CATERPILLAR®

Service Repair Manual

Models

365B and 365B L MH EXCAVATOR

Product: EXCAVATOR
Model: 365B EXCAVATOR CTY
Configuration: 365B L Material Handler CTY00001-UP (MACHINE) POWERED BY 3196 Engine

Disassembly and Assembly
365B, 365B Series II, 365BL and 365BL Series II Excavators Machine Systems
Media Number -RENR1970-10 **Publication Date -01/02/2015** **Date Updated -16/02/2015**

i02789460

Final Drive - Assemble

SMCS - 4050-016

Assembly procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	1P-2420	Transmission Repair Stand	1
B	138-7575	Link Bracket	5
C	140-7642	Duo-Cone Seal Installer As	1
F	1P-1859	Retaining Ring Pliers	1
G	138-7576	Link Bracket	2
H	5P-3931	Anti-Seize Compound	1
J	9S-3263	Thread Lock Compound	1
K	1U-8846	Gasket Sealant	1

1. Make sure that all parts of the final drive are thoroughly clean and free of dirt and debris prior to assembly.

   Note: Check the condition of all the O-ring seals that are used in the final drive. If any of the seals are worn or damaged, use new parts for replacement.

2. Reassemble the final drive on Tooling (A) .

Illustration 1 g00599211

3. Apply Tooling (H) to the surfaces that contact the bearing cones. Install the bearing cone with a press. Raise the temperature of bearing (50) and install bearing (50) .

4. Apply Tooling (H) to the surfaces that contact pins (49) . Install pins (49) .

Illustration 2 g00599224

5. Apply Tooling (H) to the surfaces that contact bearing cups (48) and (47) . Install bearing cups (48) and (47) .

Illustration 3 g00596986

6. Install bearing (45) and the bearing cone.

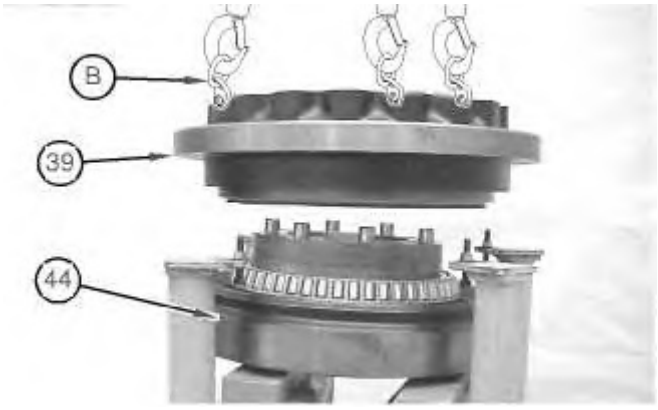

Illustration 4 g01035739

7. Attach Tooling (B) and a suitable lifting device to main housing (39) . Install the main housing on motor housing (44) , as shown.

8. Use the following procedure to determine the bearing preload and the correct number of shims.

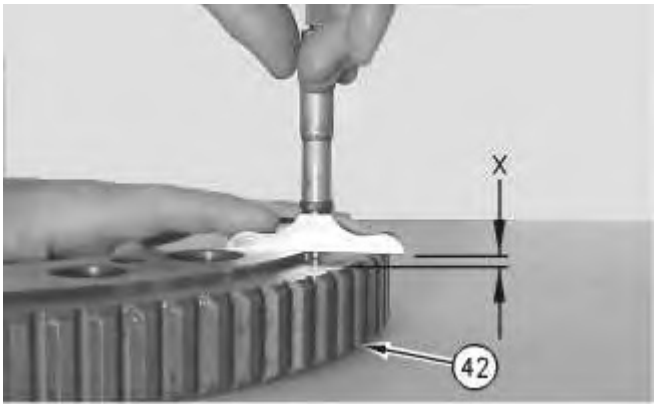

Illustration 5 g00603328

a. Use a depth micrometer in order to measure the step length of the coupling gear (42) . Take measurements at several different locations around the gear. Compute the average of the measured dimensions and record the number. Call this dimension (X) .

b. Use a suitable press and a spacer in order to apply a load of 10000 kg (22046 lb) on the bearings.

c. Rotate the main housing in order to seat the bearing.

d. Reduce the load on the bearings to 3700 ± 370 kg (8157 ± 815 lb).

Illustration 6 g00603604

e. Maintain the load on the bearings. Use a depth micrometer and measure the distance between the top face of motor housing and the bearing cone, as shown. Take this measurement in several locations around the bearing. Compute the average of the measured dimensions and record the number. Call this dimension (Y) .

f. Determine the correct thickness of the shim pack that will be installed between the bearing cone and the coupling gear. The shim pack thickness is equal to dimension (Y) minus dimension (X) . Tolerance for the shim pack is 0.1 mm (0.003 inch).

   Note: If two shims are required, install the thinner shim next to the coupling gear when the coupling gear is installed.

9. Attach Tooling (B) and a suitable lifting device in order to remove the main housing from the motor housing.

   Note: Refer to Disassembly and Assembly, "Duo-Cone Conventional Seals - Install".

   Note: The rubber seals and all surfaces that contact the seals must be clean and dry. After installation of the seals, apply clean SAE 30 oil on the contact surfaces of the metal seals.

