Model: 350-A EXCAVATOR 8HK

Configuration: 350 & 350 L Excavators 8HK00001-UP (MACHINE) POWERED BY 3306 Engine

Disassembly and Assembly

3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SENR5598-09 Publication Date -01/01/2013

Date Updated -25/01/2013

i00921612

Compression Brake - Install

SMCS - 1119-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

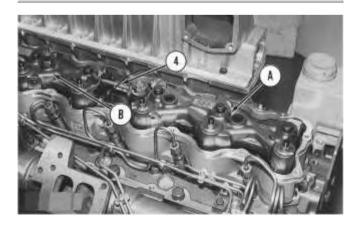


Illustration 1 g00471010

- 1. Install Compression Brake (B) and oil tube (4).
- 2. Install Compression Brake (A).

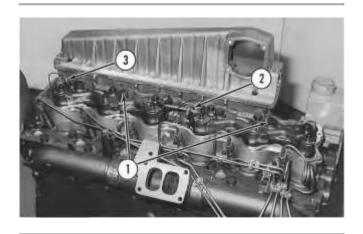


Illustration 2 g00471009

3. Connect wires (3) and (2). Install four bolts (1).

End By: Install the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install".

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Media Number -SENR5598-09 Publication Date -01/01/2013

Date Updated -25/01/2013

i00999978

Rocker Shaft and Pushrod - Remove

SMCS - 1102-011; 1208-011

Removal Procedure

Start By:

A. Remove the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

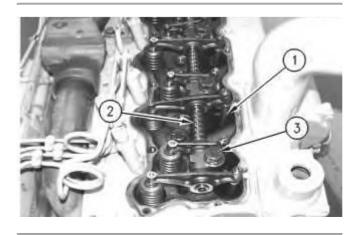


Illustration 1 g00539802

- 1. Remove six bolts (3) and rocker shaft assembly (2). Remove the O-ring seal from the rear rocker shaft support.
- 2. Put identification marks on pushrods (1) in order to identify the location of the pushrods in the engine. Remove pushrods (1) from the engine. Repeat this process for each pushrod.

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Disassembly and Assembly

3304B and 3306B Engines for Caterpillar Built Machines

Date Updated -25/01/2013

i01001004

Rocker Shaft - Disassemble

SMCS - 1102-015

Disassembly Procedure

Start By:

A. Remove the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrods - Remove".

Publication Date -01/01/2013

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

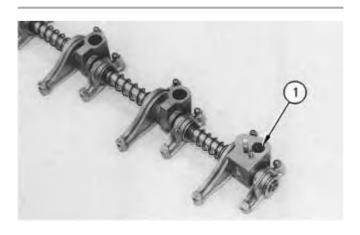


Illustration 1 g00490026

1. Remove O-ring seal (1) from the rear support bracket.

Note: Replace the O-ring seal when the head bolt is removed from the rear rocker shaft support.

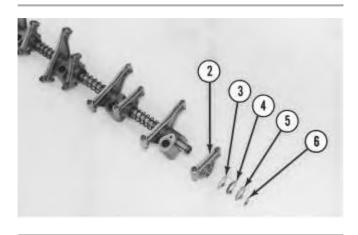


Illustration 2 g00490027

2. Remove retainer ring (6), washer (5), spring (4), washer (3) and rocker arm (2). Note the number of washers (3) that are used at both ends of the shaft. Remove rocker arms (2) from each end of the rocker shaft.

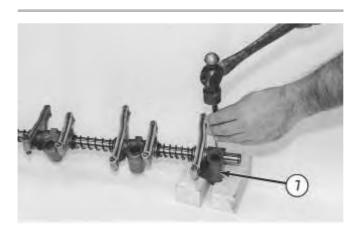


Illustration 3 g00449687

- 3. Remove the pin from the rear rocker shaft support (7) with a hammer and a suitable punch. Remove rear rocker shaft support (7).
- 4. Remove the remaining rocker arms, springs, washers and rocker shaft supports.
- 5. Remove the plugs from each end of the shaft, if necessary.

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Disassembly and Assembly

3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SENR5598-09 Publication Date -01/01/2013

Date Updated -25/01/2013

i01138110

Rocker Shaft - Assemble

SMCS - 1102-016

Assembly 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.

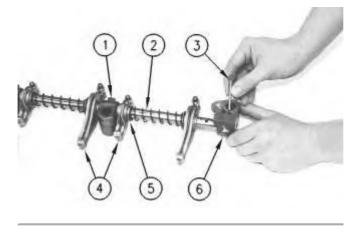


Illustration 1

- 1. Install rocker arms (4), supports (1), washer (5) and springs (2) on the rocker shaft.
- 2. Install rear rocker shaft support (6) on the rocker shaft. Ensure that the hole in the rear rocker shaft support is aligned with the hole in the rocker shaft.

g00449863

- 3. Install pin (3) through the rocker shaft support and the rocker shaft with a hammer.
- 4. Pin (3) must extend 9.60 mm (.378 inch) above the rocker shaft support.

