Wilo IL
In-Line Centrifugal Hydronic Pumps

Engineering Specification

WILO_SPC_IL_0722

PART 1 GENERAL

1.01 SUMMARY

A. Pump shall be Cronoline IL, split-coupled, single stage vertical inline centrifugal pump as manufactured by WILO USA LLC.
B. Furnish and install extended life, low-maintenance pumps with capacities as shown on plans/submittals.

1.02 REFERENCES

A. ANSI – American National Standards Institute
B. EISA 2007 – Energy Independence and Security Act of 2007
C. NEMA – National Electrical Manufacturers Association
D. HI - Hydraulic Institute

1.05 SUBMITTALS

A. Performance curve
B. Power curve
C. NPSH curve
D. Materials of construction
E. Operating limits

1.06 QUALITY ASSURANCE

A. Shall be factory tested per Hydraulic Institute (HI) standards prior to shipment
B. Shall conform to HI 1.1-1.2, and 1.3 for recommended acceptable unfiltered field vibration limits.

1.07 DELIVERY, STORAGE, AND HANDLING

A. In preparation for shipping, the pump shall have clean flanges and any exposed machined metal surfaces will be cataphoretically coated.
B. Protection of the flanges, pipe openings, and nozzles shall be supplied with wooden or plastic flange covers or with screwed-in plugs.

PART 2 PRODUCT

2.01 MANUFACTURERS

A. Subject to compliance with the specifications, the following manufacturers shall be acceptable:
    1. WILO USA LLC
    2. Pre-approved equal.

2.05 EQUIPMENT

A. Shall be factory assembled and tested, centrifugal, impeller mounted on stub shaft, split-coupled, single-suction pump as defined in HI Standard 40.6.
B. Shall be designed for base mounting, with pump and motor shafts vertical or horizontal. (Note: Horizontal motor shaft mounting allowable up to 3 Horsepower without support).
C. Shall be rated for 175-psi (12 bar) maximum working pressure and a continuous water temperature of 248°F (120°C).
D. Shall be designed with an integral suction straightening vane (in select models).
E. Glycols min 20% up to max 50% volumetric, up to 248°F (120°C).

2.06 COMPONENTS

A. Pump Casing
    1. Shall be constructed of cast iron EN-GJL-250, ASTM equivalent ASTM A48 Class 40B.
    2. Shall have threaded gauge tappings at inlet and outlet.
    3. Shall have an air vent at top of volute.
    4. Shall have 125 lb. flanged connections in accordance with ASME B16.1.
    5. Pump Volute shall be sealed via an EPDM O-ring.
    6. Cast pump feet shall be drilled and tapped for ease of installation onto base pad if necessary.
    7. Cataphoretic coating shall be applied electrostatically to prevent corrosion.

B. PUMP COVER / MOTOR STOOL
   1. Shall be constructed of cast iron (ASTM A48 Class 40B).
   2. Shall be drilled and tapped to accommodate a mechanical seal flush line which can be connected to the corresponding discharge connection to facilitate cooling and flushing of the mechanical seal.
   3. Motor stool/pump cover interface shall be sealed by an O-ring and shall include extra tappings for removal from pump volute by using “jack screws”.

C. IMPELLER
   1. Shall be constructed of bronze (G-CuSn10).
   2. Shall be statically and dynamically balanced and keyed to shaft.
   3. The allowable residual unbalance in the impeller rotating assembly shall conform to ANSI Grade G6.3.
   4. The diameter shall be trimmed to match the specified performance.

D. STUB SHAFT
   1. Shall be constructed of 316L Stainless Steel.

E. MECHANICAL SEAL
   1. Shall be an internally flushed mechanical seal with silicon carbide seal faces.
   2. Shall have HNBR elastomers.
   3. Shall have a stainless steel spring.

F. SPLIT COUPLING
   1. Shall be an axially-split device capable of absorbing torsional vibration.
   2. Shall be employed between the pump stub and motor shafts.

G. COUPLING GUARD
   1. Shall be ANSI B15.1.
   2. Shall be a Section 8 & OSHA 1910.219 compliant coupling guard which contains viewing windows for inspection of the coupling mounted to the pump end.

H. MOTOR
   1. Shall be single speed.
   2. Motor bearings shall be sealed and permanently greased.
   3. Shall have a secured mounting motor stool.
   4. Shall meet EISA 2007 requirements and NEMA MG1 Table 12-12 specifications.
   5. Shall be the size, voltage, and enclosure called for on the plans.

PART 3 EXECUTION

3.05 INSTALLATION

A. Complete installation and startup checks in accordance to manufacturer’s instructions.
B. Check piping connections for tightness. Pipe connections to pumps shall be made in such a manner so as not to exert any stress on the pump housing.
C. Clean strainers on suction piping.

END OF SECTION