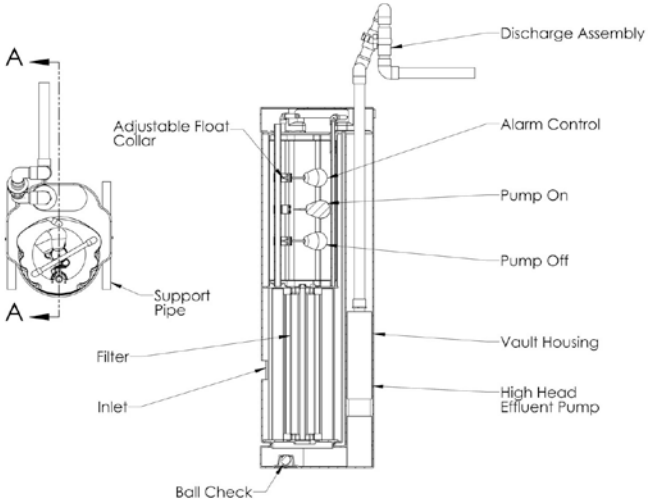
STEP PACKAGE - SEPTIC TANK EFFLUENT PUMP SPECIFICATIONS

PRODUCT USE

Polylok STEP systems are designed for septic and effluent tank pumping. They can either be used in an advanced wastewater treatment system or in a STEP collection system. The STEP system has a unique structural design to ensure long life and performance.

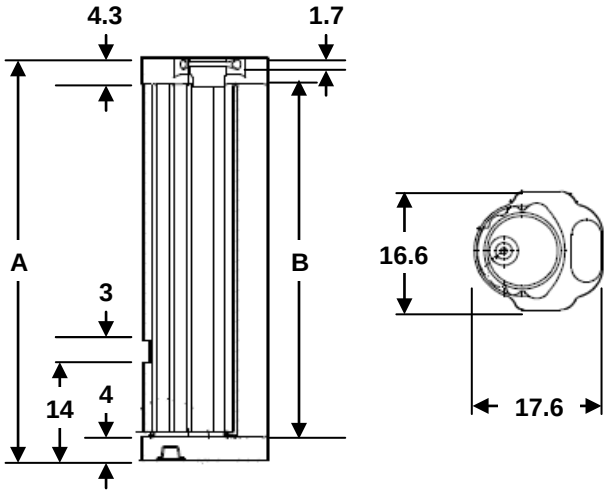
PRODUCT DESCRIPTION

Polylok STEP systems include a molded LDPE housing, polypropylene and PVC filter, Schedule 40 PVC discharge kit, Schedule 80 PVC support pipes, float level controls, submersible high head effluent pump, and control panel. The filter and float tree are designed to allow removal for cleaning without removal of the pump or housing. Standard models are available in Simplex or Duplex pumping configurations.



STEP SYSTEM SPECIFICATIONS

Model	PL-STEP49	PL-STEP57
A - Vault Height	49”	57”
Filter Diameter	9-3/4”	9-3/4”
B - Filter Height	40-11/16”	48-11/16”
Filter Screen Opening	1/8”	1/8”
Filter Surface Area	12.83 sq. ft.	15.33 sq. ft.
Filter Open Area	5.65 sq. ft.	6.76 sq. ft.
Housing Inlet Height	14”	14”
Pump Off/On/Alarm Level (From Top Of Vault	14” / 10” / 6.25” Adjustable	22.5” / 17.5” / 12.5” Adjustable



CONSTRUCTION MATERIALS

Housing	100% Recycled Low Density Polyethylene
Filter	Polypropylene / PVC
Float Tree	Schedule 40 PVC
Support Pipe	Schedule 80 PVC
Float Control	Mechanical Level Control
Discharge Kit	Schedule 40 PVC

Polylok, Inc. 3 Fairfield Blvd. Wallingford, CT 06492 Tel: 1-877-765-9565 Fax: (203) 284-8514 www.polylok.com

