

PRODUCT CATALOG 2020/2021







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THE ALL NEW FFS PRO® ADVANTAGE

Get all of your vital ordering information with the newly enhanced and userfriendly FFS PRO[®] Advantage distributor order management and tracking tool.

CORROSION CONTROL SYSTEM

Attack corrosion before it has a chance to develop with the fully integrated in-tank and in-sump Corrosion Control[™] System.

See the system in action at go.franklinfueling.com/corrosion

DEFENDER s e r i e s

Superior quality, safe servicing, minimal maintenance. The new Defender Series[®] P/V Vent with In-Line Vent delivers precision regulation of storage tank pressure for the long-haul.

Check it out at go.franklinfueling.com/pv

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Franklin Fueling Systems

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Defender Series PV Vent.png

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BUTOR SOURCE PORTAL



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Defender Series PV Vent with In-Line Vault.mp4



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Defender Series PV Vent Rain Cap.png



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Any ATG. Any device. Anytime. Anywhere.



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Store: #908 ATG: EVO 200 Tank #3 27%-

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DISPLAY CONDITIONS

IdLE - POWER ON (PUMP OFF) UL - UNDERLOAD (DRY RUN) Lr - LOCKED ROTOR (AT STARTUP) OL - OVERLOAD (WHILE RUNNING) LI - LOW INCOMING (UNDER VOLTAGE) HI - HIGH INCOMING (OVER VOLTAGE) run - PUMP RUNNING OC - OPEN CIRCUIT unc - UNCALIBRATED CAL - CALIBRATING Er - EXTENDED RUN rEL - RELAY FAULT



A major leap forward in submersible turbine control.

Check out more at go.franklinfueling.com/guardian



Order online at franklinfueling.com/LIT

SUBMERSIBLE PUMPING SYSTEMS

With industry-leading fuel dispensing rates, premium efficiency, and unmatched reliability, FE PETRO[®] brand submersible pumping systems are known throughout the world as the industry's preferred fueling solution. High performance submersible pumps, controls, and leak detectors provide the total solution for safely pumping fuel from the tank to the dispenser.

SERVICE STATION HARDWARE

From grade level to the tank, the Defender Series[®] is your site's first line of defense against fuel overfills and spills. With both grade level and below grade spill container options and a highly versatile overfill prevention valve, the Defender Series[®] delivers a complete fuel delivery package. The line is rounded out with a full offering of shear valves, flexible connectors and tank access covers, making Franklin a one-stop-shop for tank trim and hardware.

PIPING AND CONTAINMENT

Underground and aboveground containment products including pipe, fittings, sumps, and entry seals. Franklin Fueling Systems provide pipework solutions for diverse site needs including the APT® XP flexible pipe system and the UPP® electrofusion pipe system. Whether you require product or vent piping, fiberglass or polyethylene sumps, Franklin has the solution to fit any scenario.

DISPENSING SYSTEMS

HEALY[®] brand Stage II Vapor Recovery systems offer the industry's leading vacuum-assisted solution for the recovery of vapors at the dispensing point. Our complete line of FLEX-ING[®] brand hoses include solutions for any application including conventional, vapor recovery, and specialty.

FUEL MANAGEMENT SYSTEMS

Your business depends upon managing fuel inventory safely, profitably, and within compliance standards. Franklin Fueling Systems line of EVO[™] fuel management controls represent the state-of-the-art engineered solutions you need, backed by the global experience of the INCON[™] brand. Our full-line fuel management system includes; tank gauges, electronic line leak detection, magnetostrictive probes, and remote monitoring software, along with a full array of ancillary items to provide your complete solution.

TANK TRANSPORT SYSTEMS

Franklin Fueling Systems Tank Transport Systems product line is comprised of an extensive line of products for both loading and off-loading applications. Connecting to loading terminals and underground storage tanks is made easy with a broad line of FFS adapters, elbows, and valves. FFS has the solution to handle any product drop or vapor recovery situation. Preventing overfills at the loading rack is a top priority to any transporter. The FFS Optic Control Overfill Protection System (OCS) is designed to prevent such overfills and is compatible with all existing racks and monitors. Specialty items including Pressure Relief Valves, Hose Tube Doors, and Side Seal Adapters complement the system. Each component of the Tank Transport System is designed and manufactured to work in even the toughest of environments.

CORROSION CONTROL" SYSTEM

Water and moisture are key contributors to accelerated corrosion. Accelerated corrosion can result in severely inhibited fuel system functionality, difficulty in performing maintenance, and even system failure. As the industry's first complete in-tank and in-sump corrosion solution, the Corrosion Control[™] System not only detects the corrosion contributors, but it also removes the corrosion-causing water and moisture.

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Fuel Management Systems

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Six-Way Air Interlock Valves Parts List

Air Interlock with Limit Switch Parts List

Air Interlock with Limit Switch

SUBMERSIBLE PUMPING SYSTEMS

SUBMERSIBLE PUMPING SYSTEMS

- 1 Submersible turbine pumps
 - a. Variable speed submersible pumps
 - b. Fixed speed submersible pumps (2 hp, 1½ hp, 1/3 hp, ¾ hp)
 - c. Fixed and variable length
 - d. High capacity submersible pumps and controllers (3 hp and 5 hp)
- 2 Mechanical leak detectors
- Oispenser hook isolation controller
- 4 Single-phase control box
- 5 Single-phase smart controller
- 6 MagVFC[™] variable frequency controller







SUBMERSIBLE TURBINE PUMP ORDERING GUIDE



- 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.

SUBMERSIBLE TURBINE PUMPS



SUBMERSIBLE TURBINE PUMPS



ONLY FE PETRO®

FE PETRO® brand submersible pumping systems set the standard for performance, efficiency, and safety. Check out its unique set of system features.



VARIABLE SPEED

With faster fill times during peak hours and power savings during non-peak hours, FE PETRO® 2 hp and 4 hp variable speed submersible pumping systems allow you to maximize profits while mitigating operating expenses.

HIGHLIGHTS

- 2 hp variable speed systems provide faster flow rates compared to fixed speed systems for virtually the same total cost of ownership.
- Variable speed systems ramp pressure up and down for a consistent user experience and prevent system wear from line shock.



THE MAGSHELL®

It's always been about filling cars faster. The patented MagShell[®] is designed to do just that. By expanding the pump motor shell, the MagShell[®] increases the area for product flow by 45%.

HIGHLIGHTS

- The additional flow capability is equivalent to having one more nozzle operating during peak hours.
- Faster throughput during peak hours equates to greater fuel sales potential.
- Customers know which stations provide faster refueling.



FUEL COMPATIBILITY

Market demands for alternative fuel compatibility continue to change. As standards change, FE PETRO® systems are at the forefront, gaining the new approvals our customers need.

HIGHLIGHTS

- FE PETRO® systems are UL listed with both UL79A (up to 85% ethanol) and UL79B (up to 20% or 100% Biodiesel).
- Compatibility upgrades for FE PETRO[®] systems are built within the framework of the standard design, meaning no need to stock duplicate items for common service parts.



EASY REPLACEMENT

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.

HIGHLIGHTS

- Upgrade from fixed speed to variable speed with complete and cost-effective MagShell[®] equipped variable speed conversion kits.
- 2 hp fixed speed pump motor assemblies available with MagShell® in both standard and high pressure models to easily upgrade your existing STP.

THE MAGSHELL®

Maximize your flow rate capabilities and your potential throughput and profits. Check out these benefits only available from an FE PETRO® MagShell®.



FASTER BY DESIGN

Available on FE PETRO[®] brand 2 hp and 4 hp models, a MagShell[®] expands the pump motor shell to increase the flow area around the motor by 45%.

HIGHLIGHTS

- The expanded flow area creates significantly higher flow rates compared to a traditional pump motor shell.
- This additional flow capability is equivalent to having one more nozzle open during peak operating times.



HIGH FLOW RATES - FAST FILL TIMES

A 4 hp variable speed STP with MagShell® provides the highest flow rates of any single 4" submersible turbine pump available on the market today.

HIGHLIGHTS

- Faster throughput during peak operating times equates to greater fuel sales potential.
- In our fast-paced world, customers know which stations provide faster refueling during peak hours.



OUTLAST, OUTPERFORM

With an all stainless steel shell construction powered by the legendary Franklin Electric motor, MagShell[®] equipped STPs are built for long term performance.

HIGHLIGHTS

- Franklin Electric-powered submersible pumps provide maximum uptime and a proven track record in the fueling industry that spans more than four decades.
- Best-in-class flow rates and a long history of dependability.



TIME TO MAKE THE UPGRADE

Both FE PETRO® and competitive models of submersible pumps can easily be upgraded with a MagShell® to achieve higher flow rates and faster fill times at existing sites.

HIGHLIGHTS

- Upgrade from fixed speed to variable speed with complete and cost-effective MagShell[®] equipped variable speed conversion kits.
- 2 hp fixed speed pump motor assemblies available with MagShell[®] in both standard and high pressure models to easily upgrade your existing STP.

VARIABLE SPEED

Check out these benefits only FE PETRO[®] brand variable speed submersible turbine pumps (STPs), the industry's highest performing 4" diameter STPs, can provide.



HIGHER FLOW RATES

The MagVFC[™] variable speed controller ramps the STP up and down as needed to provide optimal flow rates at fueling points. The result is a more consistent customer experience.

HIGHLIGHTS

- Faster, more consistent flow rates than fixed speed systems for higher throughput at virtually the same total cost of ownership.
- Ramping up and down of pressure makes nozzles easier to squeeze and helps reduce overall system wear.



EFFICIENT

CONSUMPTION

Because a variable speed

necessary power to achieve

system only consumes as

much energy as is needed.

• Energy savings during

non-peak business

• Potential for reduced

sacrificing a faster

customer fueling

a transducer or

special wiring.

energy costs without

experience and without

hours and increased

flow during peak hours.

system is constantly

desired flow rates, the

HIGHLIGHTS

providing only the

ENERGY



MEET YOUR FLOW RATE NEEDS

A variable speed STP can be adjusted at installation to perform at a maximum per-nozzle flow rate of 10 gpm (38 lpm) based on your piping and dispensing system.

HIGHLIGHTS

- Depending on peak business requirements, choose from either 2 hp or 4 hp models to meet your needs.
- 2 hp STPs provide constant 10 gpm (38 lpm) for up to eight fueling positions operating simultaneously.
- 4 hp STPs provide constant 10 gpm (38 lpm) for up to 12 fueling positions operating simultaneously.



MINIMIZE HYDRAULIC HAMMER

Hydraulic hammer is a sudden pressure spike resulting from a stoppage in flow in a pressurized piping system. This can be exaggerated in fixed speed systems.

HIGHLIGHTS

- A variable speed STP will ramp up and down to provide only the pressure needed to meet demand and significantly minimize the effects of hydraulic hammer.
- Hydraulic hammer may result in system fatigue and intensified wear to system components.

SUBMERSIBLE TURBINE PUMPS



VARIABLE FREQUENCY CONTROL TECHNOLOGY

Introduced in 1995, FE PETRO[®] brand variable speed submersible turbine pumps (STPs) were the first of their kind for the petroleum equipment industry. With faster fill times during peak hours and power savings during non-peak hours, FE PETRO[®] brand variable speed STPs allow you to maximize profits while minimizing operating expense. These benefits are something only FE PETRO[®] brand variable speed STPs, the industry's highest performing 4" diameter STPs, can provide.



HIGHLIGHTS

Higher Flow Rates

Variable speed systems ramp up the system's horsepower as needed to provide optimal flow rates at fueling points. This results in faster and more consistent flow rates at peak business times compared to fixed speed systems. Benefits include:

- Faster and more reliable flow rates than fixed speed systems resulting in higher throughput at virtually the same total cost of ownership.
- Ramps pressure up and down making nozzles easier to squeeze for consistent customer user experience.
- Ramping up and down reduces system wear from line shock, promoting a longer overall system lifetime.

Efficient Energy Consumption

Because a variable speed system is constantly providing only the necessary horsepower to achieve desired flow rates, the system only consumes as much energy as is needed. Benefits include:

- Energy savings during non-peak business hours and increased flow during peak hours.
- Potential for reduced energy costs without sacrificing a faster customer refueling experience.

Minimize Hydraulic Hammer

Hydraulic hammer is defined as a sudden pressure spike that is the result of a sudden stoppage in flow in a pressurized piping system. Hydraulic hammer can be exaggerated in a system that utilizes a high pressure fixed speed STP.

- A fixed speed pumping system is incapable of changing the flow rate dependent upon demand and as a result, hydraulic hammer is likely to result when flow is interrupted.
- Hydraulic hammer may result in system fatigue and intensified wear to system components such as diaphragm valves in multi-product dispensers, leak detectors or hanging hardware.
- A variable speed STP will ramp up and down to provide only the pressure required to meet demand, significantly minimizing the effects of hydraulic hammer.

Meet Your Flow Rate Needs

The STP can be adjusted at installation to perform at a maximum per-nozzle flow rate of 10 gpm (38 lpm) based on the specifications of your piping and dispensing system.

- Depending on peak business requirements, choose from either 2 hp or 4 hp variable speed models to meet your desired flow rates.
- 2 hp pumps provide constant 10 gpm (38 lpm) for up to eight fueling positions operating simultaneously.
- 4 hp pumps provide constant 10 gpm (38 lpm) for up to 12 fueling positions operating simultaneously.

HIGHLIGHTS CONTINUED

MagVFC[™] Variable Frequency Controller

Variable speed pumps are controlled by the MagVFC[™] variable frequency controller which provides control for both 2 hp and 4 hp variable speed STPs. Features include:

- Faster fill times during peak hours and power savings during non-peak hours.
- Control is determined through the PMA power consumption, eliminating the need for a transducer or special wiring.
- Setup selections include 2 hp or 4 hp, MLD or PLLD, gas or diesel, and Master-Slave, alternating circuit manifolded pump control options.
- Capable of networking with INCON™ fuel management systems for enhanced pump control capabilities.

Diagnostic Fault Detection

The MagVFC[™] variable frequency controller features a dual 7-segment display that displays running status and fault codes. A fault history on the controller also provides an enhanced troubleshooting process with faults like:

Fault Detection Display Codes

U		UL	=	Underload: Dry run or blocked PMA intake
		LI	=	Low Incoming: Input power under voltage
	,	Lr	=	Locked Rotor: Overloaded while PMA is running
	U	LU	=	Locked Up: Overload at PMA startup
5	C	SC	=	Short Circuit: Short typically from controller to PMA
5	U	SU	=	Shorted Upper: Short typically in controller
0	C	OC	=	Open Circuit: Broken connection to PMA
E	,	Er	=	Extended Run: No power change for 60 minutes
H	0	НО	=	Hot Operation: Excessive controller temp / fan protection



SPECIFICATIONS

- Variable speed models are available in variable lengths only.
- Check valve: 2³/₄" 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.

Pump Motor

- 2 hp or 4 hp, variable speed, two-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- Max. pressure: selectable operating pressure on MagVFC[™] between 24 psi and 42 psi deadhead.
- Available with MagShell[®] which results in 45% increased flow area around motor.

Approvals

- cULus listed.
- Consult factory for applicable approvals.

Power Requirements

- Variable speed pumps can only be controlled by a MagVFC[™] variable frequency controller:
- VS2 models can operate with single- or three-phase incoming power supply to the MagVFC[™].
- VS4 models require three-phase incoming power supply to the MagVFC[™] for proper operation.
- Incoming power supply to the MagVFC[™] can be 200-250 VAC, 50 or 60 Hz.
- MagVFC[™] outputs a three-phase, variable frequency signal, valid for FE PETRO[®] variable speed pumps only.
- MagVFC[™] max. line draw: 20 Amps.

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- 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.
- IST 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.
- 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.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.



Note: 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 MagVFC with single or three phase incoming power.



Note: Performance based on pumping gasoline (0.76 specific gravity). Pressure is taken at the manifold discharge outlet. ISTMVS4 and STPMVS4 turbines can only be powered by a MagVFC with three phase incoming power

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ORDERING INFORMATION

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).

YYYYY = Factory Installed Options

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

F = Floating suction adapter (11/2" 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)

Z = Pump Motor Horsepower Rating

VS2** = 2 hp variable speed

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).

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.



Model Length (A)

STP Horsepower	Model Length Range	Model Length Designation
	59" - 87"	VL1
2 hp	90" - 151"	VL2
	122" - 213"	VL3
	64" - 92"	VL1
4 hp	95" - 156"	VL2
	127" - 218"	VL3

ORDERING INFORMATION CONTINUED

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"
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"

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"
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"

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 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" or "W" is specified.

5. All above models can only be powered by a MagVFC[™]. 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 $4\,\rlap{l}_2"$ 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, 11/2" 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
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

Intelligent submersible turbine pump specific accessories.

Model	Description
5874202800	MagVFC™, 2 hp or 4 hp variable frequency controller, one required per STPM VS2 or VS4
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STPM VS2 or VS4)
402459931	Model 65 psi check valve AG compatible, (for slave 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

VARIABLE SPEED CONVERSION KITS

With variable speed conversion kits you can achieve higher, consistent flow rates, in turn boosting your profits, while eliminating the wear and tear hydraulic hammer can cause. Installation is easy with a variable speed pump motor assembly, MagVFC[™] variable frequency controller and four-wire contractor's plug. All-in-one variable speed kits are compatible with both FE PETRO® brand 4" submersible turbine pumps as well as other competitive systems. The MagVFC[™] works with the existing system to increase flow as more fueling points go live, delivering the flow you need as you need it. Your customers will know the difference between sites that provide steady flow and faster fueling during peak business hours and those sites that don't.

ORDERING INFORMATION

Model	Description	
402671901	Kit with 4 hp variable speed non-MagShell® (PMA VS4)	
402671907	Kit with 4 hp variable speed with MagShell (PMA MVS4)	
400693907	Kit with 2 hp variable speed with MagShell (PMA MVS2)	
400693901	Kit with 2 hp variable speed non-MagShell® (PMA VS2)	
400693905	Kit with AG compatible 2 hp variable speed non-MagShell® (PMAAGVS2)	
400693906	Kit with AG compatible 2 hp variable speed with MagShell® (PMAAGMVS2)	
402671905	Kit with AG compatible 4 hp variable speed non-MagShell® (PMAAGVS4)	
402671906	Kit with AG compatible 4 hp variable speed with MagShell® (PMAAGMVS4)	
Note: Kite include veriable append nump mater accomply. Mag//ECTM veriable fraguency controller, four wire		

Note: Kits include variable speed pump motor assembly, MagVFC[™] variable frequency controller, four-wire contractor's plug and installation instructions. For upgrade of older competitive 4" submersible turbine pumps, additional parts may be required.





2 HP FIXED SPEED SUBMERSIBLE TURBINE PUMPS

Marketers concerned about fueling times, efficiency, serviceability, reliability, and overall quality find it an easy choice to specify FE PETRO® brand submersible turbine pumps (STPs). An STP has to be reliable, it has to be safe, and it has to perform. That's why thousands of station owners around the world have trusted FE PETRO® STPs and the Franklin Electric motors that drive them to keep their business flowing for over 25 years. With best-inclass flow rates and backed by a long history of dependability, FE PETRO® STPs simply do their job without fail, delivering fuel to customers day after day without a hitch.

HIGHLIGHTS

Faster Fueling Times

Available on FE PETRO[®] brand 2 hp models, a MagShell[®] expands the pump motor shell to increase the flow area around the motor by 45%. The expanded flow area creates significantly higher flow rates compared to a traditional pump motor shell. This additional flow capability is equivalent to having one more nozzle open during peak operating times.

Active Air Eliminator

FE PETRO® brand 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® brand 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.

Reliable Check Valve

The STP uses the proven FE PETRO[®] line check valve. At 2¾[#] in diameter, this valve reduces pressure loss at high flow rates, resulting in faster fueling times. FE PETRO[®] line check valves are offered in multiple configurations to best suit your line leak application.

Variable Length

The VL2 pump fits 94% of all known tank diameters and tank bury depth combinations. The VL1 and VL3 are available to handle installations shorter or longer than this range. The telescoping connection is a patented FE PETRO[®] feature. Pump length can be set by making one simple measurement and setting the pump length without affecting the UL listing.

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.

Franklin Fueling Systems

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SPECIFICATIONS

- 2 hp fixed speed models are available in variable length and fixed length options.
- Check valve: 2³/₄" 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.

Pump Motor

- 2 hp fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- Standard pressure (M200, two-stage) model, max. pressure = 36 psi.
- High pressure (HM200, three-stage) model, max. pressure = 45 psi.
- Available with MagShell® for 45% increased flow area around motor.

Approvals/Certifications

- cULus listed.
- Consult factory for applicable approvals.

Performance



Power Requirements

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

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- 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 (AG compatible) 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.
- 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.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer



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

ORDERING INFORMATION

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.)

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).

Notes: *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
2 hp High Pressure	63" - 92"	VL1
	94" - 154"	VL2
	126" - 218"	VL3

ORDERING INFORMATION CONTINUED

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"

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 41/2" 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.

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 11/2" NPT female, must be factory installed
К	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

2 hp fixed speed specific accessories.

Model	Description
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STP)
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312921	STP-DHI-SCI, combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for slave of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100215	STP-SCI, single-phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

11/2 HP FIXED SPEED SUBMERSIBLE TURBINE PUMPS

Marketers concerned about fueling times, efficiency, serviceability, reliability, and overall quality find it an easy choice to specify FE PETRO® brand submersible turbine pumps (STPs). An STP has to be reliable, it has to be safe, and it has to perform. That's why thousands of station owners around the world have trusted FE PETRO® STPs and the Franklin Electric motors that drive them to keep their business flowing for over 25 years. With best-in-class flow rates and backed by a long history of dependability FE PETRO® STPs simply do their job without fail, delivering fuel to customers day after day without a hitch.

HIGHLIGHTS

Active Air Eliminator

FE PETRO[®] brand 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® brand 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.

Reliable Check Valve

The STP uses the proven FE PETRO[®] line check valve. At 2¾" in diameter, this valve reduces pressure loss at high flow rates resulting in faster fueling times. FE PETRO[®] line check valves are offered in multiple configurations to best suit your line leak application.

Variable Length

The VL2 pump fits 94% of all known tank diameters and tank bury depth combinations. The VL1 and VL3 are available to handle installations shorter or longer than this range. The telescoping connection is a patented FE PETRO® feature. Pump length can be set by making one simple measurement and setting the pump length without affecting the UL listing.

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.

SPECIFICATIONS

- 1½ hp fixed speed models are available in variable length and fixed length options.
- Check valve: 2³/₄" 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.

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 = 34 psi.
- High pressure (H150, three-stage) model, max. pressure = 46 psi.

Approvals

- cULus listed.
- Consult factory for applicable approvals.

Performance



Power Requirements

- $1\frac{1}{2}$ hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power.
- 1½ hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 15 microfarad.
- STP-SCI single-phase Smart 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 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 (AG compatible) 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.
- 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.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.



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

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.)

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

 $150 = 1\frac{1}{2}$ 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).

Notes: *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
	60" - 88"	VL1
1½ hp	91" - 152"	VL2
	123" - 214"	VL3
1½ hp high pressure	61" - 89"	VL1
	92" - 152"	VL2
	124" - 215"	VL3

ORDERING INFORMATION CONTINUED

Standard 11/2 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) 11/2 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	11/2 hp AG high pressure fixed speed	VL2	92" - 152"
STPAGH150-VL3	1½ hp AG high pressure fixed speed	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 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 $4\frac{1}{2}$ " 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, 11/2" NPT female, must be factory installed
К	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

1½ hp fixed speed specific accessories.

Model	Description
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STP)
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312921	STP-DHI-SCI, combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for slave of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100215	STP-SCI, single-phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

1/3 AND 3/4 HP FIXED SPEED SUBMERSIBLE TURBINE PUMPS

Marketers concerned about fueling times, efficiency, serviceability, reliability, and overall quality find it an easy choice to specify FE PETRO® brand submersible turbine pumps (STPs). An STP has to be reliable, it has to be safe, and it has to perform. That's why thousands of station owners around the world have trusted FE PETRO® STPs and the Franklin Electric motors that drive them to keep their business flowing for over 25 years. With best-in-class flow rates and backed by a long history of dependability FE PETRO® STPs simply do their job without fail, delivering fuel to customers day after day without a hitch.

HIGHLIGHTS

Active Air Eliminator

FE PETRO® brand 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® brand 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.

Reliable Check Valve

The STP uses the proven FE PETRO[®] line check valve. At 2¾^{*} in diameter, this valve reduces pressure loss at high flow rates resulting in faster fueling times. FE PETRO[®] line check valves are offered in multiple configurations to best suit your line leak application.

Variable Length

The VL2 pump fits 94% of all known tank diameters and tank bury depth combinations. The VL1 and VL3 are available to handle installations shorter or longer than this range. The telescoping connection is a patented FE PETRO[®] feature. Pump length can be set by making one simple measurement and setting the pump length without affecting the UL listing.

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.

SPECIFICATIONS

- 1/3 and ¾ hp fixed speed models are available in variable length and fixed length options.
- Check valve: 2³/₄" 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.

Pump Motor

- 1/3 and ¾ hp fixed speed, 3450 rpm, two-stage centrifugal type pump motor with integral, automatic thermal overload protection.
- 1/3 hp models have a max. pressure of 28 psi.
- ¾ hp models have a max. pressure of 31 psi.

Approvals

- cULus listed.
- Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

Performance



Note: Performance based on pumping solvent (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STP33 models are powered by a single-phase, 60 Hz, 208/230 Volt power supply.

Power Requirements

- 1/3 and ¾ hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power.
- 1/3 and ¾ hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 15 microfarad.
- STP-SCI single-phase Smart Controllers and STP-CBS single-phase control boxes are available for 1/3 and 34 hp pump control.
- 1/3 hp max. motor draw: 4 Amps.
- ¾ hp max. motor draw: 7 Amps.

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- 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 (AG compatible) 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.
- 1/3 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.
- All wetted elastomers are made of a high grade, fluorocarbon compound.



Note: Performance based on pumping solvent (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.

ORDERING INFORMATION

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.)

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

33 = 1/3 hp fixed speed

 $75 = \frac{3}{4}$ 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).

Notes: * 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
	55" - 83"	VL1
1/3 hp	86" - 147"	VL2
	118" - 209"	VL3
	57" - 86"	VL1
¾ hp	88" - 149"	VL2
	120" - 212"	VL3

ORDERING INFORMATION CONTINUED

Standard 1/3 and ¾ hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STP33-VL1	1/3 hp fixed speed	VL1	55" - 83"
STP33-VL2	1/3 hp fixed speed	VL2	86" - 147"
STP33-VL3	1/3 hp fixed speed	VL3	118" - 209"
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) 1/3 and ¾ hp Fixed Speed Submersible Turbine Pumps

Model	Description	Model Length Range Number	Model Length Range*
STPAG33-VL1	1/3 hp AG fixed speed	VL1	55" - 83"
STPAG33-VL2	1/3 hp AG fixed speed	VL2	86" - 147"
STPAG33-VL3	1/3 hp AG fixed speed	VL3	118" - 209"
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"

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 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 41/2" 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
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

1/3 and ¾ hp fixed speed specific accessories.

Model	Description
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STP)
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312921	STP-DHI-SCI, combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for slave of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100215	STP-SCI, single-phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each





Notes:

*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).

**Implied on IST models unless VS4 is specified.

*** IST models only.

CORROSION CONTROL[®] ADVANCED PROTECTION SUBMERSIBLE TURBINE PUMPS

Available as an option on AG compatible submersible turbine pumps (STPs), Corrosion Control[™] advanced protection defends STPs from accelerated corrosion caused by the acetic byproduct of microbial activity.

HIGHLIGHTS

- Powder-coated and E-coated finishes protect exterior cast surfaces from accelerated corrosion.
- Stainless steel fasteners, riser, variable length column pipe and coupler protect against corrosion and provide long service life.
- Corrosion Control[™] advanced protection is a factory installed option on STPAG and IST biofuel compatible models.
- UL and cUL listed.
- Intake Filter Screens (IFS) provide an added defense against the in-tank debris.

ORDERING INFORMATION

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 (IST for variable speed models)

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

AP = Corrosion Control[™] advanced protection with coated exterior cast surfaces, stainless steel fasteners and piping, alcohol-gasoline compatible)

- F = Floating suction adapter (11/2" NPT female adapter)
- H = High pressure deadhead output (150 and 200 models only)
- 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

- 33 = 1/3 hp fixed speed 200 = 2 hp fixed speed
- $75 = \frac{3}{4}$ hp fixed speed
- **VS2 = 2 hp variable speed
- $150 = 1\frac{1}{2}$ hp fixed speed
- ***VS4 = 4 hp variable speed

A = Model Length

- VL1 = Variable length range #1.
- VL2 = Variable length range #2.
- VL3 = Variable length range #3.

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).

ORDERING INFORMATION CONTINUED

Corrosion Control[™] Advanced Protection Submersible Turbine

Model	Description	Model Length Range*
ISTAPMVS4-VL1	4 hp Corrosion Control™AP variable speed with MagShell®	64" - 92"
ISTAPMVS4-VL2	4 hp Corrosion Control [™] AP variable speed with MagShell®	95" - 156"
ISTAPMVS4-VL3	4 hp Corrosion Control [™] AP variable speed with MagShell [®]	127" - 218"
ISTAPM-1	2 hp Corrosion Control [™] AP variable speed with MagShell®	59" - 87"
ISTAPM-2	2 hp Corrosion Control [™] AP variable speed with MagShell®	90" - 151"
ISTAPM-3	2 hp Corrosion Control [™] AP variable speed with MagShell®	122" - 213"
STPAPM200-VL1	2 hp Corrosion Control [™] AP fixed speed with MagShell®	63" - 91"
STPAPM200-VL2	2 hp Corrosion Control [™] AP fixed speed with MagShell®	94" - 154"
STPAPM200-VL3	2 hp Corrosion Control [™] AP fixed speed with MagShell®	126" - 217"
STPAPHM200-VL1	2 hp Corrosion Control [™] AP high pressure fixed speed with MagShell®	63" - 92"
STPAPHM200-VL2	2 hp Corrosion Control [™] AP high pressure fixed speed with MagShell®	94" - 155"
STPAPHM200-VL3	2 hp Corrosion Control [™] AP high pressure fixed speed with MagShell®	126" - 218"
STPAP150-VL1	1½ hp Corrosion Control™ AP fixed speed	60" - 88"
STPAP150-VL2	1½ hp Corrosion Control [™] AP fixed speed	91" - 152"
STPAP150-VL3	1½ hp Corrosion Control™ AP fixed speed	123" - 214"
STPAPH150-VL1	1½ hp Corrosion Control [™] AP high pressure fixed speed	61" - 89"
STPAPH150-VL2	1½ hp Corrosion Control [™] AP high pressure fixed speed	92" - 152"
STPAPH150-VL3	1½ hp Corrosion Control [™] AP high pressure fixed speed	124" - 215"
STPAP75-VL1	¾ hp Corrosion Control [™] AP fixed speed	57" - 86"
STPAP75-VL2	¾ hp Corrosion Control™ AP fixed speed	88" - 149"
STPAP75-VL3	¾ hp Corrosion Control [™] AP fixed speed	120" - 212"
STP AP33- VL1	1/3 hp Corrosion Control [™] AP fixed speed	55"-83"
STP AP33- VL2	1/3 hp Corrosion Control [™] AP fixed speed	86"-147"
STP AP33- VL3	1/3 hp Corrosion Control [™] AP fixed speed	118"-209"

Notes:

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

2. STPAP/ISTAP models are listed for compatibility 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. All models can also be used with fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state with a maximum liquid viscosity of 70 SSU at 60°F (15°C)

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

4. All above ISTAP models can only be powered by a MagVFC™. 4 hp models require three-phase incoming power supply,

2 hp models can be supplied with single- or three-phase incoming power.

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

6. 4" riser pipe, if supplied locally, must be 41/2" OD by 3/16" WT tubing.

