



Service Repair Manual

Models

325F and 325F L Excavator

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Product: EXCAVATOR

Model: 325F EXCAVATOR NDJ

Configuration: 325F L Excavators NDJ00001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly 325F Excavator Machine Systems

Media Number -UENR6794-05

Publication Date -01/09/2018

Date Updated -18/09/2018

i07505849

Travel Motor - Disassemble

SMCS - 4351-015

S/N - NDJ1-UP

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2420	Transmission Repair Stand	1
	FT-0957	Positioning Gp	4
B	-	M16x2 Threaded Rod	3
	8T-1757	Nut	6
	9X-8268	Washer	6
C	421-5662	Lifting Eye Assembly	1
D	421-5663	Lifting Eye Assembly	2
E	1U-9895	Crossblock	1
	3H-0465	Push-Puller Plate	2
	8T-0298	Bolt	2

Start By:

- a. Remove the travel motor.
-

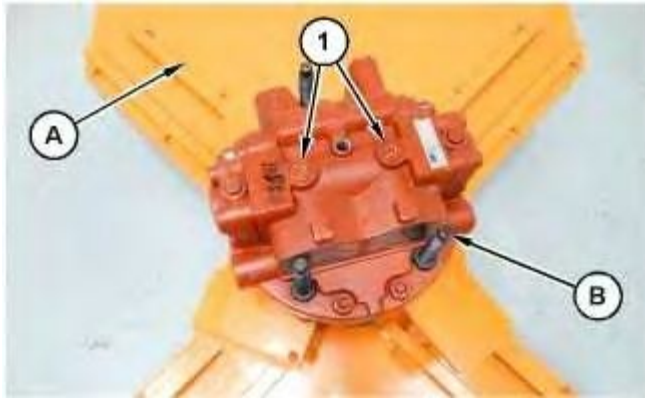


Illustration 1

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1. Attach the travel motor to Tooling (A) and (B). The weight of the travel motor is approximately 70 kg (154 lb).
2. Remove plugs (1) and the O-ring seals.



Illustration 2

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3. Remove plug (2) and the O-ring seal. Repeat for the opposite side.



Illustration 3

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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.

4. Remove plug (2A) and the O-ring seal. Repeat for the opposite side.



Illustration 4

g06341915

5. Remove spring (3).



Illustration 5

g06341917

6. Remove spool (4).
-

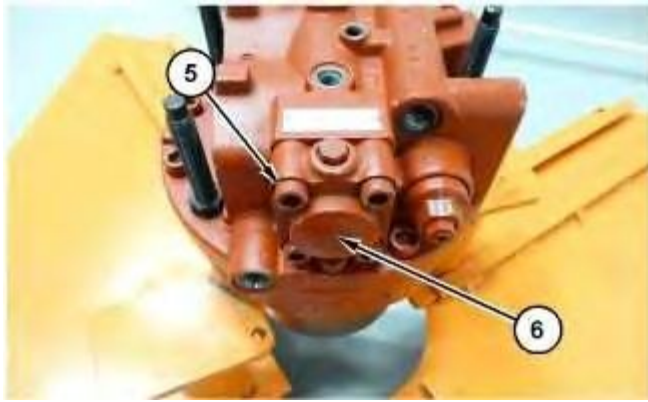


Illustration 6

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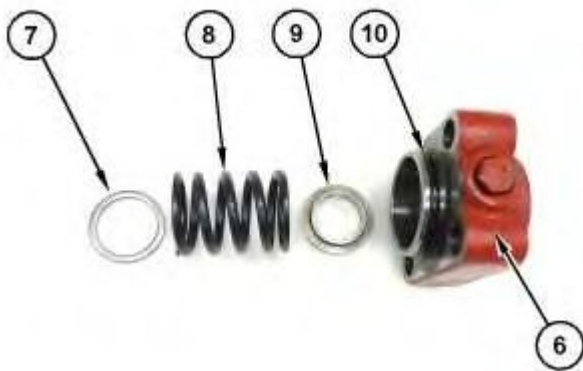


Illustration 7

g06342000

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.

7. Remove bolts (5) and cap (6). Repeat for the opposite side.
8. Remove O-ring seal (10) from cap (6). Remove guide (9), spring (8), and washer (7) from the head assembly. Repeat for the opposite side.

