

Product: TRACK-TYPE TRACTOR

Model: D7H TRACK-TYPE TRACTOR 2RG

Configuration: D7H & D7H LGP SERIES II TRACTORS / POWERSHIFT / 2RG04000-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly 3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SEN5598-09

Publication Date -01/01/2013

Date Updated -25/01/2013

i00991114

Cylinder Head - Remove

SMCS - 1100-011

Removal Procedure

Start By:

- A. Remove the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".
- B. Remove the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
- C. Remove the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrods - Remove".

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 machine. 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 in Caterpillar machines.

Dispose of all fluids according to local regulations and mandates.

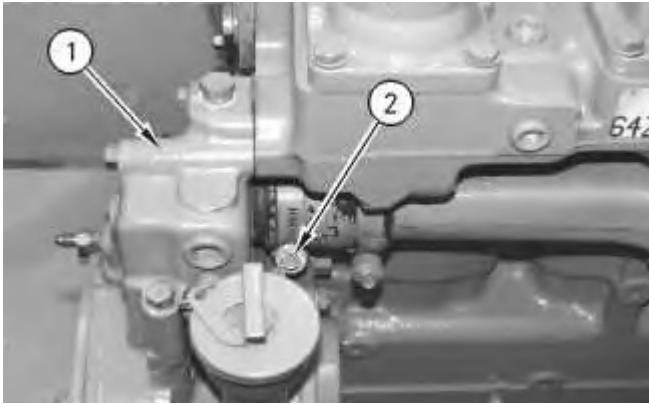


Illustration 1

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1. Loosen hose clamp (2) on the hose that connects the oil cooler to water pump elbow (1) .

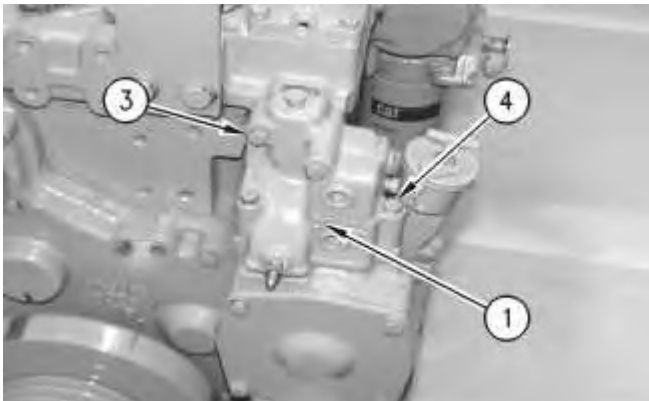


Illustration 2

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2. Remove two bolts (3) that fasten water pump elbow (1) to the cylinder head. Remove two bolts (4) that fasten water pump elbow (1) to the water pump.
 3. Carefully remove water pump elbow (1) and the gaskets from the engine.
-

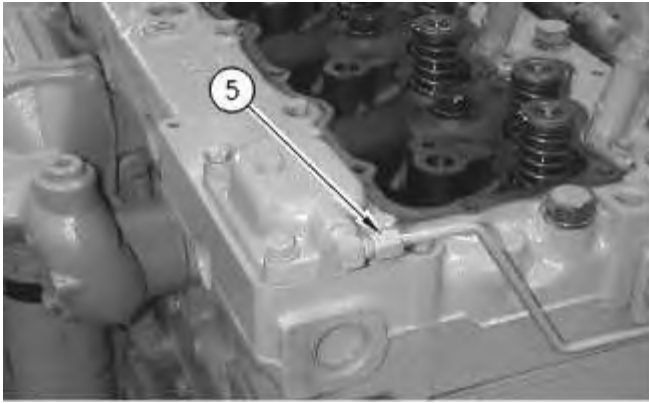


Illustration 3

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4. Disconnect tube (5) from the inlet manifold.

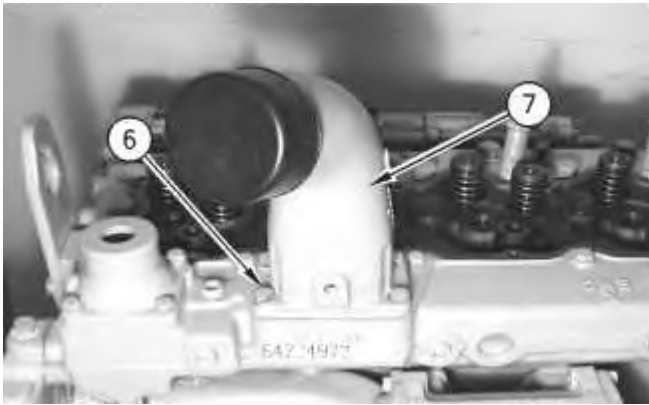


Illustration 4

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5. Remove four bolts (6) and remove air inlet pipe (7) .

