

Product: BACKHOE LOADER

Model: 442E BACKHOE LOADER PCR

Configuration: 442E Backhoe Loader PCR00001-UP (MACHINE) POWERED BY C4.4 (MECH) Engine

## **Disassembly and Assembly**

### **C4.4 (Mech) Engines for Caterpillar Built Machines**

Media Number -KENR9210-10

Publication Date -01/12/2014

Date Updated -08/08/2018

i02763492

## **Cylinder Head - Remove**

SMCS - 1100-011

### **Removal Procedure**

#### **Start By:**

- a. Remove the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
- b. Remove the injectors. Refer to Disassembly and Assembly, "Injector - Remove".
- c. Remove the rocker shaft assembly and the pushrods. Refer to Disassembly and Assembly Manual, "Rocker Shaft and Pushrod - Remove".
- d. Remove the glow plugs. Refer to Disassembly and Assembly, "Glow Plugs - Remove and Install".

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#### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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#### **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**

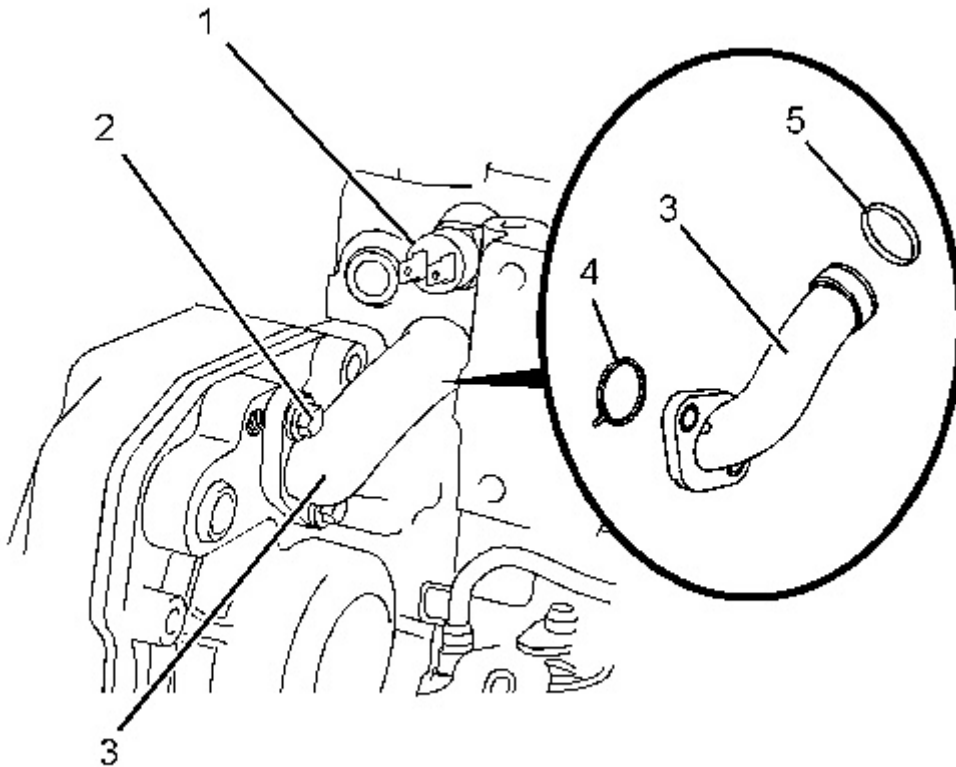
**before opening any compartment or disassembling any component containing fluids.**

