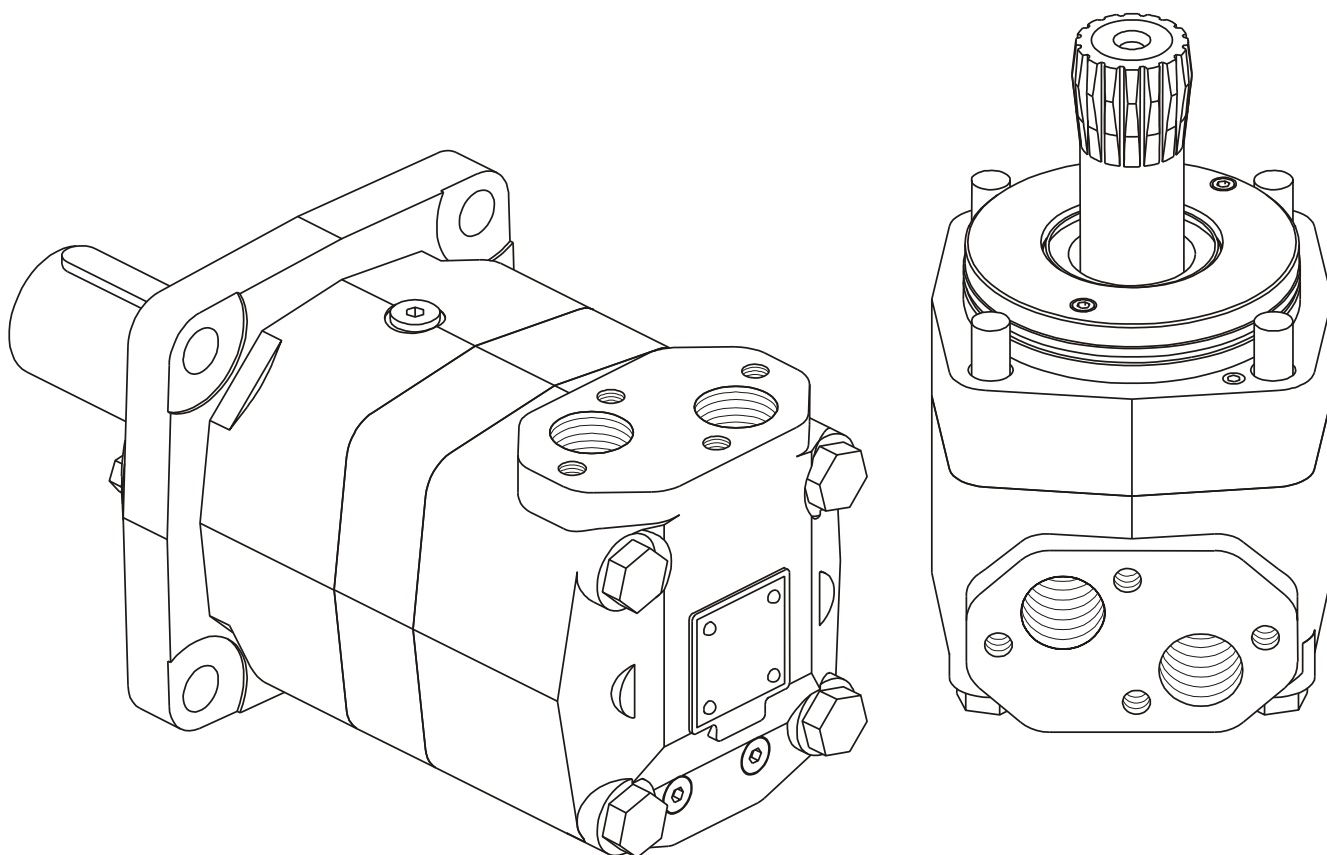
