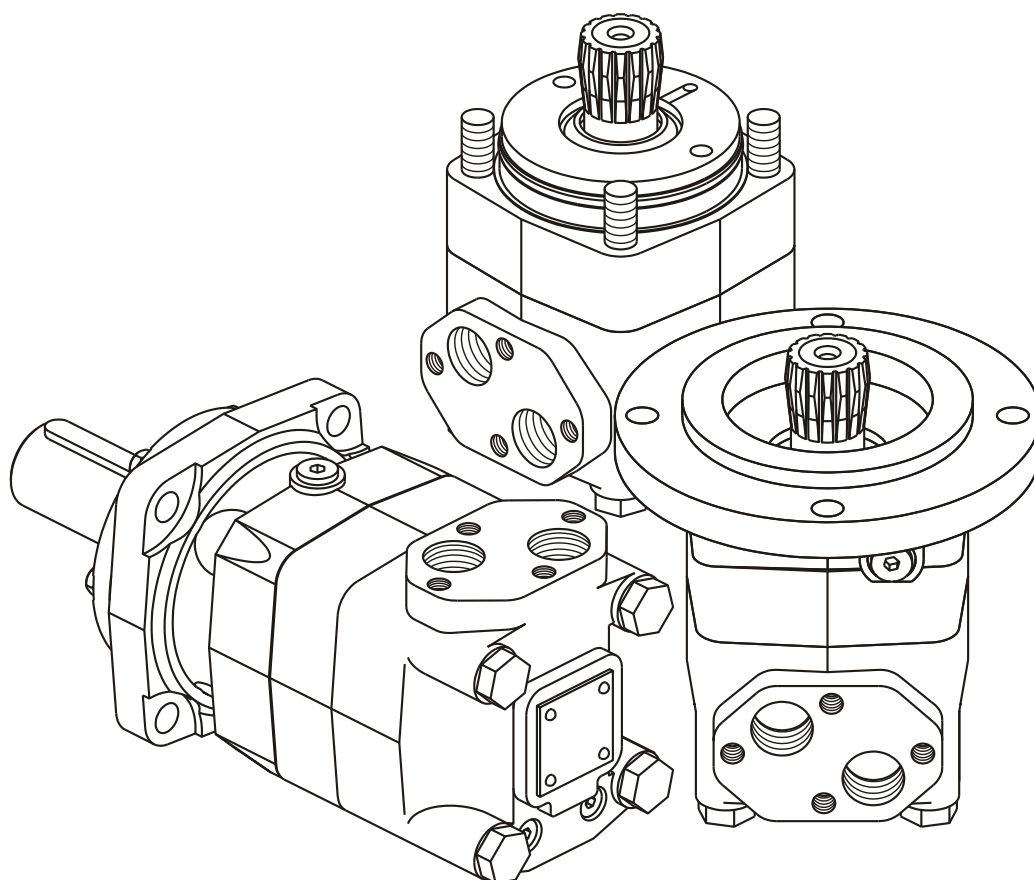
