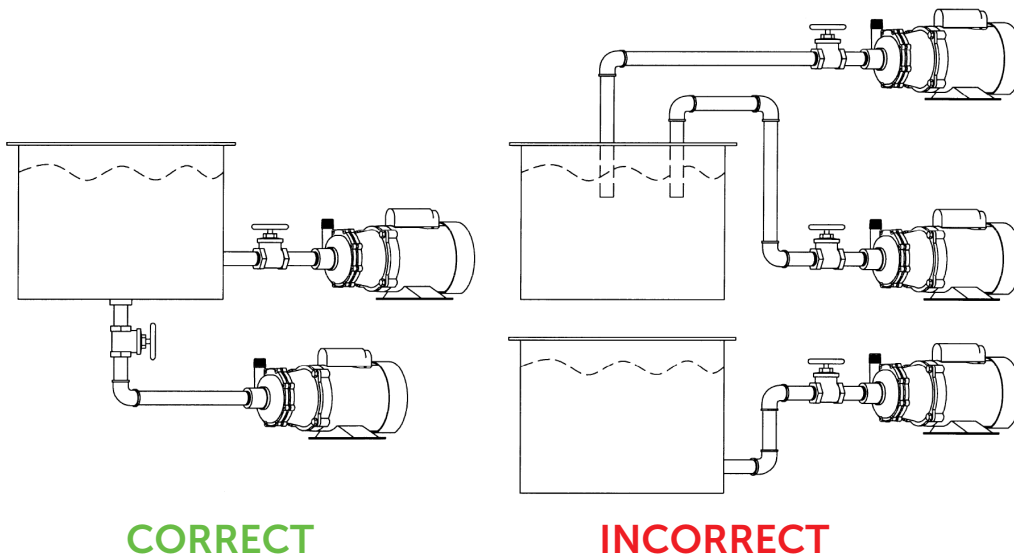


# GENERAL INSTALLATION INSTRUCTIONS



## GENERAL

- ☑ The pump should be mounted horizontally on a foundation and secured by anchor bolts
- ☑ Install the pump as near to the fluid source and as low as possible. The pump **inlet must be flooded**. When using an elbow, valve, etc. the inlet must have straight piping in length at least 5 times the diameter of the pipe.
- ☑ Inlet piping should not be smaller than the pump inlet size and preferably one size larger than the pump inlet. Ensure consistent pipe diameter from the fluid vessel to the pump inlet where possible. Reduce pipe size diameter, rather than increasing, when necessary and adhere to previous rules.
- ☑ Piping and valves should be independently supported. Do not allow the pump to support the weight of the piping.
- ☑ All inlet piping should be direct and short as possible with as little bending as possible. Excessive bending and pump inlet length will lead to flow distortion and pump cavitation.
- ☑ Available NPSH should exceed 120% of the pump required NPSH. Contact March May for clarification and pump requirements.
- ☑ Inlet velocity should not exceed 2 meters per second. Viscous and hot liquids will have an effect on velocity.
- ☑ If reducers or increasers are necessary, caution is required to ensure trapped air does not occur.
- ☑ Use a vacuum gauge in the inlet line and it should be as close as possible to the pump inlet. This is for the monitoring of pump performance whilst in operation.
- ☑ Ball valves may be installed on the inlet side to allow for maintenance and service. Never use the valve to limit flow into the pump
- ☑ Negative suction or suction lift is not recommended and should not be used. See illustration below



**CORRECT**

**INCORRECT**

- ☑ Suction pressure: Systems utilising high suction pressure where a pump is used to boost system pressure is of a concern. Be sure that the pressure does not exceed that of the pump design, otherwise severe damage and possible operator injury may occur
- ☑ If checking the system for leaks with air, do not exceed 1.4 Bar if plastic pumps are attached



# GENERAL INSTALLATION INSTRUCTIONS



## DISCHARGE

- ☑ All discharge pip size should be determined by flow velocity, which should not exceed 4.6 meters per second.
- ☑ A throttling valve should be installed for flow and pressure control. Caution - location of check valves on long discharge piping, high static discharge of 15.2 meters or more and two or more pumps used on the same common piping.
- ☑ Install discharge pressure gauge to monitor performance during operation.
- ☑ Connect electrical power to the motor in accordance with motor manufacturer's nameplate instructions. Contact March May for clarification where required

## PUMP INSTALLATION

- ☑ Before running, ensure that all centrifugal pumps are primed as they have limited suction capabilities.
- ☑ Pumps should be installed on a flat, stable surface or supports which are suitable to prevent movement of the pump and motor when in operation. It is advisable to mount the motor on dampening/insulation surface to reduce noise and vibration caused by the moving components whilst in operation.
- ☑ Always ensure that the outlet port is higher than the inlet port. This allows a path for the air to escape through. If the outlet is positioned incorrectly, the air can become trapped and may cause problems within the system. See below for examples of correct and incorrect set up.



**CORRECT**



**INCORRECT**

- ☑ The pump should never be mounted vertically with the pump head at the lowest point. This will create an air pocket within the pump chamber and may cause problems.



**CORRECT**



**INCORRECT**



# GENERAL INSTALLATION INSTRUCTIONS



## DISCHARGE

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- ☑ Install discharge pressure gauge to monitor performance during operation.
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## OPERATION

- ☑ Check the pump for proper rotation by allowing fluid into the pump (ensuring a flooded inlet) and turning power to the motor on and off in quick succession. If the motor is not rotating in correct direction, the leads should be changed to conform to the motor manufacturer's nameplate. Improper direction reduces performance of the pump.

### **-CAUTION-**

- ☑ Do not run the pump without liquid. Be sure the pump chamber is completely flooded. If the pump is run dry, excessive heat will occur damaging internal parts and could result in operator injury.
- ☑ Open inlet valve completely.
- ☑ Open discharge valve slightly (crack).
- ☑ Observe all connections for leaks. If a leak occurs, close all valves and repair all leaks before further operation.
- ☑ Start Motor
- ☑ Open discharge valve gradually until desired flow and pressure is attained.

### **-CAUTION-**

IF DISCHARGE VALVE IS FULLY OPEN ON START UP, DECOUPLING COULD OCCUR OR MOTOR OVERLOAD IS POSSIBLE

- ☑ Operating the pump for excessive periods of time at shut off (discharge valve fully closed) or at near shut off conditions could cause the liquid to rise in temperature which could cause failure of internal parts and failure of pump.
- ☑ Flow rates should be controlled by the discharge valve only, never by the suction valve.
- ☑ Electrical operation is also critical. High or low voltage could have an effect on pump performance. Caution - Refer to motor specification on high/low voltages limits, contact March May for clarification.



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