

SAFETY.CAT.COM™

MAINTENANCE INTERVALS

Operation and Maintenance
Manual Excerpt



Operation and Maintenance Manual

301.6C, 301.8C and 302.5C Mini Hydraulic Excavators

GBB1-Up (Machine)
JBB1-Up (Machine)
JSB1-Up (Machine)

i03786935

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, including all adjustments, the use of proper lubricants, fluids, filters, and the replacement of components due to normal wear and aging. Failure to adhere to proper maintenance intervals and procedures may result in diminished performance of the product and/or accelerated wear of components.

Use mileage, fuel consumption, service hours, or calendar time, WHICH EVER OCCURS FIRST, in order to determine the maintenance intervals. Products that operate in severe operating conditions may require more frequent maintenance.

Note: Before each consecutive interval is performed, all maintenance from the previous interval must be performed.

Note: If Cat HYDO Advanced 10 hydraulic oil is used, the hydraulic oil change interval is extended to 3000 hours. S·O·S services may extend the oil change to a longer interval. Consult your Caterpillar dealer for details.

When Required

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Initial 100 Service Hours

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Every 250 Service Hours

Engine Oil Sample - Obtain	120
Final Drive Oil Level - Check	122

Initial 500 Hours (for New Systems, Refilled Systems, and Converted Systems)

Cooling System Coolant Sample - Obtain	117
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Every 500 Service Hours

Boom, Stick, and Frame - Inspect	110
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Every 2000 Service Hours

Hydraulic System Oil - Change	125
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Every 2000 Service Hours or 1 Year

Receiver Dryer (Refrigerant) - Replace	132
--	-----

Every Year

Cooling System Coolant Sample - Obtain	117
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Every 3000 Service Hours

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Hydraulic System Oil - Change	125

**Every 3 Years After Date of Installation or
Every 5 Years After Date of Manufacture**

Seat Belt - Replace 133

Every 6000 Service Hours

Cooling System Coolant (ELC) - Change 114

i00993589

Battery - Recycle

SMCS Code: 1401-561

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

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.

i02004176

Battery or Battery Cable - Inspect/Replace

SMCS Code: 1401-040; 1401-510; 1401-561; 1401; 1402-040; 1402-510

WARNING

Personal injury may occur from failure to properly service the batteries.

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.

1. Turn the engine start switch to the OFF position. Remove the engine start switch key from the switch. Turn all switches to the OFF position.
2. Disconnect the negative battery cable at the battery.

3. Disconnect the positive battery cable at the battery.
4. Perform the necessary repairs. Replace the cable or the battery, as needed.
5. Connect the positive battery cable at the battery.
6. Connect the negative battery cable at the battery.
7. Install the engine start switch key.

i02343254

Blade Linkage - Lubricate

SMCS Code: 6060-086

Dozer

Lower all the work tools and the blade to the ground.

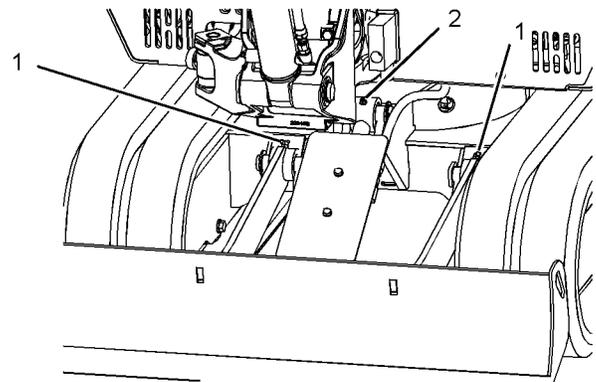


Illustration 120

g01169043

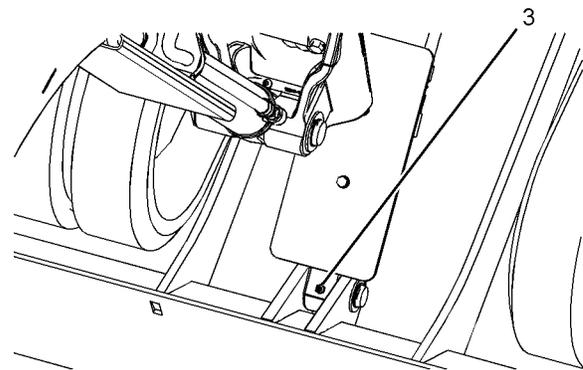


Illustration 121

g01169044

Wipe all fittings before lubricating.

1. Apply lubricant to the fittings for the arms (1) that support the blade.

2. Apply lubricant to the fitting for the rod end of the blade cylinder (2). Apply lubricant to the fittings for the head end of the blade cylinder (3).

i02343261

Boom and Stick Linkage - Lubricate

SMCS Code: 6501-086; 6502-086

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the boom and stick linkage. Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on grease.

Position the machine into the service position.

Wipe all fittings before you apply lubricant.

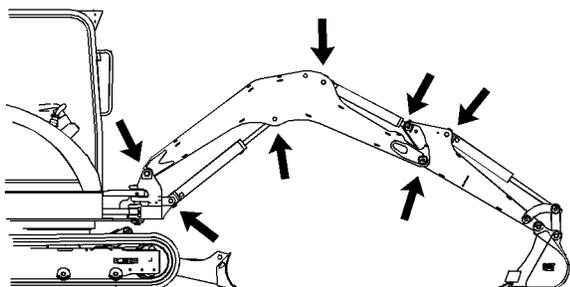


Illustration 122

g01169066

Apply lubricant to the grease fittings.

i02860835

Boom, Stick, and Frame - Inspect

SMCS Code: 6501; 6502; 6506

All earthmoving 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 kind of 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 Caterpillar dealer if repairs are necessary. Your Caterpillar dealer is qualified to carry out repairs on your behalf.

All repairs should be carried out by a Caterpillar dealer. If you carry out your own repairs, contact your Caterpillar 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
- Lifting points
- Upper frame
- Lower frame

NOTICE

The areas highlighted are of particular importance but other areas must not be neglected. The entire structure must be carefully examined.

Boom

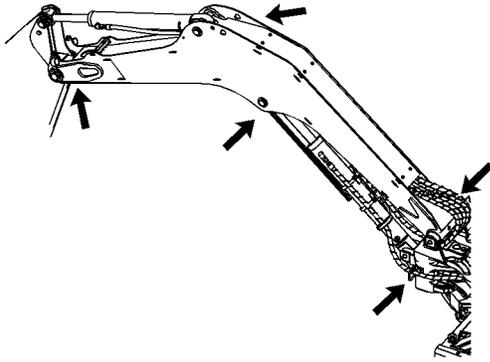


Illustration 123

g01425291

Check all welded joints and check the mounting points for the cylinder.

Check all welded joints and check the mounting points for the cylinder.

Lifting Points

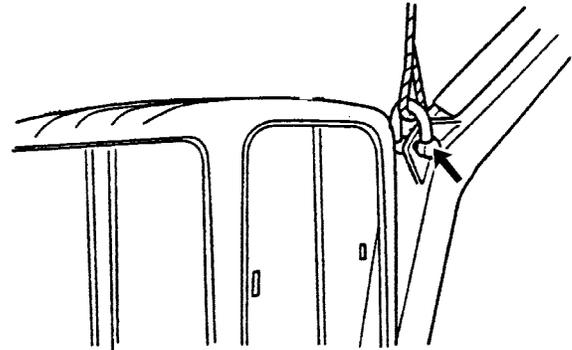


Illustration 126

g01425213

Stick

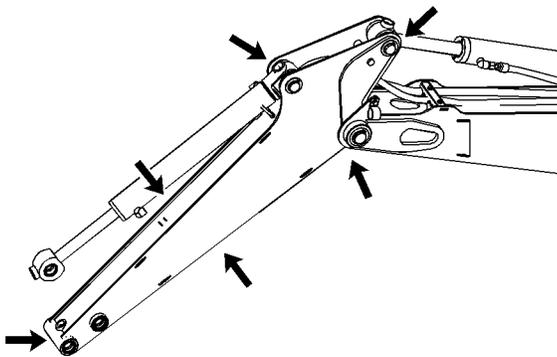


Illustration 124

g01425293

Check all welded joints and check the mounting points for the cylinder.

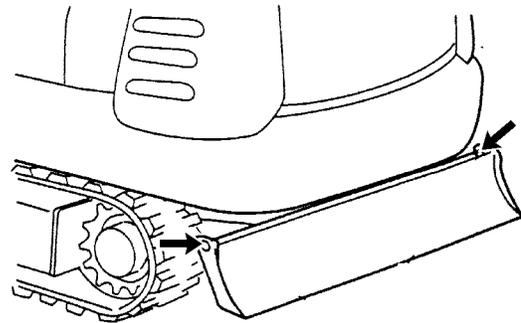


Illustration 127

g00309343

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.

Blade

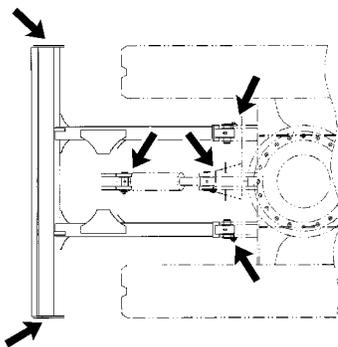


Illustration 125

g01425286

Upper Frame

i02016280

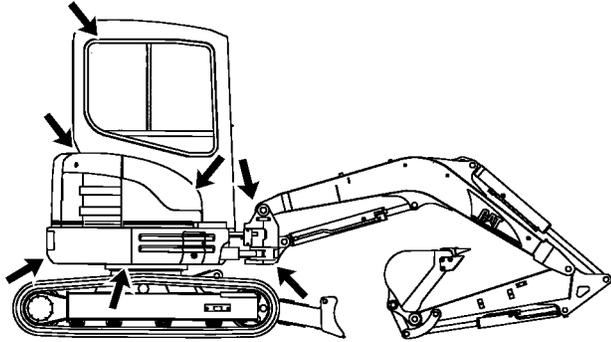


Illustration 128

g01425289

Check for damaged panels. Specifically look for any damage to the cab or damage to the canopy that might invalidate the certification. The cab or the canopy is a safety device that must be maintained in good condition. Check for loose hardware or missing hardware.

Lower Frame

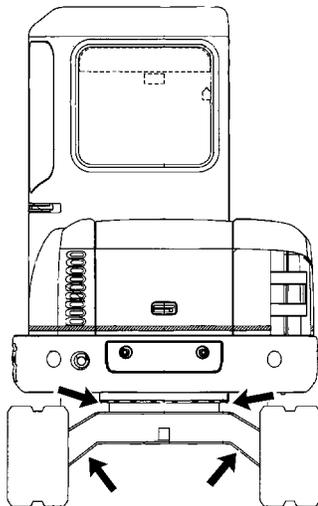


Illustration 129

g01425287

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 - Lubricate

SMCS Code: 6513-086

Note: Caterpillar recommends the use of 5% molybdenum grease for lubricating the bucket linkage. Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations" for more information on grease.