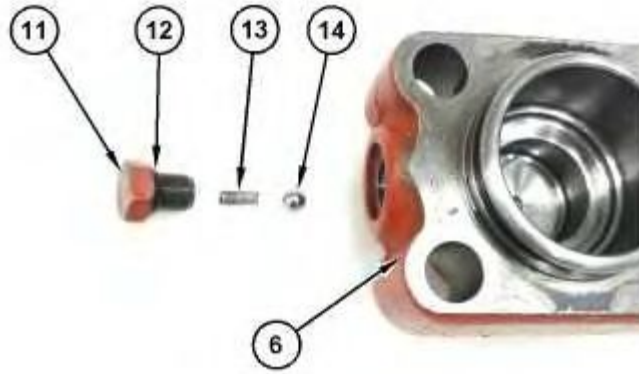


Illustration 8

g06342005

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.

9. Remove plug (11), O-ring seal (12), spring (13), and ball (14) from cap (6). Repeat for the other cap.



Illustration 9

g06342009

10. Remove spool (15).



Illustration 10

g06343314



Illustration 11

g06343315

11. Remove relief valve (16). Remove O-ring seal (17) from relief valve (16).
12. Repeat for the opposite side.

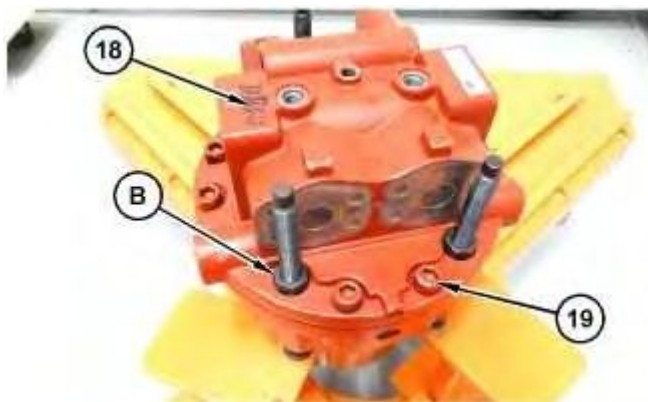


Illustration 12

g06343359



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.

13. Remove the nuts of Tooling (B). Remove bolts (19) from head assembly (18).

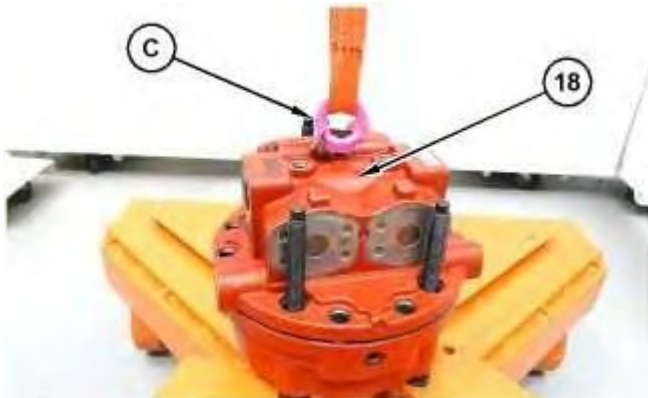


Illustration 13

g06343366

14. Use Tooling (C) and a suitable lifting device to remove head assembly (18). The weight of head assembly (18) is approximately 21 kg (47 lb).



Illustration 14

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15. Remove control plate (20) and bearing (21) from head assembly (18).
-



Illustration 15

g06343381

16. Remove pins (22) and springs (23).
17. Remove O-ring seals (24) and (25).



Illustration 16

g06343383

18. Use Tooling (D) and a suitable lifting device to remove housing assembly (26) from Tooling (A) and place on a suitable bench.



Illustration 17

g06343417

 **WARNING**

To avoid personal injury, always wear eye and face protection when using pressurized air.

19. Attach Tooling (E) to housing (26). Use air pressure to unseat brake piston (27). Remove Tooling (E) and brake piston (27).



Illustration 18

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20. Remove back up rings (28) and O-ring seals (29) from brake piston (27).



Illustration 19

g06343462

21. Remove brake piston guide (30).
-



Illustration 20

g06343464

22. Remove O-ring seal (31) from brake piston guide (30).



Illustration 21

g06343466



Illustration 22

g06343469

Note: Note the orientation of friction discs (32) and plates (33) for assembly purposes.