Illustration 7 g00600071

10. Use Tooling (C) to install Duo-Cone seal (46) in the main housing.

Illustration 8 g00600087

11. Use Tooling (C) to install Duo-Cone seal (51) in the motor housing.

Note: Make sure that the Duo-Cone seals are not scratched or damaged during the assembly of the main housing or during the assembly of the motor housing. After installation of the main housing on the motor housing, there will be a small gap between the components. The gap is caused by the Duo-Cone seals. The gap will be eliminated during installation of the gear.

Illustration 9 g00596986

12. Install bearing (45) and the bearing cone.

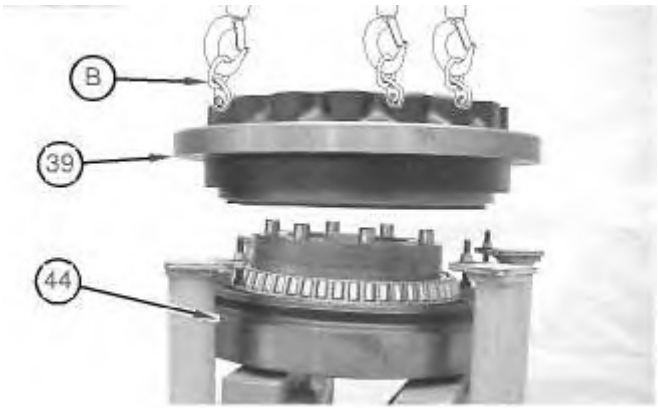

Illustration 10 g01035739

13. Attach Tooling (B) and a suitable lifting device to main housing (39) . Position main housing (39) on motor housing (44) . Make sure that the Duo-Cone seals are not scratched or damaged during installation.

Illustration 11 g00596927

14. Place shims (43) in the correct position on the motor housing. If two shims were required, put the thinner shim in contact with coupling gear (42) . Make sure that all of the holes in the components are in alignment with each other.

Illustration 12 g00596901

15. Put coupling gear (42) in the original position on the motor housing.

16. Apply Tooling (J) on the threads of bolts (41) . Install the bolts to secure coupling gear (42) in place. Tighten bolts (41) evenly and tighten the bolts in diagonally opposite pairs. Tighten bolts to a torque of 1600 ± 200 N·m (1180 ± 148 lb ft).

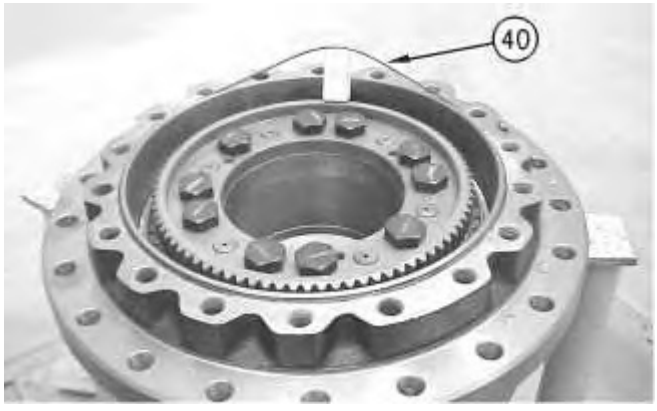

Illustration 13 g00596864

17. Install O-ring seal (40) in the main housing.

Illustration 14 g01035734

18. Thoroughly clean the mating surface of main housing (39) that contacts ring gear (38) . Apply a bead of Tooling (K) on the mating surface of ring gear (38) . Use Tooling (B) and a suitable lifting device. Place the ring gear in position on the main housing. Make sure that the alignment mark on the main housing and the ring gear line up with each other. It may be necessary to use a soft faced hammer to seat the ring gear on the main housing.

19. Assemble carrier assembly (29) , as follows:

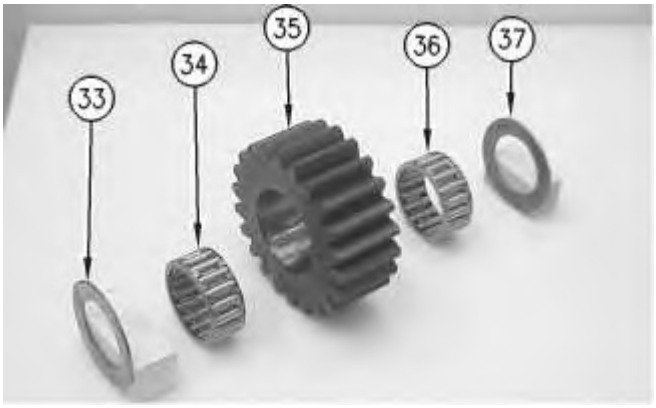

Illustration 15 g00596823

Illustration 16 g00603856

a. Apply clean SAE 30 oil on bearings (34) and (36) . Install bearings (34) and (36) in planetary gear (35) .

b. Install thrust washers (33) and (37) on each side of the planetary gear.

c. Install the planetary gear and thrust washers in carrier assembly (29) .

d. Install planetary shaft (30) in carrier (29) and through planetary gear assembly (32) . Make sure that the spring pin hole in the planetary shaft is in alignment with the spring pin hole in the carrier.

