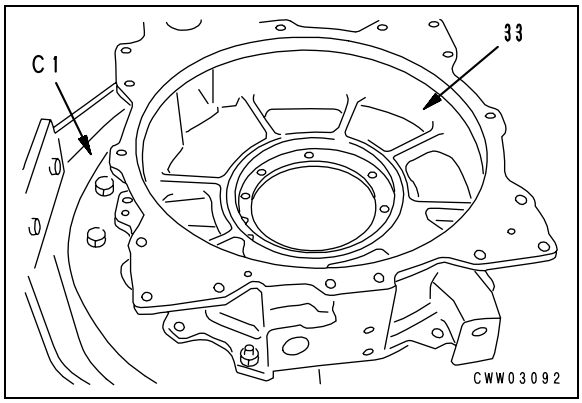
ASSEMBLY

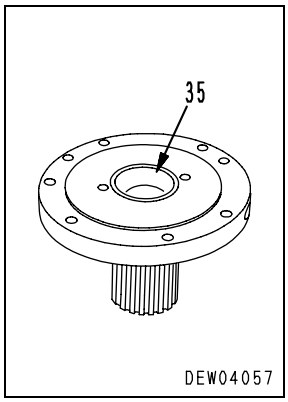
Preparatory work

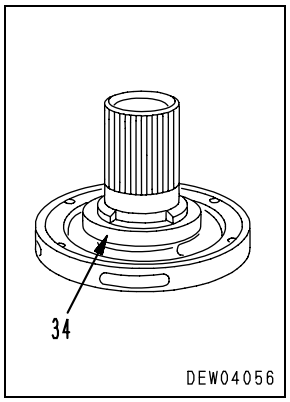
- Clean all parts, and check for dirt or damage. Coat the sliding surfaces of all parts with engine oil before installing.
- Set torque converter rear housing (33) on tool **C1**.



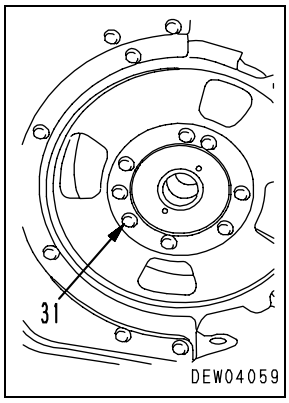
1. Stator shaft

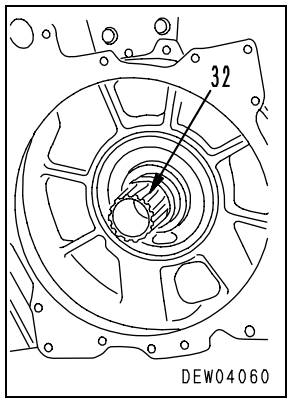
1) Expand fit sleeve (35) to stator shaft.
2) Install seal ring (34) to stator shaft.
   ★ Make the protrusion of the seal ring from the shaft uniform.





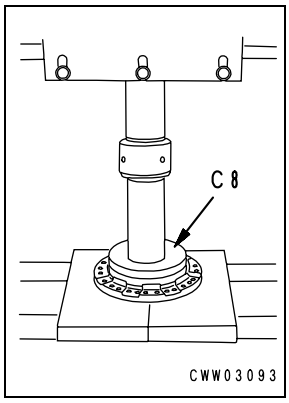
3) Operate repair stand, rotate torque converter case 90°, install stator shaft (32), then tighten 8 mounting bolts (31) from opposite side.
   Mounting bolt: **Adhesive (LT-2)**
   Mounting bolt:
   275 ± 29 Nm {28 ± 3 kgm}

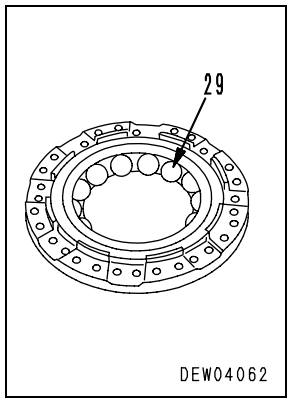




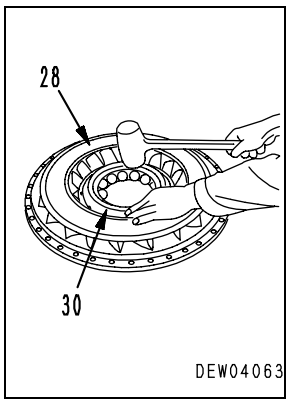
2. Pump assembly

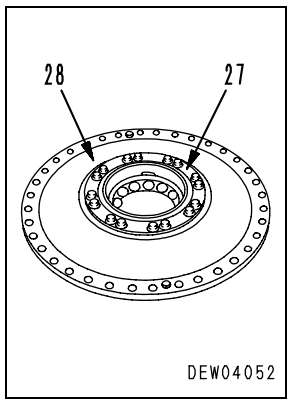
1) Using push tool **C8** (outside diameter: 195 mm), press fit bearing (29) in guide.



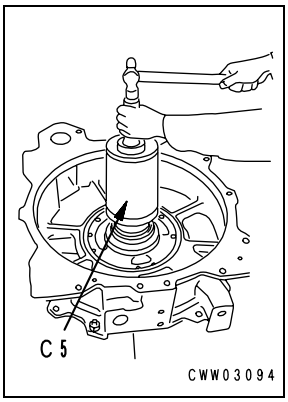


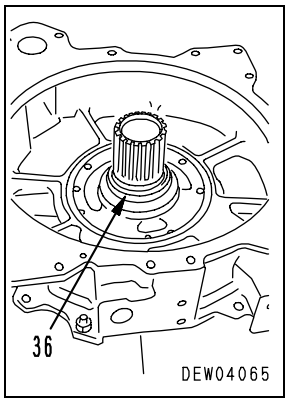
2) Install guide (30) and retainer (27) to pump (28).
   Mounting bolt: **Adhesive (LT-2)**
   Mounting bolt:
   69 ± 5 Nm {7.0 ± 0.5 kgm}



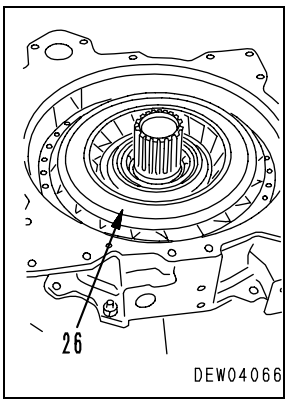


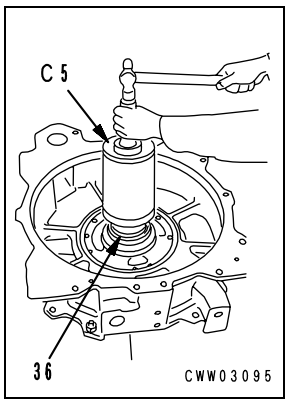
3) Using push tool **C5**, press fit inner race (36) to stator shaft.
4) Set pump assembly (26) in position, be careful not to damage the seal ring.
   ★ Coat the seal ring with grease (G2-LI), make the amount of protrusion from the shaft uniform, and fix in position.
5) Using push tool **C5**, press fit inner race (36) to stator shaft.
   ★ Be careful to install the inner race facing in the correct direction.

