4" SUBMERSIBLE TURBINE PUMPS



Since hitting the market in 1988, FE PETRO® brand submersible pumps have developed a reputation as the standard in performance, quality and dependability with innovative features only available from Franklin Electric. It is, and always will be about filling cars faster. With best-in-class flow rates and backed by a long history of dependability, FE PETRO® pumps are responsible for delivering fuel to thousands of customers around the globe, day in and day out.

HIGHLIGHTS

Variable Speed

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses.

MagShell®

The patented stainless steel MagShell®, available on 2 Hp and 4 Hp pumps, is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

Biofuel Compatibility

FE PETRO® Alcohol-Gas (AG) and Advanced Protection (AP) pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

FEATURE SELECTION

	4 HP	2 HP	1½ HP	¾ HP
Variable Speed	✓	✓		
Fixed Speed		✓	✓	✓
MagShell®	✓	✓		
Biofuel Compatibility*	✓	✓	✓	✓
Variable Length	✓	✓	✓	✓
Fixed Length		✓	✓	✓
Advanced Protection	✓	✓	✓	✓
Turbine Pump Interface**	✓	✓	✓	✓
Intake Filter Screen	✓	✓	✓	✓

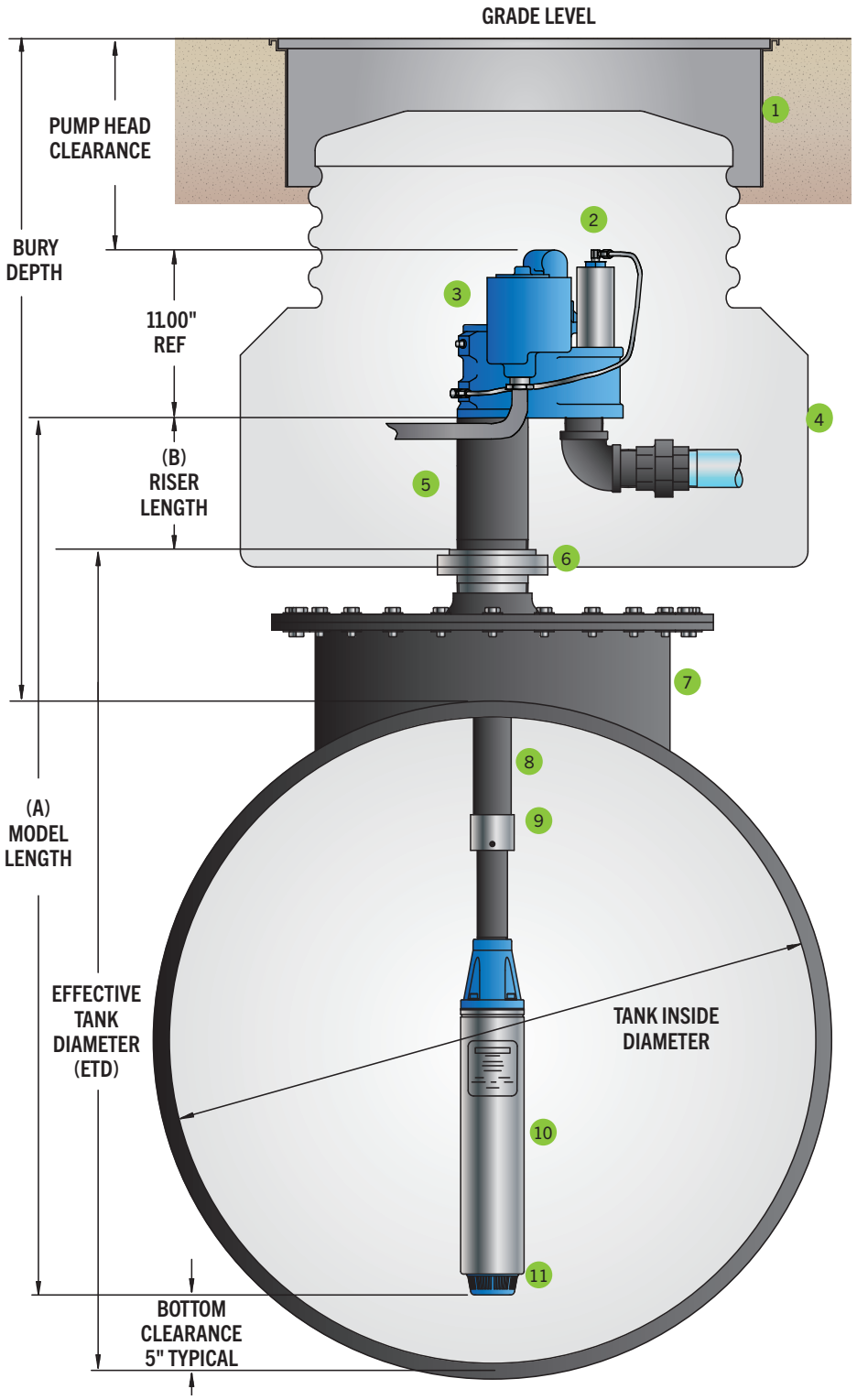
Up to 85% Ethanol and up to 20% or 100% Biodiesel.

***Fixed speed models require a Guardian Series™ Single Phase Smart Controller (SPGC-220) to network with EVO™ Series consoles.*

SPECIFICATIONS

4" Submersible Pump Components & Key Dimensions

1. Manhole
2. Leak Detector
3. Manifold
4. Containment Sump
5. 4" Riser
6. Tank Adapter
7. Tank Manway
8. Column Pipe
9. Variable Length Coupler
10. Pump Motor Assembly (PMA)
11. End Bell



Notes:

1. Effective tank diameter (ETD) = Inside tank diameter (to top of 4" bung), including tank manway and/or sump adapter.

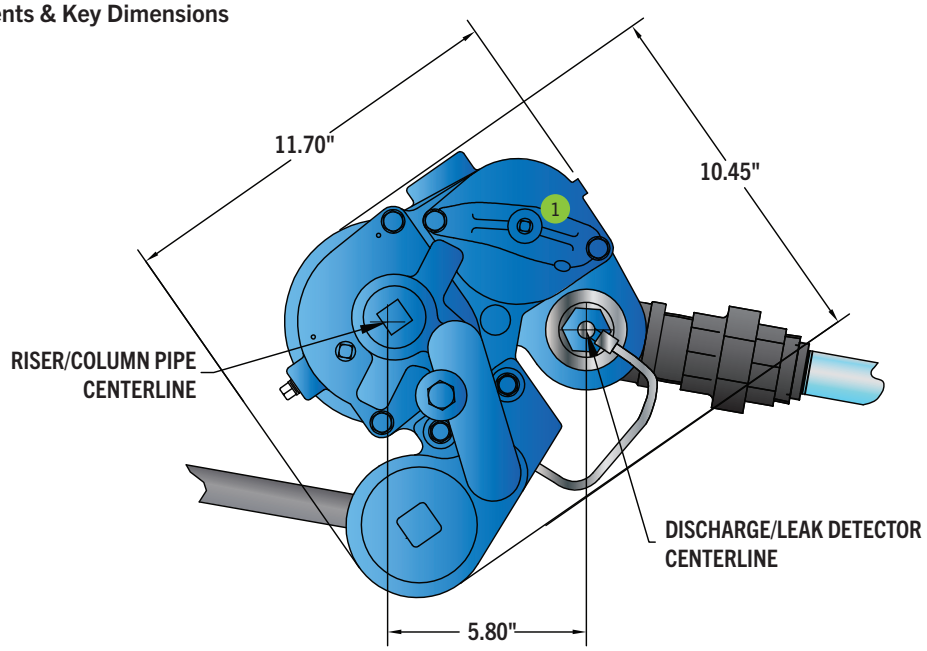
2. Model length (A) = ETD plus riser length minus bottom clearance minus 1" thread engagement.

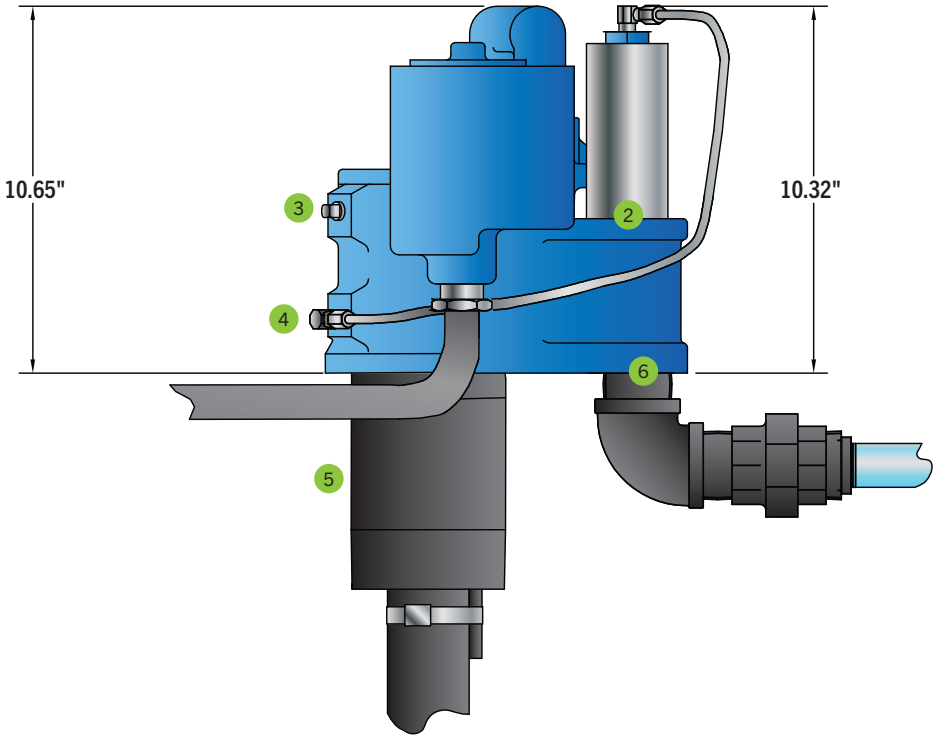
3. Riser length (B) = Bury depth (to top of tank) minus pump head clearance minus tank manway and/or minus sump adapter.