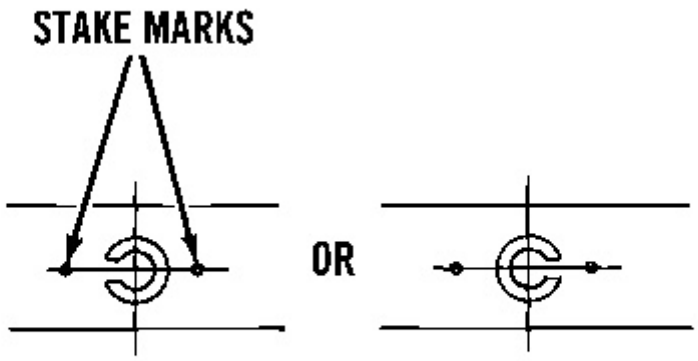

Illustration 17 g00513451

e. Install spring pin (31) in the carrier and into the planetary shaft. Make sure that the spring pin hole in the planetary shaft is in alignment with the spring pin hole in the carrier.

f. Orient the split in the spring pin (31) horizontally to the carrier. Align the split in the spring pin to the left or to the right. Make a stake mark on each side of the spring pin hole in the carrier. This will prevent the spring pin from falling out of the spring pin hole. Each stake mark should be approximately 1.5 mm (0.06 inch) to 3.00 mm (0.118 inch) from the outside diameter of the spring pin hole.

g. Repeat Steps 19.a through 19.f in order to install the remaining planetary gears in carrier (29) .

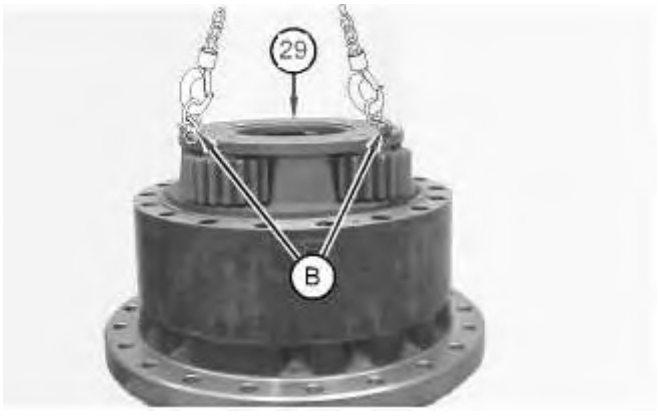

Illustration 18 g01035740

20. Attach Tooling (B) and a suitable lifting device to carrier assembly (29) . Put the carrier assembly in position in the ring gear. It may be necessary to move the carrier assembly back and forth during installation in order to ensure that all gears engage properly.

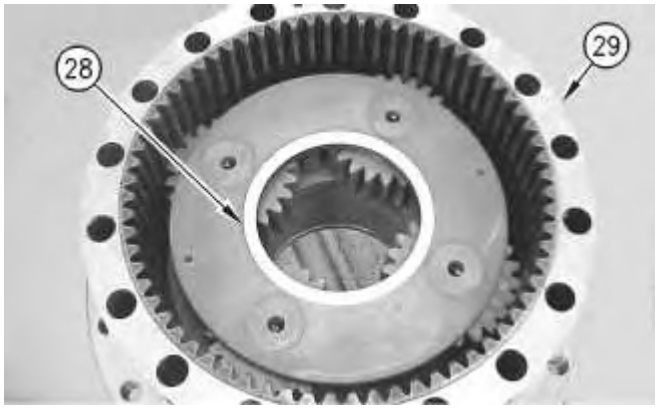

Illustration 19 g00603929

21. Install spacer (28) on carrier assembly (29) .
22. Assemble carrier assembly (21) , as follows:

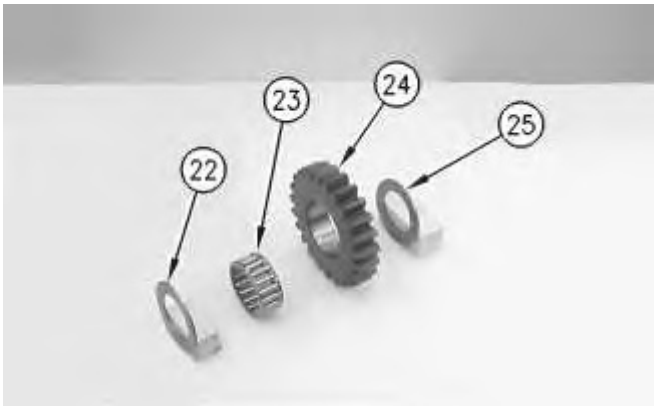

Illustration 20 g00596485

a. Apply clean SAE 30 oil on bearing (23) . Install bearing (23) in planetary gear (24) .
b. Install thrust washers (22) and (25) on each side of the planetary gear.
c. Install the thrust washers and the planetary gear in the carrier assembly (21) .

Illustration 21 g00596446

d. Install planetary shaft (20) in carrier (21) and through planetary gear assembly (24) . Make sure that the spring pin hole in the carrier is in alignment with the spring pin hole in the planetary shaft.

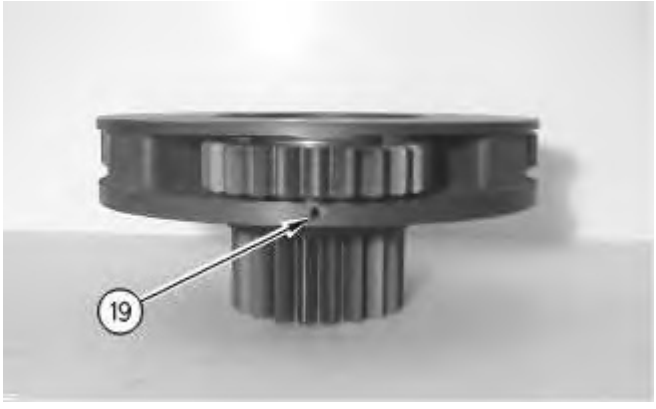

Illustration 22 g00596442

e. Make sure that the spring pin (19) in the planetary shaft is in alignment with the spring pin hole in the carrier.

