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Instruction

Assembly of Ball Sector Valve, Type Ramén KS **DN 80-250**

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Read this before assembling

- **NOTE!** Ramén highly recommends only educated and competent technicians' perform repairs or any form of maintenance on Ramén products. Ramén will not take responsibility for any technical errors or damages that may occur due to incorrect assembly. If any doubt occur, make sure to contact Ramén for further consultation before the valve is put into operation.

- This instruction is only applicable for Ramén Ball Sector Valves DN 80-250. If you wish to assemble another model, please contact Ramén for more information.

- O-rings (KS-13, 14, 15 and 16) shall be lubricated with suitable grease before assembling, e.g. Chemplex SI 400M (Fuchs-Lubritech).

- Proper mounting of the sliding ring may be done only with the appropriate tool as shown in page 6.

- For more details please take part of the document ”Maintenance Instruction for Ramén Ball Sector Valve type KS/KSP” (UI-E-KS), provided by Ramén.

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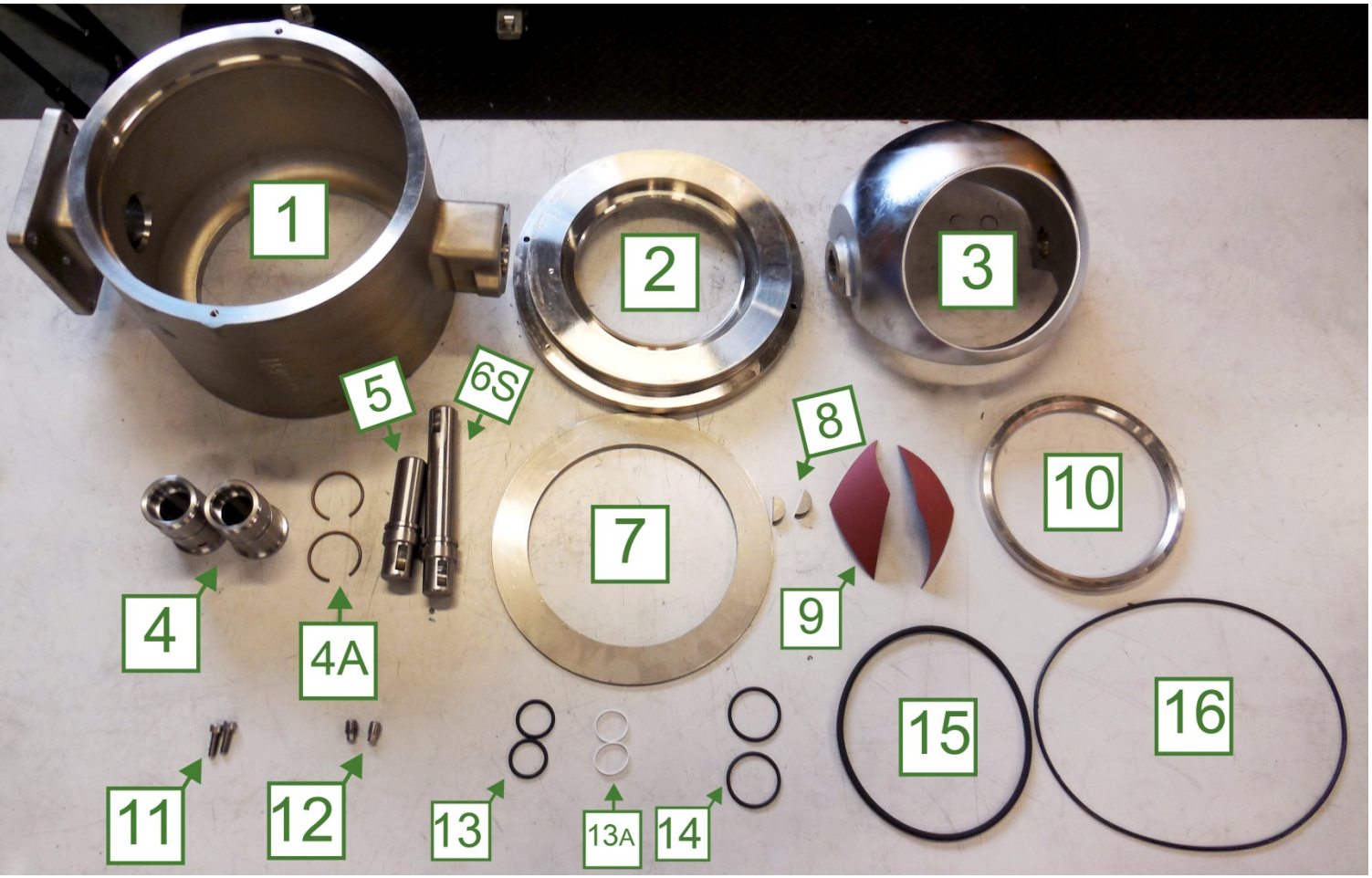

Parts list

1. Body (size DN 150-250 shown)
2. Seat holding ring
3. Ball sector
4. Bearing sleeve
4A. Safety ring
5. Shaft
6S. Shaft short
7. Seat support ring
8. Woodruff key
9. Bearing
10. Seat ring
11. Screw
12. Grub screw
13. O-ring
13A. Sliding ring
14. O-ring
15. O-ring
16. O-ring

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Parts list overview KS 150-(200)

ITEM	QTY	NAME	MATERIAL	ORDER NO.
1	1	BODY	SS 316	>KS-1/150-1
2	1	SEAT HOLDING RING	XX	>KS-2/150-1
3	1	BALL SECTOR	XX	>KS-3/150-1
4	2	BEARING SLEEVE	SS 329	>KS-4/150-200-1
4A	2	SAFETY RING	SS 316	>KS-4A/150-200-1
5	1	SHAFT	SS 329	>KS-5/150-200-1
6L	1	SHAFT LONG	SS 329	>KS-6L/150-200-1
6S	1	SHAFT SHORT	SS 329	>KS-6S/150-200-1
7	1	SEAT SUPPORT RING	SS 316	>KS-7/150-1
8	3	WOODRUFF KEY	SS 329	>KS-8/150-200-1
9	2	BEARING	SS RULON	>KS-9/150-200
10	1	SEAT RING	XX	>KS-10/150-1 ( )
11	2	SCREW	SS 316	>KS-11/150-200-1
12	2	GRUB SCREW	SS 316	>KS-12/150-200-1
13	2	O-RING	X	>KS-13/150-200-1 ( )
13A	2	SLIDING RING	PTFE	>KS-13A/150-200
14	2	O-RING	X	>KS-14/150-200-1 ( )
15	1	O-RING	X	>KS-15/150-1 ( )
16	1	O-RING	X	>KS-16/150-1 ( )

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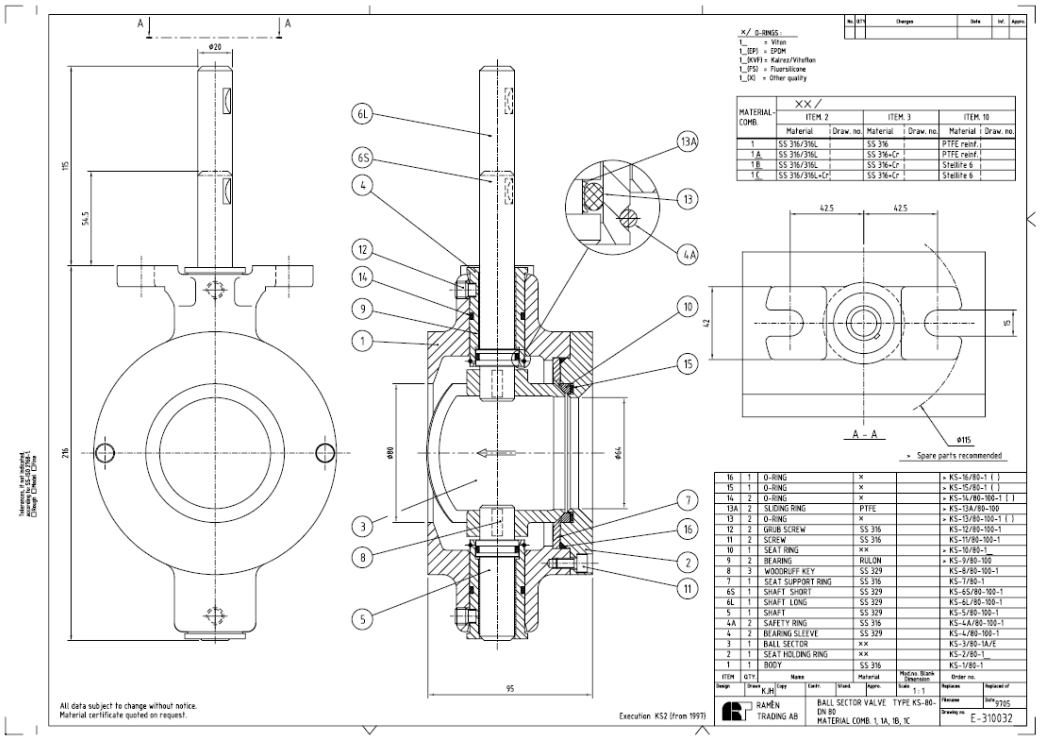