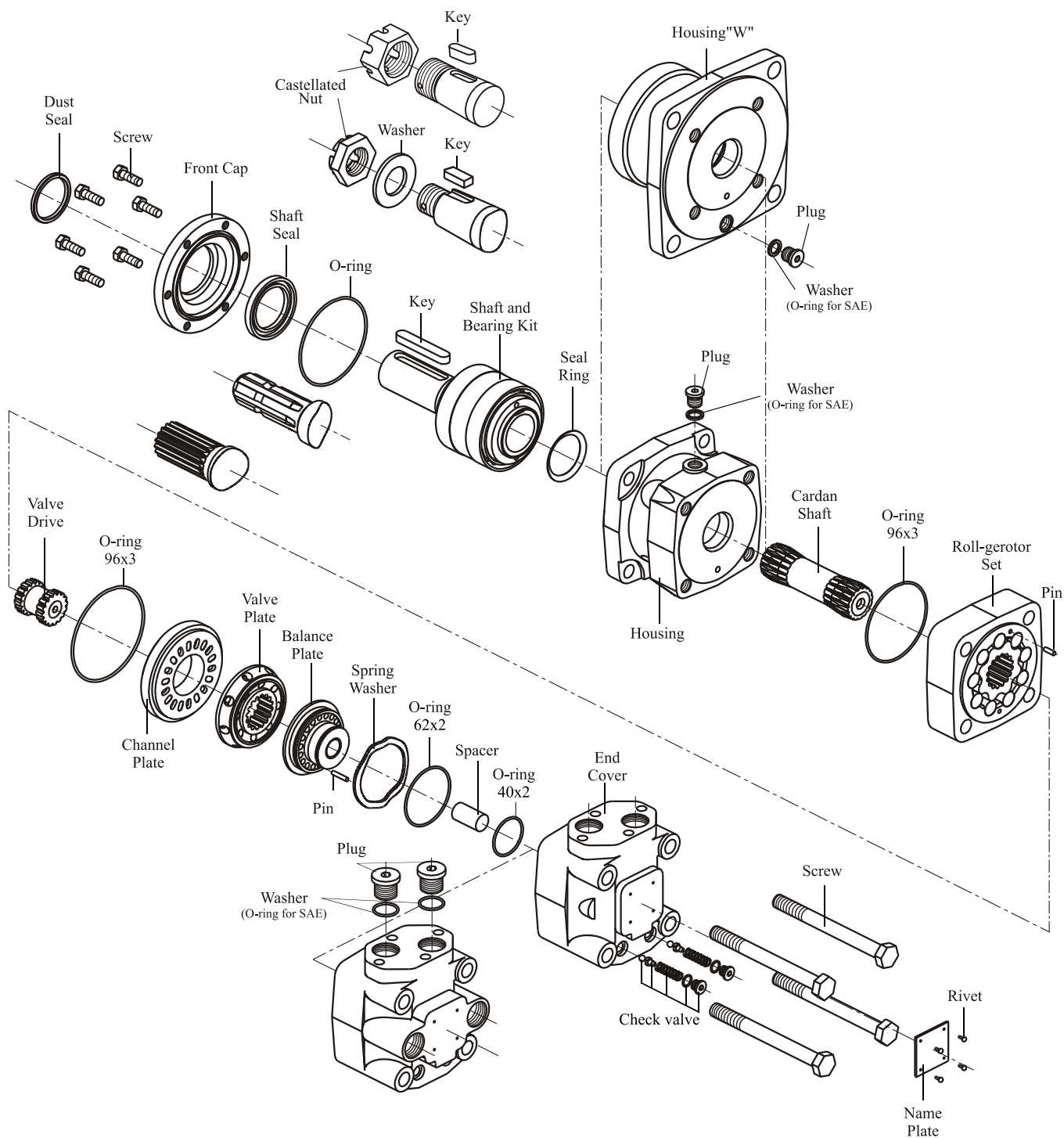
