



# Service Repair Manual

## **Models**

305CR Mini Hydraulic Excavator

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Product: MINI HYD EXCAVATOR

Model: 305 MINI HYD EXCAVATOR DGT

Configuration: 305CR Mini Hydraulic Excavator DGT00001-UP (MACHINE) POWERED BY K4N Engine

## Disassembly and Assembly

### 305 Mini Hydraulic Excavator Machine Systems

Media Number -REN5546-04

Publication Date -01/08/2007

Date Updated -07/08/2007

i02404421

## Travel Motor - Assemble

SMCS - 4351-016

### Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-1862	Snap Ring Pliers	1
B	1U-7588	Pry Bar	2
C	1U-6439	Duo-Cone Seal Installer	1
D	5P-3931	Anti-Seize Compound	1
E	9S-3263	Thread Lock Compound	1

**Note:** Replace all O-ring seals and gaskets. Apply a light film of "10W" oil to all components before assembly.

**Note:** Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

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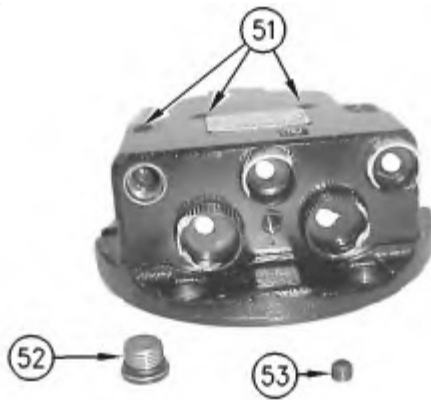


Illustration 1

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1. If necessary, install plugs (51) . Tighten the plugs to a torque of  $12.3 \pm 2.45 \text{ N}\cdot\text{m}$  ( $109 \pm 22 \text{ lb in}$ ). Install plug (52) , and the O-ring seal. Install plug (53) .

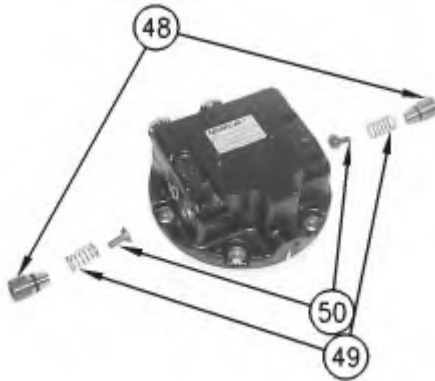


Illustration 2

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2. Install stoppers (50) , and springs (49) . Install plugs (48) , and the O-ring seals. Tighten plugs to a torque of  $79 \pm 10 \text{ N}\cdot\text{m}$  ( $58 \pm 7 \text{ lb ft}$ ).

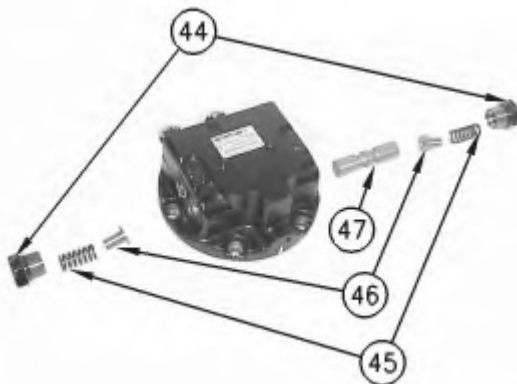


Illustration 3

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3. Install spool (47) . Install stoppers (46) , and springs (45) . Install plugs (44) , and the O-ring seals. Tighten the plugs to a torque of  $195 \pm 15 \text{ N}\cdot\text{m}$  ( $144 \pm 11 \text{ lb ft}$ ).