23. Remove friction discs (32) and plates (33).



Illustration 23

g06343638

24. Remove rotating group (34) from housing (26).



Illustration 24

g06343777

25. Remove pistons (35) and retainer (36) from barrel (37).



Illustration 25

g06343783

26. Remove hold down ball (38) and springs (39) from barrel (37).



Illustration 26

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27. Remove swashplate (40) from housing (26).



Illustration 27

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Illustration 28

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28. Remove pistons (41).

29. Remove springs (42) and shaft (43).

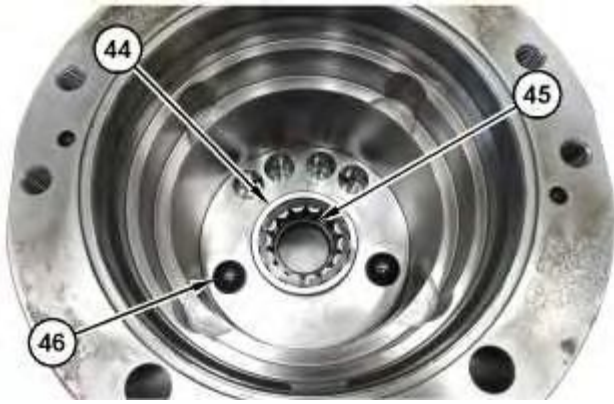


Illustration 29

g06343795

30. Remove balls (46).

31. Remove bearing (44) and lip seal (45).

Previous Screen

Product: EXCAVATOR

Model: 325F EXCAVATOR NDJ

Configuration: 325F L Excavators NDJ00001-UP (MACHINE) POWERED BY C4.4 Engine

**Disassembly and Assembly
325F Excavator Machine Systems**

Media Number -UENR6794-05

Publication Date -01/09/2018

Date Updated -18/09/2018

i01894672

Travel Motor - Assemble

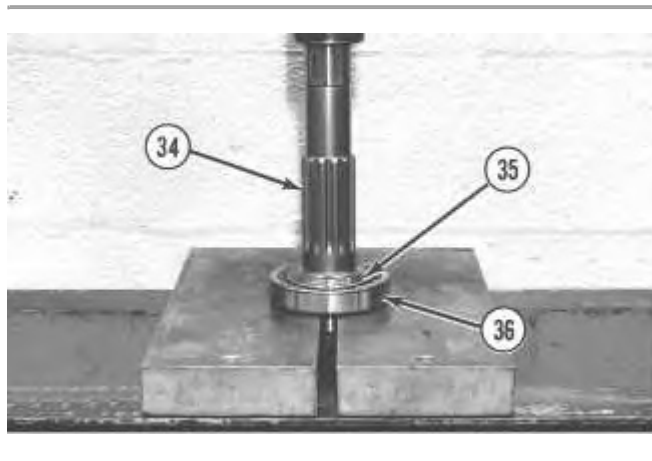
SMCS - 4351-016

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
C	1P-0510	Driver Gp	1
D	5P-3413	Pipe Sealant	1
E	9S-3263	Thread Lock Compound	1
F	1U-6396	O-Ring Assembly Compound	1
G	5P-0960	Molybdenum Grease	1

1. Make sure that all of the components of the travel motor are thoroughly clean and free of dirt and debris prior to assembly.



8. Install lip seal (38) in the body of the travel motor. Install the lip seal so that the sealing lip is facing in the direction that is shown. Make sure that the lip seal contacts the counterbore in the body of the travel motor.

Note: Slowly rotate shaft assembly (34) during the installation in order to make sure that the shaft assembly does not bind in the body of the travel motor.

9. Apply clean hydraulic oil on the lip of lip seal (38).
10. Use a press to install shaft assembly (34) in the body of the travel motor. Slowly rotate the shaft during the installation in order to make sure that the shaft does not bind. Make sure that the bearing on the shaft contacts the counterbore in the body of the travel motor.

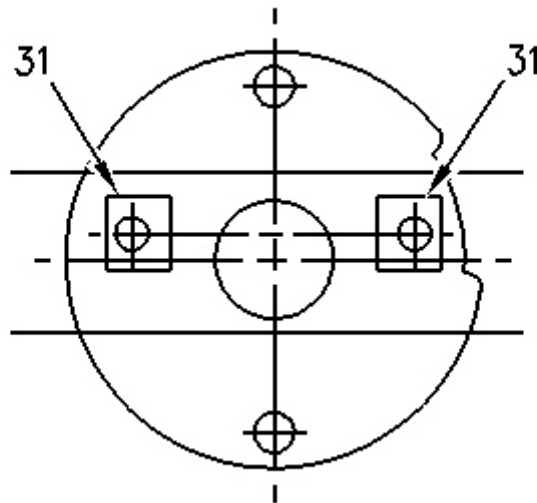


Illustration 4

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NOTICE

The locating pin on each key is not centered. In order to prevent damage to the barrel assembly during assembly of the travel motor, the keys must be installed as shown. Also, the keys must be installed in the key's original location in the body of the travel motor.

