

Product: WHEEL SCRAPER

Model: 623E WHEEL SCRAPER 5SG

Configuration: 623E Wheel Tractor/Scraper 5SG00001-00479 (MACHINE) POWERED BY 3406 Engine

Disassembly and Assembly 3406C DIESEL ENGINES FOR CATERPILLAR BUILT MACHINES

Media Number -SEN6409-02

Publication Date -01/07/2006

Date Updated -19/05/2015

SEN64090022

Rocker Shaft Assemblies & Push Rods

SMCS - 1102; 1208-011; 1208-012

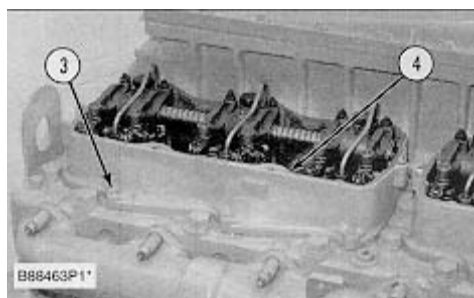
Remove Rocker Shaft Assemblies & Push Rods

| Tools Needed | | A | B |
|--------------|------------------|---|---|
| 5P0144 | Socket | 1 | |
| 5P5195 | Fuel Line Wrench | | 1 |

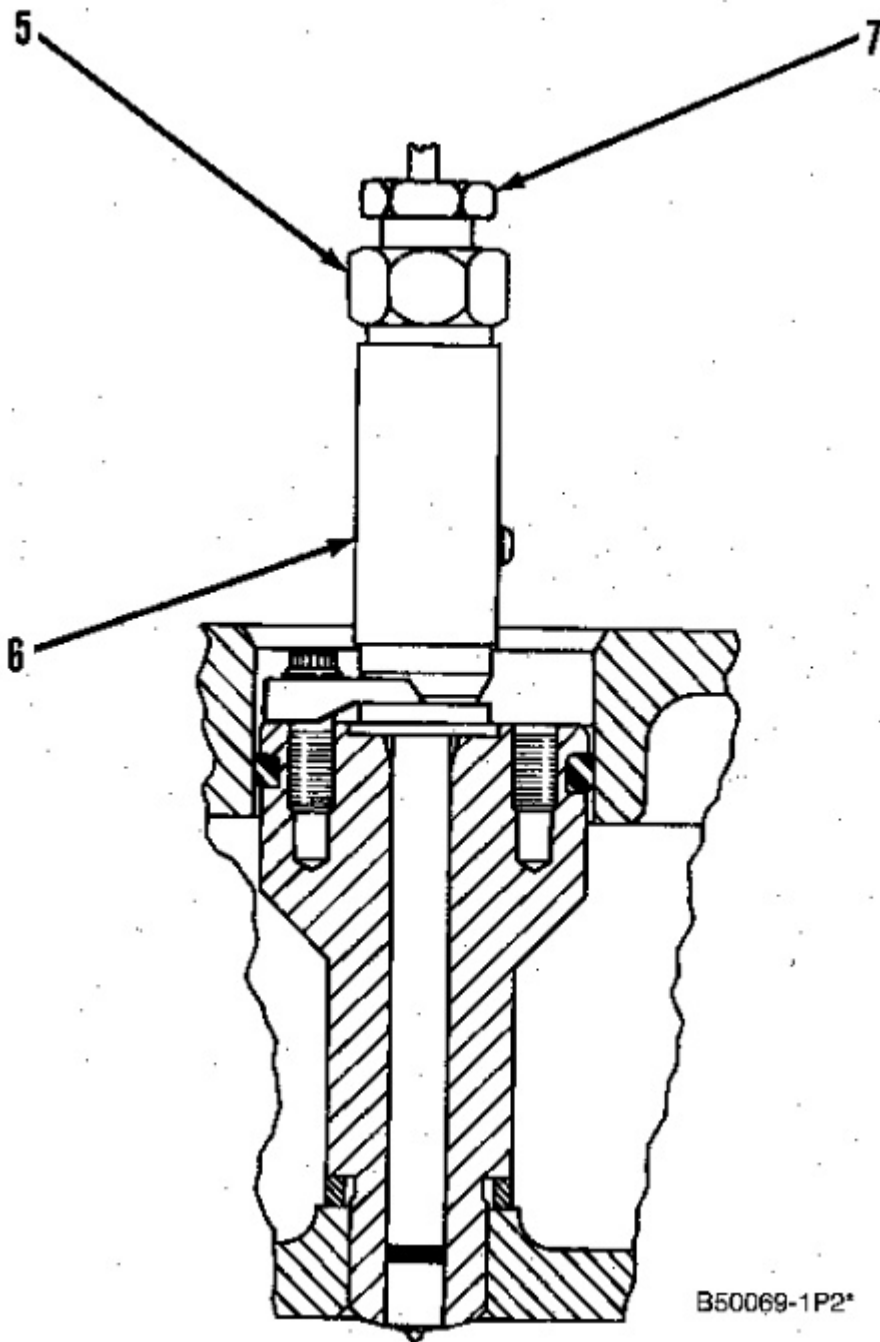
Start By:

