



Service Repair Manual

Models

349E Mobile Hydraulic Excavator

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Product: MOBILE HYD POWER UNIT

Model: 349E MOBILE HYD POWER UNIT S3P

Configuration: 349E Mobile Hydraulic Power Unit S3P00001-UP (MACHINE) POWERED BY C13 Engine

Disassembly and Assembly 349E Excavator Machine Systems

Media Number -KENR9848-04

Publication Date -01/10/2012

Date Updated -23/10/2012

i04243909

Travel Motor - Disassemble

SMCS - 4351-015

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7574	Link Bracket	1
B	-	Bolt M4 x 0.7	1
C	6V-3010	Puller Gp	1
D	3E-3879	Eyebolt	1
E	9S-9152	Bearing Puller Gp	1

Start By:

- a. Remove the travel motor.
 1. Drain the travel motor.
-

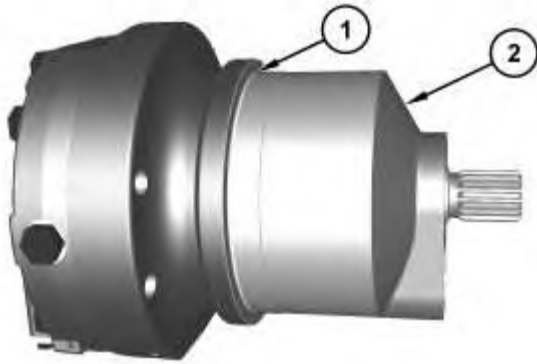


Illustration 1

g02419258

2. Remove O-ring seal (1) from motor housing (2).

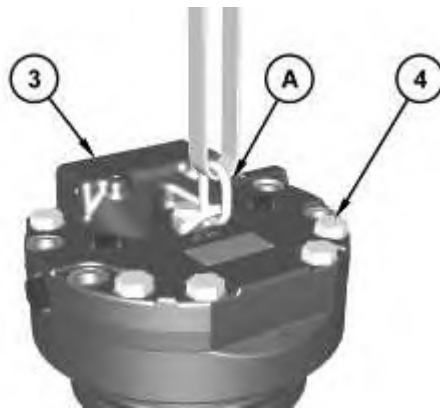


Illustration 2

g02419296



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.

-
3. Attach Tooling (A) onto head assembly (3). Remove bolts (4). Use Tooling (A) and a suitable lifting device to remove head (3). The weight of head assembly (3) is approximately 40 kg (90 lb).
-

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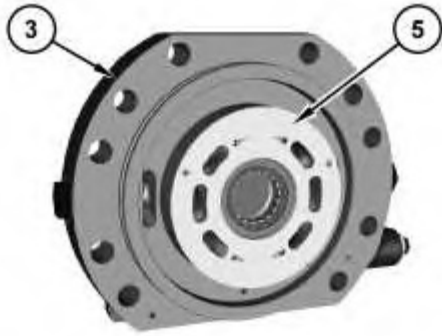


Illustration 3

g02419358

4. Remove plate (5) from head (3).

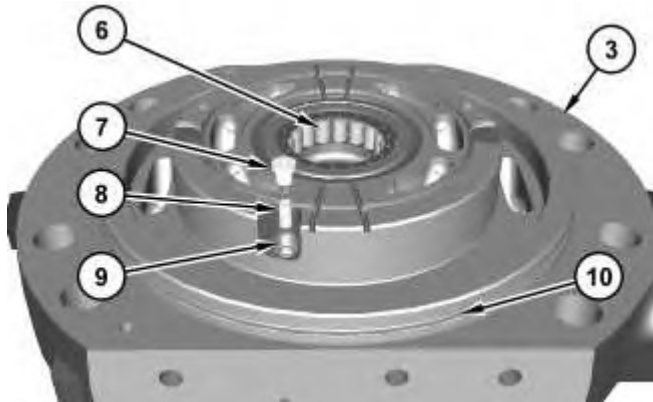


Illustration 4

g02419359

5. Remove bearing (6) from head assembly (3).
6. Remove orifice (7), spring (8), and ball (9).
7. Remove O-ring seal (10) from head assembly (3).



Illustration 5

g02419416

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.

8. Remove adapter (11), spool (12), and spring (13) from head assembly (3).

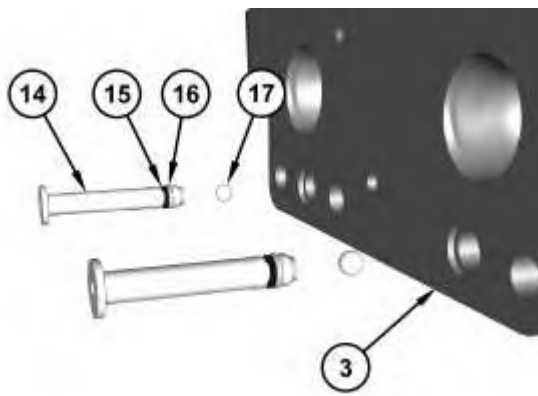


Illustration 6

g02419439

9. Use Tooling (B) in order to remove retainers (14) from head assembly (3).
10. Remove O-ring seals (16) and backup rings (15) from adapters (14).
11. Remove balls (17) from head assembly (3).