1. Park the machine on a level surface and lower the work tools and the blade to the ground.

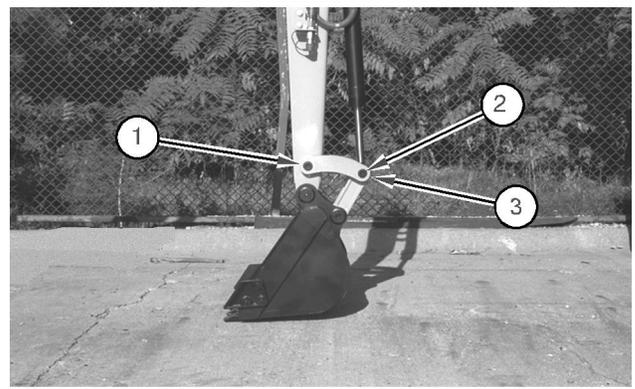


Illustration 130

g01042479

2. Wipe all fittings before you apply lubricant.
3. Apply lubricant to grease fitting (1) and grease fitting (2) for the pivot pin.
4. Apply lubricant to the grease fitting (3) for the rod end of the bucket cylinder.

i02869831

Bucket Tips - Inspect/Replace

SMCS Code: 6805-040; 6805-510

WARNING

Personal injury or death can result from bucket falling.

Block the bucket before changing bucket tips or side cutters.

Bucket Tips

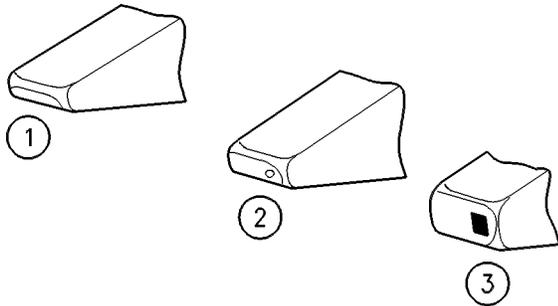


Illustration 131

g00101352

- (1) Usable
- (2) Replace this bucket tip.
- (3) Overworn

Check the bucket tips for wear. If the bucket tip has a hole, replace the bucket tip.

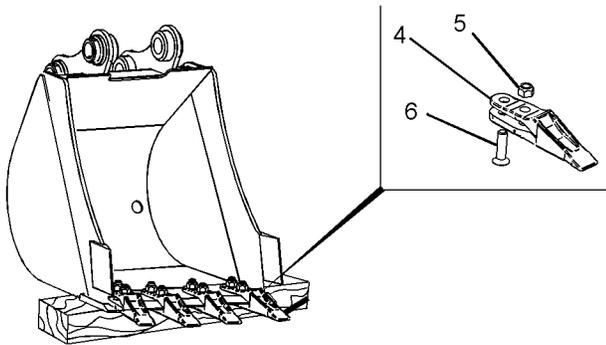


Illustration 132

g01429324

1. Block the bucket.
2. Remove mounting bolts (6) and nuts (5). Remove bucket tip (4).
3. Clean the mounting surfaces.
4. Install the new bucket tip onto the adapter.

i02343241

Cab Air Filter (Fresh Air) - Clean/Replace

SMCS Code: 7342-070; 7342-510

301.6C and 301.8C

The cab air filter is located on the underside of the frame on the right side of the machine.

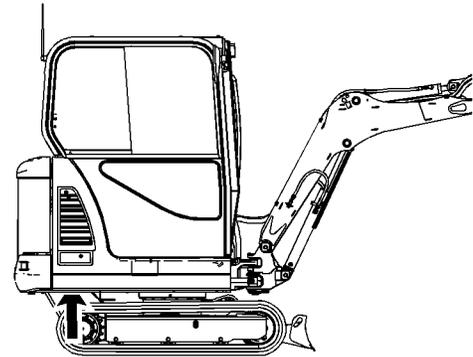


Illustration 133

g01183629

1. Remove the bolt and remove the air filter element.
2. Inspect the air filter element. If the air filter element is dirty, replace the air filter element. If the air filter element is damaged or badly contaminated, replace the air filter element.
3. Install the air filter element. Tighten the bolt.

302.5C

The cab air filter is located inside the engine compartment on the right side.

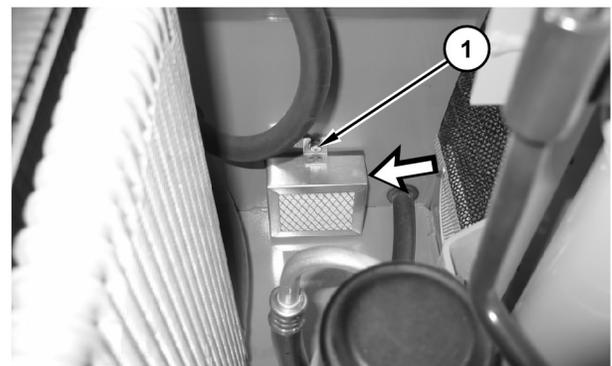


Illustration 134

g01169003

1. Open the engine access door.
2. Inspect the air filter element. If the air filter element is dirty, replace the air filter element. If the air filter element is damaged or badly contaminated, replace the air filter element.
3. Install the air filter element. Tighten bolt (1).
4. Close the engine access door.

i02375060

i02372843

Condenser (Refrigerant) - Clean

SMCS Code: 1805-070

S/N: GBB1-Up

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.

Note: You can use compressed air, high pressure water, or steam to remove dust and other debris from the condenser. However, the use of compressed air is preferred.

1. Open the access cover on the right side of the machine.

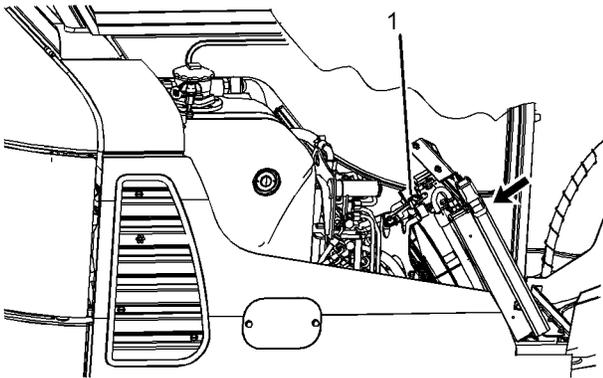


Illustration 135

g01185223

2. Inspect the condenser for debris.
3. Release rubber latch (1) in order to allow access to the fan side of the condenser. Rotate the condenser forward.
4. Clean the condenser, if necessary.
5. Close the access cover.

Cooling System Coolant (ELC) - Change

SMCS Code: 1350-044

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.

NOTICE

Mixing ELC with other products will reduce the effectiveness of the coolant.

This could result in damage to cooling system components.

If Caterpillar products are not available and commercial products must be used, make sure they have passed the Caterpillar EC-1 specification for pre-mixed or concentrate coolants and Caterpillar Extender.

The machine is shipped from the factory with extended life coolant. Extended Life Coolant is recommended when you are changing the coolant.

For information about the addition of Extender to your cooling system, see the Operation and Maintenance Manual, "Cooling System Extended Life Coolant Extender - Add" or consult your Caterpillar dealer.

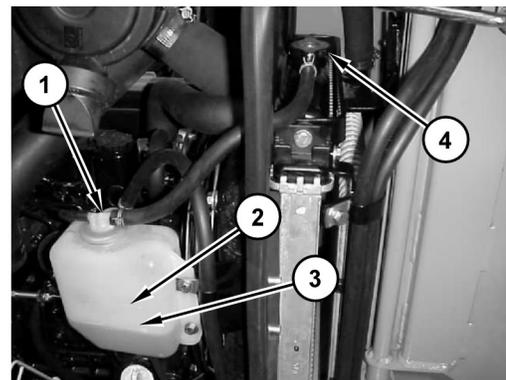


Illustration 136

g01183517

301.6C and 301.8C

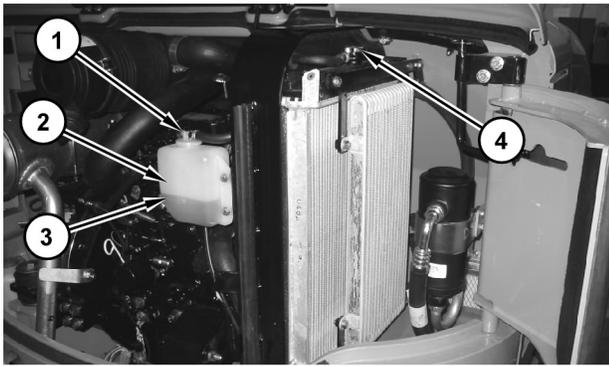


Illustration 137
302.5C

g01183518

1. Open the engine access door.
2. Loosen the radiator cap (4) slowly in order to release pressure. Remove the radiator cap.

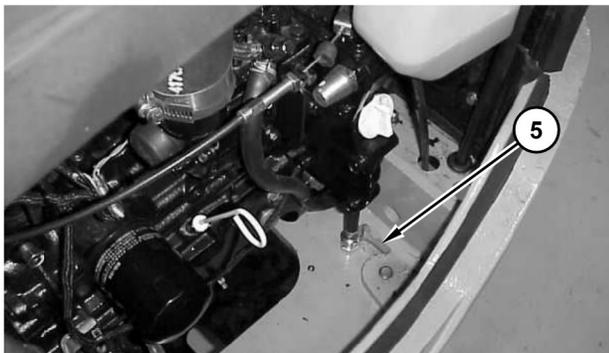


Illustration 138
301.6C and 301.8C

g01167491

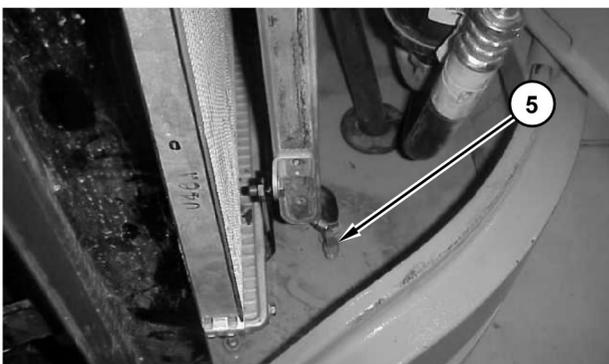


Illustration 139
302.5C

g01166467

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information that pertains to containing fluid spillage.

3. Open drain valve (5) and allow the coolant to drain into a suitable container.

Note: Dispose of drained fluids according to local regulations.

4. Flush the cooling system with clean water until the draining water is clean.
5. Close drain valve (5).
6. Add the Extended Life Coolant. See Operation and Maintenance Manual, "Capacities (Refill)".
7. Start the engine. Operate the engine without the radiator cap until the thermostat opens and the coolant level stabilizes.
8. Check the coolant reservoir. Maintain the coolant level between the "FULL" mark (2) and the "LOW" mark (3).
9. If additional coolant is necessary, remove the coolant filler cap (1) and add the appropriate coolant mixture. Install the filler cap.
10. Install radiator cap (4).
11. Stop the engine.
12. Close the engine access door.

i01278063

Cooling System Coolant Extender (ELC) - Add

SMCS Code: 1352; 1353; 1395

WARNING

Pressurized system: Hot coolant can cause serious burn. To open cap, stop engine, wait until radiator is cool. Then loose the cap slowly to relieve the pressure.

When a Caterpillar Extended Life Coolant is used, an extender must be added to the cooling system. See the Operation and Maintenance Manual, "Maintenance Interval Schedule" for the proper service interval. The amount of extender is determined by the cooling system capacity.