7. For riser pipe lengths 31" to 60", adder 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, 11/2" NPT female, must be factory installed
К	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

Model	Description
5874202800	MagVFC™, 2 hp or 4 hp variable frequency controller, one required per IST
400137908	Syphon check valve (when ordered with STP)
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312921	STP-DHI-SCI, combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for slave of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100215	STP-SCI, single-phase Smart Controller
E000200100	CTD DUIL diagonages heads inclusion for 120 Vielt diagonages headle quitables up to sight each

5800300100 STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

Veeder-Root® is a trademark of Danaher Corporation.

Red Jacket[™] is a trademark of Veeder-Root Company.



FIXED LENGTH SUBMERSIBLE TURBINE PUMP SPECIFICATIONS

Pump Motor

- Fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- 1/3 and ¾ hp fixed speed models are available as two-stage versions.
- 1½ and 2 hp fixed speed models are available in standard pressure (two-stage) versions and high pressure (H option, three-stage) versions.

Standard Features

- Check valve: 2³/₄" 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

• Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

Power Requirements

- Fixed length, fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power.
- Fixed length, fixed speed models are available in 1/3, ¾, 1½, and 2 hp versions.
- Fixed length, fixed speed models incorporate a starting and running capacitor with internal bleed resistor.
- A 370 Volt, 15 microfarad rated capacitor is used with 1/3, 34, and 1½ hp fixed length, fixed speed versions.
- A 370 Volt, 40 microfarad rated capacitor is used with 2 hp fixed length, fixed speed versions.
- STP-SCI single-phase Smart Controllers 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 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.
- AG (alcohol-gasoline) 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.
- Fixed length models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

Fixed Length Submersible Turbine Pump Model Designation System

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 ($1\frac{1}{2}$ 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)

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

*Note: 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).

Fixed Length Submersible Turbine Pumpa

Y = Pump Motor Horsepower Rating

33 = 1/3 hp fixed speed

 $75 = \frac{3}{4}$ hp fixed speed

 $150 = 1\frac{1}{2}$ 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 211" (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).

Model	Description	Model Length [*] Range
STP33	1/3 hp fixed speed	37" - 132"
STP75	¾ hp fixed speed	37" - 132"
STP150	1½ hp fixed speed	37" - 132"
STPH150	1½ hp high pressure fixed speed	37" - 132"
STPM200	2 hp fixed speed with MagShell®	37" - 132"
STPHM200	2 hp high pressure fixed speed with MagShell®	37" - 132"
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 41/2" 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 (Specified in Model Number at Time of STP Order)

Model	Description
AG	Alcohol-gasoline compatible
F	Floating suction adapter, 11/2" NPT female, must be factory installed
К	IFS (intake filter screen), factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
W	Model W check valve, factory installed, for Red Jacket™ PPM4000 Line Leak

Factory Installed Options (Fixed Speed Specific Accessories)

Model	Description
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STP)
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312921	STP-DHI-SCI, combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for slave of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100215	STP-SCI, single-phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each



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MLD+ MECHANICAL LEAK DETECTORS

FE PETRO® brand MLD+ mechanical leak detectors provide precise leak detection for standard fuel and biofuel applications on 4" submersible turbine pumps (STPs). This lineup of advanced mechanical leak detectors features reliable line leak detection capabilities and maximum product flow rates. The MLD+ features a compact, yet rugged design to reduce installation height and provide accurate, hassle-free operation.

HIGHLIGHTS

- Two models to meet the needs of your standard fuel applications include the MLD+G (blue cover, copper vent tubing) for gasoline with up to 10% Ethanol and the MLD+D (gold cover, copper vent tubing) for diesel with up to 5% Biodiesel.
- Two models to meet the needs of your biofuel applications include the MLD+AG (blue cover, stainless vent tubing) for gasoline with up to 85% ethanol and the MLD+BD (gold cover, stainless vent tubing) for diesel with up to 20% Biodiesel or 100% Biodiesel.
- Piston style construction with reduced volume allows the MLD+ to react quickly and provide more accurate leak detection capabilities.
- A specialized metering pin unique to only the MLD+ provides precision leak detection for any type of pipework system including flexible, rigid or a combination of the two.
- Burnished piston chamber provides smooth operation and long service life.
- Color coded covers easily identify the model to the application (gold for diesel and blue for gasoline).
- Opens completely to allow maximum product flow during fueling operation and remains open with discharge pressure as low as 1 psi (0.07 bar).
- Compatible with FE PETRO® brand STPs, as well as competitive STPs and line leak detector housings.

SPECIFICATIONS

- All models are capable of detecting line leaks equivalent to 3 gph at 10 psi (11.4 lph @ 0.70 bar) when installed properly with the appropriate fuels - all models will signal detection of leaks by restricting product delivery to less than 3 gpm (11.4 lpm) and taking more than 4 seconds to open
- All models will remain in the open position during product delivery to manifold, with discharge pressures as low as 1 psi (0.07 bar) all models will reset to "tripped" when line pressure delay is below 3 psi (0.21 bar) with pump off
- Detects leaks up to 10 feet (3 meters) above the point of installation
- Max. liquid viscosity of 70 SSU at 60 °F (15 °C)
- Gasoline models (blue cover, MLD+G and MLD+AG) are also listed for fuel mixtures containing 20% MTBE, 20% ETBE or 17% TAME with gasoline as well as diesel fuels, fuel oils, kerosene, Avgas, and jet fuels.
- Diesel models (gold cover, MLD+D and MLD+BD) are also listed for kerosene applications.

Approvals/Certifications

- cULus listed.
- Third party certified to comply with US EPA requirements 280.41 (B) and 280.44 (A) for continuous monitoring of pressurized piping.
- Consult factory for other applicable approvals.

SPECIFICATIONS CONTINUED

Installation

- 1 MLD+
- 2 MLD+ vent tube
- 3 Line Leak Detector Housing (2" NPT)
- 4 Tank port (vent tube must be connected here)
- 5 Syphon port



ORDERING INFORMATION

Standard Fuel MLD+ Mechanical Leak Detectors

Model	Description
403168901	STP-MLD+G for gas, single pack (blue cover, copper vent tube, brass fittings)
403168903	STP-MLD+G for gas, three pack
403170901	STP-MLD+D for diesel, single pack (gold cover, copper vent tube, brass fittings)
403170903	STP-MLD+D for diesel, three pack
403172903	STP-MLD+ Combo, three pack (contains two STP-MLD+G and one STP-MLD+D)

Biofuel MLD+ Mechanical Leak Detectors

Model	Description
403169901	STP-MLD+AG for alcohol-gas, single pack (blue cover, stainless steel tube and fittings)
403169903	STP-MLD+AG for alcohol-gas, three pack
403171901	STP-MLD+BD for Biodiesel, single pack (gold cover, stainless steel tube and fittings)
403171903	STP-MLD+BD for Biodiesel, three pack

Notes:

1. MLD+G are 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.

2. MLD+D models are listed for compatibility with diesel fuels with up to 5% Biodiesel and kerosene applications only.

3. MLD+AG models are listed for fuel mixtures containing up to 85% ethanol with gasoline and 20% MTBE, 20% ETBE, or 17% TAME with gasoline as well as diesel fuels, fuel oils, kerosene, Avgas, and jet fuels.

4. MLD+BD models are listed for diesel with up to 20% Biodiesel or 100% Biodiesel and kerosene applications only.

5. All above models will only mount in the 2" NPT leak detector port of a 4" submersible turbine, including competitive models, or in a leak detector adapter tee (sold separately below).

6. MLD+ models are listed for use with rigid pipelines up to 165.1 gallon capacity, with flexible pipelines up to 109.8 gallon capacity, and with combination rigid/flexible pipelines up to 274.9 gallon capacity.

MLD+ Mechanical Leak Detector Repair Parts and Accessories

Model	Description
400440101	Vent tube (for use with MLD+G and MLD+D)
400449903	Hardware pack (fittings and documentation for MLD+G and MLD+D)
403123001	Vent tube, stainless steel (for use with MLD+AG and MLD+BD)
400449904	Hardware pack (fittings and documentation for MLD+AG and MLD+BD)
400518001	Leak detector adapter tee



HIGHLIGHTS

- Compatible with FE PETRO[®] single-phase 1/3 Hp up to 2 Hp submersible turbine pumps (STPs), as well as comparable competitive STPs.
- 3½ digit LCD provides readable running and fault status for quick troubleshooting.
- Separate "Reset" and "Silence/Calibrate" push buttons provide clear interaction with the controller.
- Automatically logs the last five abnormal conditions seen in the pumping system. This data is retained in nonvolatile memory. Service technicians can quickly view a history of abnormal conditions, which is particularly useful when troubleshooting intermittent conditions.
- Over voltage protection and enhanced underload detection protects your pumping system equipment.

GUARDIAN SERIES" SINGLE PHASE CONTROLLER

The Guardian Series[™] Single Phase Controller provides intelligent submersible turbine pump (STP) control and protection. This controller features an enhanced user interface, greater functionality, and higher performance compared to standard control boxes. Easily retrofit an existing site by simply replacing the existing control box with the Guardian Series[™] Single Phase Controller and pressing the "Silence/Calibrate" to allow the controller to automatically learn the electrical characteristics of the STP.

SPECIFICATIONS

- Dimensions: 8½" × 5" × 3" (215 mm × 127 mm × 76 mm)
- Motor contact rating: 2 Hp, 200-250 VAC, 50/60 Hz, Single Phase
- Switch hook rating: 120-240 VAC, 50/60 Hz
- An integrated RS 485 com port is provided to connect Guardian Series[™] Controllers to EVO[™] Series automatic tank gauges (ATGs) for enhanced functionality via Turbine Pump Interface (TPI).

Approvals & Certifications

- ULc listed.
- CE certified.
- ISO 9001:2015 certified manufacturer.

Capabilities

Capability	Standard Relay Box	STP-SCI Controller	Guardian Series [™] Controller
Pump Compatibility	up to 2 Hp	up to 2 Hp	up to 2 Hp
Horsepower Selection	Not Required	Not Required	Not Required
Standard THHN Wiring	YES	YES	YES
Master-Slave Pump Operation	NO	YES	YES
Alternating Pump Operation	NO	YES	YES
Communication Display	NO	YES, yellow flashing light	YES, yellow flashing light
Incoming Power Display	NO	YES, solid green light	YES, displays "IdLE"
Pump Running Display	YES, red pilot light	YES, green flashing light	YES, flashes "run"
Fault History Readout	NO	YES, flash last five faults	YES, displays last five faults
Fault Diagnostics	NO	YES, red flashing light	YES, red backlight display
Underload (dry run) Detection	NO	YES, 1 red flash	YES, flashes "UL"
Low Incoming Voltage Protection	NO	YES, 2 red flashes	YES, flashes "LI"
High Incoming Voltage Protection	NO	YES, surge protection	YES, flashes "HI"
Overload (running) Detection	NO	YES, 3 red flashes	YES, flashes "OL"
Overload (startup) Detection	NO	YES, 3 red flashes	YES, flashes "Lr"
Open Circuit Detection	NO	YES, 4 red flashes	YES, flashes "OC"
Extended Run Protection	NO	YES, 9 red flashes	YES, flashes "Er"
Relay Failure Protection	NO	YES, 10 red flashes	YES, flashes "rEL"
Audible Fault Alarm	NO	YES, reset/silence button	YES, separate silence button

SPECIFICATIONS



Note: See product installation instructions for further details. Wiring must conform to all federal, state, and local codes. Control panels are for non-hazardous indoor use only.

ORDERING INFORMATION



Guardian Series[™] Single Phase Controller

Model	Description
5800100220	Guardian Series™ Single Phase Controller, 220 Volt

Notes:

- 1. Compatible with all single-phase FE ${\sf PETRO}^{\circledast}$ and competitive model STPs.
- 2. One controller required for each submersible (up to 2 Hp).
- 3. Not compatible for use in master/slave configurations with STP-SCI models.



Replacement Parts

ltem	Model	Description
1	223683930	SPGC-220 uppper (user input) replacement board
2	403963001	SPGC-220 lower (control, relay) replacement board



DISPENSER HOOK ISOLATION

The FE PETRO[®] dispenser hook isolation device prevents electrical feedback between dispenser hook circuits as required by most electrical codes.

HIGHLIGHTS

- Optically isolates inputs from up to eight dispensers, preventing damage to dispenser relay boards caused by cross-phasing.
- Prevents electrical feedback between dispenser hook circuits during periods of maintenance and service as required by NEC 514-3, 2002 and other international codes.
- Can be supplied factory-wired in tandem with the FE PETRO® Smart Controller or the FE PETRO® standard control box.
- Eliminates false STP run due to voltage leakage of multiple dispensers connected in parallel.
- Fuse-protected output to submersible pump controller.
- The STP-DHI can retrofit to any existing site.

SPECIFICATIONS

- Enclosure size: $8\frac{1}{2}$ " \times 5" \times 3" (215 mm \times 127 mm \times 76 mm).
- Eight optically isolated inputs from dispenser.
- One STP-DHI required per product grade for up to eight dispensers.
- STP-DHI: 120 V 30 V A input from supply, eight 120 V 10mA inputs from dispensers.
- Output fuse rating: 250 V 1A, fast-acting.
- 300 Volt surge protection.
- Maximum ambient temperature rating: 120 °F.
- LEDs indicate when source power is applied and dispenser hook signals are present.
- Compatible with any submersible pump controller.

Conventional



STP-DHI



Approvals

• Consult factory for other applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

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STP-DHI Dispenser Hook Isolation

Model	Description
402312921	STP-DHI-SCI combo DHI with factory-wired STP-SCI
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS single-phase control box
5800300100	STP-DHI, isolates up to eight, 120 Volt dispenser handles

Notes:

1. DHI models are compatible with FE PETRO® submersible pump controllers and competitive pump controller makes accepting 120 Volt dispenser hook signal.

2. DHI models can be connected together for products with more than eight dispenser handle inputs.

DHI Repair Parts and Accessories

-	
Model	Description
223243103	DHI fast-acting fuse, 250 VAC, 1 Amp
223885930	DHI circuit board, 120 Volt dispenser hook signal



'Wiring is polarity-sensitive when multiple units are connected together

SINGLE-PHASE CONTROL BOX

The FE PETRO[®] standard single-phase control box latches line power to the submersible when the relay is energized by a dispenser signal. Compatible with FE PETRO[®] and competitive makes of single-phase, fixed speed submersible turbines up to 2 hp.

Model	Description
400818921	STP-CBS, single-phase control box, with switch and lockout, 120 Volt coil
402313921	STP-DHI-CBS, combo dispenser hook isolation with factory-wired STP-CBS

Notes:

1. CBS models are compatible for use on all single-phase FE PETRO® submersibles and competitive models.

- 2. One CBS required per submersible, relay rated for 30 Amps up to 2 hp.
- 3. Incorporates pump "ON" indicator light.
- 4. Relay rated for 220 Volts, 30 Amps and pumps up to 2 hp.





🚯 Franklin Fueling Systems

ORDERING INFORMATION

ltem	Model	Description
1	403274001	Power switch (replaces 400575001)
2	400574001	Power switch bracket
3	400158001	Light assembly, 120 Volt
4	400215931	Relay, 30A, 120 Volt coil
5	400278006	Six position terminal strip
6	402410001	CBS terminal strip label
7	400817901	Cover and enclosure
8	400819001	CBS wiring diagram

STP-CBS Repair Parts and Accessories



Intake Filter Screen

Stainless steel construction filters to 0.01" or larger particles. Mounts to FE PETRO® or competitive 4" Pump Motor End Bell and only adds about 1" to assembly length.



Model 65 PSI Relief Check Valve

For use in slave(s) 4" STP in manifolded multiple pump installations. Not available factory installed.



402459931

Model 65 psi relief check valve (AG compatible)

Secondary Syphon Kit

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



Primary Syphon

Secondary Syphon

Replacement Pump Motor Assemblies*

Model	Description
PMA33	1/3 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)
Nata Devery "NA" former	

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.

Replacement Gasoline Motor Assemblies*

Model	Description
PMAAG33	1/3 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 (241/2" long)
PMAAGHM200	2 hp AG high pressure pump motor assembly with MagShell® (24½" long)

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.

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)
Noto: Romovo "M" from	model number for non MagShell® nump motor accomplian

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.

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) **

*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.





STP-SCI Single Phase Smart Controller

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



MagVFC™

Model	Description
223919930	MagVFC™ fan assembly
225040930	MagVFC™ user interface board
228289930	MagVFC™ normally open relay

STP-DHI Dispenser Hook Isolation Box

ltem	Model	Description
1	223243103	250 AC fast-acting fuse
2	223885930	120 Volt circuit board (includes fuse)

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

Item	Model	Description	Qty		
1	400125001 3/16" × 1 5/8" spiral pin		1		
2	400615001	400615001 Manual relief plug (400615002 AG compatible)			
3	400211114	00211114 O-ring, MPR plug			
4	400627001	Retaining ring, MPR			
5	400616001	Manual relief screw (400616002 AG Compatible)			
6	400333012	Relief screw, top O-ring			
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	¹ / ₄ " 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" - 40" 50" - 60"			
15	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	1⁄2" steel banding (stainless steel for AP models)	-		
17	400600002	$5/16-24 \times 7/16"$ set screw for variable lengths only $5/16-24 \times 7/16"$ set screw for VI models only (stainless steel for AP models)	3		
18	400333015		1		
10	400264009	$5/16-18 \times 1.1/8$ " socket head can screw may be purchased locally	-		
19	400204000	$5/16-18 \times 1$ 1/8" socket head cap screw, may be purchased locally	4		
	403506001	(stainless steel, for AP models)			
	400263004	5/16" high-collar lock washer, may be purchased locally			
20	403505001	5/16" high-collar lock washer, may be purchased locally (stainless steel, for AP models)	1		
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		
20	403504001	$3/8-16 \times 1^{\circ}$ Hex head screw (stainless steel, for AP models)			
24	400285002	3/8" standard lock washer, may be purchased locally	2		
24	1117703	3/8" standard lock washer (stainless steel, for AP models)			
	400197930	Manifold assembly cover, includes #10, #26, two #23, and two #24	1		
25	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	400988931 400988932 400988933 402459931	Standard check valve, includes item #26 (400988934 AG compatible) Model R check valve, includes item #26 (400988935 AG compatible) Model W check valve, includes item #26 (400988936 AG compatible) Model 65 psi check valve (AG compatible, for slave STPs only)	1		
30	30 152350902 PMA hardware pack, includes #21, and four #19 and #20 (152350904 AG compatible)		-		
Not shown	400216905	AG compatible O-ring kit, includes items #3, #6, #7, and #26 on this page and items #2, #10, #13, #17, #20 and #21 on next page	-		



Discharge Manifold Assembly



Item	Model	Description	Qty.	Item	Model	Description	Qty.
1	400192930	Junction box cover, includes item #2	1	11	400200930	Wire connector kit, includes male/female	
	400192931	Junction box cover, includes item #2 (for AP			100200000	connectors, two #10, one #5, and #18	1
100102001		models)			400200931	Wire connector kit, includes male/female	
2	400210233	O-ring, junction box cover	1		400200931	AP models)	
3	400655001	Capacitor boot	1	12	400589930	Cover, includes item #13	1
	400170931	Capacitor assembly for 1/3 to 1½ hp, 60 Hz, 15µfd,			400589931	Cover, includes item #13 (for AP models)	
4	400170024	Capacitor assembly for 2 hp, fixed speed, 60 Hz,	1	13	400210229	O-ring	1
	400170934	40µfd, 370 Volt single-phase; includes one black lead		14	400236903	Contractor's plug, 4-wire	2
5	400257001	Retaining ring, Female connector	1	15	400250002	3/8" NPT pipe plug, may be purchased locally	1
6	400258002	$3/8-16 \times 1\%$ Hex head bolt, may be purchased locally		15	400259002	(403499002, stainless steel for AP models)	
	602011016	3/8-16 × 1¼" Hex head bolt (stainless steel, for AP models)	4	16	400562901	Syphon jet assembly (400562903 AG compatible)	1
	400285002	3/8 standard lock washer, may be purchased locally	4	17	400211046	O-ring, extractable (upper, small)	1
7	1117703	3/8 standard lock washer		18	400249001	Retaining ring	1
	1117700	(stainless steel, for AP models)		19	400250002	1/8" dia. × 1⁄2" roll pin	1
	400280001	3/8 standard flat washer, may be purchased locally		20	400333343	AG compatible O-ring, extractable (upper, large)	2
8	403500001	3/8 standard flat washer	2	21	400333340	AG compatible O-ring, extractable (lower)	1
		(stainess steel, for Ar models)			400259005	2" NPT square head plug	
q	400651930 and #8		1	22	403499003	2" NPT square head plug	1
5	400651931	Junction box assembly (includes item #6, #7, and #8, for AP models)				Istainiess steel, for AP models)	
10	400210212	O-ring, Female connector	2				

HIGH CAPACITY SUBMERSIBLE TURBINE PUMPS

Available with either 3 or 5 hp, the FE PETRO[®] high capacity pump delivers efficient, reliable, and quiet performance when high volumes or high speed deliveries of gasoline or diesel fuel are required.

HIGHLIGHTS

High Performance

FE PETRO®'s two-stage centrifugal pump is coupled with a dependable Franklin Electric motor to provide higher heads, faster fuel delivery, and lower cost operation. Motors are all three-phase for smooth operation and are available in various voltages. Units come standard with a 6" diameter riser pipe to mount the pump to the tank.

Ease of Maintenance

If service is required, FE PETRO® products are designed to put the operator back in business fast. Maintenance on the pump motor assembly can be performed without having an electrician on-site. Large diameter pins and sockets provide automatic open circuits and disconnecting of the wiring when the extractable portion of the pump is removed. Properly spaced lifting eyes facilitate the removal of the unit without disturbing the discharge piping. The pump motor assembly is easily removed from the discharge head by removing four bolts and using standard pusher bolts. Replacement pump motor assemblies are available for comparably-sized competitive pumps.

Reliability

Quality engineering and simplicity of design work to ensure years of reliable performance from every high capacity unit. The continuous duty, three-phase Franklin Electric motor with carbon bearings and stainless steel journals is FE PETRO®'s standard. The impellers, made of molded acetal, and diffusers of hard coated aluminum, with a stainless steel pump shaft, assure trouble-free operation in motor fuels. Dual (180° opposed) 3" horizontal discharge ports provide easy installation, and two built-in line check valves reduce installation costs. Two line pressure relief valves protect the dispensers, meters, and piping from abnormal pressures due to thermal expansion. The mesh screen on the pump inlet prevents large particles from entering the unit and the unit is compatible with existing high capacity leak detector technology. New units are easily connected to field wiring without disassembly.

Satisfaction

Each and every high capacity pump is built to your tank and bury specifications and the complete assembly is performance tested to ensure that your needs are met. All high capacity pumps are UL listed and meet the requirements of UL 79.





- Note: 1. Effective tank diameter (ETD) = Inside tank diameter (to top of 6" bung), including tank manway and/or sump adapter.
 - Model length (A) = ETD plus riser length minus bottom clearance minus 2" thread engagement.
 - Riser length (B) = Bury depth (to top of tank) minus pump head clearance minus tank manway and/or minus sump adapter.



HIGH CAPACITY SUBMERSIBLE TURBINE PUMP SPECIFICATIONS

PUMP MOTOR

- Fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with built-in, automatic, thermal overload protection.
- High capacity pump 60 Hz models are available as two-stage versions only.

STANDARD FEATURES

- Pressure relief valve: cartridge design available in two pressure relief settings, external to check valve. Standard model relieves at 40 psi and resets above 35 psi.
- Syphon: external venturi-type syphon primer supplied as submersible accessory.
- Air eliminator: every submersible includes tank return path to provide active air elimination.

Approvals

• Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

POWER REQUIREMENTS

- High capacity pump models require three-phase, 60 Hz incoming power.
- High capacity pump models are available as 208-230 VAC, 460 VAC or 575 VAC versions.
- High capacity pump models are available in 3 hp and 5 hp versions.
- STP-SCIII three-phase Smart Controllers and STP-CB3/5 three-phase control boxes are available for high capacity pump control.

LIQUID COMPATIBILITY

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- Standard 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.
- High capacity models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

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Note: Performance based on pumping solvent (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STP3 models are powered by a three-phase, 60 Hz, 208/230 Volt power supply.



Note: Performance based on pumping solvent (0.78 specific gravity). Pressure is taken at the manifold discharge outlet. STP5 models are powered by a three-phase, 60 Hz, 208/230 Volt power supply.

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High Capacity Submersible Turbine Pump Model Designation System

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

Note: Standard models up to 10% ethanol capable.

XXXXX = Factory Installed Options

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

F = Floating suction adapter (3" NPT male adapter)

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

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

Y = Pump Motor Horsepower Rating

3 = 3 hp fixed speed, 208-230 VAC

5 = 5 hp fixed speed, 208-230 VAC

5H = 5 hp fixed speed, 460 VAC

5G = 5 hp fixed speed, 575 VAC

A = Model Length

Model length is expressed as three numeric characters that indicate the length of the HCP from the turbine manifold bottom to the pump motor inlet in inches, available from 60" to 200" (additional charge for models 132" 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 6" to 60" in three inch increments (additional charge and lead time for risers 27" or longer).

High Capacity Turbine Pumps (Fixed Length Only)**

Model	Description
STP3	3 hp 6" STP, three-phase 208-230 VAC
STP5	5 hp 6" STP, three-phase 208-230 VAC
STP5H*	5 hp 6" STP, three-phase 460 VAC
STP5G*	5 hp 6" STP, three-phase 575 VAC
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*Please call customer service for lead time on this item.

Notes:

1. STP models are listed for compatibility with fuel mixtures containing up to 10% ethanol with gasoline and up to 5% Biodiesel with diesel fuels.

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

3. All above models require three-phase, 60 Hz incoming power.

4. 6" riser pipe, if supplied locally, must be 6 5/8" OD by 14" WT tubing.

5. For riser pipe lengths 27" to 60" long, additional charges apply (consult factory for lead times).

** Model length (A) defined as the dimension from the turbine manifold bottom to pump motor inlet. Model length can be minimum of 60" to a maximum of 200". Adder (P/N 401190911) applies if model length is 132" to 170" or adder (P/N 401190914) applies if model length is 171" to 200" (charge is for additional packaging). Please call Customer Service for lead times.

Factory Installed Options

Model	Description	
F	Floating suction adapter, 3" male NPT (must be ordered with STP)	
R	Model R relief valve factory installed, for Veeder-Root® PLLD	

Field Installed Options

Model	Description		
401165905	Syphon system (when purchased with STP)		
STP-CB3	3 hp, 208-230 VAC, 60 Hz, three-phase motor starter, 120 VAC coil		
STP-CB5	5 hp, 208-230 VAC, 60 Hz, three-phase motor starter, 120 VAC coil		
STP-CB5G	5 hp, 575 VAC, 60 Hz, three-phase motor starter, 120 VAC coil		
STP-CBB5H	5 hp, 460 VAC, 60 Hz, three-phase motor starter, 220 VAC coil		
STP-SCIII	Three-phase Smart Controller, 120 VAC coil		

Note: Three-phase Smart Controller is compatible with FE PETRO® 208/230 Volt 3 and 5 hp high capacity STPs and like competitive makes. Not available for 460 or 575 Volt models.

6" STP Extractable (Less Manifold, Riser, and PMA)

Model	Description	
STPHC-EXT-XXX	6" fixed length extractable (p/n 401230901, where XXX indicates model length)*	
* Model length can be minimum of 60" and a maximum of 200" (length adder charges apply for model lengths 132" to 200"). Please ca		
Customer Service for lead times.		

Veeder-Root® is a trademark of Danaher Corporation.



HIGH CAPACITY LINE LEAK DETECTOR

The High Capacity MLD product line is based on our standard STP-MLD unit design. The High Capacity MLD's compact design allows installation in the same containment sump as the submersible pump, greatly reducing the amount of unprotected leak points between the submersible and the MLD.

HIGHLIGHTS

Low Line Restriction

Piston design offers the maximum flow rate possible by keeping flow restriction through the leak detector at an absolute minimum. Piston has a full 1 7/8" (47.6 mm) of travel to move the leak detector poppet fully out of the flow path when product is being pumped.

Faster Installation

MLD-HC can be installed after purging air on new installations.

SPECIFICATIONS

- Detects leaks of 3 gph (11.4 lph) or greater at 10 psi (69 kpa).
- Third party evaluated to comply with US EPA requirements 280.41 (B) and 280.44 (A) for continuous monitoring of pressurized piping systems with maximum of 396.60 gallons for rigid pipelines, maximum of 95.50 gallons for flexible pipelines, maximum of 492.10 gallons for combination of rigid and flexible pipelines.
- Size: 7¾" × 15" (197 mm × 381 mm).
- Weight: 28 pounds (12.7 kg).
- The MLD-HC will remain in the open flow position with dynamic line pressure at 2 psi (13.8 kpa) at the outlet.
- Maximum static head pressure without affecting operation is 12' (3.7 m) from MLD-HC to dispensing point.
- Minimum height required from 3" (76.2 mm) NPT port centerline for top clearance is 9½" (241 mm). Not position sensitive. Can be installed horizontally to reduce clearance to 3" (76.2 mm).

Piston Design

Piston cylinder has 5% cubic inches (94.22 cc) of volume to help minimize nuisance tripping due to thermal contraction during cold weather.

MLD-HC Seal

Threads seal using O-rings instead of thread sealant. This seal design makes for simple installation and removal of MLD-HC without large wrenches in the tight working environment of the containment sump.

- Compatible with all blends of motor fuels including alcohol blends from 0 to 10% ethanol, 20% MTBE or ETBE with 80% gasoline, or 17% TAME with 83% gasoline as well as diesel, fuel oil, Avgas, jet fuel, or kerosene.
- Two models available: STP-MLD-HC for gasoline, STP-MLD- HCD for diesel.

Approvals

• Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

High Capacity Mechanical Leak Detectors*

Model	Description
401315902	STP-MLD-HC leak detector complete with Adapter "T" (blue paint, for gasoline)
401320902	STP-MLD-HCD leak detector complete with Adapter "T" (tan paint, for diesel)
401315901	Replacement high capacity leak detector ONLY (blue paint, for gasoline)
401320901	Replacement high capacity leak detector ONLY (tan paint, for diesel)
401316930	Replacement cover assembly
401325901	Replacement Adapter "T" with cover assembly
400449902	MLD-HC hardware pack, includes fittings and documentation

Notes:

1. MLD-HC models are listed for compatibility with fuel mixture containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE, or 17% TAME with gasoline.

2. MLD-HCD models are listed for compatibility with diesel fuels containing up to 5% Biodiesel and kerosene applications only.

3. All above models will only mount in Adapter "T" (P/N 401325901)

4. *Refer to high capacity MLD installation manual for complete fuel compatibility.





THREE-PHASE SMART CONTROLLER

STP-SCIII is designed to replace three-phase motor starters in both new and existing locations. The STP-SCIII controller provides valuable pump protection and performance features for an economical price.

HIGHLIGHTS

Easy Retrofit

The STP-SCIII is compatible with most existing three-phase submersibles from 3 to 5 hp. Retrofitting existing stations is as simple as replacing the existing three-phase controller or starter with the STP-SCIIII. No additional wiring is required.

Continuous Diagnostics

The STP-SCIII constantly monitors for abnormal conditions that reduce motor life or cause downtime. When any of these conditions exist, the STP-SCIII will alert the service technician to the source of the problem: dry run, extended run, overvoltage, undervoltage, relay fault, voltage/current unbalance, locked rotor, phase loss or open circuit.

Pump Auto-Start

Provides "on demand" automatic pump start of up to eight submersible pumps manifolded to the same discharge line. Lead pump starts to satisfy initial demand and additional pumps are started as demand increases, reducing power consumption and extending pump life.

SPECIFICATIONS

- Enclosure size: 9 1/16" \times 7 6/8" \times 51/2" (230 mm \times 196 mm \times 140 mm).
- Compatible with three-phase FE PETRO[®] 3 and 5 hp submersibles and most competitive makes.
- Relay rating: 5 hp.
- Relay coil (hook) signal rating: 120 VAC.
- Pump "RUN" indication is provided by flashing green light.
- Power "ON" indication is provided by steady green light.
- Flashing red light indicates fault condition. Number of flashes indicates specific fault.
- Audible alarm alerts operator of fault.
- Built-in voltage surge protection.
- Flashing yellow light indicates RS 485 is communicating.
- RS 485 com port which is provided to connect Smart Controllers to each or to FFS EVO[™] Series automatic tank gauge (ATG) for enhanced functionality. When Smart Controllers are connects to the EVO[™] Series ATG via Turbine Pump Interface (TPI), Smart Controllers and ATG can leverage shared intelligence to further enhance capabilities and run your business as efficiently as possible.

