



93208-00610  
August 2011

70TMV-2 SHOP MANUAL  
Disassembly & Reassembly  
Service Standard

*SHOP MANUAL*

*WHEEL LOADER*

*70TMV-2*

**General Information**  
**Disassembly & Reassembly**  
**Service Standard**

Powered by CUMMINS QSB6.7 ENGINE

Serial No. 70C5-4001~

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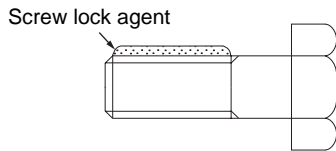
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Parking Brake Actuator .....	54-25
Parking brake actuator removing and installing .....	54-25
Parking brake actuator adjusting .....	54-27
Parking brake actuator disassembling and assembling .....	54-28
Parking Brake .....	54-31
Parking brake removing and installing / disassembling and assembling .....	54-31
70TMV-2 Service Standard Brake Group .....	55-1
Brake Valve .....	55-2
Service Brake .....	55-4
Parking Brake .....	55-5
70TMV-2 Disassembly & Reassembly Operator Station Group .....	74-1
Air Conditioner (S/N 4001~4100) .....	74-2
Air conditioner removing and installing .....	74-2
Air conditioner disassembling and assembling .....	74-4
Compressor V-belt .....	74-7
Air Conditioner (S/N 4101~) .....	74-9
Air conditioner removing and installing .....	74-9
Air conditioner disassembling and assembling .....	74-11
70TMV-2 Service Standard Operator Station Group .....	75-1
Air Conditioner .....	75-2
Air conditioner periodical inspection/servicing .....	75-2
Air conditioner tightening torque .....	75-2

## Screw lock agent application procedure

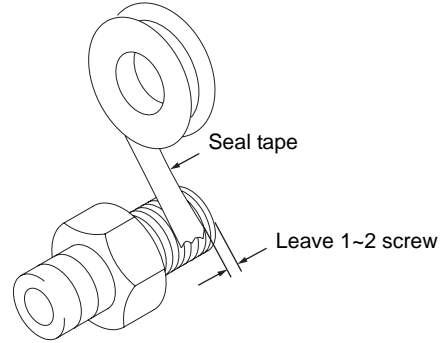
### Through-hole

Apply screw lock agent one or two lines on the male threads.



65ZV00002

## How to wind a seal tape



65ZV00004a

As the screw is tightened by turning clockwise, seal tape must be wound up clockwise direction as shown above. If not, the tape will be loosened or removed while tightening the screw, resulting in oil leakage.

To avoid a piece of seal tape left in the circuit, leave 1 or 2 screws from the end of the thread and start threading it clockwise.

Slightly stretch the tape when cutting it out, and press to fit the tape onto the screw thread.

## Fuel Tank

### Fuel tank removing and installing

#### Fuel tank removing

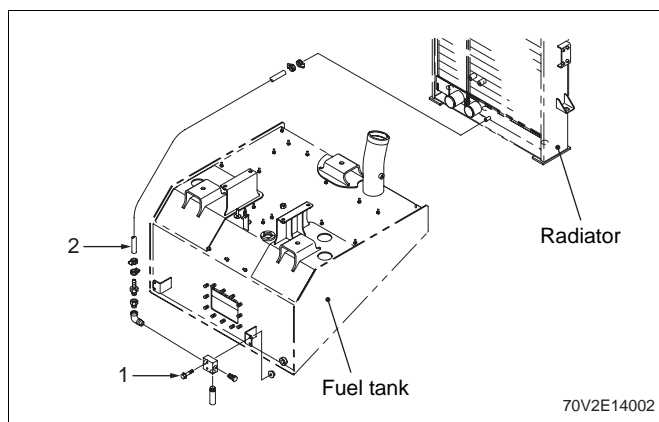
#### **⚠ WARNING**

Unexpected movement of the machine could cause an accident resulting in injury or death. Be sure to observe the following items before starting fuel tank removal:

- Position the machine on level ground, and apply the parking brake.
- Lower the attachment onto the ground, and block the tires with chocks, etc. to prevent them from moving.
- Remove the engine key, and hang a "DO NOT START ENGINE!" tag on the steering wheel.

Before starting work:

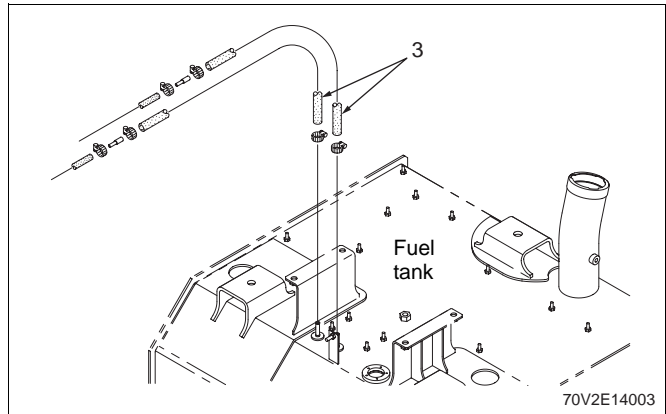
- Drain fuel from the fuel tank.  
(Fuel tank capacity: 270 L (70 gal))
- Remove the engine room.
- Remove the radiator.



1. Remove bolt (1) and remove radiator drain hose (2) from the fuel tank.

#### **Note**

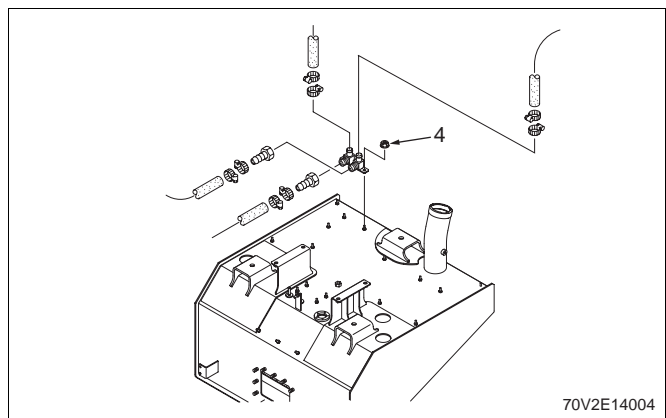
Cover the disconnected hoses with vinyl to protect them from dust and dirt.



2. Put matchmarks on fuel hose (3), and then, disconnect fuel hose (3) from the fuel tank.

#### **Note**

Cover the disconnected hoses with vinyl to protect them from dust and dirt.



3. Remove nut (4) to release the hose nipple, to which hoses from the oil cooler are connected, from the fuel tank.

## Floor Board

### Floor board removing and installing

#### Floor board removing

#### ⚠ WARNING

Unexpected movement of the machine could cause an accident resulting in injury or death.

- Position the machine on level ground, and block the tires with chocks, etc. to prevent them from moving.
- Lower the attachment onto the ground, and release the residual pressure from the hydraulic tank and lines.
- Disconnect the (-) side of the battery.
- Disconnect the (+) side of the battery.

#### IMPORTANT

If a battery terminal is removed from a machine in less than 30 seconds after the key is put into the "OFF" position, it can corrupt the ECM program, which can disable the engine. Always wait 1 full minute to be sure to be past this "write to memory function" prior to removing battery terminals.

Before starting work:

- Remove the decks on both right and left sides of the machine.
- Remove the cab.
- Collect the air conditioner refrigerant (option) using the proper recovery method.


#### Note

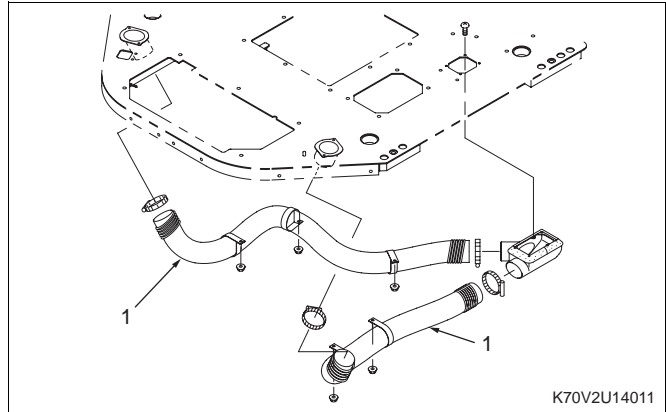
Before disconnecting the electrical couplers, hoses and pipes between the floor board and the chassis, put match marks on them to help during reassembly.

Prepare a drain pan for the oil.

The cab may be removed with the floor board assy.

Be sure to have an adequate overhead clearance and lifting capacity.

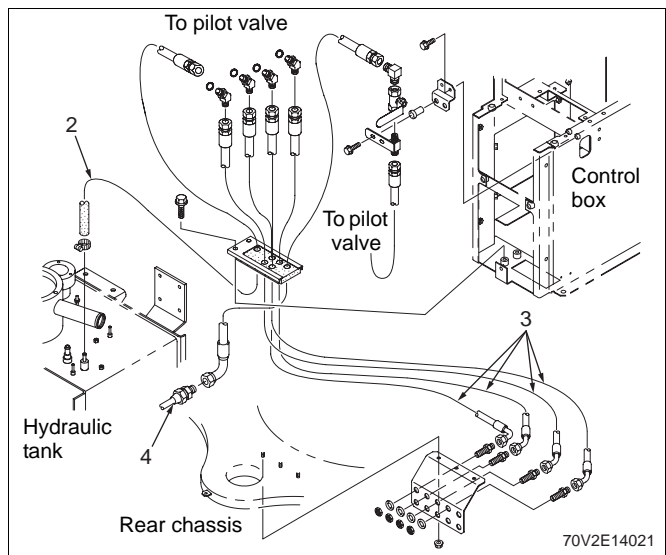
 : Floor board assy with ROPS cab:  
 800 kg (1,750 lbs)



1. Disconnect air duct hose (1) by releasing the hose band.

#### Note

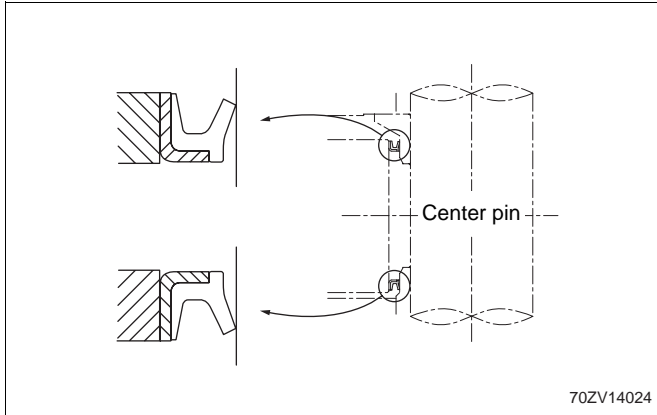
Cover the disconnected hoses with vinyl to protect them from dust and dirt.



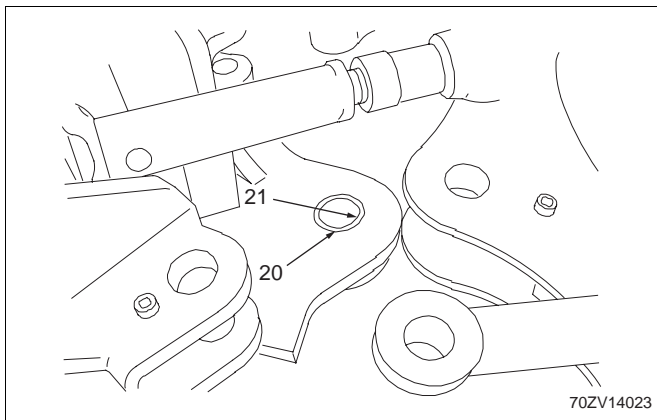
2. Disconnect pilot hydraulic line hoses (2) from the pilot valve at the port located on the hydraulic tank. Disconnect pilot hydraulic line hose (3) from the multiple control valve at chassis side. Disconnect hose (4) to the brake line accumulator.

#### Note

Cover the disconnected hoses with vinyl to protect them from dust and dirt.



**Note**  
Take care of the correct direction of dust seals as shown above.



15. When spherical bearing (21) for the lower center pin is replaced, install the bearing outer ring so that the split is perpendicular to the front - rear line of the machine.

## Center pin installing

For reinstallation, follow the above procedure in reverse order.