SPECIFICATIONS CONTINUED

4" Submersible Pump Manifold Components & Key Dimensions

1. Line Test Port, ¼" NPT
2. Leak Detector Port, 2" NPT
3. Syphon Port, ¼" NPT
4. Tank Port, ¼" NPT
5. Riser Pipe, 4" NPT
6. Discharge Outlet, 2" NPT





4 HP SUBMERSIBLE TURBINE PUMPS

With faster fill times during peak hours and power savings during non-peak hours, FE PETRO® 4 Hp variable speed submersible pumps deliver maximized profits while mitigating operating expenses.



HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

FE PETRO® pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

STANDARD FEATURES

Variable Speed

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses.

MagShell®

The patented stainless steel MagShell® is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Active Air Eliminator

FE PETRO® STPs come standard with active air elimination, which eliminates air through the highest point in the pump head at all times when the pump is running, assuring air does not pass into discharge piping.

Safety and Ease of Maintenance

FE PETRO® STPs include a contractor electrical disconnect, which requires loosening only one bolt, allowing motor wiring to be disconnected without venting the dangerous tank vapors into the sump when servicing FE PETRO® submersible products.

Simple Servicing

If ever required, the pump can be easily removed from the tank by unthreading three bolts. There is no need to disconnect the syphon system or to remove the leak detector from the system to service the STP.

Manual Pressure Relief

As a standard FE PETRO® feature, a vent screw is provided to bleed line pressure to zero when necessary. By turning this screw, product is diverted back to the tank, dropping line pressure to zero. This reduces fuel discharged into the sump manhole or dispenser pan during servicing, further protecting service technicians and the environment.

Outlast, Outperform with Franklin Electric Inside

FE PETRO® STPs are powered by the legendary Franklin Electric motor and built for long term performance. Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades. They feature best-in-class flow rates and a long history of dependability.

Quality Certification

ISO 9001:2015 certified manufacturer

SPECIFICATIONS

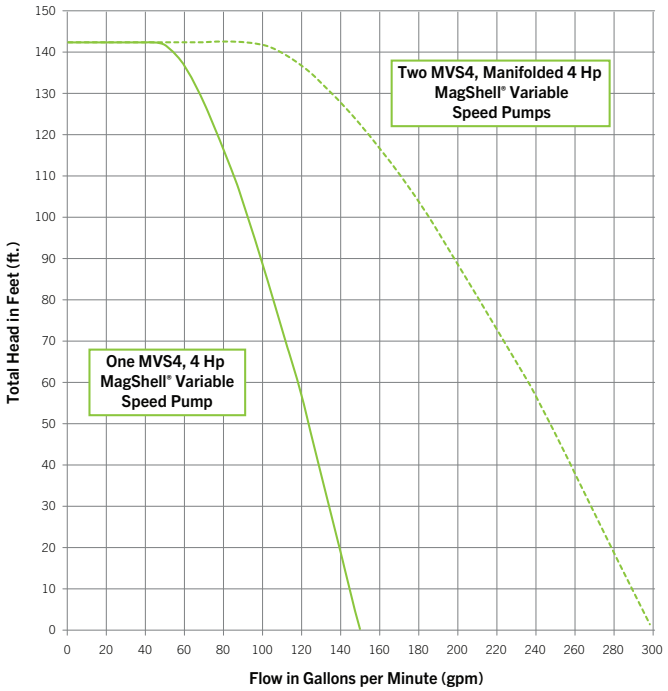
General

Variable speed models	Only available in variable lengths
Check valve	2¾" fluorocarbon seal constructed with cast aluminum body and steel backing washer
Pressure relief valve	Available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi
Syphon	Venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately
Air eliminator	Every submersible includes a tank return path with one-way check valve to provide active air elimination
Electrical disconnect	Electrical yoke for positive contractor disconnect during service
Approvals/ Certifications	- cULus listed - Consult factory for applicable approvals

Pump Motor

4 Hp	Variable speed, two-stage centrifugal type pump motor with integral, automatic, thermal overload protection
Max. pressure	Selectable operating pressure on VFGC between 24 psi and 42 psi deadhead
MagShell®	Available with MagShell® which results in 45% increased flow area around motor

4 Hp Variable Speed Pump Performance Chart



Performance based on pumping gasoline (0.72 specific gravity). Pressure is taken at the manifold discharge outlet. ISTMVS4 and STPMVS4 turbines can only be powered by a Guardian Series™ VFC with three phase incoming power.

Power Requirements

Variable speed pumps	Can only be controlled by a VFGC variable frequency controller
VS4 models	Require three-phase incoming power supply to the VFGC for proper operation
Power supply	Incoming power supply to the VFGC can be 200-250 VAC, 50 or 60 Hz
Output	VFGC outputs a three-phase, variable frequency signal, valid for FE PETRO® variable speed pumps only
Max line draw	VFGC max. line draw: 20 Amps
Max motor draw	15 Amps

Liquid Compatibility

Max. liquid viscosity	70 SSU at 60° F (15° C)
STP variable speed	STP variable speed models are UL listed for fuel mixtures containing up to 10% ethanol, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
IST/ISTAP variable speed	IST/ISTAP variable speed models are UL and cUL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
Variable speed models	All variable speed models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state
Max line draw	VFGC max. line draw: 20 Amps
Wetted elastomers	All wetted elastomers are made of a high grade, fluorocarbon compound

ORDERING INFORMATION

4 Hp Submersible Pump Ordering Guide

A typical turbine model designation has up to five components to define the pump being supplied as follows:

XXX YYYYY Z - A - B

XXX = Basic Model Designation

STP = These standard variable speed and variable length models are capable of up to 10% ethanol with gasoline

IST = These variable speed and variable length models include alcohol-gasoline compatibility (up to 85% ethanol, up to 20% Biodiesel, or 100% Biodiesel)

ISTAP = These variable speed and variable length models include alcohol-gasoline compatibility (up to 85% ethanol, up to 20% Biodiesel, or 100% Biodiesel) and Advanced Protection with powder-coated, e-coated, and stainless steel components

YYYYY = Factory Installed Options

Model designations may include one or more of the following characters in alphabetical order:

F = Floating suction adapter (1½" NPT female adapter)

K = Intake filter screen (IFS, factory installed to PMA)

M = MagShell® (flow enhancing, expanded PMA shell)

R* = Model R check valve (24 psi relief/22 psi reset for PLLD)

Z = Pump Motor Horsepower Rating

VS4 = 4 Hp variable speed

A = Model Length (see table)

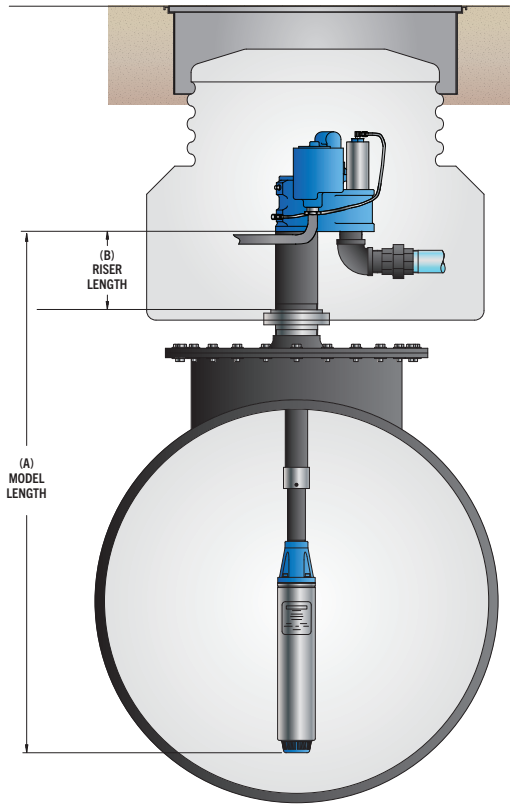
VL1 = STP variable length range #1

VL2 = STP variable length range #2

VL3 = STP variable length range #3

B = Riser Pipe Length (see diagram)

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).



Model Length (A)

STP Horsepower	Model Length Range	Model Length Designation
4 Hp	64" – 92"	VL1
	95" – 156"	VL2
	127" – 218"	VL3

**If not otherwise specified, all models are supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*

ORDERING INFORMATION CONTINUED

4 Hp Variable Speed Submersible Turbine Pumps

Variable speed, variable length.

Model	Description	Model Length Range Number	Model Length Range*
STPMVS4-VL1	4 Hp variable speed with MagShell®	VL1	64" – 92"
STPMVS4-VL2	4 Hp variable speed with MagShell®	VL2	95" – 156"
STPMVS4-VL3	4 Hp variable speed with MagShell®	VL3	127" – 218"

4 Hp Variable Speed Intelligent Submersible Turbine Pumps

Variable speed, variable length, and AG compatible.

Model	Description	Model Length Range Number	Model Length Range*
ISTMVS4-VL1	4 Hp AG variable speed with MagShell®	VL1	64" – 92"
ISTMVS4-VL2	4 Hp AG variable speed with MagShell®	VL2	95" – 156"
ISTMVS4-VL3	4 Hp AG variable speed with MagShell®	VL3	127" – 218"
ISTAPMVS4-VL1	4 Hp AG variable speed with Advanced Protection, and MagShell®	VL1	64" – 92"
ISTAPMVS4-VL2	4 Hp AG variable speed with Advanced Protection, and MagShell®	VL2	95" – 156"
ISTAPMVS4-VL3	4 Hp AG variable speed with Advanced Protection, and MagShell®	VL3	127" – 218"

Notes:

1. Remove "M" from model number for non-MagShell® pump motor assembly.

2. All STP models are UL and cUL listed for compatibility with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

3. All IST/ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

4. All models are supplied with a standard check valve unless factory option "R" is specified.

5. All above models can only be powered by a VFGC. 4 hp models require three-phase incoming power supply, 2 hp models can be supplied with single- or three-phase incoming power.

6. 4" riser pipe, if supplied locally, must be 4½" OD by 3/16" WT tubing.

7. For riser pipe length 31" to 60", additional charge applies (call Customer Service for lead times).

**Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet.*

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak

Field Installed Options

Intelligent submersible turbine pump specific accessories.

