Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Systems Operation
C3.4 Engines for Caterpillar Built Machines

Media Number -KENR6940-04 Publication Date -01/03/2012 Date Updated -01/03/2012

i02727442

Air Inlet and Exhaust System

SMCS - 1050

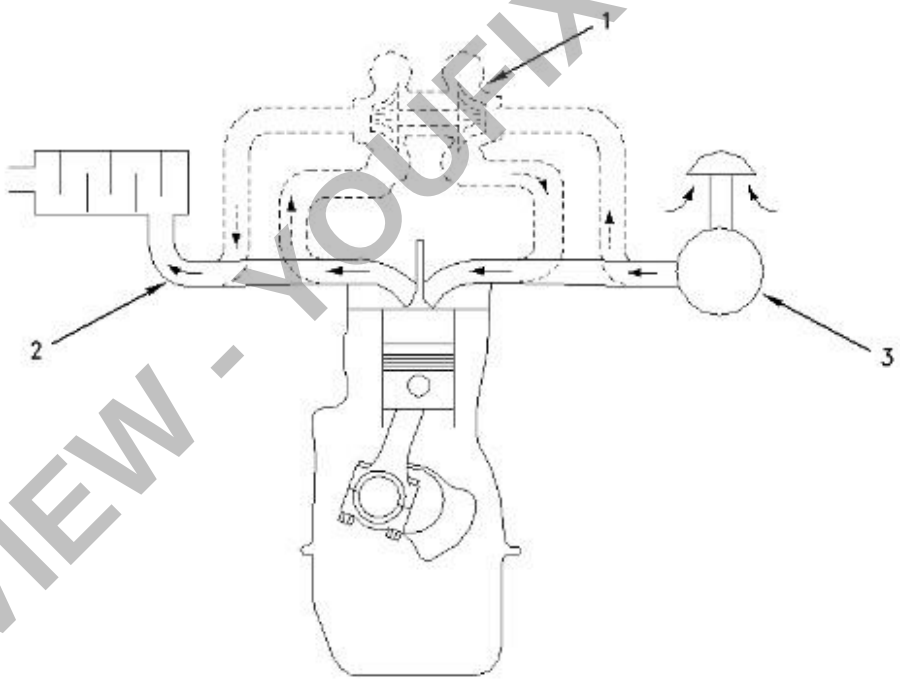


Illustration 1 g00987178

Flow diagram of the air inlet and exhaust system

(1) Turbocharger

(2) Exhaust

(3) Air inlet

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Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Testing and Adjusting
C3.4 Engines for Caterpillar Built Machines
Media Number -KENR6940-04 Publication Date -01/03/2012 Date Updated -01/03/2012

i01748792

Main Bearings - Inspect

SMCS - 1203-040

Check the main bearings for wear or other damage. Replace both halves of the bearings and check the condition of the other bearings if a main bearing is worn or damaged.

Main bearings are available with a smaller inside diameter than the original size bearings. These bearings are for main bearing journals that have been ground.

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Note: If the crankshaft bearings are replaced, check whether oversize bearings were previously installed. If the thrust washers are replaced, check whether oversize thrust washers were previously installed.

4. Ensure that all of the lubrication passages are clean and free of debris.

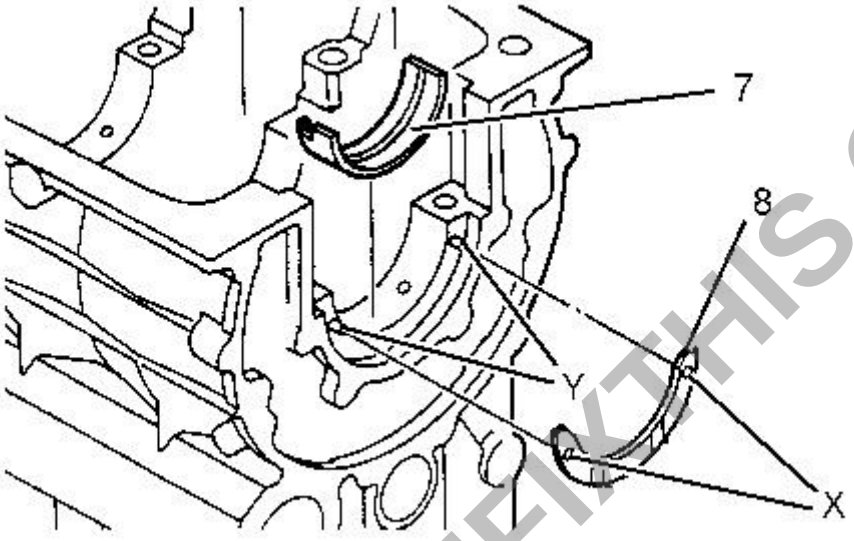


Illustration 1 g01360029

Typical example

5. Install upper bearings (7) to the cylinder block. Ensure that the locating tabs for the upper bearings are seated in the slots in the cylinder block.

   Note: The upper bearings have a groove and two oil holes.

6. Lubricate upper thrust washer (8) . Install the upper thrust washer to the rear of the cylinder block with the oil grooves toward the outside. Ensure that holes (X) in the thrust washer are aligned with dowels (Y) in the cylinder block.

7. Lubricate upper bearings (7) with clean engine oil.

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1. Support the engine.

