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ENGINEERING SPECIFICATION FOR CENTRIFUGAL PUMP

(PROJECT STANDARDS AND SPECIFICATIONS)

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SCOPE

This Project Standard and Specification covers the requirements for design, materials, fabrication, inspection, testing and supply of horizontal centrifugal pump.

REFERENCES

Throughout this Standard the following dated and undated standards/codes are referred to. These referenced documents shall, to the extent specified herein, form a part of this standard. For dated references, the edition cited applies. The applicability of changes in dated references that occur after the cited date shall be mutually agreed upon by the Company and the Vendor. For undated references, the latest edition of the referenced documents (including any supplements and amendments) applies.

1. American Petroleum Oil (API)
2. National Electrical Manufacturers' Association (NEMA)
3. Occupational Safety & Health Administration (OSHA)
4. American National Standard Institute (ANSI)
5. National Electrical Code (NEC)
6. International Electrical Code (IEC)
7. Institute of Electrical and Electronics Engineers (IEEE)
8. Tubular Exchange Manufacturers' Association (TEMA)
9. American Society for Testing Materials (ASTM)
10. Korean Industrial Standards (KS)
11. Japanese Industrial Standards (JIS)

UNITS

This Standard is based on International System of Units (SI) except pressure (bar), viscosity (Cp), pipe diameter (inch) and vessel nozzle size (inch), flange rating (#), screw and NPT threads (inch).

DESIGN AND FABRICATION REQUIREMENTS

General

Unless otherwise specified, pump and auxiliaries shall be suitable for outdoor (without shelter) installation considering the local climatic conditions.
Pump shall be designed and constructed to operate satisfactory to process conditions. If the pump require by pass flow for the specified operating conditions, the pump shall be designed to operate at a capacity which includes the by-pass in addition to the specified capacity.
The head curve of the pump shall be continuously rising from the specified operating point to the shut off point.

Casings

Pressure casings shall be of such thickness that will be suitable for the design pressure at the design temperature and the hydraulic test pressure at ambient temperature allowance.
Unless otherwise specified, all casings shall be provided with connections for vent and drain with block valve and cap. Vent connections may be omitted if the pump made self-venting by the arrangement of the nozzles.
All flanges shall be ANSI RF type.
Openings for nominal pipe sizes of 1-1/4, 2-1/2, 3-1/2, 5, 7, and 9 inches shall not be used.

Impellers

- Impellers shall be constructed as single piece casing.
- Impellers shall be statically and dynamically balanced to insure smooth operation.
- Impellers shall be keyed to the shaft.

Shaft and Shaft Sleeves

Shaft shall be made into one piece, and shall be provided with sleeves locked to the shaft.

Shaft Sealing

Shaft seal type shall be suitable for the pumping fluid condition and shall be recommended by the Vendor.