Model	Description
5874202800	VFGC, 2 Hp or 4 Hp variable frequency controller, one required per STPM VS2 or VS4
400137937	Syphon check valve, alcohol-gasoline compatible
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPM VS2 or VS4 with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STPM VS2 or VS4)
5800300100	STP-DHI dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

2 HP SUBMERSIBLE TURBINE PUMPS

With faster fill times during peak hours and power savings during non-peak hours, FE PETRO® 2 Hp variable speed submersible pumps deliver maximized profits while mitigating operating expenses. 2 Hp submersible pumps are also available in fixed speed models.



HIGHLIGHTS

OPTIONAL FEATURES

Variable Speed

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses.

Biofuel Compatibility

FE PETRO® pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

STANDARD FEATURES

MagShell®

The patented stainless steel MagShell® is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Active Air Eliminator

FE PETRO® STPs come standard with active air elimination, which eliminates air through the highest point in the pump head at all times when the pump is running, assuring air does not pass into discharge piping.

Safety and Ease of Maintenance

FE PETRO® STPs include a contractor electrical disconnect, which requires loosening only one bolt, allowing motor wiring to be disconnected without venting the dangerous tank vapors into the sump when servicing FE PETRO® submersible products.

Simple Servicing

If ever required, the pump can be easily removed from the tank by unthreading three bolts. There is no need to disconnect the syphon system or to remove the leak detector from the system to service the STP.

Manual Pressure Relief

As a standard FE PETRO® feature, a vent screw is provided to bleed line pressure to zero when necessary. By turning this screw, product is diverted back to the tank, dropping line pressure to zero. This reduces fuel discharged into the sump manhole or dispenser pan during servicing, further protecting service technicians and the environment.

Outlast, Outperform with Franklin Electric Inside

FE PETRO® STPs are powered by the legendary Franklin Electric motor and built for long term performance. Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades. They feature best-in-class flow rates and a long history of dependability.

Quality Certification

ISO 9001:2015 certified manufacturer

SPECIFICATIONS

General

Variable speed models	Only available in variable lengths
Fixed speed	Models are available in variable length and fixed length options
Check valve	2¾" diameter fluorocarbon seal constructed with cast aluminum body and steel backing washer
Pressure relief valve	Available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi
Syphon	Venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately
Air eliminator	Every submersible includes a tank return path with one-way check valve to provide active air elimination
Electrical disconnect	Electrical yoke for positive contractor disconnect during service
Approvals/Certifications	- cULus listed - Consult factory for applicable approvals

Variable Speed Pump Motor

4 Hp	Variable speed, two-stage centrifugal type pump motor with integral, automatic, thermal overload protection
Max. pressure	Selectable operating pressure on VFGC between 24 psi and 42 psi deadhead
MagShell®	Available with MagShell® which results in 45% increased flow area around motor

Fixed Speed Pump Motor

2 Hp fixed speed	2 Hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power
Standard pressure	Standard pressure (M200, two-stage) model, max. pressure = 36 psi
High pressure	High pressure (HM200, three-stage) model, max. pressure = 45 psi
MagShell®	Available with MagShell™ for 45% increased flow area around motor

Liquid Compatibility

Max. liquid viscosity	70 SSU at 60° F (15° C)
STP variable speed	STP variable speed models are UL and cUL listed for fuel mixtures containing up to 10% ethanol, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
STPAG (AG compatible)	STPAG (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
Variable speed (non-AG)	All variable speed (non-AG) models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state
2 Hp fixed speed	2 Hp fixed speed models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state
Wetted elastomers	All wetted elastomers are made of a high grade, fluorocarbon compound

Variable Speed Power Requirements

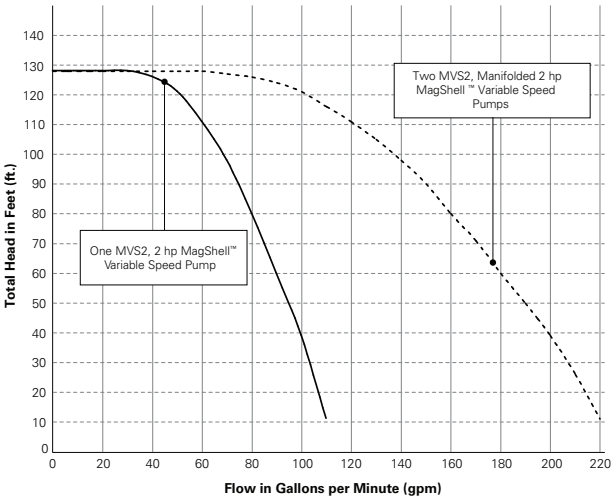
Variable speed pumps	Can only be controlled by a VFGC variable frequency controller
VS2 models	Can operate with single- or three-phase incoming power supply to the VFGC
Incoming power	Incoming power supply to the VFGC can be 200-250 VAC, 50 or 60 Hz
Outputs	VFGC outputs a three-phase, variable frequency signal, valid for FE PETRO® variable speed pumps only
Max. line draw	VFGC max. line draw: 20 Amps
Max. motor draw	7 Amps

Fixed Speed Power Requirements

Incoming power	2 Hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power
2 Hp fixed speed	2 Hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 40 microfarad
Single phase	SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for 2 hp pump control
Max. motor draw	12 Amps

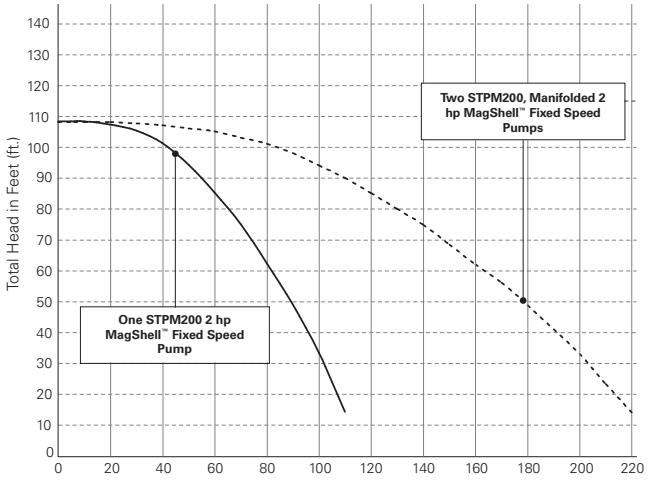
SPECIFICATIONS CONTINUED

2 Hp Variable Speed Pump Performance Chart



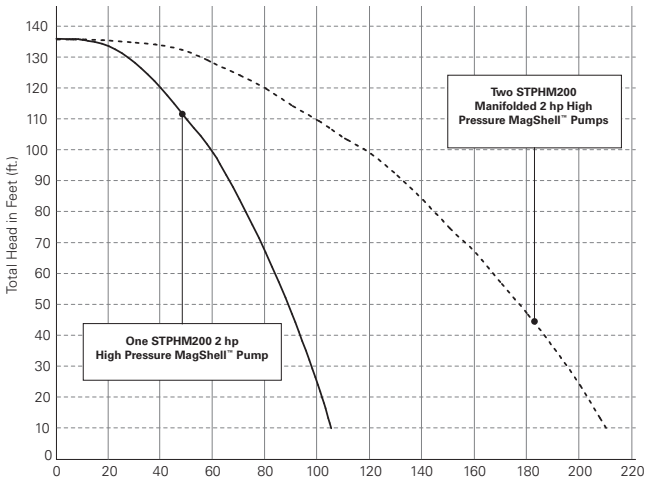
Performance based on pumping gasoline (0.76 specific gravity). Pressure is taken at the manifold discharge outlet. ISTM and STPMVS2 turbines can only be powered by a Guardian Series™ VFC with single or three phase incoming power.

2 Hp Fixed Speed Pump Performance Chart



Performance based on pumping gasoline (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STPM200 are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

2 Hp High Pressure Fixed Speed Pump Performance Chart



Performance based on pumping gasoline (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STPHM200 are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

ORDERING INFORMATION

2 Hp Variable Speed Submersible Pump Ordering Guide

A typical model designation has up to five components to define the pump being supplied as follows:

XXX YYYYY Z - A - B

XXX = Basic Model Designation

STP = These standard variable speed and variable length models are capable of up to 10% ethanol with gasoline

IST** = These variable speed and variable length models include alcohol-gasoline compatibility (up to 85% ethanol, up to 20% Biodiesel, or 100% Biodiesel)

ISTAP** = These variable speed and variable length models include alcohol-gasoline compatibility (up to 85% ethanol, up to 20% Biodiesel, or 100% Biodiesel) and Advanced Protection with powder-coated, e-coated, and stainless steel components

YYYYY = Factory Installed Options

Model designations may include one or more of the following characters:

F = Floating suction adapter (1½" NPT female adapter)

K = Intake filter screen (IFS, factory installed to PMA)

M = MagShell® (flow enhancing, expanded PMA shell)

R* = Model R check valve (24 psi relief/22 psi reset for PLLD)

Z = Pump Motor Horsepower Rating

VS2 = 2 Hp variable speed

A = Model Length (see table)

VL1 = STP variable length range #1

VL2 = STP variable length range #2

VL3 = STP variable length range #3

B = Riser Pipe Length (see diagram)

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).