Table 45

RECOMMENDED AMOUNT OF EXTENDER BY COOLING SYSTEM CAPACITY	
Cooling System Capacity	Recommended Amount of Extender
4 to 8 L (1.1 to 2.1 US gal)	.2 L (0.19 qt)

For additional information on the addition of extender, see Operation and Maintenance Manual, SEBU6250, "Caterpillar Coolant Recommendations" or consult your Caterpillar dealer.

i02337191

Cooling System Coolant Level - Check

SMCS Code: 1350-040; 1350-535-FLV;
1395-535-FLV

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.

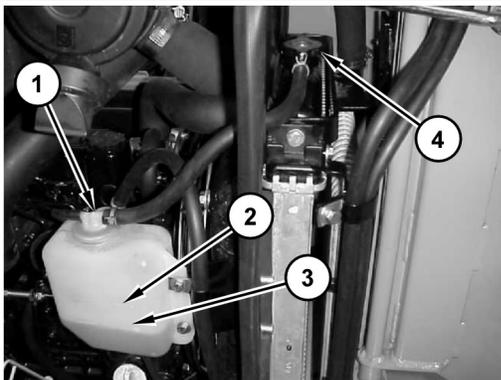


Illustration 140
301.6C and 301.8C

g01183517

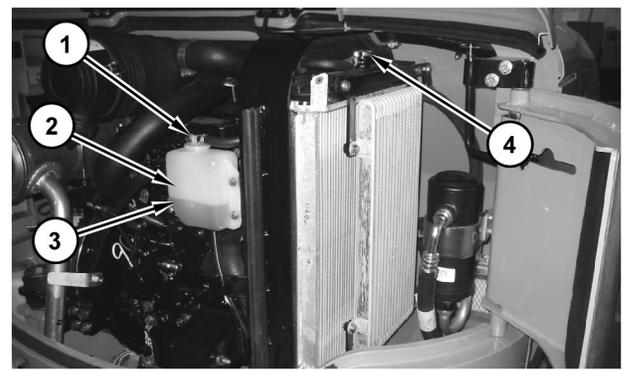


Illustration 141
302.5C

g01183518

1. Open the engine access door.
 2. Maintain the coolant level between the "FULL" mark (2) on the coolant reservoir and the "LOW" mark (3) on the coolant reservoir.
- Note:** Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.
3. If additional coolant is necessary, remove the coolant filler cap (1) and add the appropriate coolant mixture. Install the filler cap.
 4. If the coolant reservoir is empty, remove the cooling system pressure cap (4) slowly in order to relieve pressure. Add coolant to the radiator.

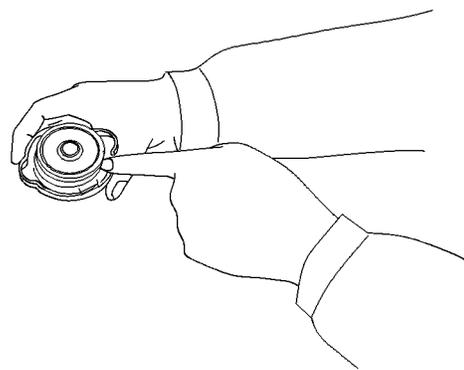


Illustration 142

g00102170

5. Inspect the condition of the cap gasket. If necessary, replace the cap.
6. Install the cooling system pressure cap.
7. Close the engine access door.

i02373374

Cooling System Coolant Sample - Obtain

SMCS Code: 1395-008; 1395-554; 7542

Note: This machine was filled at the factory with Caterpillar 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.

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.

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, NENG2500, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar 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. In order to receive the full effect of S·O·S analysis, you must establish a consistent trend of data. In order 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 in order to avoid contamination.
- Never collect samples from expansion bottles.
- Never collect samples from the drain for a system.

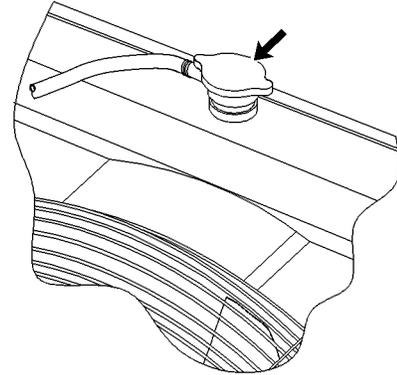


Illustration 143

g00544510

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 in order 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 in order 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.
8. Submit the sample for Level 2 analysis.

i02331721

Engine Air Filter Element - Clean/Replace

SMCS Code: 1054-070; 1054-510

Cleaning the Air Filter Element

NOTICE

Do not clean the air filter elements by bumping or tapping. This could damage the seals. Do not use elements with damaged pleats, gaskets, or seals. Damaged elements will allow dirt to pass through. Engine damage could result.

The air filter element can be cleaned by using the following methods.

- pressure air
- Vacuum cleaning

Pressurized Air

Pressurized air can be used to clean air filter elements. Pressurized air will not remove deposits of carbon and oil. Use filtered, dry air with a maximum pressure of 207 kPa (30 psi).

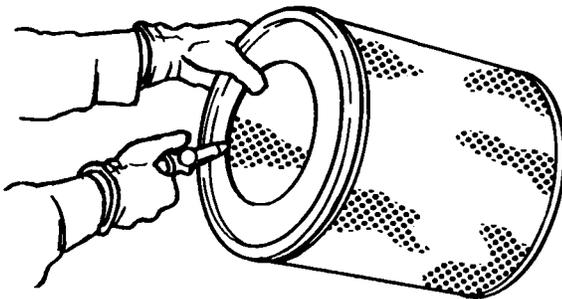


Illustration 144

g00281692

Note: When the air filter element is cleaned, always begin with the clean side (inside) in order to force dirt particles toward the dirty side (outside).

Aim the hose so that the air flows inside the element along the length of the filter in order to help prevent damage to the paper pleats. Do not aim the stream of air directly at the air filter element. Dirt could be forced further into the pleats.

Vacuum Cleaning

Vacuum cleaning is another method for cleaning air filter elements which require daily cleaning because of a dry, dusty environment. Cleaning with pressurized air is recommended prior to vacuum cleaning. Vacuum cleaning will not remove deposits of carbon and oil.

Replace the air filter element after the air filter element has been cleaned six times. Also replace the air filter element if the air filter element has been in service for 2000 hours.

Replacing the Air Filter Element

NOTICE

Service the air cleaner only when the engine stopped. Engine damage could result.

The air filter element should be replaced immediately if the element is damaged.

1. Open the engine access door.

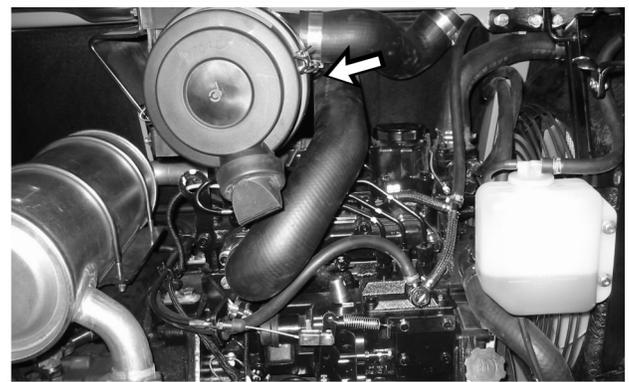


Illustration 145

g01163954

2. Unclamp the access cover and remove the access cover to the air cleaner.
3. Remove the filter element from the air cleaner housing.
4. Cover the air inlet port in order to prevent dirt from getting inside the engine.
5. Inspect the filter element. If the pleats, the gaskets or the seals are damaged, discard the filter element. Replace a damaged filter element with a new filter element.
6. Wipe dust from the interior of the air cleaner housing. Remove the cover from the air inlet port.

7. Put the clean air filter element into the air cleaner housing and push the air filter element into position.
8. Install the access cover and clamp the access cover.
9. Close the engine access door.

i02373198

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.

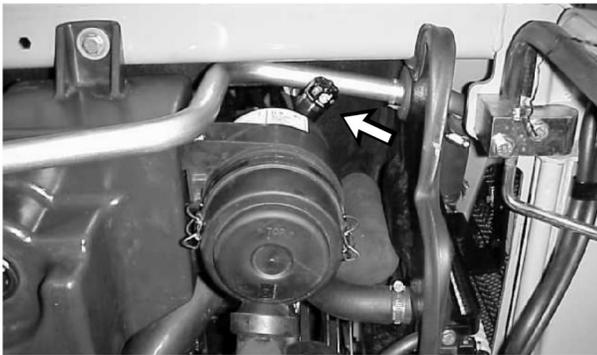


Illustration 146
301.6C and 301.8C

g01183886

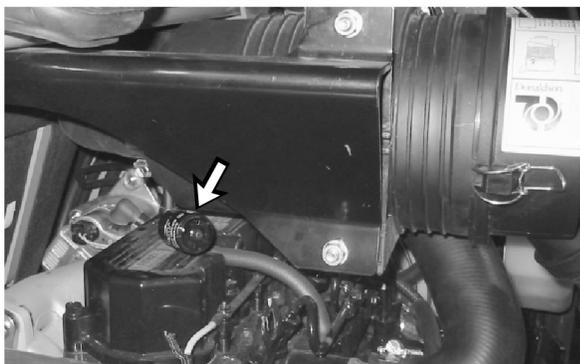


Illustration 147
302.5C

g01163949

1. Open the engine 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 engine access door.

i02331424

Engine Oil Level - Check

SMCS Code: 1000-535

NOTICE

Do not overfill the crankcase. Engine damage can result.

