GROUP 6 HST PUMP (PILOT TYPE)

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) Raise canopy and remove the front cover (1, 2).

※ **For raising and lowering of the canopy, refer to page 4-14 of the operator's manual.**

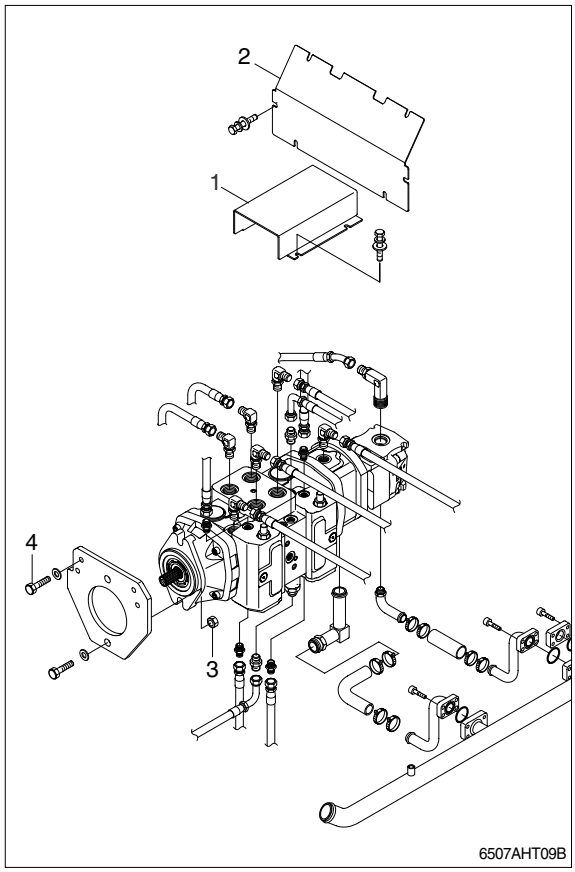
(4) Disassemble hoses connected with HST pump and auxiliary pump.

(5) Loosen the nut(3) and bolt(4).

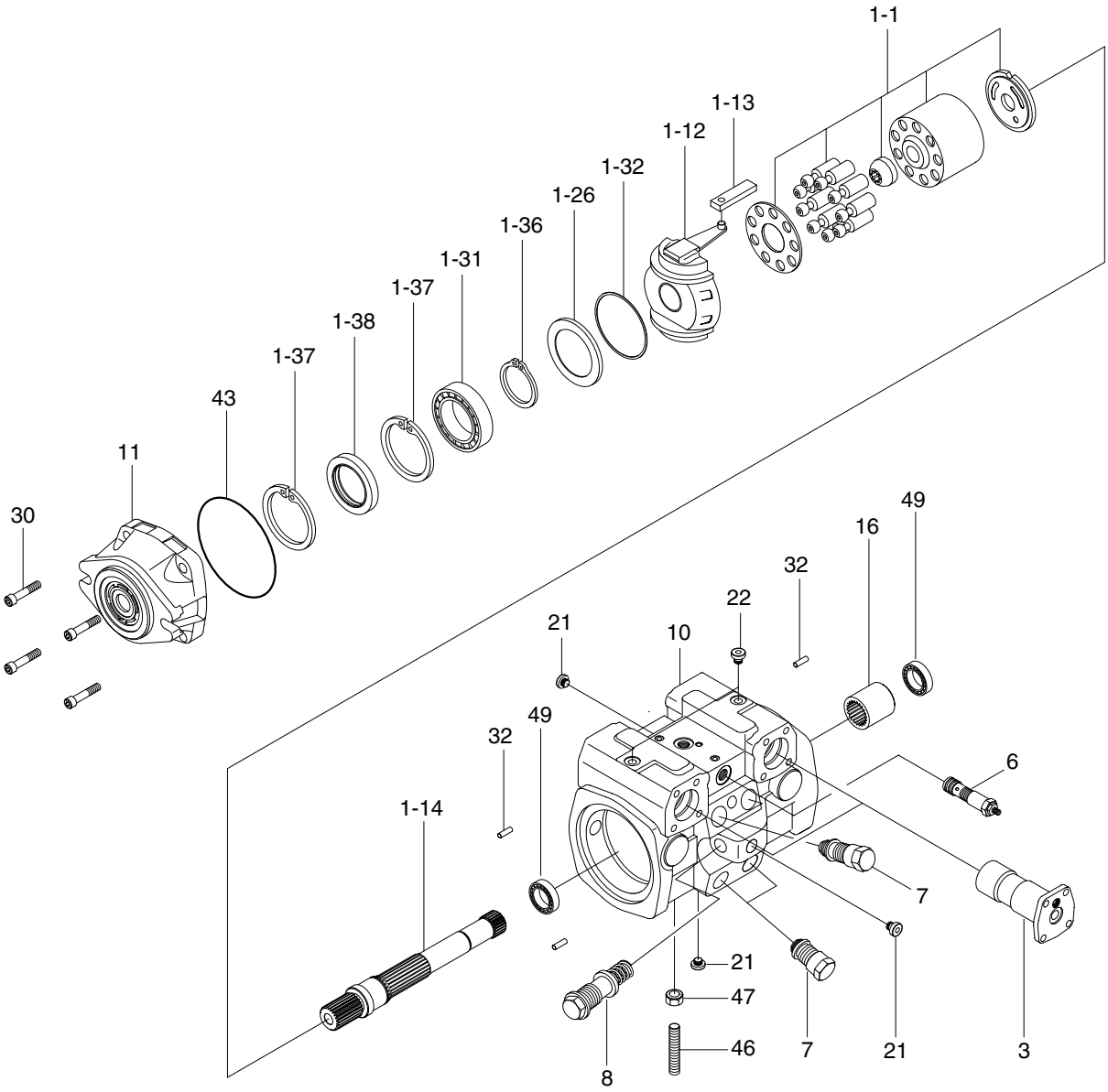
2) INSTALL

(1) Install HST pump to frame by tightening the nut(3) and bolts(4).
- Tightening torque
  - Nut(3) : 19.6±2.9kgf · m (142±21.0lbf · ft)
  - Bolt(4) : 6.9±1.4kgf · m (49.9±10.1lbf · ft)

(2) Assemble hose connected with HST pump and auxiliary pump.