11. Install the two locating pins and two keys (31) in the body of the travel motor, as shown.
-

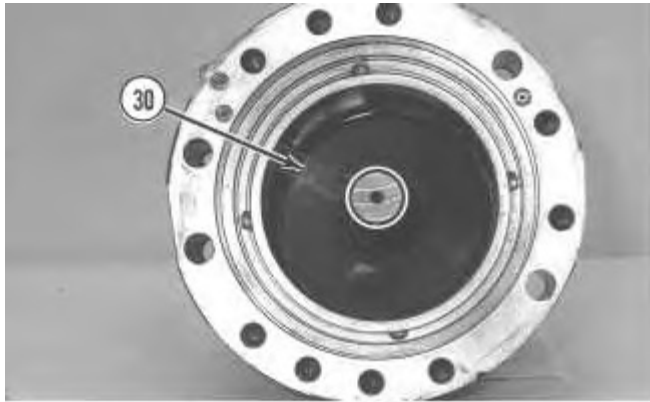


Illustration 5

g00510547

12. Install cam plate (30) in the body of the travel motor in the cam plate's original location. Make sure that the two pistons and two keys (31) in the body of the travel motor engage properly with the cam plate.



Illustration 6

g00510504

13. Install springs (29) in the barrel. Install spacer (28) and guide (27) on the barrel.



Illustration 7

g00878253

14. Install piston shoe assemblies (25) in the piston shoe assembly's original bores in shoe retainer (24).

15. Apply clean hydraulic oil in the bores of the barrel and on piston shoe assemblies (25). Install the piston shoe assemblies with the shoe retainer in the piston shoe assembly's original bore in barrel (26).

NOTICE

Make sure that the cam plate is correctly engaged with the two pistons in the body of the travel motor prior to installing the barrel assembly.

When the body of the travel motor is tilted to allow the installation of the barrel assembly, the cam plate can slide off of the two pistons. The remaining parts of the travel motor can be assembled with the cam plate in the incorrect position.

Extensive damage will result from the incorrect installation of the cam plate. Follow the exact installation procedure to prevent damage.

16. Apply clean hydraulic oil on the sliding surfaces of the cam plate, on the piston shoe assemblies and on the splined shaft of the travel motor.

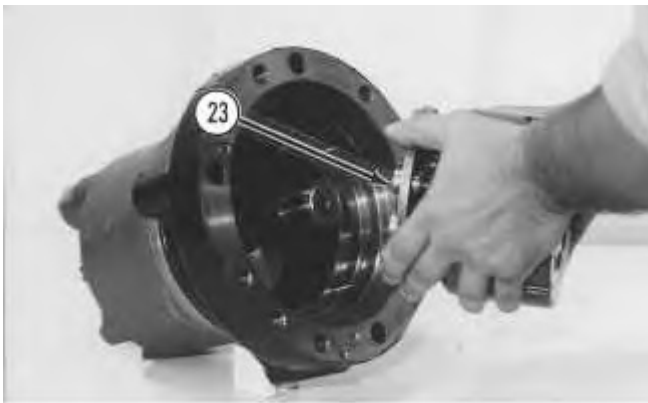


Illustration 8

g00485953

17. Route a piece of strong string through an opening for the cam plate tension adjusters. Route the string over the sliding surface of cam plate (30) and through the opposite opening for the cam plate tension adjusters. Hold the string taut in order to keep cam plate (30) correctly engaged with keys (31). Keep the string taut and position the body of the travel motor on the body's side. Do not release the tension on the string at this time. Install barrel assembly (23) as a unit on the shaft. Pull the string out of the body of the travel motor. It may be necessary to pull the barrel assembly and the piston shoe assemblies away from the cam plate slightly in order to release the string.
-

