

## **Disassembly and Assembly**

### **3208 MARINE ENGINE**

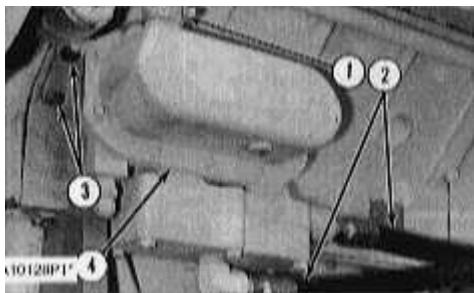
## **Engine Oil Cooler**

### **Remove & Install Engine Oil Cooler**

#### **FLUID SPILLAGE CONTAINMENT**

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the machine. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids. Refer to "TOOLS AND SHOP PRODUCT GUIDE, NENG2500", for tools and supplies suitable to collect and contain fluids in Caterpillar machines. Dispose fluids according to local regulations and mandates.

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



2. Remove hoses (2) from the cover and the base of the engine oil cooler.
3. Loosen clamps (1).
4. Remove four bolts (3) and engine oil cooler (4).

**NOTE:** For installation of the engine oil cooler, reverse the removal steps.

**NOTE:** For more detailed information regarding the engine oil cooler, see the topic "Engine Oil Cooler And Filter" in the Specifications Manual.

5. Fill the cooling system with coolant to the correct level. See the Operation & Maintenance Manual.

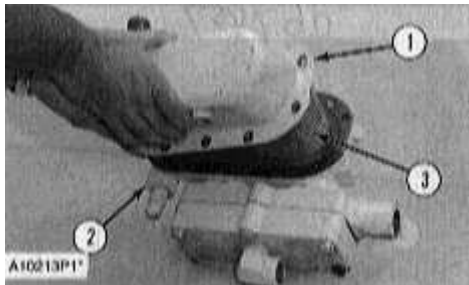
## Disassemble & Assemble Engine Oil Cooler

Start By:

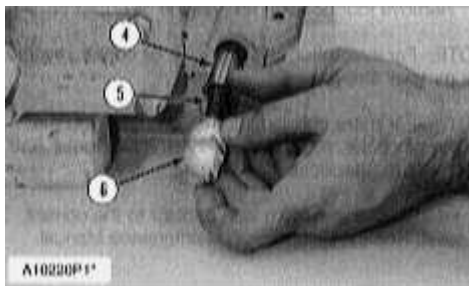
- a. remove engine oil cooler

### FLUID SPILLAGE CONTAINMENT

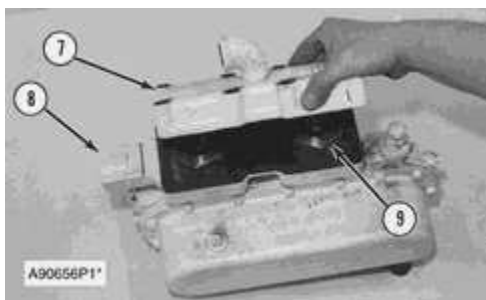
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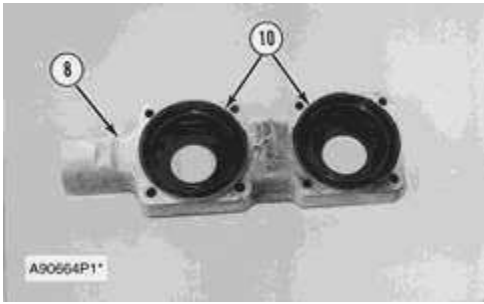
1. Remove the bolts that hold cover (1) to base (2). Remove the cover.
2. Remove the three nuts that hold core (3) to the base. Remove the core.



3. Remove the cap and fitting (6), spring (5) and valve (4) from the base.



4. Remove the bolts and cover (7).
5. Remove adapters (9) to remove base (8).



6. Remove seals (10) from base (8).

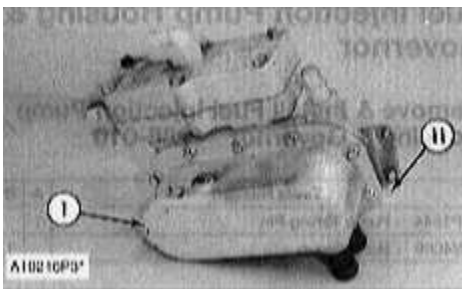
**NOTE:** The following steps are for assembly of the engine oil cooler.

7. Put clean engine oil on seals (10) and install them in base (8).

8. Put base (8) in position on the oil cooler and install adapters (9). Tighten the adapters to a torque of  $70 \pm 7 \text{ N}\cdot\text{m}$  ( $50 \pm 1 \text{ lb ft}$ ).

9. Put the gasket and cover (7) in position and install the bolts to hold cover (7) and base (8) together.

10. Install valve (4), spring (5), the cap and fitting (6) in base (2). Tighten fitting (6) to a torque of  $25 \pm 5 \text{ N}\cdot\text{m}$  ( $19 \pm 4 \text{ lb ft}$ ). Tighten the cap to a torque of  $20 \pm 5 \text{ N}\cdot\text{m}$  ( $15 \pm 4 \text{ lb ft}$ ).



11. Install the gasket that goes between the oil filter base and the core. The gasket must be installed with point (11) (indexing point) in the position shown.

12. Install core (3) and the nuts that hold it in the base. Tighten the nuts to a torque of  $21 \pm 3 \text{ N}\cdot\text{m}$  ( $16 \pm 2 \text{ lb ft}$ ).

13. Install the gasket that goes between the core and cover (1).

14. Put cover (1) in position on the base and install the bolts.

**NOTE:** For more detailed information regarding the engine oil cooler, see the topic "Engine Oil Cooler And Filter" in the Specifications Manual.

End By:

a. install engine oil cooler

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