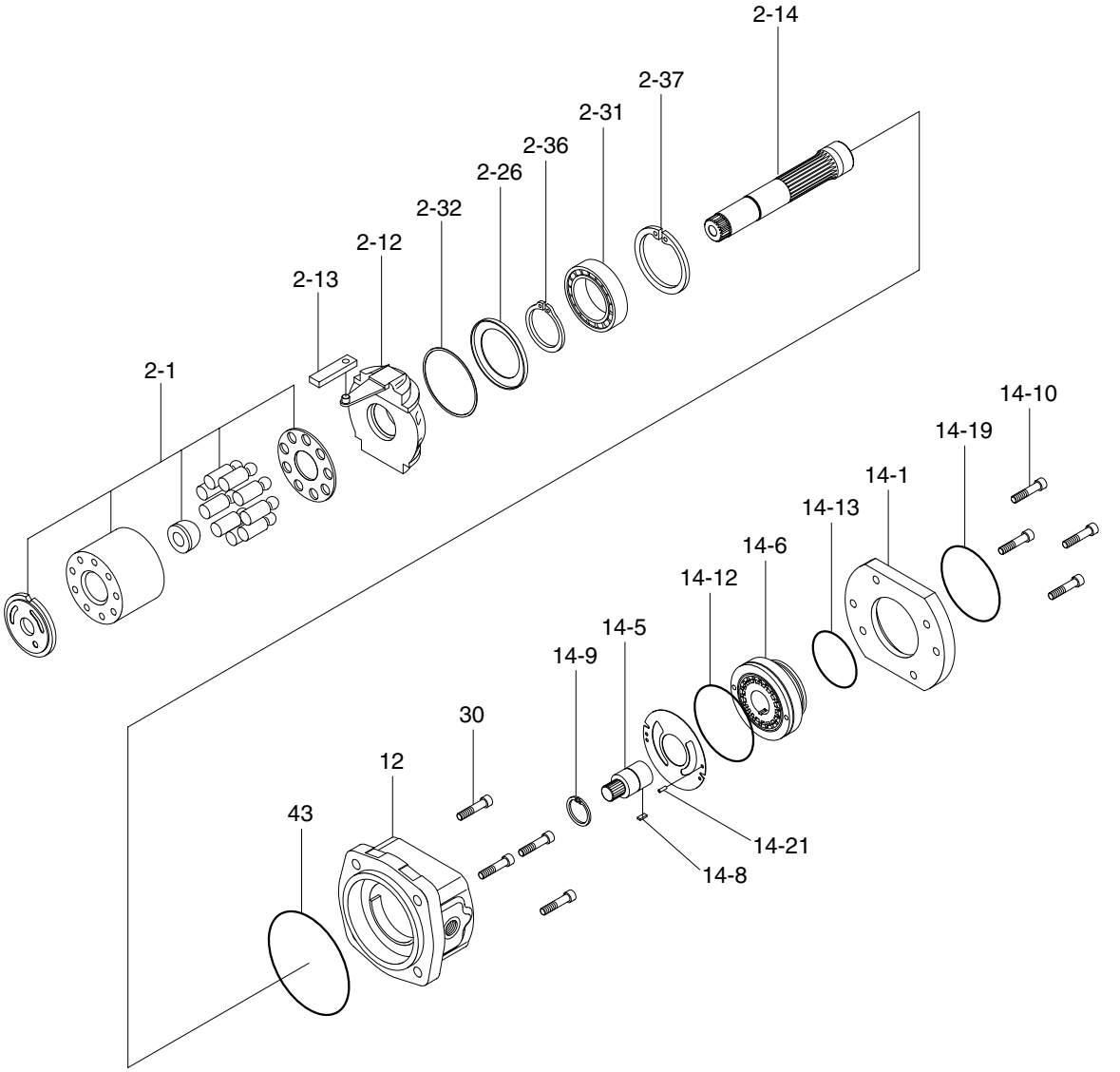
2. STRUCTURE (1/4)



6507AHT50

1	Rotary group	1-37	V-ring	16	Coupling
1-1	Rotary group	1-38	Shaft seal ling	21	Locking screw
1-12	Cradle	3	Hydraulic control	22	Locking screw
1-13	Slide ring	6	Control cartridge	30	Socket head screw
1-14	Drive shaft	7	Pressure relief valve	32	Cylinder pin
1-26	Bearing liner	8	Pressure relief valve	43	O-ring
1-31	Plain roller bearing	10	Pump housing	46	Eccentric screw
1-32	Cradle bearing assy	11	Flange bearing	47	Seal lock nut
1-36	Retaining ring	14	Internal gear pump	49	Roller bearing

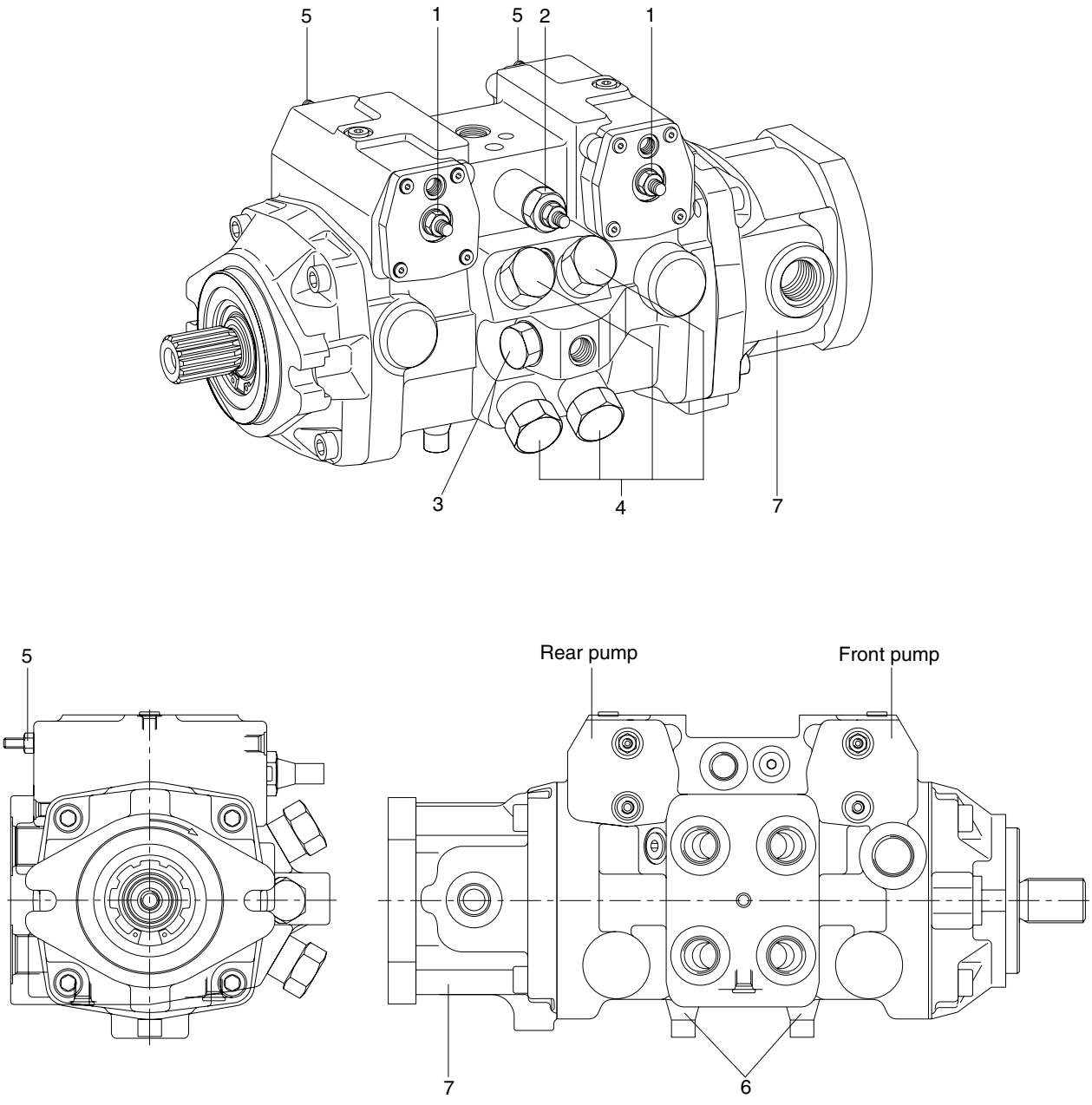
STRUCTURE (2/4)



