

PF-Series Submersible Effluent Pumps: 1-Phase, 60Hz, 4in (100mm)

Applications

Orenco's 1-phase, 60Hz, 4in (100mm) Submersible Effluent Pumps are designed to transport screened effluent (with low TSS counts) from septic or dosing tanks. These pumps are engineered using lightweight, corrosion-resistant stainless steel and polymers, and are field serviceable and repairable with common tools. They're also CSA and UL certified to US and Canadian safety standards for effluent pumps.

PF-Series pumps are used in a variety of applications, including pressurized drainfields, packed-bed filters, mounds, aerobic units, effluent irrigation, liquid-only (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:

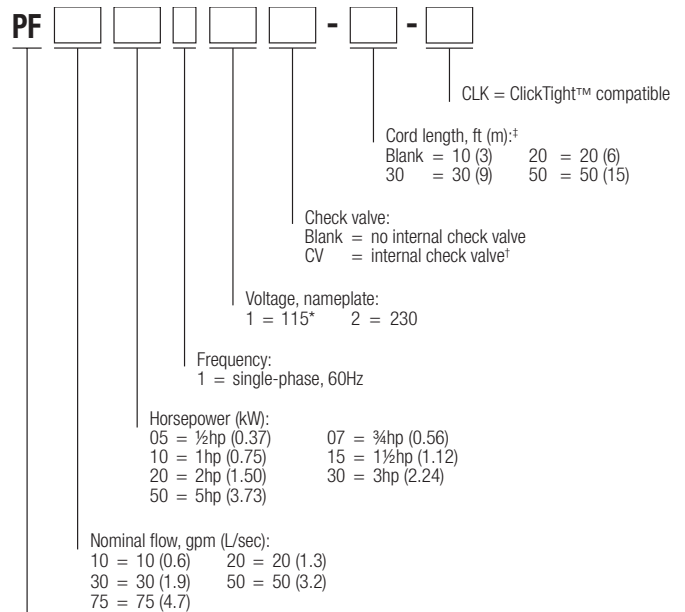
- Minimum 24-hour run-dry capability (liquid end) with no deterioration in pump life or performance*
- 1/8in (3mm) bypass orifice to ensure flow recirculation for motor cooling and to prevent air bind
- Liquid-end repair kits available for better long-term cost of ownership
- TRI-SEAL™ floating impeller design on 10, 20, and 30gpm (0.6, 1.3, and 1.9L/sec) models; floating stack design on 50 and 75gpm (3.2 and 4.7L/sec) models
- Franklin Electric Super Stainless motor, rated for continuous use and frequent cycling
- Type SOOW 600V motor cable (model PF751512 uses 14 AWG, SJ00W, 300V cord)

* Not applicable for 5hp (3.73kW) models

Standard Models

See [Specifications on page 2](#) for a list of standard pumps. For a complete list of available pumps, call Orenco.

Product Code Diagram



Pump, PF Series

* ½hp (0.37kW) only

† Available for 10gpm (0.6L/sec), ½hp (0.37kW)

