SECTION 5.10.300

FM0600
1217
Supersedes 0916

SINGLE PHASE SYSTEM

GENERAL
Pump motor shall be hermetically sealed, submersible type operating in a high quality dielectric oil for cooling the windings and for lubrication of the motor bearings and ceramic-carbon shaft seal. Single phase motor shall have internal automatic resetting, thermal overload protection. Construction shall be of ______ cast iron with 100% baked-on powder coated epoxy finish for corrosion resistance and longer casting durability (or ______ cast bronze). All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design. (Addition noted below.) Check applicable series:

<table>
<thead>
<tr>
<th>SINGLE SEAL</th>
<th>264</th>
<th>266</th>
<th>267</th>
<th>270</th>
<th>282</th>
<th>284</th>
<th>292</th>
<th>293</th>
<th>294</th>
<th>295</th>
<th>404</th>
<th>405</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOUBLE SEAL</td>
<td>4270</td>
<td>4282</td>
<td>4284</td>
<td>4292</td>
<td>4293</td>
<td>4294</td>
<td>4295</td>
<td>4404</td>
<td>4405</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CAST IRON SERIES

SIMPLEX SYSTEM
Furnish a Zoeller nonautomatic submersible pump(s), Model ______ Single Seal or Model ______ Double Seal, ______ a simplex control panel or ______ a combination starter. Pumps shall have a capacity of ______ GPM against a Total Dynamic Head of ______ feet. Motor Specification: ______ Voltage, ______ Cycles, ______ Phase, ______ HP. Discharge to be ______ 2” NPT or ______ 3” NPT or ______ 4” flange (404/4404, 405/4405). Cord length to be ______ feet. Pump shall be mounted on rail system with NPT or flange ______ discharge. Pumps will pass ______ 2” solids (264, 266, 267, 270/4270, 282/4282, 284/4284, 292/4292, 293/4293, 294/4294, 295/4295) or ______ 3” solids (404/4404, 405/4405). Pumps shall be ______ UL Listed, ______ CSA approved, ______ SSPMA certified, ______ State of Wisc. approved, ______ other (Specify ____________________________________).

SINGLE SEAL 264 266 267 270 282 284 292 293 294 295 404 405
DOUBLE SEAL 4270 4282 4284 4292 4293 4294 4295 4404 4405

MAIL TO: PO. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
TEL: (502) 778-2731 • 1 (800) 928-PUMP • FAX: (502) 774-3624

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

Visit our web site: zoellerpumps.com

© Copyright 2017 Zoeller® Co. All rights reserved.
404 (2 HP) 405 (3 HP) cast iron series pump shall have a permanent split capacitor motor with capacitor enclosed in the upper housing attached to the pump. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability.

4404 (2 HP) 4405 (3 HP) cast iron series pump shall have a permanent split capacitor motor with capacitor enclosed in the upper housing attached to the pump. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

AUTOMATIC CONTROL - INTEGRAL FLOAT TYPE
Single phase pump shall have an integral mechanical float switch, which shall require no adjustment, nor require additional equipment for operation.

AUTOMATIC CONTROL PIGGYBACK VARIABLE LEVEL FLOAT SWITCH
A Zoeller Piggyback Variable Level Float Switch with a fifteen (15) foot SJOWA cord and molded plug shall be furnished to control a nonautomatic pump. Control shall be constructed of durable plastic and be omnidirectional. Control shall be fastened to discharge pipe with plastic tie mounting strap and shall require no extra wiring. (Addition Noted Below.)

Check applicable control:

10-0032 (115 V/Max. 15 Amps) or 10-0033 (230 V/Max. 15Amps), 10-0034 (115V/Max. 13Amps) or 10-0035 (230 V/Max. 13Amps) (For use on 115 V or 230 V, 1 Phase, nonautomatic Zoeller pump.) Designed for automatic pump operation with the appropriate voltage and horsepower, single phase, Zoeller pump.

10-0229 (115 V/Max. 1 HP) or 10-0230 (230 V/Max. 2 HP) (For use on 115 V or 230 V, 1 Phase, nonautomatic Zoeller pump.) Double float system shall have an adjustable pumping range. Pumping range shall be a minimum of one (1) inch to a maximum of forty-eight (48) inches.

SIMPLEX CONTROL PANEL
A Zoeller Simplex Control Panel shall be furnished to control a nonautomatic pump. The panel shall have a NEMA 4X enclosure, pump run indicator light, high water alarm, selector switches, float switches, and UL label.

10-0123 120 V/1 Ph and 15 max. amps
10-0124 208-230 V/1 Ph and 15 max. amps
10-0323 115-208-230 V/1 Ph and 15 max. amps
10-0125 115-208-230 V/1 Ph and 20 max. amps

THREE PHASE SYSTEM (FOR USE WITH 3 PHASE PUMPS)

GENERAL

Pump motor shall be hermetically sealed, submersible type, operating in a high quality dielectric oil for cooling the windings and for lubrication of the motor bearings and ceramic-carbon shaft seal. Pump motor shall have external magnetic contactor and overload protection. All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design. (Addition noted below).