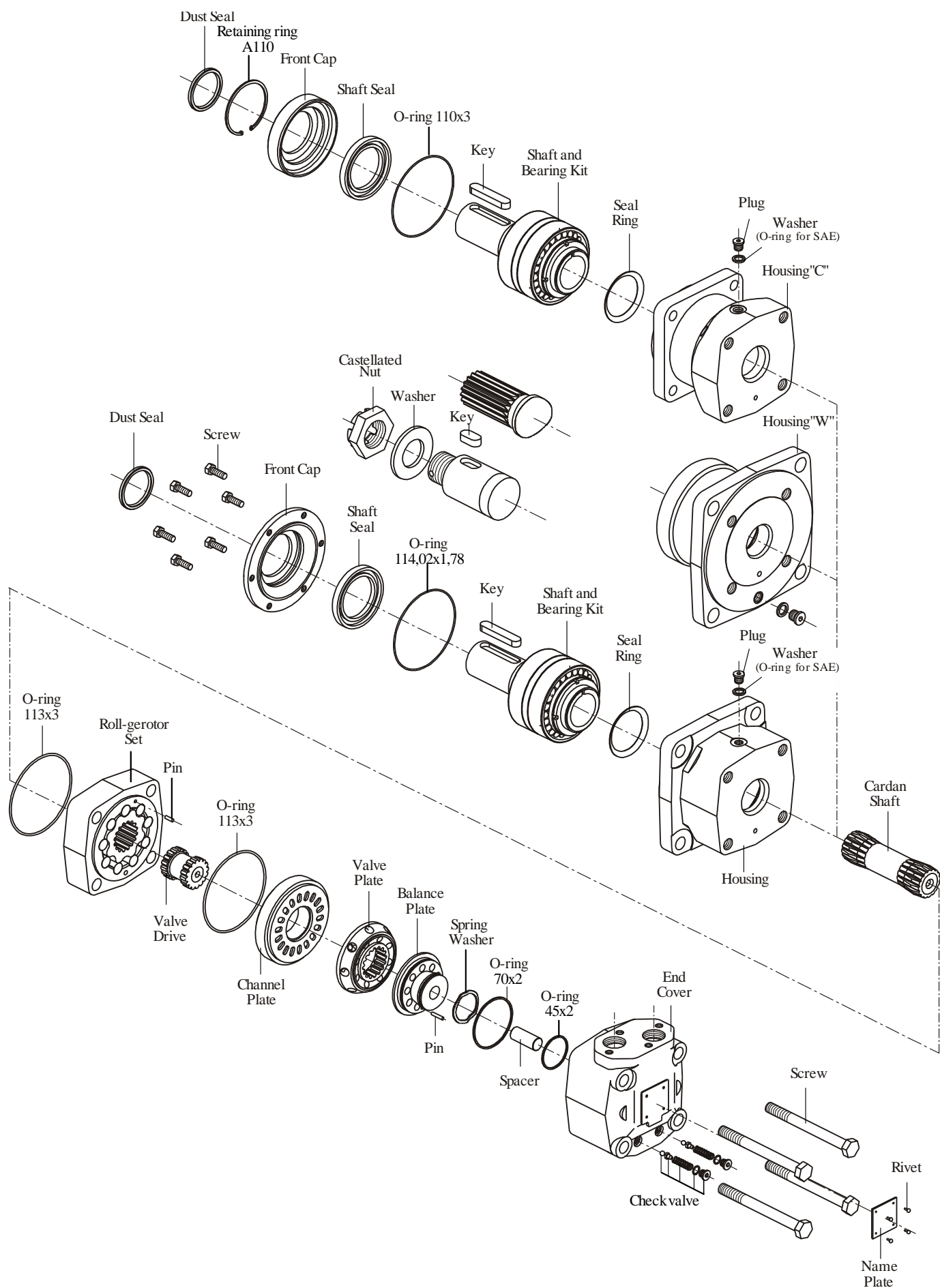


