

LP460 REPAIR INSTRUCTIONS

To Check Valves

Discharge Valves: screw off tension plugs (50). Take the spring tension cap (44A) out of the exposed discharge valve with flat nose pliers.

Remove the valve seat (44D), if necessary with an M12 screw (screwing it into the M12 thread). If the valve is extracted as a complete unity, position a screwdriver through the recess in the spring tension cap and press down on the valve plate to gently lever the valve apart.

Check parts and replace if worn. Tighten plugs (50) at 107 ft.-lbs. (145 Nm).

Suction Valves: unscrew the 8 nuts (47) and remove the valve casing (45) from seal sleeves (35). Using two screwdrivers, lever the seal case (42) out of the valve casing. Remove spring tension cap with flat nose pliers. Remove the valve seat (44D), if necessary with an M12 screw. Replace worn parts.

Tighten nuts (47) evenly at 59 ft.-lbs. (80 Nm) to secure the valve casing.

To Check Seals and Plunger Pipe

Unscrew the 8 nuts (47) and remove the valve casing by pulling it off to the front. Take the seal sleeves (35) out of their guides in the crankcase. If necessary, remove the seal case (42) from the seal sleeve (35). Remove tension spring (38A) and seal parts (36-38) from the seal sleeve (35).

Check plunger surfaces and seals (37/37A). Replace worn parts.

If plunger pipe (29B) is worn out, loosen tension screws (29C) and pull plunger pipe off to the front. Clean front surface of plunger (25) thoroughly.

Then place the new plunger pipe through the oiled seals (37/37A) and push seal sleeve with plunger pipe into the crankcase guide. Turn gear until the plunger (25) comes up against the plunger pipe.

Put a new copper gasket (29D) onto the tension screw (29C), cover the thread of the tension screw and gasket with glue (Loctite) and tighten to 22 ft.-lbs. (30 Nm).

Important! Make sure that no glue gets between the plunger pipe (29B) and the centering sleeve (29A). The plunger pipe should not be strained by improper tightening of the tension screw or it may break.

Tighten nuts (47) evenly at 59 ft.-lbs. (80 Nm) to secure the valve casing.

To Dismantle Gear

After removing the valve casing and plunger pipes, drain the oil. Screw off gear cover (4) and bearing cover (14).

Take off the connecting rod screws and push the front of the connecting rods as far as possible into the crosshead guide.

Important! Connecting rods are marked for identification. Do not twist conrod halves. The conrods must be remounted on to the shaft journals in their exact original position.

Turning the crankshaft slightly, hit it out carefully using a rubber hammer.

Important! Do not bend the conrod shanks. Check shaft and conrod mounting surfaces as well as the shaft seal rings and roller bearings.

Reassembling

Using a soft tool, press in the outer bearing ring on one side until the outer edge lines up with the outer edge of the bearing bore. Screw on the bearing cover together with the shaft seal and O-ring.

Insert the shaft through the bearing bore on the opposite side. Press in the outer bearing ring and fix this with the bearing cover, keeping the shaft in a vertical position and turning it slowly so that the taper rollers of the bearings touch the edge of the outer bearing ring.

Adjust axial bearing clearance to at least 0.1mm, but less than 0.15mm 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 conrod screws at 22 ft.-lbs. (30 Nm).