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ZOELLER® PUMP COMPANY

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Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

SSPMA

MODEL 945 TRACTION GUARD SYSTEM SPECIFICATIONS

FAMILY OWNED AMERICAN PROUD

1.00 GENERAL:

Provide a complete elevator sump pump system designed to remove water from elevator systems where hydraulic oil is not present.

Contractor shall furnish all labor, material, equipment and incidentals required to provide _____ (QTY.) 945-_____ Model _____ submersible centrifugal pump with vortex impeller as specified herein.

The Zoeller Model 945 Traction Guard System shall include:
1. Submersible pump (cast iron construction)
2. Pivot Series Control Panel
3. Mechanical float switches

2.00 PUMPS:

2.01 OPERATING CONDITIONS

Each submersible pump shall be rated at _____ H.P., _____ volts, _____ phase, 60 HZ., _____ RPM. The unit shall produce _____ Gallons Per Minute (GPM) at _____' of Total Dynamic Head (TDH).

The submersible pump shall be non-overloading throughout the length of the curve and be capable of operating not submerged without damaging the pump. The reserve service factor shall be a minimum of 1.0. The submitted performance curve shall show the flow and head capacity of the pump.

The pump housing configuration shall have a

_____ 1.5" N.P.T. vertical discharge (models 152, 153, or 161).

_____ Optional bolt on discharge flange for model 161: ____2" (10-1305) or ____3" (10-1306)

_____ 2.0" N.P.T. vertical discharge (models 284, 292, or 294).

_____ Optional bolt on discharge flange for models 284, 292 or 294: ____3" (10-1306)

2.02 CONSTRUCTION

Each pump shall be of the close coupled cCSAus listed model submersible pump as manufactured by Zoeller Pump Company of Louisville, Ky. (800-928-7867). The castings shall be constructed of epoxy coated cast iron. The motor housing shall be oil-filled to dissipate heat. All external-mating parts shall be machined and sealed with a Neoprene square ring. All fasteners exposed to the liquid shall be 300 series stainless steel. The motor shall be protected on the lower side with a mechanical seal arrangement being separated by a spring assembly. The upper and lower ball bearings shall be capable of handling all 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 top cap shall have a stainless steel lifting handle. The pump shall have support legs enabling it to be a freestanding unit. The castings shall be protected with a green powder-coated finish.

2.03 ELECTRICAL POWER CORD

The pump shall be supplied with ____ 25' / ____ 50' multiconductor power cord. It shall be SJOOW 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 Electric Code. Power cable shall enter into the cap through a compression type-sealing gland. Water sealing and strain relief are separated. The entire cap shall be sealed off from the motor housing by thru wall terminals to protect the motor from moisture.

2.04 MOTOR

The motor shall be an oil filled NEMA B design. At maximum load, the winding temperature will stabilize below the insulation class. Since air-filled motors are not capable of dissipating heat, they shall not be considered equal. Single-phase motors shall include an integral thermal overload switch and the capacitor circuit shall be located in the pump assembly. Three phase motors shall use magnetic starters with overload relays in the control panel for further protection.

2.05 BEARINGS AND SHAFT

The upper and lower ball bearing are continually lubricated by the oil which fills the motor housing. The motor shaft shall be made of ____ AISI 1215 steel (151, 153) or ____ 416 stainless steel (161, 284, 292, 294).

2.06 SEALS
Pump shall have a single carbon / ceramic seal configuration that is constructed with buna-n elastomers and a 316 SS spring. It shall be equal to a Crane Type 6a configuration.

2.07 IMPELLER
The impeller shall be of a fully balanced ____ thermoplastic (151, 153) or _____cast iron (161, 284, 292, 294) vortex design. It shall have pump out vanes located on the back shroud to keep debris away from the seal area. Attempts to improve efficiency by coating impeller shall not be acceptable.

2.08 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 stations shall be available nationwide in those cases where service requirements are beyond the scope of in-house service mechanics.

2.09 TESTING
Each pump shall run in liquid before being shipped. It shall be checked at its maximum running point for performance, amps, grounding, winding insulation, and water tightness.

3.00 TRACTION GUARD CONTROLS:
3.10 SINGLE PHASE SIMPLEX PIVOT® RL® CONTROL PANEL AND SWITCH
3.11 GENERAL
These specifications describe the simplex Pivot RL 1 phase control panel. The contractor shall furnish and install the Pivot RL Control Panel as specified herein. Incoming pump power shall be Single Phase, 60 Hz., 120/208/240 VAC. Incoming voltage to power Alarm Circuit shall be Single Phase, 60Hz., 120 VAC. The Control Switch shall be configured in a way that set the on and off points at different levels with 2 switches. A third switch shall alert of a high liquid presence.

3.12 CERTIFICATION
The control panel shall be manufactured by a UL 508A Listed industrial control panel shop and shall be 100% factory tested prior to shipment. For U.S. installations, the panel shall comply with UL 508A (Standard for Industrial Control Panels). For Canadian installations, the panel shall comply with CSA C22.2 No. 14 (Industrial Control Panels and Assemblies). The panel shall bear a cULus Listing Mark and/or cCSAus certification mark, either of which is acceptable and demonstrates evaluation to the applicable UL (United States) and CSA (Canada) requirements.