266 (1/2 HP) 267 (1/2 HP) series shall have a 4-pole squirrel cage induction motor.

282 (1/2 HP) 284 (1 HP) series shall have a 4-pole squirrel cage induction motor. The motor housing shall be finned for extra cooling capability.

4282 (1/2 HP) 4284 (1 HP) cast iron series pump shall have a 4-pole squirrel cage induction motor. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

292 (1/2 HP) 293 (1 HP) 294 (1-1/2 HP) 295 (2 HP) series shall have 2-pole squirrel cage induction motor. Impeller shall be cast iron. The motor housing shall be cast iron and finned for extra cooling capability. The lower seal cavity shall be oil-filled.

4292 (1/2 HP) 4293 (1 HP) 4294 (1-1/2 HP) 4295 (2 HP) series shall have 2-pole squirrel cage induction motor. The impeller shall be cast iron. Motor housing shall be cast iron and finned for extra cooling capability. The lower seal cavity shall be oil-filled.

SIMPLEX CONTROL PANEL
A Zoeller Simplex Control Panel with three control switches shall be furnished to control a nonautomatic pump. The panel shall have a NEMA 4X enclosure, pump run indicator light, high water alarm, selector switches, and a UL label. Panel will be sized for Zoeller Model _____, _____ Volt, _____ Cycle, _____ Phase, _____ HP, _____ FLA pump.

CONTROL SWITCHES
A Zoeller Float Switch shall be furnished to operate control circuit. Float shall be omnidirectional and include a 20' SJOWA cord and plastic tie mounting strap.
ACCESSORIES/MISCELLANEOUS

---

UNICHECK

30-0021 (Clamp Union Valve) (2 inch) full flow check valve, rated at 4.3 PSI (10 feet TDH) at 130 °F shall be furnished to fit 2 inch ABS, PVC, CPVC, steel or copper piping. Unicheck shall have valve body and seat of PVC plastic and shall be assembled with thru bolts. Gasket and flapper shall be neoprene with brass backing plates. Unicheck shall include two (2) neoprene unions and four (4) stainless steel clamps and fasteners.

30-0151 (Compression Union Valve) 2 inch IPS full flow check valve. Rated at 4.3 PSI (10 feet TDH) at 130 °F shall be furnished to fit 2 inch ABS, PVC, CPVC, steel or copper piping. Valve body and seat shall be of cast iron. Gasket and flapper shall be neoprene with brass backing plates and stainless steel rivet. Unicheck shall include two (2) neoprene unions and four (4) stainless steel clamps and fasteners.

---

OPTIONAL ALARM SYSTEM

An audible high water alarm system shall include a Zoeller

10-4012 (115 V / 1 Ph) APak® complete with tethered float and NEMA 1 plastic enclosure (cord and plug). Solid state and warning light and horn, which can be manually turned off. cCSAsus Certified on complete alarm system.

10-0126 (115 V / 1 Ph) High level Alarm complete with NEMA 4x enclosure, alarm bell, Alarm light, Silence switch, and sensor float switch with 15’ cord. Entire unit is UL Listed and CSA Certified.

10-0623 (115 V / 1 Ph) High Level Alarm rated for Indoor/Outdoor use per UL 864. The alarm will include an alarm horn, alarm light, silence and test buttons, and a 15’ float switch.

10-0682 (115 V /1 Ph) deluxe high level alarm rated for indoor/outdoor use per UL 864. The alarm will include an alarm horn, alarm light, silence and test buttons, a 20’ float switch, 6’ power cord, and watertight connectors.

SUMP BASIN

A Zoeller IAPMO polyethylene basin, 200 inch thick, .949 G/CC dense, or Zoeller fiberglass basin, 3/16 inch thick, .058 pounds/cubic feet dense, inches inside diameter by inches deep shall be furnished. The basin shall include four (4) inch cast iron caulk inlet hubs with anticorrosion coating. The center-line of the hub(s) shall be located nine (9) inches from the top of the basin. The basin shall also include a .115 inch thick steel sump cover. An optional pump installation plate can be provided on covers twenty-four (24) inches in diameter or larger. Optional anti-flotation ring can also be provided. Also included shall be a neoprene seal for pump cord, neoprene seal for vent and discharge flange, foam cover seal and plated steel fasteners. Cover shall include a _____ inch vent and a _____ inch discharge flange with mounting hardware.

PIPING & POWER WIRING

All piping shall be rigid and permanent in nature and shall be furnished and installed by the contractor. A Unicheck shall be installed in the discharge pipe. A 3/16 inch vent hole shall be drilled in the discharge pipe below the check valve and pit cover to purge the system of trapped air. Power wiring shall be supplied by electrical contractor. Power wiring for pumping system and alarm system shall be connected to separate circuits.

EXTRA DUTY

Where conditions require, specify extra duty for adverse conditions.