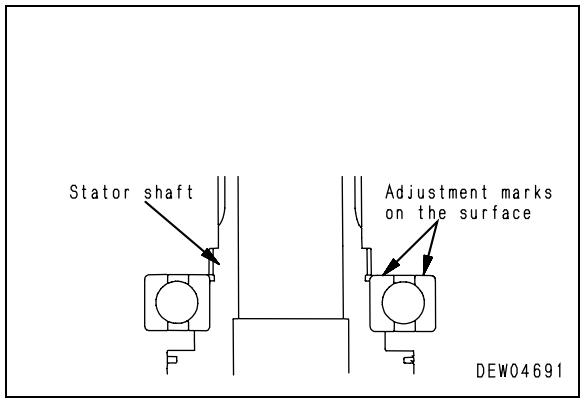




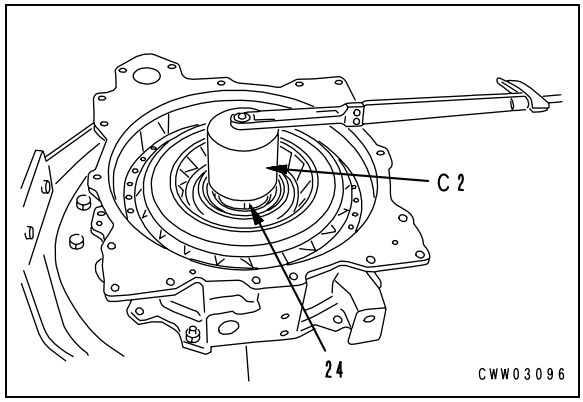
6) Set pump. Be careful not to damage the seal ring while setting pump.
   ★ Coat the seal ring with grease (G2-LI), make the amount of protrusion from the shaft uniform, and fix in position.
7) Using push tool **C5**, press fit inner race (36) to stator shaft.
   ★ Be careful to install inner race facing in the correct direction.



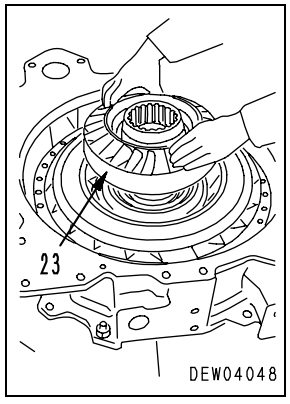


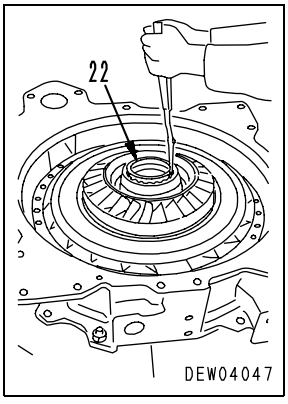


8) Using tool **C2**, install nut (24) to stator shaft.
   Nut: **Adhesive (LT-2)**
   Nut: **613 ± 25 Nm {62.5 ± 2.5 kgm}**



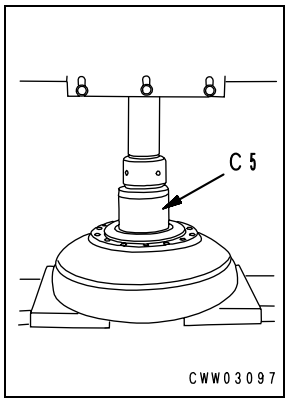
3. Stator
1) Align spline, and install stator (23).
2) Install snap ring (22).

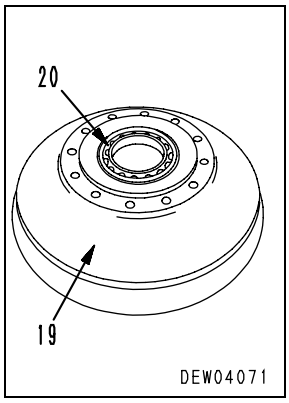




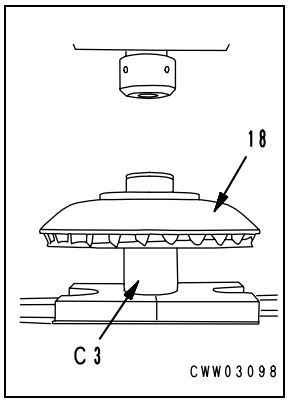
4. Turbine case assembly

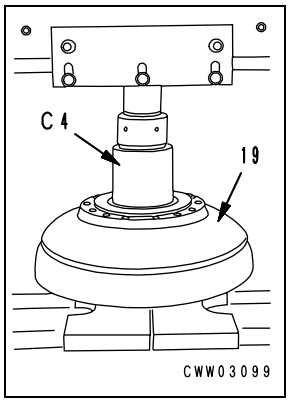
1) Using push tool **C5**, press fit bearing (20) in case (19).



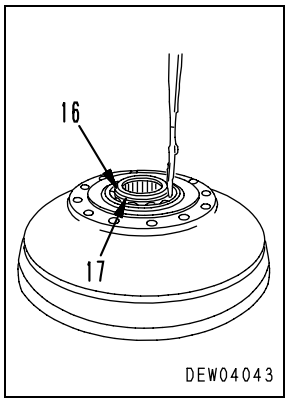


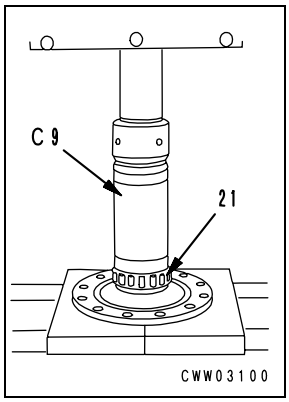
2) Set turbine (18) in push tool **C3** (outside diameter: 105 mm, height: 165 mm).
3) Using push tool **C4** (inside diameter: 110 mm), press fit case (19) to turbine (18).



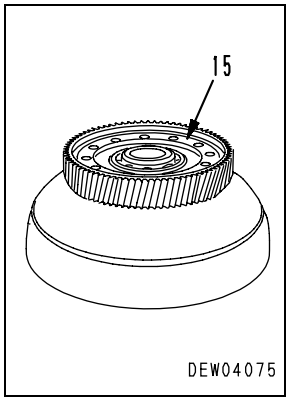


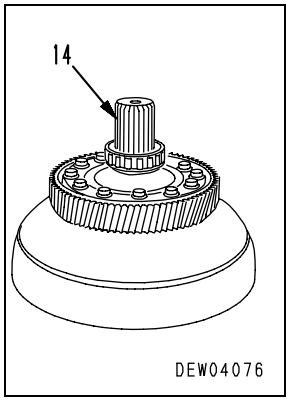
4) Fit plate (17) and install snap ring (16).
5) Using push tool **C9** (inside diameter: 90 mm), press fit bearing (21) in pilot.



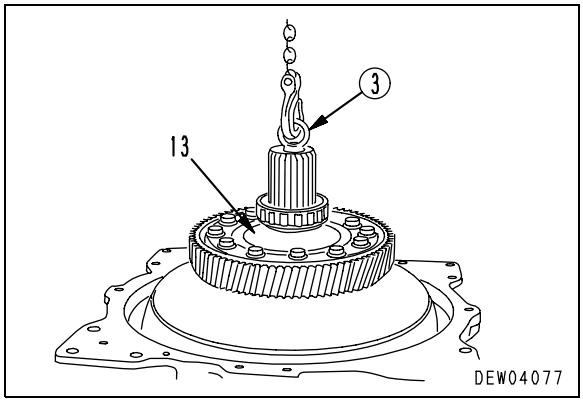


6) Install gear (15).
7) Install pilot (14).
   Mounting bolt: **Adhesive (LT-2)**
   Mounting bolt:
   275 ± 29 Nm {28 ± 3 kgm}