‡ Note: 20ft cords are available only for pumps through 1½hp

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
PF100511 ⁹	10 (0.6)	0.50 (0.37)	1	115	120	12.7	12.7	1½in GFP	23.0 (584)	16 (406)	26 (12)	300
PF100511CV ⁹	10 (0.6)	0.50 (0.37)	1	115	120	12.7	12.7	1½in GFP	23.0 (584)	16 (406)	26 (12)	300
PF100512 ⁹	10 (0.6)	0.50 (0.37)	1	230	240	6.3	6.3	1½in GFP	23.0 (584)	16 (406)	26 (12)	300
PF100712 ^{4,5,9}	10 (0.6)	0.75 (0.56)	1	230	240	8.3	8.3	1½in GFP	25.9 (658)	17 (432)	30 (14)	300
PF101012 ^{5,6,9}	10 (0.6)	1.00 (0.75)	1	230	240	9.6	9.6	1½in GFP	27.9 (709)	18 (457)	33 (15)	100
PF200511 ⁹	20 (1.3)	0.50 (0.37)	1	115	120	12.3	12.5	1½in GFP	22.3 (566)	18 (457)	25 (11)	300
PF200512 ⁹	20 (1.3)	0.50 (0.37)	1	230	240	6.4	6.5	1½in GFP	22.5 (572)	18 (457)	26 (12)	300
PF201012 ^{4,5,9}	20 (1.3)	1.00 (0.75)	1	230	240	10.5	10.5	1½in GFP	28.4 (721)	20 (508)	33 (15)	100
PF201512 ^{4,5}	20 (1.3)	1.50 (1.12)	1	230	240	12.4	12.6	1½in GFP	34.0 (864)	24 (610)	41 (19)	100
PF300511 ⁹	30 (1.9)	0.50 (0.37)	1	115	120	11.8	11.8	1½in GFP	21.3 (541)	20 (508)	28 (13)	300
PF300512 ⁹	30 (1.9)	0.50 (0.37)	1	230	240	6.2	6.2	1½in GFP	21.3 (541)	20 (508)	25 (11)	300
PF300712 ⁹	30 (1.9)	0.75 (0.56)	1	230	240	8.5	8.5	1½in GFP	24.8 (630)	21 (533)	29 (13)	300
PF301012 ^{4,9}	30 (1.9)	1.00 (0.75)	1	230	240	10.4	10.4	1½in GFP	27.0 (686)	22 (559)	32 (15)	100
PF301512 ^{4,5}	30 (1.9)	1.50 (1.12)	1	230	240	12.6	12.6	1½in GFP	32.8 (833)	24 (610)	40 (18)	100
PF302012 ^{5,6,7}	30 (1.9)	2.00 (1.49)	1	230	240	11.0	11.0	1½in SS	35.5 (902)	26 (660)	44 (20)	100
PF303012 ^{5,6,7,8}	30 (1.9)	3.00 (2.23)	1	230	240	16.8	16.8	1½in SS	44.5 (1130)	33 (838)	54 (24)	100
PF305012 ^{5,6,7,8}	30 (1.9)	5.00 (3.73)	1	230	240	25.6	25.8	1½in SS	66.5 (1689)	53 (1346)	82 (37)	100
PF500511 ⁹	50 (3.2)	0.50 (0.37)	1	115	120	12.1	12.1	2in SS	20.3 (516)	24 (610)	27 (12)	300
PF500512 ⁹	50 (3.2)	0.50 (0.37)	1	230	240	6.2	6.2	2in SS	20.3 (516)	24 (610)	27 (12)	300
PF500712 ⁹	50 (3.2)	0.75 (0.56)	1	230	240	8.5	8.5	2in SS	23.7 (602)	25 (635)	31 (14)	300
PF501012 ⁹	50 (3.2)	1.00 (0.75)	1	230	240	10.1	10.1	2in SS	27.0 (686)	26 (660)	35 (16)	100
PF501512 ⁴	50 (3.2)	1.50 (1.12)	1	230	240	12.5	12.6	2in SS	32.5 (826)	30 (762)	41 (19)	100
PF503012 ^{4,5,7,8}	50 (3.2)	3.00 (2.23)	1	230	240	17.7	17.7	2in SS	52.0 (1321)	37 (940)	55 (25)	100
PF505012 ^{5,6,7,8}	50 (3.2)	5.00 (3.73)	1	230	240	26.2	26.4	2in SS	77.0 (1956)	55 (1397)	64 (29)	100
PF751012 ⁹	75 (4.7)	1.00 (0.75)	1	230	240	9.9	10.0	2in SS	27.0 (686)	27 (686)	34 (15)	100
PF751512	75 (4.7)	1.50 (1.12)	1	230	240	12.1	12.3	2in SS	33.4 (848)	30 (762)	44 (20)	100

- 1 GFP = glass-filled polypropylene; SS = stainless steel. The 1½in NPT GFP discharge is 2 7/8in octagonal across flats; the 1½in NPT SS discharge is 2 1/8in octagonal across flats; and the 2in NPT SS discharge is 2 3/8in hexagonal across flats. Discharge is NPT threaded receptacle-style port, US 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 carton and 10ft (3m) 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 Capacitor pack (sold separately or installed in a custom control panel) required for this pump. Contact Orenco.
- 8 Torque locks are available for all pumps, and they are supplied with 3hp and 5hp pumps.
- 9 ClickTight™ compatible.

