Model: D6E TRACK-TYPE TRACTOR 2MJ

Configuration: D6E TRACTOR / POWER SHIFT / 2MJ00001-01157 (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

i00886792

## **Governor - Disassemble**

**SMCS - 1264-015** 

# **Disassembly Procedure**

Table 1

Required Tools				
Tool	Part Number	Part Description	Qty	
A	1P-0510	Driver Group	1	
В	6V-2163	Spring Clamp	1	
C	1P-1855	Retaining Ring Pliers	1	

## **Start By:**

A. Remove the fuel injection pump housing and the governor. Refer to Disassembly and Assembly, "Fuel Injection Pump Housing and Governor - Remove".

**Note:** To remove the governor for the disassembly of the fuel injection pump housing, perform Steps 1, 2, 16, 22, 24, 25, 26, 27, 30, 32 and 34.

## **NOTICE**

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

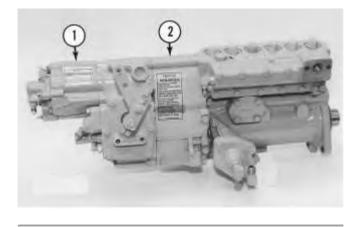


Illustration 1 g00453006

1. Remove fuel ratio control (1) from governor (2).

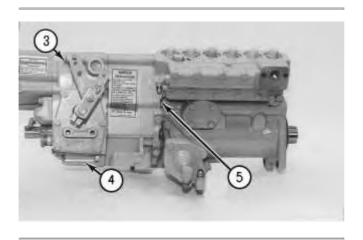


Illustration 2 g00453007

**Note:** Illustration 2 shows the fuel ratio control that is still connected.

2. Remove six bolts (3), two bolts (5), housing (4) and the gasket.

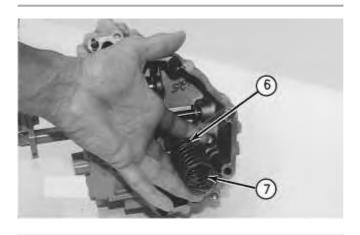


Illustration 3 g00453008

3. Remove governor spring (7), seat (6) and the washers.

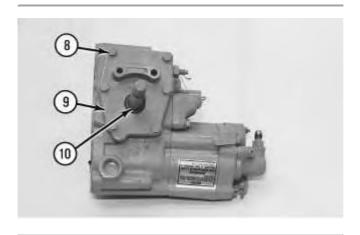


Illustration 4 g00453009

4. Remove six bolts (8), cover (9) and the gasket. Use Tool (A) in order to remove seal (10).

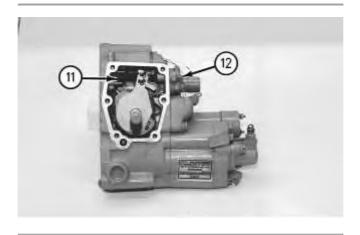


Illustration 5 g00453010

5. Remove low idle adjustment screw (12) and spring (11).

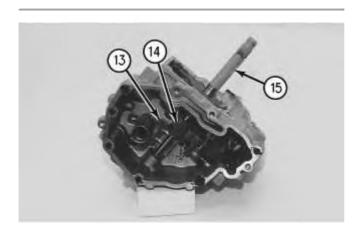


Illustration 6 g00453011

6. Remove shaft assembly (15) and levers (14) and (13).