Notes:
**If not otherwise specified, all models are supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*

***If not otherwise specified, 2 Hp variable speed pump motor horsepower rating is implied for IST models.*

2 Hp Fixed Speed Submersible Pump Ordering Guide

A typical model designation has up to five components to define the pump being supplied as follows:

STP XXXXX Y - A - B

STP = Basic Model Designation

XXXXX = Factory Installed Options

Model designations may include one or more of the following characters:

AP = Advanced Protection with powder-coated, e-coated, and stainless steel components, alcohol-gasoline compatible (up to E85, up to B20, and B100) *(Note standard models up to 10% ethanol capable)*

AG = Alcohol-gasoline compatible (up to E85, up to B20, and B100) (Note standard models up to 10% ethanol capable)

F = Floating suction adapter (1½" NPT female adapter)

K = Intake filter screen (IFS, factory installed to PMA)

M = MagShell® (flow enhancing, expanded PMA shell)

*R = Model R check valve (24 psi relief / 22 psi reset for PLLD)

*W = Model W check valve (16 psi relief / 13 psi reset for PPM4000)

Y = Pump Motor Horsepower Rating

200 = 2 Hp fixed speed

A = Model Length (see table)

VL1 = Variable length range #1

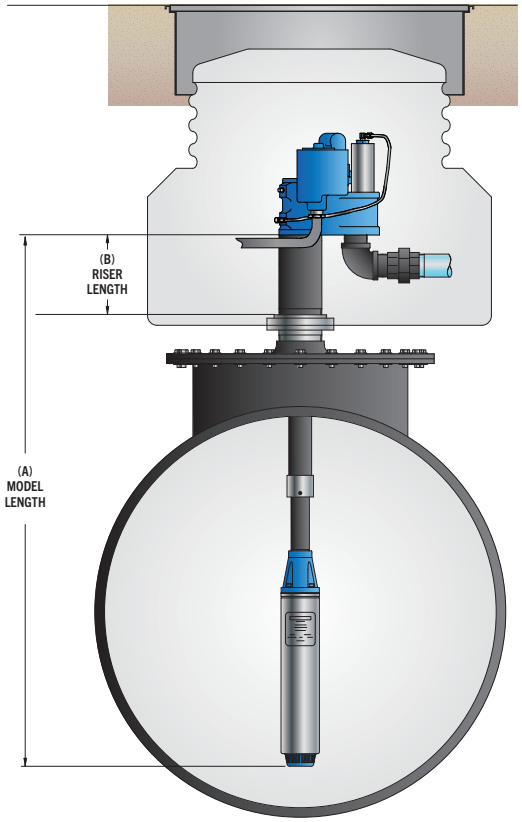
VL2 = Variable length range #2

VL3 = Variable length range #3

(Note VL2 models fit 94% of all known installations)

B = Riser Pipe Length (see diagram)

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).



Model Length (A)

STP Horsepower	Model Length Range	Model Length Designation
2 Hp Variable Speed	59" – 87"	VL1
	90" – 151"	VL2
	122" – 213"	VL3
2 Hp Fixed Speed	63" – 92"	VL1
	94" – 154"	VL2
	126" – 218"	VL3
2 Hp Fixed Speed High Pressure	63" – 92"	VL1
	94" – 155"	VL2
	126" – 218"	VL3

**If not otherwise specified, all STP models are supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*

ORDERING INFORMATION

2 Hp Variable Speed Submersible Turbine Pumps

Variable speed, variable length.

Model	Description	Model Length Range Number	Model Length Range*
STPMVS2-VL1	2 Hp variable speed with MagShell®	VL1	59" – 87"
STPMVS2-VL2	2 Hp variable speed with MagShell®	VL2	90" – 151"
STPMVS2-VL3	2 Hp variable speed with MagShell®	VL3	122" – 213"

2 Hp Variable Speed Intelligent Submersible Turbine Pumps

Variable speed, variable length, and AG compatible.

Model	Description	Model Length Range Number	Model Length Range*
ISTM-1	2 Hp AG variable speed with MagShell®	VL1	59" – 87"
ISTM-2	2 Hp AG variable speed with MagShell®	VL2	90" – 151"
ISTM-3	2 Hp AG variable speed with MagShell®	VL3	122" – 213"
ISTAPM-1	2 Hp AG variable speed with Advanced Protection, and MagShell®	VL1	59" – 87"
ISTAPM-2	2 Hp AG variable speed with Advanced Protection, and MagShell®	VL2	90" – 151"
ISTAPM-3	2 Hp AG variable speed with Advanced Protection, and MagShell®	VL3	122" – 213"

Standard 2 Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STPM200-VL1	2 Hp fixed speed with MagShell®	VL1	63" – 91"
STPM200-VL2	2 Hp fixed speed with MagShell®	VL2	94" – 154"
STPM200-VL3	2 Hp fixed speed with MagShell®	VL3	126" – 217"
STPHM200-VL1	2 Hp high pressure fixed speed with MagShell®	VL1	63" – 92"
STPHM200-VL2	2 Hp high pressure fixed speed with MagShell®	VL2	94" – 155"
STPHM200-VL3	2 Hp high pressure fixed speed with MagShell®	VL3	126" – 218"

Alcohol-Gas (AG) 2 Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STPAGM200-VL1	2 Hp AG fixed speed with MagShell®	VL1	63" – 91"
STPAGM200-VL2	2 Hp AG fixed speed with MagShell®	VL2	94" – 154"
STPAGM200-VL3	2 Hp AG fixed speed with MagShell®	VL3	126" – 217"
STPAGHM200-VL1	2 Hp AG high pressure fixed speed with MagShell®	VL1	63" – 92"
STPAGHM200-VL2	2 Hp AG high pressure fixed speed with MagShell®	VL2	94" – 155"
STPAGHM200-VL3	2 Hp AG high pressure fixed speed with MagShell®	VL3	126" – 218"
STPAPM200-VL1	2 Hp fixed speed with Advanced Protection, and MagShell®	VL1	63" – 91"
STPAPM200-VL2	2 Hp fixed speed with Advanced Protection, and MagShell®	VL2	94" – 154"
STPAPM200-VL3	2 Hp fixed speed with Advanced Protection, and MagShell®	VL3	126" – 217"
STPAPHM200-VL1	2 Hp high pressure fixed speed with Advanced Protection, and MagShell®	VL1	63" – 92"
STPAPHM200-VL2	2 Hp high pressure fixed speed with Advanced Protection, and MagShell®	VL2	94" – 155"
STPAPHM200-VL3	2 Hp high pressure fixed speed with Advanced Protection, and MagShell®	VL3	126" – 218"

Notes:

1. Remove "M" from model number for non-MagShell® pump motor assembly.

2. STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

3. All models are supplied with a standard check valve unless factory option "R" or "W" is specified.

4. All above models require single-phase, 208-230 VAC, 60 Hz incoming power.

5. 4" riser pipe, if supplied locally, must be 4½" OD by 3⁄16" WT tubing.

6. For riser pipe lengths 31" to 60", additional charges apply (call Customer Service for lead times).

7. All above IST and STPMVS2 models can only be powered by a VFGC. VFGC must be supplied with single- or three-phase incoming power for all above models.

**Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet.*

ORDERING INFORMATION CONTINUED

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak

Field Installed Options

2 Hp submersible pump specific accessories.

Model	Description
400137937	Syphon check valve, alcohol-gasoline compatible
5874202800	VFGC, 2 hp or 4 hp variable frequency controller, one required per STPM VS2 or VS4
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

1½ HP SUBMERSIBLE TURBINE PUMPS



FE PETRO® 1½ Hp fixed speed submersible pumps deliver consistent flow rates for medium throughput fuels.

HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

FE PETRO® pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

STANDARD FEATURES

Active Air Eliminator

FE PETRO® STPs come standard with active air elimination, which eliminates air through the highest point in the pump head at all times when the pump is running, assuring air does not pass into discharge piping.

Safety and Ease of Maintenance

FE PETRO® STPs include a contractor electrical disconnect, which requires loosening only one bolt, allowing motor wiring to be disconnected without venting the dangerous tank vapors into the sump when servicing FE PETRO® submersible products.

Simple Servicing

If ever required, the pump can be easily removed from the tank by unthreading three bolts. There is no need to disconnect the syphon system or to remove the leak detector from the system to service the STP.

Manual Pressure Relief

As a standard FE PETRO® feature, a vent screw is provided to bleed line pressure to zero when necessary. By turning this screw, product is diverted back to the tank, dropping line pressure to zero. This reduces fuel discharged into the sump manhole or dispenser pan during servicing, further protecting service technicians and the environment.

Outlast, Outperform with Franklin Electric Inside

FE PETRO® STPs are powered by the legendary Franklin Electric motor and built for long term performance. Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades. They feature best-in-class flow rates and a long history of dependability.

Quality Certification

ISO 9001:2015 certified manufacturer

SPECIFICATIONS

General

1½ Hp fixed speed models	Available in variable length and fixed length options
Check valve	2¾" diameter fluorocarbon seal constructed with cast aluminum body and steel backing washer
Pressure relief valve	Available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi
Syphon	Venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately
Air eliminator	Every submersible includes a tank return path with one-way check valve to provide active air elimination
Electrical disconnect	Electrical yoke for positive contractor disconnect during service
Approvals/Certifications	- cULus listed - Consult factory for applicable approvals

Pump Motor

1½ Hp	Fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection
Standard pressure	(150, two-stage) model, max. pressure = 32 psi
High pressure	(H150, three-stage) model, max. pressure = 45 psi

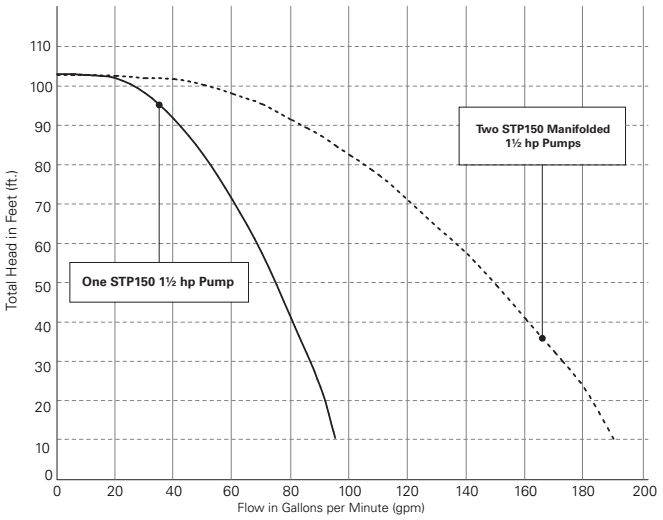
Power Requirements

Incoming power	1½ Hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power
1½ Hp fixed speed	1½ Hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 15 microfarad
Single phase	SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for 1½ Hp pump control
Max. motor draw	11 Amps

Liquid Compatibility

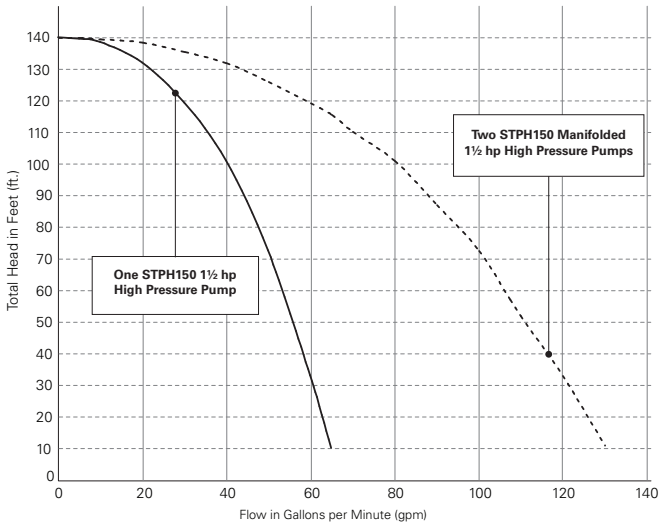
Max. liquid viscosity	70 SSU at 60° F (15° C)
Standard STP	Standard STP models are UL and cUL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
STPAP/STPAG (AG compatible)	STPAP/STPAG (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
1½ Hp	1½ Hp fixed speed models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state
Wetted elastomers	All wetted elastomers are made of a high grade, fluorocarbon compound