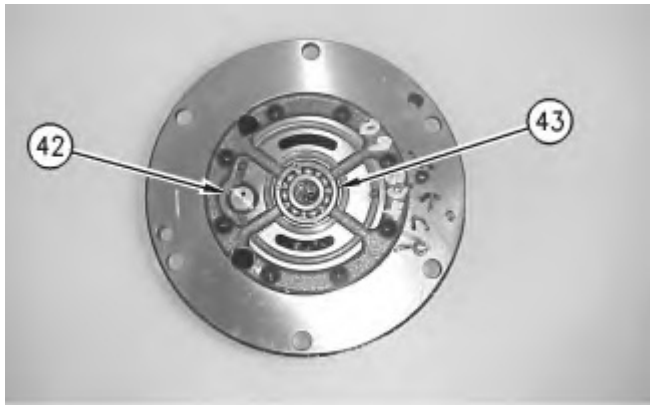


Illustration 4

g00764855

4. If necessary, install valve (42) . Install bearing (43) .

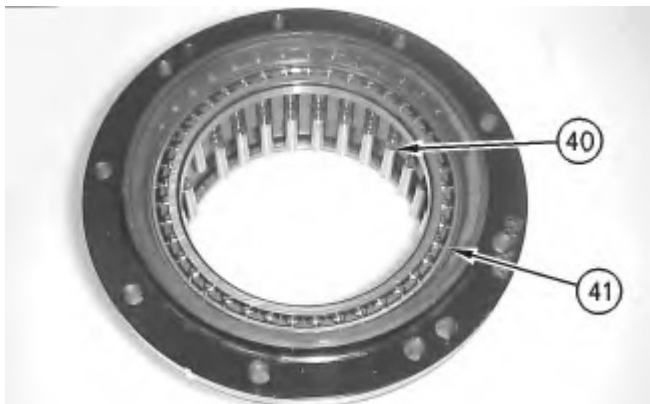


Illustration 5

g00764227

5. Install bearing (41) . Install pins (40) .
-

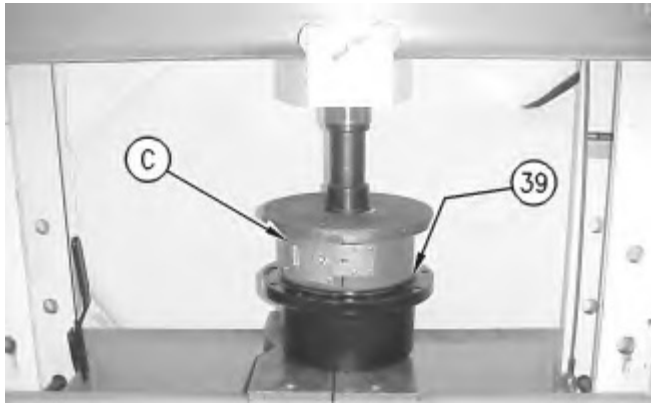


Illustration 6

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6. Use Tooling (C) in order to install Duo-Cone seal kit (39) .

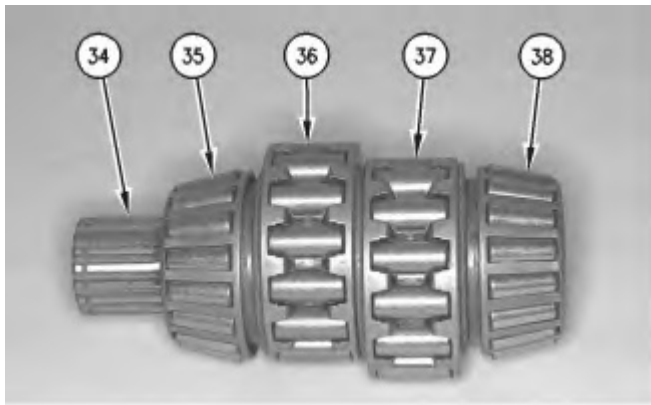


Illustration 7

g00764198

7. Install bearing (36) , and bearing (37) on shaft (34) . Install bearing cone (35) , and bearing cone (38) on shaft (34) .



Illustration 8

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8. Install gear (33) , and shaft assemblies (32) .