To facilitate the assembly, make sure to have the drawings available. If you don't have access to the drawings, please contact Ramén.

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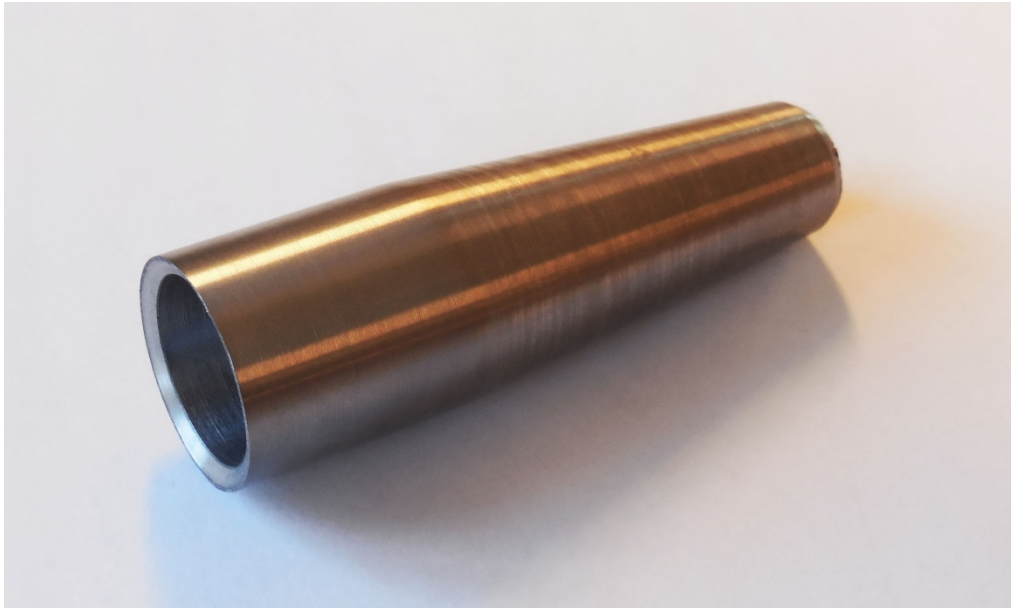
Special Ramén tool for mounting sliding ring (KS-13A) and O-ring (KS-13)



TYPE	ORDER NO.
DN 25	190-1-1001
DN 50	190-1-1002
DN 80-100	190-1-1004
DN 150-200	190-1-1005
DN 250	190-1-1006

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Mount the sliding rings (KS-13A) on the ball sector shafts (KS,-5-6) by using the special tool provided by Ramén. Preferably this should be done a couple of hours before assembling the O-ring.

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This is how the sliding rings (KS-13A) should look like when assembled on the shafts (KS-5,-6).

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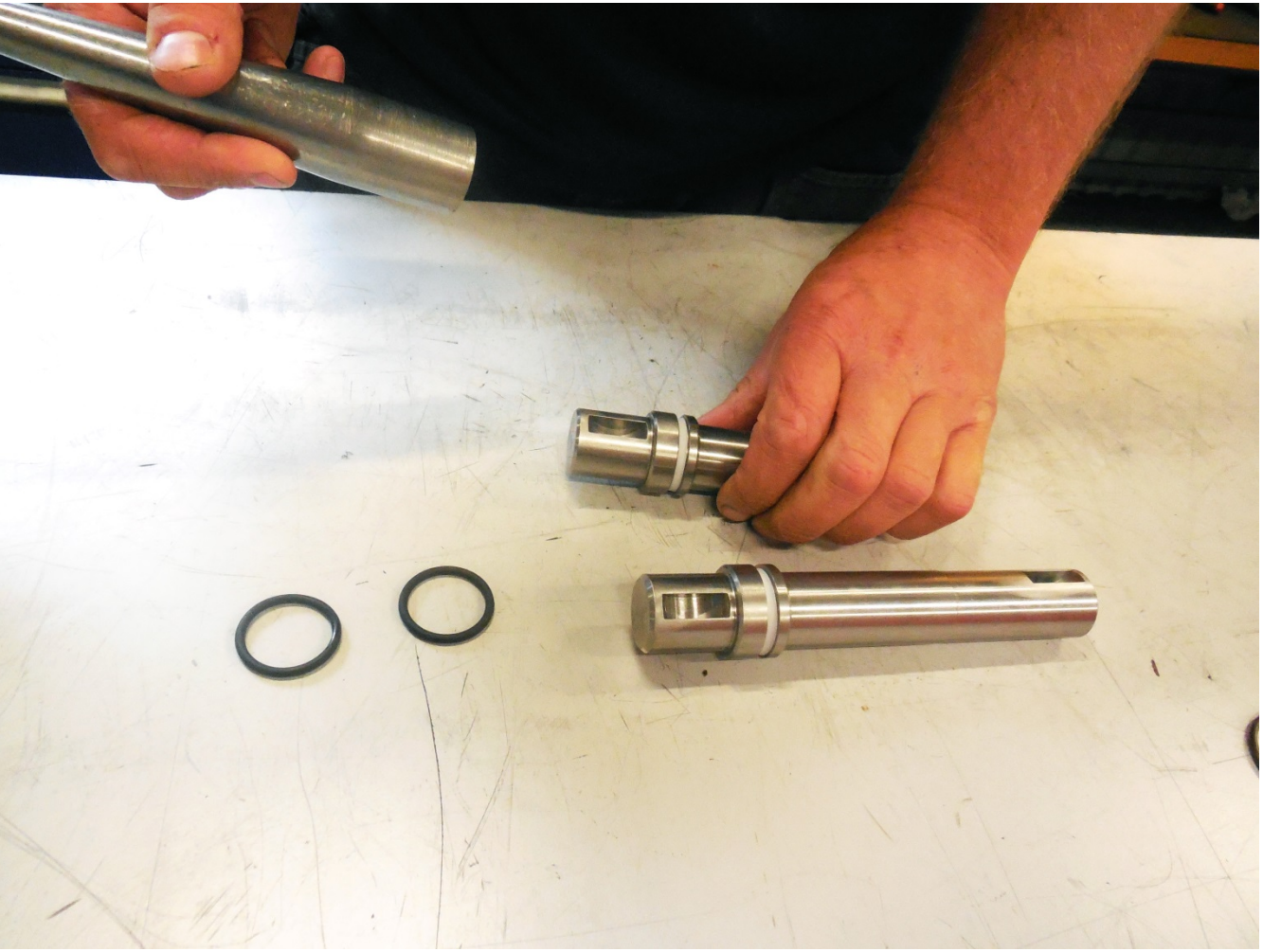

Mount the o-rings (KS-13) on the ball sector shafts (KS-5,-6) by using the special tool provided by Ramén.