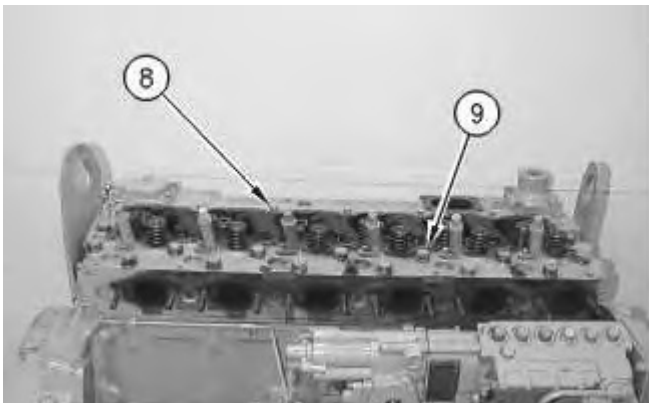


Illustration 5

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NOTICE

Do not set the cylinder head on a hard, flat surface. Damage may occur to the fuel injection nozzle tips.

6. Remove all bolts (8) and (9) that hold the cylinder head to the cylinder block.

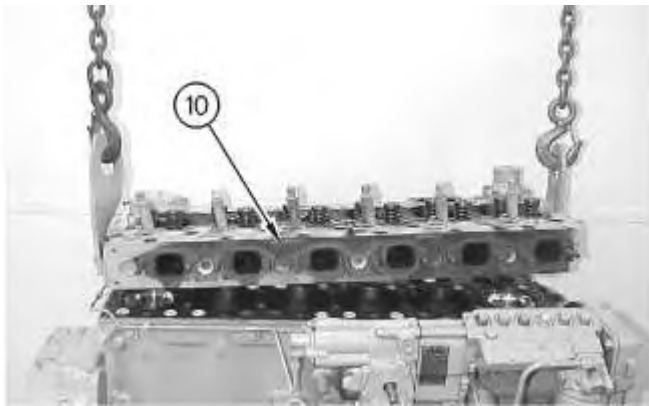


Illustration 6

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7. Attach the proper lifting device in order to remove cylinder head (10) from the engine. Remove cylinder head (10) from the engine. The weight of cylinder head (10) is approximately 95 kg (210 lb).
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i07489822

Cylinder Head - Install

SMCS - 1100-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Note: When the cylinder head is removed, a new spacer plate gasket must be installed. Refer to Disassembly and Assembly, "Spacer Plate - Remove and Install".

1. Ensure that the surface of the cylinder head is clean and dry. Install a new dry cylinder head gasket onto the cylinder block.

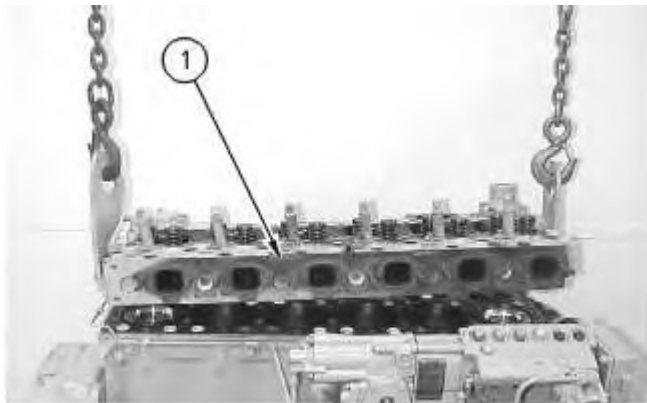


Illustration 1

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2. Fasten the proper lifting device to cylinder head (1). Put cylinder head (1) in position on the cylinder block. Remove the lifting device after cylinder head (1) is positioned.