1. Open the engine access door.

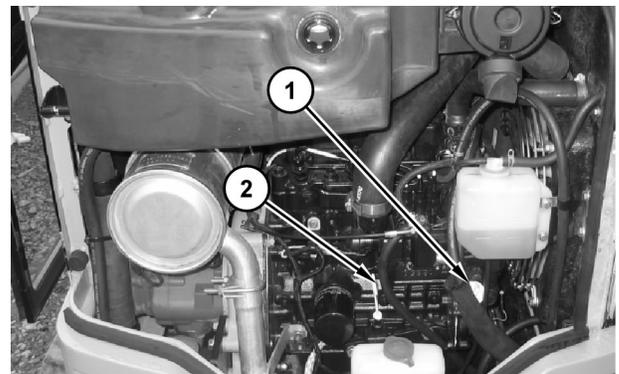


Illustration 148
301.6C and 301.8C

g01163811

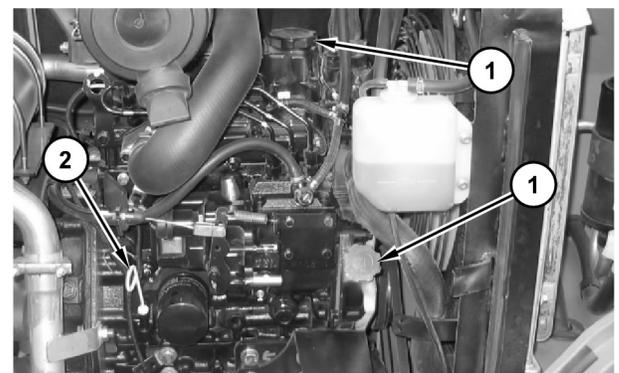


Illustration 149
302.5C

g01163810

2. While the engine is stopped, maintain the oil level in the crosshatched area on the dipstick (2).

3. If necessary, remove the oil filler cap (1) and add oil. Allow the oil to drain into the crankcase before you check the oil level.
4. Close the engine access door.

i02331668

Engine Oil Sample - Obtain

SMCS Code: 1000-008; 1000; 1348-008;
1348-554-SM; 7542-008; 7542-554-OC, SM

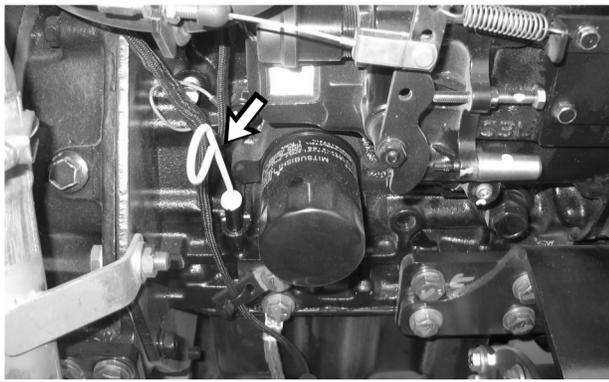


Illustration 150

g01163905

Obtain a sample of the engine oil through the dipstick tube. Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluids Recommendations", "S-O-S Oil Analysis" for information that pertains to obtaining a sample of the engine oil. Refer to Special Publication, PEHP6001, "How To Take A Good Oil Sample" for more information about obtaining a sample of the engine oil.

i02336591

Engine Oil and Filter - Change

SMCS Code: 1318-510

Note: If the sulfur content in the fuel is greater than 1.5% by weight, use an oil with a TBN of 30. With the high sulfur fuel, change the oil and the filter element after every 125 hours. Otherwise, change the oil and the filter element after every 500 hours.

Change the oil while the machine is parked on flat ground. Lower all attachments to the ground.

1. Open the engine access door.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

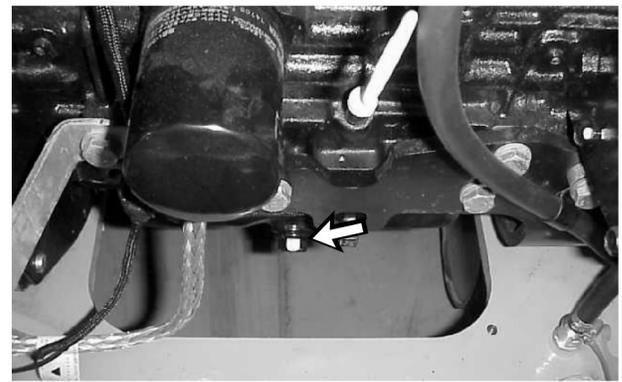


Illustration 151

g01166478

Location for the drain plug on the 301.6C and on the 301.8C

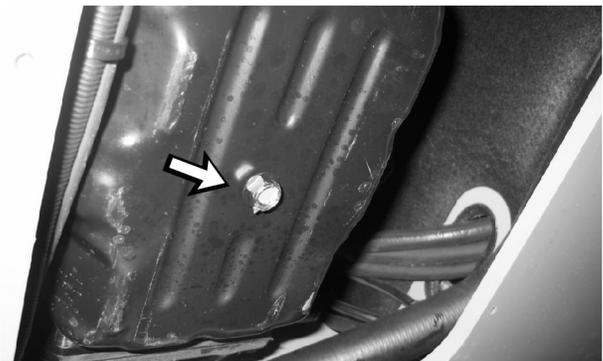


Illustration 152

g01166480

Location for the drain plug on the 302.5C

2. Remove the crankcase drain plug and allow the oil to drain into a suitable container. After you drain the oil, clean the drain plug and clean the plug hole. Install the drain plug.

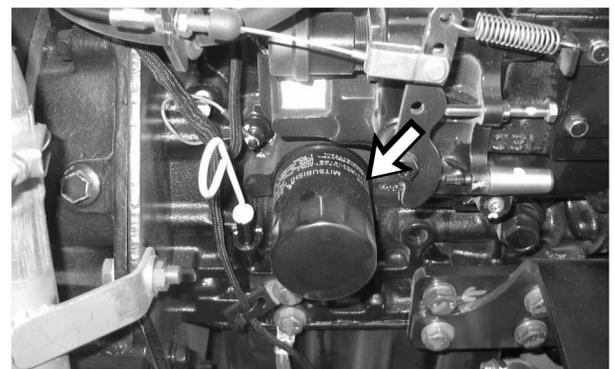


Illustration 153

g01166481

The oil filter location for the 302.5C is shown. The oil filter location for the 301.6C and for the 301.8C is similar.

3. Remove the filter element with a filter wrench.

- Install the new filter element by hand. When the gasket contacts the filter base, tighten the filter for an additional three quarters of a turn.

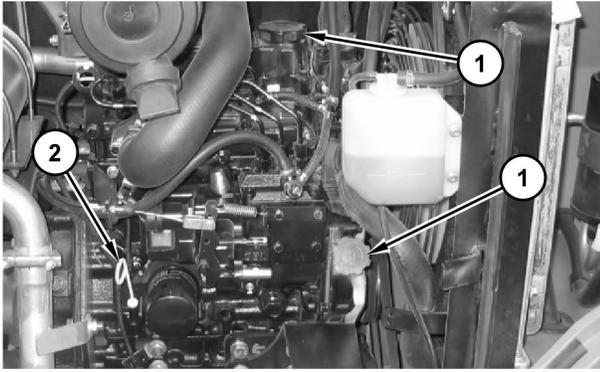


Illustration 154

g01163810

The location for the oil filler cap for the 302.5C is shown. The location for the oil filler cap for the 301.6C and for the 301.8C is similar.

- Remove the oil filler cap (1) and add the appropriate amount of oil.
- Start the engine and operate the engine at low idle for several minutes. While the engine is running, check the filter base for oil leaks.
- Stop the engine and allow the oil to drain back into the crankcase. Maintain the oil level in the crosshatched area on the dipstick (2).
- Close the engine access door.

i02858287

Engine Valve Lash - Check

SMCS Code: 1102-082; 1102-535; 1102; 1105-025; 1105-535; 1121-535; 1209-082; 1209-535; 1209; 7527

WARNING

Ensure that the engine can not 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.

For the serial number GBB1-up, refer to Service Manual, RENR5578, "S3L2/S4L2 MHI Engine Manual" in order to perform the complete procedure for the valve lash adjustment.

For the serial number JBB1-up and JSB1-up, refer to Service Manual, RENR9981, "MHI L-Series Engine Service Manual." in order to perform the complete procedure for the valve lash adjustment.

i02360062

Final Drive Oil - Change

SMCS Code: 4050-044-FLV

Note: At the time of changing oil, observe the oil for presence of metallic particles or other foreign matters. If you find something that needs attention, consult your Caterpillar dealer.

- Warm up the oil by roading the tracks.
- Move the machine to level ground.

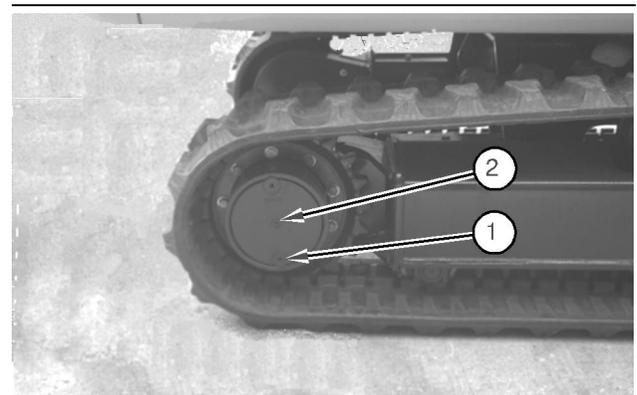


Illustration 155

g01045493

- Oil drain plug
- Oil level plug

- Position one final drive so that the drain plug is at the bottom.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

4. Remove the oil level plug (2).
5. Remove the oil drain plug (1). Allow the oil to drain into a suitable container.
6. Clean the drain plug. Apply pipe sealant on the threads in order to prevent leakage. Reinstall the oil drain plug.
7. Add oil to the final drive through the opening for the oil level plug until the oil is level with the plug threads. See Operation and Maintenance Manual, "Lubricant Viscosities" and Operation and Maintenance Manual, "Capacities (Refill)".
8. Clean the oil level plug.
9. Repeat the procedure for the other final drive.
10. Start the engine and allow the final drives to run through several cycles.
11. Stop the engine. Check the oil level in both final drives.
12. Apply pipe sealant on the threads of the oil level plug. Reinstall the oil level plug.
13. Properly dispose of the drained material. Obey local regulations for the disposal of the material.

i02015871

Final Drive Oil Level - Check

SMCS Code: 4050-535-FLV

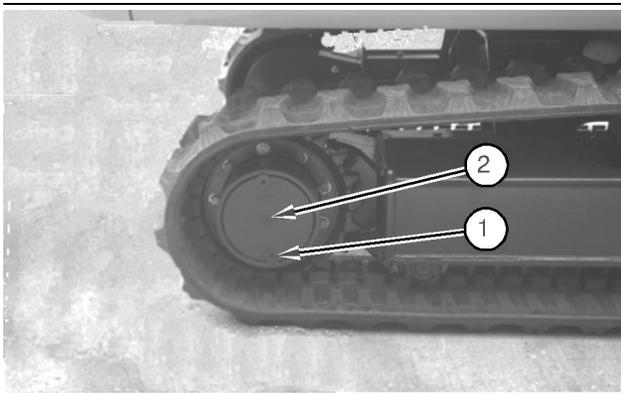


Illustration 156

g01045493

- (1) Oil drain plug
(2) Oil level plug

1. Position one final drive so that the oil drain plug (1) is on the bottom. Oil level plug (2) is in position ready to check the oil level.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

2. Remove the oil level plug (2).
3. Check the oil level. The oil level should be near the bottom of the opening for the oil level plug (2).
4. If necessary, add oil through the opening for the oil level plug (2).

Note: Do not overfill the final drive compartment.

