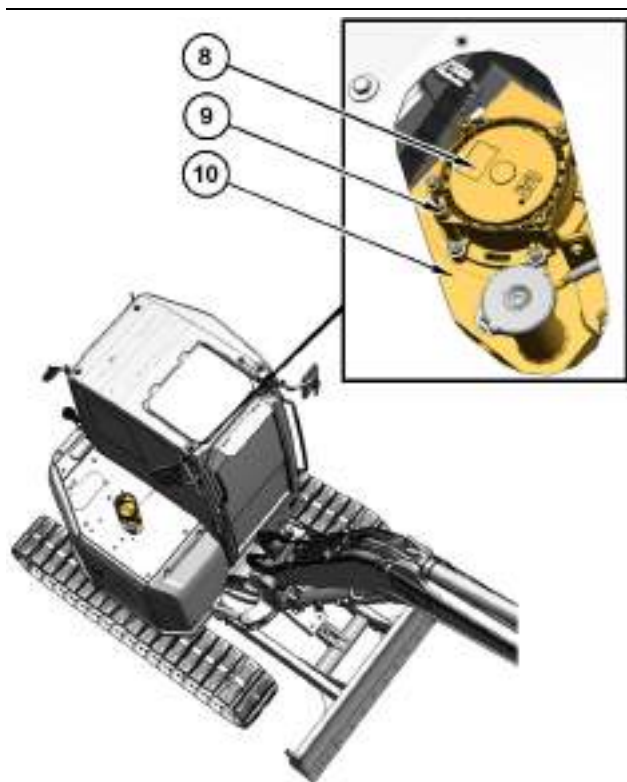


Illustration 721

g06777234

Some components removed for better clarity

- (8) Hydraulic tank cover
- (9) Bolt
- (10) Hydraulic tank

10. Remove four bolts (9) that secure hydraulic tank cover (8).

11. Remove hydraulic tank cover (8) and gain access inside hydraulic tank (10).

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

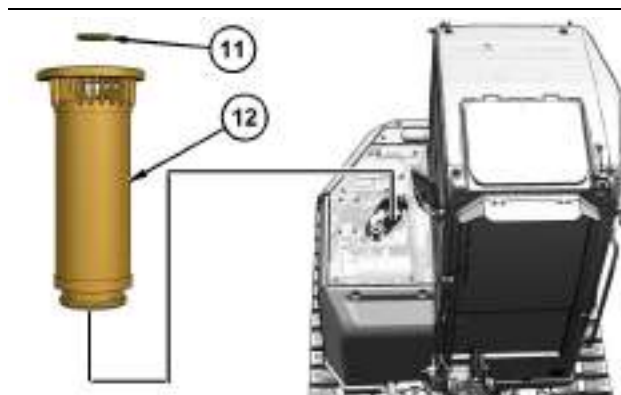


Illustration 722

g06777245

Some components removed for better clarity

Exploded view of O-ring seal (11) and filter (12)

- (11) O-ring seal
- (12) Filter

12. Remove filter (12) from hydraulic tank (10) using the attached handle in filter (12).

Remove O-ring seal (11) from inside filter (12). Inspect O-ring seal (11). Replace O-ring seal (11) if wear or damage is evident.

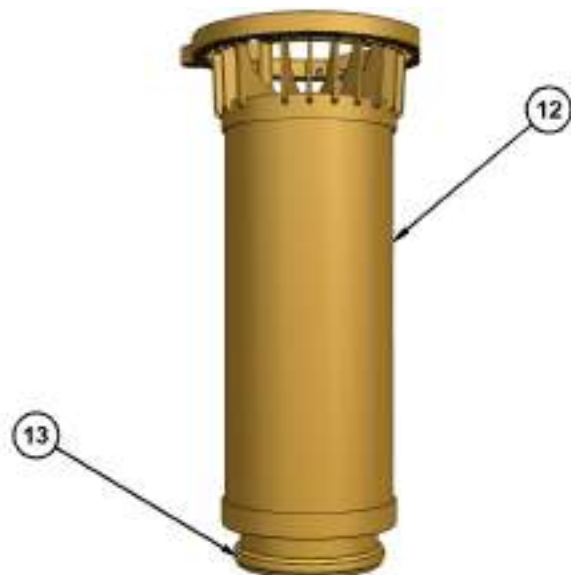


Illustration 723

g06777250

Some components removed for better clarity

- (12) Filter
- (13) O-ring seal

13. Inspect O-ring seal (13) on outside of filter (12). Replace O-ring seal (13) if wear or damage is evident.

14. Inspect filter (12). Replace filter (12) if damaged.

Note: Dispose used filter (12) according to local regulations.

15. Install new filter (12) inside hydraulic tank (10).

Note: Make sure that O-ring seal (11) inside filter (12) and O-ring seal (13) outside filter (12) are properly positioned in filter (12) before installation of filter (12) inside hydraulic tank (10).

16. Install hydraulic tank cover (8) on hydraulic tank (10) and secure hydraulic tank cover (8) with four bolts (9). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

Hydraulic System Oil - Fill

1. Clean the area thoroughly to keep dirt out of breather (4).

2. Remove breather cap (3) from breather (4).

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

3. Fill hydraulic tank (10) with hydraulic oil. Refer to "Hydraulic System Oil Level - Check" for more information on hydraulic oil fill procedure.

Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

4. Clean and close breather cap (3).

Hydraulic System Air Purge

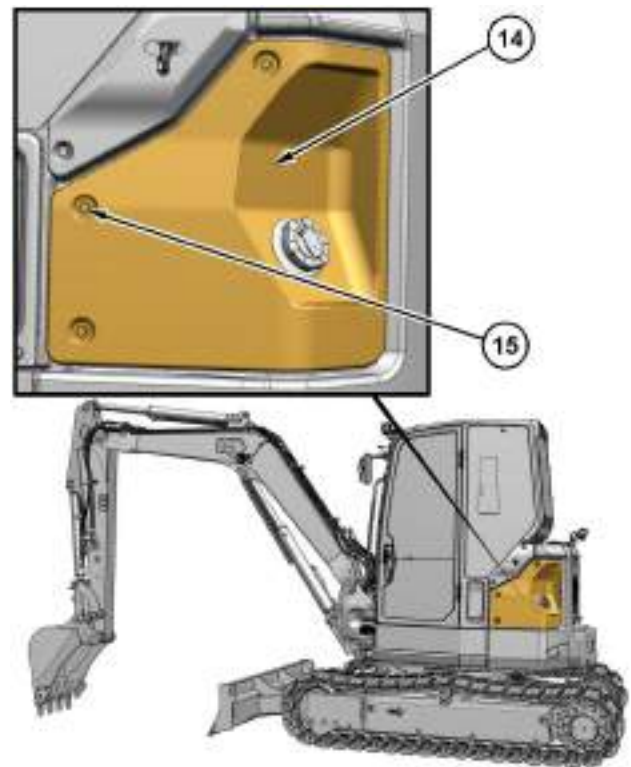


Illustration 724

g06777257

(14) Access door
(15) Bolt

1. Remove three bolts (15). Open access door (14) on the left side of the machine. Refer to "Access Door and Cover Locations" for more information.

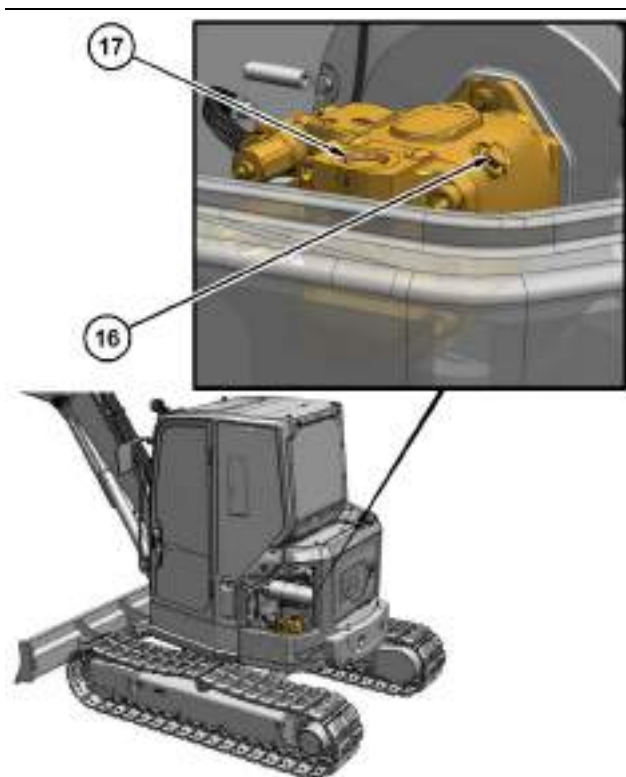


Illustration 725

g06777267

Some components removed for better clarity

(17) Hydraulic pump
(16) Vent plug

Note: Make no attempt to start the engine until hydraulic pump (17) has been filled with hydraulic oil. Serious damage to the hydraulic components can result.

Note: Cavitation in hydraulic pump (17) and damage in hydraulic pump (17) can occur if air is trapped in hydraulic pump (17).

2. Slowly loosen vent plug (16) on hydraulic pump (17).

Note: Refer to “General Hazard Information” for information containing fluid spillage.

3. Leave vent plug (16) loose until hydraulic oil starts to flow out of vent plug (16). Flowing out hydraulic oil indicates that air has been released from hydraulic system.

Note: Discard drained fluids according to local regulations.

4. Install vent plug (16) and tighten to $60 \pm 10 \text{ N}\cdot\text{m}$ ($44 \pm 07 \text{ lb ft}$).

5. Start the engine. Refer to “Engine Starting” for more information. Operate the engine at idling speed for 5 minutes.
6. Operate the joysticks to circulate the hydraulic oil. Lower the bucket to the ground so that the stick is vertical to the ground. Refer to “Joystick Controls” for more information. Stop the engine. Refer to “Stopping the Engine” for more information.

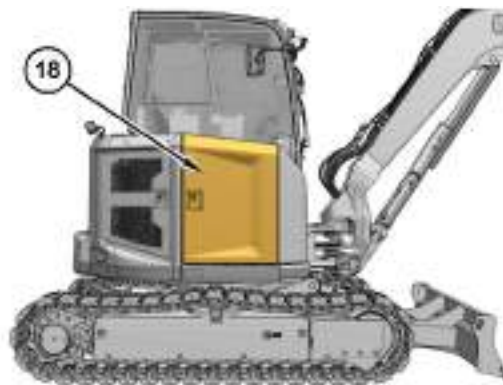


Illustration 726

g06777275

(18) Access door

7. Open access door (18) on right side of the machine. Refer to “Access Door and Cover Locations” for more information.

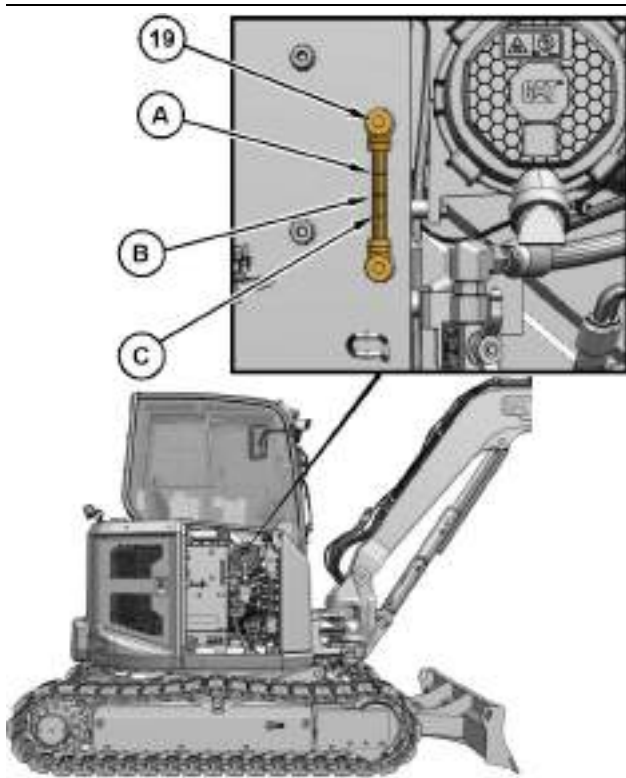


Illustration 727

g06777291

- (19) Sight gauge
(A) High temperature range
(B) Middle temperature range
(C) Low temperature range

8. Check the hydraulic oil level in sight gauge (19). If hydraulic oil temperature is between 10° C (50° F) and 30° C (86° F), maintain oil level in low temperature range (C) in sight gauge (19). If hydraulic oil temperature is between 50° C (122° F) and 80° C (187° F), maintain oil level in high temperature range (A) in sight gauge (19). If hydraulic oil temperature is between 31° C (87° F) and 49° C (121° F), maintain oil level in middle temperature range (B) in sight gauge (19).

9. Add hydraulic oil if hydraulic oil level is low. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

Refer to "Hydraulic System Oil Level - Check" for more information on hydraulic oil fill procedure.

10. Close access door (18) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

11. Install three bolts (15) in access door (14). Secure and close access door (14) on the left side of the machine. Refer to "Access Door and Cover Locations" for more information.

12. Install access cover (2) and secure access cover (2) with three bolts (1). Refer to Illustration 716 for location of access cover (2). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

i08780973

Hydraulic System Oil Filter (Return) - Replace

SMCS Code: 5068-510-RJ

S/N: 5C51-Up

S/N: 5G51-Up

S/N: 5X51-Up

S/N: AX51-Up

S/N: AX61-Up

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Pressurized system!

The hydraulic tank contains hot oil under pressure. To prevent burns from the sudden release of hot oil, relieve the tank pressure with the engine off. Relieve pressure by slowly turning the cap until the cap reaches the secondary stop.

NOTICE

Never remove the fill/vent plug from the hydraulic tank if the oil is hot.

Air can enter the system and cause pump damage.