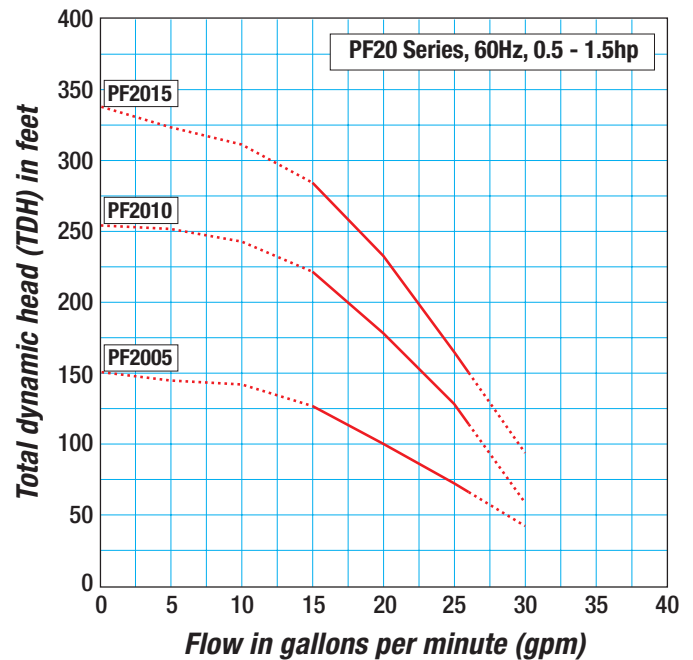
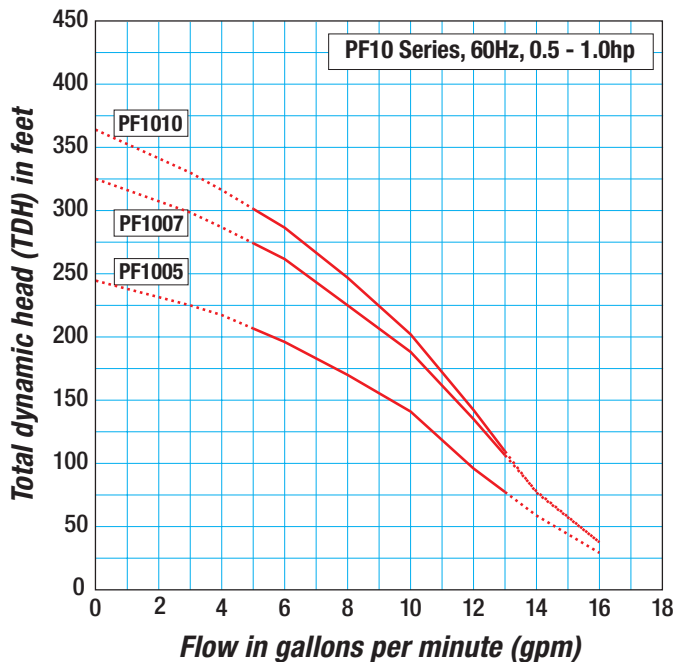
Materials of Construction

Discharge	Glass-filled polypropylene or stainless steel
Discharge bearing	Engineered thermoplastic (PEEK)
Diffusers	Glass-filled PPO (SABIC's NORYL™ GFN3 resin)
Impellers	Celanese's Celcon® acetal copolymer on 10, 20, and 30gpm models; 50gpm impellers are NORYL GFN3 resin
Intake screen	Polypropylene
Suction connection	Stainless steel
Drive shaft	7/16in 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. Single-phase motors are equipped with surge arrestors for added security. Single-phase motors through 1.5hp (1.12kW) have built-in thermal overload protection, which trips at 203-221°F (95-105°C).

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.

