

## GROUP 7 TRAVEL MOTOR

### 1. REMOVAL AND INSTALL

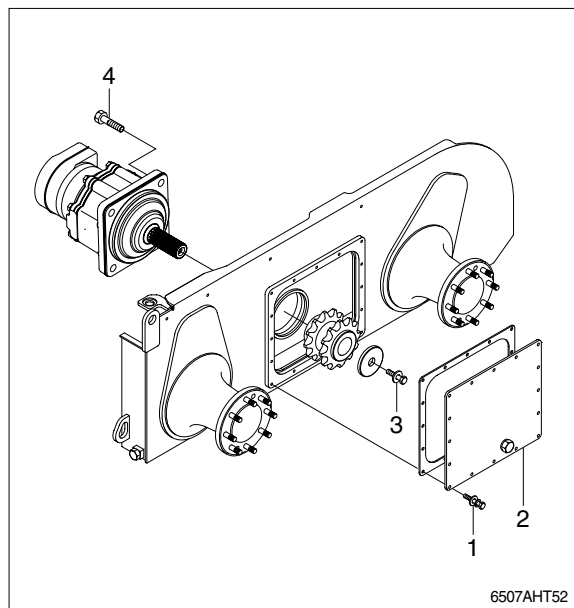
#### 1) REMOVAL

▲ If engine is running or full up pressure into hydraulic system, absolutely does not repair or tighten hose, fitting. As hydraulic line explode, dangerous accident may occur.

- (1) Lowered the bucket on the ground.
- (2) Shut off engine and raise the seat bar.
- (3) Raising canopy and remove the front cover.
- ※ For raising and lowering of the canopy, refer to page 4-14 of the operator's manual.
- (4) Loosen the bolt(1) and remove the cover(2).
- (5) Separate input, output, drain line from travel motor and block the hole to avoid alien.
- (6) Remove the hex bolt(3).
- (7) Loosen bolt(4) from travel motor.
- (8) Remove travel motor, and put it on the work bench to make disassembly possible.