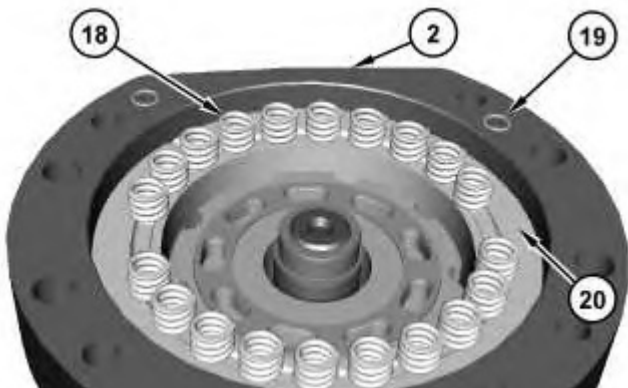


Illustration 7

g02419577

12. Remove springs (18) from brake housing (20).

13. Remove O-ring seals (19) from motor housing (2).

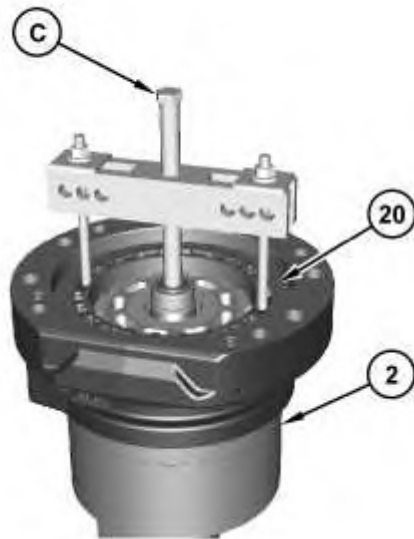


Illustration 8

g02420880

14. Use Tooling (C) in order to remove brake housing (20) from motor housing (2).

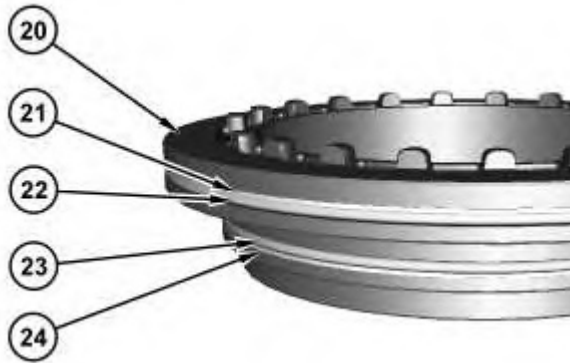


Illustration 9

g02419659

15. Remove backup ring (21) and O-ring seal (22) from brake piston (20).

16. Remove O-ring seal (23) and backup ring (24) from brake piston (20).

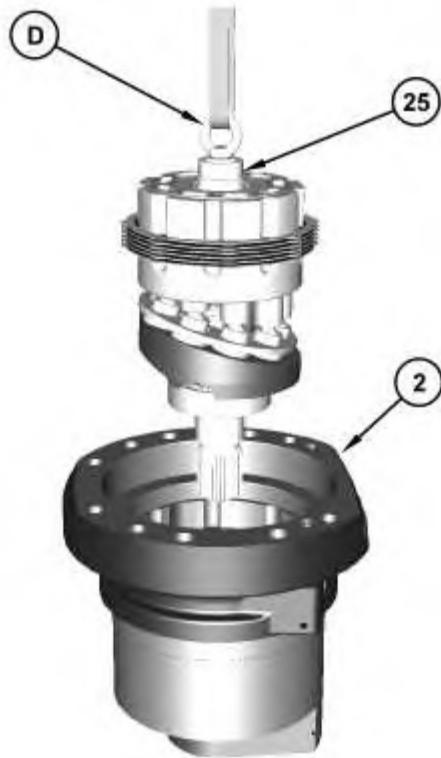


Illustration 10

g02419858

17. Attach Tooling (D) to shaft assembly (25).
18. Use Tooling (D) and a suitable lifting device in order to lift the rotating group from motor housing (2). The weight of the rotating group is approximately 30 kg (65 lb).

