

Product: EXCAVATOR

Model: 336 EXCAVATOR SP9

Configuration: 336 Excavator SP900001-UP (MACHINE) POWERED BY C9.3 Engine

## Disassembly and Assembly 336 Excavator Machine Systems

Media Number -M0087649-02

Publication Date -01/10/2018

Date Updated -22/10/2018

i03885522

## Final Drive - Disassemble

SMCS - 4050-015

## Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Brackets	3
B	154-6183	Forcing Bolts	3
C	138-7576	Link Brackets	3

### Start By:

- a. Remove the final drive and the travel motor.



Illustration 1

g02131413

1. Attach Tooling (A) and a suitable lifting device to cover (2). The weight of cover (2) is approximately 20 kg (45 lb). Remove bolts (1) and cover (2).
- 



Illustration 2

g02131414

2. Remove plate (3) from cover (2).
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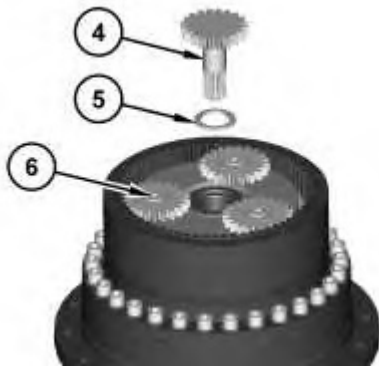
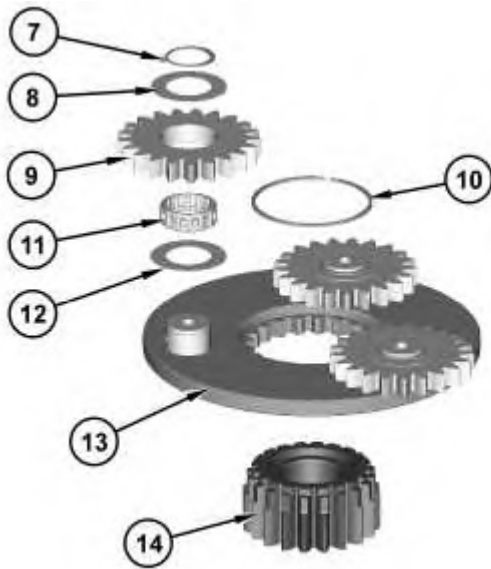


Illustration 3

g02131415

3. Remove sun gear (4), spacer (5), and planetary gear assembly (6).
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Illustration 4

g02131875

4. Remove retaining ring (7), washer (8), planetary gear (9), roller bearing (11), and washer (12) from carrier assembly (13).
  5. Remove retaining ring (10) and sun gear (14) from carrier assembly (13).
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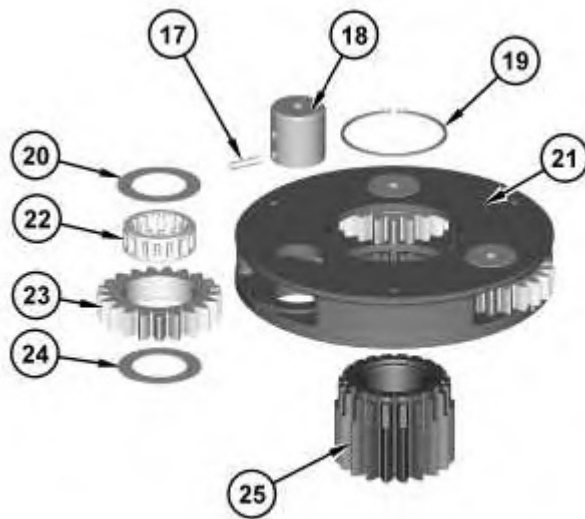


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Illustration 5

g02131876

6. Remove spacer (16).
  7. Attach Tooling (A) and a suitable lifting device to planetary gear assembly (15). The weight of planetary gear assembly (15) is approximately 32 kg (70 lb). Remove planetary gear assembly (15).
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Illustration 6

g02131877

8. Drive spring pin (17) into planetary shaft (18) with a suitable hammer and a suitable punch.
9. Remove planetary shaft (18), washer (20), roller bearing (20), planetary gear (23), and washer (24) from the carrier assembly (21).
10. Remove spring pin (17) from planetary shaft (18) with a suitable hammer and a suitable punch.
11. Remove retaining ring (19) and sun gear (25) from carrier assembly (21).




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Illustration 7

g02131878

12. Remove spacer (26).
  13. Attach Tooling (A) and a suitable lifting device to ring gear (27). The weight of ring gear (27) is approximately 70 kg (155 lb). Remove bolts (28) and ring gear (27).
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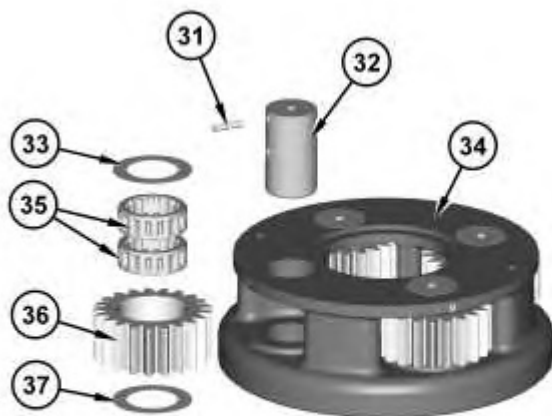


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Illustration 8

g02131879

14. Remove O-ring seal (29).
  15. Attach Tooling (A) and a suitable lifting device to planetary gear assembly (30). The weight of planetary gear assembly (30) is approximately 57 kg (125 lb). Remove planetary gear assembly (30).
- 



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Illustration 9

g02131881

16. Drive spring pin (31) into planetary shaft (32) with a suitable hammer and a suitable punch.
  17. Remove planetary shaft (32), washer (33), roller bearings (35), planetary gear (36), and washer (36) from the carrier assembly (34).
  18. Remove spring pin (31) from planetary shaft (32) with a suitable hammer and a suitable punch.
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Illustration 10

g02131882

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Illustration 11

g02131885

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19. Remove bolts (38). Use Tooling (B) in order to remove gear (39).
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Illustration 12

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20. Remove shims (40).
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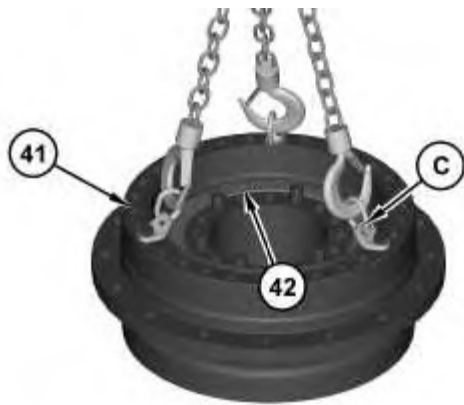


Illustration 13

g02131887

21. Attach Tooling (C) and a suitable lifting device to sprocket housing (41). The weight of sprocket housing (41) is approximately 107 kg (235 lb). Remove sprocket housing (41) and roller bearing (42).