STEP PACKAGE - SEPTIC TANK EFFLUENT PUMP SPECIFICATIONS

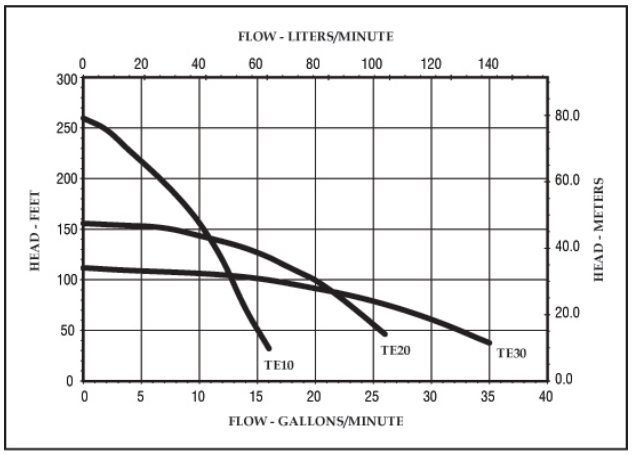
PUMP SPECIFICATIONS

Pump Flow Rate (Gallons Per Minute / GPM)	Standard – 20 GPM Optional – 10, 30 GPM
RPM	3450
Hp	1/2
Voltage	115
Phase	1
Frequency	60 Hz
Full Load Amps	10 Amps
Discharge Size	1-1/4"
Cable Length	10'
Cable Type	Sjow300V
Backflow Protection	Removable Built-In Check Valve
Motor Protection	Thermal Overload

PUMP CONSTRUCTION MATERIALS

Motor Housing	Stainless Steel
Impeller Material	Celcon
Diffuser	Glass Filled Polypropylene
Fasteners	Stainless Steel
Shaft	Stainless Steel
Bearings	PEEK
Discharge	Glass Filled Polypropylene

PERFORMANCE DATA



PL-TE10, PL-TE20, & PL-TE30

CONTROL PANEL SPECIFICATIONS

Standard Polylok Control Panel Model	Pl-112 Simplex Step Panel
Enclosure Dimensions	8"X8"X4"
Enclosure Type	UL Type 4x With Removable Molded Mounting Feet
Audible Alarm	Includes Normal – Silence Switch 83-85 Db
Alarm Light	Flashing Red
Voltage To Control Alarm	120 VAC
Voltage To Pump Relays	120 VAC
Complete With Step By Step Installation Instructions.	

CONTROL PANEL FEATURES

Standard Features

- Standard Control Devices
- Pump On/Off
- Alarm Light And Horn
- Lockable Latch
- Hoa Switch
- Normal-Silence Switch
- Pump And Controls Circuit Breakers
- Motor Magnetic Contactor
- 3 Float Operation (Installed In Basin)

Available Options

- Elapsed Time Meter
- Cycle Counter
- Run Indication Light
- Power Indication Light
- Programmable Timer
- Plc Smart Panel
- Lightning Arrestor
- Remote Monitoring
- Alarm & Remote Mounting
- Auto Dialers
- Custom – Call Factory