Approvals

• Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

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STP-SCIII Three-Phase Smart Controller*

Model 5800103200 Notes:

20001

1. One STP-SCIII required per submersible, relay rated for 30 Amps.

STP-SCIII three-phase Smart Controller

2. STP-SCIII models do not utilize the pump motor thermal overload wiring (blue leads).

*STP-SCIII is compatible with FE PETRO® 3 and 5 hp submersibles and competitive makes except the 460 and 575 Volt models.

STP-SCIII Repair Parts

ltem	Model	Description
1	228727101	Three-phase relay, 120 Volt coil (requires Rev 1.15)
2	223905901	Logic board assembly (Rev 1.15)
3	223910901	208-230 Volt power board assembly
4	223867102	Bracket (required update for 228727101)

STP-SCIII Three-Phase Smart Controller Standalone Wiring Diagram



Notes: See product installation instructions for further details. Wiring must conform to all federal, state, and local electrical codes. Motor control panel is for non-hazardous location use only.



STP-CB 3/5 Wiring Diagram



CB 3/5 Magnetic Starters

STP-CB 3/5 MAGNETIC STARTER

The FE PETRO® magnetic starter incorporates ambient compensated relays with quick trip heaters and three leg protection to assure proper pump motor protection.

SPECIFICATIONS

- Compatible with three-phase FE PETRO[®] 3 and 5 hp submersibles and most compatible models.
- Relay rating: 5 hp.
- Relay coil hook signal rating: 120 Volts for all versions except CBB5H, which is energized by 220 Volt dispenser signal.
- Incorporates three-leg contactor and adjustable overload relay with reset button.

Approvals

• Consult factory for applicable approvals.

Quality Certification

• Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

Model	Description	
401220903	STP-CB3 three-phase control box with adjustable overload, 120 Volt relay, 3 hp, 208-230 Volt, 60 Hz pump control	
401220904	STP-CB5 three-phase control box with adjustable overload, 120 Volt relay, 5 hp, 208-230 Volt, 60 Hz pump control	
401220993	STP-CB5G three-phase control box with adjustable overload, 120 Volt relay, 5 hp, 575 Volt, 60 Hz pump control	
401220933	STP-CBB5H three-phase control box with adjustable overload, 220 Volt relay, 5 hp, 460 Volt, 60 Hz pump control	

Replacement Pump Motor Assemblies*

Model	Description
PMA3	3 hp 208-230 Volt 6" pump motor assembly
PMA3RJ	3 hp 208-230 Volt 6" pump motor assembly, replaces competitive model UMP300J4-2HB
PMA5	5 hp 208-230 Volt 6" pump motor assembly
PMA5RJ	5 hp 208-230 Volt 6" pump motor assembly, replaces competitive model UMP500J4-2K
PMA5H**	5 hp 460 Volt 6" pump motor assembly
PMA5G**	5 hp 575 Volt 6" pump motor assembly

"For pump motor assemblies with floating suction adapters (3" male NPT connections), specify "F" in the model number and adder charge applies (must be ordered with PMA).

"Please call customer service for lead time on these items.

Syphon System

Item	Model	Description
1	402505001	Syphon block
2	400562901	Syphon jet assembly
3	400430004	$3/8" P \times 3/8" T$ compression fitting
4	400259001	¼" pipe plug
5	400114001	¼" close nipple, two required per system
6	400114003	¼" nipple × 3" long
7	402510001	¼" threaded tee
8	402511001	¼" threaded elbow, 90 °
9	400137937	Syphon check valve
10	402544001	Caution tag
11	400982001	Security seal
12	402553902	Copper tube (HC pump)
13	400430003	14" P \times 3/8" T compression fitting
NS	401165930	Syphon unit complete, includes all items above



CONNECT 1/4" NPT × 3/8" TUBE FITTING TO CHECK VALVE AND 3/8" OD COPPER TUBING TO HIGHEST POINT IN SYPHON LINE (FURNISHED BY CUSTOMER)

High Capacity General Assembly




SUBMERSIBLE TURBINE PUMPS

STP3 and STP5 High Capacity General Assembly

Item	Model	Qty	Description		
1	401148101	1	Connection box cover		
2	400236909	1	Seal off plug assembly, 5-wire		
3	401149001	2	Eye bolt		
4	400258001	4	3/8-16 × 1" large Hex head cap screw		
5	400285002	8	3/8" lock washer		
6	401236002	1	Upper manifold seal		
8	400273004	6	12 gauge wire terminal		
	400273006	4	14 gauge wire terminal		
9	401142901	1	Plug assembly		
10	401091001	6	$6-32 \times 3/8$ " large round head machine screw, three required per connector		
11	401137901	1	Receptacle assembly		
12	401238001	2	Bushing ring, electrical entry		
13	401239001	1	Seal plug, electrical entry		
14	401112101	1	Discharge manifold		
15	401163001	1	6" flange gasket		
16	400333235	1	O-ring, connectors		
17	400333234	1	O-ring, connection box cover (400210234)		
18	400258005	12	1/2-13 × 11/4" large Hex head cap screw		
19	400285005	12	1/2" lock washer		
20	400259001	2	14" pipe plug		
21	401032901	2	Model 550 relief (old standard pressure, tire valve)		
21	401330902	1	Model "R" relief (units built since S/N 0302XXXX)		
22*	401154001	2	Valve spring and bracket		
23	400523001	4	$10-24 \times 3/8"$ long Sems fastener, two required per bracket		
24*	401150101	2	Inset valve assembly (check valve)		
25	401236001	1	Lower manifold seal		
26	401158903	1	Air eliminator assembly		
27	400258006	4	34-10 × 3" large Hex head cap screw		
28	401162001	2	3" flange gasket		
29	401113101	2	3" companion flange		
			6" riser pipe		
	4011910XX		12" riser pipe		
30	6 5/8" OD × ¼" WT	1	15" riser pipe		
	(XX = length)		18" riser pipe		
			24" riser pipe		
31	400333218	1	O-ring, lead assembly		
32	151593906	1	192" lead assembly		
33	401161101	1	6" flange		
34	993517	4	34" lock washer (400285006)		
35	400274004	4	34-10 Hex nut		
36	400264011	4	3/8-16 × 1¼" large SHCS		
37	400333255	1	O-ring, motor discharge (large, shell)		
38	402406001	4	Rubber washer		
39	400333225	1	O-ring, motor discharge (small, electrical hub)		
40	PMA XXX	1	Pump motor assembly, includes #37, #39, and four #5, #36, and #38 (XXX indicates options and horsepower)		

*401154001 and 401150101 must be replaced together



DIESEL EXHAUST FLUID PUMP MOTOR ASSEMBLIES

FE PETRO[®] brand diesel exhaust fluid (DEF) pump motor assemblies (PMAs) feature a stainless steel close-coupled design that is completely compatible with DEF/AdBlue[®]. FE PETRO[®] DEF PMAs are powered by the field-proven Franklin Electric motor.

HIGHLIGHTS

- Stainless steel, encapsulated motor ensures longevity and impermeability to DEF seepage.
- Heavy-duty shaft provides superior alignment and resistance to stress.
- Double mechanical shaft seals protect the oil-filled bearing chamber from DEF seepage, assuring minimal wear and proper bearing lubrication.
- Stainless steel hydraulics provide superior performance and efficiency.
- Multiple models available to meet global requirements of voltage and frequency.
- All models are suitable for vertical installation where the pump motor is suspended off the bottom of the tank by the discharge piping.

SPECIFICATIONS

- Materials: Stainless steel construction including impellers/ diffusers, inlet/outlet, and outer shell
- Pump type: All models are 5.1" (130 mm) outside diameter centrifugal type pump
- Power cable: 23' (7m) black polyethylene jacketed plug-in power cable
- 60 Hz pump motor: Two-stage pump with 2" NPT female outlet
- 50 Hz pump motor: Three-stage pump with 2" BSPT female outlet
- Motor rating: Continuous operation with motor cooling provided by product flow and protected from dry running
- Bypass relief valve with cracking pressure of 30-40 psi (2.1-2.8 bar) and 4 gpm (15 lpm) minimum flow required at the discharge of all models.
- Non-return check valve with maximum cracking pressure of 3 psi (0.2 bar) required between product piping and bypass relief valve of all models.
- Liquid compatibility: All models are intended for use with Diesel Exhaust Fluid (DEF). DEF is a non-flammable, non-combustible liquid that has a specific gravity of 1.09 at 68 °F, and is made per ISO 22241-1 specifications with 32.5% urea and distilled or deionized water. As defined by ISO 22241-1, DEF is the same as AUS 32[®] (aqueous urea solution) and also commonly known as AdBlue[®].

SUBMERSIBLE TURBINE PUMPS

SPECIFICATIONS CONTINUED

Discharge Outlet Cable Collection Collection

60 Hz DEF Pump Motor Performance

DEF-PMA150A (single-phase) and DEF-PMA150D (three-phase)



Note: Performance is based on pumping water (1.00 specific gravity). Pressure is taken at the discharge outlet of the pump motor.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

DEF - PMA YYY Z

DEF = Pump Compatible with DEF

PMA = Pump Motor Assembly

YYY = Pump Motor hp Rating

 $150 = 1\frac{1}{2}$ hp fixed speed (1.1 kW)

Z = Motor Electrical Rating

A = Single-phase, 60 Hz, 208-240 VAC (rated 7.9 Amps, requires 25 microfarad run/start capacitor rated 370 VAC)

D = Three-phase, 60 Hz, 208-240 VAC (rated 5.0 Amps)

Note: Three-phase models require overload protection in motor starter. Single-phase models have thermal overload protection built into the motor.

Model	Description
403383903	DEF-PMA 150 A: single-phase, 60 Hz, 208-240 VAC, 1.5 hp (single pak)
403383933	DEF-PMA 150 D: three-phase, 60 Hz, 208-240 VAC, 1.5 hp (single pak)
403383703	DEF-PMA 150 A: single-phase, 60 Hz, 208-240 VAC, 1.5 hp (12 pack pallet)
403383733	DEF-PMA 150 D: three-phase, 60 Hz, 208-240 VAC, 1.5 hp (12 pack pallet)

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AUS 32[®] is a registered trademark of GBZI Ltd.





DIESEL EXHAUST FLUID SUBMERSIBLE TURBINE PUMP KITS

FE PETRO® brand diesel exhaust fluid (DEF) submersible turbine pump (STP) kits feature an all-stainless steel design that makes them completely compatible to transfer DEF/AdBlue®. Kits are available as complete variable length assemblies or as individual assembly kits for fixed length applications, providing everything needed for a DEF/AdBlue® pumping application.

HIGHLIGHTS

Pump Motor Assembly

- Field-proven Franklin Electric encapsulated motor ensures longevity and impermeability to DEF seepage.
- Heavy-duty shaft provides superior alignment and resistance to stress.
- Double mechanical shaft seals protect the oil-filled bearing chamber from DEF seepage, assuring minimal wear and proper bearing lubrication.
- Stainless steel hydraulics provide superior performance and efficiency.
- All models are suitable for vertical installation where the pump motor is suspended off the bottom of the tank by the discharge piping.

Submersible Turbine Pump Kit

- Submersible turbine pump kits come complete with variable length column pipe kit, check valve kit, bypass kit, EZ FIT pump motor assembly connection kit, and pump motor assembly.
- Submersible turbine pump kits also available for locally supplied fixed length column pipe applications.
- Bypass relief valve creates a continuous bypass of fluid to keep the motor cool.
- Check valve maintains line pressure while the pump is not in operation.
- EZ FIT PMA connection makes disconnection and reconnection of the PMA quick and easy.
- Each EZ FIT connection comes complete with coupler and gasket to ensure tight connection.

SUBMERSIBLE TURBINE PUMPS

SPECIFICATIONS

Pump Motor Assembly

- Materials: Stainless steel construction including impellers/ diffusers, inlet/outlet, and outer shell
- Pump type: All models are 5.1" (130 mm) outside diameter centrifugal type pump
- Power cable: 23' (7m) black polyethylene jacketed power cable
- 60 Hz pump motor: Two-stage pump with 2" NPT female outlet
- Motor rating: Continuous operation with motor cooling provided by product flow and protected from dry running

Submersible Turbine Pump Kit

- All stainless steel hardware and Viton[®] or EPDM seals
- Bypass relief valve cracking pressure of 30-40 psi (2.1-2.8 bar) and 4 gpm (15 lpm) minimum flow at the discharge of all models
- Non-return check valve cracking pressure of 3 psi (0.2 bar) between product piping and bypass relief valve of all models
- Liquid compatibility: All models are intended for use with Diesel Exhaust Fluid (DEF). DEF is a non-flammable, non-combustible liquid that has a specific gravity of 1.09 at 68 °F (20 °C), and is made per ISO 22241-1 specifications with 32.5% urea and distilled or deionized water. As defined by ISO 22241-1, DEF is the same as AUS 32[®] (aqueous urea solution) and also commonly known as AdBlue[®]

Variable Length Range



Variable Length Range (A)

Model Length Range	Model Length Designation
69" - 102" (1,750 mm - 2,590 mm)	VL1
102" - 166" (2,590 mm - 4,215 mm)	VL2

Pump Motor Performance

DEF-PMA150A (Single-Phase) and DEF-PMA150D (Three-Phase)



Note: Performance is based on pumping water (1.00 specific gravity). Pressure is taken at the discharge outlet of the pump motor.

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AUS 32[®] is a registered trademark of GBZI Ltd.

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ORDERING INFORMATION

Variable Length Diesel Exhaust Fluid Submersible Turbine Pump Kits Each variable length submersible turbine pump kit comes complete with variable length column pipe kit (VL1 or VL2), check valve kit, bypass kit, EZ FIT pump motor assembly connection kit, and pump motor assembly (single- or three-phase).

Model	Description
403469901	60 Hz, single-phase, VL1 69" - 102" (1,750 mm - 2,590 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #5 below)
403470901	60 Hz, single-phase, VL2 102" - 166" (2,590 mm - 4,215 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #5 below)
403478901	60 Hz, three-phase, VL1 69" - 102" (1,750 mm - 2,590 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #4 and #6 below)
403479901	60 Hz, three-phase, VL2 102" - 166" (2,590 mm - 4,215 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #4 and #6 below)

Variable Length Components

- 1 Variable length column pipe kit, 2" to 1½" NPT (not sold separately)
- 2 Check valve kit
- Bypass kit
- 4 Pump motor assembly connection kit
- **6** 6 Pump motor assembly (single- or three-phase)

Variable Length Diesel Exhaust Fluid Submersible Turbine Pump Replacement Kits

Item #	Model	Description		
2	403463901	Check valve kit (includes 1% "NPT non-return check valve and 1% "NPT \times 4" long nipple on inlet)		
3	403461901	Bypass kit (includes ½" NPT bypass relief valve, ½" NPT × 1½" NPT bushing in 1½" NPT tee)		
4	403454901	Pump motor assembly connection kit (includes 2" NPT male inlet \times 1½" NPT male outlet EZ FIT connection		
5	403383903	60 Hz, single-phase pump motor assembly (DEF-PMA150A)		
6	403383933	60 Hz, three-phase pump motor assembly (DEF-PMA150D)		

Variable Length Accessories and Repair Parts

Model	Description		
403713921	Single-phase electrical kit, includes m/n STP-CBS, 208-240 Volt pump control with 120 Volt coil (p/n 400818921) and 25 uF / 370 V capacitor (p/n 400170936, for use with DEF-PMA150A)		
401220903	Three-phase 208-240 Volt pump control box with overload protection and 120 Volt coil (STP-CB3)		
403408931	11/2" NPT non-return check valve (part of component #2, valve only)		
403409931	½" NPT bypass relief valve (part of component #3, valve only)		
403468901	DEF-PMA hardware pack (part of component #5 or #6, includes cable grip, cable ties, and documentation)		
400170936	Capacitor, 25 uF / 370 V (for use with DEF-PMA150A)		



Fixed Length Components

- 1 Column pipe, 2" NPT (locally supplied)
- 2 Check valve kit
- 3 Bypass kit
- 4 Pump motor assembly connection kit

5 6 Pump motor assembly (single- or three-phase)

Fixed Length Diesel Exhaust Fluid Submersible Turbine Pump Kits

Individual assembly kits can be ordered for fixed length submersible turbine nump kit applications

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ltem #	Model	Description
2	403464901	Check valve kit (includes 2" NPT non-return check valve and 2" NPT \times 4" long nipple on inlet)
3	403462901	Bypass kit (includes ½" NPT bypass relief valve, ½" NPT × 2" NPT bushing in 2" NPT tee)
4	403456901	Pump motor assembly connection kit (includes 2" NPT male inlet \times 2" NPT male outlet EZ FIT connection
5	403383903	60 Hz, single-phase pump motor assembly (DEF-PMA150A)
6	403383933	60 Hz, three-phase pump motor assembly (DEF-PMA150D)

Fixed Length Accessories and Repair Parts

	Model	Description
	403713921	Single-phase electrical kit, includes m/n STP-CBS, 208-240 Volt pump control with 120 Volt coil (p/n 400818921) and 25 uF / 370 V capacitor (p/n 400170936)
	401220903	Three-phase 208-240 Volt pump control box with overload protection and 120 Volt coil (STP-CB3)
	403408932	2" NPT non-return check valve (part of component #2, valve only)
	403409931	1/2" NPT bypass relief valve (part of component #3, valve only)
	403468901	DEF-PMA hardware pak (part of component #5 or #6, includes cable grip, cable ties, and documentation)
	400170936	Capacitor, 25 uF / 370 V (for use with DEF-PMA150A)



2" NPT fixed length column pipe supplied locally (length to suit application)

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SERVICE STATION HARDWARE

SERVICE STATION HARDWARE

SYSTEM SOLUTIONS

- Product shear valves
- 2 Vapor shear valves
- Objective Series® single and double wall vapor spill containers without drain (mechanical or sensor monitored)
- 4 Defender Series[®] single and double wall fill spill containers with drain (mechanical or sensor monitored)
- 5 Monitoring Wells
- 6 Manways
- 7 Multiport tank sumps
- 8 Multiport manholes
- 9 Defender Series[®] overfill prevention valves
- 10 Vapor recovery caps
- 11 Vapor recovery swivel adapter
- 12 Fill caps
- 13 Fill swivel adapter
- 🚺 Drop tubes
- 15 Tank bottom protectors
- 16 Extractor vents
- 🕧 Tank vents
- 18 Flexible connectors

SERVICE STATION HARDWARE





DEFENDER SERIES[®] BUNDLE KITS

Combine a Defender Series[®] spill container, overfill prevention valve (OPVs), riser, cap, and adapter into a single part number and receive up to a 10% discount compared to purchasing all components separately. Get a premium, UST regulation compliant Defender Series[®] solution from grade level to tank, for fill point and overfill release prevention.

ORDERING INFORMATION

ABC

A = Spill Container

Select from the spill container MODEL numbers below

B = Overfill Prevention Valve

Select the ALPHA character below which corresponds with the appropriate OPV

C = Riser, Cap, and Adapter

- 1 = Stainless steel swivel fill adapter, cap, and riser
- 2 = No riser, cap, or adapter
- 3 = Stainless steel swivel vapor adaptor

Defender Series® Spill Containers

2 Defender Series[®] overfill prevention valve

3 Riser, cap, and adapter

1 Defender Series[®] spill container

SPECIFICATIONS

Components



IVIodel	Description
705545001	5 gallon spill container, single wall, NPSM thread, with drain, with black epoxy-coated cast iron gasketed lid
705545002	5 gallon spill container, single wall, NPSM thread, without drain, with black epoxy-coated cast iron gasketed lid
705545011	5 gallon spill container, single wall, NPT thread, with drain, with black epoxy-coated cast iron gasketed lid
705545012	5 gallon spill container, single wall, NPT thread, without drain, with black epoxy-coated cast iron gasketed lid
705555101	5 gallon spill container, double wall, NPSM thread, with drain, with 12 monitor, with black epoxy-coated cast iron gasketed lid
705555102	5 gallon spill container, double wall, NPSM thread, without drain, with I2 monitor, with black epoxy-coated cast iron gasketed lid
705555111	5 gallon spill container, double wall, NPT thread, with drain, with I2 monitor, with black epoxy-coated cast iron gasketed lid
705555112	5 gallon spill container, double wall, NPT thread, without drain, with I2 monitor, with black epoxy-coated cast iron gasketed lid
705555201	5 gallon spill container, double wall, NPSM thread, with drain, with TSP-ULS sensor, with black epoxy-coated cast iron gasketed lice
705555202	5 gallon spill container, NPSM thread, without drain, with TSP-ULS sensor, with black epoxy-coated cast iron gasketed lid
705555211	5 gallon spill container, double wall, NPT thread, with drain, with TSP-ULS sensor, with black epoxy-coated cast iron gasketed lid
705555212	5 gallon spill container, NPT thread, without drain, with TSP-ULS sensor, with black epoxy-coated cast iron gasketed lid
705556111	5 gallon below grade spill container, double wall, NPT thread, with drain, with i2 monitor, with 18" manway
705556112	5 gallon below grade spill container, double wall, NPT thread, without drain, with I2 monitor, with 18" manway

Defender Series® Overfill Prevention Valves

Model	Alpha	Description
708591901	A	Overfill prevention valve with 5' top drop tube, 8' bottom drop tube
708591902	В	Overfill prevention valve with 5' top drop tube, 10' bottom drop tube
708591921	С	Overfill prevention valve with 5' top drop tube, 8' bottom drop tube, AGB compatible*
708591922	D	Overfill prevention valve with 5' top drop tube, 10' bottom drop tube, AGB compatible*
708592901	E	Overfill prevention valve with 10' top drop tube, 8' bottom drop tube
708592902	F	Overfill prevention valve with 10' top drop tube, 10' bottom drop tube
708592921	G	Overfill prevention valve with 10' top drop tube, 8' bottom drop tube, AGB compatible*
708592922	н	Overfill prevention valve with 10' top drop tube, 10' bottom drop tube, AGB compatible*
708593901	I	Overfill prevention valve, coaxial with 6.5' top drop tube, 8' bottom drop tube
708593902	J	Overfill prevention valve, coaxial with 6.5' top drop tube, 10' bottom drop tube
708593923	К	Overfill prevention valve, poppeted coaxial with 6.5' top drop tube, 8' bottom drop tube, AGB compatible*
708593924	L	Overfill prevention valve, poppeted coaxial with 6.5' top drop tube, 10' bottom drop tube, AGB compatible*
N/A	N	No OPV - Option available with vapor swivel adapter only

*Alcohol, gas, biofuel compatible (E-85, gasoline and Biodiesel) models come with hard coated anodized drop tubes for full compatibility.

Franklin Fueling Systems

SELECTING A SPILL CONTAINER

When you fully understand both your current site needs and where you might be headed in the future, you are able to make a sound decision on which type of spill container is right for your application. Be sure to consider your compliance needs, operational requirements, and weather/environmental conditions when selecting between a Defender Series[®] grade level or below grade spill container. Use this side-by-side comparison of the two spill container options to assist in making your selection.

	GRADE LEVEL	BELOW GRADE
Single wall containment option		
Double wall containment option	 Image: A set of the set of the	 Image: A start of the start of
Upgrade from single wall to double wall spill containment	 Image: A second s	
Integrated monitor option (visual inspection testing)	 Image: A set of the set of the	✓
Integrated electronic sensor option (continual ATG monitoring)	 Image: A second s	 Image: A set of the set of the
Push-pull drain option		\checkmark
Installs with 1" (2.5cm) slope to grade level		
Installs flush with grade level		\checkmark
Snow plow ring		
Flush fiberglass composite manway cover		✓
Cast iron gasketed lid		
Gasketed lock-down lid with locking tabs		✓
Containment housed inside a ribbed roto-molded PE gravel guard.	 Image: A second s	
Containment protected by a solid steel manway skirt		✓



DEFENDER SERIES° SPILL CONTAINERS

Defender Series[®] five gallon spill containers combine years of knowledge and experience in forecourts across the globe to represent the best defense in spill containment. Proactively protecting a site from the dangers of fugitive emissions during fuel delivery can save station owners both time and money by avoiding remediation due to fuel leakage. Available in both grade level and below grade level models to meet the needs of your application and preference, the complete lineup of Defender Series[®] spill containers provides a durable, easy-to-install, and simple-to-maintain and service spill containment solution for any environment and any application.

HIGHLIGHTS

- Available in both grade level and below grade level models to meet the needs of your application and preference.
- Double wall protection complete with integrated visual interstitial integrity monitor or electronic sensor monitoring options for the secondary containment space (single wall grade level option available).
- Visual interstitial monitor facilitates efficient monthly inspections of the integrity of the secondary containment space during walk-through inspections.
- Electronic sensor monitor provides active integrity monitoring of the secondary containment space, providing immediate alarm of liquid when paired with an automatic tank gauge.
- Drop tube adapter ensures a vapor tight seal and easy in and out of drop tube / overfill prevention valve during installation or maintenance.
- Drain valve option, designed to meet CARB leak rate requirements, drains any spilled fuel into the tank.
- Grade level spill containers feature a rugged concrete ring, sturdy snow plow ring, and cast iron lid to deflect forecourt traffic. Their integrated liquid dam and gasketed lid prevent water entry. The container is housed inside a ribbed roto-molded PE gravel guard.
- Below grade spill containers feature a flush fiberglass composite manway lid allowing forecourt traffic to pass cleanly over its top. The gasketed lock-down cover seals water out. The container is protected by a solid steel manway skirt.
- Grade level spill containers offer variable installation height adjustment making it easy to ensure proper installation.
- Below grade spill containers install easily, and cleanly into the included 18" manway for simple installation.

SPECIFICATIONS

Components

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Below Grade	Grade Level
* Sold separately	
5 Drain	🔞 Cast iron gasketed lid
4 Drop tube adapter	11 Gravel guard
3 Nipple*	10 Fiberglass manyway lid
2 Swivel adapter*	9 18" manway
 Adapter cap* 	8 Lock down lid
Secondary containment	7 Electronic sensor monitor
Primary containment	6 Visual monitor





SPECIFICATIONS CONTINUED

Grade Level Spill Container Dimensions







Below Grade Spill Container Dimensions



CI-GKT = Black epoxy-coated cast iron gasketed lid (grade level only)

CI-GRN = Green epoxy-coated cast iron gasketed lid (grade level only)

CI-RED = Red epoxy-coated cast iron gasketed lid (grade level only)

CI-WHT = White epoxy-coated cast iron gasketed lid (grade level only)

CI-YEL = Yellow epoxy-coated cast iron gasketed lid (grade level only)

Example: 705555111CI-GKT = Defender Series[®] grade level double wall spill container

with visual monitor, with NPT base thread, with drain and with black cast iron gasketed lid.

Example: **705556211BLK** = Defender Series[®] below grade double wall spill container with electronic sensor monitor, with NPT base thread, with drain and with black fiberglass

CI-ORG = Orange epoxy-coated cast iron gasketed lid (grade level only)

SPECIFICATIONS CONTINUED

Approvals/Certifications

- UL Listed MH62435 (below grade, and grade level version with CI-GKT cover), ULC Listed (grade level CI-GKT versions only).
- CARB approved (grade level only).
- Exceeds H20 and HS20 load standards (maximum axle load requiring support for the 32,000 or 16,000 pounds for each set of dual tire wheels).

ORDERING INFORMATION

Ordering Guide

Complete spill container part numbers have a specific order and are created using the following guidelines:

705 XXX Y A B C

XXX = Containment Options

C = Lid/Cover* BLK = Black fiberglass 18" manway cover (below grade only)

- 545 = Grade level single wall
- 555 = Grade level double wall
- 556 = Below grade double wall

Y = Interstitial Monitoring Options

- 0 = No sensor
- 1 = Visual monitor (float gauge)
- 2 = Electronic sensor monitor

A = Base Thread Options

- 0 = NPSM
- 1 = NPT
- 2 = BSPT

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B = Drain Options

- 1 = With drain
- 2 = Without drain

Defender Series[®] Spill Containers Common Configurations

Model	Description
705545001CI-GKT	Defender Series® grade level, single wall, NPSM thread, with drain, with black epoxy-coated cast iron gasketed lid
705545002CI-GKT	Defender Series® grade level, single wall, NPSM thread, without drain, with black epoxy-coated cast iron gasketed lid
705545011CI-GKT	Defender Series® grade level, single wall, NPT thread, with drain, with black epoxy-coated cast iron gasketed lid
705545012CI-GKT	Defender Series® grade level, single wall, NPT thread, without drain, with black epoxy-coated cast iron gasketed lid
705545021CI-GKT	Defender Series® grade level, single wall, BSPT thread, with drain, with black epoxy-coated cast iron gasketed lid
705545022CI-GKT	Defender Series® grade level, single wall, BSPT thread, without drain, with black epoxy-coated cast iron gasketed lid
705555101CI-GKT	Defender Series® grade level, double wall, NPSM thread, with drain, with visual monitor, with black epoxy-coated cast iron gasketed lid
705555102CI-GKT	Defender Series® grade level, double wall, NPSM thread, without drain, with visual monitor, with black epoxy-coated cast iron gasketed lid
705555111CI-GKT	Defender Series® grade level, double wall, NPT thread, with drain, with visual monitor, with black epoxy-coated cast iron gasketed lid
705555112CI-GKT	Defender Series® grade level, double wall, NPT thread, without drain, with visual monitor, with black epoxy-coated cast iron gasketed lid
705555211CI-GKT	Defender Series® grade level, double wall, NPT thread, with drain, with electronic sensor monitor, with black epoxy-coated cast iron gasketed lid
705555212CI-GKT	Defender Series® grade level, NPT thread, without drain, with electronic sensor monitor, with black epoxy-coated cast iron gasketed lid
705556111BLK	Defender Series® below grade, double wall, NPT thread, with drain, with visual monitor, with black fiberglass manway cover (18" manway included)
705556112BLK	Defender Series® below grade, double wall, NPT thread, no drain, with visual monitor, with black fiberglass manway cover (18" manway included)
705556211BLK	Defender Series® below grade, double wall, NPT thread, with drain, with electronic sensor monitor, with black fiberglass manway cover (18" manway included)
705556212BLK	Defender Series® below grade, double wall, NPT thread, no drain, with electronic sensor monitor, with black fiberglass manway cover (18" manway included)

* API colors available. Call factory for additional lid options.

manway cover (manyway included).

705559901* Defender Series® grade level cutaway display, double wall, with drain, with visual monitor

*For display and demonstration purposes only. Six to eight week lead time.