6507AHT51

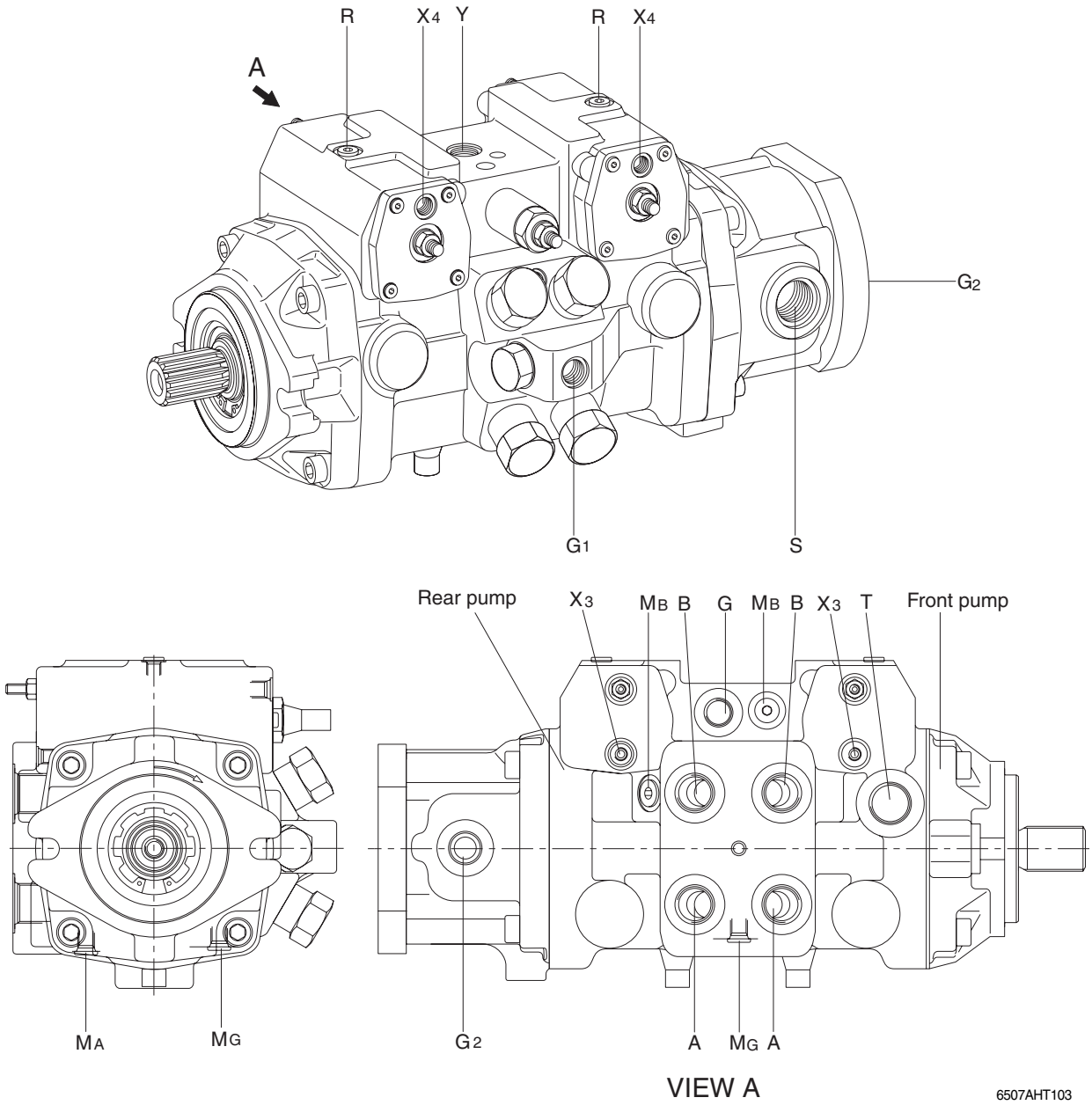
2	Rotary group	2-36	Retaining ring	14-9	Snap ring
2-1	Rotary group	2-37	V-ring	14-10	Socket head screw
2-12	Cradle	12	Bearing flange	14-12	O-ring
2-13	Slide ring	14	Internal gear pump	14-13	O-ring
2-14	Drive shaft	14-1	Intermediate flange	14-19	O-ring
2-26	Bearing liner	14-5	Coupling	14-21	Cylinder pin
2-31	Plain roller bearing	14-6	Internal gear pump	30	Socket head screw
2-32	Cradle bearing assy	14-8	Shaft key	43	O-ring

STRUCTURE (3/4)



1 Mechanical centering adjustment
2 DA-Control valve
3 Low pressure valve
4 High pressure valve
5 Mechanical stroke limiter
6 Timing adjustment screw
7 Auxiliary pump

STRUCTURE (4/4)



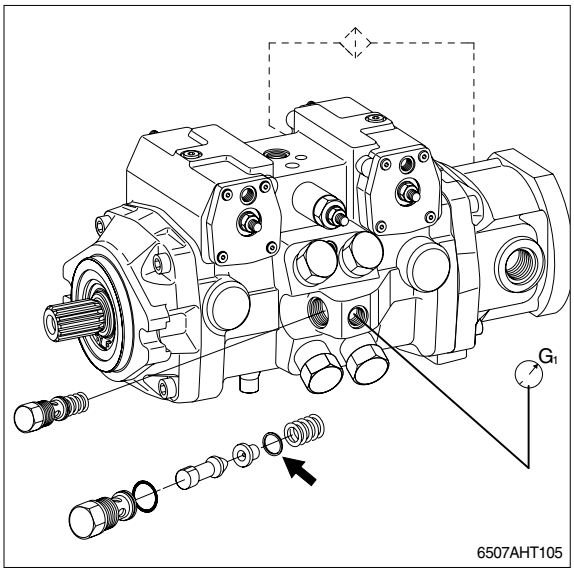
Port	Port name	Port size
A / B	High pressure ports	1 1/16 -12UN
T	Case drain port	1 1/16 -12UN
M_A	Pressure gauge - operating pressure A	9/16 -18UNF
M_B	Pressure gauge - operating pressure B	9/16 -18UNF
R	Air bleed	7/16 - 20UNF
X_3 / X_4	Control pressure ports (before the orifice)	7/16 - 20UNF
G	Pressure port for auxiliary circuit	3/4 - 16UNF
M_G	Pressure gauge - operating pressure G	9/16 -18UNF
G_1	Pressure port for auxiliary circuit	9/16 -18UNF
G_2	Pressure port for auxiliary circuit	3/4 -16UNF
Y	Control pressure - gauge port	9/16 -18UNF
S	Boost suction port	1 5/8 -12UN

3. ADJUSTMENT INSTRUCTIONS

1) LOW PRESSURE VALVE (Boost pressure)

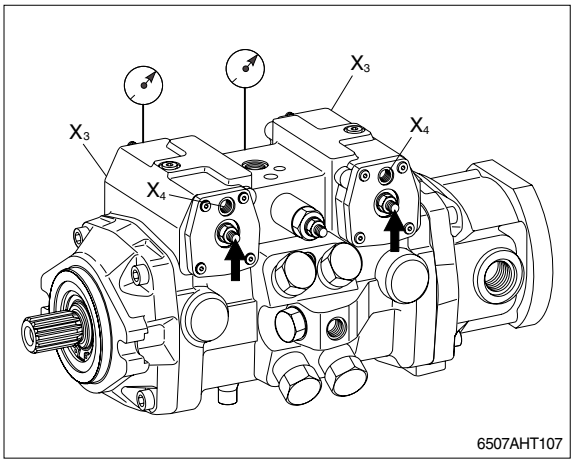
⚠ Observe safety regulations.

