


INSTALLATION INSTRUCTIONS

Required NPSH refers to water: Specific weight 1kg/dm³ at 570 RPM.

 Before putting the pump into operation, please read operating instructions carefully!

IMPORTANT! When renewing the high pressure plunger seal (pos. 40), do not use grease. Hot water causes grease to wash off the seal which in turn can jam the valves!

Before installation, the new seals should only be oiled lightly.

Operation and Maintenance

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

IMPORTANT! If there is a **danger of frost**, the water in the pump and in the pump fittings (particularly the unloader valve) must be emptied. The second discharge port can also be used and the pump run “dry” for 1-2 minutes for this purpose.

Oil amount: 101 ounces (3.0 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.

Caution: When operating in damp places, with high temperature fluctuations or if condensate (frothy oil) occurs in the gear box, oil must be changed immediately.

Keep NPSH under control.

Maximum input pressure 145 PSI (10 bar), maximum suction head -4.35 PSI (-0.3 bar). Make sure that suction pulsation is sufficiently dampened – water column resonance must be avoided.

Safety Rules

Pump operation without safety valve as well as any excess in temperature or speed limits automatically voids the warranty. The safety valve must be regulated in accordance with the guidelines for liquid spraying units so that

the admissible operating pressure can not be exceeded by more than 10%.

When the pump is in operation, the open shaft end must be covered up by shaft protector (21); the driven shaft side and coupler must be covered by a belt guard or bell housing.

To cover the exposed crankshaft end, mount the shaft guard (21) together with the holder (21A) onto the bearing cover (14) and secure with bearing cover screws (17).

Before any maintenance to the pump takes place pressure in discharge line and in pump must be at zero. Close up suction line. To ensure that the driving motor does not get switched on accidentally, disconnect fuses.

Before starting the pump, make sure that all parts on the pressure side of the unit are vented and refilled and that the the pressure is set at zero.

In order to prevent air, or an air/water-mixture being absorbed and to prevent cavitation occurring, the pump-npshr, positive suction head and water temperature must be kept under control.

Cavitation and/or compression of gases lead to uncontrollable pressure-kicks which can ruin pump and unit parts and also be dangerous to the operator or anyone standing nearby.

Giant Plunger Pumps are suitable for pumping clean water and other non-aggressive or abrasive media with a specific weight similar to water.

Before pumping other liquids - especially inflammable, explosive and toxic media - the manufacturer must under all circumstances be consulted with regard to the resistance of the pump material. It is the responsibility of the manufacture and/or operator to ensure that all pertinent safety regulations are adhered to.

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Supplementary Information

Giant Triplex Pump LP121HT(C) has been especially constructed for pumping hot water e.g. steam boiler storage. The plunger seals (40) on the water side are made out of a high temperature-resistant material. Rinsing chambers behind the high pressure seals through which cold water can flow thus increasing the life of the seals are available upon request LP121HT(C). The cold water connections (59) are suited to the Ermeto-pipe 6mm diameter. The operator can also use hose nipples; there are 1/8" BSP threads in the seal sleeve for this purpose.

The cold water 68 °F - 104 °F (20 °C - 40 °C) can be guided into the pump from either side and flows out on the opposite side e.g. into a drain. The cold water flow rate should be at least 17 ounces/min (0.5 L/min) and must be put into use as soon as the pump is started.

If the cold water doesn't start flowing immediately the pump is put into operation, the ceramic plunger (29B), could crack under the cold shock.

IMPORTANT! The cooling water must be delimited to avoid lime formation due to warming.

IMPORTANT! If the location of the pump doesn't allow for cooling, on no account are the connections in the seal sleeves (35) to be closed up because this is where water from the high pressure seals has to drip out.

The pipe bends (58) should be removed in this case. To ensure the seals are properly greased, the openings in the screw-in joints (57) should be used to fill the rinsing chambers with high-temperature-resistant grease by means of a grease gun.

In the case of water temperature above 194 °F (90 °C), we strongly recommend the cold-water rinse.

Plant Lay-Out

For perfect functioning of the pump, the following points must be adhered to.

a) Pressure in Suction Side

The stipulated NPSHR is the minimum required pressure above the vapor pressure of the medium and is never to fall short of this figure. Temperature and vapor pressure of the medium, the geodetical 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 install 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 dampened in order to prevent resonance in the suction line which in turn, causes cavitation. Therefore, the pump is never to be connected by a rigid pipe but rather by 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 can't 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 pretensioned on location.

Depending on the layout of the plant, a pressure accumulator may be necessary on the discharge side. This pressure accumulator must be installed right behind the discharge outlet of the high pressure pump. We recommend the use of only one pressure accumulator in the discharge line in order to avoid irritation which could be caused by different pretension levels in the accumulators.

Gas-tension in both the suction flow stabilizer and in the pressure accumulator are to be checked regularly.