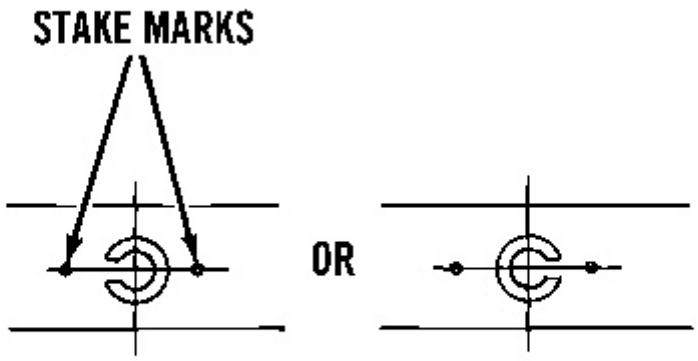

Illustration 23 g00513451

f. Orient the split in the spring pin (19) horizontally to the carrier. Align the split in the spring pin to the left or to the right. Make a stake mark on each side of the spring pin hole in the carrier. This will prevent the spring pin from falling out of the spring pin hole. Each stake mark should be approximately 1.5 mm (0.06 inch) to 3.00 mm (0.118 inch) from the outside diameter of the spring pin hole.

g. Repeat Steps 22.a through 22.f in order to install the remaining two planetary gears in carrier (18) .

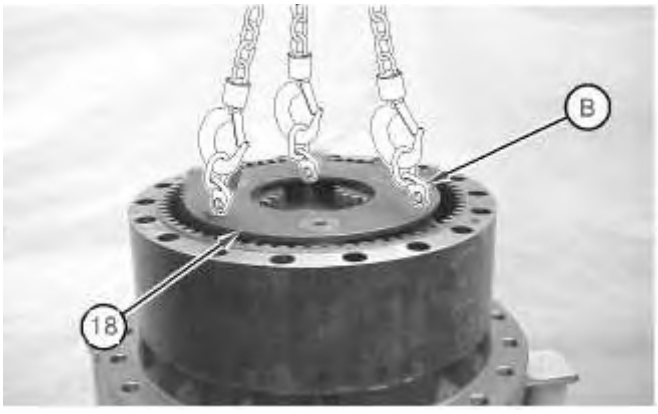

Illustration 24 g01035731

23. Attach Tooling (B) and a suitable lifting device to carrier assembly (18) . Position carrier assembly (18) in ring gear (38) . Move carrier assembly (18) back and forth during the installation in order to ensure that all gears engage properly.

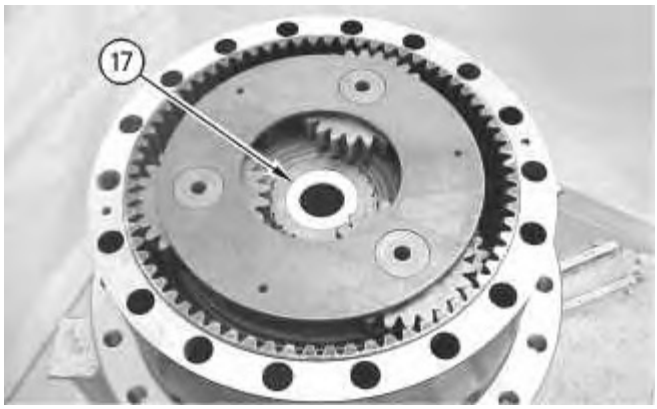

Illustration 25 g00596342

24. Install spacer (17) .

25. Assemble carrier assembly (8) , as follows:

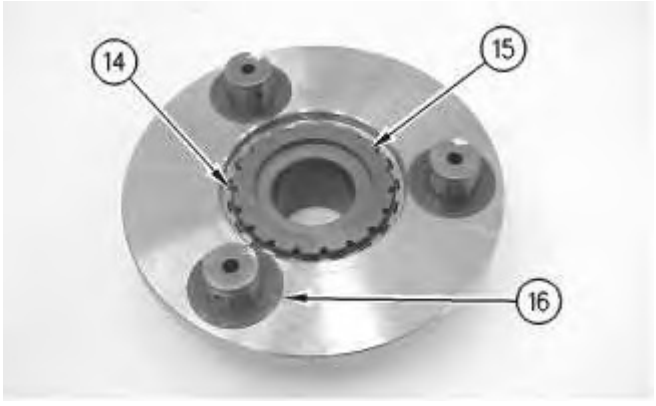

Illustration 26 g00596337

a. Install washers (16) and gear (15) . Use suitable Tooling to install ring (14) .

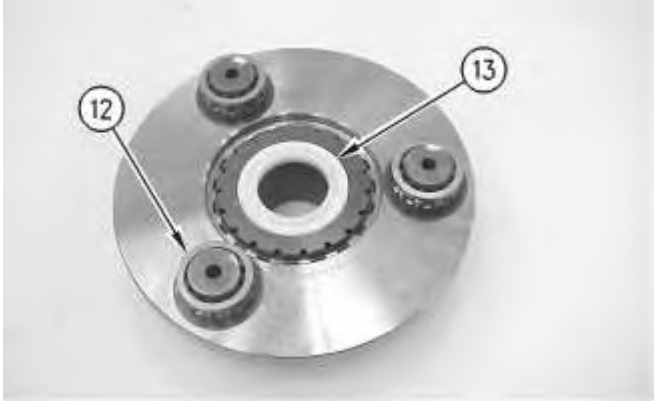

Illustration 27 g00596273

b. Install bearings (12) and spacer (13) .