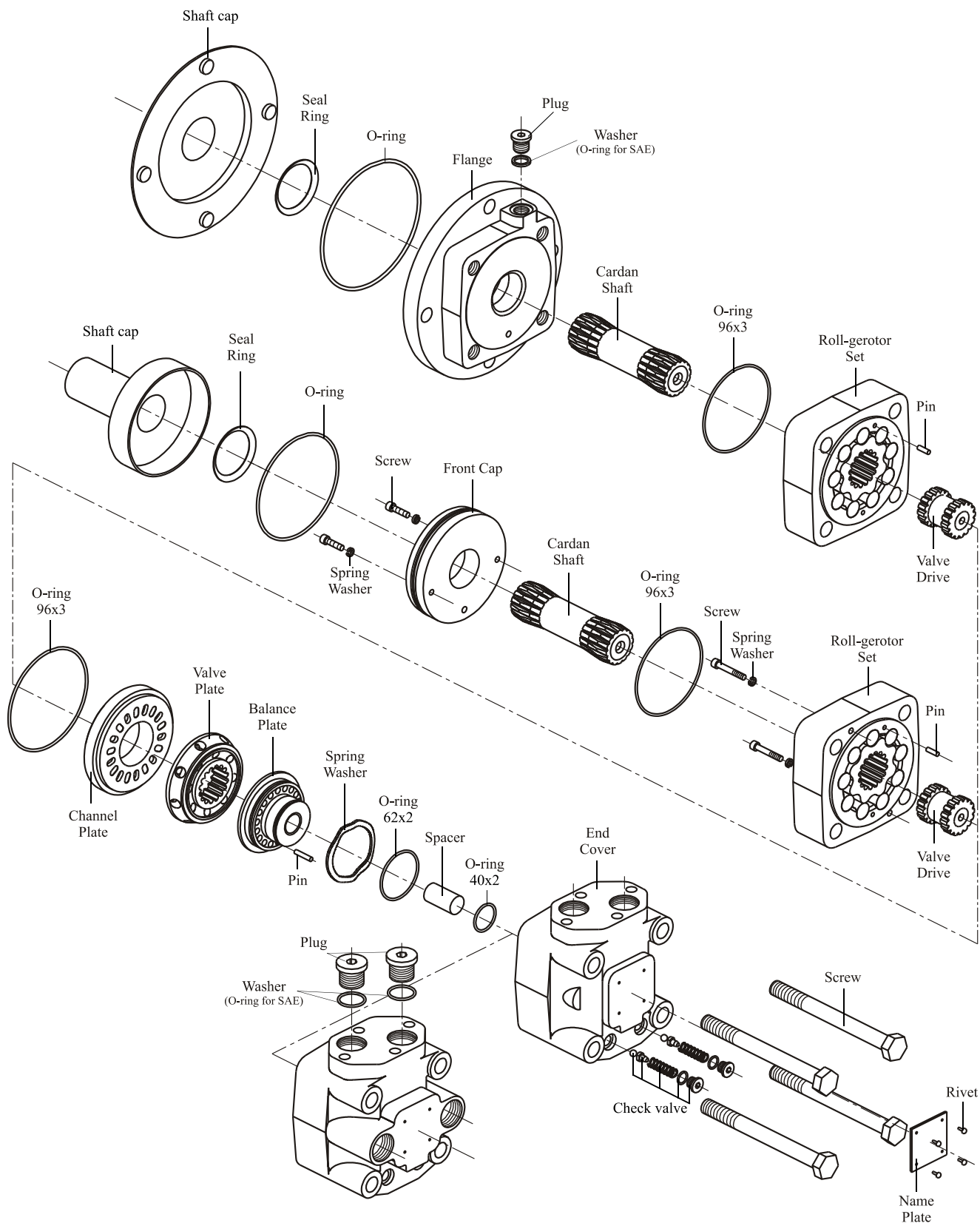