1½ Hp Fixed Speed Pump Performance Chart



Note: Performance based on pumping gasoline (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STP150 models are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

1½ Hp High Pressure Fixed Speed Pump Performance Chart



Note: Performance based on pumping gasoline (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STPH150 models are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

ORDERING INFORMATION

1½ Hp Fixed Speed Submersible Pump Ordering Guide

A typical turbine model designation has up to five components to define the pump being supplied as follows:

STP XXXXX Y - A - B

STP = **Basic Model Designation**

XXXXX = **Factory Installed Options** (Model designations may include one or more of the following characters in alphabetical order)

AP = Advanced Protection with powder-coated, e-coated, and stainless steel components, alcohol-gasoline compatible (up to E85, up to B20, and B100) (Note standard models up to 10% ethanol capable)

AG = Alcohol-gasoline compatible (up to E85, up to B20, and B100) (Note standard models up to 10% ethanol capable)

F = Floating suction adapter (1½" NPT female adapter)

K = Intake filter screen (IFS, factory installed to PMA)

*R = Model R check valve (24 psi relief / 22 psi reset for PLLD)

Y = **Pump Motor Horsepower Rating**

150 = 1½ hp fixed speed

A = **Model Length** (see table)

VL1 = Variable length range #1

VL2 = Variable length range #2

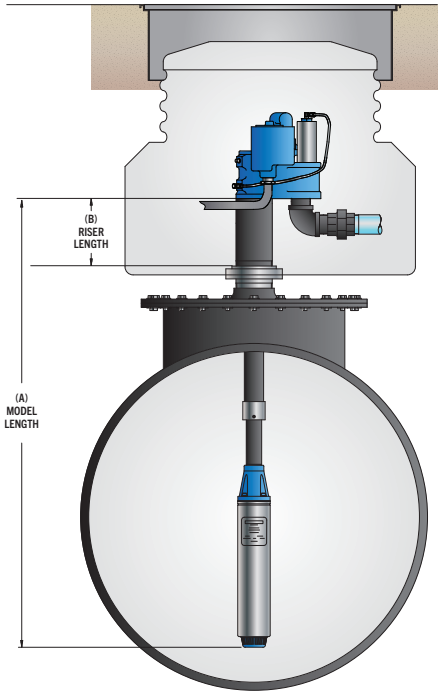
VL3 = Variable length range #3

(Note VL2 models fit 94% of all known installations)

B = **Riser Pipe Length** (see diagram)

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).

**If not otherwise specified, all STP models are supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*



Model Length (A)

STP Horsepower	Model Length Range	Model Length Designation
1½ Hp	60" – 88"	VL1
	91" – 152"	VL2
	123" – 214"	VL3
1½ Hp High Pressure	61" – 89"	VL1
	92" – 152"	VL2
	124" – 215"	VL3

ORDERING INFORMATION CONTINUED

Standard 1½ Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STP150-VL1	1½ Hp fixed speed	VL1	60" – 88"
STP150-VL2	1½ Hp fixed speed	VL2	91" – 152"
STP150-VL3	1½ Hp fixed speed	VL3	123" – 214"
STPH150-VL1	1½ Hp high pressure fixed speed	VL1	61" – 89"
STPH150-VL2	1½ Hp high pressure fixed speed	VL2	92" – 152"
STPH150-VL3	1½ Hp high pressure fixed speed	VL3	124" – 215"

Alcohol-Gas (AG) 1½ Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STPAG150-VL1	1½ Hp AG fixed speed	VL1	60" – 88"
STPAG150-VL2	1½ Hp AG fixed speed	VL2	91" – 152"
STPAG150-VL3	1½ Hp AG fixed speed	VL3	123" – 214"
STPAGH150-VL1	1½ Hp AG high pressure fixed speed	VL1	61" – 89"
STPAGH150-VL2	1½ Hp AG high pressure fixed speed	VL2	92" – 152"
STPAGH150-VL3	1½ Hp AG high pressure fixed speed	VL3	124" – 215"
STPAP150-VL1	1½ Hp fixed speed with Advanced Protection	VL1	60" – 88"
STPAP150-VL2	1½ Hp fixed speed with Advanced Protection	VL2	91" – 152"
STPAP150-VL3	1½ Hp fixed speed with Advanced Protection	VL3	123" – 214"
STPAPH150-VL1	1½ Hp high pressure fixed speed with Advanced Protection	VL1	61" – 89"
STPAPH150-VL2	1½ Hp high pressure fixed speed with Advanced Protection	VL2	92" – 152"
STPAPH150-VL3	1½ Hp high pressure fixed speed with Advanced Protection	VL3	124" – 215"

Notes:
1. STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

2. All models are supplied with a standard check valve unless factory option "R" or "W" is specified.

3. All above models require single-phase, 208-230 VAC, 60 Hz incoming power.

4. 4" riser pipe, if supplied locally, must be 4½" OD by 3/16" WT tubing.

5. For riser pipe lengths 31" to 60", additional charges apply (call Customer Service for lead times).

**Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet.*

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak

Field Installed Options

1½ Hp fixed speed specific accessories.

Model	Description
400137937	Syphon check valve, alcohol-gasoline compatible
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

¾ HP SUBMERSIBLE TURBINE PUMPS

FE PETRO® ¾ Hp fixed speed submersible pumps deliver consistent flow rates for low throughput fuels.



HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

FE PETRO® pumps are UL listed with both UL79A (up to 85% Ethanol) and UL79B (up to 20% or 100% Biodiesel).

Variable Length

The patented telescoping pump shaft lets installers adjust the length of the pump onsite for the perfect fit.

Advanced Protection

Stop corrosion in its tracks. Special powder-coated, e-coated, and stainless steel components defend your pump in the tank and in the sump from accelerated corrosion.

Turbine Pump Interface

Remote enhanced pump monitoring and control including pump-in-water automation, clogged intake escalation, tank leveling, and tank priority.

Intake Filter Screen

Avoid system damage, pumping slowdowns, and reduce filter changes by keeping harmful tank debris, sediment, and corrosion from entering the pumping system with this factory-installed option.

STANDARD FEATURES

Active Air Eliminator

FE PETRO® STPs come standard with active air elimination, which eliminates air through the highest point in the pump head at all times when the pump is running, assuring air does not pass into discharge piping.

Safety and Ease of Maintenance

FE PETRO® STPs include a contractor electrical disconnect, which requires loosening only one bolt, allowing motor wiring to be disconnected without venting the dangerous tank vapors into the sump when servicing FE PETRO® submersible products.

Simple Servicing

If ever required, the pump can be easily removed from the tank by unthreading three bolts. There is no need to disconnect the syphon system or to remove the leak detector from the system to service the STP.

Manual Pressure Relief

As a standard FE PETRO® feature, a vent screw is provided to bleed line pressure to zero when necessary. By turning this screw, product is diverted back to the tank, dropping line pressure to zero. This reduces fuel discharged into the sump manhole or dispenser pan during servicing, further protecting service technicians and the environment.

Outlast, Outperform with Franklin Electric Inside

FE PETRO® STPs are powered by the legendary Franklin Electric motor and built for long term performance. Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades. They feature best-in-class flow rates and a long history of dependability.

Quality Certification

ISO 9001:2015 certified manufacturer

SPECIFICATIONS

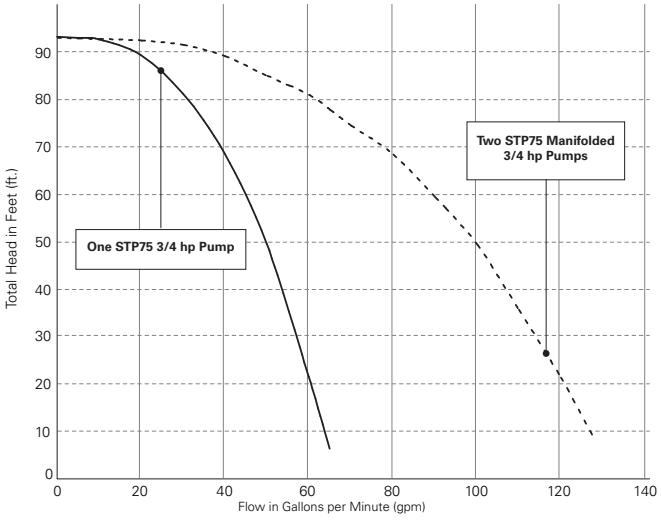
General

¾ Hp fixed speed models	Available in variable length and fixed length options
Check valve	2¾" diameter fluorocarbon seal constructed with cast aluminum body and steel backing washer
Pressure relief valve	Available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi
Syphon	Venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately
Air eliminator	Every submersible includes a tank return path with one-way check valve to provide active air elimination
Electrical disconnect	Electrical yoke for positive contractor disconnect during service
Approvals/ Certifications	- cULus listed - Consult factory for applicable approvals

Pump Motor

¾ Hp fixed speed	Fixed speed, 3450 rpm, two-stage centrifugal type pump motor with integral, automatic thermal overload protection
¾ Hp models	¾ Hp models have a max. pressure of 30 psi

¾ Hp Fixed Speed Pump Performance Chart



Note: Performance based on pumping gasoline (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STP75 models are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

Power Requirements

Incoming power	¾ hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power
⅓ and ¾ Hp fixed speed	¾ hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 15 microfarad
Single phase	SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for ⅓ and ¾ hp pump control
¾ Hp max. motor draw	7 Amps

Liquid Compatibility

Max. liquid viscosity	70 SSU at 60° F (15° C)
Standard STP	Standard STP models are UL and cUL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
STPAG/STPAP (AG compatible)	STPAG/STPAP (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
⅓ and ¾ hp fixed speed models	⅓ and ¾ hp fixed speed models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state
Wetted elastomers	All wetted elastomers are made of a high grade, fluorocarbon compound

ORDERING INFORMATION

¾ Hp Fixed Speed Submersible Pump Ordering Guide

A typical turbine model designation has up to five components to define the pump being supplied as follows:

STP XXXXX Y - A - B

STP = **Basic Model Designation**

XXXXX = **Factory Installed Options** (Model designations may include one or more of the following characters in alphabetical order).