## Center pin installation cautions

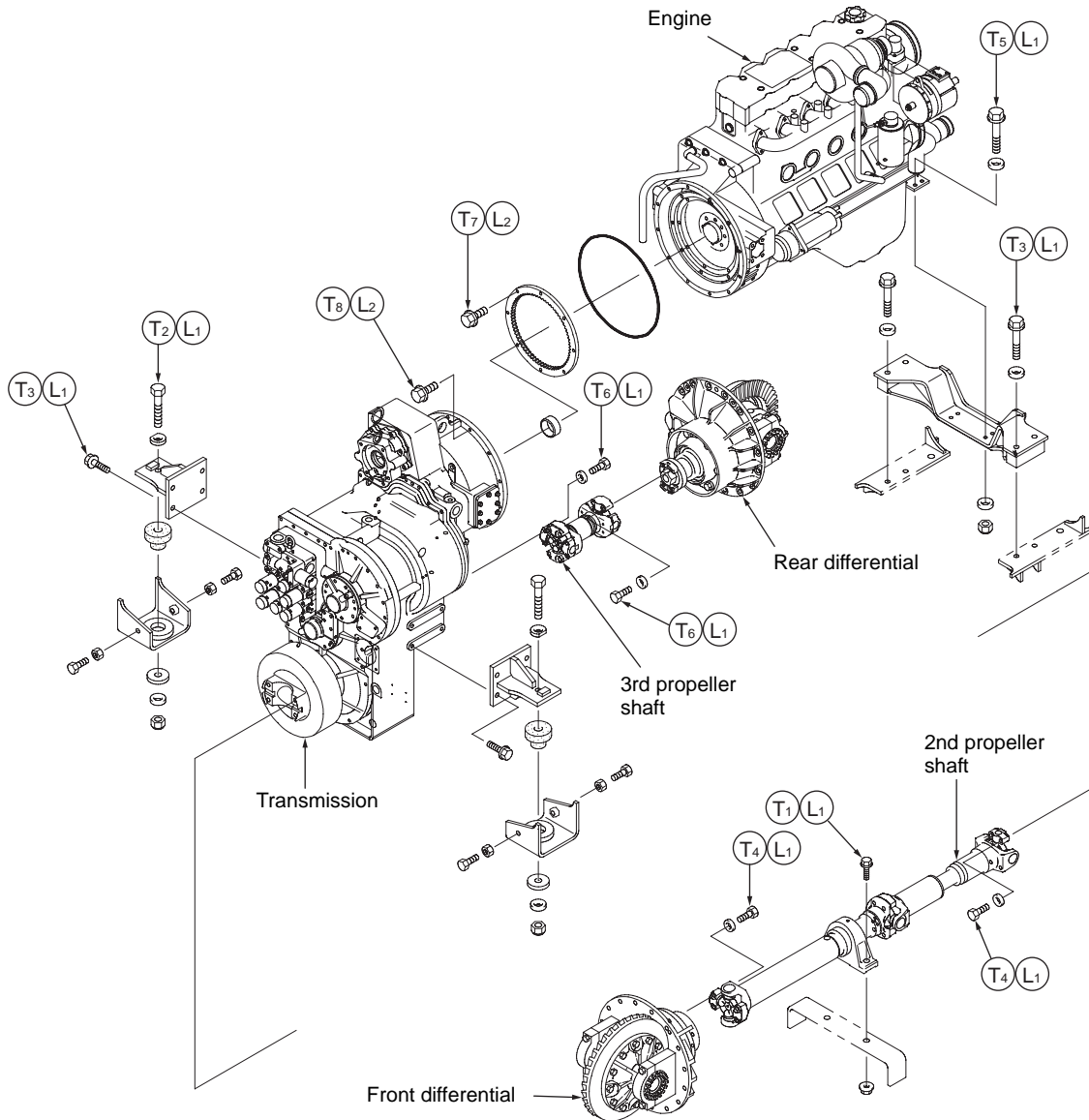
- After reinstallation, grease the center pins, and operate them. During operation, check the pins for abnormal noise and looseness.
- Check each section for oil leakage.
- No oil leakage should be found in any part.
- Be sure to completely bleed the brake of air.  
For air bleeding procedure, refer to the "Service brake air bleeding procedure" page 24-20.

## **⚠ WARNING**

Insufficient air bleeding in brake oil line could cause an accident resulting in injury or death be sure to completely bleed the brake of air.

# Power Line

## Power line tightening torque



K70V2U24001



- T<sub>1</sub>: 441 N-m (45 kgf-m) (325 lb-ft)
- T<sub>2</sub>: 417 N-m (42.5 kgf-m) (307 lb-ft)
- T<sub>3</sub>: 230 N-m (23.5 kgf-m) (170 lb-ft)
- T<sub>4</sub>: 142 N-m (14.5 kgf-m) (105 lb-ft)
- T<sub>5</sub>: 94 N-m (9.6 kgf-m) (69 lb-ft)
- T<sub>6</sub>: 80 N-m (8.2 kgf-m) (59 lb-ft)
- T<sub>7</sub>: 67 N-m (6.8 kgf-m) (49 lb-ft)
- T<sub>8</sub>: 53 N-m (5.4 kgf-m) (39 lb-ft)

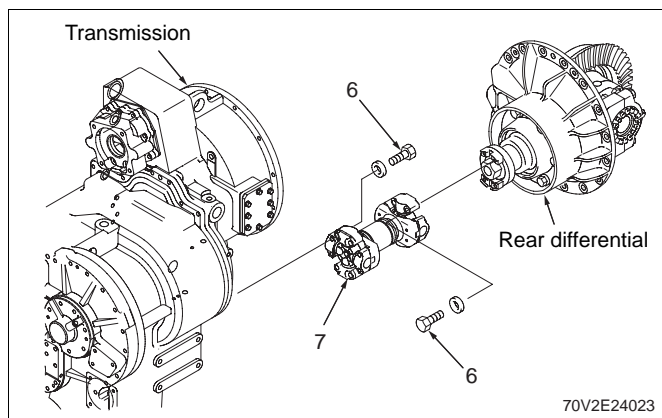


- L<sub>1</sub>: Screw lock agent (Loctite<sup>®</sup> 262)
- L<sub>2</sub>: With lubrication oil (Engine oil or gear oil)



**Note**

Always replace drive shaft bolts with new ones - never reuse them.


### Third propeller shaft removing



1. Remove bolt (6).

 : Bolt (6): 80 N-m (8.2 kgf-m) (59 lb-ft)  
 : Screw lock agent (Loctite® 262) application

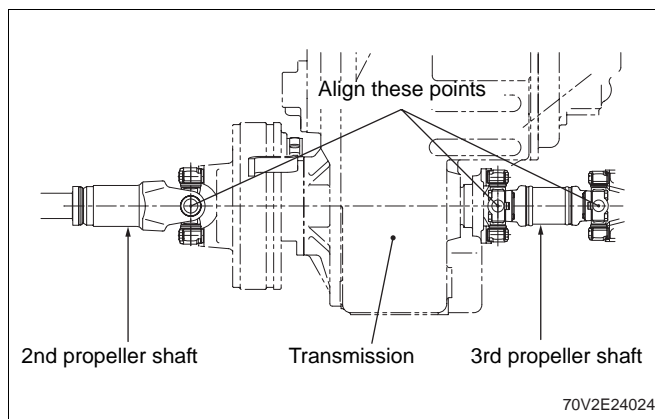
2. Remove third propeller shaft (7).

 : Third propeller shaft: 10 kg (25 lbs)

### Propeller shaft installing

For reinstallation, follow the above procedure in reverse order.

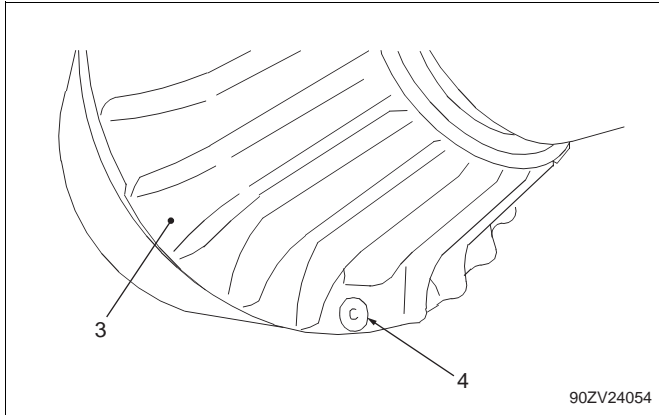
### Propeller shaft installation cautions



During reinstallation, align the direction of the flange yokes on the second and third propeller shaft sides of the transmission. (Refer to Section 22.)

[Difference in the yoke phase (direction) will cause the propeller shaft damage and "knocking" during a turn.] Also adjust the shafts so that the grease nipples on them come to the same direction.

24-22  
 70TMV-2 Disassembly & Reassembly Power Group  
 Front Axle Assembly



5. Turn drain plug (4) to the bottom of wheel hub (3) to drain oil.

 : Gear oil: Approx. 20 L (5.3 gal)

**Note**

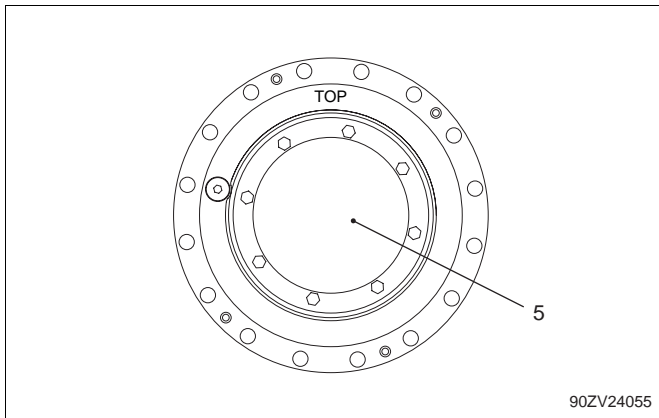
To replace the oil, refer to the oil amount described below.

Wheel hub section:  
 10 L (2.6 gal) for left side,  
 10 L (2.6 gal) for right side



Differential section (front): 30 L (8 gal)  
 Total oil amount for front axle: 50 L (13.2 gal)

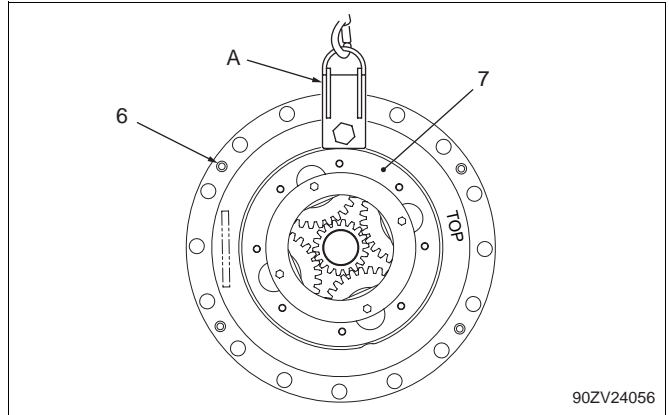
**Reference**

Differential section (rear): 32 L (8.5 gal)  
 Total oil amount for rear axle: 52 L (13.7 gal)





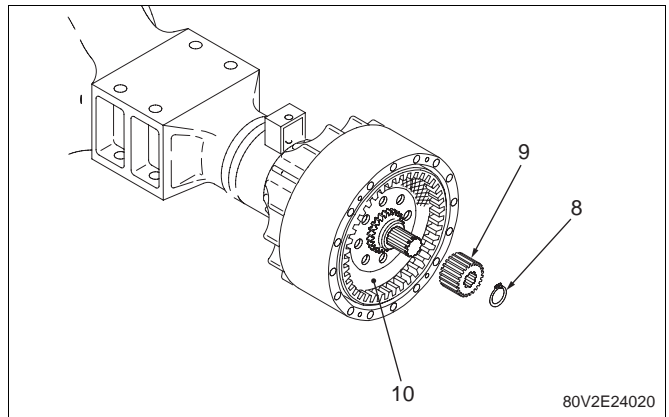
6. Remove cover (5).

 : Retainer bolt: 90 N-m (9.2 kgf-m) (67 lb-ft)  
 : Screw lock agent (Loctite® 262) application



7. Temporarily sling the spider using hoisting tool (A). Remove four spider retainers (6) to remove spider assembly (7).

 : Bolt (6): 86 N-m (8.8 kgf-m) (64 lb-ft)  
 : Spider assembly: 60 kg (132 lbs)

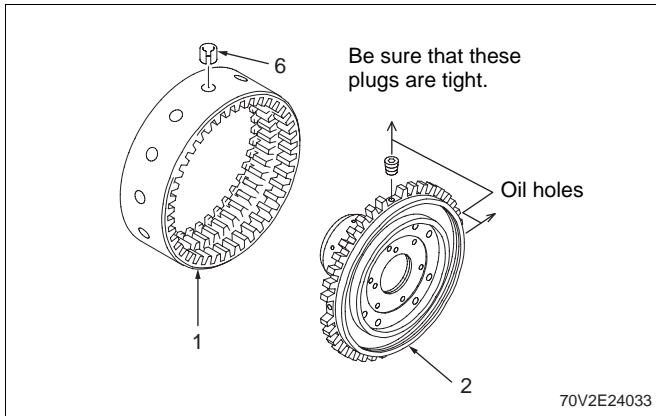


8. Remove snap ring (8), and then, remove sun gear (9).  
 9. Remove friction plate (10).

## Internal gear hub assembly cautions

### IMPORTANT

- Replace all the O-rings with new ones.
- Clean and check all the parts. If a part is damaged, replace it with a new one.



