

GROUP 5 SWING DEVICE

1. REMOVAL AND INSTALL OF MOTOR

1) REMOVAL

- (1) Lower the work equipment to the ground and stop the engine.
- (2) Operate the control levers and pedals several times to release the remaining pressure in the hydraulic piping.
- (3) Loosen the breather slowly to release the pressure inside the hydraulic tank.

▲ Escaping fluid under pressure can penetrate the skin causing serious injury.

※ When pipes and hoses are disconnected, the oil inside the piping will flow out, so catch it in oil pan.

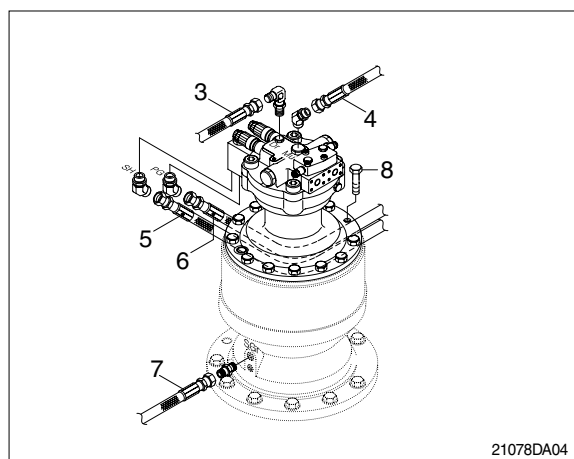
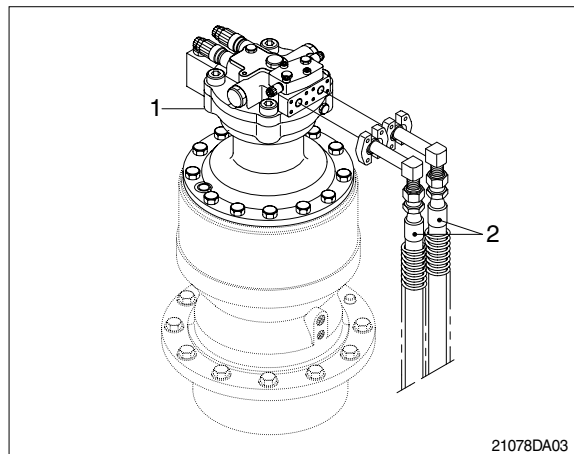
- (4) Disconnect hose assembly (2).
 - (5) Disconnect pilot line hoses (3, 4, 5, 6, 7).
 - (6) Sling the swing motor assembly (1) and remove the swing motor mounting bolts (8).
- Motor device weight : 230kg (507lb)

- (7) Remove the swing motor assembly.

※ When removing the swing motor assembly, check that all the piping have been disconnected.

