

PF-Series 60Hz, 3-Phase Effluent Pumps

Applications

Orenco's PF-Series 60Hz, 3-phase, 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.



Franklin Electric Super Stainless motor

Powered by
Franklin Electric



US
LR80980
LR2053896

General

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

- Minimum 24-hour run-dry capability (liquid end) with no decline in pump life or performance; not applicable for 5hp (3.73kW) models
- 1/8in (3mm) bypass orifice to ensure flow recirculation for motor cooling and to prevent air binding
- 1/8in (3mm) mesh intake screen to limit solids
- Liquid-end repair kit availability for lower long-term cost to own
- Franklin Electric 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 motors are rated for continuous use and frequent cycling, with surge arrestors, hermetically sealed motor housing for moisture-free windings, and Kingsbury-type thrust bearing for thrust absorption
- Type SOOW 600V motor cable

Standard Models

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

Product Code Diagram

PF 3 -

Cord length, ft (m):
Blank = 10 (3) 30 = 30 (9)
50 = 50 (15)

Check valve:
Blank = no internal check valve
CV = internal check valve,
available only for 10gpm (0.6L/sec), 1/2hp (0.37kW)

Voltage, nameplate:
2 = 230 4 = 460
200 = 200

Frequency:
3 = 3-phase, 60Hz

Horsepower (kW):
05 = 1/2 (0.37) 07 = 3/4 (0.56)
10 = 1 (0.75) 15 = 1 1/2 (1.12)
20 = 2 (1.50) 30 = 3 (2.24)
50 = 5 (3.73)

Nominal flow, gpm (L/sec):
10 = 10 (0.6) 20 = 20 (1.3)
30 = 30 (1.9) 50 = 50 (3.2)
75 = 75 (4.7)

Pump, PF-Series

Not all product code configurations may be available as standard products.

