

Product: WHEEL LOADER

Model: 988K XE WHEEL LOADER EWX

Configuration: 988K XE Wheel Loader EWX00001-UP (MACHINE) POWERED BY C18 Engine

## Disassembly and Assembly 988K XE Wheel Loader Machine Systems

Media Number -M0080216-01

Publication Date -01/07/2018

Date Updated -12/07/2018

i07190709

# Piston Pump (Steering) - Disassemble

SMCS - 4306-015-QP; 5070-015-ZH

## Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	437-3776	Fixture As	1
	1U-9129	Adapter Plate	1
	1U-5750	Engine Stand	1
B	4C-8359	Lifting Eye Assembly	2
C	154-6360	Forcing Bolt	2

### Start By:

- a. Remove the steering pump.

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### 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, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat<sup>®</sup> products.

Dispose of all fluids according to local regulations and mandates.

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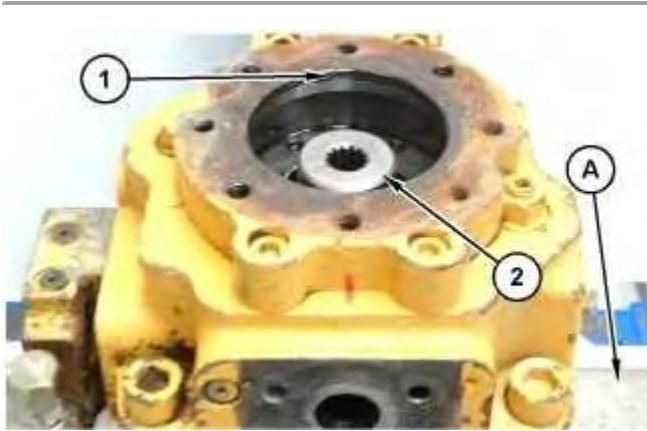


Illustration 1

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1. Attach the piston pump to Tooling (A) or a suitable fixture. Remove O-ring seal (1) and coupler (2).
- 



Illustration 2

g06248079

2. Remove bolts (3) and flange (4).
-



Illustration 3

g06248082

3. Remove O-ring seal (5) from flange (4).
- 



Illustration 4

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4. Remove bolts (6) and pump control (7).
- 

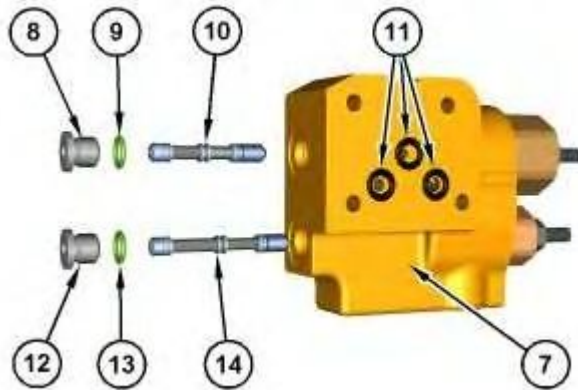


Illustration 5

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5. Remove plugs (8) and (12). Remove O-ring seals (9) and (13). Remove spools (10) and (14). Remove O-ring seals (11) from pump control (7).
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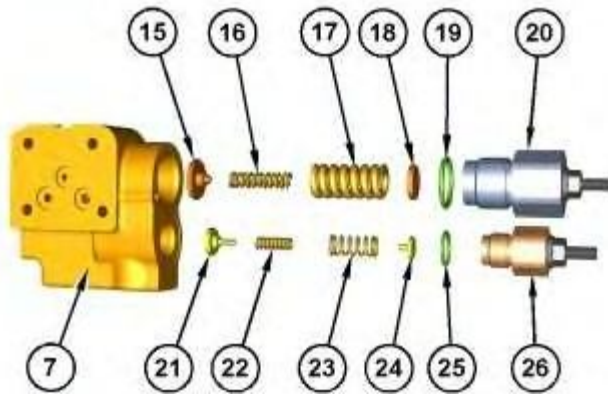


Illustration 6

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 **WARNING**

**Personal injury can result from being struck by parts propelled by a released spring force.**

**Make sure to wear all necessary protective equipment.**

**Follow the recommended procedure and use all recommended tooling to release the spring force.**

6. Remove adapter (20), O-ring seal (19), retainer (18), spring (17), spring (16), retainer (15) from pump control (7).
7. Remove adapter (26), O-ring seal (25), retainer (24), spring (23), spring (22), retainer (21) from pump control (7).