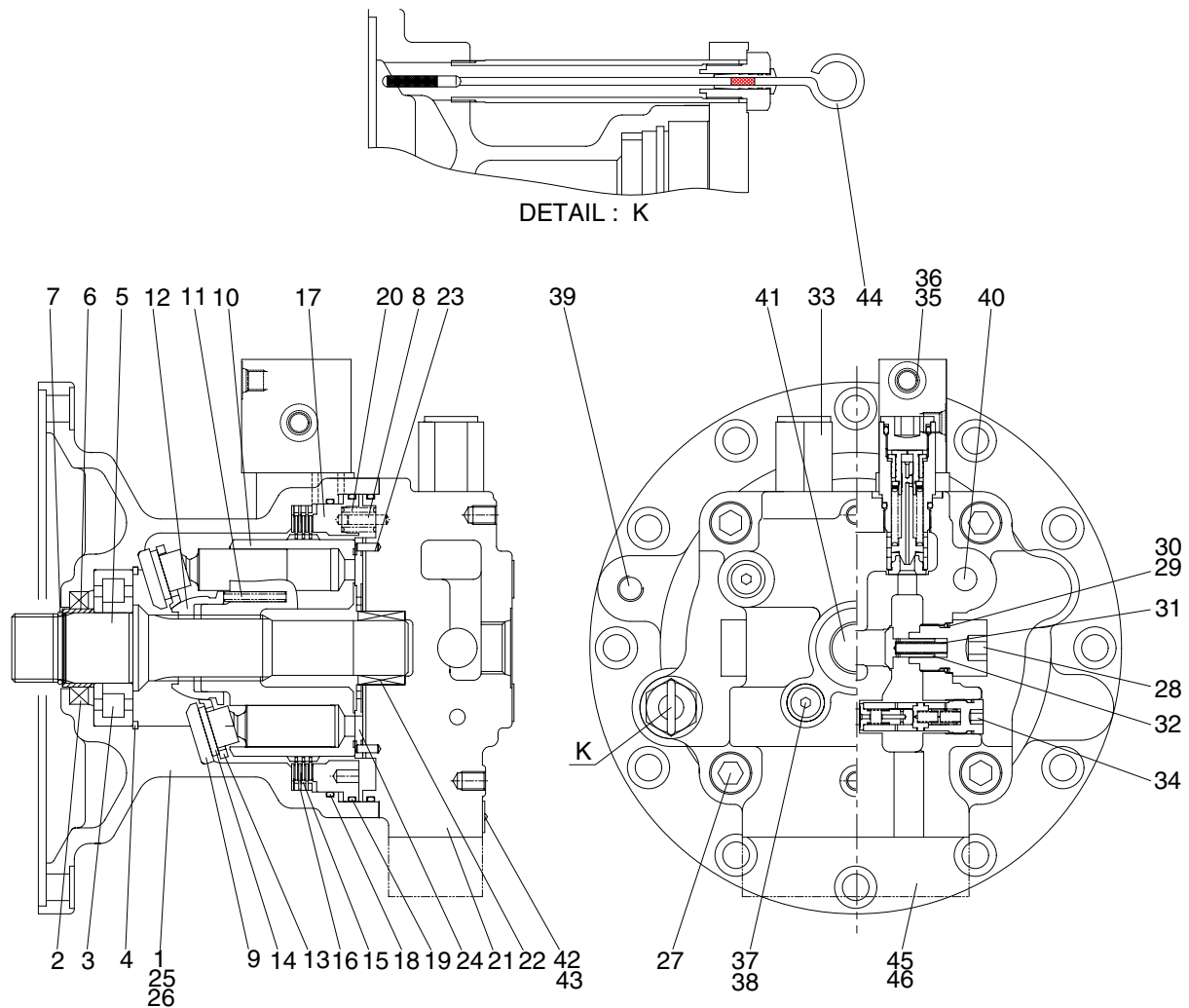
2) INSTALL

- (1) Carry out installation in the reverse order to removal.
- (2) Bleed the air from the swing motor.
 - ① Remove the air vent plug.
 - ② Pour in hydraulic oil until it overflows from the port.
 - ③ Tighten plug lightly.
 - ④ Start the engine, run at low idling and check oil come out from plug.
 - ⑤ Tighten plug fully.
- (3) Confirm the hydraulic oil level and check the hydraulic oil leak or not.



2. DISASSEMBLY AND ASSEMBLY OF SWING MOTOR

1) STRUCTURE



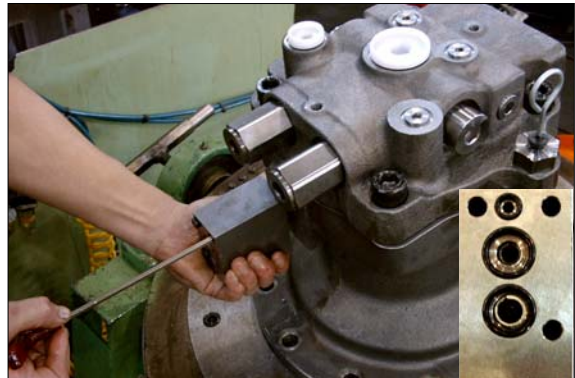
220072SM02

1	Body	18	O-ring	35	Time delay valve
2	Oil seal	19	O-ring	36	Wrench bolt
3	Roller bearing	20	Spring	37	Plug
4	Snap ring	21	Rear cover	38	O-ring
5	Shaft	22	Needle bearing	39	Plug
6	Bushing	23	Pin	40	Plug
7	Stop ring	24	Valve plate	41	Plug
8	Pin	25	O-ring	42	Name plate
9	Shoe plate	26	O-ring	43	Rivet
10	Cylinder block	27	Wrench bolt	44	Level gauge
11	Spring	28	Plug	45	Flange
12	Ball guide	29	Back up ring	46	O-ring
13	Set plate	30	O-ring	47	Plug
14	Piston assy	31	Spring	48	O-ring
15	Friction plate	32	Check	49	O-ring
16	Plate	33	Relief valve	50	Back up ring
17	Brake piston	34	Anti-inversion valve		

