

REPAIR INSTRUCTIONS - LP305/LP605

To Check Valves

Discharge Valves: remove valve plugs (48) using a socket wrench. Using a screwdriver, carefully push the exposed spring tension cap (51A) to the side to remove it from the valve seat. Take out the spring tension cap, valve spring (51B) and valve plate (51C). Pull out valve seat (51D) using a valve seat puller tool ($\varnothing 12\text{-}\varnothing 16$).

To dismantle the complete valve, place a screwdriver through a gap in the spring tension cap, press on the valve plate and lever the valve apart. Tighten plugs (52) at 107 ft.-lbs. (145 Nm).

Suction Valves: unscrew the 8 nuts (49A) and pull valve casing (43) off to the front. Continue as described above under Discharge Valves. Examine valves and replace worn parts.

To Check Seals and Plunger Pipe

Unscrew the 8 nuts (49A) and pull off valve casing to the front. Pull seal sleeves (35) out of guides in crankcase. With the help of 2 screwdrivers, pry out seal case (37) from seal sleeve (35).

Check plunger surfaces and seals (36/40/40C). Replace worn seals.

If plunger pipe is worn out, remove tension screw (29C) and pull of plunger pipe to the front. Clean front surface of plunger (25) carefully. Then place new plunger pipe carefully through the oiled seals 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 tension screw (29C). Apply a thin coat of bonding agent (Loctite) to the thread of the tension screw and to the gasket. Tighten screw on LP605 to 265 in.-lbs (30Nm) and LP305 to 310 in.-lbs. (35 Nm).

Important! Care must be taken that no glue gets between the plunger pipe (29B) and the centring sleeve (29A). The plunger pipe should not be strained by eccentric tightening of the tension screw or through damage to front surface of plunger, otherwise it will probably break.

Tighten the fixing nuts (49A) for the valve casing evenly at 59 ft.-lbs. (80 Nm).

To Dismantle Gear

Remove the 8 nuts (49A) and pull off valve casing to the front. Pull seal sleeves (35) out of guides in crankcase.

Remove plunger pipe (29B).

Unscrew plug (12) and drain oil. Remove gear cover (4) and bearing cover (14).

Remove connecting rod screws (24) 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 rods should 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.

Attach bearing cover together with shaft seal and o-ring. Fit shaft through bearing hole on the opposite side.

Press in outer bearing ring and apply tension 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 to 265 in.-lbs. (30 Nm).