5. Clean the oil level plug. Reinstall the plug. Apply pipe sealant on the threads in order to prevent leakage.
6. Repeat the procedure for the other final drive.

i02024989

Final Drive Oil Sample - Obtain

SMCS Code: 4011-008; 4050-008; 4050-SM;
7542-008

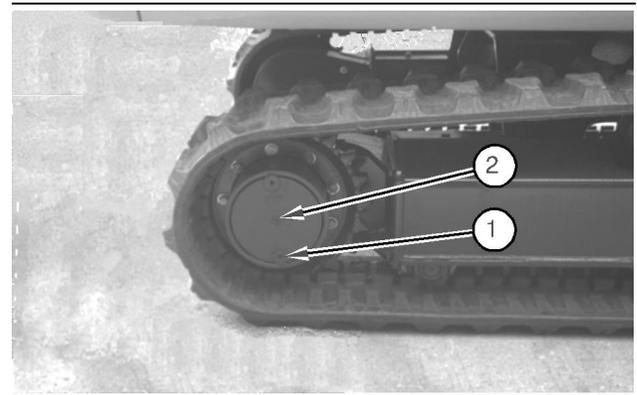


Illustration 157

g01045493

- (1) Oil drain plug
(2) Oil level 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, PEHP6001, "How To Take A Good Oil Sample".

i02331839

Fuel System Primary Filter (Water Separator) Element - Replace

SMCS Code: 1263-510-FQ

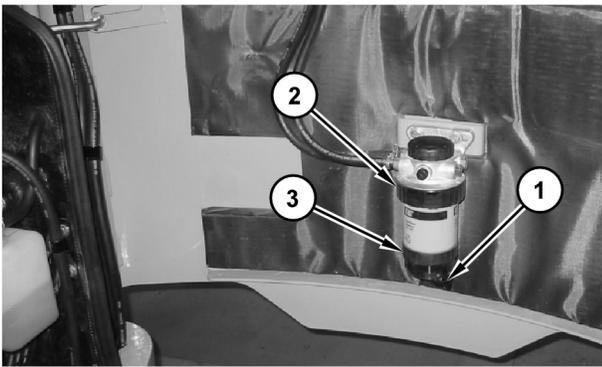


Illustration 158

g01183469

The fuel system filter/water separator element is located on the engine access door on the 301.6C and on the 301.8C.

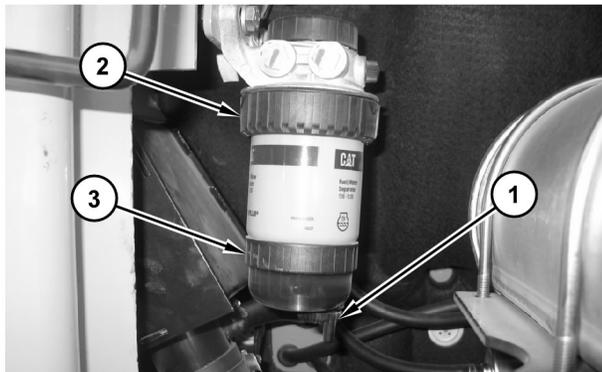


Illustration 159

g01183470

The fuel system filter/water separator element is located in the engine compartment on the 302.5C.

1. Open the engine access door.
2. Open the drain on the water separator bowl (1). Allow the water and fuel to drain into a suitable container.

3. Support the water separator element and rotate the locking ring (2) counterclockwise. Remove the primary filter/water separator.

4. Remove the water separator bowl (3) from the bottom of the fuel filter/water separator.

Note: The water separator bowl is reusable. Do not discard the water separator bowl.

5. Inspect the O-ring seal of the water separator bowl for damage. Replace the O-ring seal, if necessary.

6. Lubricate the O-ring seal with clean diesel fuel or lubricate the O-ring seal with motor oil. Place the seal in the water separator bowl.

7. Spin the water separator bowl onto the new element by hand until the fuel filter/water separator is snug. Do not use tools to tighten the fuel filter/water separator element to the bowl.

8. Clean the filter mounting base.

9. Install the new element. Rotate the locking ring clockwise in order to fasten the filter to the mounting base.

10. Close the engine access door.

i02331817

Fuel System Water Separator - Drain

SMCS Code: 1263



Illustration 160

g01183502

The water separator is located on the engine access door on the 301.6C and on the 301.8C.



Illustration 161

g01183503

The water separator is located in the engine compartment on the 302.5C.

1. Open the engine access door.
2. Loosen the drain valve on the bottom of the water separator. Allow the water and the sediment to drain into a suitable container.
3. Tighten the drain valve.
4. Close the engine access door.

i02338406

Fuel Tank Cap and Strainer - Clean

SMCS Code: 1273-070-STR

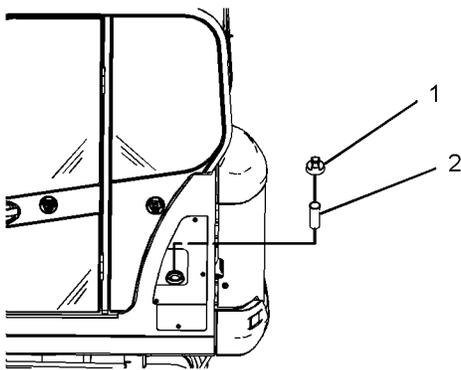


Illustration 162

g01167205

1. Remove fuel cap (1) and fuel fill screen (2).

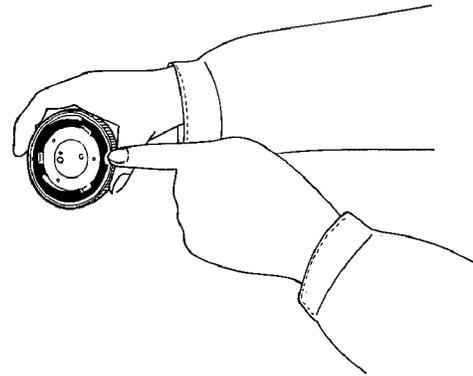


Illustration 163

g00104238

2. Inspect the cap. Replace the cap if the cap is damaged.
3. Wash fuel fill screen (2) in a clean, nonflammable solvent and dry the fuel fill screen.
4. Install fuel fill screen (2).
5. Put a light coating of fuel on the cap gasket.
6. Install fuel cap (1).

i02015865

Fuel Tank Water and Sediment - Drain

SMCS Code: 1273-543

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

1. Open the drain valve that is located under the fuel tank. Allow the water and the sediment to drain into a suitable container.

Note: Discard the drained fluids according to local regulations.

2. Close the drain valve.

i02327084

Fuses - Replace

SMCS Code: 1417-510

Fuses – Fuses protect the electrical system from damage that is caused by overloaded circuits. Replace the fuse if the element separates. If the element of a new fuse separates, check the circuit. If necessary, repair the circuit.

NOTICE

Replace the fuses with the same type and size only. If the type and size is changed, electrical damage can result.

If it is necessary to replace fuses frequently, an electrical problem may exist. Contact your Caterpillar dealer.

The fuse panel is located in the storage box under the operator seat.

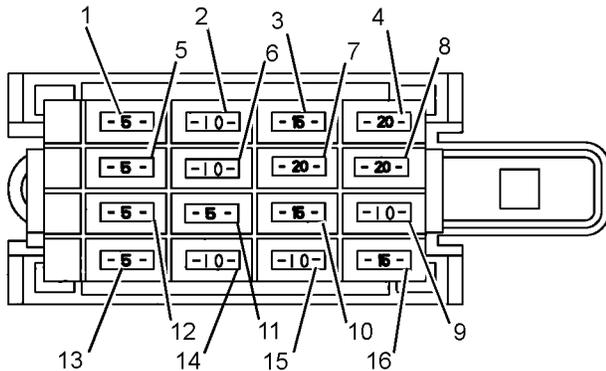


Illustration 164

g01162478

- (1) **Spare** – 5 Amp
- (2) **Spare** – 10 Amp
- (3) **Spare** – 15 Amp
- (4) **Spare** – 20 Amp
- (5) **Radio** – 5 amp
- (6) **Window Wiper and Window Washer** – 10 amp
- (7) **Heater** – 15 amp
- (8) **Air conditioning** – 20 amp
- (9) **Start** – 10 amp
- (10) **Engine Start Switch** – 15 amp
- (11) **Cab Dome Light** – 10 amp
- (12) **Horn** – 5 amp
- (13) **Fuel Pump** – 5 amp
- (14) **Accessory** – 10 amp
- (15) **Beacon** – 10 amp
- (16) **Chassis Lights** – 15 amp

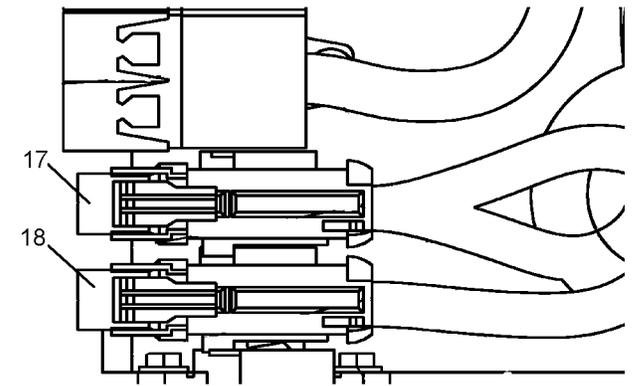


Illustration 165

g01124518

Side view inside storage compartment

(17) **Main Fuse** – 60 amp(18) **Alternator** – 30 amp

i03653015

Hydraulic System Oil - Change

SMCS Code: 5056-044

Cat HYDO Oil Change Interval

The standard Cat HYDO oil change interval is every 2000 service hours.

A maintenance interval of 4000 service hours for changing the hydraulic oil is available. The extended interval requires S-O-S monitoring of the hydraulic oil. The interval for S-O-S monitoring is every 500 hours. The maintenance interval for the hydraulic oil filter is not changed.

Machines with hammers are not included in the maintenance interval of 4000 service hours. 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 maintenance interval 4000 service hours. Machines that are used in severe conditions must use the interval in the Maintenance Interval Schedule.

Cat HYDO Advanced 10 Oil Change Interval

The standard Cat HYDO Advanced 10 oil change interval is every 3000 service hours.

A maintenance interval of 6000 service hours for changing the hydraulic oil is available. The extended interval requires S·O·S monitoring of the hydraulic oil. The interval for S·O·S monitoring is every 500 hours. The maintenance interval for the hydraulic oil filter is not changed.

Machines with hammers are not included in the maintenance interval of 6000 service hours .
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 maintenance interval 6000 service hours. Machines that are used in severe conditions must use the interval in the Maintenance Interval Schedule.

Procedure to Change the Hydraulic Oil

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

1. Park the machine on level ground. Position the machine so that the right rear corner of the machine is located outside the tracks.

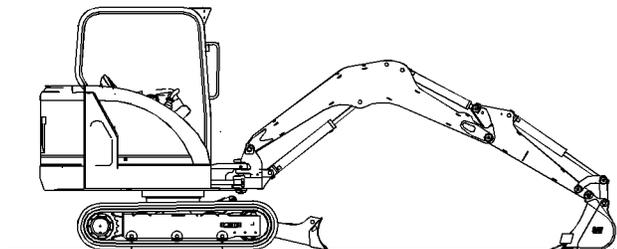


Illustration 166

g01167770

2. Extend the stick and the bucket fully. Lower the boom so that the bucket is rested on the ground. Lower the blade to the ground.

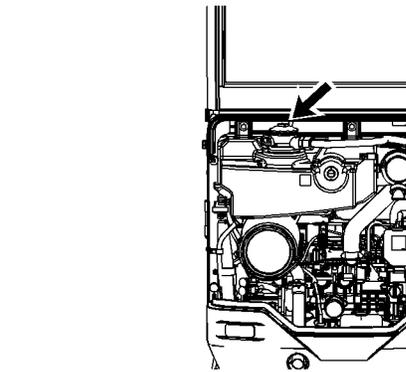


Illustration 167

g01168803

301.6C and 301.8C

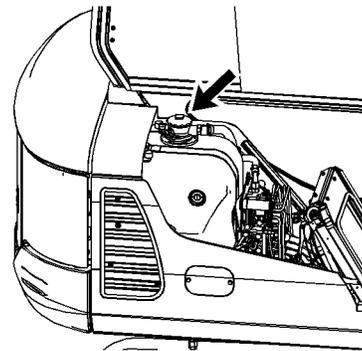


Illustration 168

g01168804

302.5C

3. Open the access door to the hydraulic tank. Clean the area thoroughly around the hydraulic oil filler cap in order to prevent dirt from entering the hydraulic tank.