**Dispose of all fluids according to local regulations and mandates.**

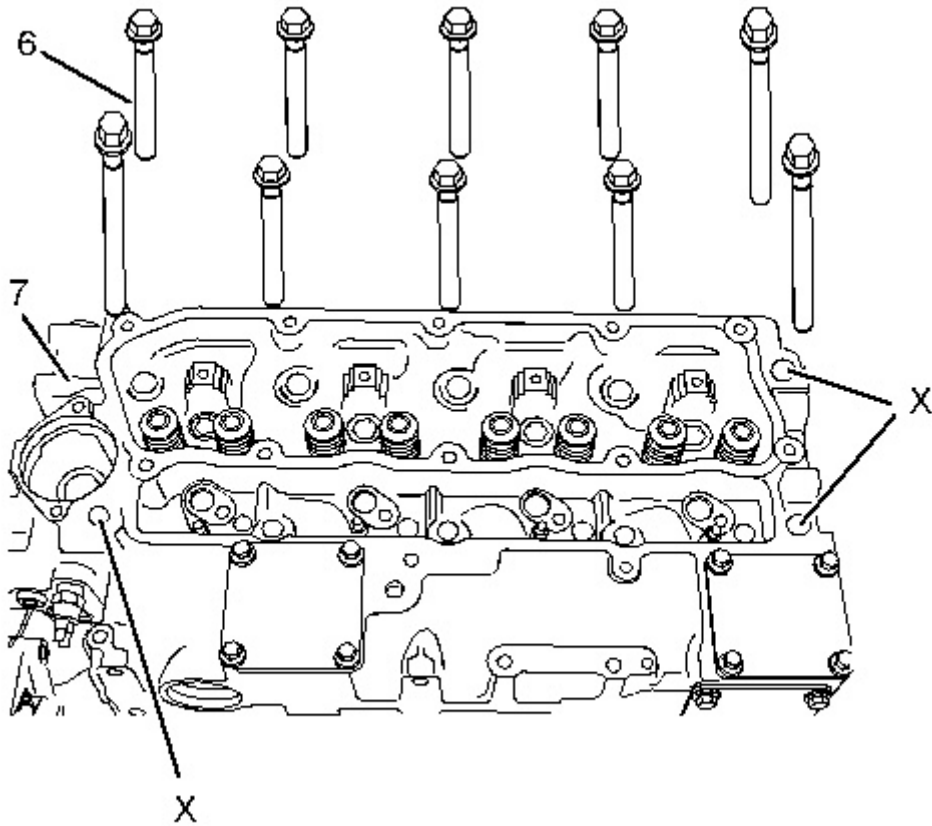
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**Note:** Put identification marks on all hoses, on all hose assemblies, on wires and on all tube assemblies for installation purposes. Plug all hose assemblies and tube assemblies. This helps to prevent fluid loss and this helps to keep contaminants from entering the system.

1. If the alternator bracket is mounted on the cylinder head, remove the alternator. Refer to Disassembly and Assembly, " Alternator - Remove".
  2. If the fuel priming pump and the fuel filter base are mounted on the cylinder head, remove the fuel priming pump and the fuel filter base. Refer to Disassembly and Assembly, "Fuel Priming Pump and Fuel Filter Base - Remove and Install".
  3. Drain the coolant from the cooling system into a suitable container for storage or for disposal. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change" for the correct draining procedure.
  4. Disconnect the upper radiator hose from the water temperature regulator housing.
  5. If necessary, remove the air hose from the inlet connection.
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6. Disconnect the harness assembly from sensor (1).
7. Remove bolts (2). Remove bypass tube (3) from the cylinder head. Remove O-ring seals (4) and (5).

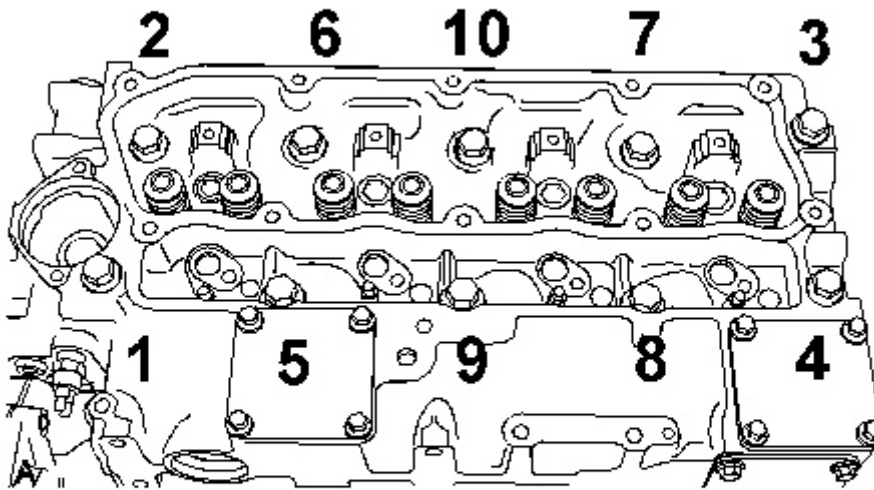


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Illustration 2  
Typical example

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Illustration 3

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Sequence for tightening the bolts for the cylinder head