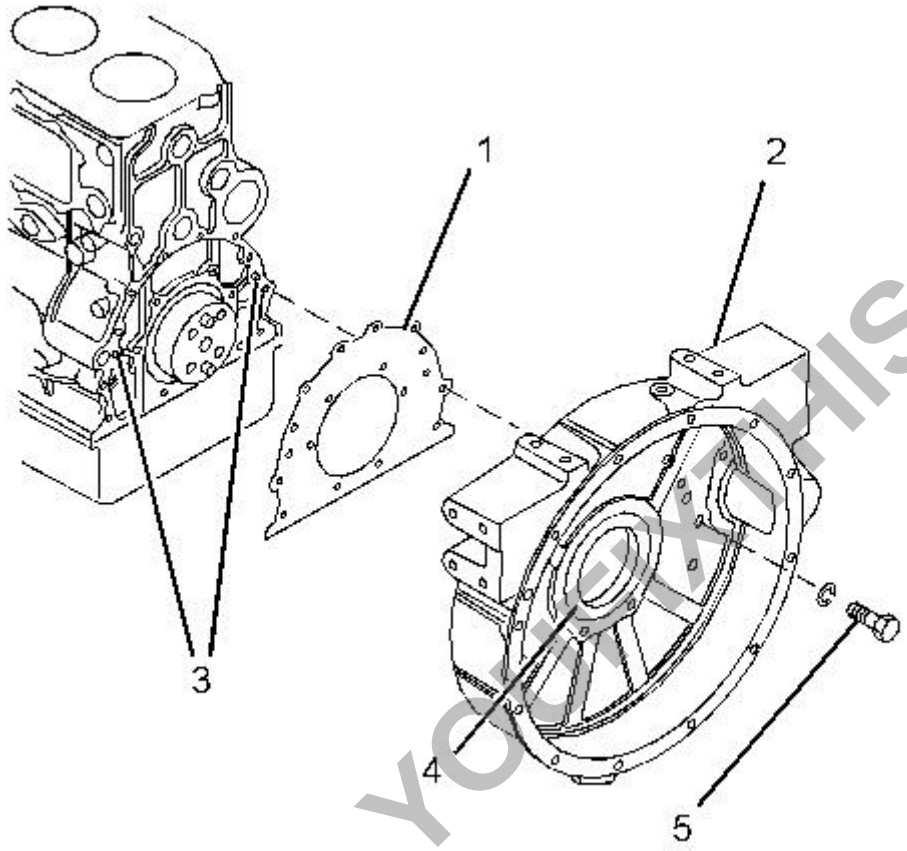


Illustration 1 g01335374

Typical example

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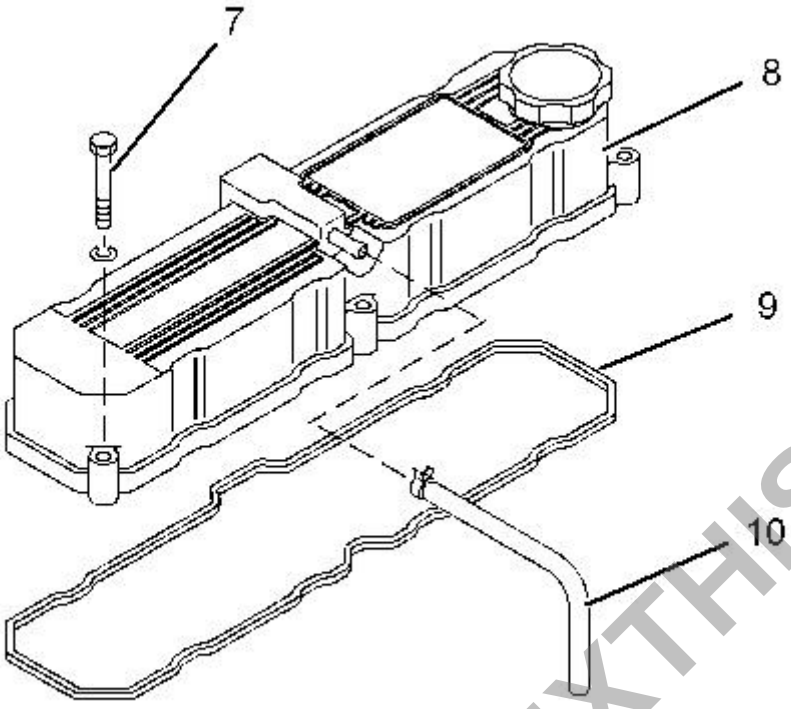


Illustration 3 g01345049

2. Install a new seal (9) to valve mechanism cover (8) .

   Note: Ensure that the joint is fully seated into the groove of the valve mechanism cover.

3. Place valve mechanism cover (8) in position on the cylinder head.
4. Install bolts (7). Tighten the bolts to a torque of 12 N·m (106 lb in).
5. Connect hose (10) to valve mechanism cover (8) and tighten the hose clamp.

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Previous Screen

Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Specifications
259B3 Compact Track Loader, 247B3 and 257B Series 3 Multi Terrain Loaders and 216B Series 3, 226B3, 236B3, 242B Series 3 and 252B Series 3 Skid Steer Loaders
Media Number -UENR0249-03 Publication Date -01/09/2015 Date Updated -15/09/2015

i05772409

Radiator and Oil Cooler Mounting

SMCS - 1353-MT; 1374-MT

S/N - B7H1-UP

S/N - SRS1-UP

S/N - YYZ1-UP

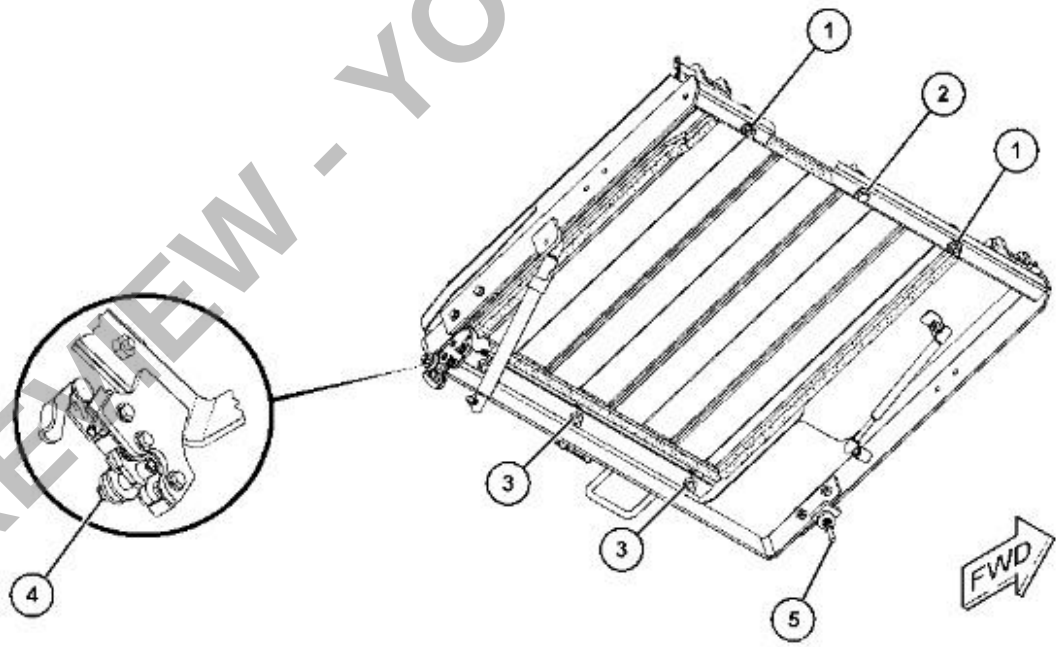


Illustration 1 g03662085

Table 1

Specification for 280-8260 Radiator Support Gp			
Item	**Qty**	**Part**	**Specification Description**

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5. A fuel injection nozzle does not operate correctly.

   Run the engine at the rpm that gives maximum misfiring or rough running. Then, loosen a fuel line nut on the injection line for each cylinder. Loosen one nut at a time. Then, tighten that nut before the next fuel line nut is loosened. If loosening the fuel line nut does not affect the operation of the engine, the fuel injection nozzle is probably suspect. Test the fuel injection nozzle for that cylinder. Replace the suspect fuel injection nozzle.