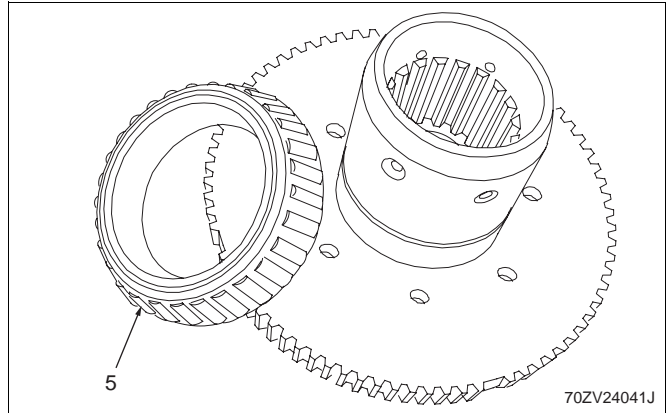
- When reassembling internal gear (1) to internal gear hub (2), align the oil holes of internal gear hub (2) with that of spring pin (6).

### Note

To reinstall the internal gear hub (2) on the axle, the brake oil path should be aligned to these oil holes. In addition, the oil hole is used for the alignment of spring pin (6).

Moreover, spring pin (6) is used for the target to measure the brake disc wear.

- Check that the snap ring is properly inserted into the groove of internal gear (1).



- Before reinstallation of taper roller bearing (5), be sure to heat the bearing to 90~120°C (194~248°F) in oil.
- Apply grease to the O-rings.
- For disassembling and reassembling the brake piston, refer to "Service Brake" page 54-24.

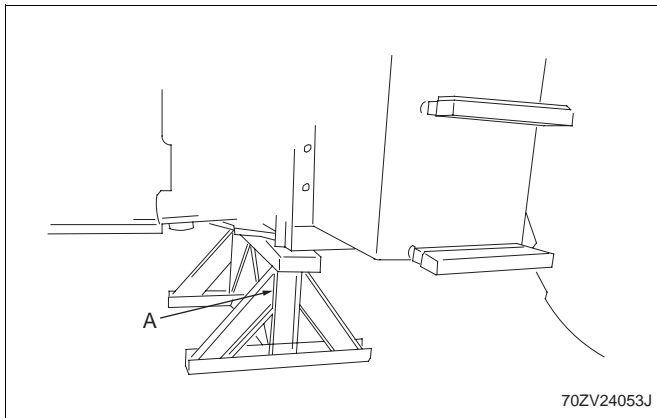
## Rear axle assembly removing and installing

### Rear axle assembly removing

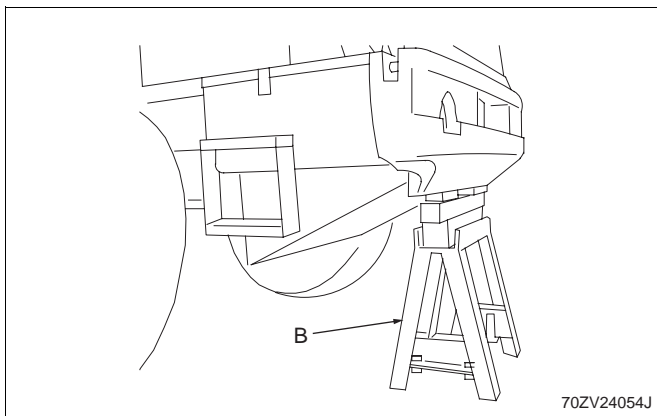
#### **⚠ WARNING**

Unexpected movement of the machine may cause an accident resulting in injury or death. To prevent such an accident, observe the following items:

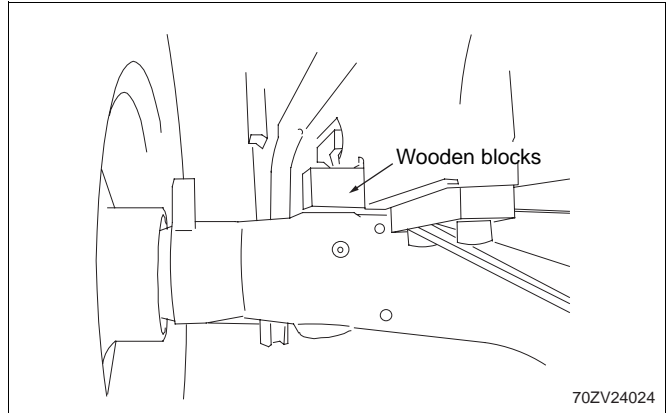
- Park the machine on level ground.
- Apply the articulation stopper.
- Block the front wheels with chocks or the like to prevent the wheels from moving.



1. Lower the attachment onto the ground. Lift the front wheels while supporting the machine with the attachment. Place stand (A) under the rear chassis (behind the center pin) to support the chassis.



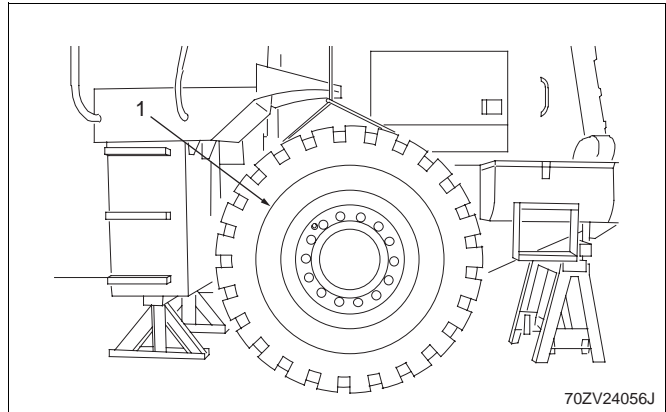
2. Lift the boom, and then, roll the attachment back to level. Check that the rear wheels are off the ground. Place stand (B) under the counter weight to support it.





3. Insert wooden blocks into the swing stopper section to prevent the axle from swinging. Block both sides.

#### **⚠ WARNING**

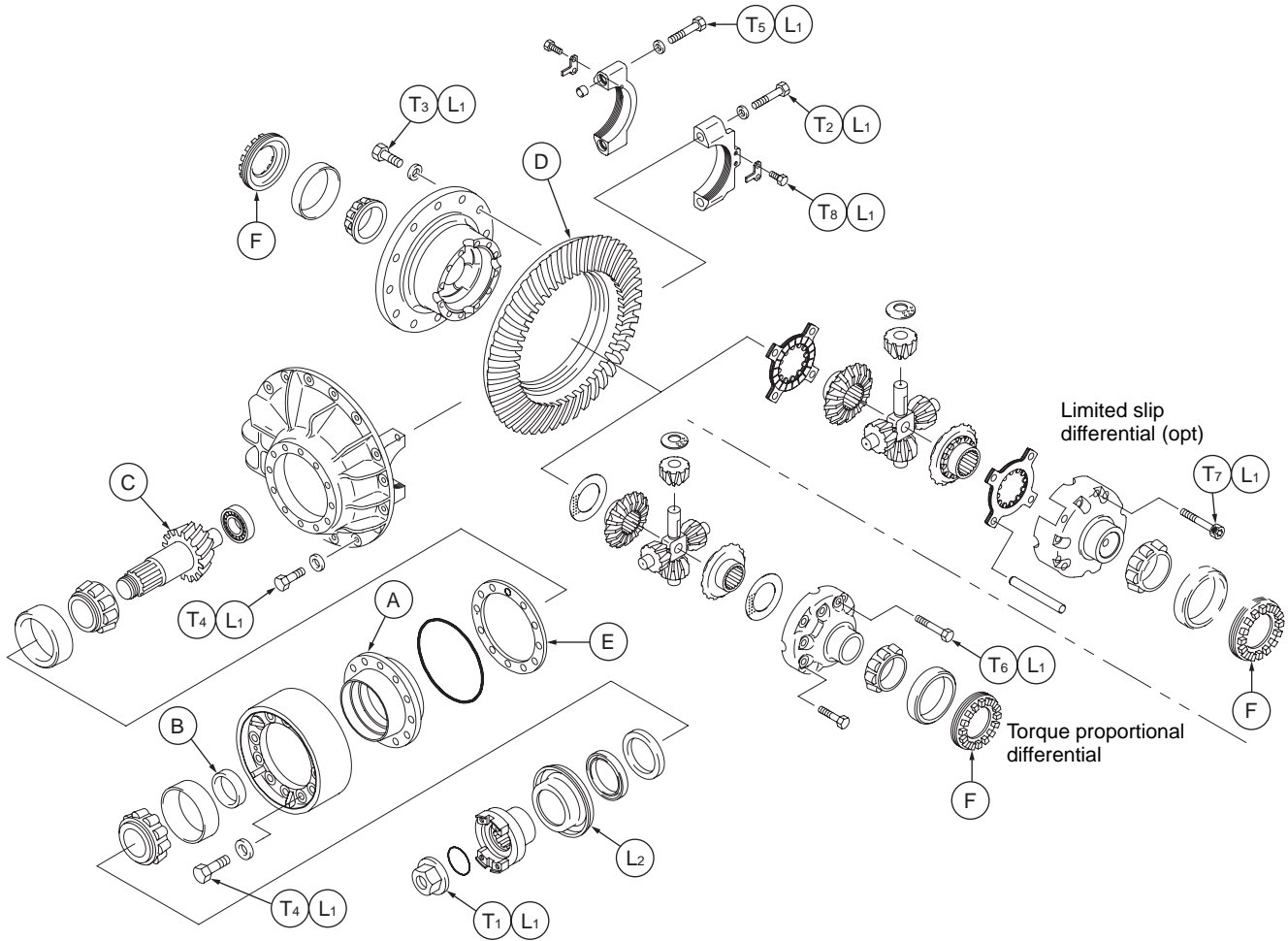
The axle will not be balanced when a tire is removed. If wooden blocks are not inserted, your fingers or body may be caught in the machine.



4. Remove right and left wheel and tire assemblies (1).

-  : Tire of 1 wheel: 325 kg (715 lbs)
-  : Retainer bolt:  
892 N-m (91.0 kgf-m) (658 lb-ft)

**Rear differential tightening torque**



K70V2U24003

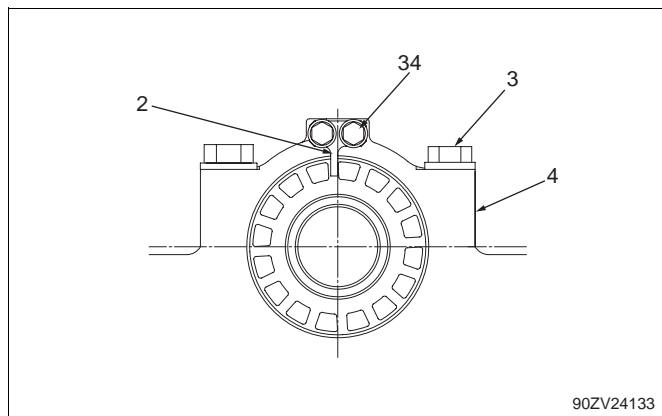


- T<sub>1</sub>: 883 N-m (90.0 kgf-m) (651 lb-ft)
- T<sub>2</sub>: 515 N-m (52.5 kgf-m) (380 lb-ft)
- T<sub>3</sub>: 330 N-m (33.7 kgf-m) (244 lb-ft)
- T<sub>4</sub>: 314 N-m (32.0 kgf-m) (232 lb-ft)
- T<sub>5</sub>: 231 N-m (23.5 kgf-m) (170 lb-ft)
- T<sub>6</sub>: 132 N-m (13.5 kgf-m) (98 lb-ft)
- T<sub>7</sub>: 127 N-m (13.0 kgf-m) (94 lb-ft)
- T<sub>8</sub>: 53 N-m (5.35 kgf-m) (39 lb-ft)






- L<sub>1</sub>: Screw lock agent (Loctite® 262) application
- L<sub>2</sub>: Liquid gasket (Three Bond 1215 or a locally procured Room Temperature Vulcanizer (RTV) that does not contain acetic acid.)

24-62  
70TMV-2 Disassembly & Reassembly Power Group  
Differential Assembly





90ZV24133

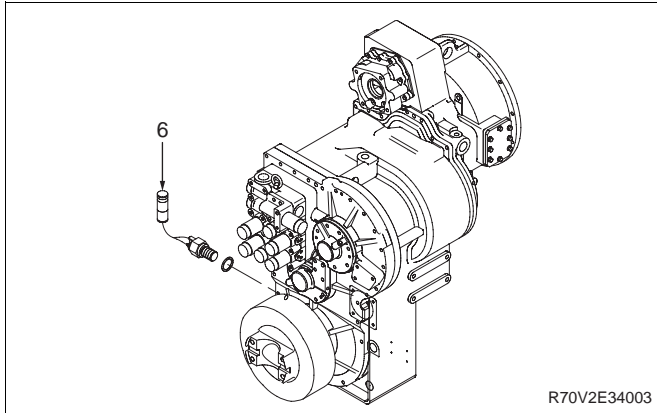
13. Tighten bolts (3) of bearing cap (4).

