

INSTALLATION INSTRUCTIONS

Operation and Maintenance

Check oil level prior to starting and ensure trouble-free water supply.

Oil amount: 4 gallons (15 litres). Only use ISO VG 220 industrial gear oil (e.g. Aral Degol BG220) or automobile gear oil SAE 90 GL4 (Giant's p/n 01154). Initial change after 50 operating hours and then every 1000 operating hours, or after 1 year if used less.

IMPORTANT! Care must be taken when operating in damp places or with high temperature fluctuations. Oil must be changed immediately should condensate (frothy oil) occur in the gear box.

IMPORTANT! When setting up the pump, note carefully the arrow on the side of the crankcase which shows the recommended direction of rotation. The preferred direction of rotation ensures the motion of the conrods correctly distributes oil onto the crosshead guides – which is a particular advantage where continuous operation is involved.

IMPORTANT! The torque tension on the valve casing nuts (49A) is to be checked after approximately 200 operating hours. Please see page 6 concerning the torque values. The pump must be at zero pressure when checking the torque tension.

IMPORTANT! Gear oil cooling: the pump can normally be run in continuous operation without oil cooling up to a power of 73.8 HP (55 kW). However, the oil temperature in the crankcase must not rise above 167 °F (75°C) in this case.

External oil cooling may be necessary depending on ambient temperatures, on the temperature of the medium and on heat transfer to the environment. External cooling can be set up using the ½" input connection (K10) on the bottom of the crankcase cover and the corresponding diagonal ½" output connection (K10) on the top of the crankcase cover through which cooling water can be feed. Its flow amount depends on the temperature of the cooling water and ambient temperatures. We recommend a cooling capacity of 1.3 to 2 HP (1 to 1.5 kW).

IMPORTANT! A closed circuit can be fitted for cooling. The system pressure in such a closed cooling circuit must not exceed 29 PSI (2 bar).

Plant Lay-Out

For correct functioning of the pump, the following points must be respected:

a) Pressure on Suction Side

The stipulated NPSHR is the minimum required pressure above the vapour pressure of the medium and is never to fall short of this figure. Temperature and vapour pressure of the medium, the geodetic height of the location, the flow rate and loss of friction in the suction line must all be taken into consideration. It may be necessary to fit a booster pump (centrifugal pump) in the suction line.

b) Pulsation

Due to its construction, the plunger pump creates pulsation in the suction and discharge lines. Suction pulsation in particular must be damped in order to prevent resonance in the suction line which in turn causes cavitation. Therefore the pump is never to be connected to a rigid pipe, but instead to a flexible hose (not reinforced by steel), and if possible 1.5 to 2 times wider than the suction connection. If a booster pump is used, the hose is to be attached between the booster pump and the high pressure pump.

If several pumps are used, each pump must have its own suction line. If this cannot be done, a suction air chamber or a suction flow stabilizer must be installed in front of each pump. The bladder in the stabilizer is to be charged on location.

Depending on the layout of the plant, a pressure accumulator may be necessary on the discharge side. This pressure accumulator must be fitted directly in front of the discharge outlet of the high pressure pump. We recommend the use of only one pressure accumulator respectively in the discharge line in order to avoid irritation which could be caused by different pre-tension levels in the accumulators.

Gas tension in both the suction flow stabilizer/s and in the pressure accumulator/s should be checked regularly.