SERVICE MANUAL

Hydraulic Motors type MT... *and MLHT...*







The instructions in this manual concern motor types MT and MLHT.

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 are 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 MLHT).

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

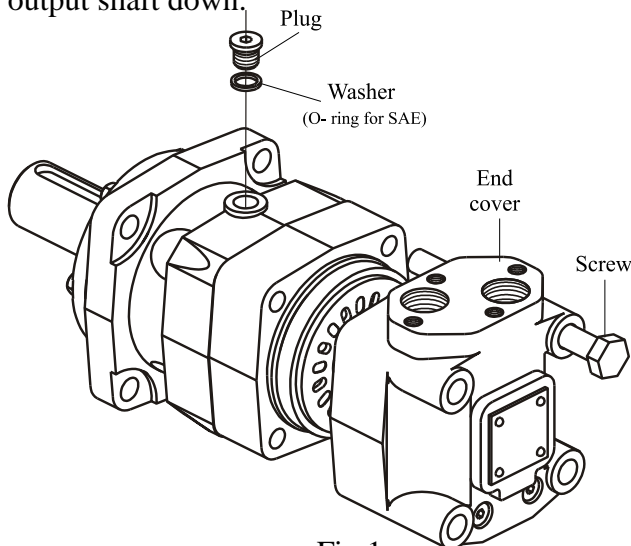


Fig.1

3. Unscrew screws using a S22 torque wrench. (see Figure 1)

4. Remove end cover assembly.

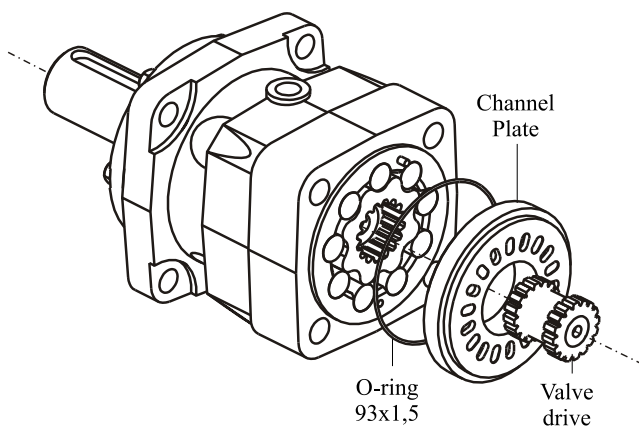


Fig.2

5. Separate Channel Plate from Roll-gerotor set and remove Valve Drive (see Fig.2).

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

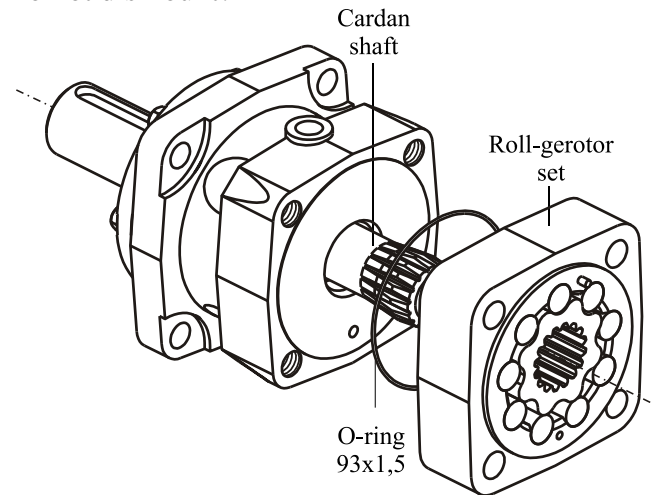


Fig.3

7. Remove O-ring 93x1,5 from the housing (виж Fig.3).

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

Turn housing with the shaft up.

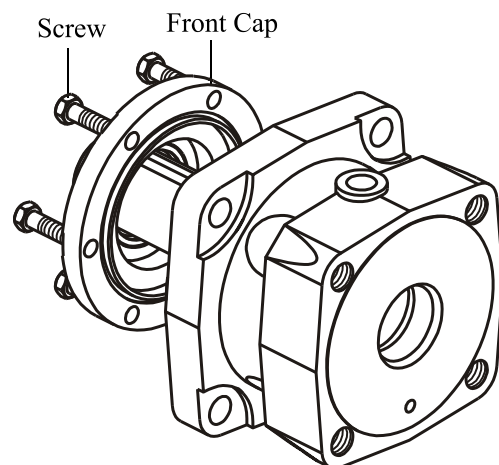


Fig.4

9. Unscrew bolts using a socket wrench. Remove front cover incl. seals. (see Fig.4)

10. Remove dust seal, shaft seal and O-ring Капак преден (виж Fig.5).

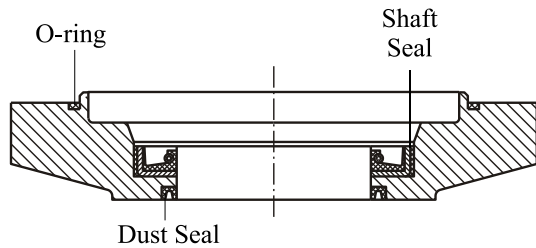


Fig.5

11. Fix Housing in a hydraulic press and push output shaft with bearing kit out of housing (Fig.6).

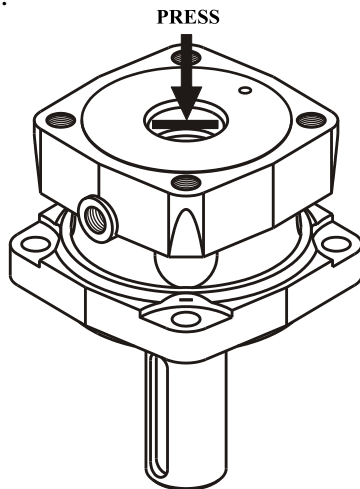


Fig.6

End Cover Disassembly:

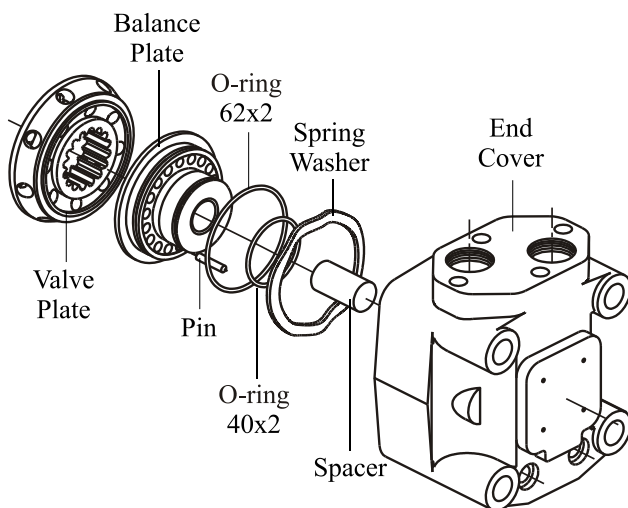


Fig.7

12. 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 7).

13. Remove O-rings from the grooves of the balance plate.

14. 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 pcs.):

With an Allen key S5 remove plug and check valve parts from end cover (see Fig.8).

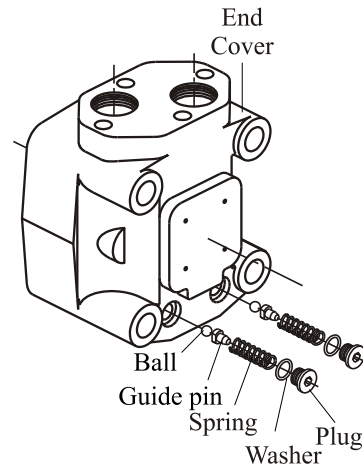


Fig.8

Seal Kits:

SK 41 5129 7000 for MT... and MTW...
 SK 41 5169 1010 for MT...U and MTW...U
 SK 41 5129 7137 for MT...T
 SK 41 5169 1170 for MT...U...T
 SK 41 5129 7096 for MTS...
 SK 41 5129 7150 for MTV...
 SK 41 5123 9000 for MLHT...
 SK 41 5123 9004 for MLHT...7 and MLHTW...7
 SK 41 5169 1520 for MLHT...U and MLHTW...U
 SK 41 5169 1524 for MLHT...7U and LHTW...7U
 SK 41 5169 2000 for MLHT...T
 SK 41 5169 2240 for MLHT...UT
 SK 41 5123 9500 for MLHTS...
 SK 41 5123 9504 for MLHTS...7
 SK 41 5123 9525 for MLHTV...
 SK 41 5123 9529 for MLHTV...7

1. CLEANING:

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

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 housing with the hole $\varnothing 90$ mm upwards on a soft pad of hydraulic press table (see Fig.9). Lubricate sealing ring and place it in the housing. Lubricate bearing surface. Move the shaft with internal spline into the housing hole. Use the hydraulic press to stave the unit.

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

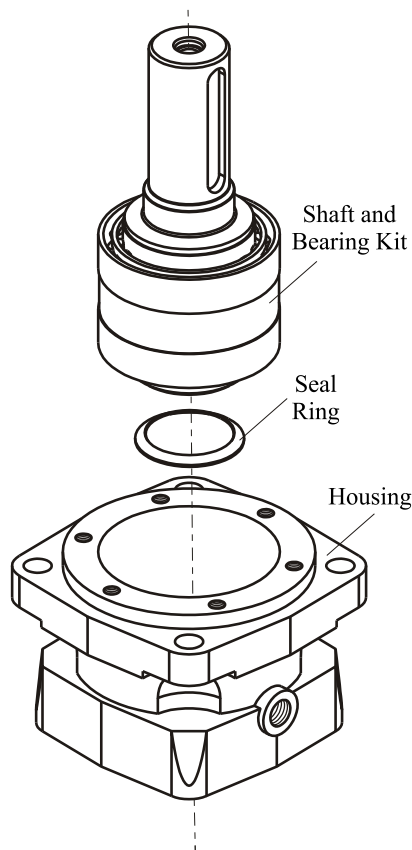


Fig.9

Assemble Front Cover and Housing

(Fig.10)

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.