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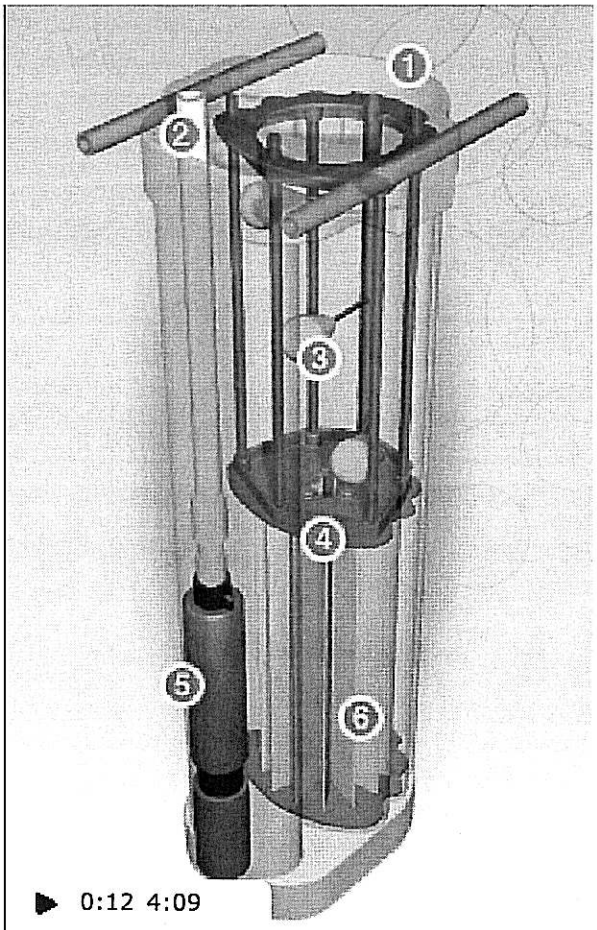

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1. Polyethylene Basin
2. Discharge Pipe
3. Float Switch Assembly
4. Light Weight ECO FILTER Cartridge
5. High-head Effluent Submersible Pump(s)
6. Filters

Wastewater

High Head Filtered Effluent Pumps

Applications:

- Filtered effluent service
- Aeration
- Ornamental fountains/waterfalls

Features

- Ideal for filtered effluent pumping
- Thermoplastic discharge and motor brackets are tough and non-corrosive
- Heavy duty, 300 volt, 10' SJOW Jacketed cord with stripped leads
- 1-1/4" FNPT discharge
- High quality top bearing for maximum durability and years of reliable service
- Proven Noryl® staging allows close tolerances and increased performance
- Stainless steel up thrust washer prevents excessive wear in services applications
- Removable built-in check valve
- Powered by Franklin Electric super stainless submersible motor
- Built-in lightning protection

Noryl® is a registered trademark of G.E. Plastics.

Poly lok
PL-TE-20

MODEL 112 Control Panel

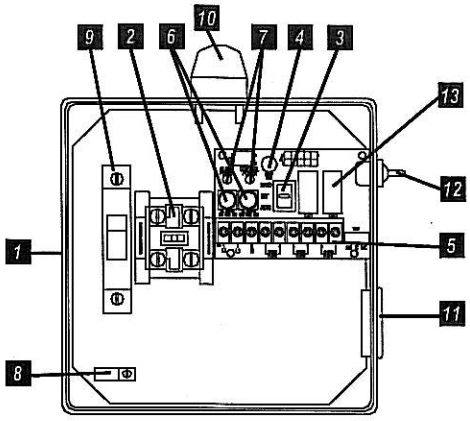
Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.

PANEL COMPONENTS

1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use).

   * Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Ground Lug**
9. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.



Model Shown 1121W914X

STANDARD ALARM PACKAGE

10. **Red Alarm Beacon** provides 360° visual check of alarm condition.
    Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
11. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating).
    Note: NEMA 1 style utilizes an internally mounted buzzer in lieu of horn.
12. **Exterior Alarm Test/Normal/Silence Switch** allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition has been cleared.
13. **Horn Silence Relay** (mounted on circuit board).

NOTE: other options available.

c UL us LISTED

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' SJE SignalMaster® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty

112	1	W	1	1	4	H	17A

MODEL 112

ALARM PACKAGE
- [ ] 0 = select options or no alarm package
- [x] 1 = alarm package (includes test/normal/silence switch, fuse, red light, horn & float)

ENCLOSURE RATING
- [ ] I = Indoor, NEMA 1 (metal)
- [x] W = Weatherproof, NEMA 4X (engineered thermoplastic)

STARTING DEVICE
- [x] 1 = magnetic motor contactor 120/208/240V
- [ ] 9 = magnetic motor contactor 120V only