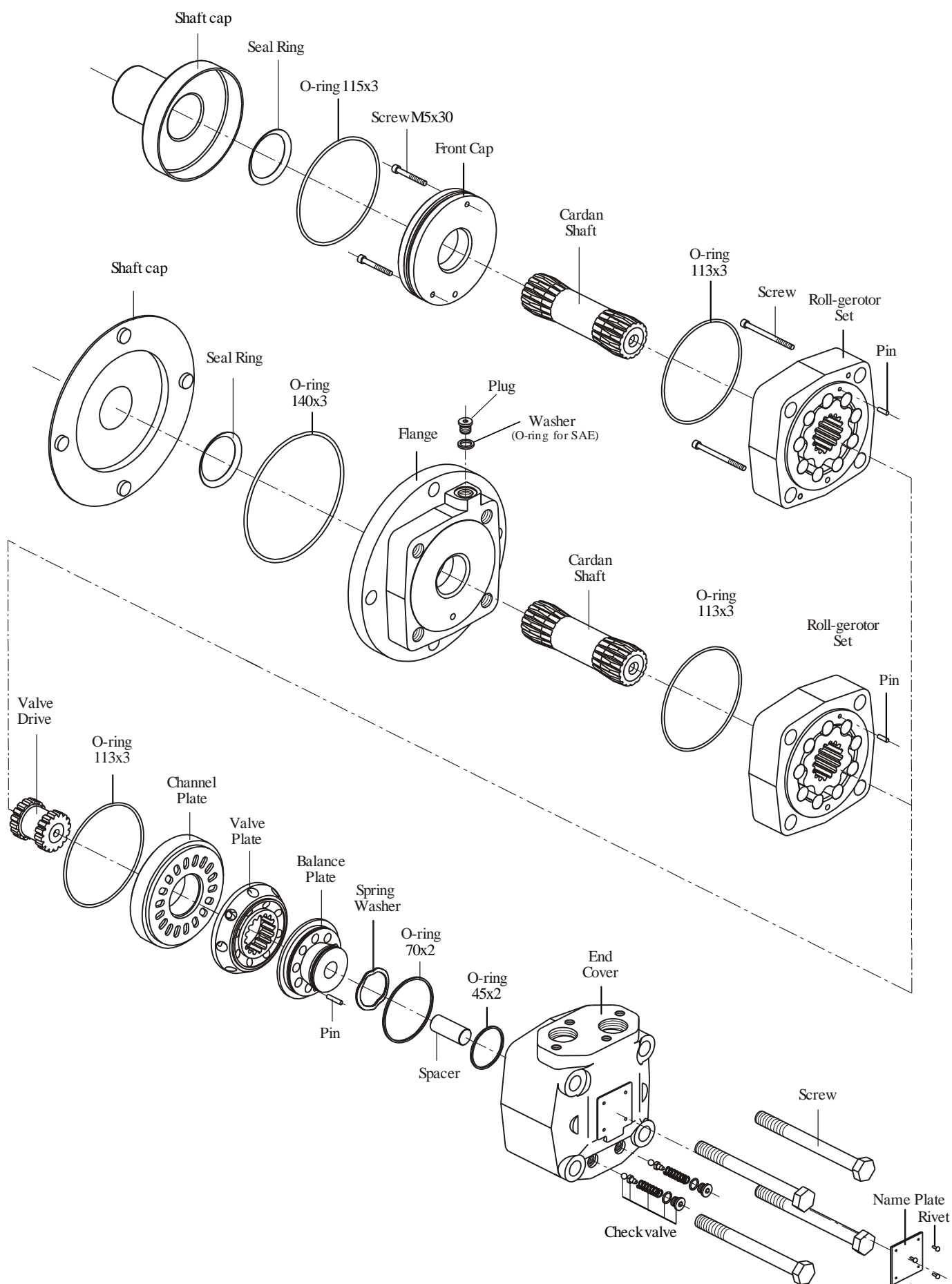
SERVICE MANUAL

Hydraulic Motors type MV...
and MLHV...

Series 1 and 2







The instructions in this manual concern motors types MV and MLHV.

Cleanliness is extremely important when repairing these motors. Work on clean surface!

Before disassembly, drain the oil from the motor and dry the working bench.

If there is castellated nut, washer or key, they have to be removed from the shaft.

Although not all drawings show the motor in disassembly devise (vice with soft clamping jaws), we recommend the motor to be tightened during disassembly.