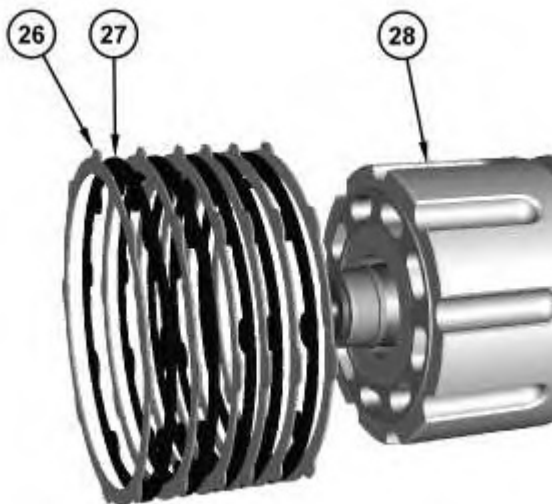


Illustration 11

g02420501

19. Remove plates (26) and friction disks (27) from barrel assembly (28).
-

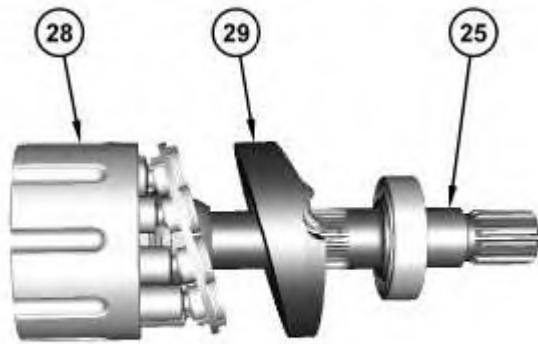


Illustration 12

g02420544

20. Remove barrel assembly (28) and swashplate (29) from shaft assembly (25).
-

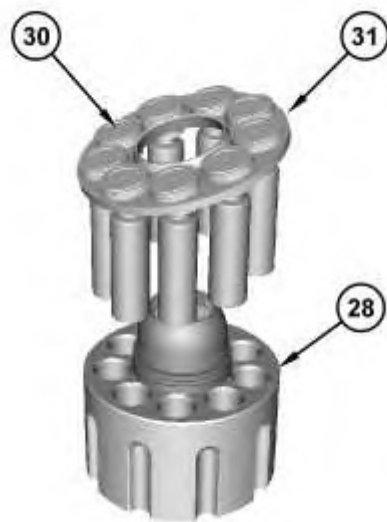


Illustration 13

g02420578

21. Remove plate (31) and pistons (30) from barrel assembly (28).
-

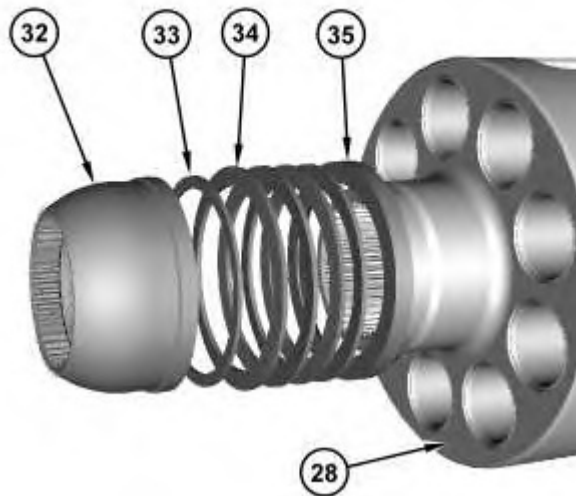


Illustration 14

g02420596

22. Remove bearing (32), thin shim (33), Belleville washers (34), and barrel spacer (35) from barrel assembly (28).

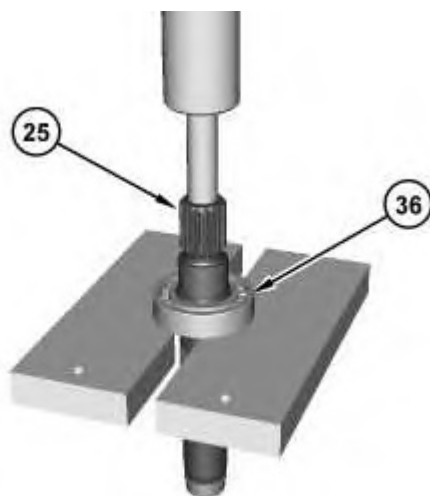


Illustration 15

g02420937

23. Use a suitable press in order to remove bearing (36) from shaft assembly (25).
-

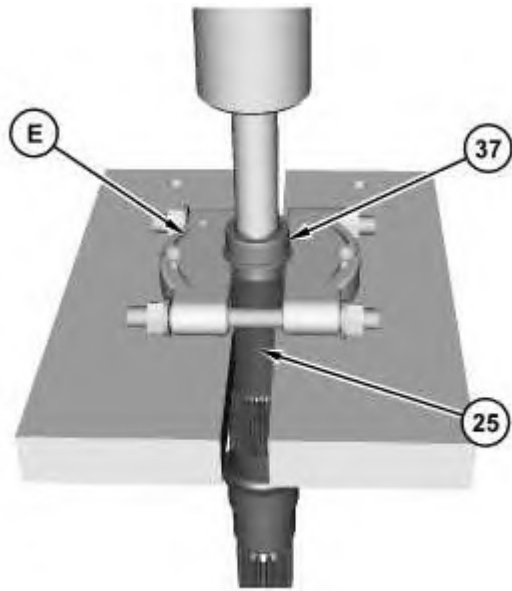


Illustration 16

g02421036

24. Use Tooling (E) and a suitable press in order to remove inner race (37) from shaft assembly (25).



Illustration 17

g02420998

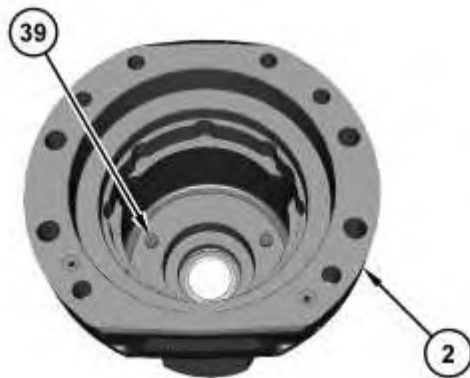


Illustration 18

g02421000

25. Remove keys (38) and pins (39) from motor housing (2).

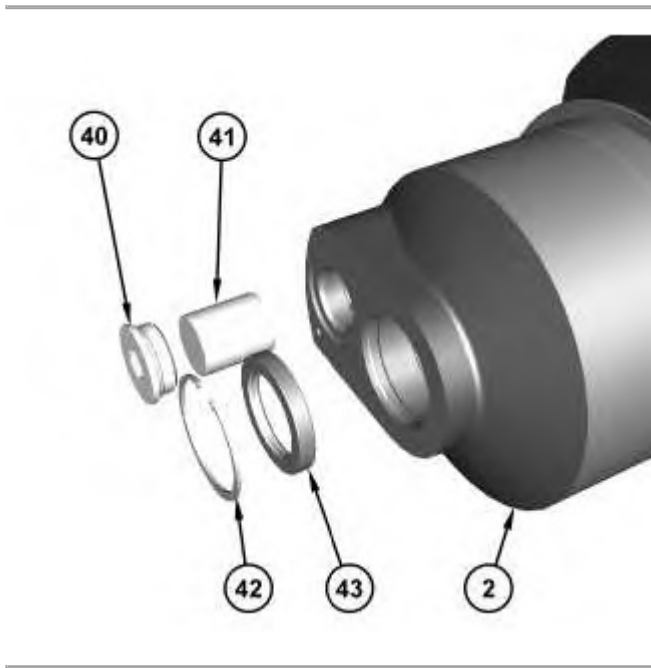


Illustration 19

g02421056

26. Remove plug (40) and the O-ring seal. Remove actuator piston (41).

27. Remove retaining ring (42) and seal (43) from motor housing (2).

Previous Screen

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**Disassembly and Assembly
349E Excavator Machine Systems**

