

PF-Series Submersible Effluent Pumps: 3-Phase, 60-Hz, 4-inch (100-mm)

Applications

Our 3-phase, 4-inch (100-mm) Submersible Effluent Pumps are designed to transport screened effluent (with low TSS counts) from septic tanks or separate dosing tanks. These pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics, and all are field-serviceable and repairable with common tools. They're also CSA- and UL-certified to U.S. and Canadian safety standards for effluent pumps.

Orenco's Effluent Pumps are used in a variety of applications, including pressurized drainfields, packed-bed filters, mounds, aerobic units, effluent irrigation, effluent sewers, wetlands, lagoons, and more. These pumps are designed to be used with a Biotube® pump vault or after a secondary treatment system.



Powered by
Franklin Electric

Features/Specifications

To specify this pump for your installation, require the following:

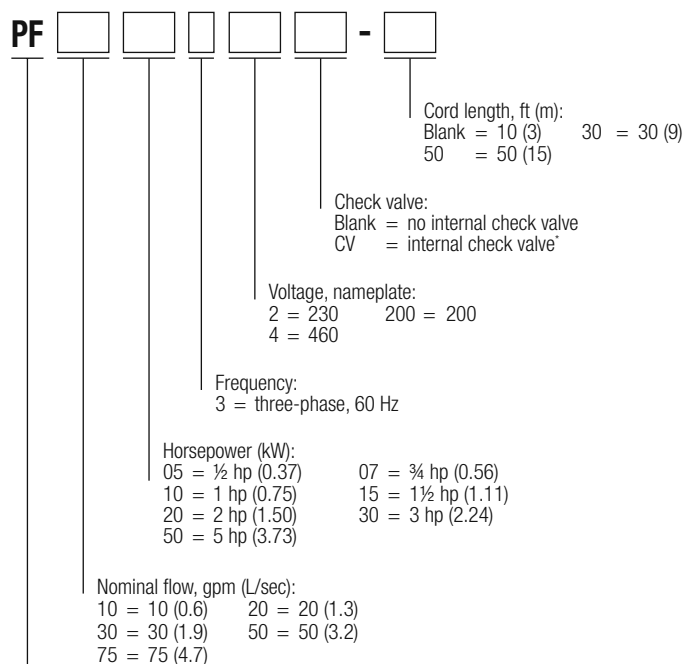
- Minimum 24-hour run-dry capability (liquid end) with no deterioration in pump life or performance*
- 1/8-inch (3-mm) bypass orifice to ensure flow recirculation for motor cooling and to prevent air bind
- Liquid-end repair kits available for better long-term cost of ownership
- TRI-SEAL™ floating impeller design on 10, 20, and 30 gpm (0.6, 1.3, and 1.9 L/sec) models; floating stack design on 50 and 75 gpm (3.2 and 4.7 L/sec) models
- Franklin Electric Super Stainless motor, rated for continuous use and frequent cycling
- Type SOOW 600-V motor cable

* Not applicable for 5-hp (3.73 kW) models

Standard Models

See specifications chart, pages 2-3, for a list of standard pumps. For a complete list of available pumps, call Orenco.