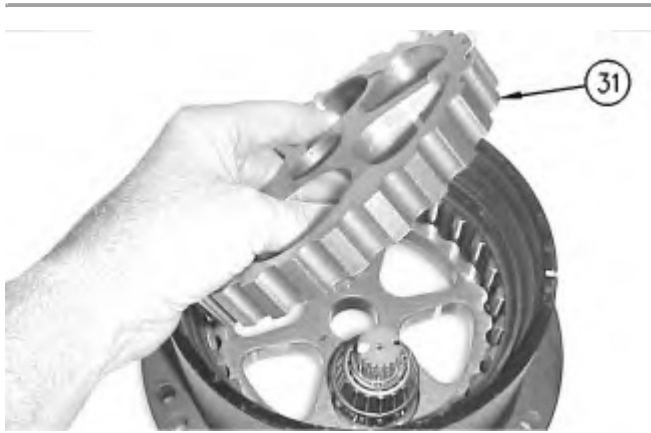


Illustration 9

g00764176

9. Install gear (31) .

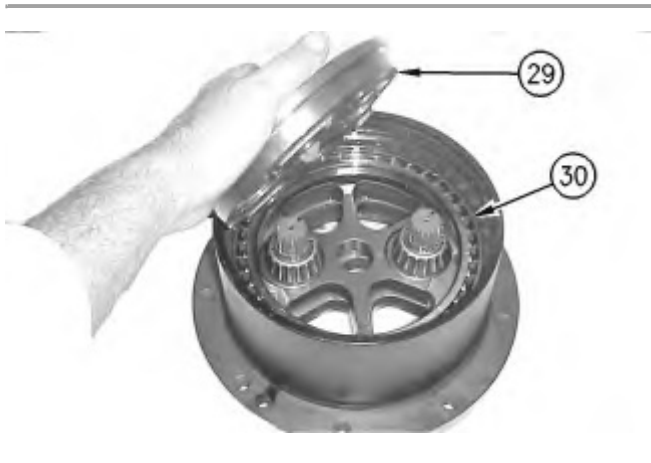


Illustration 10

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### NOTICE

**During installation of the flange plate, keep the flange plate level and true. If the flange plate is not kept level and true, galling of the flange plate will result.**

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10. Install bearing (30) , and flange (29) .

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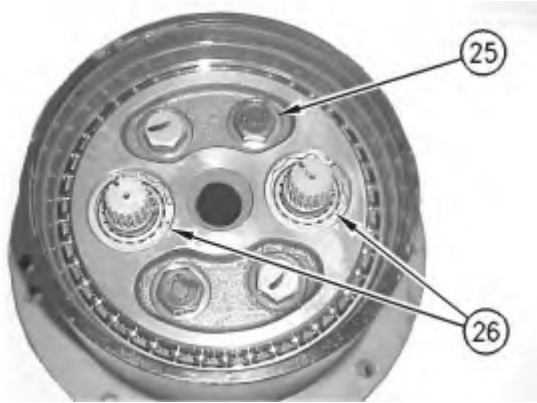


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Illustration 11

g00765016

11. Install spindle (27) into housing (28) .



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Illustration 12

g00764056

12. Install two retaining rings (26) .

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### NOTICE

**If bolts (25) are not tightened evenly, a small amount at a time, the flange plate will tilt resulting in seizure of the bolts. Also, the seating face of each bolt must be in face-to-face contact with the flange plate after they are tightened to the specified torque value.**

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13. Make sure that bolts (25) are thoroughly clean and dry. Apply Tooling (D) on the shank of each bolt. Apply Tooling (E) to the threads of each bolt.
14. Install bolts (25) . Tighten bolts (25) evenly by tightening the bolts in small increments. Tighten bolts (25) to a final torque of  $252 \pm 39$  N·m ( $186 \pm 29$  lb ft).



Illustration 13

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15. Install pivots (23) , and lip seal (24) .

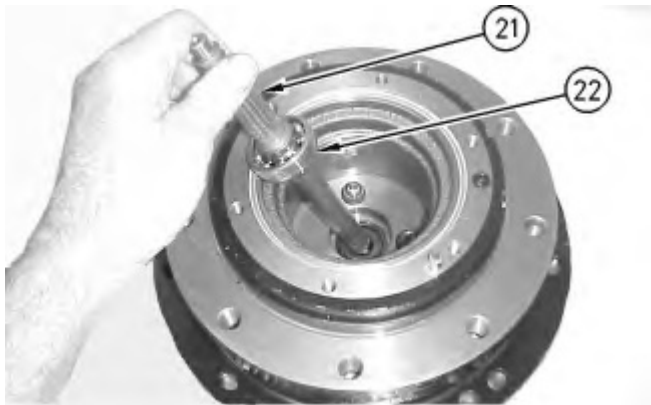


Illustration 14

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16. Install bearing (22) . Install shaft (21) .