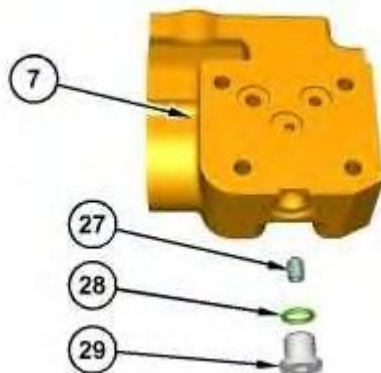


Illustration 7

g06248639

8. Remove plug (29), O-ring seal (28), and orifice (27) from pump control (7).



Illustration 8

g06248159



Illustration 9

g06248163

## **WARNING**

**Personal injury can result from being struck by parts propelled by a released spring force.**

**Make sure to wear all necessary protective equipment.**

**Follow the recommended procedure and use all recommended tooling to release the spring force.**

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9. Remove bolts (31) from head assembly (30). Use Tooling (B) and a suitable lifting device to remove head assembly (30). The weight of head assembly (30) is approximately 26 kg (57 lb).
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Illustration 10

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10. Remove port plate (32) from head assembly (30).
- 



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Illustration 11

g06248187

11. Remove plug (33) and the O-ring seal from head assembly (30).
- 



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Illustration 12

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12. Remove plug (34) and the O-ring seal from head assembly (30). Remove plug (35) and the O-ring seal from head assembly (30).
-



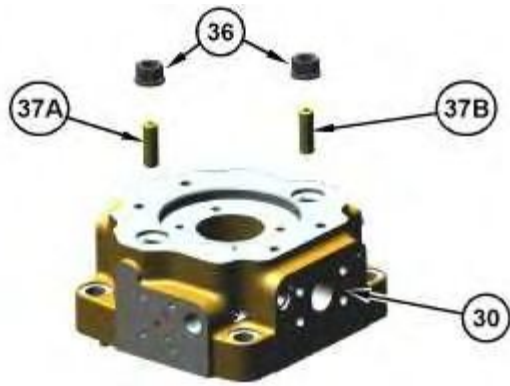


Illustration 13

g06249041

**Note:** Measure adjustment screws (37) for assembly purposes.

13. Remove nuts (36). Remove set screws (37A) and (37B) from head assembly (30).



Illustration 14

g06248257

14. Remove bias actuator (38), spring (40), control actuator (39), and O-ring seal (41) from pump housing (43).
15. Rotate housing (43) to a horizontal position and remove rotating group (42).



Illustration 15

g06248259

16. Remove pistons (44) and retainer (45) from barrel (46).



Illustration 16

g06248271

17. Remove hold down ball (47) from barrel (46).



Illustration 17

g06248276

18. Remove shims (48) and springs (49) from barrel (46).

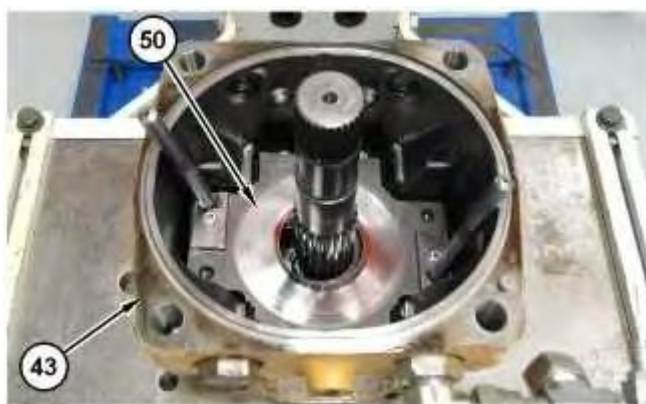


Illustration 18

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19. Remove swashplate (50) from housing (43).

