GENERAL NOTES ON PUMP SELECTION

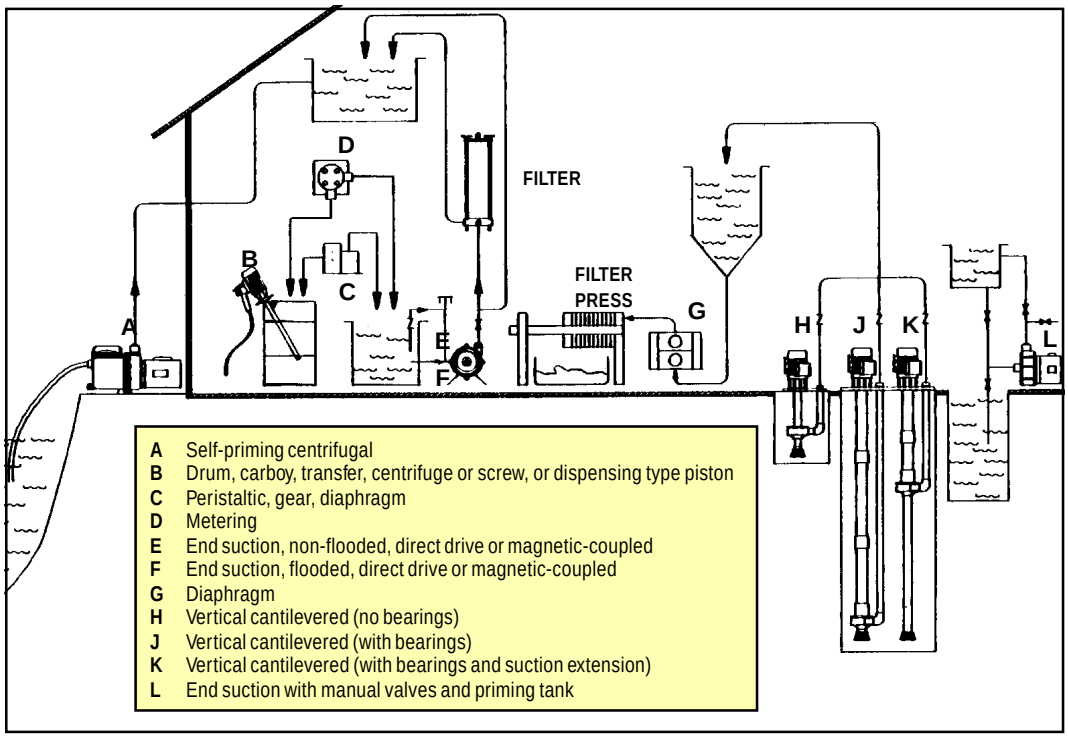
In order to achieve a desired flow and pressure, the pump selected must provide a TDH at the given flow. The flow must exceed the desired discharge pressure plus friction losses resulting from the length of the pipe line, fittings and valves in the line and any other impediments to flow in the line.

The inlet and outlet port sizes of the pump selected do not necessarily indicate the actual size of either the suction or discharge piping. When specific gravities higher than 1.0 are encountered, oversized motors are required.

In any pumping system, valves should be selected to maintain the pump prime and control flow and pressure at the desired levels. In order to prevent backsiphoning, loss of solution or loss of prime, check valves should be utilized. Consideration must be given to ensure that the pump will develop adequate pressure to open the check valve at the time of start-up. A globe valve, ball valve or plug valve should be installed on the discharge line directly after the pump discharge nozzle. Gate valves are not recommended to throttle or regulate flow.

TYPICAL PUMP APPLICATIONS

Many different types of pumps with a wide range of flow rates and discharge pressures are available to meet the requirements of various applications. The drawing below illustrates a number of possible applications and the different types of pumps which can be used to meet these requirements.



Reference **E** in the above illustration indicates that the horizontal pump would have to be manually primed at least the first time used, and a foot valve (check valve) should be used on the suction side of the pump to maintain the primed condition when the pump is not operating

The illustration also indicates the employment of three different length vertical pumps, the shortest of which will generally be considered to be the most dependable. The slightly longer pump with a suction extension could continue to lift the liquid, provided the level is slightly above the suction strainer (flooded suction). If the pump was shut off and the liquid level falls below the pump and suction strainer, it would lose its suction or prime and the pump would then require priming or a flooded suction. Therefore, use of the very longest pump may be required under certain conditions, particularly when it would be necessary to pump at any given time from any level within the reservoir.

If the installation requires constant pumping or pumping upon demand, it is recommended that standby pumps are included in the installation. If the desired flow rate reaches its peak only occasionally, then it might be possible to use a smaller pump with the second being energized only when required. In such an instance, a third pump might be suggested to make absolutely certain that two of the three pumps are available at any one time.

SERFILCO

PUMP APPLICATION FORM

To help us recommend the proper pump for your use, please furnish as many details as possible. This information will be considered strictly confidential.

FROM:

Company _____ Date _____

Individual _____ Title _____

Street _____

City _____ State _____ Zip Code _____

CAPACITY AND SPEED

Capacity required _____ U.S. gallons per minute. Operating speed _____ RPM

Is service continuous or intermittent? _____

If intermittent, please explain _____

_____

Is there a filter system? _____ Average flow required _____ U.S. GPM _____

LIQUID PUMPED

Type and concentration _____ pH _____ Pumping temperature _____ °F

Viscosity at 70°F _____ at 100°F _____ at 210°F _____

Specific gravity _____ or weight per U.S. gallon _____

Are solids or abrasives present? If so, please explain _____

_____

DISCHARGE PRESSURE (if any)

Pounds per square inch _____ or _____ foot head Constant or varying? _____

If varying, explain _____

_____

Vertical distance from center line of pump to highest discharge outlet _____

Pipe size _____ I.D. Total length of discharge line _____ Number of elbows _____ 90°; _____ 45°

No. & desc. of other fittings _____

Is there a heat exchanger? _____ Pressure drop _____ PSI _____

Type of filter system _____ Average pressure drop _____ PSI _____

SUCTION LINE

Vertical distance from center line of pump to surface of liquid supply _____ Pipe size _____ I.D.

Total suction line length _____ No. of elbows _____ 90°; _____ 45°;

No. & desc. of other fittings _____

Is there a strainer? _____ Type _____ size _____

NPSH available _____ feet.

POWER UNIT

To be furnished by user _____; furnished by dealer _____; furnished by SERFILCO _____

Specify prime mover (electric motor, gas engine, etc.) _____

Horsepower developed _____ and other characteristics _____

Electric motor: Manufacturer _____ , HP _____ , RPM _____

Phase _____, Hertz _____ , Volts _____ , Motor enclosure _____