NOTICE

Hot oil can cause personal injury. Remove the hydraulic oil filler cap only when the engine is stopped. Allow time for the hydraulic system to cool. Remove hydraulic oil filler cap slowly in order to relieve pressure.

4. The hydraulic oil drain plug is located on the bottom of the hydraulic oil tank.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

5. Remove the hydraulic oil drain plug. Allow the oil to drain into a suitable container.
6. Clean the drain plug and reinstall the plug.

7. Remove the hose from the hydraulic tank strainer. Inspect the hose. Replace the hose if the hose is damaged.
8. Remove the hydraulic tank strainer. Inspect the strainer and clean the strainer. Replace the strainer if the strainer is worn.
9. Install the strainer. Install the hose.
10. Change the hydraulic oil filter. Refer to Operation and Maintenance Manual, "Hydraulic System Oil Filter (Return) - Replace".
11. Fill the hydraulic system oil tank. Refer to Operation and Maintenance Manual, "Lubricant Viscosities" and Operation and Maintenance Manual, "Capacities (Refill)".
12. Inspect the gasket on the hydraulic tank filler cap for damage. Replace the gasket, if necessary.
13. Install the hydraulic tank filler cap.
14. Start the engine and run the engine for a few minutes. Operate the control levers in order to cause the hydraulic oil to flow through the circuits.

15. Maintain the hydraulic oil level between the top mark and the bottom mark on the decal next to the sight gauge, if a decal is installed. This is particularly important on early 301.6c and 301.8c models. The correct oil level is important to avoid pump cavitation. If your machine has no decal next to the sight gauge, the oil level must be visible in the sight gauge. Any position on the sight gauge is acceptable level.

Note: The oil must be free of bubbles. If bubbles are present in the oil, air is entering the hydraulic system. Inspect the suction hoses, the hose clamps and the hydraulic oil return filter.

16. Stop the engine.

17. If necessary, tighten any loose clamps and any loose connections. Replace any damaged hoses.

18. Close the access door.

i02342268

Hydraulic System Oil Cooler Core - Clean

SMCS Code: 1374-070-KO

Note: Certain work environments may encourage plugging and more frequent cleaning may be required.

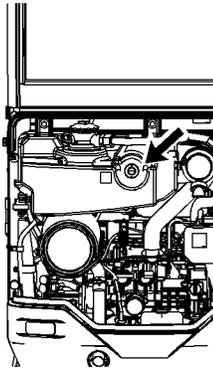


Illustration 169
301.8C is shown.

g01167771

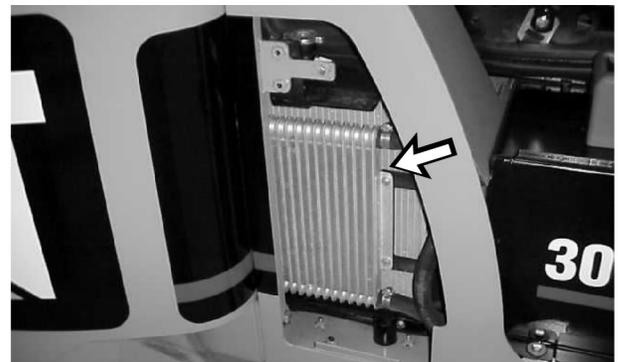


Illustration 171
301.6C and 301.8C

g01167841

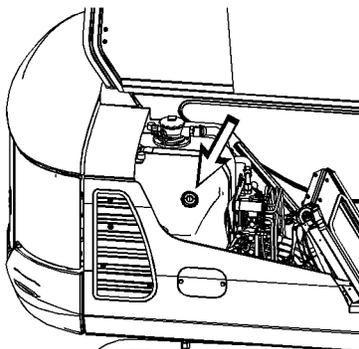


Illustration 170
302.5C is shown.

g01621721

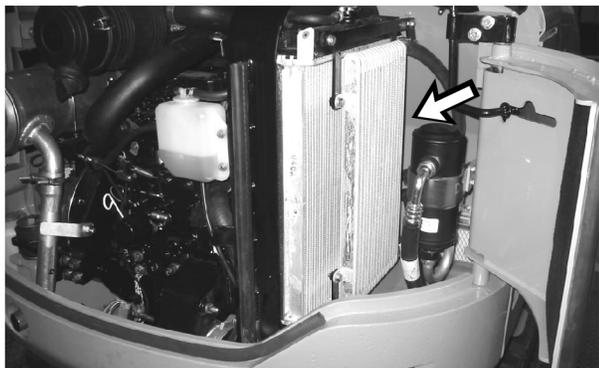


Illustration 172
302.5C

g01167843

1. Open the engine access door.
2. Remove the access panel on the right rear corner on the 301.6C and on the 301.8C.

The hydraulic oil cooler core is bolted to the outside edge of the radiator.

3. Check for accumulation of dust in the fins of the hydraulic oil cooler.
4. Clean the fins of the hydraulic oil cooler with compressed air, pressurized water or steam.

Note: Clean the area between the fins of the oil cooler and the radiator.

5. Replace the access panel on the corner.
6. Close the engine access door.

i02342279

Hydraulic System Oil Filter (Return) - Replace

SMCS Code: 5068-510-RJ

NOTICE

Hot oil can cause personal injury. Remove the hydraulic oil filler cap only when the engine is stopped. Allow time for the hydraulic system to cool. Remove hydraulic oil filler cap slowly in order to relieve pressure.

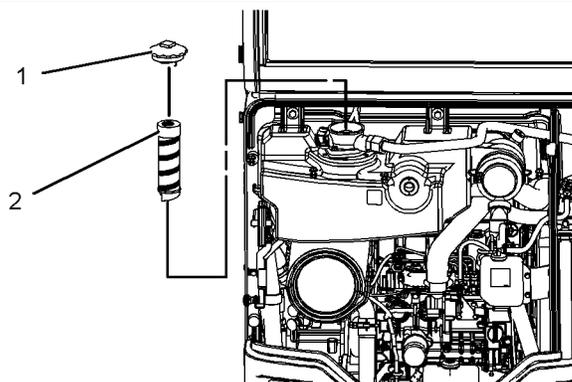


Illustration 173
301.6C and 301.8C

g01168349

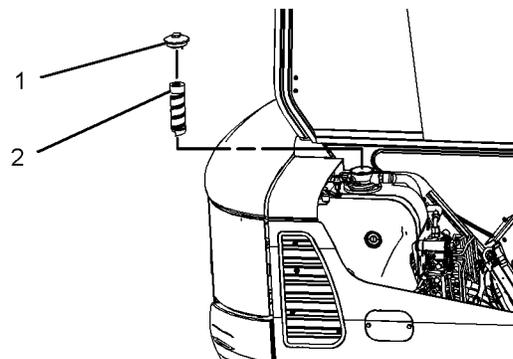


Illustration 174
302.5C

g01168353

1. Open the access door in order to gain access to the hydraulic oil tank. Clean the area thoroughly in order to prevent dirt from entering the filter.
2. Slowly remove the hydraulic oil filler cap (1) in order to relieve the pressure in the hydraulic oil tank.

Note: Refer to Operation and Maintenance Manual, "General Hazard Information" for information on Containing Fluid Spillage.

3. Remove the used filter (2).
4. Install the new filter.
5. Reinstall the hydraulic oil filler cap.
6. Close the access door.

i02342208

Hydraulic System Oil Level - Check

SMCS Code: 5050-535

Note: Check the hydraulic system oil level with the machine on a level surface.

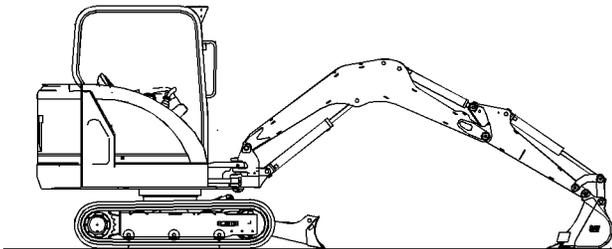


Illustration 175

g01167770

1. Extend the stick and the bucket fully. Lower the boom so that the bucket is rested on the ground. Lower the blade to the ground.
2. Open the access door for the hydraulic tank on the 301.6C and the 301.8C.

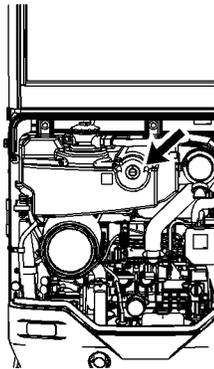


Illustration 176

g01167771

Location for the 301.6C and the 301.8C

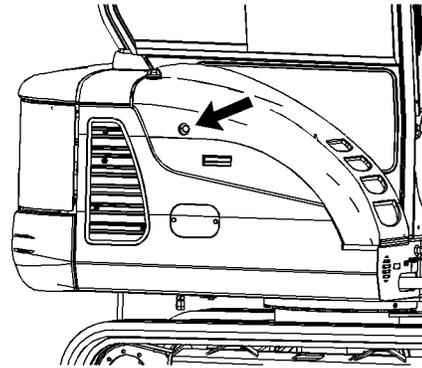


Illustration 177

g01167778

Location for the 302.5C

3. The sight gauge is located on the hydraulic tank.
4. Maintain the hydraulic system oil level between the top mark and the bottom mark on the sight gauge.

NOTICE

Hot oil can cause personal injury. Remove the hydraulic oil filler cap only when the engine is stopped. Allow time for the hydraulic system to cool. Remove hydraulic oil filler cap slowly in order to relieve pressure.

5. Remove the hydraulic tank filler cap slowly in order to relieve any pressure and add hydraulic oil, if necessary.
6. Clean the hydraulic tank filler cap. Install the hydraulic tank filler cap.

i02340736

i02106227

Hydraulic System Oil Sample - Obtain

SMCS Code: 5050-008-OC; 5095-008; 5095-SM; 7542-008; 7542

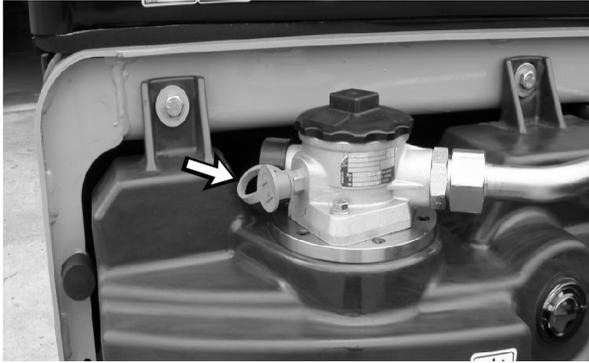


Illustration 178
301.6C and 301.8C

g01183311



Illustration 179
302.5C

g01183314

Obtain a sample of the hydraulic oil from the hydraulic oil sampling valve. The hydraulic oil sampling valve is located on the hydraulic oil tank. Refer to Special Publication, SEBU6250, "S·O·S Oil Analysis" for information that pertains to obtaining a sample of the hydraulic oil. Refer to Special Publication, PEHP6001, "How To Take A Good Oil Sample" for more information about obtaining a sample of the hydraulic oil.