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Illustration 19

g06248295

20. Remove bearing assemblies (51) from swashplate (50).



Illustration 20

g06248297

21. Remove bolts (53), retainers (54), and actuators (52) from swashplate (50).

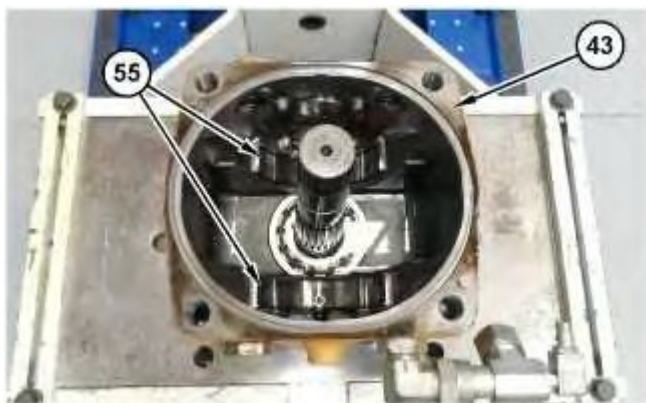


Illustration 21

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22. Remove bearing cradles (55) from housing (43).



Illustration 22

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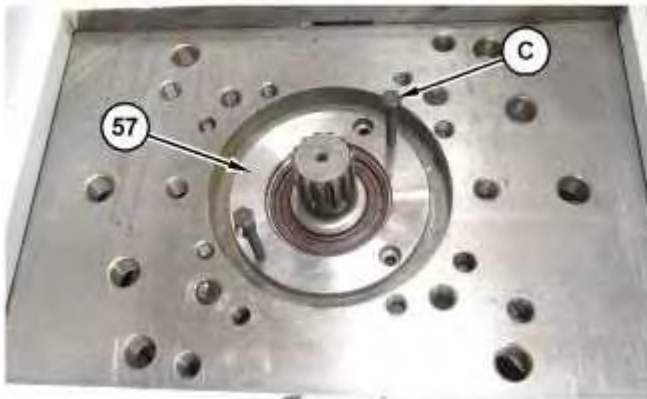


Illustration 23

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23. Rotate the pump to access the seal retainer. Remove bolts (56).
24. Use Tooling (C) to remove seal retainer (57) from the pump housing.



Illustration 24

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25. Remove lip seals (58), O-ring seal (59), and O-ring seals (60) from seal retainer (57).

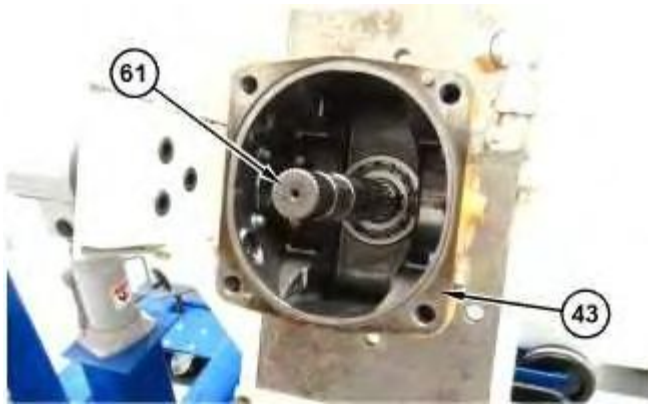


Illustration 25

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26. Use a soft faced hammer to remove shaft assembly (61) from pump housing (43).



Illustration 26

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27. Remove retaining ring (62) from shaft assembly (61). Use a suitable press to remove bearing (63) from shaft assembly (61).