Defender Series® Spill Container Installation Tools

Model	Description
T-7001	T-handle wrench
T-7106	Double-ended installation tool
T-7107	Double wall vacuum test kit (for double wall models only)

Grade Level Single Wall Replacement Parts

#	ł	Model	Description
1		70544011	Cover, cast iron w/gasket (black)
2		70551911	Cover gasket
3		70553001	Plow ring assembly
4		602009007	Plow ring gasket
5		70541202	Fill riser, cap, and adapter kit
6		77720102	Top seal fill cap
7		SWF-100-SS	Fill swivel adapter
8		70521307	4" x 2.88" close nipple
9		70541302	Vapor riser, cap, and adapter kit
1		30430103	Top seal vapor cap
1		SWV-101-SS	Vapor swivel adapter
12	2	70550901EC	DT riser clamp assembly
1	3	1103939	DT riser gasket
14	4	70533729	Pull-to-push drain valve kit
1	5	70550311	Spill container seal ring gasket
10	3	602256001	Tank riser gasket
		705545001SP	Spill container, NPSM, with drain
1	7	705545002SP	Spill container, NPSM, no drain
		705545011SP	Spill container, NPT, with drain
		705545012SP	Spill container, NPT, no drain





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Grade Level Double Wall Replacement Parts

#	Model	Description		
1	70544011	Cover, cast iron w/gasket (black)		
2	70551911	Cover gasket		
3	70553001	Plow ring assembly		
4	602009007	Plow ring gasket		
5	70541202	Fill riser cap and adapter kit		
6	77720102	Top seal fill cap		
7	SWF-100-SS	Fill swivel adapter		
8	70521307	4" x 2.88" close nipple		
9	70541302	Vapor riser, cap, and adapter kit		
10	30430103	Top seal vapor cap		
11	SWV-101-SS	Vapor swivel adapter		
12	70550901EC	DT riser clamp assembly		
13	1103939	DT riser gasket		
14	70533729	Pull-to-push drain valve kit		
15	70553301	l² monitor and inspection port kit		
16	TSP-ULS	Electronic leak detection sensor		
17	70553302	Sensor inspection port		
18	70550311	Spill container seal ring gasket		
19	602256001	Tank riser gasket		
	705555101SP	Spill container, I2, NPSM, with drain		
	705555102SP	Spill container, I2, NPSM, no drain		
	705555111SP	Spill container, I2, NPT, with drain		
20	705555112SP	Spill container, I2, NPT, no drain		
	705555201SP	Spill container, sensor, NPSM, with drain		
	705555202SP	Spill container, sensor, NPSM, no drain		
	705555211SP	Spill container, sensor, NPT, with drain		
	705555212SP	Spill container, sensor, NPT, no drain		



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Below Grade Double Wall Replacement Parts

#	Model	Description
1	78130401	Cover, 18", fiberglass (black)
2	705587901	Lock down cover assembly
	71520201	Spare lift handle assembly
3	70541202	Fill riser cap and adapter kit
4	77720102	Top seal fill cap
5	SWF-100-SS	Fill swivel adapter
6	70521307	4" x 2.88" close nipple
7	70541302	Vapor riser, cap, and adapter kit
8	30430103	Top seal vapor cap
9	SWV-101-SS	Vapor swivel adapter
10	70550901EC	DT riser clamp assembly
11	1103939	DT riser gasket
12	70533729	Pull-to-push drain valve kit
13	70553301	l² monitor and inspection port kit
14	TSP-ULS	Electronic leak detection sensor
15	70553302	Sensor inspection port
16	602256001	Tank riser gasket



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Note: Order the Above ground Drain Cover Kit (p/n 9002201) to turn a drain configuration into a no-drain spill container.

Model	Description
70544011	Grade level, cast iron gasketed, black
70544015	Grade level, cast iron gasketed, yellow
70511012	Grade level, cast iron gasketed, white
70544013	Grade level, cast iron gasketed, red
70544017	Grade level, cast iron gasketed, orange
70544018	Grade level, cast iron gasketed, green
78130401	Below grade, 18" FRC black
78130402	Below grade, 18" FRC white
78130403	Below grade, 18" FRC red
78130405	Below grade, 18" FRC yellow
78130407	Below grade, 18" FRC orange
78130601	Below grade, 18" steel

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EBW[®] SERIES SPILL CONTAINERS

EBW[®] Series spill containers provide an economical solution for the collection of spilled product during normal tank filling of underground storage tanks. They are available in both grade level and below grade level models to meet the needs of your application and preference. The complete lineup of EBW[®] Series spill containers provides a basic, easy-to-install, and simple-to-maintain spill containment solution.

HIGHLIGHTS

- Available in both grade level and below grade level models to meet the needs of your application and preference.
- Single wall containment protection.
- The flexible polyethylene container is designed to move with natural ground movements.
- Drain and pump options facilitate easy return of spilled fuel back into the tank.
- A cast iron base provides stability (NPT or BSPT).
- Threaded base for new installations.
- Slip-on grade level models for retrofit applications use a gasket flanged bolt system to secure the spill container to the riser pipe and are designed to eliminate the need to remove the riser pipe from the tank when installing.
- Covers available in a variety of colors to clearly identify product contained in the tank and prevent cross drops.

Grade Level Spill Containers

- 5 gallon capacity.
- Grade level spill containers feature a durable cast iron deflector ring which provides protection from heavy traffic and truck plows while diverting water away from the spill container top.
- The container is equipped with a gravel guard to prevent backfill material from filling in around the movable shell, mitigating issues with ground movement.
- Composite, cast iron, or aluminum cover options.

Below Grade Spill Containers

- 5 gallon and 15 gallon capacity options.
- Below grade level spill containers feature a hinged, locking, watertight cover that prevents water from entering the containment.
- They include an 18" wide, 8" deep cast iron manway with either a composite or steel lid that allows forecourt traffic to pass cleanly over its top.

SPECIFICATIONS





SPECIFICATIONS CONTINUED

Grade Level Spill Container Dimensions





Grade Level Retrofit Spill Container Dimensions





Below Grade Spill Container Dimensions





- 14" (35cm)

16" (40cm)



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SPECIFICATIONS CONTINUED

Grade Level Spill Container Materials

- Base: Cast iron
- Container: Polyethylene
- Deflector ring: Cast iron
- Cover: Fiber reinforced composite (FRC), cast iron, or aluminum

Approvals/Certifications

- Spill containers and manways exceed DOT H20 requirements.
- UL listed, MH62436 (below grade models only), ULC listed, MH21091*
- CARB Phase 1 EVR approved, VR-101*

*See ordering information for a listing of specific spill container models that hold this approval/certification.

UL2447 listed (below grade only)

ORDERING INFORMATION

EBW® Series Grade Level Spill Containers

Model	Description
70547001ALUM	Grade level spill container, 5 gallon capacity, with drain, NPT threads, aluminum cover
70547002ALUM	Grade level spill container, 5 gallon capacity, without drain, NPT threads, aluminum cover
70547021ALUM	Grade level spill container, 5 gallon capacity, with drain, BSPT threads, aluminum cover
70547001BLK	Grade level spill container, 5 gallon capacity, with drain, NPT threads, black composite cover
70547002BLK	Grade level spill container, 5 gallon capacity, without drain, NPT threads, black composite cover
70547021BLK	Grade level spill container, 5 gallon capacity, with drain, BSPT threads, black composite cover
70547901CI-GKT*	Grade level spill container, 5 gallon capacity, with drain, NPT threads, cast iron cover with gasket
70547902CI-GKT*	Grade level spill container, 5 gallon capacity, without drain, NPT threads, cast iron cover with gasket
70549001BLK**	Grade level spill container, 5 gallon capacity, with drain, NPT threads, black composite cover (CARB approved)
70549002BLK**	Grade level spill container, 5 gallon capacity, without drain, NPT threads, black composite cover (CARB approved)
*III C I:-+ N4110100	

*ULC listed, MH21091

**CARB Phase 1 EVR approved, VR-101

EBW® Series Slide-On Grade Level Spill Containers

Model	Description
70240001BLK	Grade level spill container, 5 gallon capacity, with pump, slide-on base, black composite cover
70240002BLK	Grade level spill container, 5 gallon capacity, without pump, slide-on base, black composite cover
70240402CI-GKT*	Grade level spill container, 5 gallon capacity, no pump option, slide-on base, cast iron cover with gasket

*ULC listed, MH21091

EBW® Series Grade Level Spill Container Covers

Replace the last letters in any standard spill container part number for these cover options.

Model	Description		
BLK	Black composite		
WHT	White composite		
RED	Red composite		
YEL	Yellow composite		
ORG	Orange composite		
BRN	Bronze composite		
WHT-X	White with black cross composite		
RED-X	Red with white cross composite		
ALUM	Aluminum		
CI	Cast iron		
CI-GKT	Cast iron with gasket		

Below Grade Spill Container Materials

- Base: Cast iron
- Container: Polyethylene
- Deflector ring: Cast iron
- Cover: Fiber reinforced composite (FRC), or steel





EBW[®] Series Below Grade Spill Containers

Model	Description
70547401BLK*	Below grade spill container, 5 gallon capacity, with drain, NPT threads, 18" \times 8" manway with black composite cover
70547402BLK*	Below grade spill container, 5 gallon capacity, without drain, NPT threads, 18" x 8" manway with black composite cover
70549201BLK**	Below grade spill container, 5 gallon capacity, with drain, NPT threads, 18" x 8" manway with black composite cover (CARB approved)
70549202BLK**	Below grade spill container, 5 gallon capacity, without drain, NPT threads, 18" x 8" manway with black composite cover (CARB approved)
71547401BLK*	Below grade spill container, 15 gallon capacity, with drain, NPT threads, 18" x 8" manway with black composite cover
71547402BLK*	Below grade spill container, 15 gallon capacity, without drain, NPT threads, 18" x 8" manway with black composite cover
71549201BLK**	Below grade spill container, 15 gallon capacity, with drain, NPT threads, 18" x 8" manway with black composite cover (CARB approved)
71549202BLK**	Below grade spill container, 15 gallon capacity, without drain, NPT threads, 18" x 8" manway with black composite cover (CARB approved)





*ULC listed, MH21091

**CARB Phase 1 EVR approved, VR-101

EBW[®] Series Manway Covers

Replace the last letters in any standard spill container part number for these cover options.

Model	Description	Model	Description
BLK	Black composite	YEL	Yellow composite
WHT	White composite	ORG	Orange composite
RED	Red composite	STL	Steel

EBW® Series Spill Container Replacement Parts

#	Model	Description
1	70542301	Cover, composite (black)
2	70544011	Cover, cast iron w/gasket (black)
3	77720102	Top seal fill cap
4	SWF-100-SS	Fill swivel adapter
5	70521307	4" x 3" close nipple
6	30430103	Top seal vapor cap
7	SWV-101-SS	Vapor swivel adapter
8	70541202	Fill riser, cap, and adapter kit for grade level spill containers
9	70541302	Vapor riser, cap, and adapter kit for grade level spill containers
10	70533219*	Pull-to-push drain valve kit
11	78130401	Cover, 18", fiberglass (black)
12	71040114 71040201	Lock down cover w/ base Lock down cover w/o base
	71520201	Spare lift handle assembly
13	70521305	4" x 5" close nipple
14	70541201	Fill riser, cap, and adapter kit for below grade spill containers
15	70541301	Vapor riser, cap, and adapter kit for below grade spill containers

Grade Level



Below Grade



*CARB approved model (P/N 70533719) also available.

SERVICE STATION HARDWARE



BUNDLE AND SAVE

Combine all of your multiport equipment into a single part number and receive a **10%*** **discount** compared to purchasing all components separately.

COMPLETE PACKAGE

Packages include a multiport manway, watertight sump shield, and overfill prevention valve, plus the necessary hardware and fiberglass seam kit.

FOR YOUR APPLICATION

Available packages include 42" Defender Series[®] multiports, 42" PHIL-TITE™ multiports, or 36" PHIL-TITE™ - to - Defender Series[®] retrofit multiports for gas and diesel applications.

SPILL CONTAINMENT

SPECIFICATIONS

Components

- 1 Multiport manway with skirt
- 2 Fill spill container
- 3 Vapor spill container
- 4 Swivel fill adapter and cap
- 5 Swivel vapor adapter and cap
- 6 Watertight sump shield
- Watertight sump shield mounting reducer
- 8 Spill container opening with boots and clamps
- Inspection port with boot and clamp
- 10 Drop tubes (top and bottom)
- 11 Overfill prevention valve



ORDERING INFORMATION

42" DIESEL NEW DEFENDER SERIES® MULTIPORT PACKAGE

Model 705589913 includes all of the components listed below.

Model	Description
DMP36-1-WTSS-32	Watertight sump shield with one spill container opening, for 32" diameter sump riser (fits sump opening 31.75" to 33.25") - includes corresponding boots and clamps
FIBERGLASS-KIT	Fiberglass seam kit - includes matte, resin, putty and catalyst for (1) fiberglass seam, single or double wall, plus (1) 3"x 1/2" roller, (3) quart cups, (1) 2" brush, (2) stir sticks, (1) squeegee, (2) pairs of large gloves.
DMP42-1-SWT-YEL	42" Defender Series® multiport kit: includes one spill container, one 8" access port, yellow cast iron lid (NPT THREAD)
70541202	Swivel fill adapter kit - includes 3" SSTL nipple, adapter and cap
708592902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

42" GAS NEW DEFENDER SERIES® MULTIPORT PACKAGE

Model 705589914 includes all of the components listed below.

Model	Description
DMP36-2-WTSS-32	Watertight sump shield with two spill container openings, for 32" diameter sump riser (fits sump opening 31.75" to 33.25") - includes corresponding boots and clamps
FIBERGLASS-KIT	Fiberglass seam kit - includes matte, resin, putty and catalyst for (1) fiberglass seam, single or double wall, plus (1) 3"x 1/2" roller, (3) quart cups, (1) 2" brush, (2) stir sticks, (1) squeegee, (2) pairs of large gloves.
DMP42-2-SWT-WHT/ORG	42" Defender Series® multiport kit - includes two spill containers, one 8" access port, white and orange cast iron lids (NPT THREAD)
70541202	Swivel fill adapter kit - includes 3" SSTL nipple, adapter and cap
70541302	Swivel vapor adapter kit - includes 3" SSTL nipple, adapter and cap
M-1600	Riser alignment bracket for 16" center
708592902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

Contact Franklin Fueling Systems for other configuration options.

42" DIESEL PHIL-TITE™ MULTIPORT PACKAGE

Model 705589905 includes all of the components listed below.

Model	Description
MSC-XS36-1	Watertight sump shield with one spill container opening, 30" x 36" (31 5/8" OD, 31 1/4" ID) - includes corresponding boots and clamps
FIBERGLASS-KIT	Includes matte, resin, putty and catalyst for one fiberglass seam single or double wall. Also includes one roller (1/2' x 3"), three quart cups, one brush (2"), two stir sticks, one squeegee, and two pairs of gloves (large).
M42-1C-1-0-NPR	42" PHIL-TITE™ multiport kit - includes one spill container, one 8" access plate
PP-1005-TB	Debris bucket, no pump
70541201	Swivel fill adapter kit - includes 5" SSTL nipple, adapter and cap
MF 4X4	Male/female 4" x 4" riser adapter (NPT to NPSM)
708592902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

42" GAS PHIL-TITE™ MULTIPORT PACKAGE

Model 705589906 includes all of the components listed below.

Model	Description
MSC-XS36-3	Watertight sump shield with two spill container openings, 30" x 36" (31 5/8" OD, 31 1/4" ID) - includes corresponding boots and clamps
FIBERGLASS-KIT	Includes matte, resin, putty and catalyst for one fiberglass seam single or double wall. Also includes one roller (1/2' x 3"), three quart cups, one brush (2"), two stir sticks, one squeegee, and two pairs of gloves (large).
M42-2C-1-0-NPR	42" PHIL-TITE™ multiport kit - includes two spill containers, one 8" access plate
PP-1005-TB	Debris bucket, no pump
PP-1005-TBP	Debris bucket, with pump
70541201	Swivel fill adapter kit - includes 5" SSTL nipple, adapter and cap
70541301	Swivel vapor adapter kit - includes 5" SSTL nipple, adapter and cap
MF 4X4	Male/female 4" x 4" riser adapter (NPT to NPSM) - QTY 2
M-1600	Riser alignment bracket for 16" center
708592902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

Fiberglass Kit

Model	Description
FIBERGLASS-KIT	Includes matte, resin, putty and catalyst for one fiberglass seam single or double wall. Also includes one roller (1/2' x 3"), three quart cups, one brush (2"), two stir sticks, one squeegee, and two pairs of gloves (large).

Boots

Defender Series® multiport sump Nitrile boot with stainless steel band clamp.

Model	Description
WTRB-1315	Defender Series® spill container reducer boot with clamp for spill container to watertight sump shield connection

Caps

Defender Series® multiport sump cap covers for sealing access openings.

Model	Description
WTRC-0600	6" rubber cap with clamp for 6" access opening in watertight sump shield
WTRC-0800	8" rubber cap with clamp for 8" access opening in watertight sump shield
WTRC-1300	13" rubber cap with clamp for 13" access opening in watertight sump shield



DEFENDER SERIES[®] MULTIPORT MANWAYS

The EBW® brand Defender Series® multiport manways include the Defender Series® spill containers and feature the patented watertight sealing system. Available in both 36" and 42" models with a variety of configurations to meet the needs of any application.

 Exceeds H20 and HS20 load standards (maximum axle load requiring support for the 32,000 or 16,000 pounds for

HIGHLIGHTS

- Provides future access to tank top.
- Fewer forecourt manways improves site appearance and pedestrian safety.
- 18" skirt.
- Cam locks seal manway cover allowing simple removal.
- Optional waterproof sump shield system.
- Cast iron snowplow rings.
- Incorporates 5 gallon Defender Series® spill containers.
- Cam locks eliminate corroded threads, lost bolts, and water entry from not reinstalling bolts after service.

Components

- 1 One spill container multiport manway
- 2 Two spill container multiport manway
- 3 Four spill container multiport manway
- 4 Multiport cover assembly
- 5 Cover
- 6 Spill container
- 7 Spill container sleeve
- 8 18" skirt
- 9 Plow ring
- 10 Cast iron lid
- 11 Access cover
- 12 Handles
- 13 Cam locks
- 14 Concrete tabs



SPECIFICATIONS

each set of dual tire wheels).







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ORDERING INFORMATION

Available in 36" and 42" access opening diameters. Spill container access openings are 16" on center to align with standard tank bung openings. Multiport manways include a manway cover with cam locks, 18" aluminum skirt, stainless steel sleeve(s) with cover(s), and fill and/or vapor containers.

Ordering Guide

X - Y - Z - A

X = Size and Style

DMP36 = 36" Defender Series[®] multiport

DMP42 = 42" Defender Series® multiport

Y = Number of Spill Containers

- 1 = One spill container
- 2 = Two spill containers
- 4 = Four spill containers

Z = Container Configuration

- SW = Single wall, NPSM
- SWT = Single wall NPT

 $DWI = Double wall w/I^2 monitor$

DWS = Double wall w/ TSP-ULS sensor

DWIT = Double wall w/l^2 monitor NPT

DWST = Double wall w/ TSP-ULS sensor NPT

A = Cover Color

YEL = Yellow

RED/ORG = Red and orange

WHT/ORG = White and orange

Example: DMP36-1-SW-YEL = 36° Defender multiport with one spill container, one 13° access port, and yellow cast iron lid.

Defender Series® Multiport Manways Packages

New Construction

Model	Description
DMP36-1-SW-YEL	36" Defender Series® multiport, one spill container, one 13" access port, yellow cast iron lid
DMP36-2-SW-RED/ORG	36" Defender Series® multiport, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP36-2-SW-WHT/ORG	36" Defender Series® multiport, two spill containers, one 8" access port, one white/one orange cast iron lid
DMP42-1-SW-YEL	42" Defender Series® multiport, one spill container, one 13" access port, yellow cast iron lid
DMP42-2-SW-RED/ORG	42" Defender Series® multiport, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP42-2-SW-RED/ORG	42" Defender Series [®] multiport, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP42-2-SW-WHT/ORG	42" Defender Series® multiport, two spill containers, one 8" access port, one white/one orange cast iron lid
DMP42-4-SW-WHT/ORG	42" Defender multiport, four spill containers, one 6" access port,two white/two orange cast iron lids

Retrofits

Model	Description
DMP36R-1-SW-YEL	36" Defender Series® multiport retrofit kit, one spill container, one 13" access port, yellow cast iron lid
DMP36R-2-SW-RED/ORG	36" Defender Series® multiport retrofit kit, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP36R-2-SW-WHT/ORG	36" Defender Series® multiport retrofit kit, two spill containers, one 8" access port, one white/one orange cast iron lid
DMP42R-1-SW-YEL	42" Defender Series® multiport retrofit kit, one spill container, one 13" access port, yellow cast iron lid
DMP42R-2-SW-RED/ORG	42" Defender Series® multiport retrofit kit, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP42R-2-SW-WHT/ORG	42" Defender Series® multiport retrofit kit, two spill containers, one 8" access port, one white/one orange cast iron lid
DMP42R-4-SW-WHT/ORG	42" Defender Series [®] multiport retrofit kit, four spill containers, one 6" access port, two white/two orange cast iron lids

Note: Retrofits do not include the frame or skirt.

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ORDERING INFORMATION CONTINUED

Defender Series[®] Multiport Manway Replacement Parts

#	Model	Description
1	70544011	Cover, cast iron w/gasket (black)
2	70551911	Cover gasket
3	705560901	Plow ring assembly
4	602009009	Manyway cover plow ring gasket
5	110370382	Spill container sleeve gasket
6	70556101	Spill container sleeve
7	602346908	Access cover assembly with gasket
8	602009011	Access cover gasket
9	SC-1501L	Cam lock assembly (qty 6)
10	SC-1536B	36" gasket
	SC-1542B	42" gasket
1	70541202	Fill riser, cap, and adapter kit
12	77720102	Top seal fill cap
13	SWF-100-SS	Fill swivel adapter
14	70521307	4" x 2.88" close nipple
15	70541302	Vapor riser, cap, and adapter kit
16	30430103	Top seal vapor cap
1	SWV-101-SS	Vapor swivel adapter
	705542001	Single wall spill container, NPSM, with drain
18	705542002	Single wall spill container, NPSM, no drain
•••	705542011	Single wall spill container, NPT, with drain
	705542012	Single wall spill container, NPT, no drain
	705552101	Double wall spill container, I2, NPSM, with drain
	705552102	Double wall spill container, 12, NPT with drain
	705552112	Double wall spill container, 12, NPT, no drain
19	705552201	Double wall spill container, sensor, NPSM, with drain
	705552202	Double wall spill container, sensor, NPSM, no drain
	705552211	Double wall spill container, sensor, NPT, with drain
	705552212	Double wall spill container, sensor, NPT, no drain
20	70550901EC	DT riser clamp assembly
21	1103939	DT riser gasket
22	70533729	Pull-to-push drain valve kit
23	70550311	Spill container seal ring gasket
24	70553301	I2 monitor and inspection port kit
25	TSP-ULS	Electronic leak detection sensor
26	70553302	Sensor inspection port
27	602256001	Tank riser gasket
	602503931	36" manway cover assembly with one spill container opening, one access port
	602503932	36" manway cover with two spill container openings, one access port
28	602504931	42" manway cover with one spill container opening, one access port
	602504932	42" manway cover with two spill container openings, one access port
	602504933	42" manway cover with four spill container openings, one access port





DEFENDER SERIES[®] MULTIPORT SUMPS

EBW® brand Defender Series® multiport sumps feature a solid fiberglass design and provide a watertight tank top containment solution for fill and vapor spill containers. Designed for use with Defender Series® multiport manways, these multiport sumps allow you to reduce the number of forecourt manways for better site appearance and improved pedestrian safety. The two-piece design eliminates confined spaces and gives installers full access to the containment during installation. The octagonal base design features eight flat panels molded together which provide ideal installation surfaces for 90° pipe entries. Each package includes a watertight sump shield, a sump reducer, the appropriate size and quantity of Neoprene boots, and clamps.

HIGHLIGHTS

- Constructed from rugged three-layer hand layup fiberglass with a white vapor and watertight gel coat interior for added protection and increased visibility.
- Sump reducers are available to fit under both 32" and 42" manways.
- Double wall models are shipped under vacuum with vacuum gauge installed for on-site verification of a sealed interstitial space.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

DM A B - C - D - E

DM = Defender Series[®] Multiport[™] Sump

A = Sump Depth Options

M = Medium burial

B = Sump Size Options

4236 = 42" base, 36" manway opening

4842 = 48" base, 42" manway opening

C = Watertight Shield Openings Options

- 1/0 = One container opening, one 8" access port opening
- 4/0 = Four container openings, one 6" access port opening
- 2/1 = Two container openings, one 8" access port opening

D = Tank Mount Options

OB = Octagonal base with bottom (single wall only)

OC = Octagonal collar mount base

E = Wall Type and Interstitial Monitoring Method Options

S = Single wall, none

H = Double wall, hydrostate (bring)

 $\label{eq:stample:DMM4236-1/0-OB-S = Defender Series^{\circledast} \mbox{ multiport sump, medium burial, 42" base, 36" manway opening, sump shield with one container opening and one 8" access port opening, octagonal base with bottom, single wall$

Defender Series[®] Watertight Sump Packages

Pre-configured multiport sump packages for typical applications. These packages include a sump and watertight sump shield which comes complete with corresponding boots and clamps. Multiport sump packages should be ordered in conjunction with multiport manways.

Model	Description
DMM4236-1/0-OB-S*	Defender Series® multiport sump, medium burial, 42" base, 36" manway opening, sump shield with one container opening and one 8" access port opening, octagonal base with bottom, single wall
DMM4236-1/0-OC-S*	Defender Series® multiport sump, medium burial, 42" base, 36" manway opening, sump shield with one container opening and one 8" access port opening, octagonal collar mount base, single wall
DMM4236-2/1-OB-S**	Defender Series [®] multiport sump, medium burial, 42" base, 36" manway opening, sump shield with two container openings, one 8" access port opening, octagonal base with bottom, single wall
DMM4236-2/1-OC-S**	Defender Series [®] multiport sump, medium burial, 42" base, 36" manway opening, sump shield with two container openings, one 8" access port opening, octagonal collar mount base, single wall
DMM4842-4/0-OC-H***	Defender Series [®] multiport sump, medium burial, 48" base, 42" manway opening, sump shield with four container openings and one 6" access port opening, octagonal collar mount base, double wall
DMM4842-4/0-OC-S***	Defender Series® multiport sump, medium burial, 48" base, 42" manway opening, sump shield with four container openings and one 6" access port opening, octagonal collar mount base, single wall

*Requires one seam kit for installation.

**Requires two seam kits for installation.

***Requires four seam kits for installation.

Defender Series[®] Watertight Sump Shield Packages

These stand alone watertight sump shield packages allow you to install Defender Series[®] multiport manways with non-Defender Series[®] sumps. These sump shields come complete with corresponding boots and clamps. We have included the sump top opening diameter range with each sump shield package to assist you in identifying compatibility with non-Defender Series[®] sumps.

Model	Fiberglass Kit	Compatible Sump Collar Diameter Range		Access Openings	15" Spill Container Openings
		Minimum	Maximum	Access Openings	
DMP36-1-WTSS-32	1	31¾"	33¼"	1 (8" access)	1
DMP36-2-WTSS-32	2	31¾"	33¼"	1 (8" access)	2
DMP36-1-WTSS-33	1	32 3/16"	33¼"	1 (8" access)	1
DMP36-1-WTSS-42	1	41 5/8"	42 5/8"	1 (8" access)	1
DMP36-2-WTSS-33	2	32 3/16"	33¾"	1 (8" access)	2
DMP36-2-WTSS-42	2	41 5/8"	42 5/8"	1 (8" access)	2
DMP42-1-WTSS-42	1	41 5/8"	42 5/8"	1 (8" access)	1
DMP42-2-WTSS-42	2	41 5/8"	42 5/8"	1 (8" access)	2
DMP42-4-WTSS-42	4	42 5/8"	42 5/8"	1 (6" access)	4
DMP36-1-WTSS-48	1	48 7/8"	48 7/8"	1 (8" access)	1
DMP36-2-WTSS-48	1	48 7/8"	48 7/8"	1 (8" access)	2



PHIL-TITE" MULTIPORT MANWAYS

PHIL-TITE[™] multiport manways provide watertight access to spill containers for the filling of underground storage tanks. Available in a variety of sizes and configurations, the PHIL-TITE[™] multiport manway design allows sump shield removal for regular maintenance or inspection without having to unthread and remove the spill containers. This is a key feature for markets that require costly permitting, site closure, and testing if the vapor space is broken by removing spill containers.

HIGHLIGHTS

- · Each manway includes a manway cover with cam locks, 18" flared fiberglass skirt, stainless steel spill container sleeve(s) with powder coated manway and spill container cover(s), and 5-gallon fill and/or vapor spill containers.
- Available in 36" and 42" access opening diameters.
- Fill spill containers feature a drain valve to facilitate easy return of spilled fuel back into the tank.
- Spill container access openings are 16" on center to align with standard tank bung openings.
- D-profile O-ring seals the manhole cover and prevents groundwater intrusion.
- 18" corrosion-resistant fiberglass skirt.
- Cover includes cam locks with stainless steel hardware to eliminate lost bolts and corroded threads as well as prevent water entry from improper re-installation after maintenance.
- Available with optional plow ring for areas where snowfall is present.
- Optional watertight sump shield also available.
- EVR Phase I Certification, Executive Order VR-101.

SPECIFICATIONS

Components

- Powder coated manway 6 Fiberglass skirt 2 Cam locks 3 Spill container sleeves 8 Drain valve 4 Vapor spill container
- 6 Fill spill container
- 7 Spill container lids 9 Access opening





SPECIFICATIONS CONTINUED

Multiport Manway Configurations



One Spill Container Configuration

- One spill container
- One 13" access opening



Two Spill Container Configuration

- Two spill containers
- One 8" access opening



Four Spill Container Configuration

- Four spill containers
- One 6" access opening





	А	В	С	D
Model	Spill Collection Separation	Cover Diameter	Clear Opening	Manway Skirt from Finished Grade Height
36" Multiport Manway	16″	38″	36″	18″
42" Multiport Manway	16″	45″	42″	18″

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36" PHIL-TITE[™] Multiport Manways



Model	Description	
M36-1C-1-0-NPR	36" multiport manway, one spill container with drain, one 13" access opening, without plow ring	
M36-1C-1-0-SPR	36" multiport manway, one spill container with drain, one 13" access opening, with plow ring	
602132909	Replacement cover assembly for M36-1C-1-0-NPR	
602132919	Replacement cover assembly for M36-1C-1-0-SPR	
Model	Description	
M36-2C-0-1-NPR	36" multiport manway, one spill container with drain, one spill container without drain, one 13" access opening, without plow ring	

	container without drain, one 13 access opening, without plow hr
M36-2C-0-1-SPR	36" multiport manway, one spill container with drain, one spill container without drain, one 13" access opening, with plow ring
602132914	Replacement cover assembly for M36-2C-0-1-NPR
602132920	Replacement cover assembly for M36-2C-0-1-SPR

42" PHIL-TITE[™] Multiport Manways

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Model	Description
M42-1C-1-0-NPR	42" multiport manway, one spill container with drain, one 13" access opening, without plow ring
602133905	Replacement cover assembly for M42-1C-1-0-NPR



Model	Description
M42-2C-0-1-NPR	42" multiport manway, one spill container with drain, one spill container without drain, one 8" access opening, without plow ring
602133909	Replacement cover assembly for M42-2C-0-1-NPR



Model	Description
M42-4C-0-1-NPR	42" multiport manway, two spill containers with drains, two spill containers without drains, one 6" access opening, without plow ring
602133910	Replacement cover assembly for M42-4C-0-1-NPR

PHIL-TITE[™] Multiport Manway Installation Tools & Accessories

Model	Description
MF 4X4	PHIL-TITE [™] spill container riser adapter
Note: Each PHI	L-TITE [™] spill container requires a riser adapter for installation.
Model	Description
T-7043	PHIL-TITE™ spill container tool kit includes T-handle (T-7001), spil container tool (T-7002-A), and swivel adapter tool (T-7102)
Model	Description
Model PP-1005-TB	Description Debris bucket without pump
Model PP-1005-TB PP-1005-TBP	Description Debris bucket without pump Debris bucket with pump
Model PP-1005-TB PP-1005-TBP	Description Debris bucket without pump Debris bucket with pump
Model PP-1005-TB PP-1005-TBP	Description Debris bucket without pump Debris bucket with pump
Model PP-1005-TB PP-1005-TBP	Description Debris bucket without pump Debris bucket with pump Description

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36" Access Watertight Sump Shield Packages

Each watertight sump shield includes a fiberglass sump adapter as well as all necessary spill container reducer boots, caps, and clamps.

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Model	Description	Multiport Manway Compatibility
MSC-XS36-1	36" watertight sump shield with one spill container opening, includes fiberglass sump adapter for 32" Xerxes® riser	M36-1C-1-0-NPR M36-1C-1-0-SPR
MSC-XS36-3	36" watertight sump shield with two spill container openings, one 8" access opening, includes fiberglass sump adapter for 32" Xerxes® riser	M36-1C-1-0-NPR M36-1C-1-0-SPR
MSC-4236-2-1	36" watertight sump shield with two spill container openings, one 8" access opening, includes fiberglass sump adapter for 42" riser	M36-2C-0-1-NPR M36-2C-0-1-SPR

Note: Each watertight sump shield requires a fiberglass seam kit for installation, see below for details.