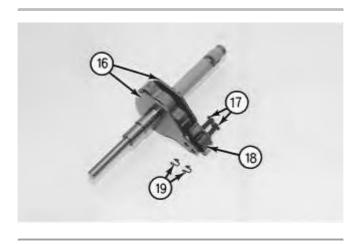


Illustration 7 g00453012

7. Remove two snap rings (19) from two pins (17). Remove two pins (17). Remove plates (16) and stop (18).

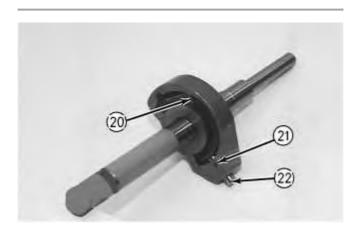


Illustration 8 g00453014

8. Remove pins (21) and (22) and remove spring (20).

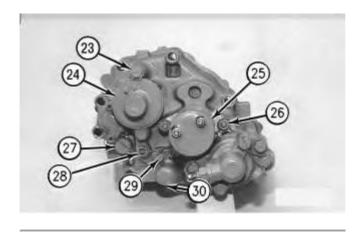


Illustration 9

9. Remove two bolts (23), and the washers, and remove adapter (24), the coupling, and the Oring seal.

g00453015

- 10. Remove contact (27) and body (28) with an O-ring seal.
- 11. Remove two bolts (29) and the washers and remove cover (30) and the gasket.
- 12. Remove two nuts and washers (26) and remove shutoff solenoid (25) and the gasket.

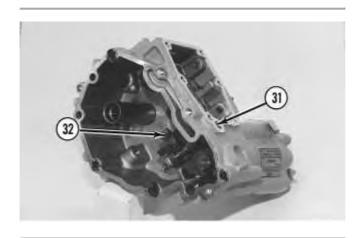


Illustration 10 g00453016

13. Remove shaft (31) and lever (32).

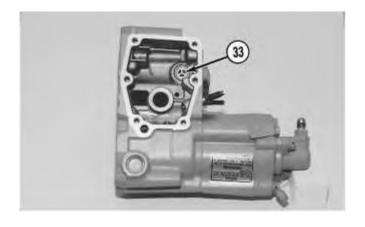


Illustration 11 g00453017

**Note:** The check valve will be damaged during removal. Remove check valve (33) only if a replacement is necessary.

14. Remove check valve (33) only if a replacement is necessary.

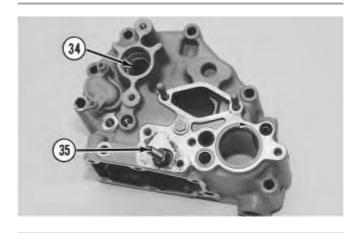


Illustration 12 g00453018

15. Remove seal (34) and adjustment screw (35).

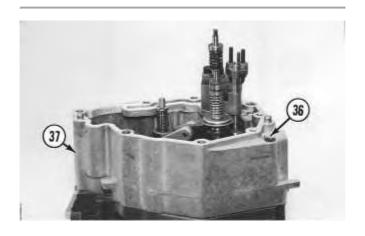


Illustration 13 g00453019

16. Remove bolt (36), housing (37) and the gasket from the fuel injection pump housing.

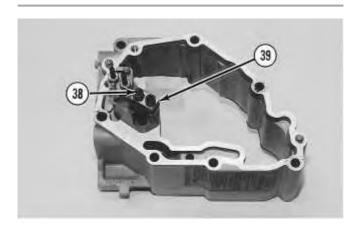


Illustration 14

g00453557

Typical example

- 17. Remove bolts (38) and remove torque control (39).
- 18. Disassemble torque control (39) and inspect the spacer, the spring, and the insulator for damage or wear. Replace parts that are worn or damaged with new parts.