Illustration 14

g02131888

22. Remove bearing races (43) and Duo-Cone seal (44) from sprocket housing (41).



23. Remove Duo-Cone seal (45) and roller bearing (47) from motor housing (48). The weight of motor housing (48) is approximately 91 kg (200 lb).
  24. If necessary, remove dowels (46) from motor housing (48).
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Product: EXCAVATOR

Model: 336 EXCAVATOR SP9

Configuration: 336 Excavator SP900001-UP (MACHINE) POWERED BY C9.3 Engine

## Disassembly and Assembly 336 Excavator Machine Systems

Media Number -M0087649-02

Publication Date -01/10/2018

Date Updated -22/10/2018

i05103849

## Final Drive - Assemble

SMCS - 4050-016

## Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Brackets	3
B	154-6183	Forcing Bolts	3
C	138-7576	Link Brackets	3
D	5P-3931	Anti-Seize Compound	-
E	1U-9895	Crossblock	1
F	6V-2012	Depth Micrometer	1
G	6V-7059	Micrometer ( )	1
H	-	Loctite 242	-
J	6V-2055	Grease	-
K	-	Loctite 17430	-
L	8T-9206	Seal Installer	1



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Illustration 1

g02132155

1. Apply Tooling (D) to the surface of dowels (46) . Install dowels (46) .
2. Raise the temperature of roller bearing (47) . Install the roller bearing (47) on motor housing (48) .
3. Install Duo-Cone seal (45) .

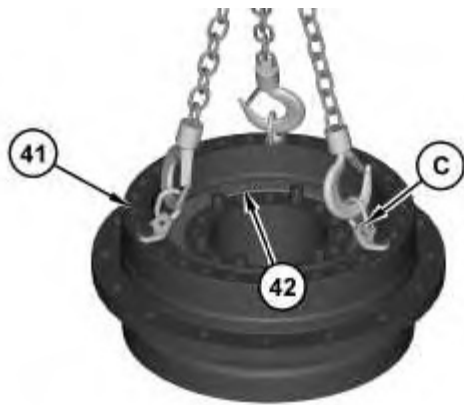


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Illustration 2

g02131888

4. Lower the temperature of bearing races (43) . Install bearing races (43) in sprocket housing (41) .
  5. Install Duo-Cone seal (44) .
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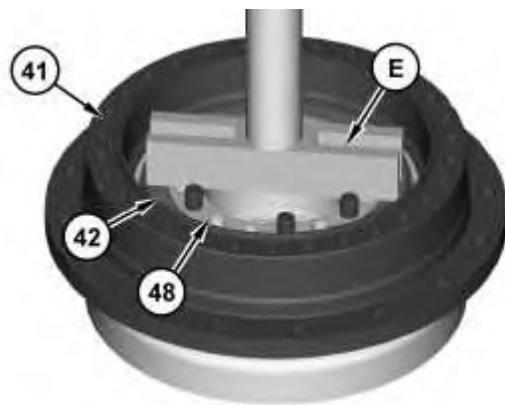


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Illustration 3

g02131887

6. Attach Tooling (C) and a suitable lifting device to sprocket housing (41) . The weight of sprocket housing (41) is approximately 107 kg (235 lb). Install sprocket housing (41) .
7. Raise the temperature of roller bearing (42) . Install the roller bearing (42) .