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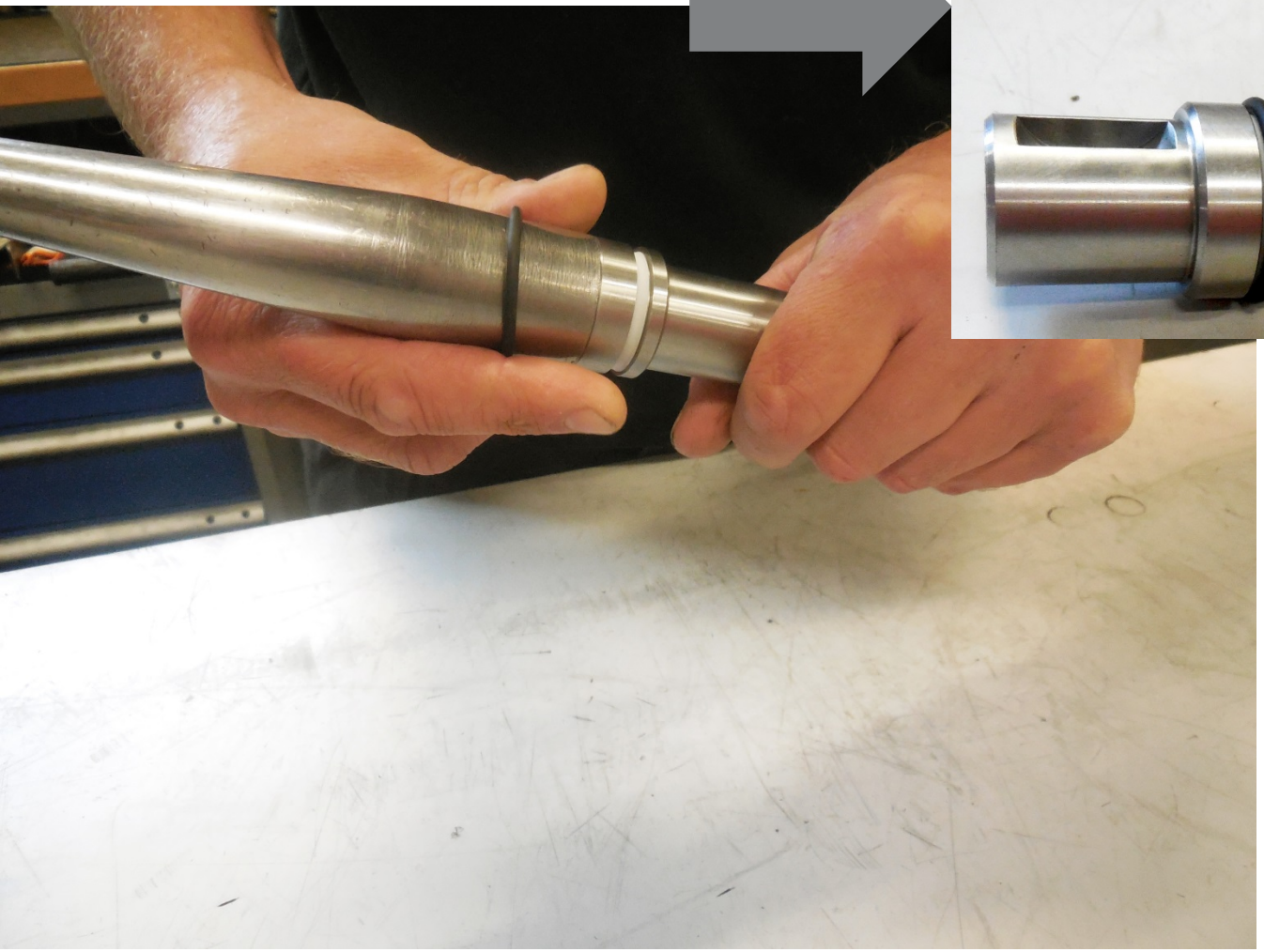

Carefully mount the O-rings on the shafts.

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Mount the woodruff key (KS-8) in the groove, as shown in the picture. Use a rubber hammer if necessary.

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Repeat with the second shaft.

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Mount the O-rings (KS-14) on the bearing sleeves (KS-4) (2 pcs)

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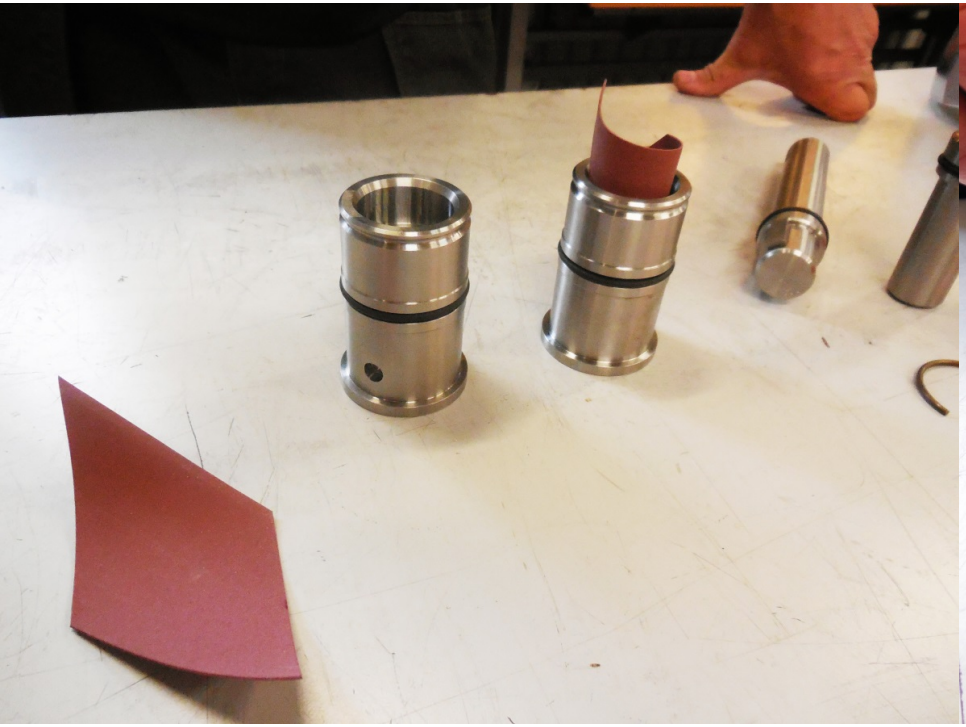

Insert Rulon bearing (KS-9) into the bearing sleeves (KS-4)

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Firmly push down the Rulon bearing (KS-9) into the bearing sleeves (KS-4).

(Note that the correct position is shown on the bearing sleeve positioned to the right)

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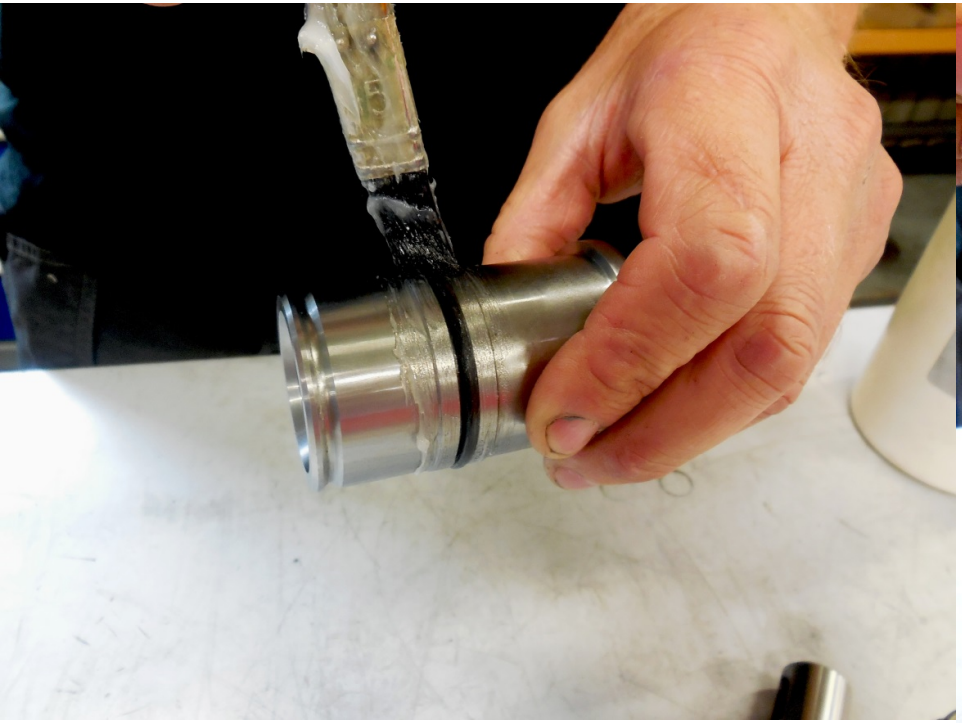

Apply generously of silicon grease, e.g. Chemplex SI 400M (Fuchs-Lubritech), with a brush on the O-rings assembled on the shafts and the bearing sleeves.

