

REPAIR INSTRUCTIONS - LP700

To Check Valves

Discharge Valves: screw out 8 x hexagon screw (54), remove cover (51). Screw hexagon screw (54) into thread of the plug (50) and pull out plug. Using a clipping pliers, remove spring tension cup (44A) and valve seat (44D). If necessary, use a diameter 12 pull out tool to remove valve seat. Check parts, and replace if worn.

Check o-rings (40/44E) and support rings (41/44F) and replace as necessary.

Tighten hexagon screws (54) to 59 ft.-lbs. (80 Nm).

Suction Valves: unscrew 8 x nut (47), remove valve casing (45) from seal sleeves (42). Using two screwdrivers, lever out seal case (42) from valve casing. Remove spring tension cup (44A) and valve seat (44D) with a clipping pliers. If necessary, use a diameter 12 pull out tool to remove valve seat. Check parts, and replace if worn.

Check o-rings (40/44E) and support rings (41/44F) and replace as necessary.

Important! The leakage seal (39) must be positioned with its $\varnothing 3$ bore onto the notched pin (35A) so that its cut-outs are placed exactly over the bores of the seal sleeve (35) and the drip return bores of the valve casing. To secure valve casing, tighten nuts (47) evenly to 80 Nm.

To Check Seals and Plunger Pipe

Unscrew the 8 x nut (47), remove valve casing by pulling it out to the front. Remove seal sleeve (35) from crankcase guides. If necessary, remove seal case (42) from seal sleeve (35). Remove tension spring (38A) and seal parts (36-38) from seal sleeve. Check plunger surfaces and seals (37). Replace worn parts.

After removing clipping (32) and support ring (33), check leakage seal (33A) and replace if necessary.

If the surface of the plunger is worn, screw out the plunger (29) with a size 13 tool. Clean centring and front surface of crosshead with plunger (25).

Thread new plunger carefully through oiled seals in seal sleeve. Coat thread of new plunger lightly with suitable bonding agent (Loctite). Then insert the seal sleeve together with the plunger into crankcase guide until the threads of the plunger (29) push against plunger (25).

Important! Push the seal sleeves all the way into the crankcase guides only after the plungers (29) have been screwed in, as otherwise the leakage seal (33A) will be shorn off.

Crank the drive until all the plungers have been to the top; tighten plungers (29) at 22 ft.-lbs. (30 Nm) using a size 13 torque wrench.

Then press the seal sleeves (35) all the way into the crankcase guides.

Important! The leakage seal (39) must be positioned with its $\varnothing 3$ bore onto the notched pin (35A) so that its cut outs are placed exactly over the bores of the seal sleeve (35) and the drip return bores of the valve casing. To secure valve casing, tighten nuts (47) evenly to 59 ft.-lbs. (80 Nm).

To Dismantle Gear

After removing valve casing and plunger pipe, drain oil. Screw off gear cover (4) and bearing cover (14). Loosen connecting rod screws and push the front of the connecting rod forward as far as possible into the crosshead guide.

Important! Connecting rods are marked for identification. Do not twist connecting rod halves. Connecting rod is to be reinstalled in the same position on shaft journals.

Turning the crankshaft slightly, hit it out carefully to the side with a rubber hammer.

Important! Do not bend the connecting rod shanks. Check shaft and connecting rod surfaces, shaft seals and taper roller bearings.

To Reassemble

Using a soft tool, press in the outer bearing ring till the outer edge lines up with the outer edge of the bearing hole. Screw on bearing cover together with shaft seal and o-ring. Fit shaft through bearing hole on the opposite side. Press in outer bearing ring and tension it inwards with the bearing cover, keeping the shaft in vertical position and turning slowly so that the taper rollers of the bearings touch the edge of the outer bearing ring. Adjust axial bearing clearance to at least 0.1 mm and maximum 0.15 mm by placing fitting discs (20A) under the bearing cover.

Important! After assembly has been completed, the shaft should turn easily with very little clearance. Tighten connecting rod screws at 22 ft.-lbs. (30 Nm).