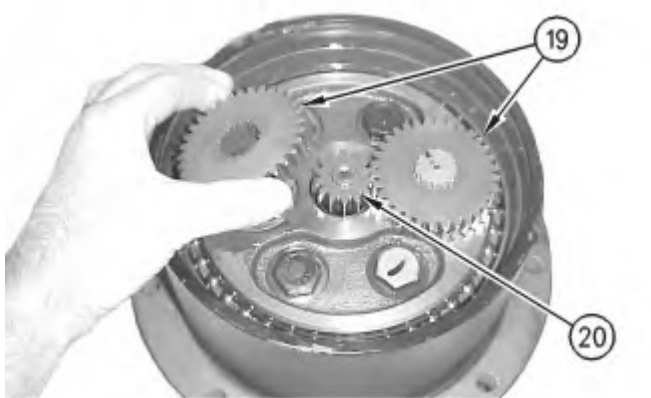


Illustration 15

g00763613

17. Install gears (19) . Install gear (20) .

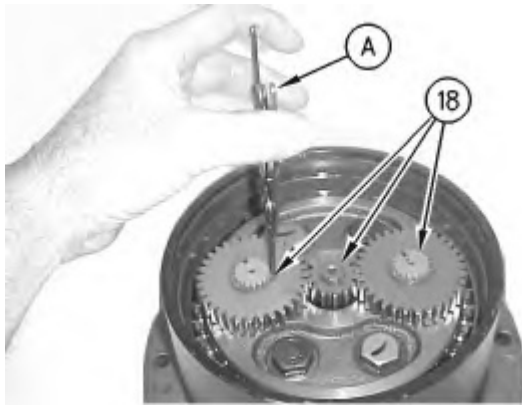


Illustration 16

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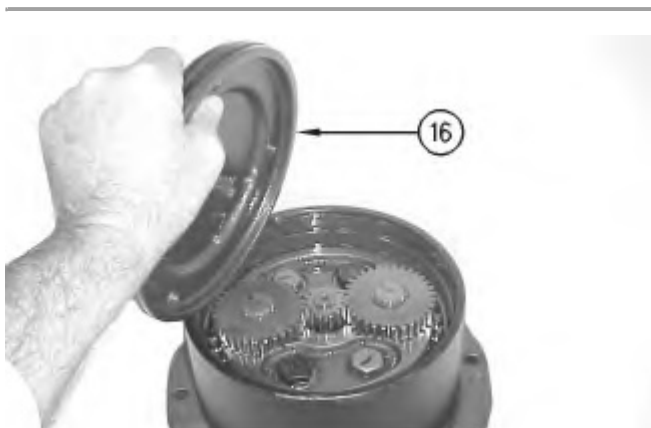
18. Use Tooling (A) in order to install retaining rings (18) .



Illustration 17

g00763603

19. Install O-ring seal (17) .



20. Install cover (16) .



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Illustration 19

21. Install ring (14) into the groove between cover (15) and the final drive housing.



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Illustration 20

22. Install plugs (1) .

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Illustration 21

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23. Install spring (13) , and piston (12) .



Illustration 22

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24. Install swashplate (11) .

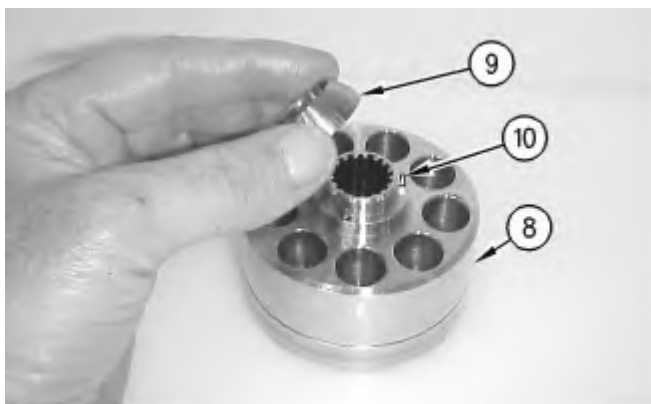
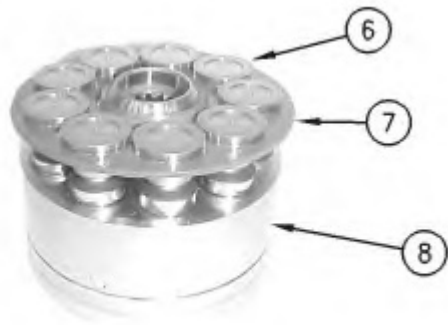


Illustration 23

g00763958

25. Install pins (10) into barrel (8) . Install guide (9) .



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Illustration 24

g00763935

26. Use the identification marks on piston assemblies (6) in order to locate the pistons in the retainer plate (7) and the barrel (8) . Install piston assemblies (6) and retainer plate (7) into barrel (8) as a unit.