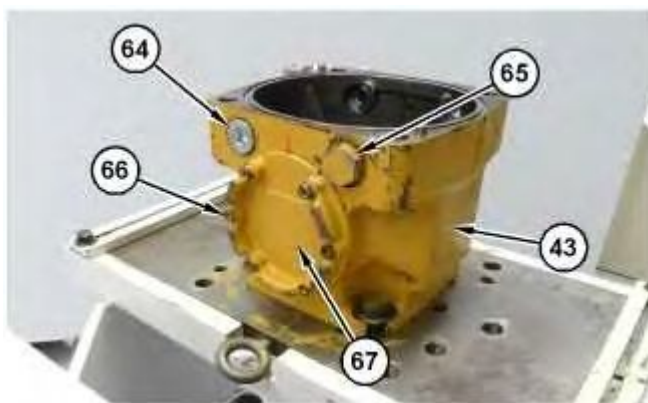


Illustration 27

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28. Remove plug (64) and the O-ring seal. Remove plug (65) and the O-ring seal. Remove bolts (66) and cover (67) from pump housing (43).



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Illustration 28

g06248518

29. Remove O-ring seal (68) from cover (67).

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Configuration: 988K XE Wheel Loader EWX00001-UP (MACHINE) POWERED BY C18 Engine

## Disassembly and Assembly 988K XE Wheel Loader Machine Systems

Media Number -M0080216-01

Publication Date -01/07/2018

Date Updated -12/07/2018

i07190710

## Piston Pump (Steering) - Assemble

SMCS - 4306-016-QP; 5070-016-ZH

### Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	437-3776	Fixture As	1
	1U-9129	Adapter Plate	1
	1U-5750	Engine Stand	1
B	4C-8359	Lifting Eye Assembly	2
D	1P-0510	Driver Gp	1
E	-	Loctite 242	-
F	6V-2055	Grease	1

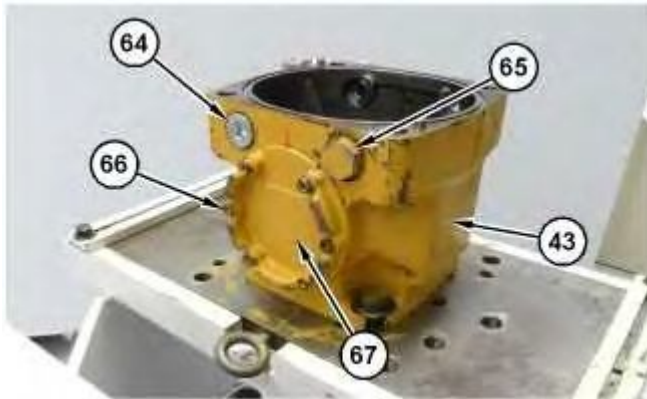


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Illustration 1

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1. Install O-ring seal (68) into cover (67).



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Illustration 2

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2. Install cover (67) and bolts (66). Tighten bolts (66) to a torque of  $28 \pm 7$  N·m ( $248 \pm 62$  lb in). Install plug (65) and the O-ring seal. Install plug (64) and the O-ring seal.

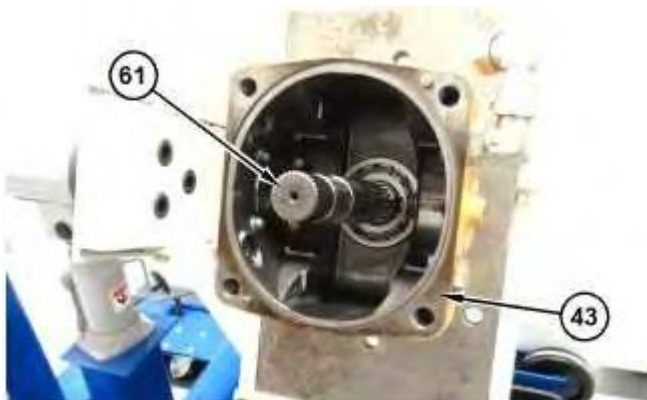


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Illustration 3

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3. Install bearing (63) and retaining ring (62) onto shaft assembly (61).