Product Code Diagram



Pump, PF Series

* Available for 10 gpm (0.6 L/sec), 1/2 hp (0.37 kW) only

Specifications

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Discharge size and material ¹	Length in. (mm)	Min. liquid level in. (mm) ²	Weight lb (kg)	Rated cycles per day
PF100532	10 (0.6)	0.50 (0.37)	3	230	240	2.4	2.9	1 ¼ in. GFP	23.0 (660)	16 (406)	27 (12)	300
PF10053200	10 (0.6)	0.50 (0.37)	3	200	208	3.8	3.8	1 ¼ in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF100534	10 (0.6)	0.50 (0.37)	3	460	480	1.2	1.5	1 ¼ in. GFP	23.0 (660)	16 (406)	27 (12)	300
PF100732	10 (0.6)	0.75 (0.56)	3	230	240	3.1	3.8	1 ¼ in. GFP	25.9 (658)	17 (432)	31 (14)	300
PF10073200 ^{4,5}	10 (0.6)	0.75 (0.56)	3	200	208	5.1	5.2	1 ¼ in. GFP	25.4 (645)	17 (432)	31 (14)	300
PF100734	10 (0.6)	0.75 (0.56)	3	460	480	1.6	1.9	1 ¼ in. GFP	25.9 (658)	17 (432)	31 (14)	300
PF101032	10 (0.6)	1.00 (0.75)	3	230	240	3.9	4.7	1 ¼ in. GFP	27.3 (693)	18 (457)	37 (17)	300
PF10103200 ^{5,6}	10 (0.6)	1.00 (0.75)	3	200	208	5.5	5.5	1 ¼ in. GFP	27.3 (693)	18 (457)	37 (17)	300
PF101034	10 (0.6)	1.00 (0.75)	3	460	480	2.0	2.4	1 ¼ in. GFP	27.3 (693)	18 (457)	37 (17)	300
PF200532	20 (1.3)	0.50 (0.37)	3	230	240	2.4	2.9	1 ¼ in. GFP	22.5 (572)	18 (457)	27 (12)	300
PF20053200	20 (1.3)	0.50 (0.37)	3	200	208	3.7	3.8	1 ¼ in. GFP	22.3 (566)	18 (457)	26 (12)	300
PF20103200 ^{4,5}	20 (1.3)	1.00 (0.75)	3	200	208	5.8	5.9	1 ¼ in. GFP	27.8 (706)	20 (508)	33 (15)	300
PF201034	20 (1.3)	1.00 (0.75)	3	460	480	2.0	2.4	1 ¼ in. GFP	27.8 (706)	20 (508)	33 (15)	300
PF201532	20 (1.3)	1.5 (1.11)	3	230	240	5.0	5.9	1 ¼ in. GFP	30.7 (780)	20 (508)	35 (16)	300
PF20153200 ^{4,5}	20 (1.3)	1.50 (1.11)	3	200	208	7.1	7.2	1 ¼ in. GFP	30.7 (780)	20 (508)	35 (16)	300
PF201534	20 (1.3)	1.5 (1.11)	3	460	480	2.5	3.1	1 ¼ in. GFP	30.7 (780)	20 (508)	35 (16)	300
PF300532	30 (1.9)	0.50 (0.37)	3	230	240	2.4	2.9	1 ¼ in. GFP	21.3 (541)	20 (508)	26 (12)	300
PF30053200	30 (1.9)	0.50 (0.37)	3	200	208	3.6	3.6	1 ¼ in. GFP	21.3 (541)	20 (508)	25 (11)	300
PF300534	30 (1.9)	0.50 (0.37)	3	460	480	1.2	1.5	1 ¼ in. GFP	21.3 (541)	20 (508)	26 (12)	300
PF300732	30 (1.9)	0.75 (0.56)	3	230	240	3.1	3.8	1 ¼ in. GFP	24.8 (630)	21 (533)	29 (13)	300
PF30073200	30 (1.9)	0.75 (0.56)	3	200	208	4.9	4.9	1 ¼ in. GFP	24.6 (625)	21 (533)	30 (14)	300
PF300734	30 (1.9)	0.75 (0.56)	3	460	480	1.6	1.9	1 ¼ in. GFP	24.8 (630)	21 (533)	29 (13)	300
PF301032	30 (1.9)	1.00 (0.75)	3	230	240	3.9	4.7	1 ¼ in. GFP	26.4 (671)	22 (559)	33 (15)	300
PF30103200 ⁴	30 (1.9)	1.00 (0.75)	3	200	208	5.8	5.8	1 ¼ in. GFP	26.4 (671)	22 (559)	33 (15)	300
PF301034	30 (1.9)	1.00 (0.75)	3	460	480	2.0	2.4	1 ¼ in. GFP	26.4 (671)	22 (559)	33 (15)	300
PF301532	30 (1.9)	1.50 (1.11)	3	230	240	5.0	5.9	1 ¼ in. GFP	29.8 (757)	22 (559)	34 (15)	300
PF30153200 ^{4,5}	30 (1.9)	1.50 (1.11)	3	200	208	6.9	6.9	1 ¼ in. GFP	29.8 (757)	22 (559)	34 (15)	300
PF301534 ^{4,5}	30 (1.9)	1.50 (1.11)	3	460	480	2.8	2.8	1 ¼ in. GFP	29.5 (685)	22 (559)	34 (15)	300
PF302032	30 (1.9)	2.00 (1.49)	3	230	240	6.7	8.1	1 ¼ in. SS	34.0 (864)	24 (610)	41 (19)	300
PF30203200 ^{5,6}	30 (1.9)	2.00 (1.49)	3	200	208	9.3	9.3	1 ¼ in. SS	34.0 (864)	24 (610)	41 (19)	300
PF302034	30 (1.9)	2.00 (1.49)	3	460	480	3.4	4.1	1 ¼ in. SS	34.0 (864)	24 (610)	41 (19)	300
PF303032 ^{5,6,7}	30 (1.9)	3.00 (2.23)	3	230	240	10.0	10.1	1 ¼ in. SS	44.3 (1125)	27 (686)	52 (24)	300
PF305032 ^{5,6,7}	30 (1.9)	5.00 (3.73)	3	230	240	16.6	16.6	1 ¼ in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF30503200 ^{5,6,7}	30 (1.9)	5.00 (3.73)	3	200	208	18.7	18.7	1 ¼ in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF500532	50 (3.2)	0.50 (0.37)	3	230	240	3.0	3.0	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF50053200	50 (3.2)	0.50 (0.37)	3	200	208	3.7	3.7	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500534	50 (3.2)	0.50 (0.37)	3	460	480	1.5	1.5	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500732	50 (3.2)	0.75 (0.56)	3	230	240	3.9	3.9	2 in. SS	23.7 (602)	25 (635)	32 (15)	300
PF50073200	50 (3.2)	0.75 (0.56)	3	200	208	4.9	4.9	2 in. SS	23.1 (587)	26 (660)	32 (15)	300