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Illustration 25

g00763578

27. Install barrel assembly (5) .



28. Install port plate (4) .

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29. Install plate (3) . Install four bolts (2) . Tighten the bolts to a torque of  $29.4 \pm 5 \text{ N}\cdot\text{m}$  ( $22 \pm 4 \text{ lb ft}$ ).

**End By:** Install the piston motor (travel). Refer to Disassembly and Assembly, "Piston Motor (Travel) - Install" in this manual.

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Product: MINI HYD EXCAVATOR

Model: 305 MINI HYD EXCAVATOR DGT

Configuration: 305CR Mini Hydraulic Excavator DGT00001-UP (MACHINE) POWERED BY K4N Engine

## Disassembly and Assembly 305 Mini Hydraulic Excavator Machine Systems

Media Number -REN5546-04

Publication Date -01/08/2007

Date Updated -07/08/2007

i01671207

# Travel Motor - Install

SMCS - 4351-012

## Installation Procedure

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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, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

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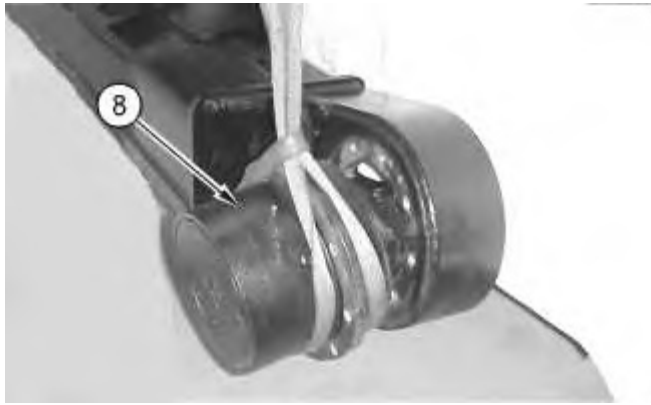


Illustration 1

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1. Position travel motor (8) to the undercarriage frame with a suitable lifting strap. Weight of the travel is 60 kg (132 lb).