NOTICE

If the machine is filled with non-biodegradable hydraulic oil and biodegradable hydraulic oil is wanting to be used, consult a Cat dealer. Biodegradable hydraulic oil can NOT be added to the system by performing an ordinary hydraulic oil change. Damage to the hydraulic system can occur.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

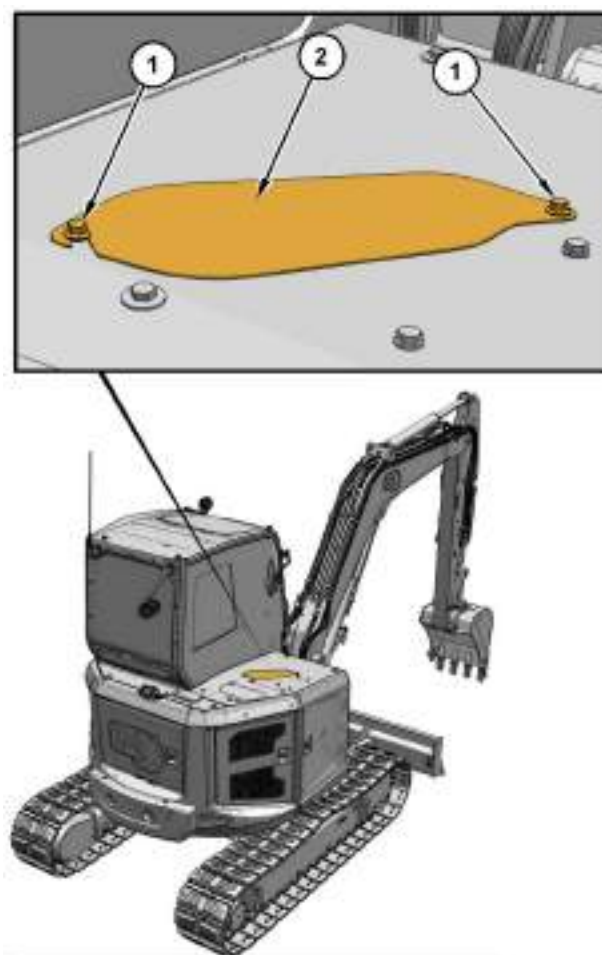


Illustration 728

g06778168

Some components removed for better clarity

- (1) Bolt
(2) Access cover

1. Remove two bolts (1) that secure access cover (2) on top of the machine.
2. Remove access cover (2).

Maintenance Section
Hydraulic System Oil Filter (Return) - Replace

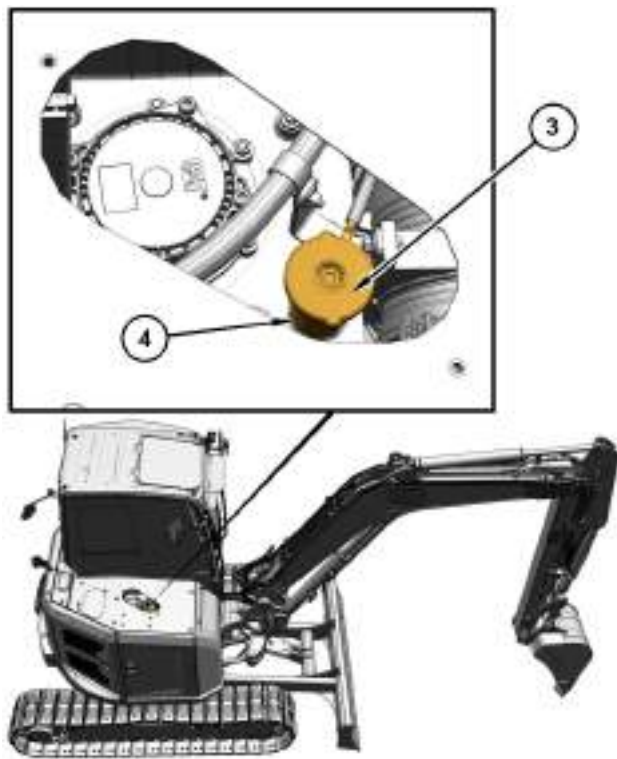


Illustration 729

g06778169

Some components removed for better clarity

- (3) Breather cap
- (4) Breather

3. Clean the area thoroughly to keep dirt out of breather (4). Slowly loosen breather cap (3) to relieve system pressure. Refer to "System Pressure Release" for more information.
4. Close breather cap (3) after system pressure is completely relieved.

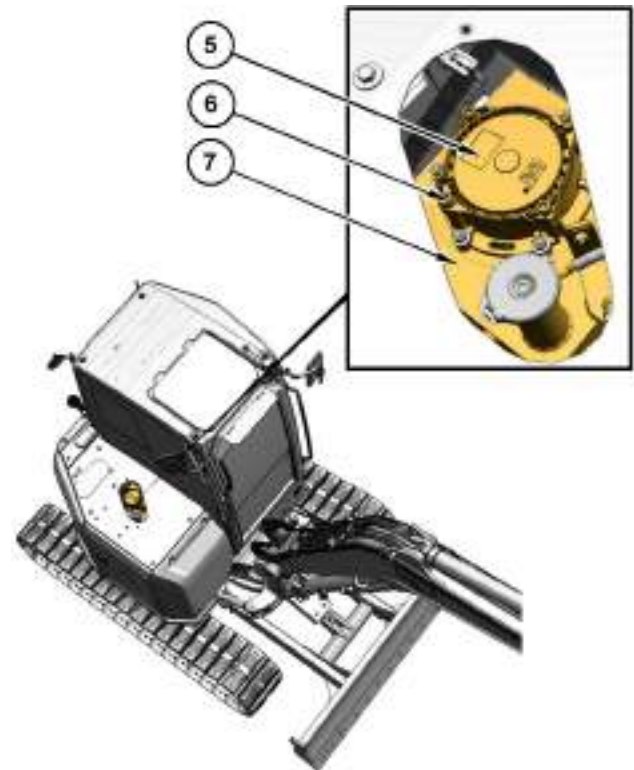


Illustration 730

g06778171

Some components removed for better clarity

- (5) Hydraulic tank cover
- (6) Bolt
- (7) Hydraulic tank

5. Remove four bolts (6) that secure hydraulic tank cover (5).
6. Remove hydraulic tank cover (5) and gain access inside hydraulic tank (7).

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

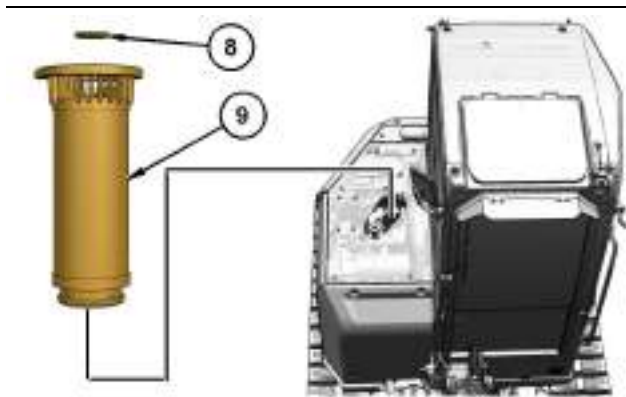


Illustration 731

g06778172

Some components removed for better clarity

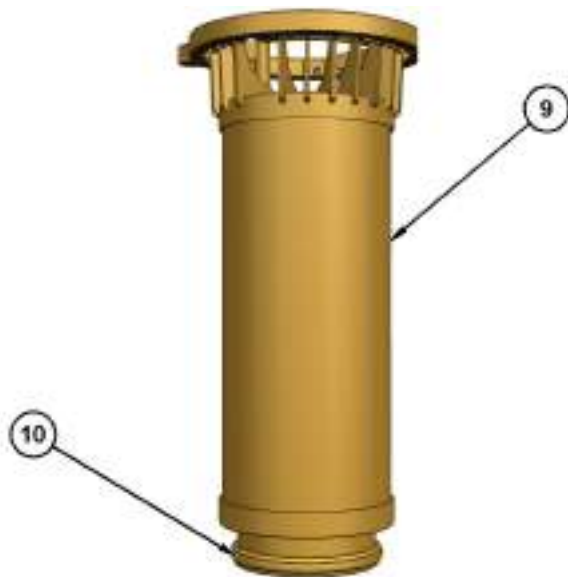
(8) O-ring seal
(9) Filter

Illustration 732

g06778173

Some components removed for better clarity

(9) Filter
(10) O-ring seal

7. Remove filter (9) from hydraulic tank (7) using the attached handle in filter (9).

Remove O-ring seal (8) from inside of filter (9). Inspect O-ring seal (8). Replace O-ring seal (8) if wear or damage is evident.

8. Inspect O-ring seal (10) on outside of filter (9). Replace O-ring seal (10) if wear or damage is evident.

9. Inspect filter (9). Replace filter (9) if damaged.

Note: Dispose used filter (9) according to local regulations.

10. Install new filter (9) inside hydraulic tank (7).

Note: Make sure that O-ring seal (8) inside filter (9) and O-ring seal (10) outside filter (9) are properly positioned in filter (9) before installation of filter (9) inside hydraulic tank (7).

11. Install hydraulic tank cover (5) on hydraulic tank (7) and secure hydraulic tank cover (5) with four bolts (6). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

12. Check the level of hydraulic oil in hydraulic tank (7). Add oil if necessary. Refer to "Hydraulic System Oil Level - Check" for more information. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

13. Install access cover (2) and secure access cover (2) with two bolts (1) on top of the machine. Refer to Illustration 728 for location of access cover (2). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

i08788604

Hydraulic System Oil Filter (Return) - Replace

SMCS Code: 5068-510-RJ

S/N: AN41-Up

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Pressurized system!

The hydraulic tank contains hot oil under pressure. To prevent burns from the sudden release of hot oil, relieve the tank pressure with the engine off. Relieve pressure by slowly turning the cap until the cap reaches the secondary stop.

NOTICE

Never remove the fill/vent plug from the hydraulic tank if the oil is hot.

Air can enter the system and cause pump damage.

NOTICE

If the machine is filled with non-biodegradable hydraulic oil and biodegradable hydraulic oil is wanting to be used, consult a Cat dealer. Biodegradable hydraulic oil can NOT be added to the system by performing an ordinary hydraulic oil change. Damage to the hydraulic system can occur.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and component failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

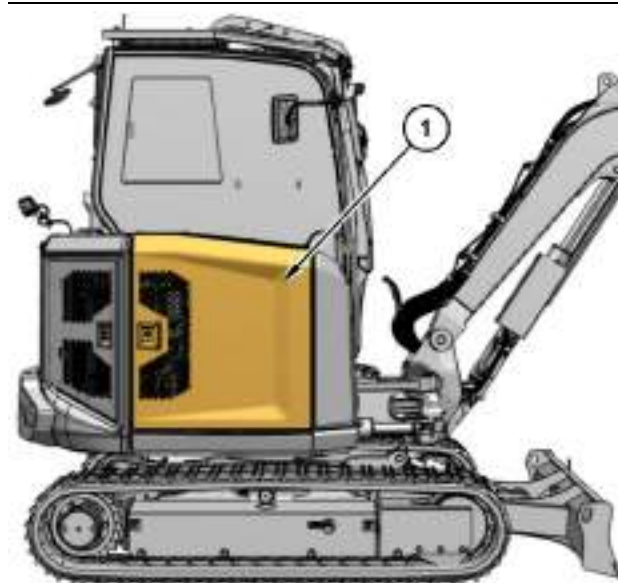


Illustration 733

g06790830

Right side of the machine

(1) Access door

1. Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

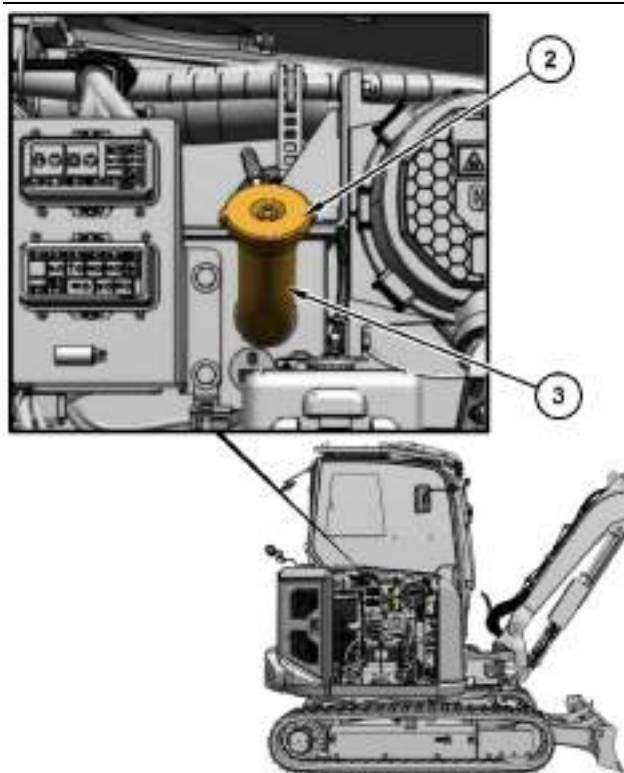


Illustration 734

g06790836

Some components removed for better clarity

- (2) Breather cap
(3) Breather

2. Clean the area thoroughly to keep dirt out of breather (3). Slowly loosen breather cap (2) to relieve system pressure. Refer to "System Pressure Release" for more information.
3. Clean and close breather cap (2) after system pressure is completely relieved.

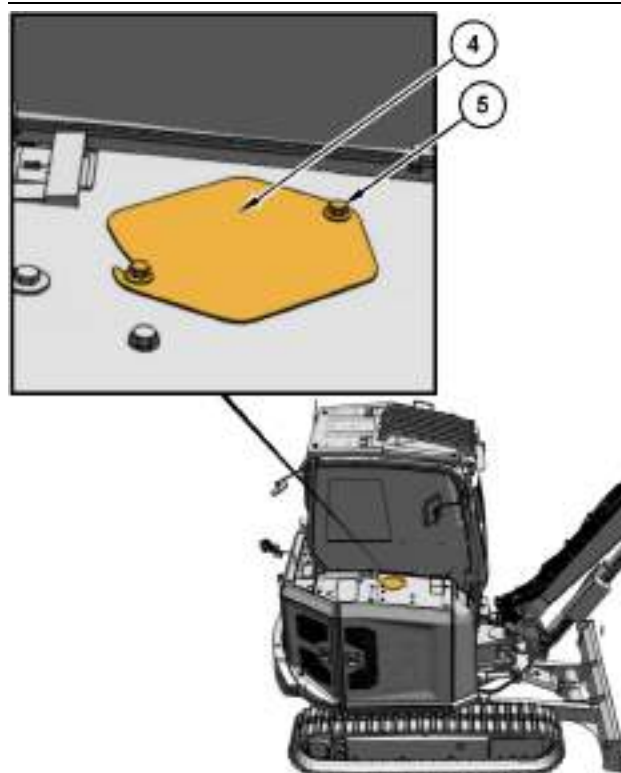


Illustration 735

g06790844

Some components removed for better clarity

- (4) Access cover
(5) Bolt

4. Remove two bolts (5) that secure access cover (4) on top of the machine.
5. Remove access cover (4).

Maintenance Section
Hydraulic System Oil Filter (Return) - Replace

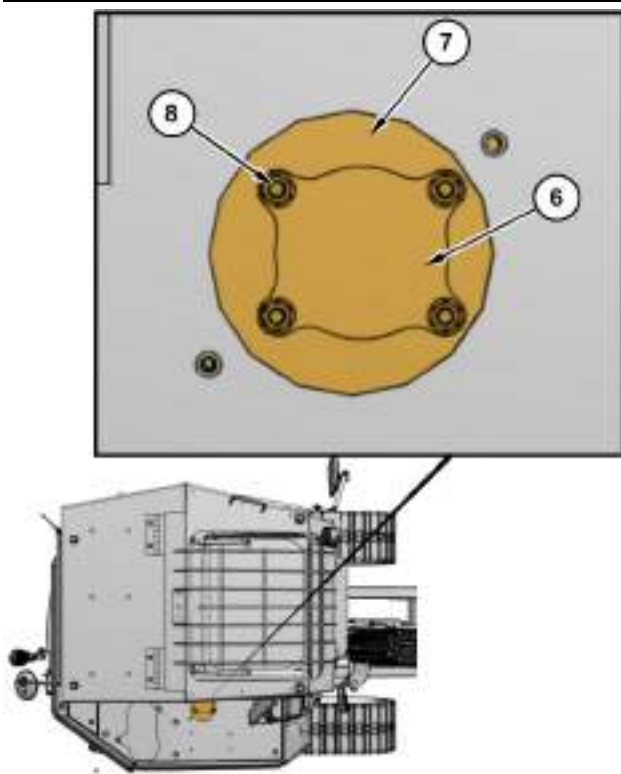


Illustration 736

g06790850

Some components removed for better clarity

- (6) Hydraulic tank cover
- (7) Hydraulic tank
- (8) Bolt

6. Remove four bolts (8) that secure hydraulic tank cover (6).
7. Remove hydraulic tank cover (6) and gain access inside hydraulic tank (7).