AP = Advanced Protection with powder-coated, e-coated, and stainless steel components, alcohol-gasoline compatible (up to E85, up to B20, and B100) (Note standard models up to 10% ethanol capable)

AG = Alcohol-gasoline compatible (up to E85, up to B20, and B100) (Note standard models up to 10% ethanol capable)

F = Floating suction adapter (1½" NPT female adapter)

K = Intake filter screen (IFS, factory installed to PMA)

*R = Model R check valve (24 psi relief / 22 psi reset for PLLD)

Y = **Pump Motor Horsepower Rating**

75 = ¾ Hp fixed speed

A = **Model Length** (see table)

VL1 = Variable length range #1.

VL2 = Variable length range #2.

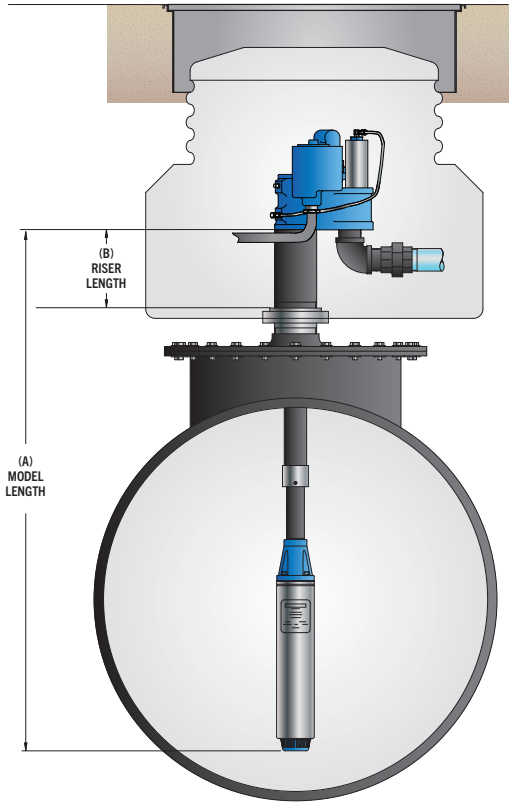
VL3 = Variable length range #3.

(Note VL2 models fit 94% of all known installations)

B = **Riser Pipe Length** (see diagram)

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).

**If not otherwise specified, all STP models are supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*



Model Length (A)

STP Horsepower	Model Length Range	Model Length Designation
¾ Hp	57" – 86"	VL1
	88" – 149"	VL2
	120" – 212"	VL3

ORDERING INFORMATION CONTINUED

Standard ¾ Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STP75-VL1	¾ Hp fixed speed	VL1	57" – 86"
STP75-VL2	¾ Hp fixed speed	VL2	88" – 149"
STP75-VL3	¾ Hp fixed speed	VL3	120" – 212"

Alcohol-Gas (AG) ¾ Hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STPAG75-VL1	¾ Hp AG fixed speed	VL1	57" – 86"
STPAG75-VL2	¾ Hp AG fixed speed	VL2	88" – 149"
STPAG75-VL3	¾ Hp AG fixed speed	VL3	120" – 212"
STPAP75-VL1	¾ Hp fixed speed with Advanced Protection	VL1	57" – 86"
STPAP75-VL2	¾ Hp fixed speed with Advanced Protection	VL2	88" – 149"
STPAP75-VL3	¾ Hp fixed speed with Advanced Protection	VL3	120" – 212"

Notes:
1. STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

2. All models are supplied with a standard check valve unless factory option "R" or "W" is specified.

3. All above models require single-phase, 208-230 VAC, 60 Hz incoming power.

4. 4" riser pipe, if supplied locally, must be 4½" OD by 3⁄16" WT tubing.

5. For riser pipe lengths 31" to 60", additional charges apply. (Call Customer Service for lead times.)

**Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet.*

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak

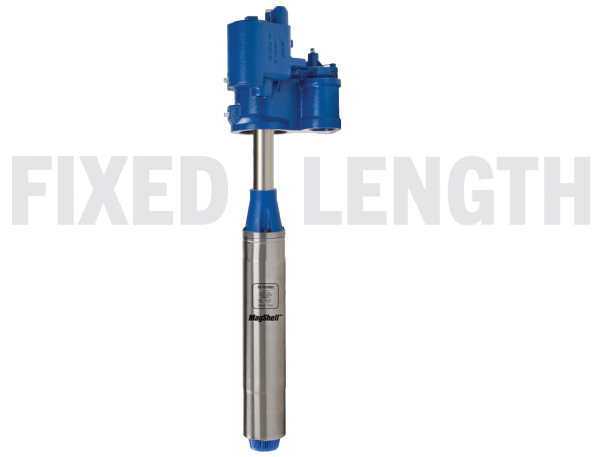
Field Installed Options

¾ Hp fixed speed specific accessories.

Model	Description
400137937	Syphon check valve, alcohol-gasoline compatible
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

FIXED LENGTH SUBMERSIBLE TURBINE PUMPS

FE PETRO® 2 Hp, 1½ Hp, and ¾ Hp fixed speed submersible pumps are available with fixed lengths.



SPECIFICATIONS

General

Check valve	2¾" diameter fluorocarbon seal constructed on cast aluminum body and aluminum backing washer
Pressure relief valve	Available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi
Syphon	Venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately
Air eliminator	Every submersible includes a tank return path with one-way check valve to provide active air elimination
Electrical disconnect	Electrical yoke for positive contractor disconnect during service
Approvals/ Certifications	- cULus listed - Consult factory for applicable approvals - Franklin Fueling Systems is an ISO 9001Certified Manufacturer

Pump Motor

Fixed speed	3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection
¾ Hp fixed speed	¾ Hp fixed speed models are available as two-stage versions
1½ and 2 Hp fixed speed	1½ and 2 Hp fixed speed models are available in standard pressure (two-stage) versions and high pressure (H option, three-stage) versions

Power Requirements

Incoming power	Fixed length, fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power
¾, 1½, and 2 Hp versions	Fixed length, fixed speed models are available in ¾, 1½, and 2 Hp versions
Fixed length, fixed speed	Fixed length, fixed speed models incorporate a starting and running capacitor with internal bleed resistor
350 volt, 15 microfarad	A 370 Volt, 15 microfarad rated capacitor is used with ⅓, ¾, and 1½ Hp fixed length, fixed speed versions
370 volt, 40 microfarad	A 370 Volt, 40 microfarad rated capacitor is used with 2 Hp fixed length, fixed speed versions
Single phase	SPGC-220 Guardian Series™ Single Phase Smart Controller and STP-CBS single-phase control boxes are available for fixed speed pump control

Liquid Compatibility

Max. liquid viscosity	70 SSU at 60° F (15° C)
Fixed length STP	Fixed length STP models are UL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
STPAG/STPAP (AG compatible)	STPAG/STPAP (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline
All fixed speed models	Fixed length models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state
Wetted elastomers	All wetted elastomers are made of a high grade, fluorocarbon compound

ORDERING INFORMATION

Fixed Length Submersible Pump Ordering Guide

A typical turbine model designation has up to five components to define the pump being supplied as follows:

STP XXXXX Y - A - B

STP = Basic Model Designation

XXXXX = Factory Installed Options

STP model designations may include one or more of the following characters in alphabetical order:

AG = Alcohol-gasoline compatible (up to E85, up to B20, and B100)

Note: Standard models up to 10% ethanol capable

F = Floating suction adapter (1½" NPT female adapter)

H = High pressure (1½ hp and 2 hp models only)

K = Intake filter screen (IFS, factory installed to PMA)

M = MagShell® (2 Hp models only)

*R = Model R check valve (24 psi relief / 22 psi reset for PLLD)

***Y = Pump Motor Horsepower Rating**

75 = ¾ Hp fixed speed

150 = 1½ Hp fixed speed

200 = 2 Hp fixed speed

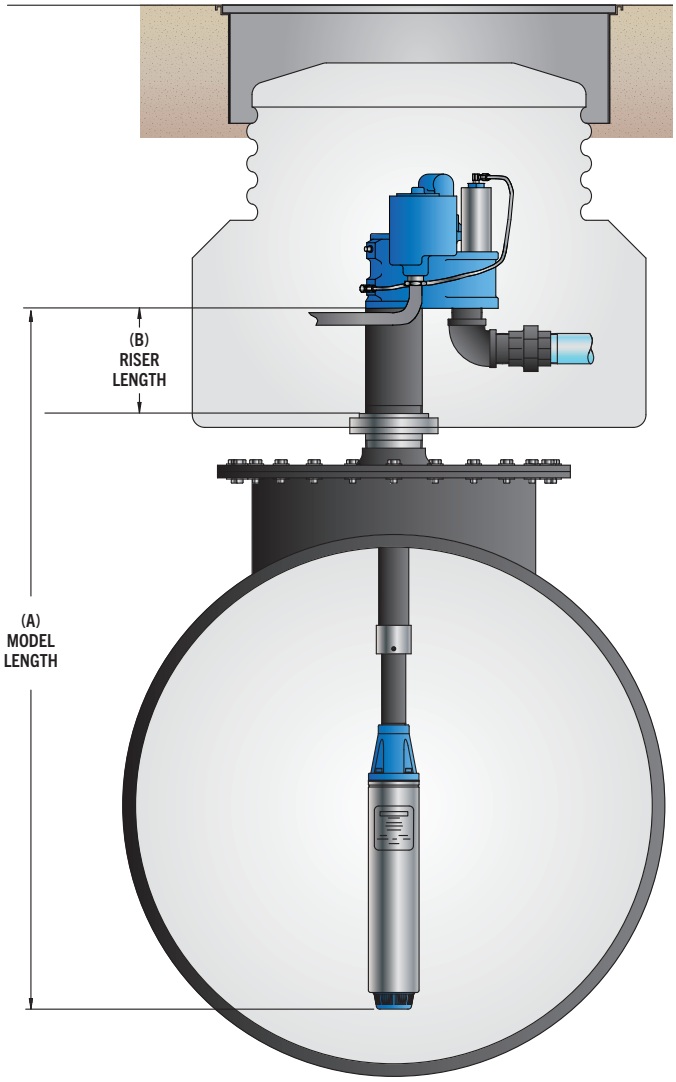
A = Model Length

Model length is expressed as three numeric characters that indicate the length of the STP from the turbine manifold bottom to the pump motor inlet in inches, available from 37" to 246" (additional charge for models 133" and longer)

B = Riser Pipe Length

Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31"or longer).