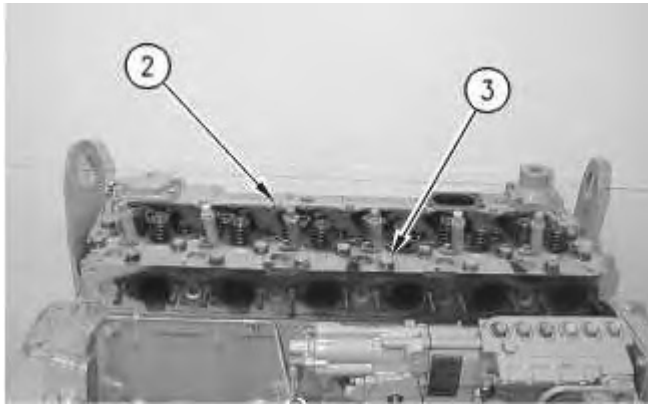


Illustration 2

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3. Apply clean engine oil to the threads and the washer faces of cylinder head bolts (2) and (3). Install cylinder head bolts (2) and (3). Tighten the cylinder head bolts finger tight.

Note: Do not tighten the cylinder head bolts at this time.



Illustration 3

g00511493

4. Install pushrods (4). Make sure that the pushrods are installed in the original location and that the pushrods are seated correctly in the valve lifters.
 5. Loosen the adjusting screws on rocker arms (5) for valve clearance. This will prevent a bent valve or a broken pushrod during installation.
 6. Install a new O-ring seal in the rear rocker arm support.
 7. Apply clean engine oil to all the rocker shaft bolts except bolt (25). Refer to illustration 5.
 8. Put rocker shaft assembly (5) in position on the cylinder head. Make sure that the dowels in the rocker shaft supports are aligned with the dowel holes in the cylinder head.
 9. Ensure that the rocker arms are aligned with the pushrods and install the rocker shaft mounting bolts. Tighten the rocker shaft mounting bolts finger tight.
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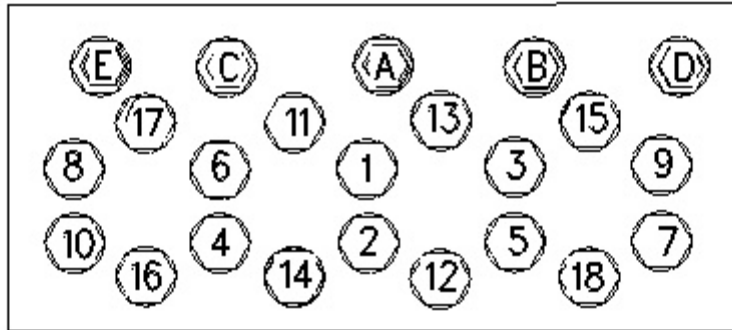


Illustration 4

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3304B torque sequence

10. Tighten the cylinder head bolts by hand, as follows:
 - a. Tighten all the bolts (1 through 18) in the numerical sequence to a torque of $150 \pm 15 \text{ N}\cdot\text{m}$ ($115 \pm 12 \text{ lb ft}$).
 - b. Tighten all the bolts (1 through 18) again in the numerical sequence to a torque of $250 \pm 17 \text{ N}\cdot\text{m}$ ($185 \pm 13 \text{ lb ft}$).
 - c. Tighten all the bolts (1 through 18) again in the numerical sequence to a final torque of $250 \pm 17 \text{ N}\cdot\text{m}$ ($185 \pm 13 \text{ lb ft}$).
 - d. Tighten all the remaining bolts (A through E) to a torque of $43 \pm 7 \text{ N}\cdot\text{m}$ ($32 \pm 5 \text{ lb ft}$).

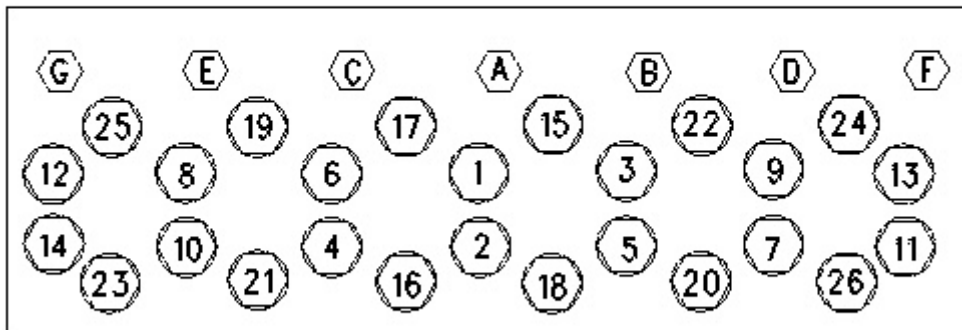


Illustration 5

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