1. Unscrew the Drain plug with S6 Allen key and remove the washer (O-ring for MLHV).

2. Place the motor in disassembly devise with output shaft down.

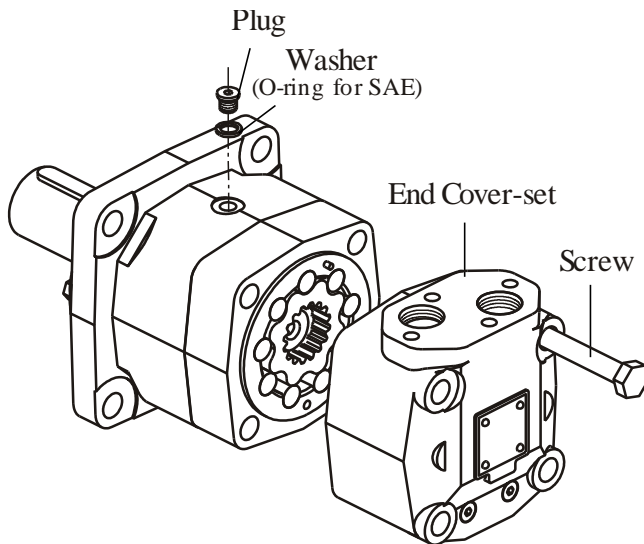


Fig.1

3. Unscrew screws using a S24 torque wrench (see Figure 1).

4. Remove end cover assembly.

5. Remove the roll-gerotor set carefully to prevent dropping of rollers and rotor from stator. Do not dismount!

6. Remove O-ring 113x3 from roll-gerotor groove (see Figure 2).

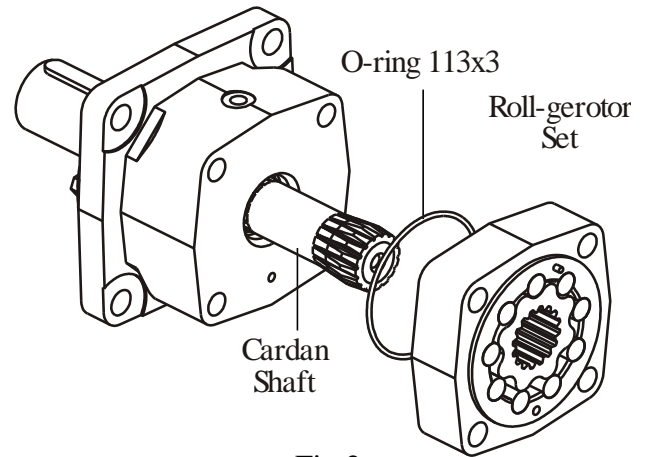


Fig.2

7. Remove cardan shaft from the splines of output shaft.

8. Turn housing with the shaft up. Unscrew bolts using a socket wrench. Remove front cover incl. seals. (see Fig.3).

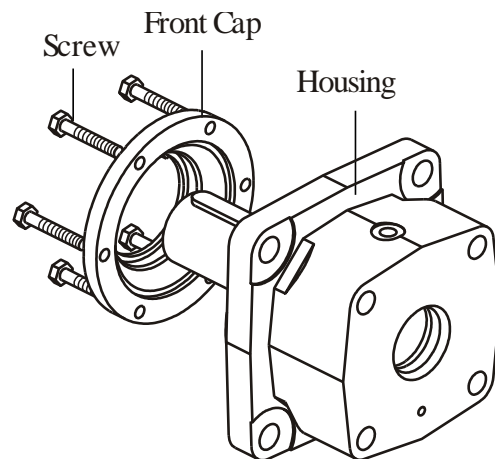


Fig.3

9. Remove carefully dust seal, shaft seal and O-ring (see Fig. 4).

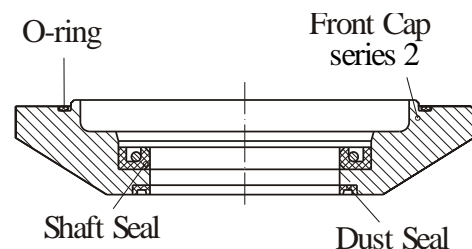


Fig. 4 (for series 2)

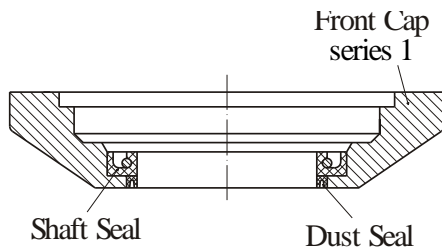


Fig.4 a (for series 1)

10. Fix Housing in a hydraulic press and push output shaft with bearing kit out of housing (see Fig.5).

Note: Replace Output Shaft and bearing kit as a unit. If not necessary do not dismount the bearing kit!

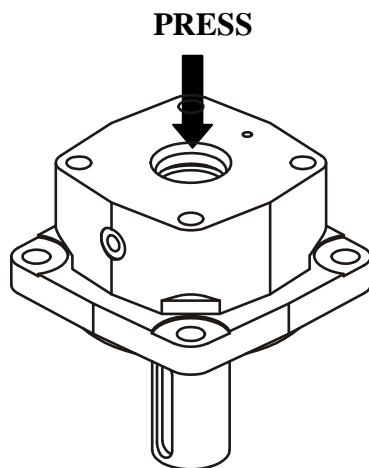


Fig.5

End Cover Disassembly:

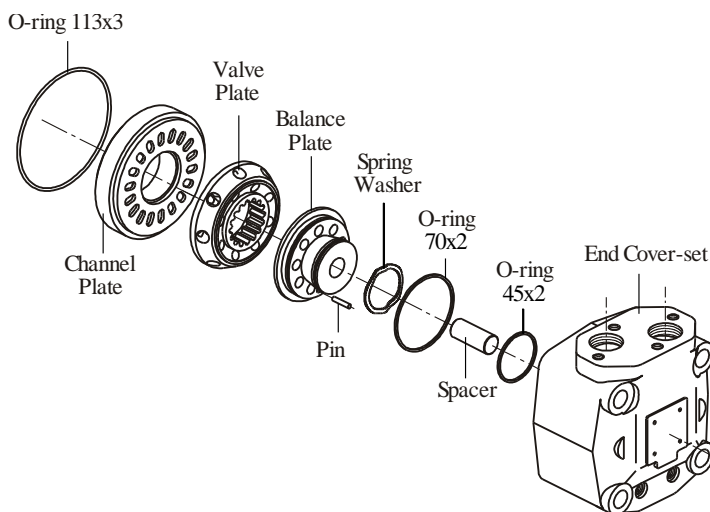


Fig.6

11. Turn the End Cover with the internal hole upwards. Remove the O-ring. Take the channel plate up swivelling it slightly. Use corresponding

device or two studs M16 placed diametric in plate holes.

12. Remove valve drive carefully than remove disc valve.

13. Turn the end cover with the hole conversely on a clean soft surface. Knock several times using a plastic hammer on the rear side. Set in order the fallen parts apart (see Fig.6).

14. Remove O-rings 70x2 and 45x2 from the grooves of the balance plate.

Note: In older versions Cant seals are used instead of O-rings.

15. Remove the pin using a vice with soft jaws or pliers knocking on the balance plate and swivelling it round the pin simultaneously.

Check Valve Disassembly (2 psc.):

With an Allen key S5 remove plug and check valve parts from end cover (see Fig.7).

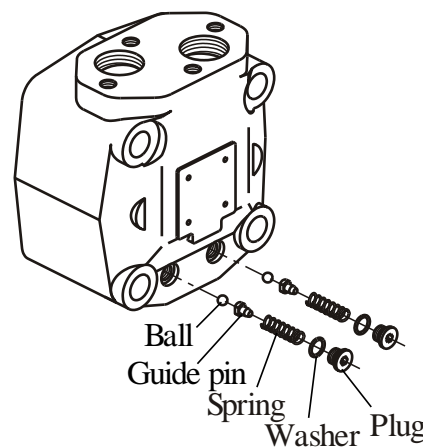


Fig.7

Seal Kits:

SK 41 5129 7200 for MV... and MVW...
SK 41 5129 7845 for MVS...
SK 41 5129 7865 for MVV...
SK 41 5125 9500 for MV... and MVW...- series 2
SK 41 5125 9100 for MVC...- series 2

SK 41 5123 7240 for MLHV...2 and MLHVV...2
SK 41 5123 7250 for MLHV...4 and MLHVV...4
SK 41 5123 7270 for MLHVS...2
SK 41 5123 7275 for MLHVS...4
SK 41 5123 7490 for MLHVV...2
SK 41 5123 7495 for MLHVV...4
SK 41 5124 8750 for MLHV...2B and MLHVV...2B
SK 41 5124 8770 for MLHV...4B and MLHVV...4B
SK 41 5124 7960 for MLHVC...2B
SK 41 5124 7980 for MLHVC...4B

1. CLEANING:

Wash all parts (except seals) in a weak solvent on carbon base and then degreased.

2. MEASURING AND REPLACEMENT:

Measure all parts and compare their actual dimensions with the nominal ones given in the technical documentation. Replace any parts with scratches or burrs that could cause leakage or damage with new ones. Use new seals and washers when reassembling the motor.

3. LUBRICATION:

Lubricate all frictioning parts, which should be reassembled with light film of petroleum jelly.

1 Place the housing in reassembly device (vice).

Lubricate sealing ring and place it in the housing. Lubricate bearing surface. Use a press to install output shaft with bearing kit into housing (see Fig.8).

Rotate the shaft by hand. The max. moment of rotation of the shaft with assembled bearing is 0,25 daNm.