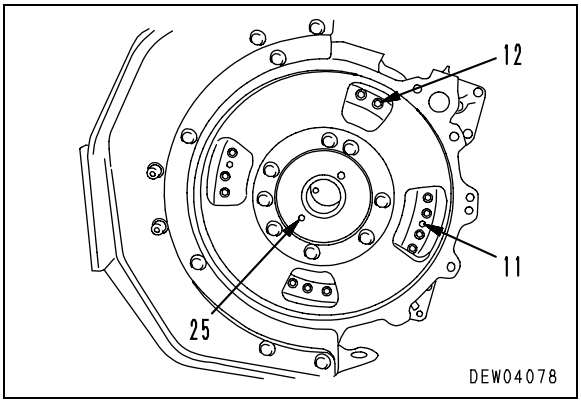




8) Using eyebolts [3] (Dia. = 16 mm, Pitch = 2.0 mm), raise turbine case assembly (13), align oil groove of case with drain hole of pump (2 places), then install.
9) Tighten pump mounting bolts temporarily.
   Mounting bolt: **Adhesive (LT-2)**

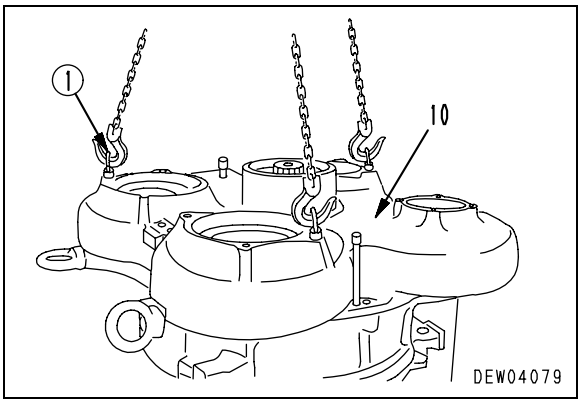


10) Rotate repair stand 90° and tighten mounting bolts (12).
    Mounting bolt:
    54 ± 5 Nm {5.5 ± 0.5 kgm}
11) Tighten drain plug (11).
12) Tighten 2 plugs (25).
    Plug: **7.4 ± 2.5 Nm {0.75 ± 0.25 kgm}**

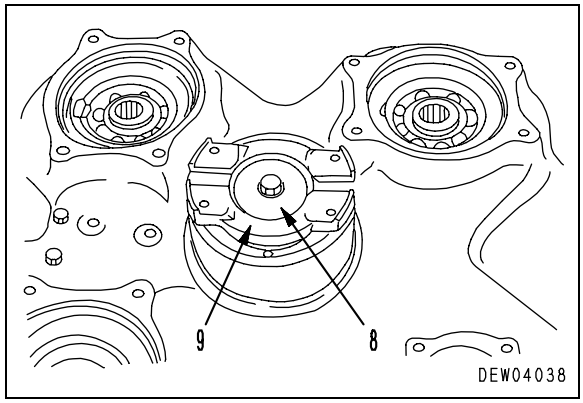


5. PTO assembly

1) Fit O-ring, then using eyebolts [1] (Dia. = 16 mm, Pitch = 2.0 mm), install PTO assembly (10).
   ★ Be careful not to damage the oil seal when installing.
   ★ Mount PTO assembly after adjusting mounting position. If move PTO assembly after mounting, O-ring will be twisted and gone out of groove.

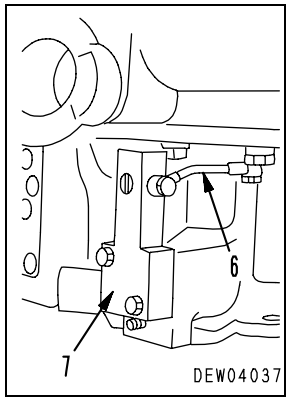


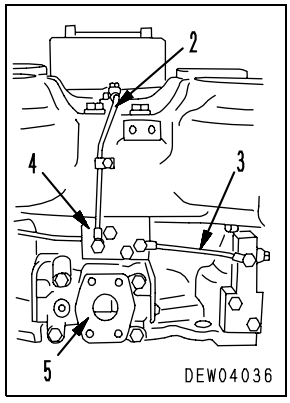
2) Install coupling (9).
3) Fit O-ring and install holder (8).
   Mounting bolt:
   275 ± 29 Nm {28 ± 3 kgm}



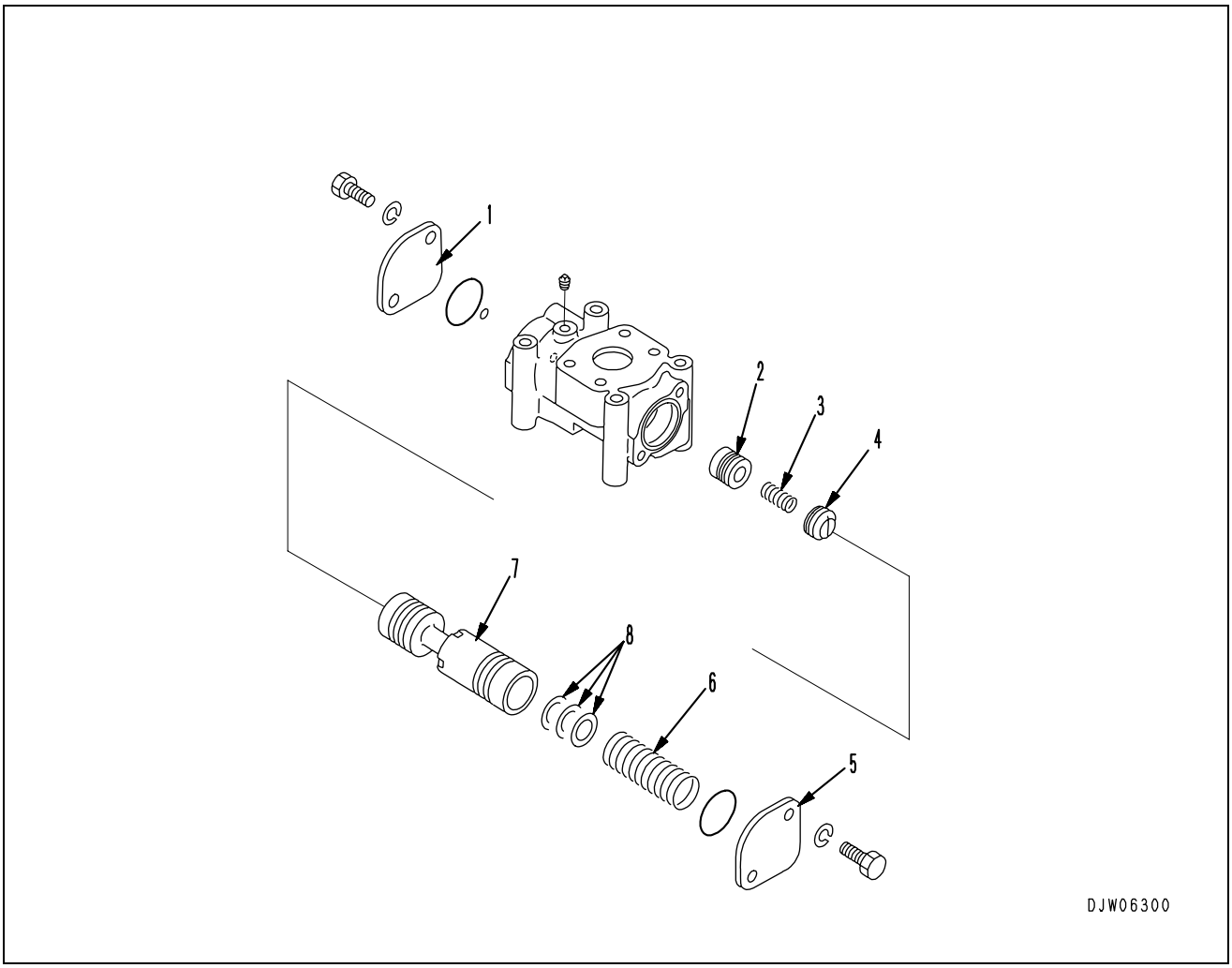
6. Valve assembly

1) Fit O-ring and install block (7) and tube (6).
2) Fit O-ring and install valve assembly (5).
3) Fit block (4) and install tubes (3) and (2).
   Valve assembly mounting bolt:
   49 ± 5 Nm {5.0 ± 0.5 kgm}
   Tube mounting bolt:
   25 ± 5 Nm {2.5 ± 0.5 kgm}