a. remove valve covers

NOTE: Call out (1) and (2) are not used in this removal procedure. Call outs begin with number (3).

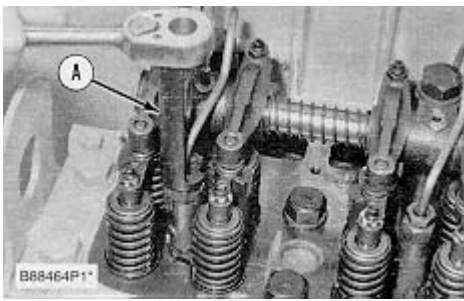


1. Remove bolts (3) that hold the valve cover bases to the cylinder head assembly. Remove valve cover bases (4).

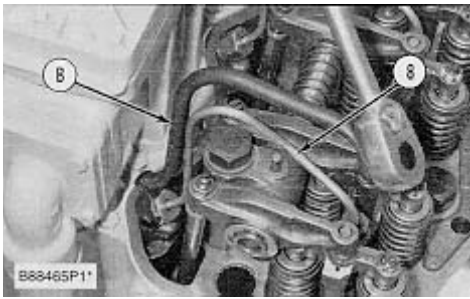


NOTICE

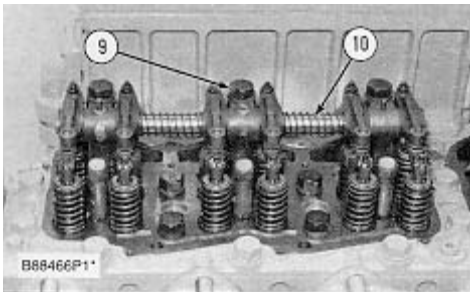
To prevent damage to the fuel injection nozzle, hold adapter assembly (5) in position at the of injection nozzle (6) when fuel line nut (7) is loosened or tightened.



2. Use Tool (A) and a 7/8 **5P0328 Crow Foot (in)** to loosen the fuel injection line nut at the nozzle end.

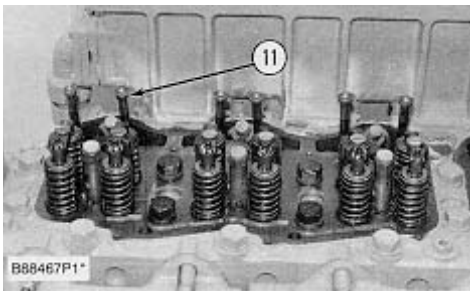


3. Use Tool (B) to loosen the nut at the fuel injection line adapter end. Remove inner fuel injection lines (8). Install caps and plugs on all fuel injection line openings to keep dirt out of the fuel system.

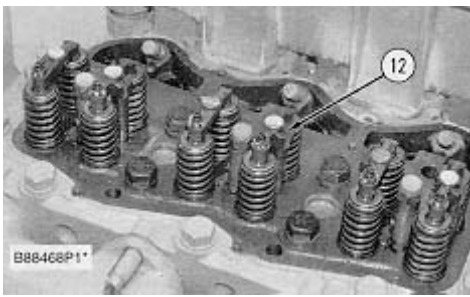


4. Remove bolts (9) that hold the rocker shaft assemblies to the cylinder head assembly.

5. Remove rocker shaft assemblies (10).



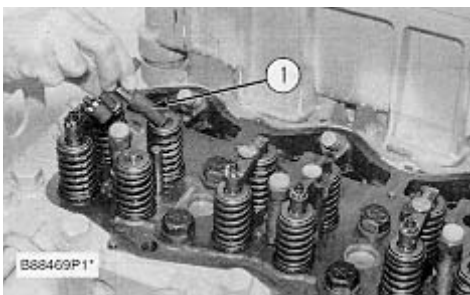
6. Put identification marks on the push rods as to their location in the engine. Remove push rods (11).