   Make sure that all of the fuel injection nozzles are the correct type for the engine. Test the pressure setting of the fuel injection nozzles.

   Make sure that the fuel injection nozzles are properly sealed in the threaded ports. Make sure that the fuel injection nozzles are correctly aligned in the threaded ports. Make sure that the fuel injection nozzles are tightened to the correct torque. Ensure that the gaskets and the seat washers are installed on the fuel injection nozzles correctly. Make sure that the bottom of the threaded ports are clean and free of debris. Make sure that the bottom of the threaded ports do not contain extra gaskets.

6. The engine mounts are not correctly tightened or the engine mounts are not mounted correctly. This condition also causes vibration.

   Check the engine mounts for correct positioning. Check the bolts of the engine mounts for correct tightening.

7. The fuel is contaminated with water, dirt, ice, or wax.

   Drain any water from the fuel tank and from the fuel filter. If the fuel is contaminated by dirt, ice, or wax, replace the fuel.

8. The cylinders have low compression.

   Starting the engine may be difficult in warm weather. The engine may not start in cold weather. Low compression is most frequently caused by the following conditions:

   - Cylinder walls are worn or damaged.
   - Piston rings are worn or broken.
   - The piston height is incorrect.
   - The piston is damaged.
   - The fuel injection nozzles are not seated correctly.
   - The valve lash requires adjustment.
   - The fuel injection pump timing is incorrect.
   - The engine timing is incorrect.
   - When an inlet valve or an exhaust valve is fully seated, gases leak past the valve head.

The engine runs evenly, but the engine loses power.

Probable Cause

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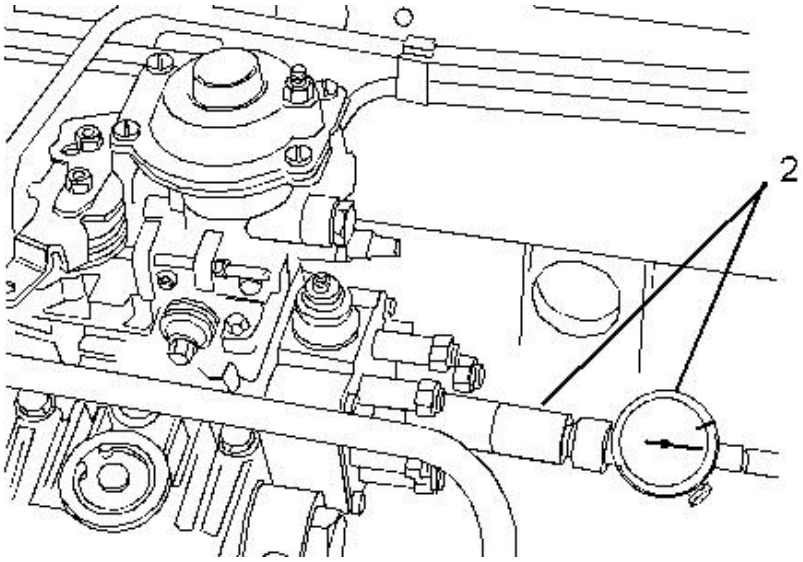


Illustration 4 g01037576

Typical example

(2) Timing tools

6. Rotate the crankshaft in the opposite direction of the engine rotation. Rotate the crankshaft until the reading on the dial indicator stabilizes at the bottom of the lift of the plunger in the pump. Set the dial indicator to zero.

   Note: The needle of the dial indicator will stop moving when the bottom of the lift of the plunger has been reached.

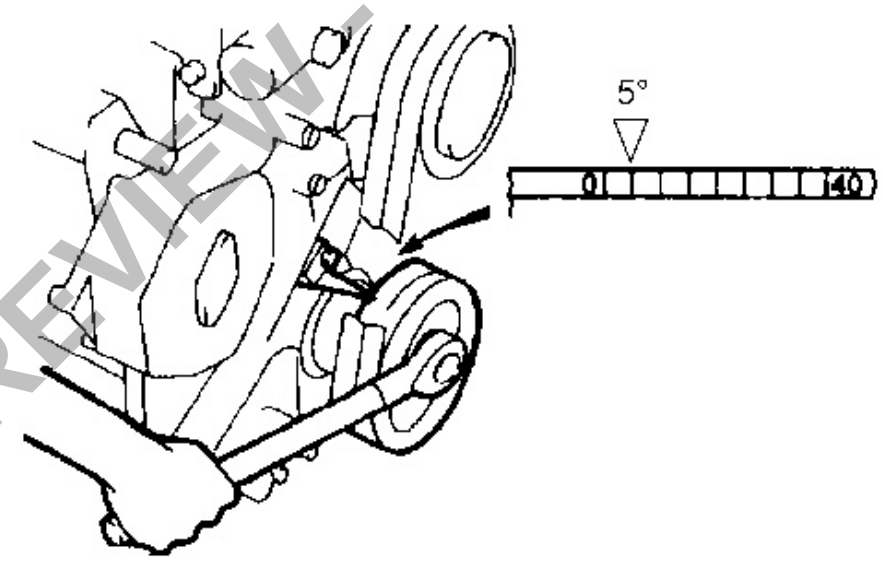


Illustration 5 g01011407

7. Rotate the crankshaft in the normal direction of the engine until the mark for the correct degree on the crankshaft pulley is aligned with the pointer on the timing case.

8. Record the reading on the dial indicator. The reading should be 0.5 mm (0.0197 inch).

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The Solenoid Valve Group (hydrostatic system), the Solenoid Valve Group (work tool), and the Solenoid Valve and Mounting Group (parking brake) are energized under the following conditions:

- The seat must be occupied.
- The arm bar must be in the DOWN position.
- The parking brake switch must be disengaged.

The Solenoid Valve Group (hydrostatic system) (12) is located on the Pilot Valve (hydrostatic system) (11). The solenoid valve allows the flow of hydraulic signal oil to the pilot operated hydraulic control. When the solenoid is de-energized, no hydraulic signal oil flows to the hydraulic control.

The Solenoid Valve and Mounting Group (parking brake) (8) is located under the cab on the left side of the machine. The solenoid valve allows the flow of pilot hydraulic oil to the brakes. The parking brakes are located on piston motors (7) and (9) .

When the solenoid is de-energized, the flow of pilot hydraulic oil is blocked. Hydraulic oil from the parking brake actuators drains through the solenoid valve to the hydraulic tank. Oil going to the hydraulic tank allows the force of the actuator spring to engage the brakes. When the solenoid is energized, pilot hydraulic oil flows into the parking brakes. The oil pressure overcomes the force of the spring in order to disengage the parking brakes.

