

	PROCEDURE FOR OVERHAUL 27E	OV-27E R0
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This is a procedure book for overhaul of the following target valve model.
Please do it with extreme caution when do a overhaul not to add wound to each part product.

1. Target valve model : H45 300A

2. Disassembly

When valve with a drive device (a pneumatic actuator, a worm gears, etc), remove a drive device from a valve after set a mark at a separation point with magic markers in order to do reassembly easily after having shut a valve.

2-1. Before disassembly

Keep the next procedure, and please work.

- 1) Secure enough work space to can work safely.
- 2) Lay pipes at a valve, and several times let you operate, and please skip pressure in a valve. And remove a fluid left in a valve and wash it.
- 3) Set a mark at a joint of a body and a body cap, a joint of a body and a side cover with magic markers in order to do reassembly easily.
- 4) About the consumption parts, ball seat, etc, please prepare a new purity part.

2-2. Disassembly

Refer to a sectional drawing (4 pages), and please work in the next procedure. Please pay attention not to add wound to each part product. A number in ○ shows a number of a sectional drawing.

- 1) Fix a valve to a work stand, consider it to can disassembly safely, and secure enough work space.
- 2) Loosen nuts (24) and bolts (27) with an offset wrench to degree to can change in opposite angle alternation by hand.
- 3) Remove a valve from work stand, and put side cover ③ above, do a ground department of body this side, and put it plumb.
Then, let put support at need under flange department with body cap ② and body ① of two places of sides and be stable.
- 4) Remove nuts (24) of two places of body cap ② next to side cover ③ from body ①, and remove two body cap ②.
- 5) Remove bolts (27) and side cover ③ from body ①.
- 6) Loosen socket head bolts (31) with six angles of wrenches (hexagon socket screw keys), and remove it.

Concerned materials					
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- 7) Remove gland flange ⑫ and stem ⑥, stem ring ⑪, thrust bearing ⑧, stem bearing ⑦ from body ①.
- 8) Remove bolts (28) and bottom cap ⑬, thrust bearing ⑭.
- 9) Pull out bottom stem ⑯ and remove bottom stem bearing ⑮.
- 10) Remove o-ring ⑰⑱⑲ from stem ⑥ and bottom stem ⑯.
- 11) Remove ball ④ from body ①.
- 12) Remove body cap ② (rest of one piece) from body ①.
- 13) Remove seat retainer ⑨ from body cap ② and side cover ③.
- 14) Remove ball seat ⑤ from seat retainer ⑨.
- 15) Remove seat retainer ⑨ from o-ring (23).
- 16) Remove o-ring ⑳(21)(22) from body ① or body cap ② and side cover ③, bottom cap ⑬.

2-3. After disassembly

- 1) Please enforce check to each part product whether there is not abnormality.
- 2) Please wash the metal parts which disassembled with water/steam cleanly.

3. Assembly

3-1. Before assembly

Please confirm the next contents before assembly.

- 1) About consumption parts such as ball seat ⑤, stem bearing ⑦, thrust bearing ⑧⑭, bottom stem bearing ⑮, o-ring ⑰~(23), please prepare a purity part new entirely.
- 2) Please confirm whether there is not wound in ball④. If there is wound, cannot use it. Purchase a new article, and please assemble it.
- 3) A small quantity grease(KYODO YUSHI CO., LTD. :SIMPLEX S No.00 or other equivalent) applies on o-ring ⑰~(23). Then, please pay attention to so that an alien substance does not stick. (Put a valve in a bag made by vinyl.)

3-2. Assembly of a part for a seat

- 1) Mount seat retainer⑨ with ball seat⑤.
- 2) Mount seat retainer⑨ with o-ring (23).
- 3) Mount body ① and body cap ②, side cover ③ with load spring ⑩.
- 4) Mount body ① and body cap ②, side cover ③ with seat retainer ⑨.

3-3. Assembly

Refer to a sectional drawing (4 pages), and please work in the next procedure.

