FEDERAL PUMP CORP

FEDERAL PUMP CORPORATION
Est. 1927

TYPE

P

SUBMERSIBLE NON-CLOG PUMP

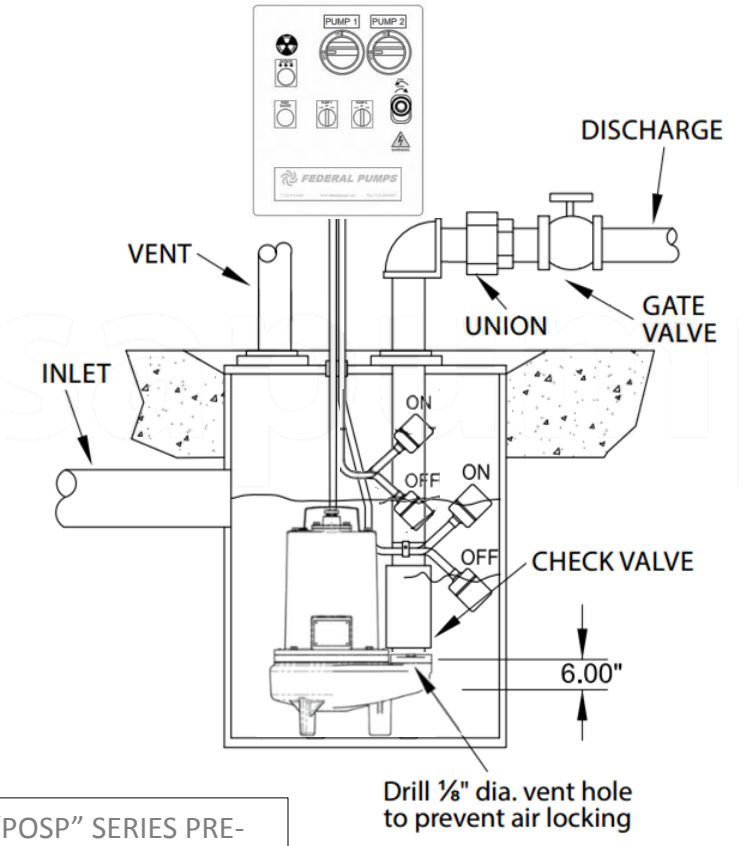
PUMP WITH DISCHARGES SIZE 2" & 3"
CAPACITIES TO 400 GPM, HEADS TO 60 FEET
IN 1750 RPM OPERATION

STAINLESS STEEL HARDWARE.
DOUBLE ROW BEARING AVAILABLE
IN SINGLE AND THREE PHASE OPTIONS

HIGH LIGHT

- Motors are fully submersible
- Pumps can handle up to 2½" spherical solids (for 3" Discharge pumps only)
- Indoor and outdoor installation
- Easy installation and removal
- For sump and rain water
- Control system available
- Fiberglass and steel basin available

INTRODUCTION



SHOWN AS “POSP” SERIES PRE-PACKAGED SYSTEM WITH FRAME, COVER AND BASIN

Sump pumps provide for the lifting and disposal of fluids from retaining basins or concrete pits and are pumped to city water disposal lines where these fluids cannot drain under gravity conditions alone. Typically located below grade, sump pumps provide building owners the ability to design and locate floor drains or other facilities below ground that are serviced by these lift stations.

Compatible with Federal Pump’s OS, FSS, SBS, TCS, and NPC simplex, and duplex control system, the P series can support 24/7 automatic operation for standard sump pump service in residential and small commercial buildings.

The “P” product offering is also conveniently packaged in the “POSP” system that provides the end user with trouble and maintenance free operation when designed, installed, and maintained properly.

PRODUCT DETAILS

DISCHARGE
2" & 3" NPT, female vertical, bolt on flange

LIQUID TEMPERATURE
104˚F (40˚C) continuous

PUMP BODY
Cast iron ASTM A-48 class 30

IMPELLER
2 vane open cast iron ASTM A-48 class 30 impeller, with vanes on back side, balanced.

SHAFT
416 series stainless steel

O-RING
Buna-N

HARDWARE
300 series stainless steel

SEAL
Single mechanical seals with carbon/ceramic/Buna-N faces for extended seal life with stainless steel hardware

CORD ENTRY
20ft(½~1HP) or 25ft(1½~3HP) of neoprene cord SJO 14/3, sealed against moisture

BEARINGS
upper row ball bearing for radial load, and lower row ball bearing for radial and thrust load

MOTOR
Single Phase: NEMA L, permanent split capacitor, 115, 208 & 230 volts, 60 Hz, 4-pole, oil filled, with overload protection in motor.
Three Phase: NEMA B, 208, 230, & 460 volts, 60 Hz, 4-pole, oil filled. Overload protection should be included in the control panel.