The Solenoid Valve Group (work tool) (10) is located on the Pilot Valve (work tool) (13). The solenoid valve allows the flow of pilot hydraulic oil to the pilot operated hydraulic control. When the solenoid is de-energized, no flow of pilot hydraulic oil reaches the hydraulic control.

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Previous Screen

Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Testing and Adjusting
259B3 Compact Track Loader, 247B3 and 257B3 Multi Terrain Loaders and 216B3, 226B3, 236B3, 242B3 and 252B3 Skid Steer Loaders Machine Systems
Media Number -UENR0250-03 Publication Date -01/06/2014 Date Updated -19/06/2014

i03938976

Line Relief Valve - Test and Adjust

SMCS - 5117-025-L9; 5117-081-L9

Before any tests are performed, prepare the machine for troubleshooting. Refer to Testing and Adjusting, "Machine Preparation". Before any tests are performed, visually inspect the complete hydraulic system. Refer to the Testing and Adjusting, "Visual Inspection".

The following test is performed in order to determine if a line relief valve for the work tool is damaged or improperly set.

Machine Test (Pressure)

Table 1

REQUIRED TOOLS		
Part Number	**Description**	**Qty**
6V-4143	Coupler Assemblies	2
177-7861	Hose	1
6V-3989	Unvalved Fitting	1
8T-0860	Gauge 0 to 40000 kPa (5802 psi)	1

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.

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The CID CID 2211 FMI 03 diagnostic code is active.

Results:

- **YES -** The CID 2211 FMI 03 diagnostic code remains active.

  Repair: Check the circuit again. Perform a Wiggle Test on the machine wiring harness by using the Caterpillar Electronic Technician (ET) service tool. The Wiggle Test can detect momentary or intermittent shorts or opens in the machine wiring harness.If the problem remains, the ECM may have failed. The failure of the ECM is due to the following:

  - ECM detected the open circuit condition in the solenoid circuit and activated FMI 05 diagnostic code when solenoid wire was disconnected.

  Verify that all possible causes of the diagnostic code have been investigated. Exit this procedure and perform this procedure again.Prior to replacing an ECM, always contact your dealership for possible consultation with Caterpillar. This consultation may greatly reduce repair time. If the cause of the diagnostic code is not found and the ECM must be replaced, refer to Testing and Adjusting, "Electronic Control Module (ECM) - Replace".

  STOP

- **NO -** The CID 2211 FMI 03 code is not active. The problem does not exist at this time.

  Repair: The initial diagnostic code was probably caused by a poor connection or a short at one of the harness connectors that was disconnected and reconnected. Resume normal machine operation.

  STOP

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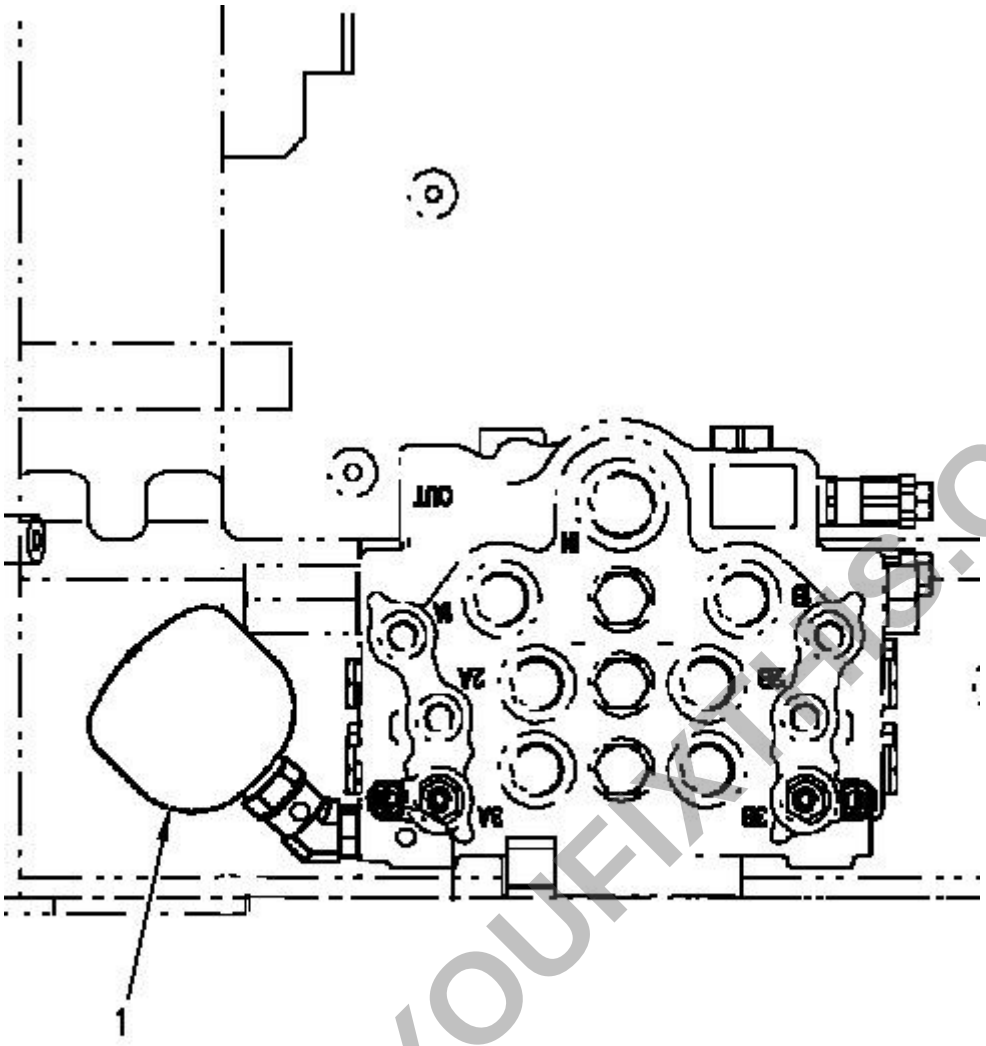


Illustration 1 g00897731

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Illustration 2 g00902987

WARNING

Improper assembly of parts that are spring loaded can cause bodily injury.

To prevent possible injury, follow the established assembly procedure and wear protective equipment.

2. Install cap (32) and the O-ring seal. Tighten the cap to a torque of 25 ± 3 N·m (18 ± 2 lb ft).



Illustration 3 g00902884

WARNING

Improper assembly of parts that are spring loaded can cause bodily injury.