Note: Refer to “General Hazard Information” for information that pertains to containing fluid spillage.

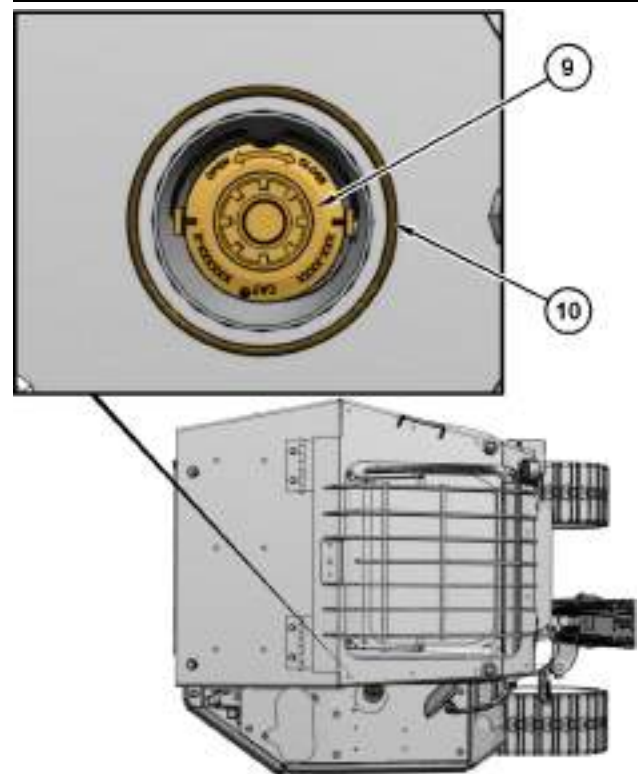


Illustration 737

g06790855

Some components removed for better clarity

- (9) Filter
- (10) O-ring seal

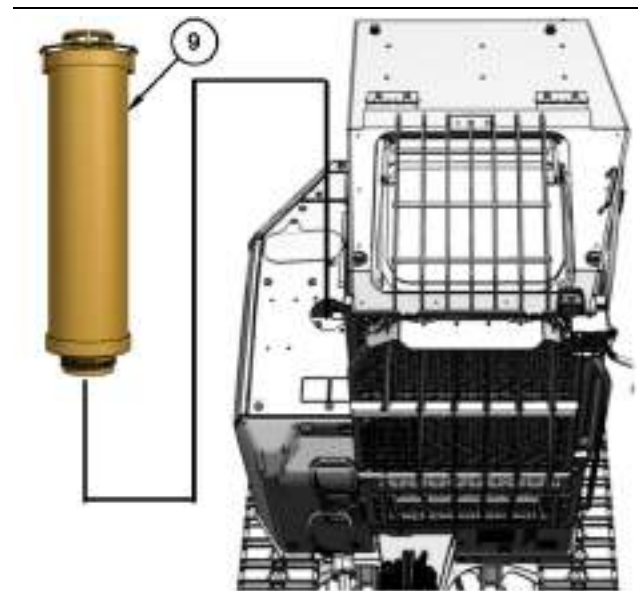


Illustration 738

g06790858

Some components removed for better clarity

- (9) Filter

8. Remove filter (9) from hydraulic tank (7) using the attached handle in filter (9).

Note: Dispose used filter (9) according to local regulations.

9. Remove O-ring seal (10). Inspect O-ring seal (10). Replace O-ring seal (10) if wear or damage is evident.
10. Install new filter (9) inside hydraulic tank (7).
11. Install hydraulic tank cover (6) on hydraulic tank (7) and secure hydraulic tank cover (6) with four bolts (8). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.
12. Check the level of hydraulic oil in hydraulic tank (7). Add oil if necessary. Refer to "Hydraulic System Oil Level - Check" for more information. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.
13. Install access cover (4) and secure access cover (4) with two bolts (5) on top of the machine. Refer to Illustration 735 for location of access cover (4). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.
14. Close access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i09669660

Hydraulic System Oil Level - Check

SMCS Code: 5050-535

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Pressurized system!

The hydraulic tank contains hot oil under pressure. To prevent burns from the sudden release of hot oil, relieve the tank pressure with the engine off. Relieve pressure by slowly turning the cap until the cap reaches the secondary stop.

WARNING

Crush Hazard!

Machine access doors can pinch, trap, or crush personnel when being closed.

Use caution while closing machine access doors. Ensure that all personnel are clear of the machine before closing the access doors.

NOTICE

Never remove the fill/vent plug from the hydraulic tank if the oil is hot.

Air can enter the system and cause pump damage.

NOTICE

If the machine is filled with non-biodegradable hydraulic oil and biodegradable hydraulic oil is wanting to be used, consult a Cat dealer. Biodegradable hydraulic oil can NOT be added to the system by performing an ordinary hydraulic oil change. Damage to the hydraulic system can occur.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Maintenance Section
Hydraulic System Oil Level - Check

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Refer to "System Pressure Release".

Note: Check the hydraulic system oil level with the machine on a flat and level surface.



Illustration 739

g07541935

(1) Access door

1. Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

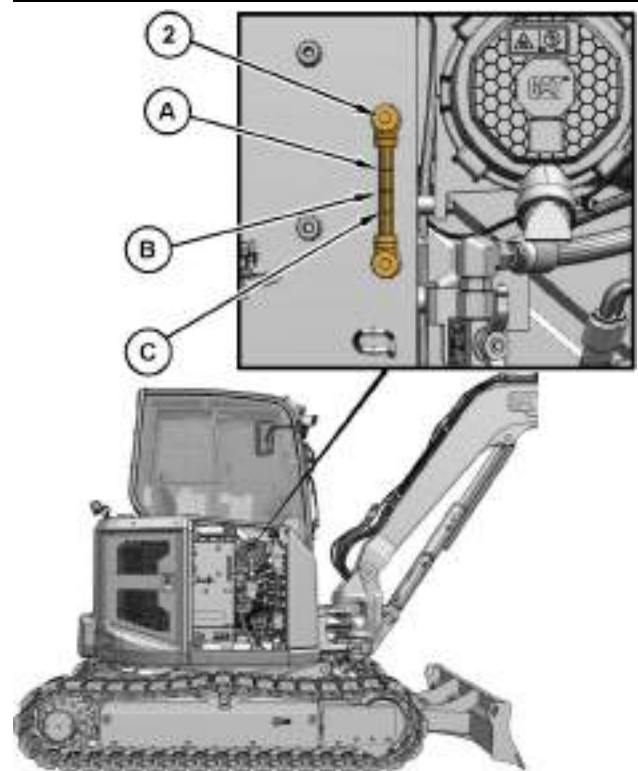


Illustration 740

g06777756

- (2) Sight gauge
(A) High temperature range
(B) Middle temperature range
(C) Low temperature range

2. Check the hydraulic oil level in sight gauge (2).

- If hydraulic oil temperature is between 10° C (50° F) and 30° C (86° F), maintain oil level in low temperature range (C) in sight gauge (2).
- If hydraulic oil temperature is between 50° C (122° F) and 80° C (187° F), maintain oil level in high temperature range (A) in sight gauge (2).
- If hydraulic oil temperature is between 31° C (87° F) and 49° C (121° F), maintain oil level in middle temperature range (B) in sight gauge (2).

3. Perform step 4 through step 10, if hydraulic oil level is low.

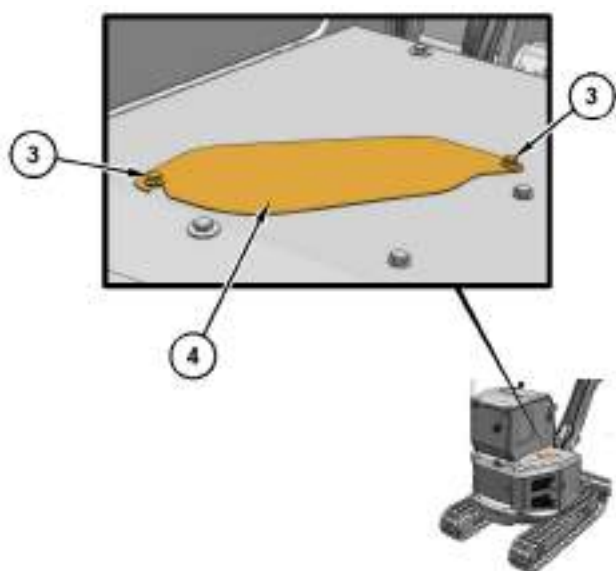


Illustration 741

g07541939

Some components removed for better clarity

- (3) Bolt
(4) Access cover

4. Remove two bolts (3) that secure access cover (4).
5. Remove access cover (4). Refer to "Access Door and Cover Locations" for more information.

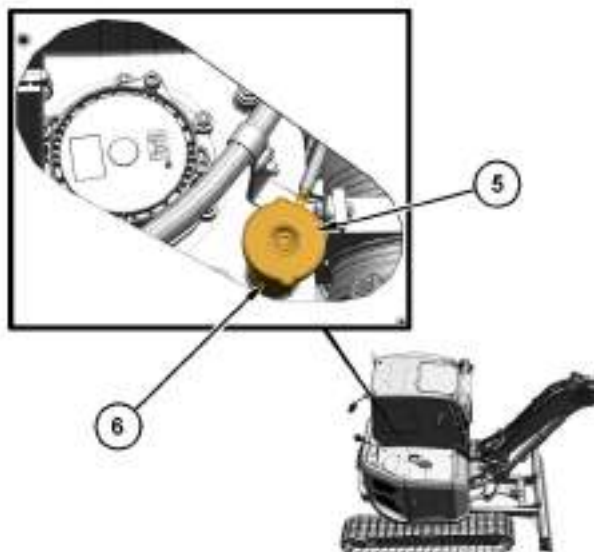


Illustration 742

g07541941

Some components removed for better clarity

- (5) Breather cap
(6) Breather

6. Clean the area thoroughly to keep dirt out of breather (6). Slowly loosen breather cap (5) to relieve system pressure. Refer to "System Pressure Release" for more information.

7. Remove breather cap (5).

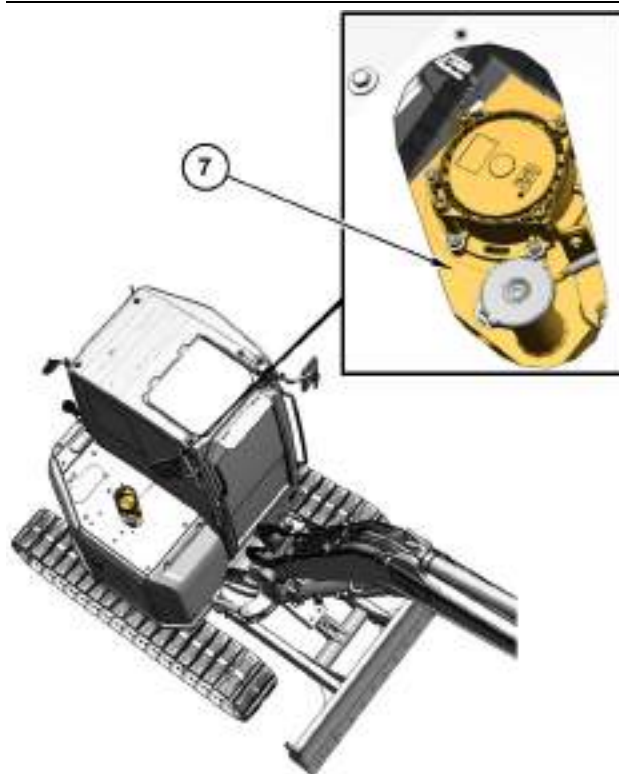


Illustration 743

g06777760

Some components removed for better clarity

- (7) Hydraulic tank

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

8. Add hydraulic oil in hydraulic tank (7). Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.
9. Clean and install breather cap (5) on breather (6).
10. Install access cover (4) and secure access cover (4) with two bolts (3) on top of the machine. Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.
11. Close access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i08779731

Hydraulic System Oil Sample - Obtain

SMCS Code: 5050-008-OC; 5095-008; 5095-SM; 7542; 7542-008

WARNING

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the attachments have been lowered, oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

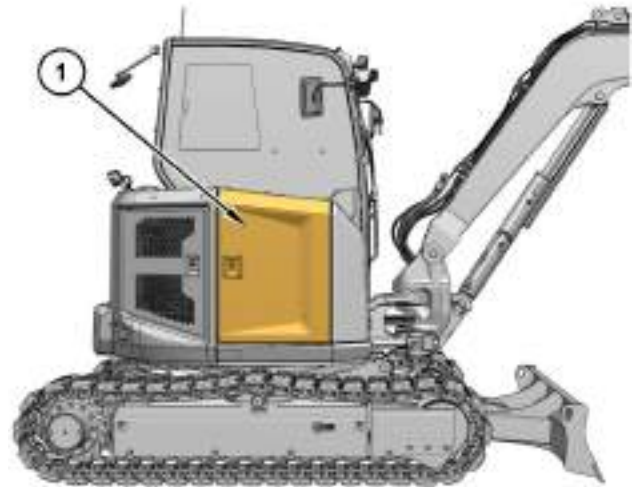


Illustration 744

g06777705

(1) Access door

1. Open access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

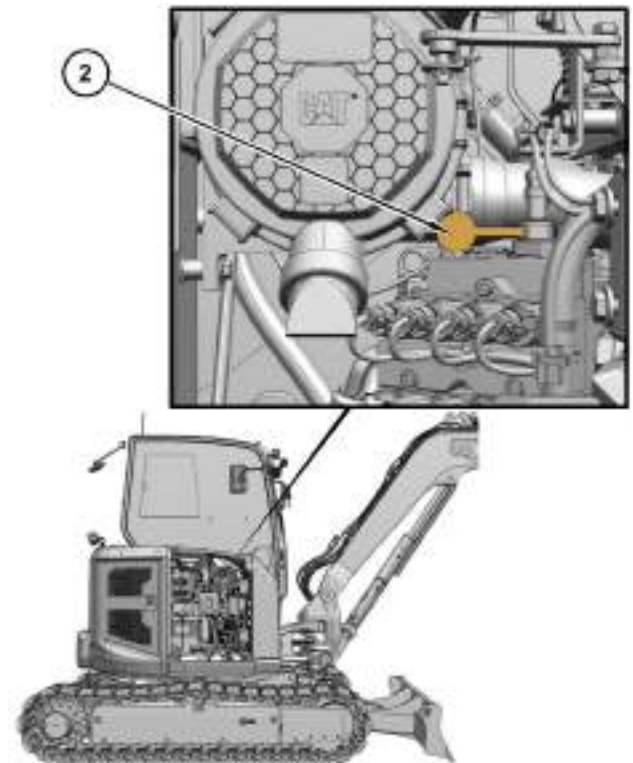


Illustration 745

g06777717

Some components removed for better clarity

(2) Hydraulic oil sampling valve

2. Obtain an oil sample of hydraulic oil from hydraulic oil sampling valve (2). Hydraulic oil sampling valve (2) is on the right side of the machine at the top of main control valve.

Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on obtaining a sample from the hydraulic system. For additional information about taking an oil sample, refer to Special Publication, PEGJ0047, "How To Take A Good Oil Sample".

3. Close access door (1) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

i08784977

Hydraulic Tank Screen - Clean

SMCS Code: 5056-070-Z3

WARNING

Access to this service point may require climbing on the equipment. Slipping or falling while climbing on the equipment could result in personal injury or death. Refer to the Operation and Maintenance Manual, "Mounting and Dismounting" topic, for safety information.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

WARNING

Pressurized system!

The hydraulic tank contains hot oil under pressure. To prevent burns from the sudden release of hot oil, relieve the tank pressure with the engine off. Relieve pressure by slowly turning the cap until the cap reaches the secondary stop.

CAUTION

Bleed the hydraulic pump after performing a hydraulic oil change and using a vacuum pump - otherwise severe damage to the pump can occur.

NOTICE

If the machine is filled with non-biodegradable hydraulic oil and biodegradable hydraulic oil is wanting to be used, consult a Cat dealer. Biodegradable hydraulic oil can NOT be added to the system by performing an ordinary hydraulic oil change. Damage to the hydraulic system can occur.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, PERJ1017, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat® products.

Dispose of all fluids according to local regulations and mandates.

NOTICE

Never remove the fill/vent plug from the hydraulic tank if the oil is hot.

Air can enter the system and cause pump damage.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Maintenance Section
Hydraulic Tank Screen - Clean

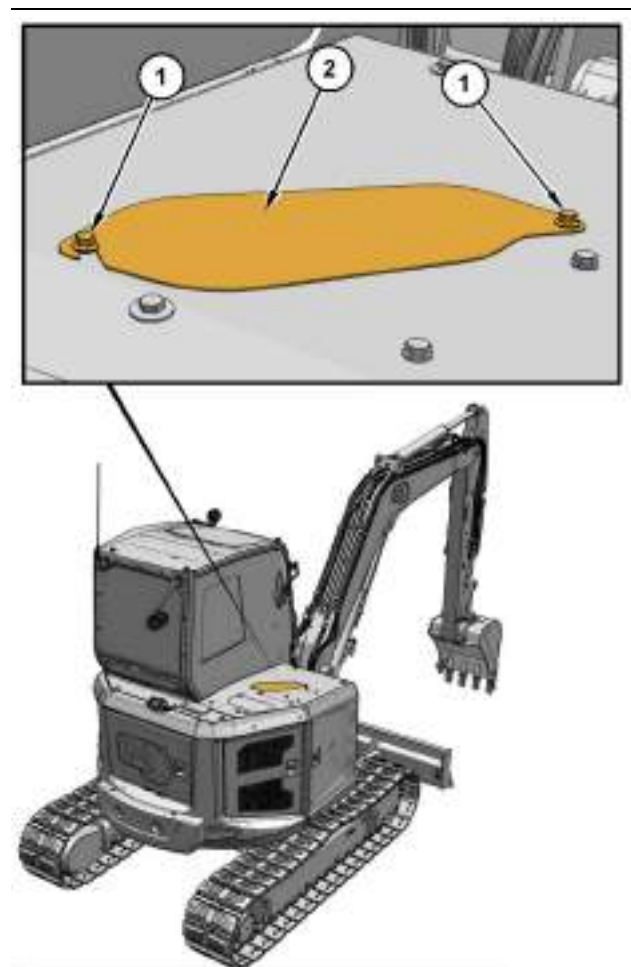


Illustration 746 g06777155

Some components removed for better clarity

- (1) Bolt
- (2) Access cover

1. Remove two bolts (1) that secure access cover (2).
2. Remove access cover (2).

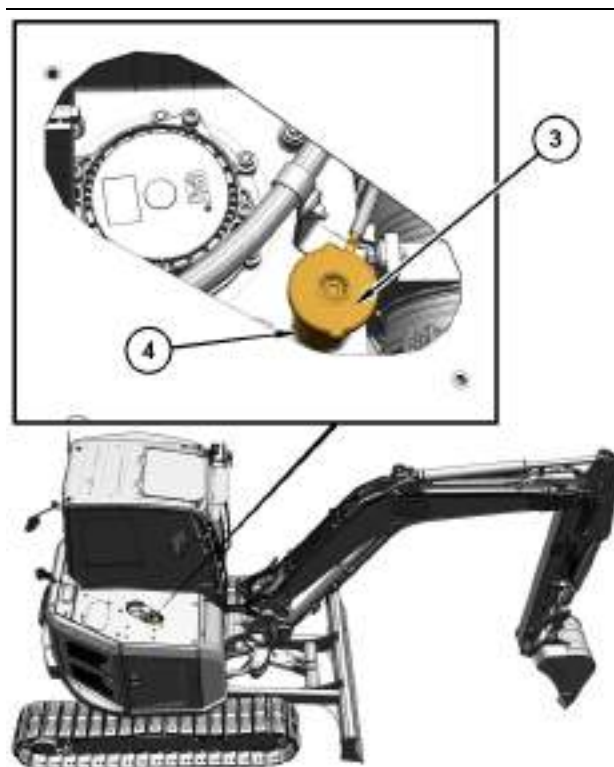


Illustration 747 g06777181

Some components removed for better clarity

- (3) Breather cap
- (4) Breather

3. Clean the area thoroughly to keep dirt out of breather (4). Slowly loosen breather cap (3) to relieve system pressure. Refer to "System Pressure Release" for more information.
4. Close breather cap (3) after system pressure is completely relieved.



Illustration 748

g06777204

Location of drain valve access cover

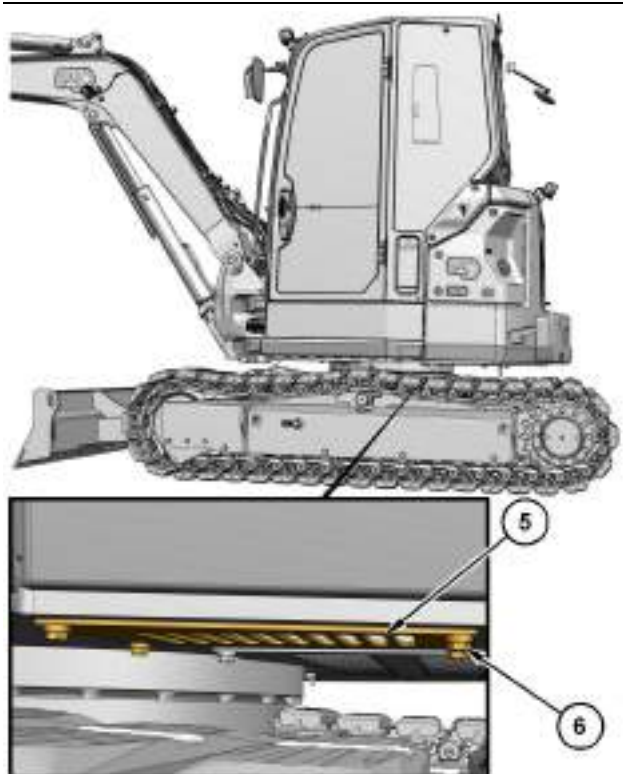


Illustration 749

g06777208

(5) Cover
(6) Bolt

5. Remove four bolts (6) that secure cover (5).
6. Remove cover (5) at the bottom of the machine to gain access to the drain valve.

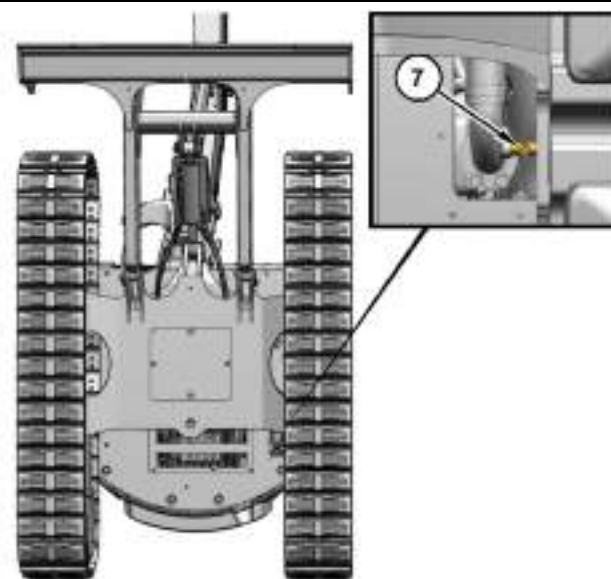


Illustration 750

g06777217

Some components removed for better clarity
Bottom view of the machine

(7) Drain valve

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

7. Open drain valve (7) and allow the hydraulic oil to drain into a suitable container.

Note: Dispose drained fluids according to local regulations.

8. Clean and close drain valve (7).
9. Install cover (5) and secure cover (5) with four bolts (6). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

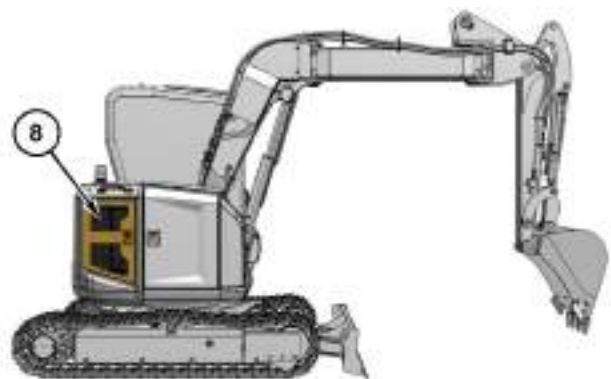


Illustration 751

g06791001

Right side of the machine

(8) Access door

Maintenance Section
Hydraulic Tank Screen - Clean

10. Open access door (8) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

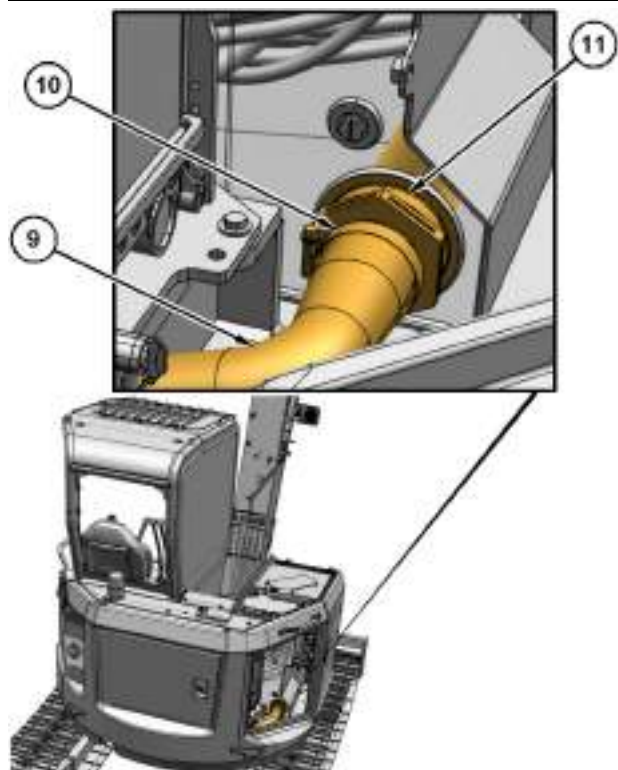


Illustration 752

g06791007

Some components removed for better clarity

- (9) Suction tube
(10) Clamp
(11) Screen

11. Remove suction tube (9) by loosening clamp (10).

Note: Dispose drained fluids according to local regulations.

12. Remove screen (11).

13. Wash screen (11) in a clean nonflammable solvent. Allow screen (11) to dry. Inspect screen (11). Replace screen (11), if damaged.

14. Remove O-ring (12) from old screen (11).

15. Inspect O-ring (12). Replace O-ring (12) if wear or damage is evident.

16. Install O-ring (12) on screen (11).

17. Install screen (11) and tighten to torque of $81 \pm 6 \text{ N}\cdot\text{m}$ ($60 \pm 4 \text{ lb ft}$).

Note: Ensure O-ring (12) is properly seated on screen (11) during installation of screen (11).

18. Reconnect suction tube (9) with screen (11) and tighten using clamp (10).

19. Close access door (8) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

Hydraulic System Oil - Fill

1. Clean the area thoroughly to keep dirt out of breather (4).

2. Remove breather cap (3) from breather (4).

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

3. Fill hydraulic tank with hydraulic oil. Refer to "Hydraulic System Oil Level - Check" for more information on hydraulic oil fill procedure.

Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

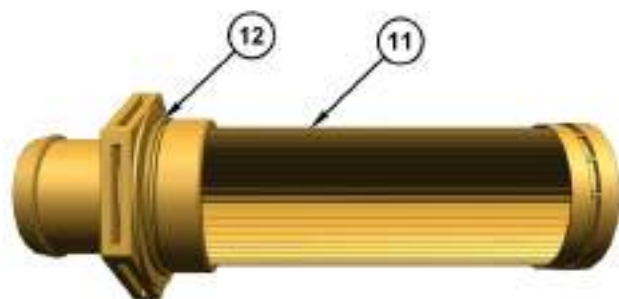


Illustration 753

g06791009

- (11) Screen
(12) O-ring

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

4. Clean and close breather cap (3).

Hydraulic System Air Purge

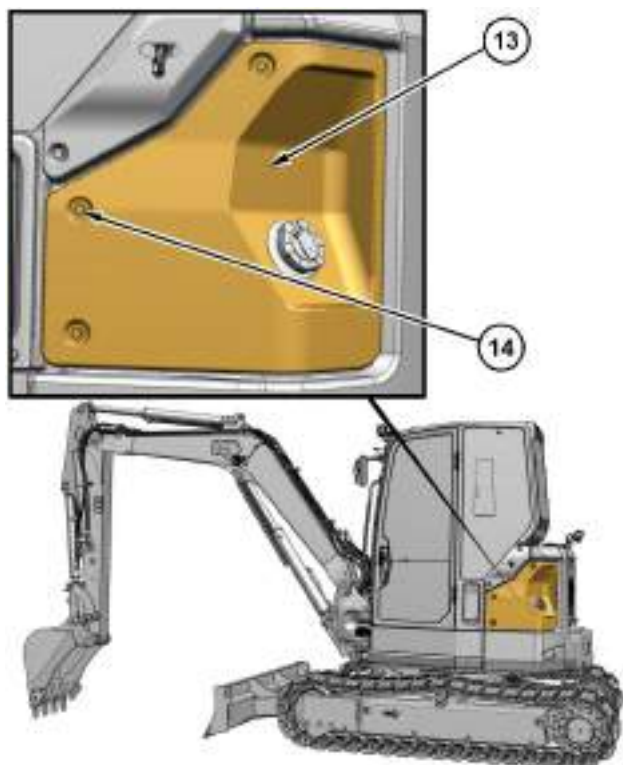


Illustration 754

g06791021

(13) Access door
(14) Bolt

1. Remove three bolts (14). Open access door (13) on the left side of the machine. Refer to "Access Door and Cover Locations" for more information.