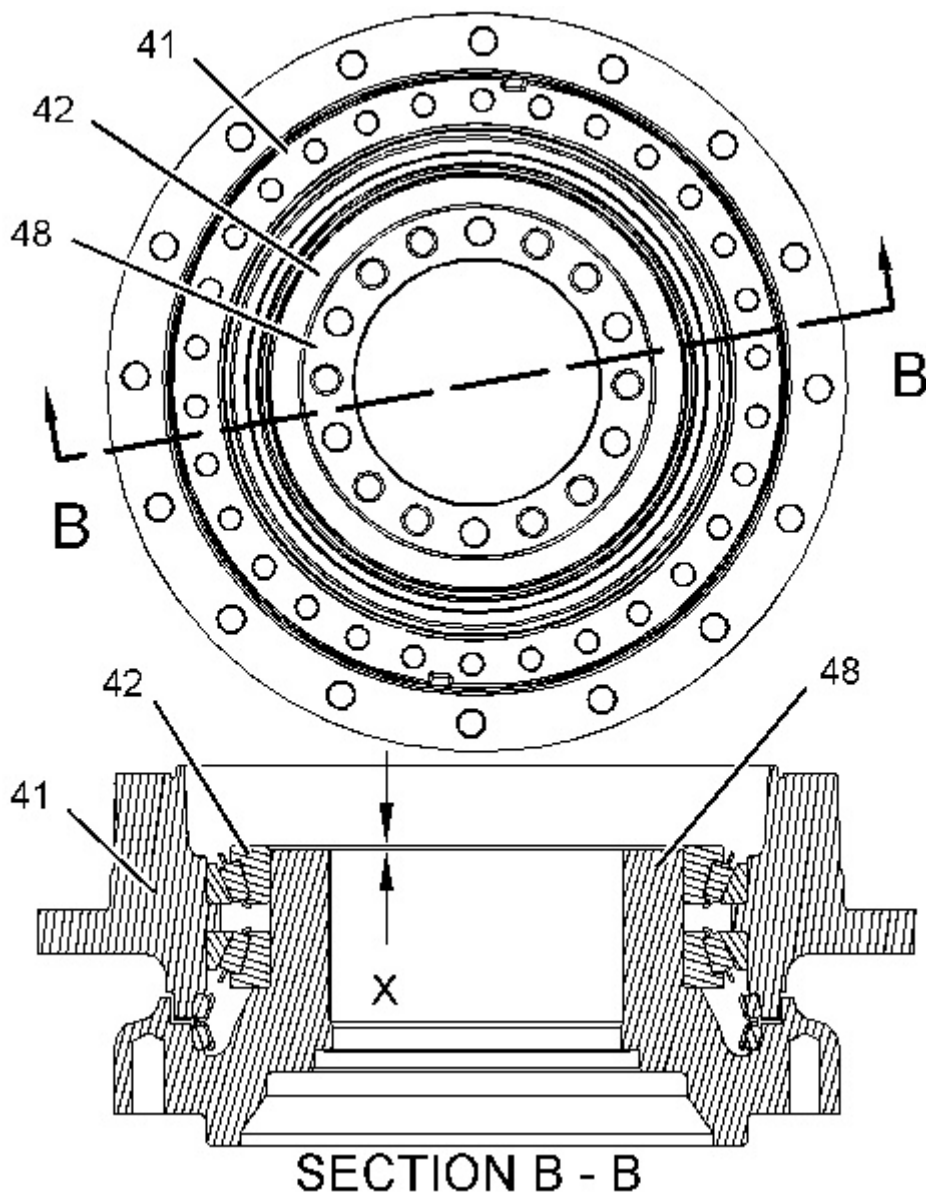


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Illustration 4

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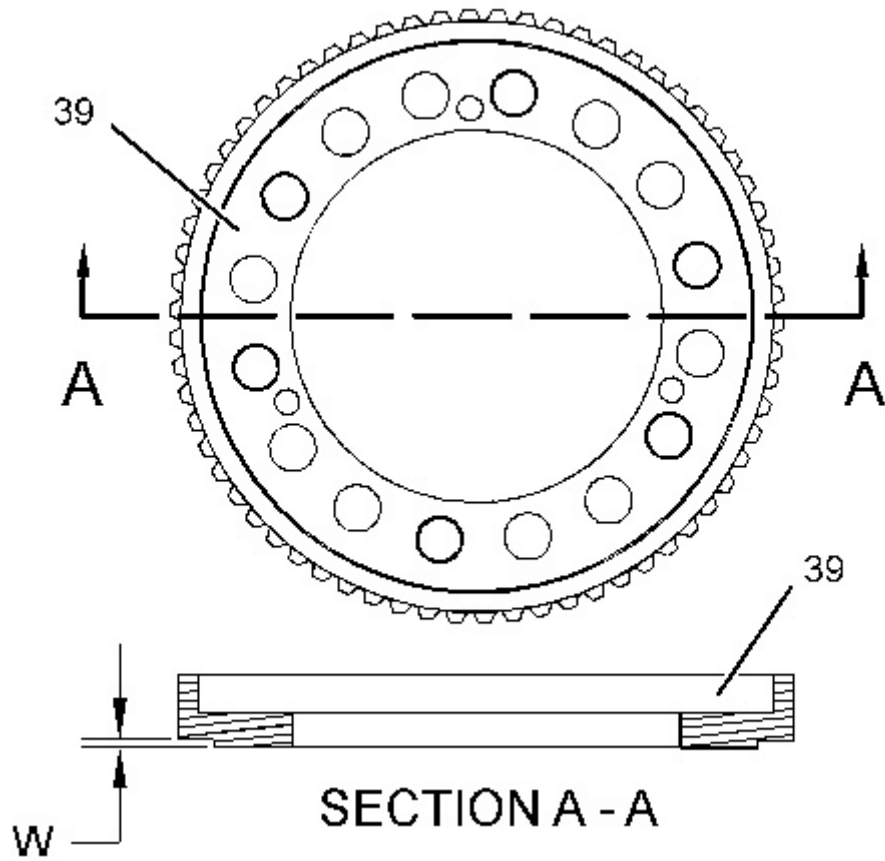


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Illustration 5

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8. Use Tooling (E) and a suitable press in order to apply force to roller bearing (42) . Apply a force of 4000 kg (8818 lb) to the top of Tooling (E) . Rotate sprocket housing (41) in order to seat the roller bearings.
  9. Reduce the force on top of Tooling (E) to  $3000 \pm 300$  kg ( $6614 \pm 661$  lb). Use Tooling (F) in order to measure Dimension (X) . Record Dimension (X) .
-



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Illustration 6

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10. Use Tooling (F) in order to measure Dimension (W) on gear (39) . Record Dimension (W) .
11. Remove Tooling (E) .



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Illustration 7

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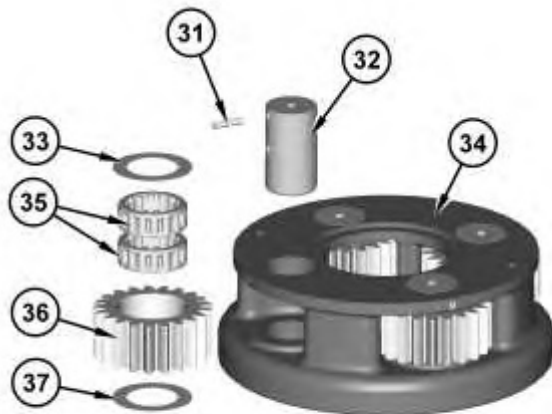
Illustration 8

g02131882

12. Subtract Dimension (X) from Dimension (W) and record the difference as Dimension (V) . The correct shim thickness is Dimension (V) . Use Tooling (G) in order to measure the correct thickness of shims (40) . The tolerance of Dimension (V) is  $0 \pm 0.05$  mm ( $0 \pm 0.002$  inch).

**Note:** Use a maximum of two shims (40) . If two shims (40) are used to achieve the proper dimension, install the thinner of the two shims toward gear (39) .

13. Install shims (40) .
14. Apply Tooling (G) to the threads of bolts (38) . Install gear (39) and bolts (38) . Tighten bolts (38) to a torque of  $900 \pm 100$  N·m ( $665 \pm 75$  lb ft).



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Illustration 9

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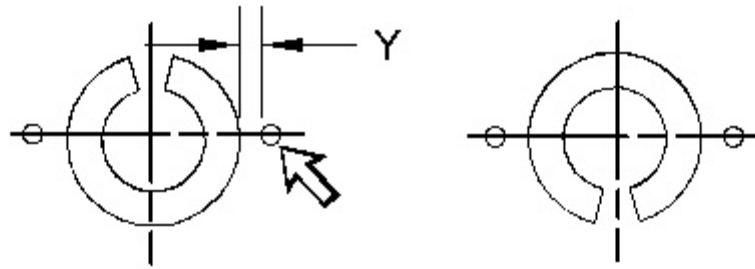


Illustration 10

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**Note:** Make sure that the spring pin hole in planetary shaft (32) is aligned with the spring pin hole in the carrier.

15. Install roller bearings (35) , planetary gear (36) , washer (37) , washer (33) , planetary shaft (32) , and spring pin (31) into carrier assembly (34) . Install spring pin (31) until spring pin (31) is even with the outside surface of the carrier. Align the split in spring pin (31) to the top or the bottom.
16. Make a stake mark on each side of the spring pin hole in the carrier, as shown. The stake mark will prevent the spring pin from falling out of the spring pin hole. Make a stake mark at Dimension (Y) . Dimension (Y) is  $2.25 \pm 0.75$  mm ( $0.089 \pm 0.030$  inch).