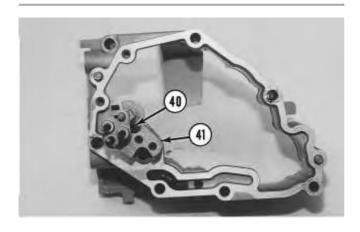


Illustration 15

g00453558

19. Remove two bolts (40) and block (41).

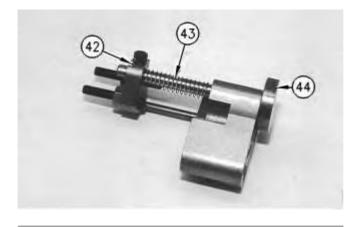


Illustration 16 g00453559

20. Remove the bolt that holds collar (42) to bolt (44). Remove collar (42), spring (43) and bolt (44).

21. Remove the stop screws from collar (42) if the collar needs to be replaced.

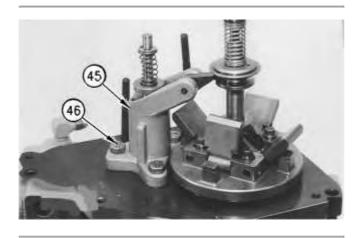
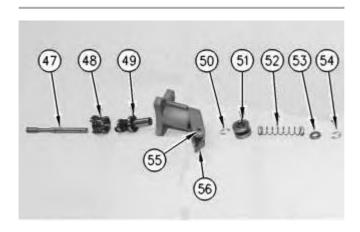


Illustration 17 g00453560

22. Remove three bolts (46) and remove governor servo (45). The governor servo must be rotated in order to be released from the rack's regulator.



23. Remove lockring (50), seat (53), link spring (52) and sleeve (51). Remove the other lockring (50) from the groove in the center of valve (47). Remove valve (47), sleeve (48) and piston (49). The piston must be pushed down in order to be removed. Remove the Oring seal from sleeve (48). Remove pin (55) and lever (56).

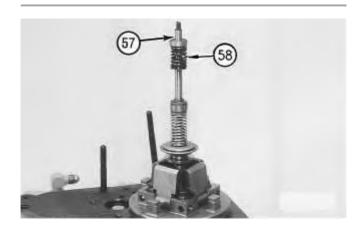


Illustration 19 g00453633

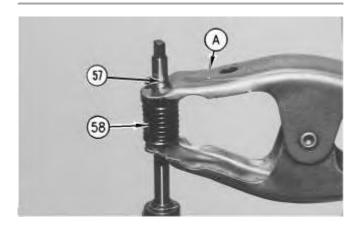


Illustration 20 g00453634

- 24. Use Tool (A) in order to hold spring (58) compressed for the removal of ring (57). Spring (58) is used in order to put a preload on the thrust bearing for the camshaft in the fuel injection pump housing.
- 25. Remove ring (57) and slowly release Tool (A).

