

Product: BACKHOE LOADER

Model: 438C BACKHOE LOADER 1TR

Configuration: 438C Backhoe Loader Side Shift, Parallel Lift 1TR01284-01549 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly 3054 Engine for Caterpillar Built Machines

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01082828

Water Temperature Regulator - Remove and Install

SMCS - 1355-010

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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 Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

1. Drain the coolant from the cooling system into a suitable container for storage or disposal.

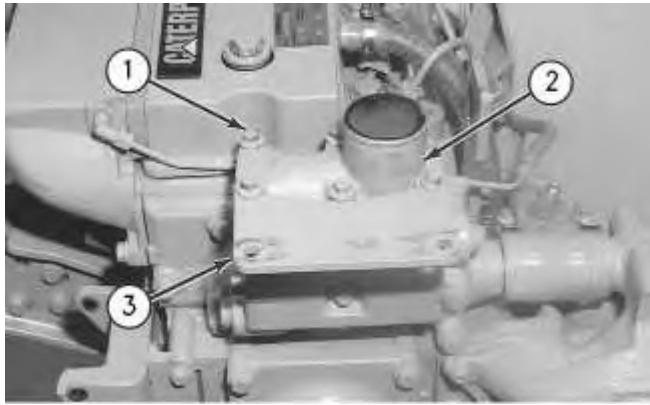


Illustration 1

g00546643

Typical example of Type 1 and 9RM engines

Note: For a complete description of Type 1 and Type 2 engines, refer to the Disassembly and Assembly, "Engine Design" topic.

2. Remove six bolts (1) that hold cover (2) and bracket (3) in position.

Note: Type 2 engines and 7BJ engines have four mounting bolts (1) that hold cover (2) in position.

3. Remove bracket (3) and cover (2) from the water temperature regulator housing.

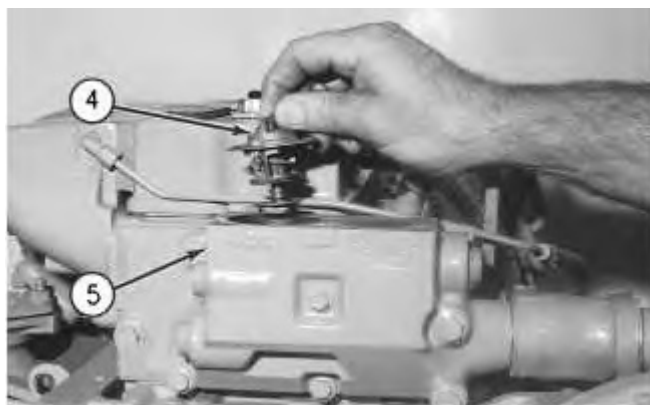


Illustration 2

g00546644

Typical example of Type 1 and 9RM engines

4. Remove water temperature regulator (4) and the gasket from water temperature regulator housing (5) .

Note: Type 1 and 9RM engines may have two water temperature regulators for some engine ratings. Type 2 and 7BJ engines will have one water temperature regulator for all engine ratings.

Note: Refer to the Testing and Adjusting Module for the correct procedure on testing the water temperature regulator.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Inspect the condition of the gasket. Replace the gasket, if necessary.

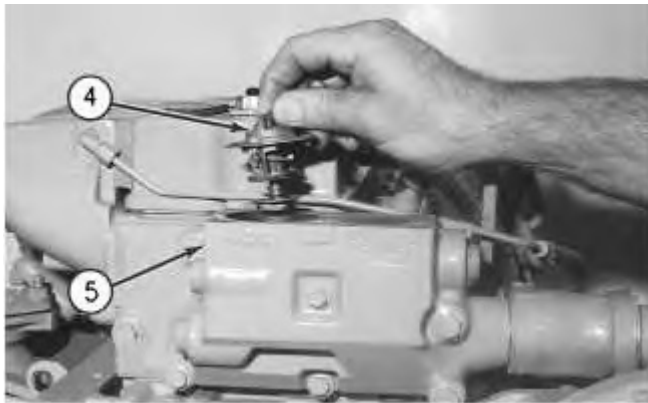


Illustration 3

g00546644

Typical example of Type 1 and 9RM engines

Note: For a complete description of Type 1 and Type 2 engines, refer to the Disassembly and Assembly, "Engine Design" topic.

Note: Type 1 and 9RM engines may have two water temperature regulators for some engine ratings. Type 2 and 7BJ engines will have one water temperature regulator for all engine ratings.

2. Install water temperature regulator (4) and the gasket into housing (5) .
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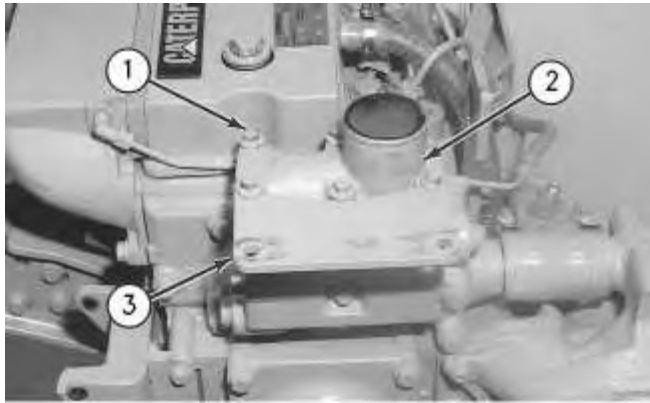


Illustration 4

g00546643

Typical example of Type 1 and 9RM engines

3. Install bracket (3) and cover (2) on the water temperature regulator housing.
4. Install six bolts (1) that fasten cover (2) and bracket (3) to the water temperature regulator housing.

Note: Type 2 engines and 7BJ engines have four mounting bolts (1) for the cover.