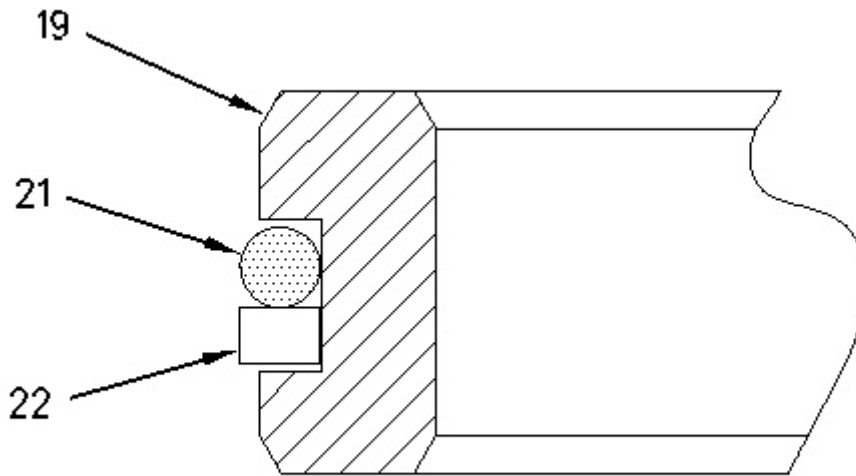


Illustration 9

g00651967

18. Install O-ring seal (21) and backup ring (22) on piston guide (19), as shown.



Illustration 10

g00510356

19. Place the body of the travel motor in a vertical position.
 20. Apply clean hydraulic oil on five friction plates (20) and the four steel plates. Install the plates in alternating order in the body of the travel motor. Start with a friction plate and end with a friction plate.
 21. Install piston guide (19) in the body of the travel motor until the piston guide contacts the counterbore in the body of the travel motor.
-

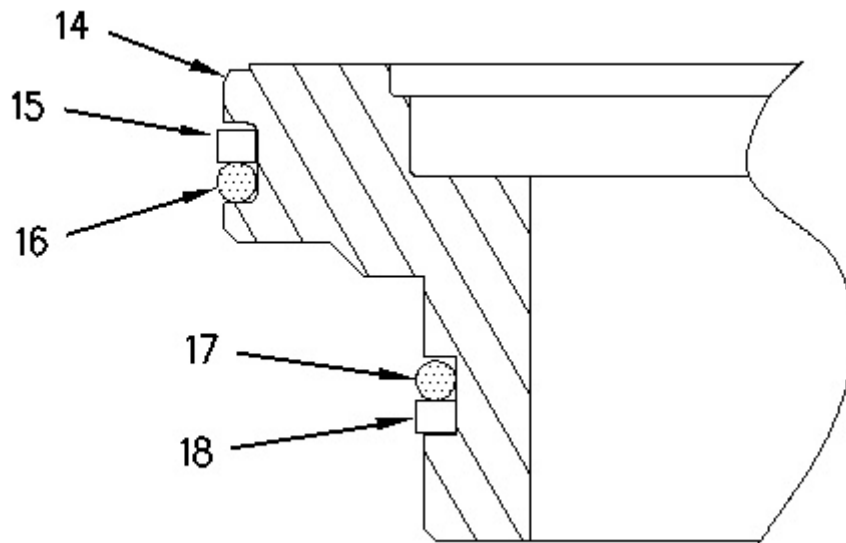


Illustration 11

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Note: Make sure that brake piston (14) is thoroughly clean and free of dirt and debris.

22. Install O-ring seal (16). Install backup ring (15).
 23. Install O-ring seal (17). Install backup ring (18).
 24. Apply a thin coat of hydraulic oil on the surfaces of brake piston (14) which contact the body of the travel motor. Install brake piston (14) in the body of the travel motor by hand. It may be necessary to use a soft faced hammer to seat the brake piston correctly.
-