Illustration 28 g00596269

c. Install gears (11) .

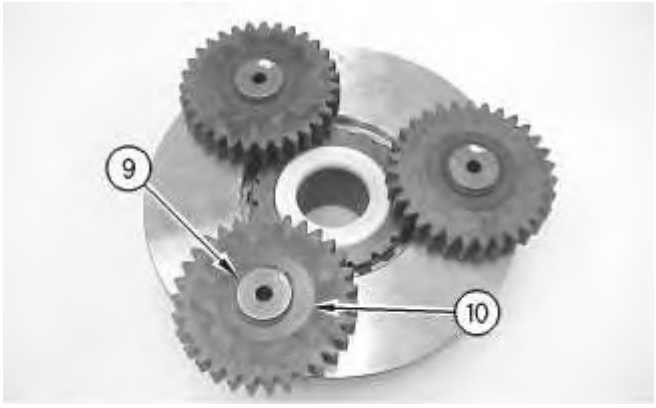

Illustration 29 g00596242

d. Install washers (10) . Use Tooling (F) in order to install retaining ring (9) .

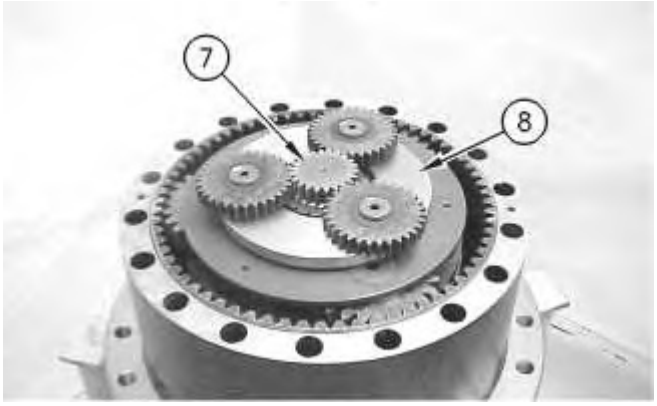

Illustration 30 g00596082

26. Use two people to install carrier assembly (8) . The weight of the carrier assembly (8) is approximately 24 kg (53 lb). Install sun gear (7) .

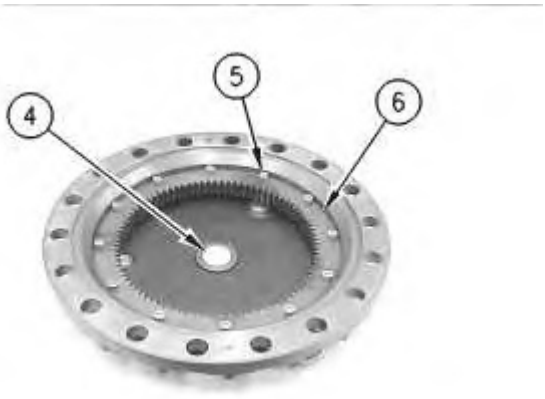

Illustration 31 g00596018

27. Install ring gear (6) into the cover. Tighten bolts (5) to a torque of 100 ± 20 N·m (74 ± 15 lb ft). Install spacer (4) .

    The weight of the cover is approximately 65 kg (143 lb).

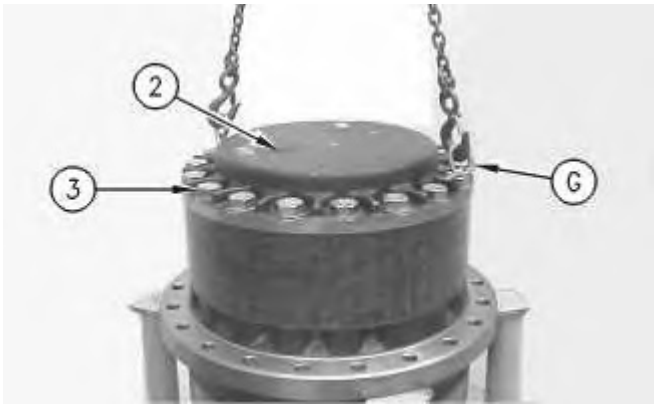

Illustration 32 g00604398

28. Attach Tooling (G) and a suitable lifting device to cover (2) . Install bolts (3) and the washers. Tighten bolts (3) to a torque of 1600 ± 200 N·m (1180 ± 148 lb ft).

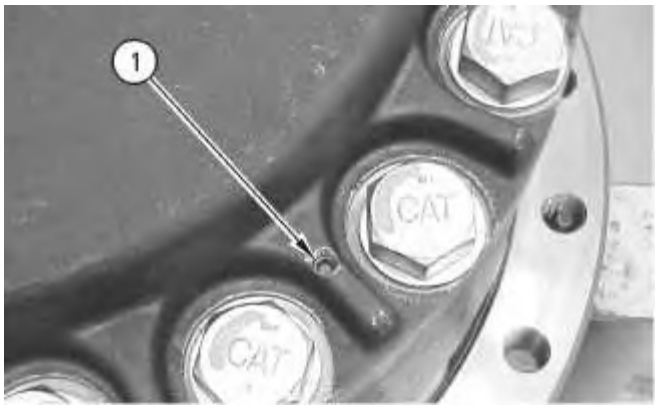

Illustration 33 g00596007

29. Install socket head bolts (1) .

End By: Install the final drives and the travel motors. Refer to Disassembly and Assembly, "Final Drive - Install".

