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SECTION: Z3.10.500

ZM1723

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Supersedes

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MODEL 7008, 7009 & 7010

SUBMERSIBLE GRINDER PUMP GUIDE SPECIFICATION

1.0, 1.5 & 2.0 HP



1.01 GENERAL

Contractor shall furnish all labor, material, equipment and incidentals required to provide ____ (QTY.) Model ____ centrifugal grinder pump (s) as specified herein.

2.01 OPERATING CONDITIONS

Each submersible pump shall be rated at ____ HP, ____ volts, ____ phase, 60 Hz, 3450 RPM. The unit shall pump ____ GPM at ____ feet of TDH.

The submersible pump shall be capable of handling sewage and grinding it into fine slurry enabling it to be pumped over long distances in pipelines as small as 1.25" in diameter. The submersible pump shall have a shut-off head of ____ feet and pump ____ GPM at ____ feet TDH.

The pump shall be controlled with:

- ____ an integrally mounted on/off float switch (automatic model).
- ____ a piggyback float with plug and pump receptacle (115 and 230 Volt models only).
- ____ a NEMA 4X simplex control panel with high water alarm and dry contact, operating off 3 float switches.
- ____ a NEMA 4X duplex control panel with high water alarm and dry contact, operating off 3 or 4 float switches.

3.01 CONSTRUCTION

Each centrifugal grinder pump shall be equal to the cCSAus listed model ____ submersible type as manufactured by Zoeller Engineered Products of Louisville, Ky. (800-928-7867). The castings shall be constructed of an epoxy coated cast iron. The motor housing shall be finned and oil-filled to dissipate heat. Air-filled motors shall not be considered equal since they do not adequately dissipate heat from the motor. All external-mating parts shall be machined and sealed with a Viton elastomers. All fasteners exposed to the liquid shall be 300 series stainless steel. The upper and lower ball bearings shall be capable of handling all thrust and radial thrust loads. The pump housing shall be of the concentric design thereby equalizing the pressure forces inside the housing, which will extend the service life of the seals and bearings. The pump shall have a stainless steel lifting bracket.

Pump housing configuration shall be:

- ____ 1.25" NPT vertical discharge
- ____ 1.25" NPT horizontal discharge

4.01 ELECTRICAL POWER CORD

The submersible pump shall be supplied with 20' (____ 35' or ____ 50' optional) of multiconductor power cord. It shall be SOW or SOOW type cord capable of continued exposure to the pumped liquid. Power cord shall be sized for the rated full load amp loading of the pump in accordance with the National Electrical Code. Power cable shall enter into the pump's cap assembly through a compression type-sealing gland. Water sealing and strain relief are separated. The entire junction chamber shall be sealed off from the motor housing by through wall terminals to protect the motor from moisture.

5.01 MOTOR

The oil-filled motor shall be a Class B insulated NEMA B design rated for continuous duty. At maximum load, the winding temperature will not exceed 220 degrees F un-submerged. Since air-filled motors are not capable of dissipating heat and lack continuous lubrication, they shall not be considered equal. A single phase pump motor shall have an integral thermal overload switch in the windings for protecting the motor. 3 Phase overload protection shall be provided for in the control panel.

6.01 BEARINGS AND SHAFT

Upper and lower ball bearings made of high carbon chromium steel shall be provided to prevent shaft deflection by withstanding all thrust and radial loads. The bearing system shall be designed to enable proper cutter alignments from shut off head to maximum load at 5 feet of TDH. The motor shaft shall be made of 416 SS and have a minimum diameter of .625".

7.01 SEALS

Pump shall have a single mechanical seal protecting the motor from the pumped liquid, seal assembly having silicon carbide rotary faces and carbon stationary with buna-n elastomer and 316 SS spring. It shall be equal to a Crane Type 6a configuration.

Optional seal faces shall be
___silicon carbide / silicon carbide.

8.01 IMPELLER

The impeller shall be engineered, glass-filled plastic with a stainless steel insert and with pump out vanes on the back shroud to keep debris away from the seal area. It shall be keyed and bolted to the motor shaft.

___An optional fully balanced bronze vortex impeller.

8.02 CUTTER MECHANISM

The cutter and plate shall be constructed of 440C SS with a Rockwell C hardness of 55 - 60. The stationary cutter plate shall have specially designed grooves and orifices machined through it which enable the slurry to flow through the pump housing at an equalized pressure and velocity. The double-bladed angled cutter, rotating against the plate in a scissor-like operation, will shred solids down to less than 1/8".

9.01 PAINTING

The exterior castings of the pump shall be protected with green powder coated epoxy finish.

10.01 SERVICEABILITY

Components required for the repair of the pump shall be readily available within 24 hours. Components such as mechanical seals and bearings shall not be of a proprietary design and be available from local industrial supply houses. Special tools shall not be required to service the pump. A network of service centers shall be available nationwide in those cases where service requirements are beyond the scope of in-house service mechanics.

11.01 SUPPORT

The pump shall have cast iron support legs enabling it to be a free standing unit. The legs will be high enough to allow solids and long stringy debris to enter the cutter assembly.

For those installations requiring a field assembled rail system:

- ___1.25" x 2.0" Z-Rail® disconnect system, suspending the pump from a ductile iron base fitting by means of a sealed plate attached to the pump (3/4" rail pipes and lifting cable are to be provided by others).
- ___SS intermediate stabilizer required for rail systems used where basin depths are greater than 12 feet.

For those "Outdoor" installations requiring a factory assembled basin package with Z-Rail® disconnect system:

- ___Simplex system with a ___" diameter by ___" depth basin.
- ___Duplex system with a ___" diameter by ___" depth basin.

For those "Indoor" installations requiring a factory assembled basin package with pump suspended from cover:

- ___Simplex system with a ___" diameter by ___" depth basin.
- ___Duplex system with a ___" diameter by ___" depth basin.

12.01 TESTING

Each pump shall be operated and tested in liquid during its production process. It shall be checked at its maximum running point for performance, amps, grounding, winding insulation, and water tightness.

- ___An optional certified performance test based on the Hydraulic Institute or SWPA (Submersible Wastewater Pump Association) Test Standard for submersible pumps.
- ___Start up services at the job site by an authorized representative of Zoeller Engineered Products shall be required. Start-up report form ZM1074 should be completed in the presence of the installers and returned to the Project Engineer or Zoeller Engineered Products.

13.01 WARRANTY

Standard warranty shall be 18 months from date of manufacture, 12 months from date of purchase (proof of purchase required) or 12 months from the date of start up when a start up report is on file with Zoeller Company.



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