

**Close Coupled In-Line Pumps**

**General**

Furnish and install as shown on the plans, \_\_\_\_\_ (qty) Weinman In-Line Series 320 size (\_\_\_\_x\_\_\_\_x\_\_\_\_) model \_\_\_\_\_ centrifugal pump(s). Each shall be capable of pumping \_\_\_\_\_ GPM when operating against a total pumping head of \_\_\_\_\_ feet (suction lift/suction pressure) at the temperature, specific gravity and viscosity indicated. The pump shall operate at \_\_\_\_\_ RPM and shall have \_\_\_\_\_ percent minimum efficiency at the design point. The pump(s) shall be rated for continuous service and shall be bronze fitted construction suitable for pumping a liquid with the following characteristics:

- Liquid handled \_\_\_\_\_
- Specific Gravity \_\_\_\_\_
- Temperature \_\_\_\_\_
- Viscosity of liquid at pumping temperature \_\_\_\_\_
- NPSHA \_\_\_\_\_

Note: Add any additional facts concerning the nature of the liquid or installation which might affect the pump construction, application or operation.

**Construction**

The adapter to the casing is to be one piece cast iron construction capable of mounting a type 1 mechanical seal with carbon/(ni-resist)(ceramic faces) stainless steel metal parts and elastomers, rated at (180)(230) degrees F. Casing shall be of cast iron ASTM-A48, Class 30 cast iron with tensile strength of 30,000 psi or ductile iron with minimum tensile strength of 60,000 psi. Pump units shall be capable of standing hydrostatic test pressures of 1.5 times maximum working pressure. All assembly points shall be of machine register fit to assure proper alignment. The flanged casing discharge nozzles shall conform to ANSI B16.1 specifications with minimum 150 psi ratings at 250 degrees F. A renewable wear ring shall be fitted to the case at the suction fitting.

The casing shall have tapped and plugged drain connections, air vent and 1/4" npt gauge tappings on the suction and discharge nozzles. The case shall be of the suction cover design for ease of maintenance and service with out disturbing discharge piping, bearing frame or motor mounting. The impeller shall be of the enclosed design constructed of ASTM B584 Bronze (with a renewable impeller wear ring). The seal cavity shall have an internal self-bleeding channel with a provision for internal plug off to allow an external air bleed.

The motor shaft shall be steel and protected with a (bronze)(stainless steel) sleeve heat fit to the shaft. A neoprene deflector shall be mounted on the shaft to prevent liquid from entering the motor.

**Testing**

The following (witnessed)(non-witnessed) tests are to be performed in accordance to Hydraulic Institute test standards.

- \_\_\_\_\_ Pump performance (A)(B) tolerance level
- \_\_\_\_\_ Routine Motor test
- \_\_\_\_\_ Hydrostatic - Complete Pump

**Motor**

The motor shall be not less than \_\_\_\_\_ hp \_\_\_\_\_ RPM, NEMA design B squirrel cage type, (drip proof)(TEFC) (EISA)(premium) efficiency motor with (1.15)(1.0) service factor and suitable for operation on (115)(230) volt, 1 phase, (50)(60) Hertz power supply OR (200)(230)(460) (575) volt, 3 phase, 60 hertz power supply. Motor size shall be sufficient to prevent overloading at operating conditions or at the lowest listed head conditions whichever point requires greater horsepower. Following installation, grouting and connection of all piping, pump and motor must be checked for alignment in accordance with standards of the Hydraulic Institute.