Product: EXCAVATOR
Model: 365B EXCAVATOR CTY
Configuration: 365B L Material Handler CTY00001-UP (MACHINE) POWERED BY 3196 Engine

Disassembly and Assembly
365B, 365B Series II, 365BL and 365BL Series II Excavators Machine Systems
Media Number -RENR1970-10 **Publication Date -01/02/2015** **Date Updated -16/02/2015**

i01089053

Final Drive - Install

SMCS - 4050-012

Installation Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
(A)	132-8223	Power Pack	1
	1U-6221	Hydraulic Torque Wrench Assembly	1
	132-8154	3/4 inch Square Drive Link	1

Note: The procedure to install the right hand final drive and the procedure to install the left hand final drive is identical. The procedure that follows is for one of the final drives.

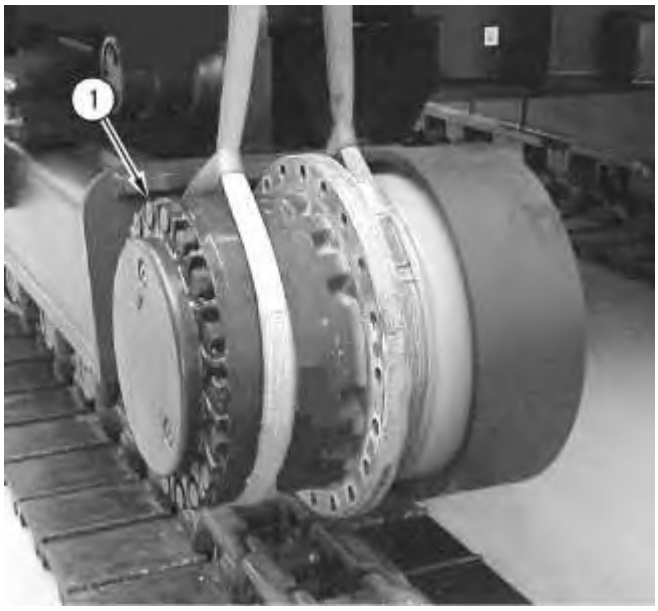

Illustration 1 g00595681

1. Attach two lifting straps and a hoist to final drive (1). The approximate weight of the final drive is 812 kg (1790 lb). It may be necessary to adjust the lifting straps for correct balance of the final drive. Position final drive (1) on the track roller frame, as shown.

   Note: The weight of the final drive must be adjusted if any other components are being installed with the final drive.

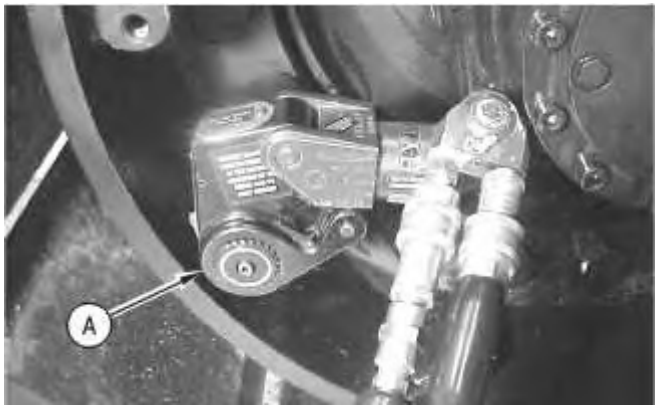

Illustration 2 g00594077

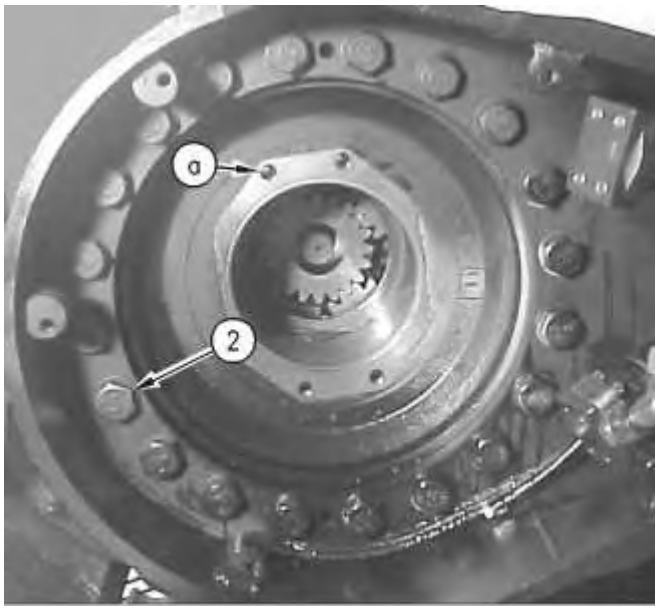

Illustration 3 g00595694

Note: Make sure that mounting holes (a) for the travel motor are aligned, as shown. This is necessary for the correct installation of the travel motor.

2. Use **9S-3263** Thread Lock Compound on bolts (2). Install the washers and bolts (2). Use Tooling (A) to tighten bolts (2) to a torque of 1800 ± 200 N·m (1328 ± 148 lb ft).

End By:

a. Install the travel motor. Refer to Disassembly and Assembly, "Travel Motor - Install" in this manual.
b. Install the final drive sprocket. Refer to Disassembly and Assembly, "Final Drive Sprocket - Remove and Install" in this manual.