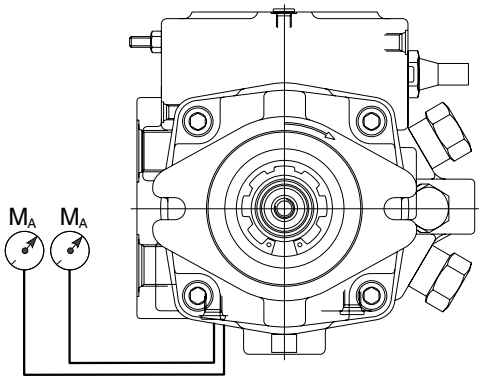
(1) Readjust only at operating temperature.
(2) Connect pressure gauge (60 bar) to "G_1" port.
※ **Boost pressure setting is adjusted with shims.**
(3) Setting data is in accordance to the specification.

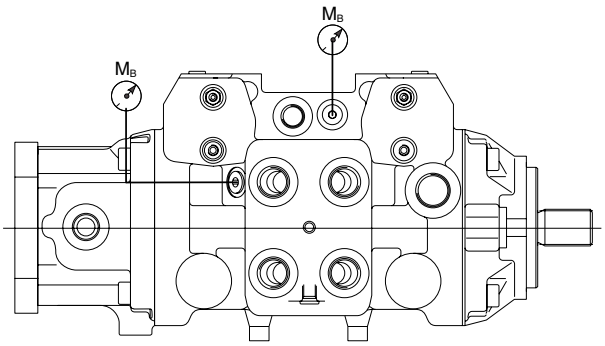


2) MECHANICAL "ZERO POSITION"

(1) Ports X_3 / X_4 control pressure to the tank open.
(2) Connect pressure gauges (600 bar) to MA and MB. Adjust the zero position so that with at blocked drive both pressure gauges indicate the same pressure valve.
※ **Ascertain the zero position dead band.**

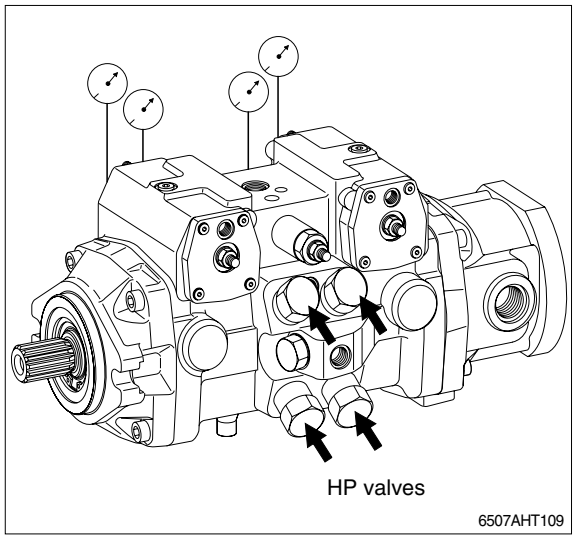


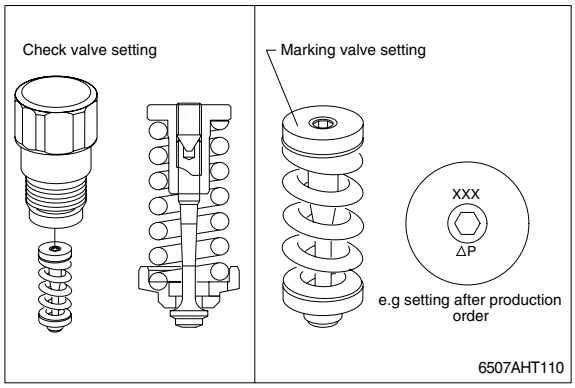




3) HP-VALVES (High pressure)

(1) Operate the valves with small pump flow over the valves.
Check setting value. (Only for a short moment - "Risk of over heating")



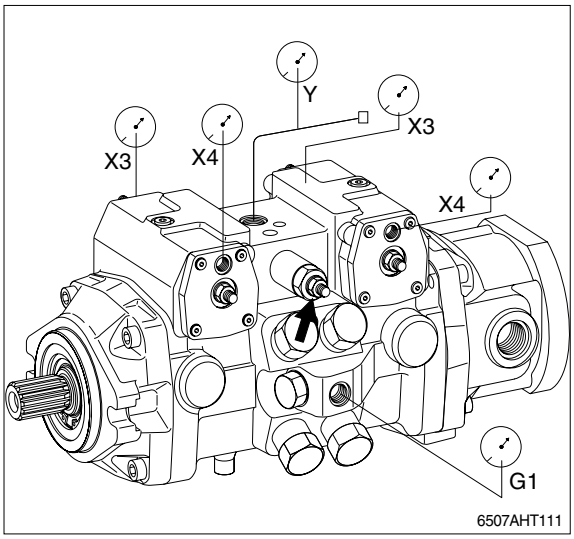


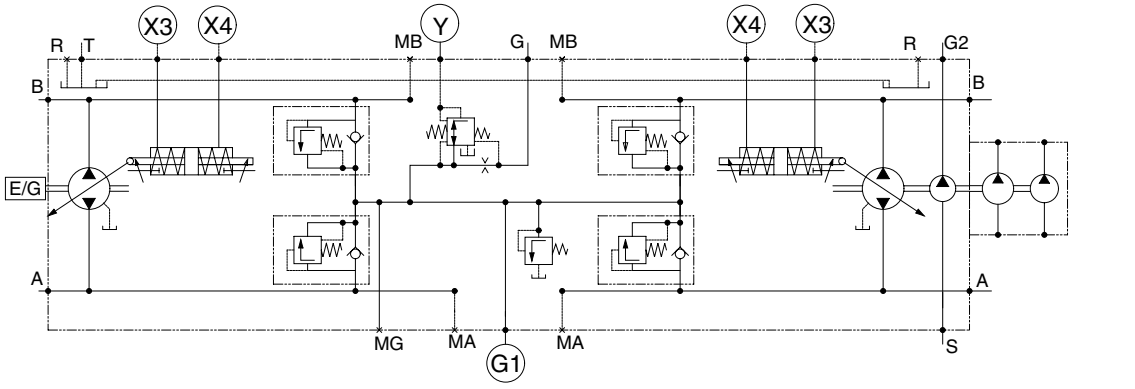
4) ADJUSTMENT INSTRUCTIONS - DA CONTROL

(1) Check setting data.

(2) Operating temperature should be generally kept constant during the checking procedure.

※ **Setting data is in accordance to the order.**



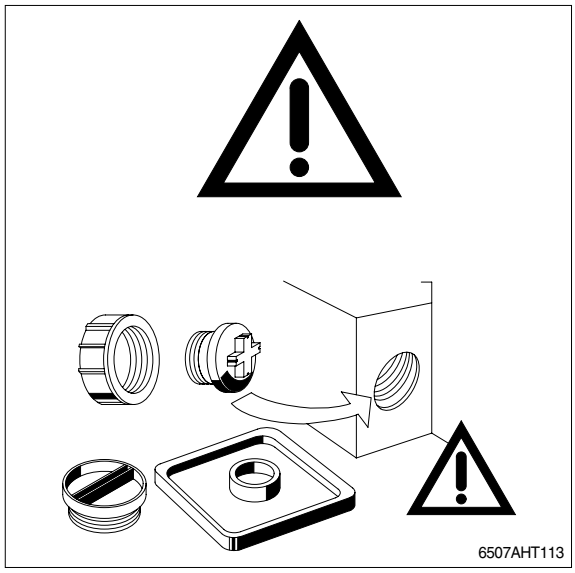


4. DISASSEMBLY AND ASSEMBLY

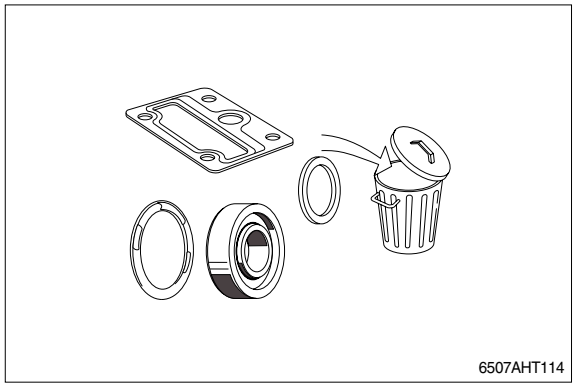
1) GENERAL REPAIR INSTRUCTIONS

※ **Observe the following notes when repairing hydraulic components.**

(1) Close all ports of the hydraulic components.