P-2B MODEL SHOWN

P-3A MODEL SHOWN

P-3F MODEL SHOWN

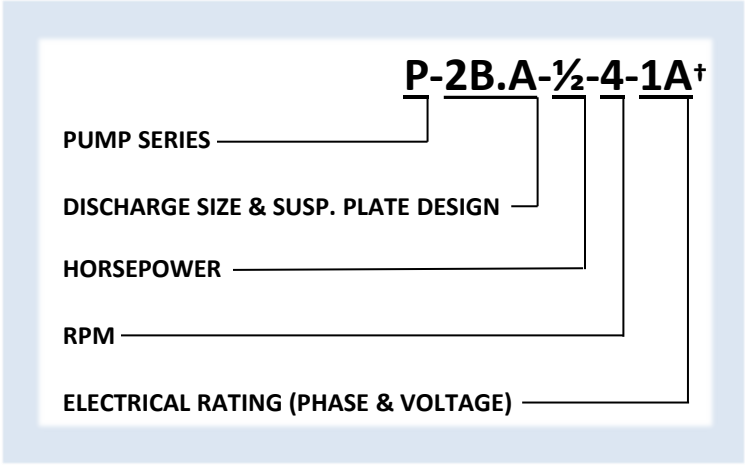
P-3A MODEL SHOWN (1½HP & 2HP)
(FOR 3PH MODELS ONLY)

P-3A MODEL SHOWN (3HP)
(ALSO INCLUDES 1PH 1½ & 2HP MODELS)

SELECTION TABLE*

SYSTEM DESIGN COMPONENTS

The P series sump pump is available in free standing and automatic operation option **(1Ph/115V models only)** and should be reviewed in detail prior to order. Dimensions may vary based upon option requested and custom specification requirements. Every option will include a submersible pump and motor with mechanical seal rated to 104˚F. Pump to close coupled to motor. **Add ".A" to the "DISCHARGE SIZE & SUSP. PLATE DESIGN" for 1Phase/115V models to add built-in automatic float switch to the pump.**



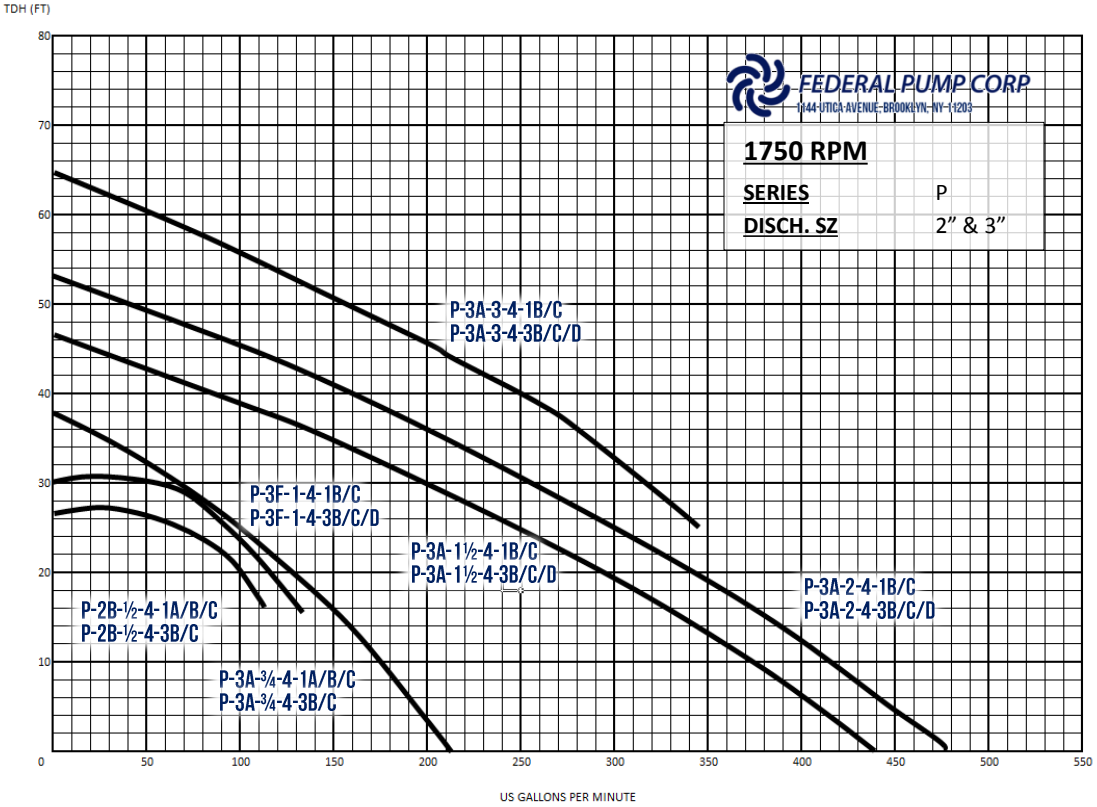
† 1=1PH,3=3PH A= 115V, B=208V, C=230V, D=460V

MODEL NO	G.P.M.	DISCH. HEAD [FEET]	MOTOR H.P.	DISCH. SIZE [INCHES]
P-2B-½-4-#*	50	26	½	2
P-3A-¾-4-#*		30	¾	3
P-3F-1-4-#*		32	1	3
P-3A-1½-4-#*		43	1½	3
P-3A-2-4-#*		49	2	3
P-3A-3-4-#*		60	3	3
P-2B-½-4-#*	100	20	½	2
P-3A-¾-4-#*		24	¾	3
P-3F-1-4-#*		25	1	3
P-3A-1½-4-#*		39	1½	3
P-3A-2-4-#*		45½	2	3
P-3A-3-4-#*		56	3	3
P-3F-1-4-#*	150	16	1	3
P-3A-1½-4-#*		35	1½	3
P-3A-2-4-#*		41	2	3
P-3A-3-4-#*		51	3	3