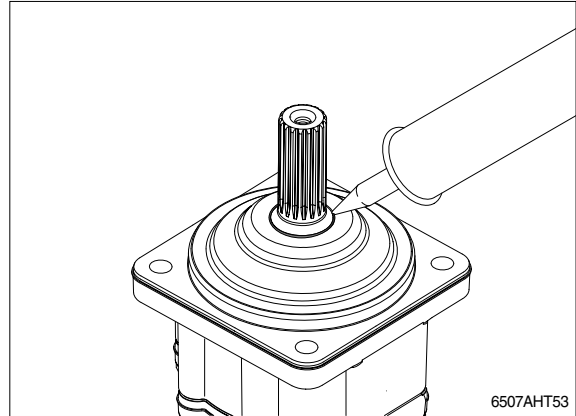
13031GE18



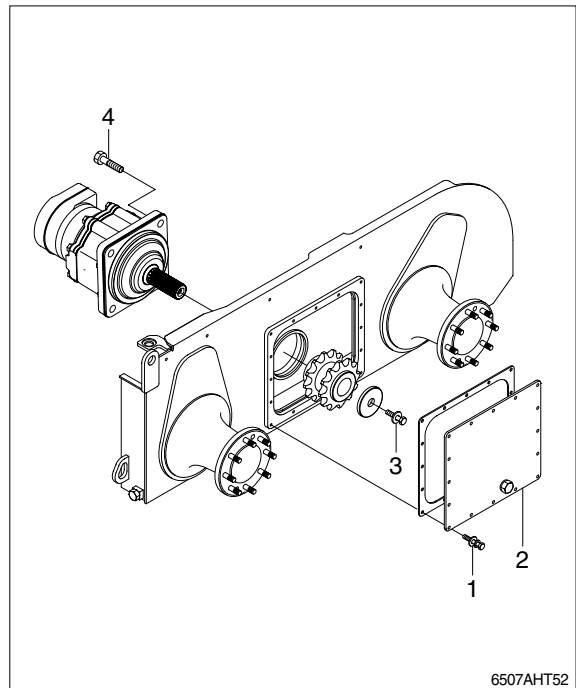
6507AHT52

## 2) INSTALL

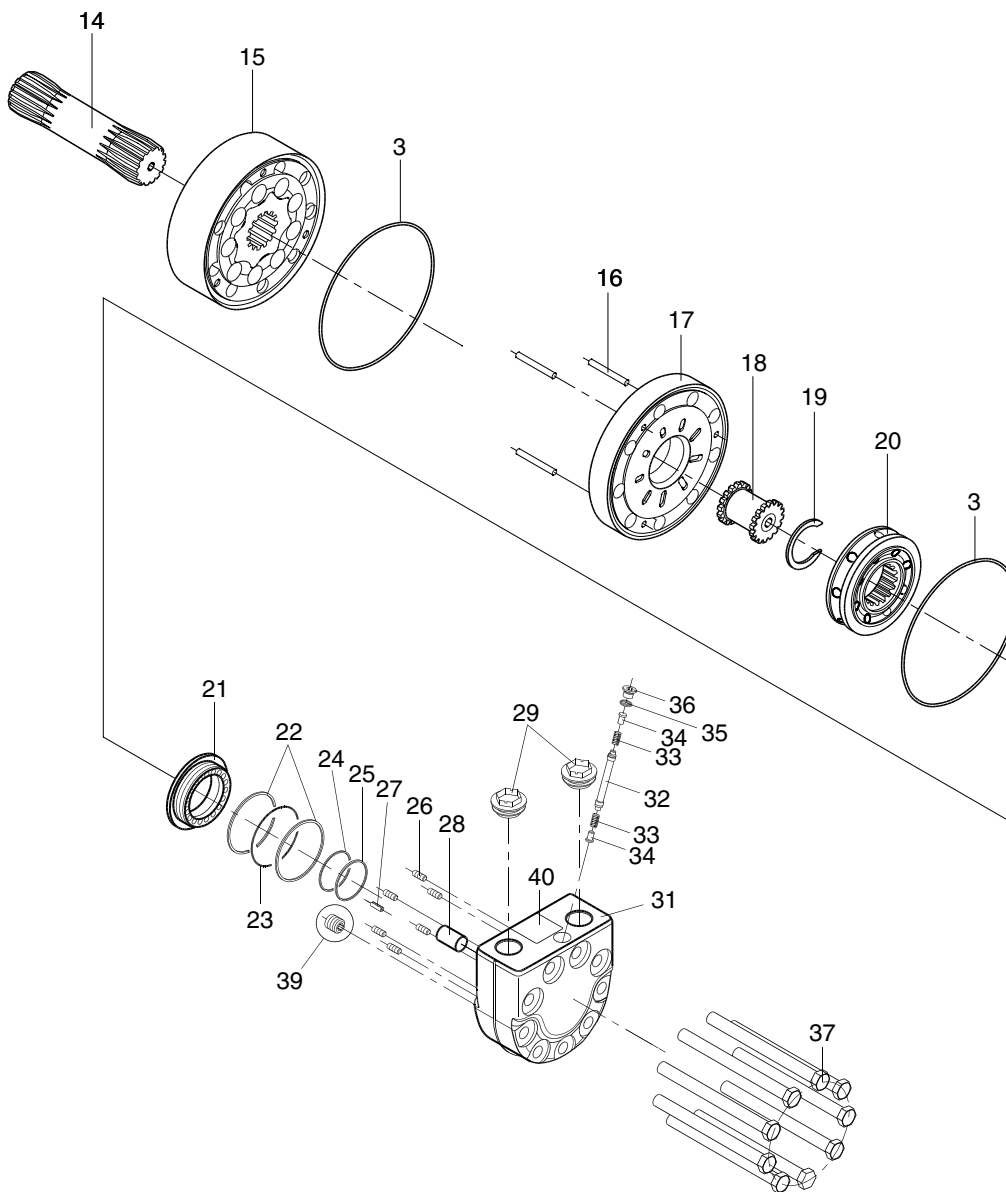
- (1) Paint silicon sealant to travel motor flange to prevent the final drive housing from oil leakage.



- (2) Tighten mounting bolt(4).
  - Torque :  $23.4 \pm 3.5 \text{kgf} \cdot \text{m}$  ( $169 \pm 25 \text{lb} \cdot \text{ft}$ )
- (3) Release the plug out of the motor port and remove the cap from the hydraulic hose.
- (4) Assemble hose assembly linked to the lower port connector of the travel motor.
- (5) Assemble hose assembly linked to the upper port connector of the travel motor.
- (6) Assemble hose assembly(Drain) linked to travel motor connector from the oil tank elbow.
- (7) Assemble the hex bolt(3).
- (8) Assemble the cover(2) and tighten the bolt(1).
  - Torque :  $6.9 \pm 1.4 \text{kgf} \cdot \text{m}$  ( $49.9 \pm 10.1 \text{lb} \cdot \text{ft}$ )



