

## GP6140-4000 & GP6145-4000 REPAIR INSTRUCTIONS

### To Check Valves

Loosen plugs (56) and take out complete valve (51) with a slide hammer (provided with pump). With a bent piece of wire, take out o-rings (52) located between the suction and discharge valves. To dismantle the valves, carefully tap the valve plate (51B) with a bolt until the valve seat (51A) is pushed out of the spacer pipe (51D). Check the sealing surfaces and replace all worn parts. Check the o-rings. When reinstalling the valve, particular care must be taken so that the o-rings sit properly in their fittings in the valve casing. Tighten the plugs (56) to 160 ft.-lbs..

### To Check Seals and Plunger Pipe

Loosen nuts (49A) and remove the pump head. Separate the plunger connection (36) from the crosshead assembly (25) by means of two open-end wrenches (size 22mm and 27mm). Pull seal sleeves (40) out of their fittings in the crankcase (1). Take seal case (41) out of seal sleeve (40). Examine plunger (37) and sleeves (and grooved ring (45A) in GP6140-4000 only). Check the o-rings (41A and 41C). Replace worn parts. Grease seals with Silicone before reinstalling. Replace plunger (37) and tighten to 355 in.-lbs.

**IMPORTANT: Do not loosen the three plunger screws (36) before the valve casing (50) has been removed; otherwise, the tension screw (38) could hit against the spacer pipe (51D) when the pump is being turned.**

For the pumps, the seal unit (43, 44, 44A) is loaded by a spring (42). Seal life can be increased if the loading allows for a little leakage. This assists lubrication and keeps the seals cool. It is therefore not necessary to replace the seals before the leakage becomes too heavy and causes output and operating pressure to drop. When reassembling, tighten plunger (37) to 33 ft.-lbs. Check o-rings on seal case (41). Clean surfaces of seal sleeves in gear box and sealing surfaces of valve casing. Push valve casing carefully onto o-rings of seal case and centering studs (49C). Tighten nuts (49A) to 103 ft.-lbs.

### To Disassemble Gear End

Take out plunger and seal sleeves as described above. Drain oil. After removing the circlip ring (33B), pry out seal retainer (33) with a screw driver. Check seals (32 and 33A) and surfaces of crosshead. Remove crankcase cover (4). Loosen inner hexagon screws on the connecting rods (24) and push connecting rod halves as far into the crosshead guide as possible.

**IMPORTANT:** Connecting rods are marked for identification. Do not twist con rod halves. Con rod is to be reinstalled in the same position on shaft journals. Check surfaces of connecting rod and crankshaft (22). Take out bearing cover to one side and push out crankshaft taking particular care that the connecting rod does not get bent.

Reassemble in reverse order: Regulate axial bearing clearance - minimum 0.1mm, maximum 0.15mm - by means of fitting disc (20A). Shaft should turn easily with little clearance. Tighten inner hexagon screws (24) to 355 in.-lbs.

**IMPORTANT: Connecting rod has to be able to be slightly moved sidewise at the stroke journals.**

## GP6140-4000 and GP6145-4000 TORQUE SPECIFICATIONS

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Torque Amount</u>
24	06896	Inner Hexagon Screw	355 in.-lbs.
38	12554	Tensioning Screw	33 ft.-lbs.
49A	06958	Nut, Valve Casing	103 ft.-lbs.
56	05171	Tensioning Plug	160 ft.-lbs.