MODEL NO	G.P.M.	DISCH. HEAD [FEET]	MOTOR H.P.	DISCH. SIZE [INCHES]
P-3A-1½-4-#*	200	30	1½	3
P-3A-2-4-#*		36	2	3
P-3A-3-4-#*		46	3	3
P-3A-1½-4-#*	250	25	1½	3
P-3A-2-4-#*		31	2	3
P-3A-3-4-#*		40	3	3
P-3A-1½-4-#*	300	19	1½	3
P-3A-2-4-#*		25	2	3
P-3A-3-4-#*		33	3	3
P-3A-1½-4-#*	350	13	1½	3
P-3A-2-4-#*		19	2	3
P-3A-3-4-#*		24	3	3
P-3A-2-4-#*	400	12	2	3

***Table is used for quick sizing only. Refer to pump performance curve for exact pump operation over its range.**
***Refer to page 9 for amp draw on the each pump and model selection**
Only models running in 1Ph/115V in the Q series sump pump line are available with automatic float switch option.
Add 2 pounds to equipment weight for automatic float switch options.
#* 1=1PH,3=3PH
A=115V, B=208V, C=230V, D=460V

SERIES PERFORMANCE RANGE

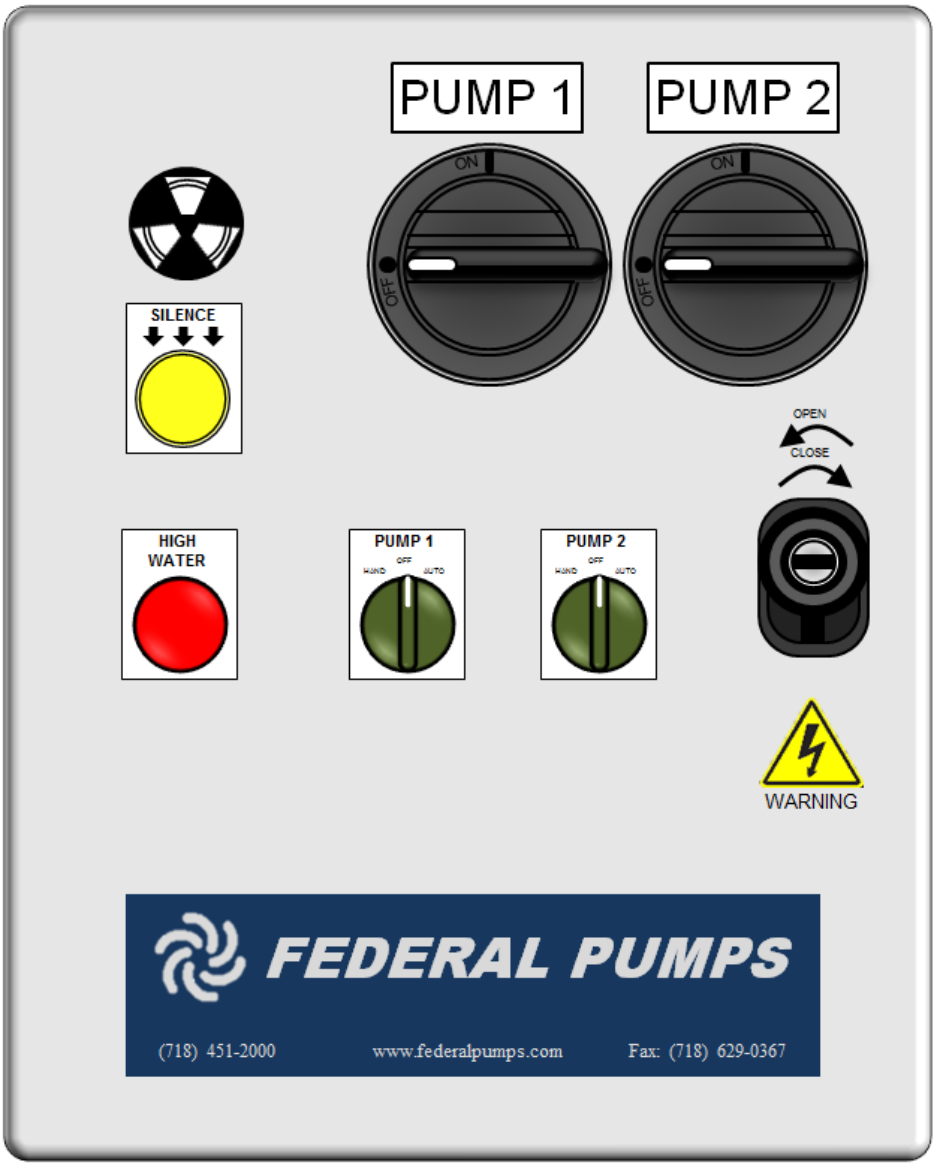


MODEL	MOTOR HP	DISCH. SIZE [INCHES]	RPM	IMPELLER	WEIGHT [lb.]
P-2B-½-4-...	½	2	1750	PP2P	50
P-3A-¾-4-...	¾	3	1750	PP3P	70
P-3F-1-4-...	1	3	1750	PP102	95
P-3A-1½-4-...	1½	3	1750	PP152	146
P-3A-2-4-...	2	3	1750	PP202	146
P-3A-2-4-...	3	3	1750	PP302	170