**If not otherwise specified, all STP models supplied with standard model check valve (40 psi relief / 35 psi reset for MLD, TS-LS300, and TS-LS500).*



ORDERING INFORMATION CONTINUED

Fixed Length Submersible Turbine Pumps

Model	Description	Model Length* Range
STP75	¾ Hp fixed speed	37" – 132"
STP150	1½ Hp fixed speed	
STPH150	1½ Hp high pressure fixed speed	
STPM200	2 Hp fixed speed with MagShell®	
STPHM200	2 Hp high pressure fixed speed with MagShell®	

Notes:
1. Remove "M" from model number for non-MagShell® pump motor assembly.
2. STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
3. All models are supplied with a standard check valve unless factory option "R" or "W" is specified.
4. All above models require single-phase, 208-230 VAC, 60 Hz incoming power.
5. 4" riser pipe, if supplied locally, must be 4½" OD by 3/16" WT tubing.
6. For riser pipe lengths 31" to 60", additional charges apply (call Customer Service for lead times).
**Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet. Model length (A) can be a minimum of 37" to a maximum of 211". Adder (p/n 400326912) applies if model length is 133" to 180" (charge is for boards to protect STP shipment). Adder (p/n 400326917) applies if model length is 181" to 211" and (p/n 400389112) applies if model length is 212" to 246" (additional charge is for crating to protect the STP).*

Factory Installed Options

Model	Description
AG	Alcohol-gasoline compatible
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen), factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak

Field Installed Options

Model	Description
400137937	Syphon check valve, alcohol-gasoline compatible
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

REPLACEMENT PARTS & ACCESSORIES

The rock solid design of FE PETRO® pumps has remained virtually unchanged since day one, meaning we can, and still do, service our pumps installed since 1988 with backward compatibility.



ORDERING INFORMATION



Replacement Pump Motor Assemblies*

Model	Description
PMA33	⅓ Hp pump motor assembly (16" long)
PMA75	¾ Hp 18¼" pump motor assembly (18¼" long)
PMA150	1½ Hp pump motor assembly (21" long)
PMAH150	1½ Hp high pressure pump motor assembly (21¾" long)
PMA200	2 Hp pump motor assembly (23¾" long)
PMAM200	2 Hp pump motor assembly with MagShell® (23¾" long)
PMAH200	2 Hp high pressure pump motor assembly (24½" long)
PMAHM200	2 Hp high pressure pump motor assembly with MagShell® (24½" long)



Replacement Gasoline Motor Assemblies*

Model	Description
PMAAG33	⅓ Hp AG pump motor assembly (16" long)
PMAAG75	¾ Hp AG pump motor assembly (18¼" long)
PMAAG150	1½ Hp AG pump motor assembly (21" long)
PMAAGH150	1½ Hp AG high pressure pump motor assembly (21¾" long)
PMAAG200	2 Hp AG pump motor assembly (23¾" long)
PMAAGM200	2 Hp AG high pressure pump motor assembly with MagShell® (23¾" long)
PMAAGH200	2 Hp AG high pressure pump motor assembly (24½" long)
PMAAGHM200	2 Hp AG high pressure pump motor assembly with MagShell® (24½" long)



Replacement Variable Speed Pump Motor Assemblies*

Model	Description
PMAMVS2	2 Hp variable speed pump motor assembly with MagShell® (20" long)
PMAAGMVS2	2 Hp AG variable speed pump motor assembly with MagShell® (20" long)
PMAMVS4	4 Hp variable speed pump motor assembly with MagShell® (25" long)
PMAAGMVS4	4 Hp AG variable speed pump motor assembly with MagShell® (25" long)



4" STP Extractable Sections (Less Manifold, Riser, and PMA)

Model	Description
STPEXT-XXX	Fixed length extractable (XXX indicates model length, p/n 400394901) **
STPAGEXT-XXX	AG Fixed length extractable (XXX indicates Model Length, p/n 400394905) **
STPEXT-VL1	Variable length #1 extractable (p/n 402074901)
STPEXT-VL2	Variable length #2 extractable (p/n) 402075902)
STPEXT-VL3	Variable length #3 extractable (p/n 402075903)
STPAGEXT-VL1	AG variable length #1 extractable (p/n 402201902)
STPAGEXT-VL2	AG variable length #2 extractable (p/n 402202902)
STPAGEXT-VL3	AG variable length #3 extractable (p/n 402203902)
STPAPEXT-VL1	AP variable length #1 extractable (p/n 403614901) ***
STPAPEXT-VL2	AP variable length #2 extractable (p/n 403614902) ***
STPAPEXT-VL3	AP variable length #3 extractable (p/n 403614903) ***

Note: Remove "M" from model number for non-MagShell® pump motor assemblies.
** For pump motor assemblies (PMAs) with floating section adapters (1½" NPT female connections), specify "F" in the number; adder charge applies when ordering PMA. For PMAs with intake filter screen, specify "K" in the model number; adder charge applies when ordering PMA.*

***Model length (XXX) defined as the dimension form turbine manifold bottom to pump motor inlet. Model length (A) can be a minimum of 37' to a maximum of 211", Fixed Length adders apply for Extractable Model Lengths 133" and longer (please call Customer Service for lead times of Extractables with a model length of 181" and longer).*

****Please call Customer Service for lead times of AP Extractables.*

ORDERING INFORMATION CONTINUED

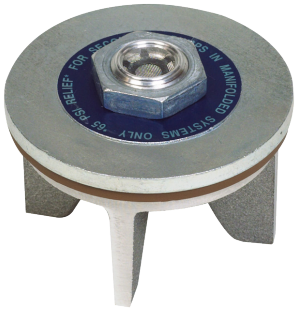
Intake Filter Screen

An Intake Filter Screen (IFS) provides fuel filtration for the entire system down to about the size of a grain of sand (0.009" openings). It's designed to keep harmful debris, sediment, and tank corrosion from entering the pumping system and creating service events including dispenser filter changes. Mounts to FE PETRO® or competitive 4" pump motor end bell and only adds about 1" to assembly length.



Model	Description
400660901	Intake filter screen, single pack
400660912	Intake filter screen, 12-pack carton

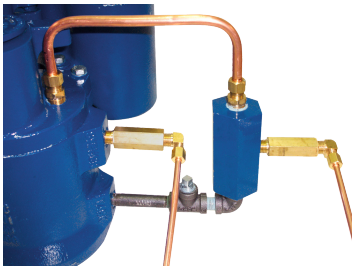
Check Valves



Model	Description
400988934	Standard check valve, AG compatible
400988935	Model R check valve (for Veeder-Root® PLLD), AG compatible
402459931	Model 65 psi check valve (for secondary manifolded STPs with Veeder-Root® PLLD), AG compatible

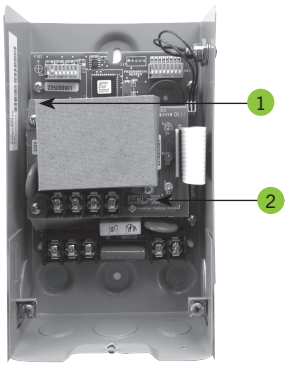
Secondary Syphon Kit

For use when two syphon primers are required for one 4" STP. Not available factory installed.



Model	Description
402507930	Secondary syphon kit (when two syphon primes are required for one STP)

STP-SCI Single Phase Smart Controller



Item	Model	Description
1	225000930	SCI lower board control
2	225005930	SCI upper board relay

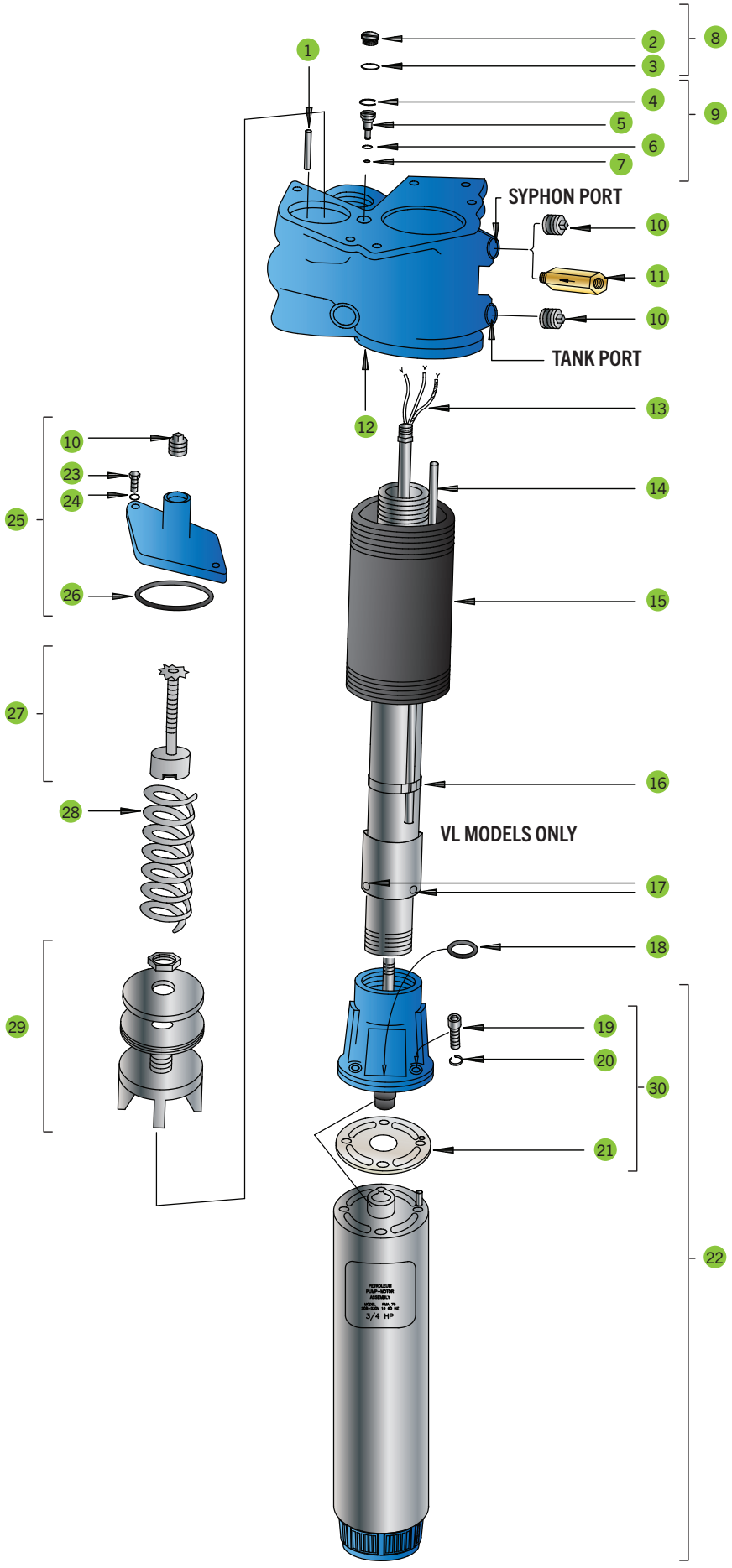
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ORDERING INFORMATION CONTINUED