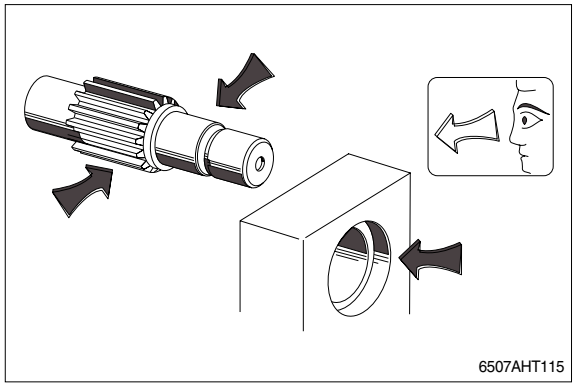


(2) Replace all seals. Use only ORIGINAL spare parts.

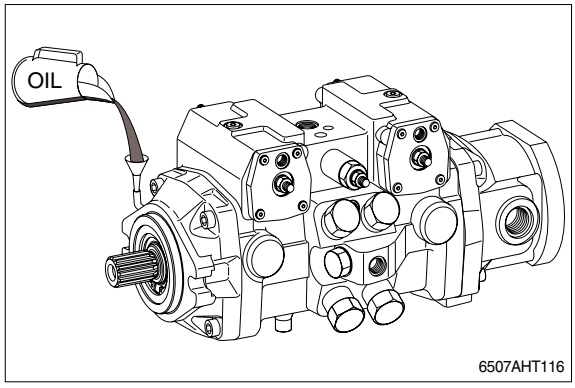


(3) Check all seal and sliding surfaces for wear.

※ **Rework of sealing area (e.g. with abrasive paper) can damage the surface.**

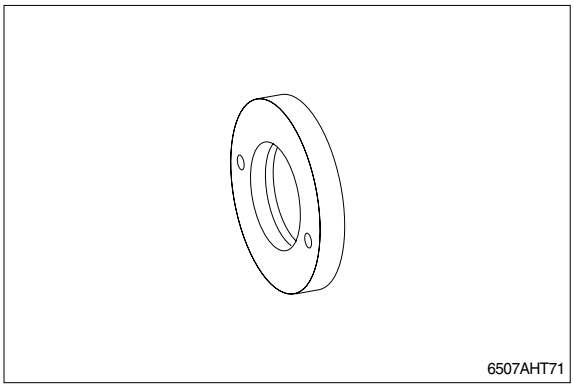


(4) Fill the hydraulic units with the recommended hydraulic fluid before commissioning.

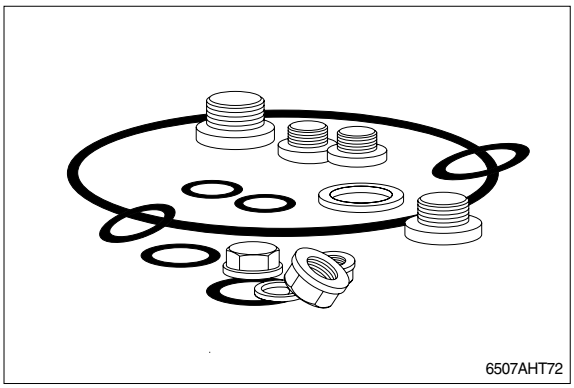


2) SEAL KITS AND SUBASSEMBLIES

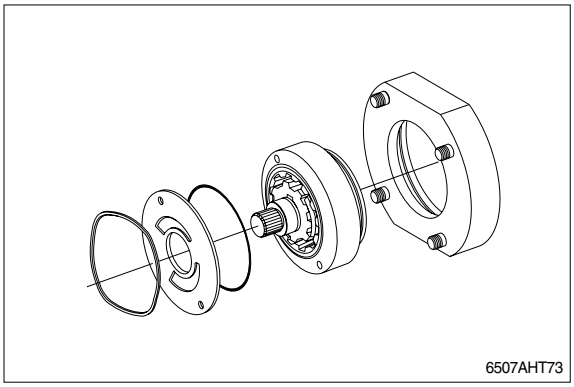
(1) Seal kit for drive shaft.



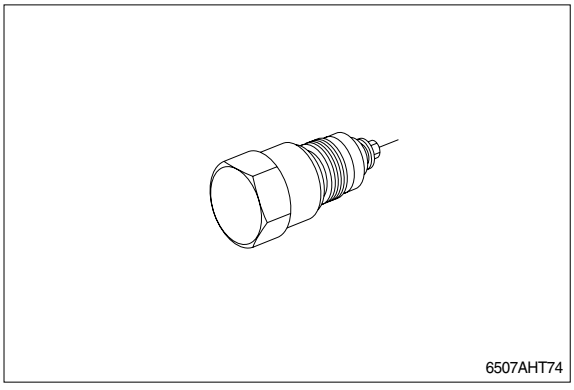
(2) Peripheral seal kit.



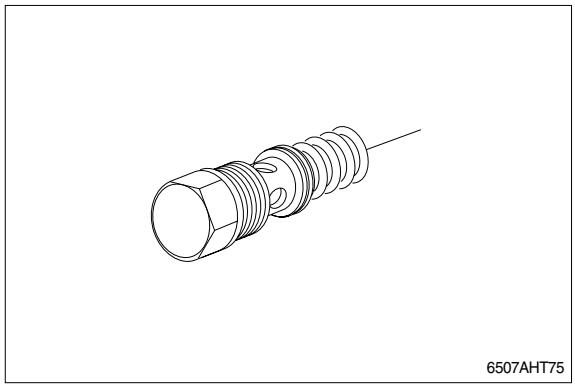
(3) Inner gear pump



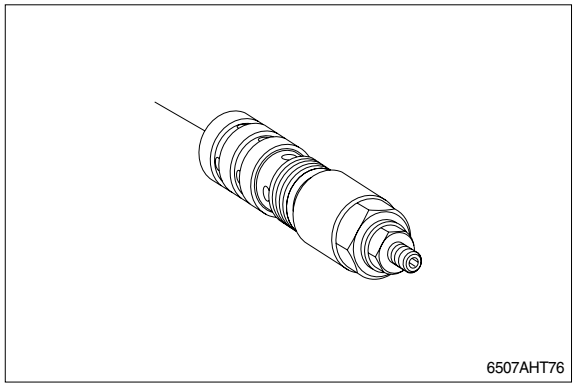
(4) High pressure relief valve



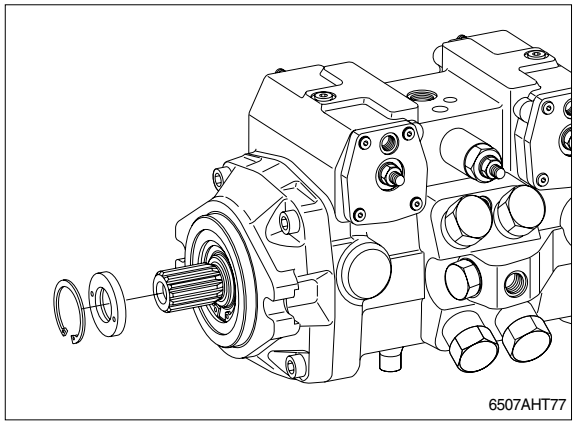
(5) Boost pressure relief valve.