-  : Bolt (3, Bevel gear side):  
231 N-m (23.5 kgf-m) (170 lb-ft)
-  : Bolt (3, Opposite side (without bushing)):  
515 N-m (52.5 kgf-m) (380 lb-ft)
-  : Screw lock agent (Loctite<sup>®</sup> 262) application

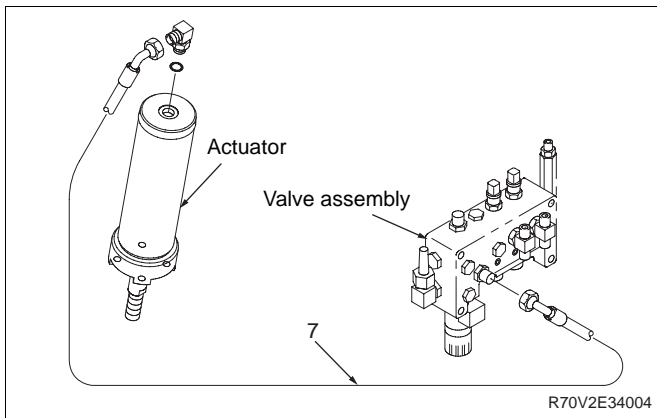
14. Mount lock plate (2), and then, tighten bolts (34) to fix the lock plate.

-  : Bolt (34): 53 N-m (5.35 kgf-m) (39 lb-ft)
-  : Screw lock agent (Loctite<sup>®</sup> 262) application

## 70TMV-2 Disassembly & Reassembly Torque Converter and Transmission Group Torque Converter and Transmission Assembly



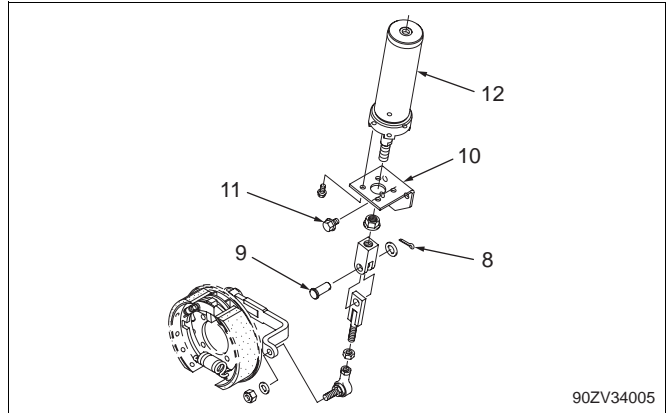
3. Disconnect electric wire (6) from the speed meter sensor and speed sensor.




4. Release the parking brake and disconnect the link of the actuator. If the machine has low accumulator oil pressure, feed oil into hose (7) from an external source.

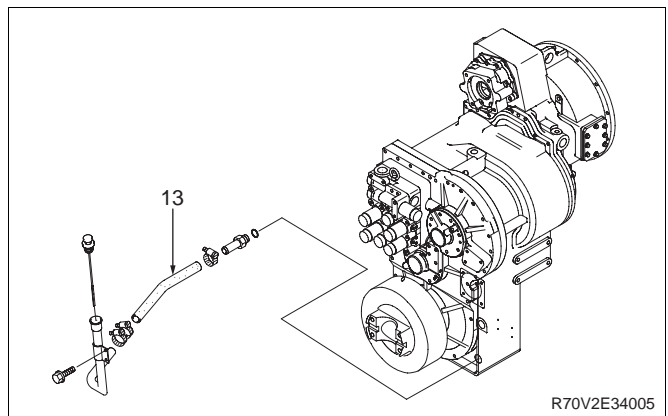
### Note

If there is no oil source, apply a rope or cable to the link, and then, pull it down using a bar to compress the spring of the actuator. After that, remove the pin.



5. Remove split pin (8), and then, remove pin (9).
6. Remove bolts (11) from actuator mounting bracket (10). Disconnect the oil source, and then, remove actuator (12).

 : Actuator (with bracket): 10 kg (22 lbs)



7. Disconnect hose (13) from the transmission level gauge.

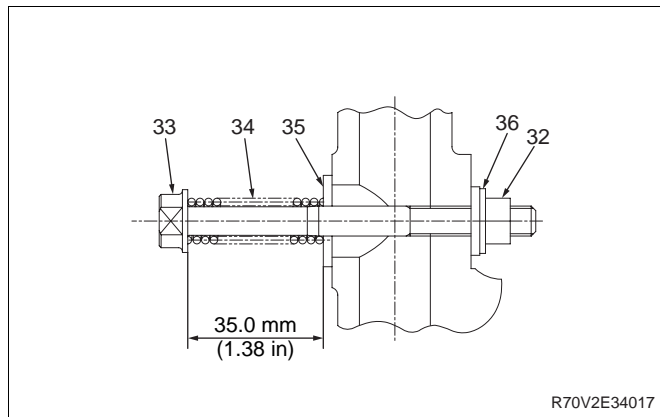
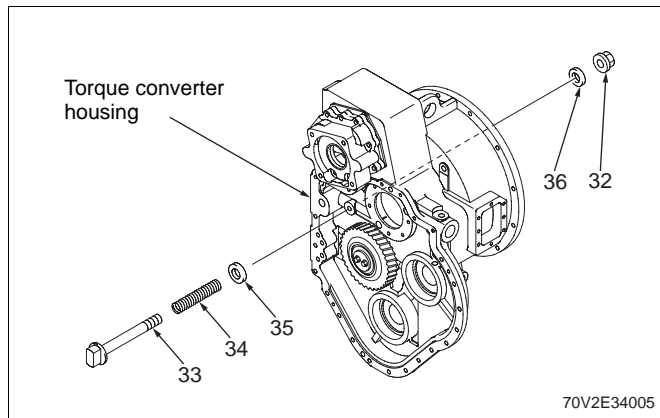
### Note

After removing the hose, plug or cover the disconnected part with clean vinyl to protect from dust and dirt.

**Torque converter assembly assembling****IMPORTANT**

- Clean and check all the parts. If a part is damaged, replace it with a new one.
- Before reassembly, apply transmission oil to the parts.

1. Turn over the torque converter housing.

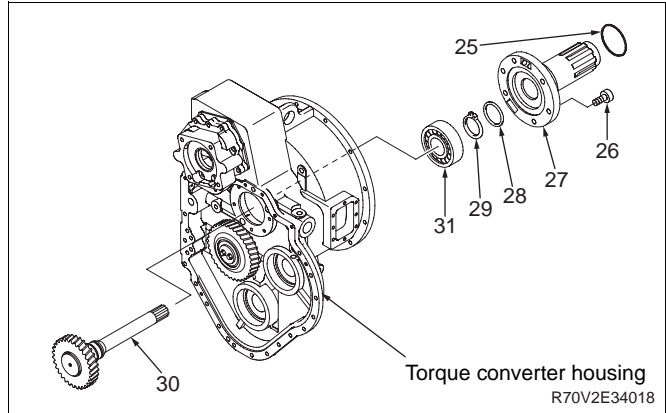


2. Install spring (34) and washer (35) to bolt (33).
3. Install bolt (33) to the housing.

**IMPORTANT**

Adjust the clearance between the torque converter housing and bolt (33) to 35.0 mm.

4. Install washer (36) and nut (32) onto bolt (33).





5. Install turbine shaft bearing (31).
6. Install turbine shaft (30) and snap ring (29).
7. Attach seal ring (28).

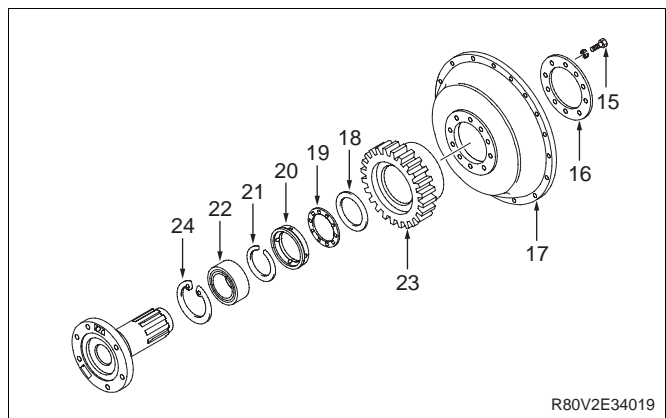
**Note**

Apply grease to seal ring (28), and then, insert it into the groove.


8. Tighten bolts (26) to fix stator shaft (27), and then, install seal ring (25).


 Bolt (26): 59 N-m (6 kgf-m) (43 lb-ft)

 With lubrication oil (Engine oil or gear oil)



9. Install needle bearing (22) and snap rings (21)(24) into gear (23). Install plate (16) to pump impeller (17), and then, attach spacer (20), thrust bearing (19), and thrust washer (18) in order.

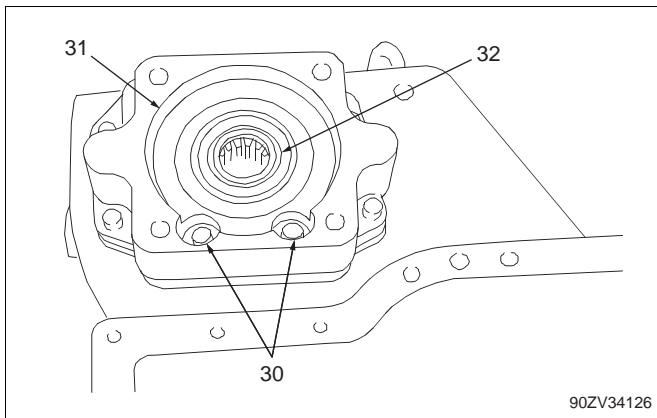
 Bolt (15): 59 N-m (6 kgf-m) (43 lb-ft)

 With lubrication oil (Engine oil or gear oil)


## Transmission assembly assembling

### Note

- For clutch pack disassembly and reassembly, refer to the "disassembling and assembling" section of each clutch pack.
- Clean and check all the parts. If a part is damaged, replace it with a new one. Refer to Section 35 for wear limits.
- When assembling, apply transmission oil to the parts.
- Replace all the seals and packings with new ones.
- When installing each clutch pack assembly, manually turn the gears to check that the gears are engaged properly.

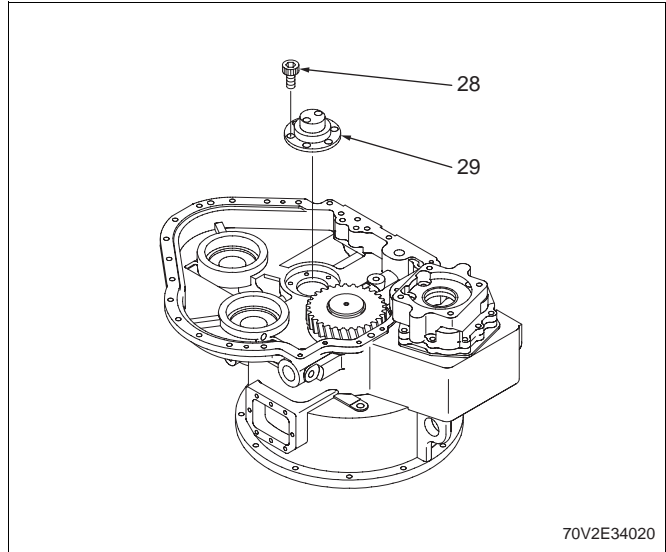


1. Install torque converter gear pump (31) with bolt (30).


 Bolt: 53 N-m (5.4 kgf-m) (39 lb-ft)

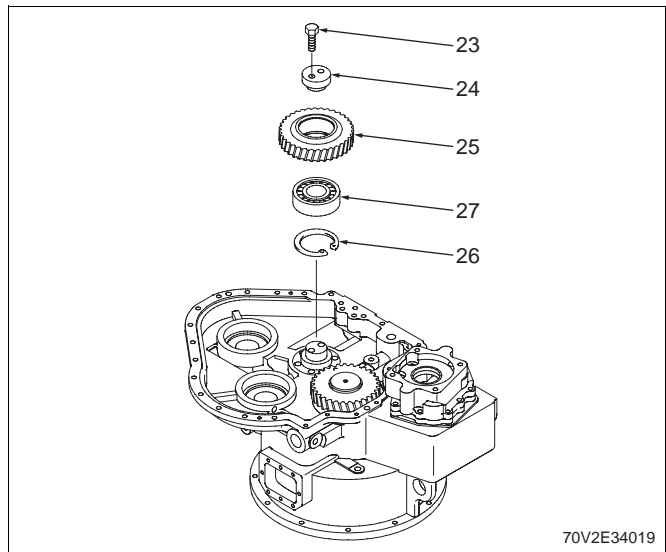
### Note

Check the thrust clearance (0.5~0.9 mm) (0.020~0.035 in) at pump shaft (32) (PTO shaft). Tap the shaft with a soft hammer to check the thrust clearance, if necessary.