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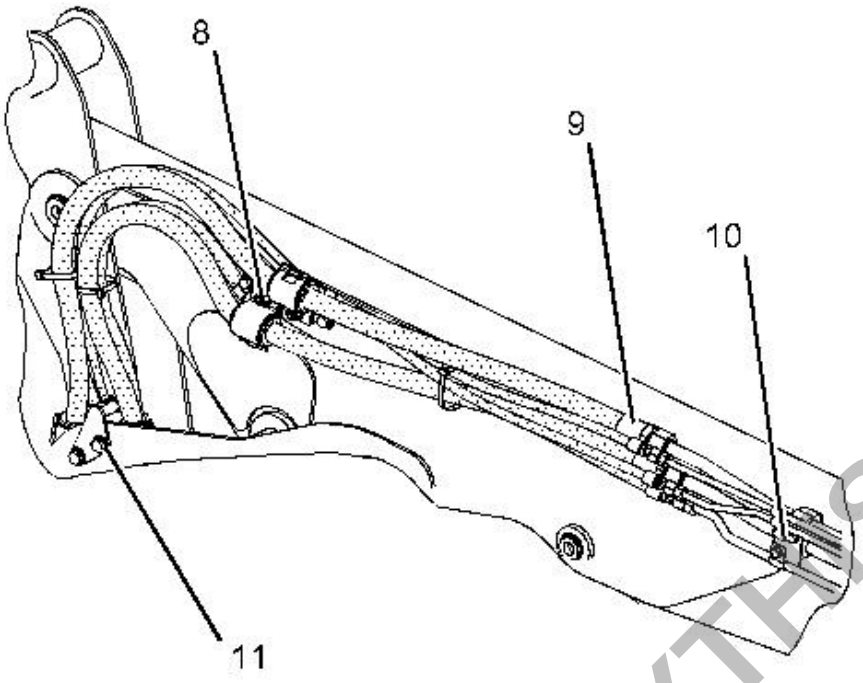
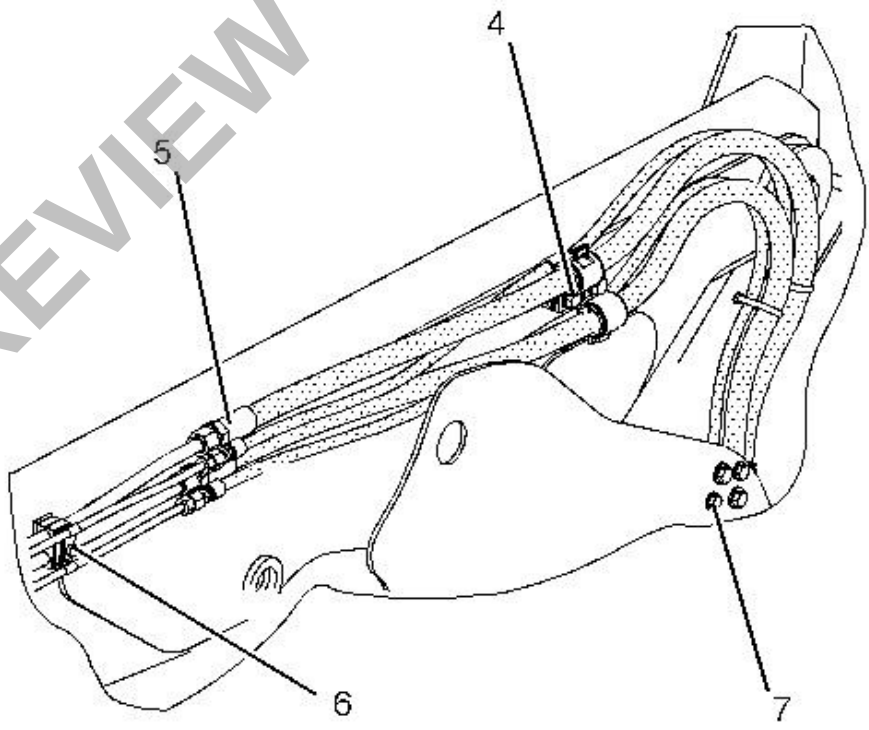


Illustration 5 g01051845

5. Connect hose assemblies (9). Install bolts (8), (11) and (10) .



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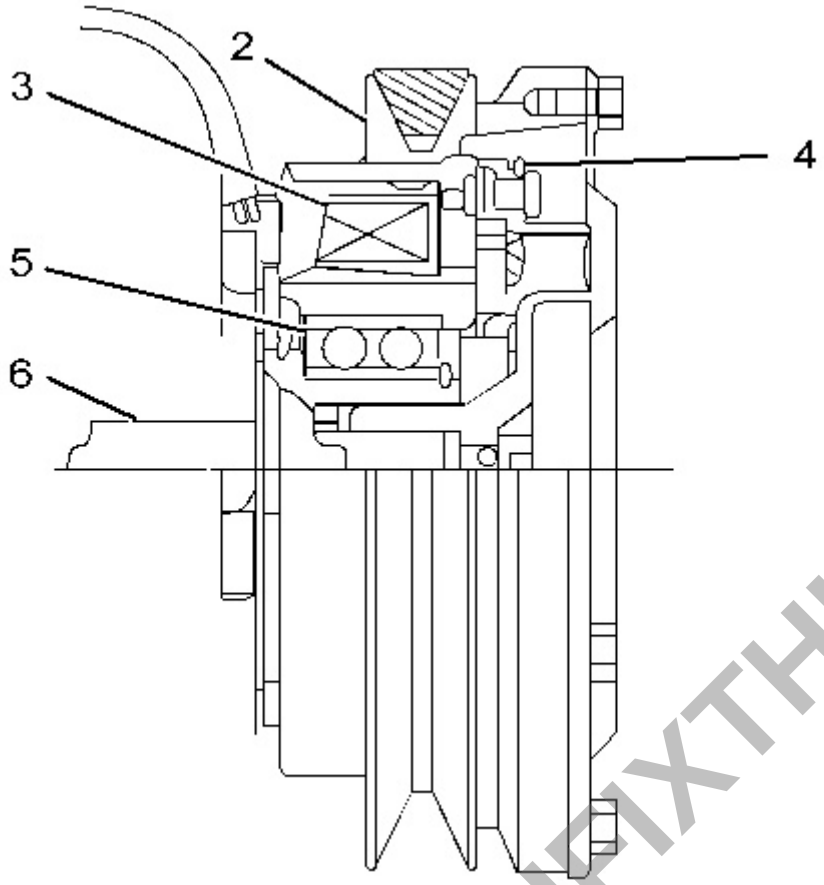


Illustration 2 g01266606

(2) Magnetic clutch and pulley assembly
(3) Coil assembly
(4) Drive plate
(5) Bearing
(6) Compressor shaft

The compressor is driven by the engine. A belt connects the engine to the clutch and pulley assembly (2). The pulley assembly is located on the clutch. The drive plate (4) is fastened to the shaft of the compressor. The clutch and pulley assembly (2) turns on the bearing (5). The clutch and pulley assembly (2) are not connected to the shaft (6). The electric current from the thermostat controls a magnetic field in the coil assembly (3).