- 1) Do side cover ③ side of body ① beneath, and put it plumb.
- 2) Catch the part which there is not of a screw of stud bolt (24) with a pliers, and tighten it fully in upper part of body ①.
- 3) Mount one place of pertinance o-ring (21) department of body ① with o-ring (21).
- 4) Lower flange of body cap ② installed with a foregoing paragraph, and do a ground department of body ① this side, and put it plumb. Then, let put support at need under flange department with body cap ② and body ① of

- two places of sides and be stable.
- 5) Mount body ① with ball ④.
 - 6) Mount body ① with stem bearing ⑦ and bottom stem bearing ⑮.
 - 7) Mount stem ⑥ with key (25), tighten socket head bolt (29) using six angles of wrenches (hexagon socket screw keys).
 - 8) Mount stem ⑥ and bottom stem ⑯ with o-ring ⑰⑱⑲.
 - 9) Insert stem ⑥ into body ① and ball ④. Then, a port of ball ④ (flow direction), a flow direction indication groove of stem ⑥ become a the same direction.
 - 10) Mount body ① with o-ring(22) for side cover ③, and install side cover③ according to a mark, and tighten all bolts(27) in the degree that doesn't loosen.
 - 11) Mount body ① with two rest of o-ring (21).
 - 12) Mount body ① with two rest of body cap ②.
 - 13) Tighten all nuts (24) for a stud bolt lightly.
 - 14) Fix a valve to a work stand, in order to tighten bolts (27), nuts (24). And confirm that a port of ball ④ agrees with a port of body cap ②. Then, tighten bolts (27) for side cover ③ fixation in opposite angle alternation with an offset wrench surely. When a port of body cap ② doesn't fit a port of ball ④, wound sticks to a ball seat, and cause a leak.
 - 15) Tighten nuts (24) for body cap fixation opposite to side cover ③ in opposite angle alternation with an offset wrench surely. Next tighten nuts (24) for rest of two body cap ② fixation in opposite angle alternation with an offset wrench surely.
 - 16) Mount body ① with bottom stem ⑯.
 - 17) Mount body ① with thrust bearing ⑭ and o-ring ⑳.
 - 18) Mount body ① with bottom cap ⑬, tighten bolts (21).
 - 19) Refer to a sectional drawing (4 pages), and confirm order and direction to install, and mount with thrust bearing ⑧ and stem bearing ⑪.
 - 20) Mount body ① with gland flange ⑫ according to a mark.
 - 21) Tighten socket head bolt (31) using six angles of wrenches (hexagon socket screw keys).
 - 22) Mount stem ⑥ with key (26), tighten socket head bolt (30) using six angles of wrenches (hexagon socket screw keys).

3-4. After assembly

- 1) About a finished valve, enforce shell test and seat leakage test, and confirm that there is not a problem. Fundamentally, pressure of shell test is 1.5 times of the highest use pressure, and pressure of seat leak test is the use pressure.
About a test method, after confirm that each part is assembled normally and there was not abnormality ,pressurizes it to around 1/2 of test pressure, and pressurize it to test pressure by degrees while confirming that there is not abnormality.
- 2) When valve with a drive device (a pneumatic actuator, a worm gears, etc), refer to valve specification (an opening and shutting position of a drive device and an opening and shutting position of a valve) and set a mark before disassembly, and mount a drive device.

品番	品名	数量
31	SOCKET HEAD BOLT	1 SET
30	SOCKET HEAD BOLT	1
29	SOCKET HEAD BOLT	2
28	BOLT	1 SET
27	BOLT	1 SET
26	KEY	1
25	KEY	2
24	STUD BOLT & NUT	1 SET
23	O-RING	8
22	O-RING	1
21	O-RING	3
20	O-RING	1
19	O-RING	1
18	O-RING	1
17	O-RING	2
16	BOTTOM STEM	1
15	BOTTOM STEM BEARING	1
14	THRUST BEARING	1
13	BOTTOM CAP	1
12	GLAND FLANGE	1
11	STEM RING	1 SET
10	LOAD SPRING	4
9	SEAT RETAINER	4
8	THRUST BEARING	1 SET
7	STEM BEARING	1
6	STEM	1
5	BALL SEAT	4
4	BALL	1
3	SIDE COVER	1
2	BODY CAP	3
1	BODY	1

H45 300A
SECTIONAL DRAWING