42" Access Watertight Sump Shield Packages

Each watertight sump shield includes a fiberglass sump adapter as well as all necessary spill container reducer boots, caps, and clamps.

	Model	Description	Multiport Manway Compatibility
	MSC-4242-1-0	42" watertight sump shield with one spill container opening, includes fiberglass sump adapter for 42" riser	M42-1C-1-0-NPR
	MSC-4242-2-1	42" watertight sump shield with two spill container openings, one 8" access opening, includes fiberglass sump adapter for 42" riser	M42-2C-0-1-NPR
	MSC-4242-4-1	42" watertight sump shield with four spill container openings, one 6" access opening, includes fiberglass sump adapter for 42" riser	M42-4C-0-1-NPR

Note: Each watertight sump shield requires a fiberglass seam kit for installation, see below for details.

Watertight Sump Shield Installation Tools & Accessories

IN AND IN A DO	Model	Description
	FIBERGLASS-KIT	Fiberglass seam kit for one seam - includes: matte, resin, putty, catalyst, ½" x 3" roller, 2" brush, quart cups (qty 3), stir sticks (qty 2), squeegee, glove - size large (qty 2 pairs)



Model	Description
WTRB-1013	Spill container reducer boot with clamp

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6	

Model	Description
WTRC-0600	6" rubber cap with clamp for 6" access opening
WTRC-0800	8" rubber cap with clamp for 8" access opening
WTRC-1300	13" rubber cap with clamp for 13" access opening

PHIL-TITE[™] Replacement Parts

Model	Description
SC-1536B	36" gasket
SC-1542B	42" gasket
SC-1513V	Cast iron cover seal
SC-1501L	Large cam lock assembly

PHIL-TITE[™] SPILL CONTAINER REPLACEMENT PARTS

Replacement Spill Containers

Replacement 5 gallon spill containers, include factory installed risers on both fill and vapor models. A drain valve is included on fill models as shown. Factory assembled and tested. Available as vapor, without drain valve, or fill, with drain valve.

Model	Description
85100-1*	Replacement 5 gallon 85000-1 fill spill bucket, with drain valve
85101-1*	Replacement 5 gallon 85000-1 vapor spill bucket, without drain valve
85100	Replacement 3.5 gallon PHIL-TITE™ spill bucket, with drain valve
85101	Replacement 3.5 gallon PHIL-TITE™ spill bucket, without drain valve

*Missouri MOPETP approved.

HIGHLIGHTS

- Extra space at top of spill container makes it easier for drivers to connect fuel hose.
- Patent number: 4,696,330.
- EVR Phase 1 Certification VR-101 for gas and E85.
- Florida approved EQ555.
- Tracer tight approved.
- Missouri MOPETP approved APCP-0002-001-99.
- Tracer tight approved.
- Missouri MOPETP approved APCP-0002-001-99.



85000-1 and 85100-1 Spill Collector FIII Spill Bucket

Number	Part Number	Description
1	85011-1	Gray ductile cast iron cover with wiper seal
2	SC-1513V	U-shaped seal for ductile cast iron lid
0	PP-1005-TB	Fill debris bucket insert, without pump
3	PP-1005-TBP	Vapor debris bucket insert, with pump
4	85031-1	Stainless steel retaining ring for screen and filter
5	602026001	Flexible polyurethane foam filter
6	05005	Shut-off collar to screen, upper O-ring
7	85035	Shut-off collar to screen, lower O-ring
8	85039	¼" flat seal-riser tube, inner O-ring
9	85035	Riser tube to spill bucket, outer O-ring
10	85036	Outer spill bucket U-shaped seal for 85000 Series
	85036-1	Outer spill bucket U-shaped seal for 85000-1 Series
11	85009	Direct bury stainless steel sleeve
12	85400	Drain valve handle and valve assembly



2.75" 0.12"-	2.00"
	3.50
RASS I ETTER PLATE	ALUMINUM BASE

Madal	Description	Size	
Iviodei		In	mm
78710003	D - diesel kit	3.50 × 2.00	89.00 × 51.00
78710006	SU - super unleaded kit	3.50×2.00	89.00 × 51.00
78710009	RU - regular unleaded kit	3.50×2.00	89.00×51.00
Model	Description		
78710101	Aluminum base only		
78710203	D - brass letter only		
78710206	SU - brass letter only		
78710209	RU - brass letter only		





Madal	Description	Size	
IVIOUEI			mm
78710302	Fill replacement plate	1.50×3.50	38.00 × 89.00
78720101	High-grade unleaded kit, red	4.00 × 5.00	102.00 × 127.00
78720102	Low-grade unleaded kit, white	4.00 × 5.00	102.00 × 127.00
78720103	Diesel kit, yellow	4.00×5.00	102.00 × 127.00
78720104	Mid-grade unleaded kit, blue	4.00 × 5.00	102.00 × 127.00

787 SERIES FUEL IDENTIFICATION

787 Series Fuel Identification Markers

This interchangeable identification marker allows quick visual identification of tank contents, eliminating the danger of wrong product fill. The aluminum base is easily set in soft concrete and removable brass letter plates are fastened to the base. When the tank contents change, the letters are easily changed to reflect the new product. The marker kit is available in eight standard letter codes.

MATERIALS

- Body: aluminum.
- Plate: brass.

787 Series Fill Identifier

Tank contents and capacity are easily identified with this color-coded fill identifier. Colored identifiers allow instant identification of the tank's contents. A solid brass plate, inscribed with maximum fill levels, helps prevent tank overfill and product mixing. The identifier and brass plate are permanently attached to the cast iron base which is set in soft concrete, flush with surrounding pavement. The identifier kit is available in five product-coded colors.

MATERIALS

- Body: cast iron.
- Plate: brass.



CARBAPPROVED UNDER VR-102

In markets that follow CARB EVR Phase I standards, it is now approved to install Defender Series® Overfill Prevention Valves with OPW® spill containers under Executive Order revision VR-102-T. With the updated UST Regulations in full effect, now you can take advantage of the superior remote testing capabilities of the Defender Series® OPV on all of your sites.

Visit go.franklinfueling.com/OPV for details.
THE BEST DEFENSE

Check out these unique features found only on the Defender Series[®] Overfill Prevention Valve (OPV).



NO LEAK POINTS

The revolutionary magnetically-coupled actuator system allows the Defender Series® OPV to achieve positive shut-off without a single penetration in the valve body.



SIMPLE INSTALL

Gone are the days of flaring, riveting, and epoxying drop tubes on site. The Defender Series® OPV utilizes an error-proof roll-crimp and thread installation method to achieve a perfectly in-line installation.



REMOTE TESTING

The magnetically-coupled actuator system along with the testing tool allows for primary functionality testing of the OPV without having to remove the entire assembly from the riser.



VERSATILITY

The Defender Series® represents our most versatile offering of OPVs to date with approvals, including UL2583, ULc listing, CARB approval for use with equipment lists VR-101 and VR-102, and capabilities per model as well as simpler ordering options.

HIGHLIGHTS

- The absence of body penetrations in the OPV eliminates potential leak paths for escaping vapors.
- With increasing vapor recovery regulations around the world, the Defender Series[®] OPV will have you ready for compliance.

HIGHLIGHTS

- A special, double O-ring top adapter is used to attach the drop tube for easy installation without any drilling, riveting, epoxy or flaring tools.
- A perfectly in-line assembly installs smoothly into the riser and can be easily removed for maintenance.

HIGHLIGHTS

- The remote testing tool will actuate the flapper when inserted down the drop tube and slid by the actuator - this is confirmed visually through a window in the tool.
- Fast visual inspection can be conducted by a single person.

HIGHLIGHTS

- Alcohol, gas, and biofuel (E-85, gasoline and Biodiesel) compatible models come with hard coated anodized drop tubes for full compatibility.
- For use in direct and remote gravity drop applications with models for coaxial applications.



Top Adapter



The Defender Series[®] overfill prevention valve (OPV) is a self-contained two-stage positive shut-off valve that prevents the overfill of an underground storage tank (UST) during a gravity-fed product delivery. The Defender Series[®] OPV employs a revolutionary magnetically-coupled actuator system to provide positive shut-off. This unique method of shut-off eliminates any penetrations in the valve, making it both vapor- and leak-tight. The Defender Series[®] OPV provides safe, rapid, and reliable fuel drops for the broadest range of fuel applications and environmental conditions. Simple to install, service, and test remotely, the Defender Series[®] OPV is the industry's most versatile overfill prevention valve.

HIGHLIGHTS

- Magnetic coupler actuates the interior primary flapper assembly and secondary shut-off valve when the float rises outside of the valve, eliminating valve body penetrations and any potential product or vapor leak points.
- After cutting to length in the field, the upper drop tube is roll-crimped onto a top adapter outfitted with two O-rings and then threaded onto the top of the valve body, eliminating the need for drilling, rivets, epoxy, and flaring tools.
- Bottom drop tube is cut in the field and threaded onto the bottom of the valve ensuring straight installation.
- The roll-crimp/thread method of installing drop tubes ensures proper alignment of the drop tubes with the rest of the OPV assembly, making installation and removal of the entire assembly smooth.
- Damaged drop tubes can be easily replaced instead of having to purchase an entire new assembly.
- Fully compatible with gas, gas/alcohol blends, diesel, and Biodiesel.
- Compatible with industry standard 4" drop tubes allowing retrofit into existing installations.
- The entire OPV assembly remains within the 4" inner diameter of the riser preventing interference with other tank components and also allowing removal even while the tank is full.
- Actuates in both low- and high-flow applications and functions within a broad range of flow rates from 25 gpm to 370 gpm (95 lpm to 1,400 lpm) and higher.
- The remote testing tool allows for remote testing of the primary functionality without having to remove the OPV from the riser.

SPECIFICATIONS

Approvals/Certifications

- UL 2583 listed and ULc listed, MH21090.
- ATEX approved.
- CARB certified, VR-101 (FFS) and VR-102 (OPW®)

Dimensions



OPW® is a registered trademark of Dover, Corp.

SPECIFICATIONS CONTINUED

Components

- Pre-flanged aluminum top drop tube
- 2 Roll-crimped top fitting/drop tube
- Optimize Protective float sleeve
- 4 Float (shielded by float sleeve)
- 5 Valve assembly
- 6 Magnetically-coupled actuator
- 7 Threaded bottom drop tube

Operation

As the liquid level in the UST approaches 95% capacity, the liquid level raises the float. As the float rises it actuates the external/internal magnetic couplers which release the flapper to be closed by the flow of product. As the float continues to rise, the internal mechanism pushes the flapper further into the product flow to allow actuation at high or low flow rates. This sudden reduction in flow caused by the primary flapper closing creates "line shock" to the fill hose which signals the delivery driver that the tank is nearing 95% capacity. As the float continues to rise to the 95% fill level, the secondary closes, completely stopping the flow of fuel.



ORDERING INFORMATION

Model	Description
708591901	Defender Series® overfill prevention valve with 5' (1524mm) top drop tube, 8' (2438mm) bottom drop tube
708591902	Defender Series® overfill prevention valve with 5' (1524mm) top drop tube, 10' (3048mm) bottom drop tube
708591921	Defender Series® overfill prevention valve with 5' (1524mm) top drop tube, 8' (2438mm) bottom drop tube, AGB compatible*
708591922	Defender Series® overfill prevention valve with 5' (1524mm) top drop tube, 10' (3048mm) bottom drop tube, AGB compatible*
708592901	Defender Series® overfill prevention valve with 10' (3048mm) top drop tube, 8' (2438mm) bottom drop tube
708592902	Defender Series® overfill prevention valve with 10' (3048mm) top drop tube, 10' (3048mm) bottom drop tube
708592921	Defender Series® overfill prevention valve with 10' (3048mm) top drop tube, 8' (2438mm) bottom drop tube, AGB compatible*
708592922	Defender Series® overfill prevention valve with 10' (3048mm) top drop tube, 10' (3048mm) bottom drop tube, AGB compatible*
708593901	Defender Series® overfill prevention valve, coaxial with 6.5' (1981mm) top drop tube, 8' (2438mm) bottom drop tube
708593902	Defender Series® overfill prevention valve, coaxial with 6.5' (1981mm) top drop tube, 10' (3048mm) bottom drop tube
708593923	Defender Series® overfill prevention valve, poppeted coaxial with 6.5' (1981mm) top drop tube, 8' (2438mm) bottom drop tube*
708593924	Defender Series® overfill prevention valve, poppeted coaxial with 6.5' (1981mm) top drop tube, 10' (3048mm) bottom drop tube*
708594901	Defender Series® overfill prevention valve only with top adapter, AGB compatible*
708594902	Defender Series® overfill prevention valve only with coaxial top adapter, AGB compatible*
708535901	Roll crimping tool
708530930	Replacement roll crimper tool roller bit for retrofit with existing tool
708534901	Remote testing tool, 11' (3353mm) long sectional/collapsible
708534902	Coaxial remote testing tool, 11' (3353mm) long sectional/collapsible

*Alcohol, gas, biofuel compatible (E-85, gasoline and Biodiesel) models come with hard coated anodized drop tubes for full compatibility.

Defender OPV Replacement Parts

Model	Description
85039-DT	Spare drop tube seal
1103942	Spare adapter O-ring
1103943	Spare Coaxial adapter O-ring
708526901	Upper tube adapter kit
708529901	Coaxial Upper tube adapter kit
708542908	8' thread-on bottom drop tube assembly, 2-pk
708542910	10' thread-on bottom drop tube assembly, 2-pk
708542910AN	10' thread-on bottom drop tube assembly, 2-pk, AGB compatible
708542908AN	8' thread-on bottom drop tube assembly, 2-pk, AGB compatible
70821705	5' flanged top drop tube; order in multiles of 4
70821725	5' flanged top drop tube, AGB compatible; order in multiples of 4



DEFENDER SERIES[®] REMOTE FILL SPLICE KIT

The Defender Series[®] remote fill splice kit allows you to modify a standard drop tube for remote fill applications. The open tube design provides access to a Defender Series[®] overfill prevention valve (OPV) for remote testing without having to remove the assembly. The kit contains installation hardware as well as a gasketed splice which is then roll-crimped inside of the drop tube using the Defender Series[®] OPV installation tool. An external O-ring provides a vapor tight seal inside the riser tee. The kit provides the same biofuel compatibility as the Defender Series[®] OPV.

SPECIFICATIONS

Components

- 1 Top drop tube (included with OPV)
- 2 Defender Series[®] remote fill splice kit
- 3 Bottom drop tube (included with OPV)
- 4 Defender Series overfill prevention valve (included with OPV)
- 5 4" x 4" x 4" tee (locally supplied)
- 6 Remote fill line



ORDERING INFORMATION

Model	Description
708556901	Defender Series [®] remote fill splice kit, includes splice and O-rings





DROP TUBES

Drop tubes are available in two wall thicknesses. The thin wall (.035 thickness) models offer easy handling and installation. The heavy wall (.062 thickness) models offer more durability. The drop tube fits directly into the underground tank riser pipe in dual point vapor recovery and conventional non-vapor recovery fill systems. Fuel is efficiently delivered at a faster rate, and allows submerged filling, which generates less vapors and evaporation. The drop tubes are furnished with a straight cut bottom, which can be cut to length on the job site.

Note: For use with outside clamping drop elbows on adapter only. Do not use with inside expanding drop elbows.

2" size shipped six tubes per box.

HIGHLIGHTS

• Flared end with Buna-N gasket for positive seating.

Model	Tubes per Box	Size		Wall Thickness		OD		Weight	
		ln × Ft.	mm × M	In	mm		mm	Lbs	Kg
78220212	6	2 × 12	51 × 3.66	0.42	10.67	1.88	48.00	45.00	20.41
78220312	4	3 × 12	76 × 3.66	0.42	10.67	2.94	75.00	32.00	14.51
78220410-2*	2	4 × 10	102 × 3.05	0.062	1.580	3.88	99.00	22.00	10.00
78220412-2*	2	4 × 12	102 × 3.66	0.062	1.580	3.88	99.00	26.00	11.80
78220415-2*	2	4 × 15	102 × 4.57	0.062	1.580	3.88	99.00	30.00	13.60
78220430-2**	2	4 × 10	102 × 3.05	0.062	1.580	3.88	99.00	22.00	10.00
78220432-2**	2	4 × 12	102 × 3.66	0.062	1.580	3.88	99.00	26.00	11.80

*CARB: EVR Phase 1 Certification VR-101

"Biofuel approved models (E85 and Biodiesel). CARB: EVR Phase 1 Certification VR-101.



TANK BOTTOM PROTECTORS

Designed to ensure a true tank bottom measurement and protect the bottom of the tank from punctures.

HIGHLIGHTS

- Protects steel and fiberglass tanks from punctures and wear from gauge stick.
- Easily installs in drop tubes.

Model

Description

TBP-3516-E*Tank bottom protector*Biofuel approved model (E85 and Biodiesel).



4" COAXIAL VAPOR RECOVERY ADAPTERS AND DROP TUBES

The EBW® coaxial vapor recovery adapter provides an inexpensive way to convert conventional underground storage tank fill risers to coaxial vapor recovery for Stage I vapor recovery requirements where the cap can remain on the adapter during vapor testing. When used in conjunction with EBW® coaxial drop tubes, the coaxial vapor recovery adapter allows product to flow through the center while vapors escape around the edge of the drop tube back to the delivery truck.

HIGHLIGHTS

- Constructed of hard-coated aluminum.
- Set screw on the adapter prevents movement on the riser pipe, ensuring a tight seal.
- Bodies constructed of hard-coat anodized aluminum for compatibility with E-85 and Biodiesel.



EBW® coaxial drop tube is designed to replace conventional EBW® drop tubes when coaxial single point Stage I vapor recovery is required and no other vapor fill risers are available.

Coaxial drop tubes contain aluminum centering tabs welded to the tube, allowing vapors to return to the delivery truck through the space between the drop tube and the fill riser pipe.

For use with the EBW® 306-300 coaxial adapter (order separately).

New poppeted coaxial vapor recovery adapter and drop tube kit seals off vapor path of ullage space through drop tube when not in use.

Madal	Description	Weight		
wouer	Description	Lbs	Kg	
30630001	Non-poppeted coax V.R. adapter-NPT	1.52	0.69	
30630021	Non-poppeted coax V.R. adapter-BSPT	1.59	0.69	
70822604-2	$4"\times13'$ coaxial drop tube, two per box	24.00	10.89	
708335901	Poppeted coax V.R. adapter	3.30	1.50	
708336901	Poppeted coax adapter and drop tube kit	45.00	20.45	
708340901	Tightening tool	Call	Call	

Note: 708335901 Poppetted Coaxial Vapor Recovery Adapter must be used with an EBW® poppetted coaxial Drop Tube.



HIGHLIGHTS

- Two body styles to choose from, glass-filled nylon or epoxy-coated aluminum.
- Padlock capability.
- Iron-copper infiltrated 4" cams.
- Corrosion-resistant steel hatches.
- Orange body for easy identification.



The vapor cap secures the vapor check valve preventing dust and debris build-up. It also protects the vapor poppet of a dual point fill system. Orange in color to indicate vapor recovery lines and lockable to prevent misuse, our vapor cap fits all 4" male quick couplings. The cam action creates a solid push down and pull up movement for fast, easy removal and replacement of cap.

ORDERING INFORMATION

Madal	Matarial	Weight		
wouer	Iviaterial	Lbs	Kg	
30420006	Glass-filled PBT, AGB	1.19	0.53	
30420007	Glass-filled PBT w/chain, AGB	1.19	0.53	
30430103*	Epoxy-coated aluminum, AGB	1.38	0.63	
30430104	Epoxy-coated aluminum w/chain, AGB	1.38	0.63	
Model	Description			
95021501	Replacement gasket CARB approved			

*Biofuel approved model (E85 and Biodiesel), CARB: EVR Phase 1 Certification VR-101.

VAPOR CHECK VALVE ADAPTERS

The vapor check valve adapter permits coupling to the vapor return line from the underground tank in dual point systems. The poppet design seals off the vapor path when not coupled.

VAPOR CHECK VALVE

ADAPTER

HIGHLIGHTS

- Body constructed of anodized aluminum or brass
- Fits all 4" vapor recovery elbows.

ORDERING INFORMATION

Model	Riser	Height		Dedu Material	We	Throada		
	Thread	In	mm		Lbs	Kg	TTTEaus	
30021001	4"	4.19	107.00	Anodized aluminum	4.30	1.95	NPSM	
30021031	3"	5.44	139.00	Anodized aluminum	4.30	1.95	BSPP	
30022001	4"	4.19	107.00	Brass	12.50	5.66	NPSM	
30022031	4"	4.19	107.00	Brass	12.50	5.66	BSPP	
30030001	3"	5.44	139.00	Anodized aluminum	4.30	1.95	NPSM	
30030031	3"	5.44	139.00	Anodized aluminum	4.30	1.95	BSPP	
Model	Description							
77020102	3" Replacement gasket							
77020103	4" Benjacement dasket							



VAPOR SWIVEL ADAPTERS

The vapor swivel adapter helps prevent leaks caused by constant delivery elbow movement on the riser adapter. The top section rotates during normal deliveries, preventing the bottom section from loosening on the riser pipe which could cause a vapor or product leak around the adapter. It's poppet design seals off the vapor path when not coupled.

HIGHLIGHTS

- Adds approximately 4" to riser height to fit under most existing fill and vapor manway covers.
- Swivels on two rows of corrosion-resistant chromium steel ball bearings for long life in high volume stations.
- All vapor seals are fluorocarbon and inert in motor fuels.
- Stainless steel models provide additional fuel compatibility and are CARB Phase I EVR approved under executive order VR-101.
- Available in packages including vapor and fill adapter.
- Available in kits including riser, cap, and swivel adapter.

SPECIFICATIONS

Components Cap



- 3 Riser nipple
- 4 Spill container



ORDERING INFORMATION

Vapor Swivel Adapters



Model	Description
SWV-101-SS**	Vapor swivel adapter, 4" NPT, stainless steel
SWV-101-B*	Vapor swivel adapter, 4" NPT, brass
SWFV-PKGSS**	Vapor and fill swivel adapter kit, 4" NPT, stainless steel
SWFV-PKG*	Vapor and fill swivel adapter kit, 4" NPT, brass
85039	Replacement gasket for all swivel adapters
*EVR Phase 1 Certific	ation VR-101.

**EVR Phase 1 Certification VR-101 for gas and E85.

Vapor Swivel Adapter Kits

Be sure to select the appropriate kit for your specific spill container type.



Model	Description
70541302	Vapor swivel adapter kit for 5 gallon Defender Series [®] (grade level and below grade level) and EBW [®] Series (grade level) spill containers, includes stainless steel vapor swivel adapter, 3" riser nipple, vapor top cap.
70541301	Vapor swivel adapter kit for 5 gallon PHIL-TITE™ and EBW® Series (below grade) spill containers, includes stainless steel vapor swivel adapter, 5″ riser nipple, vapor top cap.
70541503	Vapor swivel adapter kit for 15 gallon EBW® Series (below grade) spill containers, includes stainless steel vapor swivel adapter, 12" riser nipple, vapor top cap.



FILL SWIVEL ADAPTERS

The fill swivel adapter helps prevent leaks caused by constant fill delivery elbow movement on the riser adapter. The top section rotates during normal deliveries, preventing the bottom section from loosening on the riser pipe which could cause a vapor or product leak around the adapter.

HIGHLIGHTS

- Adds approximately 4" to riser height to fit under most existing fill and vapor manway covers.
- Swivels on two rows of corrosion-resistant chromium steel ball bearings for long life in high volume stations.
- All vapor seals are fluorocarbon and inert in motor fuels.
- Stainless steel models provide additional fuel compatibility and are CARB Phase I EVR approved under executive order VR-101.
- Available in packages including fill and vapor adapter.
- Available in kits including riser, cap, and swivel adapter.

SPECIFICATIONS





4 Spill container



ORDERING INFORMATION

Fill Swivel Adapters



Model	Description
SWF-100-SS**	Fill swivel adapter, 4" NPT, stainless steel
SWF-100-B*	Fill swivel adapter, 4" NPT, brass
SWFV-PKGSS**	Vapor and fill swivel adapter kit, 4" NPT, stainless steel
SWFV-PKG*	Vapor and fill swivel adapter kit, 4" NPT, brass
85039	Replacement gasket for all swivel adapters
FVD Dhasa 1 Cartific	vertice VID 101

*EVR Phase 1 Certification VR-101. **EVR Phase 1 Certification VR-101 for gas and E85.

Fill Swivel Adapter Kits

Be sure to select the appropriate kit for your specific spill container type.



Model	Description
70541202	Fill swivel adapter kit for 5 gallon Defender Series® (grade level and below grade level) and EBW® Series (grade level) spill containers, includes stainless steel fill swivel adapter, 3" riser nipple, vapor top cap.
70541201	Fill swivel adapter kit for 5 gallon PHIL-TITE™ and EBW® Series (below grade) spill containers, includes stainless steel fill swivel adapter, 5" riser nipple, vapor top cap.
70541203	Fill swivel adapter kit for 15 gallon EBW® Series (below grade) spill containers, includes stainless steel fill swivel adapter, 12" riser nipple, vapor top cap.



o

7.00"

TOP SEAL FILL CAP

0

0

2.08"

4" TOP SEAL FILL CAP

EBW® top seal fill caps are used to prevent vapors from escaping the fill riser pipe on the underground storage tank when it is not being filled. The geometry of the linkage provides self-centering characteristics for dependable sealing. The easy-to-operate T-handle provides a convenient method of removal and replacement — simply pull to remove and push to replace.

HIGHLIGHTS

- Glass-filled nylon and aluminum body styles available.
- Stainless steel latches.
- Padlock capability.
- Form-fitting replaceable gasket, molds itself to the contour of the adapter to form a positive seal for added protection.

Madal	Description	Weight		
wouer	pel Description -		Kg	
77720102*	CARB EVR glass-filled PBT, AGB	1.00	0.45	
77720202	Aluminum, epoxy-coated gray, AGB	1.12	0.51	
95021501	CARB approved replacement gasket	0.20	0.90	

777201901* Glass-filled PBT, 20 pack

"Biofuel approved model (E85 and Biodiesel), CARB: Phase 1 Certification VR-101.



3" TOP SEAL FILL CAP

This durable 3" top seal single lever cap provides a tight positive seal on all 3" adapters.





HIGHLIGHTS

- Extruded brass cam arm.
- Cap body made of corrosion-resistant epoxy-coated aluminum.

Model	Description	Weight		
	Description	Lbs	Kg	
77920001	3" top seal fill cap	1.00	0.45	
Model	Description			
77420203	3" replacement gasket			

SERVICE STATION HARDWARE



ADAPTER

TOP SEAL FILL PIPE ADAPTERS

Top seal fill pipe adapters are installed on the fill riser pipe in spill containment manways on an underground storage tank. The adapters are used to connect delivery drop elbows to the fill pipe for fuel deliveries. Adapters can be ordered with or without wrenching lugs to suit your installation preference. EBW® top seal fill pipe adapters fit all top seal drop elbows and top seal fill caps.

HIGHLIGHTS

- Constructed of ASTM B62 corrosion-resistant brass.
- Nitrile gasket for a secure seal onto the fill pipe.

Model	Description
70541801	Brass RCA Fill Kit, 5" NIP, fits EBW [®] 5 gallon Grade Level Spill Containers (Includes one 5" nipple, one 77720202 4" Aluminum Fill Cap and one 77830101 fill adapter)
70541802	Brass RCA Fill Kit, 7" NIP, fits EBW [®] 5 gallon Below Grade Spill Containers (Includes one 7" nipple, one 77720202 4" Aluminum Fill Cap and one 77830101 fill adapter)
70541803	Brass RCA Fill Kit, 12.5" NIP, fits EBW [®] 15 gallon Grade Level Spill Containers (Includes one 12.5" nipple, one 77720202 4" Aluminum Fill Cap and one 77830101 fill adapter)
70541804	Brass RCA Fill Kit, 14.5" NIP, fits EBW [®] 15 gallon Below Grade Spill Containers (Includes one 714.5" nipple, one 77720202 4" Aluminum Fill Cap and one 77830101 fill adapter)

Model	Height		Description	Weight	
Model	In	mm	Description	Lbs	Kg
77830101	2.69	68.27	$4" \times 4"$ with lugs - NPSM	2.00	0.90
77830102	2.69	68.27	4" × 4" without lugs - NPSM	2.00	0.90
77830105*	2.69	68.27	$4" \times 4"$ with lugs - NPSM	2.00	0.90
77830135	2.69	68.27	$4" \times 4"$ with lugs - BSPP	2.00	0.90
77830106	2.69	68.27	$4" \times 4"$ with lugs stainless steel - NPSM	2.08	0.95
77830132	2.69	68.27	4" × 4" without lugs - BSPP	2.00	0.90
77830201	2.25	57.15	$4" \times 3"$ with lugs - NPSM	2.00	0.90
77830231	2.25	57.15	$4" \times 3"$ with lugs - BSPP	2.00	0.90
77830302	2.69	68.27	4" × 4" composite with gasket - NPSM	2.00	0.90
77830330	2.69	68.27	4" × 4" composite - BSPP	0.49	022
77830332	2.69	68.27	4" × 4" composite with gasket - BSPP	0.49	022
78020001	1.75	44.45	3" × 3" without lugs - NPSM	2.00	0.90
Model	Description				
77020102	3" replaceme	ent gasket			
77020103	4" replacement gasket				

"Biofuel compatible model (E85 and Biodiesel).





The EBW® side seal fill cap is used to prevent vapors from escaping from the fill riser pipe on the underground storage tank when it is not being filled. The easy-to-operate T-handle provides a convenient method of removal and replacement — simply pull to remove and push to replace.



HIGHLIGHTS

- Padlock capability for positive locking.
- Stainless steel latches.
- Cap body made from corrosion-resistant epoxy-coated aluminum.
- Iron-copper infiltrated cams.

Model	Description	Weight		
	Description	Lbs	Kg	
77520201	4" side seal fill cap	2.00	0.90	
Model	Descri	Description		
77510401	Replacement gasket			







4" SIDE SEAL FILL ADAPTER

The EBW[®] side seal fill pipe adapter is installed on the fill riser pipe in spill containment manways on underground storage tanks. The adapters are used to connect delivery drop elbows to the fill pipe for fuel deliveries. The EBW[®] side seal adapter fits all 4" side seal drop elbows and side seal fill caps.

HIGHLIGHTS

- Constructed of ASTM B62 corrosion-resistant brass.
- Nitrile gasket provides a secure seal onto the fill riser pipe.

Madal		Description	Weight		
	wouer	Description	Lbs	Kg	
	77630001	4" side seal fill adapter-NPT	2.00	0.90	
	77630031	4" side seal fill adapter-BSPT	2.00	0.90	
	Model	Description			

77020103 4" replacement gasket

EMERGENCY SHUT-OFF VALVES



PRODUCT SHEAR VALVES

EBW® product shear valves immediately stop product flow in the event of fire or collision at the dispenser. A patented adapter shears upon impact, causing the poppet to seal on the valve body, preventing fuel spillage. If fire occurs, a fusible link releases the fulcrum arm, engaging the poppet.

HIGHLIGHTS

- Standard 1½" openings allow minimal flow restriction and a pre-drilled test plug is included for line pressure testing
- Can be boss or U-bolt mounted.
- E-coated for corrosion protection and AGB compatibility.
- Easy-to-replace adapters slide on and off valve base without lifting the dispenser.
- Adapters are available in male, female or, union connections.
- Single poppet models stop product flow from the pump. Double poppet models stop flow from the pump and dispenser piping.

