

# INSTALLATION INSTRUCTIONS

Installation of the Giant Industries, Inc., pump is not a complicated procedure, but there are some basic steps common to all pumps. The following information is to be considered as a general outline for installation. If you have unique requirements, please contact Giant Industries, Inc. or your local distributor for assistance.

1. The pump should be installed flat on a base to a maximum of a 15 degree angle of inclination to ensure optimum lubrication.

2. The inlet to the pump should be sized for the flow rate of the pump with no unnecessary restrictions that can cause cavitation. Teflon tape should be used to seal all joints. If the water temperature exceeds 30°C or if aggressive water (seawater, demineralized water) or other liquids are to be pumped, the integrated gear oil cooling system must be decoupled and a separate cooling circuit set up.

The gear oil cooling system must be used for driving power of more than 50kW in continuous operation and is advisable for maximum performance in intermittent operation of more than 60 minutes. The flow in the integrated gear oil cooling system is dependent on the plunger diameter and the pump rpm, and the cooling water is drawn and conveyed by one plunger. The amount of cooling water conveyed ensures satisfactory oil cooling under observation of the recommended rpm limits. If a separate cooling circuit is fitted, the cooling capacity must be 1500 W.

3. A tube fitting on the side of the pumphead which allows the circulation of water between the valve casing and seal sleeves to take place. The tube fitting must always be mounted on the same side as the suction line.

4. The discharge plumbing from the pump should be properly sized to the flow rate to prevent line pressure loss to the work area. It is essential to provide a safety bypass valve between the pump and the work area to protect the pump from pressure spikes in the event of a blockage or the use of a shut-off gun.

5. Use of a dampener is necessary to minimize pulsation at drive elements, plumbing, connections, and other system areas. The use of a dampener with Giant Industries, Inc. pumps is optional, although recommended by Giant Industries, Inc. to further reduce system pulsation. Dampeners can also reduce the severity of pressure spikes that occur in systems using a shut-off gun. A dampener must be positioned downstream from the unloader.

6. Crankshaft rotation on Giant Industries, Inc. pumps should be made in the direction designated by the arrows on the pump crankcase. Reverse rotation may be safely achieved by following a few guidelines available upon request from Giant Industries, Inc. Required horsepower for system operation can be obtained from the charts on page 3.

7. Before beginning operation of your pumping system, remember: Check that the crankcase and seal areas have been properly lubricated per recommended schedules. Do not run the pump dry for extended periods of time. Cavitation will result in severe damage. Always remember to check that all plumbing valves are open and that pumped media can flow freely to the inlet of the pump.

Finally, remember that high pressure operation in a pump system has many advantages. But, if it is used carelessly and without regard to its potential hazard, it can cause serious injury.

## IMPORTANT OPERATING CONDITIONS

**Failure to comply with any of these conditions invalidates the warranty**

1. Prior to initial operation, add oil to crankcase so that the oil level is between the two lines on the oil dipstick. **DO NOT OVERFILL. SAE 80W-90 Industrial Gear Lube Oil may be used (Giant's p/n 01154).** Crankcase oil should be changed after the first 50 hours of operation, then at regular intervals of 500 hours or less depending on operating conditions.

2. Pump operation must not exceed rated pressure, volume, or RPM. The suction side input pressure must not exceed 29 PSI (2 bar) if the integrated gear oil cooling system is connected. The maximum system pressure for a separately fitted oil cooling system must likewise not exceed 29 PSI (2 bar).

If the integrated gear oil cooling system is not used, the maximum admissible input pressure on the pump suction side is 10 bar. In this case, transmitted pulsation from the pump to the suction line must be sufficiently damped. A pressure relief device must be installed in the discharge of the system.

3. Acids, alkalines, or abrasive fluids cannot be pumped unless approval in writing is obtained before operation from Giant Industries, Inc.

4. If there is danger of frost, the pump and adjoining components such as the unloader and safety valve as well as the cooling system must be emptied. Empty the pump through the second unused suction and discharge connection. Run the pump "dry" for 1-2 minutes to aid emptying.

Empty the cooling system by removing screw joints K11 on the pump head and by blowing the hoses with compressed air on the K11/K7 side. Anti-freeze is recommended to guard against frost where a separate cooling circuit is used.