2) DISASSEMBLING

(1) Disassemble the sub of a TURNING AXIS

- ① Unloosing wrench bolt and disassemble time delay valve assy (35) from rear cover (21)



14078SM201/201A

- ② Disassemble level gauge (44) from body (1).



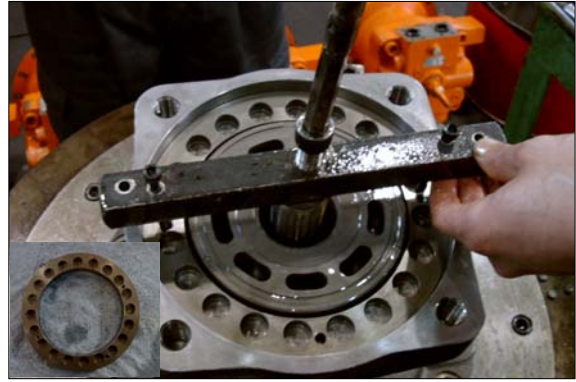
14078SM202/202A

- ③ Hang rear cover (21) on hoist, unloose wrench bolt (27) and disassemble from body (1).



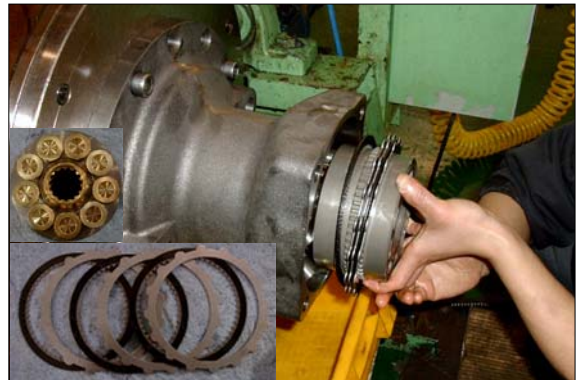
14078SM203/203A

- ④ Using a jig, disassemble break piston (17) from body (1).



14078SM204/204A

- ⑤ Disassemble respectively cylinder block assy, friction plate (15), plate (16) from body (1).



14078SM205/205A/B

(2) Disassemble cylinder block assy sub

- ① Disassemble piston assy (14), set plate (13) from cylinder block assy.



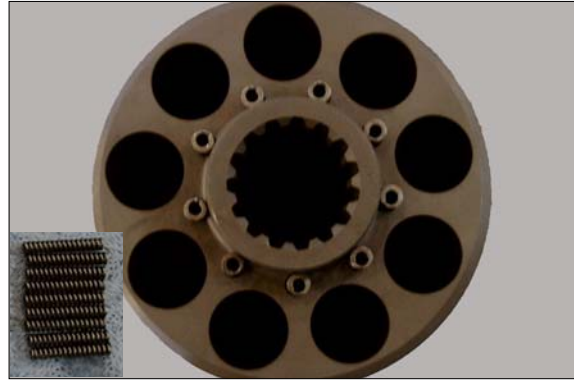
14078SM206/205B

- ② Disassemble ball guide (12) from cylinder block (10).



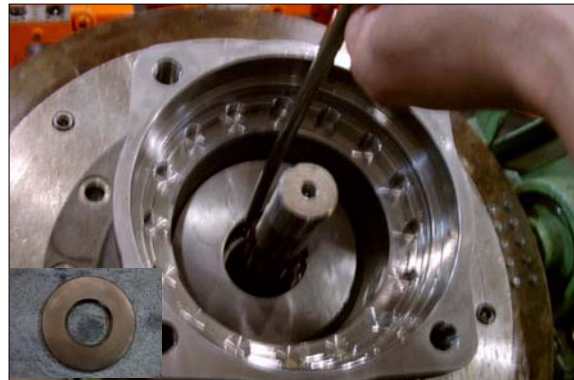
14078SM207/207A

- ③ Disassemble spring (11) from cylinder block (10).