7. Put identification marks on the bridges as to their location in the engine. Remove bridges (12) from the dowels on the cylinder head assembly.

Install Rocker Shaft Assemblies & Push Rods

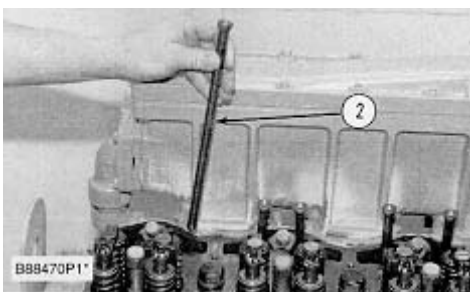
| Tools Needed | | A | B |
|--------------|------------------|---|---|
| 5P5195 | Fuel Line Wrench | 1 | |
| 5P0144 | Socket | | 1 |



1. Put clean engine oil on the bridges and dowels.

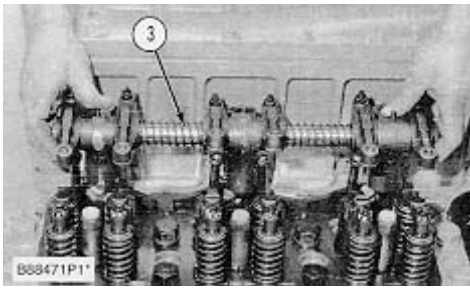
NOTE: Install the original bridges in their respective locations. New bridges can be mixed.

2. Install bridges (1) on the bridge dowels. While firmly pressing **0.5 to 4.5 kg (1 to 10 lb)** straight down on the top contact surface of the bridge, turn the adjusting screw clockwise until contact is made with the valve stem. Turn the screw an additional **1/31/2 20 to 30 degrees (to of 1 hex on nut)**. This will straighten the dowel in the guide and compensate for the slack in the threads. Hold the adjusting screw in this position and tighten the locknut to a torque of **30 ± 4 N·m (22 ± 3 lb ft)**.



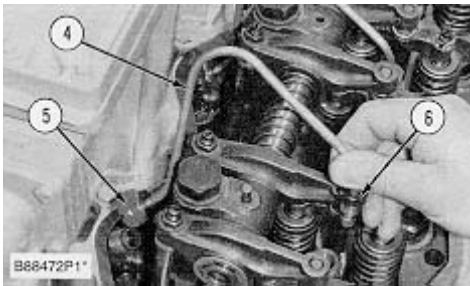
NOTE: Install the original push rods in their respective locations in the engine. New push rods can be mixed.

3. Install push rods (2).



4. Put rocker shaft assemblies (3) in position on the cylinder head assembly.

5. Put clean engine oil on the threads of the bolts that hold the rocker shaft assemblies in place. Tighten the bolts first to a torque of **$270 \pm 25 \text{ N}\cdot\text{m}$ ($200 \pm 18 \text{ lb ft}$)**. Start with the bolt in the center of the rocker shaft assembly. Tighten the bolts again to a torque of **$450 \pm 20 \text{ N}\cdot\text{m}$ ($330 \pm 15 \text{ lb ft}$)**. Tighten the bolts again by hand to a torque of **$450 \pm 20 \text{ N}\cdot\text{m}$ ($330 \pm 15 \text{ lb ft}$)**.



NOTICE

Do not cause damage to the O-ring seals on the inner fuel lines.

6. Install inner fuel injection lines (4). Tighten the fuel injection line adapter nuts (5) to a torque **$40 \pm 7 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ lb ft}$)** with Tool (A).

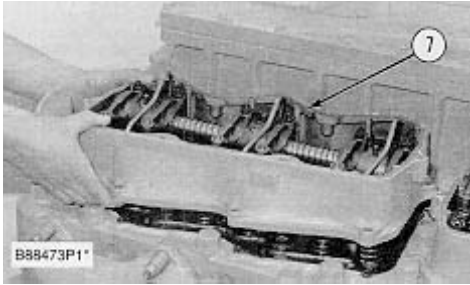
NOTICE

Do not let the tops of the fuel nozzles turn when the fuel lines are tightened. The nozzles will be damaged if the top of the nozzles turns in the body.