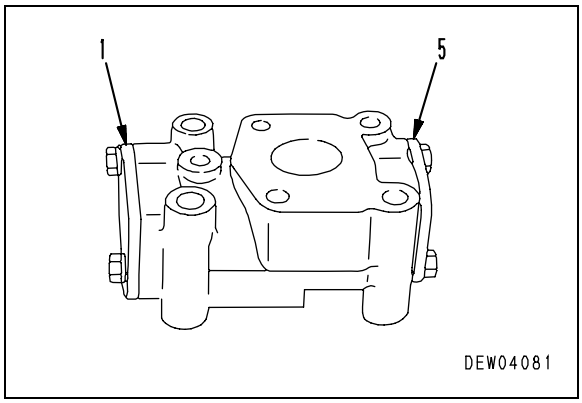


DISASSEMBLY AND ASSEMBLY OF TORQUE CONVERTER VALVE



DISASSEMBLY OF TORQUE CONVERTER VALVE

1. Remove cover (1), then remove valve (2), spring (3) and valve (4).
2. Remove cover (5), then remove spring (6), valve (7) and washer, shim (8).



ASSEMBLY OF TORQUE CONVERTER VALVE

★ Clean all parts, and check for dirt or damage. Coat the sliding surfaces of all parts with engine oil before installing.

1. Assemble washer, shim (8), valve (7) and spring (6), then fit O-ring and install cover (5).
2. Assemble valve (4), spring (3), and valve (2), then install cover (1).

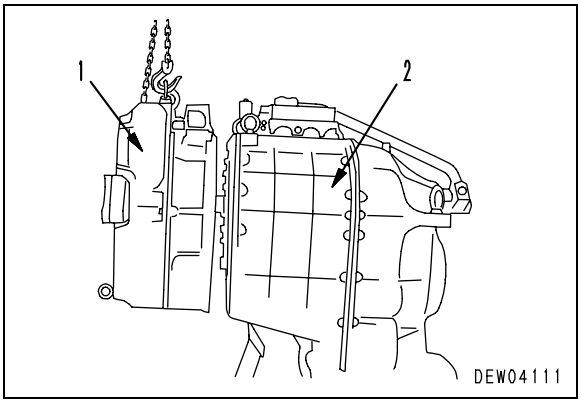
DISASSEMBLY AND ASSEMBLY OF TRANSMISSION

DISASSEMBLY

1. Torque converter assembly

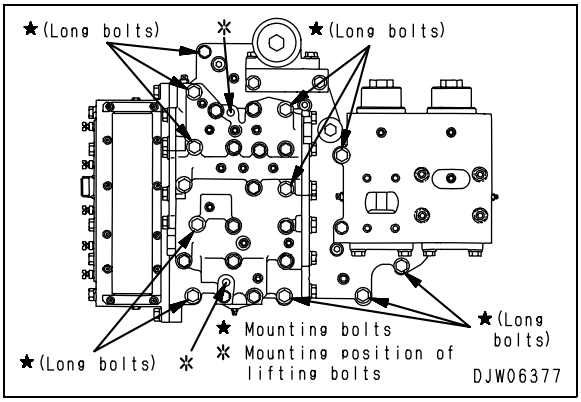
Using eyebolts, remove torque converter assembly (1) from transmission assembly (2).

Torque converter assembly: **650 kg**



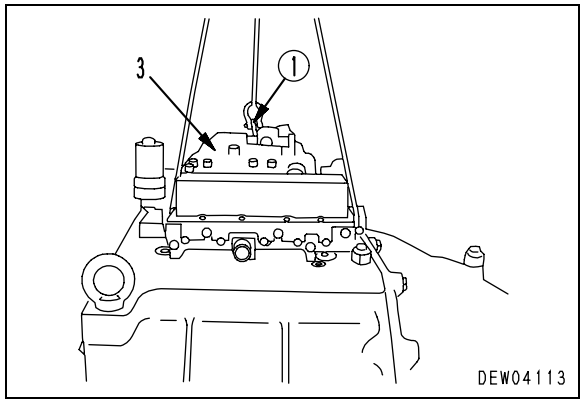
2. Control valve assembly

1) Remove 11 mounting bolts.
   - The length of the bolts is different, so check before removing.
   - Remove only the bolts marked ★ in the diagram.



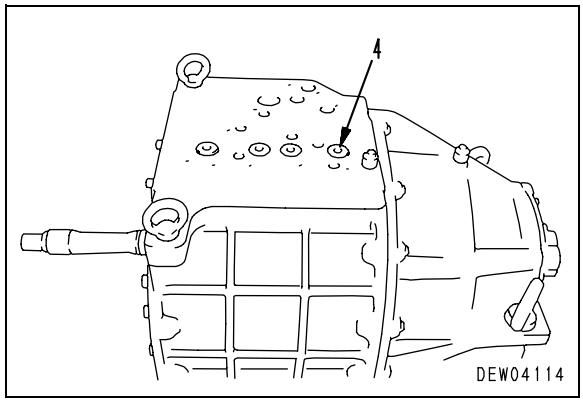
2) Using eyebolts [1] (Dia. = 10 mm, Pitch = 1.5 mm), lift off control valve assembly (3).

Control valve assembly: **110 kg**



3. Sleeve

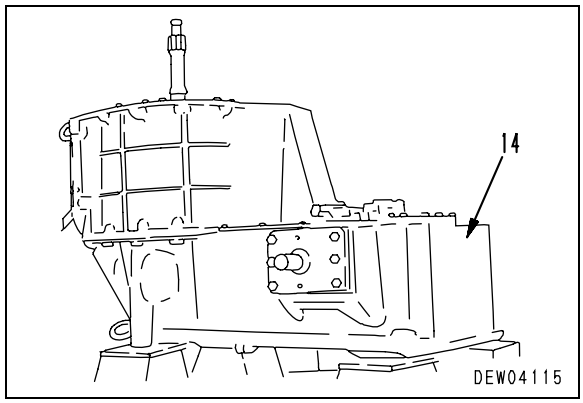
Remove sleeve (4).



4. Transmission case

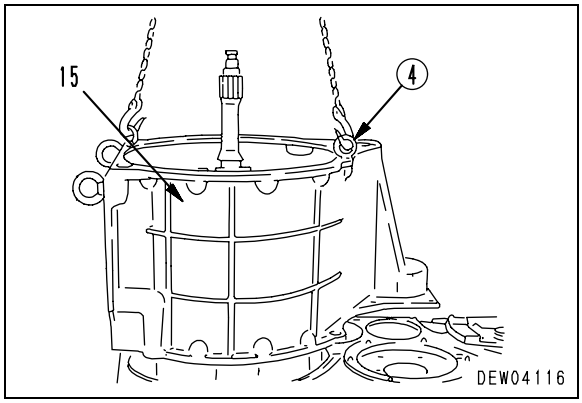
1) Raise transfer and transmission assembly, and put transfer (14) at bottom.

Transfer, transmission assembly: **2,200 kg**



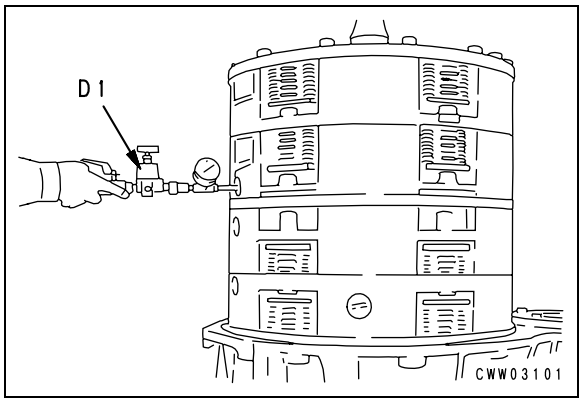
2) Using eyebolts [4] (Dia. = 16 mm, Pitch = 2.0 mm), lift off transmission case (15).