3.13 CONSTRUCTION
The panel enclosure shall be polycarbonate, NEMA 4X rated, with lockable latches, and approved for both indoor and outdoor environments, consistent with the Pivot RL Series construction which utilizes a NEMA 4X non metallic, gasketed enclosure suitable for outdoor exposure. The enclosure shall provide ample internal wiring space to facilitate installation and ensure organized routing of conductors as documented for the Pivot RL Series. Internally, the panel shall contain a factory assembled control system including a control board, IEC motor contactor, pump circuit breaker, individually fused control and alarm circuits with LED indicators, and clearly labeled terminal blocks for pump leads, float switches, remote alarm contacts, and power input, all arranged for maximum serviceability and operational clarity. The user interface shall include a Hand Off Auto selector switch, Pump Run LED, float status LEDs, Control Power and Alarm Power indicators, a high water audible alarm, a 360° visual alarm beacon, and a Test/Silence switch enabling verification of horn, beacon, and LED operation. Model options may include an elapsed time meter and cycle counter when specified. All components shall be mounted securely within the enclosure and factory wired using the highest quality workmanship to ensure proper routing, protection from interference with operating devices, and long term reliability under wastewater system conditions. An alarm component external to the control panel and merely connected to it shall not be acceptable; all alarm and control devices shall be fully hardwired into the panel, and plug in style systems shall not be acceptable. The control panel shall be designed to be operator and maintenance friendly to ensure ease of system setup, field wiring, and troubleshooting. A permanently affixed nameplate shall be located inside the enclosure and shall display the panel model number, drawing number, voltage, phase, and ampere ratings. A schematic wiring diagram shall also be permanently installed inside the enclosure for use by field personnel. The control panel shall be a Zoeller Pivot RL Single Phase Simplex or approved equal.

3.20 THREE PHASE SIMPLEX PIVOT® CONTROL PANEL AND SWITCH
3.21 GENERAL
These specifications describe the simplex Pivot Pro 3 phase control panel. The contractor shall furnish and install the Pivot Pro Control Panel as specified herein. Incoming pump power shall be Three Phase, 60 Hz., 208/240/480 VAC. A Multi-Tap transformer (208/240/480VAC Primary) shall provide 120V control power for the “Smart Board”. The Control Switch shall be configured in a way that set the on and off points at different levels with 2 switches. A third switch shall alert of a high liquid presence.

3.22 CERTIFICATION
The control panel shall be manufactured by a UL 508A Listed industrial control panel shop and shall be 100% factory tested prior to shipment. For U.S. installations, the panel shall comply with UL 508A (Standard for Industrial Control Panels). For Canadian installations, the panel shall comply with CSA C22.2 No. 14 (Industrial Control Panels and Assemblies). The panel shall bear a cULus Listing Mark and/or cCSAus certification mark, either of which is acceptable and demonstrates evaluation to the applicable UL (United States) and CSA (Canada) requirements.

3.23 CONSTRUCTION

The panel enclosure shall be polycarbonate, NEMA 4X rated with lockable latches, approved for indoor and outdoor environments, consistent with Zoeller's Pivot Series construction, which specifies a NEMA 4X enclosure with a lockable latch suitable for harsh outdoor conditions. The Pivot Pro control panel shall incorporate a user friendly LCD interface, advanced logic capability, and support for pump sensors and an option to add Z Control® communication as defined in the Pivot Pro technical data. Standard features shall include a red 360 degree alarm beacon, a 95 dB audible alarm, a weatherproof SILENCE/RESET/TEST toggle switch, and HAND/OFF/AUTO controls for each pump. Internal construction shall include individually fused 3 amp fast acting alarm and control circuits, IEC motor contactors rated for 120/208/240 VAC up to 50 A, circuit breaker protection, and Form C dry contacts for auxiliary outputs, with all terminal points properly labeled for field wiring. The enclosure shall provide adequate space for wiring, and all components shall be fully serviceable, with wiring routed cleanly and professionally to prevent interference with operating devices. An alarm component connected externally to the pump control shall not be acceptable, and all components shall be hardwired into the panel; plug in type systems shall not be acceptable. The control panel shall be operator and maintenance friendly to ensure ease of system setup. All internal wiring shall be of the highest quality and craftsmanship to assure proper routing of conductors and prevent interference with operating devices. A permanently affixed nameplate shall be installed inside the enclosure displaying panel model number, drawing number, voltage, phase, and ampere ratings, and a schematic drawing shall be located inside the enclosure for field personnel. Control panel shall be a Pivot Pro 3 Phase Simplex or approved equal.

4.00 WARRANTY

4.01 PUMPS

Standard warranty shall be 18 months from date of manufacture or 12 months from date of installation with proof of purchase required.

4.02 CONTROLS

Standard warranty shall be ____ 3 years (Single Phase Panel) or _____ 5 years (Three Phase Panel) from date of manufacture or date of installation with proof of purchase required.

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