



Service Repair Manual

Models

16G MOTOR GRADER

Product: MOTOR GRADER

Model: 16G MOTOR GRADER 93U

Configuration: 16G MOTOR GRADER 93U01179-02678 (MACHINE) POWERED BY 3406 ENGINE

Disassembly and Assembly

3406C DIESEL ENGINES FOR CATERPILLAR BUILT MACHINES

Media Number -SEN6409-02

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SEN64090010

Fuel Injection Pump Housing

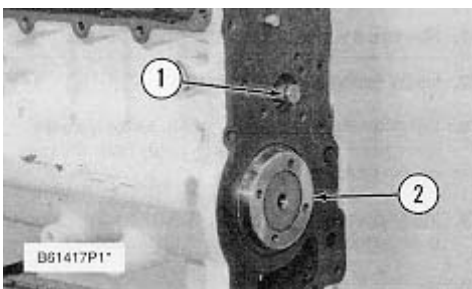
SMCS - 1253-015; 1253-016

Disassemble Fuel Injection Pump Housing

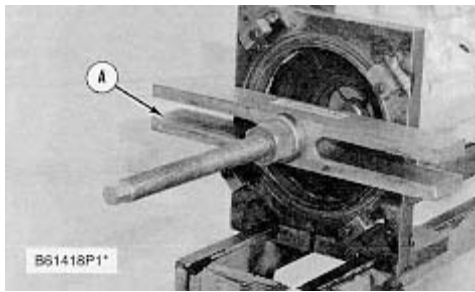
Tools Needed		A
8S2241	Tool Group	1
8B7548	Puller Assembly	1

Start By:

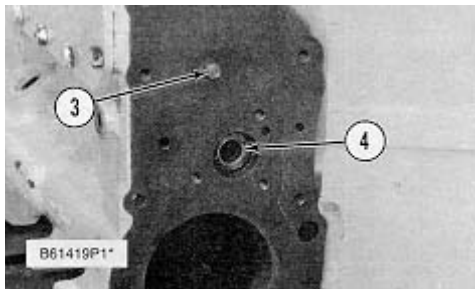
- a. disassemble governor
- b. remove fuel injection pumps



1. Remove the six lifters from the fuel pump housing.
2. Remove rack (1) and camshaft (2) from the fuel pump housing. If necessary, use a soft hammer to push the camshaft out the governor end.

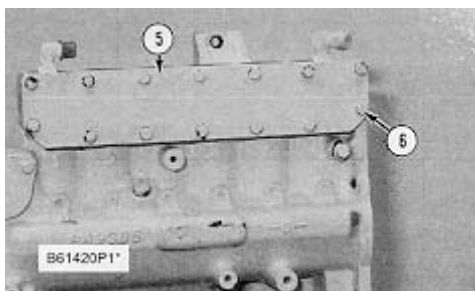


3. Use Tool (A) and remove the three camshaft bearings from the fuel pump housing.



4. Remove rack bearing (4) and the other rack bearing from the fuel pump housing.

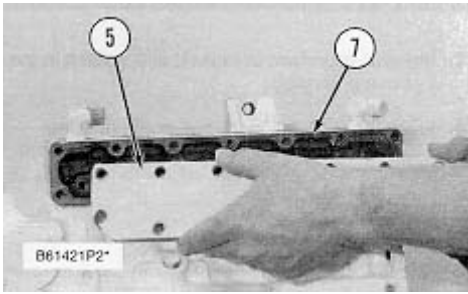
5. Remove dowel (3) from the fuel pump housing.



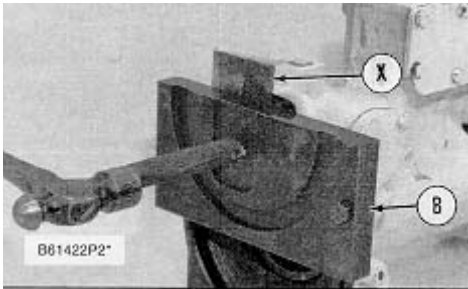
6. Remove bolts (6), cover (5) and the gasket from the fuel pump housing.