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Put the ball sector (KS-3) into the body (KS-1), from the inlet side and with the seat sealing area positioned as shown in the picture.

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Keep the ball sector in an open position when assembling. Put the long shaft at the actuator side of the valve to your right and the ball sector as shown in the picture.

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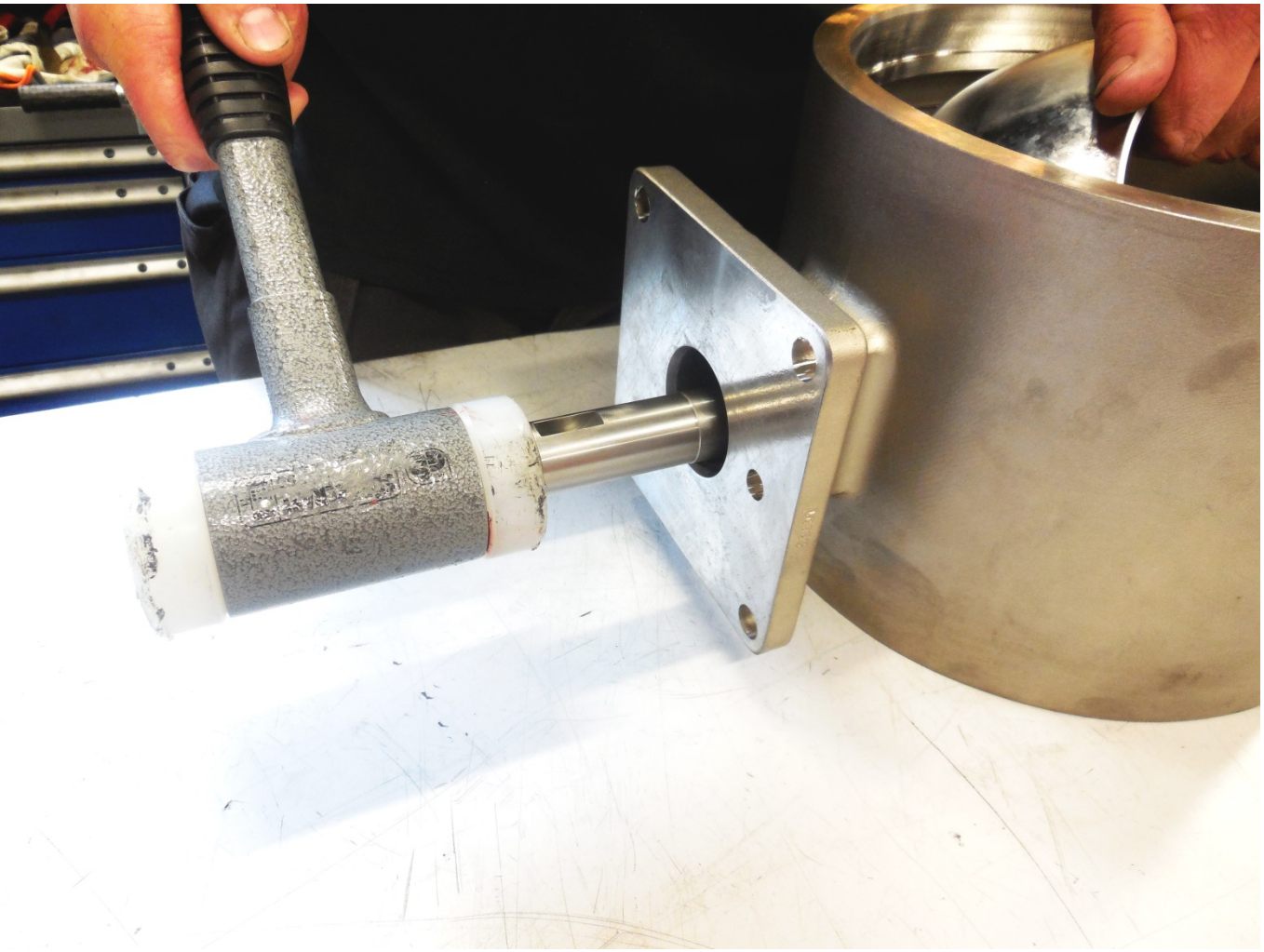

Assembly the drive shaft (KS-6S) in the body, aligning the ball. Use a soft hammer.

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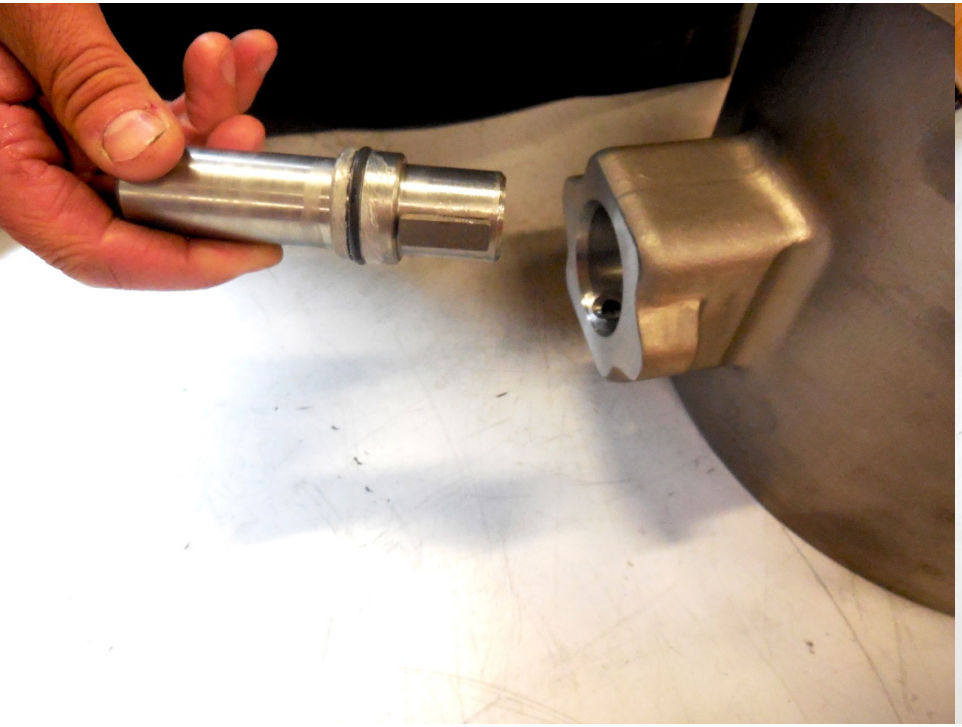

Assembly the short shaft (KS-5) in the body, aligning the ball.