The magnetic field pulls the drive plate (4) against the clutch and pulley assembly (2). The clutch and the pulley assembly (2) turns the shaft (6) that operates the compressor. When the current to the coil assembly (3) is stopped, the magnetic field is removed. This allows the drive plate (4) to move away from the clutch and pulley assembly (2). The clutch and the pulley assembly (2) will turn freely on the bearing (5). The sequence of connecting and disconnecting the pulley to the compressor shaft (6) is called compressor cycling. The compressor cycling is controlled by the thermostat . The thermostat is controlled by the capillary tube, which is installed between the fins of the evaporator coil.

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51 °C (124.0 °F)	1247 kPa (180.8 psi)
52 °C (125.0 °F)	1265 kPa (183.5 psi)
52 °C (126.0 °F)	1285 kPa (186.3 psi)
53 °C (127.0 °F)	1304 kPa (189.1 psi)
53 °C (128.0 °F)	1323 kPa (191.9 psi)
54 °C (129.0 °F)	1342 kPa (194.7 psi)
54 °C (130.0 °F)	1362 kPa (197.6 psi)
55 °C (131.0 °F)	1382 kPa (200.5 psi)
56 °C (132.0 °F)	1402 kPa (203.4 psi)
56 °C (133.0 °F)	1422 kPa (206.3 psi)
57 °C (134.0 °F)	1443 kPa (209.3 psi)

(1) All pressures in this table are gauge pressures.

Procedure for Labeling

Attach a label to the air conditioning system that indicates the system charge. Attaching a label to the system will allow easy identification of the system. Refer to Table 3 for the part number of the appropriate label. A **8L-8413** Cable Strap may be used in order to secure the tag to the air conditioning system.

Table 3

System Capacity	Part Number for Label
9U-7551 Air Conditioner Oil	
1.5 kg (3.31 lb)	130-4677
1.8 kg (3.97 lb)	114-0050
1.9 kg (4.19 lb)	114-0051

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Note: Ambient temperature is above 21°C (70°F).

3. The temperature of the air flow from the evaporator is warm.

Probable Cause

The condenser is not functioning properly.

Note: The system may have a normal or overcharge of refrigerant.

1. Check for a blockage in the flow of air through the condenser.
2. If a blockage is found in the condenser, remove all blockages and perform a performance check. The performance check will ensure proper system operation. Refer to Service Manual, SENR5664, "Air Conditioning Performance - Test".
3. If the problem still exists, perform the following procedure. Check the system for an overcharge of refrigerant.

   Note: Do not operate the engine.

   - Recover the refrigerant. Refer to the Service Manual, SENR5664, "Refrigerant Recovery" section in Testing and Adjusting.
   - Evacuate the system. Refer to the Service Manual, SENR5664, "Refrigerant System - Evacuate" section in Testing and Adjusting.
   - Recharge the system with the correct amount of refrigerant. Measure the refrigerant by weight. Refer to the Service Manual, SENR5664, "Refrigerant System - Charge" section in Testing and Adjusting.

   Note: With the ambient temperature above 21°C (70°F), the normal gauge reading for the low-pressure side is 70 to 138 kPa (10 to 20 psi) while the normal gauge reading for the high-pressure side is 820 to 1300 kPa (120 to 190 psi).

   - In order to ensure the correct systems operation, perform a performance check. Refer to Service Manual, SENR5664, "Air Conditioning Performance - Test".

4. If the low-pressure gauge reading and the high-pressure gauge readings are too high, perform the following procedure:

   - Recover the refrigerant from the system. Refer to the Service Manual, SENR5664, "Refrigerant Recovery" section in Testing and Adjusting.
   - Replace the receiver-dryer or replace the in-line dryer. Refer to the Service Manual, SENR5664, "Receiver-Dryer - Remove and Install" section in Disassembly and Assembly. For in-line dryers, refer to the Service Manual, SENR5664, "In-Line Refrigerant Dryer - Remove and Install" section in Disassembly and Assembly.
   - If the receiver-dryer or the in-line dryer is not equipped with quick couplers, evacuate the system. Refer to the Service Manual, SENR5664, "Refrigerant System - Evacuate" section in Testing and Adjusting.

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Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Disassembly and Assembly
Air Conditioning and Heating R134a for All Caterpillar Machines

Media Number -SENR5664-27 Publication Date -01/05/2015 Date Updated -27/05/2015

i05907625

Refrigerant Receiver-Dryer - Remove and Install

SMCS - 7322-010

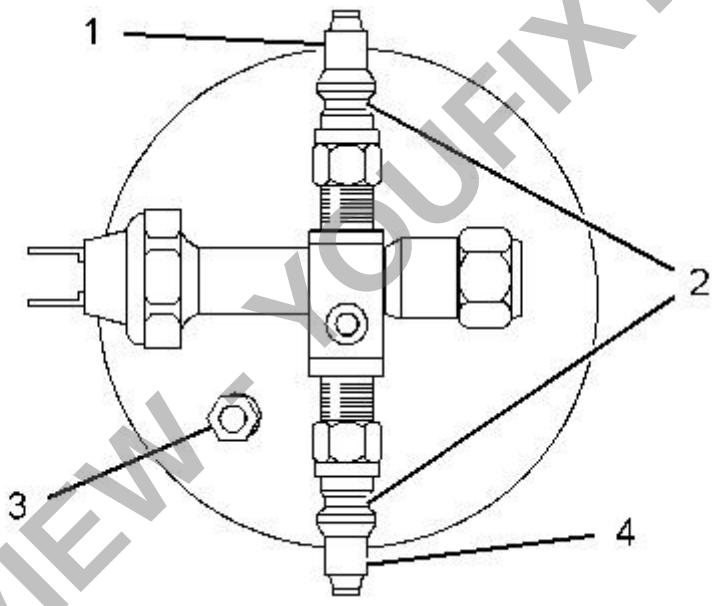


Illustration 1 g01257459

Top View of Receiver-Dryer

(1) Inlet

(2) Quick Disconnect Fittings

(3) Moisture Indicator

(4) Outlet

NOTICE

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Do not smoke when servicing air conditioners or wherever refrigerant gas may be present.

Before any checks of the air conditioning and heating system are made, move the machine to a smooth horizontal surface. Lower all implements to the ground. Make sure the transmission is in neutral or park and that the parking brake is engaged. Keep all other personnel away from the machine or where they can be seen.

1. Recover the air conditioner refrigerant from the air conditioner system. Refer to Service Manual, SENR5664, "Air Conditioning and Heating Systems with R-134a Refrigerant" for the correct procedure. Refer to Special Publication, NEDG2500, "Air Conditioning Tools" for the correct tools.