HIGH TEMPERATURE PUMPS

For applications up to 200 °F continuous operation, specify High Temperature Zoeller Pump Co. models. See literature on High Temperature pumps, FM2811, FM1923 and FM0807, for additional information.

PUMP DISCONNECTS AND RAIL SYSTEMS

Where conditions, due to safety, health and the economy of maintenance require pump disconnects or rail systems specify:

---

39-0002, 2" Disconnect (Non-pump Supporting)

39-0004, 2" NPT Rail System (Non-pump Supporting)

39-0128, 2" x 2" Z-Rail Disconnect System, all Ductile Iron Construction

39-0129, 2" x 2" Z-Rail Disconnect System, Ductile Iron Construction w/ SS Upper Rail Bracket

39-0122, 3" x 3" Z-Rail Disconnect System, all Ductile Iron Construction

39-0123, 3" x 3" Z-Rail Disconnect System, Ductile Iron Construction w/ SS Upper Rail Bracket

The Z-Rail® Disconnect System is a pump support assembly consisting of a disconnect fitting, rail plate & guide and utilizes two 3/4" rail pipes that guide the pump into and out of the basin. The assembly components are made of ductile iron with an optional 304 SS upper rail support bracket. Used in concrete, steel or fiberglass basins, it allows for the installation or removal of the pump from the basin at ground level without entering the basin. The disconnect fitting has a machined fit with an O-ring seal that holds up to 160 psi, being able to support pumps weighing up to 300 lbs. The 3/4" rail pipes are provided by the installer, being either galvanized steel or SS pipe.

---

39-0094, 3" x 3" Flanged Rail System, connected horizontally, powder coated cast iron and fitted with a SS support bracket. 2" schedule 40 rail pipes are provided by others.

39-0016, 4" x 4" Flanged Rail System, connected horizontally, powder coated cast iron and fitted with SS rail brackets. 2" schedule 40 rail pipes are provided by others.

© Copyright 2017 Zoeller® Co. All rights reserved.
SEWAGE SIMPLEX SYSTEM WITH INTEGRAL SWITCH
(SINGLE PHASE)

POWER SUPPLY
NOTE: DO NOT PLUG A-PAK ALARM SYSTEM INTO
THE SAME CIRCUIT AS THE PUMP

USE WATERTIGHT JUNCTION BOX
IF INSTALLED IN A DAMP AREA

4" OF GRAVEL

DIAMETER 18" OR 24" STANDARD

ZOELLER AUTOMATIC PUMP

4" INLET HUB

22", 24", 30" STANDARD

BASEIN

9" STANDARD

CENTERLINE OF HUB

4" INLET HUB

1-1/2" DISCHARGE PIPE

CHECK VALVE

"A-PAK" ALARM

FLOOR LEVEL

3 PRONG GFCI OUTLET

PUMP CORD

ALARM ON LEVEL

ON LEVEL

OFF LEVEL

© Copyright 2017 Zoeller® Co. All rights reserved.
SEWAGE SIMPLEX SYSTEM WITH SINGLE PIGGYBACK VARIABLE LEVEL FLOAT SWITCH
(SINGLE OR THREE PHASE)

1-1/2" DISCHARGE PIPE

POWER SUPPLY
NOTE: DO NOT PLUG A-PAK ALARM SYSTEM INTO THE SAME CIRCUIT AS THE PUMP

CHECK VAVLE

"A-PAK" ALARM

FLOOR LEVEL

9" STANDARD
CENTERLINE OF HUB

4" INLET HUB

22", 24", 30" STANDARD

BASIN

ZOELLER NONAUTOMATIC PUMP

VARIABLE LEVEL FLOAT SWITCH

4" OF GRAVEL

DIAMETER 18" OR 24" STANDARD

3 PHASE SYSTEM REQUIRES A SIMPLEX PANEL

3 PRONG GFCI OUTLET

PUMP CORD

FLOAT CORD

USE WATERTIGHT JUNCTION BOX IF INSTALLED IN A DAMP AREA

ALARM ON LEVEL

VENT HOLE

ON LEVEL

VARIABLE LEVEL

ALARM OFF LEVEL

NOTE: DO NOT PLUG A-PAK ALARM SYSTEM INTO THE SAME CIRCUIT AS THE PUMP

"A-PAK" ALARM

VAVLE

POWER SUPPLY

FLOOR LEVEL

9" STANDARD
CENTERLINE OF HUB

4" INLET HUB

22", 24", 30" STANDARD

BASIN

ZOELLER NONAUTOMATIC PUMP

VARIABLE LEVEL FLOAT SWITCH

4" OF GRAVEL

DIAMETER 18" OR 24" STANDARD

NOTE: DO NOT PLUG A-PAK ALARM SYSTEM INTO THE SAME CIRCUIT AS THE PUMP
PUMP DISCONNECT WITH RAIL SYSTEM
(Non-pump supporting)

PULL ROD
CABLE
DISCONNECT
RAIL
CHECK VALVE
VENT HOLE
INTERMEDIATE GUIDE RAIL BRACKET REQUIRED FOR BASIN DEPTHS GREATER THAN 10'.