Repair Instructions - GP8035 Pump

To Check Valves

Loosen screws (58) and lift discharge casing (50B) up and away. Take out pressure springs (57). Pull out assembled valves (51 and 52) with fitting tool (p/n 07662).
Dismantling valves: the spring tension cap (51A, 52A) is screwed together with the valve seat (51B/52B). Remove spring tension cap, take out springs (51E/52E) and valve plate (51C/52C). Check sealing surfaces and O-rings (51D/F, 52D/F, 56A).
Replace worn parts.
Coat threads of valve seat with silicon grease or molycote anti-seize Cu-7439 when reassembling. Before refitting the valves, clean the sealing surfaces in the casing and check for any damage.
Tighten screws (58) at 132 Ft-lbs (180 NM); check torque tension after 8-10 operating hours.

To Check Seals and Plunger Pipe

Screw off hexagon nuts (49A) and hose coupling (K11 and K15). Remove pump head together with seal case (38) and intermediate casing (62) from crankcase (1). If necessary, carefully tap the valve casing (50) past the centering stud (50A) using a rubber hammer.

Important! If necessary, support the pump head by resting it on wooden blocks or by using a pulley.

Take off flat leakage seal (62D) and check.

Remove plunger (36) from crosshead with plunger base (25) and take seal sleeve (39) together with all mounted parts out of the drive.
Pull plunger out of seal assembly and check for any damage. Clean centering and top-surface of crosshead with plunger base (25). Take out tension spring (45). Carefully remove the whole seal unit (41-44) by using socket wrench or backside of a screwdriver. Check plunger surface and seals. Check O-rings (39A).
Renew damaged parts.
After removing off clip-ring (40C) and pressure ring (40B), check leakage seal (40) and O-ring (40A) and renew (if necessary).

Important! Be careful not to damage seal sleeve (39) pressure ring (41) and guide ring (41A). Check the inner diameter of the pressure ring and guide ring for wear and if necessary replace together with seals (42) and support ring (44). Clean all parts. New parts should be lightly coated with silicon grease before installation.

Insert the seal unit (41-45) into the seal sleeve (39). Push the plunger (36) carefully through the seals from the crankcase side. If necessary, the seals can be held tightly using a suitable pipe support held on the other side of the seal sleeve.
Take out the seal case (38) from the intermediate casing (62) and check O-rings (38A). If necessary, secure 2 screwdrivers in the front O-ring groove to extract seal casing from intermediate casing. Coat O-rings with silicon grease before installing.

Important! Mounting surfaces of the crankcase, seal sleeves, intermediate casing and

valve casing must be clean and free of damage. The components must lie exactly and evenly on one another. The same exactness applies for all centering positions in the crankcase, intermediate casing, pressure-and valve casing.

Coat the seal sleeve lightly with anticorrosive grease (e.g. molycote no. Cu-7439) in its fitted area towards the crankcase. Insert seal sleeves in to their crankcase fittings.

Important! Watch the even milled surfaces on the seal sleeves. They must be positioned vertically on each other.

Turn the pump (by hand) until the plunger (25) rests against the plunger (36). Tighten plunger (36) to 33 Ft-lbs. (45 NM).
Insert the seal tension spring (45) in to the seal sleeve (39).

Mounting Valve Casing:

Press seal cases (38) (with the stepped OD diameter 65mm) carefully to its stop in the centering holes of the intermediate casing. Mount flat leakage seal (62D).

Important! The flat leakage seal (62D) must be positioned with its 3mm diameter bore onto the notched pin (62C) on the intermediate casing. The leakage return bores in the intermediate casing and in the seal sleeves must remain clear of the cutouts in the seal (62D).

Push valve casing (50) together with intermediate casing (62) carefully on to the centering studs (50A).

Tighten hexagon nuts evenly and crosswise to 265 Ft-lbs. (360 NM).

Important! The torque tension on the screws (49A) must be checked after 8-10 operating hours; the pump must be at zero pressure. Thereafter the tension is to be checked every 200 operating hours.