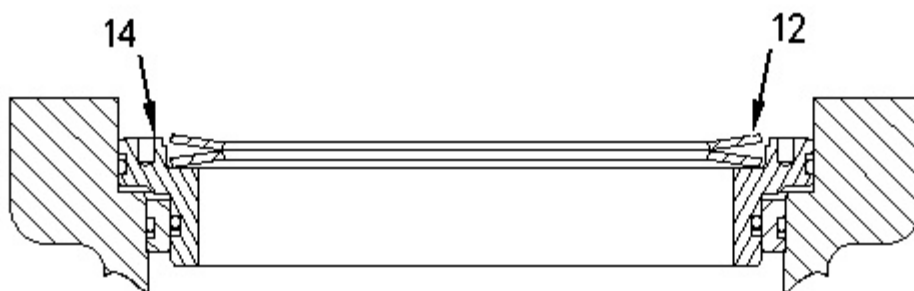


Illustration 12

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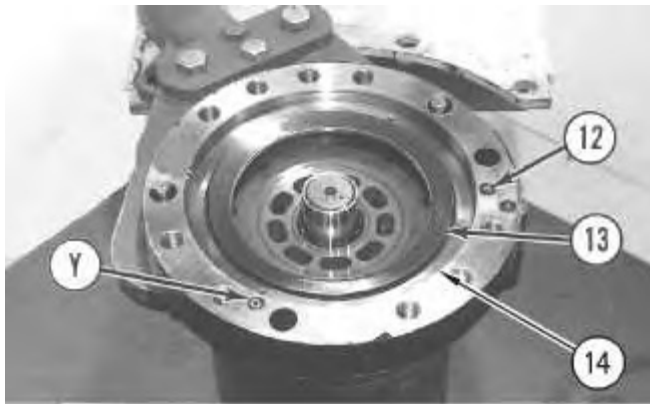


Illustration 13

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25. Install washer set (13) in piston (14), as shown.
26. Install O-ring seals (12) in the body of the travel motor, as shown.

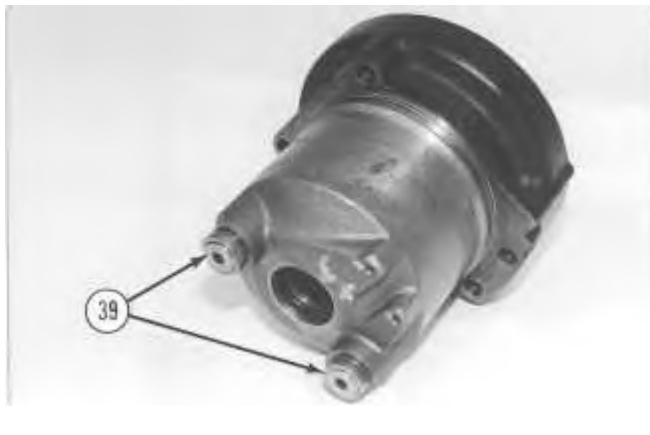


Illustration 14

g00510605

27. Install the two pistons and two stoppers (39) in the housing of the travel motor. Tighten the stoppers to a torque of $140 \pm 14 \text{ N}\cdot\text{m}$ ($105 \pm 10 \text{ lb}\cdot\text{ft}$).

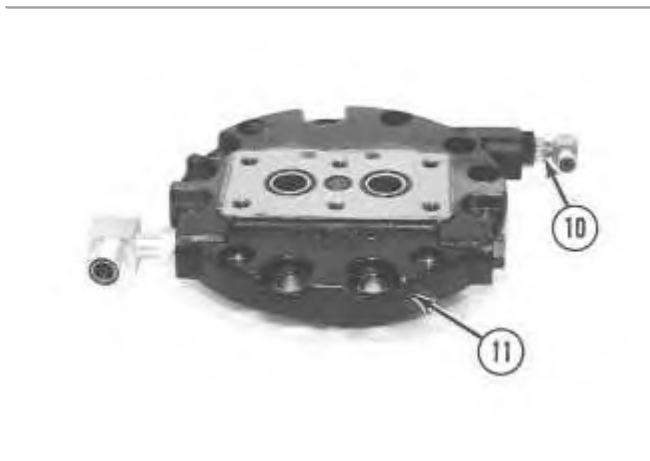


Illustration 15

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28. Install the O-ring seals on fittings (10). Use Tooling (D) on the threads of fittings (10). Install the fittings in the head, as shown.
29. Install plugs (11) in the head. Tighten each plug to a torque of 15 ± 2 N·m (11 ± 1 lb ft).