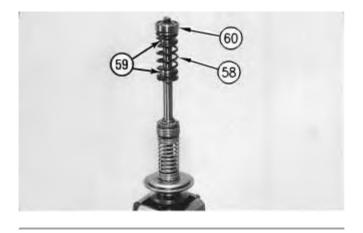


Illustration 21 g00453635

26. Remove bearing (60), sleeves (59) and spring (58).

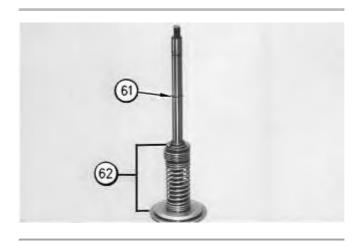


Illustration 22 g00453636

27. Remove ring (61) and dashpot assembly (62) .

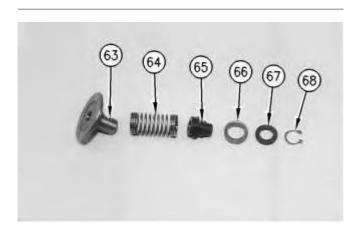


Illustration 23 g00453637

28. Use Tool (C) in order to remove snap ring (68). Remove ring (67) and spool (66).

29. Remove seat (65) from spring (64) and remove spring (64) from seat (63).

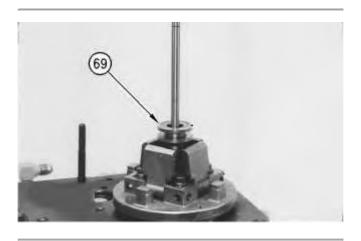


Illustration 24 g00453665

30. Remove riser (69).

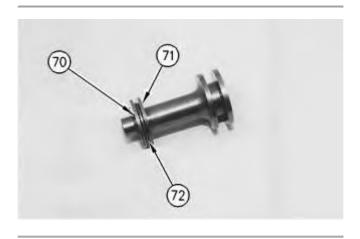


Illustration 25 g00453667

31. Remove ring (70), races (71) and bearing (72).

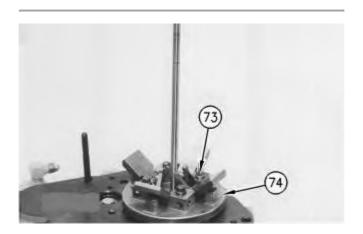


Illustration 26 g00453668

32. Remove four bolts (73) and carrier (74).

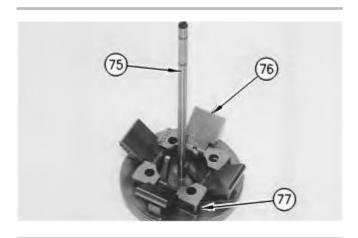


Illustration 27 g00453669

33. Remove dowels (77) and flyweights (76). Remove governor shaft (75) and the dowel that is not shown from shaft (75).

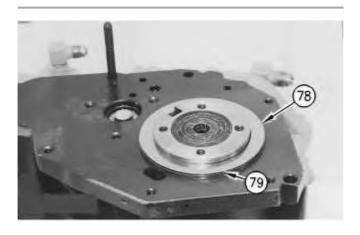


Illustration 28 g00453670

34. Remove races (78) and bearing (79).

Model: D6E TRACK-TYPE TRACTOR 2MJ

Configuration: D6E TRACTOR / POWER SHIFT / 2MJ00001-01157 (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

i01111261

## **Governor - Assemble**

**SMCS - 1264-016** 

# **Assembly Procedure**

Table 1

Required Tools				
Tool	Part Number	Part Description	Qty	
A	1P-1855	Retaining Ring Pliers	1	
В	6V-2163	Spring Clamp	1	
C	1P-0510	Driver Group	1	
D	6V-2054	Shield Driver	1	

Note: Put clean engine oil on all parts before assembly. Ensure that all of the oil passages are clear.

Note: Check the condition of the gaskets and the O-ring seals. If the gaskets, the seals, or any parts are worn or damaged, use new parts for replacement.

#### **NOTICE**

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

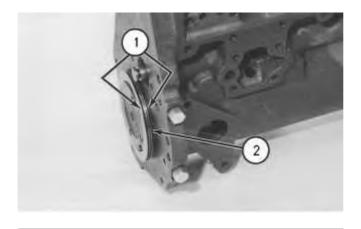


Illustration 1 g00453799

1. Install one race (1), bearing (2) and the other race (1) on the camshaft in the fuel injection pump housing.

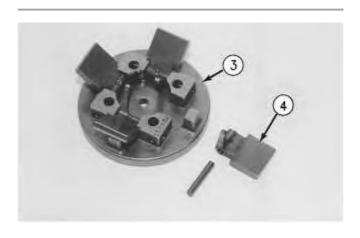


Illustration 2 g00453801

2. Put flyweights (4) in position on carrier (3) and install the dowels in order to hold the flyweights in place. The flyweights must move freely on the dowels.