ORDERING INFORMATION

Shear Valves

Model	Description
662500901	Single poppet shear valve, union, 1½" NPT
662500902	Single poppet shear valve, female, 1½" NPT
662500903	Single poppet shear valve, male, 1½" NPT
662510902	Single poppet shear valve, female, 1½" BSPT
662510903	Single poppet shear valve, male, 1½" BSPT
662501901	Double poppet shear valve, union, 1½" NPT
662501902	Double poppet shear valve, female, 11/2" NPT
662501903	Double poppet shear valve, male, 1½" NPT
662511902	Double poppet shear valve, female, 1½" BSPT
662511903	Double poppet shear valve, male, 1½" BSPT
662502902*	Double poppet shear valve, normally closed, female, 11/2" NPT
*UL listed only.	'

U-Bolt Kit

Holds the single or double poppet shut-off valve rigidly in place, ensuring proper shearing.

Model	Description
66213801	U-bolt kit, 0.3 lbs (0.14 kg)

SPECIFICATIONS

- Fusible link closes poppet at 165.0 °F (73.9 °C).
- Top and body material: E-coated cast iron
- Poppet and O-ring: Fluorocarbon
- Stem and poppet spring: Stainless steel

Approvals/Certifications

- Meets NFPA 30A requirements.
- UL and ULC listed. UL 842A and 842B approved for E-85 alcohol/gas blends and Biodiesel.
- ATEX approved, SIRA 13ATEX9035U.

Dimensions







Female Double Poppet

Male Double Poppet

PRODUCT SHEAR VALVE ACCESSORIES AND REPLACEMENT TOPS

Shear Valve Replacement Parts

Model Description 90074 Fulcrum arm kit











1¹/₂" Union Adapter Replacement Tops

Model	Description	Poppet	Shear Valve Adapter	Thread
662500201	Shear valve top union 1.5"	Single	662500901	Union
662501201	Shear valve top union 1.5"	Double	662501901	Union

11/2" Female Adapter Replacement Tops

Model	Description	Poppet	Shear Valve Adapter	Thread
662500202	Shear valve top female 1.5" NPT	Single	662500902	NPT
662501202	Shear valve top female 1.5" NPT	Double	662501902	NPT
662502202	Shear valve top female N/C 1.5" NPT	Single	662502902	NPT
662511202	Shear valve top female 1.5" BSPT	Double	662511902	BSPT
662510202	Shear valve top female 1.5" BSPT	Single	662510902	BSPT

11/2" Male Adapter Replacement Tops

Model	Description	Poppet	Shear Valve Adapter	Thread
662500203	Shear valve top male 1.5" NPT	Single	662500903	NPT
662501203	Shear valve top male 1.5" NPT	Double	662501903	NPT
662510203	Shear valve top male 1.5" BSPT	Single	662510903	BSPT
662511203	Shear valve top female 1.5" BSPT	Double	662511903	BSPT

Note: Replacing tops negates the ATEX approval. Entire unit must be replaced to remain in compliance with ATEX approval.

EMERGENCY SHUT-OFF VALVES



362 VAPOR SHEAR VALVE

The EBW[®] 362 vapor shear valve is designed for use as an emergency breakaway on Stage II vapor recovery lines in fuel dispensers. The double poppet design allows spring-loaded poppets inside the valve to seal vapors within both the dispenser riser and vapor piping in the event of dispenser displacement, providing maximum environmental protection.

HIGHLIGHTS

- Dual poppets seal vapors in dispenser riser and in vapor line for maximum environmental protection.
- One 1" test port and two 3/8" test ports eliminate extra T-joints in vapor line which reduces potential leak points and provides more flexibility for Stage II vapor recovery installation.
- DE-coated for corrosion protection and fuel compatibility.
- Standard U-bolt and boss mount allows for quick and easy installation.
- Base thread includes 11/2" female.
- California State Fire Marshal approved.

Approvals/Certifications

- UL 842 listed, MH9253
- ATEX approved, DEMKO 17ATEX1914

DESIGN FEATURES



Number	Description	Model	Description
1	1" test plug	36220613	$1" \times 1\%$ " NPT thread vapor shear valve
2	Double poppet design	36220631	$1" \times 1\%$ " BSPT thread vapor shear valve
3	3/8" test plug		
4	1" dispensing side opening		
5	Boss mount		
6	U-bolt mount		
7	1½" female		



FLEXIBLE CONNECTORS

FLEX-ING® brand flexible connectors have become the industry standard and benchmark for quality as a means to easily connect a pipework system to other system components such as submersible pumps or shear valves. As an integral part of any system, installers enjoy how easy they make connections in tight spaces while station owners have come to depend on their durability and their simplification of regular maintenance. End fittings are available in either nickel plated steel or stainless steel construction. FLEX-ING® flexible connectors offer multiple diameter and length options as well as a wide offering of end fitting connections so you can create the right flexible connector to fit virtually any application.

HIGHLIGHTS

- Standard on all flexible connectors, the stainless steel corrugated fuel contact layers feature a thick construction and gain flexibility from having more corrugations per foot rather than thinner walls.
- Enclosing the corrugated fuel contact layer is a stainless steel braid that is manufactured from only high-grade stainless steel.
- Standard end fittings are nickel plated steel with stainless steel construction options available on any flexible connector that does not include a swivel end fitting.
- Available in a multitude of end connections to ensure the right fit for any application including tees, elbows, and fiberglass transitions.
- All metal construction means one flexible connector for both above and below ground applications (may not be direct buried).
- Schedule 80 hex end fittings protect against deformation of the ends during installation.
- The EZ FIT union style coupling system is specifically designed to make connections in confined spaces simple and tight.
- EZ FIT union style couplings come complete with couplers and gaskets (flange only fittings excluded).

SPECIFICATIONS

- Meets USA NFPA 30-A fire code requirements.
- Outer shell: 304 stainless steel
- Inner core: 321 stainless steel
- End fittings: Nickel plated steel or stainless steel.
- 100% pressure tested to 100 PSI to assure quality.

Approvals/Certifications

- UL 2039 listed for above and below ground installation for use with gasoline, gas alcohol blends (up to E85), diesel, and Biodiesel.
- UL 2039 approved for 50 psi working pressure.

End Fitting Options

EZ Fit flange only*
 EZ Fit flange only*
 Hex female fixed (NPT)*
 EZ Fit male*
 Hex male fixed (BSPT)*
 EZ Fit female*
 Hex male swivel (BSPT)*
 EZ Fit fiberglass (glued)*
 90° male swivel
 Female swivel
 EZ Fit tee flanges only*
 Female swivel
 Flat faced round flange*
 *Also available in stainless steel.



ORDERING INFORMATION

Use the diagrams below along with the Ordering Guide at the bottom to help you build your flexible connector model numbers.

Ordering Options Diagram



End Fitting Options



*These models feature full stainless steel construction.

Ordering Guide

Complete flexible connector part numbers have a specific order and are created using the following guidelines. Please note that full stainless steel models are available on any flexible connector that does not include swivel end fittings.

ABXCDXE

A = Product Type

FF = If either of the end connections are any type of swivel or EZ Fit, this option must be selected.

FFUL = If both end connections are fixed (non-swivel or EZ Fit), this option must be selected.

B = Hose Diameter

- 07 = 3/4"
- 10 = 1"
- 15 = 1½"
- 20 = 2"
- 30 = 3"
- 40 = 4"

C = Overall Length in Inches

Use two-digit format

Examples:

 $\label{eq:FF20X18M346XHM} FE are the set of the set o$

 $\label{eq:FF20X18SSEZMXSSHM} = \mbox{Flexible connector, 2" hose diameter, 18" overall length, with one stainless steel EZ Fit male end fitting and one stainless steel fixed hex male end fitting, full stainless steel construction.$

- **D & E** = End Fitting Options (non-swivel options available in stainless steel)
 - EZ = EZ FIT flange only (stainless steel)
 - EZM = EZ FIT male NPT (SSEZM = stainless steel)
 - EZF = EZ FIT female NPT (SSEZF = stainless steel)
 - EZFG = EZ FIT fiberglass glue pipe (SSEZFG = stainless steel)
 - M346 = Male swivel NPT
 - F346 = Female swivel NPT
 - HM = Hex male fixed NPT (SSHM = stainless steel)
 - HF = Hex female fixed NPT (SSHF = stainless steel)
 - BT = Hex male fixed BSPT (SSBT = stainless steel)
 - BTS = Male swivel BSPT
 - MS90 = 90° with male swivel NPT
 - **EZFFT** = EZ Fit Tee (**SSEZFFT** = stainless steel)
 - **SSFF** = Flat faced round flange (stainless steel only)

SSRF = Raised faced round flange (stainless steel only) Note: Each EZ FIT union style coupling comes complete with couplers and gaskets.

Flexible Connectors with Differing Hose and End Fitting Diameters

All end fittings are, by default, the same diameter as the hose. If you require a flexible connector where the end fitting diameter does not match the hose diameter, the size must be indicated numerically in front of the corresponding fitting as in the following example.

Example: FFUL15X18HMX2HM = Flexible connector with fixed end fittings, 1½" hose diameter, 18" overall length, with one 1½" hex male fixed end fitting, and one 2" hex male fixed end fitting.

Rules:

- 1) End fitting diameters can not be smaller than hose diameters.
- 2) Only one hose fitting per flexible connector can be of a different diameter than the hose diameter.
- 3) End fitting diameter must only be one size larger than hose (1" hose could use $1\frac{1}{2}$ " fitting,
- 1½" hose could use 2" fitting, etc.).
 4) EZ Fit end fittings are available in 1", 2", and 3" only.

5) Additional end fitting types are available. Please contact Customer Service with inquiries.





ORDERING INFORMATION CONTINUED

Flexible Connector Common Configurations (Nickel Plated Steel End Fittings)

All include NPT threads unless otherwise specified as BSPT.

Model	Description
FFUL15X18HMXHM	1½" diameter flexible connector, hex male by hex male, 18" OAL
FFUL20X18HMXHM	2" diameter flexible connector, hex male by hex male, 18" OAL
FF10X18HMXM346	1" diameter flexible connector, hex male by male swivel, 18" OAL
FF15X12BTXBTS	11/2" diameter flexible connector, hex male (BSPT) by male swivel (BSPT), 12" OAL
FF15X12HMXM346	11/2" diameter flexible connector, hex male by male swivel, 12" OAL
FF15X12M346X2F	11/2" diameter flexible connector, male swivel by 2" hex female, 12" OAL
FF15X12M346XEZ	11/2" diameter flexible connector, male swivel by EZ Fit flange only, 12" OAL
FF15X12SSHMXEZ	11/2" diameter flexible connector, stainless steel hex male by EZ Fit flange only, 12" OAL
FF15X15HMXM346	11/2" diameter flexible connector, hex male by male swivel, 15" OAL
FF15X16BTXBTS	11/2" diameter flexible connector, hex male (BSPT) by male swivel (BSPT), 16" OAL
FF15X16HMXM346	11/2" diameter flexible connector, hex male by male swivel, 16" OAL
FF15X18EZMXEZFFT	11/2" diameter flexible connector, EZ Fit male by EZ Fit tee, 18" OAL
FF15X18EZMXEZM	11/2" diameter flexible connector, EZ Fit male by EZ Fit male 18" OAL
FF15X18HMXEZM	11/2" diameter flexible connector, hex male by EZ Fit male, 18" OAL
FF15X18HMXM346	11/2" diameter flexible connector, hex male by male swivel, 18" OAL
FF15X18M346X2F	11/2" diameter flexible connector, male swivel by 2" hex female, 18" OAL
FF15X18M346XEZM	11/2" diameter flexible connector, male swivel by EZ Fit male, 18" OAL
FF15X24HMXM346	11/2" diameter flexible connector, hex male by male swivel, 24" OAL
FF20X12HMXM346	2" diameter flexible connector, hex male by male swivel, 12" OAL
FF20X15HMXM346	2" diameter flexible connector, hex male by male swivel, 15" OAL
FF20X18HMXEZF	2" diameter flexible connector, hex male by EZ Fit female, 18" OAL
FF20X18HMXM346	2" diameter flexible connector, hex male by male swivel, 18" OAL
FF20X18M346XF	2" diameter flexible connector, male swivel by hex female, 18" OAL
FF20X24BTXBTS	2" diameter flexible connector, hex male (BSPT) by male swivel (BSPT), 24" OAL
FF20X24HMXM346	2" diameter flexible connector, hex male by male swivel, 24" OAL
FF20X24HMXMS90	2" diameter flexible connector, hex male by 90° male swivel, 24" OAL

Flexible Connector Common Configurations (Stainless Steel End Fittings)

All include NPT threads unless otherwise specified as BSPT.

Model	Description
FF15X12SSHMXSSHM	1½" diameter stainless steel flexible connector, hex male by hex male, 12" OAL
FF15X18SSHMXSSHM	11⁄2" diameter stainless steel flexible connector, hex male by hex male, 18" OAL
FF15X24SSHMXSSHM	11/2" diameter stainless steel flexible connector, hex male by hex male, 24" OAL
FF15X12SSHMXEZ	11/2" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 12" OAL
FF15X18SSHMXEZ	1% diameter stainless steel flexible connector, hex male by EZ Fit flange only, 18" OAL
FF15X24SSHMXEZ	11/2" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 24" OAL
FF15X12EZXSSEZM	11/2" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 12" OAL
FF15X18EZXSSEZM	11⁄2" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 18" OAL
FF15X24EZXSSEZM	11/2" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 24" OAL
FF15X18SSHMXSSEZM	11⁄2" diameter stainless steel flexible connector, hex male by EZ Fit male, 18" OAL
FF20X12SSHMXSSHM	2" diameter stainless steel flexible connector, hex male by hex male, 12" OAL
FF20X18SSHMXSSHM	2" diameter stainless steel flexible connector, hex male by hex male, 18" OAL
FF20X12SSHMXEZ	2" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 12" OAL
FF20X18SSHMXEZ	2" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 18" OAL
FF20X12EZXSSEZM	2" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 12" OAL
FF20X18EZXSSEZM	2" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 18" OAL
FF20X12SSHMXSSEZM	2" diameter stainless steel flexible connector, hex male by EZ Fit male, 12" OAL
FF20X18SSHMXSSEZM	2" diameter stainless steel flexible connector, hex male by EZ Fit male, 18" OAL

FLEXIBLE CONNECTORS

2" EZ Fit \times EZ Fit connector, stainless steel

2" EZ Fit blank, stainless steel

3" EZ Fit blank, stainless steel

2" EZ Fit \times 2" EZ Fit ball valve

2" EZ Fit \times 2" ball valve, brass

2" EZ Fit \times 2" EZ Fit ball valve, stainless steel

2" EZ Fit \times 2" EZ Fit 90° elbow, stainless steel

3" EZ Fit \times 2" EZ Fit 90° elbow, stainless steel

Description

 $2^{\prime\prime}$ EZ Fit \times $2^{\prime\prime}$ ball valve, stainless steel

3" EZ Fit × 3" EZ Fit ball valve, brass 3" EZ Fit × 3" EZ Fit ball valve, stainless steel

ORDERING INFORMATION CONTINUED

EZ Fit Accessories



Model	
EZFITXEZFIT	

Model EZBLANK

Model EZXEZX20BV

Model

EZXEZ90

EZ30XEZ3090

EZX20BV

EZX20BVSS

EZXEZX20BVSS

EZ30XEZ30X30BV

EZ30XEZ30X30SSBV

EZ30BLANK













Niudei	Description
EZXEZXEZTEE	2" EZ Fit \times 2" EZ Fit \times 2" EZ Fit 1½" tee, stainless steel
EZ20XEZ20TEEFF	2" EZ Fit \times 2" EZ Fit \times 2" EZ Fit, 2" tee, stainless steel
EZ30XEZ30XEZ30T	3^{\ast} EZ Fit \times 3^{\ast} EZ Fit \times 3^{\ast} EZ Fit tee, stainless steel

Model	Description
EZX15HM90	$2^{\prime\prime}$ EZ Fit \times $1^{\prime\prime\prime}_{2}$ hex male 90^{o} elbow, nickel plated
EZX20HM90	2" EZ Fit \times 2" hex male 90° elbow, nickel plated
EZX20HM90SS	2" EZ Fit \times 2" hex male 90° elbow, stainless steel
EZX30M90	3" EZ Fit × 3" male 90° elbow, nickel plated



Model	Description
EZX20HF90	2" EZ Fit \times 2" female 90° elbow, nickel plated
EZX30F90	3" EZ Fit \times 3" female 90° elbow, nickel plated



Model	Description
EZX20FG90	2" EZ Fit \times 2" fiberglass glue pipe 90° elbow, nickel plated
EZX30FG90	3" EZ Fit \times 3" fiberglass glue pipe 90° elbow, nickel plated

Model	Description
EZX20FGTEE	2" EZ Fit \times 2" fiberglass glue pipe tee, nickel plated
EZX30FGTEE	3" EZ Fit \times 3" fiberglass glue pipe tee, nickel plated



ORDERING INFORMATION CONTINUED



Model	Description
EZX15HMPL	2" EZ Fit × 1½" hex male, nickel plated
EZX15HMSS	2" EZ Fit × 1½" hex male, stainless steel
EZX20HMPL	2" EZ Fit × 2" hex male, nickel plated
EZX20HMSS	2" EZ Fit × 2" hex male, stainless steel
EZX30MP	3" EZ Fit \times 3" male, nickel plated



Model	Description
EZX15HFSS	2" EZ Fit \times 1½" hex female, stainless steel
EZX20HFPL	2" EZ Fit \times 2" hex female, nickel plated
EZX20HFSS	2" EZ Fit \times 2" hex female, stainless steel



Model	Description
EZX20FGPL	2" EZ Fit × 2" fiberglass glue pipe, nickel plated
EZX20FGSS	2" EZ Fit × 2" fiberglass glue pipe, stainless steel
EZX30FGSS	3" EZ Fit \times 3" fiberglass glue pipe, nickel plated



Model	Description
EZ10CLAMP	1" EZ Fit clamp
EZCLAMP	2" EZ Fit clamp
EZ30CLAMP	3" EZ Fit clamp



Model	Description
407493001	1" EZ Fit gasket
407493002	2" EZ Fit gasket
407493003	3" EZ Fit gasket



EXIBLE CONNECTOR IN UNDER EXIBLE CONNECTOR FOR FUR ODUCTS, ALCOHOL AND ADD PS I.G. WORKING PRESSURE





SERVICE STATION HARDWARE

FLEXIBLE CONNECTORS EZ FIT SYSTEM

By stocking just a few fittings and the right kind of FLEX-ING[®] brand flexible connectors, you can transform your inventory into a versatile offering that's ready to handle the real-world demands of contractors. The EZ FIT system can help reduce your inventory and ensure you have the right solution on-hand for any situation.

Find out how you can make your flexible connector inventory work for you.





EZ FIT SYSTEM

STOCK LESS, DO MORE

By stocking common lengths of flexible connectors with an EZ FIT flange on one end, you can completely customize that flexible connector to connect to any type of pipe, STP manifold, or shear valve right at your parts counter.



GO WITH A FLANGED END FITTING

Choose a flange fitting on one end of your flexible connectors. That gives you the ability to customize it to connect to any type of pipe using a quick release style fitting. This gives you a welded assembly with no commitment to a specific end fitting.



STOCK A MIX OF QUICK RELEASE FITTINGS

Quick release fittings allow you to connect your flexible connector to a pipework system. By keeping a mix of these fittings on-hand, you can customize a flexible connector for any type of system (APT[™], UPP[®], or fiberglass) right at your parts counter. Mix and match on the spot.



KEEP COMMON LENGTHS ON HAND

Stock the typical lengths of flexible connectors your customers use. The most common flexible connector lengths for connecting pipework to STP manifolds and shear valves are 12", 15", 18", and 21".



BUILT-IN SWIVEL ACTION

The EZ FIT connection not only allows you to reduce threaded connections, they will also act as a swivel on-site. Installers will enjoy how simple it is to make these connections in tight spaces. They can also be easily disconnected for maintenance.

How EZ FIT Connections Work

A variety of products come with integrated flange fitting options. These flanged fittings are mated together using a single EZ FIT clamp and gasket. These connections are watertight and allow easy connection during installation or fast reconnection for service and maintenance.



Step 1: Flanged components like fittings and flexible connectors can be connected using a single EZ FIT clamp and gasket



Step 2: The EZ FIT gasket fits in between the two flanged components to create a watertight seal while the EZ FIT clamp unhinges around the components



Step 3: Close the single-pin EZ FIT clamp around the flanged edges of both components and tighten the wing nut to seal them together

Submersible Turbine Pump EZ FIT Connections

Use the FLEX-ING® flexible connector EZ FIT system to quickly and easily connect typical pipework systems to the STP manifold.





2" UPP® Pipe

Components

Item	Model	Description
1	EZX20HMPL	2" EZ FIT flange x hex male adapter
2	EZCLAMP	EZ FIT clamp
3	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
4	EZX20HM90	2" EZ FIT 90° elbow flange x hex male adapter
5	BV200FPBRASS	2" ball valve
6	FF20XYYHMXEZ*	2" flexible connector, EZ FIT flange x hex male
7	EZX20HFPL	Quick release threaded hex fitting for 2" fiberglass pipe
8	EZX20FGPL	Quick release glued fitting for 2" fiberglass pipe
9	QRS-XP-175-200	Quick release fitting for 1¾" APT™ XP Pipe
10	90-063 QL-U	Quick release termination fitting for 2" UPP® pipe
1	02-63-L-U	2" electrofusion welding coupler

*For YY, enter flexible connector length in inches.

2" Fiberglass Pipe Shear Valve Risers

Use the FLEX-ING® flexible connector EZ FIT system to quickly and easily connect 2" fiberglass pipe (both glued and threaded) to the shear valve riser.



Components

Item	Model	Description
1	662501902	11⁄2" double poppet shear valve, female
2	FF15XYYHMXEZ*	1½" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	EZXEZ90	2" EZ FIT 90° elbow flange x flange
6	EZX20FGPL	Quick release glued fitting for 2" fiberglass pipe
7	EZX20HFPL	Quick release threaded hex fitting for 2" fiberglass pipe
8	EZX20FGTEE	Quick release glued tee fitting for 2" fiberglass pipe
9	EZ20XEZ20TEEFF	Quick release tee flange fitting for 2" connections

*For YY, enter flexible connector length in inches.

Extra EZ FIT Connection

If you require an additional point of connection, choose an EZ FIT male connection (EZM) instead of the hex male (HM). This comes complete with the EZ FIT clamp, gasket, and threaded male connection pre-assembled on the flexible connector. This gives you an additional higher disconnection point that is closer to grade level, making it easier for technicians to access for maintenance. It also provides an another swivel point for easier installation.

Example: FF15XYYEZMXEZ

*For YY, enter flexible connector length in inches.



FLEXIBLE CONNECTORS

1 ¾" APT™ XP Pipe Shear Valve Risers

Use the FLEX-ING[®] flexible connector EZ FIT system to quickly and easily connect 1¾" APT™ XP pipe to the shear valve riser.



Components

ltem	Model	Description
1	662501902	11/2" double poppet shear valve, female
2	FF15XYYHMXEZ*	11/2" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	EZXEZ90	2" EZ FIT 90° elbow flange x flange
6	QRS-XP-175-200	Quck release fitting for 1¾" APT™ XP Pipe
7	EZ20XEZ20TEEFF	Quick release tee flange fitting for 2" connections

*For YY, enter flexible connector length in inches.

Extra EZ FIT Connection

If you require an additional point of connection, choose an EZ FIT male connection (EZM) instead of the hex male (HM). This comes complete with the EZ FIT clamp, gasket, and threaded male connection pre-assembled on the flexible connector. This gives you an additional higher disconnection point that is closer to grade level, making it easier for technicians to access for maintenance. It also provides an another swivel point for easier installation.

Example: FF15XYYEZMXEZ *For YY, enter flexible connector length in inches.



2" UPP[®] Pipe Shear Valve Risers

Use the FLEX-ING® flexible connector EZ FIT system to quickly and easily connect 2" UPP® pipe to the shear valve riser.



Components

ltem	Model	Description
1	662501902	1½" double poppet shear valve, female
2	FF15XYYHMXEZ*	1%" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	90-063 QL-U	Quick release termination fitting for 2" UPP® pipe
6	03-063-EIF-U	2" electrofusion 90 elbow fitting
7	02-063-L-U	2" electrofusion coupler
8	08-063-EIF-U	2" electrofusion tee fitting

*For YY, enter flexible connector length in inches.

Extra EZ FIT Connection

If you require an additional point of connection, choose an EZ FIT male connection (EZM) instead of the hex male (HM). This comes complete with the EZ FIT clamp, gasket, and threaded male connection pre-assembled on the flexible connector. This gives you an additional higher disconnection point that is closer to grade level, making it easier for technicians to access for maintenance. It also provides an another swivel point for easier installation.

Example: FF15XYYEZMXEZ *For YY, enter flexible connector length in inches.



2" and 3" Vent Line EZ FIT Connections

Use the FLEX-ING[®] flexible connector EZ FIT system to quickly and easily connect 2" and 3" UPP[®] pipe or fiberglass pipe to the extractor vent valve.



Components

Item	Model	Description
1	31040011	4" x 4" x 2" extractor vent valve
2	FF20XYYHMXEZ*	2" flexible connector, EZ FIT flange x hex male
3	EZ30 CLAMP	2" EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	EZX20HFPL	Quick release threaded hex fitting for 2" fiberglass pipe
6	EZX20FGPL	Quick release glued fitting for 2" fiberglass pipe
7	90-063 QL-U	Quick release fitting for 2" fiberglass pipe
8	02-63-L-U	2" electrofusion welding coupler
9	31140011	4" x 4" x 3" extractor vent valve
10	FF30XYYHMXEZ*	3" flexible connector, EZ FIT flange x hex male
1	EZ30 CLAMP	EZ FIT clamp
12	407493003	3" EZ FIT gasket (one required per EZ FIT connection)
13	EZ30X30FP	Quick release threaded hex fitting for 3" fiberglass pipe
14	EZX30FGPL	Quick release glued fitting for 3" fiberglass pipe
15	90-090 QL-U	Quick release fitting for 3" fiberglass pipe
16	02-90-U	3" electrofusion welding coupler

*For YY, enter flexible connector length in inches.

FLEX-ING® FIREFLEX™ FLEXIBLE CONNECTOR ISOLATION ACCESSORIES

These protective sleeves isolate piping to prevent cathodic corrosion and the maintenance it can require. They are constructed with durable, state-of-the-art engineered polymers which are resistant to fuels and other corrosive materials to provide an extended service life.

Yellow Jacket Easy Fit Boot

The Yellow Jacket Easy Fit Boot features a Velcro[™] seal making it easy to install on existing piping systems or new installations.

Model	Description
YJVSLEEVE	3½" × 30" Yellow Jacket Easy Fit Boot with Velcro™ seal
YJVSLEEVE25	3½" × 25' Yellow Jacket Easy Fit Boot with Velcro™ seal
YJVSLEEVE50	3½" × 50' Yellow Jacket Easy Fit Boot with Velcro™ seal
YJVSLEEVEII	3½" × 30" Yellow Jacket Easy Fit Boot with Velcro™ seal, adhesive, straps and two mounting collars 3" × 30"



Note: For 11/2" and 2" dia flex connectors

Yellow Jacket Boot

The Yellow Jacket Boot has the ability to be pulled back while the connection is being made and then slide back in place to seal off. Utilizes the Yellow Jacket heat shrink wrap.

Model	Description		
YJ32BOOT	31/2" ID × 30" Yellow Jacket Boot		
YJ32BOOTKIT-40	$3^{1}/_{\rm e}^{\rm HD} \times 40^{\rm e}$ Yellow Jacket Boot, adhesive, straps, and two mounting collars		

Note: For 11/2" and 2" dia flex connectors

Yellow Jacket Heat Shrink Sleeve

Model	Description
YJHS03	$3" \times 36"$ Yellow Jacket heat shrink sleeve
YJHS20	$3" \times 20'$ Yellow Jacket heat shrink sleeve
YJHS50	$3" \times 50'$ Yellow Jacket heat shrink sleeve

Note: For 11/2" and 2" dia flex connectors

Heat Shrink Flexwrap

Model	Description
FLEXWRAP47X03	4.7" × 3' heat shrink sleeve
Note: For 3" flex connectors	-

Velcro[™] is a trademark of Velcro Industries B.V.







BALL VALVES

FLEX-ING[®] brand ball valves provide in-line product flow shut-off, making testing and inspection of equipment easy. Incorporating ball valves into the installation of your pipework system up front can save you on time, labor, and dispenser shutdown costs for years to come. The use of ball valves allows you to isolate and shut-down the flow of product to specific system components so you can perform maintenance or inspection on only the desired components, while the rest of the system remains in operation.

HIGHLIGHTS

- Blowout-proof, triple-sealing stems.
- 100 psi working pressure.
- 100% leak tested at factory.

Approvals

- UL842 listed.
- CSA certified.
- FM approval.

SPECIFICATIONS

- Body, end connections, stem, and packing gland: CW617N brass
- Ball: Black T.E.A. coated CW617N brass
- Packing and seat: PTFE
- Handle and nut: Plated steel with vinyl grip

ORDERING INFORMATION

Model	Description
BV150FPBRASS	1½" full port brass ball valve
BV200FPBRASS	2" full port brass ball valve
BV300FPBRASS	3" full port brass ball valve
BV150FPSS	1½" full port stainless steel ball valve
BV200FPSS	2" full port stainless steel ball valve
BV300FPSS	3" full port stainless steel ball valve



Model	А	В	С	D
BV150FPBRASS	4.16"	3.22"	6.00"	1.49"
BV200FPBRASS	5.00"	3.40"	6.00"	1.99"
BV300FPBRASS	7.08"	4.90"	8.00"	2.99"
BV150SS	4.16"	3.22"	6.00"	1.49"
BV200FPSS	5.00"	3.40"	6.00"	1.99"



FIBERGLASS ACCESS COVERS

FLEX-ING® fiberglass access covers provide maximum access to tank sumps while delivering solid durability. They feature a full fiberglass construction with a composite lightweight lid for easy access. The unique contoured skirt design expands out to 47", providing clear access to large tank sumps as well as giving the manway added strength.

HIGHLIGHTS

- Compatible with Franklin Fueling Systems 42" and 48" fiberglass tanks sumps and 45" polyethylene tank sumps.
- The 43" inner diameter of the manway opening provides ample workspace for service and maintenance of tank sump equipment.
- The 47" flared base of the skirt maximizes the space around the tank sump to direct water away from the sump.
- The composite lid is constructed of many layers of high quality fiberglass bonded together with premium resin and then hand finished with the utmost attention to quality.
- At its center, the composite lid tapers up from 1" to 1¼" in wall thickness while most competitive models remain at a uniform 1" wall thickness. This extra wall thickness provides minimal deflection and an extended service life.
- Deep 15" fiberglass skirt extends down around the neck of the tank sump.
- Exceeds H20 and HS20 load standards.

ORDERING INFORMATION

Fiberglass Access Covers

Model	Description
14F-4215	Fiberglass access cover with composite lid and 15" fiberglass skirt

SPECIFICATIONS









FLEX-ING® COMPOSITE ACCESS COVERS

At a fraction of the weight of typical steel access covers, a single technician can easily remove the lightweight FLEX-ING[®] composite access cover.

HIGHLIGHTS

- Slip resistant covers are constructed of many layers of high quality fiberglass bonded together with premium resin and then hand finished with the utmost attention to quality.
- At their center, our composite access cover tapers up from 1" to 1-1/4" in wall thickness while most competitive models remain at a uniform 1" wall thickness. The extra wall thickness provides minimal deflection and an extended service life.
- A shallow handle hole and chest-style handle with backer plate keep the wall thickness higher around this highimpact area of the cover.

ORDERING INFORMATION

Composite Access Cover

Model	Description
14U-3810	39" composite cover with 37" x 10" skirt
14U-RT3810	39" raintight composite cover with 37" x 10" skirt
14U-RT3810CL	39" raintight composite cover with 37" x 10" skirt and cam locks
14U-RT3810CLC	39" raintight composite cover
14U-3810C	39" composite cover
14U-4210	44" composite cover with 42" x 10" steel skirt
14U-RT4210	44" raintight composite cover
14U-RT4210CL	44" raintight composite cover with 42" x 10" steel skirt and cam locks
14U-RT4210CLC	44" raintight composite cover with cam locks
14U-4210C	44" composite cover

SPECIFICATIONS

- Exceeds H20 and HS20 load standards (maximum axle load requiring support for the 32,000, or 16,000 pounds for each set of dual tire wheels).
- Available with solid construction cast Zn-Al-Mg alloy, slope-style cam locks for the ultimate in watertight sealing.
- 12 gauge skirt construction that is also powder coated for extreme protection.
- 38" and 42" come standard with spring loaded handle and are available with cam lock for raintight seal.

