

## Typical Specification for Series 1510 / e-1510 Base Mounted, Flexible Coupled, End-Suction Pumps

Furnish and install pumps with performance characteristics as shown on plans. Pumps shall be base mounted, single stage, end suction design with a foot mounted volute to allow removal and service of the entire rotating assembly without disturbing the pump piping, electrical motor connections or pump to motor alignment.

Pump volute shall be Class 30 cast iron with integrally-cast pedestal support feet. The impeller shall be a cast bronze or stainless steel enclosed type, balanced to ANSI/HI 9.6.4-2009 balance grade G6.3 and secured to the shaft by a locking capscrew or nut.

The liquid cavity shall be sealed off at the pump shaft by an internally-flushed mechanical seal with ceramic seal seat and carbon seal ring, suitable for continuous operation at 225°F (107°C). A replaceable non-ferrous shaft sleeve shall completely cover the wetted area under the seal.

Pump shall be rated for minimum of 175 psi (12 bar) working pressure. Volute shall have gauge tapings at the suction and discharge nozzles and vent and drain tapings at the top and bottom.

The pump(s) vibration limits shall conform to Hydraulic Institute ANSI/HI 9.6.4-2009 for recommend acceptable unfiltered field vibration limits (as measured per ANSI/HI 9.6.4-2009 Figure 9.6.4.2.3.1) for pumps with rolling contact bearings.

Baseplate shall be of structural steel or fabricated steel channel with fully enclosed sides and ends, and securely welded cross members. Grouting area shall be fully open. The combined pump and motor baseplate shall be sufficiently stiff as to limit the susceptibility of vibration. The minimum baseplate stiffness shall conform to ANSI/HI 1.3-2009 for Horizontal Baseplate Design standards.

A flexible type, center drop-out design coupling, capable of absorbing torsional vibration, shall be employed between the pump and motor. Pumps for variable speed application shall be provided with a suitable coupling sleeve. The coupling shall be shielded by a dual rated ANSI B15.1 & OSHA 1910.219 compliant coupling guard and contain viewing windows for inspection of the coupling.

Motor shall meet NEMA and EISA 2007 (where applicable) specifications and shall be of the size, voltage and enclosure called for on the plans. Pump and motor shall be factory aligned, and shall be realigned by the contractor per factory recommendations after installation.

The pump(s) selected shall conform to ANSI/HI 9.6.3.1 standards for Preferred Operating Region (POR) unless otherwise approved by the engineer.

Each pump shall be factory hydrostatically tested per Hydraulic Institute standards. It shall then be thoroughly cleaned and painted with at least one coat of high grade paint prior to shipment.

The pump(s) shall be manufactured, assembled and tested in an ISO 9001 approved facility.

A pump condition monitoring system should be provided on the pump power end to continuously measure pump vibration and temperature at the outboard bearing. The system shall record the baseline vibration at start-up and have local alarm indication at the pump when the vibration levels are double the baseline values or when alarm limits are reached for vibration and temperature. Vibration modes shall be based on ANSI/HI 9.6.4-2009 and ISO 101816 recommended levels. The sensors and condition monitors' electronics shall be provided in a stainless steel enclosure potted in epoxy for protection from the environment. A battery powered system is preferred with no external power source required. The acceptable ambient temperature range shall be -40°F to 212°F (-40°C to 100°C). CSA certification is required.

Pumps shall be Series 1510 / e-1510 as manufactured by Xylem Bell & Gossett or equal.