Specifications, cont.

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Discharge size and material ¹	Length in. (mm)	Min. liquid level in. (mm) ²	Weight lb (kg)	Rated cycles per day
PF500734	50 (3.2)	0.75 (0.56)	3	460	480	1.8	1.8	2 in. SS	34.8 (884)	25 (635)	31 (14)	300
PF501032	50 (3.2)	1.00 (0.75)	3	230	240	3.9	4.7	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF50103200	50 (3.2)	1.00 (0.75)	3	200	208	5.7	5.7	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF501034	50 (3.2)	1.00 (0.75)	3	460	480	2.2	2.2	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF501532	50 (3.2)	1.50 (1.11)	3	230	240	5.0	5.9	2 in. SS	29.3 (744)	26 (660)	35 (16)	300
PF501532004	50 (3.2)	1.50 (1.11)	3	200	208	7.0	7.0	2 in. SS	29.3 (744)	26 (660)	35 (16)	300
PF501534	50 (3.2)	1.50 (1.11)	3	460	480	2.5	3.1	2 in. SS	29.3 (744)	26 (660)	35 (16)	300
PF50303200 ^{4, 5, 7}	50 (3.2)	3.00 (2.23)	3	200	208	13.1	13.1	2 in. SS	43.4 (1102)	30 (762)	55 (25)	300
PF503034 ^{4, 5, 7}	50 (3.2)	3.00 (2.23)	3	460	480	5.3	5.3	2 in. SS	40.0 (1016)	31 (787)	55 (25)	300
PF505032 ^{5, 6, 7}	50 (3.2)	5.00 (3.73)	3	230	240	16.5	16.5	2 in. SS	59.3 (1506)	49 (1245)	64 (29)	300
PF751032	75 (4.7)	1.00 (0.75)	3	230	240	3.9	4.7	2 in. SS	26.4 (671)	27 (686)	38 (17)	300
PF75103200	75 (4.7)	1.00 (0.75)	3	200	208	4.5	5.4	2 in. SS	26.4 (671)	27 (686)	38 (17)	300
PF751034	75 (4.7)	1.00 (0.75)	3	460	480	2.0	2.4	2 in. SS	26.4 (671)	27 (686)	38 (17)	300
PF751532	75 (4.7)	1.5 (1.11)	3	230	240	5.0	5.9	2 in. SS	30.2 (767)	26 (660)	38 (17)	300
PF75153200	75 (4.7)	1.5 (1.11)	3	200	208	5.8	6.8	2 in. SS	30.2 (767)	26 (660)	38 (17)	300
PF751534	75 (4.7)	1.5 (1.11)	3	460	480	2.5	3.1	2 in. SS	30.2 (767)	26 (660)	38 (17)	300