4. Use a soft faced hammer to install shaft assembly (61) into housing (43).
- 

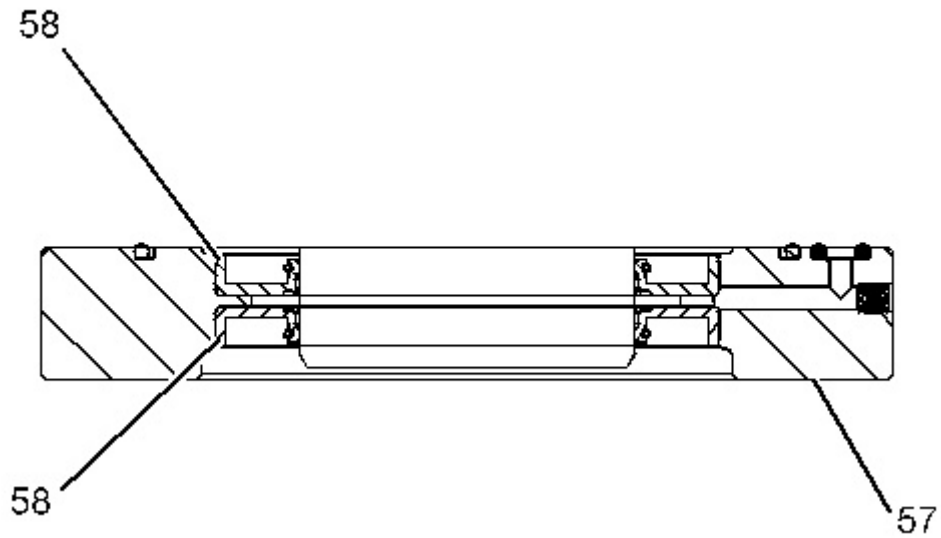


Illustration 5

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Illustration 6

g06248624

5. Install O-ring seals (60), O-ring seal (59) into seal carrier (57). Use Tooling (D) to install lip seals (58) into seal carrier (57).
-



Illustration 7

g06248862

6. Apply Tooling (E) to bolts (56).
7. Install seal carrier (57) and bolts (56) onto the pump housing. Tighten bolts (56) to a torque of  $28 \pm 7 \text{ N}\cdot\text{m}$  ( $248 \pm 62 \text{ lb in}$ ).

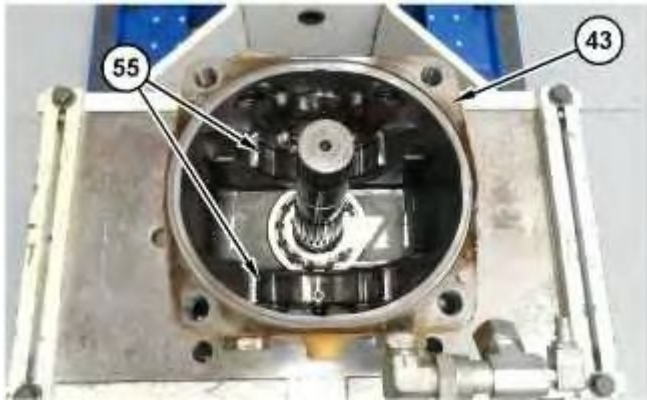


Illustration 8

g06248472

8. Install bearing cradles (55) into housing (43).



Illustration 9

g06248297

9. Install actuators (52), retainers (54), and bolts (53) onto swashplate (50). Tighten bolts (53) to a torque of  $12 \pm 1$  N·m ( $106 \pm 9$  lb in).