7. Tighten fuel injection line nut (6) to a torque of **$40 \pm 7 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ lb ft}$)** with Tool (B) and a **7/8 5P0328 (in) Crow Foot wrench**.

8. Make adjustments to the valves until the intake valve clearance is **0.38 mm ($.015 \text{ in}$)** and the exhaust valve clearance **0.76 mm ($.030 \text{ in}$)**. See the topic "Valve Clearance Setting" in Testing &

Adjusting Manual SENR6471. Tighten the locknut to a torque of **$30 \pm 4 \text{ N}\cdot\text{m}$ ($22 \pm 3 \text{ lb ft}$)** and check the adjustments.



9. Install valve cover bases (7) on the cylinder head assembly. Install bolts that hold the valve cover bases in place. Tighten the bolts to a torque of **$14 \pm 3 \text{ N}\cdot\text{m}$ ($10 \pm 2 \text{ lb ft}$)**.

End By:

a. install valve covers

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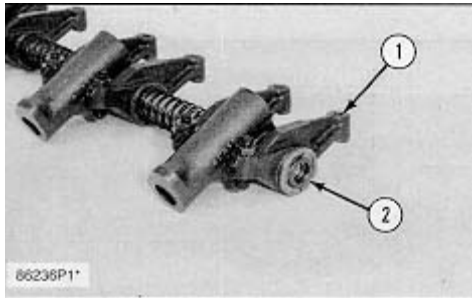
Rocker Shaft Assemblies

SMCS - 1102-015; 1102-016

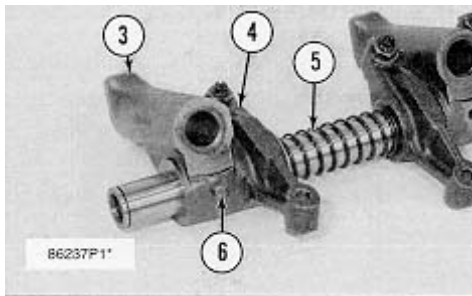
Disassemble Rocker Shaft Assemblies

Start By:

- a. remove rocker shaft assemblies and push rods



1. Remove retainer (2) from the end of the shafts.
2. Remove the washers and rocker arms (1).

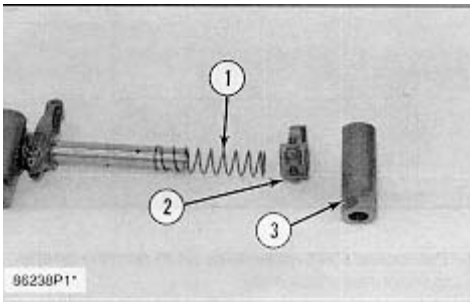


3. Remove pins (6) that hold the brackets to each end of the shaft.

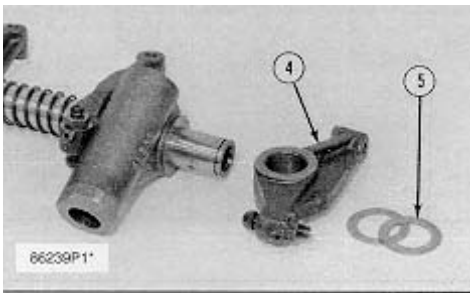
NOTE: The center bracket does not have a pin.

4. Remove bracket (3), rocker arm (4) and spring (5).

Assemble Rocker Shaft Assemblies



1. Put clean engine oil on the shaft.
2. Install the bracket and rocker arms for the center bracket.
3. Install spring (1), rocker arm (2) and bracket (3). Install the pin that holds the brackets on each end of the rocker shaft. Install the pin until it extends **12.7 ± 1.0 mm (.50 ± .04 in)** from the surface of the bracket.



4. Install rocker arm (4) on each end of the shaft. Install washers (5) as needed to get an assembled clearance of **.030 to 1.40 mm (.0012 to .055 in)** at each end of the shaft. Install the retainer on each end of the shaft.

End By:

- a. install rocker shaft assemblies and push rods
-

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