Transmission case: **125 kg**

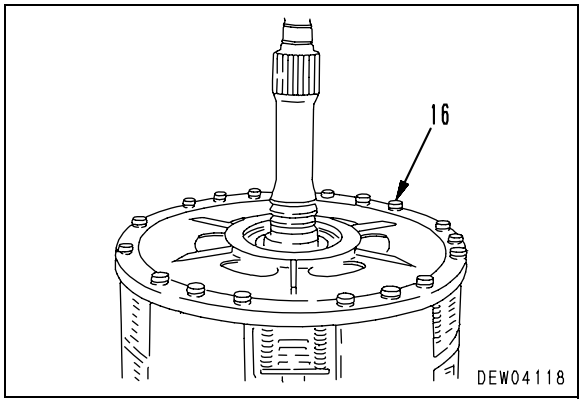


5. Tie bolts

1) Using tool **D1**, check the operation of the piston before disassembling.



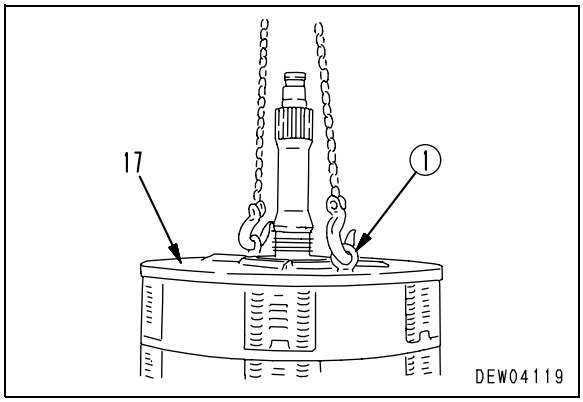
2) Remove tie bolts (16).



6. Plate

Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off plate (17).

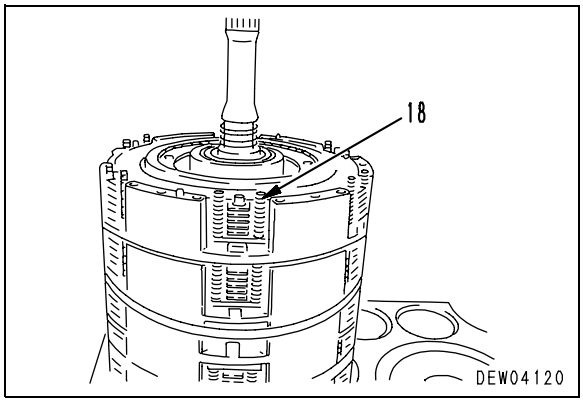
Plate: **30 kg**



7. Spring

Remove spring (18).

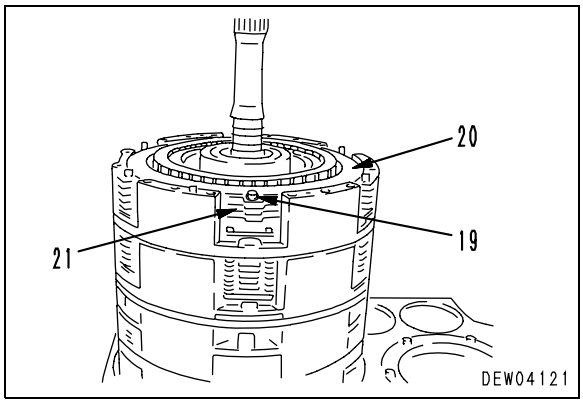
★ This spring is different from the other springs, so keep it separately in a safe place.



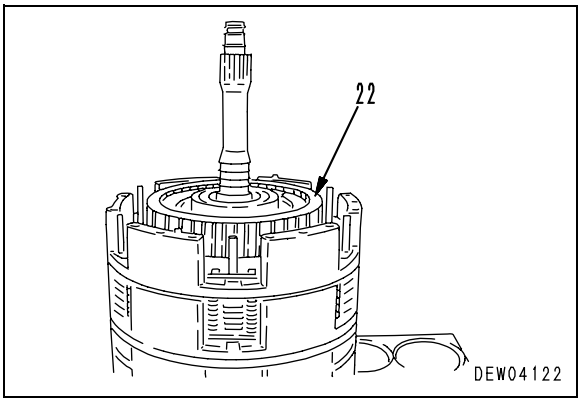
8. Spring, disc, plate

Remove spring (19), disc (20), and plate (21).

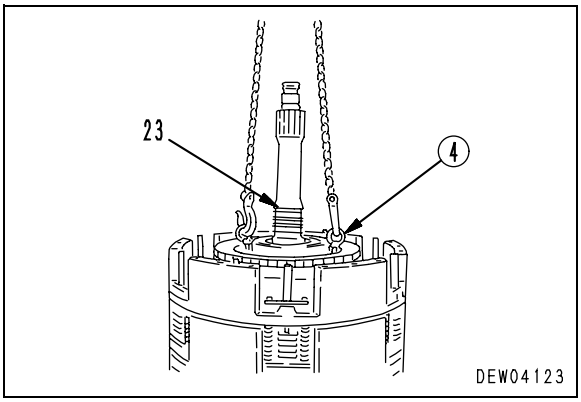
★ There are springs between each plate.



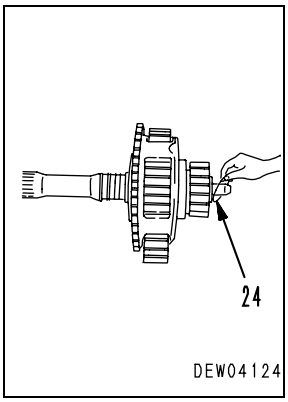
9. No. 1 ring gear
Remove ring gear (22).

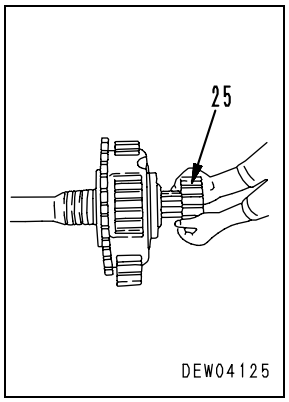


10. Shaft, No. 1 carrier assembly
1) Using eyebolts [4] (Dia. = 12 mm, Pitch = 1.75 mm), lift off shaft and No. 1 carrier assembly (23).

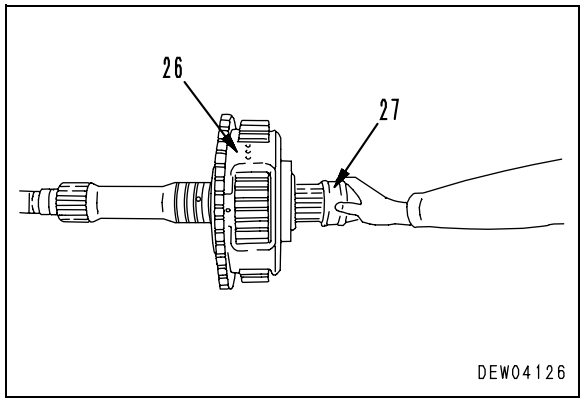


2) Disassemble shaft and No. 1 carrier assembly as follows.
   i) Remove snap ring (24).
   ii) Remove gear (25).