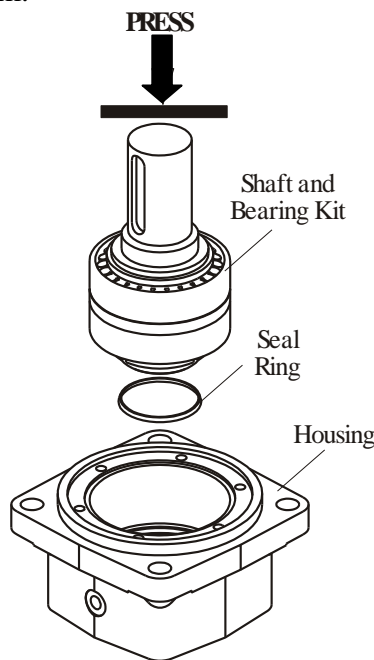


Fig.8

Assemble Front Cover and Housing

(Fig.9)

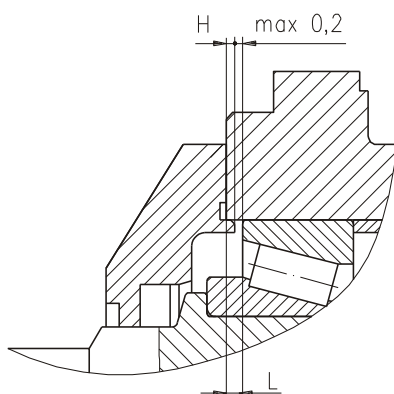


Fig.9

2. Measure size "L" from the housing front to the external bearing race using depth gauge.

3. Measure size "H" of front cover step with depth gauge indicator.

4. Assemble front cover and housing so that L-H difference ensures clearance of $S=0,05 \div 0,2$ mm. If necessary grind the front cover.

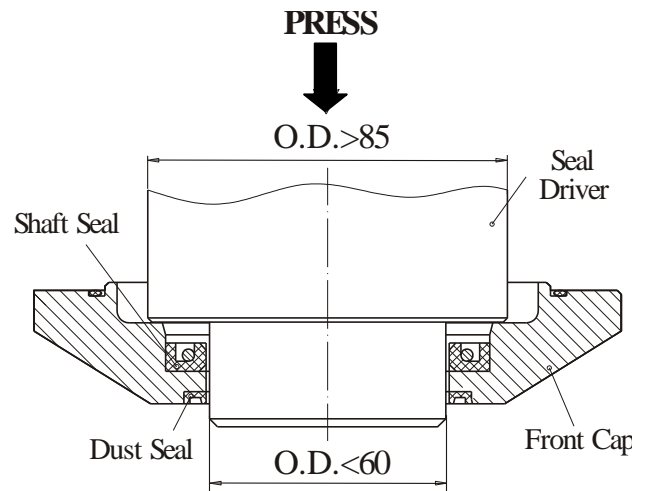


Fig.10

5. Place shaft seal in the Front cap and firmly push with Seal driver (see Fig.10).

6. Turn the front cap on 180° and carefully press dust seal into place

Important: Lubricate shaft seal and dust seal with light film of clean petroleum jelly.

7. Install the front cap incl. assembled seals on shaft. Prevent the seals against damages. Lubricate the O-ring and fit it to the front cover.

Note: Place O-ring in the housing for motors series 1.

8. Install in the front cap 6 screws and alternately torque them to 2,5-3 daNm using a S13 torque wrench (see Fig.11).

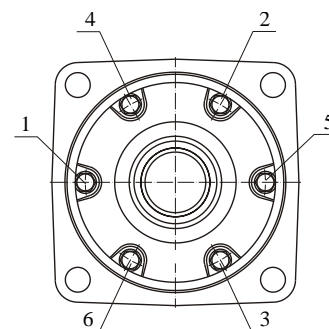


Fig.11

9. Reposition motor in reassembly device with shaft down.

Alignment studs can be very helpful in reassembly of the motor. Install two studs M16x300 diagonally in the housing

10. Install cardan shaft into splines of output shaft.

11. Lubricate and install O-ring 113x3 in roll-gerotor set seal groove.

Timing Procedure

12. Stave the pin preliminarily into the stator. Orientate the roll-gerotor set acc.to Fig.12 and assemble the rotor splines into the cardan shaft splines. (If necessary, turn the shaft to one or another direction for keeping symmetry of rotor towards stator.)