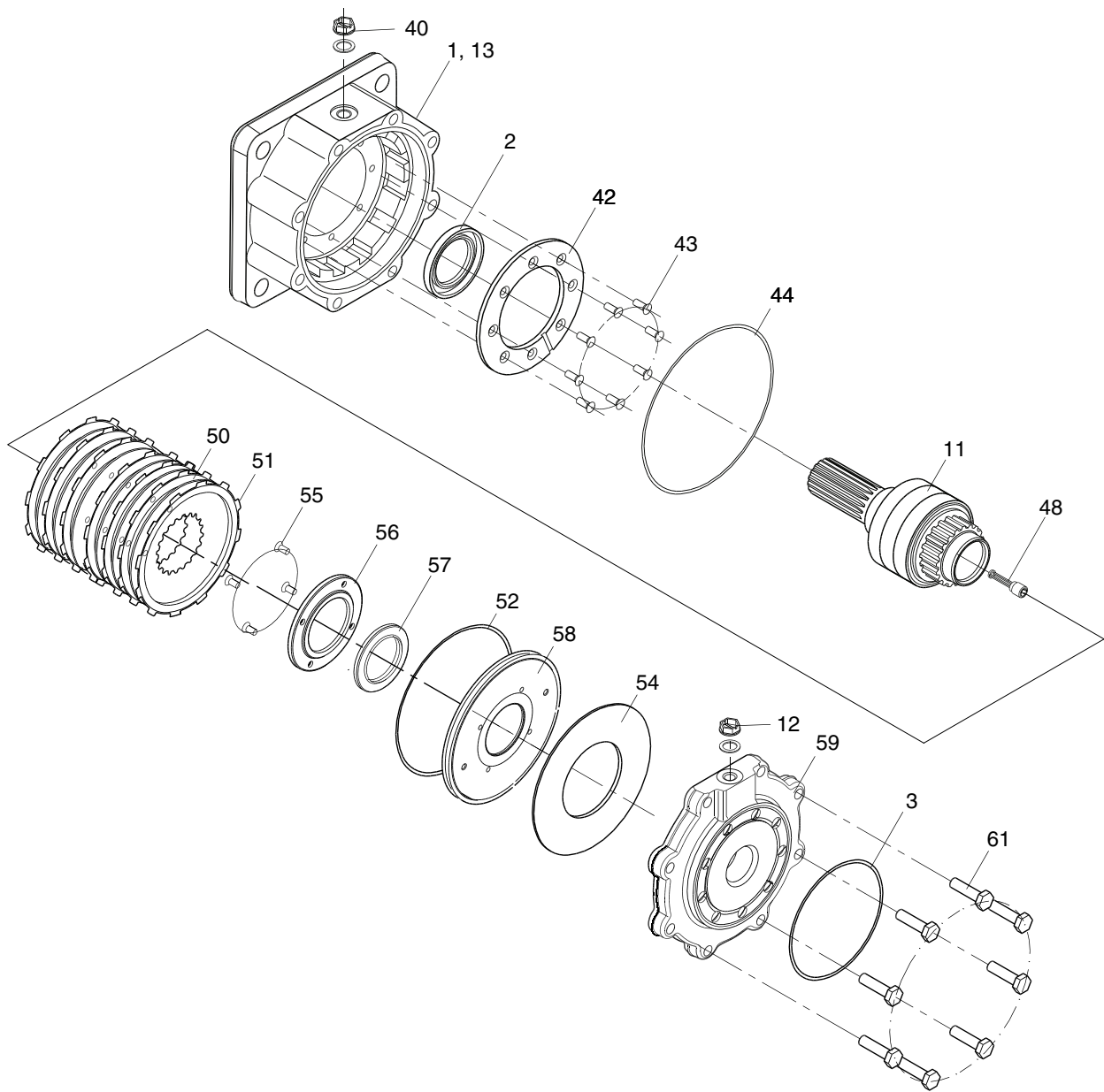
## 2. STRUCTURE (1/2)



6507AHT33-1

3	O-ring	22	Back up ring	32	Flushing valve
14	Cardan shaft	23	O-ring	33	Spring
15	Gear wheel	24	Back up ring	34	Stop pin
16	Guide pin	25	O-ring	35	O-ring
17	Channel plate	26	Spring	36	Plug
18	Valve drive	27	Guide pin	37	Bolt
19	Stop ring	28	Spacer	39	Orifice
20	Disc valve	29	Plug	40	Name plate
21	Balance plate	31	End cover		

## STRUCTURE (2/2)

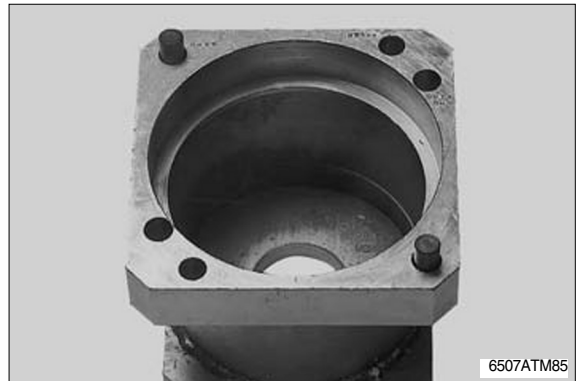


6507AHT33-2

- |    |                 |    |                |    |               |
|----|-----------------|----|----------------|----|---------------|
| 1  | Bearing housing | 42 | Retaining ring | 54 | Disc spring   |
| 2  | Shaft seal      | 43 | Bolt           | 55 | Bolt          |
| 3  | O-ring          | 44 | O-ring         | 56 | Retainer ring |
| 11 | Splined shaft   | 48 | Filter         | 57 | Shaft seal    |
| 12 | Plug            | 50 | Brake disc     | 58 | Housing       |
| 13 | Motor flange    | 51 | Brake disc     | 59 | Motor flange  |
| 40 | Plug            | 52 | O-ring         | 61 | Bolt          |

### 3. TOOLS

(1) Holding tool SJ 151B9000-2.



(2) Holding plate SJ 151B5000-4 (for installation on holding tool).



(3) Stripper SJ 151B5000-2 for brake piston.



(4) Mandrel SJ 151B5000-1 for shaft seal.



- (5) Installation tool for back up rings.  
For end cover and balance plate, use tool  
SJ 151B5000-3.



- (6) Mandrel SJ 151B9000-11/13 for  
installation of shaft with bearings.



- (7) Tool for gamma-ring 151Z9001.



- (8) Holding tool for TMT W FL 151Z9002.



## 4. DISASSEMBLY AND ASSEMBLY

### Travel motor disassembly

(1) Fix motor in holding tool SJ 150B9000-2.