Illustration 11

g02131879

17. Attach Tooling (A) and a suitable lifting device to planetary gear assembly (30) . The weight of planetary gear assembly (30) is approximately 57 kg (125 lb). Install planetary gear assembly (30) .
18. Install O-ring seal (29) .

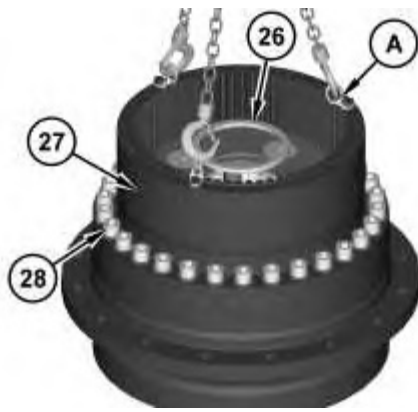


Illustration 12

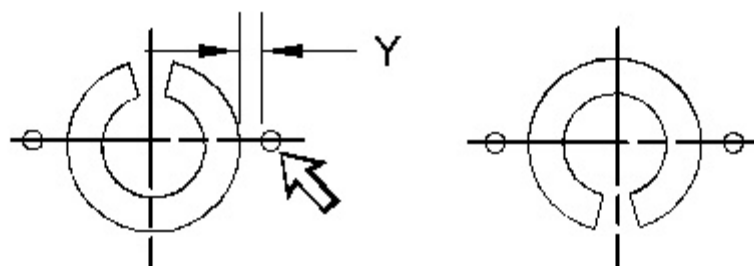
g02131878

19. Attach Tooling (A) and a suitable lifting device to ring gear (27) . The weight of ring gear (27) is approximately 70 kg (155 lb). Install ring gear (27) and bolts (28) . Tighten bolts (28) to a torque of  $520 \pm 70 \text{ N}\cdot\text{m}$  ( $385 \pm 52 \text{ lb ft}$ ).
20. Install spacer (26) .



Illustration 13

g02131877





21. Install roller bearing (22) , planetary gear (23) , washer (24) , washer (20) , planetary shaft (18) , and spring pin (17) into carrier assembly (21) . Install spring pin (17) until spring pin (17) is even with the outside surface of the carrier. Align the split in spring pin (17) to the top or the bottom.
22. Make a stake mark on each side of the spring pin hole in the carrier, as shown. The stake mark will prevent the spring pin from falling out of the spring pin hole. Make a stake mark at Dimension (Y) . Dimension (Y) is  $2.25 \pm 0.75$  mm ( $0.089 \pm 0.030$  inch).
23. Install sun gear (25) and retaining ring (19) .

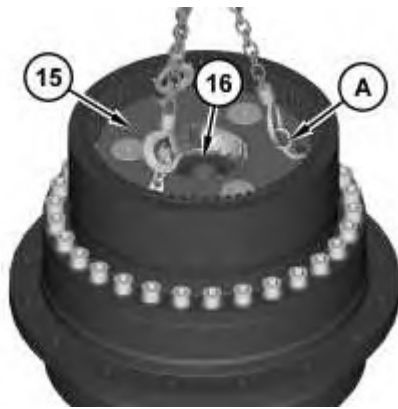
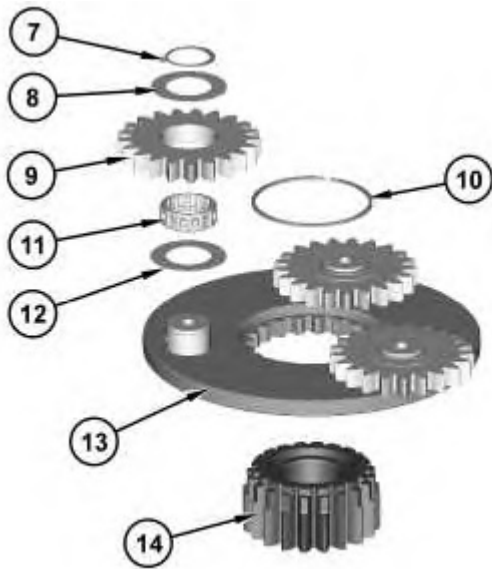


Illustration 15

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24. Attach Tooling (A) and a suitable lifting device to planetary gear assembly (15) . The weight of planetary gear assembly (15) is approximately 32 kg (70 lb). Install planetary gear assembly (15) .
  25. Install spacer (16) .
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Illustration 16

g02131875

26. Install sun gear (14) and retaining ring (10) .
27. Install washer (12) , roller bearing (11) , planetary gear (9) , washer (8) , and retaining ring (7) on carrier assembly (13) .



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Illustration 17

g02131415

28. Install planetary gear assembly (6) , spacer (5) , and sun gear (4) .
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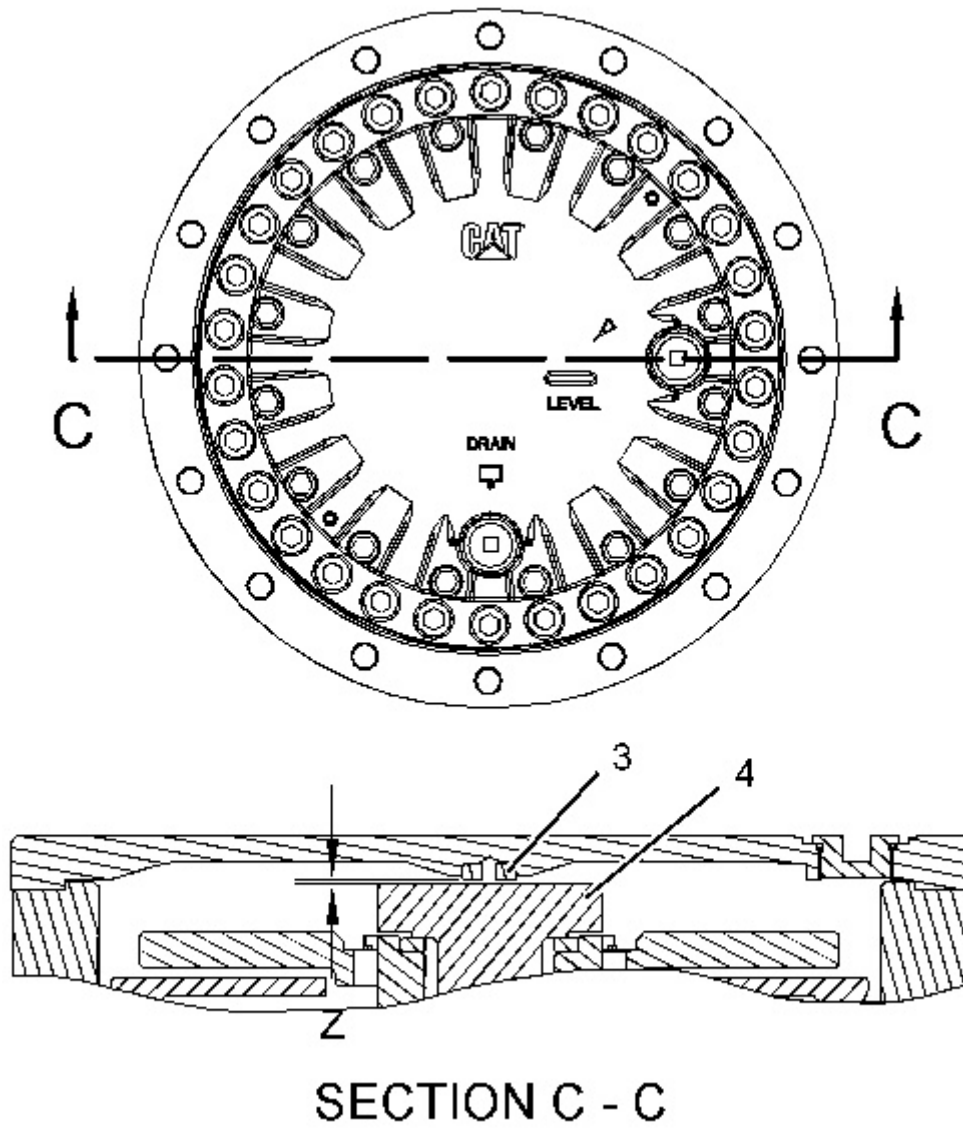