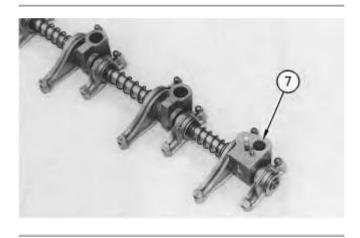


Illustration 2 g00449625

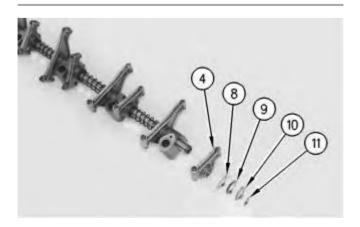


Illustration 3	g00449628
indutation 5	500117020

5. Install O-ring seal (7). Install rocker arm (4), washer (8), springs (9), washer (10) and retainer ring (11).

Note: Make sure that the correct number of washers (8) are installed on the shaft.

6. Install the plugs in each end of the rocker shaft if the plugs were removed.

End By: Install the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrods - Install".

Model: 350-A EXCAVATOR 8HK

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Disassembly and Assembly

3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SENR5598-09 Publication Date -01/01/2013

Date Updated -25/01/2013

i07085956

Rocker Shaft and Pushrod - Install

SMCS - 1102-012; 1208-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

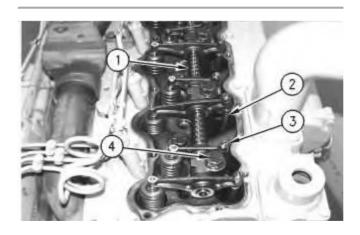


Illustration 1

g00539829

1. Loosen adjusting screws (3). This will prevent a bent valve or a bent pushrod during the installation of the rocker shaft assembly. Install pushrods (2) and ensure that the pushrods are seated in the valve lifters.

2. Install rocker shaft assembly (1) in position on the cylinder head.

NOTICE

Ensure that the dowels on each end of the rocker shaft assembly are in alignment with the holes in the cylinder head.

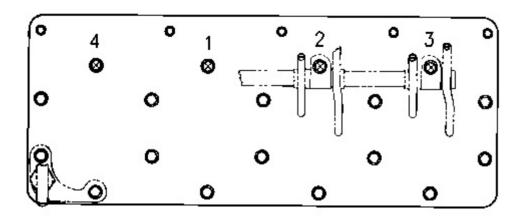


Illustration 2 g00591852 3304B torque sequence

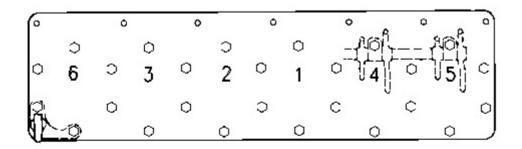


Illustration 3 g00544706

Note: Replace the O-ring seal when the bolt toward the rear of the engine is installed in the rocker shaft support.

- 3. Apply **6V-4876** Lubricant on the threads of six bolts (4) except for the bolt that passes through the rear rocker shaft support (bolt (6) in Illustration 3). Install six bolts (4) in the rocker shaft assembly.
- 4. Refer to Illustration 3. Tighten six bolts (4) for the rocker shaft, as follows:
 - a. Tighten all the bolts in the numerical sequence to a torque of 155 N·m (115 lb ft).
 - b. Tighten all the bolts in the numerical sequence to a torque of $250 \pm 17 \text{ N} \cdot \text{m}$ (185 ± 13 lb ft).
 - c. Tighten all the bolts again in the numerical sequence to a final torque of $250 \pm 17 \text{ N} \cdot \text{m}$ (185 ± 13 lb ft).
- 5. The assembled length of the springs at both ends of the rocker shaft must be 1.50 ± 0.25 mm (.059 \pm .010 inch). Remove the washers or install the washers behind the springs to change the assembled length of the springs.
- 6. Adjust the inlet valve lash to 0.38 ± 0.08 mm ($.015 \pm .003$ inch) and adjust the exhaust valve lash to 0.64 ± 0.08 mm ($.025 \pm .003$ inch). Refer to Testing and Adjusting, "Air Inlet and Exhaust System" for more information on setting the valve lash. Tighten the locknuts for the adjusting screws (3) to a torque of 29 ± 7 N·m (21 ± 5 lb ft). Refer to Specifications, "Valve Rocker Arms and Lifters".

End By:

a. Install the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install".

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Media Number -SENR5598-09

Configuration: 350 & 350 L Excavators 8HK00001-UP (MACHINE) POWERED BY 3306 Engine

Disassembly and Assembly

3304B and 3306B Engines for Caterpillar Built Machines

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".

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- 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

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.

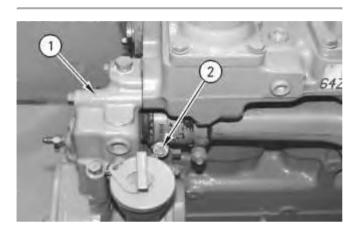


Illustration 1 g00505124

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

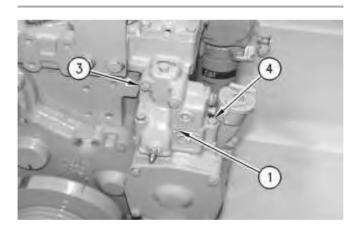


Illustration 2 g00505164

- 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.

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