

Product: COMPACT WHEEL LOADER

Model: 907H COMPACT WHEEL LOADER SJM

Configuration: 907H Wheel Loader SJM00001-UP (MACHINE) POWERED BY C3.4 IND Engine

## Disassembly and Assembly 906, 907 and 908 Compact Wheel Loaders Power Train

Media Number -KENR5211-04

Publication Date -01/06/2012

Date Updated -26/04/2017

i03267340

## Differential and Bevel Gear (Locking) - Disassemble

SMCS - 3254-015; 3256-015; 3270-015

### Disassembly Procedure

Table 1

Required Tools			
Tools	Part Number	Part Description	Qty
A	1P-1861	Retaining Ring Pliers	1
B	1P-0510	Driver Gp	1
C	220-8430	Pinion Wrench	1
D	220-8428	Spanner Wrench	1
E	8H-0663	Bearing Puller Gp	1

#### Start By:

- Remove the differential. Refer to Disassembly and Assembly, "Differential (Limited Slip) - Remove".

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### NOTICE

**Failure to properly assemble parts or failure to follow established procedures can lead to damage of the parts and assembly.**

**To avoid damage to parts, always identify and mark the parts so that they can be installed in the same location. Ensure that gear surfaces align. Never force parts during assembly.**

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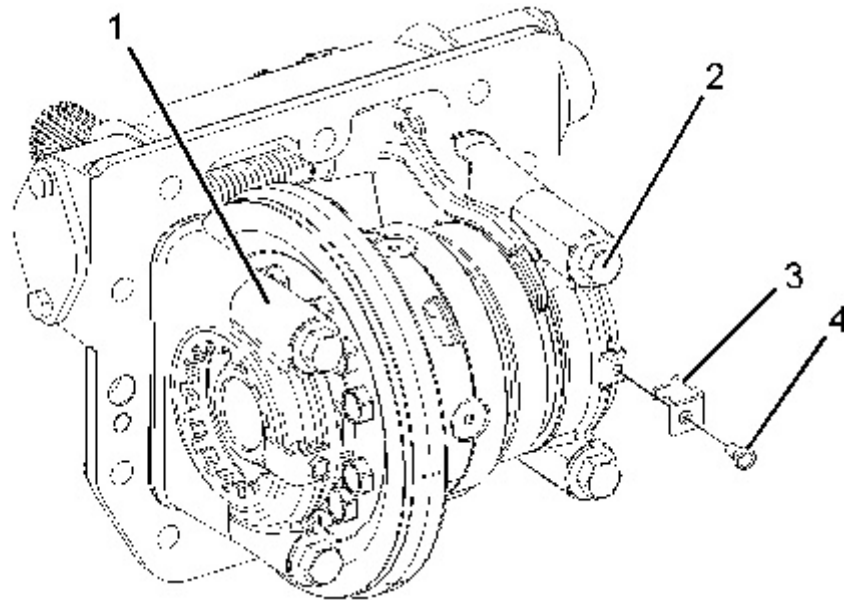
## NOTICE

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 Dealer Service Tool Catalog" 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

g01453350

1. Mark caps (1) before removal. Remove bolts (4) from lock plates (3). Remove bolts (2) from caps (1). Remove caps (1).
-

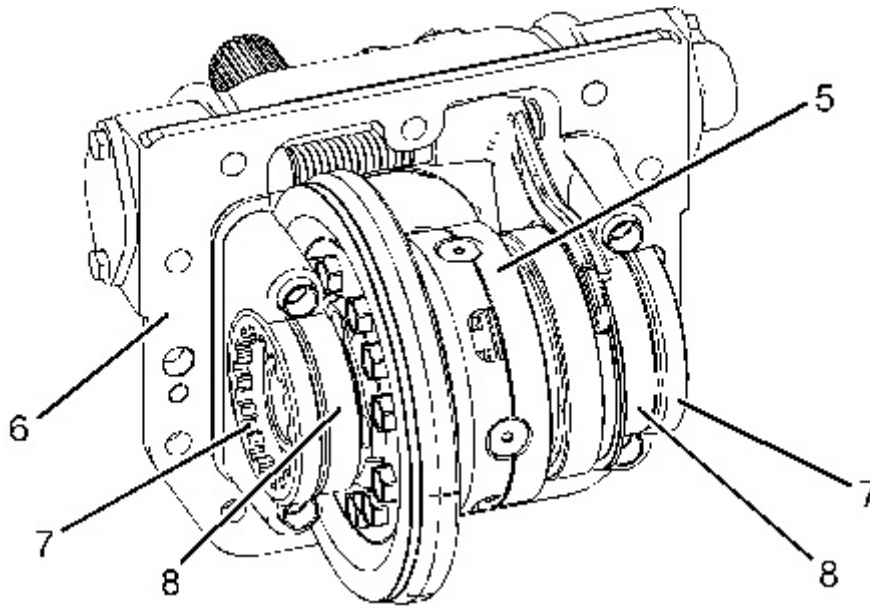


Illustration 2

g01453520

**Note:** Mark the ring gear and the housing for installation.

2. Remove the differential case (5) from the housing (6). Remove bearing nuts (7). Leave the bearing cones (8) on at this time.

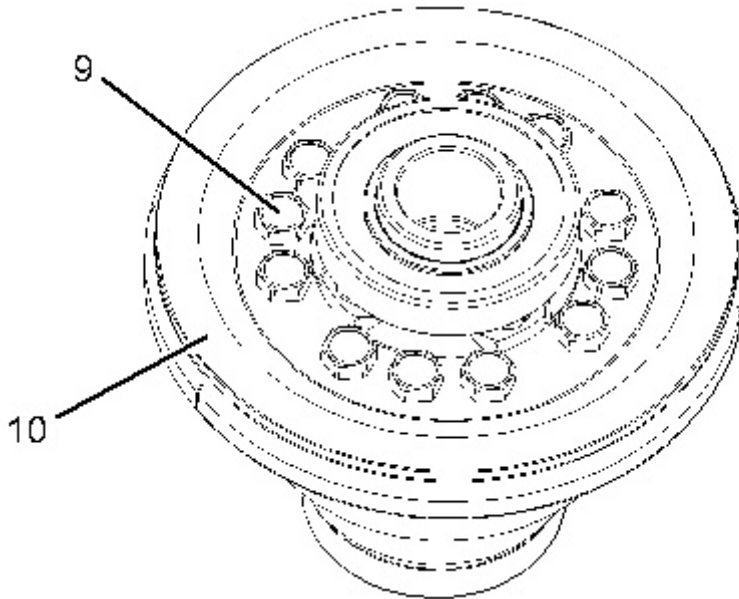


Illustration 3

g01453353

3. Remove bolts (9) from ring gear (10).
4. Remove ring gear (10).

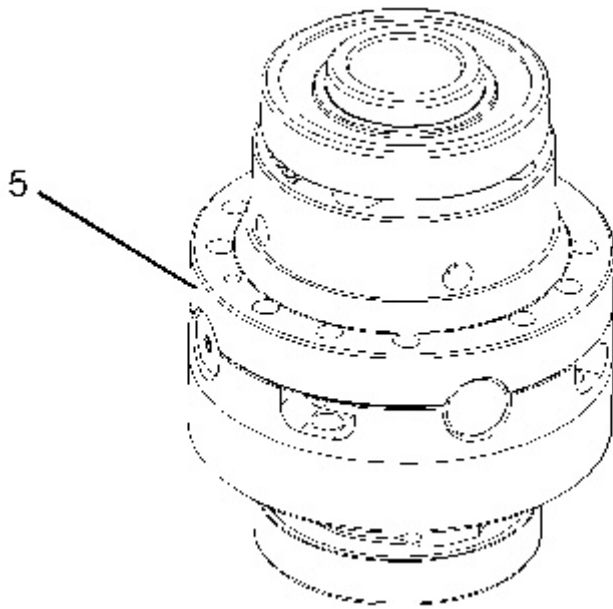


Illustration 4

g01453544

**Note:** Mark the differential case for assembly.

5. Split the differential case (5).

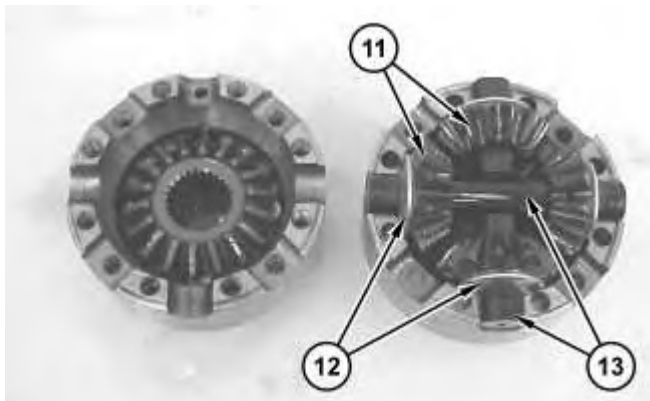


Illustration 5

g01455030

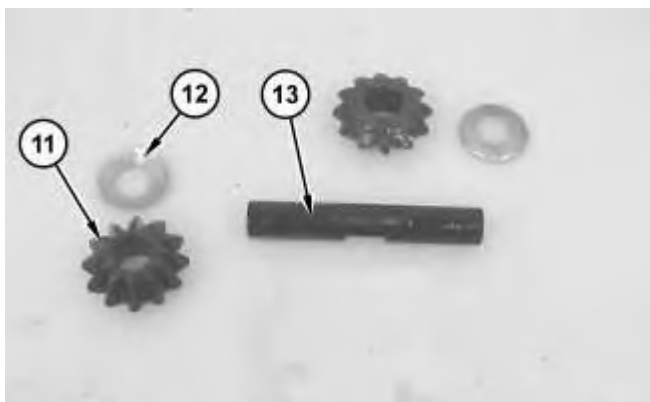
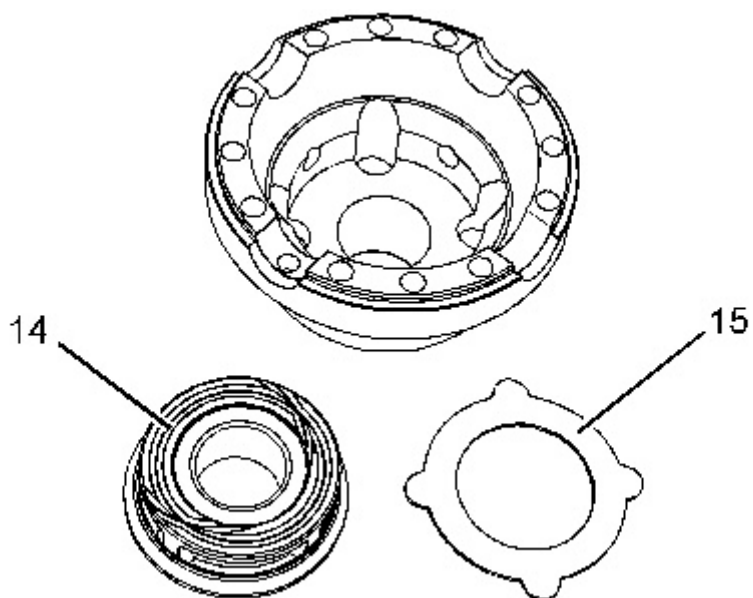