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) ³	Rated cycles per day
PF100532	10 (0.6)	0.50 (0.37)	3	230	240	2.4	2.9	1½in GFP	23.0 (584)	16 (406)	27 (12)	300
PF10053200	10 (0.6)	0.50 (0.37)	3	200	208	3.8	3.8	1½in GFP	23.0 (584)	16 (406)	26 (12)	300
PF100534	10 (0.6)	0.50 (0.37)	3	460	480	1.2	1.5	1½in GFP	23.0 (584)	16 (406)	27 (12)	300
PF100732	10 (0.6)	0.75 (0.56)	3	230	240	3.1	3.8	1½in 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	1½in GFP	25.4 (645)	17 (432)	31 (14)	300
PF100734	10 (0.6)	0.75 (0.56)	3	460	480	1.6	1.9	1½in GFP	25.9 (658)	17 (432)	31 (14)	300
PF101032	10 (0.6)	1.00 (0.75)	3	230	240	3.9	4.7	1½in 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	1½in GFP	27.3 (693)	18 (457)	37 (17)	300
PF101034	10 (0.6)	1.00 (0.75)	3	460	480	2.0	2.4	1½in GFP	27.3 (693)	18 (457)	37 (17)	300
PF200532	20 (1.3)	0.50 (0.37)	3	230	240	2.4	2.9	1½in GFP	22.5 (572)	18 (457)	27 (12)	300
PF20053200	20 (1.3)	0.50 (0.37)	3	200	208	3.7	3.8	1½in 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	1½in GFP	27.8 (706)	20 (508)	33 (15)	300
PF201034	20 (1.3)	1.00 (0.75)	3	460	480	2.0	2.4	1½in GFP	27.8 (706)	20 (508)	33 (15)	300
PF201532	20 (1.3)	1.50 (1.12)	3	230	240	5.0	5.9	1½in GFP	30.7 (780)	20 (508)	35 (16)	300
PF20153200 ^{4,5}	20 (1.3)	1.50 (1.12)	3	200	208	7.1	7.2	1½in GFP	30.7 (780)	20 (508)	35 (16)	300
PF201534	20 (1.3)	1.50 (1.12)	3	460	480	2.5	3.1	1½in GFP	30.7 (780)	20 (508)	35 (16)	300
PF300532	30 (1.9)	0.50 (0.37)	3	230	240	2.4	2.9	1½in GFP	21.3 (541)	20 (508)	26 (12)	300
PF30053200	30 (1.9)	0.50 (0.37)	3	200	208	3.6	3.6	1½in GFP	21.3 (541)	20 (508)	25 (11)	300
PF300534	30 (1.9)	0.50 (0.37)	3	460	480	1.2	1.5	1½in GFP	21.3 (541)	20 (508)	26 (12)	300
PF300732	30 (1.9)	0.75 (0.56)	3	230	240	3.1	3.8	1½in GFP	24.8 (630)	21 (533)	29 (13)	300
PF30073200	30 (1.9)	0.75 (0.56)	3	200	208	4.9	4.9	1½in GFP	24.6 (625)	21 (533)	30 (14)	300
PF300734	30 (1.9)	0.75 (0.56)	3	460	480	1.6	1.9	1½in GFP	24.8 (630)	21 (533)	29 (13)	300
PF301032	30 (1.9)	1.00 (0.75)	3	230	240	3.9	4.7	1½in 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	1½in GFP	26.4 (671)	22 (559)	33 (15)	300
PF301034	30 (1.9)	1.00 (0.75)	3	460	480	2.0	2.4	1½in GFP	26.4 (671)	22 (559)	33 (15)	300
PF301532	30 (1.9)	1.50 (1.12)	3	230	240	5.0	5.9	1½in GFP	29.8 (757)	22 (559)	34 (15)	300
PF30153200 ^{4,5}	30 (1.9)	1.50 (1.12)	3	200	208	6.9	6.9	1½in GFP	29.8 (757)	22 (559)	34 (15)	300
