



Springdale Water Utilities

526 Oak Avenue P.O. Box 769 Springdale, Arkansas 72765-0769 (479) 751-5751

STEP SYSTEM COMPONENTS TO MAINTIAN COMPATABILITY

December 1, 2022

Springdale Water Utilities maintains a pressure sewer system in the northern portion of the City of Springdale (formerly known as the City of Bethel Heights). Each property has at least one tank with a pump in it that pumps into this pressure sewer system.

To maintain compatibility with the system, the Orenco Installation Manual should be strictly used for the installation and repair of this equipment. In addition to these standards, the latest revision of the Arkansas State Plumbing Code and Sewer Use Code.

All repairs and component replacements should be in conformance with manufacturer (Orenco) standards and requirements. Where available, all components replaced should be the same as what was originally installed. If improper components are installed, an overflow may occur, which becomes a public health concern.

It is critical that pumps meet certain conditions to be able to effectively pump from the tank into the pressure sewer system. If a pump is installed that does not meet these requirements, then the pumping system will ultimately fail.

This information provides useful information to home owners and repair services to assist them in maintaining compatibility when components are repaired.

1. PUMP

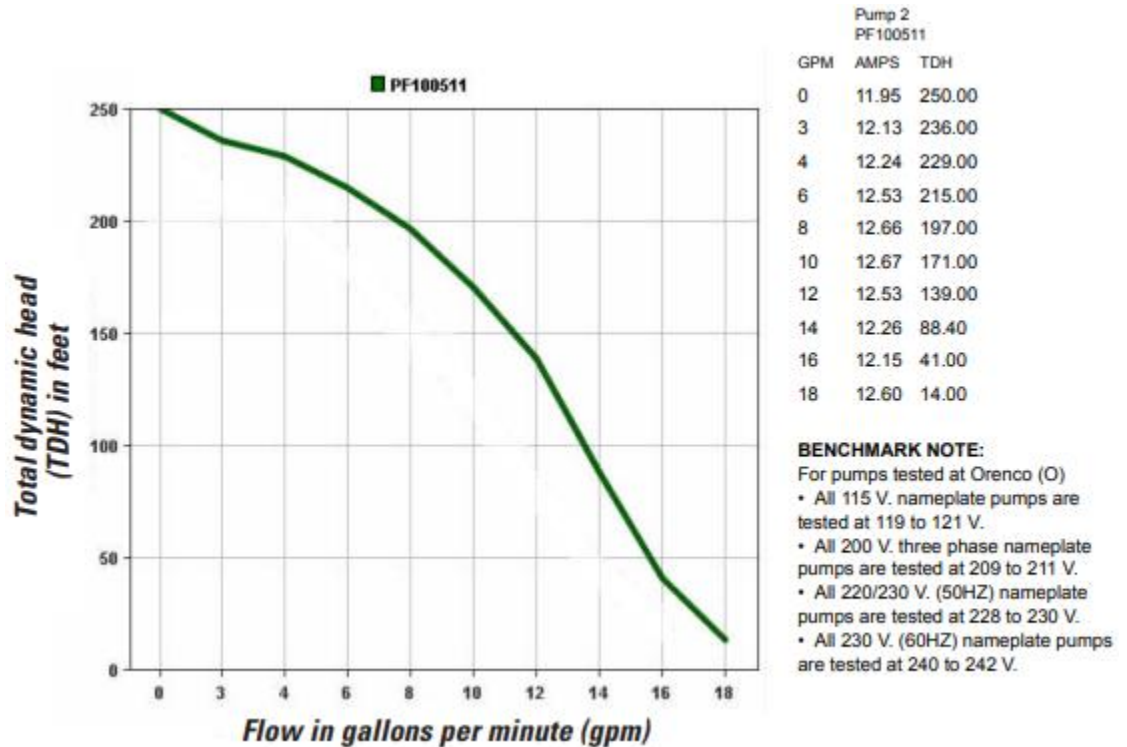
- a. The pump installed shall be an Orenco PF100511, Zoeller 5030-0007 Turbine Effluent Pump, or approved equal. Under no circumstances shall the type and model of pump be different unless approved by the utility. The pump must meet 18 gpm at a pressure of 14 feet and 10 gpm at 171 ft TDH, with a shut-off head



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of 250 feet, as shown in this curve:



2. SERVICE CONNECTION

The service connection shall be Orenco Systems, Inc. Model SC100 (1-inch), SC125 (1.25-inch), SC150 (1.5-inch), or SC200 (2-inch) or approved equal. Service connection will include a swing-check valve, factory-connected to a ball valve. All components will be PVC Schedule 40 and rated for 150 psi.

Lids on the service connection shall be Orenco Systems, Inc. Model FL18G, RR1818 or approved equal, acrylonitrile styrene acrylate (ASA), with green non-skid finish.

3. TANK LIDS

One lid shall be furnished with each access riser. Lids shall be Orenco Systems, Inc. DuraFiber™ Model FLD30G, fiberglass with green finish, and provided with stainless steel bolts.