5. Install the upper radiator hose and fill the radiator to the correct level with coolant.

Note: Refer to the Operation and Maintenance Manual for the correct procedure.

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Publication Date -01/08/2008

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i01082786

Water Outlet Manifold - Remove

SMCS - 1362-011

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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 Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

1. Drain the coolant from the cooling system into a suitable container for storage or disposal.

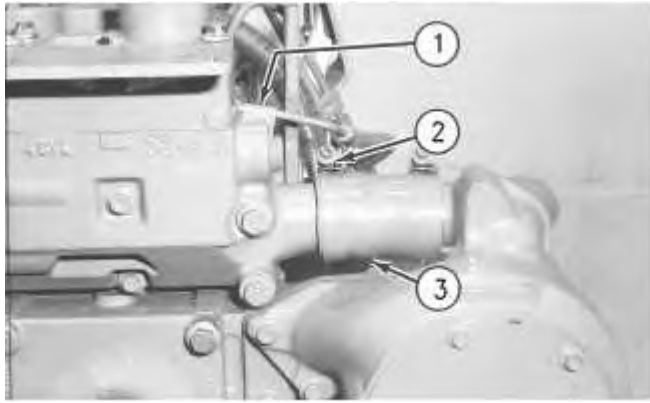


Illustration 1

g00553901

Typical example

2. Remove clamp (1) for the boost line.
3. Loosen clamp (2) and disconnect hose (3) .

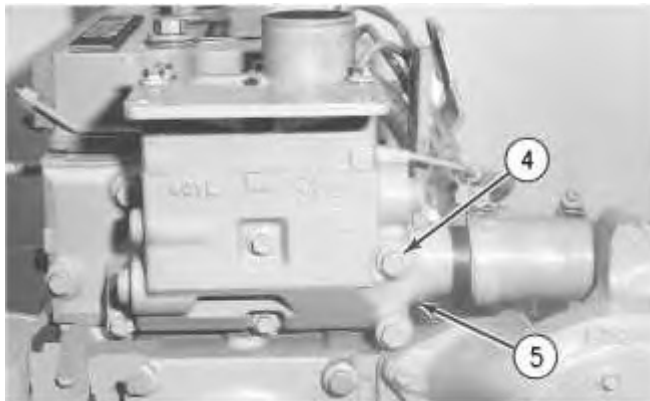


Illustration 2

g00553902

Typical example

4. Remove all bolts (4) that hold water outlet manifold (5) in position.
 5. Remove water outlet manifold (5) and the gasket.
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i01082822

Water Outlet Manifold - Install

SMCS - 1362-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

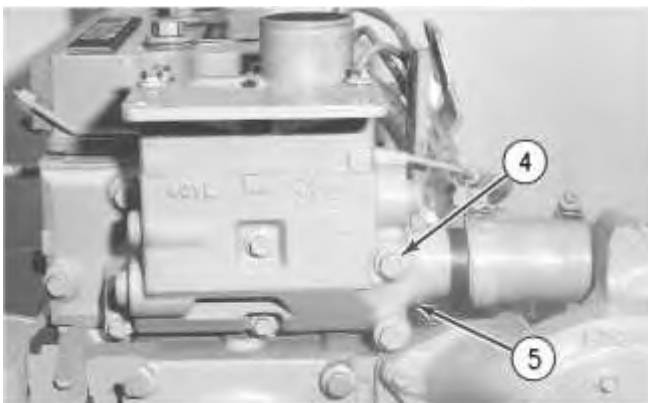


Illustration 1

g00553902

Typical example

1. Inspect the condition of the gasket. Replace the gasket, if necessary.

2. Put water outlet manifold (5) and the gasket in position on the engine.
3. Install bolts (4) that secure water outlet manifold (5) to the engine.

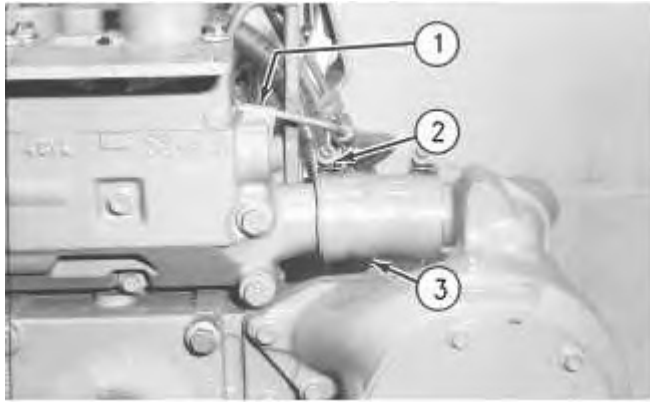


Illustration 2

g00553901

Typical example

4. Connect hose (3) and tighten clamp (2) .
 5. Install clamp (1) for the boost line.
 6. Install the upper radiator hose and fill the cooling system with coolant to the correct level. Refer to the Operation and Maintenance Manual for the correct procedure.
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i04406238

Flywheel - Remove

SMCS - 1156-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



Typical Example. Different lifting device shown than what is called out in the Table.



Illustration 2

g00546793

1. Install Tool (A) and a suitable lifting device on flywheel (1) .
2. Remove bolts (3) and bearing housing (4) .
3. Remove six bolts (2) and the washers from the flywheel.

Note: The 3054 and 3056 marine engines used several bolt patterns to attach the flywheel to the crankshaft. There are drilled holes that are not used in the crankshaft and in the flywheel.

4. Use the suitable lifting device in order to remove flywheel (1) . The weight of flywheel (1) and the flywheel ring gear is 53 kg (120 lb).
5. If removal of the flywheel ring gear is necessary, place an index mark on the chamfer of the flywheel ring gear for the installation process.



Illustration 3

g00546795



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