14078SM208/208A

- ④ Disassemble shoe plate (9) from body (1).



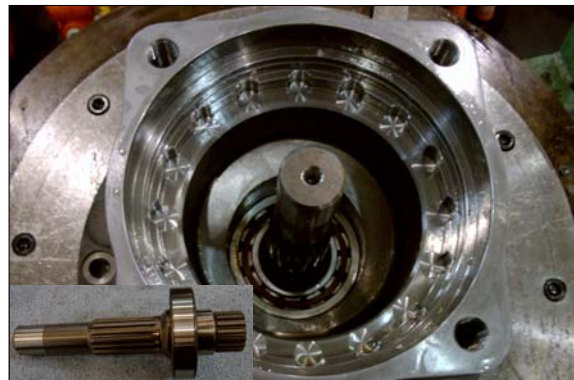
14078SM209/209A

- ⑤ Using a plier jig, disassemble snap ring (4) from shaft (5).



14078SM210/210A

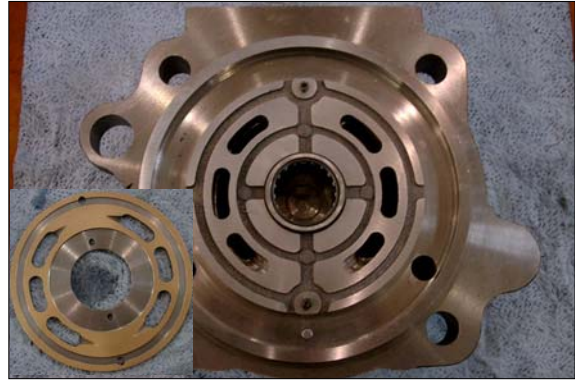
- ⑥ Disassemble shaft assy from body (1).



14078SM211/211A

(3) Disassemble rear cover assy sub

- ① Disassemble pin (8, 23), valve plate (24) from rear cover (21).



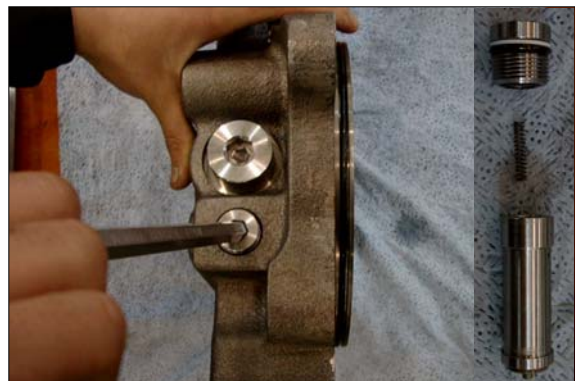
14078SM212/212A

- ② Using a torque wrench, disassemble relief valve assy (33) 2 set from rear cover (21).



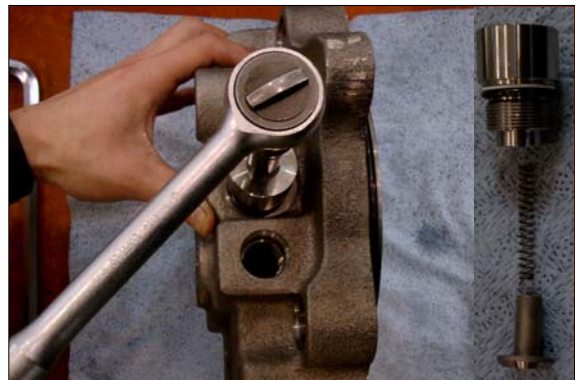
14078SM213/213A

- ③ After disassembling plug with a L-wrench from rear cover (21), disassemble respectively back up ring, O-ring, O-ring, spring, anti-inversion valve assy (34)



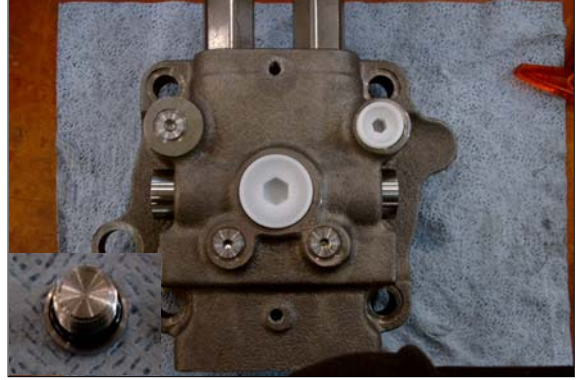
14078SM214/214A

- ④ Disassemble make up check valve assy with a torque wrench from rear cover (21).