PUMP FULL LOAD AMPS
- [ ] 0 = 0-7 FLA
- [x] 1 = 7-15 FLA
- [ ] 2 = 15-20 FLA
- [ ] 3 = 20-30 FLA

PUMP DISCONNECTS
- [ ] 0 = no pump disconnect
- [x] 4 = circuit breaker 120V (select STARTING DEVICE option 9 above)
  120/208/240V (select STARTING DEVICE option 1 above)

FLOAT SWITCH APPLICATION
- [x] H or L = pump down or pump up (select 17 option)
- [ ] X = no floats
  WITH alarm package
  WITHOUT alarm package

OPTIONS *Listed below*

★ ENCLOSURE UPSIZE - If you selected 3 or more of the ★ options, or one ★★ option, **add a one-time enclosure upsize fee would apply.**

	CODE	DESCRIPTION
[ ]	1A	Red beacon only / no audio *(must select 1E if floats included)*
[ ]	1C	Horn only / no visual *(must select 1E if floats included)*
[ ]	1E	Alarm float
[ ]	3A	Alarm flasher
[ ] ★	3B	Manual alarm reset
[ ] ★	4A	Redundant off *(select option 4D if floats included)*
[ ] ★	4B	Red redundant off indicator & alarm *(must select 4A also)*
[ ]	4D	Redundant off float *(select 4A option) (select 17 option)*
[ ] ★	5A	Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads)
[ ] ★★	5E	Seal failure circuit & red indicator (2 wire)
[ ]	6A	Auxiliary alarm contact, form C
[ ] ★	8A	Elapsed time meter
[ ] ★	8C	Event (cycle) counter
[ ] ★★	9_A	Pump overload specify amperage after number 9 followed by letter "A". Example: 912A = 12 amp pump.
★★ [ ]		0-25 FLA
★★ [ ]		25-30 FLA
[ ]	10E	Lockable latch - NEMA 4X
[ ]	10E	Lockable latch - NEMA 1
[ ] ★	10F	Lightning arrestor *(select pump circuit breaker)*
[ ] ★	10K	Anti-condensation heater

	CODE	DESCRIPTION
[ ]	11C	NEMA 1 alarm panel *(must select option 6A)*
[ ]	11D	NEMA 4X alarm panel *(must select option 6A)*
[ ] ★★	14B	Main disconnect (rotary style, mounted through door, non-fused)
★★ [ ]		0-20 FLA
★★ [ ]		20-30 FLA
[ ]	15A	Control / alarm circuit breaker
[ ]	16A	10' cord in lieu of 20' *(per float)*
[ ]	16B	15' cord in lieu of 20' *(per float)*
[ ]	16C	30' cord in lieu of 20' *(per float)*
[ ]	16D	40' cord in lieu of 20' *(per float)*
[x]	17A	SJE SignalMaster® / mounting strap ● *(per float)*
[ ]	17B	SJE SignalMaster® / externally weighted ● *(per float)*
[ ]	17C	Sensor Float® / internally weighted ▲ *(per float)*
[ ]	17D	Sensor Float® / externally weighted ▲ *(per float)*
[ ]	17E	Sensor Float® Mini / pipe clamp ▲ *(per float)*
[ ]	17F	Sensor Float® Mini / externally weighted ▲ *(per float)*
[ ]	17J	Sensor Float® / pipe clamp ▲ *(per float)*
[ ]	19T	TOA (Test/Off/Automatic) switch and pump run light through door mounted
[ ]	19U	HOA (Hand/Off/Automatic) switch and pump run light through door mounted
[ ]	19X	Door mounted pump run indicator
[ ]	21A	SJE PumpMaster® in lieu of on/off switches ●
[ ]	21B	SJE PumpMaster® Plus in lieu of on/off switches ●
[ ]	21C	Super Single® in lieu of on/off switches ▲
[ ]	21D	Double Float® in lieu of on/off switches ▲