PF301534 ^{4,5}	30 (1.9)	1.50 (1.12)	3	460	480	2.8	2.8	1½in GFP	29.5 (749)	22 (559)	34 (15)	300
PF302032	30 (1.9)	2.00 (1.49)	3	230	240	6.7	8.1	1½in 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	1½in SS	34.0 (864)	24 (610)	41 (19)	300
PF302034	30 (1.9)	2.00 (1.49)	3	460	480	3.4	4.1	1½in 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	1½in 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	1½in 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	1½in SS	60.8 (1544)	48 (1219)	66 (30)	300
PF500532	50 (3.2)	0.50 (0.37)	3	230	240	3.0	3.0	2in SS	20.6 (523)	24 (610)	28 (13)	300
PF50053200	50 (3.2)	0.50 (0.37)	3	200	208	3.7	3.7	2in SS	20.6 (523)	24 (610)	28 (13)	300
PF500534	50 (3.2)	0.50 (0.37)	3	460	480	1.5	1.5	2in SS	20.6 (523)	24 (610)	28 (13)	300
PF500732	50 (3.2)	0.75 (0.56)	3	230	240	3.9	3.9	2in SS	24.8 (630)	25 (635)	32 (15)	300
PF50073200	50 (3.2)	0.75 (0.56)	3	200	208	4.9	4.9	2in SS	24.8 (630)	26 (660)	32 (15)	300
PF500734	50 (3.2)	0.75 (0.56)	3	460	480	1.8	1.8	2in SS	24.8 (630)	25 (635)	31 (14)	300
PF501032	50 (3.2)	1.00 (0.75)	3	230	240	3.9	4.7	2in SS	28.3 (719)	26 (660)	39 (18)	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) ³	Rated cycles per day
PF50103200	50 (3.2)	1.00 (0.75)	3	200	208	5.7	5.7	2in SS	28.3 (719)	26 (660)	39 (18)	300
PF501034	50 (3.2)	1.00 (0.75)	3	460	480	2.2	2.2	2in SS	28.3 (719)	26 (660)	39 (18)	300
PF501532	50 (3.2)	1.50 (1.12)	3	230	240	5.0	5.9	2in SS	30.8 (782)	26 (660)	35 (16)	300
PF50153200 ⁴	50 (3.2)	1.50 (1.12)	3	200	208	7.0	7.0	2in SS	30.8 (782)	26 (660)	35 (16)	300
PF501534	50 (3.2)	1.50 (1.12)	3	460	480	2.5	3.1	2in SS	30.8 (782)	26 (660)	35 (16)	300
PF50303200 ^{4,5,7}	50 (3.2)	3.00 (2.24)	3	200	208	13.1	13.1	2in SS	49.3 (1252)	30 (762)	55 (25)	300
PF503034 ^{4,5,7}	50 (3.2)	3.00 (2.24)	3	460	480	5.3	5.3	2in SS	49.3 (1252)	31 (787)	55 (25)	300
PF505032 ^{5,6,7}	50 (3.2)	5.00 (3.73)	3	230	240	16.5	16.5	2in SS	72.0 (1829)	49 (1245)	64 (29)	300
PF751032	75 (4.7)	1.00 (0.75)	3	230	240	3.9	4.7	2in SS	26.4 (671)	27 (686)	38 (17)	300
PF75103200	75 (4.7)	1.00 (0.75)	3	200	208	4.5	5.4	2in SS	26.4 (671)	27 (686)	38 (17)	300
PF751034	75 (4.7)	1.00 (0.75)	3	460	480	2.0	2.4	2in SS	26.4 (671)	27 (686)	38 (17)	300
PF751532	75 (4.7)	1.50 (1.12)	3	230	240	5.0	5.9	2in SS	30.2 (767)	26 (660)	38 (17)	300
PF75153200	75 (4.7)	1.50 (1.12)	3	200	208	5.8	6.8	2in SS	30.2 (767)	26 (660)	38 (17)	300
PF751534	75 (4.7)	1.50 (1.12)	3	460	480	2.5	3.1	2in SS	30.2 (767)	26 (660)	38 (17)	300