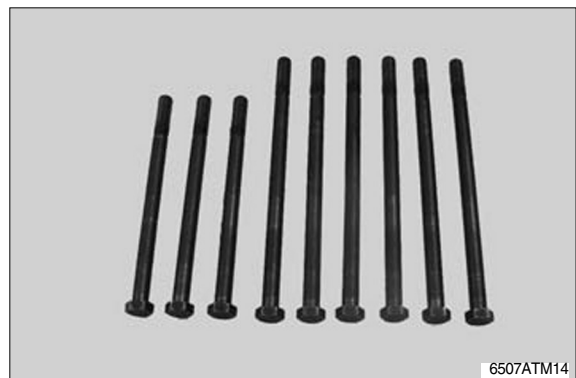
(2) To ensure correct assembly/location of motor parts, provide identification marks.



(3) With an 18mm key, loosen the nine bolts (37) in end cover.



(4) The bolts have different lengths: three short ones and six long ones. The three short bolts keep the motor part assembled, whereas the six long bolts keep the motor part fixed to the bearing housing.



(5) Lift end cover (30).



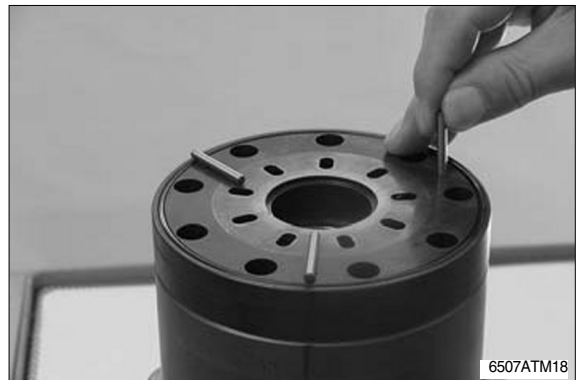
(6) Separate disc valve (20) from valve drive (18).



(7) Remove valve drive (18) and stop ring (19) from channel plate (17).



(8) Remove the three guide pins (16) from channel plate (17).





(9) Separate channel plate (17) from gear wheel set (15).



(10) Take out gear wheel set (15).

※ Note that the rollers in the gear wheel set can fall out.



(11) Separate cardan shaft (14) from output shaft (11).



(12) Take out motor flange (13) from bearing housing (1).



- (13) Fix bearing housing in a hydraulic press, and push output shaft with bearings out of housing.



- (14) With tool SJ 150B5000-1, push shaft seal (2) out of bearing housing.

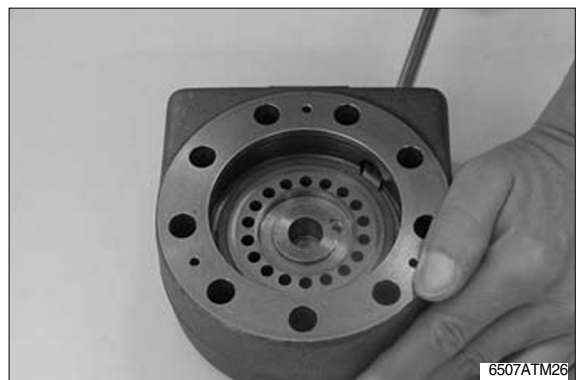


#### **Disassembly of the end cover**

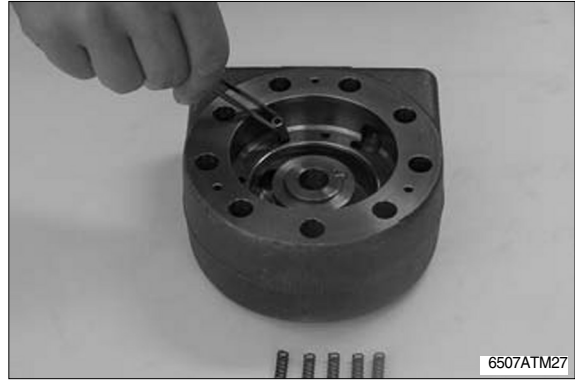
- (15) Remove spacer (28) from end cover.



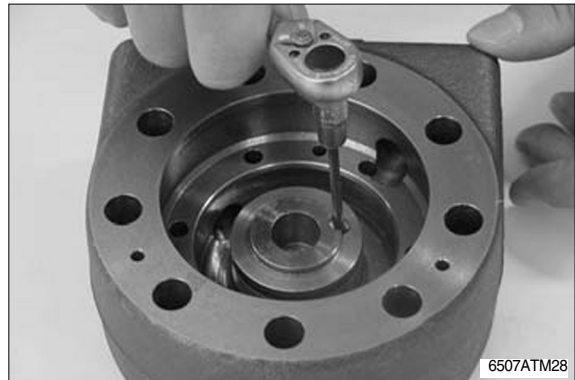
- (16) With a screwdriver through the connection port, separate balance plate (21) from end cover.



(17) Remove springs (26).



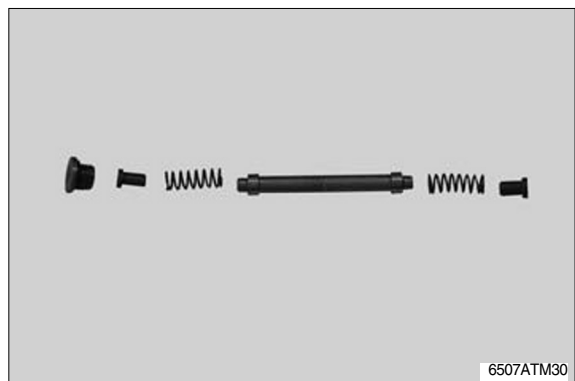
(18) With an Allen key (3 mm), remove orifice (39).