Media Number -KENR9848-04

Publication Date -01/10/2012

Date Updated -23/10/2012

i06563923

Travel Motor - Assemble

SMCS - 4351-016

Specifications

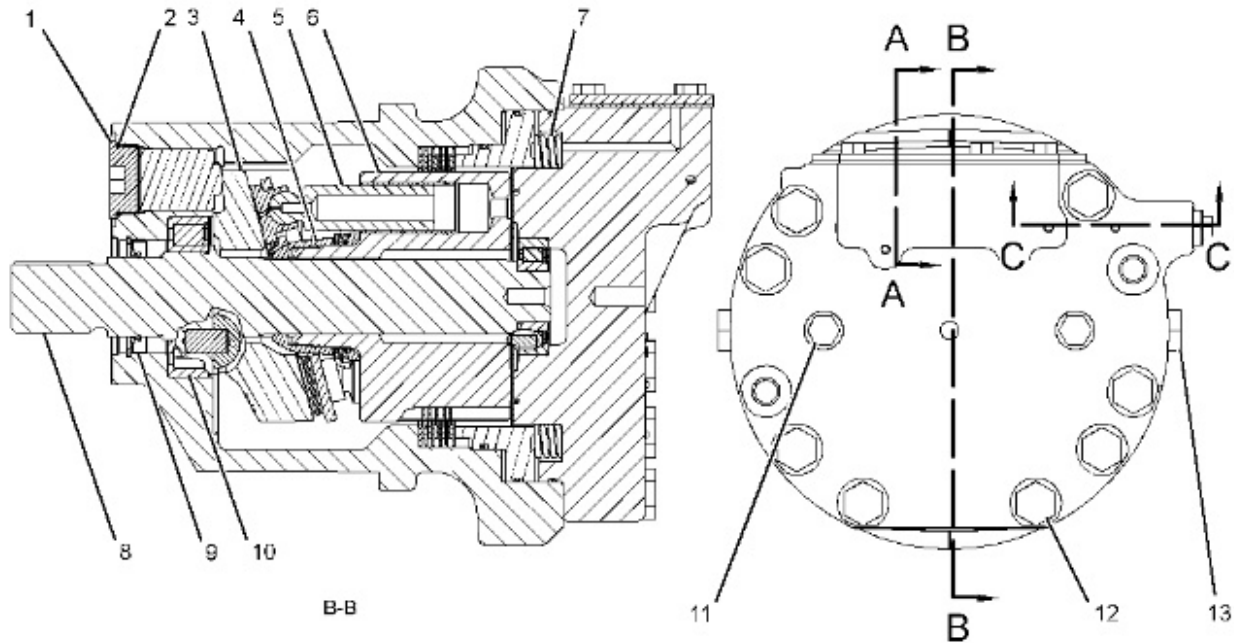


Illustration 1

g03845362

NOTICE

To prevent damage to the motor, the case must be filled with clean hydraulic oil at least to the fill port before operation.

Item	Qty	Part	Specification Description
14	2	1T-0936 Pipe Plug	Install in the orifice toward the head surface or below the head surface.
15	1	124-1554 Spring	Length under test force is 15 mm (0.6 inch). Test force is 15.0 ± 2.0 N (3.4 ± 0.4 lb). Free length after test is 16.15 mm (0.636 inch).
D	-	-	Depth from the head and interface of the port plate is 20.0 ± 0.2 mm (0.79 ± 0.01 inch).
16	1	195-4456 Orifice Plug	Torque to 7 ± 1 N·m (62 ± 9 lb in).

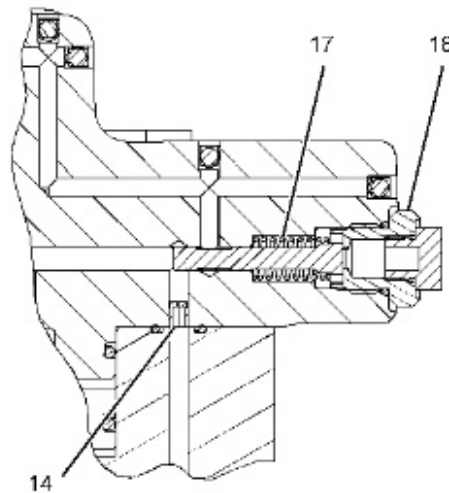


Illustration 3
Section C-C

g03845365

Table 3

Item	Qty	Part	Specification Description
17	1	230-5483 Spring	Length under test force is 25 mm (1.0 inch). Test force is 60.0 ± 8.0 N (13.5 ± 1.8 lb). Free length after test is 35 mm (1.4 inch).
18	1	087-4786 Adapter	Torque to 115 ± 10 N·m (85 ± 7 lb ft).

Assembly Procedure

Table 4

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7573	Link Bracket	1
D	3E-3879	Eyebolt	1

F	1U-6396	O-Ring Assembly Compound	1
G	-	Loctite 242	-
H	1P-0510	Driver Gp	1
J	6V-2055	Grease	1
K	128-5049	Guide Stud	2

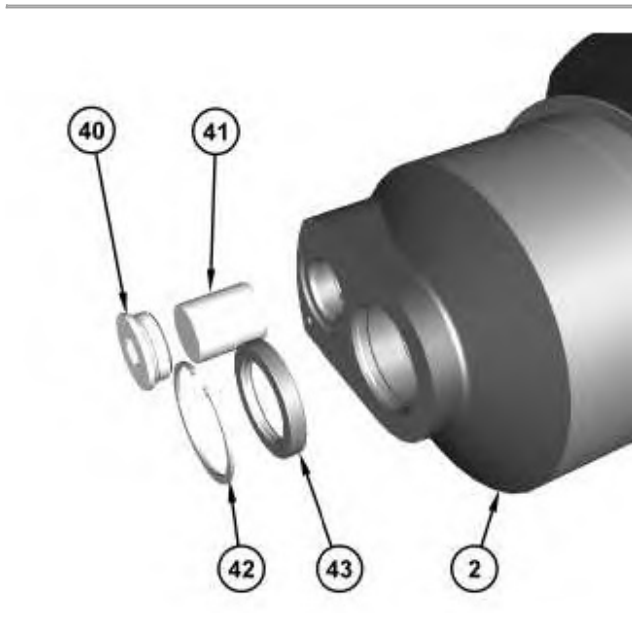


Illustration 4

g02421056

1. Lubricate actuator piston (41) with the oil that is being used. Install actuator piston (41) into housing (2). Apply Tooling (F) onto O-ring seal of plug (40). Install plug (40) into motor housing (2). Tighten plug (42) to a torque of 430 ± 40 N·m (315 ± 30 lb ft).
2. Apply Tooling (G) onto outside diameter of seal (43). Use Tooling (H) to install seal (43). Install retaining ring (42).