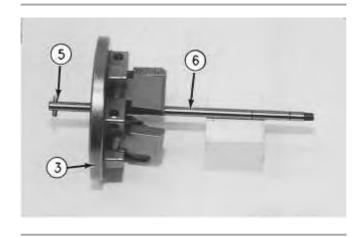


Illustration 3 g00453802

3. Install dowel (5) in governor shaft (6) and install the governor shaft in the carrier (3).

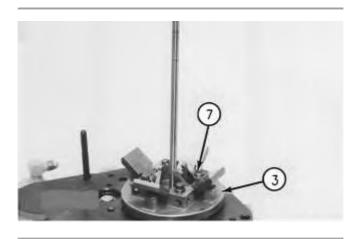


Illustration 4 g00459340

4. Put carrier (3) in position and install bolts (7).

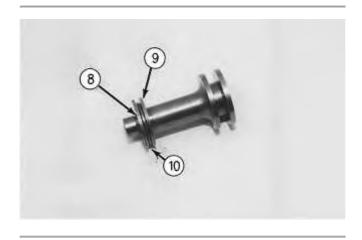


Illustration 5 g00459410

5. Install race (9), bearing (10) and race (9). Use Tool (A) in order to install ring (8) on riser (11).

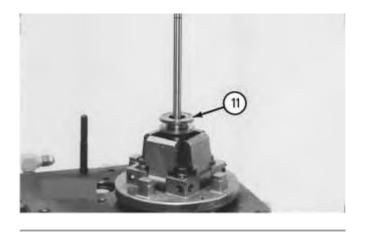


Illustration 6 g00459411

6. Install riser (11).

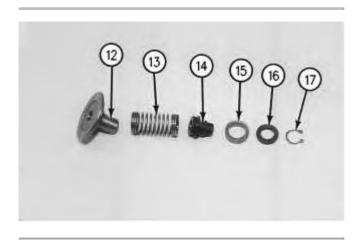


Illustration 7 g00459414

- 7. Assemble the dashpot, as follows:
  - a. Install spring (13) on seat (12) and install seat (14) in spring (13).
  - b. Put spool (15) and ring (16) in position on seat (14) and use Tool (A) in order to install snap ring (17).

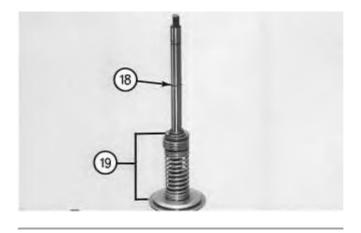


Illustration 8 g00459416

8. Install dashpot assembly (19). Install ring (18) in the lower groove in the governor shaft.

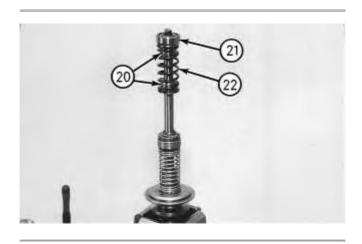


Illustration 9 g00459419

9. Install sleeve (20), spring (22), sleeve (20) and bearing (21).

**Note:** Spring (22) is used in order to put a preload on the thrust bearing on the camshaft in the fuel injection pump housing.

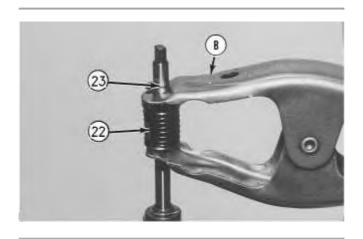


Illustration 10 g00459421

10. Use Tool (B) in order to hold spring (22) compressed and install ring (23) in the groove in the governor shaft. Remove Tool (B).

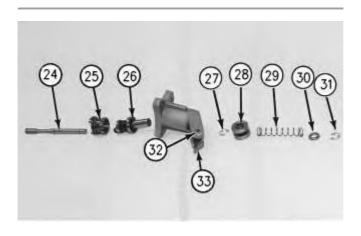


Illustration 11 g00459423

- 11. Put lever (33) in position on the governor servo and install pin (32) in order to hold the lever in place. Use a hammer and a chisel in order to move the metal (stake) at four places that are spread apart 90 degrees. Perform this procedure on the outside surface on both legs of the governor servo. This helps to hold pin (32) in place.
- 12. Install the O-ring seal on sleeve (25). Install piston (26) and sleeve (25).
- 13. Install valve (24).
- 14. Install one lockring (27) in the groove near the center of valve (24). Put sleeve (28), link spring (29) and seat (30) in position on valve (24) and install second lockring (31).

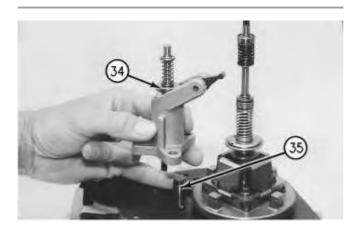


Illustration 12 g00454273

15. Put the governor servo in position on the fuel injection pump housing with piston (34) that is engaged over rack control sleeve (35) and install the bolts that hold the rack control sleeve in place.