Illustration 18

g02135393

29. Use the correct plate (3) in order to achieve Dimension (Z) . Dimension (Z) is 1.00 to 2.00 mm (0.039 ± 0.079 inch).



30. Use Tooling (J) in order to secure plate (3) in cover (2) .

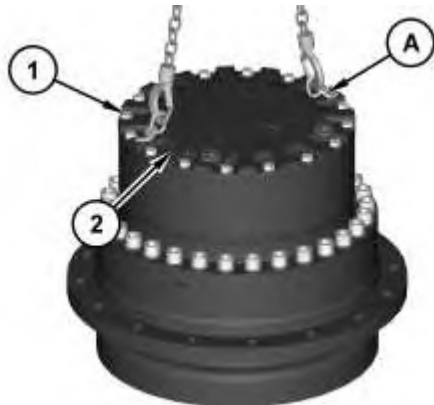


Illustration 20

31. Apply Tooling (K) to the mating surface of cover (1) . Attach Tooling (A) and a suitable lifting device to cover (2) . The weight of cover (2) is approximately 20 kg (45 lb). Install cover (2) and bolts (1) . Tighten bolts (1) to a torque of  $105 \pm 20 \text{ N}\cdot\text{m}$  ( $80 \pm 15 \text{ lb ft}$ ).
32. Remove Tooling (A) and the suitable lifting device. Apply Tooling (H) to the threads of the set screws. Install the set screws so that the setscrews are flush with cover (1) .

**End By:** Install the final drive and the travel motor.

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Model: 336 EXCAVATOR SP9

Configuration: 336 Excavator SP900001-UP (MACHINE) POWERED BY C9.3 Engine

## Disassembly and Assembly 336 Excavator Machine Systems

Media Number -M0087649-02

Publication Date -01/10/2018

Date Updated -22/10/2018

i07223777

# Swivel - Remove and Install

SMCS - 5060-010

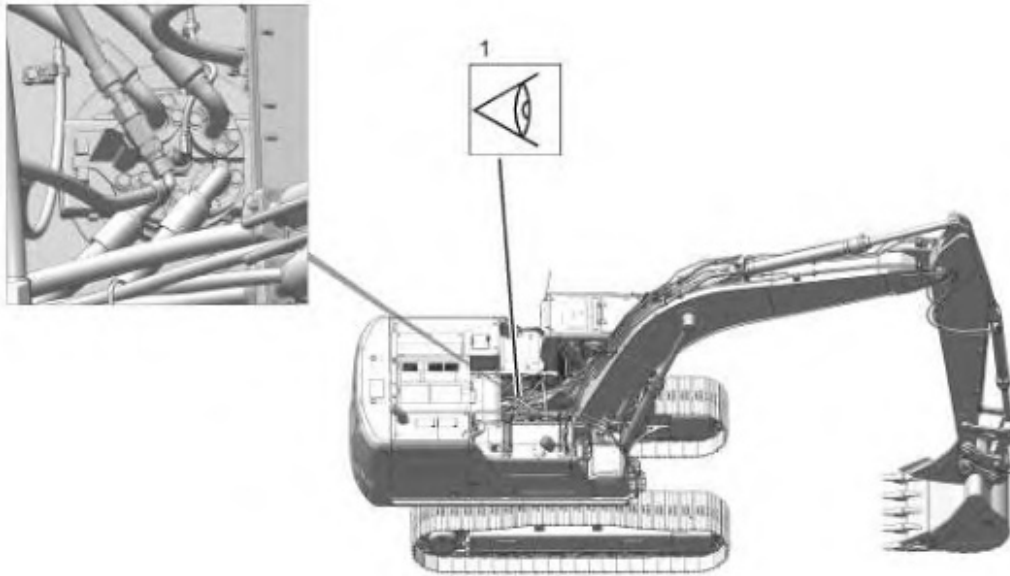
## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	422-5473	Lifting Eye Assembly	2
B	8C-8422	Sealant	-
C	-	LOCTITE 243	-