Illustration 6

g01455053

6. Remove bevel gears (11) and thrust washers (12). separate bevel gears (11) from shaft (13).

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Illustration 7

g01648202

7. Remove bevel pinion (14).

8. Remove counter disk (15).



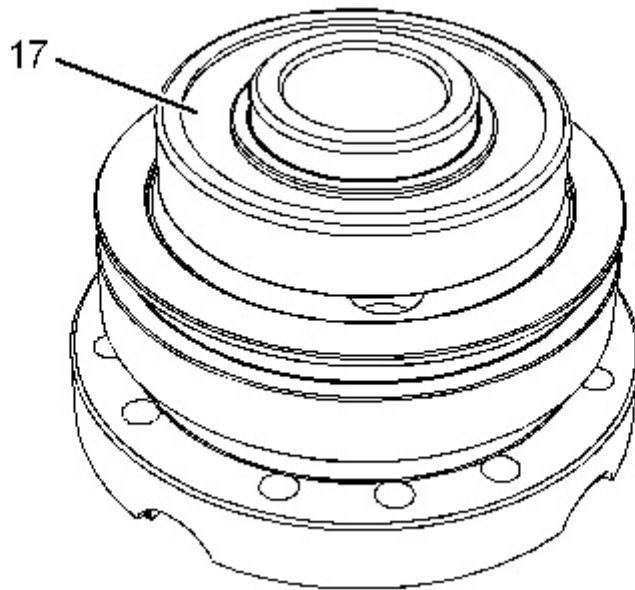
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Illustration 8

g01453557

9. Remove bearing cone (16).

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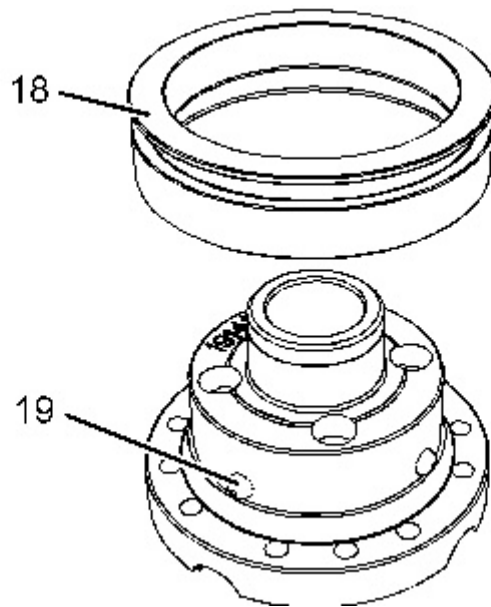
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Illustration 9

g01665780

10. Remove bearing cone (17).

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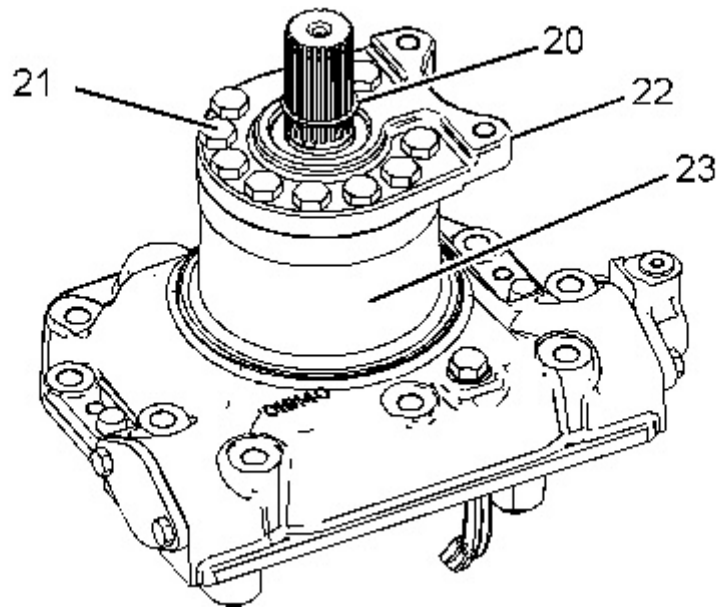
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Illustration 10

g01665781

11. Remove collar (18). Remove pins (19).

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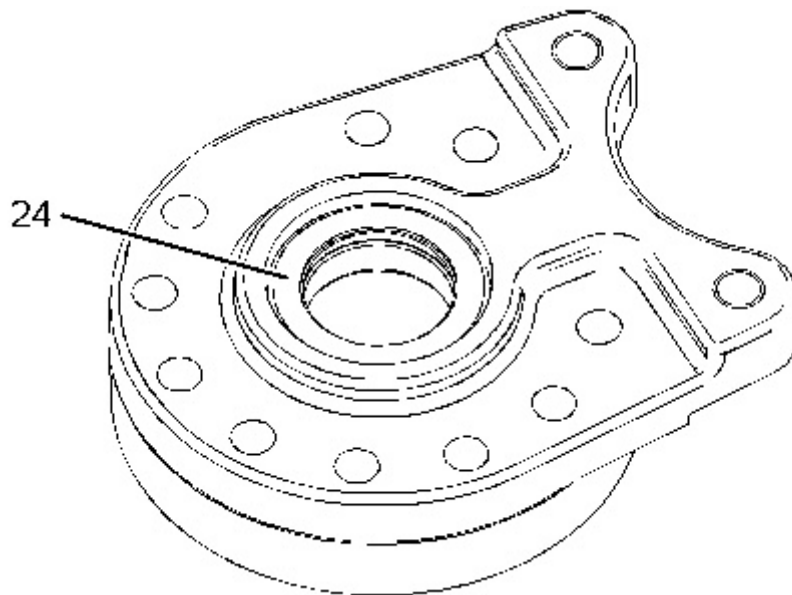


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Illustration 11

g01665914

12. Use Tooling (A) to remove retaining ring (20).
  13. Remove bolts (21) from bracket (22).
  14. Remove bracket (22) from housing (23).
- 

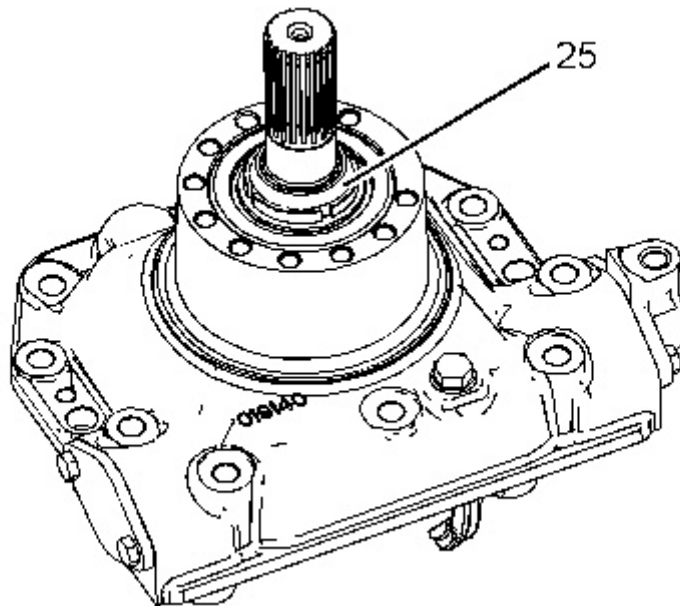


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Illustration 12

g01665917

15. Use Tooling (B) to remove lip seal (24).
-

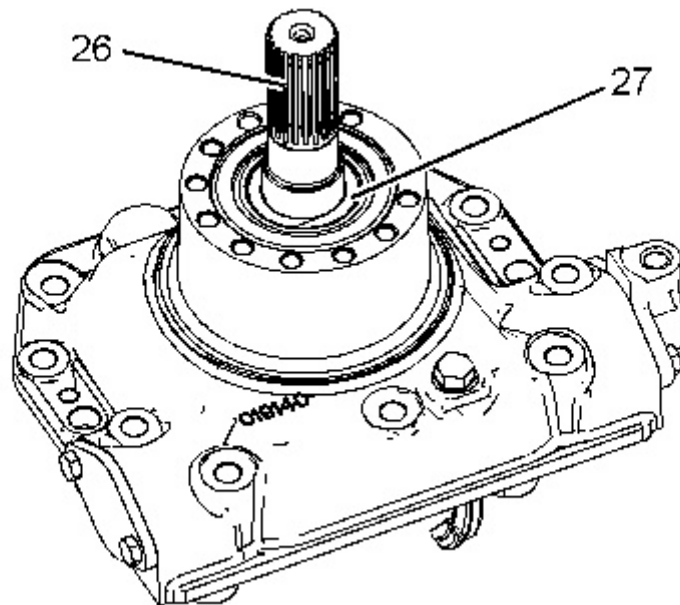


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Illustration 13

g01665918

16. Use Tooling (C) and Tooling (D) to remove nut (25) and the washer.
- 



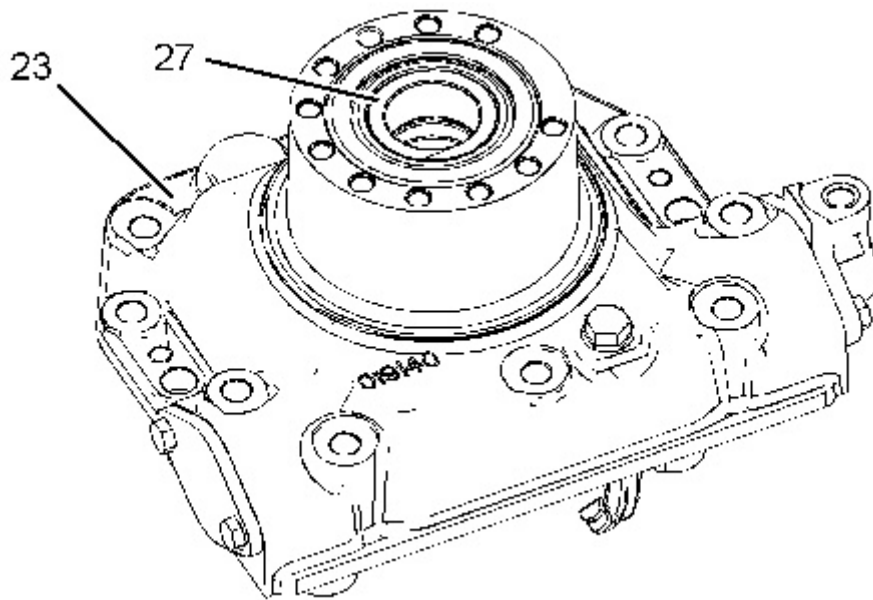
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Illustration 14