- GFP = glass-filled polypropylene; SS = stainless steel. The 1 1/4in NPT GFP discharge is 2 7/8in octagonal across flats; the 1 1/4in NPT SS discharge is 2 1/8in octagonal across flats; and the 2in NPT SS discharge is 2 7/8in 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.
- Minimum liquid level is for single pumps 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.
- Weight includes 10ft (3m) cord.
- High-pressure discharge assembly required.
- Do not use cam-lock option (Q) on discharge assembly.
- Custom discharge assembly required for these pumps. Contact Orenco.
- Torque locks are available for all pumps, and they are supplied with 3hp (2.23kW) and 5hp (3.73kW) pumps.

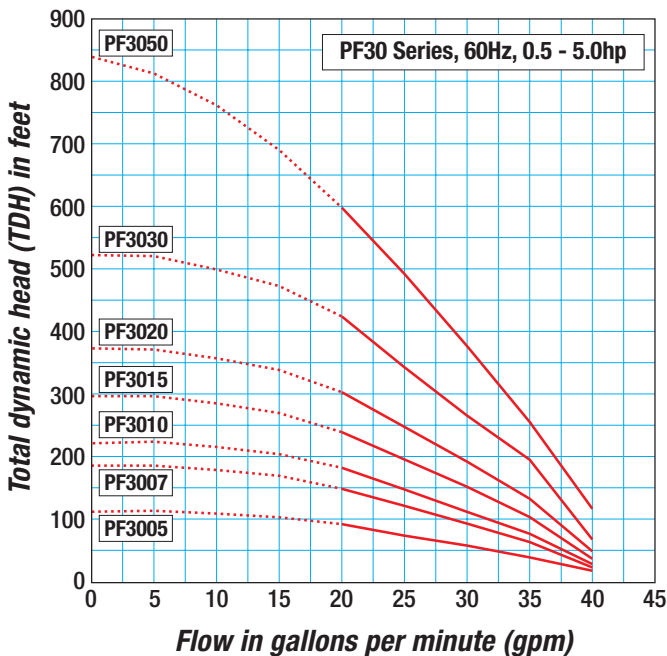
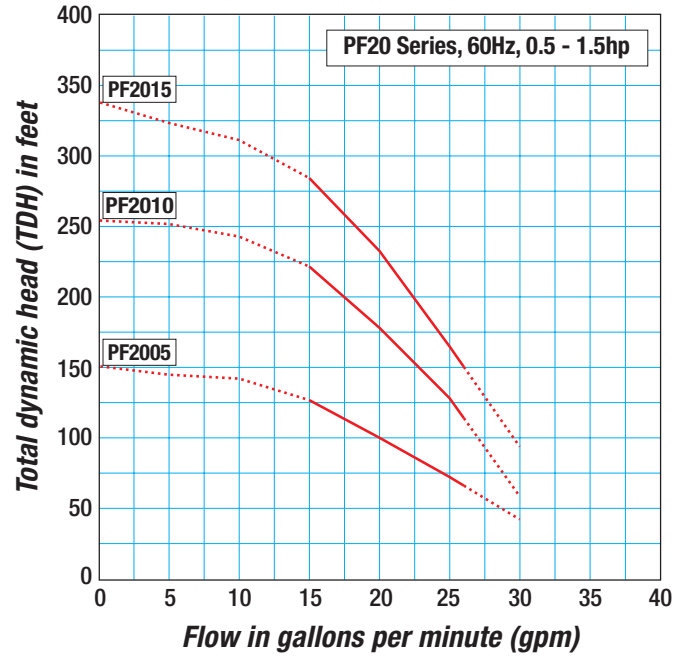
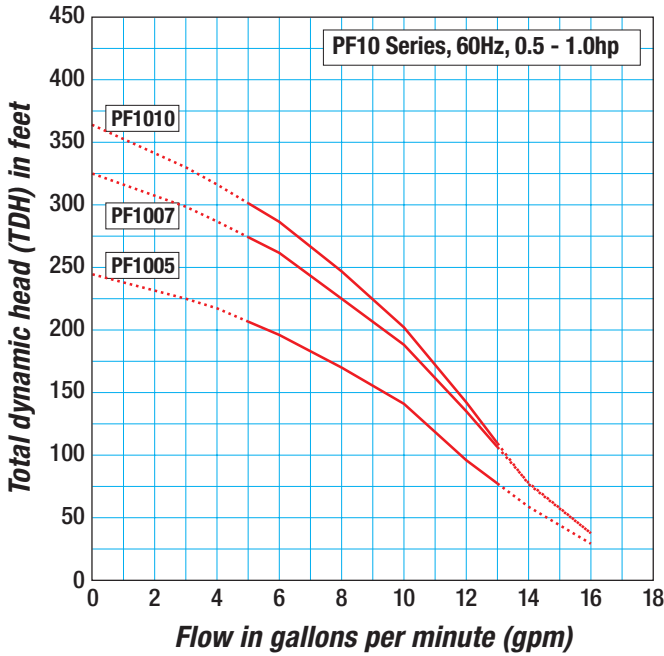
Materials of Construction

Discharge	Glass-filled polypropylene or stainless steel
Discharge bearing	Engineered thermoplastic (PEEK)
Diffusers	Glass-filled PPO (SABIC's NORLYL™ GFN3 resin)
Impellers	Celanese's Celcon® acetal copolymer on 10, 20, and 30gpm models; 50gpm impellers are NORLYL 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 Electric 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, 200V, 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 (gpm or L/sec) 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 – the value, measured in gpm, expressed by the first two numerals in an Orenco pump nomenclature. These graphs use solid lines to show the optimal pump operation range. Dashed lines indicate flow rates outside of the optimal range for each pump. For the most accurate pump specification, use Orenco's PumpSelect™ software.

Pump Curves



Pump Curves, cont.