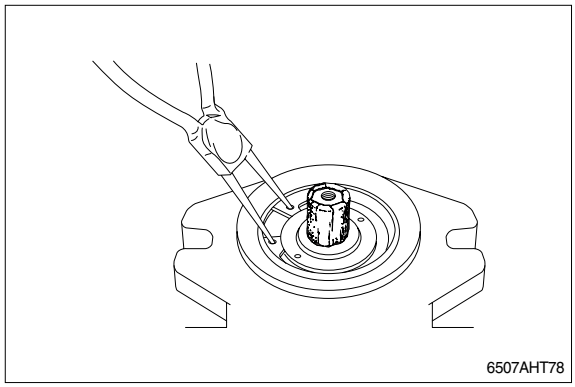
(6) DA-cartridge



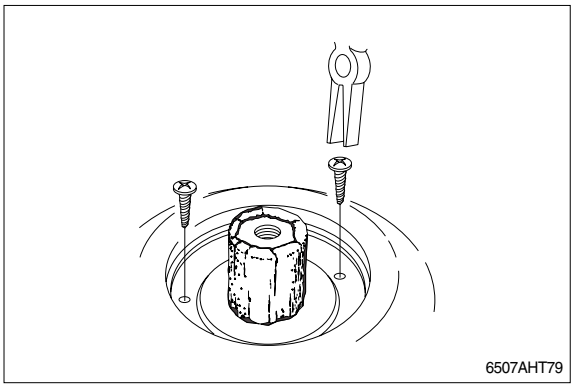
3) SEALING OF THE DRIVE SHAFT



(1) Remove retaining ring.

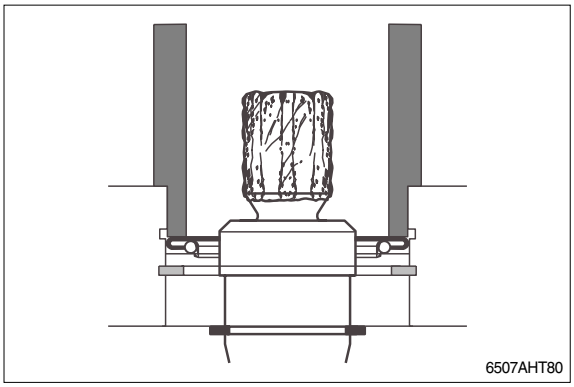


(2) Screw in tapping screw into the holes fitted with rubber.
Pull out shaft seal with pliers.

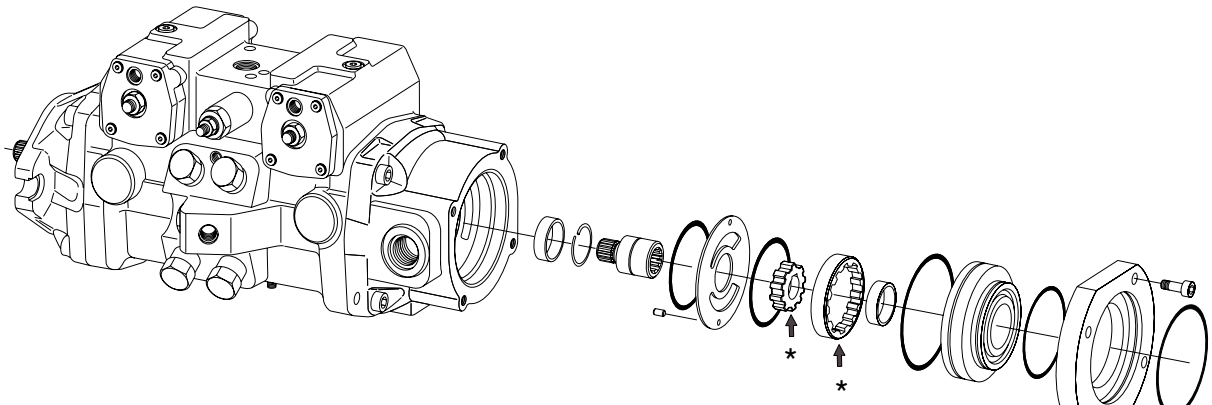


(3) Press-in shaft seal with bush to stop.

※ **Lightly grease the seal, dust lips and shaft seal ring.**



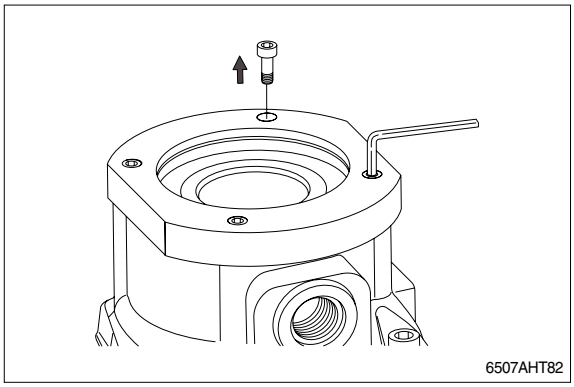
4) SEALING OF THE INNER GEAR PUMP



* : Mount the "chamfered side" towards the cover.

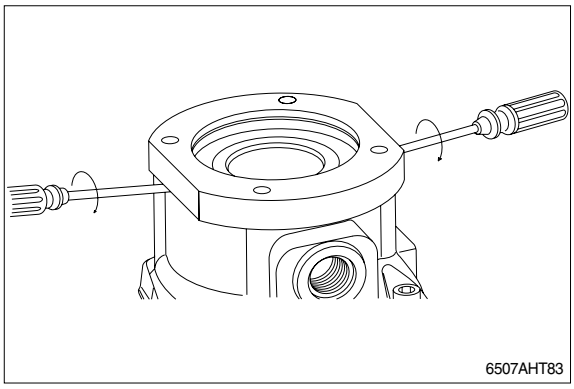
6507AHT81

(1) Remove fixing screws.



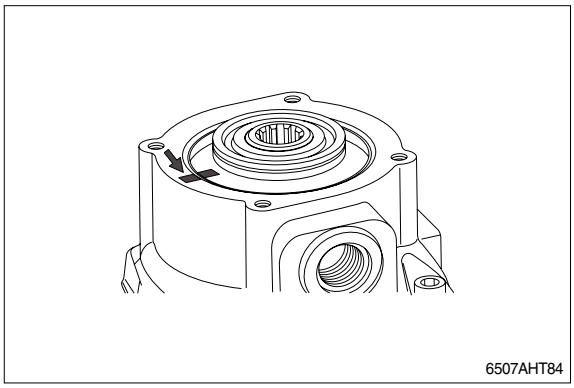
6507AHT82

(2) Pry-off cover.



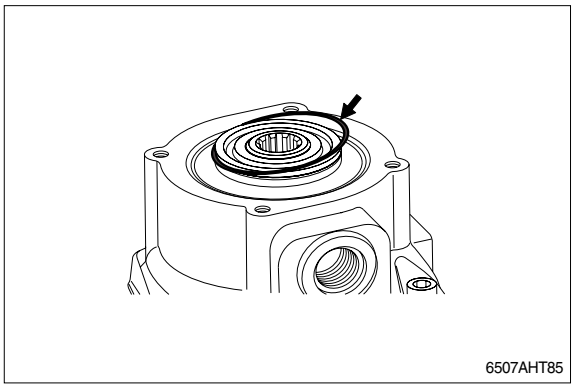
6507AHT83

(3) Mark position.