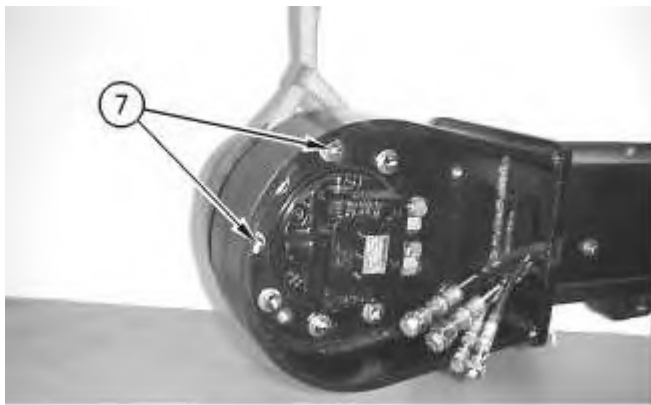


Illustration 2

g00726947

2. Install washers and bolts (7) to the travel motor. Tighten the bolts.

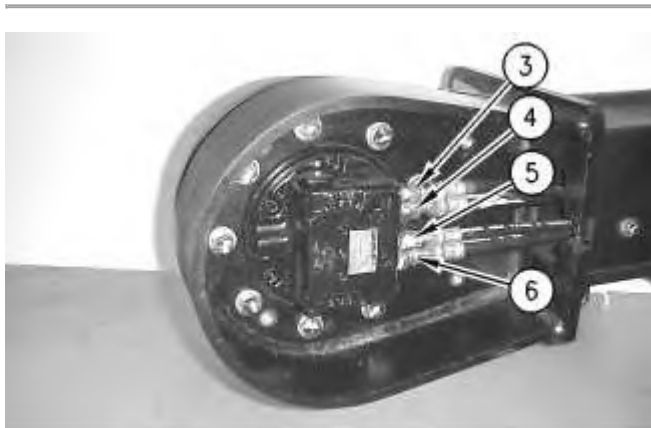


Illustration 3

g00726946

3. Connect hose assemblies (3), (4), (5), and (6) to the travel motor.

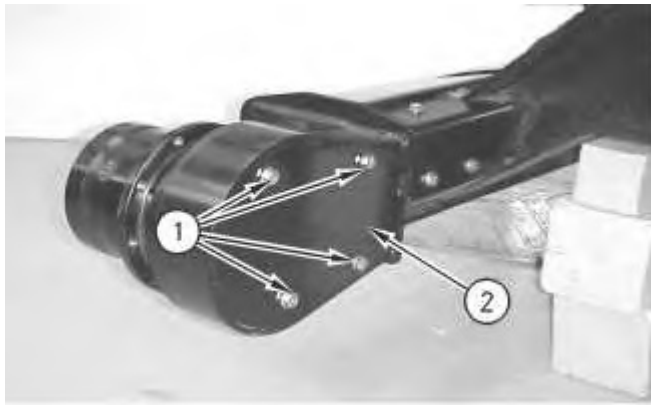


Illustration 4

g00723963

4. Position cover (2) to the undercarriage frame and install washers and four bolts (1). Tighten the bolts.
5. Repeat Steps 1 through 4 for the other side of the travel motor.

**End By:**

- a. Install the final drive sprocket. Refer to Disassembly and Assembly, "Final Drive Sprocket - Remove and Install".
- b. Install the track. Refer to Disassembly and Assembly, "Track - Remove and Install".

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## Disassembly and Assembly

### 305 Mini Hydraulic Excavator Machine Systems

Media Number -REN5546-04

Publication Date -01/08/2007

Date Updated -07/08/2007

i01683218

## Swivel - Remove

SMCS - 5060-011

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	6V-9507	Face Seal Plug (9/16 inch by 18)	4
B	8V-9828	Cap As (9/16 inch by 18)	4
C	6V-9509	Face Seal Plug (13/16 inch by 16)	4
D	6V-9830	Cap As (13/16 inch by 16)	4

### Start By:

- A. Release the hydraulic system pressure. Refer to Disassembly and Assembly, "Hydraulic System Pressure - Release".
- B. Remove the cab. Refer to Disassembly and Assembly, "Cab - Remove and Install".

**Note: SERVICE DATA: TOOLING (A ) THROUGH TOOLING (D) WILL NOT BE IDENTIFIED IN PHOTOGRAPHS IN THE REMOVAL OR THE INSTALLATION. THIS TOOLING IS SHOWN IN ORDER TO ASSIST THE EXPERIENCED SERVICEMAN.**


**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 attachments have been lowered, 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.**

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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, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**

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**Note:** Put identification marks on all the hose assemblies for installation purposes. Plug all hose assemblies. This helps to prevent fluid loss, and this helps to keep contaminants from entering the system.

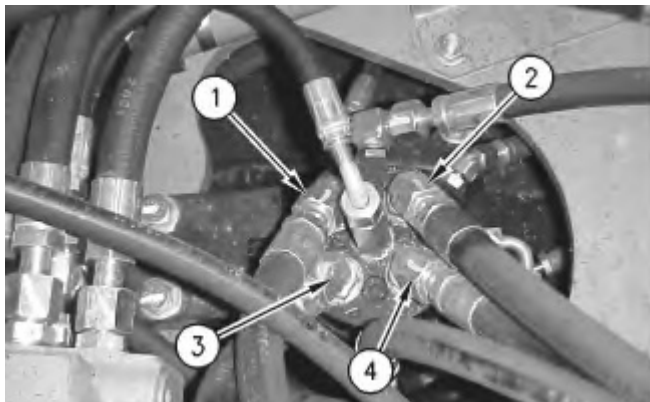


Illustration 1

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1. Disconnect hose assemblies (1), (2), (3), and (4) from the swivel.
-