(19) With an Allen key (5mm), remove plug (36) and flushing valve parts from flushing valve.



(20) Flushing valve parts:



(21) Install flushing valve and tighten plug with a torque of  $1.27 \pm 0.15 \text{ kgf} \cdot \text{m}$  ( $9.19 \pm 1.1 \text{ lbf} \cdot \text{ft}$ ).



### Disassembly of seals on balance plate

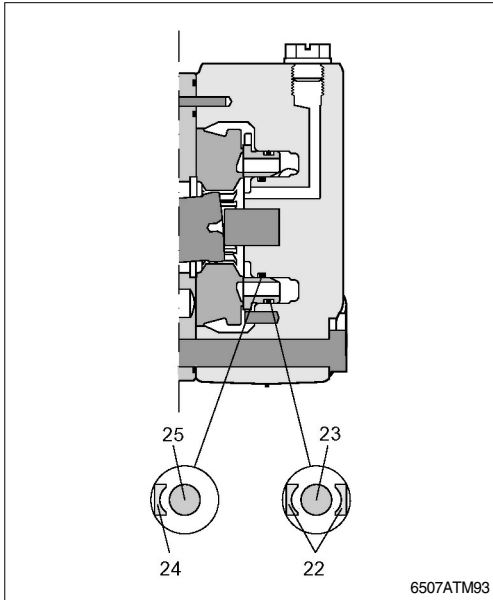
(22) Remove O-ring (23) and back up rings (22) from balance plate.

※ Cannot be done without damaging it.



### Installation of seals on balance plate

(23) With tool SJ 151B5000-3, mount the two back up rings (22). Note that the back up rings are moulded and must therefore be correctly positioned. Be sure to make the radius of both back up rings face the O-ring.

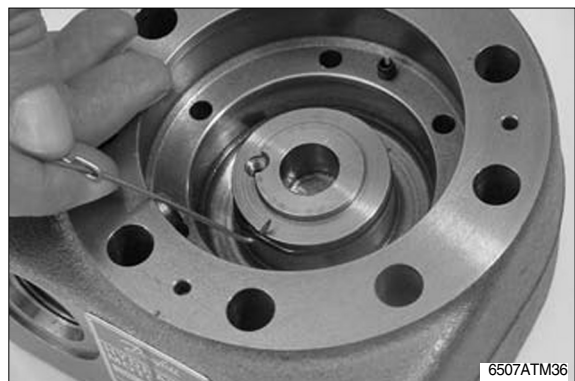


### Disassembly of seals in end cover

(24) After installing the back up rings, mount the O-ring (23) in between these.

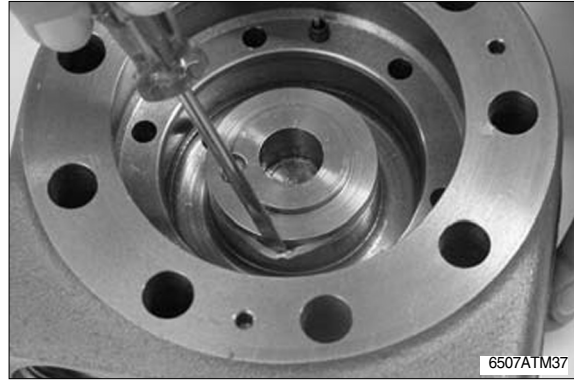


(25) Remove O-ring (25) from end cover.



(26) Remove back up ring (24).

※ Cannot be done without damaging it.



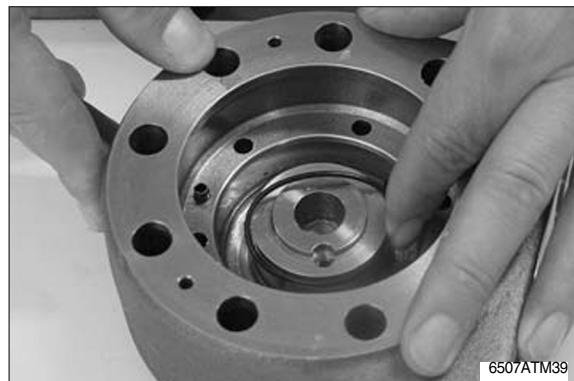
(27) Use tool SJ 151B5000-3 to position back up ring (24). Make sure that the excavation for the O-ring faces the housing.

As shown on the photo, the back up ring is located on the top.

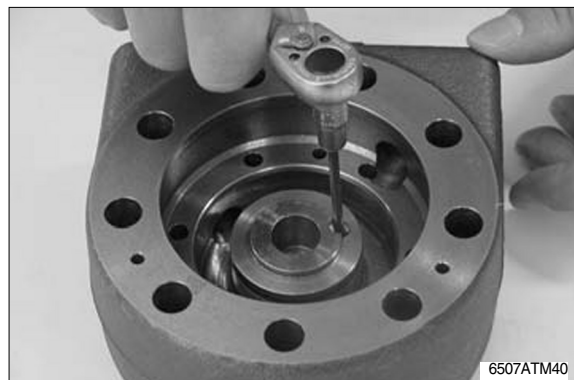


#### Assembly of end cover

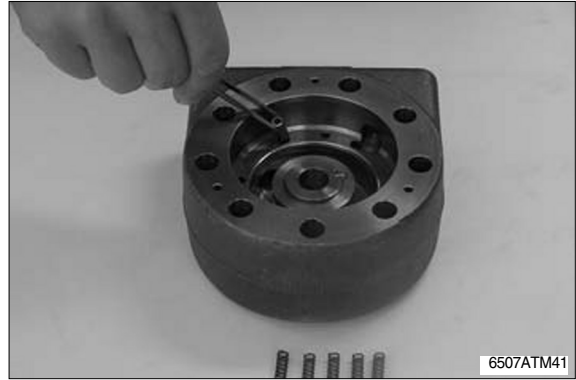
(28) Mount O-ring (25) beneath the back up ring.