14078SM215/215A

- ⑤ Disassemble respectively plug (37, 40, 41), with a L-wrench from rear cover (21).

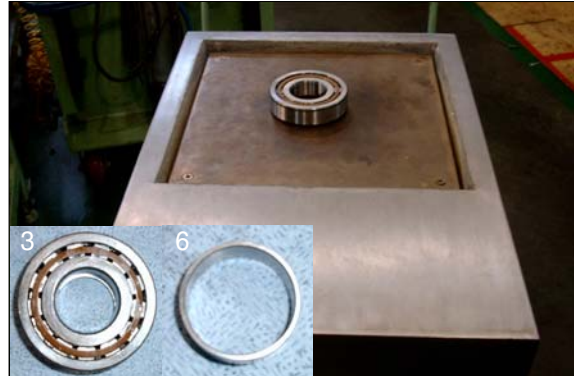


14078SM216/216A

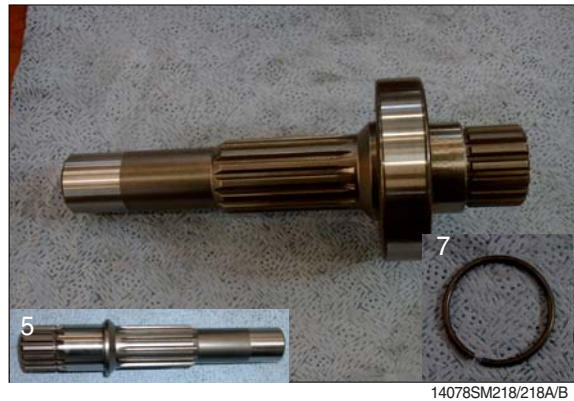
3) ASSEMBLING

(1) Assemble the sub of a turning axls

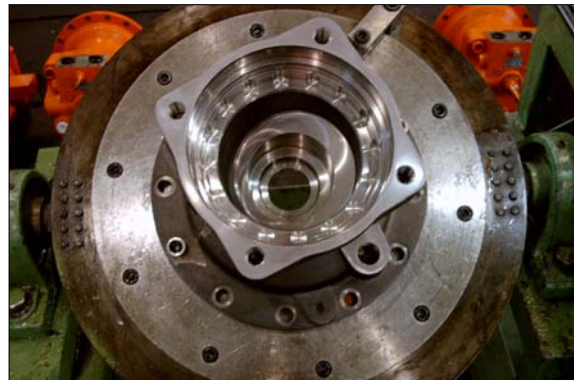
- ① Put roller bearing (3), bushing (6) on preheater and provide heat to inner wheel (compressing temp : 290°C for 2minutes)
- Roller bearing × 1EA
 - Bushing × 1EA



- ② After assembling and compressing preheated roller bearing (3), bushing (6) into shaft (5).
- Stop ring × 1EA
 - Shaft × 1EA



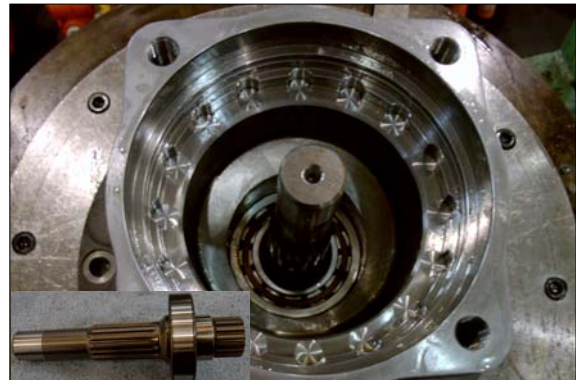
- ③ Put body (1) on a assembling jig, fix it with bolts to prohibit moving.



- ④ Using a compressing tool and steel stick, assemble oil seal (2) into body (1).
· Oil seal × 1EA



- ⑤ Insert above shaft sub into body (1) and assemble it with a steel stick.