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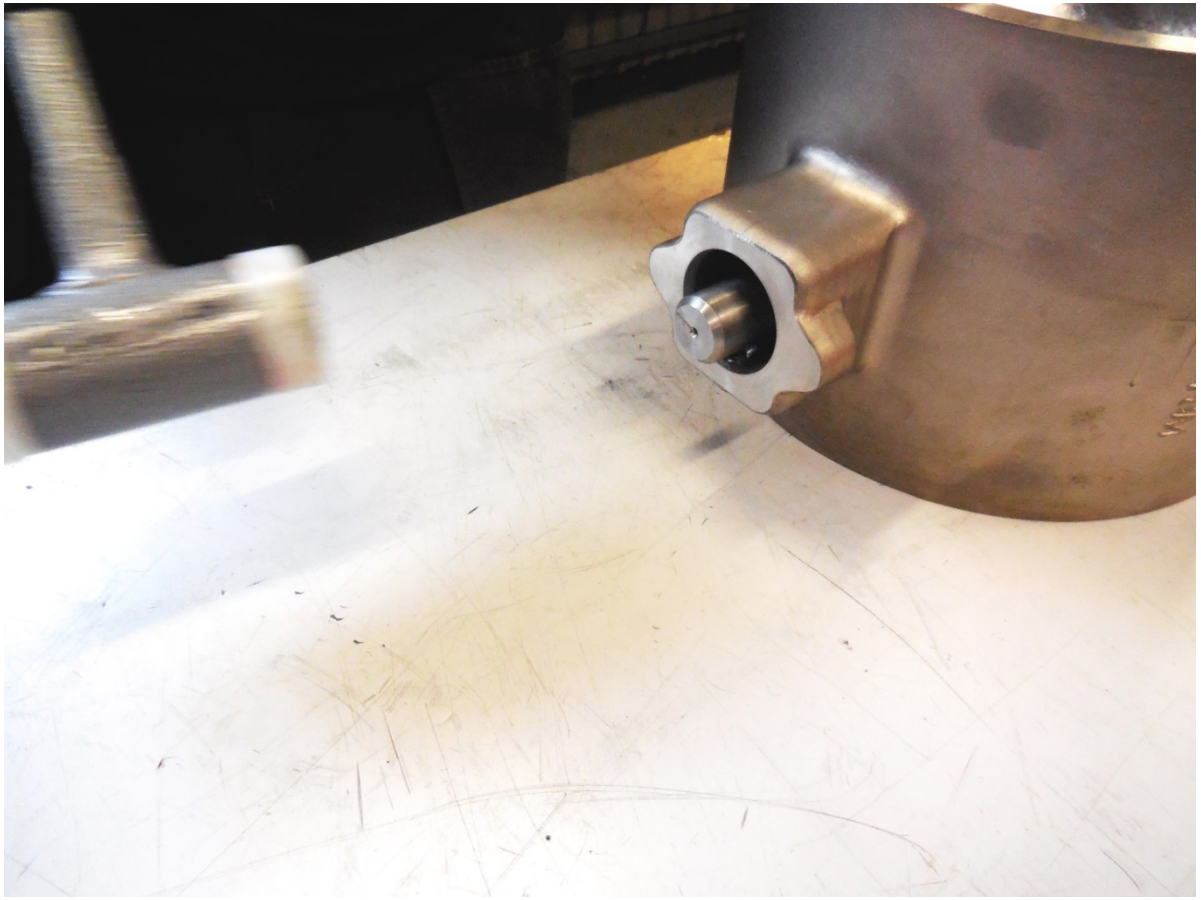

Use a soft hammer as shown in the picture.

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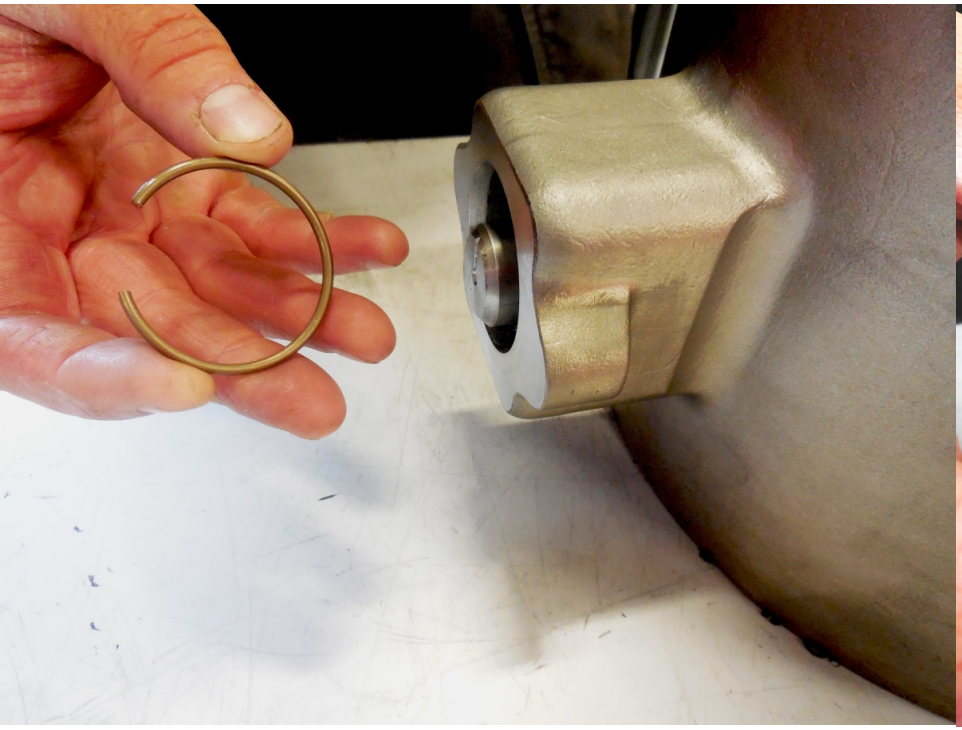

Insert the safety ring (KS-4A) all the way against the ball sector – down side.

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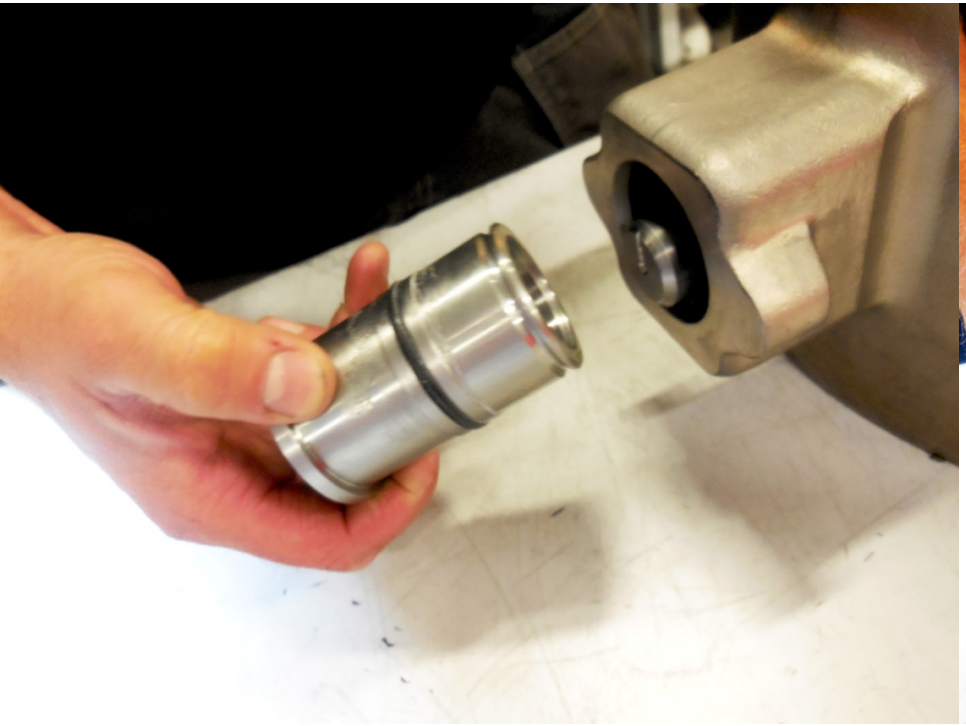