Assemble Fuel Injection Pump Housing

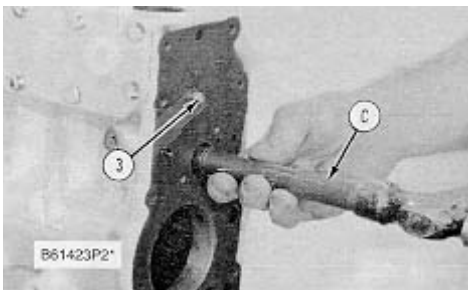
Tools Needed		A	B	C
8S2241	Tool Group	1		
6V4824	Driver		1	
6V4825	Plate		1	
1P510	Driver Group			1



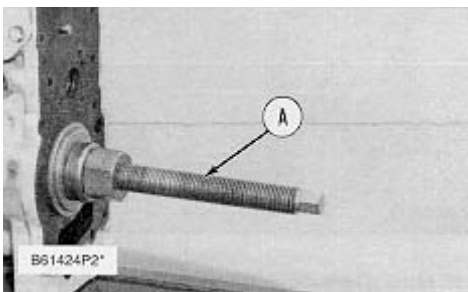
1. Install gasket (7) and cover (5) on the side of the fuel pump housing.



2. Use Tool (B) and install the D shaped rack bearing into the governor and fuel pump drive side of the fuel pump housing $87.0 \pm 0.5 \text{ mm}$ ($3.42 \pm .02 \text{ in}$) from outside surface (X).
3. The inside flat diameter after assembly must be $11.178 \pm 0.050 \text{ mm}$ ($.440 \pm .002 \text{ in}$) and the inside large diameter must be $12.767 \pm 0.058 \text{ mm}$ ($.503 \pm .002 \text{ in}$).

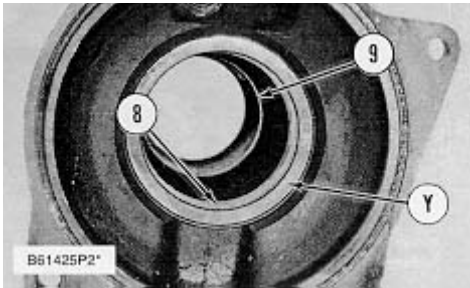


4. Install dowel (3) in the fuel pump housing 6.0 ± 0.5 ($.24 \pm .02 \text{ in}$) above the outside surface.
5. Use Tool (C) and install the rack bearing into the fuel pump housing $7.16 \pm 0.13 \text{ mm}$ ($.282 \pm .005 \text{ in}$) below the surface of the pump housing.
6. The inside diameter of the bearing after assembly must be 12.746 ± 0.045 ($.502 \pm .002 \text{ in}$).



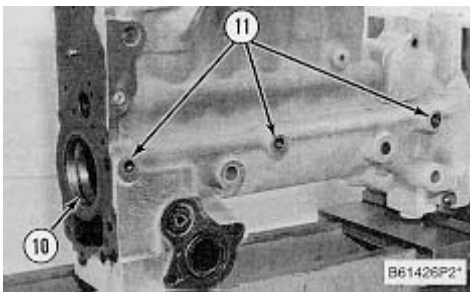
7. Use Tool (A) and install the three camshaft bearings in the fuel pump housing with the oil holes in the bearings $30 \pm 3 \text{ degrees}$ from the horizontal center line toward the plugged holes in the fuel pump housing.

8. The inside diameter of all three bearings after assembly must be **68.399 ± 0.038 mm ($2.6905 \pm .0015$ in)**.



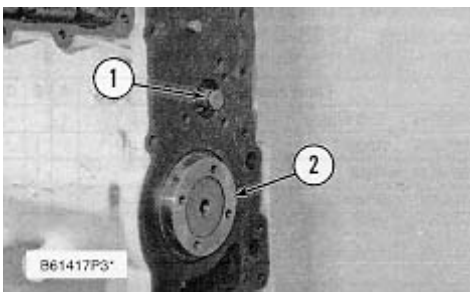
9. Make sure bearing (8) on the governor and fuel pump drive is installed **1.0 ± 0.5 mm ($.04 \pm .02$ in)** below surface (Y).

10. Make sure middle bearing (9) is **218 ± 0.3 mm ($8.6 \pm .01$ in)** below surface (Y).



11. Make sure bearing (10) governor side is **1.00 ± 0.25 mm ($.040 \pm .010$ in)** below the outside surface.

12. Remove the plugs from the side of the fuel pump housing. The oil holes in the bearings must in alignment with holes (11) in the fuel pump housing. If the bearings are not in alignment, remove them and install again.



13. Make an alignment of rack (1) and install it in the fuel pump housing.

14. Install the six lifters in the fuel pump housing. Make sure the pins in the lifter are on the same side as the dowels in the fuel pump housing.

End By:

a. install fuel injection pumps

b. assemble governor

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