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Disassembly and Assembly
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Media Number -RENR1970-10 **Publication Date -01/02/2015** **Date Updated -16/02/2015**

i01075995

Swivel - Remove

SMCS - 5060-011

Removal Procedure

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.

WARNING

At operating temperature the implement hydraulic oil tank is hot and under pressure. Hot oil can cause burns.

To prevent possible injury, release the pressure in the implement hydraulic system before hydraulic lines or components are disconnected or removed.

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
(A)	138-7573	Link Bracket	2

1. Release the hydraulic system pressure.

   Reference: Refer to Disassembly and Assembly, "Hydraulic System Pressure Release".

2. Put identification marks on all hose assemblies and all tube assemblies. Mark the locations that are connected to the swivel assembly for installation purposes.

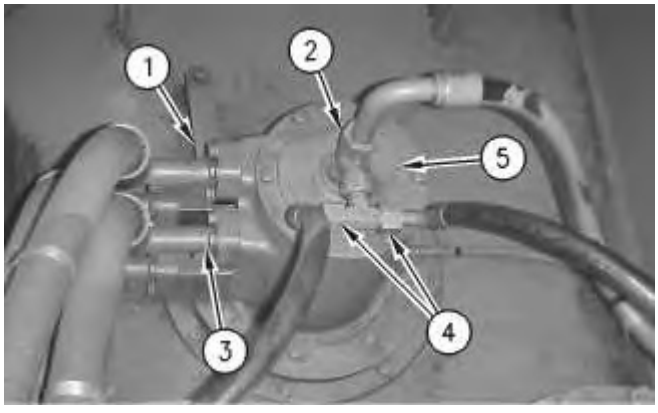

Illustration 1 g00564081

3. Disconnect hose assembly (2) from the top of the swivel assembly (5). Disconnect two hose assemblies (4) from the top of the swivel assembly (5) .

4. Disconnect four hose assemblies (3) from the swivel assembly (5) .

5. Remove two bolts and washers that hold support (1) in position. Remove the support from the swivel assembly.

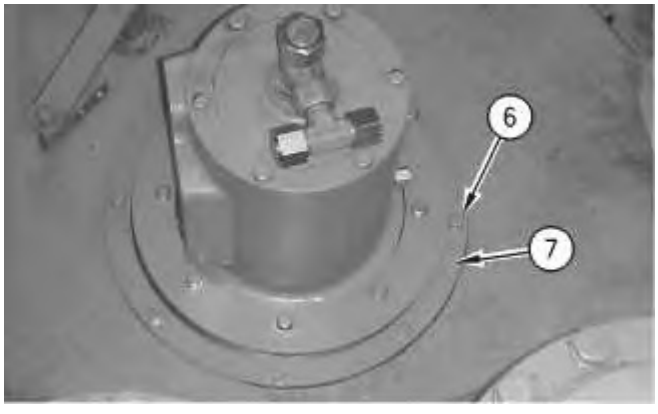

Illustration 2 g00564141

6. Remove eight bolts (6) and washers from the retainer (7). Remove retainer (7) from the swivel assembly.

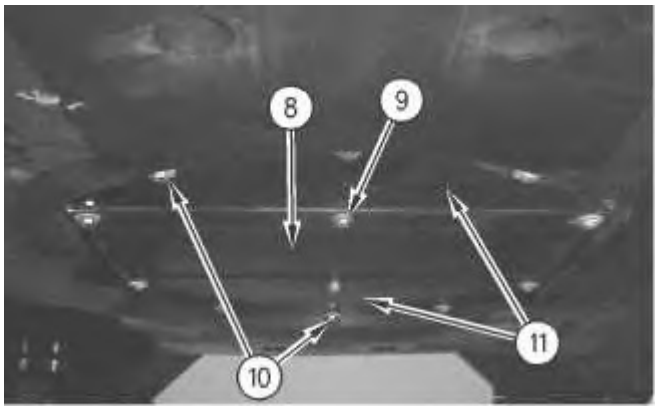

Illustration 3 g00564022

7. Remove six bolts (9) and washers from the middle cover assembly (8). Remove middle cover assembly (8).
8. Remove six bolts (10) and washers from cover assemblies (11). Remove cover assemblies (11) .

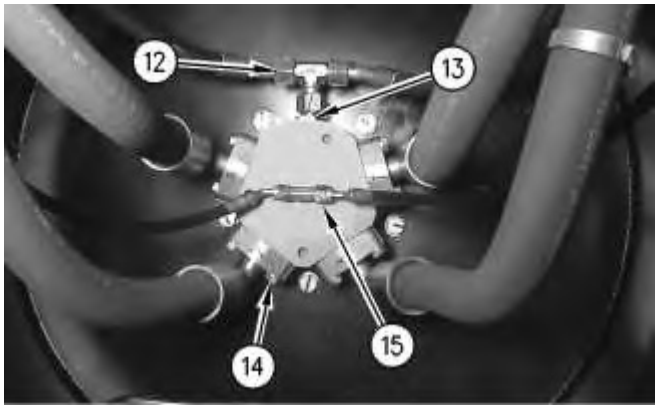

Illustration 4 g00564155

9. Disconnect two hose assemblies (15) from the swivel assembly.
10. Disconnect two hose assemblies (12) from the swivel assembly. Remove fitting (13) in order to create extra clearance for removing the swivel assembly from the undercarriage of the machine.
11. Disconnect four hose assemblies (14) from the swivel assembly.