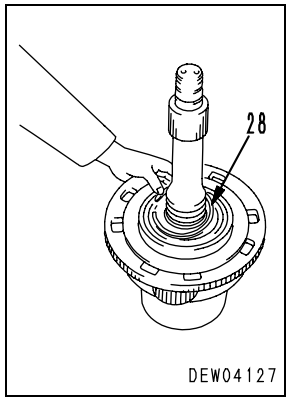


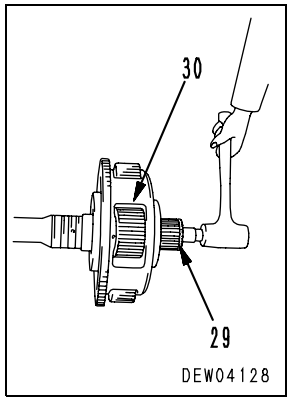


iii) Remove collar (27) from shaft and carrier assembly (26).

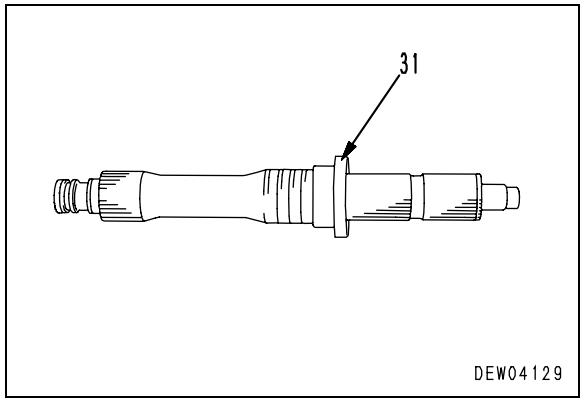


iv) Remove snap ring (28), then remove shaft assembly (29) from carrier assembly (30).

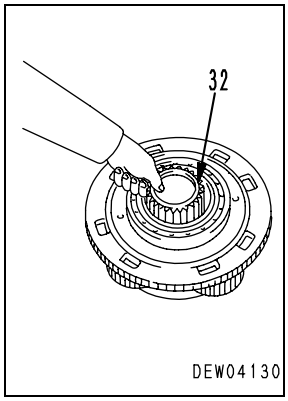


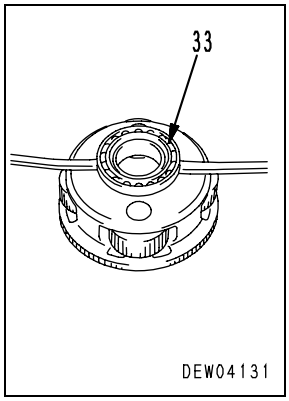


v) Remove bearing (31).

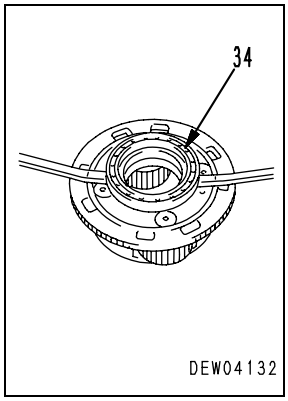


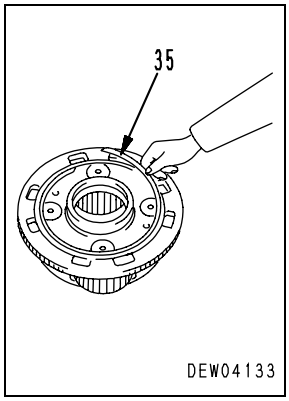
vi) Remove sun gear (32).
vii) Remove bearing (33).



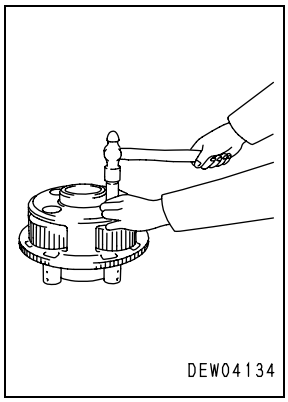


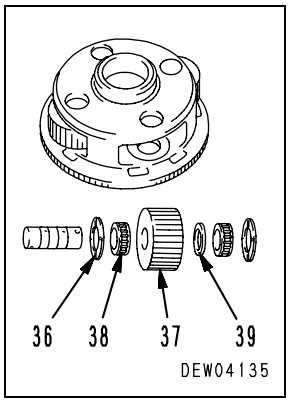
viii) Remove bearing (34).
ix) Remove snap ring (35).



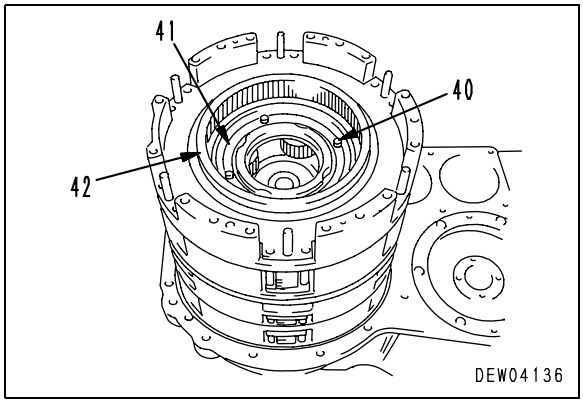


x) Remove pin, then remove thrust washer (36), planetary gear (37), needle bearing (38), and spacer (39).
★ When removing the pin, be careful not to lose the ball.





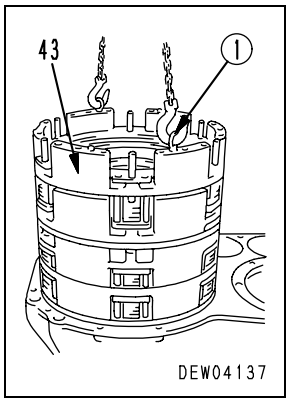
11. No. 2 ring gear
1) Remove mounting bolts (40), then remove plate (41).
2) Remove ring gear (42).

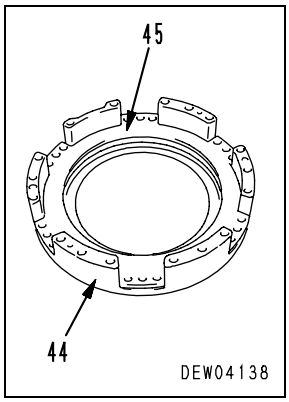


12. No. 1 piston, housing
1) Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off piston and housing (43).

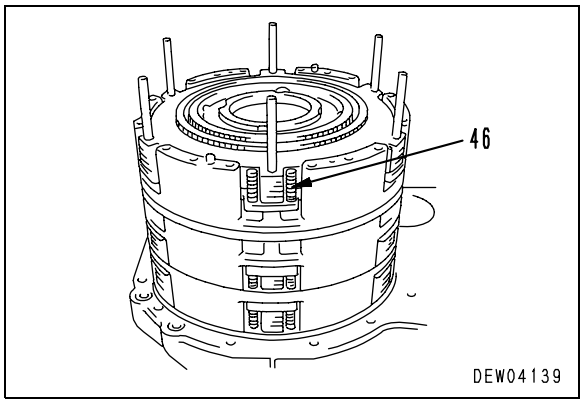
Piston, housing: **65 kg**

2) Remove piston (45) from housing (44).





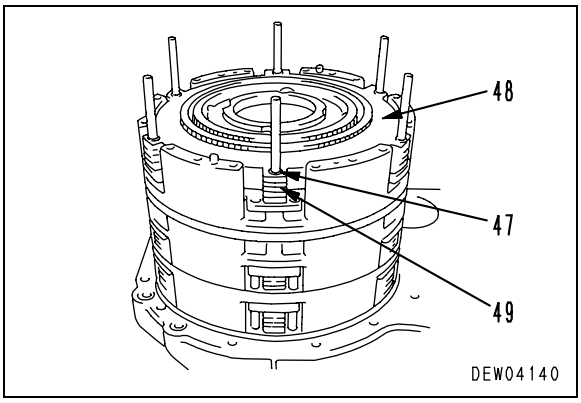
13. Spring
Remove spring (46).
★ This spring is different from the other springs, so keep it separately in a safe place.