**Reference:** Special Instruction, "Visual Service Procedures - Colors and Symbols" M0066576.

1. Drain hydraulic fluid. Refer to operation maintenance manual hydraulic system oil change M0068104.
-



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Illustration 1

g06257077

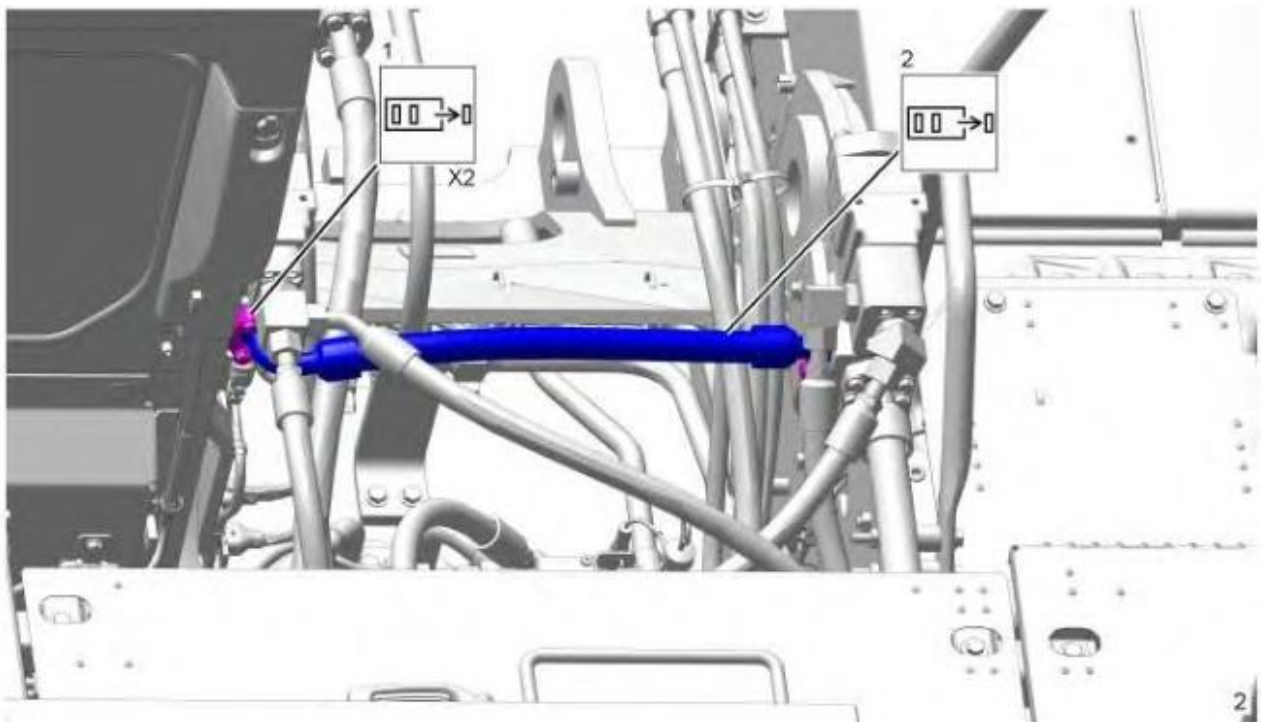


Illustration 2

g06241074

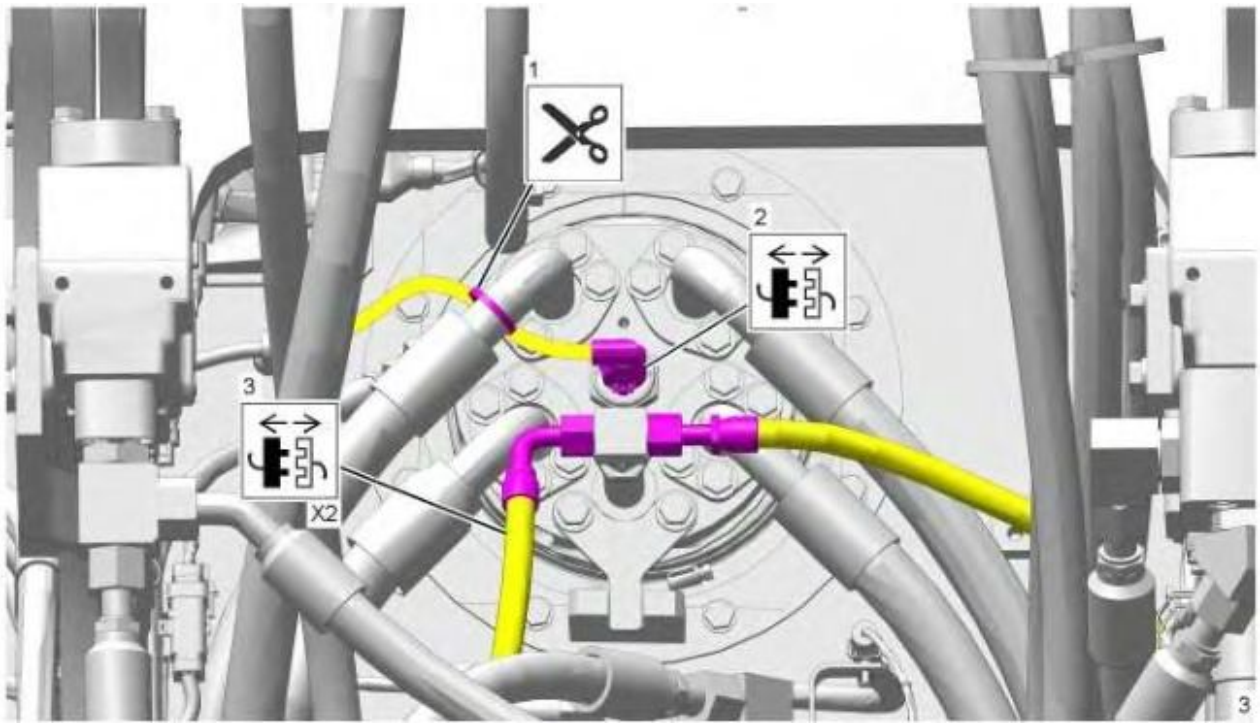


Illustration 3

g06241091

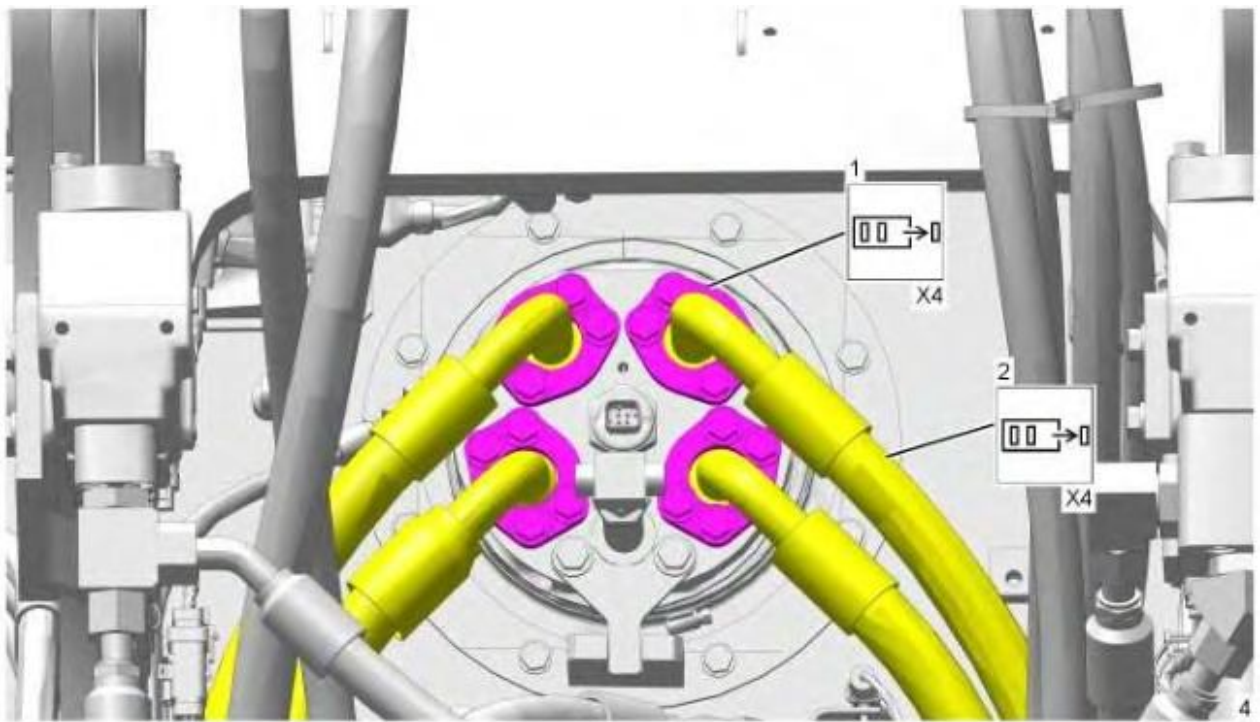


Illustration 4

g06241152

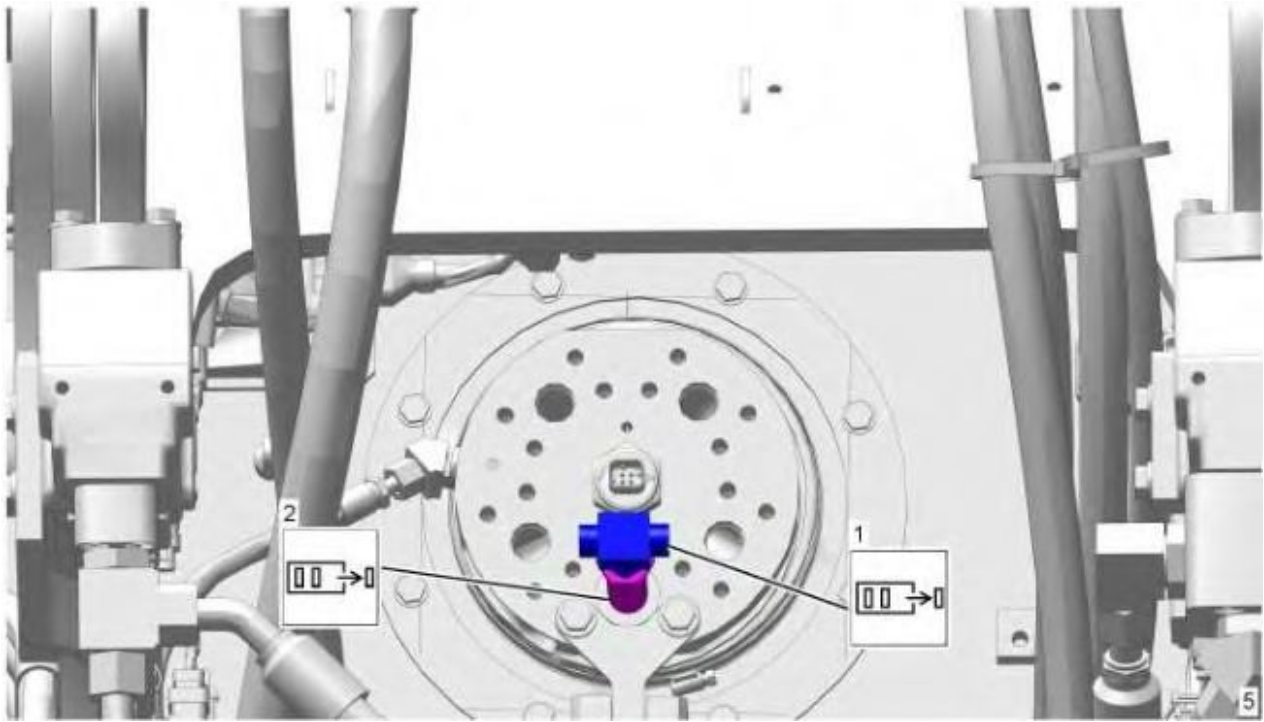


Illustration 5