(29) Mount orifice (39) in end cover and tighten with a torque of  $0.61 \pm 0.15 \text{ kgf} \cdot \text{m}$  ( $4.4 \pm 1.1 \text{ lbf} \cdot \text{ft}$ ).



(30) Install the six springs (26) in end cover.



### Assembly of travel motor

(31) Fit balance plate into end cover and press in (if so required, use the hydraulic press). Make sure that the balance plate is still springy.



(32) Place shaft seal (2) on tool SJ 151B5000-1.



(33) Fix bearing housing in a hydraulic press and push shaft seal into bearing housing.



(34) With tool SJ 151B9000-11/13, press output shaft with bearings into bearing housing.



(35) Fix bearing housing with output shaft and bearings in holding tool SJ 150-9000-2. Install motor flange (13).

- ※ Use marks to ensure that bearing housing and motor flange are in line.
- ※ Remember new O-rings.



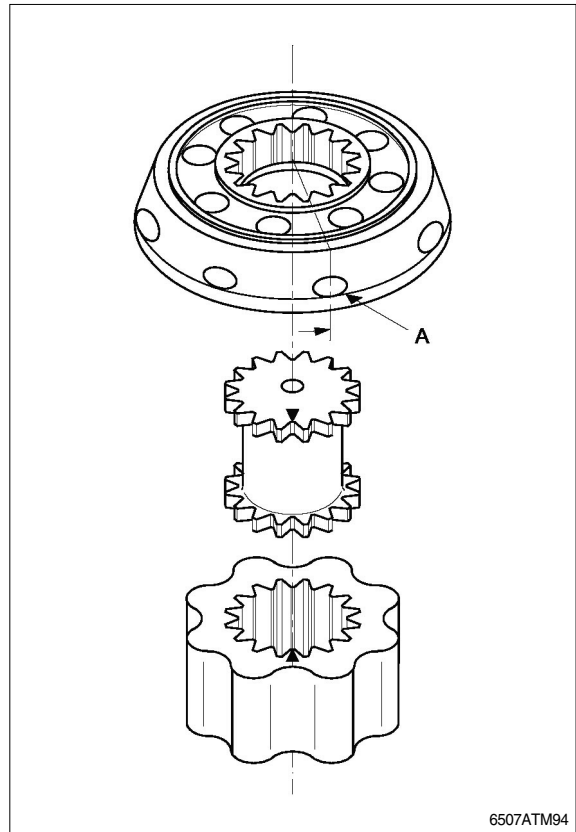
(36) Install cardan shaft (14) into splines of output shaft.





(37) The sketch shows the correct timing of the motor. Mark the gear wheel set rotor at the point where the tip of a spline tooth is opposite to the bottom of a tooth in the external rotor teeth (see drawing). Mark the bottom of a spline on the valve drive.

Line up mark on rotor and valve drive. Align mark on valve with a hole in the outer rim. (See "A" on drawing). Turn disc valve counter-clockwise until splines in the two parts engage.



(38) Install gear wheel set (15) (use marks to ensure alignment).

※ Remember a new O-ring.



(39) Fit channel plate (17) onto gear wheel set (use marks to ensure alignment).

※ Remember a new O-ring.



(40) Install the three guide pins (16).



(41) Install drive shaft (18) in gear wheel splines. Fix valve drive with stop ring (19).



(42) Put distributor valve (20) onto drive shaft. Make sure that the motor is correctly timed (see the sketch, page 2-98).



(43) Mount end cover (including balance plate, spacer, O-ring and back up ring). If so required, fix spacer with Vaseline.

※ Use marks to ensure alignment.



(44) Mount the 3 short bolts (38) in the right holes and mount 6 long bolts (37).



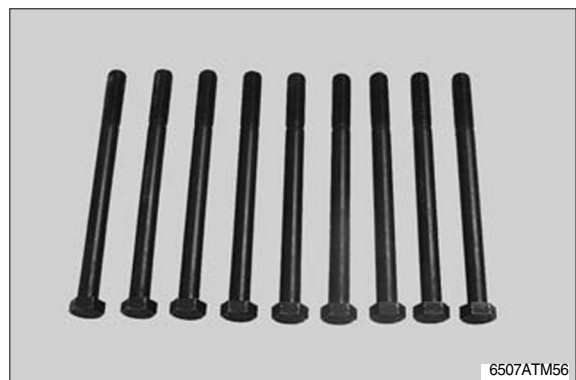
(45) Tighten all bolts with a torque of  $11.2 \pm 1.02$  kgf · m ( $81 \pm 7.4$  lbf · ft).



#### Disassembly of brake motor

(46) To disassemble brake motor follow the same instructions as for travel motor until you get to the brake part. Fix brake motor in holding tool SJ 151B9000-2 and holding plate SJ 151B5000-4.

※ In the brake motor, all bolts are equally long.