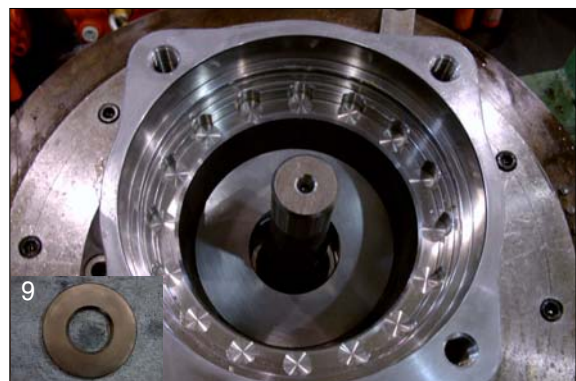
- ⑥ Fix snap ring (4) to shaft with a plier jig.

· Snap ring × 1EA



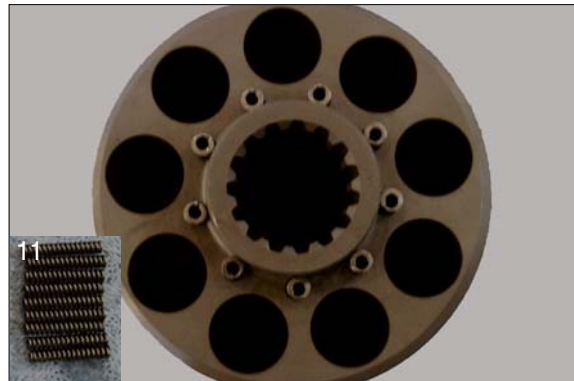
- ⑦ Spread grease on shoe plate (9) and assemble on the body.

· Shoe plate × 1EA



(2) Assemble the sub of cylinder block assy

- ① Assemble spring (11) 9 set into cylinder block (10).
· Spring × 9EA



14078SM208/208A

- ② Assemble ball guide (12) into cylinder.
· Ball guide × 1EA



14078SM207/207A

- ③ Assemble piston assy (14) 9 set into set plate (13).
· Piston assy × 9EA
· SET plate × 1EA



14078SM223/223A

- ④ Assemble above item ② and ③.



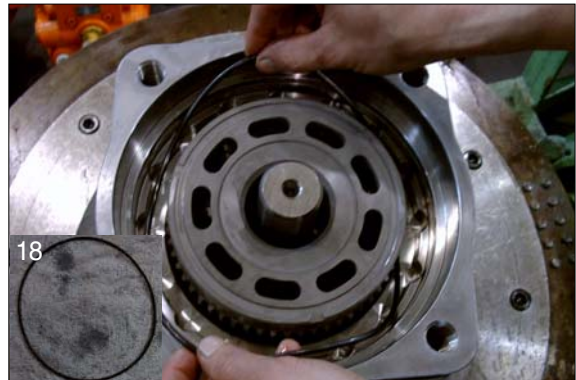
14078SM224

- ⑤ Assemble cylinder block assy into body (1).



14078SM225

- ⑥ Assemble O-ring (18) into body (1).
· O-ring × 1EA



14078SM226/226A

- ⑦ Assemble 3 set of plate (16), friction plate (15) respectively into body.
· Plate × 3EA
· Friction plate × 3EA



14078SM227/205A

- ⑧ Assemble O-ring (19) into break piston (17).
· O-ring × 2EA



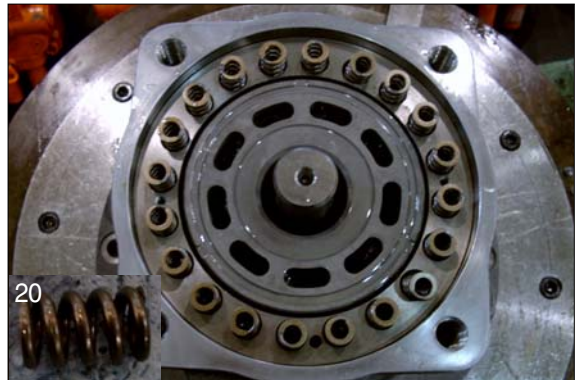
14078SM228/226A

- ⑨ Insert break piston assy into body (1) and compress it with a jig and hammer.