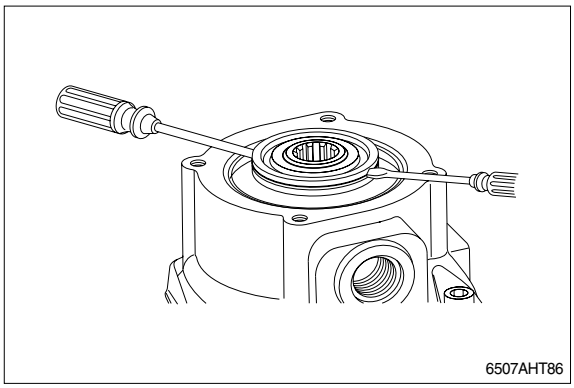


6507AHT84

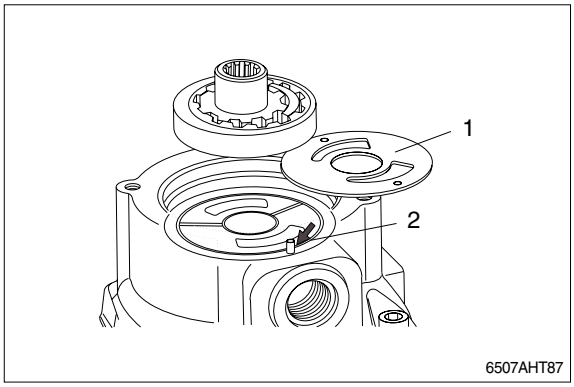
(4) Remove O-ring.



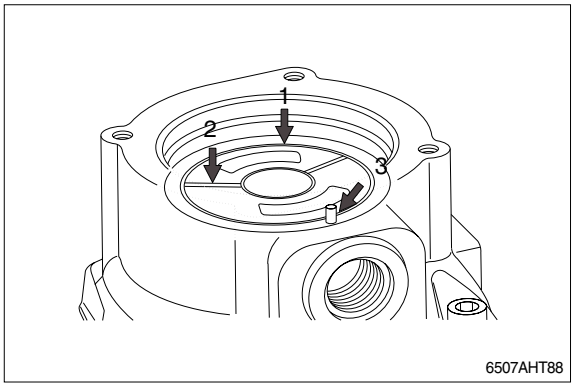
(5) Pry-off the boost pump.



1 Wear plate
2 Locating pin

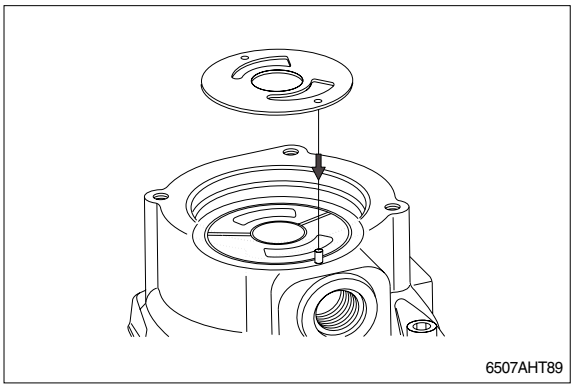


1 Kantsil-ring
2 Unloading channel
3 Locating pin



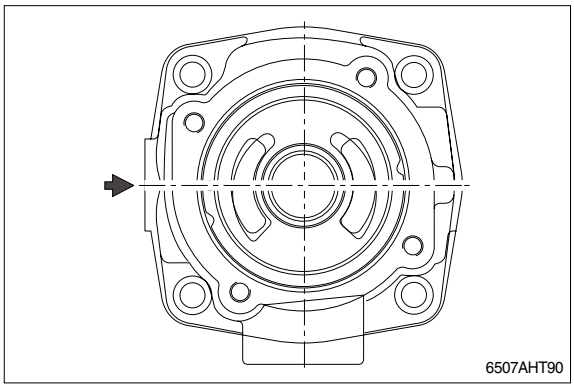
(6) Fit wear plate.

※ **Take care of the direction or rotation.**

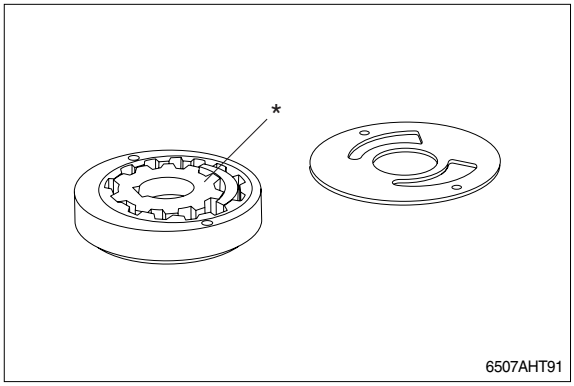


(7) Fit wear plate.
Direction of rotation **"Clockwise"** looking on the drive shaft.

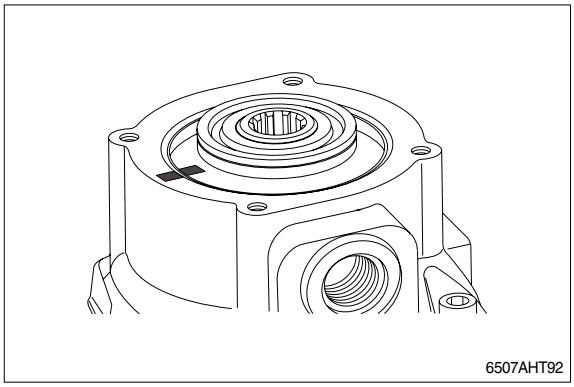
※ **Locating pin.**



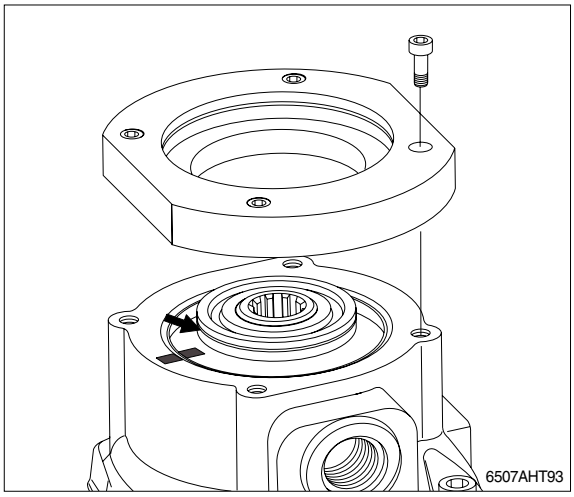
*** : Mount the "chamfered side" towards the cover.**



(8) Fit boost pump.

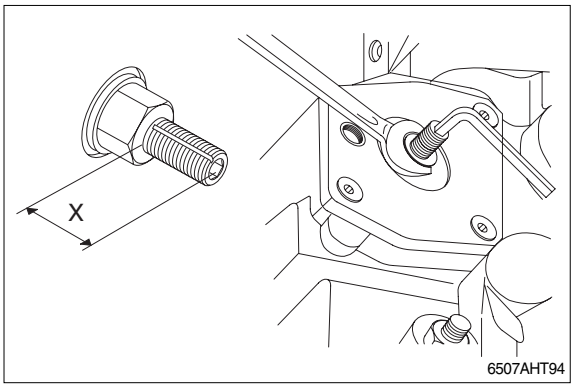


(9) Fit O-ring and cover plate.