Dimensions

Model	Diameter	Lid Thickness	Frame ID	Skirt Height	Skirt ID
38″	39.00"	1.00"	39.25"	10.75"	37.00"
42″	44.00"	1.00"	44.25"	10.75"	42.00"

Note: Confirm clearance of interior dimensions for your application before ordering.



COMPOSITE **ACCESS COVERS REPLACEMENT PARTS**

FLEX-ING® brand composite access cover replacement lids give you all the benefits of the solid cover for use with existing, competitive rings. Simply measure the dimensions of the existing manhole ring to determine the appropriate replacement lid. Comes standard with spring loaded handle.

ORDERING INFORMATION

R Line Composite Access Replacement Lid Replaces OPW Conquistador™ Lids

Madal		А	В		
WOUEI	IVIODEI Description		cm	In	cm
14U-39R	39" R Line replacement lid	39.3 +/125	100.01	1.00	2.54
14U-44R	44" R Line replacement lid	44 +/125	112.07	1.00	2.54

MoreCore Composite Access Replacement Lid Replaces Morrison Bros. Lids

Model	Description		A		В		С	
IVIOUEI	Description		cm		cm	In	cm	
14U-39MOR	39" MoreCore replacement lid	38.75	98.40	1.75	4.4	1.25	3.2	
14U-44MOR2	44" MoreCore replacement lid	44.88	114.00	2.17	5.51	1.25	3.2	

Composite Access Replacement Handle Kit

Complete chest handle replacement kit includes handle, back plate, two bolts, two nuts, and an allen wrench.

Model	Description
HANDLE KIT	Replacement handle kit

Composite Access Replacement Gasket Kits

Replacement gasket kit includes enough gasket material for a 42" lid. Cut to desired length for other lid sizes.

Model	Description
BOLT KIT	Replacement gasket and bolt kit for bolt-down style lids (includes gasket material and four bolts)
NONBOLT KIT	Replacement gasket kit for non bolt-down (lay in and cam lock) style lids (includes gasket material only, 12' roll, 3/8" wide x 1/8" deep)
CAMLOCK	Replacement gasket and hardware for cam lock style lids (includes four cam locks, with nuts, four bolts, four O-rings, and gasket material)



MoreCore Replacement Lid













SAFE-LITE FRC access covers are ultra lightweight. Engineered and tested to exceed the D.O.T. H20 load ratings. Covers weigh almost one-third less than steel, which dramatically reduces injury potential during cover removal. Available in 12", 30", 36", and 42" sizes. The slide action cover further reduces the chance of injury by eliminating the need to bend down to remove or replace the cover.

ORDERING INFORMATION

12" Round Access Way with FRC Covers

Model	Cover OD	Description
78121212BLK	12.88"	Black with 12" skirt
78121212ORG	12.88"	Orange with 12" skirt

30" Round Access Way with FRC Covers

Model	Cover OD	Description
78143012GRY	32.00"	Gray, bolted cover with 12" skirt
78143013GRY	32.00"	Gray with 12" skirt

36" Round Access Way with FRC Covers

Model	Cover OD	Description
78143312GRY	39.50"	Gray, bolted cover with 12" skirt
78143313GRY	39.50"	Gray with 12" skirt
78148512GRY	39.50"	Gray, slide action cover with 12" skirt

42" Round Access Way with FRC Covers

Model	Cover OD	Description
78144312GRY	44.25"	Gray, bolted cover with 12" skirt
78144318GRY	44.25"	Gray, bolted cover with 18" skirt
78144412GRY	44.25" × 52.00"	Gray, bolted cover with 42" × 8" top skirt and 52" × 14" bottom skirt
78144313GRY	44.25"	Gray with 12" skirt
78148612GRY	44.25"	Gray, slide action cover with 12" skirt



Model	A		В		D		E	
wouer	In	cm	In	cm	In	cm	In	cm
12"	13.75	34.93	12.00	30.48	8.50	21.59	12.00	30.48
30"	32.75	83.19	31.12	79.38	12.00	30.48	28.75	73.03
36"	40.25	102.24	38.62	98.09	12.00	30.48	36.25	92.08
42"	45.00	114.30	43.38	110.19	12.00	30.48	41.00	104.14

MANWAYS AND MONITORING WELLS

12" Round Covers

Model	Cover OD	Description
78130201	12.88"	Black
78130207	12.88"	Orange

30" Round Covers

Model	Cover OD	Description
78145906	32.00"	Gray, bolted cover
78149006	32.00"	Gray

36" Round Covers

Model	Cover OD	Description
78145606	39.50"	Gray, bolted cover
78144806	39.50"	Gray
78148206	39.50"	Gray, slide action cover

42" Round Covers

Model	Cover OD	Description
78144106	44.25"	Gray, bolted cover
78144506	44.25"	Gray
78148306	44.25"	Gray, slide action cover

36" FRC Aramid Covers

Model	Cover OD	Description
78044806	39.50"	Gray
78045606	39.50"	Gray, bolted cover

42" FRC Aramid Covers

Model	Cover OD	Description
78044106	44.25"	Gray, bolted cover
78044506	44.25"	Gray

36" Round Access Ways with FRC Aramid Covers

Model	Cover OD	Description
780492BD	39.50"	Bolted cover with 12" skirt
780492NB	39.50"	12" skirt
780492SA	39.50"	Slide cover
780492SB	39.50"	Gray, slide action cover with bolt-down option

36" Round Access Ways with FRC Aramid Covers

Model	Cover OD	Description
780491BD	44.25"	Bolted cover with 12" skirt
780491NB	44.25"	12" skirt
780491SA	44.25"	Slide action cover
780491SB	44.25"	Slide action cover with bolt-down option



UPP° COMPOSITE ACCESS COVERS

UPP® brand composite access covers feature a lightweight, watertight design for safe and easy access to underground containment. Their large diameter openings provide a wide access point for larger containment spaces. The full composite construction of both the lid and the ring provide complete corrosion resistance. For the ultimate in easy access, dip models feature an integrated inspection port at the center of the cover lid. Additionally, the locking mechanism seal the cover down to prevent it from spinning out and thwart unwanted access.

HIGHLIGHTS

- Two size ranges are available to accommodate varying applications and access opening size requirements including a 35" (900mm) diameter access opening and a larger 42" (1,060mm) diameter access opening.
- Complete composite construction is corrosion resistant even in the harshest forecourt conditions as well as resistant to chemical corrosion from petroleum and alcohols.
- Composite construction resists warping and delamination.
- Extremely hard wearing and durable, will not spin out, buckle or lose shape due to pressure forces from vehicles.
- Lockable design provides increased on-site security and safety.
- Anti-slip surface for increased safety.
- Integrated cover O-ring creates a watertight seal between the cover and frame.
- Dip models available with integrated inspection port.
- Locking mechanism key included.

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- All component parts are resistant to chemical attack, diesel, petrol, salt and water or a combination over the lifespan of the cover (surface discoloration is acceptable in service).
- Access cover lifting handles make cover removal safe and easy (sold separately).
- Access cover skirts available (sold separately).

SPECIFICATIONS

- 35" (900mm) Composite Access Cover Specifications
- Load rating: EN124 Class C250 & D400
- Clear opening: 35 7/16" (900mm) diameter
- Cover external dimension: 37 7/8" (962mm) diameter
- Frame external dimension: 43 5/16" (1,100mm) diameter
- Cover weight: 68 lbs (31kg)
- Frame weight: 33 lbs (15kg)
- Tread: Embedded aggregate uni-directional, complies with EN124
- Material: Advanced fiberglass composite.

42" (1,060mm) Composite Access Cover Specifications

- Load rating: EN124 Class C250
- Clear opening: 41 3/4" (1,060mm) diameter
- Cover external dimension: 44 3/16" (1,122mm) diameter
- Frame external dimension: 49 1/16" (1,245mm) diameter
- Cover weight: 88 lbs (40kg)
- Frame weight: 29 lbs (13kg)
- Tread: Embedded aggregate uni-directional, complies with EN124
- Material: Advanced fiberglass composite.

SPECIFICATIONS CONTINUED

Dimensions





ORDERING INFORMATION

Composite Access Covers

Model	Description
PCR090	35" (900mm) composite access cover, C250 rating
PDR090	35" (900mm) composite access cover, D400 rating
PCR090-DIP	35" (900mm) composite access cover with integrated dip inspection port, C250 rating
PCR106	42" (1,060mm) composite access cover, C250 rating
PCR106-DIP	42" (1,060mm) composite access cover with integrated dip inspection port, C250 rating
PCR-DIPCAP	Replacement dip cap for composite access covers
PCR-LIFT	Lifting handle tool for composite access covers
PCR-LOCK	Locking mechanism for composite access covers
PCR-PLUG	Locking mechanism replacement dust plug
SDFLX40FC	Sealant (to seal access cover frame to skirt)



35" (900mm) Composite Access Cover Accessories

Model	Description
PDR090-S	Replacement gasket for 35" (900mm) composite access covers (between lid and frame)
PXR090-OCH-SK	35" (900mm) fiberglass skirt, for use with OCH tank cambers

42" (1,060mm) Composite Access Cover Accessories

Model	Description
PCR106-S	Replacement gasket for 42" (1,060mm) composite access covers (between lid and frame)
PCR106-OCH1400-SK	42" (1,060mm) fiberglass skirt, for use with OCH tank cambers
PCR106-TSM4542-SK	42" (1,060mm) fiberglass skirt, for use with TSM tank cambers
METALLIC ACCESS WAYS

Available in 18" to 48" round or 24" square.

HIGHLIGHTS

- Covers meet or exceed D.O.T. H20 load rating.
- Painted rustproof-black.
- 24" square manway is manufactured using all welded construction. Corners are matched to ensure proper fit with covers.





ORDERING INFORMATION

Madal	Dimer	nsions	Skirt	: Size	Cover	Weight		
Iviodei	In	cm	ln cm		Cover	Lbs	Kg	
SSQ2409	24.00 × 24.00	60.96 × 60.96	9.00	22.86	Non-bolted	86.00	39.01	

MANWAYS AND MONITORING WELLS

ROUND MANWAY



Madal	A		E	В		C		D	
IVIOUEI	In	cm	In	cm	In	cm	In	cm	
78141808 STL	19.00	48.26	18.00	45.72	8.50	21.59	17.93	45.54	
78141812 STL	19.00	48.26	18.00	45.72	12.00	30.48	17.93	45.54	
78141818 STL	19.00	48.26	18.00	45.72	18.00	45.72	17.93	45.54	
SR1809 WT	17.50	44.45	16.75	42.55	9.00	22.86	16.25	41.28	
SR2409 HD	23.50	59.69	22.75	57.79	9.00	22.86	22.25	56.52	
SR3009 HD	29.50	74.93	28.75	73.03	9.00	22.86	28.25	71.76	
SR3609 HD	35.50	90.17	34.75	88.27	9.00	22.86	34.25	87.00	
SR3609 WT	35.50	90.17	34.75	88.27	9.00	22.86	34.25	87.00	
SR3809 HD	39.50	100.33	38.75	98.43	9.00	22.86	38.25	97.16	
SR3809 WT	39.50	100.33	38.75	98.43	9.00	22.86	38.25	97.16	
SR4209 HD	41.50	105.41	40.25	102.24	9.00	22.86	39.75	100.97	
SR4209 WT	41.50	105.41	40.25	102.24	9.00	22.86	39.75	100.97	
SR4809 HD	47.50	120.65	46.25	117.48	9.00	22.86	45.75	116.21	
SR4809 WT	47.50	120.65	46.25	117.48	9.00	22.86	45.75	116.21	

Madal	Dimer	nsions	Skirt	Size	Course	Weight	
IVIOUEI	ln	cm	In	cm	Cover	Lbs	Kg
78141808 STL	18.00	45.72	8.00	20.32	Non-bolted	39.00	17.60
78141812 STL	18.00	45.72	12.00	30.48	Non-bolted	41.00	18.60
78141818 STL	18.00	45.72	18.00	45.72	Non-bolted	44.00	19.95
SR1809 WT	18.00	45.72	9.00	22.86	Bolted	40.00	18.14
SR2409 HD	24.00	60.96	9.00	22.86	Non-bolted	70.00	31.75
SR3009 HD	30.00	76.20	9.00	22.86	Non-bolted	139.00	63.05
SR3609 HD	36.00	91.44	9.00	22.86	Non-bolted	192.00	87.09
SR3609 WT	36.00	91.44	9.00	22.86	Bolted	192.00	87.09
SR3809 HD	38.00	96.52	9.00	22.86	Non-bolted	235.00	106.59
SR3809 WT	38.00	96.52	9.00	22.86	Bolted	235.00	106.59
SR4209 HD	42.00	106.68	9.00	22.86	Non-bolted	310.00	140.61
SR4209 WT	42.00	106.68	9.00	22.86	Bolted	310.00	140.61
SR4809 HD	48.00	121.92	9.00	22.86	Non-bolted	400.00	181.44
SR4809 WT	48.00	121.92	9.00	22.86	Bolted	400.00	181.44

Note: May require two week lead time. Consult factory for availability.



16" AND 24" SQUARE ACCESS WAYS WITH KNOCK DOWN SKIRTS

EBW® square access ways feature a 3/8" diamond back steel plate cover with a galvanized steel skirt. Available in 16" \times 16" and 24" \times 24" dimensions and meeting D.O.T. H20 load rating, each is individually boxed with skirt in knock down form for easy handling and storing.

HIGHLIGHTS

Heavy-Duty Covers

All EBW[®] square manways feature a 3/8" diamond back steel plate cover.

Convenient Packaging

Shipped in individual boxes with knock down skirts, making handling and storage easy. Skirts are easily assembled using the provided hardware.

ORDERING INFORMATION

Square Manway Replacement Covers

Model	Description
78920301	16" × 16" steel cover
98720101	24" × 24" steel cover
1102103	Nut

Madal	Dimer	nsions	Skirt	Size Weight		
IVIOUEI	In	cm	In	cm	Lbs	Kg
98710001	16.00 × 16.00	40.60 × 40.60	7.50	19.05	38.50	17.50
98720001	24.00 × 24.00	60.96 × 60.96	9.00	22.86	82.00	37.00





TANK ACCESS WAYS

These access ways have a proven track record of troublefree operation. Their durable construction withstands the heaviest traffic and meets the requirements of a D.O.T. H20 load rating.

HIGHLIGHTS

Cast Iron Cover and Rings

 $\mathsf{EBW} \circledast 7\%$ round manways have ribbed cast iron covers and cast iron rings to withstand heavy loads and traffic.

Heavy-Duty Skirts

EBW® 7½" round manways have heavy-duty cast iron skirts. 12" and 18" round manways have a 16 gauge welded steel skirt and are available in different depths to fit your needs.

Colored Cover Options

EBW® 18" round manways can be ordered with optional FRC colored covers in standard API color codes. The FRC covers also include a recessed area for optional API color coded identification plates.

Highway 20 Rated (D.O.T. H20)

All EBW® spill containers and manways exceed the D.O.T. H20 requirement.

	Manway Size		C	Skirt Depth		Weight	
IVIOUEI	In	mm	Cover	In	mm	Lbs	Kg
78120808	7.50	191.00	Cast iron	8.00	203.00	22.00	10.00
78121212BLK	12.00	305.00	FRC	12.00	305.00	29.00	13.00
78121212CI	12.00	305.00	Cast iron	12.00	305.00	36.00	16.00
78121212CI-H	12.00	305.00	Cast iron with handle	12.00	305.00	36.00	16.00
78121212ORG	12.00	305.00	FRC	12.00	305.00	29.00	13.00
78121224CI	12.00	305.00	Cast iron	24.00	610.00	70.00	32.00
78141808BLK	18.00	457.00	FRC	8.50	216.00	30.00	14.00
78141812BLK	18.00	457.00	FRC	12.00	305.00	33.00	15.00
78141818BLK	18.00	457.00	FRC	18.00	457.00	39.00	18.00
78147865	18.00	457.00	FRC bolted	8.50	216.00	30.00	14.00

REPLACEMENT ROUND MANWAY COVERS

Madal with drain	Manway Size		Cover	Weight	
	In	mm	Cover	Lbs	Kg
78140201	7.50	191.00	Cast iron	6.00	3.00
78140001	12.00	305.00	Cast iron	17.00	8.00
78130201	12.00	305.00	FRC black	10.00	5.00
78130207	12.00	305.00	FRC orange	10.00	5.00
78140701	12.00	305.00	Cast iron with handle	18.00	8.10
78130401	18.00	457.00	FRC black	10.00	5.00
78130601	18.00	457.00	Steel with finger hole	33.00	15.00
78133401	18.00	457.00	FRC black, bolt-down, cover only	10.00	5.00

MONITORING WELL EQUIPMENT

The EBW[®] brand offering of monitoring well equipment includes all of the necessary hardware components necessary to operate and properly maintain a monitoring well.

HIGHLIGHTS

- 8", 10", and 14" manyway options.
- 2", 4", and 6" cap plug options.
- 2", 4", and 6" screen pipe options.
- 2" and 4" screen pipe filter wrap options.
- Monitoring well discriminating liquid sensor.



ORDERING INFORMATION

Model	Description
80840001	8" cast iron monitoring well
81030201	10" cast iron monitoring well
81430201	14" cast iron monitoring well
71520201	Spare lift handle assembly, below grade containers

ORDERING INFORMATION

Monitoring Well Packages

Pre-configured packages with common sizes.

Model	Description
808-4-K	(1) 808-400-01 8" manway, (1) 772-102-01 4" cap plug, and (1) 773-200-02 4" screen pipe
810-4-K	(1) 810-302-01 10" manway, (1) 772-102-01 4" cap plug, and (1) 773-200-02 4" screen pipe
810-6-K	(1) 810-302-01 10" manway, (1) 772-109-01 6" cap plug, and (1) 773-200-03 6" screen pipe

Note: Filter wrap and liquid sensor sold separately.

MONITORING WELL WAYS

EBW® brand 8", 10", and 14" monitoring well manways are equipped with strong cast iron, bolt-down lids to provide limited access to entering the manway. A watertight seal prevents contamination and a heavy-duty cast iron rim protects the manway from forecourt traffic. The lid features a distinctive triangle and the words "Do Not Fill - Test Well" which are both cast into the cover to meet API specifications.

SPECIFICATIONS

- 8" manway height / weight: 13" (330 mm) / 18 lbs (8 kg)
- 10" manway height / weight: 12" (305 mm) / 25 lbs (11 kg)
- 14" manway height / weight: 12" (330 mm) / 41 lbs (19 kg)







ORDERING INFORMATION

Model	Description
77210601	2" monitoring well cap plug (51 mm)
77210201	4" monitroing well cap plug (102 mm)
77210901	6" monitoring well cap plug (152 mm)

MONITORING WELL SCREEN PIPE

EBW® brand monitoring well screen pipes facilitate groundwater testing by allowing groundwater to pass through horizontal slots in the pipe. The screen pipe features precision cut slot apertures that provide a measured and uniform barrier to ingress with no sharp edges to damage the filter sock or oversized apertures that can allow bulging and perforation of the filter sock.

MONITORING WELL CAP PLUGS

EBW®® brand monitoring well cap plugs expand on the inside diameter of the screen pipe casing to form a vapor and watertight seal. An integrated locking mechanism prevents unauthorized access. The locking mechanism features a captured bolt, eliminating potential drop-out. The cap is a distinctive yellow color and features the words "Do Not Fill - Monitor Well" which is molded into the cap.

SPECIFICATIONS

- Body: Corrosion-proof plastic
- Gasket: Buna-N

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ORDERING INFORMATION

Model	Description
77320001	2" × 13' monitoring well screen pipe (51 mm × 396 cm)
77320002	4" × 13' monitoring well screen pipe (102 mm × 396 cm)
77320003	6" × 13' monitoring well screen pipe (152 mm × 396 cm)
77320004	$4" \times 15'$ monitoring well screen pipe (102 mm \times 457 cm)



ORDERING INFORMATION

Model	Description
77310002	2" × 100' monitoring well filter wrap (51 mm × 3048 cm)
77310004	4" × 100' monitoring well filter wrap (102 mm × 3048 cm)

SPECIFICATIONS

- The screen pipe must be installed with the included bottom cap to prevent any bypass of the well screen pipe apertures and filter wrap.
- The screen pipe is intended to be installed together with a filter wrap.

MONITORING WELL FILTER WRAP

EBW[®] brand monitoring well filter wrap is used on the outside of monitoring well screen pipe to further prevent fine soil from entering and blocking the slots.

SPECIFICATIONS

- Body: Spun bound polypropylene
- Micron rating: 250 microns
- Available in 100' (3048 cm) rolls

MANWAYS AND MONITORING WELLS



PROBE ACCESS HOLE

Probe access manholes offer an ideal solution for housing fuel management systems electronics and providing tank access with isolation from backfill.

HIGHLIGHTS

- Flat container sides for easy installation of penetration fittings.
- Bolt-down container lid.
- Integrated tabs for solid installation into concrete.

ORDERING INFORMATION

Model	Description
20URTATG	Probe access manhole
81830701	Replacement cover with plain lid top

3/8" Hex Head Mounting Bolts with









PROBE CAP AND ADAPTER KIT

CARB EVR approved 4" probe riser cap is used to protect tank probes and secure probe or monitoring sensor connections. The easy-to-operate T-handle provides a convenient method of removal and replacement.

The 90037 adapter kit includes a 4" nylon cap with $1\!\!/_2$ " and 3/8" cable bushing and a 4" composite adapter.

Bushing Weight In mm Lbs Kg 90037-E* 0.50 and 0.38 12.70 and 9.50 1.92 0.87 Model Description Description Description Description

95021501* Replacement Nitrile gasket for cap

*CARB EVR Phase 1 certification VR-101 for gas and E85.

HIGHLIGHTS

- Durable nylon construction.
- CARB: EVR Phase 1 Certification VR-101 and VR-103.



HIGHLIGHTS

Pressure / Vacuum Vent

- The P/V vent is constructed of high-grade, UV-resistant materials and premium internal components designed and tested to last.
- A vent cap with stainless steel mesh debris shield protects the system from water and insect intrusion.
- The one-turn locking mechanism provides easy installation and removal for servicing.
- High tolerance for over-pressure situations.
- Compatible with all fuel types.
- A rolling diaphragm achieves low leak rates and high flow rates with a tight and consistent seal.
- Includes 2" NPT vent stack adapter.
- The internal female threads are compatible with OPW[®] vent stack adapters for easy retrofit onto existing sites.
- Compatible with manifolded vent applications.

In-Line Vault

- The cast ductile iron enclosure houses the P/V vent for added security and protection from the environment while also placing it at grade-level for safer, cost-effective maintenance and testing.
- The vault includes a UV-resistant vent cap with a stainless steel mesh debris shield for the top of the vent stack.
- The stainless steel gasketed faceplate includes a swivel pin that holds it in place during service.
- Tamper-resistant screws secure the faceplate to the vault.
- Eliminates wrenching at height.
- Integrated drain plug facilitates draining of condensate.

PRESSURE / VACUUM VENT WITH IN-LINE VAULT

Defender Series[®] Pressure/Vacuum (P/V) vents regulate the pressure at which vapor is allowed to escape from the underground storage tank and the vacuum at which outside air is allowed to enter the tank. The P/V vent's internal rolling diaphragm delivers consistent and controlled cracking for both low leak and high-pressure conditions while the superior construction of UV-resistant materials extends the overall service life. The in-line vault provides added protection and facilitates at-grade servicing and testing. This eliminates the added expense of lift trucks as well as the potential safety concerns of conducting work at height.

SPECIFICATIONS

- Pressure setting: 2.5" to 6.0" WC
- Vacuum setting: -6.0" to -10.0" WC
- Pressure leak rate: ≤ .05 CFH at +2" WC
- Vacuum leak rate: ≤ .21 CFH at -4" WC
- Maximum flow rate: 8,000 SCFH at 2 PSI
- Operating temperature: -22° to 122° F (-30° to 50° C)

Materials

- P/V vent body: UV-resistant polymer
- Seals: UL Listed elastomers
- Screens: Stainless steel
- Rain cap: UV-resistant polymer
- In-line vault body: E-coated cast ductile iron
- In-line vault cover: Stainless steel

Approvals & Certifications

- UL2583 listed.
- Meets the requirements of EPA 40 CFR part 63 for Gasoline Dispensing Facilities



SPECIFICATIONS CONTINUED

Pressure/Vacuum Vent





Vent Stack Adapter





Vent Cap





In-Line Vault







ORDERING INFORMATION





Select the in-line tank venting package that best fits your site from the kits below.

Model	
DPVV	(1) Defender S

Description Series® P/V vent with (1) In-line vault and (1) vent cap



END-OF-LINE TANK VENTING

Order the following kit to upgrade your end-of-line tank venting system.

Model	Description
804100901	Defender Series® P/V vent, and Defender Series® 2" vent stack adapter



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RETROFIT & REPLACEMENT PARTS

Order a P/V vent compatible with OPW® P/V vent adapters to retrofit existing OPW® vent stack adapters.

Model	Description
804100930	Defender Series [®] P/V vent (includes O-rings for both Defender Series [®] and OPW [®] vent stack adapters)
804110901	Maintenance kit includes inlet screen (includes O-rings for both Defender Series® and OPW® vent stack adapters)
804110902	Vault faceplate gasket
804110903	(2) replacement tamper-resistant screws for vault faceplate
804110904	Vault service plug, prevents vapors from escaping during maintenance
804023901	Vent cap
804110905	Vault L-key wrench (T40 tip size)



PV-ZERO™ PRESSURE/ VACUUM VENT VALVE

The PV-ZERO[™] pressure/vacuum vent valve from Franklin Fueling Systems provides an innovative solution for tank venting needs. The patented liquid trap design utilizes vapor pressure to provide positive and negative pressure relief of an underground storage tank. The stainless steel design allows the PV-ZERO[™] to be compatible with both gasoline and E85.







Atmosphere

Tank Pressure

HIGHLIGHTS

- Installed, serviced, and tested from ground level, eliminating the need for ladder or costly boom truck.
- Liquid-based pressure and vacuum venting system with no leak rate.
- Stainless steel construction.
- Biofuels compatible.
- Stage I EVR approved to VR-101, 102, 104, and 105 for use with gas and E85.
- UL 842 Listed

Model	Description			
407215901	PV-ZERO™ pressure/vacuum vent valve, 3" NPT, gas and E85			
407225901	PV-ZERO™ test cap assembly, gas and E85			
407220001	PV-ZERO™ gas/E85 fluid			

Note: May require four to eight week lead time. Consult factory for availability.



EXTRACTOR VENT VALVES

Extractor vent valves are designed to fit into a 4" tank opening on an underground storage tank. Several outlet sizes are available to accommodate manifolded tank lines and Stage II vapor recovery installations.

HIGHLIGHTS

• E-coated bodies are fully compatible for alcohol/gas blends and Biodiesel.

Madal		А		В		С		Weight	
ivioaei		In	mm	In	mm	In	mm	Lbs	Kg
31040011	4" × 2" extractor valve w/o adaptor-NPT	4.00	102.00	2.00	51.00	n/a	n/a	13.00	5.90
31140011	4" × 3" extractor valve w/o adaptor-NPT	4.00	102.00	3.00	76.00	n/a	n/a	13.00	5.90
33040011	$4" \times 3" \times 2"$ extractor valve w/o adaptor-NPT	4.00	102.00	3.00	76.00	2.00	51.00	18.00	8.16
33140011	$4" \times 3" \times 3"$ extractor valve w/o adaptor-NPT	4.00	102.00	3.00	76.00	3.00	76.00	15.00	6.80
34040011	4" \times 2" \times 2" extractor valve w/o adaptor-NPT	4.00	102.00	2.00	51.00	2.00	51.00	17.00	7.71
34040041	$4" \times 2" \times 2"$ extractor valve w/o adaptor-BSPP	4.00	102.00	2.00	51.00	2.00	51.00	17.00	7.71
31040042	4" × 2" extractor valve w/o adaptor-BSPT	4.00	102.00	2.00	51.00	n/a	n/a	13.00	5.90
31140042	$4" \times 3"$ extractor valve w/o adaptor-BSPT	4.00	102.00	3.00	76.00	n/a	n/a	13.00	5.90
33040042	$4" \times 3" \times 2"$ extractor valve w/o adaptor-BST	4.00	102.00	3.00	76.00	2.00	51.00	18.00	8.16

Extractor Vent Valve Accessories

Hard Coated Aluminum Plug with O-Ring Seal

Plug used for isolating vent piping from tank during testing.

Model	Departmention	Weight		
	Description	Lbs	Kg	
39120101	4" test plug	3.60	1.63	

Adapters, for use with EBW® Ball Floats

Model	Description	Weight		
Iviouei	Description	Lbs	Kg	
30822802	ADPT 2" NPT, AGB, spare	1.15	0.52	
30822803	ADPT 3" NPT, AGB, spare	1.65	0.75	

5' Extractor Wrench

Five-foot extractor wrench works on all EBW® extractor vent valves for removing extractor cage assemblies and inserting test plugs.

Model	Description	Weight		
		Lbs	Kg	
32110001	5' extractor wrench	14.00	6.35	



4" Pipe Cap

Madal	Description	Weight		
IVIODEI		Lbs	Kg	
76020101	Brass, NPSM	4.60	2.09	
76020131	Brass, BSPP	4.60	2.09	
770201023	4" spare gasket	4.60	2.09	

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BALL FLOAT VENT VALVE

Ball float bent valves are used in conjunction with extractor vent valves in the Stage I vapor riser or tank vent lines on underground storage tanks. The ball float vent valve will restrict vapor venting should a full tank condition occur and protect against product missing and vapor locks due to vent pipe flooding. All ball floats are made of materials fully compatible with alcohol/gas blends and biofuels (E-85, Biodiesel, B-20).

WARNING: 308 Series float bents should not be used with suction pump systems. For use on gravity drop systems only. Do not use with pump-off unloading. Do not use with coaxial Stage I vapor recovery drop tubes.

HIGHLIGHTS

308023107

308023112

308023116

308023119

- Epoxy-coated steel mipple to prevent dissimilar metals from contacting each other.
- Stainless steel ball float is corrosion-resistant for long life.

0.06

0.06

0.06

0.06

BSPT

BSPT

BSPT

BSPT

Model	Nipple Length (in)	Bleed Hole (in)	Thread	
308030003	3.00	0.06	NPT	
308020205	5.12	0.06	NPT	
308020107	7.00	0.06	NPT	
308020112	12.00	0.06	NPT	
305020116	16.00	0.06	NPT	
308020119	19.00	0.06	NPT	
308023003	3.00	0.06	BSPT	

ORDERING INFORMATION

7.00

12.00

16.00

19.00*

*Does not include Installation Cage.



FOOT VALVES AND EXTRACTORS

Foot valves are used to maintain the prime in suction system fuel lines. Single poppet foot valves are typically used where easy access to the valve is available. Double poppet models offer twice as much protection for maintaining the prime. Both 1½" models can be used with 320 foot valve extractor fittings.

HIGHLIGHTS

- Metal-to-metal poppet seating.
- 24 stainless steel screen protects the valve from debris.
- All valves are pressure tested to ensure accuracy.