14078SM229/229A

- ⑩ Assemble spring (20) (20EA) into break piston (17).
 · Spring × 20EA



14078SM230/230A

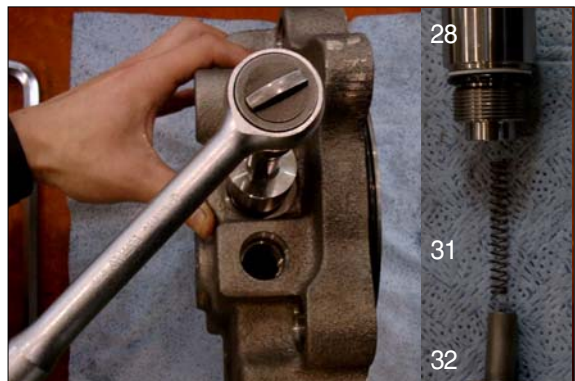
(3) Assemble the sub of rear cover assy sub

- ① Assemble the sub of make up check valve assy.
 Assemble O-ring (30), back up ring (29) into plug (28) with a O-ring assembling jig.
 · Plug × 1EA
 · Back up ring × 1EA
 · O-ring × 1EA



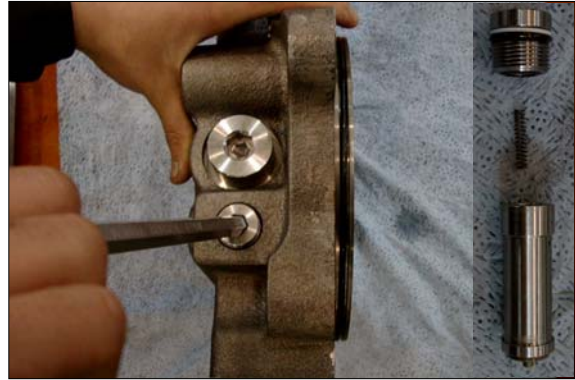
14078SM231/231A/B

- ② Assemble respectively make up check valve assy spring (31), check (32), plug (28) into rear cover (21) after then screw it torque wrench.
 · Make up check sub × 2set
 · Spring × 2EA
 · Check × 3EA



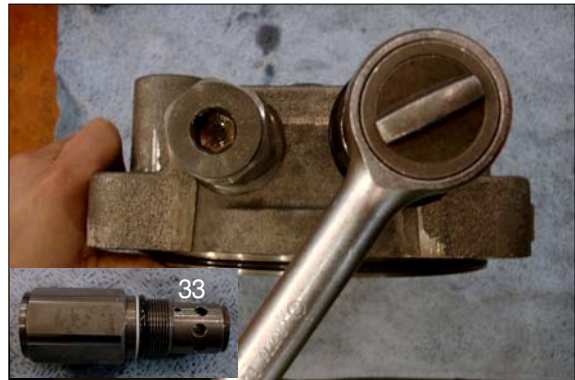
14078SM215/215A

- ③ Assemble respectively plug (47), back up ring, O-ring, O-ring, spring, anti-rotating valve assy (34) into rear cover (21).
(Bilateral symmetry assembling)
- Anti-Inversion v/v assy × 2set
 - O-ring (P12) × 2EA
 - O-ring (P18) × 2EA
 - Back up ring (P18) × 2EA



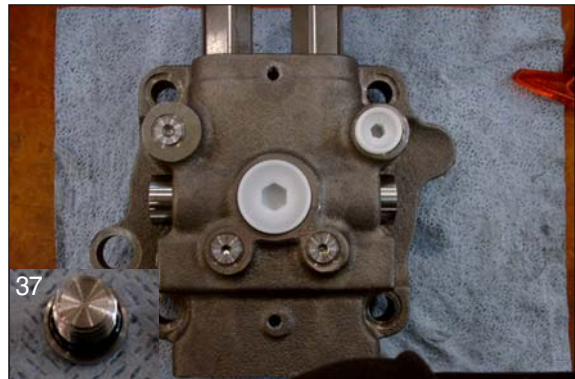
14078SM214/214A

- ④ Assemble relief valve assy (33) 2set into rear cover (21) with a torque wrench.
(Bilateral symmetry assembling)