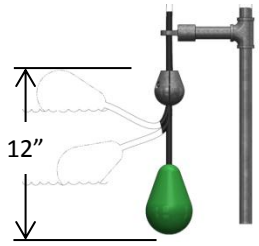
RECOMMENDED MINIMUM PIT & BASIN SIZES

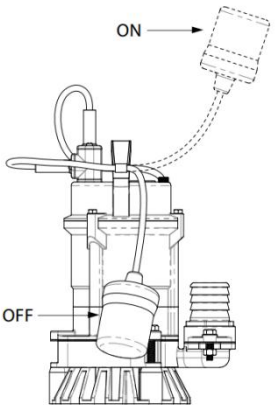
Pump Series	Pump Model	Round		Square	
		Simplex	Duplex	Simplex	Duplex
P	P-2B-½-4-...	24" dia.	36" dia.	24" X 24"	36" X 36"
	P-3A-¾-4-...	30" dia.	42" dia.	30" X 30"	42" X 42"
	P-3F-1-4-...	24" dia.	36" dia.	24" X 24"	36" X 36"
	P-3A-1½-4-...	30" dia.	42" dia.	30" X 30"	42" X 42"
	P-3A-2-4-...	30" dia.	42" dia.	30" X 30"	42" X 42"
	P-3A-2-4-...	30" dia.	42" dia.	30" X 30"	42" X 42"

SUGGESTED CONTROLS – DUPLEX



FLOAT DETAIL





OS Control Panel & Floats(Standard Items)

- NEMA Type 1,4 & 12
- Disconnect Switch
- Across-the-line Magnetic Starter
- H-O-A Switch with integral Pilot Light
- Control Circuit Transformer (24V)
- HWA Light & Adjustable Buzzer
- HWA Silencing Push Button
- Pump Auxiliary Float Switches
- Dedicated HWA Float Switch

SUGGESTED SPECIFICATIONS – SIMPLEX (PLUG-IN)

General Product Overview: Furnish and install where shown in the plans a Federal Pump Series P simplex submersible sump pump with each pump rated as shown in the pump schedule. Each pump shall include submersible motor, cast iron casing, standard fitted construction with stainless steel shaft and water proof power cable and automatic float switch. Motor shall be NEMA L, single phase, permanent split capacitor, 115 volts, 60Hz, 1750RPM, oil filled and have overload protection.
Sequence of Operation: Plug the factory provided control plug into a GFI receptacle, then plug the pump into the piggy-back plug. In the event of liquid level reaching above the set point, the pump float switch will signal the pump to turn "ON". Upon lowering the liquid level to meet the "OFF" set point, the pump will terminate operation and standby for the next cycle.
Warranty: The pump manufacturer will provide a (1) year limited warranty for material and workmanship and take unit responsibility of the system components.

SUGGESTED SPECIFICATIONS – SIMPLEX (CONTROL PANEL)

General Product Overview: Furnish and install where shown in the plans a Federal Pump Series POSP simplex submersible sump pump with each pump rated as shown in the pump schedule. Each pump shall include submersible motor, cast iron casing, standard fitted construction with stainless steel shaft and water proof power cable and automatic float switch. Motor shall be NEMA L, single phase, permanent split capacitor, 230 volts, 60Hz, 1750RPM, oil filled and have overload protection OR three phase, 208/230/460volts, 60Hz, 1750RPM, oil filled.
Controls: Pump manufacturer shall provide a Federal Pump series OS simplex level control system including simplex Control Panel (for wall mounting) and accessory alarms as detailed in this specification. simplex Pump Controller shall include: disconnect switch with thru-the-door handles, across-the-line type magnetic starters, (overload protection for 3 phase pumps), high water alarm light and horn with silencing push button, control circuit transformer, programmable logic controller, oil detection relay, numbered terminal strip, and Form-C circuits for BMS. The controls shall be provided in a NEMA 1 enclosure built to UL-580A standard. The POSP package will include a float switch for ON/OFF & high water alarm conditions.
Sequence of Operation: In the event of liquid level reaching above the set point, the pump float switch will signal the pump to turn "ON". In the event of where the pump is not non-functional or cannot keep up with system demand, the liquid level would continue to rise and signal the High Water Alarm. Upon lowering the liquid level to meet the "OFF" set point, the pump will terminate operation and standby for the next cycle. In the event of presence of oil, the oil sensing element will terminate pump operation and sound the alarm horn and light alerting the presence of oil in the sump.
Warranty: The pump manufacturer will provide a (1) year limited warranty for material and workmanship and take unit responsibility of the system components.