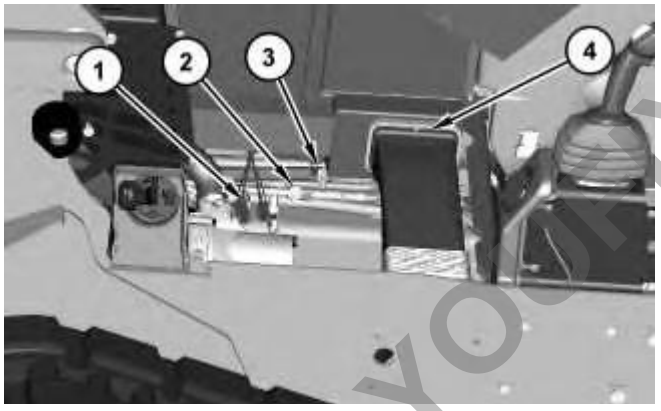


Illustration 1 g02150180

2. Disconnect harness assemblies (1) , tube assemblies (2) , and hoses (3) . Disconnect vent assembly (4) .

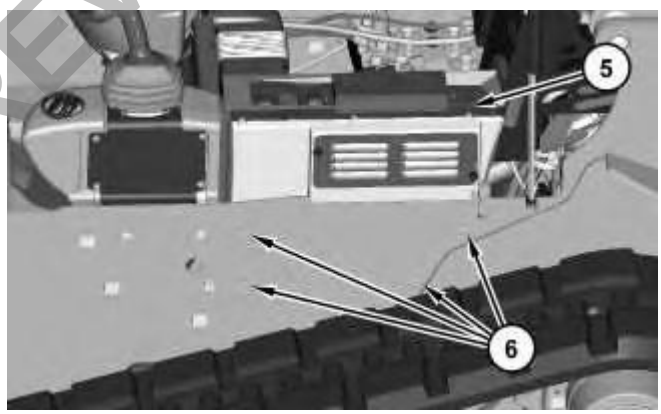


Illustration 2 g02150194

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Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Testing and Adjusting
259B3 Compact Track Loader, 247B3 and 257B3 Multi Terrain Loaders and 216B3, 226B3, 236B3, 242B3 and 252B3 Skid Steer Loaders Machine Systems
Media Number -UENR0250-03 Publication Date -01/06/2014 Date Updated -19/06/2014

i03937994

Hydrostatic System Troubleshooting

SMCS - 4350-035

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.

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.

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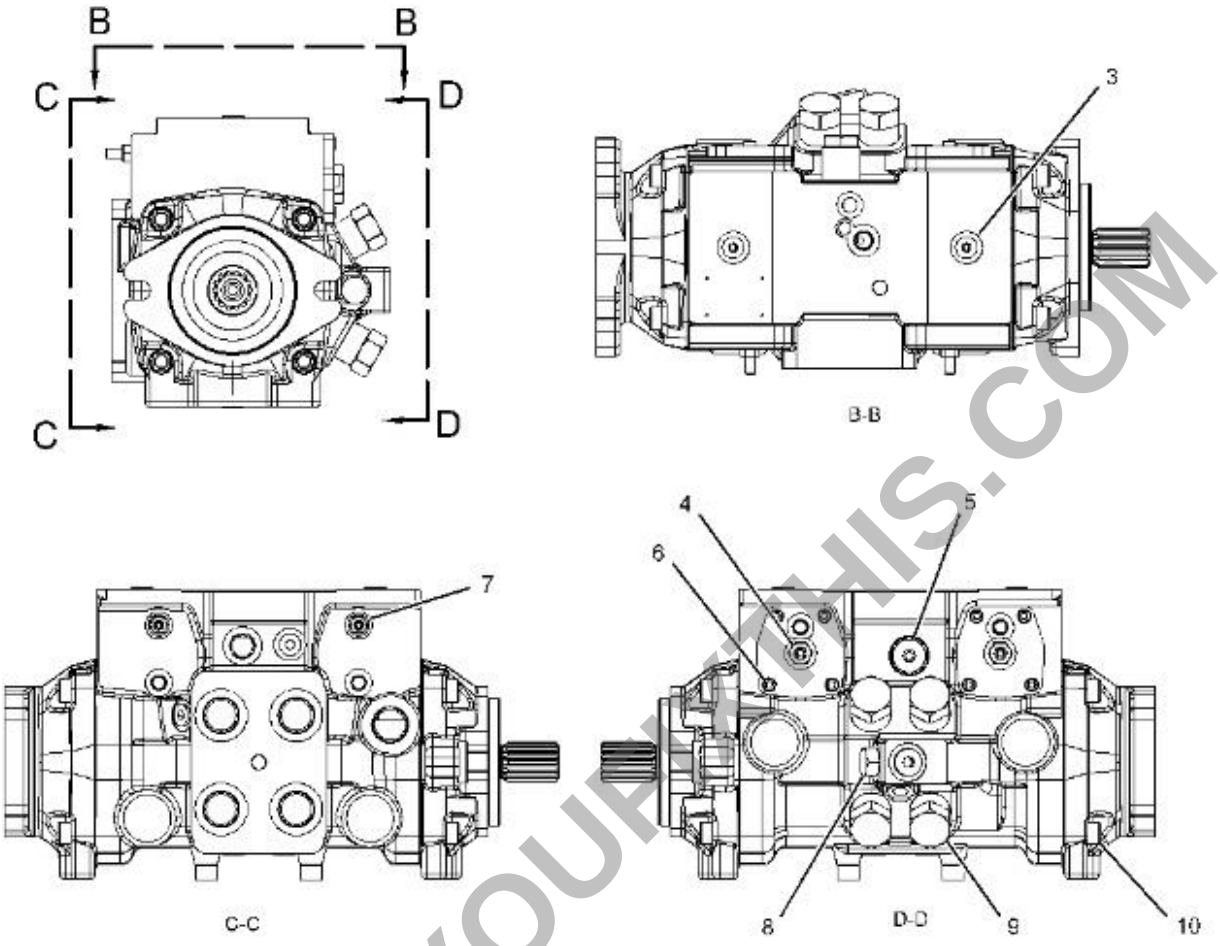


Illustration 2 g03746586

Piston pump group

Typical example

Table 2

Item	Qty	Part	Specification Description
3	2	**9S-8002** O-Ring Plug	Torque to 15.00 ± 0.75 N·m (132.76 ± 6.64 lb in).
4	2	**9X-6606** Hex Nut	Torque to 30.0 ± 1.5 N·m (265.5 ± 13.3 lb in).
5	1	-	Torque to 50.0 ± 2.5 N·m (36.9 ± 1.8 lb ft).
6	8	**8T-0267** Bolt	Torque to 10.40 ± 0.52 N·m (92.05 ± 4.60 lb in).
7	2	**9T-4817** Nut	Torque to 22.0 ± 1.1 N·m (194.7 ± 9.7 lb in).