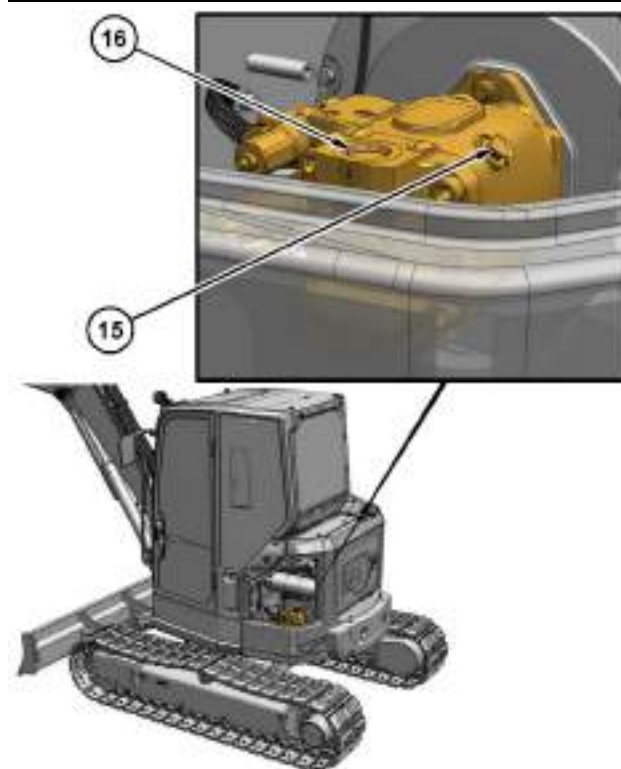


Illustration 755

g06791023

Some components removed for better clarity

(15) Vent plug
(16) Hydraulic pump

Note: Make no attempt to start the engine until hydraulic pump (16) has been filled with hydraulic oil. Serious damage to the hydraulic components can result.

Note: Cavitation in hydraulic pump (16) and damage in hydraulic pump (16) can occur if air is trapped in hydraulic pump (16).

2. Slowly loosen vent plug (15) on hydraulic pump (16).

3. Refer to "General Hazard Information" for information containing fluid spillage.

Leave vent plug (15) loose until hydraulic oil starts to flow out of vent plug (15). Flowing out hydraulic oil indicates that air has been released from hydraulic system.

Note: Discard drained fluids according to local regulations.

4. Install vent plug (15) and tighten to $60 \pm 10 \text{ N}\cdot\text{m}$ ($44 \pm 07 \text{ lb ft}$).

Maintenance Section
Hydraulic Tank Screen - Clean

5. Start the engine. Refer to "Engine Starting" for more information. Operate the engine at idling speed for 5 minutes.
6. Operate the joysticks to circulate the hydraulic oil. Lower the bucket to the ground so that the stick is vertical to the ground. Refer to "Joystick Controls" for more information. Stop the engine. Refer to "Stopping the Engine" for more information.

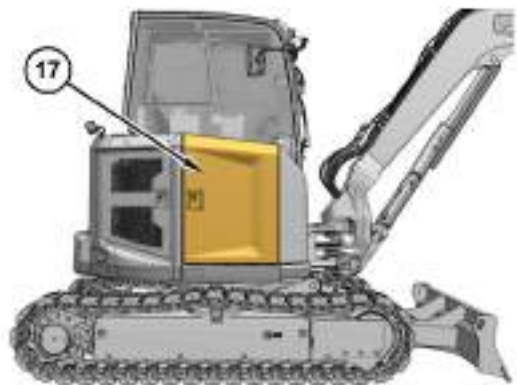


Illustration 756

g06791024

(17) Access door

7. Open access door (17) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.

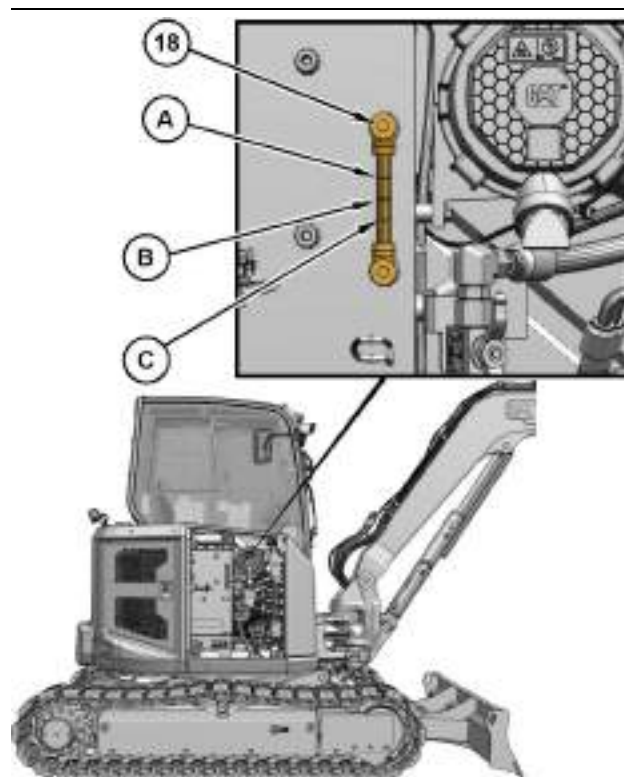


Illustration 757

g06791028

- (18) Sight gauge
(A) High temperature range
(B) Middle temperature range
(C) Low temperature range

8. Check the hydraulic oil level in sight gauge (18). If hydraulic oil temperature is between 10° C (50° F) and 30° C (86° F), maintain oil level in low temperature range (C) in sight gauge (18). If hydraulic oil temperature is between 50° C (122° F) and 80° C (187° F), maintain oil level in high temperature range (A) in sight gauge (18). If hydraulic oil temperature is between 31° C (87° F) and 49° C (121° F), maintain oil level in middle temperature range (B) in sight gauge (18).
9. Add hydraulic oil if hydraulic oil level is low. Refer to "Lubricant Viscosities" and "Capacities (Refill)" for more information.

Refer to "Hydraulic System Oil Level - Check" for more information on hydraulic oil fill procedure.
10. Close access door (17) on right side of the machine. Refer to "Access Door and Cover Locations" for more information.
11. Install three bolts (14) in access door (13). Secure and close access door (13) on the left side of the machine. Refer to "Access Door and Cover Locations" for more information.

12. Install access cover (2) and secure access cover (2) with two bolts (1). Refer to Illustration 746 for location of access cover (2). Refer to Specifications, SENR3130, "Torque Specifications" for the recommended torque.

i03753191

Indicators and Gauges - Test

SMCS Code: 7450-081; 7490-081

1. Look for broken lenses on the gauges, broken indicator lights, broken switches, and other broken components in the cab.
2. Start the engine.
3. Look for inoperative gauges.
4. Turn on all machine lights. Check for proper operation.
5. Move the machine forward. Release the travel levers and the travel pedals. The machine should stop.
6. Stop the engine.
7. Make any repairs that are required before operating the machine.

i07521738

Quick Coupler - Lubricate

SMCS Code: 6129-086

Spindle Lubricate

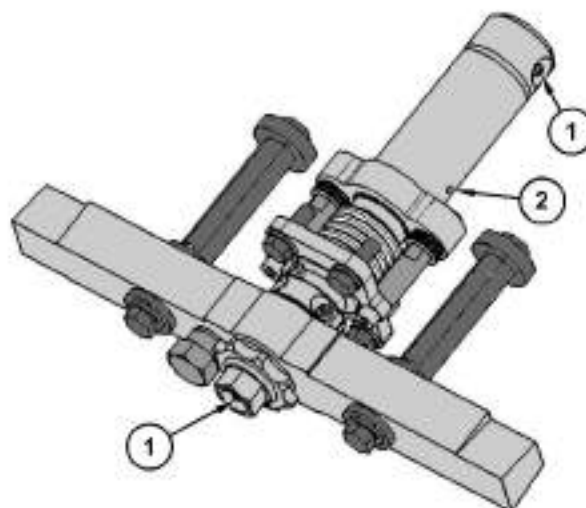


Illustration 758

g06348453

Note: On quick couplers with spindle coupling, the spindle must be lubricated.

1. Uncouple the work tool to lubricate the spindle housing. Refer to Uncoupling the Work Tool - Quick Coupler with Spindle Coupling for more information.
2. Turn the spindle inward completely, in a CLOCKWISE direction. Grease the spindle at both grease points (1) until the grease becomes visible at the grease release hole (2).
3. Turn the spindle outward completely, in a COUNTER-CLOCKWISE direction. Remove any excess grease from the spindle.

4. Couple the work tool.

i07521787

i07521781

Quick Coupler - Lubricate (Mechanical Pin Grabber Quick Coupler (If Equipped))

SMCS Code: 6129-086

1. Release the work tool from the quick coupler.
Ensure that the work tool is in a stable and safe storage position on the ground. Refer to Operation and Maintenance Manual, "Quick Coupler Operation - Mechanical Pin Grabber Quick Coupler" for the proper procedure.



Illustration 759

g06348486

Fitting location

2. Wipe off the fitting before you lubricate the fitting.
3. Apply grease to the fitting of the quick coupler.
4. Check that all pin retainers are in place and that all bolts and nuts are tight.
5. Check the full operation of all the moving parts within the quick coupler. Repair or replace immediately if required.
6. Check that there is no material buildup around the rear locking mechanism, threaded actuator, or wedge plate. Check that there is no material buildup around the front locking mechanism.
7. Check the quick coupler for cracks, bent components, or wear.

Quick Coupler - Lubricate (Hydraulic Pin Grabber Quick Coupler (If Equipped))

SMCS Code: 6129-086

1. Uncouple the work tool from the quick coupler.
Ensure that the work tool is in a stable and safe storage position on the ground. Refer to Operation and Maintenance Manual, "Quick Coupler Operation - Hydraulic Pin Grabber Quick Coupler" for the proper procedure.



Illustration 760

g06348504

Fitting location

2. Wipe off the fittings before you lubricate the fitting.
3. Apply grease to the fittings of the quick coupler.
4. Check that all pin retainers are in place and that all bolts and nuts are tight, including the hydraulic cylinder mounting bolts.
5. Check the hydraulic hoses and fittings for any leaks, damage, or wear. Replace immediately if required.
6. Check the full operation of all the moving parts within the quick coupler. Repair or replace immediately if required.
7. Check that there is no material buildup around the rear locking mechanism, cylinder, or wedge plate. Check that there is no material buildup around the front locking mechanism.
8. Check the quick coupler for cracks, bent components, or wear.

i08579904

Radiator Core - Clean

SMCS Code: 1353-070

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

WARNING

Personal injury can result from air pressure.

Personal injury can result without following proper procedure. When using pressure air, wear a protective face shield and protective clothing.

Maximum air pressure at the nozzle must be less than 205 kPa (30 psi) for cleaning purposes.

WARNING

To avoid personal injury, always wear eye and face protection when using pressurized air.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Do not spray high-pressure water into the radiator while the engine is running.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

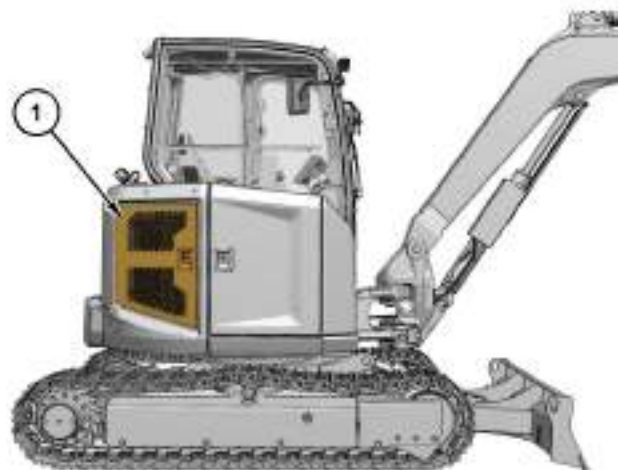


Illustration 761

g06710254

Right side of the machine

(1) Access door

1. Open access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

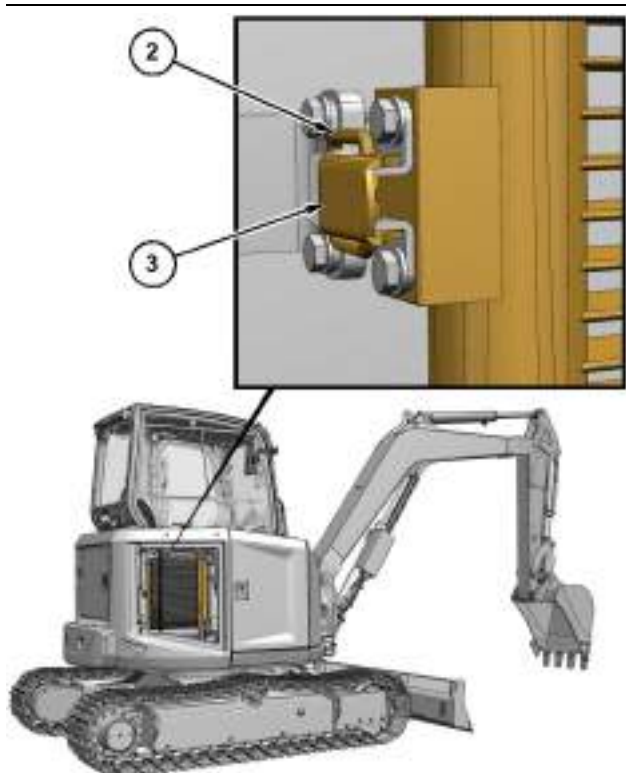


Illustration 762

g06710247

Some components removed for better clarity

- (2) Latch
(3) Handle

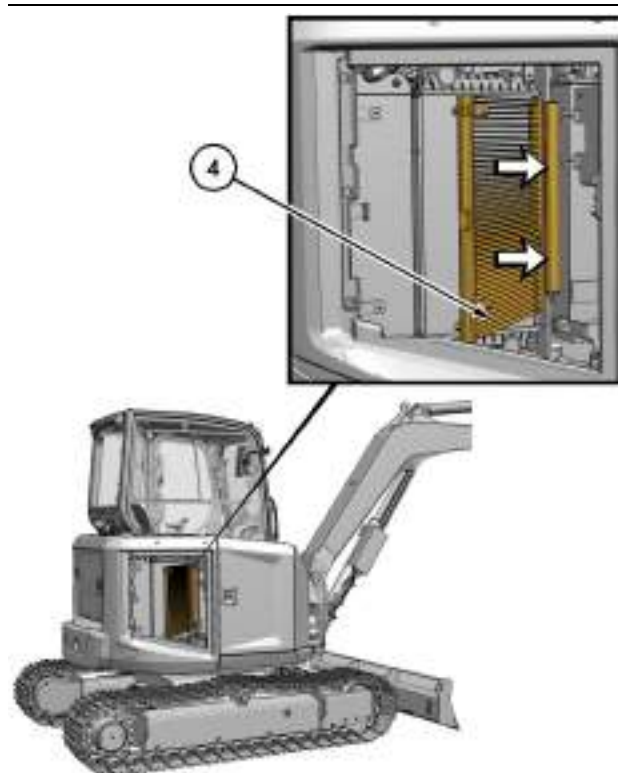


Illustration 763

g06710248

Some components removed for better clarity

- (4) Condenser

2. Remove latch (2) using handle (3) provided in condenser (4).
3. Swing condenser (4) open. Refer to Illustration 763 for the direction to swing open condenser (4).