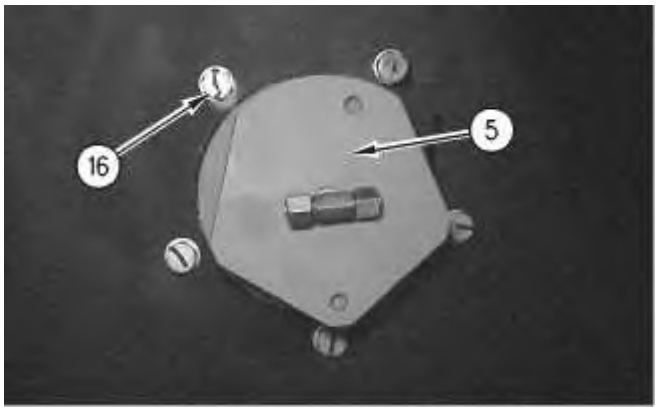

Illustration 5 g00564467

12. Remove five bolts (16) and the washers that secure the swivel assembly to the undercarriage of the machine.

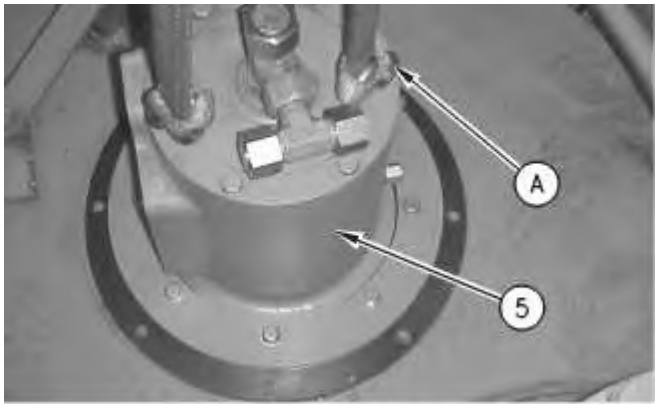

Illustration 6 g00564469

13. Remove two bolts from the top of the swivel assembly and install Tooling (A). Fasten lifting straps to the link brackets and remove the swivel assembly from the machine. The weight of the swivel assembly is 124 kg (274 lb).

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Media Number -RENR1970-10 **Publication Date -01/02/2015** **Date Updated -16/02/2015**

i01076491

Swivel - Disassemble

SMCS - 5060-015

Disassembly Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
(A)	1P-2420	Transmission Repair Stand	1
(B)	6V-3822	Bolt	2
	1P-5546	Crossblock	1
	5P-4168	Step Plate	1
	5F-7366	Screw	1

Start By:

A. Remove the swivel. Refer to Disassembly and Assembly, "Swivel - Remove" in this manual.

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.

Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

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.

1. Thoroughly clean the outside of the swivel assembly prior to disassembly.

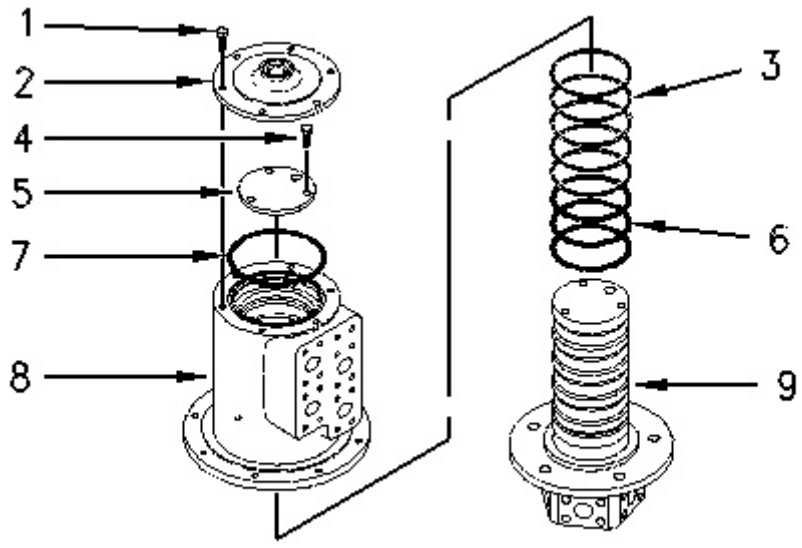

Illustration 1 g00600898

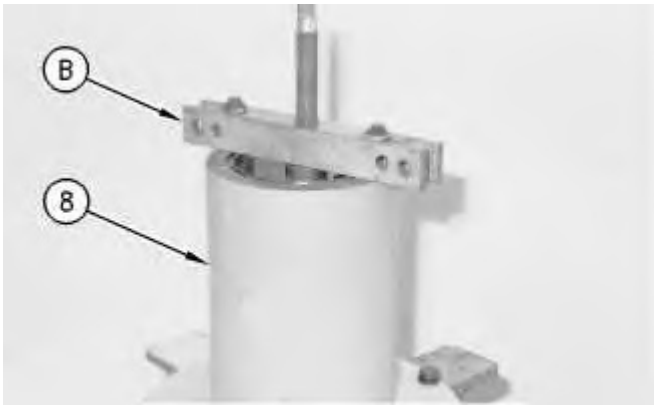

Illustration 2 g00600904

2. Fasten Tooling (A) to the swivel. The cover (2) for the swivel must face upward. The weight of the swivel assembly is 124 kg (274 lb).

3. Remove six bolts (1) and cover (2) from the outside housing.