● Mechanically-activated ▲ Mercury-activated

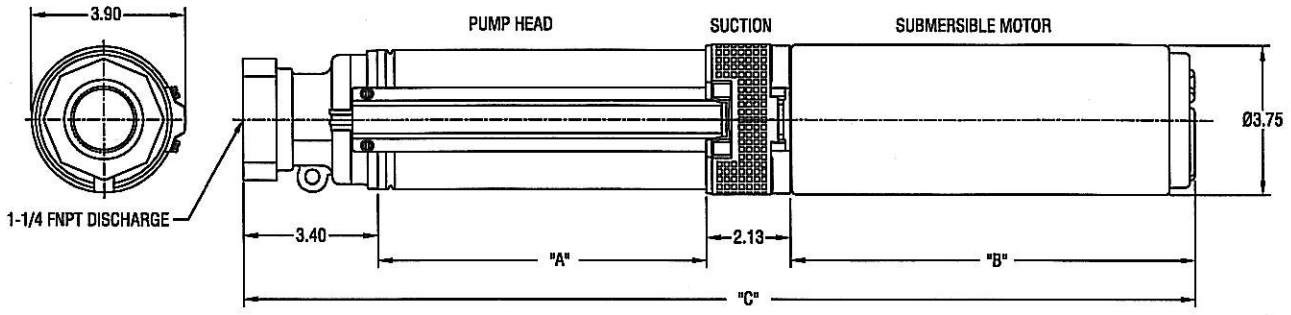
If additional features are required, call the factory for a quote on an Engineered Custom control panel.

SAMPLE

MODEL	112	1	W	9	1	4	H	3A 8A 17A

Alarm Package
Enclosure Rating
Starting Device
Pump Full Load Amps
Pump Disconnect
Float Switch Application
Options: Flasher, Elapsed Time Meter, SJE SignalMaster® / pipe clamp

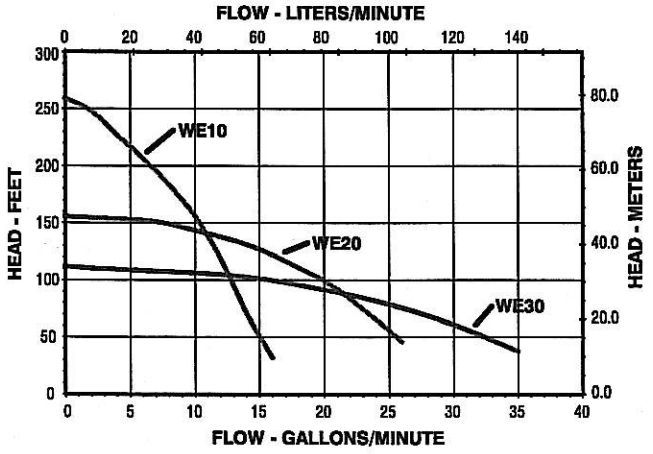
Dimensional Outline



Item No.	Dimension A	Dimension B	Dimension C
558221	7.00	9.38	21.91
558222	7.00	9.38	21.91
558223	9.00	9.38	23.91
558224	9.00	9.38	23.91
558225	6.50	9.38	21.41
558226	6.50	9.38	21.41

Specifications

Model No.	Item No.	HP	Volts/Hz	Discharge (dia. in.)	Performance (GPM@Head) 50'	100'	150'	200'	250'	Wire	Cord
WE10G05P4-21..	558221	1/2	115/60	1-1/4	15	13	10	7	2	2 Wire	SJOW/300V/10' Stripped Leads
WE10G05P4-22	558222	1/2	230/60	1-1/4	15	13	10	7	2	2 Wire	SJOW/300V/10' Stripped Leads
WE20G05P4-21	558223	1/2	115/60	1-1/4	26	20	8	—	—	2 Wire	SJOW/300V/10' Stripped Leads
WE20G05P4-22	558224	1/2	230/60	1-1/4	26	20	8	—	—	2 Wire	SJOW/300V/10' Stripped Leads
WE30G05P4-21	558225	1/2	115/60	1-1/4	32	14	—	—	—	2 Wire	SJOW/300V/10' Stripped Leads
WE30G05P4-22	558226	1/2	230/60	1-1/4	32	14	—	—	—	2 Wire	SJOW/300V/10' Stripped Leads