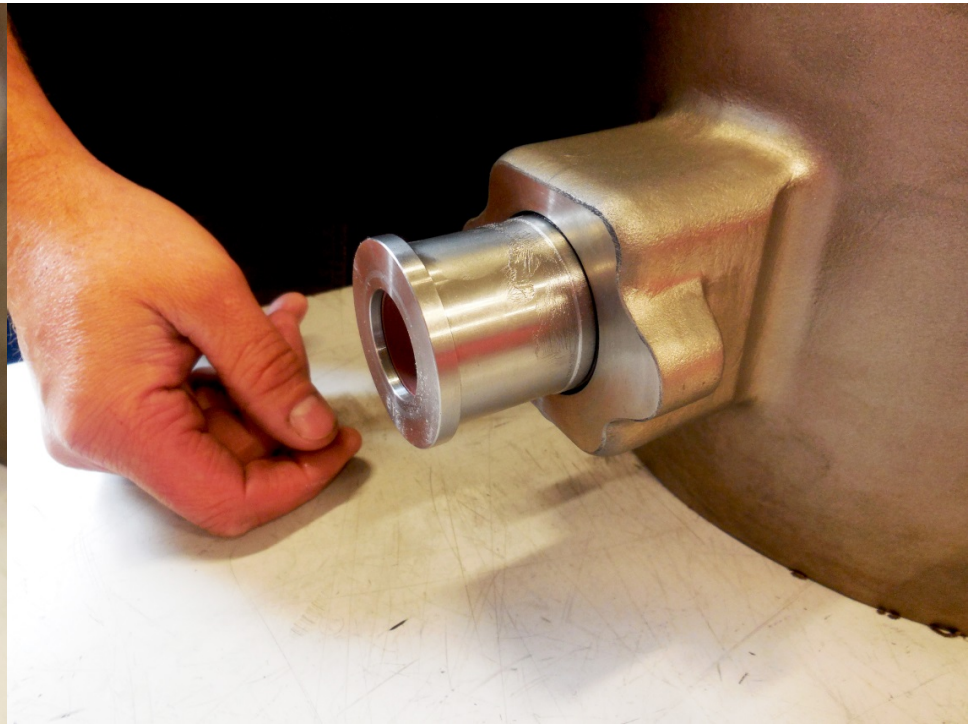

Insert the bearing sleeve (KS-4). Be careful not to damage the O-ring passing the threaded hole in the body. Push the sleeves firmly all the way in.

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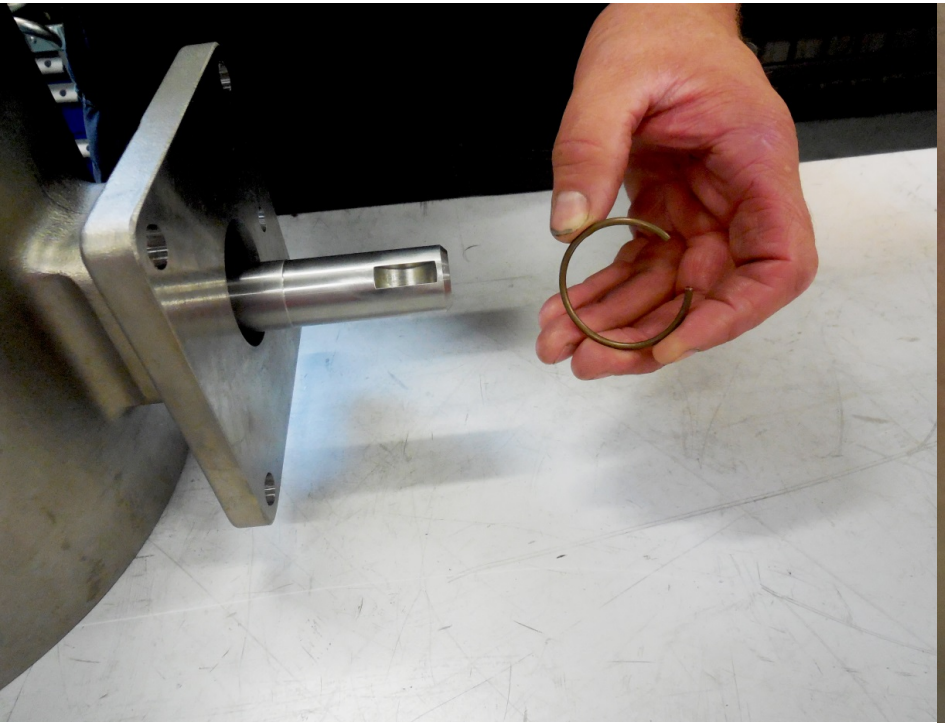

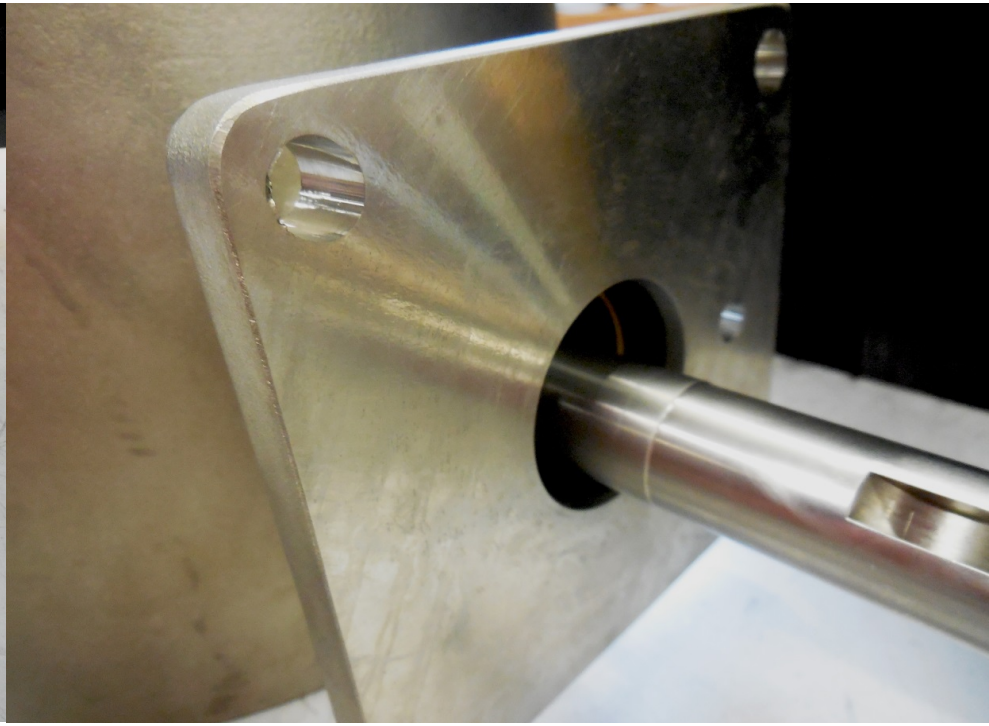

Insert the safety ring (KS-4A) all the way against the ball sector – upper side.

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Put the safety ring on both bearing sleeves. Check that the safety ring (KS-4A) is undamaged and kept in some tension in its groove after reassembly. Change ring if necessary.

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Use thread locker on both grub screws (KS-12).