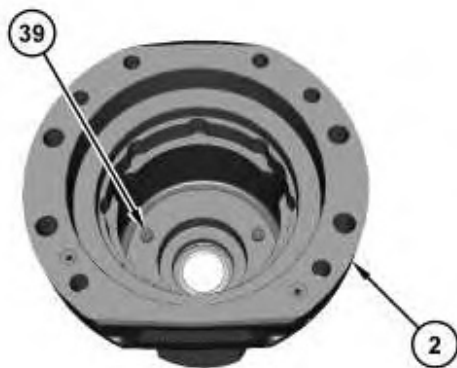


Illustration 5

g02421000



Illustration 6

g02420998

3. Install pins (39) and keys (38) into motor housing (2).
-

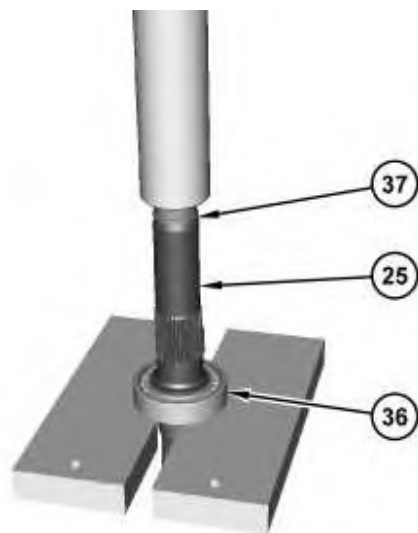


Illustration 7

g02421876

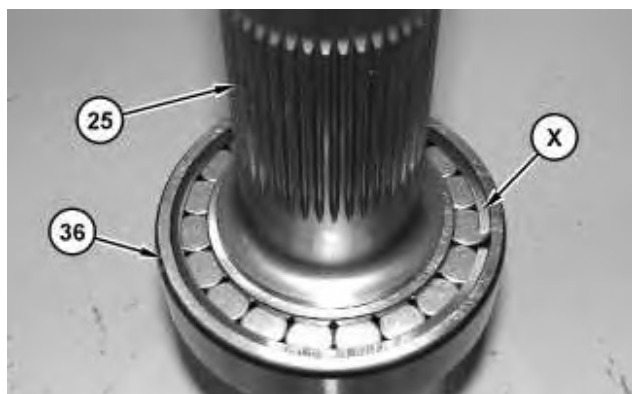


Illustration 8

g02421958

4. Use a suitable press to install bearing (36) and bearing (37) onto shaft assembly (25). Bearing (36) must be installed with Retaining Clip (X) toward the barrel assembly.
-