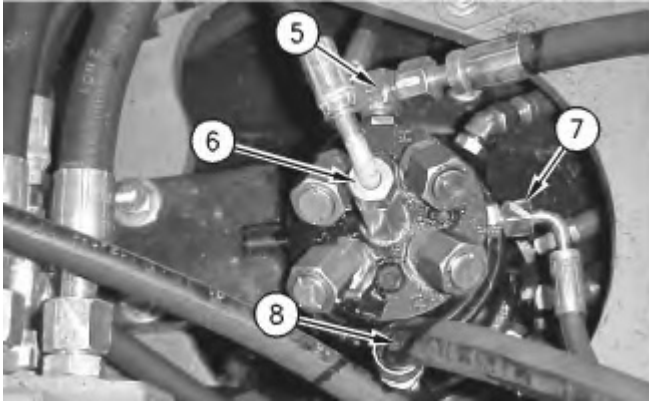


Illustration 2

g00867813

2. Disconnect hose assemblies (5), (6), (7), and (8) .

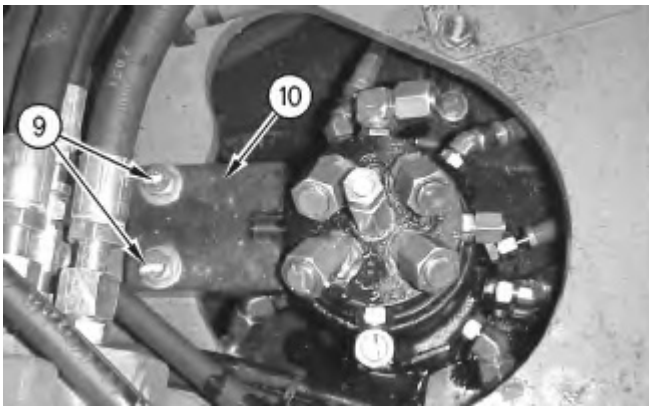


Illustration 3

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3. Remove bolts (9),and remove plate (10) .

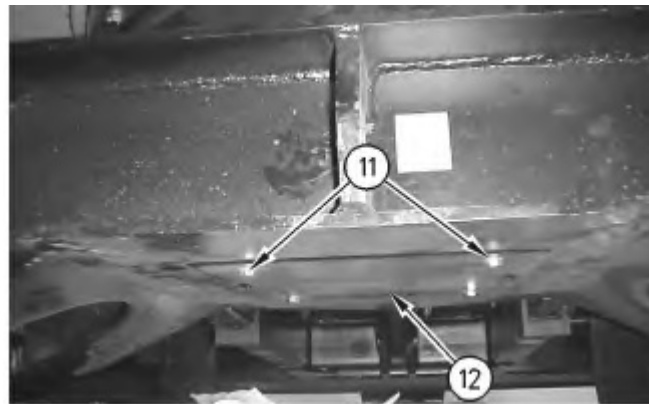


Illustration 4

g00867827

View from the bottom of the carbody



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4. Remove bolts (11) and remove plate assembly (12).

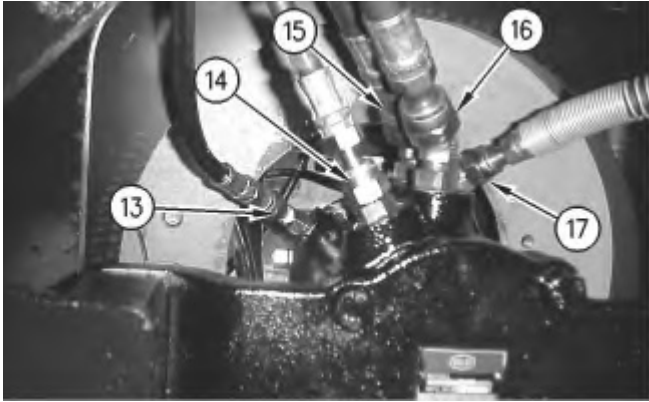


Illustration 5

g00867833

View from the bottom of the carbody

5. Disconnect hose assemblies (13), (14), (15), (16), and (17) from the swivel.

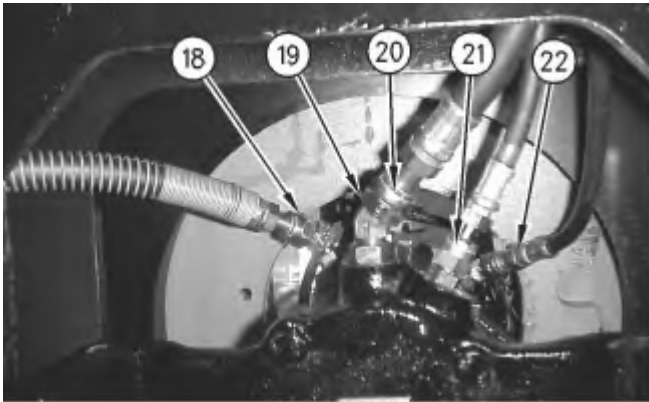


Illustration 6

g00867834

View from the bottom of the carbody

6. Disconnect hose assemblies (18), (19), (20), (21), and (22) from the swivel.
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