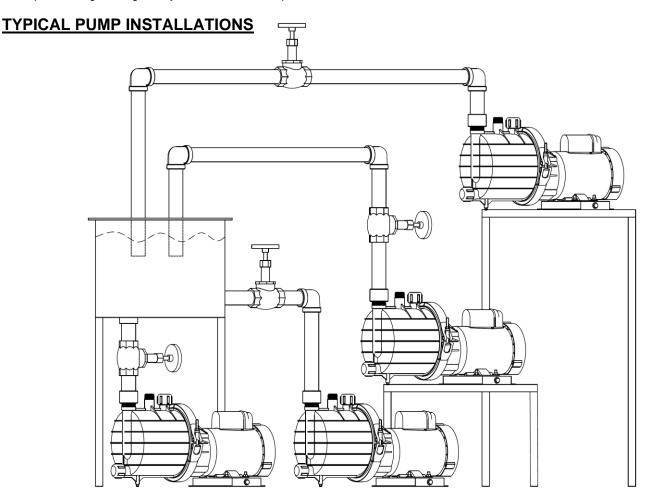1. The Pump should be mounted horizontally on a foundation and secured by Anchor Bolts.
2. Install the pump as near to the suction source. When using an elbow, valve, etc., the suction must have straight piping in length at least five (5) times the diameter of the pipe.
3. Suction piping should not be smaller than the pump suction size.
4. Piping and valves should be independently supported. Do not allow the pump to support the weight of the piping.
5. All suction piping should be direct and short as possible with as little bending as possible. Excessive bending and pump suction length will lead to flow distortion and pump cavitation.
6. Suction velocity should not exceed 6.5 feet per second. Viscous and hot liquids will have an effect on velocity.
7. If reducers or increasers are necessary, caution is to be used so as not to trap air.
8. Use a vacuum gauge in the suction line and it should be as close as possible to the pump suction. This is for monitoring the performance of the pump while in operation.
9. Valves may be installed on the suction side to allow maintenance and service. NEVER use the valve to limit flow into the pump.
10. Suction Pressure: Systems utilizing high suction pressure where a pump is used to boost system pressure is of concern. Be sure that the pressures do not exceed that of pump design, otherwise severe damage and possible operator injury could result.
11. If checking the system for leaks with air, do not exceed 20 PSI.

DISCHARGE
1. All discharge piping size should be determined by flow velocity which should not exceed 15 feet per second.
2. A Throttling Valve should be installed for flow and pressure control. Caution—Location of check valves on long discharge piping, high static discharge of 50 feet or more and two or more pumps used on the same common piping.
3. Install Discharge Pressure Gauge to monitor performance during operation.
4. Connect electrical power to the motor in accordance with motor manufacture's nameplate instructions.

OPERATION
1. Priming container and pump must be filled completely with liquid before turning pump on.
   750 self-priming container holds approximately one gallon of liquid.
   Pump SP-TE-7-MD container holds approximately 1.75 gallons of liquid.
   Pump SP-TE-8P-MD container holds approximately 1.75 gallons of liquid.
2. Do not run pump without liquid. If pump is run dry, excessive heat will occur damaging internal parts and could result in operator injury.
3. Open suction valve completely.
4. Open discharge valve slightly.
5. Observe all connections for leaks. If leaks occur, close all valves and repair all leaks before further operation.
6. Start motor and check for proper rotation.
7. Open discharge valve gradually until desired flow and pressure is attained.

TYPICAL PUMP INSTALLATIONS

—CAUTION—

IF DISCHARGE VALVE IS WIDE OPEN ON START UP, DECOUPLING CAN OCCUR OR MOTOR OVERLOAD IS POSSIBLE

8. Operating the pump for excessive periods of time at shut off (discharge valve fully closed) or at near shut off conditions can cause the liquid to rise in temperature which can cause failure of internal parts and failure of pump.
9. Flow rates should be controlled by the discharge valve only, never by the suction valve.
10. If using variable speed do not exceed the max internal pressure of the pump. If decreasing speed priming time will increase.

—OPERATING PERFORMACE NOTES—

—Altitude—

For every thousand feet, the maximum suction lift is decreased by a multiplier of 0.06.
2500 Feet: 0.88 of maximum suction lift.
4500 Feet: 0.76 of maximum suction lift.
6500 Feet: 0.64 of maximum suction lift.

—Specific Gravity—

The specific gravity will affect the maximum suction lift. The higher the specific gravity the less the maximum suction lift will be.
Divide the specific gravity by the maximum suction. For example, if the pump's maximum suction lift is 20 feet, and the specific gravity is 1.5, then the equation is
20/1.5= 13.33 Feet. The 13.33 Feet is the maximum suction lift.