2. Install shaft (29) with bolt (28).

 Bolt: 59 N-m (6 kgf-m) (43 lb-ft)



3. Install gear (25), bearing (27) and snap ring (26) onto shaft (29).  
Install plate (24) and tighten bolt (23).

 Bolt: 53 N-m (5.4 kgf-m) (39 lb-ft)

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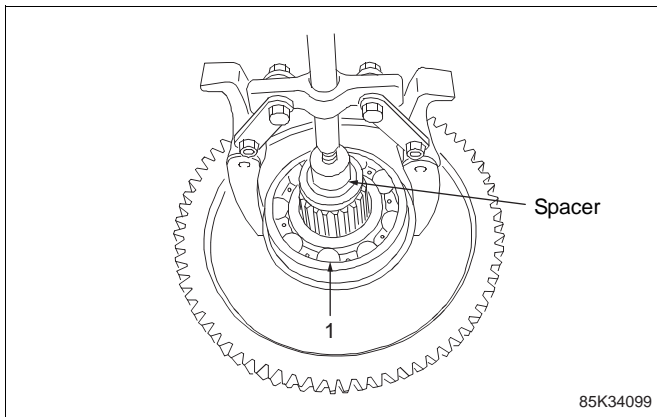
## Transmission 1st/3rd Speed Clutch Pack

### Transmission 1st/3rd speed clutch pack disassembling and assembling

#### Transmission 1st/3rd speed clutch pack disassembling

**Note**

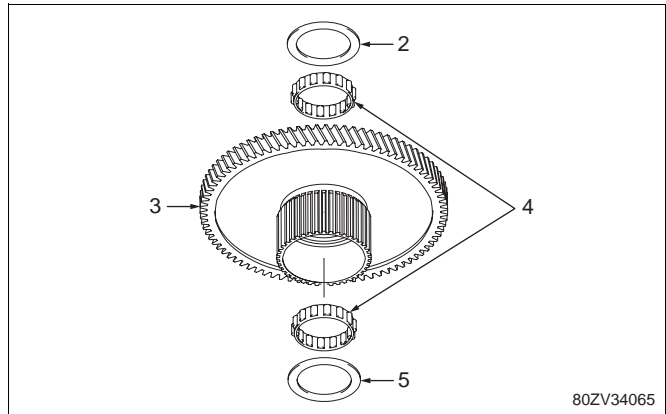
This disassembling and reassembling procedures for the 1st and 3rd clutch packs are basically the same. The different points are described for each procedure.



1. Remove ball bearing (1) using a puller.

**Note**

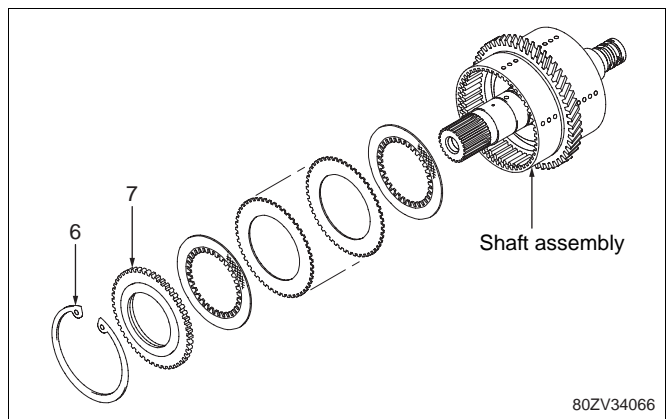
Use a spacer over the shaft to protect the shaft and inner bearing from damage.



2. Remove thrust washer (2), and then, remove rear gear (3).  
Using an internal or blind hole puller, remove needle bearings (4) and thrust washer (5).

**Note**

When reassembling, install thrust washers (2)(5) so that the notch faces to gear (3).



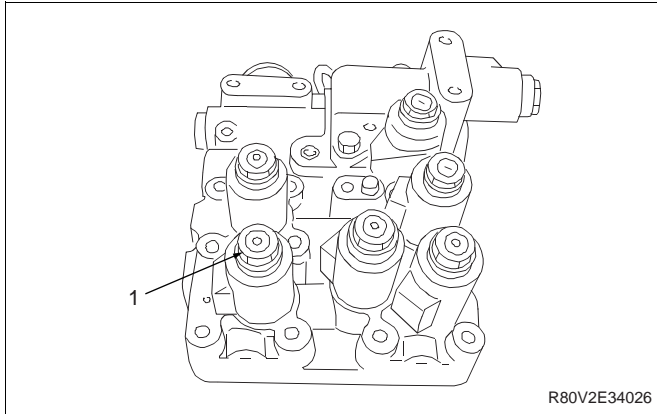
3. Remove snap ring (6) and backing plate (7).

## Control valve disassembling and assembling


### Control valve disassembling

#### Note

Clean the control valve.



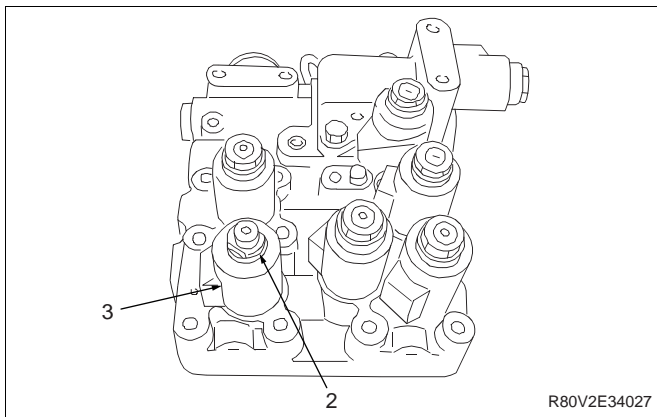
1. Remove nut (1).

 : Nut: 10 N-m (1.0 kgf-m) (7 lb-ft)

#### Note

Nut width across flat: 30 mm

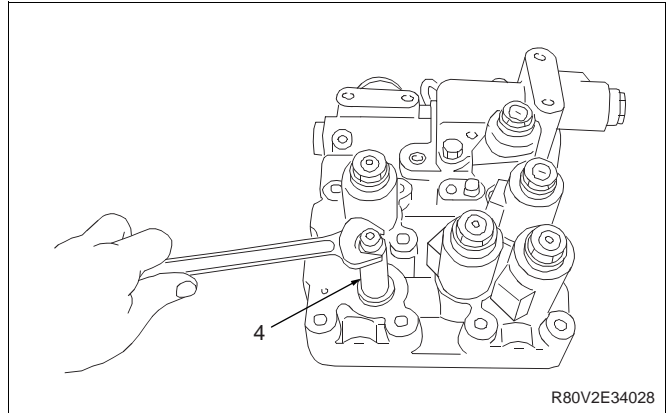
For other valves, follow the same procedure.




2. Remove O-ring (2), and then, remove coil (3).

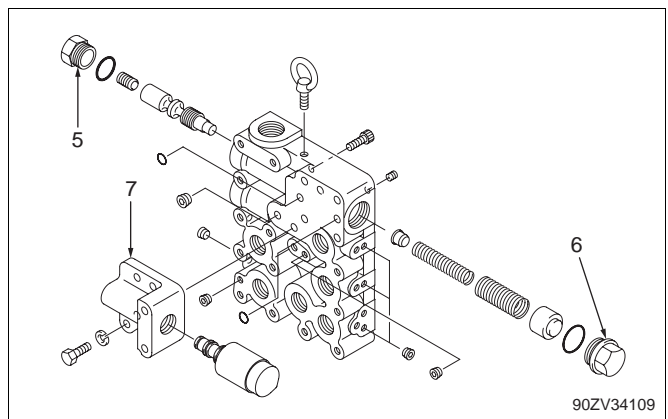
#### Note

For other solenoid valves, follow the same procedure.



3. Remove valve (4) using a 17 mm wrench.

 : Valve: 34 N-m (3.5 kgf-m) (24 lb-ft)

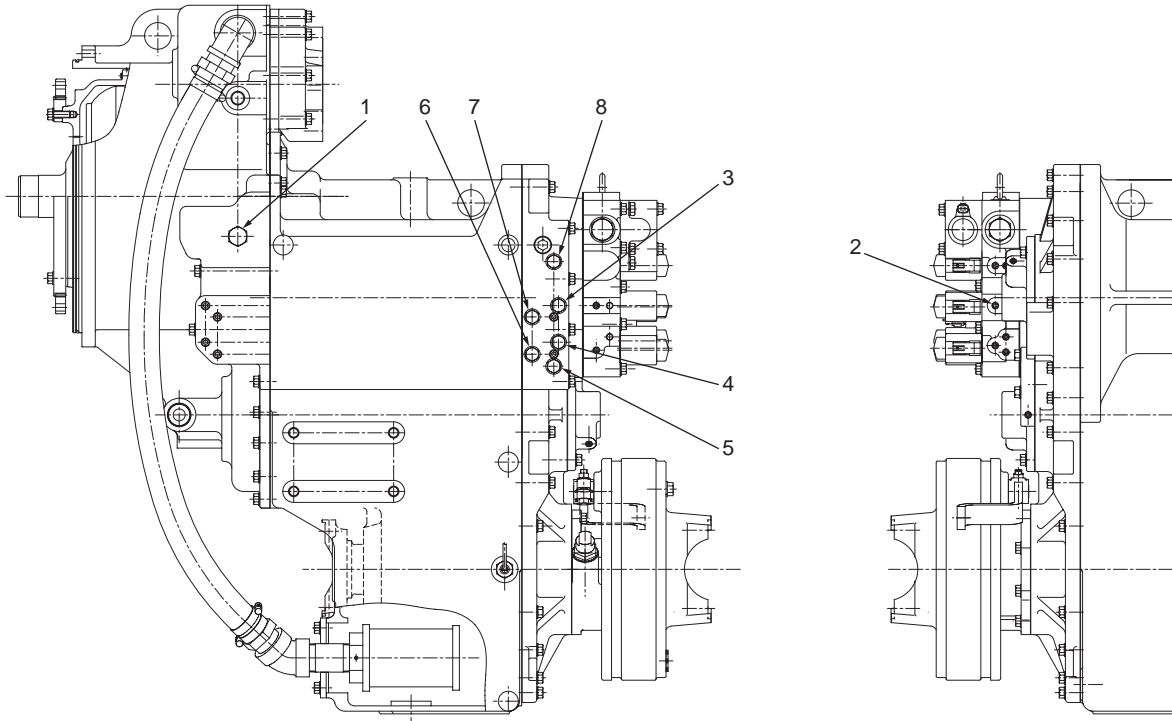


4. Remove plugs (5)(6), and then, remove the parts from the inside.

#### Note

Do not remove trimmer body (7) unless absolutely necessary.

## Clutch Oil Pressure

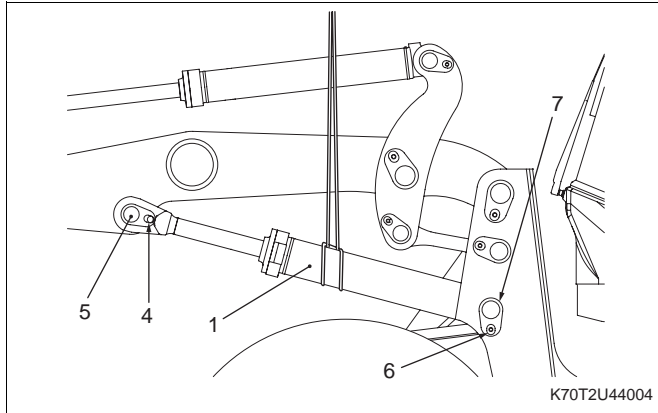


70V2E35003


## Clutch oil pressure standard value

(Oil temperature 50~80°C (120~180°F))


No.	Measuring port location	Measuring port size	Oil pressure MPa (kgf/cm <sup>2</sup> ) (psi)		Shift lever position	
			Engine revolution (rpm)			
			800 (Low idle)	2,600 (High idle)		
1	Torque converter inlet	PT1/2	0.03~0.5 (0.3~5.5) (4.3~78)	0.2~0.5 (2.0~5.5) (28~78)	All speed range	
2	Clutch oil pressure	Main oil pressure	1.3±0.2 (13±2) (185±28)	1.5±0.2 (15±2) (213±28)	All speed range	
3		Forward clutch oil pressure			PT1/4	Forward
4		Reverse clutch oil pressure			PT1/4	Reverse
5		1st speed clutch oil pressure			PT1/4	1st speed
6		2nd speed clutch oil pressure			PT1/4	2nd speed
7		3rd speed clutch oil pressure			PT1/4	3rd speed
8		4th speed clutch oil pressure			PT1/4	4th speed



3. Remove lock bolt (4) and pin (5).

 Bolt: 231 N-m (23.5 kgf-m) (169 lb-ft)

4. Remove lock bolt (6) from retainer pin (7) on the bottom side. Remove pin (7), and then, sling boom cylinder (1).

 Bolt: 231 N-m (23.5 kgf-m) (169 lb-ft)

#### Note

Cover the disconnected hoses with plastic, plugs, or caps to protect them from dust, water and dirt.  
For the detailed description of cylinder disassembly and reassembly, refer to "Hydraulic cylinder disassembling and assembling" page 44-16.