Illustration 10

g06248295

10. Install bearing assemblies (51) onto swashplate (50).

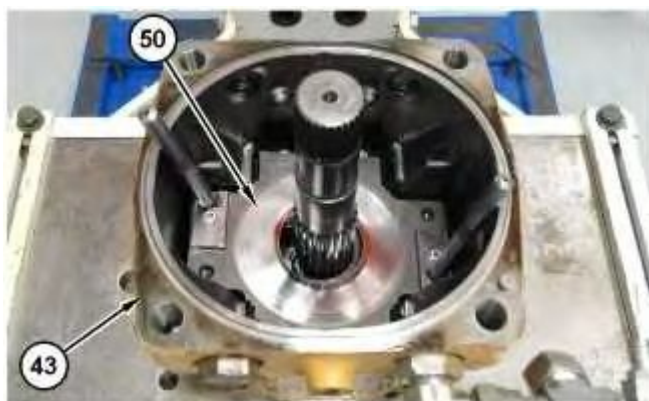


Illustration 11

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11. Install swashplate (50) into housing (43).

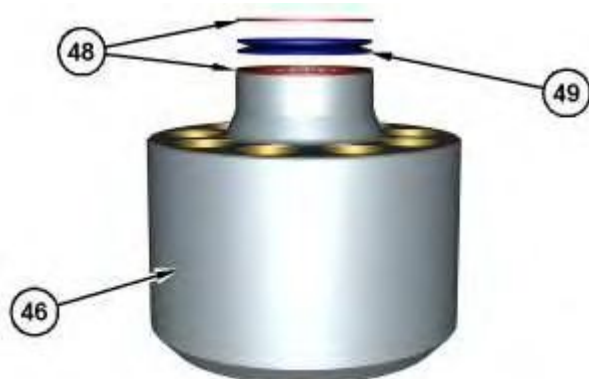


Illustration 12

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12. Install shims (48) and spring assembly (49) onto barrel (46).



Illustration 13

g06248271

13. Install hold down ball (47) onto barrel (46).



Illustration 14

g06248259

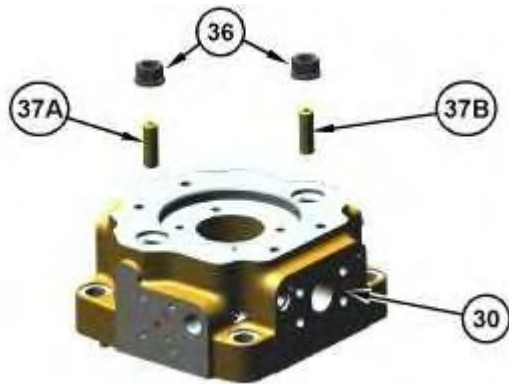
14. Install retainer (45) and pistons (44) onto barrel (46).



Illustration 15

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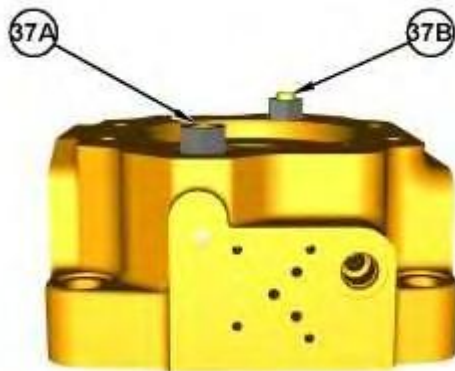
15. Install rotating group (42) into housing (43).
16. Install O-ring seal (41) into housing (43). Install control actuator (38), spring (40), and bias actuator (39) into housing (43).



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Illustration 16

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Illustration 17

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17. Install set screw (37A) and (37B) into head assembly (30). Install set screw (37A) to a depth of  $14.3 \pm 0.2$  mm ( $0.563 \pm 0.008$  inch). Install set screw (37B) to a depth of 18 mm (0.71 inch). Install nuts (36). Tighten nuts (36) to a torque of  $190 \pm 15$  N·m ( $140 \pm 11$  lb ft).



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Illustration 18

g06248247

18. Install plug (35) and the O-ring seal into head assembly (30). Install plug (34) and the O-ring seal into head assembly (30).
-



Illustration 19

g06248187

19. Install plug (33) and the O-ring seal into head assembly (30).



Illustration 20

g06248182

20. Install port plate (32) into head assembly (30).



Illustration 21

g06248163



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