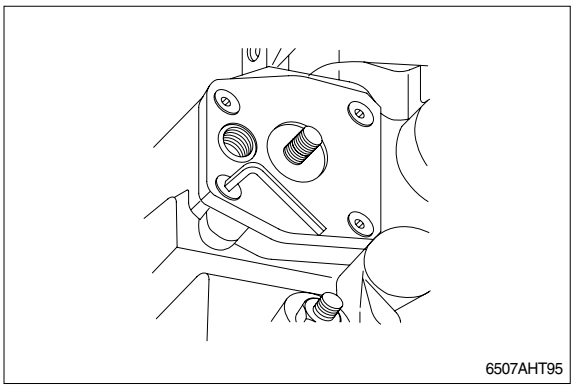


5) SEALING OF THE CONTROL PISTON COVER

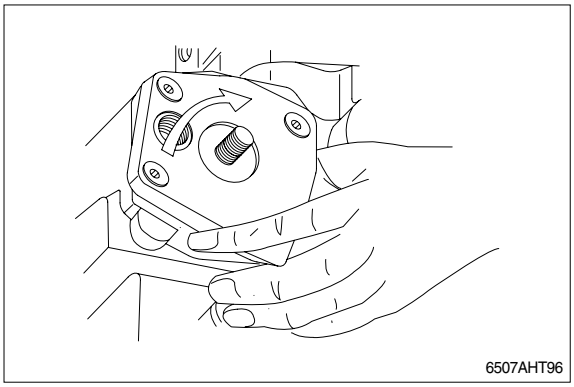
(1) Mark cover. Make a note of dimension X, loosen counter nut, hold adjustment screw.



(2) Remove cover.

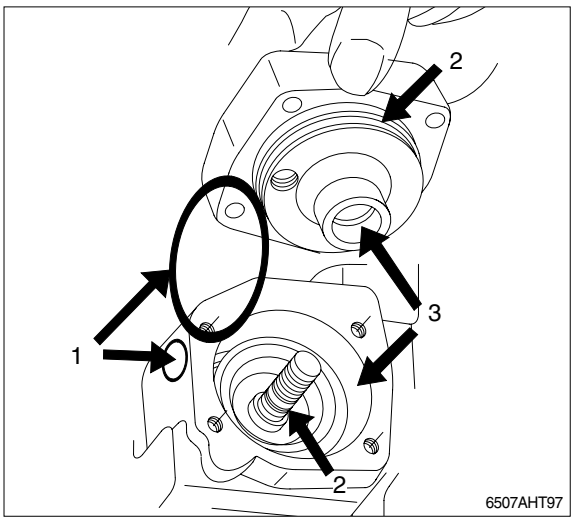


(3) Lift off by turning the setting screw.



(4) Check the O-ring (1), groove (2), housing (3).

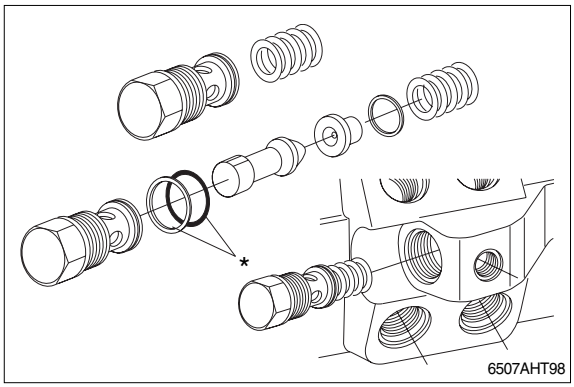
※ **Adjustment of the correct zero position to be carried out after installation into the machine or on the test bench. (see adjustment instructions)**



6) SEALING OF THE VALVES

(1) P_{SP} - Valve - Sealing elements*

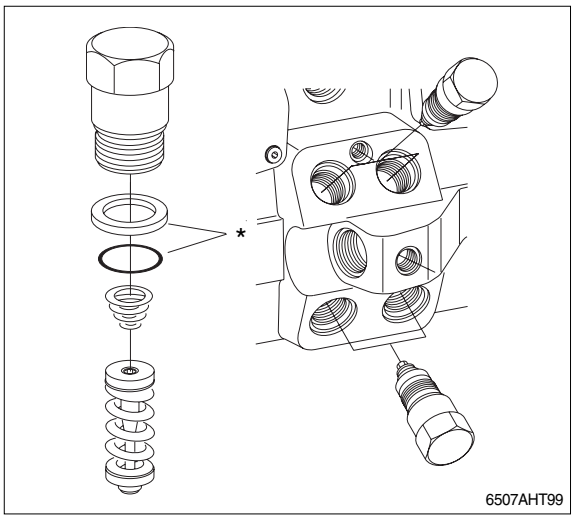
· Tightening torque : 7.14kgf · m
(51.6lbf · ft)



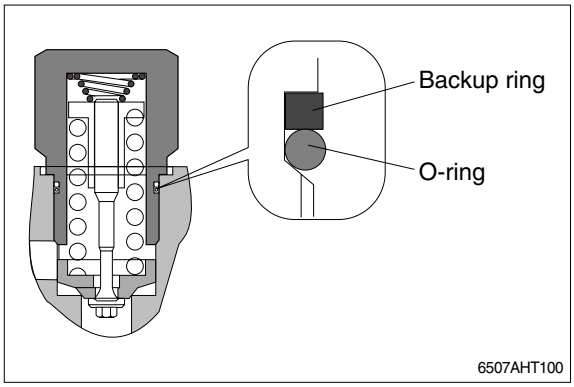
(2) P_{HP} - Valve - Sealing elements*

· Tightening torque : 25.5kgf · m
(184lbf · ft)

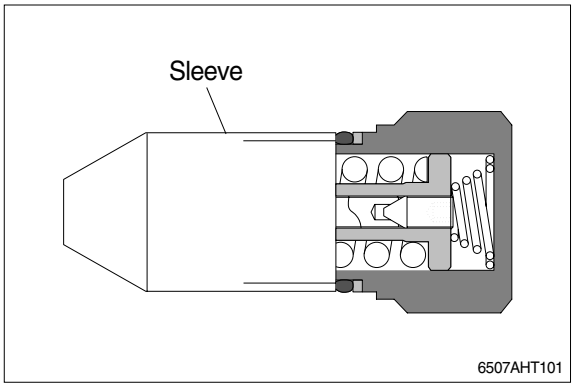
※ **Lubricate the thread and the support surface under the block of the high-pressure valve.**



(3) Remove valve poppet with spring.



(4) Install O-ring and back up ring with auxiliary tool (sleeve).

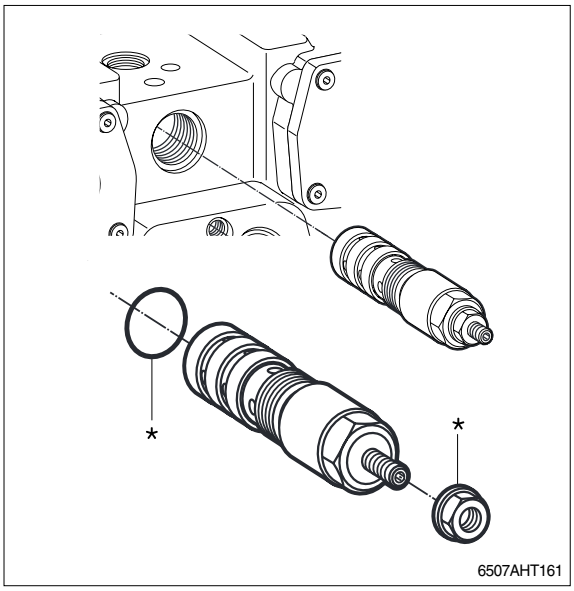


(5) Remove control valve.

*Sealing elements

DA-cartridge

· Tightening torque : 5.1kgf · m
(36.9lbf · ft)



(6) Do not damage the orifice diameter.

※ **Check the orifice diameter.**