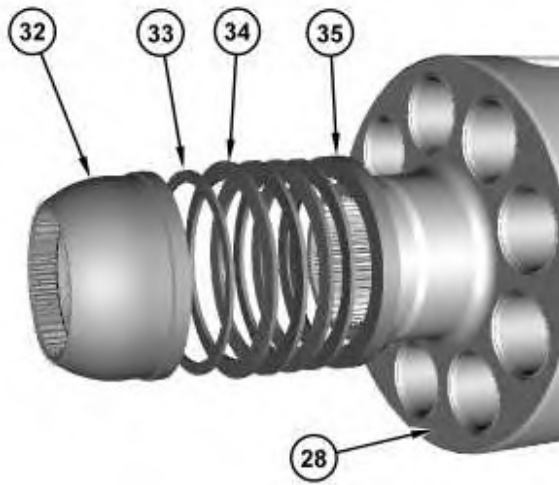


Illustration 9

g02420596

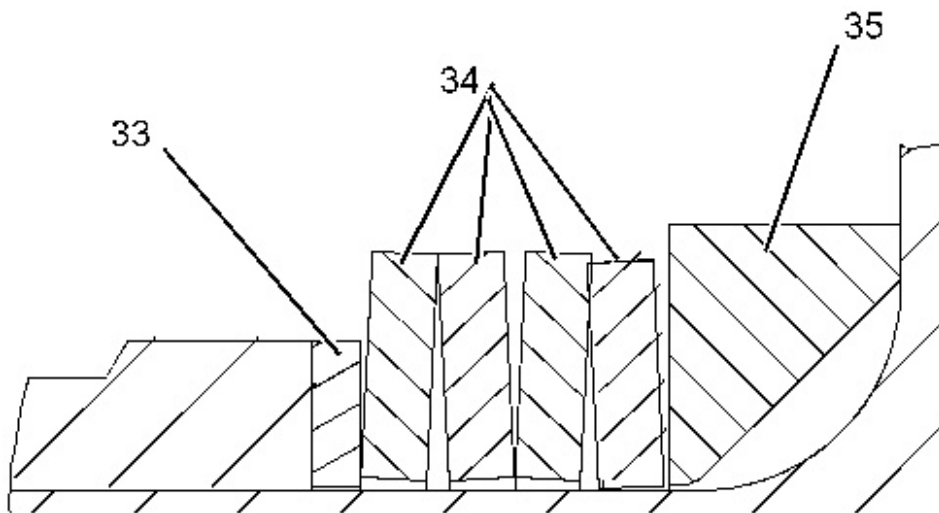


Illustration 10

g02423556

5. Install barrel spacer (35), Belleville washers (34), thin shim (33), and bearing (32) onto barrel assembly (28).
-

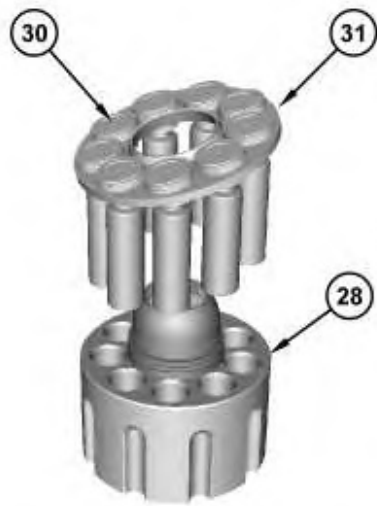


Illustration 11

g02420578

6. Install pistons (30) and plate (31) onto barrel assembly (28).
-

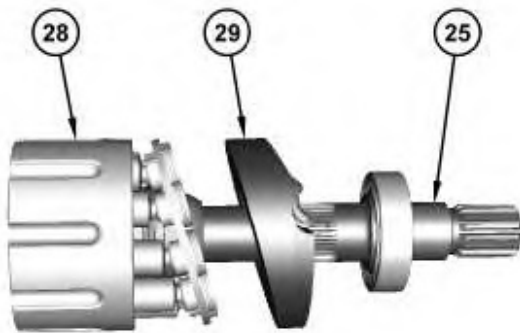


Illustration 12

g02420544

7. Install swashplate (29) and barrel assembly (28) onto shaft assembly (25).
-

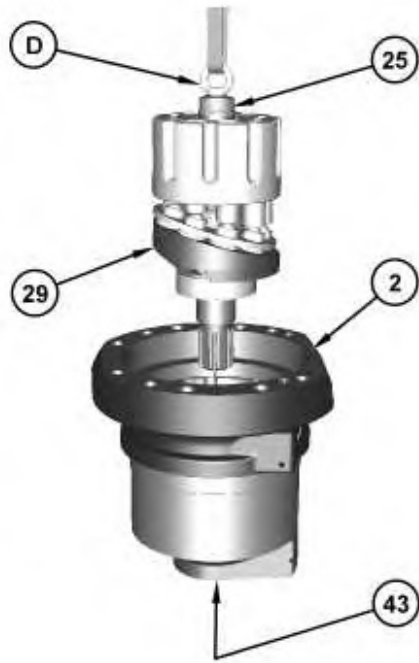


Illustration 13

g02423621

8. Use Tooling (D) and a suitable lifting device to install the rotating group into motor housing (2). The weight of the rotating group is approximately 30 kg (65 lb).

Note: Align the notches of swashplate (29) with the keys in the motor housing (2).

Note: Protect shaft seal (43) from damage by covering the splines on shaft assembly (25) with heat shrink tubing.

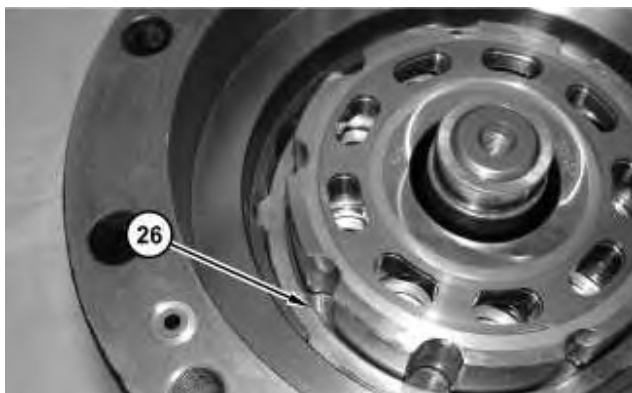


Illustration 14

g02423738

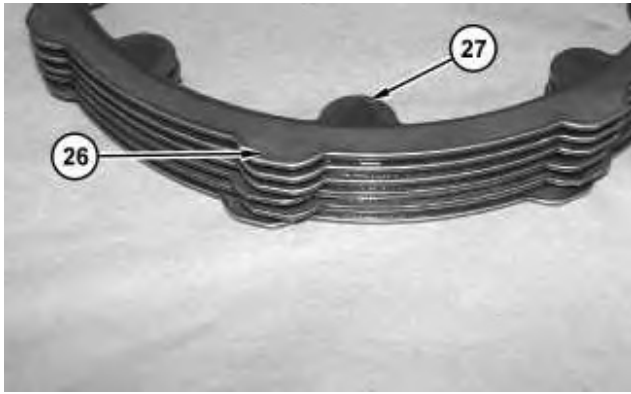


Illustration 15

g02423742

9. Install plates (26) and friction discs (27). Start with plate (26). Alternate between plates (26) and friction discs (27) with plates (26) on the top and the bottom.

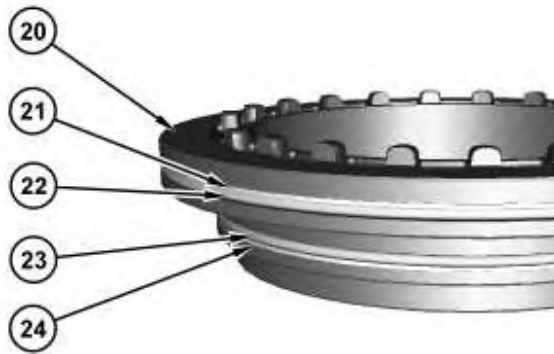


Illustration 16

g02419659

10. Install backup ring (21) and O-ring seal (22) onto brake piston (20).
11. Install backup ring (24) and O-ring seal (23) onto brake piston (20).