g06241160

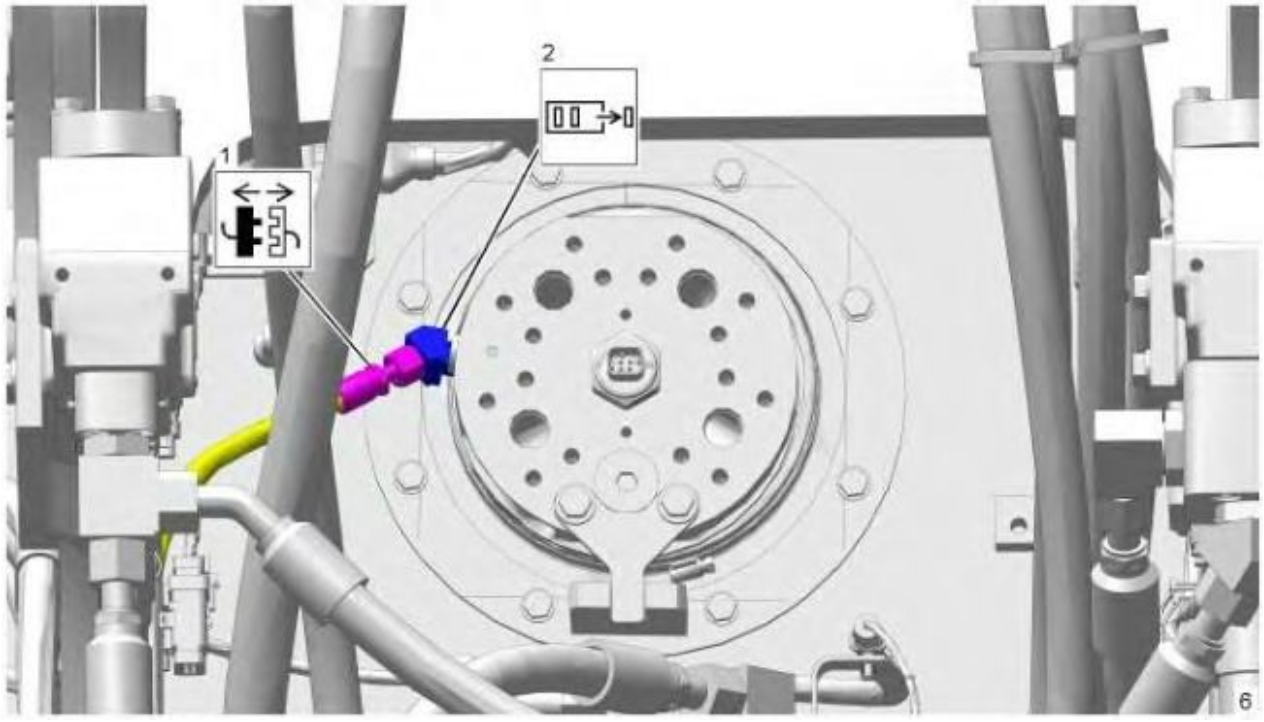


Illustration 6

g06241175



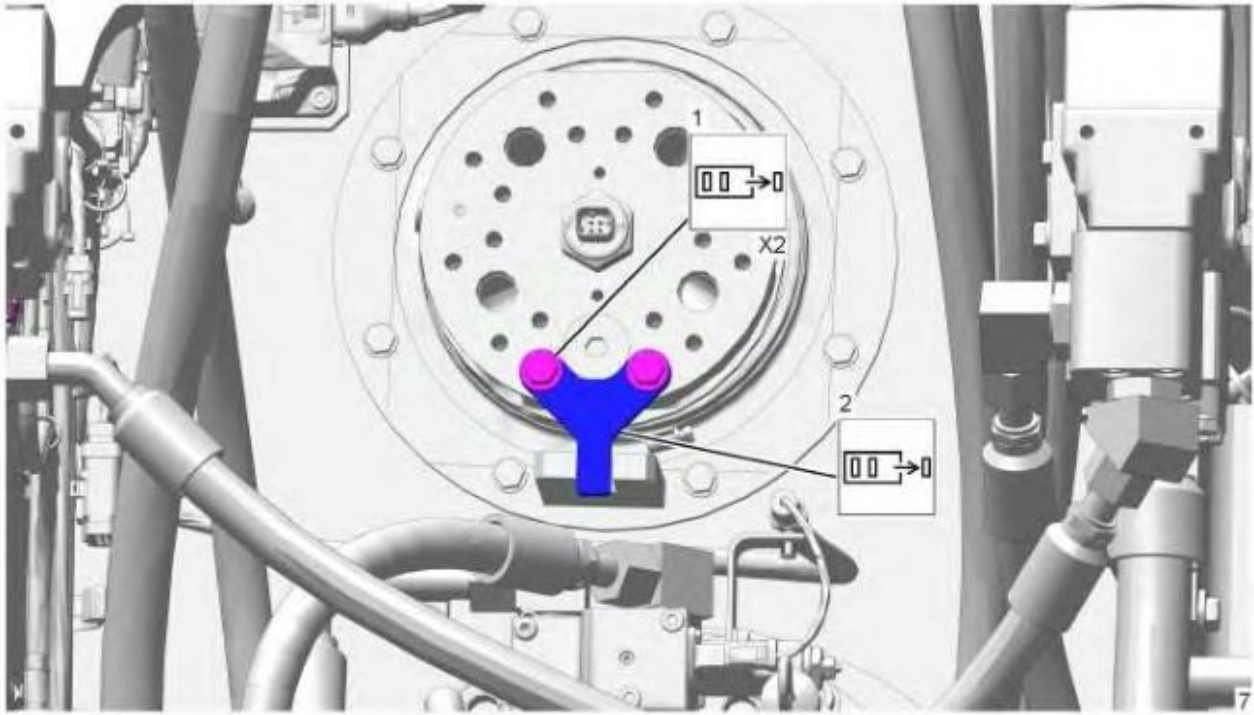


Illustration 7

g06241190

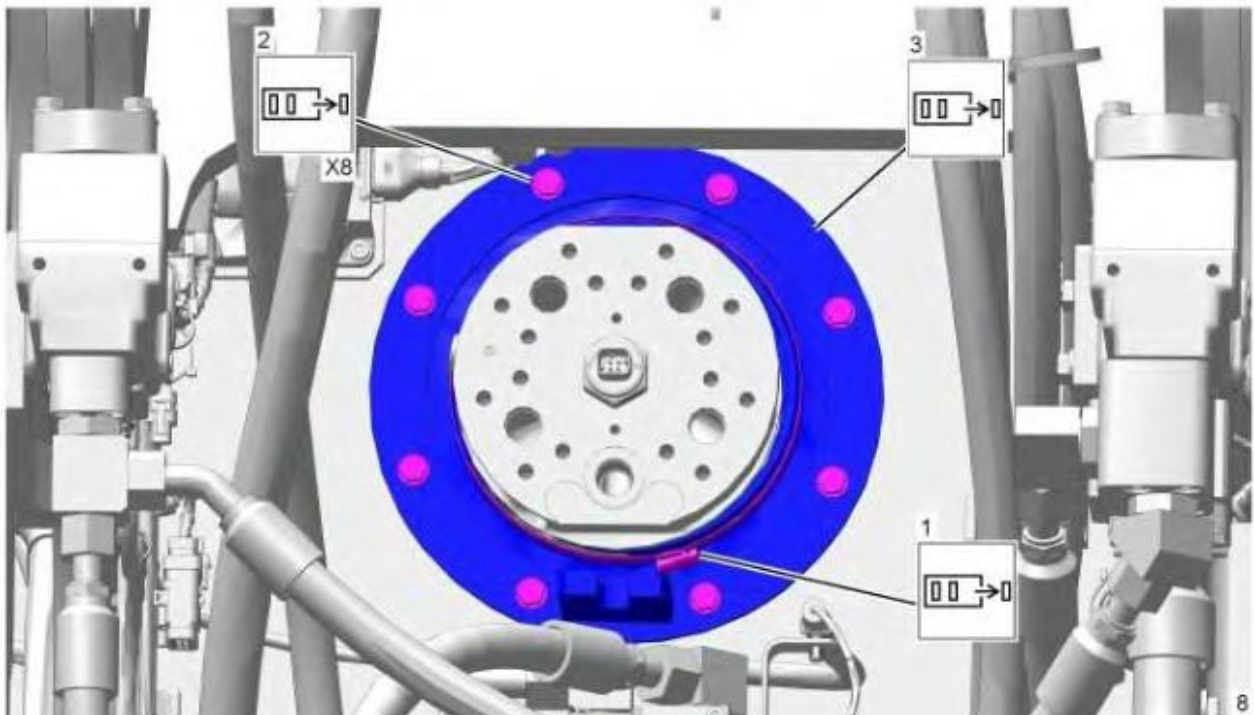


Illustration 8

g06241191



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