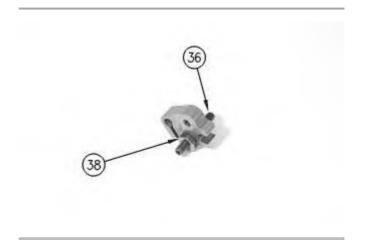


Illustration 13

g00591527

3304B engine

Note: The 3304B engine has one stop screw (36) and one locknut (38).

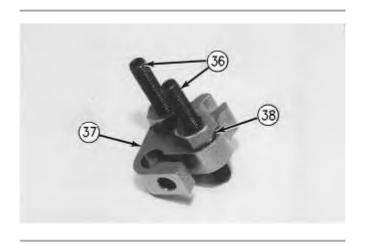


Illustration 14

g00454274

3306B

16. If the stop screws were removed, install two stop screws (36) in collar (37), as shown. Install locknuts (38) .

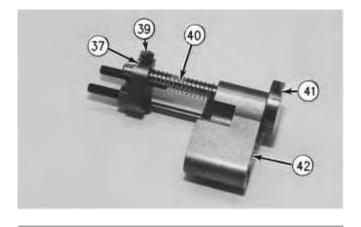


Illustration 15 g00454275

17. Install bolt (41) in block (42), as shown. Install spring (40) on bolt (41), as shown. Put collar (37) in position on bolt (41) with the hole in the collar in alignment with the notch in bolt (41) and install bolt (39) in order to hold the collar in place.

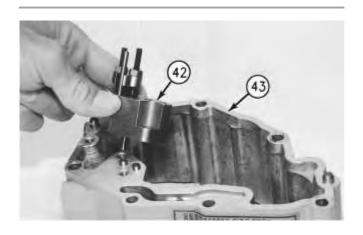


Illustration 16 g00454428

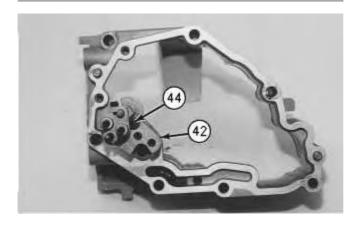
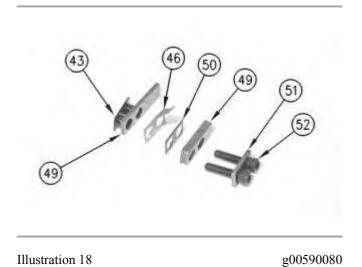


Illustration 17 g00459548

18. Put block (42) in position on housing (43). Align the holes in block (42) with the dowels. Tighten two bolts (44) .



3304B torque control

19. Assemble the torque control on the 3304B engine. Install retainer (51), two bars (49), spacer (50), contact (46), and insulator (45) in position on bolts (52).

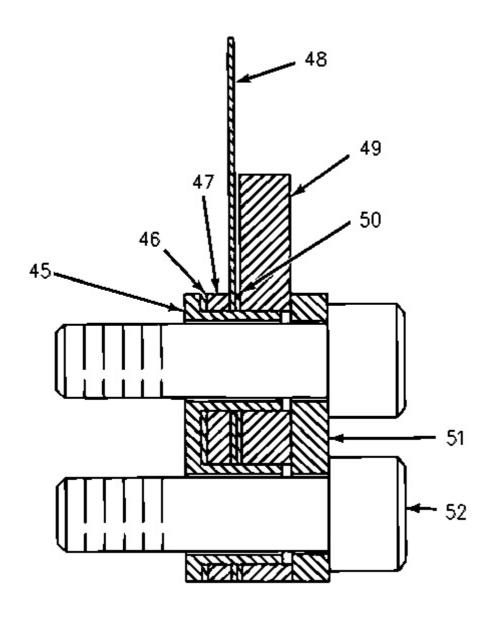


Illustration 19 g00454429

- 20. Assemble the torque control on the 3306B, as follows:
  - a. Install spring (48), spacer (47), contact (46) and spacer (50) on insulator (45), as shown.
  - b. Install retainer (51) and bar (49) on bolts (52).