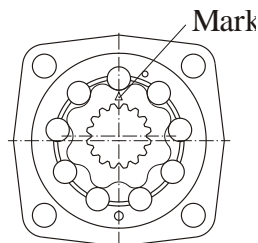


Fig.12

13. Install the valve drive into the rotor spline sector.

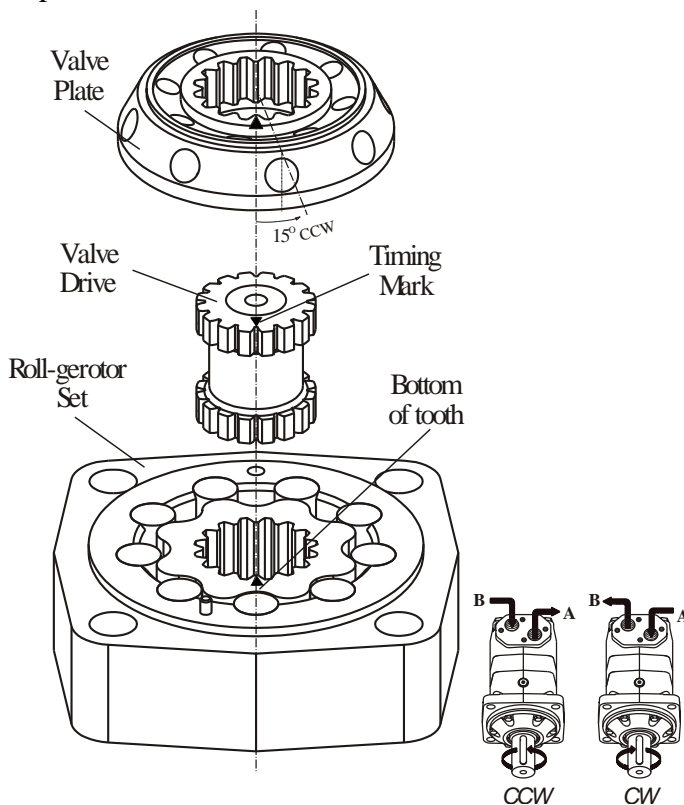


Fig.13

14. Mark the rotor at the point where the tip of a spline tooth is opposite to the bottom of a tooth in the external rotor teeth as shown on Fig.12 and 13.

15. Mark the bottom of a spline on the valve drive. Line up mark on rotor and valve drive.

16. Lubricate the roll-gerotor set surface and place on it the channel plate with the 9 holes to the roll-gerotor set centring it by pin. Lubricate O-ring 113x3 and place it in seal groove between Channel Plate and roll-serotor set.

17. Align mark on valve drive with a hole in the outer rim of the Valve Plate. Turn Valve Plate clockwise (as shown on Fig.13) until splines in the two parts engage / rotation about 15°.

Reverse Rotation:

Reverse rotation is obtained by rotation of the Valve Plate counter clockwise (as shown on Fig.13A) until splines in the two parts engage.

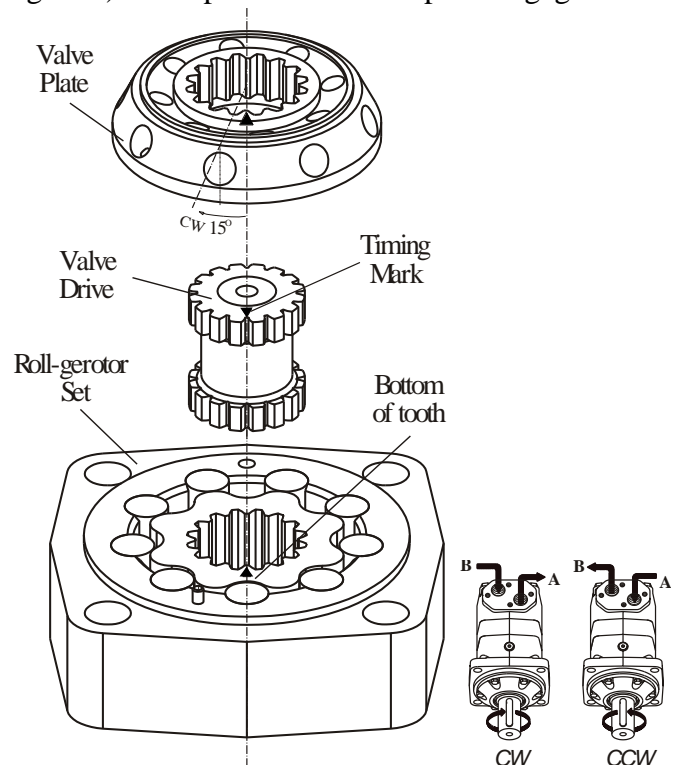


Fig.13A

Reassembly of End Cover:

18. Reassembly of Check valves: Place the front cap with the name plate upwards. Drop the ball into the valve hole. Install check valve parts

as shown on Fig.14 and tighten plug with a torque of $1 \div 1,5$ daNm and Allen key S5.