CAUTION: Clearance breach is not allowed.

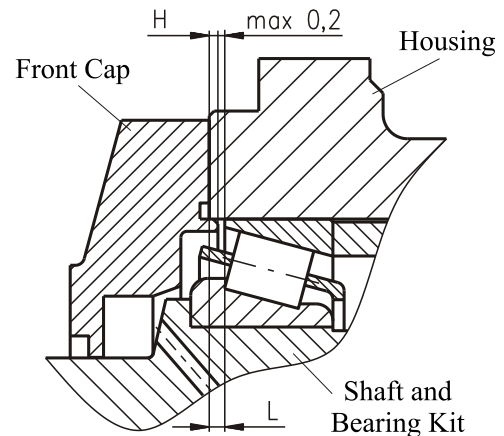


Fig.10

5. Place Front Cover with the hole $\varnothing 65$ mm upwards on the hydraulic press table. Lubricate the surface $\varnothing 65$ with hydraulic oil. Place the shaft seal and stave it using a hydraulic press. Turn on 180° and stave dust seal. Lubricate the O-ring and fit it to the front cover (see Fig.6).

6. Lubricate friction lips of shaft seal ring. Place over all shafts except tapered shafts a safety cap for protection lips of the seal with extension. Fit the front cover. Install in the front cap 6 screws and alternately torque them to 2,5-3 daNm using a S13 torque wrench (see Fig.11).

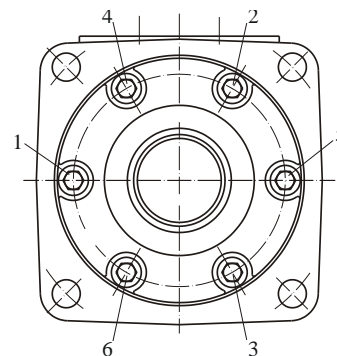


Fig.11

7. Place the assembled unit in horizontal position. Set the key in the key slot. Knock it to rest using a plastic hammer (the shaft is supported on a X-shaped soft surface). For cone shafts install washer and screw Castellated Nut.

8. Place the housing (compl.) with the shaft directed downwards into a fixture for final assembling. (The shaft is free to rotate - 2 holes for the housing fixing are pinned). Screw up 2 pcs. assembly studs M14x250 in opposite housing holes by hand.

9. Install the cardan shaft into splines of the output shaft.

10. Lubricate and install O-ring 96x1,5 in housing seal groove (Fig.3).

Timing Procedure

11. 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, rotate slightly shaft for keeping symmetry of rotor towards stator).

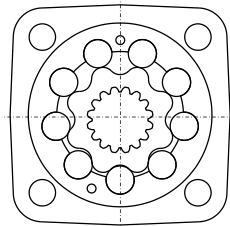


Fig.12

ATTENTION: Orient the drain channel of roll-gerotor set according to drain port of housing as shown on Fig.3