Note: Refer to "General Hazard Information" for information on using compressed air and/or water.

4. Inspect condenser (4) and clean both sides of condenser (4).

Compressed air is preferred, but high-pressure water or steam can be used to remove dust and general debris from condenser (4).

Refer to Special Publication, SEBD0518, "Know Your Cooling System" for more detailed information about cleaning condenser (4).

i08192239



Illustration 764

g06710249

Some components removed for better clarity

(5) Radiator core

5. Remove dust and debris from radiator core (5).

Refer to Special Publication, SEBD0518, "Know Your Cooling System" for more detailed information about cleaning radiator core (5).

6. Swing condenser (4) back in position and secure condenser (4) with latch (2).

7. Close access door (1) on the right side of the machine. Refer to "Access Door and Cover Locations" for more information.

Receiver Dryer (Refrigerant) - Replace

SMCS Code: 7322-510; 7322-710

WARNING

Personal injury can result from contact with refrigerant.

Contact with refrigerant can cause frost bite. Keep face and hands away to help prevent injury.

Protective goggles must always be worn when refrigerant lines are opened, even if the gauges indicate the system is empty of refrigerant.

Always use precaution when a fitting is removed. Slowly loosen the fitting. If the system is still under pressure, release it slowly in a well ventilated area.

Personal injury or death can result from inhaling refrigerant through a lit cigarette.

Inhaling air conditioner refrigerant gas through a lit cigarette or other smoking method or inhaling fumes released from a flame contacting air conditioner refrigerant gas, can cause bodily harm or death.

Do not smoke when servicing air conditioners or wherever refrigerant gas may be present.

Use a certified recovery and recycling cart to properly remove the refrigerant from the air conditioning system.

NOTICE

If the refrigerant system has been open to the outside air (without being plugged) for more than 30 minutes, the receiver-dryer must be replaced. Moisture will enter an open refrigerant system and cause corrosion which will lead to component failure.

Prepare the machine for maintenance. Refer to Operation and Maintenance Manual, "Prepare the Machine for Maintenance".

Refer to Service Manual, "Air Conditioning and Heating R-134a for All Caterpillar Machines" for the proper procedure to change the receiver-dryer assembly and for the procedure to reclaim the refrigerant gas.

i07103309

i06970675

Seat Belt - Inspect

SMCS Code: 7327-040

Always inspect the condition of the seat belt and the condition of the seat belt mounting hardware before you operate the machine. Replace any parts that are damaged or worn before you operate the machine.



Illustration 765

g06224278

Typical example

Inspect buckle (2) for wear or for damage. If the buckle is worn or damaged, replace the seat belt.

Inspect seat belt (1) for webbing that is worn or frayed. Replace the seat belt if the webbing is worn or frayed.

Inspect all seat belt mounting hardware for wear or for damage. Replace any mounting hardware that is worn or damaged. Make sure that the mounting bolts are tight.

If your machine is equipped with a seat belt extension, also perform this inspection procedure for the seat belt extension.

Contact your Cat dealer for the replacement of the seat belt and the mounting hardware.

Note: The seat belt should be replaced within 3 years of the date of installation. A date of installation label is attached to the seat belt retractor and buckle. If the date of installation label is missing, replace belt within 3 years from the year of manufacture as indicated on belt webbing label, buckle housing, or installation tags (non-retractable belts).

Seat Belt - Replace

SMCS Code: 7327-510

The seat belt should be replaced within 3 years of the date of installation. A date of installation label is attached to the seat belt retractor and buckle. If the date of installation label is missing, replace the belt within 3 years from the year of manufacture as indicated on the belt webbing label, buckle housing, or installation tags (non-retractable belts).

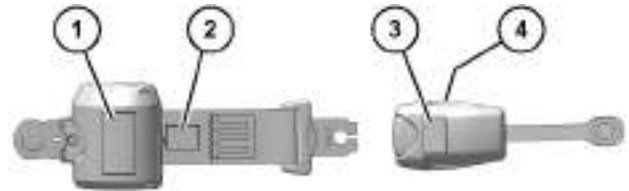


Illustration 766

g06183390

- (1) Date of installation (retractor)
- (2) Year of manufacture (tag) (fully extended web)
- (3) Date of installation (buckle)
- (4) Year of manufacture (underside) (buckle)

Consult your Cat dealer for the replacement of the seat belt and the mounting hardware.

Determine the age of a new seat belt before installing on seat. A manufacture label is on the belt webbing and imprinted on the belt buckle. Do not exceed the install by date on the label.

A complete seat belt system should be installed with new mounting hardware.

Date of installation labels should be marked and affixed to the seat belt retractor and buckle.

Note: Date of installation labels should be permanently marked by punch (retractable belt) or stamp (non-retractable belt).

If your machine is equipped with a seat belt extension, also perform this replacement procedure for the seat belt extension.

i06306041

Shovel Crane - Inspect (If Equipped)

SMCS Code: 6500-040

WARNING

Do not operate the shovel crane with a hook that has cracks or deformities. Failure to follow these instructions may cause the load to fall and result in injury or death. Replace the shovel crane hook if there are any signs of cracks or deformities.

1. Position the machine on a level surface and retract the bucket. Lower the bucket to the ground.
2. Move the hydraulic lockout control to the LOCKED position. Stop the engine.

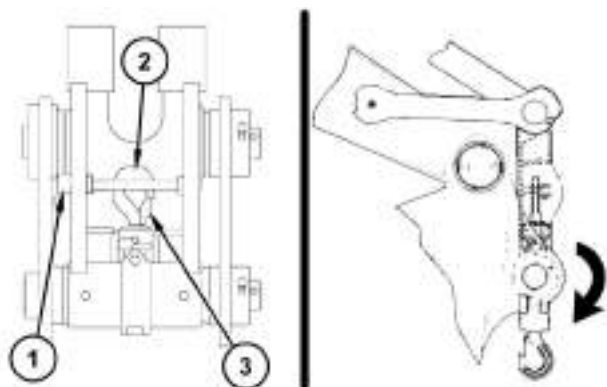


Illustration 767

g02976961

- (1) Retaining pin
- (2) Shovel crane hook
- (3) Shovel crane latch

3. Remove retaining pin (1) and lower the hook for inspection.
4. Inspect shovel crane hook (2) and shovel crane latch (3) and make any repairs before operation of the shovel crane.

Inspect Shovel Crane Hook

Ensure that the shovel crane is properly lubricated. Refer to this Operation and Maintenance Manual, "Shovel Crane - Lubricate" for the correct procedure.

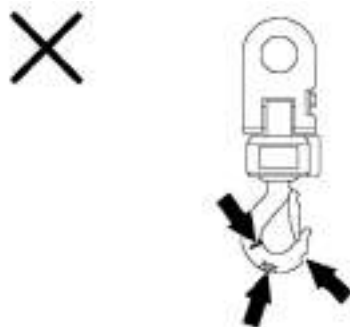


Illustration 768

g02976841

Inspect for notable scratches, tears, or welded parts.

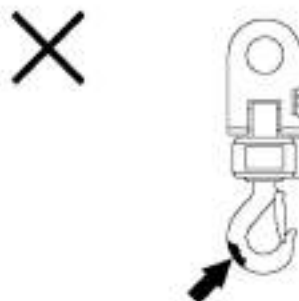


Illustration 769

g02976844

Visually inspect for corrosion and rust. If corrosion or rust is found, polish the area with a grinder and lubricate the hook with oil.

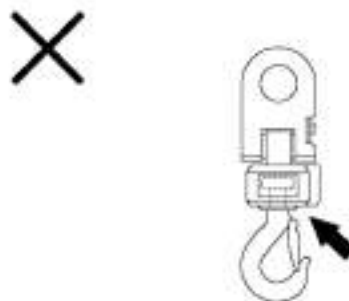


Illustration 770

g02976852

Inspect the shovel crane swivel. The swivel should rotate smoothly and not rattle.

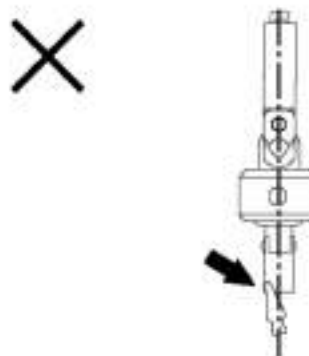


Illustration 771

g02976859

Inspect the tip of shovel crane hook and ensure that the tip is not bent to either side.

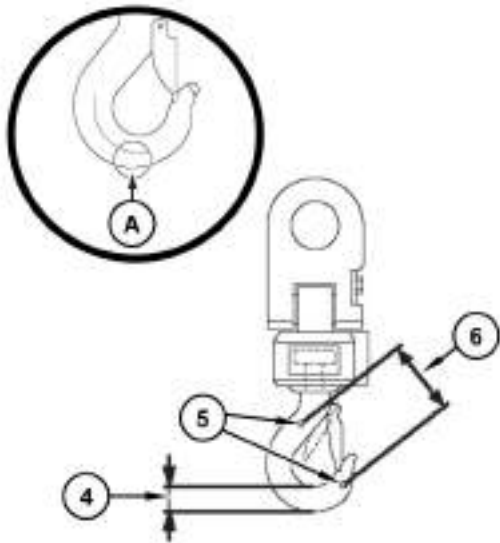


Illustration 772

g03301277

- (4) Width
- (5) Punch marks
- (6) Length

There are two types of hooks:

Hook (A) – This type of hook will not have a mark to indicate the area intended to bear the weight of a suspended load.

Measure the shovel crane hook to ensure that the specifications do not exceed the thresholds found in the table below.

Table 89

Disposal Reference Chart				
Hook Type	New Shovel Hook Specifications for Reference		Shovel Hook Specification Threshold	
	Length (6)	Width (4)	Length (6)	Width (4)
A	65.0 mm	28.4 mm	Over 68.3 mm	Less than 27.0 mm

Note: Length (6) is the distance between punch marks (5).

Replace shovel crane hook for any of the following reasons:

- Deep scratches, tears, or welded parts
- Corrosion or rust that cannot be removed with a grinder
- Hook swivel does not rotate smoothly
- Tip of the hook is bent to either side
- Hook has excessive movement in the swivel

- Hook exceeds the specification thresholds found in the disposal reference chart.

Inspect the Shovel Crane Latch



Illustration 773

g02977957

- (C) Open
- (D) Closed
- (E) Operating range

Inspect the latch to ensure that the latch moves smoothly in operating range (E).

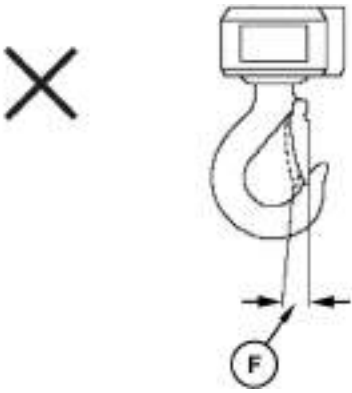


Illustration 774

g02978118

Inspect the latch for excessive movement (F). Ensure that the spring is not broken and the latch does not rattle.

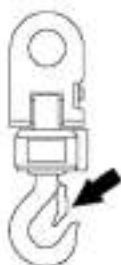


Illustration 775

g02978136

Inspect the latch to ensure that the latch closes completely and there is no gap between the latch and the hook. The latch should rest firmly on the tip of the hook.

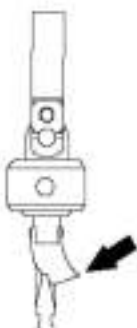


Illustration 776

g02978141

Inspect the latch to ensure that the latch is not bent or deformed. The latch should be centered on the tip of the hook.

Replace shovel crane latch for any of the following reasons:

- Latch does not move smoothly within the operating range
- Latch has excessive movement or rattles
- Latch does not fully close

- Latch is bent or deformed

i06565085

Shovel Crane - Lubricate (If Equipped)

SMCS Code: 6500

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the shovel crane linkage. Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on molybdenum grease.

Wipe all fittings before you apply lubricant.

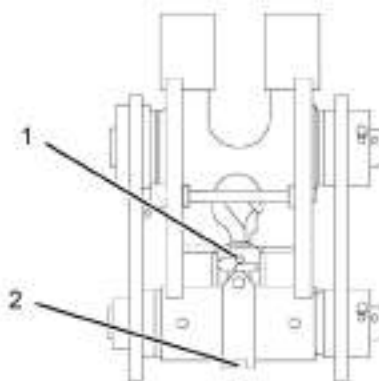


Illustration 777

g02975238

Type 1

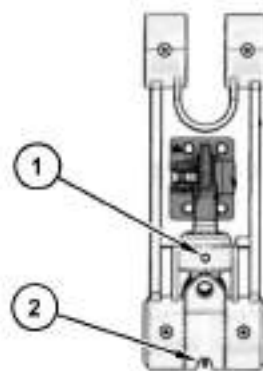


Illustration 778

g06024987

Type 2

1. Apply lubricant through fittings (1) and (2). Continue to fill with grease until the grease is visible.

Note: Service the above fittings after you operate the shovel crane under water.

2. Check the hook for cracks and deformities.
Replace the hook if necessary.

Note: Refer to this Operation and Maintenance Manual, "Shovel Crane - Inspect"

i07776789

Swing Bearing - Lubricate

SMCS Code: 7063-086

S/N: AN41–Up

S/N: 5C51–Up

S/N: 5G51–Up

S/N: 5X51–Up

S/N: AX61–Up

Wipe the fittings before lubricating the swing bearing.

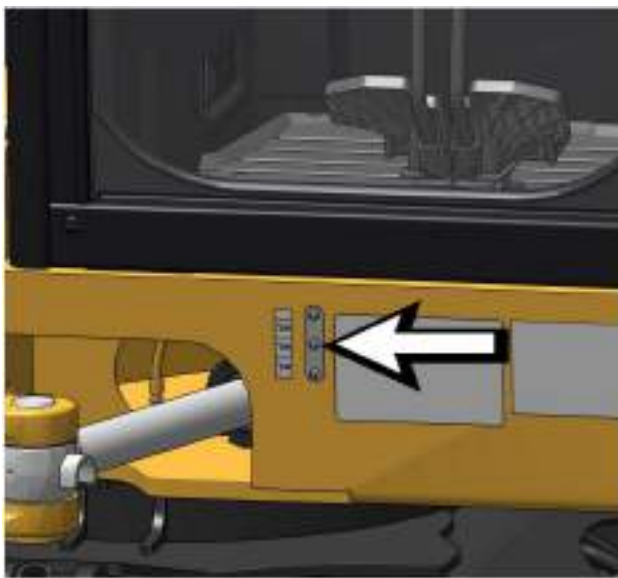


Illustration 779

g06432946

The fitting is on the front left of the machine on the upper carriage.

Apply lubricant through the middle fitting until the lubricant overflows the bearing seals.

i08775946

Swing Bearing - Lubricate

SMCS Code: 7063-086

S/N: AX51–Up

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a "Do Not Operate" or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

NOTICE

Improper lubrication can cause damage to machine components.

To avoid damage, make sure that the proper amount of grease is applied to the swing drive.

When the amount of grease in the compartment becomes too large, the agitation loss becomes large, thereby accelerating grease deterioration.

Grease deterioration can cause damage to the pinion gear of the swing drive and swing internal gear.