SUGGESTED SPECIFICATIONS – DUPLEX (CONTROL PANEL)

General Product Overview: Furnish and install where shown in the plans a Federal Pump Series POSP duplex submersible sump pump with each pump rated as shown in the pump schedule. Each pump shall include submersible motor, cast iron casing, standard fitted construction with stainless steel shaft and water proof power cable and automatic float switch. Motor shall be NEMA L, single phase, permanent split capacitor, 230 volts, 60Hz, 1750RPM, oil filled and have overload protection OR three phase, 208/230/460volts, 60Hz, 1750RPM, oil filled.
Controls: Pump manufacturer shall provide a Federal Pump series OS duplex level control system including Duplex Control Panel (for wall mounting) and accessory alarms as detailed in this specification. Duplex Pump Controller shall include: individual disconnect switches with thru-the-door handles, single-feed power input terminal block, across-the-line type magnetic starters, (overload protection for 3 phase pumps), H-O-A selector switches with integral pilot run lights, control circuit transformer, high water alarm light and horn with silencing push button, power relays, control relays, oil detection relay, numbered terminal strip, and Form-C circuits for BMS. The controls shall be provided in a NEMA 1 enclosure built to UL-580A standard. The POSP package will include a float switch for high water alarm conditions. Each of the (2) pumps have dedicated automatic float switch.
Sequence of Operation: In the event of liquid level reaching above the set point, the pump float switch will signal the lead pump to turn "ON". If the liquid level rise above a certain rate where the lead pump along cannot satisfy demand, the lag pump will start at a predetermined set point and work in parallel with the lead pump to satisfy system conditions. Upon lowering the liquid level to meet the "OFF" set point, the lag pump will terminate operation first, then the lead pump, and the two would standby for the next cycle. The system will automatically alternate lead and lag pumps – the pump's level set point will dictate the lead and lag orientation. In the event of where the pumps are not non-functional or cannot keep up with system demand, the liquid level would continue to rise and signal the High Water Alarm. In the event of presence of oil, the oil sensing element will terminate pump operation and sound the alarm horn and light alerting the presence of oil in the sump.
Warranty: The pump manufacturer will provide a (1) year limited warranty for material and workmanship and take unit responsibility of the system components.

SYSTEM SCHEMATIC

Fully automatic sump pump system designed for ease in installation and future pump maintenance

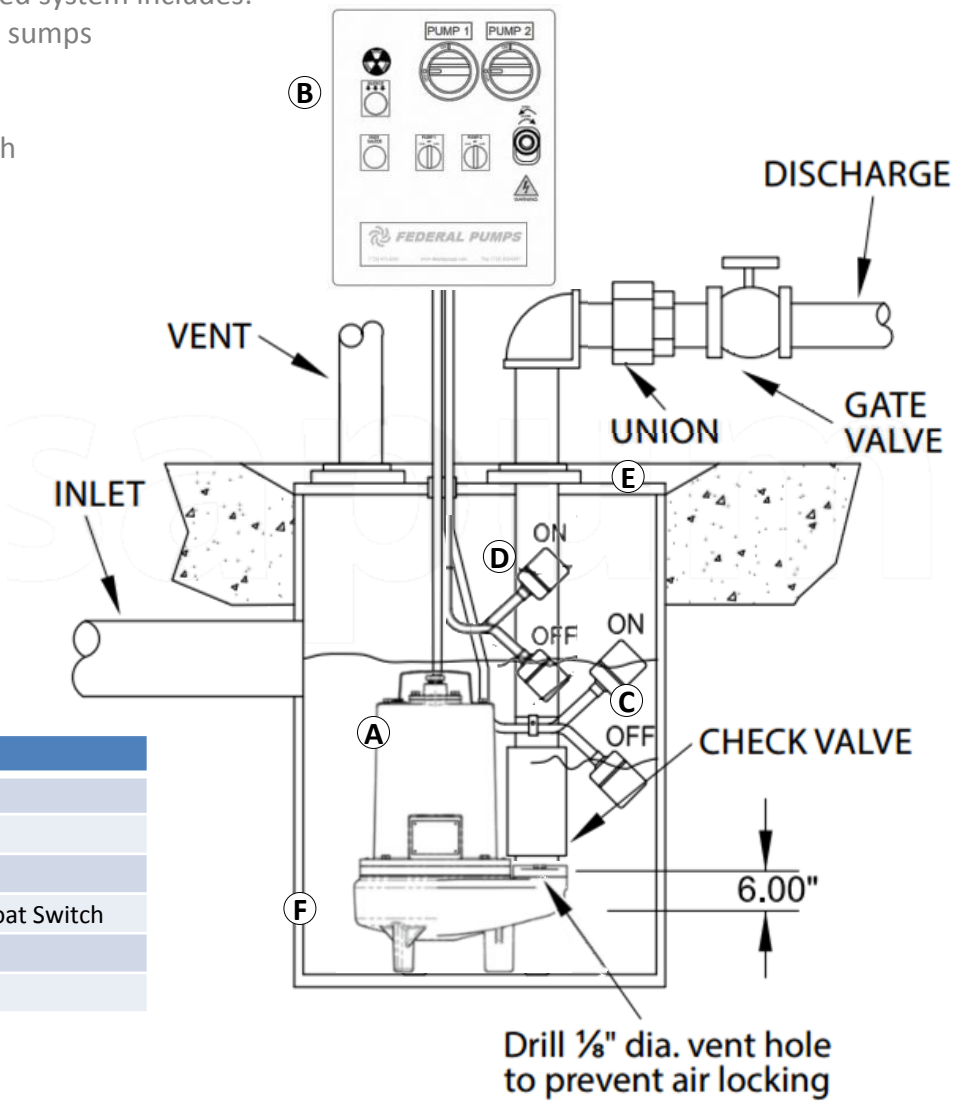
Available to shipped loose for field assembly with fiberglass basins and “gas-tight” covers. The P series effluent pump provides a formidable sump system by combining the ease of installation with a small form factor