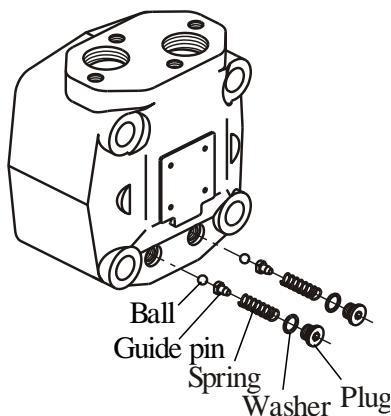


Fig.14

19. Mount the lubricated O-rings 70x2 and 45x2 in the relevant grooves of the balance plate (see Fig.6).

20. Stave the preliminarily lubricated pin into the balance plate hole (to the thin end).

21. Place the cover with the front for nameplate downwards. Lubricate lightly all internal cap surfaces to protect seals. Put the

spring washer into hole with passing diameter.

22. Place the balance plate (assembly) inside the end cover with the pin orientated to fall in with the hole of its bottom. Lubricate spacer and install in the balance plate hole.

Parts are correctly assembled when at pressing the front surface of balance plate by thumbs downwards, the balance plate jumps up itself as a result of spring force.

23. Mount the end cover (assembly) over both alignment studs. Make sure that the port face of end cover coincides with the drain port of the housing.

24. Install the screws in end cover. Tighten screws with $19 \div 19,5$ daNm torque using a S24 torque wrench.

Remove the alignment studs and replace with the two remaining bolts.

25. Install washer (O-ring for MLHV...4) on drain plug. Tighten plug with Allen key S6 with torque $2,0 \div 2,5$ daNm.

26. Install key in shaft key groove. For cone shafts install washer and screw castellated nut.

Disassembly and reassembly of "W" and "C" – flange motors:

In these motors are used different Front cap and Retaining ring (see Fig.15). The Front cap is mounted to housing with Retaining ring A110. Except these ones, all other parts are the same as for the standard motor and the same procedures of disassembly and reassembly are applied.

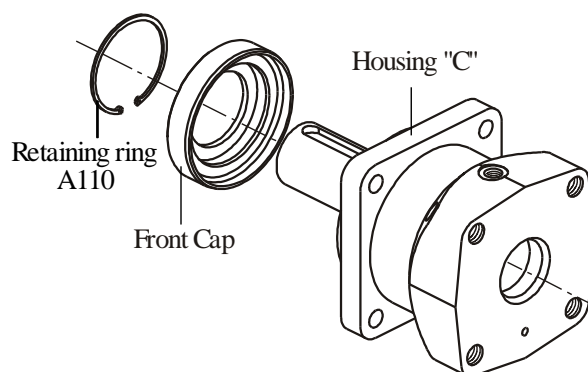


Fig.15

Disassembly and reassembly of short (without bearings) motors type “S” and “V”:

These motors are the same as the standard motors without bearing unit /Output shaft and Housing/. The Housing is replaced with Flange for MVS and Front Cup for MVV. Follow the same disassembly and reassembly procedures as for the rear section of standard motor.

For MVS (MLHVS) only: Fit shaft cap for MVS motors to flange. Place the flange in the fixture with the cap downwards. Screw 2 assembly studs M16x250 in opposite flange holes by hand. Install in flange cardan shaft. Shaft cup will prevent dropping out of cardan shaft. Follow the reassembly procedures from 11 to 24. Mount the rear section carefully over assembly studs. Turn motors with the flange upwards and remove the shaft cap. Lubricate cone seal ring and place it in the flange. Lubricate O-ring and install into flange seal groove.

For MVV (MLHVV) only: Fit shaft cap for MVV motors to Roll-gerotor set. Screw 2 assembly studs M16 in opposite Roll-gerotor set holes by hand. Install cardan shaft in Roll-gerotor set. Shaft cup will prevent dropping out of cardan shaft. Follow the reassembly procedures from 11 to 23. Mount the rear section carefully over both studs. Replace studs with screws. Turn the motor on 180° and remove shaft cap. Mount roll-gerotor set to end cover with two screws M5 using S5 (4) Allen head spanner. Tighten with 0,5÷0,7 daNm torque. Install front cap to roll-gerotor set and tighten with two screws M5x30 with 0,5÷0,7 daNm torque. Lubricate cone seal ring and place it in front cup. Lubricate O-ring and install into front cap seal groove.