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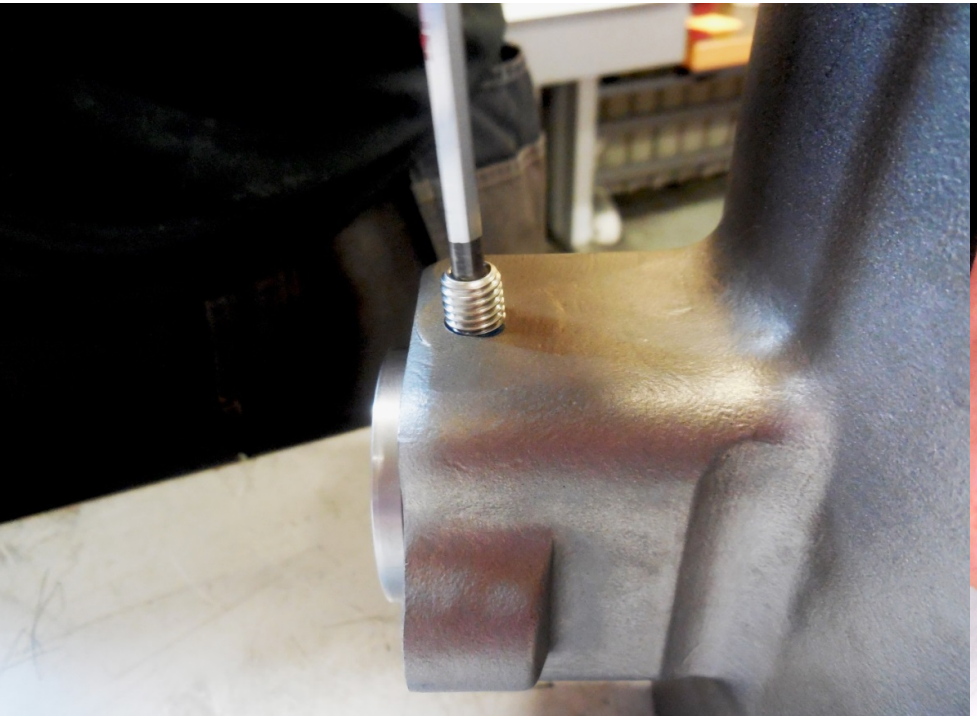
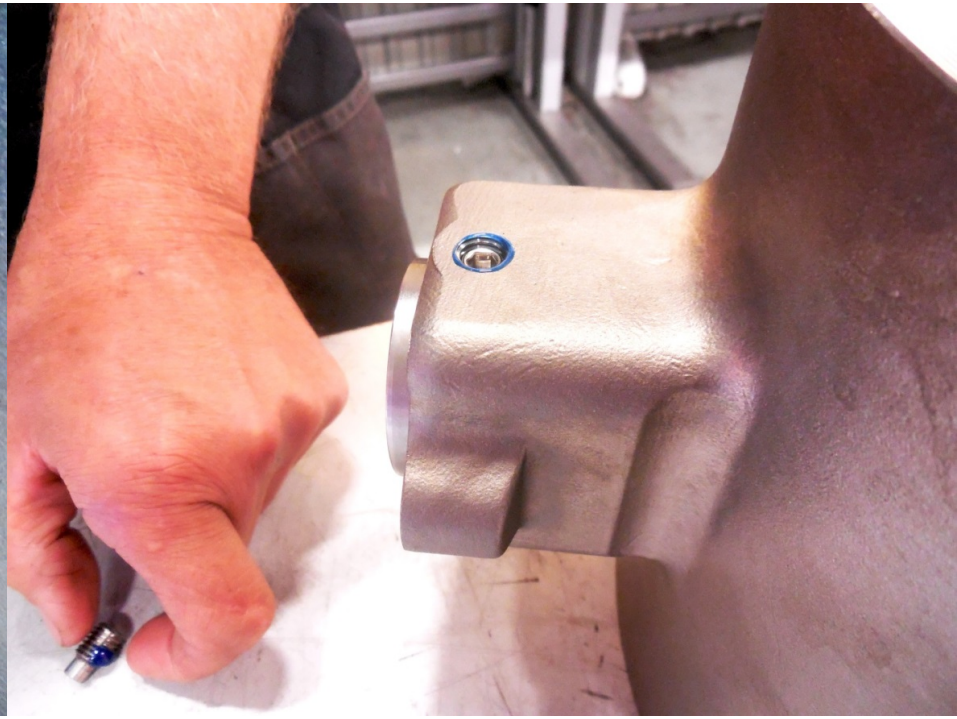
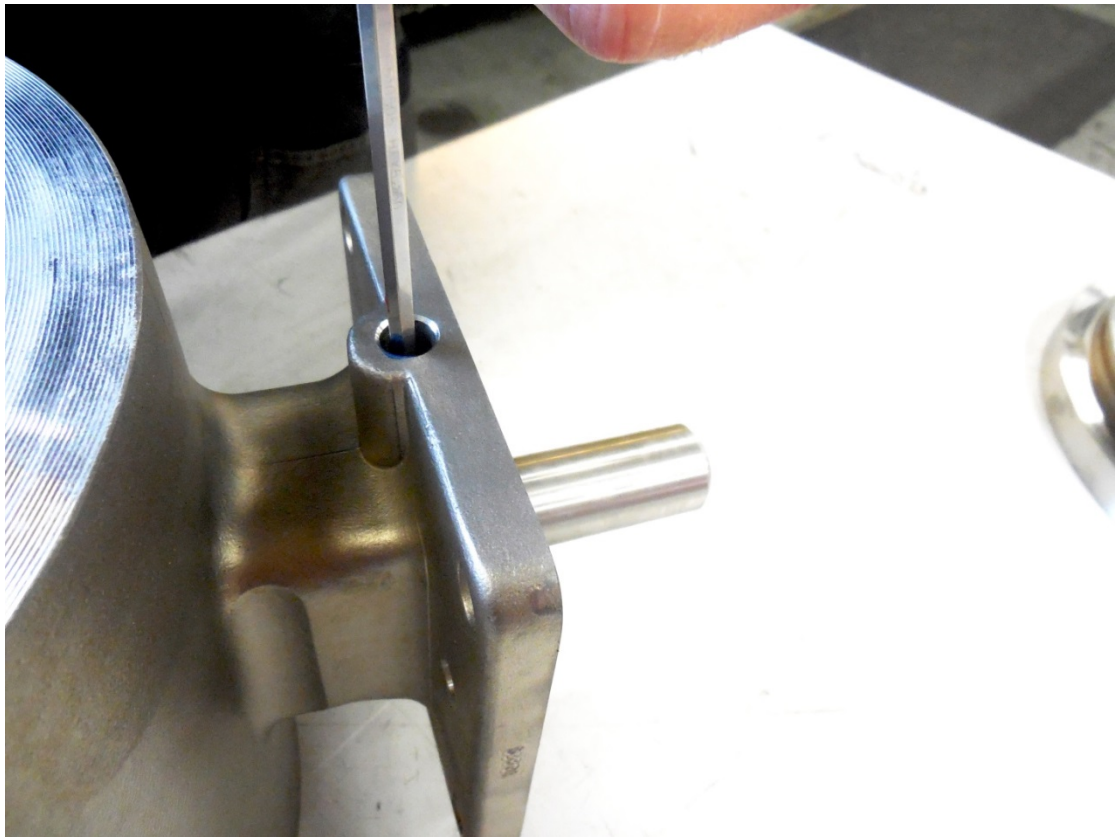




Assembly the grub screws (KS-12). Turn them clockwise all the way down and then in the opposite direction ½ turn.



Repeat the procedure on the other side.

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Install the seat support ring (KS-7).

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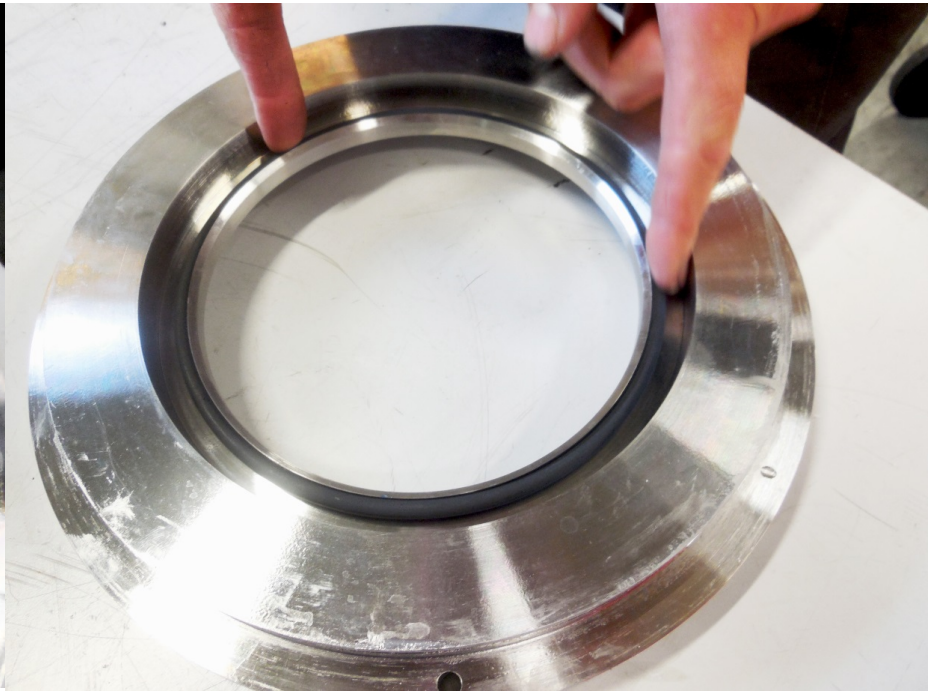

Put the O-ring (KS-15) in the seat holding ring (KS-2)

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Carefully take the seat (KS-10) and press down over the O-ring (KS-15). This picture demonstrates a stellited seat, type 1B. However the procedure is the same, regardless of what kind of seat is used.