### Boom cylinder installing

To reinstall the boom cylinder, follow the above removal procedure in reverse order.

### Boom cylinder installation cautions

Be sure the pins accept grease after installation.

### Cylinder air bleeding procedure

#### IMPORTANT

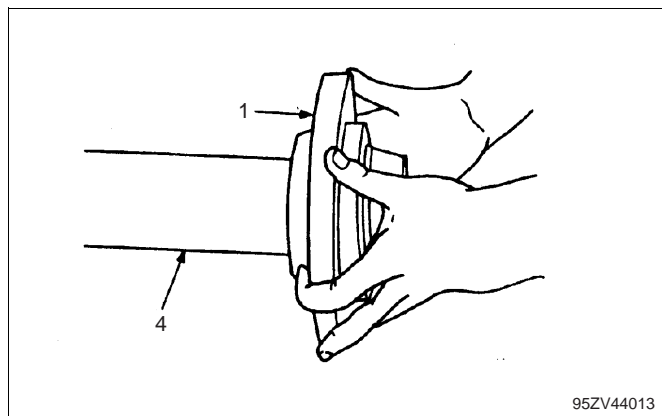
After repairing or replacing a cylinder, be sure to bleed the cylinder of air, or the piston seal or back-up ring may be seized.

- (a) While operating the engine at low-idling speed, operate the cylinder piston for 4 to 5 strokes.

#### Note

Stop the piston about 100 mm (4.0 in) before stroking fully.

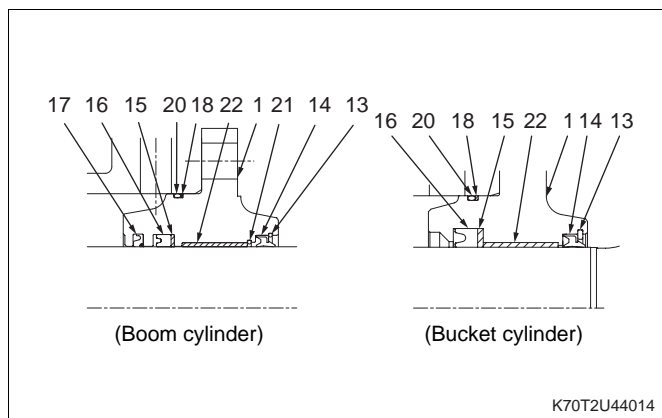
- (b) After that, stroke the cylinder piston fully to both ends 4 to 5 times.  
(c) Add hydraulic oil to the tank, and check the cylinder and its piping for oil leakage.



## Hydraulic cylinder assembling

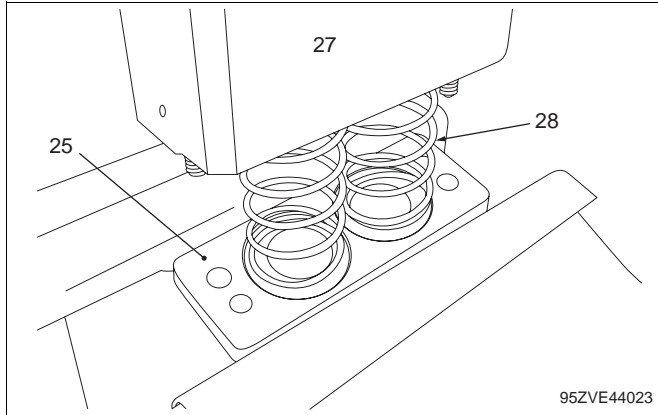
To reassembling the hydraulic cylinders, follow the above removal procedure in reverse order.

9. Remove rod cover (1) from piston rod (4).

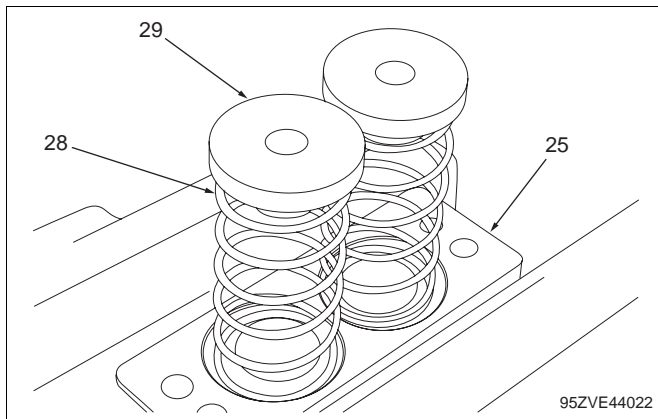


10. Remove snap ring (13), scraper ring (14), back-up ring (15), U-packing (16), buffer ring (17), back-up ring (18) O-ring (20), stop ring (21) and bushing (22) from rod cover (1).

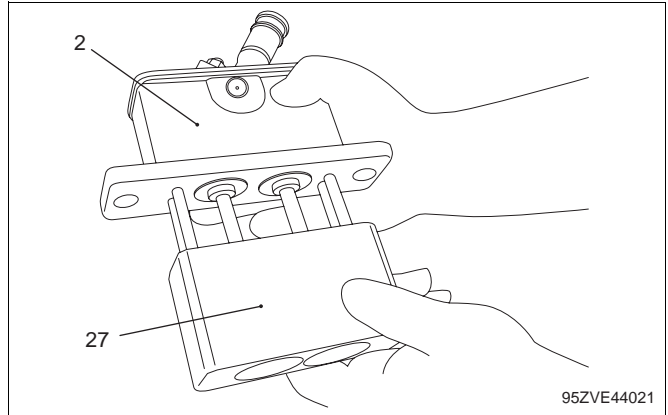
44-30  
70TMV-2 Disassembly & Reassembly Hydraulic Group  
Pilot Valve



19. Remove cover (2) and detent casing (27) from center plate (25).  
Be advised that fixing discs (29) on outer springs (28) may be stuck to detent casing (27) with grease, and could be dropped.



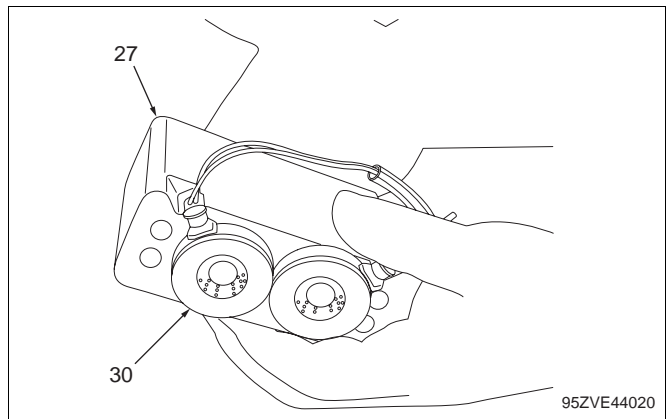
20. Remove outer springs (28) and fixing discs (29) on center plate (25).



21. Remove detent casing (27) from cover (2).

**Note**

The push rod may be fall off the detent bush without the steel ball.

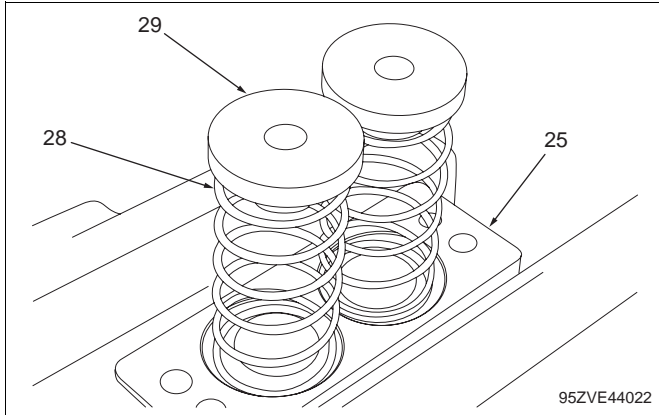


22. Remove solenoid coil (30) from detent casing (27).

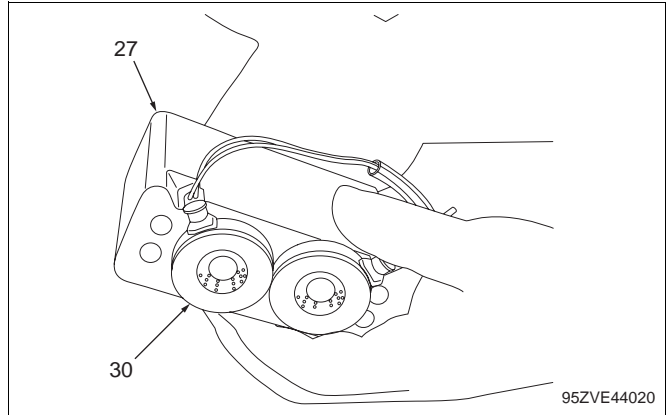
**Note**

While removing solenoid coil (30), do not pull the electrical harness.

44-40  
70TMV-2 Disassembly & Reassembly Hydraulic Group  
Pilot Valve



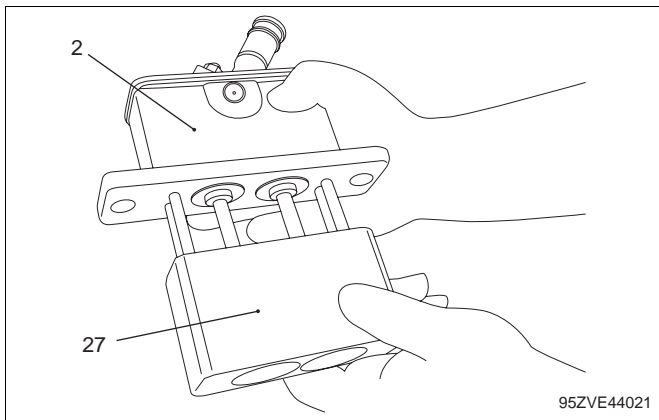
14. Remove outer springs (28) and fixing discs (29) on center plate (25).



16. Remove solenoid coil (30) from detent casing (27).

**Note**

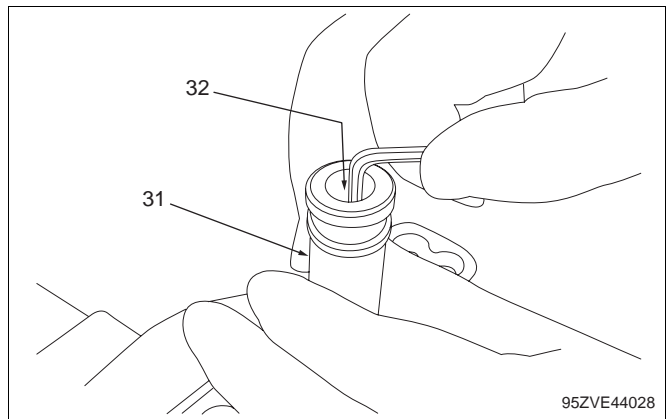
While removing solenoid coil (30), do not pull the electrical harness.




15. Remove detent casing (27) from cover (2).

**Note**

The push rod may fall off the detent bush without the steel ball.

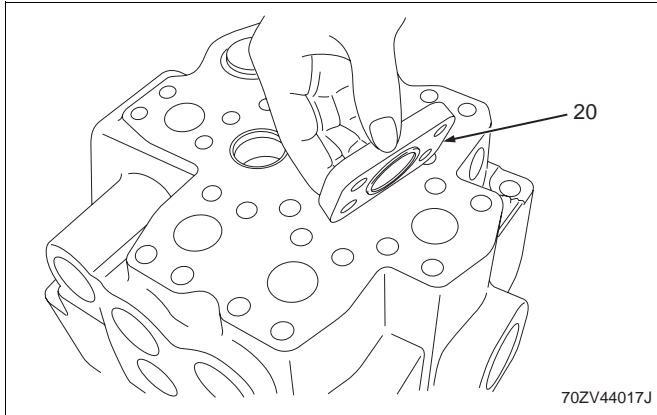


17. Remove lever (31) by loosening socket bolt (32) with a hexagon (Allen) wrench.

: Socket bolt (32):  
6.9 N-m (0.7 kgf-m) (5.1 lb-ft)


**Note**

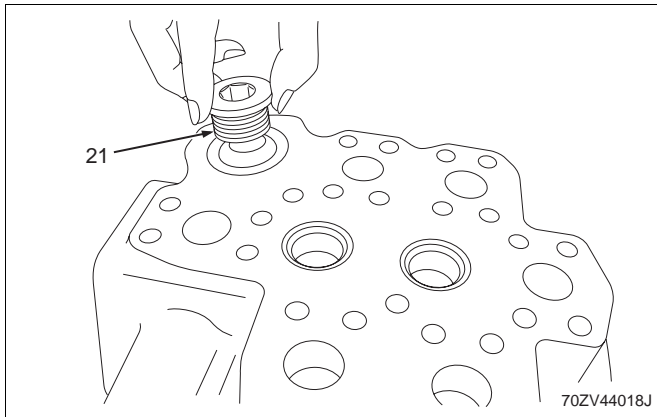
Loctite® 241 is applied requiring bigger torque to loosen the bolt.