14. Spring, disc, plate

Remove spring (47), disc (48), and plate (49).

★ There are springs between each plate.

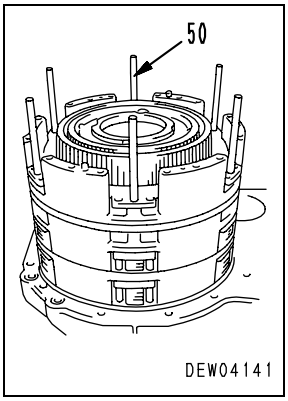


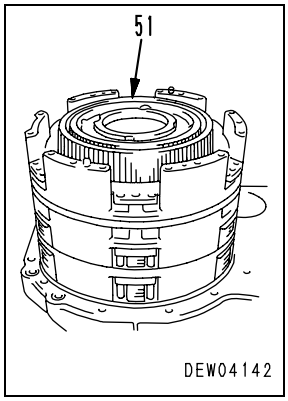
15. Guide Pin

Remove guide pin (50).

16. Ring gear

Remove ring gear (51).



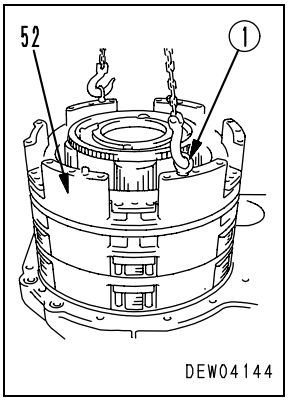


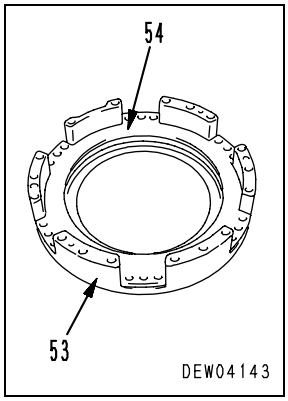
17. No.2 piston, housing

1) Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off piston and housing (52).

Piston, housing: **65 kg**

2) Remove piston (54) from housing (53).

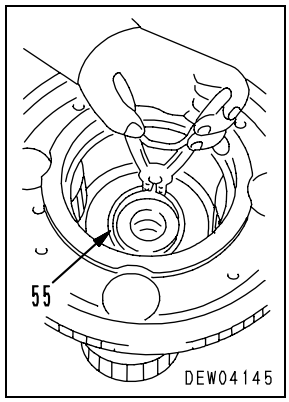


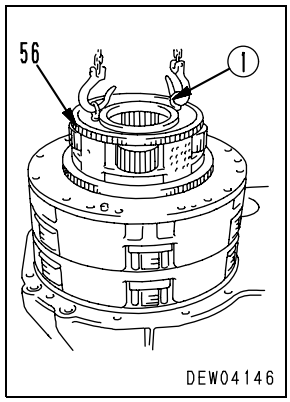


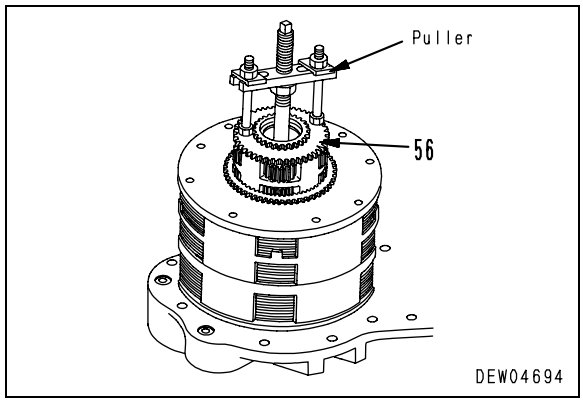
18. No. 2, 3 carrier assembly

1) Remove snap ring (55).
2) Using puller, pull out bearing press-fit portion of No. 2 and 3 carrier assembly (56).
3) Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off carrier assembly (56).

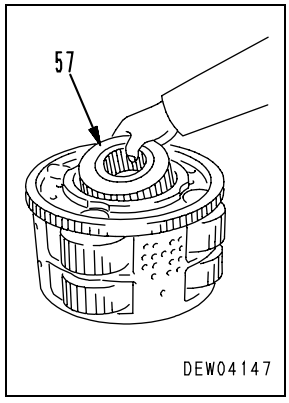
Carrier assembly: **90 kg**

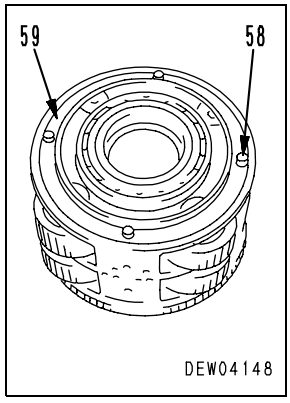




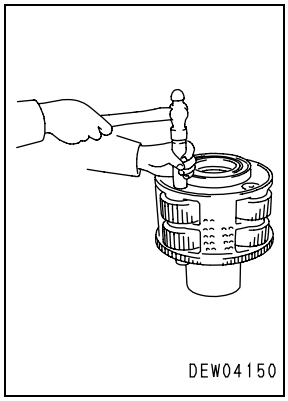


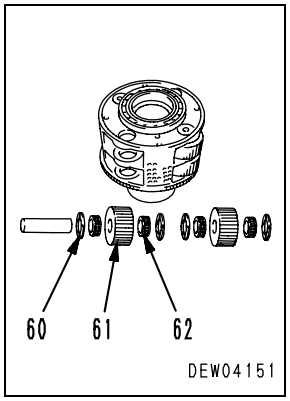
4) Disassemble No. 2 and 3 carrier assembly as follows.
   i) Remove sun gear (57).
   ii) Remove mounting bolts (58), then remove retainer (59).





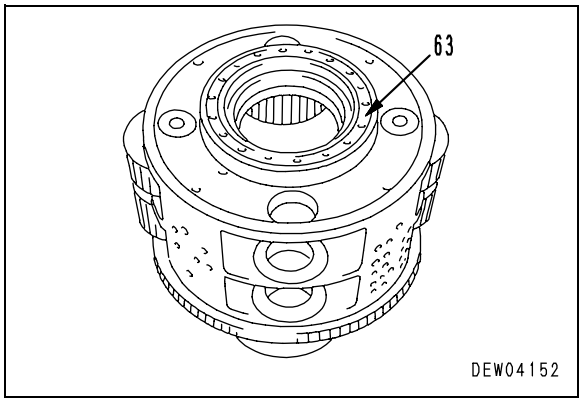
iii) Remove pin, then remove thrust washer (60), planetary gear (61), and needle bearing (62).
★ When removing the pin, be careful not to lose the ball.


DEW04150



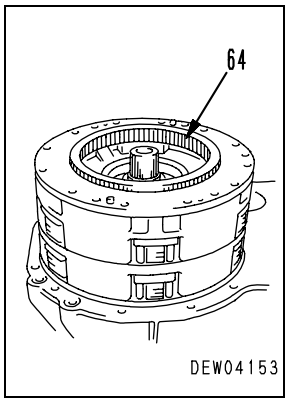
DEW04151

iv) Remove bearing (63).