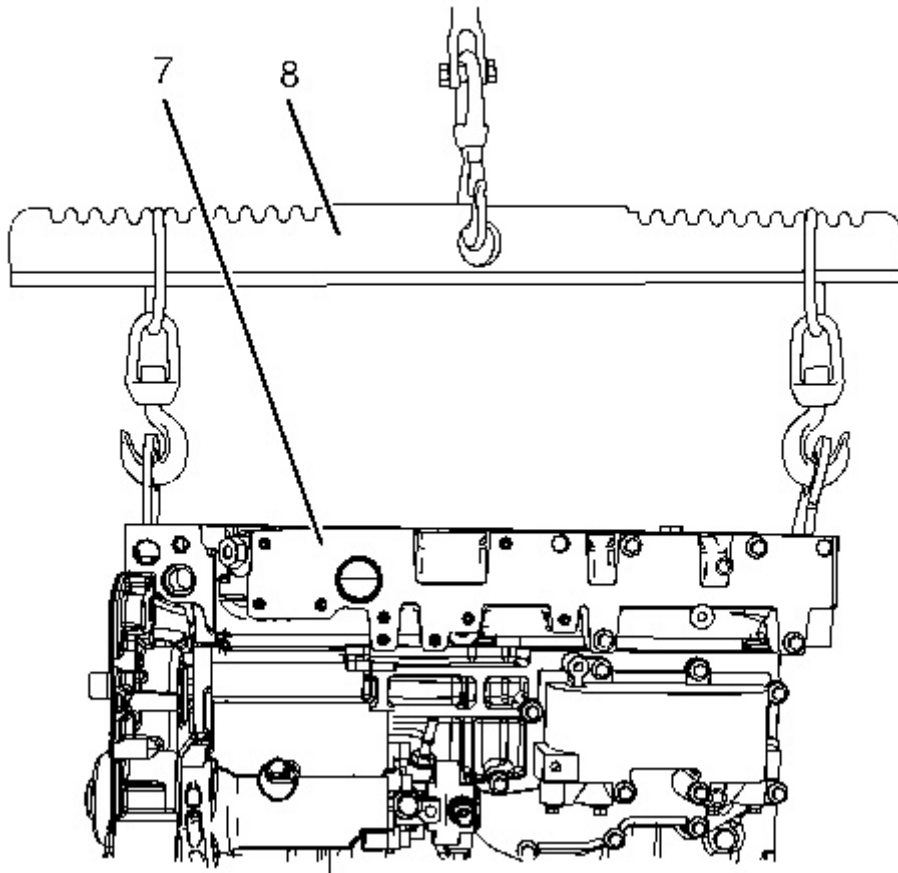
8. Gradually loosen bolts (6) in the reverse numerical order to the sequence that is shown in Illustration 3.

**Note:** Follow the correct sequence in order to help prevent distortion of the cylinder head.

9. Remove bolts (6) from cylinder head (7).

**Note:** The bolts are two different lengths. Note the positions of the different bolts.

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Illustration 4

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Typical example

10. Attach a suitable lifting device (8) to cylinder head (7). Support the weight of the cylinder head. The weight of the cylinder head is approximately 56 kg (124 lb).

**Note:** It is advisable to use a spreader bar during the lifting operation in order to distribute the weight of the cylinder head .

11. Use lifting device (8) to carefully lift cylinder head (7) off the cylinder block.

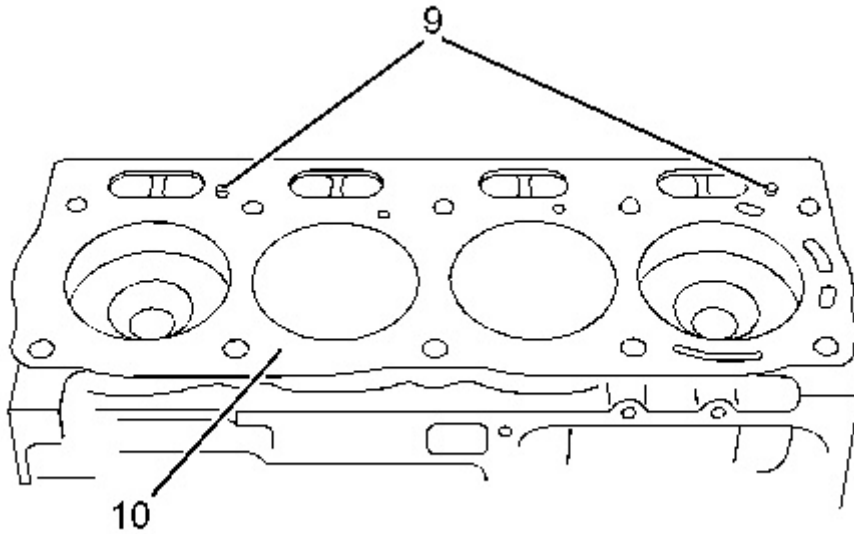
**Note:** Do not use a lever to separate the cylinder head from the cylinder block. Take care not to damage the machined surfaces of the cylinder head during the removal procedure.

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## NOTICE

**Place the cylinder head on a surface that will not scratch the face of the cylinder head.**

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Illustration 5

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Typical example

12. Remove cylinder head gasket (10).
  13. Note the position of dowels (9) in the cylinder block. Do not remove the dowels unless the dowels are damaged.
  14. If necessary, remove the sensor from cylinder head.
  15. If necessary, remove the water temperature regulator from the cylinder head. Refer to Disassembly and Assembly, "Water Temperature Regulator - Remove and Install".
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