(47) With a 17 mm key, untighten the eight bolts (61).

※ The disc spring is compressed against the motor flange.



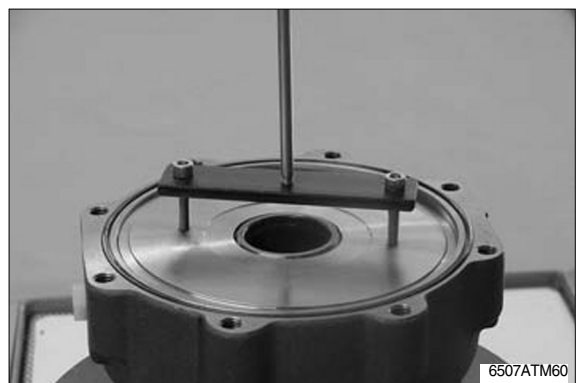
(48) Remove motor flange (59).



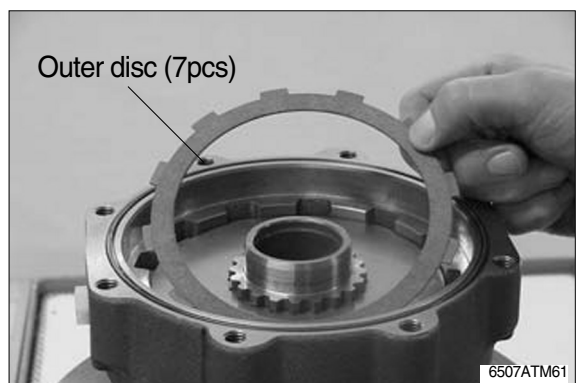
(49) Remove disc spring (54).

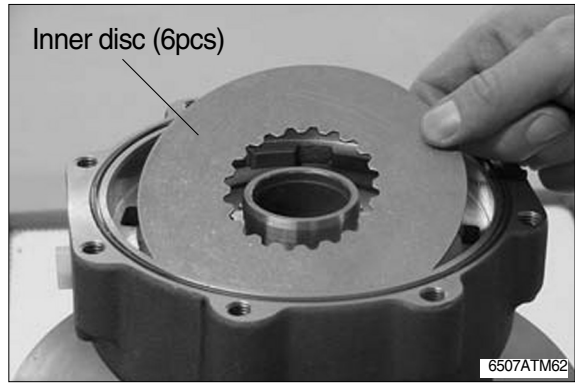


(50) With tool SJ 151B5000-2, lift brake piston out of housing (58).



(51) Remove the multiple brake discs (50 and 51).

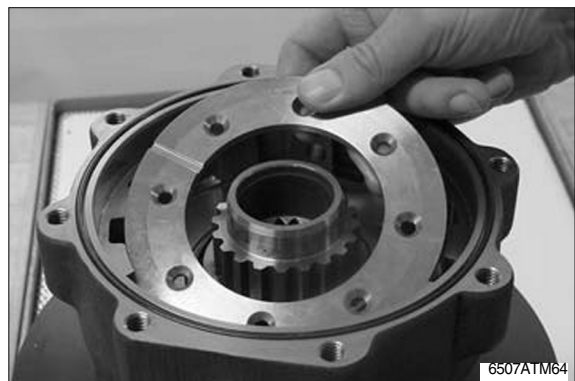




(52) Unfasten the 6 bolts (43).



(53) Lift out retainer ring (42).



(54) Fix bearing housing in the hydraulic press and push shaft with bearings out of housing.

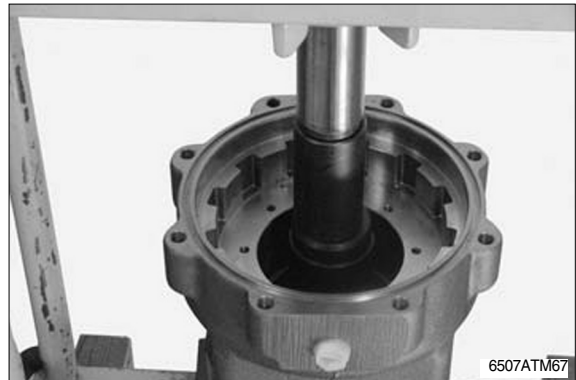


(55) With tool SJ 151B5000-1, push shaft seal (2) out of housing.



#### Assembly of brake motor

(56) With tool SJ 151B5000-1, press a new shaft seal into bearing housing. Grease shaft seal with fat before installation.



(57) Remove filter (48) from output shaft.



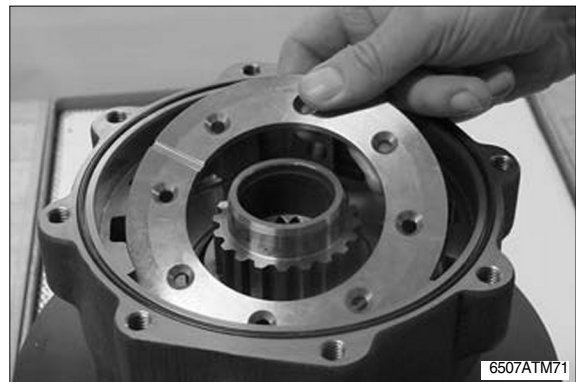
(58) Clean filter, refit onto the shaft and tighten with a torque of  $3.06 \pm 0.51$  kgf · m ( $22.1 \pm 3.7$  lbf · ft).