Oil Filter - Inspect

SMCS Code: 1308-507; 5068-507

Inspect a Used Filter for Debris

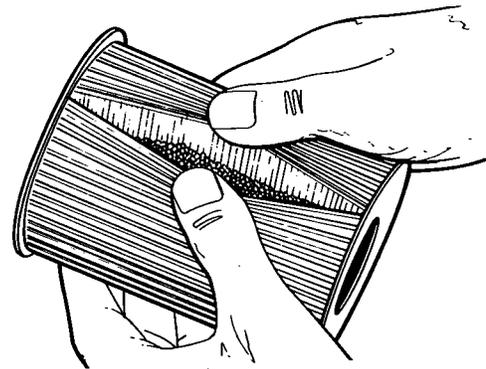


Illustration 180

g00100013

The element is shown with debris.

Use a filter cutter to cut the filter element open. Spread apart the pleats and inspect the element for metal and for other debris. An excessive amount of debris in the filter element can indicate a possible failure.

If metals are found in the filter element, a magnet can be used to differentiate between ferrous metals and nonferrous metals.

Ferrous metals can indicate wear on steel parts and on cast iron parts.

Nonferrous metals can indicate wear on the aluminum parts of the engine such as main bearings, rod bearings, or turbocharger bearings.

Small amounts of debris may be found in the filter element. This could be caused by friction and by normal wear. Consult your Caterpillar dealer in order to arrange for further analysis if an excessive amount of debris is found.

Using an oil filter element that is not recommended by Caterpillar can result in severe engine damage to engine bearings, to the crankshaft, and to other parts. This can result in larger particles in unfiltered oil. The particles could enter the lubricating system and the particles could cause damage.

i02973191

Quick Coupler - Clean

SMCS Code: 6129-070

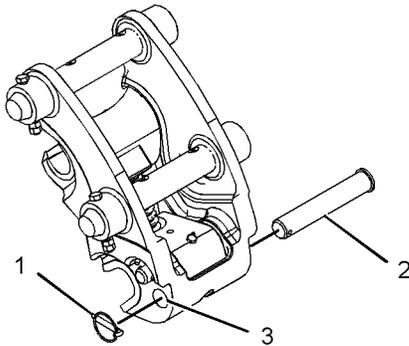


Illustration 181

g01155173

Typical example

1. Remove pin (1).
2. Remove safety pin (2) from the quick coupler. The pin may be located on the right side or located on the rear of the quick coupler.
3. Clean safety pin (2).
4. Clean out bore (3) on either side of the coupler.
5. Remove any trash or buildup from the quick coupler.
6. Apply grease to safety pin (2).

Refer to Special Publication, SEBU6250, "Caterpillar Machine Fluid Recommendations" for more information about the selection of grease.
7. Insert safety pin (2) into bore (3) on the right side.
8. Insert pin (1) into safety pin (2) on the left side of the quick coupler.

i02973110

Quick Coupler - Lubricate (If Equipped)

SMCS Code: 6129-086

1. Lower all work tools to the ground.
2. Wipe off the fittings before you lubricate the fitting.

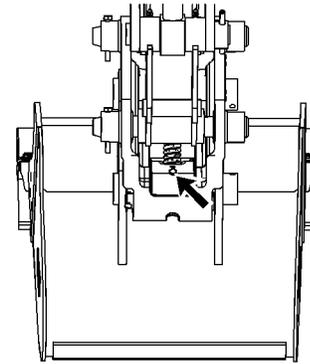


Illustration 182

g01167510

Typical example

3. Apply grease to the fittings of the quick coupler.

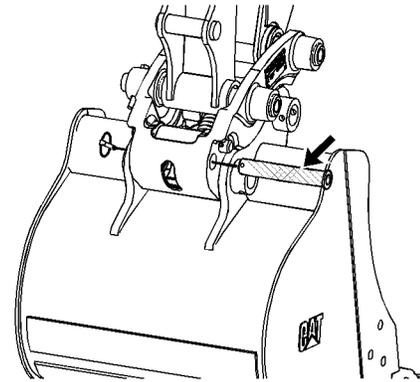


Illustration 183

g01167518

Typical example

4. Apply grease to the external surface of the pin in the lock assembly.

Note: The lock assembly may be located on the side of the coupler or located on the rear of the coupler.

5. Check the overall condition of the quick coupler. Look for the following conditions: loose bolts, worn parts, broken parts, missing parts, and damaged parts. Make any necessary repairs.

i02326214

i02723802

Radiator Core - Clean

SMCS Code: 1353-070

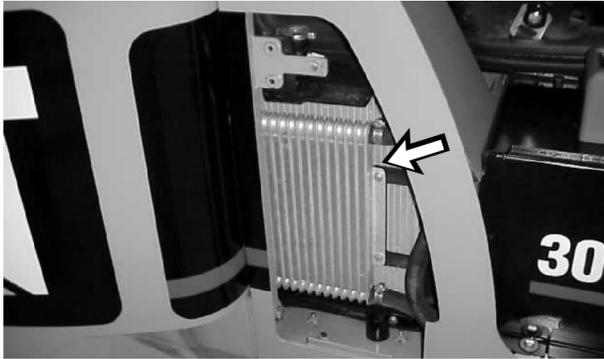


Illustration 184
301.6C and 301.8C

g01167841



Illustration 185
302.5C

g01162208

1. Open the engine access doors.
2. Remove the access panel on the right rear corner on the 301.6C and on the 301.8C.
3. You can use compressed air, high pressure water, or steam to remove dust and other debris from the radiator fins. However, the use of compressed air is preferred.
4. Replace the access panel on the corner.
5. Close the engine access doors.

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.

Refer to Service Manual, SENR5664, "Air Conditioning and Heating System with R-134a Refrigerant for All Caterpillar Machines" for the proper procedure to change the receiver-dryer assembly and for the procedure to reclaim the refrigerant gas.

i02429589

i02429594

Seat Belt - Inspect

SMCS Code: 7327-040

Always check 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.

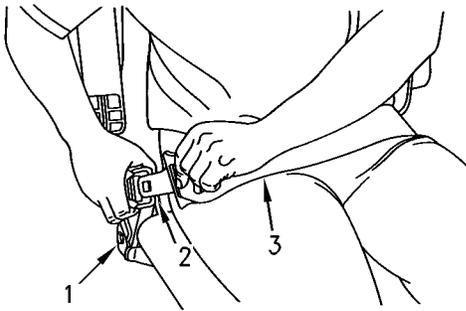


Illustration 186

g00932801

Typical example

Check the seat belt mounting hardware (1) for wear or for damage. Replace any mounting hardware that is worn or damaged. Make sure that the mounting bolts are tight.

Check buckle (2) for wear or for damage. If the buckle is worn or damaged, replace the seat belt.

Inspect the seat belt (3) for webbing that is worn or frayed. Replace the seat belt if the seat belt is worn or frayed.

Consult your Caterpillar dealer for the replacement of the seat belt and the mounting hardware.

Note: Within three years of the date of installation or within five years of the date of manufacture, replace the seat belt. Replace the seat belt at the date which occurs first. A date label for determining the age of the seat belt is attached to the seat belt, the seat belt buckle, and the seat belt retractor.

If your machine is equipped with a seat belt extension, also perform this inspection procedure for the seat belt extension.

Seat Belt - Replace

SMCS Code: 7327-510

Within three years of the date of installation or within five years of the date of manufacture, replace the seat belt. Replace the seat belt at the date which occurs first. A date label for determining the age of the seat belt is attached to the seat belt, the seat belt buckle, and the seat belt retractor.

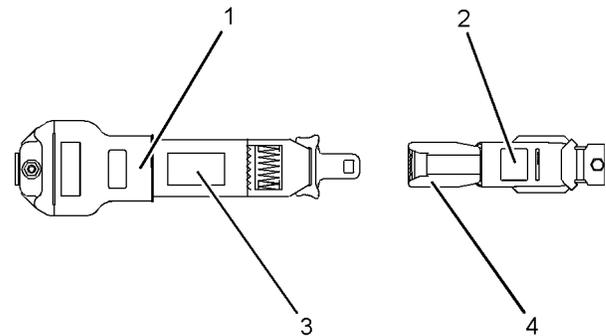


Illustration 187

g01152685

- (1) Date of installation (retractor)
- (2) Date of installation (buckle)
- (3) Date of manufacture (tag) (fully extended web)
- (4) Date of manufacture (underside) (buckle)

Consult your Caterpillar dealer for the replacement of the seat belt and the mounting hardware.

If your machine is equipped with a seat belt extension, also perform this replacement procedure for the seat belt extension.

i02476957

Swing Frame and Cylinder Bearings - Lubricate

SMCS Code: 5105-086-BD; 6506-086-BD;
6507-086-BD

Wipe the fittings before you lubricate the fittings.

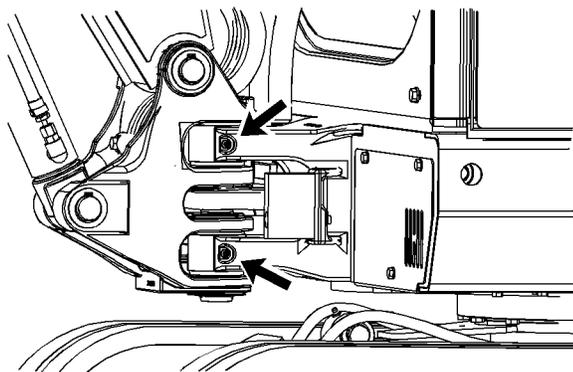


Illustration 188
301.6C and 301.8C

g01171787

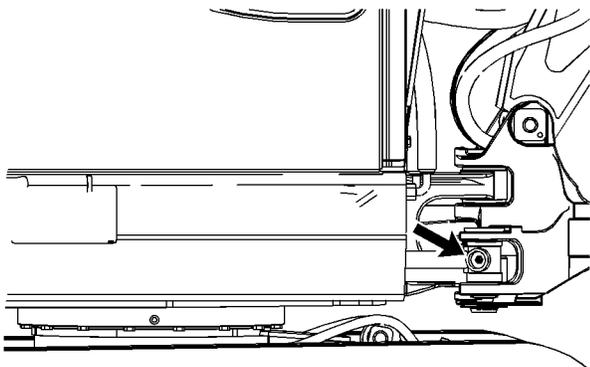


Illustration 189
301.6C and 301.8C

g01171713

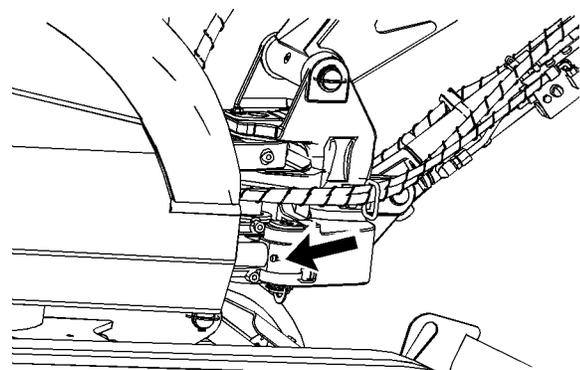


Illustration 190
302.5C

g01236788

Apply lubricant to the fittings.