Not enough grease will result in poor gear lubrication.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

Note: Refer to Operation and Maintenance Manual, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on grease.

Note: Do not overgrease the swing bearing. Do not grease more than the recommended maintenance interval. Refer to "Maintenance Interval Schedule" for more information.

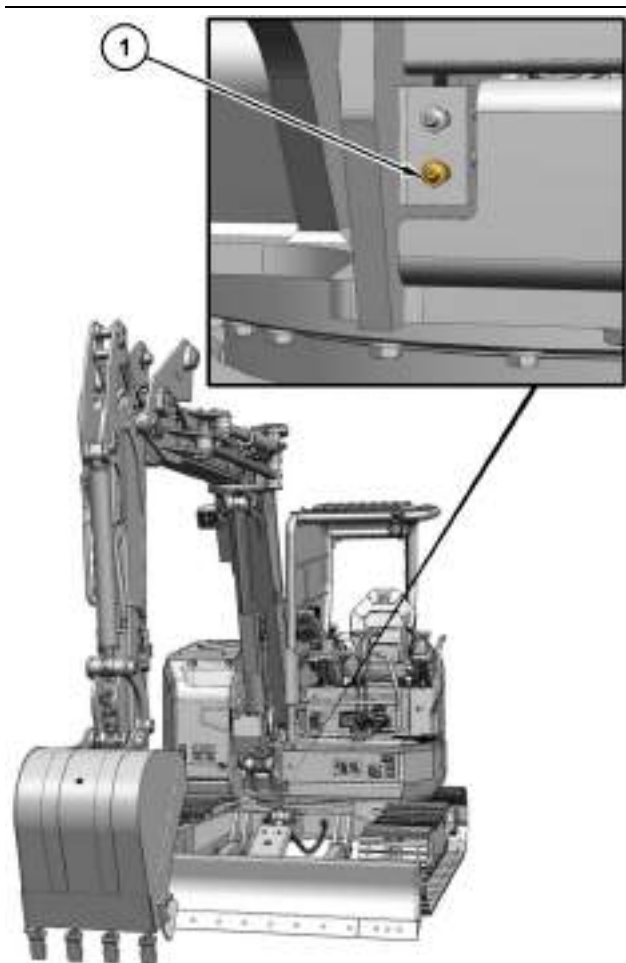


Illustration 780

g06774609

Some components removed for better clarity

(1) Grease fitting

1. Grease fitting (1) is at the front of swing drive housing near the boom cylinder.

2. Wipe grease fitting (1) before lubrication.

Note: Refer to "General Hazard Information" for information that pertains to containing fluid spillage.

3. Apply lubricant through grease fitting (1) until the lubricant overflows the bearing seals.

i07527315

Swing Frame Pin - Lubricate

SMCS Code: 6506-086; 6507-086

1. Lower all work tools to the ground.

2. Wipe all grease fittings before you lubricate the grease fittings.



Illustration 781

g06350521

3. Apply lubricant to the grease fittings for the swing frame.

i07776367

Swing Gear - Lubricate

SMCS Code: 7063-086

S/N: AN41–Up

S/N: 5C51–Up

S/N: 5G51–Up

S/N: 5X51–Up

S/N: AX61–Up

Note: Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on grease.

NOTICE

Improper lubrication can cause damage to machine components.

To avoid damage, make sure that the proper amount of grease is applied to the swing drive.

When the amount of grease in the compartment becomes too large, the agitation loss becomes large, thereby accelerating grease deterioration.

Grease deterioration can cause damage to the pinion gear of the swing drive and swing internal gear.

Not enough grease will result in poor gear lubrication.

Wipe all the fittings before you apply lubricant.

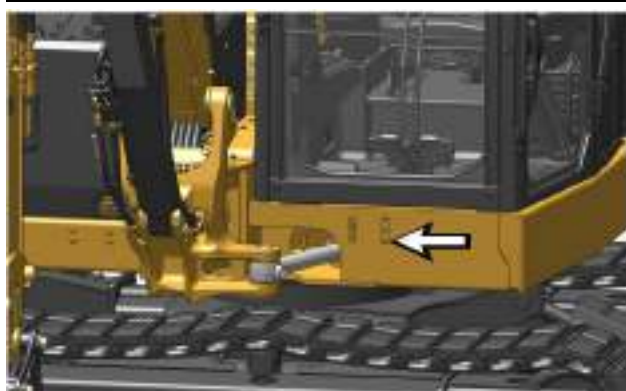


Illustration 782

g06432900

1. Add lubricant through the lower fitting to lube the swing gear.



Illustration 783

g06432906

2. Raise the boom and turn the upper structure by 90 degrees. Lower the bucket to the ground.
3. Repeat Step 1 at every 90 degrees in 4 places.

i08775925

Swing Gear - Lubricate

SMCS Code: 7063-086

S/N: AX51–Up

WARNING

Personal injury can result from rotating and moving parts. Stay clear of all rotating and moving parts.

Never attempt adjustments while the machine is moving or the engine is running unless otherwise specified.

The machine must be parked on a level surface and the engine stopped.

Attach a “Do Not Operate” or similar warning tag to the start switch and controls before servicing, repairing, or making adjustments to the machine.

NOTICE

Improper lubrication can cause damage to machine components.

To avoid damage, make sure that the proper amount of grease is applied to the swing drive.

When the amount of grease in the compartment becomes too large, the agitation loss becomes large, thereby accelerating grease deterioration.

Grease deterioration can cause damage to the pinion gear of the swing drive and swing internal gear.

Not enough grease will result in poor gear lubrication.

NOTICE

Not following the recommendations found in this manual can lead to reduced performance and compartment failure.

Prepare the machine for maintenance. Refer to “Prepare the Machine for Maintenance”.

Note: Refer to Operation and Maintenance Manual, SEBU6250, “Caterpillar Machine Fluids Recommendations” for more information on grease.

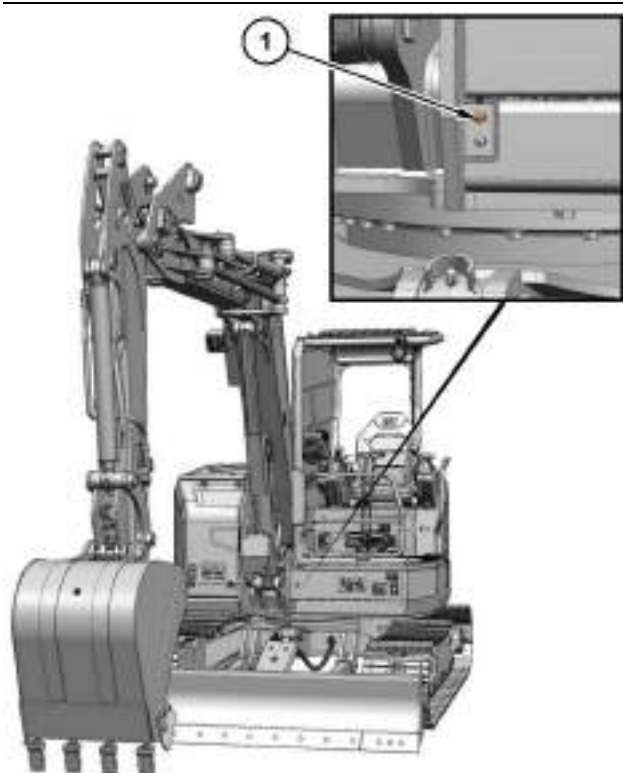


Illustration 784

g06774571

(1) Grease fitting

1. Add lubricant through grease fitting (1).

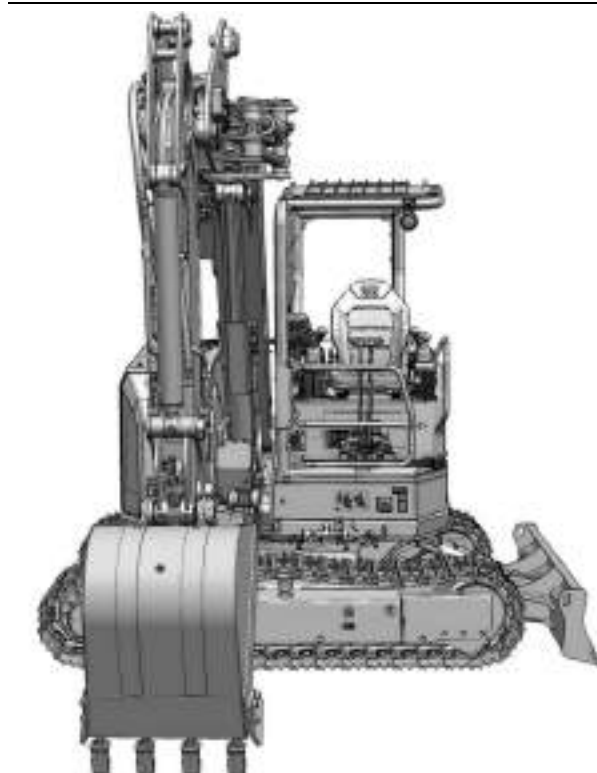


Illustration 785

g06774578

Typical Example

2. Raise the boom and rotate the upper structure by 90 degrees. Lower the bucket to the ground.
3. Repeat Step 1 at every 90 degrees in 4 places.

i07496276

Thumb - Lubricate (If Equipped)

SMCS Code: 6547-086

Standard Thumb

1. Lower all work tools to the ground.
2. Wipe off the fittings before you lubricate the fittings.

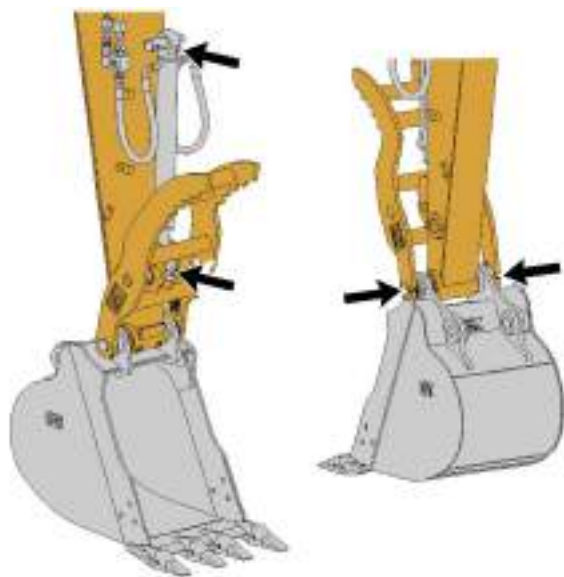


Illustration 786

g06338385

typical example of a standard thumb

3. Apply grease to the fittings.

There are lubrication fittings on each end of the cylinder and fittings on each side of the thumb.

4. Check the overall condition of the thumb. Look for the following conditions: loose bolts, worn parts, broken parts, missing parts and damaged parts. Make any necessary repairs.

Progressive Link Thumb

1. Lower all work tools to the ground.
2. Wipe off the fittings before you lubricate the fittings.

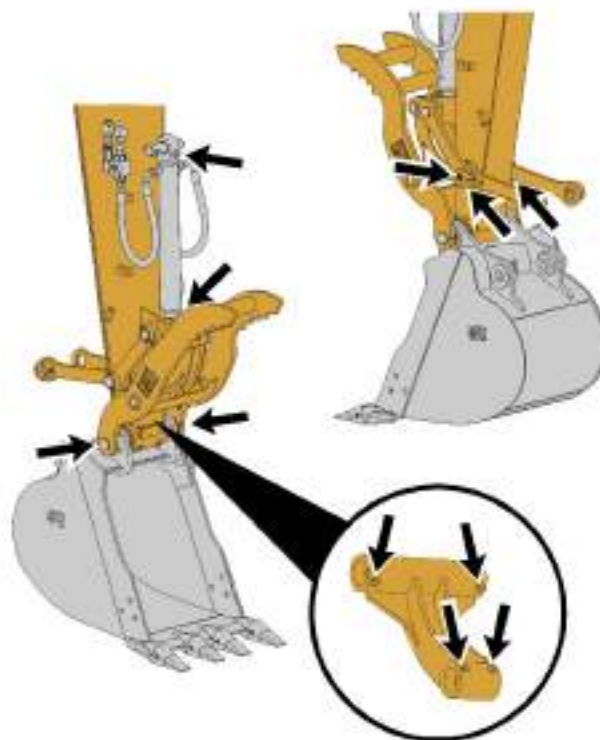


Illustration 787

g06338401

Typical example of a progressive link thumb

3. Apply grease to the fittings.

There are lubrication fittings in the following locations: each end of the cylinder, each side of the thumb, both of the side links, the pin and four fittings on the progressive link.

4. Check the overall condition of the thumb. Look for the following conditions: loose bolts, worn parts, broken parts, missing parts and damaged parts. Make any necessary repairs.

i08058063

Track Adjustment - Adjust

SMCS Code: 4170-025

WARNING

Personal injury or death can result from grease under pressure.

Grease coming out of the relief valve under pressure can penetrate the body causing injury or death.

Do not watch the relief valve to see if grease is escaping. Watch the track or track adjustment cylinder to see if the track is being loosened.

Loosen the relief valve one turn only.

If track does not loosen, close the relief valve and contact your Caterpillar dealer.

NOTICE

Keeping the track properly adjusted will increase the service life of the track and drive components.

Note: The track tension must be adjusted according to the current operating conditions. Keep the track as slack as possible if the soil is heavy.

Measuring Track Tension

1. Swing the upper structure so that the upper structure is perpendicular to the tracks.
2. Lower the bucket to the ground.
3. Raise the blade fully.
4. Apply gradual downward pressure with the boom until the track is lifted off the ground.
5. Block the machine by using the appropriate blocks and lower the frame onto the blocks.

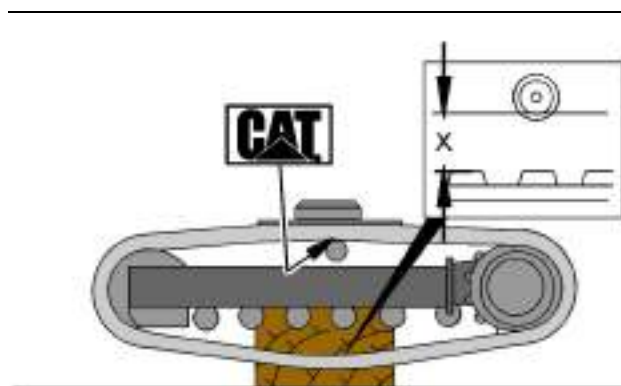


Illustration 788

g06338944

Example of the machine on blocks.

6. Operate the track until the "CAT" symbol that is on the track is above the track carrier roller.
7. Measure the sag in the track.

a. Rubber Track

Measure the distance between the track and the wear surface of the track roller. Dimension (X) should be 10 to 15 mm (0.39 to 0.59 inch). Adjust the tension on the track until dimension (X) is reached.

b. Steel Track

With the steel track not contacting the ground and link pin directly over the top of the carrier roller, measure the sag at the bottom from the wear surface of the track link to the wear surface of the closest track roller. This dimension should be 25 to 35 mm (0.98 to 1.38 inch). Adjust the tension on the track until dimension is reached.

8. Tighten the tension of the track. Refer to Operation and Maintenance Manual, "Track Adjustment - Adjust" for the correct procedure.

9. Repeat Step 1 through Step 8 for the other track.

Adjusting Track Tension



Illustration 789

g06338940

The track adjuster is on the track frame.