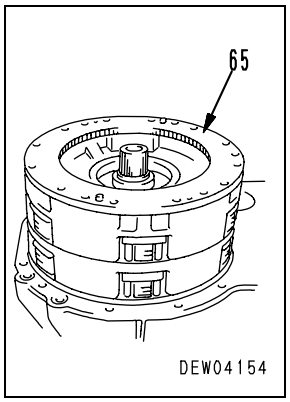


DEW04152

19. Ring gear, plate
1) Remove ring gear (64).
2) Using eyebolts (Dia. = 12 mm, Pitch = 1.75 mm), lift off plate (65).

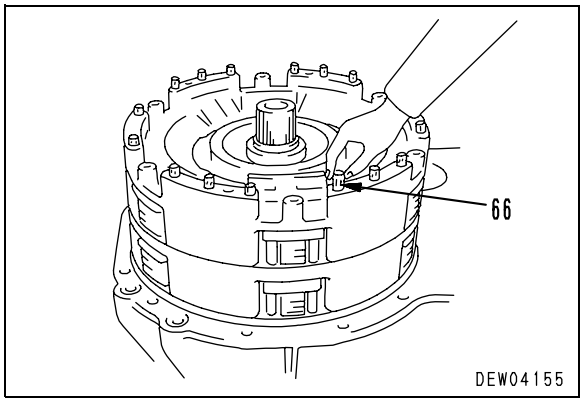


DEW04153



DEW04154

20. No. 3 piston, housing
1) Remove collar (66).

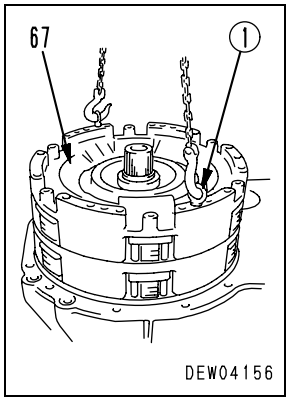


DEW04155

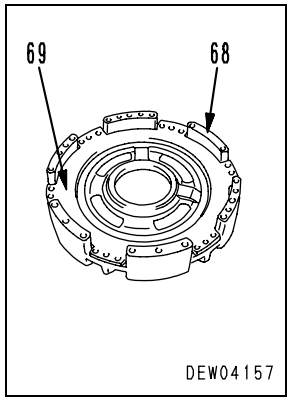
2) Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off piston and housing (67).

Piston, housing: **65 kg**

3) Remove piston (69) from housing (68).

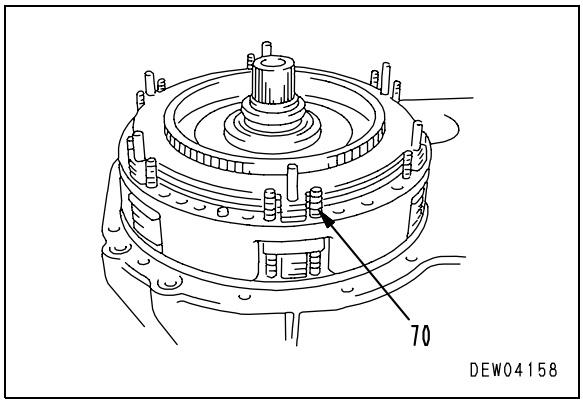


DEW04156



DEW04157

21. Spring
Remove spring (70).
★ This spring is different from the other springs, so keep it separately in a safe place.

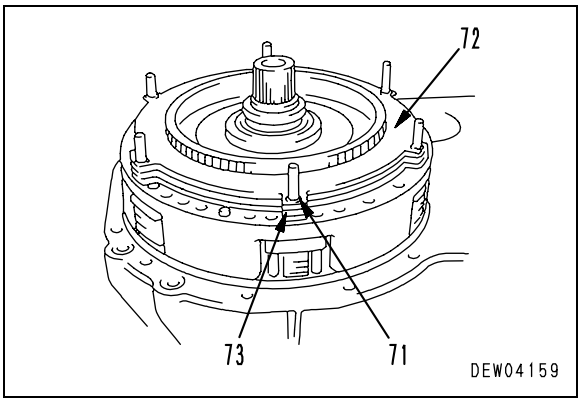


DEW04158

22. Spring, disc, plate

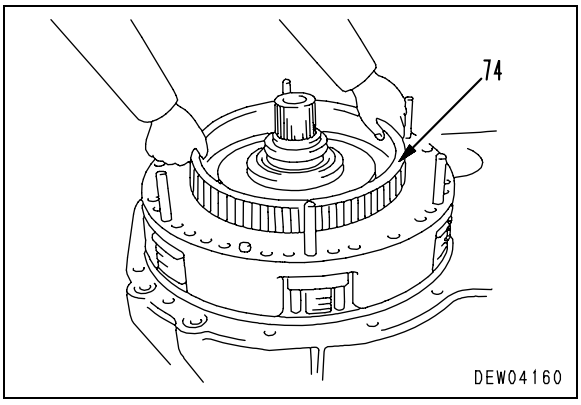
Remove spring (71), disc (72), and plate (73).

★ There are springs between each plate.



23. No. 3 ring gear

Remove ring gear (74).

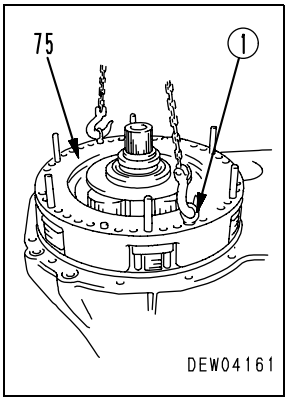


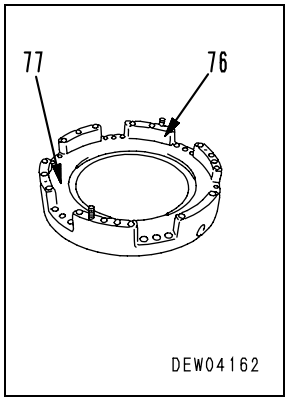
24. No. 4 piston, housing

1) Using eyebolts [1] (Dia. = 12 mm, Pitch = 1.75 mm), lift off piston and housing (75).

Piston, housing: **65 kg**

2) Remove piston (77) from housing (76).

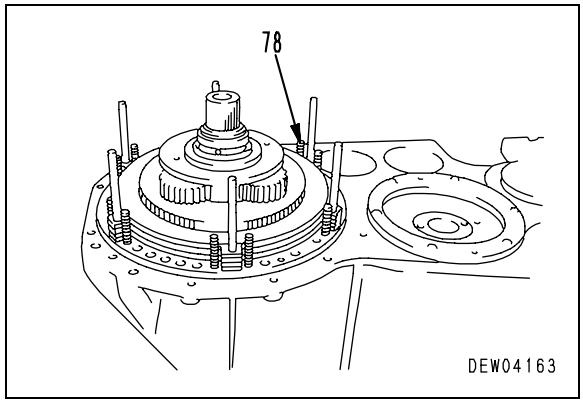




25. Spring

Remove spring (78).

★ This spring is different from the other springs, so keep it separately in a safe place.



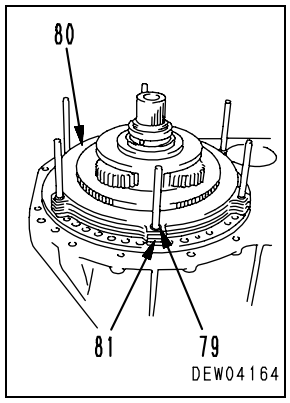
26. Spring, disc, plate

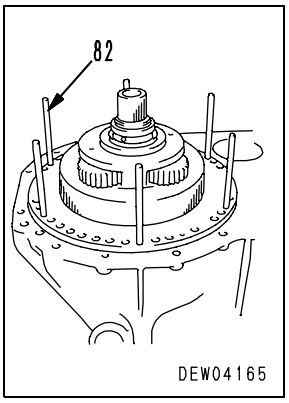
Remove spring (79), disc (80), and plate (81).

★ There are springs between each plate.

27. Guide pin

Remove guide pin (82).





28. Plate

Remove plate (83).