g01665919

17. Use a soft hammer in order to drive pinion (26) from bearing cone (27).
-



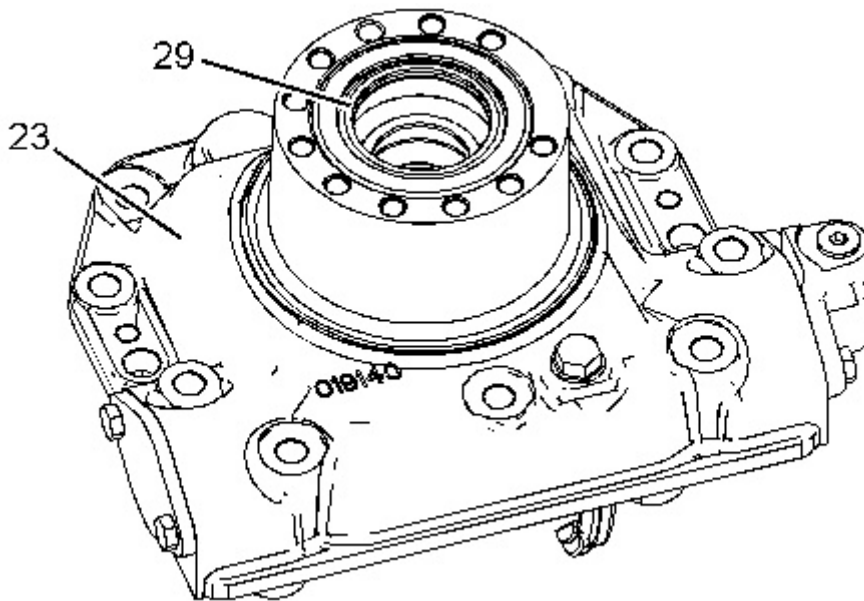


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Illustration 15

g01665920

18. Remove bearing cone (27) from housing (23).
- 



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Illustration 16

g01665922

19. Remove bearing cups (29) from housing (23).
-

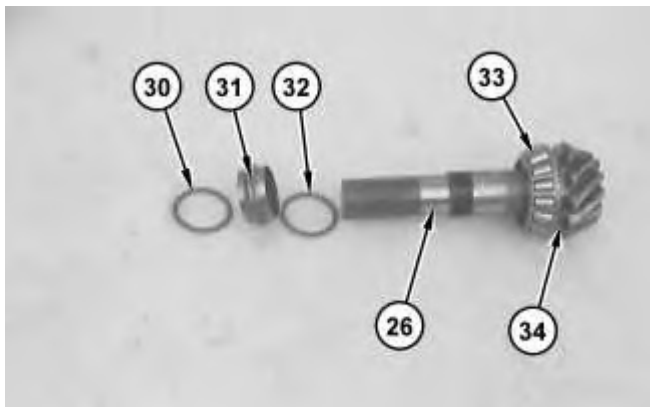


Illustration 17

g01665923

20. Remove the pinion washer (30).
21. Remove crush sleeve (31) from pinion (26).
22. Remove pinion washer (32).
23. Use Tooling (E) to remove bearing cone (33) from pinion (26).
24. Remove shim (34) from pinion (26).

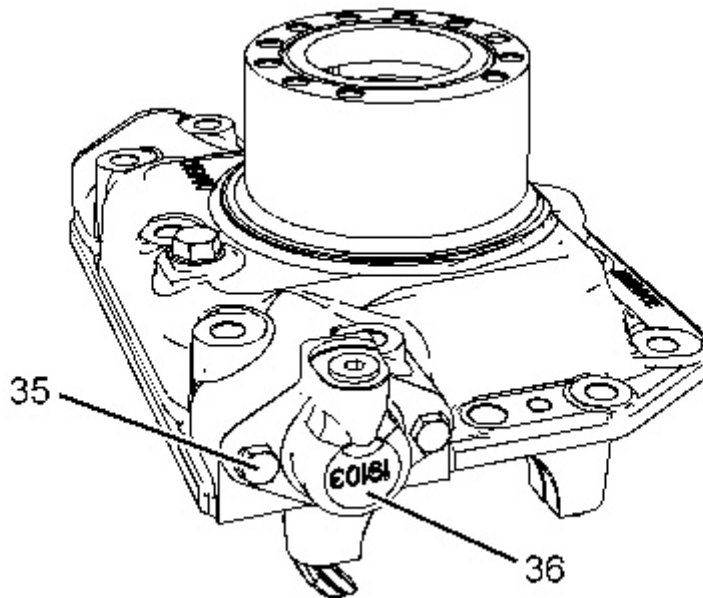


Illustration 18

g01666034

 **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.**

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25. Remove bolts (35). Remove support (36).

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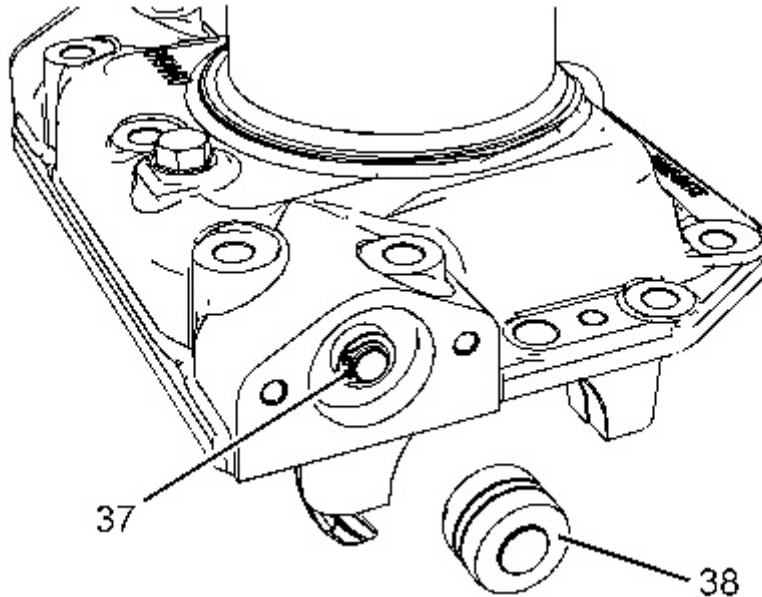


Illustration 19

g01666093

**! 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.**

---

26. Remove the piston and O-ring seal (38). Remove retaining ring (37).

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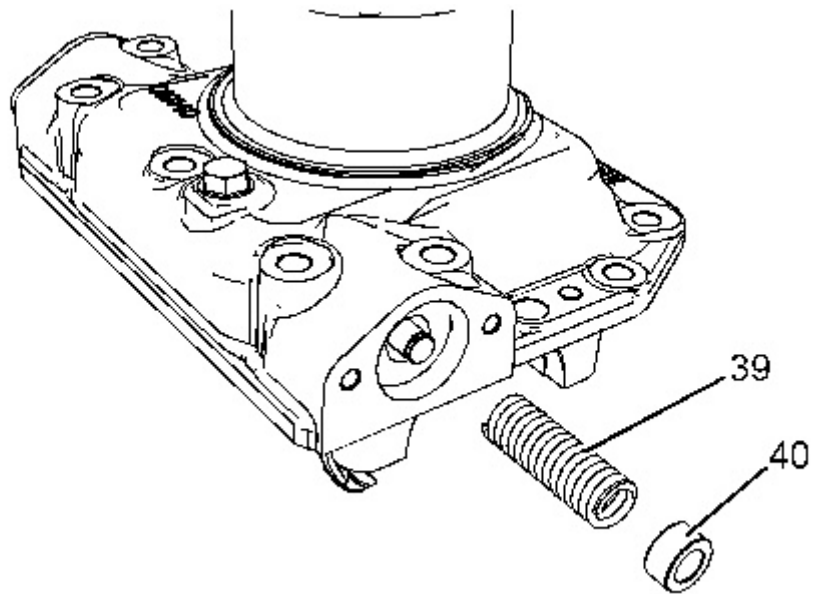