14078SM213/213A

- ⑤ Assemble plug (37), plug (40, 41) into rear cover (21) with a L-wrench.
* Plug × 3EA (PF1/4)



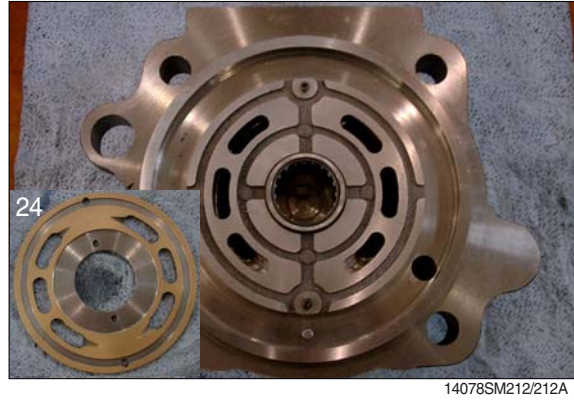
14078SM216/216A

- ⑥ After assembling needle bearing (22) into rear cover (21), with a hammer assemble pin (8, 23).
* Pin × 1EA
* Pin × 2EA



14078SM212

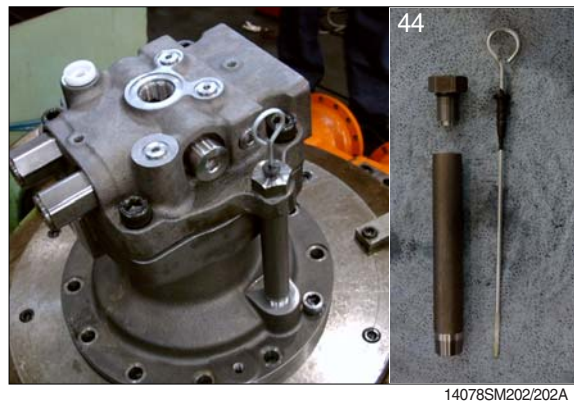
- ⑦ Spreading grease on valve plate (24),
assemble into rear cover (21).
· Valve plate × 1EA



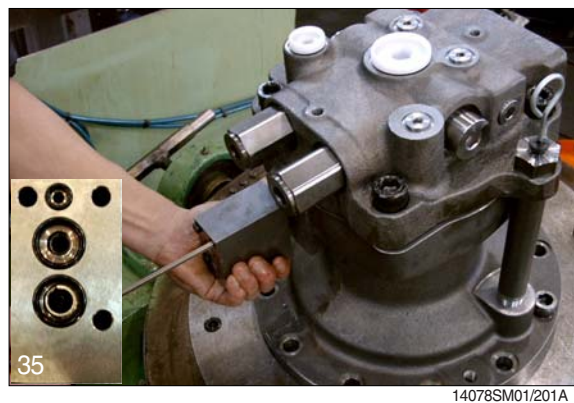
- ⑧ Lift up rear cover assy on body (1) by a crane and assemble it with a wrench bolt (27).



- ⑨ Assemble level gauge (44) into body (1).

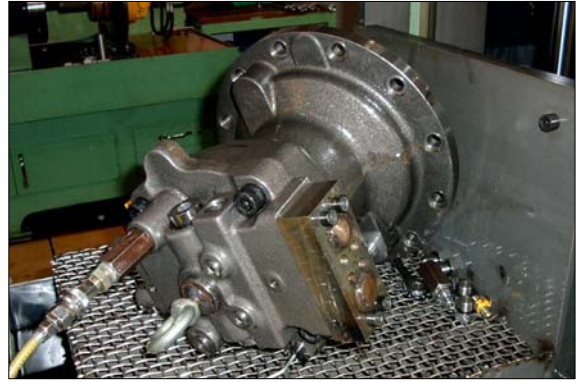


- ⑩ Assemble time delay valve assy (35) into rear cover (21) with a wrench bolt (36).



(4) Air pressing test

Be sure of leakage, after press air into assembled motor



14078SM232

(5) Leakage check

After cleaning motor by color check No.1, paint No.3 and be sure of leakage.



14078SM233/233A

(6) Mount test bench

Mounting motor test bench, test the availability of each part.



220078SM14