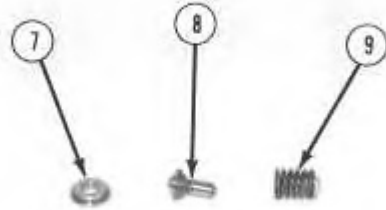


Illustration 16

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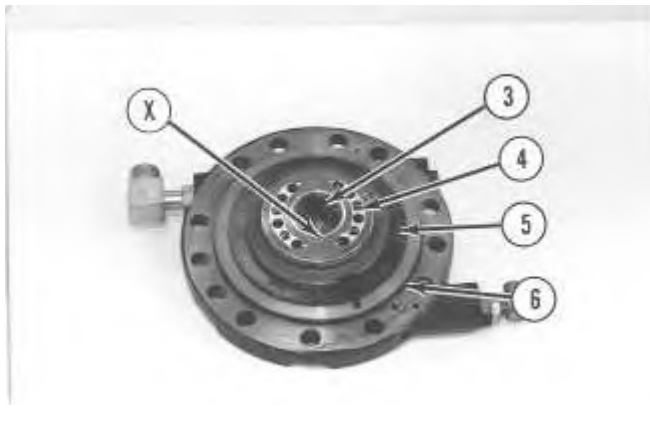


Illustration 17

g00510341

30. Use Tooling (E) on the threads of the check valves. Install the check valves in the head.
31. Install seat (7), poppet (8) and spring (9) in the head at Location (X).
32. Install O-ring seal (6) in the head, as shown.
33. Install bearing (3) in the head until the bearing contacts the counterbore in the cover.
34. Use Tooling (F) on port plate (4). Install the port plate in the port plate's original position on the motor cover.
35. Use a shim or shims (5) so that the following requirements are met.

Note: During the following checks, turn the travel motor output shaft in a clockwise direction.

- a. The travel motor output shaft does not rotate with an applied torque of 440 N·m (325 lb ft) or more with the parking brake release port open.

- b. The travel motor output shaft rotates with an applied torque of 29 N·m (21 lb ft) or less when the parking brake release port is pressurized to 780 kPa (115 psi) with both the inlet port and the outlet port open to the hydraulic oil tank.

Note: It may be necessary to remove head (2) several times in order to determine the correct thickness of shim or shims (5) that are used to adjust the rolling torque of the travel motor output shaft.

36. Use Tooling (G) on shims (5). Install the shim or shims on the head. The grease will hold the shim or shims in place during the installation of the head. Install the head on the body of the travel motor.



Illustration 18

g00510326

37. Place head (2) in the head's original position on the travel motor. Install socket head bolts (1) that secure the head. Tighten the socket head bolts to a torque of 175 ± 18 N·m (130 ± 13 lb ft).

NOTICE

To prevent possible damage to the travel motor, fill the unit with oil at least to the fill port before operating the machine. Refer to the Operation and Maintenance Manual for the correct oil specification.

End By:

- a. Install the travel motor. Refer to Disassembly and Assembly, "Travel Motor - Install" in this manual.

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Product: EXCAVATOR

Model: 325F EXCAVATOR NDJ

Configuration: 325F L Excavators NDJ00001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly 325F Excavator Machine Systems

Media Number -UENR6794-05

Publication Date -01/09/2018

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i07505850

Travel Motor - Assemble

SMCS - 4351-016

S/N - NDJ1-UP

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2420	Transmission Repair Stand	1
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	8T-1757	Nut	6
	9X-8268	Washer	6
C	421-5662	Lifting Eye Assembly	1
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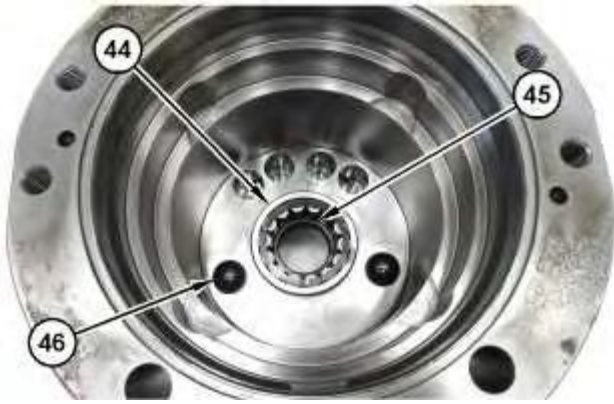


Illustration 1

g06343795

1. Install lip seal (45) and bearing (44).
2. Install balls (46).



Illustration 2

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Illustration 3

g06343788

3. Install shaft (43) and springs (42).
4. Install pistons (41).



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Illustration 4

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5. Install swashplate (40) into housing (26).



Illustration 5

g06343783

6. Install springs (39) and hold down ball (38) into barrel (37).



Illustration 6

g06343777

7. Install retainer (36) and piston (35) into barrel (37).

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