Illustration 20

g01666095

27. Remove spacer (40). Remove spring (39).

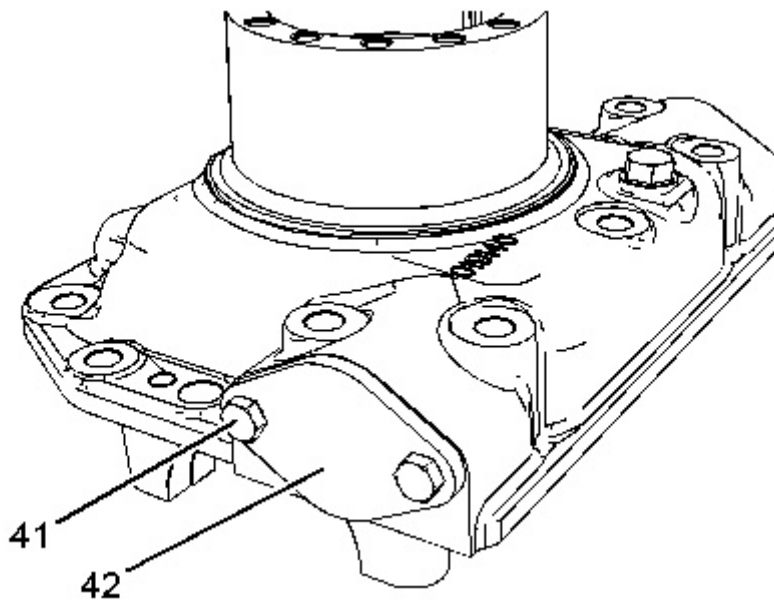


Illustration 21

g01666653

**⚠ WARNING**

**Personal injury can result from being struck by parts propelled by a released spring force.**

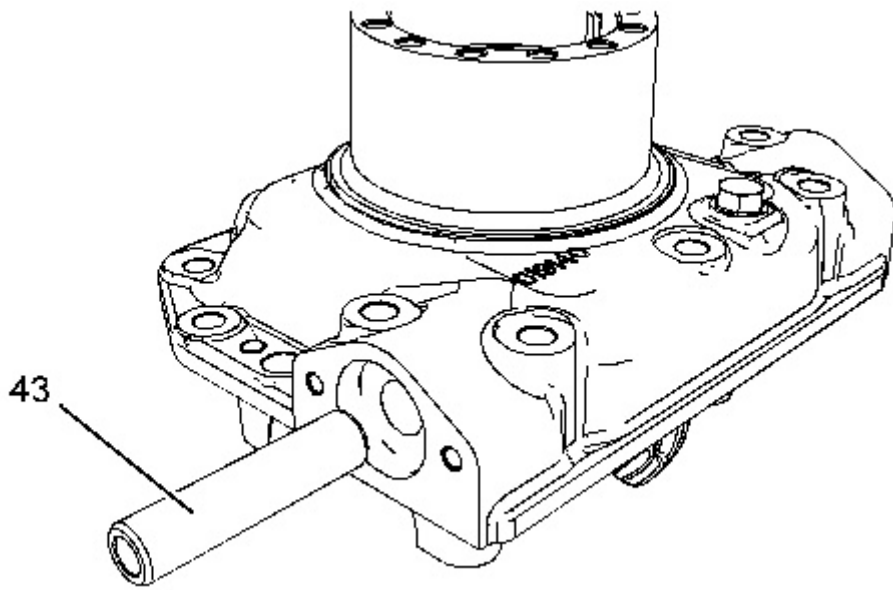
**Make sure to wear all necessary protective equipment.**

**Follow the recommended procedure and use all recommended tooling to release the spring force.**

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28. Remove bolts (41). Remove cover (42).

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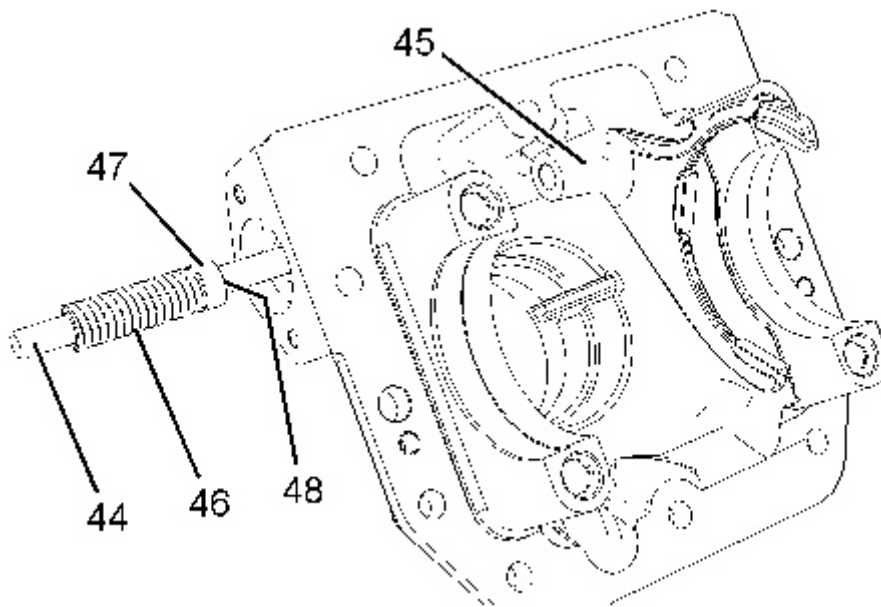
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Illustration 22

g01666713

29. Remove bushing (43).

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Illustration 23

g0166677

30. Reposition pin (44). Remove fork (45). Remove spring (46). Remove spacer (47). Remove retaining ring (48).

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## Disassembly and Assembly 906, 907 and 908 Compact Wheel Loaders Power Train

Media Number -KENR5211-04

Publication Date -01/06/2012

Date Updated -26/04/2017

i05034358

## Differential and Bevel Gear (Locking) - Assemble

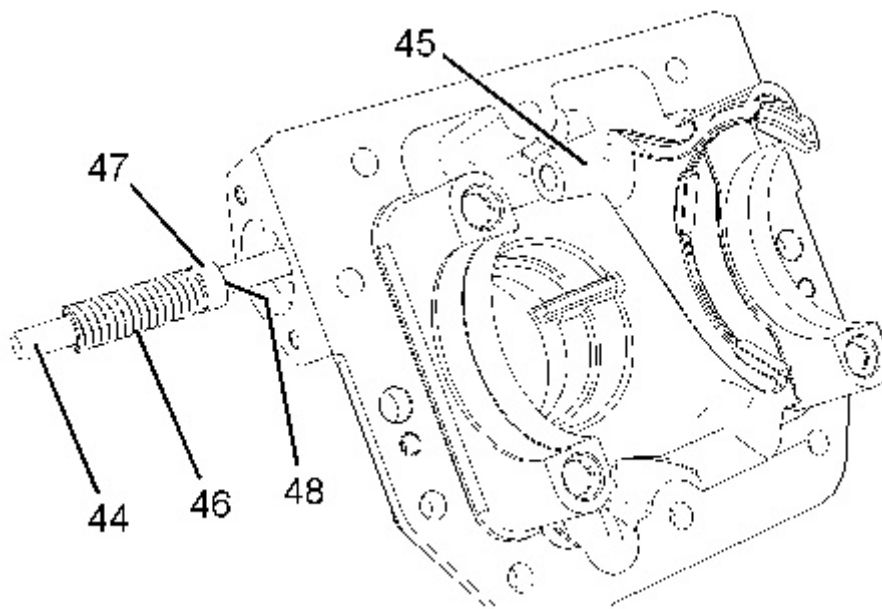
SMCS - 3254-016; 3256-016; 3270-016

### Assembly Procedure

Table 1

Required Tools			
Tools	Part Number	Part Description	Qty
A	1P-1861	Retaining Ring Pliers	1
B	1P-0510	Driver Gp	1
C	220-8430	Pinion Wrench	1
D	220-8428	Spanner Wrench	1
E	8H-0663	Bearing Puller Gp	1
F	235-2796	Measuring Shaft Assembly	1
G	235-2795	Plate	2
H	6V-2012	Depth Micrometer	1
J	8T-5096	Dial Indicator Gp	1

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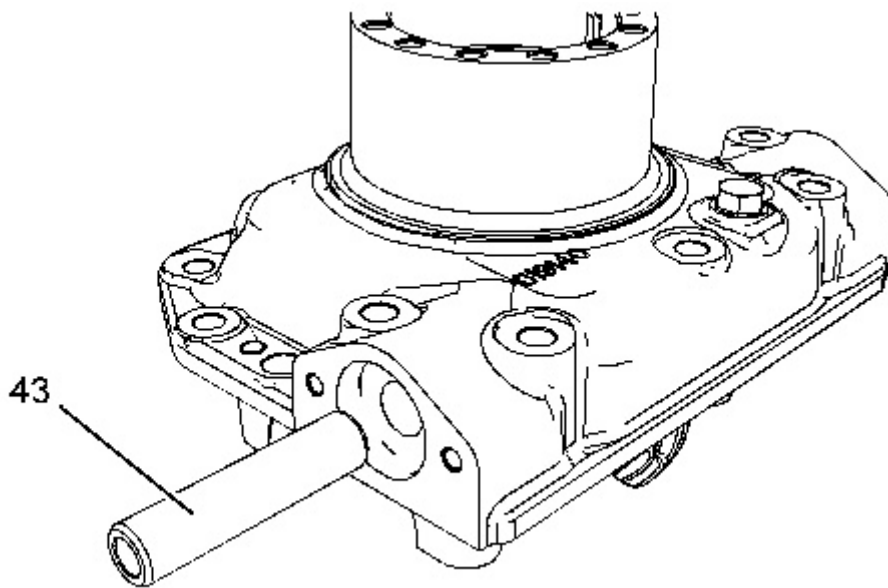


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Illustration 1

g01666677

1. Install retaining ring (48) on pin (44). Install spacer (47) and spring (46) on pin (44). Position fork (45). Reposition pin (44).