Complete set of “POSP” packaged system includes:

- Submersible “P” series sump sumps
- Duplex control panel
- Automatic float switch
- High Water Alarm float switch

Accessories that be modified:

- Frame & Cover
- Basin



	ITEM
A	Submersible Pump
B	Duplex Panel
C	Float Switches
D	High Water Alarm Float Switch
E	Frame & Cover
F	Basin

PERFORMANCE DATA

ITEM	DESCRIPTION	
DISCHARGE SIZE	2" & 3"	
HORSEPOWER RANGE	½ ~ 3 hp	
PERFORMANCE RANGE	50 ~ 400 GPM	
MAX. WATER TEMPERATURE	104°F	
CASING	ASTM A48 CLASS 30 CAST IRON	
IMPELLER	2 VANE OPEN CAST IRON ASTM A-48 CLASS 30 IMPELLER, WITH VANES ON BACK SIDE, BALANCED	
SHAFT	416 SERIES STAINLESS STEEL	
MOTOR HOUSING	ASTM A48 CLASS 30 CAST IRON	
CORD ENTRY	UP TO 1HP	20FT NEOPRENE
	1½HP~3HP	25FT NEOPRENE
FASTENERS	300 SERIES STAINLESS STEEL	
MECHANICAL SEALS	SINGLE MECHANICAL SEALS WITH CARBON/CERAMIC/BUNA-N FACES	
BEARINGS	**UPPER ROW:** BALL, SINGLE ROW, OIL LUBRICATED, FOR RADIAL LOAD **LOWER ROW:** BALL, SINGLE ROW, OIL LUBRICATED, FOR RADIAL & THRUST LOAD	
MOTOR TYPE	SINGLE PHASE	OIL FILLED NEMA-L PERMANENT SPLIT CAPACITOR WITH OVERLOAD PROTECTION
	THREE PHASE	OIL FILLED NEMA-B WITHOUT OVERLOAD PROTECTION

MOTOR OPERATING PERFORMANCE [AMPS AVG.]

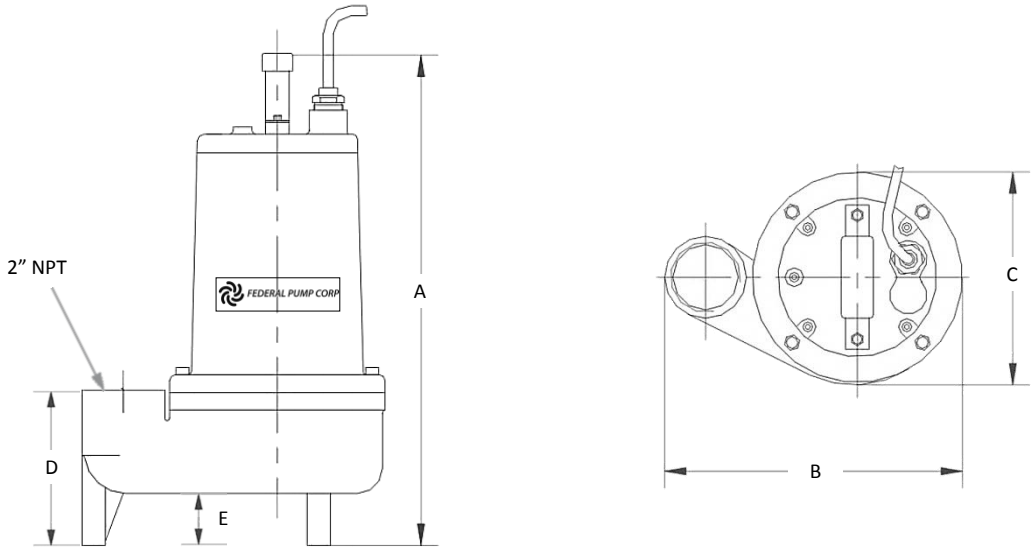
MODEL	HP	1PH/115V	1PH/208V	1PH/230V
P-2B-½-4-...	½	12.0	6.6	6.0
P-3A-¾-4-...	¾	16.6	9.2	8.3
P-3F-1-4-...	1	-	12.1	11.0
P-3A-1½-4-...	1½	-	13.9	12.6
P-3A-2-4-...	2	-	16.0	14.5
P-3A-3-4-...	3	-	30.9	28.0