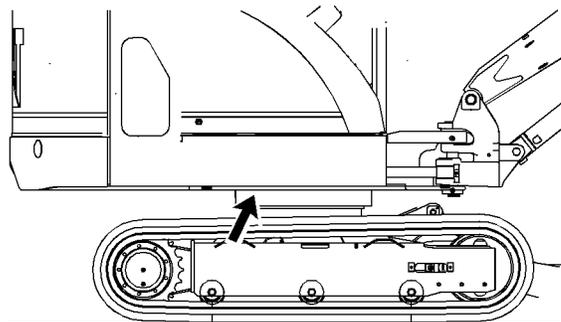


Illustration 191

g01171789

Apply lubricant to the grease fitting for the bearing on the head end of the swing cylinder.

i02326498

Swing Gear and Bearing - Lubricate

SMCS Code: 7063-086

1. Lower all work tools to the ground.



Illustration 192

g01162263

2. Wipe all fittings before you lubricate the fittings.
3. The fittings for the swing gear and bearing are located under the boom base on the front side of the upper structure.
4. Rotate the upper structure for 90°.
5. Apply grease to the fittings for the swing gear and bearing.
6. Repeat Step 4 and Step 5 until the upper structure has rotated 360°.

i02345179

Tip-Over Protective Structure (TOPS) - Inspect

SMCS Code: 7325-040

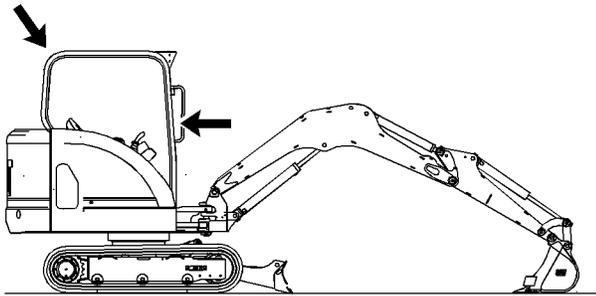


Illustration 193

g01171594

Inspect the Tip Over Protection Structure (TOPS) for bolts that are loose, damaged or missing. Replace any bolts that are loose, damaged, or missing with original replacement parts only. Torque the M14 bolts to 80 ± 15 N·m (60 ± 10 lb ft).

Note: Apply thread lock to all bolt threads for the TOPS before you install the bolts.

Do not weld reinforcement plates to the TOPS in order to straighten the TOPS. Do not weld reinforcement plates to the TOPS in order to repair the TOPS.

Consult your Caterpillar dealer for repairs of any cracks in the TOPS.

Consult your Caterpillar dealer for an inspection of the TOPS if an incident occurs.

i02050907

Track Adjustment - Adjust

SMCS Code: 4170-025

Tightening the Tracks

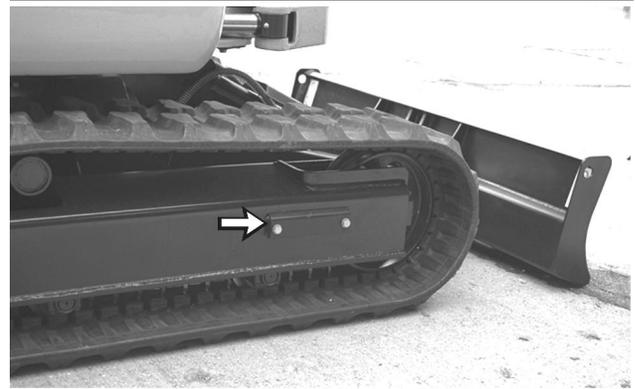


Illustration 194

g00523702

1. Remove the cover plate for the track adjustment valve.

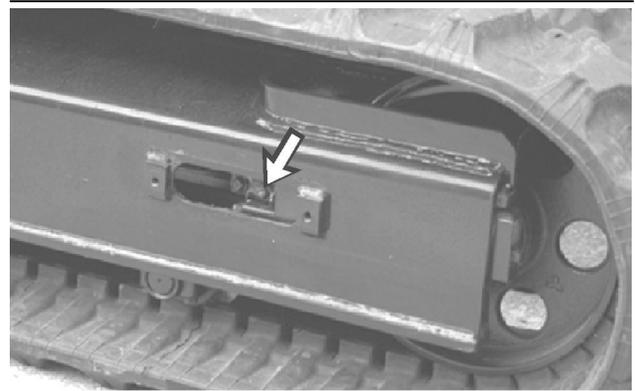


Illustration 195

g00523707

2. Wipe the fitting before you add grease.
3. Add grease through the valve fitting until the correct tension is reached.
4. Operate the track back and forth in order to equalize the pressure.
5. Check the amount of sag. Adjust the track, as needed. Refer to Operation and Maintenance, "Track Adjustment - Inspect".
6. Replace the cover plate for the track adjustment valve.
7. Repeat the same procedure for the other track.

Loosening the Track

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.

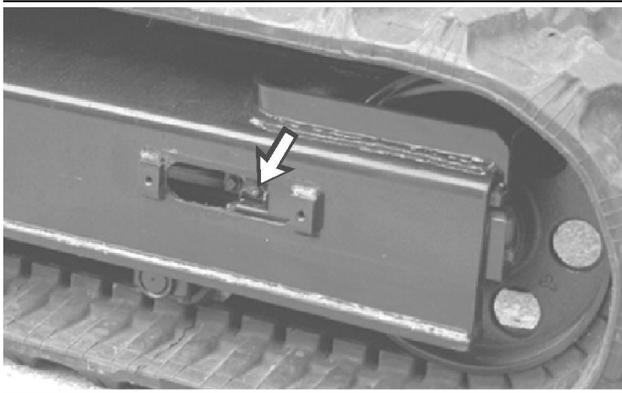


Illustration 196

g00523707

1. Loosen the filler valve carefully until the track begins to loosen. One turn should be the maximum.
2. Tighten the filler valve to 34 N·m (25 lb ft) when the desired track tension is reached.
3. Operate the track back and forth in order to equalize pressure.
4. Check the amount of sag in the track. Adjust the track, as needed. Refer to Operation and Maintenance, "Track Adjustment - Inspect".
5. Repeat the same procedure for the other track.

If the correct adjustment cannot be achieved consult your Caterpillar dealer.

i02345604

Track Adjustment - Inspect

SMCS Code: 4170-040

Note: Keeping the track properly adjusted will increase the service life of the track components and the drive components.

Check the rubber tracks for the following conditions:

- Steel cords that are cut
- Core irons that are fractured
- Rubber flaking off to the point of showing steel cords or core irons
- Loss of traction or grousers are worn down to approximately 5 mm (0.2 inch) in height.

If any of the above conditions or a combination of the above conditions are observed, replace the belt.

Measuring Rubber Track Tension

1. Park the machine on a level surface.
2. Position the upper frame over the tracks at a 90° angle.
3. Lower the bucket to the ground with the stick in a vertical position.
4. Check the track that is not being lifted off the ground.
5. Apply boom down pressure until the track that is on the same side as the bucket has cleared the ground.
6. Check the lower frame of the machine in this position.
7. Clean the track rollers and the area around the skid plate.

i02345060

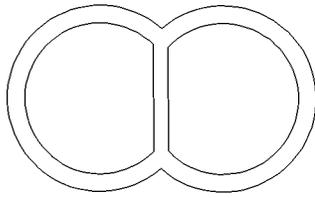


Illustration 197

g00484245

8. For a machine that is equipped with the rubber tracks, locate the "omega" mark on the inside flat of the track.
9. Locate the "omega" mark under the center track roller.

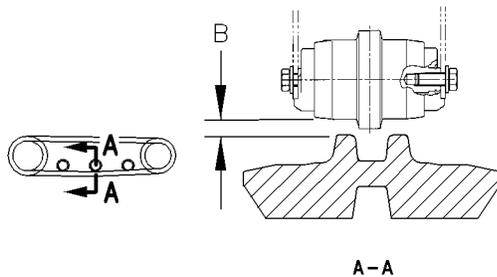


Illustration 198

g00522663

The distance (B) should be 10 to 15 mm (0.4 to 0.6 inch).

10. Measure the sag in the track. The sag is measured from the bottom of the roller to the surface on the top of the track. A properly adjusted track will have 10 to 15 mm (0.4 to 0.6 inch) of sag.

Measuring Steel Track Tension

Note: The track tension must be set according to the current operating conditions. Keep the track as slack as possible if the soil is heavy.

Follow the same procedures for measuring rubber track tension. There is not an "omega" mark on the steel tracks. You do not need to align the steel tracks. The proper amount of sag for steel tracks is 25 to 35 mm (1.0 to 1.4 inch).

If the correct adjustment cannot be achieved consult your Caterpillar dealer.

Travel Alarm - Test

SMCS Code: 7429-081

You must move the machine in order to test the travel alarm.

1. Start the engine. Lower the hydraulic lockout control to the UNLOCKED position.
2. Raise the work tool. Make sure that there is adequate overhead clearance.

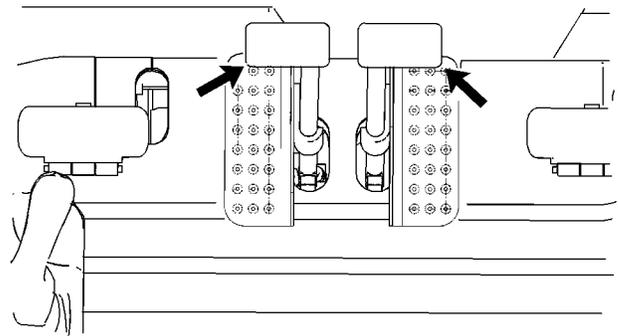


Illustration 199

g01171530

3. Use the travel levers to move the machine forward. The travel alarm should sound.
4. Release the travel levers in order to stop the machine.
5. Use the travel levers to move the machine backward. The travel alarm should sound.
6. Release the travel levers in order to stop the machine. Lower the work tool to the ground. Deactivate the hydraulic controls by placing the hydraulic control console in the RAISED position. Stop the engine.

i01725177

Undercarriage - Check

SMCS Code: 4150-535

1. Check 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.

i01021011

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.

The washer fluid bottle is located in the engine compartment.

1. Open the engine access door.
2. Remove the filler cap.
3. Fill the washer fluid bottle with washer fluid through the filler opening.
4. Replace the filler cap.
5. Close the engine access door.

i01048717

Window Wiper - Inspect/Replace

SMCS Code: 7305-040; 7305-510

Inspect the wiper blade on the front window. Replace the window wiper blade if the window wiper blade is worn or damaged. Replace the front window wiper blade if the front window is streaked after use.

i01592019

Windows - Clean

SMCS Code: 7310-070; 7340-070

Use commercially available window cleaning solutions in order to clean the windows.

Note: When you are cleaning the window above the front window, you should use a soft cloth that is not abrasive. This window can be easily scratched.

WARNING

Wash polycarbonate windows with a mild soap and water. Never use a cleaning solvent on polycarbonate windows.

Cleaning Methods

Aircraft Windshield 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, or isopropyl alcohol, or of Butyl Cellosolve. Then, wash the windows with soap and with water.