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Illustration 2

g01666713

2. Install bushing (43).
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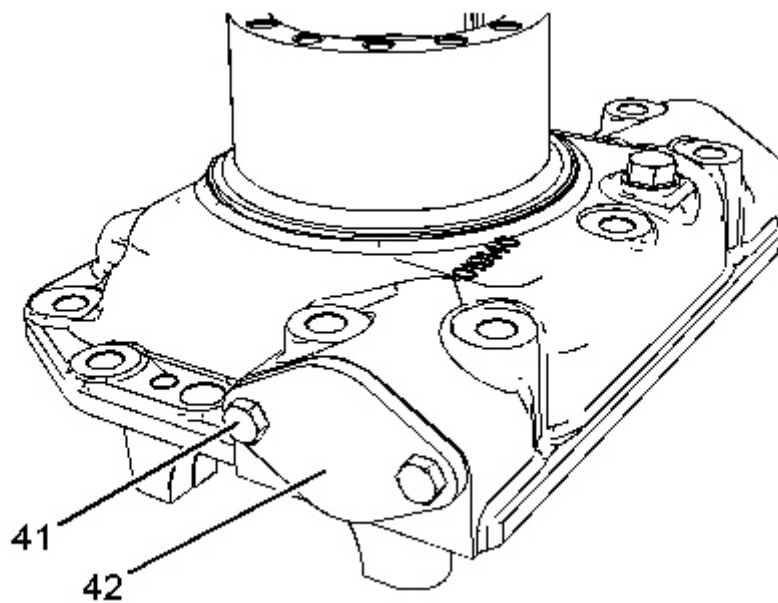


Illustration 3

g01666653

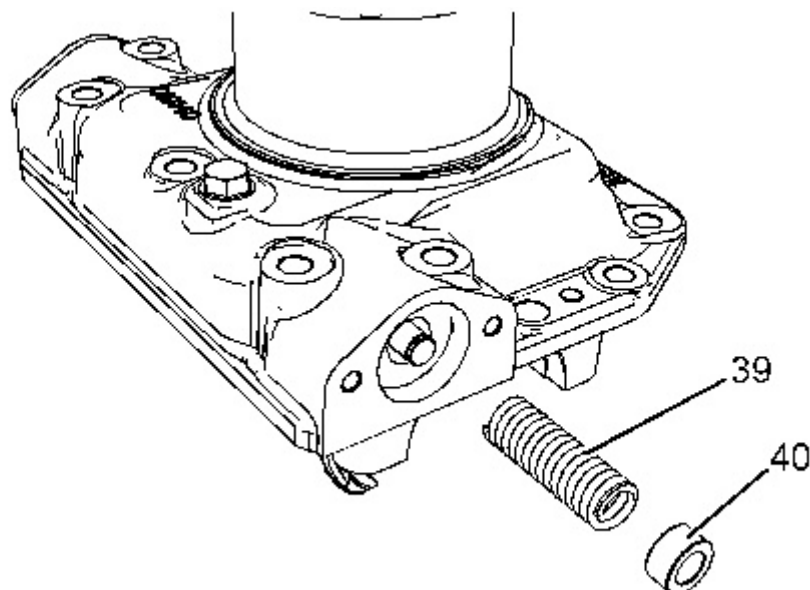
**! WARNING**

**Personal injury can result from being struck by parts propelled by a released spring force.**

**Make sure to wear all necessary protective equipment.**

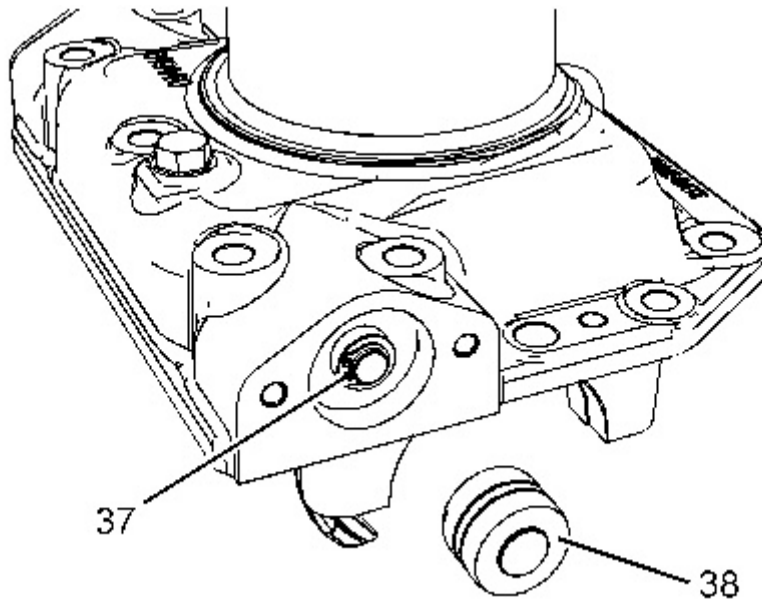
**Follow the recommended procedure and use all recommended tooling to release the spring force.**

3. Position cover (42). Install bolts (41).





- 
4. Install spring (39). Install spacer (40).
- 



**! 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.**

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5. Install retaining ring (37). Install the piston and O-ring seal (38).
-