MODEL	HP	3PH/208V	3PH/230V	3PH/460V
P-2B-½-4-...	½	3.9	3.5	-
P-3A-¾-4-...	¾	5.3	4.8	-
P-3F-1...	1	6.6	6.0	3.0
P-3A-1½...	1½	12.8	11.6	5.8
P-3A-2..	2	15.5	14.0	7.0
P-3A-3..	3	21.0	19.0	9.0

NOTES:

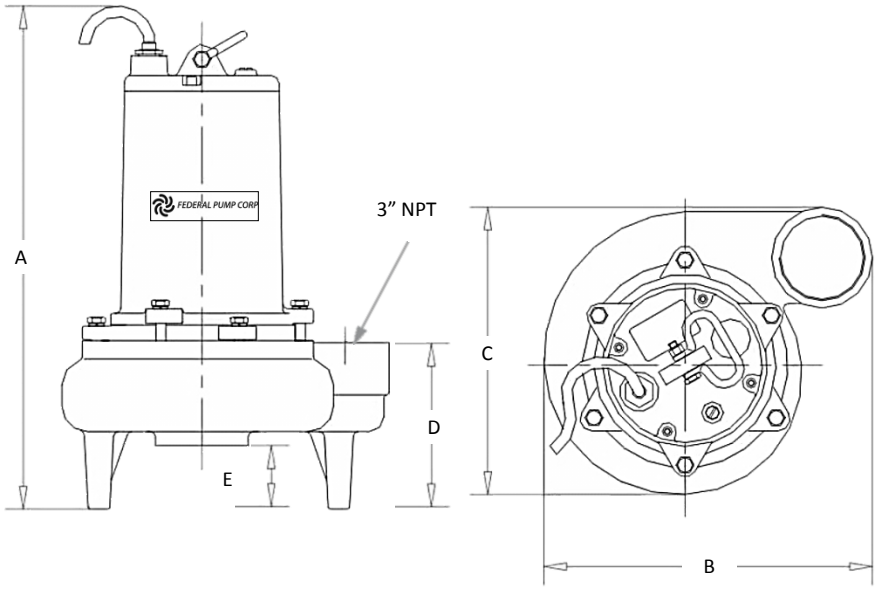
1. Motors are designed for 20 starts per hour. Level devices and pit depths should be designed to maintain 10~12 starts per hours at maximum 104°F for typical sump pump applications
2. Float devices require 8~12" of water level differential from low float(OFF) to high float(ON) position. Basins should be designed to accommodate float level differential
3. High water alarm float(ON level) should be designed to activate at 6" below the bottom of invert to prevent any fluids backing into the supply lines. Float switch tilt travel of 12" should be considered
4. Most fiberglass basins limit temperature to less than 120°F. For temperature in excess of 120°F where fiberglass basins are required, contact the factory for special assistance

DIMENSIONAL DATA



Disch.	Model	HP	RPM	A	B	C	D	E	Lb.
2	P-2B-½...	½	1750	15.50	11.00	7.50	5.00	2.00	50

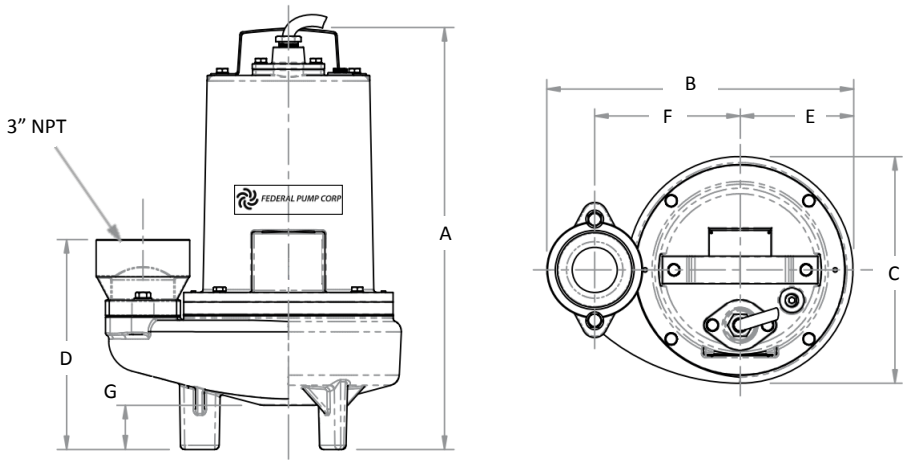
Dimensions in inches



Disch.	Model	HP	RPM	A	B	C	D	E	Lb.
3	P-3A-¾...	¾	1750	18.63	14.63	11.00	6.75	2.50	70