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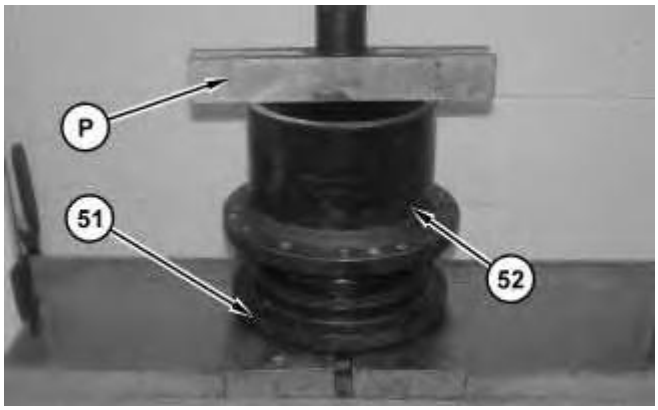


Illustration 2 g03337052

2. Use Tooling (P) and a suitable press in order to install housing (52) and spindle (51) .

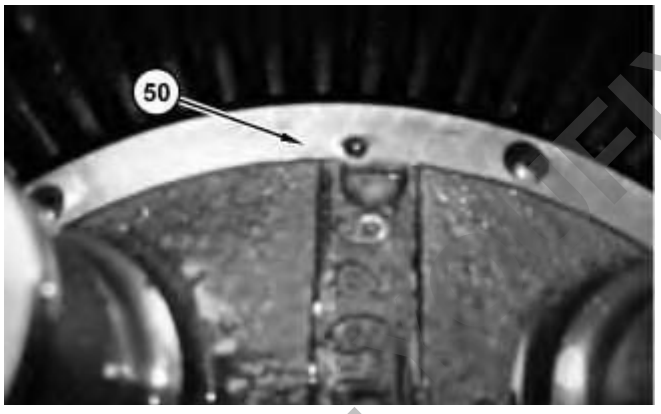


Illustration 3 g01515073



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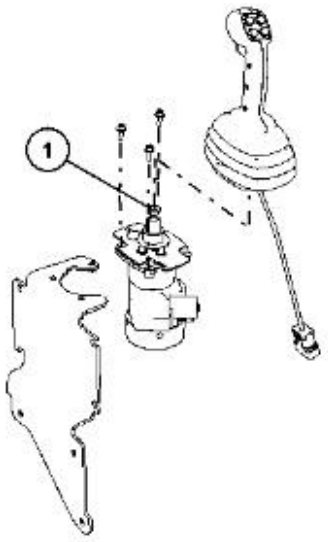
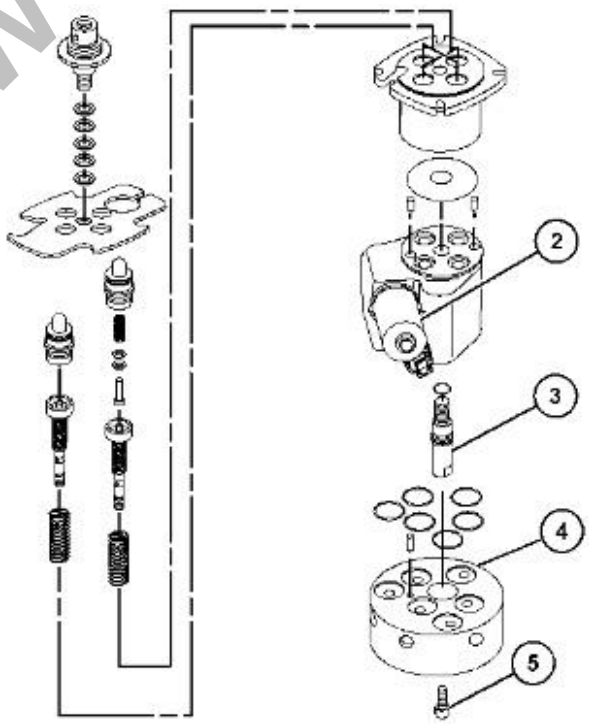


Illustration 1 g03663332

Typical example

Table 1

Specification for 326-5267 Pilot Operated Hydraulic Control Gp , 326-5268 Pilot Operated Hydraulic Control Gp , 491-3864 Pilot Operated Hydraulic Control Gp , and 326-5269 Pilot Operated Hydraulic Control Gp			
Item	**Qty**	**Part**	**Specification Description**
1	1	**095-1207** Nut	Apply red Loctite 263 to threads. Torque to 40 ± 5 N·m (30 ± 4 lb ft).



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15.88 mm (0.625 inch)	40 ± 6 N·m (30 ± 4 lb ft)	3 1/2	3
19.05 mm (0.750 inch)	50 ± 6 N·m (37 ± 4 lb ft)	3 1/2	3

Note: Clean the connectors and the seals and lubricate the connectors and seals by using Refrigerant Mineral Oil. This is a special oil that is compatible with R−134a.

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Product: COMPACT TRACK LOADER
Model: 259B3 COMPACT TRACK LOADER YYZ
Configuration: 259B3 Compact Track Loader YYZ00001-UP (MACHINE) POWERED BY C3.4 IND Engine

Disassembly and Assembly
259B3 Compact Track Loader, 247B3 and 257B3 Multi Terrain Loaders and 216B3, 226B3, 236B3, 242B3 and 252B3 Skid Steer Loaders Power Train

Media Number -UENR0251-06 Publication Date -01/11/2014 Date Updated -05/11/2014

i05941627

Recoil Spring and Track Adjuster - Install

SMCS - 4157-012; 4158-012

S/N - DXZ1-UP

S/N - ESL1-UP

S/N - HR21-UP

S/N - KB31-UP

S/N - PWK1-UP

S/N - YYZ1-UP

Installation Procedure

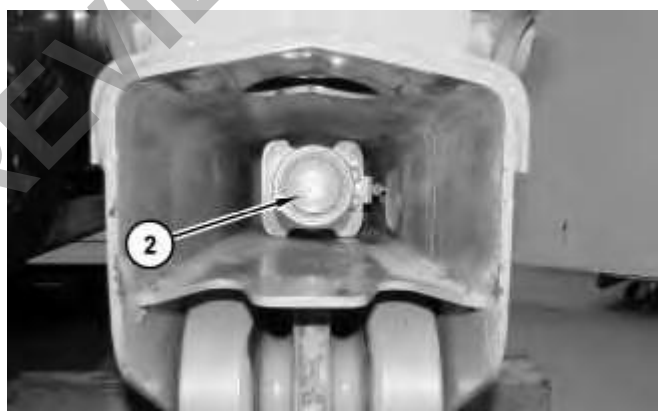


Illustration 1 g01539233

1. Use two people in order to install recoil spring and track adjuster (2) . The weight of the recoil spring and track adjuster is approximately 36 kg (80 lb).

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