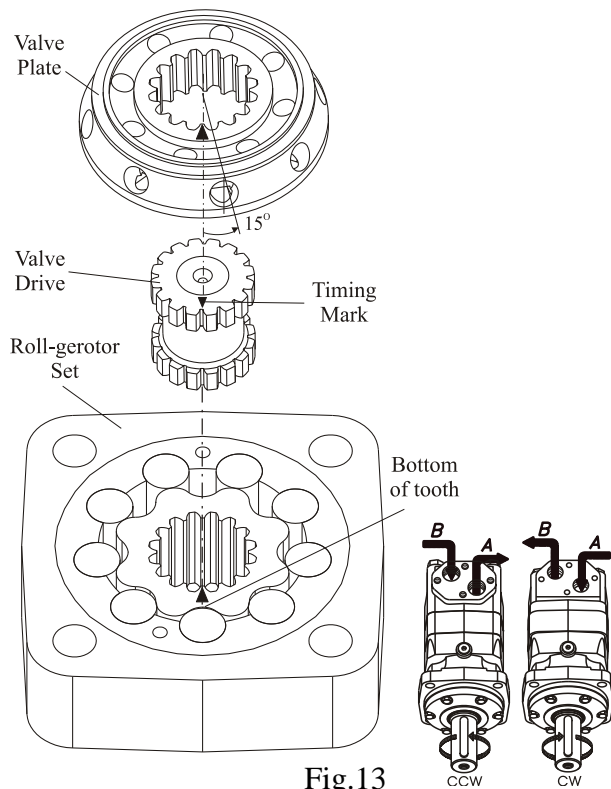


Fig.13

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

13. 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.13.

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

15. Lubricate the roll-gerotor set surface and place on it the channel plate centring it by pin. Lubricate O-ring 96x1,5 and place it in seal groove between Channel Plate and roll-gerotor set.

16. Align mark on valve drive with a hole in the outer rim of the Valve Plate. Turn Valve Plate clockwise (as shown on Fig.20) 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.

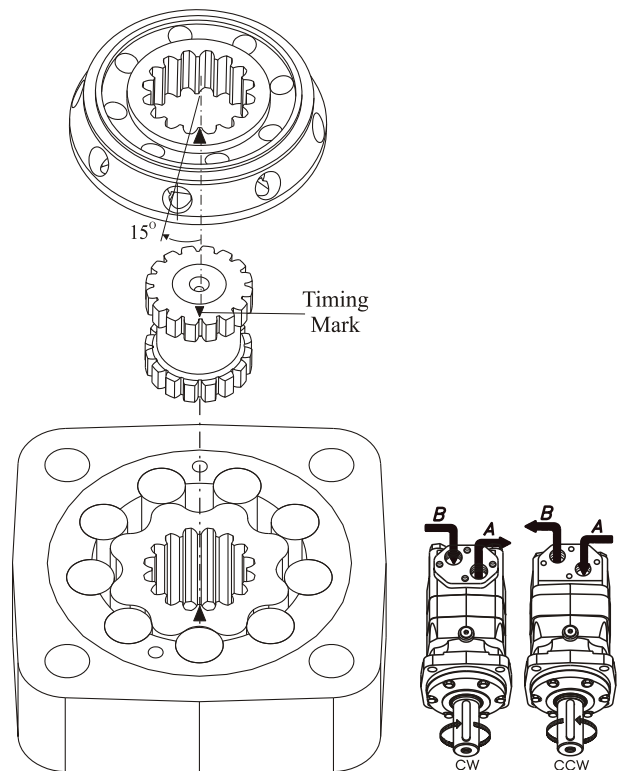


Fig.13A

Reassembly of End Cover:

17. 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.8 and tighten plug with a torque of 1÷1,5 daNm and Allen key S5.

18. Mount the lubricated O-rings 62x2 and 40x2 in the relevant grooves of the balance plate (see Fig.7).

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

20. 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.

21. Place the balance plate (set) 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.

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

23. Install the screws in End cover. Tighten screws with $10 \div 11$ daNm torque using a S22 torque wrench .

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

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

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 MTS and Front Cup for MTV. Follow the same disassembly and reassembly procedures as for the rear section of standard motor.

For MTS (MLHTS) only: Fit shaft cap for MTS motors to flange. Place the flange in the fixture with the cap downwards. Screw 2 assembly studs M14x250 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 23. 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 MTV (MLHTV) only: Fit shaft cap for MTV motors to Roll-gerotor set. Screw 2 assembly studs M14 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 22. 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 $0,5 \div 0,7$ daNm torque. Install front cap to roll-gerotor set and tighten with two screws M5x30 with $0,5 \div 0,7$ daNm torque. Lubricate cone seal ring and place it in front cup. Lubricate O-ring and install into front cap seal groove.