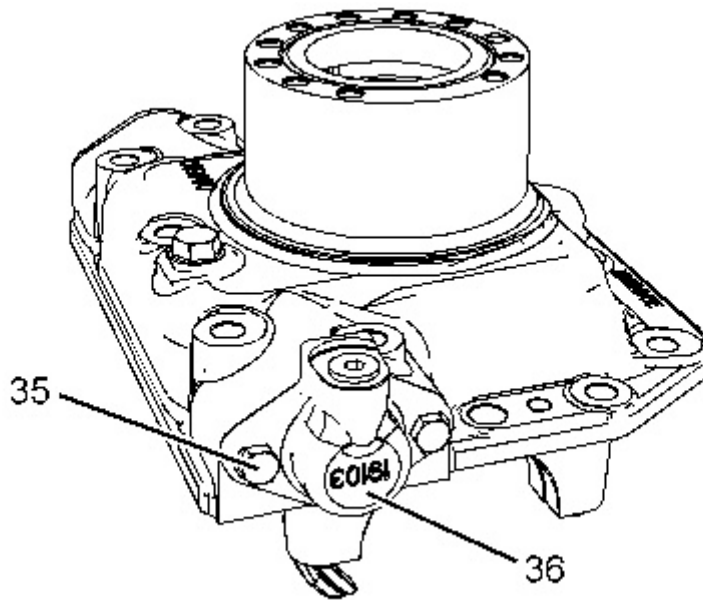


Illustration 6

g01666034

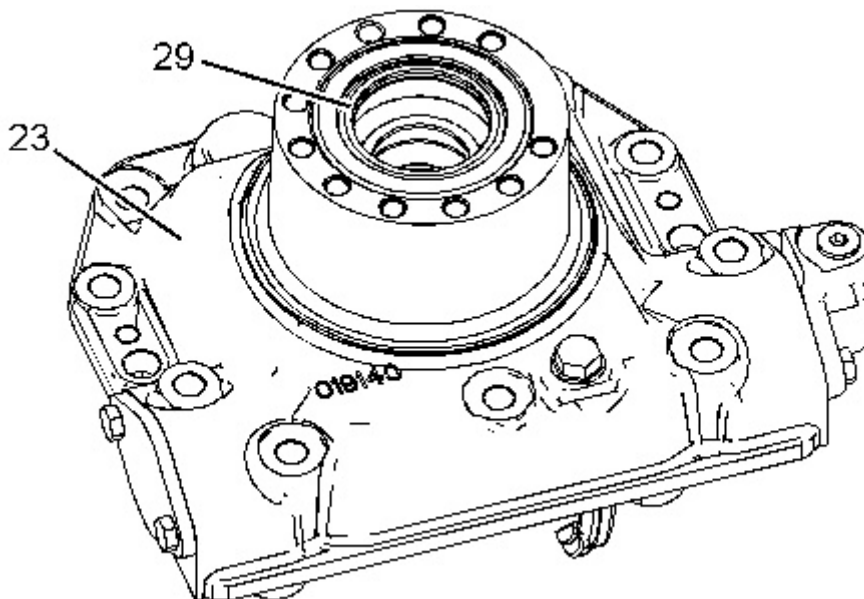
**! WARNING**

**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.**

6. Position support (36). Install bolts (35).



7. Use Tooling (B) to install bearing cups (29) in housing (23).

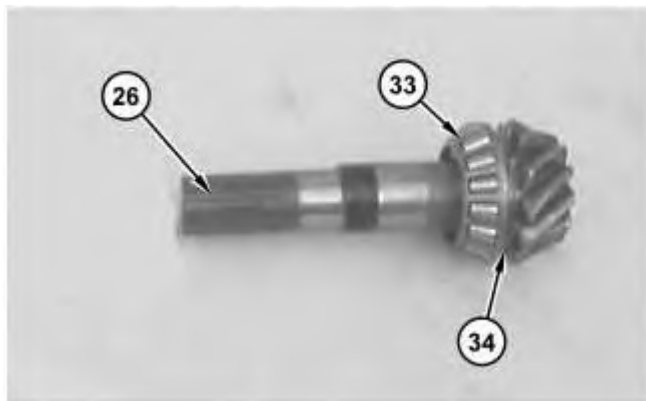


Illustration 8

g01667055

8. Install shim (34) and bearing cone (33) to pinion (26).

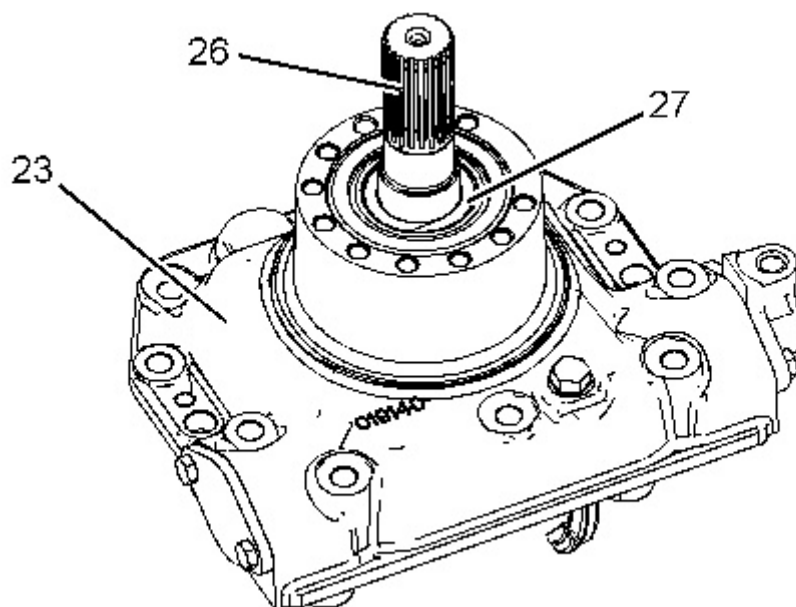


Illustration 9

g01667056

9. Install pinion (26) in housing (23).
10. Install bearing cone (27) to pinion (26).

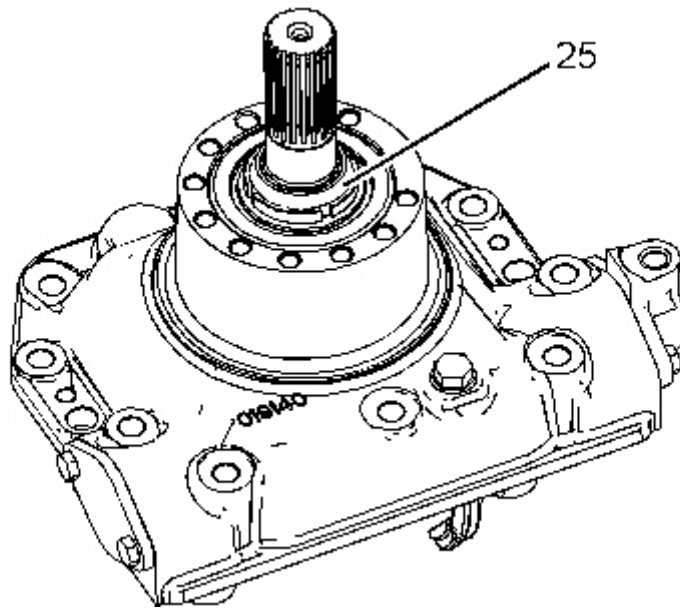


Illustration 10

g01665918

11. Install nut (25) and the washer. Use Tooling (C) and (D) in order to tighten nut (25) and remove the end play.

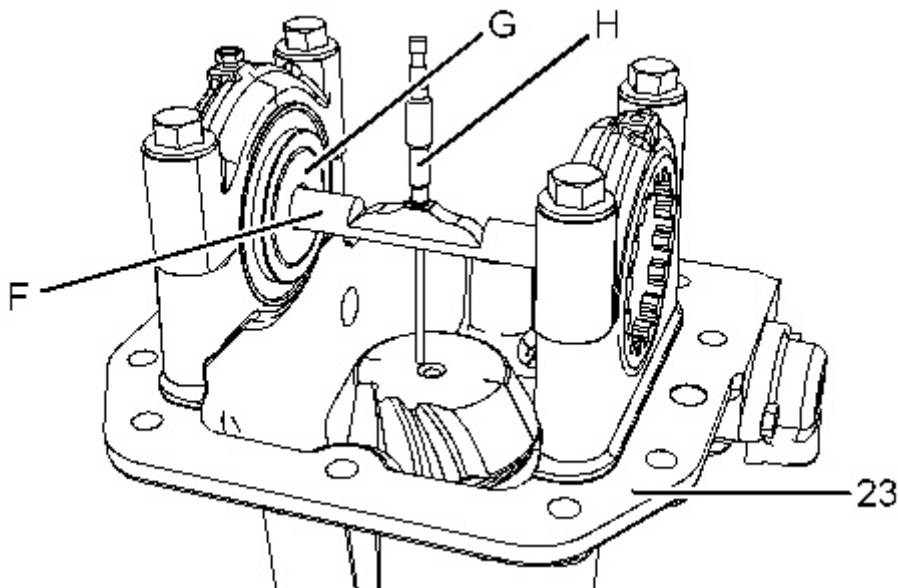
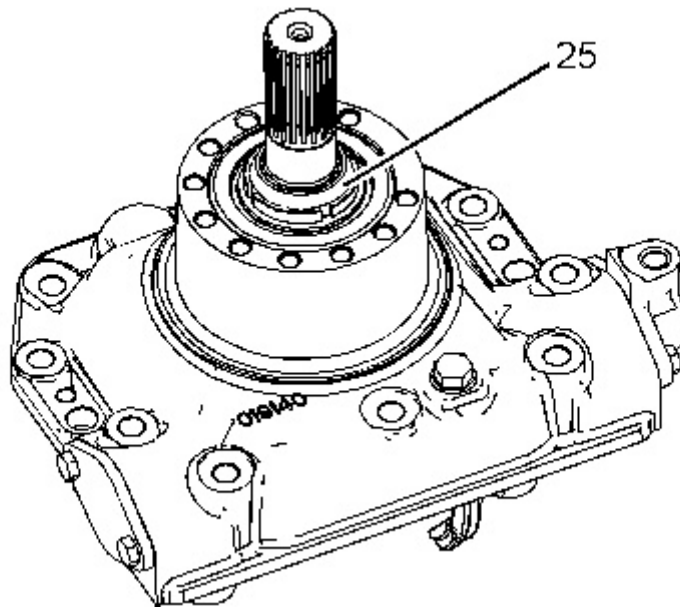


Illustration 11

g01667057

12. Rotate housing (23).
13. Use Tooling (F), Tooling (G), and Tooling (H) to measure the distance to the pinion. This will determine if the pinion is in the correct position. Record the measurement. Compare the measurement to the number on the face of the pinion.
14. Use the following formula: **Measurement (mm) + 35.25mm = stamp (mm)**. If depth is not correct, adjust shim (31).

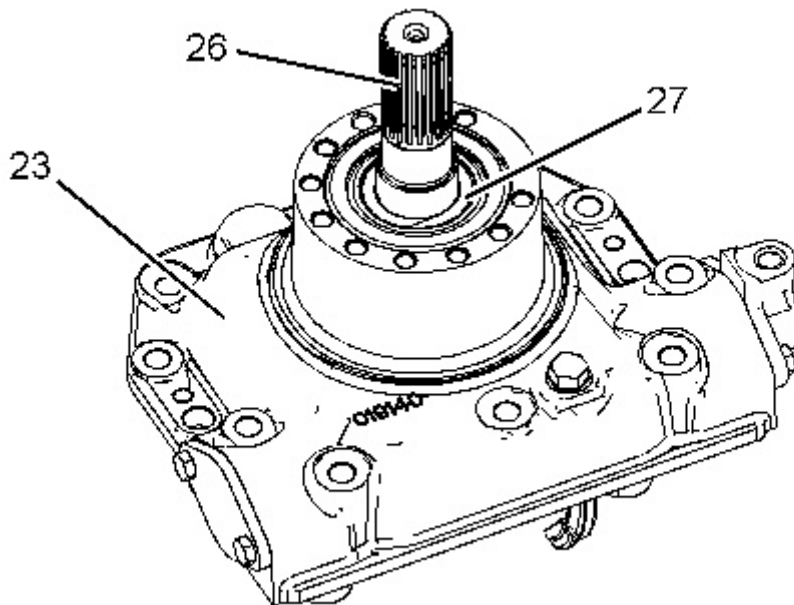


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Illustration 12

g01665918

15. Remove nut (25) and the washer.
- 



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Illustration 13

g01667056

16. Remove bearing cone (27) from pinion (26).  
17. Remove pinion (26) from housing (23).
-

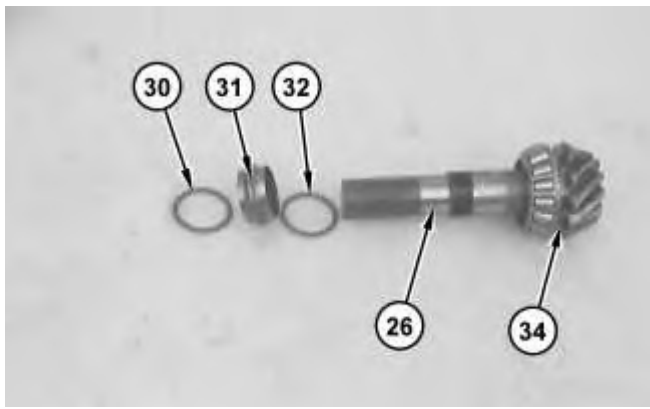


Illustration 14

g01670455

18. Install washer (32) to pinion (26).
19. Install a new crush sleeve (31) to pinion (26).
20. Install washer (30) to pinion (26).

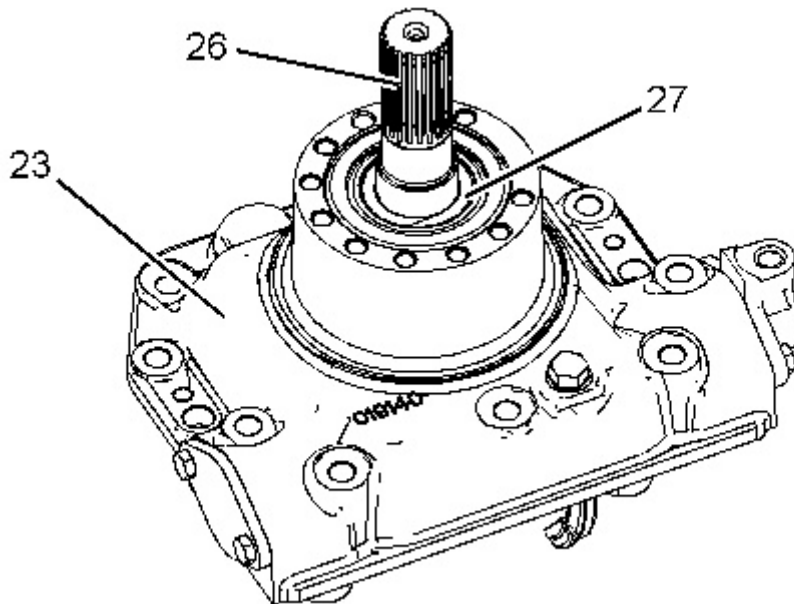


Illustration 15

g01667056

21. Install pinion (26) to housing (23).
22. Install bearing cone (27) to pinion (26).

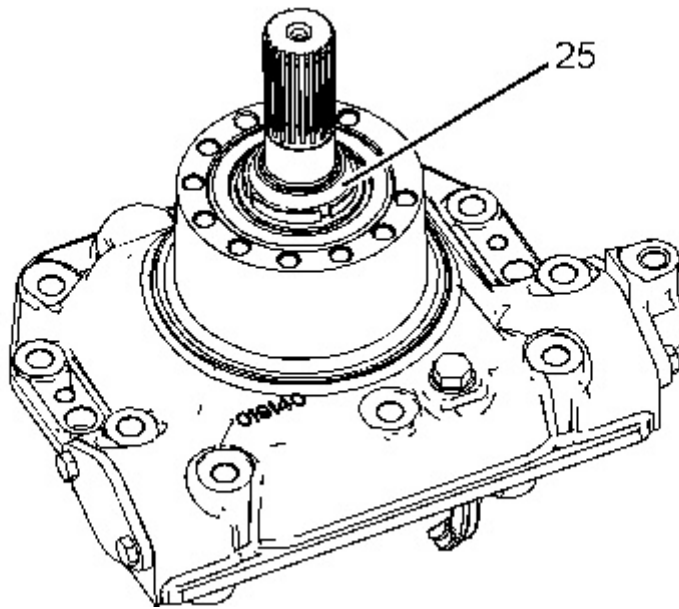


Illustration 16

g01665918

23. Install nut (25) and the washer. Use Tooling (C) and (D) in order to ensure that the bearings are seated.

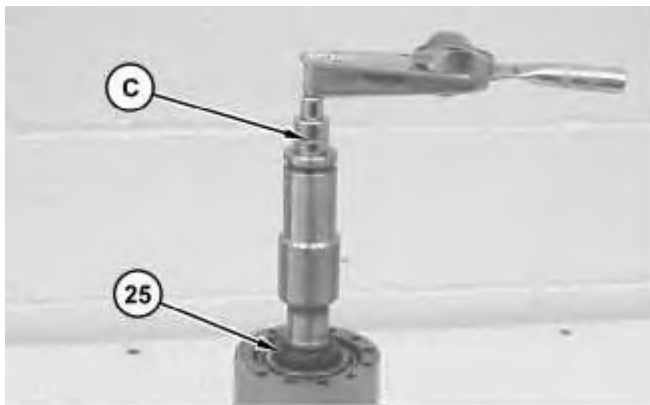


Illustration 17

g01667295

24. Use Tooling (C) with a needle type torque wrench in order to set the rotating torque. Tighten nut (25) to a torque of 1.6 to 2.4 N·m (14 to 21 lb in).