PMA, Riser, and Check Valve for Variable Length and Fixed Length Pumps

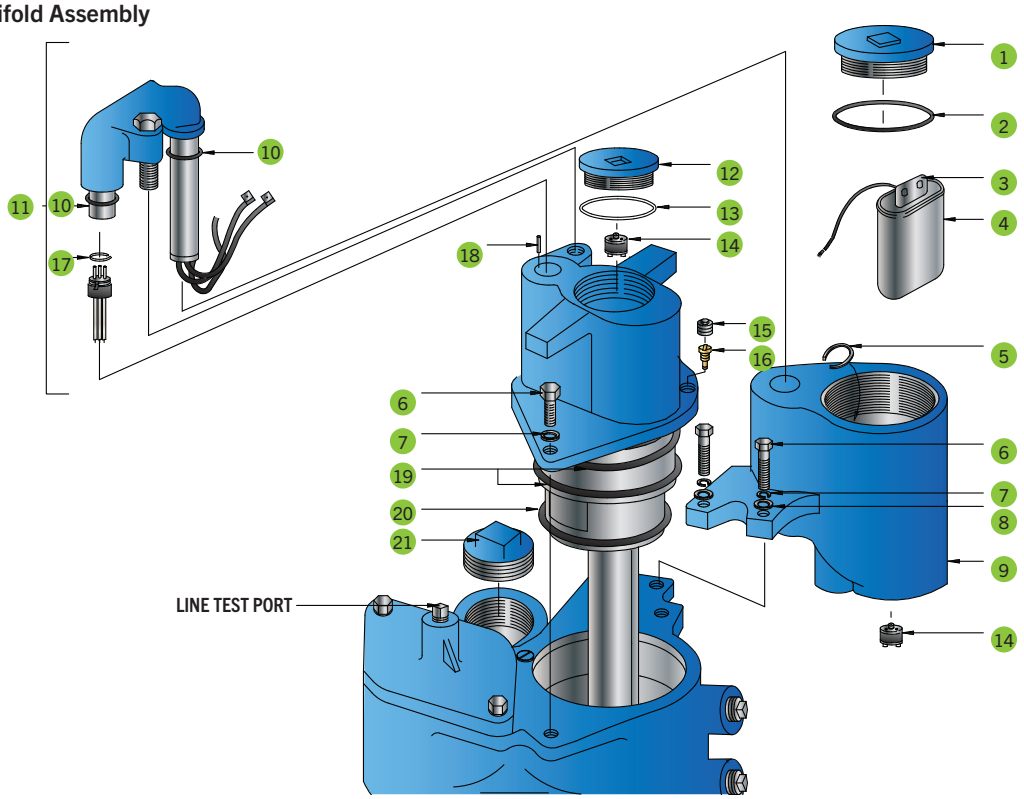
Use the parts drawing on the following page.

Item	Model	Description	Qty
1	400125001	3/16" × 1 5/8" spiral pin	1
2	400615001	Manual relief plug (400615002 AG compatible)	1
3	400211114	O-ring, MPR plug	1
4	400627001	Retaining ring, MPR	1
5	400616001	Manual relief screw (400616002 AG Compatible)	1
6	400333012	Relief screw, top O-ring	1
7	400333007	Relief screw, bottom O-ring	1
8	400628901	Manual relief plug assembly, includes items #2 and #3 (400628902 AG compatible)	1
9	400629901	Manual relief screw assembly, includes items #4, #5, #6, and #7 (400629902 AG compatible)	1
10	400259001	¼" NPT pipe plug, may be purchased locally	3
	403499001	¼" NPT pipe plug, may be purchased locally (stainless steel, for AP models)	
11	400137937	Syphon check valve	-
12	400221930	Discharge manifold, includes #1, #8, #9, and two #10	1
	400221931	Discharge manifold (includes item #1, #8, #9, and #10) (for AP models)	-
13	151213930 151213932	156" lead assembly 240" lead assembly	1
14	Purchase locally	Stationary vapor tube, 3/8 OD × 7/20 WT	-
15	4001689XX (XX = length)	Riser, 4½" OD × 3/16" WT steel tubing (consult factory for lead times for 31"-60" lengths) 7" - 19" 20" - 30" 31" - 49" 50" - 60"	1
	4035229XX (XX = length)	Riser, 4½" OD × 4.12" ID (stainless steel, for AP models) consult factory for lead time 7" - 19" 20" - 30" 31" - 49" 50" - 60"	
16	Purchase locally	½" steel banding (stainless steel for AP models)	-
17	400600002	5/16-24 × 7/16" set screw for variable lengths only	3
	403432002	5/16-24 × 7/16" set screw for VL models only (stainless steel, for AP models)	-
18	400333015	Lead assembly O-ring	4
19	400264009	5/16-18 × 1⅛" socket head cap screw, may be purchased locally	4
	403506001	5/16-18 × 1⅛" socket head cap screw, may be purchased locally (stainless steel, for AP models)	
20	400263004	5/16" high-collar lock washer, may be purchased locally	1
	403505001	5/16" high-collar lock washer, may be purchased locally (stainless steel, for AP models)	
21	403403001	PMA gasket (403403002 AG/AP compatible)	1
22	PMA XXX	Pump motor assembly, includes item #30 (XXX indicates options and horsepower)	1
23	400981001	3/8-16 × 1" Hex head screw	2
	403504001	3/8-16 × 1" Hex head screw (stainless steel, for AP models)	
24	400285002	3/8" standard lock washer, may be purchased locally	2
	1117703	3/8" standard lock washer (stainless steel, for AP models)	
25	400197930	Manifold assembly cover, includes #10, #26, two #23, and two #24	1
	400197931	Manifold Assembly Cover (includes item #10, #23, #24, and #26 for AP models)	
26	400333238	O-ring, manifold cover (AG compatible)	1
27	400147930	Clamp valve assembly (AG compatible)	1
28	400174930	Check valve spring	1
29	400988934 400988935 400988936 402459931	Standard check valve, includes item #26 (AG compatible) Model R check valve, (for Veeder-Root™ PLLD) includes item #26 (AG compatible) Model W check valve, (for Red Jacket PPM4000) includes item #26 (AG compatible) Model 65 psi check valve, AG compatible (for secondary manifolded STPs with Veeder-Root™ PLLD)	1
30	152350902	PMA hardware pack, includes #21, and four #19 and #20 (152350904 AG compatible)	-
--	400216905	AG compatible O-ring kit, includes items #3, #6, #7, and #26 on this page and items #2, #10, #13, #19 and #20 on the Discharge Manifold Assembly page	-


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SYPHON PORT
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ORDERING INFORMATION CONTINUED

Discharge Manifold Assembly



Item	Model	Description	Qty.
1	400192930	Junction box cover, includes item #2	1
	400192931	Junction box cover, includes item #2 (for AP models)	
2	400210233	O-ring, junction box cover	1
3	400655001	Capacitor boot	1
4	400170931	Capacitor assembly for ⅓ to 1½ hp, 60 Hz, 15µfd, 370 Volt single-phase; includes one black lead	1
	400170934	Capacitor assembly for 2 hp, fixed speed, 60 Hz, 40µfd, 370 Volt single-phase; includes one black lead	
5	400257001	Retaining ring, Female connector	1
6	400258002	⅜-16 × 1¼" Hex head bolt, may be purchased locally	4
	602011016	⅜-16 × 1¼" Hex head bolt (stainless steel, for AP models)	
7	400285002	⅜ standard lock washer, may be purchased locally	4
	1117703	⅜ standard lock washer (stainless steel, for AP models)	
8	400280001	⅜ standard flat washer, may be purchased locally	2
	403500001	⅜ standard flat washer (stainless steel, for AP models)	
9	400651930	Junction box assembly, includes two #6, #7, and #8	1
	400651931	Junction box assembly (includes item #6, #7, and #8, for AP models)	
10	400210212	O-ring, Female connector	2
11	400200930	Wire connector kit, includes male/female connectors, two #10, one #5, and #18	1
	400200931	Wire connector kit, includes male/female connectors, two #10, one #5, and #18 (for AP models)	
12	400589930	Cover, includes item #13	1
--	400589931	Cover, includes item #13 (for AP models)	
13	400210229	O-ring	1
14	400236903	Contractor's plug, 4-wire	2
15	400259002	⅜" NPT pipe plug, may be purchased locally (403499002, stainless steel for AP models)	1
16	400562901	Syphon jet assembly (400562903 AG compatible)	1
17	400249001	Retaining ring	1
18	400250002	⅛" dia. × ½" roll pin	1
19	400333343	AG compatible O-ring, extractable (upper, large)	2
20	400333340	AG compatible O-ring, extractable (lower)	1
21	400259005	2" NPT square head plug	1
	403499003	2" NPT square head plug (stainless steel, for AP models)	

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