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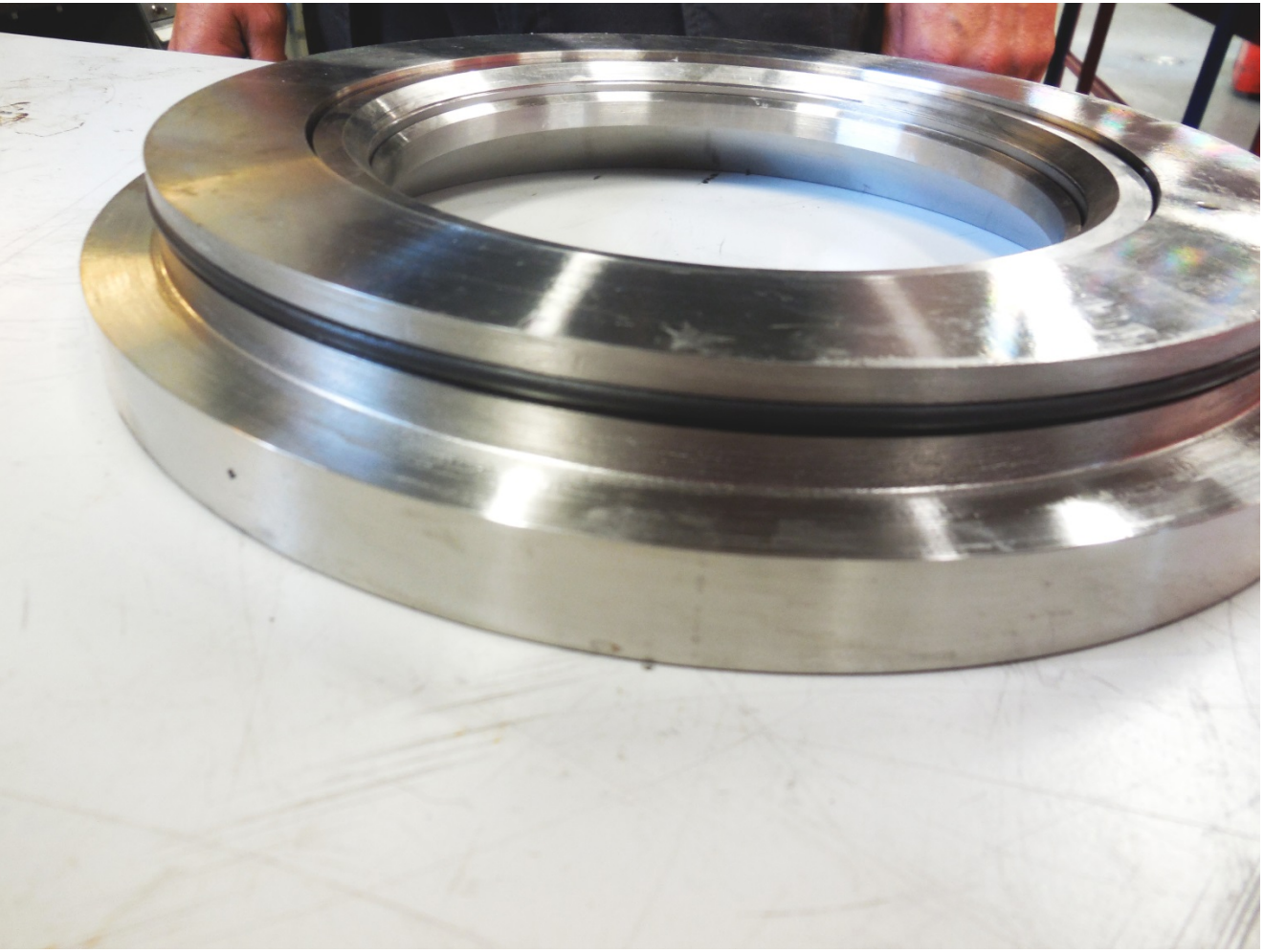

Mount the O-ring (KS-16) in the outer groove of the seat holding ring (KS-2)

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Assembly the seat holding ring together with the valve.

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Secure the seat holding ring with two screws (KS-11)

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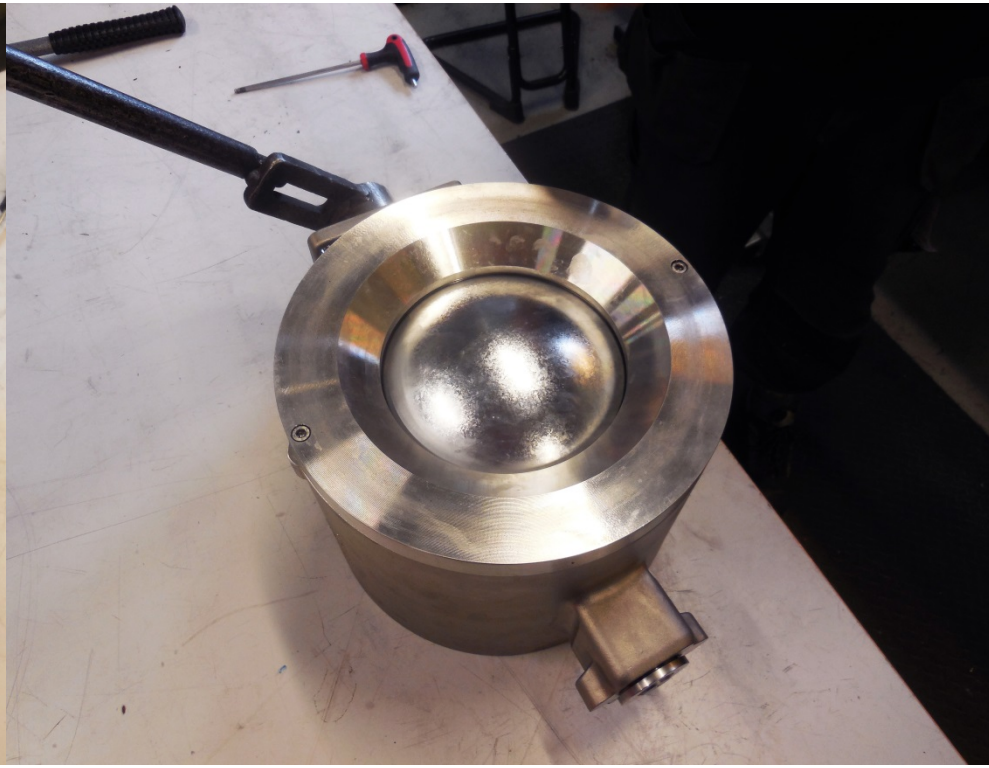

Mount the hand lever and turn the ball sector a number of times between open and closed position, checking that the necessary torque is normal (according to given torque in the main brochure).

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Pressure and leakage testing

Turn the ball sector to exact closed position. Apply flanges to the valve body allowing to detect leakage across all sealings. No bubbles are accepted over the shaft seals (KS-13). Single bubbles might disappear if the valve is actuated a couple of times allowing the O-ring seals to find their position and seal properly. If the valve continues to leak, it must be disassembled for inspection and exchange of O-rings if found damaged at the assembly work.

Valves equipped with PTFE seat should normally be drop-tight but not bubble-tight closing in both directions. Metal seated valves (stellited steel) would not be expected drop-tight. These valves are best checked for leakage with water pressure if so requested. Max allowed leakage should not exceed 0,01% of Kvs for the size of seat used. See also main Ramén KS valves brochures concerning pressure and leakage testing standards and normal torque needed for operation.

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