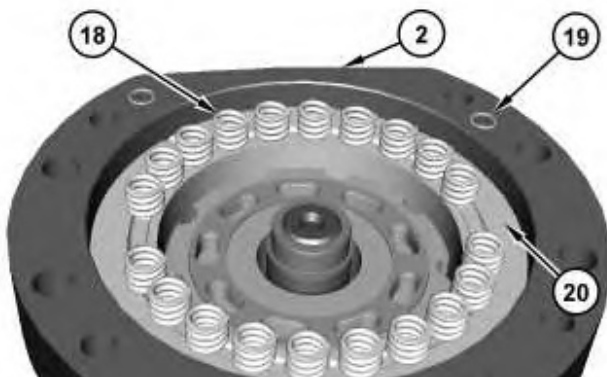


Illustration 17

g02419577

12. Install O-ring seals (19) onto motor housing (2). Install springs (18) onto brake piston (20).

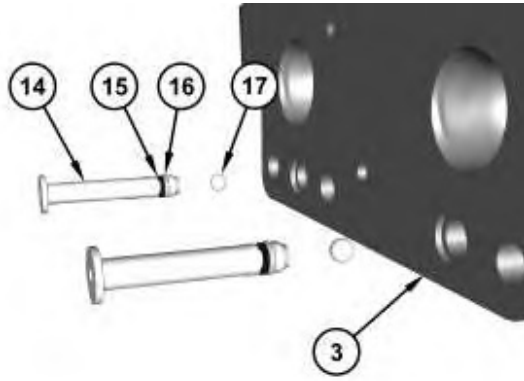


Illustration 18

g02419439

13. Install balls (17), backup rings (15), O-ring seals (16), and retainers (14) into head assembly (3).



Illustration 19

g02419416

 **WARNING**

Improper assembly of parts that are spring loaded can cause bodily injury.

To prevent possible injury, follow the established assembly procedure and wear protective equipment.

14. Install spring (13), spool (12), and adapter (11). Tighten adapter (11) to a torque of $115 \pm 10 \text{ N}\cdot\text{m}$ ($85 \pm 7 \text{ lb ft}$).

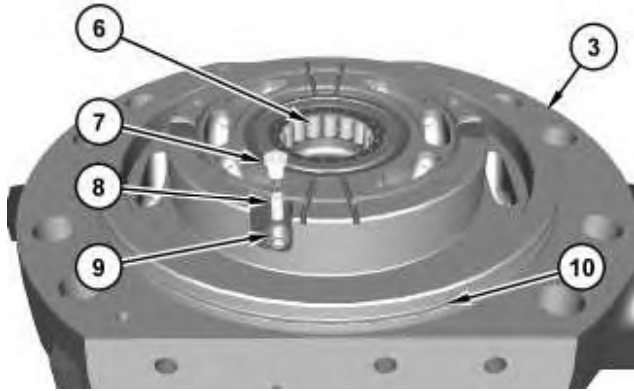


Illustration 20

g02419359

15. Install ball (9), spring (8), and orifice (7). Tighten orifice (7) to a torque of $7 \pm 1 \text{ N}\cdot\text{m}$ ($62 \pm 9 \text{ lb in}$).
16. Install bearing (6) and O-ring seal (10) onto head assembly (3).



Illustration 21

g02001974

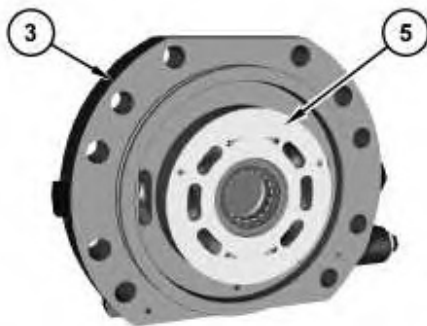


Illustration 22

g02419358

17. Apply Tooling (K) to the back side of plate (5) to hold plate (5) in place during assembly. Install plate (5) to head assembly (3).



Illustration 23

g02424459

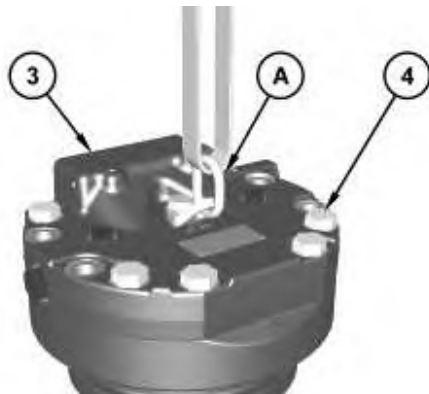


Illustration 24

g02419296

WARNING

Improper assembly of parts that are spring loaded can cause bodily injury.

To prevent possible injury, follow the established assembly procedure and wear protective equipment.

18. Install Tooling (K) onto motor housing (2). Use Tooling (A) and a suitable lifting device to install head assembly (3) onto motor housing (2). The weight of the head (3) is approximately 40 kg (90 lb). Remove Tooling (A) and Tooling (D). Install bolts (4). Tighten bolts (4) to a torque of $530 \pm 70 \text{ N}\cdot\text{m}$ ($390 \pm 50 \text{ lb ft}$).

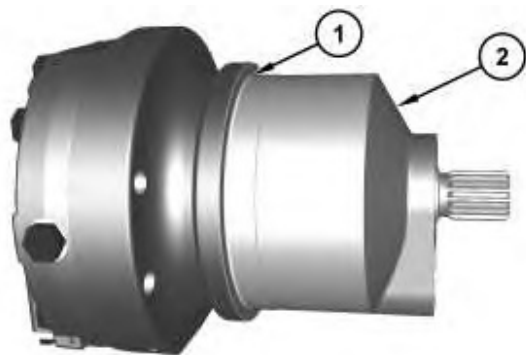


Illustration 25

g02419258

19. Install O-ring seal (1) onto motor housing (2).

End By:

- a. Install the travel motor.

