

REPAIR INSTRUCTION - MP SERIES

To Check Valves

Suction Valves: Remove plugs (42A). Take out spacer pipe (51) and suction valve adaptor (52). For MP4120 and MP4124 pumps, remove spacer ring (52A) as well. Push valve parts and as necessary spacer pipe (51) out of suction valve adaptor using a soft tool.

Check and replace worn parts. Check O-rings (42B, 44A, 53 and 53A for MP4120/MP4124 only). Replace as necessary.

Discharge Valves: Remove plugs (48). Remove spring tension cap (47), valve spring (46) and valve plate (45) from the discharge valve. Take out valve seat (44) with a valve puller tool.

Check and replace worn parts.

Check O-rings (44A, 48A) and replace as necessary.

Tighten plugs (42A, 48) to 107 ft.-lbs. (145 Nm).

To Check Seals and Plunger Pipe

Remove plugs (42A). Loosen nuts (50) and remove valve casing (43) from plungers by pulling away from the crankcase (1). Take out spacer pipe (51), suction valve adaptor (52), tension spring (42) and seal-unit (39-41A).

Check surfaces of plunger pipes (29B) as damaged surfaces cause fast wear to the seals.

When replacing V-sleeves (40/40A), grease new seals with special grease from pump manufacturer before installing.

Check O-rings (42B, 44A, 53 and 53A for MP4120/MP4124 only) and replace as necessary.

Check rear v-sleeve (35 or 35B) and O-ring (35D for MP4120 only) after having removed snap ring (36) and replace as necessary.

If plunger pipe (29B) has to be replaced, loosen tension screw (29C) and remove it together with the plunger pipe (29B). Check and clean plunger (25) surfaces and install new plunger pipe and seal washer (29D).

Cover thread of tension screw (29C) with a fine film of liquid glue and tighten carefully to 247 in.-lbs. (28 Nm).

Important! Care must be taken that no glue gets between the plunger pipe (29B) and centring sleeve (29A). The plunger pipe should not be strained by eccentric tightening of tension screw, nor through dirt or damage to the front surface of the plunger as this could cause the plunger pipe to break.

Install spacer rings (41A, 52A - MP4120/MP4124 only), tension spring (42), spring tension disc (54), suction valve adaptor (52) and spacer pipe (51) and then tighten plug (42A) to 107 ft.-lbs. (145 Nm).

Install valve casing and tighten nuts (50) evenly to 59 ft.-lbs. (80 Nm).

To Dismantle Gear

After dismantling the valve casing (43) and plunger pipes (29B), drain the oil. Remove crankcase cover (4) and bearing covers (14).

Loosen connecting rod screws (24) and push stem of connecting rod halves as far as possible into the crosshead guides.

Important! Connecting rods (24) are marked for identification. Do not twist connecting rod halves. Connecting rods must be reinstalled in the same position on shaft journals.

While turning slightly, hit the crankshaft (22) to one side with a rubber hammer.

Important! Do not bend the front portion of the connecting rods. Check the crankshaft (22) and connecting rod (24) surfaces, shaft seals (15 and 31) and taper roller bearings (20).

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.

Remove bearing cover (14) together with shaft seal (15) and O-ring (16). Fit crankshaft (22) through bearing hole on the opposite side. Press in outer bearing (20), and tension it inwards with the bearing cover. Keep the crankshaft in vertical position and turn 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 and maximum 0.15mm by placing fitting discs (20A/20B) under the bearing cover (14).

Important! After assembly has been completed, the crankshaft should turn easily with very little clearance.

Tighten connecting rod screws (24) to 106 in.-lbs. (12 Nm).