9. Remove the hexagon bolts and remove cap (20).


Hexagon width across flat: 8 mm (0.31 in)

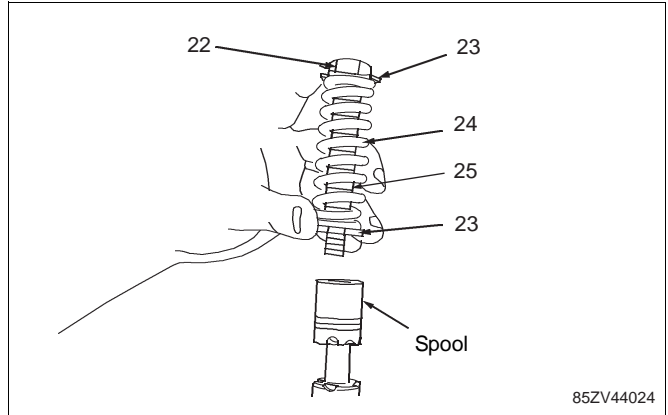
 Bolt: 65 N-m (6.6 kgf-m) (48 lb-ft)



10. Remove plug assembly (21) and remove the O-ring.


Hexagon width across flat: 17 mm (0.67 in)


 Plug (21): 410 N-m (41.8 kgf-m) (302 lb-ft)



11. Set the spool assembly in a rise, and then, loosen bolt (22) to remove.

Hexagon width across flat: 10 mm (0.39 in)

 Bolt (22): 18 N-m (1.8 kgf-m) (13 lb-ft)

 Screw lock agent (Loctite® 262) application

12. Remove spring seat (23), spring (24), stopper (25) from each spool (there are two spools).

#### Note

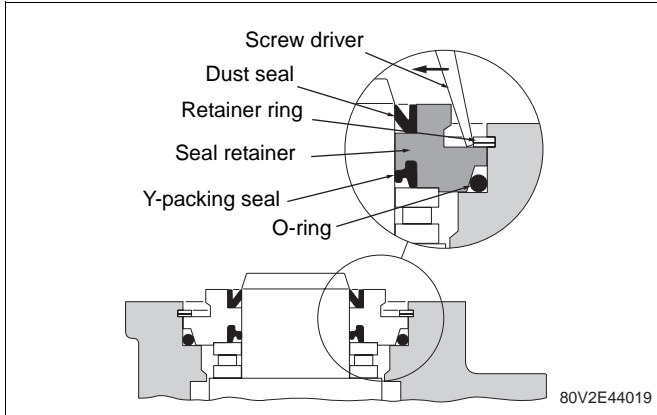
Cover the spool to protect it from being scratched.

### Multiple control valve assembling

To reassemble the multiple control valve, follow the above removal procedure in reverse order.

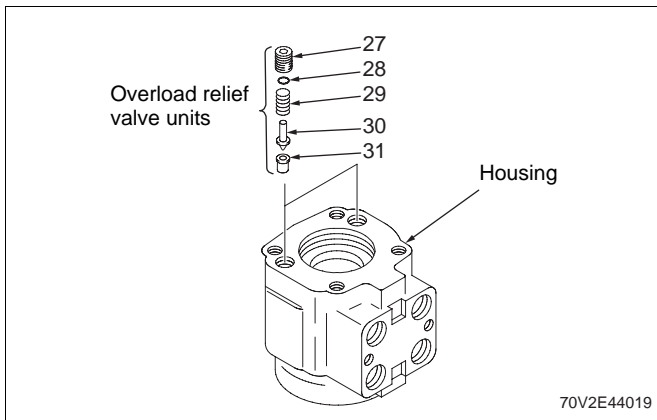
### Multiple control valve assembly cautions

- Clean and check all the parts. If a part is defective, replace or repair it.
- Replace all the O-rings with new ones.
- Apply a thin coat of hydraulic oil or grease to each part before reassembly.
- Apply the specified torque to tighten each main part.



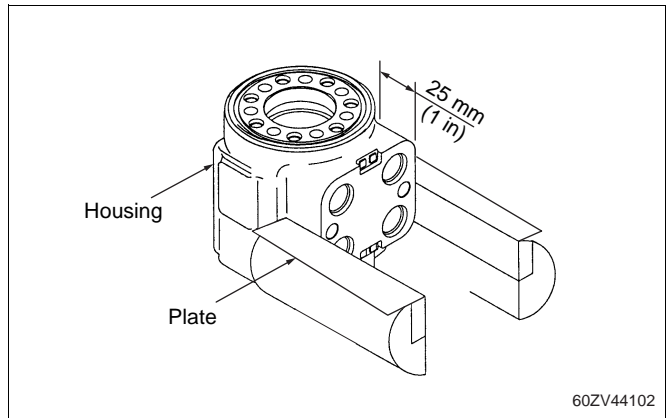
**Note**

Be sure that the position and direction of the seals are placed correctly.

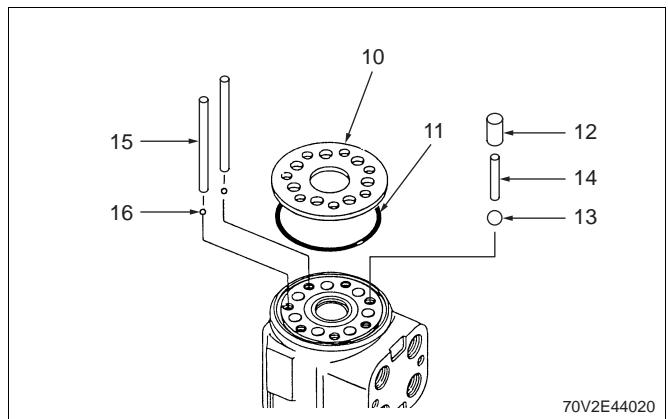


8. Insert O-ring (28) in plug (27). Apply grease to ball holder (30) and install ball (31). Insert ball holder (30) and spring (29) into the housing, and then, insert plug (27) using the hexagon wrench (width across flat: 0.2 in).

**(Reassembling rotor)**



9. Set the Orbitrol® in a vise so that the rotor side comes to the top position. Use a copper plates on a vise and do not tighten the vise too strong.



10. Insert ball (16) and pin (15) of the make-up valve to the housing. Insert ball (13) and spring pin (14) of the emergency check valve and tighten adapter screw (12) by a screw driver. Then, install O-ring (11) to the housing and put on spacer plate (10). Align the bolt holes in the plate with those in the housing.

44-70  
70TMV-2 Disassembly & Reassembly Hydraulic Group

**MEMO**

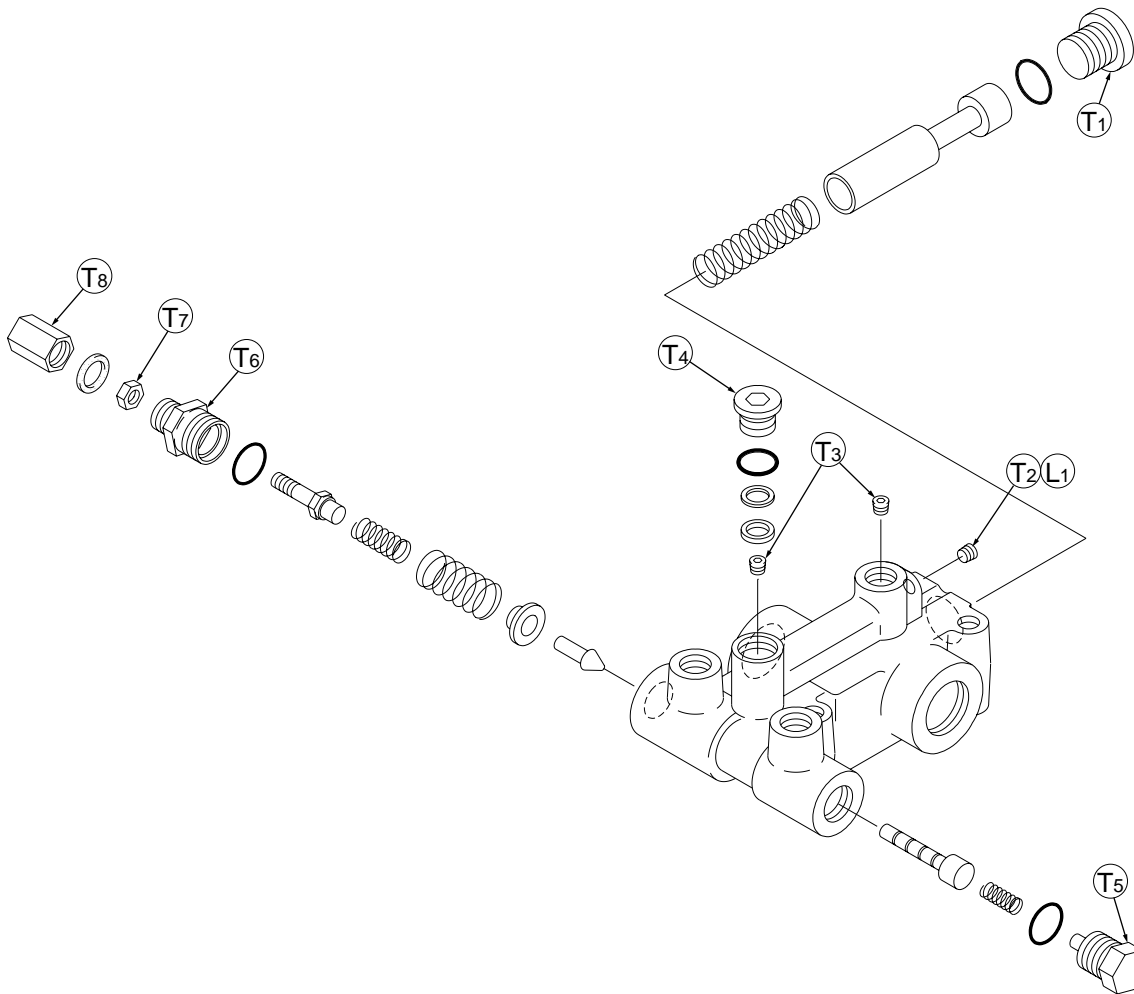
## Unloader valve disassembling and assembling

### IMPORTANT

Before disassembly or reassembly, read and understand the aforementioned "Hydraulic Parts Disassembly and Assembly Cautions" page 44-3.

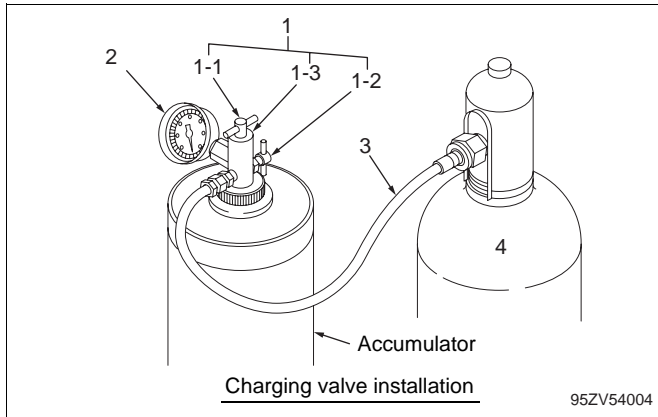
### Unloader valve cross section and tightening torque

(S/N 4001~4019)



## Nitrogen gas charging

### Nitrogen gas charging tools



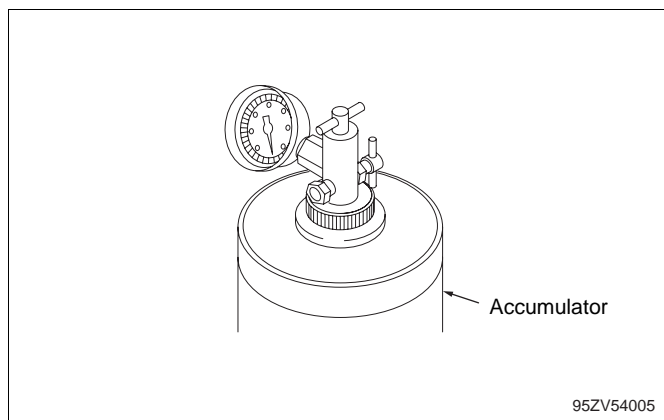
1. Charging valve assembly
  - 1-1 Handle (for adjusting screw)
  - 1-2 Handle (for bleeder plug)
  - 1-3 Valve body
2. Pressure gauge (4,903 kPa (50 kgf/cm<sup>2</sup>) (1,000 psi))
3. Hose assembly
4. Nitrogen (N<sub>2</sub>) gas cylinder

## Nitrogen gas charging procedure

### **⚠ WARNING**

Improper gas pressure can cause serious injury or death. To prevent such an accident, observe the following item:

- Before measuring the gas pressure or charging the gas, stop the engine and release the oil pressure in the line by depressing the brake pedal until there is no brake pressure.