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Product: MOBILE HYD POWER UNIT

Model: 349E MOBILE HYD POWER UNIT S3P

Configuration: 349E Mobile Hydraulic Power Unit S3P00001-UP (MACHINE) POWERED BY C13 Engine

Disassembly and Assembly 349E Excavator Machine Systems

Media Number -KENR9848-04

Publication Date -01/10/2012

Date Updated -23/10/2012

i07186913

Final Drive and Travel Motor - Remove and Install

SMCS - 4050; 4351

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-9200	Lever Puller Hoist	1
B	439-3941	Link Brackets	2
C	-	Loctite 243	-



WARNING

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the work tools have been lowered to the ground, and the oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.

-
1. Refer to Operation and Maintenance Manual, "Final Drive Oil - Change" for the correct draining and filling procedures.
-

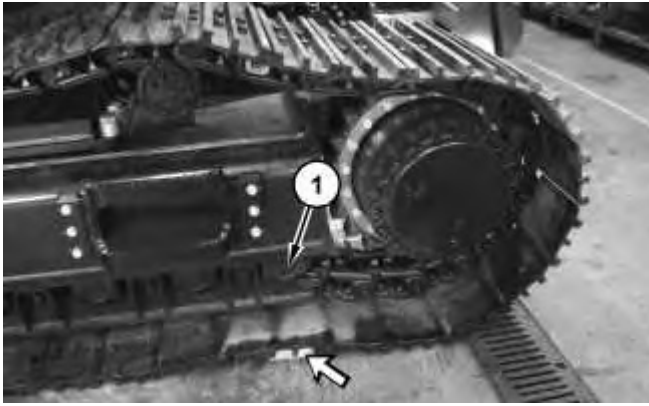


Illustration 1

g02415557

2. Release the track tension. Refer to Operation and Maintenance Manual, "Track Adjustment - Adjust".
3. Start the machine. Position track roller (1) on suitable cribbing. Position pin to separate the track above the final drive.
4. Separate the track.
5. Remove the counterbalance valve.

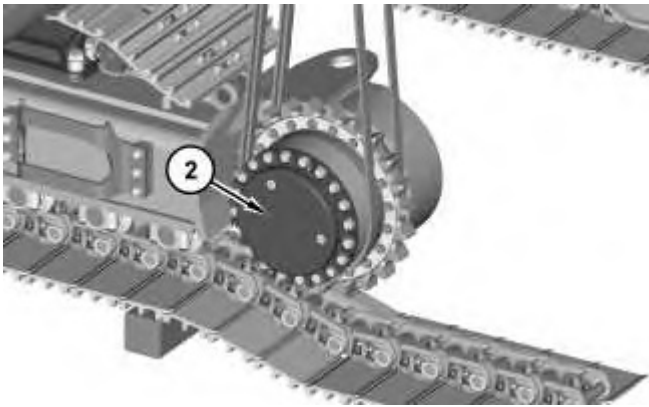
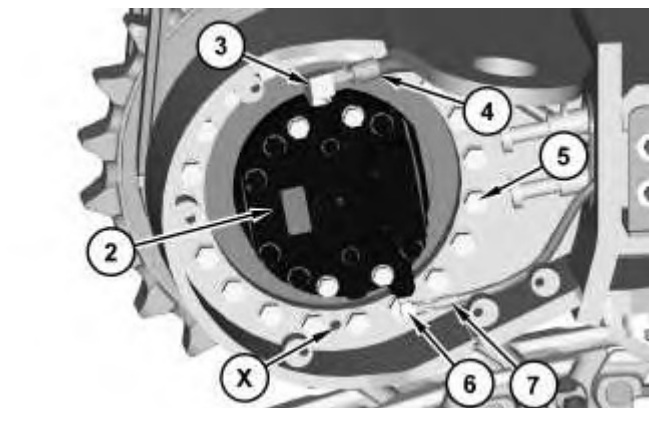


Illustration 2

g02417799





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Note: Mark the orientation of the final drive and travel motor assembly for installation purposes.

6. Attach Tooling (A) and a suitable lifting device to final drive and travel motor (2). The weight of final drive and travel motor (2) is approximately 733 kg (1615 lb). Apply a slight lifting tension on final drive and travel motor (2).
7. Disconnect hose assemblies (4) and (7). Remove fittings (3) and (6).
8. Remove bolts (5).
9. Use two bolts (5) in Holes (X) to remove final drive and travel motor (2).
10. Remove final drive and travel motor (2).
11. Remove bolts (5) from the frame.

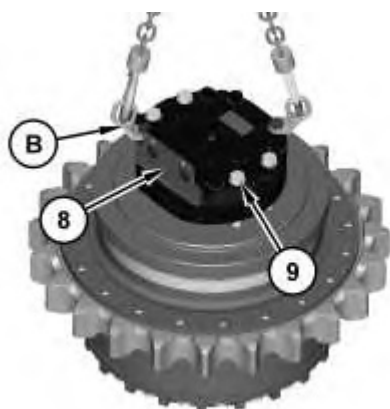


Illustration 4

g02417838

12. Attach Tooling (B) and a suitable lifting device to travel motor (8). The weight of travel motor (8) is approximately 143 kg (315 lb).
13. Remove four bolts (9), travel motor (8), and the O-ring seal.

Installation Procedure

1. Install final drive and travel motor (2) in the reverse order of removal.
 - a. Apply Tooling (C) to the threads of bolts (5). Tighten bolts (5) to a torque of $250 \pm 25 \text{ N}\cdot\text{m}$ ($185 \pm 18 \text{ lb ft}$).
 - b. Turn bolts (5) to an additional angle of 45 ± 5 degrees. Refer to Service Magazine , M0083843 , "An Improved bolt Tightening Procedure for the Critical Joints Is Now Used on All Excavators", for more details.

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