

Adequate Piping Setup

These units are furnished for a specific service condition so any change in the hydraulic system may affect the pump's performance adversely. The piping connection must be carried out with utmost care; otherwise, the pumping medium can escape during operation, which can seriously endanger the operating personnel. For an adequate piping placement to be made, the following guidelines must be observed:

- Do not start the piping and alignment procedures until grouting, preliminary alignment and on site welding have been performed.
- In a new installation, great care should be taken to prevent dirt, scale, welding beads, and other items from entering the pump. The suction system should be thoroughly flushed before installing the suction strainer and suction piping.
- Suction and discharge piping, fittings, and valves must be adequately supported and anchored close to the pump flanges to eliminate strains imposed on the pump case, prevent excessive nozzle loads, maintain pump/driver alignment, and avoid pipe-induced vibration.
- Do not install unsupported piping on the pump.
- It is important to confirm that the pump can be moved out from the baseplate without cutting or welding (only by adjusting connections and flanges).
- Piping layout and installation shall provide adequate maintenance and operation accessibility. Field installed auxiliary equipment shall not interfere with removal of the machine or driver.
- Pump and pipe flanges must be parallel; they should mate together without effort, and with the bolt holes properly in line.
- Suction and discharge piping should be of ample size, be installed in direct runs with minimum bends.
- Short-radius elbows shall be avoided near the suction nozzle. If an elbow is necessary, it should be of the long radius type.
- Install a check valve and a gate valve in the discharge pipe. When the pump is stopped, the check valve will protect the pump against excessive back-flow pressure and will prevent the pump from running backward. The check valve should be installed between the gate valve and discharge flange in order to permit its inspection.
- Make sure that there are isolation block valves at the pump for each type of auxiliary piping.
- The suction strainer should be installed between 5 to 20 pipe diameters upstream from the suction flange.
- No obstruction within at least 5 pipe diameters of the suction flange should be fitted.
- Consider a slope in the suction piping to avoid high points.

Diagram 1
Negative Suction

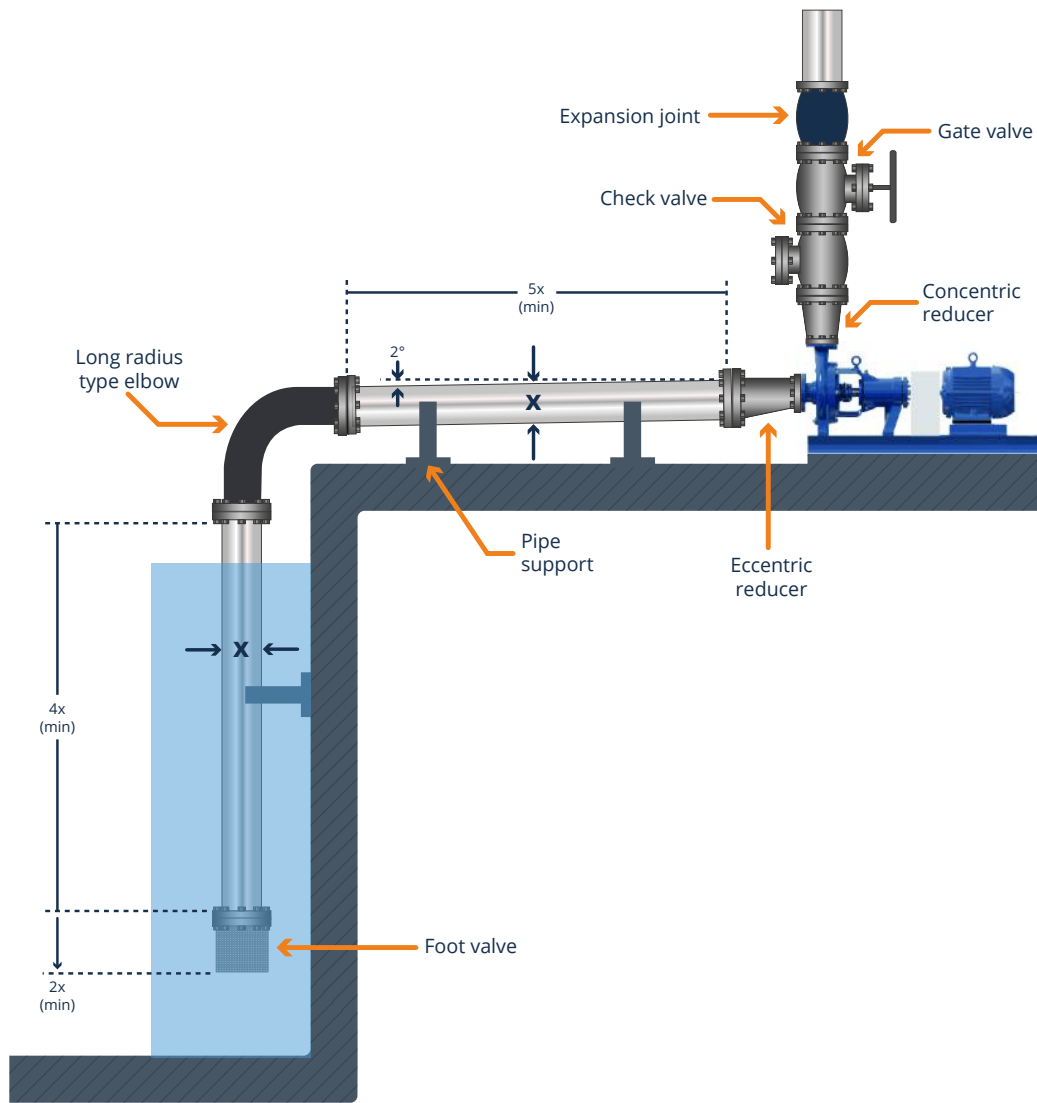


Diagram 2
Positive Suction