Tightening the Track

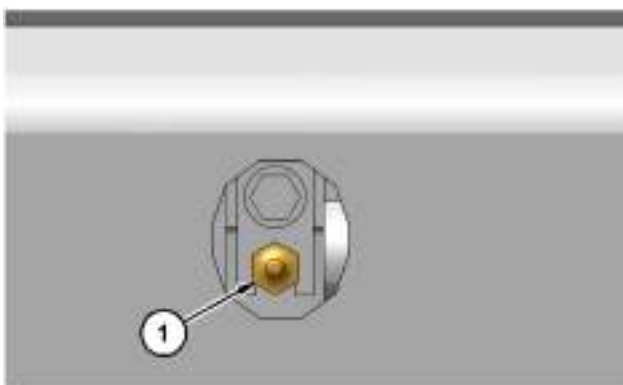


Illustration 790

g06442994

(1) Grease valve

Wipe the fitting before you add grease.

1. Add grease through grease valve (1) until the correct track tension is reached.
2. Operate the machine back and forth to equalize the pressure.
3. Check the amount of sag. Adjust the track, as needed.

Loosening the Track

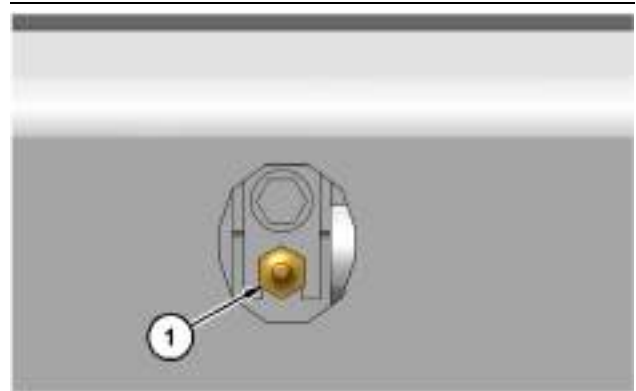


Illustration 791

g06442994

(1) Grease valve

1. Loosen valve (1) carefully until the track begins to loosen. One turn should be the maximum.
2. Tighten grease valve (1) to $34 \pm 5 \text{ N}\cdot\text{m}$ ($25 \pm 4 \text{ lb ft}$) when the desired track tension is reached.
3. Operate the machine back and forth to equalize the pressure.
4. Check the amount of sag. Adjust the track, as needed.

If the correct adjustment cannot be achieved, consult your Cat dealer.

Storage of Rubber Belt Tracks (If Equipped)

If a rubber track needs to be stored for an extended time, store the rubber track in a well ventilated area that is not exposed to direct sunlight. The tracks should be operated monthly while the tracks are in storage. If the rubber track is not stored on a machine, do not roll the track in a small radius.

Break in Period for the Rubber Track (If Equipped)

A rubber track that has been replaced requires a break-in period of 200 service hours. Adjust the track in 50-hour intervals during the break-in period.

i07316495

Track Adjustment - Inspect

SMCS Code: 4170-040



Illustration 792

g06182929

Check the track adjustment. Check the track for wear and for excessive dirt buildup.

If the track appears to be too tight or too loose, refer to Operation and Maintenance Manual, "Track Adjustment - Adjust".

i07511732

Travel Alarm - Test (If Equipped)

SMCS Code: 7429-081

Move the machine to test the travel alarm.

1. Start the engine. Move the hydraulic lockout control to the UNLOCKED position.
2. Raise the work tool to avoid any obstacles. Make sure that there is adequate overhead clearance.



Illustration 793

g06181402

3. Use the travel levers or the travel pedals to move the machine forward. The travel alarm should sound.
4. Release the travel levers and the travel pedals to stop the machine.
5. Use the travel levers and the travel pedals to move the machine backward. The travel alarm should sound.



Illustration 794

g06344494

6. Press the alarm mute button. The travel alarm should shut off.
7. Stop the machine. Lower the work tool to the ground. Move the hydraulic lockout control to the LOCKED position. Stop the engine.

i07316497

Undercarriage - Check

SMCS Code: 4150-535



Illustration 795

g06182923

1. Check the carrier rollers, the track rollers, and the idler wheels for possible leakage.
2. Check the surface of the track, the carrier rollers, the track rollers, the idler wheels, the track shoes, and the drive sprockets. Look for signs of wear and loose mounting bolts.
3. Listen for any abnormal noises while you are moving slowly in an open area.
4. If abnormal wear exists or abnormal noises or leaks are found, consult your Caterpillar dealer.

i08414907

Window Washer Reservoir - Fill

SMCS Code: 7306-544-KE

NOTICE

When operating in freezing temperatures, use Caterpillar or any commercially available nonfreezing window washer solvent.

1. Prepare the machine for maintenance. Refer to "Prepare the Machine for Maintenance".

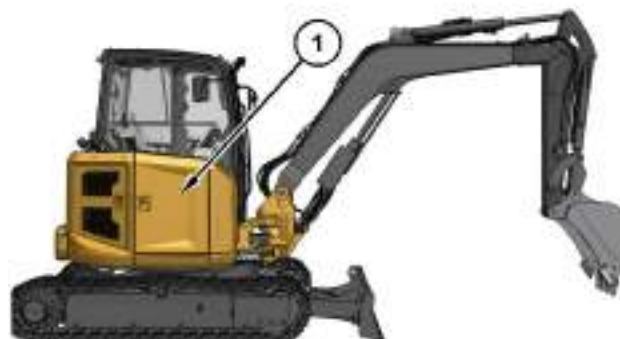


Illustration 796

g06636476

- (1) Right side access door

2. Open right side access door (1) on the machine. Refer to "Access Door and Cover Locations" for more information.

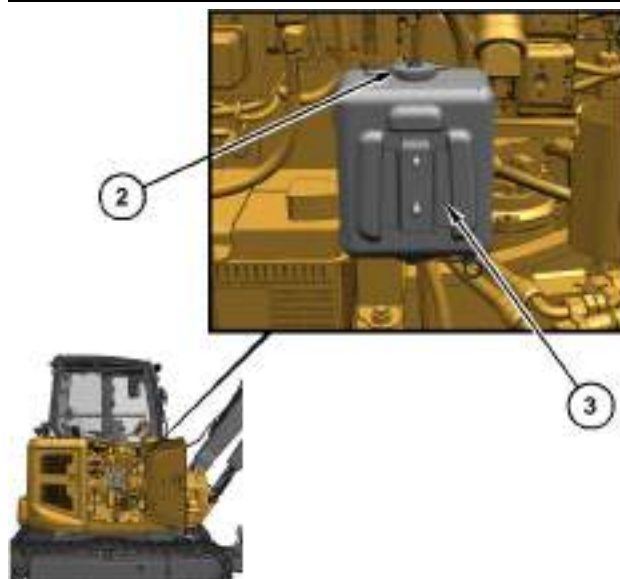


Illustration 797

g06636473

Parts removed for better clarity

- (2) Filler cap
- (3) Window washer reservoir

3. Remove filler cap (2) on window washer reservoir (3).
4. Fill window washer reservoir (3) with washer fluid through the filler opening.
5. Install filler cap (2) on window washer reservoir (3).
6. Close right side access door (1) on the machine. Refer to "Access Door and Cover Locations" for more information.

i01258249

Window Wiper - Inspect/Replace

SMCS Code: 7305-510; 7305-040

Inspect the condition of the wiper blades. Replace the wiper blades if the wiper blades are worn or damaged or if streaking occurs.

i07305526

Windows - Clean

SMCS Code: 7310-070; 7340-070

Clean the outside of the windows from the ground, unless handholds are available.



Illustration 798

g06277176

Typical example

Cleaning Methods

Aircraft Window Cleaner

Apply the cleaner with a soft cloth. Rub the window with moderate pressure until all the dirt is removed. Allow the cleaner to dry. Wipe off the cleaner with a clean soft cloth.

Soap and Water

Use a clean sponge or a soft cloth. Wash the windows with a mild soap or with a mild detergent. Also use plenty of lukewarm water. Rinse the windows thoroughly. Dry the windows with a moist chamois or with a moist cellulose sponge.

Stubborn Dirt and Grease

Wash the windows with a good grade of naphtha, of isopropyl alcohol, or of Butyl Cellosolve. Then, wash the windows with soap and with water.

Polycarbonate Windows (If equipped)

Special care is needed to clean polycarbonate windows.

Wash polycarbonate windows with mild soap and warm water that does not exceed 50° C (122° F). Use a soft sponge, or damp cloth. Never use a dry cloth or paper towels on polycarbonate windows. Rinse the windows with a sufficient amount of clean cold water.

Note: Naphtha or kerosene can be used to remove labels, films, paint, or marking pen from polycarbonate windows.

Note: Do not use abrasive, or highly alkaline cleaners. Do not use sharp instruments, such as squeegees or razor blades on polycarbonate windows. Do not clean polycarbonate windows in the hot sun or at elevated temperatures.

Warranty Section

Warranty Information

i08769122

Emissions Warranty Information

SMCS Code: 1000

The certifying engine manufacturer warrants to the ultimate purchaser and each subsequent purchaser that:

1. New non-road diesel engines and stationary diesel engines less than 10 L per cylinder (including Tier 1 and Tier 2 marine engines < 37 kW, but excluding locomotive and other marine engines) operated and serviced in the United States and Canada, including all parts of their emission control systems ("emission related components"), are:

- a. Designed, built, and equipped so as to conform, at the time of sale, with applicable emission standards prescribed by the United States Environmental Protection Agency (EPA) by way of regulation.
- b. Free from defects in materials and workmanship in emission-related components that can cause the engine to fail to conform to applicable emission standards for the warranty period.

2. New non-road diesel engines (including Tier 1 and Tier 2 marine propulsion engines < 37 kW and Tier 1 through Tier 4 marine auxiliary engines < 37 kW, but excluding locomotive and other marine engines) operated and serviced in the state of California, including all parts of their emission control systems ("emission related components"), are:

- a. Designed, built, and equipped so as to conform, at the time of sale, to all applicable regulations adopted by the California Air Resources Board (ARB).
- b. Free from defects in materials and workmanship which cause the failure of an emission-related component to be identical in all material respects to the component as described in the engine manufacturer's application for certification for the warranty period.

3. New non-road diesel engines installed in construction machines conforming to the South Korean regulations for construction machines manufactured after January 1, 2015, and operated and serviced in South Korea, including all parts of their emission control systems ("emission related components"), are:

- a. Designed, built, and equipped so as to conform, at the time of sale, with applicable emission standards prescribed in the Enforcement Rule of the Clean Air Conservation Act promulgated by South Korea MOE.
- b. Free from defects in materials and workmanship in emission-related components that can cause the engine to fail to conform to applicable emission standards for the warranty period.

4. New China non-road 4 mobile diesel engines operated and serviced in China, including all parts of their emission control systems ("emission related components"), are:

- a. Designed, built, and equipped so as to conform, at the time of manufacture, sale, and import with applicable emission standards in the promulgated by Enforcement Rule of the Clean Air Conservation Act Ministry of Ecology and Environment (MEE).
- b. Free from defects in materials and workmanship in emission-related components that can cause the engine to fail to conform to applicable emission standards for the warranty period.

A detailed explanation of the Emission Control Warranty that is applicable to new non-road and stationary diesel engines, including the components covered and the warranty period, is found in the Emission Control Warranty statement available at the Cat Warranty website. Consult your authorized Cat dealer to determine if your engine is subject to an Emission Control Warranty, and to obtain a copy of the applicable warranty publication.

Reference Information Section

Reference Materials

i08292374

Reference Material

SMCS Code: 1000; 7000

Additional literature regarding your product may be purchased from your local Cat dealer or by visiting publications.cat.com. Use the product name, sales model, and serial number to obtain the correct information for your product.

publications.cat.com

i08292382

Decommissioning and Disposal

SMCS Code: 1000; 7000

When the product is removed from service, local regulations for the product decommissioning will vary. Disposal of the product will vary with local regulations.

Improperly disposing of waste can threaten the environment. Obey all local regulations for the decommissioning and disposal of materials.

Utilize appropriate personal protective equipment when decommissioning and disposing product.

Consult the nearest Cat dealer for additional information. Including information for component remanufacturing and recycling options.

i09705956

Caterpillar Approved Work Tools

SMCS Code: 6700; 7007

NOTICE

Use only work tools that are recommended by Caterpillar. The use of work tools that are not recommended by Caterpillar could damage your machine. Consult your Cat[®] dealer for information on recommended work tools.

The following work tools have been approved by Caterpillar. Refer to Operation and Maintenance Manual for each work tool for proper operation, maintenance, and servicing of the work tools.

Using work tools of other manufactures, or work tools which have been released for other excavators, can reduce the machines output and stability. Work tools of other manufactures can also damage the machine and cause injuries to the operator or other personnel.

Always compare the weight of the work tool and maximum payload of work tool with the indications in the lift capacity table. Never exceed the maximum payload stated in the lift capacity table.

Reference Information Section
Caterpillar Approved Work Tools

Table 90

Caterpillar Approved Work Tools	
Work Tool	304, 305 CR, and 305.5 CR Excavators
Hammer	B6 B6s H65Ds H65E H65Es
Quick Coupler	Manual Dual Lock Pin Grabber Quick Coupler
	Hydraulic Dual Lock Pin Grabber Quick Coupler
	Hydraulic Dual Lock Tilt Pin Grabber Quick Coupler
	Pin Puller Quick Coupler
	Manual CW10 Quick Coupler
	Hydraulic CW10 Quick Coupler
Thumbs	Hydraulic Thumb
Auger	A19B Auger
Ripper	Ripper Shank
Cold Planer	PC35
Compaction Wheels	Pin On Interface (12", 18", 24", 36" wide)
	1/4 yd Pin-Lock Interface (12", 18", 24" wide)
Vibratory Plate Compactor	CVP16
	CVP28
Flail Mower	HMF110
Scrap Shear	S305
Shear	S308
Buckets	X ⁽¹⁾
Coupler	S40
Grapple	G206

(1) Refer to Operation and Maintenance Manual, "Boom/Stick/Bucket Combinations" for more information

Table 91

Caterpillar Approved Work Tools	
Work Tool	305 SR Excavators
Hammer	B6 B6s H65Ds H65E H65Es
Buckets	X (1)

(1) Refer to Operation and Maintenance Manual, "Boom/Stick/Bucket Combinations" for more information

Refer to Operation and Maintenance Manual, "Maintenance Interval Schedule" for more information.

This list was completed at the time of publication. There may be additional work tools that have been approved since that time. Consult your Cat[®] dealer for an updated list of approved work tools.

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Product and Dealer Information

Note: For product identification plate locations, see the section “Product Identification Information” in the Operation and Maintenance Manual.

Delivery Date: _____

Product Information

Model: _____

Product Identification Number: _____

Engine Serial Number: _____

Transmission Serial Number: _____

Generator Serial Number: _____

Attachment Serial Numbers: _____

Attachment Information: _____

Customer Equipment Number: _____

Dealer Equipment Number: _____

Dealer Information

Name: _____ Branch: _____

Address: _____

	<u>Dealer Contact</u>	<u>Phone Number</u>	<u>Hours</u>
Sales:	_____	_____	_____
Parts:	_____	_____	_____
Service:	_____	_____	_____

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