¹ GFP = glass-filled polypropylene; SS = stainless steel. The 1 1/4-in. NPT GFP discharge is 2 7/8 in. octagonal across flats; the 1 1/4-in. NPT SS discharge is 2 1/8 in. octagonal across flats; and the 2-in. NPT SS discharge is 2 7/8 in. hexagonal across flats. Discharge is female NPT threaded, U.S. nominal size, to accommodate Orenco® discharge hose and valve assemblies. Consult your Orenco Distributor about fittings to connect hose and valve assemblies to metric-sized piping.

² Minimum liquid level is for single pumps when installed in an Orenco Biotube® Pump Vault or Universal Flow Inducer. In other applications, minimum liquid level should be top of pump. Consult Orenco for more information.

³ Weight includes 10-ft (3-m) cord.

⁴ High-pressure discharge assembly required.

⁵ Do not use cam-lock option (Q) on discharge assembly.

⁶ Custom discharge assembly required for these pumps. Contact Orenco.

⁷ Torque locks are available for all pumps, and are supplied with 3-hp and 5-hp pumps.

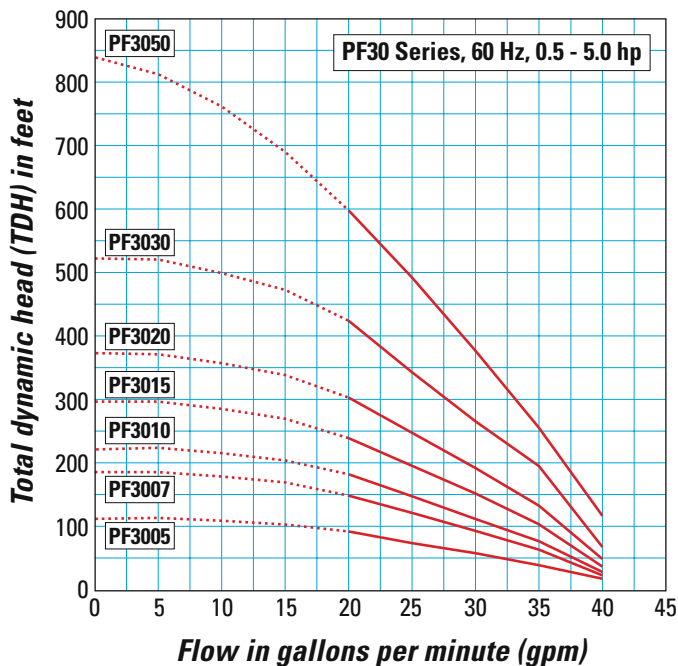
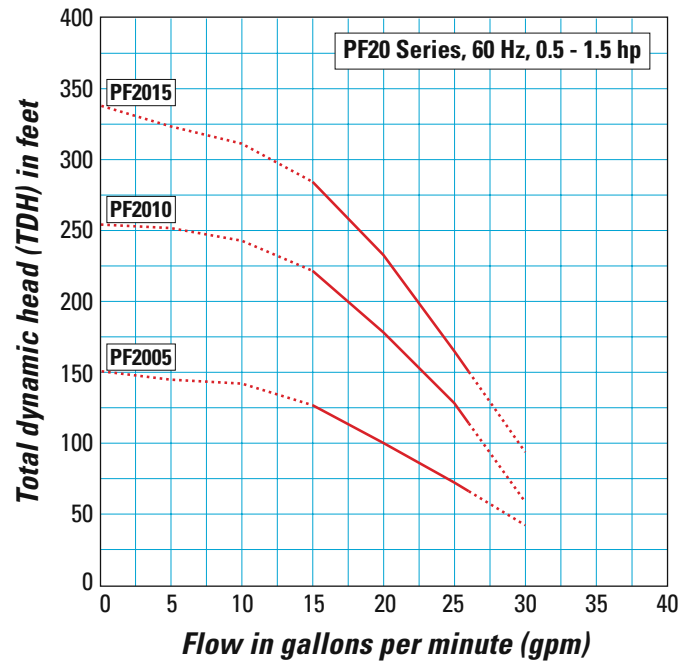
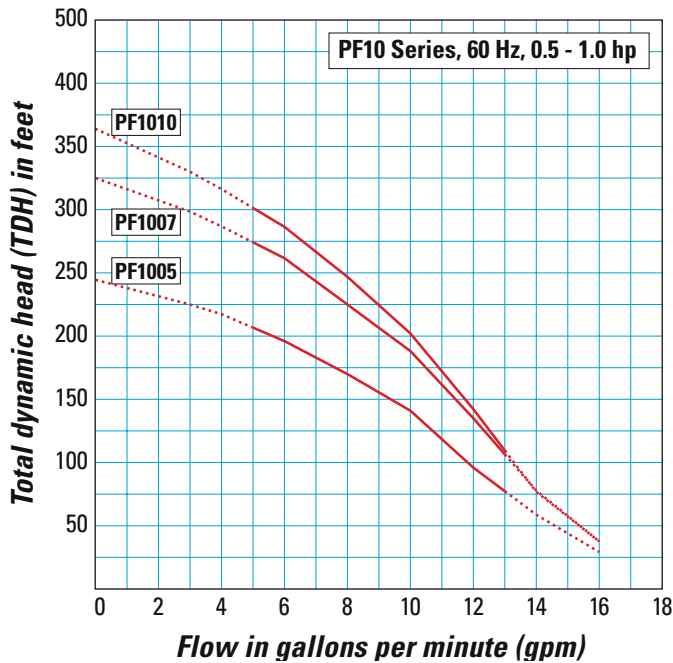
Materials of Construction

Discharge	Glass-filled polypropylene or stainless steel
Discharge bearing	Engineered thermoplastic (PEEK)
Diffusers	Glass-filled PPO (Noryl GFN3)
Impellers	Celcon® acetal copolymer on 10-, 20-, and 30-gpm models; 50-gpm impellers are Noryl GFN3
Intake screen	Polypropylene
Suction connection	Stainless steel
Drive shaft	7/16-in. hexagonal stainless steel, 300 series
Coupling	Sintered stainless steel, 300 series
Shell	Stainless steel, 300 series
Motor	Franklin motor exterior constructed of stainless steel. Motor filled with deionized water and propylene glycol for constant lubrication. Hermetically sealed motor housing ensures moisture-free windings. All thrust absorbed by Kingsbury-type thrust bearing. Rated for continuous duty. Three-phase, 200- and 230V motors are equipped with surge arrestors for added security. All 3-phase motors require thermal overload protection in the control panel.

Using a Pump Curve

A *pump curve* helps you determine the best pump for your system. Pump curves show the relationship between flow and pressure (total dynamic head or "TDH"), providing a graphical representation of a pump's optimal performance range. Pumps perform best at their nominal flow rate. These graphs show optimal pump operation ranges with a solid line and flow rates outside of these ranges with a dashed line. For the most accurate pump specification, use Orenco's PumpSelect™ software.

Pump Curves



Pump Curves, cont.