4. PUMPING SYSTEM

- a. The pump shall include an internal check valve and shall be capable of delivering 18 gpm at a pressure of 14 feet and 10 gpm at 171 ft, with a shut-off head of 250



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feet. When used in conjunction with a flow controller, the pump shall be capable of providing 5 gpm against a head of 190 feet. The pump shall be UL- and CSA-listed for use with Prelos. The pump liquid end must have a minimum 24-hour run-dry capability without water lubrication while submerged in water. The pump shall have a 1/8-inch bypass orifice to ensure flow circulation for motor cooling and to prevent air bind. The pump shall have a floating impeller design to protect against upthrust and to increase pump life. The pump's liquid ends must be repairable (by replacing impellers and/or diffusers) for better long-term cost of ownership. The motor must be rated for continuous use and frequent cycling, at least 300 cycles per day. The motor cable must be suitable for Class 1 and Division 1 and 2 applications. The pump shall be lightweight (less than 30 pounds) for easy removal and maintenance. The pump intake screen must be 1/8-inch mesh polypropylene. The pump shall have internal thermal overload protection and internal lightning protection. All pumps shall undergo 3-point (dead head, design flow, and design flow + 30%) wet testing at the factory to confirm performance.

- b. The discharge piping system should be a hanging style, allowing for quick removal without unions. Please keep in mind this style is not used at all locations. The discharge assembly shall be Orenco Systems, Inc. Model HDAS30125FCASLC hanging-style discharge assembly or approved equal. Discharge assembly shall be 1 1/4-inch diameter and include an anti-siphon mechanism, flow control disk, and high-pressure reinforced EPDM flex hose with working pressure rating of 250 psi, 1 1/4-inch quick-disconnect, line check valve, and Schedule 80 PVC pipe.
- c. Some systems have a flex hose, some do not. We recommend a flex hose to be installed. The high-pressure external flex hose should be Orenco Systems, Inc. Model HVX125PR series or approved equal. Hose shall be reinforced EPDM and constructed of a special elastomer compound with a working pressure of 250 psi. The high-pressure external flex hose connections shall be clamped with Oetiker® stainless steel, two-ear clamps.
- d. The wiring connection system should be Orenco Systems, Inc. ClickTight™ Model CLK-2-60 or approved equal. The ClickTight must be pre-wired with 62 feet of direct burial PVC/nylon cable, with 14 AWG wire for the pump and 18 AWG wire for the float switches. The housing shall be UL-listed for wet locations and have three female plugs: two (2) capable of accepting the male plugs from the float switches and one (1) capable of accepting the male plug from the pump.

5. CONTROLS AND ALARMS



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- a. Motor-Start Contactor: 120 VAC, 1hp, 17 FLA, 60 Hz, 2.5 million cycles at FLA (10 million at 50% of FLA)
- b. Toggle Switch: Single-pole, double-throw HOA switch, 20 amps, 1 hp
- c. Controls Circuit Breaker: 10 amps, OFF/ON switch, single-pole 120 VAC, DIN rail mounting with thermal magnetic tripping characteristics
- d. Pump Circuit Breaker: 20 amps, OFF/ON switch, single-pole 120 VAC, DIN rail mounting with thermal magnetic tripping characteristics
- e. Audio Alarm: 95 dB at 24 inches, warble-tone sound,
- f. Visual Alarm: 7/8-inch diameter red lens, "push-to-silence," UL Type 4X, 1-watt LED bulb, 120 VAC
- g. Panel Enclosure: Measures 11.5 inches high x 9.3 inches wide x 5.4 inches deep, UL Type 4X rated or Type 3R when using a generator receptacle, constructed of UV-resistant fiberglass, stainless steel hinges and latch
- h. Surge Arrestor: AG2401 120/230V, three 18-inch leads, rated for a maximum of 32,000 amps, UL/CSA-listed.

6. COMMONLY USED PARTS

The following are commonly used parts that are used in the STEP System. There's some tanks that use different parts, so it's best to check the part number and model number on what's being replaced before ordering:

<u>Part Number</u>	<u>Description</u>
FL15GT	Fiberglass Lid 15" w/ Bolt and Gaskets (Prelos Style - after 2019)
FLD18G	Lid, Fiberglass, 18" w/ Urethane Gasket, 4 Bolts
FLD18G-4BU	Lid, Fiberglass, 18" w/ Urethane Gasket, 4 Bolts
FLD24G	Fiberglass Lid, DuraFiber, 24" W/ Urethane Gasket; 4 bolts (Prelos Style - after 2019)
FLD24G-4B	Lid, Fiberglass, 24" w/ Urethane Gasket, 4 Bolts
FLD30G	Fiberglass Lid, Durafiber, 30" W/Urethane Gasket; 4 Bolts
HV100BCFCASPRX	1" HOSE & VALVE ASSY
MF1N	Signal Float w/ Collar, Non-Mercury, NC
MF1P	Signal Float w/ Collar, Non-Mercury (Prelos Style - after 2019)
MFCOLLAR1	Float Collar, Adj. ABS
PCLEAD10	PF Motor Lead, 10' 16/3 SOOW, Jam Nut Style, 2-wire + GND, 1.5 HP max (Prelos Style - after 2019)
PF100511	Pump, Orenco, 1/2 HP, 10 GPM, 115V, 60 Hz, 10' Lead
PFR1005	PF-Series Rebuild Kit, 10 GPM, 1/2HP, 60 HZ for Pumps w/ SS suction connection
PVU57-1819	Universal Biotube Pump Vault, 18" Cartridge
PVU-CA57-18	Biotube Filters



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RF3024	RISER AND LID (Prelos Style - after 2019)
RR2410	24"x18" tall riser
RU1818	18" x 18" tall riser
RULB	SS LID SCREW, 5/16"x2"
S1RO	MODEL SIMPLEX 115V CONTROL PANEL AND FLOATS (Prelos Style - after 2019)
SB5	Splice Box, PVC w/5 cord grips (Prelos Style - after 2019)