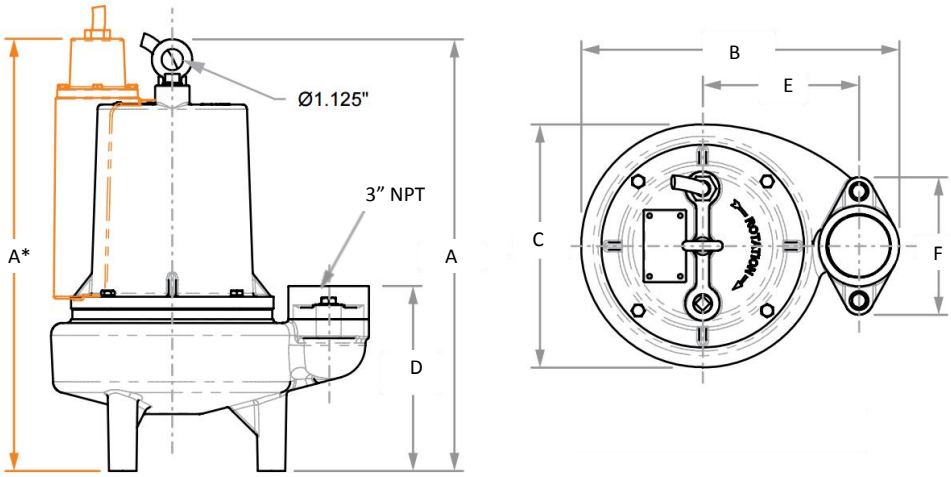
Dimensions in inches

DIMENSIONAL DATA



Disch.	Model	HP	RPM	A	B	C	D	E	F	G	Lb.
3	P-3F-1...	1	1750	18.66	12.94	9.76	11.80	6.50	4.88	2.16	95

Dimensions in inches



Disch.	Model	HP	RPM	A	A*	B	C	D	E	F	Lb.
3	P-3A-1½-4-1B/C	1½	1750	-	24	16.88	12.88	9.75	8.25	5.24	146
3	P-3A-1½-4-3B/C/D	1½	1750	22.75	-	16.88	12.88	9.75	8.25	5.24	146
3	P-3A-1½-4-1B/C	2	1750	-	24	16.88	12.88	9.75	8.25	5.24	146
3	P-3A-1½-4-3B/C/D	2	1750	22.75	-	16.88	12.88	9.75	8.25	5.24	146
3	P-3A-1½-4-1B/C	3	1750	-	24	16.88	12.88	9.75	8.25	5.24	170
3	P-3A-1½-4-3B/C/D	3	1750	-	24	16.88	12.88	9.75	8.25	5.24	170

Dimensions in inches

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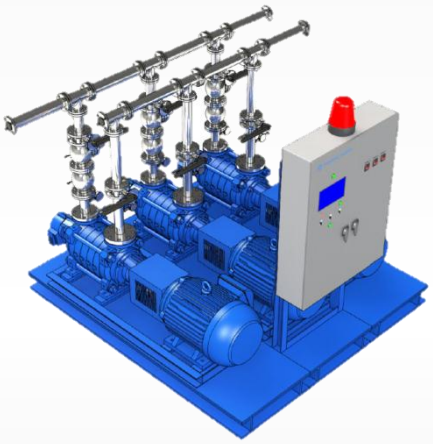
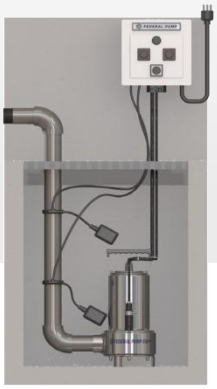
Est. 1927

Variable Speed Booster
Model VSPV(up to 300 PSI)



Variable Speed Booster
Model VSPM(up to 600 PSI)



Oil Shield Elevator Sump System
Model SOSP(up to 125GPM)

Since 1927 Federal Pump has been a leading provider of reliable and innovative fluid handling solutions for supply water management and dewatering pump services.

Its recent introduction of the VSPV & VSPM variable speed domestic water supply system combines innovative technological advancements in premium efficient motors and variable speed drive support programs that reduce energy demand, lower operating costs, and provide more finely tuned supply controls.

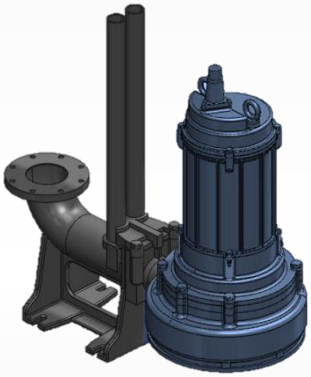
Its VSA/VSP vertical pump rated to 210F provides solutions in dewatering applications where condensate or boiler feed water are collected and then cooled and pumped to city sewer connections providing continuous service where submersible pumps do not provide a sustainable solution.

The SOSP Oil Shield sump pumps alerting building management to potential oil leaks in the elevator areas provide additional building support.

High rise roof fill applications, water make-up systems for mechanical equipment utilizing rain water systems and energy efficient condensate, boiler feed, and vacuum condensate units continue in the focus of energy efficiency and building support.

In the tradition of leadership through product innovation, quality designs, and reliable customer service, Federal Pump continues to be a supplier to those water management and dewatering markets where it first started that tradition of leadership in Brooklyn, N.Y.

Vertical Sewage/Sump Pump
Model VSA/VSP(up to 1400GPM)



Submersible Sewage/Sump Pump
Model MSC-QD/J(up to 500GPM)

MANUFACTURED IN NEW YORK
FEDERAL PUMP CORPORATION

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