25. Lock retaining nut (25) by peening the collar in the slot on pinion shaft (26).
- 

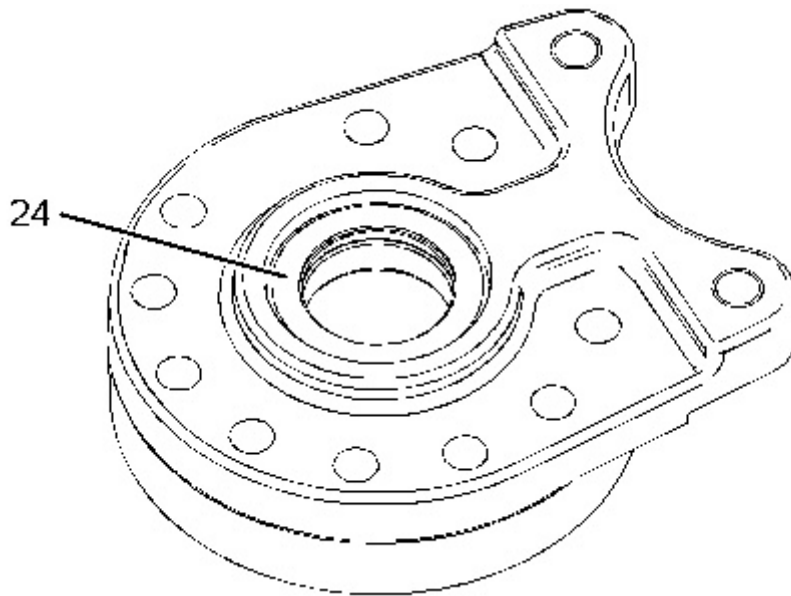


Illustration 19

g01665917

26. Use Tooling (B) to install lip seal (24).
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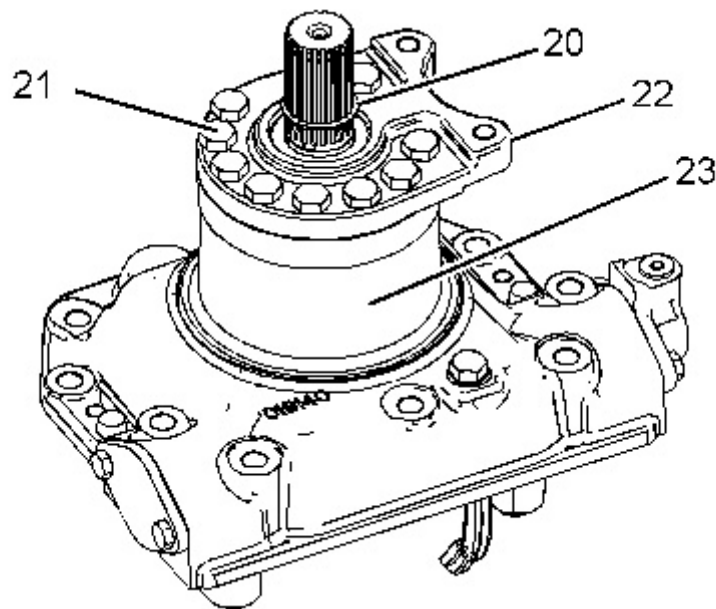
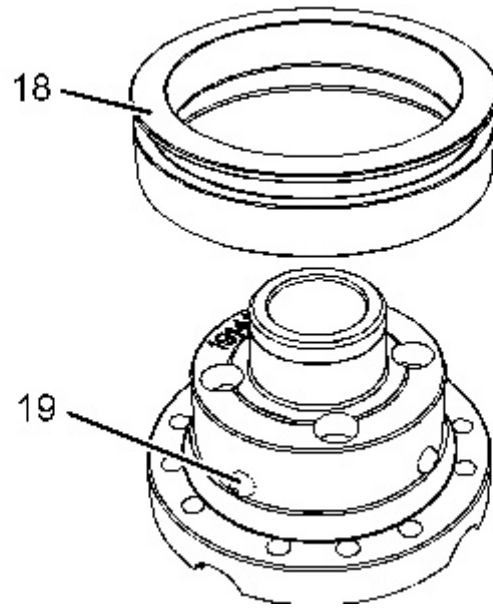


Illustration 20

g01665914

27. Install bracket (22) to housing (23). Apply sealant to bracket (22) before assembling to housing (23).
28. Install bolts (21) to bracket (22). Tighten bolts (21) to a torque of 50 N·m (37 lb ft).
29. Use Tooling (A) to install retaining ring (20).





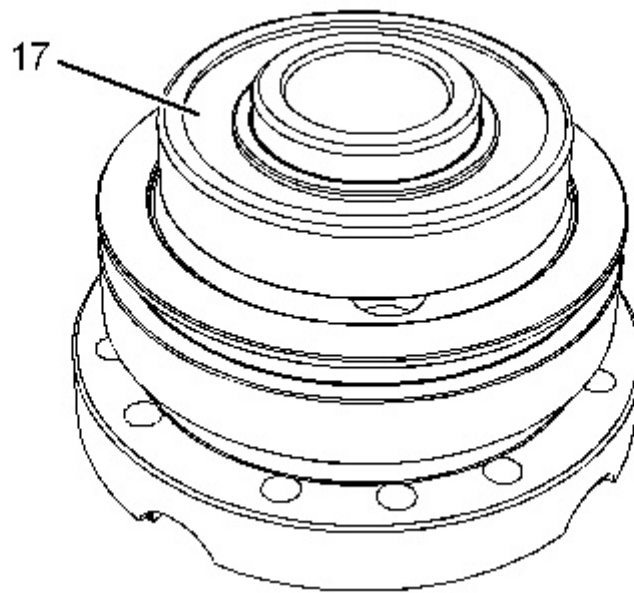
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Illustration 21

g01665781

30. Install pins (19). Install collar (18).

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Illustration 22

g01665780

31. Install bearing cone (17).

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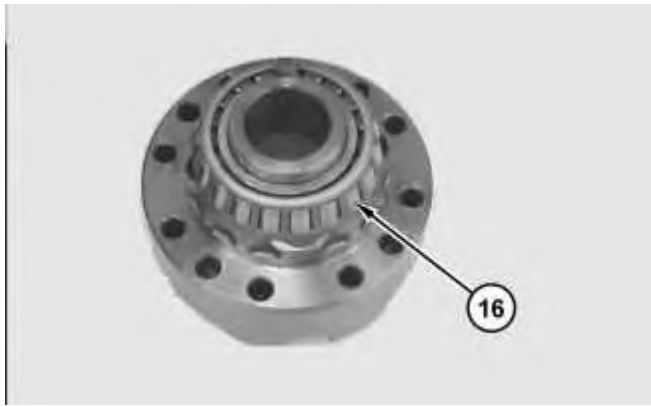