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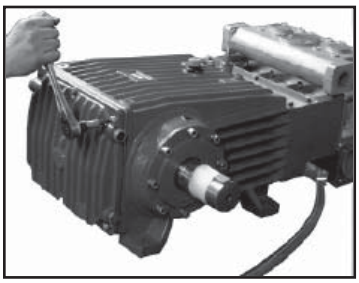
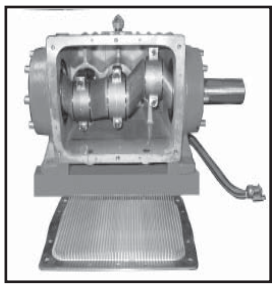
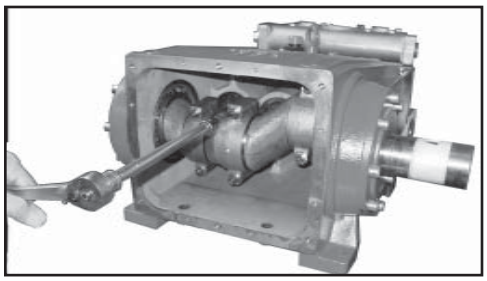
To Dismantle Crankcase Gear



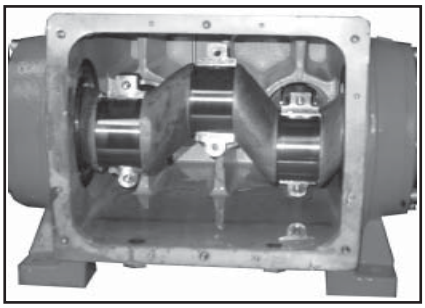


10) Take out plungers and seal sleeves as described above. Drain the oil by taking off the plug (12). After removing the clip ring (33B), lever out the seal retainer (33) with a screwdriver. Open hose adapter (K11) and remove gear cover (K3). Remove the cooling vane plate (K1) by removing the screws (K4)

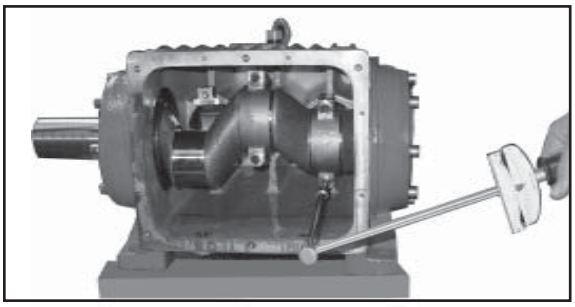


11) Remove the connecting rod screws (24).

Important! Connecting rods are marked 1 to 3 for identification. Do not twist connecting rod halves or interchange them. When reassembling, the connecting rod must be fitted in their exact original position on the crankshaft journals.



12) Push connecting rod halves together with the crosshead as far as possible into the crosshead guide. Take out bearing cover (14/14A) and push out crankshaft taking particular care that the con rod doesn't get bent. Check surfaces on the connecting rods (24), crankshaft (22) and crossheads (25). Check the surfaces of the crosshead guides in the crankcase for any unevenness.



13) Reassemble in reverse order. Thread the long end of the crankshaft together with the inner bearing rings into the crankcase; then mount outer bearing ring (20) and spacer ring (22A). Mount connecting rod halves in their exact original position and tighten at 37 Ft-lbs. Important! Connecting rods must be able to move slightly sideways on the stroke journals.

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14) Mount bearing cover (14A) and tighten screws (17) to 64 Ft-lbs. Adjust axial play (clearance) on the crankshaft to minimum 0.1 mm / max. 0.15 mm using shims (21A/21B). The shaft should turn easily with little clearance. Connecting rod must sit exactly in the middle of each crank pin. Fit the bearing cover (14) and tighten the screws (17) at 64 Ft-lbs. Seal (32A) must always be installed so that the seal lip on the inside diameter faces the oil. Possible axial float of the seal adapter (33) to be compensated with shims (33C).

Mount cooling plate (K1) and gear cover (K3) with their respective seals (K2). When assembling the cooling circuit line, make sure that the oil cooler connection (K7) is always joined to the upper connection (K3) of the gear cover.