(59) Fix the bearing housing in the hydraulic press and use tool SJ 151B9000-11/13 to press output shaft with bearings into the housing.



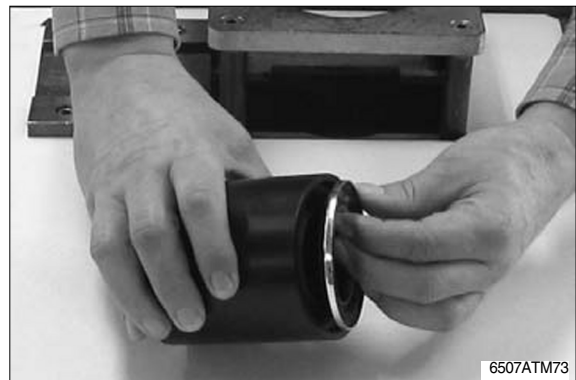
(60) Install retainer ring (42).



(61) Fix retainer ring with 8 bolts (43) and tighten with a torque of  $0.92 \pm 0.15$  kgf · m ( $6.65 \pm 1.08$  lbf · ft).



(62) Mounting of gamma-ring.



### The standard brake piston

- ※ There are two types of brake pistons:  
A standard brake piston, and a  
backpressure brake piston.

(63) With tool SJ 151B5000-1, push shaft seal (2) out of brake piston.

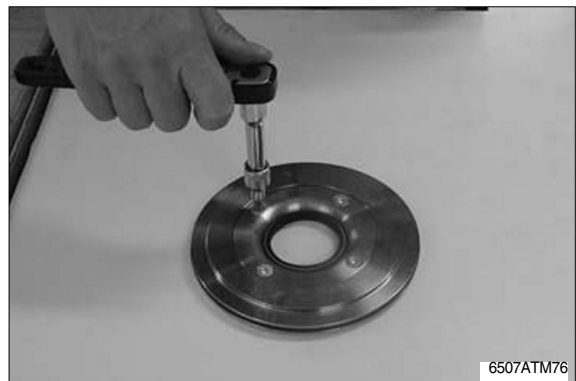


(64) With tool SJ 151B5000-1, press in a new shaft seal (2) with grease.



### The back-pressure brake piston

(65) Remove the four bolts (55).



(66) Remove retainer ring (56) and shaft seal (57). For removal and reinstallation, use tool SJ 151B5000-1.





(67) After installation of the shaft seal, fix it with a retainer ring (56).



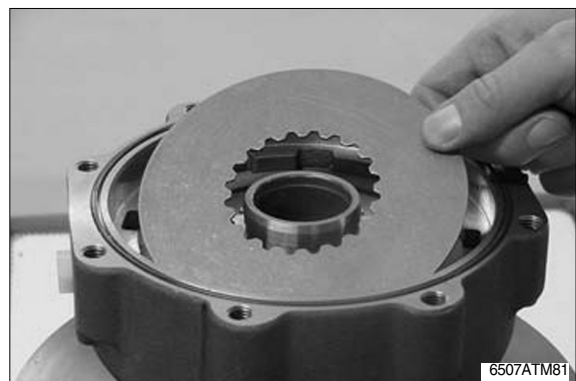
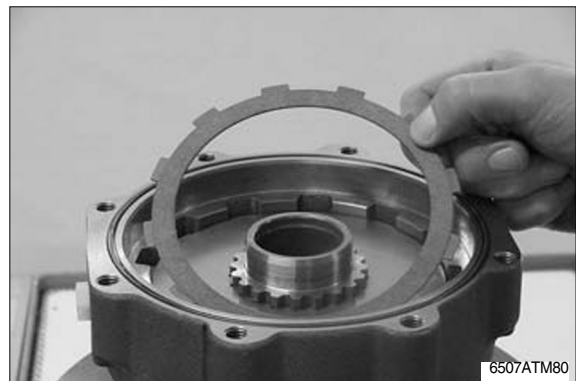
(68) Mount the four bolts (55) and tighten with  $0.92 \pm 0.5 \text{ kgf} \cdot \text{m}$  ( $6.65 \pm 1.08 \text{ lbf} \cdot \text{ft}$ ).



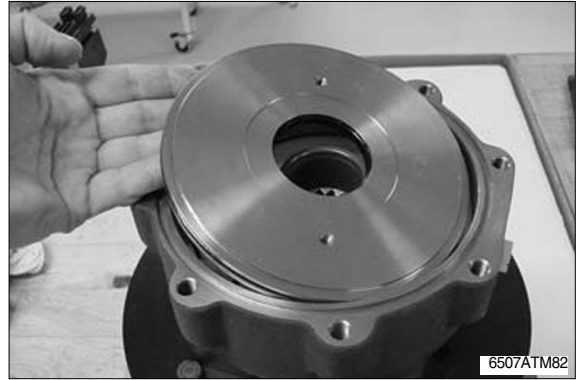
### Installation of braking part

(69) Install the multiple disc brake, starting with the external multiple discs.

Install seven external (51) and six internal (50) multiple discs.



(70) Install the brake piston and remember a new O-ring (52).



(71) Install the disc spring (54).



(72) Mount the motor flange (59) and tighten with a torque of  $7.65 \pm 1.02$  kgf · m ( $55.3 \pm 7.38$  lbf · ft).