Illustration 23

g01453557

32. Install bearing cone (16).

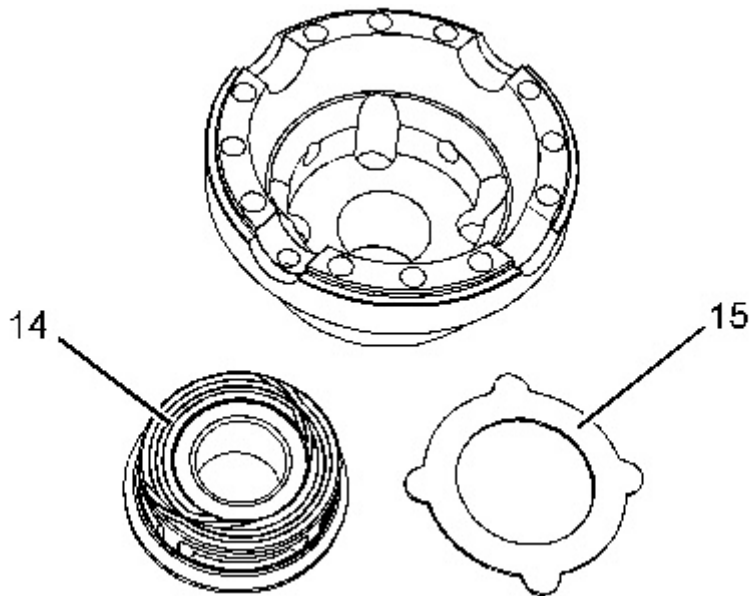


Illustration 24

g01648202

33. Install counter disk (15).

34. Install bevel pinion (14).



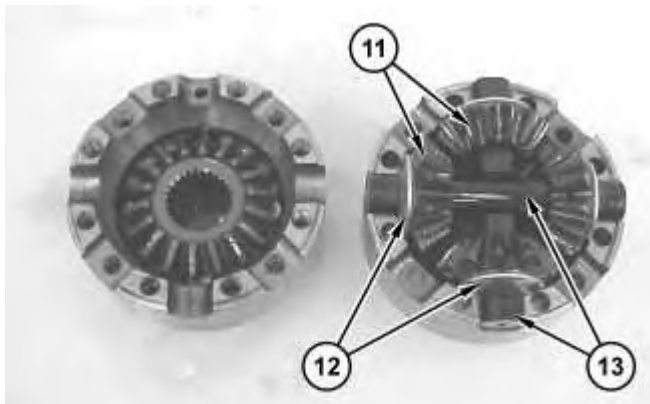


Illustration 26

35. Install bevel gears (11) to shaft (13).
  36. Install thrust washer (12) to bevel gears (11).
- 

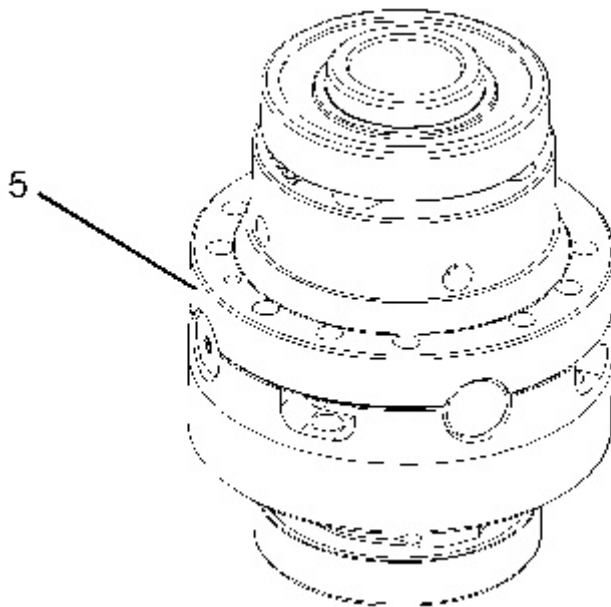
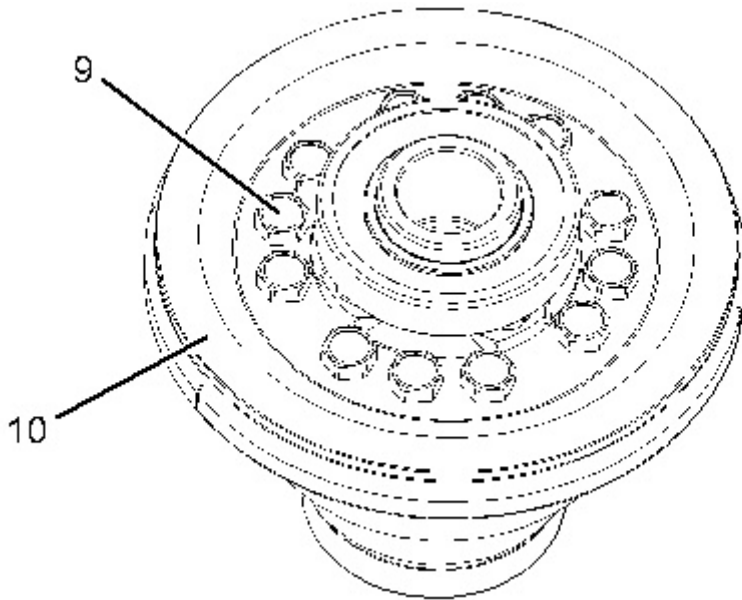


Illustration 27

37. Join differential case (5).
-

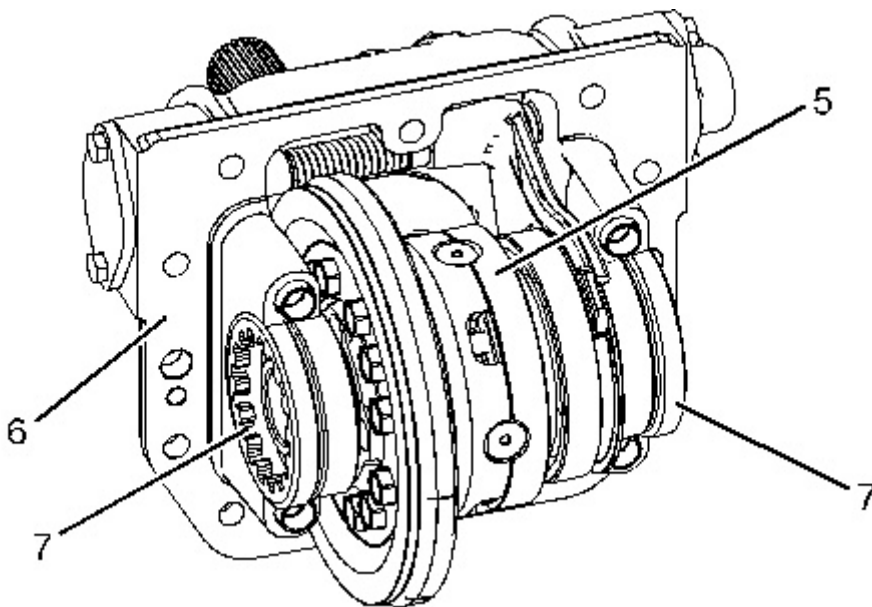


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Illustration 28

g01453353

38. Install ring gear (10) to differential case. Install bolts (9). Tighten bolts (9) to a torque of  $95 \pm 4.75 \text{ N}\cdot\text{m}$  ( $70 \pm 3 \text{ lb ft}$ ).
- 



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Illustration 29

g01463348

39. Install differential case (5) to housing (6).
40. Install bearing nuts (7). Make sure that the bearing nuts (7) can turn freely.
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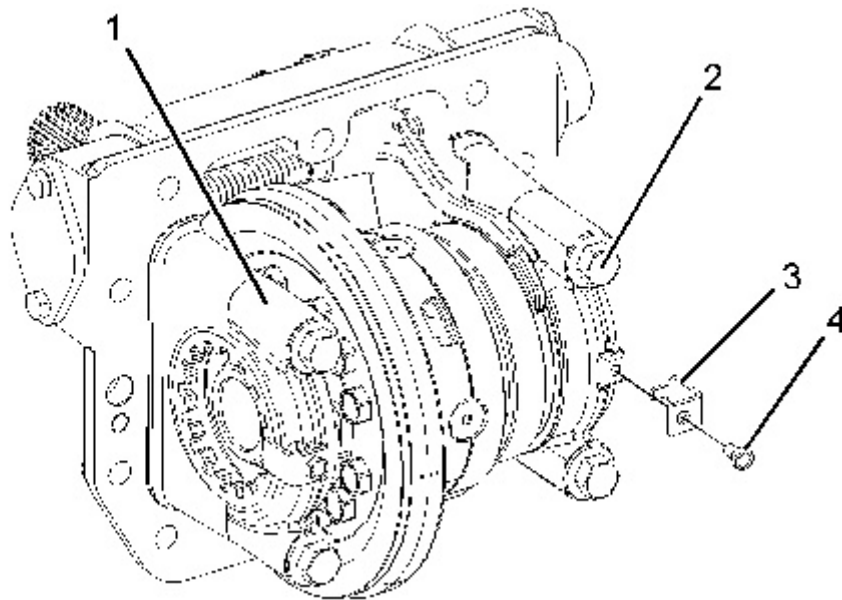


Illustration 30

g01453350

**Note:** Marks need to be oriented correctly for the installation.

41. Install bearing caps (1).

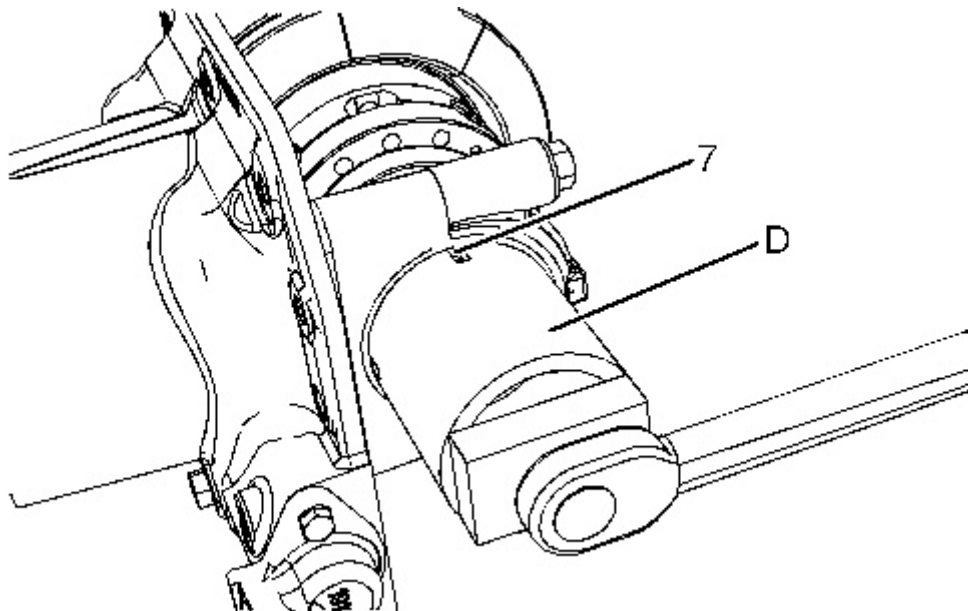


Illustration 31

g01648223

42. Oscillate the bevel gear and advance bearing nut (7). Continue to advance the adjustment nut until there is no backlash. Back off the adjustment nut by 1/2 turn.

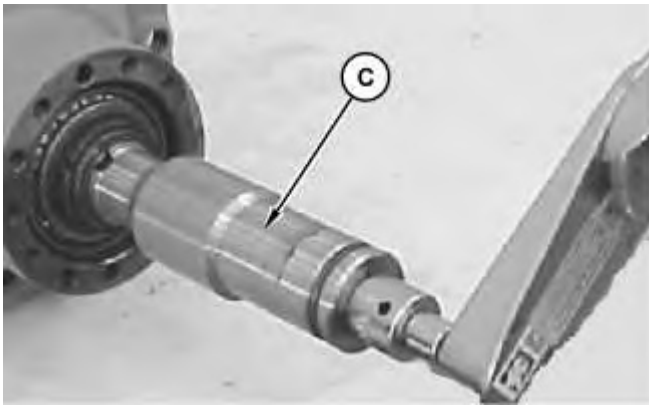


Illustration 32

g01648436

43. Use a torque wrench and Tooling (C) in order to measure the overall rolling torque at the pinion shaft. Torque should be 1.6 N·m to 2.4 N·m (14 lb in to 21lb in) above measured rotating torque of pinion.

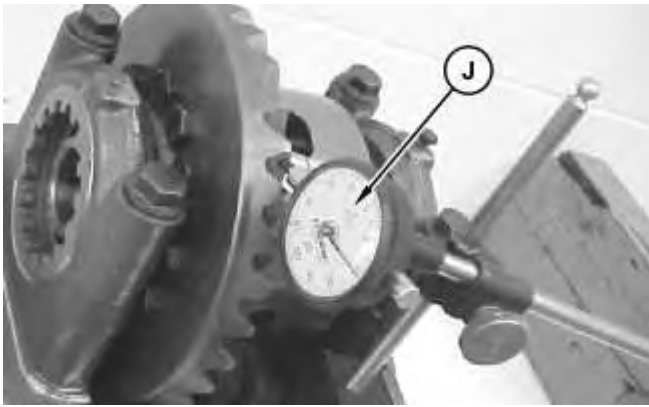


Illustration 33

g01648438

44. Mount Tooling (J) on the carrier, as shown. Measure the backlash at four places on the bevel gear at 90 degree intervals. Compare the lowest reading to the specifications. The proper backlash setting is 0.180 mm to 0.230 mm (0.0071 inch to 0.0091 inch).
45. If the backlash is not within the specification, retract one adjustment nut and advance the opposite adjustment nut equally. This will maintain the bearing preload.
46. When proper backlash is obtained, tighten bearing cap bolts (2) to a torque of 266 N·m (196 lb ft).
47. Install lock plates (3) and bolts (4).

**End By:**

- a. Install the differential. Refer to Disassembly and Assembly, "Differential (Limited Slip) - Install".

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