Construction

Motor housing	Stainless Steel
Impeller material	Celcon
Diffuser	Glass Filled PPO (Noryl®)
Power cord	10' SJOW
Check Valve	Celcon
Fasteners	Stainless steel
Shaft	Stainless steel
Bearings	PEEK
Discharge	Glass Filled Polypropylene

Model 112 Control Panel Specifications

Single Phase Simplex Control Panel

1.01 GENERAL

A. Contractor shall furnish all labor, materials, equipment and incidentals required to provide a simplex motor control panel as specified herein.

B. The motor control panel shall be assembled and tested by a controls system manufacturer (SJE-Rhombus or pre-approved equal) meeting the Standards of UL 508A for industrial controls and be UL labeled and serialized accordingly. The motor control panel shall be assembled and tested by the manufacturer so as to insure suitability in matching controls to motors and to insure single source responsibility for the equipment.

C. The panel shall contain all components required by the pump manufacturer for starting and protecting the motor as well as features required by the pump manufacturer for warranty of the pumps. Items such as thermal overload detection or seal failure detection shall be included when required.

D. Incoming pump power shall be single-phase, 60 Hz, 120/208/240 volts AC.

E. Incoming control/alarm power shall be single-phase, 60 Hz, 120 volts AC.

F. The control panel shall incorporate three (3) normally open, mercury or mechanically-activated control switches with pipe clamps. Floats shall be labeled in the panel as stop, start, and alarm. Floats shall be SJE-Rhombus control switches or approved equal.

2.01 CONSTRUCTION

A. The controls for the pump shall be housed in an engineered thermoplastic

enclosure meeting NEMA 4X requirements with a hinged door and neoprene gasket. The enclosure shall have provisions for a padlock.

B. A nameplate shall be permanently affixed to the panel. A ratings label shall include the model number, voltage, phase, frequency, ampere rating and horsepower rating and shall be affixed to the inside of the enclosure. A warning label against electric shock shall be permanently affixed to the outer door. The interior of the enclosure shall have a clear envelope with "as built" schematics located within.

C. A removable aluminum back plate shall be provided for mounting all circuit breakers, motor starters, etc. All components mounted to the back plate shall be secured by type 25, self-tapping screws in extruded holes. Rivets shall not be acceptable for securing any component to the backplate.

D. A simplex pump controller shall be provided for control logic. The controller shall utilize a printed circuit board to avoid conventional wiring. The printed circuit board of the pump controller shall be manufactured using UL listed materials. There shall be separately fused control and alarm circuit protection. A run light and hand-off-auto switch shall be provided for the pump circuit. The run light and hand-off-auto switch shall be mounted on the printed circuit board. The run light shall be green.

E. A circuit breaker shall be used as branch circuit protection for the pump. The circuit breaker shall be thermal magnetic and sized to meet NEC requirements for interrupt capacity and amp rating.

F. The magnetic motor starter shall be general purpose type rated for the pump horsepower and include a contactor with a minimum mechanical life of 500,000 operations and a minimum contact life of 100,000 operations. Pump overloads, if not included in the pump, shall provide overload protection for the pump circuit and shall be sized to meet NEC requirements for the pump

full load ampere rating specified.

G. A high-level alarm condition shall activate the main alarm light (red, mounted on the top of the panel) and alarm horn. The alarm light shall remain illuminated until the problem is corrected. The alarm horn shall be rated 83-85 dB minimum. A Test-Normal-Silence toggle switch labeled and placed adjacent to the horn, shall be included.

H. Wire ties shall be used to maintain panel wiring in neat bundles for maintenance and to prevent interference with operating devices. All grounding conductors shall be securely connected to assure a proper ground.

I. The control panel shall be a 112 series panel as manufactured by SJE-Rhombus or approved equal.