1. Turn handle (1-1) counterclockwise until it stops turning.
2. Turn handle (1-2) counterclockwise to open.
3. Remove the gas valve guard cap, and then, install charging valve assembly (1) to the gas valve.
4. Install pressure gauge (2) to the charging valve assembly and connect hose (3) to nitrogen gas cylinder (4).
5. Slightly open the valve of the nitrogen gas cylinder. Turn handle (1-2) clockwise to close after confirming the gas comes out from handle (1-2) part.
6. Slowly turn handle (1-1) clockwise to open the piston of the gas valve.
7. Open the valve of the nitrogen gas cylinder more and put a charge into the accumulator.

### **Note**

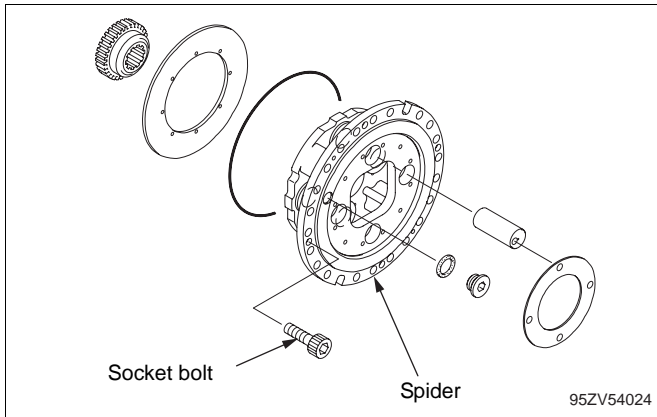
Close the valve of the nitrogen gas cylinder when checking the gas pressure on the gauge to read the gauge needle at the stable condition.

## Service Brake

### Service brake disassembling and assembling

Refer to "Front axle disassembling and assembling" page 24-21 for the procedures.

### Service brake installation cautions



### Brake disc installation cautions

#### **⚠ CAUTION**

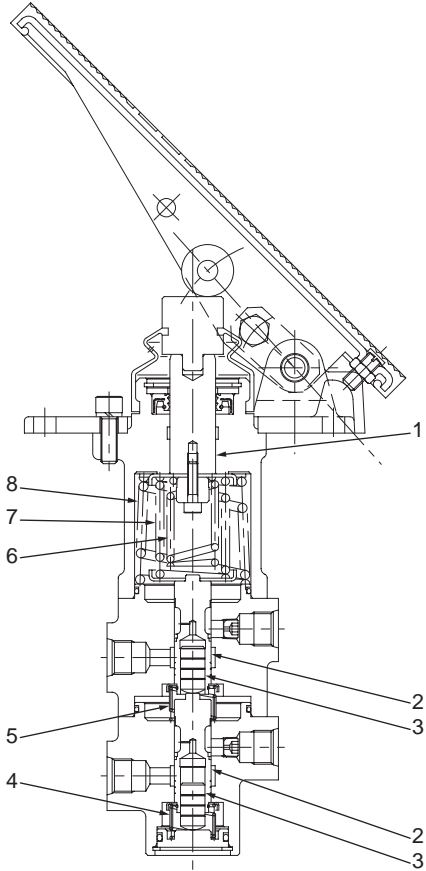
When only the friction plates or the steel plates are to be replaced, if the brake piston and brake stroke adjusting mechanism are installed as they are, the brake may drag and the brake discs may seize. After reinstalling tires, check that manual rotation of the tires is possible.

#### **⚠ WARNING**

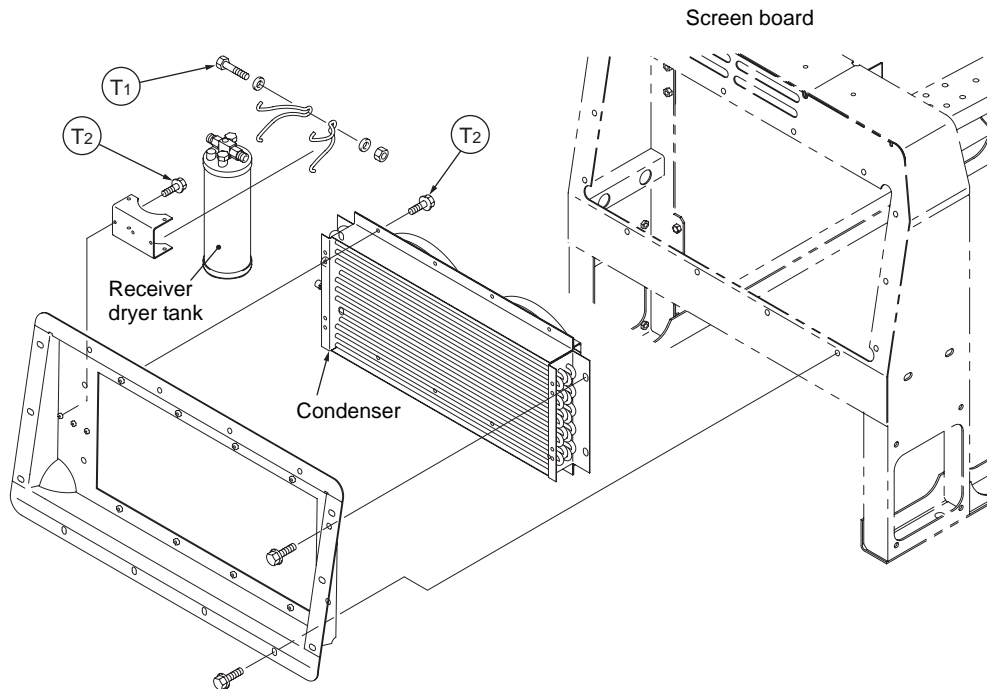
Before air bleeding in the brake oil line, be sure that the wheel and tire assemblies are installed on the wheel hub. If fail to do, the bolts (4 pcs) temporarily tighten the spider and the wheel hub may be broken by the brake piston. Finally the spider and the cover may fall off and it could cause serious injury or death.

55-2  
70TMV-2 Service Standard Brake Group  
Brake Valve

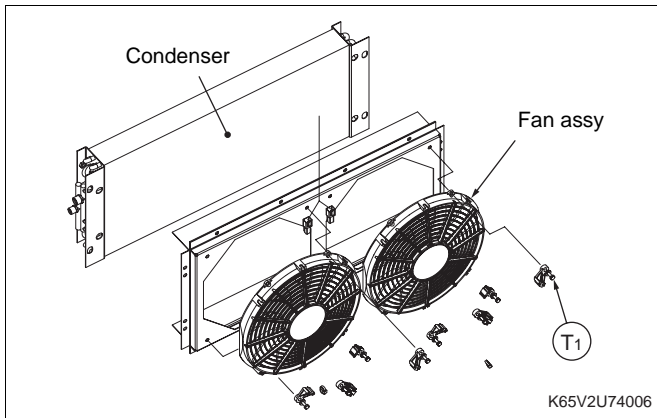
# Brake Valve



**[Condenser]**

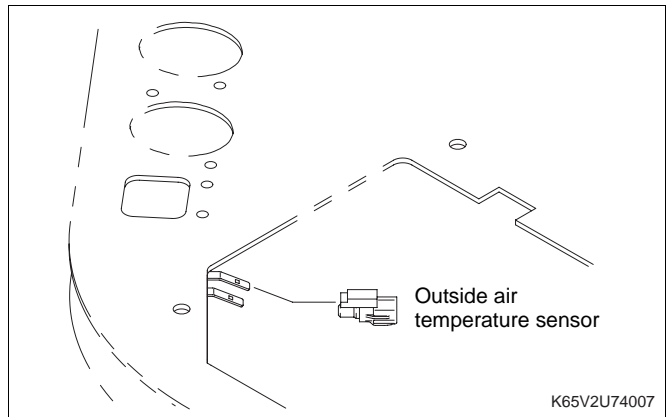


K65V2U74005



K65V2U74006

**[Ambient temperature sensor]**

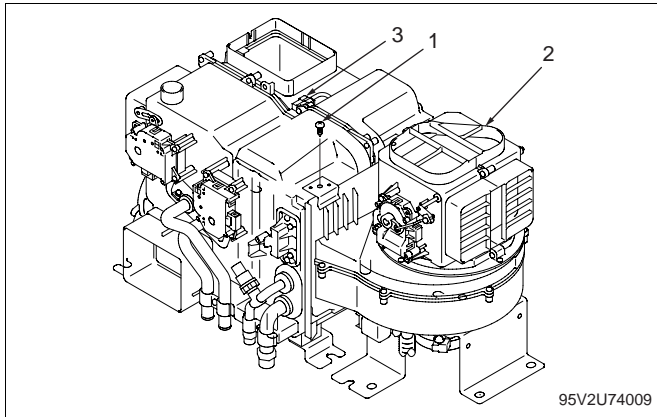
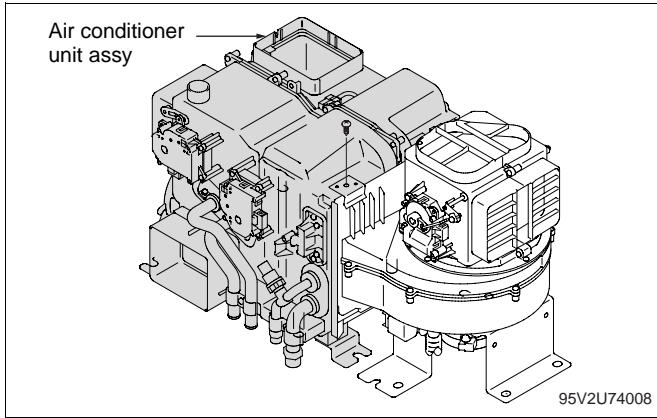


K65V2U74007

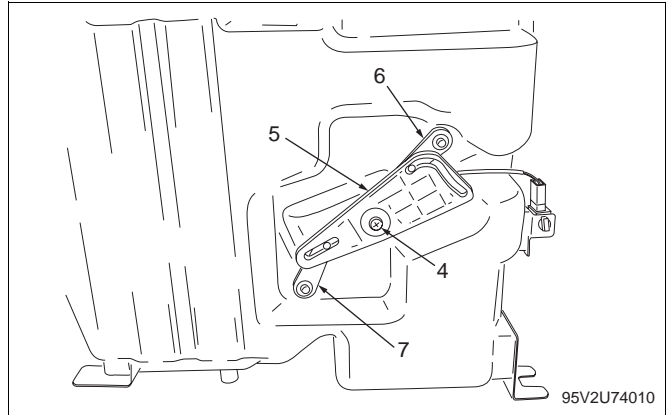


T<sub>1</sub>: 4.5 N-m (0.46 kgf-m) (3.32 lb-ft)  
 T<sub>2</sub>: 12 N-m (1.22 kgf-m) (8.85 lb-ft)

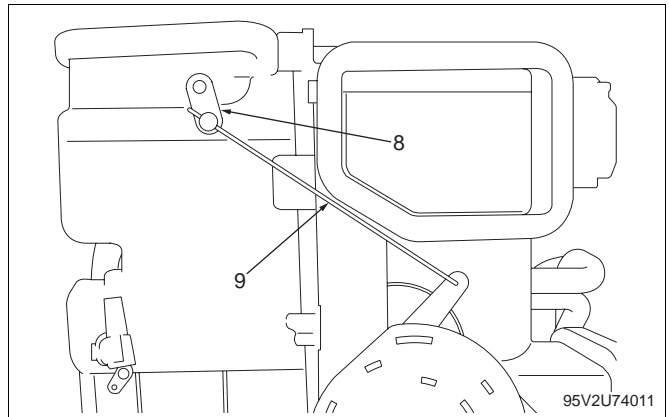
**[Air conditioner unit assy]**



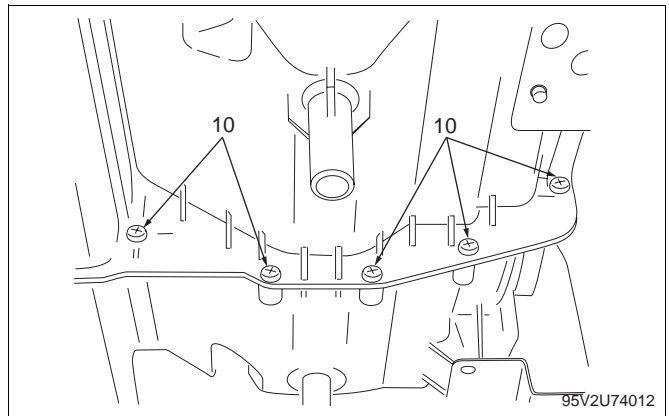
1. Remove tapping screw (1) that fixes blower assy (2) to the air conditioner unit assy.
2. Pull blower assy (2) upward to separate it from the air conditioner unit assy.
3. Remove thermistor assy (3) from the case.



4. Remove tapping screw (4) and then remove plate (5).
5. Remove lever (6) and lever (7) respectively.



6. Remove clamp (8) using a screw driver. Then remove link shaft (9).



7. Remove tapping screw (10) (11 pcs) and separate the cooler case.

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