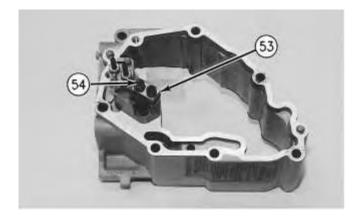


Illustration 20 g00459552

21. Put torque control (53) in position on block (40). Install bolts (54).

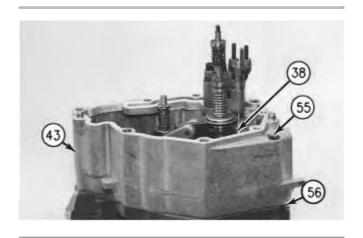


Illustration 21 g00454442

**Note:** When housing (43) is installed on the fuel injection pump housing, the flange on bolt (38) must be behind the dashpot. If housing (43) is installed with the flange on bolt (38) on the wrong side of the dashpot, the riser in the governor will be held in the maximum fuel delivery position.

22. Install gasket (56) on the fuel injection pump housing. Put housing (43) in position on the fuel injection pump housing with bolt (38) behind the dashpot, as shown. Install bolts (55) that hold housing (43) in place.

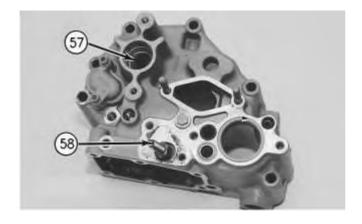


Illustration 22 g00459558

- 23. Use Tool (C) in order to install lip type seal (57) in the outer governor housing with the lip inward.
- 24. Install adjustment screw (58) and the locknut for the high idle adjustment.

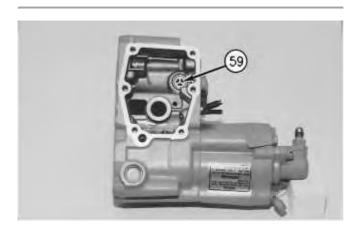


Illustration 23 g00459560

25. Install check valve (59).

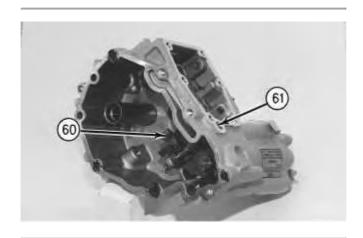


Illustration 24 g00459562

26. Put lever (60) in position, as shown. Install shaft (61).

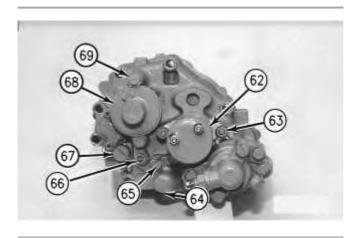


Illustration 25 g00459564

- 27. Put the gasket and shutoff solenoid (62) in position and install two bolts (63).
- 28. Put the gasket and cover (64) in position and install two bolts (65).
- 29. Install body (66) and contact (67).
- 30. Put the O-ring seal on adapter (68) and put the coupling and adapter (68) in position. Install two bolts (69).

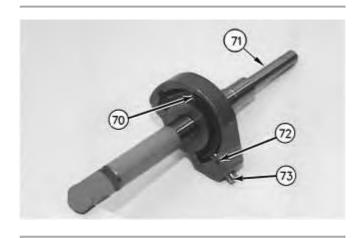


Illustration 26 g00459590

31. Install spring (70) in shaft assembly (71). Install pin (72) in shaft assembly (71). The tip of pin (72) should be engaged in the hole in spring (70). Install pin (73) in shaft assembly (71) in order to hold pin (72) in place.

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