ORDER INFORMATION

Foot Valves

Madal	Description	A	4		В	Wei	ght
IVIOUEI	Description		mm			Lbs	Kg
5010501	1⁄2" single	1.44	37.00	2.75	70.00	0.75	0.34
5110001	½" double	1.44	37.00	4.00	102.00	1.18	0.54
7510501	¾" single	1.69	43.00	2.75	70.00	0.94	0.43
7610001	¾" double	1.69	43.00	4.00	102.00	1.31	0.60
10010501	1" single	2.00	51.00	3.00	76.00	1.12	0.51
10110001	1" double	2.00	51.00	4.25	108.00	1.56	0.71
15020201	1½" single	2.75	70.00	4.25	108.00	3.12	1.42
15120001	1½" double	2.75	70.00	5.38	137.00	4.38	1.99
20020001	2" single	3.44	87.00	4.88	124.00	4.38	1.99
20120001	2" double	3.44	87.00	6.75	172.00	6.44	2.92

Foot Valve Extractors

Madal	Size			4	В	
IVIOUEI	In	mm	In	mm	In	mm
32030201	4× 4 × 1.5	$102 \times 102 \times 38$	5.5	139.7	7.25	184.15
32030202	$4 \times 4 \times 2$	102 × 102 × 51	5.5	139.7	7.25	184.15

Thread Size

Model	Inlet I Th	⁼ emale read	Inlet Male Thread		Outlet Thread		Top Thread	
	In	mm	In	mm	In	mm	In	mm
32030201	1.50	38.00	4.00	102.00	1.50	38.00	4.00	102.00
32030202	1.50	38.00	4.00	102.00	2.00	51.00	4.00	102.00

Replacement Parts

Model	Description
32010201	Suction stub adapter
32010301	Cap assembly
32110001	Extractor wrench
32010401	Kit - cap with gasket

SPECIFICATIONS

Foot Valves

- Body: brass.
- Poppet: brass.
- Screen: 24 mesh brass.
- 1/2" foot valve has a stainless steel screen

Foot Valve Extractors

- Body: zinc-plated cast iron.
- Cap: bronze.
- Suction stub adapter: bronze.
- Gasket: leather.





325 PRODUCT LINE ISOLATION VALVE

The EBW® 325 product line isolation valve (PLIV) is designed to be installed at the top of the underground storage tank fuel line fitting on suction systems, or at the output of the submersible pump in a remote system. This provides a means of sealing off the tank for precision line testing without breaking pipe connections. The 325 PLIV can also be used for vapor line tank isolation on suction systems.

HIGHLIGHTS

- Compatible with suction style and submersible style systems.
- Threaded brass cap with O-ring seal.
- 50 psi working pressure.



MATERIALS

- Body: plated cast iron.
- Cap: plated cast iron.
- Test plug: brass.
- Seals: fluorocarbon.

Madal	Size		Description	Weight		
IVIOUEI	In	М	Description	Lbs	Kg	
32530001	$4.00 \times 4.00 \times 2.00$	102.00 × 102.00 × 51.00	PLIV	17.00	7.71	
Model		Description				
32110001	Extractor wrench, 14 lbs					
32510001	2" test plug					

VERTICAL CHECK VALVES

EBW® vertical check valves are used on suction system fuel lines to maintain prime. Check valves are installed directly below the dispenser pumping unit. EBW® offers both single and double poppet models. Double poppet models offer twice the protection from losing prime.



HIGHLIGHTS

- Metal-to-metal poppet seating.
- All valves are pressure tested to ensure accuracy.



MATERIALS

- Body: brass.
- Poppet: brass.
- Seat: brass.

Madal	Size		Poppet		A		В	We	ight
Iviodei	In	mm	Туре	In	mm	In	mm	Lbs	Kg
51520001	1.50	38.10	Single	2.81	71.30	3.83	97.20	3.13	1.42
51620001	1.50	38.10	Double	2.81	71.30	5.40	137.20	4.31	1.96



ANGLE CHECK VALVES

Angle check valves are used on suction system fuel lines to maintain prime. EBW® angle check valves are installed at the top of an underground storage tank suction line. Single poppet models are typically used where access to the valve is readily available.



MATERIALS

- Body: zinc-plated cast iron.
- Seat: brass.
- Poppet: brass.
- NPT: brass.
- Spring: stainless steel.



Madal		A		В		С	[)		E
IVIOUEI	In	mm		mm		mm		mm		mm
61530101	1.50	38.10	2.19	55.60	1.82	46.20	2.62	66.50	44.40	112.80
63520101	1.81	45.90	2.69	68.30	2.43	61.70	2.66	67.60	5.09	129.30
Spring load	ed.									

Madal	S	ize	Poppet	We	ight
IVIOUEI	In	mm	Туре	Lbs	Kg
61530101	1.50	38.1	Single	3.80	1.70
61530201*	1.50	38.1	Single	3.90	1.80
63520101	2.00	51	Single	7.25	3.30

"Spring loaded.

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UNDER PUMP/IN-LINE CHECK VALVES

Under pump/in-line check valves are designed to be installed directly in the inlet of the dispenser pumping unit to maintain prime on a suction system fuel line. The under pump/in-line check valve can also be used in a pressurized system at the submersible pump outlet to hold product in the line.

HIGHLIGHTS

- Cast-in Hex for sturdy wrenching surface.
- Threads on both ends are designed to receive female threaded product lines.
- Pressure relief models relieve thermal expansion in the pumping unit, reducing the chance of vapor lock.

SPECIFICATIONS

- Body material: brass
- Poppet: brass
- Seal: fluorocarbon
- Spring: stainless steel

ORDERING INFORMATION

Madal	Size		Pressure	Throad	Weight	
IVIOUEI	In mm Relief		IIIeau	Lbs	Kg	
62020101*	1.5	38.1	No	NPT	1.31	0.59
62120001	1.5	38.1	No	NPT	1.31	0.59
62130001	1.5	38.1	Yes	NPT	1.61	0.73
62220001	2	51	No	NPT	1.11	0.5
62230001**	2	51	Yes	NPT	1.87	0.85
62130021	1.5	38.1	Yes	BSPT	1.61	0.73

* Only one end threaded

**E-coated for AGB compatibility.

UNION CHECK VALVES

EBW® union check valves are designed to be installed into an existing union to temporarily stop the loss of prime due to damaged foot valves, angle check valves, or vertical check valves in a suction system fuel line.

SPECIFICATIONS

- Body: bronze.
- Poppet: acetal.
- Seal: fluorocarbon.
- Spring: stainless steel.
- Screen: brass.

HIGHLIGHTS

- Spring-loaded poppet.
- Open construction design allows for free flow of product.
- With or without protective screen.

Madal	Si	ze	Caraan	Weight	
IVIOUEI	In	mm	Screen	Lbs	Kg
65010402	1.50	38.10	Yes	0.50	0.23
65010802	1.50	38.10	No	0.50	0.23



DIESEL EXHAUST FLUID FLEXIBLE CONNECTORS

FLEX-ING[®] brand diesel exhaust fluid flexible connectors allow you to easily connect a pipework system to other systems' components such as submersible pumps. The all-stainless steel construction provides complete compatibility with DEF (Diesel Exhaust Fluid)/AdBlue[®].



HIGHLIGHTS

- All-stainless steel construction.
- Enclosing the corrugated DEF/AdBlue[®] contact layer is a stainless steel braid that is manufactured from only high-grade stainless steel.
- The EZ FIT union style coupling system is specifically designed to make connections in confined spaces simple and tight.
- Each EZ FIT male and female style coupling comes complete with couplers and gaskets.

SPECIFICATIONS

- All metal construction means one flexible connector for both above and below ground applications
- An 18-8 alloy outer wrap, 321 stainless Steel inner core provides a long service life
- Thick, schedule 80 Hex end fittings protect against deformation of the ends
- 100% pressure tested to assure quality
- 50 psi working pressure
- EZ FIT clamp and gasket are included with each assembly
- Stainless steel fittings and EPDM gaskets are fully DEF/ AdBlue[®] compatible

ORDERING INFORMATION

Use these diagrams below along with the Ordering Guide at the bottom of the page to help you build your flexible connector model numbers.

Ordering Options Diagram

Use the options and descriptions in the Ordering Guide along with this diagram to assist in building your model numbers.



End Fitting Options

Use the options and descriptions in the Ordering Guide along with the diagrams below to select your end fitting types (two total).



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ORDERING INFORMATION CONTINUED

Ordering Guide DEF A X B C X D

DEF = DEF/AdBlue® Flexible Connector

All materials are fully compatible with DEF/AdBlue® including stainless steel fittings and EPDM seals.

A = Hose Diameter

- 07 = 3/4"
- 10 = 1"
- 15 = 1½"
- 20 = 2"
- 30 = 3"

Example: DEF20X18MXEZM = DEF flexible connector, 2" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other (includes EZCLAMP and EZ20GASKET-EPDM).

B = Overall Length in Inches

Use two-digit format

C and D = End Fitting Options

EZ = EZ FIT flange only

EZM = EZ FIT male NPT (Each EZ FIT union style coupling comes complete with couplers and gaskets)

EZF = EZ FIT female NPT (Each EZ FIT union style coupling comes complete with couplers and gaskets)

M = Hex male fixed NPT

F = Hex female fixed NPT

BT = Hex male fixed BSPT

BTF = Hex female fixed BSPT

Flexible Connectors with Differing Hose and End Fitting Diameters

All end fittings are, by default, the same diameter as the hose. If you require a flexible connector where the end fitting diameter does not match the hose diameter, the size must be indicated numerically in front of the corresponding fitting as in the following example.

Example: DEF15X18MX2M = DEF flexible connector, $1\frac{1}{2}$ " hose diameter, 18" overall length, with one $1\frac{1}{2}$ " Hex male fixed NPT fitting on one end and one 2" male NPT fitting on the other.

Rules:

1) End fitting diameters can not be smaller than hose diameters.

2) Only one hose fitting per flexible connector can be of a different diameter than the hose diameter.

3) End fitting diameter must only be one size larger than hose (1" hose could use 11/2" fitting, 11/2" hose could use 2" fitting, etc.)

Common Models

You can also select from the following most-common DEF flexible connector model numbers.

Model	Description
DEF10X10MXEZM	1" hose diameter, 10" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other
DEF10X12MXEZM	1" hose diameter, 12" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other
DEF10X12MXM	1" hose diameter, 12" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF10X15MXM	1" hose diameter, 15" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF10X18MXM	1" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF15X18MXEZM	11/2" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other
DEF15X18MXM	11/2" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF20X12MXM	2" hose diameter, 12" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF20X18MXEZM	2" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other
DEF20X18MXM	2" hose diameter, 18" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF20X24MXEZM	2" hose diameter, 24" overall length, with one Hex male fixed NPT fitting on one end and one EZ FIT male NPT fitting on the other
DEF20X24MXM	2" hose diameter, 24" overall length, with one Hex male fixed NPT fitting on one end and one Hex male fixed NPT fitting on the other
DEF20X30MXF	2" hose diameter, 30" overall length, with one Hex male fixed NPT fitting on one end and one Hex female fixed NPT fitting on the other

Replacement Parts

Model	Description
407493001	1" EZ-FIT Gasket
EZ10CLAMP	1" EZ FIT clamp
407493002	2" EZ-FIT gasket
EZCLAMP	2" EZ-FIT clamp
407493003	3" EZ-FIT gasket
EZ30CLAMP	3" EZ FIT clamp





DIESEL EXHAUST FLUID SHEAR VALVE

FLEX-ING[®] brand 1¹/₂" diesel exhaust fluid shear valves shut-off the flow of DEF/AdBlue[®] in the event of a vehicle collision with a dispenser, preventing an excessive and uncontrolled release into the environment. The optional e-coated mounting bracket allows installation both in containment sumps beneath the dispenser as well as direct mounting to the concrete forecourt.

HIGHLIGHTS

- Integrated wrench flats for easy installation.
- Mounting bracket kit allows for in-sump containment or flush mounting.
- Available with either 1¹/₂" NPT or BSPT inlet (bottom) and 1" NPT or BSPT outlet (top) options.

ORDERING INFORMATION

Model	Description
663100001	DEF shear valve, 1½" NPT inlet, 1" outlet
663100021	DEF shear valve, 1½" BSPT inlet, 1" outlet
66320000	Mounting bracket for DEF shear valve including U-bolt, nuts and bracket guides

SPECIFICATIONS

- Body: Stainless steel
- Mounting bracket: E-coated steel
- Height: 3¾" (95.25 mm)
- Break force: Under 650 pound-feet (884 N-m)
- Break force within parameters established by UL842 for product shear valves.
- Must be installed with locally supplied 1" rigid pipe threaded into outlet.

Diagram



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PRESSURE REGULATOR VALVE

The EBW® 664 pressure regulator valve is designed to be used in conjunction with suction type dispensers connected to an aboveground storage tank. The pressure regulator valve prevents fuel from flowing to the pumping unit and flowing out the vent tube of the self-contained dispenser when the pump is not activated. The pressure regulator valve is a vacuum actuated valve which will not allow product flow until the suction of the pumping unit opens the valve. The valve closes by means of an internal spring when pumping is complete.

HIGHLIGHTS

- Hydrostatic pressure adjusting mechanism with durable weather cap.
- Built in thermal expansion pressure relief valve.
- Shear section is standard, eliminating need for an additional shear valve.
- NFPA 30.
- API/RP 2000.

SPECIFICATIONS

- Body: cast iron.
- Seals: fluorocarbon.
- Filter: stainless steel.
- Poppet: fluorocarbon.



ORDER INFO					
		Weight			
IVIODEI	Description	Lbs	Kg		
66430201	Male-NPT	19.00	8.62		
66430202	Union	19.30	8.75		
66430203	Female-NPT	19.00	8.62		
66430206	Female-Poppeted	19.00	8.62		
66430226	Female-BSPT	19.00	8.62		
Model	Description				
66222001	Male replacement adapter				
66421101 Female replacement adapter for 664-302-06					
66430401	Mounting bracket				



Note: Please refer to the installation instructions supplied with the valve for proper installation procedures.



PRESSURE VACUUM VENTS

EBW® pressure vacuum vents are used on underground storage tanks with a throughput of less than 100K gal/month and aboveground storage tank vent pipes to discharge vapors upward into the atmosphere. The top casting is dome-shaped to quickly drain off moisture including rain, snow, and ice. Body and cover are cast aluminum. 2" and 3" models have vent rates of 8000 cubic feet per hour, and vent at 13.8 in WC of pressure and 0.8 in WC of vacuum.

HIGHLIGHTS

- Two model types available, NPT/BSPT threads or O-ring with locking screw.
- NFPA 30.

MATERIALS

- Body: aluminum.
- Poppet: acetal.
- Spring: stainless steel.
- Screws: zinc-plated steel.
- Screen: brass.



800-303

Madal	Size		Installation	Weight	
IVIOUEI	In	mm	IIIStallation	Lbs	Kg
80230301	2.00	51.00	NPT threaded	1.88	0.85
80230302	2.00	51.00	O-ring seal	1.84	0.83
80230321	2.00	51.00	BSPT threaded	1.88	0.85
80230405	3.00	76.00	NPT threaded	2.44	1.11
80230406	3.00	76.00	O-ring seal	2.40	1.08



OPEN ATMOSPHERE TANK VENTS

EBW® tank vents are designed to provide an open path for vapors from an underground or aboveground storage tank to the atmosphere.

HIGHLIGHTS

- Dome-shaped top design drains off moisture including rain, snow, and ice.
- 30 mesh prevents dirt and debris from entering vent lines.

MATERIALS

- Body: aluminum.
- Lid: zinc-plated steel.
- Seal: brass.

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Madal	Si	ze	Weight	
IVIOUEI	In	mm	Lbs	Kg
80020301	3.00	76.00	1.19	0.54
80020702	2.00	51.00	1.00	0.42

ABOVEGROUND EMERGENCY VENTS

803 aboveground emergency vents are designed to work in conjunction with 802 pressure vacuum vents to prevent an aboveground storage tank from becoming over-pressurized in the event of a fire or blockage. When the aboveground tank reaches a determined pressure, the cast iron lid will raise up to allow the pressure to release. When the pressure releases, the cast iron cover will lower and reseat. The sturdy cast iron body and lid, along with the fluorocarbon O-ring, provide a tight seal when closed. Aboveground tank vents are designed to open at 8.0 ounces of pressure.

HIGHLIGHTS

- Several sizes and styles available, 4" and 6" male and female models.
- Fluorocarbon O-ring seal.

MATERIALS

- Body: cast iron.
- Lid: cast iron.

Madal	A	Ą	E	3	(2	Throad
wouer	In	mm	In	mm	In	mm	Theau
80320001	6.00	154.80	4.50	115.14			4" NPT
80320501	8.06	204.73	5.19	131.95			6" NPT
80330801	10.50	268.17	5.50	141.94			8" NPT

Madal	Size		Connection	Weight	
Iviodei	In		Connection	Lbs	Kg
80320001	4.00	102.00	Female	14.00	6.35
80320501	6.00	152.00	Female	30.00	13.60
80330801	8.00	203.00	Female	40.20	18.23

Vent :		
In	mm	@ 2.5 F31 = 3CFH
4.00	102.00	96,000 SCFH
6.00	152.00	233,000 SCFH
8.00	203.00	411,000 SCFH



Note: Pipe nipple shown for male thread models only.



ANTI SYPHON VALVES

EBW® brand anti syphon valves are recommended for all aboveground storage applications to prevent fuel from exiting the storage tank in the event of a broken line or leak. The anti syphon valve will shut-off product flow when lines are broken, preventing fuel spillage and fire hazards. Each valve has an adjusting mechanism accommodating various liquid head pressure settings. Each valve also includes a pressure relief valve to eliminate thermal expansion of fluid in the lines. The adjusting mechanism is lockable after the preferred setting is made. Valves are set to maximum head pressure when shipped from the factory.

HIGHLIGHTS

- Hydrostatic pressure adjusting mechanism with E-coated weather cap
- Built-in thermal expansion pressure relief valve.
- ¾" and 1" models are ideal for fuel oil and generator applications.
- Install in vertical position only.
- Can be used in pressure systems.
- NFPA 30 fire rating.

ORDERING INFORMATION

Model	Description
60530011	34" NPT anti syphon valve, 0' to 12' head pressure
60630011	1" NPT anti syphon valve, 0' to 12' head pressure
61630013	1½" NPT anti syphon valve, 0' to 5' head pressure
61630011	1½" NPT anti syphon valve, 5' to 12' head pressure
61630012	1½" NPT anti syphon valve, 12' to 25' head pressure
61630031	1½" BSPT anti syphon valve, 5' to 12' head pressure
61630032	1½" BSPT anti syphon valve, 12' to 25' head pressure
63630011*	2° NPT anti syphon valve, 5' to 12' head pressure, AGB compatible
63630012*	2° NPT anti syphon valve, 12' to 25' head pressure, AGB compatible
63630031*	2" BSPT anti syphon valve, 5' to 12' head pressure, AGB compatible
63630032*	2" BSPT anti syphon valve, 12' to 25' head pressure, AGB compatible

*E-coated for alcohol and biodiesel compatibility.

SPECIFICATIONS

Specifications

- Body material: E-coated
- Spring material: Zinc-plated steel
- Adjustment screw: Stainless steel
- Disc: Fluorocarbon seal

Approvals/Certifications

• UL 842 listed, MH17159 and ULc listed.



WARDEN® AST OVERFILL PREVENTION VALVE

The EBW® Warden® is designed to provide a positive shut-off during a pressurized fill delivery on an aboveground storage tank. It eliminates spills and overfills, avoiding costly cleanup expenses and ground contamination. The Warden® is fully adjustable to provide shut-off in various height and capacity aboveground tanks. It is designed to fit into a 4" fill riser, making installation on new and existing locations simple and quick. Designed with inverted floats for use in small or large rectangular tanks. Requires 4" minimum ullage.

Note: The Warden[®] is recommended for use with clean product only. Contaminated product may cause erratic operation or valve failure.

HIGHLIGHTS

- Cylindrical float design eliminates interference with tank walls and cross braces.
- 100 psi working pressure rating.
- Flow rate 200 gpm at 20 psi.
- No minimum flow rate.
- Ships complete with upper nipple and tight fill adapter with crossbar to prevent open fills.
- Simply thread onto a 4" riser pipe to install. Length of upper tube determines shut-off point.

MATERIALS

- Valve body: aluminum 356-T6.
- Poppet: aluminum 356-T6.
- Shaft: stainless steel.
- Float: high density polyethylene.
- Nipple: epoxy-coated black iron pipe.



Madal	Deparintion	Weight	
IVIOUEI	Description	Lbs	Kg
70942001	Warden®, 4" overfill with inverted floats	12.50	5.67
77421220	2" dust cap	1.25	0.57



AST SPILL CONTAINER

The EBW® AST spill container gives overflow protection to fill and vapor return risers on an aboveground storage tank. Its 7½ gallon capacity prevents potential environmental problems by containing fuel overfill spills during fill-up.

HIGHLIGHTS

- Built-in drain allows spilled fuel to drain back into the tank.
- 7½ gallon capacity.
- Lockable lid prevents tampering and theft.
- Epoxy-coated 14 gauge steel skirt and lid provide corrosion protection and durability.
- Threads onto a 4" riser pipe to install.
- Cast iron base securely bolted to the steel skirt provides superior strength for heavy-duty applications.

MATERIALS

- Lid and skirt: 14 gauge epoxy-coated steel.
- Base: cast iron.
- Gasket: fire-resistant graphite base gasket.
- Drain valve: acetal with a flourocarbon valve seal.





DRAIN	VALVE	ASSEMBLY

Madal	Description	Weight		
wouer	Description	Lbs	Kg	
70534101	Replacement drain valve	0.50	0.20	
706500901	Standard, 7.5 gallon	40.00	18.14	





REMOTE FILL BOXES

FLEX-ING[®] brand stainless steel remote fill boxes house the valves, fittings, and connectors required for the remote filling of underground storage tanks. Remote fill boxes are available in a variety of configurations, connection sizes, and mounting styles and can be ordered as pre-plumbed (including valves, fittings, and connectors) or not plumbed.

25.50"

Model	Height	Depth	Width
RFBP-TOP	25.3"	25.5"	20.25"
RFBP-REAR	25.3"	25.5"	20.25"
RFBNP-REAR	25.3"	25.5"	20.25"

Note: Optional pedestal base available. Please contact FFS customer service for details.



Top Inlet Pre-Plumbed







Rear Inlet Not Plumbed

Rear Inlet Pre-Plumbed

ORDERING INFORMATION

Model	Description
RFBP-TOP	3" pre-plumbed box, top inlet
RFBP-TOP-3	3" pre-plumbed box, top inlet with stainless steel legs
RFBP-REAR	3" pre-plumbed box, rear inlet
RFBP-REAR-2	2" pre-plumbed box, rear inlet
RFBP-REAR-30	3" pre-plumbed box, rear inlet with stainless steel legs
RFBNP-TOP	3" box (not pumbed), top inlet
RFBNP-TOP-30	3" box (not plumbed), top inlet with stainless steel legs
RFBNP-REAR	3" box (not plumbed), rear inlet
RFBNP-REAR-4	4" box (not plumbed), rear inlet
RFBNP-REAR-30	3" box (not plumbed), rear inlet with stainless steel legs

Note: Contact Franklin Fueling Systems for custom plumbing options.



FLEX-ING[®] WALL MOUNT REMOTE FILL BOX

The wall mount remote fill boxes feature a stainless steel enclosure design which houses valves, fittings, and connectors required for the remote filling of storage tanks. The wall mount model is designed for external building wall applications.

FEATURES

- 14 gauge stainless steel construction.
- Hinged access door with gasket.
- Lockable handle.
- 18" deep spill compartment.
- ¾" NPT drain connection.

Model	Description	Height	Depth	Width
RFBNP-WALL	Wall mount remote fill box	25.3"	25.5"	20.25"
RFBP-WALL-2	2" Pre-plumbed wall mount box, top inlet	25.3"	25.5"	20.25"



2" FILL CAPS

751

770 Locking Fill Cap

This watertight, locking fill cap consists of a sturdy brass body with an attractive gray, epoxy-coated, cast iron cap. Holes are uniformly located around the edge of the cap so that it may be locked in any position. Furnished with a Buna-N gasket.

Madal		Size		Weight	
IVIOUEI	Thread		mm	Lbs	Kg
77010101	NPT	2	51	2.62	1.19
77010121	BSPT	2	51	2.62	1.19
					•

Model	Description
77020101	2" replacement gasket

751 Locking Fill Cap

Construction of aluminum, this fully lockable fill cap has female threads for installation. Lock is not included.

Madal	Description	Weight	
Iviodei	Description	Lbs	Kg
75120201	Female NPT	0.69	0.31
75120401	Male NPT	0.69	0.31
75120221	Female BSPT	0.69	0.31
75120421	Male BSPT	0.69	0.31

MATERIALS

- Body: brass.
- Cap: cast iron.
- Gasket: Buna-N.

MATERIALS

- Body: aluminum.
- Cap: aluminum.

FLEX-ING® PIPE GUARDS AND BOLLARDS

Protect property and avoid costly damage to dispensers with these schedule 40 pipe guards and bollards.

U-Shaped Pipe Guards

Model	А	В	С	D
BGU35565414	3.5"	36"	54"	14"
BGU35415314	3.5"	41"	53"	14"
BGU35485014	3.5"	48"	50"	14"
BGU40365614	4.0"	36"	56"	14"
BGU40415314	4.0"	41"	53"	14"
BGU40417414	4.0"	41"	74"	14"
BGU40435414	4.0"	43"	54"	14"
BGU40485114	4.0"	48"	51"	14"
BGU35365510SS4*	3.5"	36"	55"	10"

*#4 finish stainless steel

Bollards

Model	A	В
BGS4042	4.0"	42"
BGS4063	4.0"	63"
BGS4072	4.0"	72"
BGS6063	6.0"	63"
BGS6072	6.0"	72"
BGS6084	6.0"	84"
BGS4072SS4*	4.0"	72"
BGS6084 BGS4072SS4*	6.0" 4.0"	84" 72"

*#4 finish stainless steel





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SPILL CONTAINER, OVERFILL PREVENTION VALVE & MANWAY TOOLS & ACCESSORIES

ORDERING INFORMATION

Defender Series® Spill Container Tools

T-7104

	Model T-0074	Description Defender Series® spill container tool kit includes T-handle (T-7001), spill container tool (T-7106), and swivel adapter tool (T-7102)
K	Model T-7001	Description T-handle, attaches to all installation adapter tools
	Model T-7106	Description Defender Series® spill container tool, used to install and remove both below grade and grade level spill containers
	Model T-7102	Description Orange swivel adapter tool, used to remove or install Franklin Fueling Systems swivel adapters and M/F 4x4 riser adapters
	Model T-7107	Description Defender Series® spill container double wall vacuum test tool
	Model T-7100	Description Red non-swivel adapter tool, used to install and remove legacy non-swivel adapters
	Model T-7103	Description Blue OPW swivel adapter tool, used to install and remove OPW swivel adapters
	Model	Description

Green swivel adapter torque testing tool, used to torque test any swivel adapter

ORDERING INFORMATION

Defender Series[®] Overfill Prevention Valve Tools



Model	Description
708535901	Roll crimping installation tool includes roller bit
708530930	Roller bit
CW1	Cutting bit

Model	Description
708534901	Defender Series® overfill prevention valve remote testing tool
708534902	Defender Series® coaxial overfill prevention valve remote testing tool

PHIL-TITE[™] Spill Container Tools



Model	Description
T-7043	PHIL-TITE [™] spill container tool kit includes T-handle (T-7001), spill container tool (T-7002-A), and swivel adapter tool (T-7102)

Model	Description
T-7001	T-handle, attaches to all installation adapter tools

	E.	
1		2

Model	Description
T-7002-A	PHIL-TITE [™] spill container tool, used to install and remove spill containers



Model	Description
T-7102	Orange swivel adapter tool, used to remove or install Franklin Fueling Systems swivel adapters and M/F 4x4 riser adapters



Model	Description
T-7002HD	Heavy duty T-handle with counterweights, attaches to all installation adapter tools, includes PHIL-TITE [™] spill container tool (T-7002-A)

ORDERING INFORMATION

Manway Cover Tools



Chain Wrench Tools



Model	Description
32110001	¾" chain wrench, 60" length for removing and installing, 14.00 Lbs/6.40 Kg
90110101	¾" chain wrench, 26" length for removing and installing, 3.00 Lbs/1.40 Kg

PIPING AND CONTAINMENT

PIPING AND CONTAINMENT

- 1 XP flexible pipe
- 2 UPP[®] semi-rigid electrofusion weld pipe
- 3 XP pipe fittings and test boots
- 4 Flexible entry boots
- 5 Polyethylene and fiberglass dispenser sumps
- 6 Polyethylene and fiberglass tank sumps



PIPING AND CONTAINMENT


PIPING



PREMIUM PIPE CONSTRUCTION

Double wall (or secondary contained) XP pipe features a premium multi-layer construction designed to provide double wall protection, give enhanced strength, and allow the flexibility needed for sweeping bends.

- 1 Interior primary (Nylon 12)
- 2 Metallized Mylar
- Over the second state of the second state o
- 4 Exterior Primary (Nylon 12)
- 6 Clear Mylar
- 6 Secondary Jacket (Nylon 12)
- Metallized Mylar
- (8) Scuff Guard (Nylon 12)

XP pipe is offered in 1", 1 ½", 1 ¾", and 2" diameters in a variety of lengths.





FLEXIBLE PIPEWORK

APT[™] XP pipework provides a highly flexible pipework solution that makes installation simple and easy in any weather condition or site configuration.

- XP pipe features a 3 ft. bend radius for all pipe diameters making it one of the most flexible, yet durable fuel pipes available.
- With long coils (1000+ ft.) and simple fittings, XP pipework can be installed quickly without specialized tools in any weather.
- By combining the XP pipework system with APT[™] sumps and entry fittings, you can achieve true watertight containment.



🚯 Franklin Fueling Systems



XP PIPE FITTINGS

APT[™] XP tee, elbow and quick release fittings allow for an easy, space-saving installation by eliminating the need for additional fittings and threaded connections.

HIGHLIGHTS

- Reducing threaded connections eliminates potential leak paths inside of the containment space.
- Compact fittings free up valuable space inside of tight containment sumps where space is already at a premium.
- There are no special tools or drying times with these standard fittings. Installation can be carried out quickly.



RIGID ENTRY BOOTS

Rigid entry boots allow you to connect XP double wall flexible pipe and conduit to containment sumps with an unsurpassed level of installation ease, while also completely removing exposed rubber from the connection.

HIGHLIGHTS

- Requires only a single entry hole for installation - no drilling multiple holes as well as the templates they require.
- The interior ridges of the boot guide XP flexible pipe into place to ensure a proper 90° entry.
- Suitable for use on flat and round sumps.



SPLIT TEST BOOTS

APT[™] split test boots are designed to make the integrity testing of secondary contained XP pipe simple and easy for both new and existing sites.

HIGHLIGHTS

- A hinged design allows you to clamp the boot down over the pipe after it has been installed.
- The integrated Schrader valve allows you to apply air pressure (5-8 psi) while the Nitrile rubber seals create an airtight chamber for testing purposes.
- Once testing is complete the boot can be left in place for future testing or easily removed for use at other sites.



APT[™] 4" XP Pipe ducting allows for simple and easy underground pipe removal without the need for extensive excavation.

HIGHLIGHTS

- The 4" inside diameter of the ducting allows XP pipe to easily slide through during installation or removal.
- Recommended for future-proofing sites for pipe changes or as an empty conduit for future added lines.
- The corrugated polyethylene design prevents collapse under the weight of backfill and protects the pipe.



WATERTIGHT DUCTED ENTRY BOOT

APT[™] Fusion Ducted Entry Boots provide a watertight seal between XP Pipe and polyethylene constructed containment sumps.

HIGHLIGHTS

- Utilizing the electrofusion welding process, the entry boot, ducting, and sump become one solid structure, creating a watertight entry into the containment space.
- The electrofusion welding process is safe and simple to complete in any climate and virtually any weather condition.
- Ducting is recommended for future-proofing sites for pipe changes or as a pull chase for future station expansion.

XP FLEXIBLE PIPEWORK

APT[™] XP pipework provides a highly flexible pipework solution that makes installation simple and easy in any weather condition or site configuration. XP pipework can be used in both pressure and suction applications, and is ideal for underground service station fuel delivery systems. The XP pipework system features controlled flexibility, even in low temperatures, permitting fast, easy installation.

Reel Size	Inches*	cm*
Master	91 × 33 × 74	231.1 × 83.8 × 187.9
Super Master (S. Mast.)	91 × 52 × 74	231.1 × 132.1 × 187.9

*Reel dia. × width × hub dia.

HIGHLIGHTS

- Available in 1", 1½", 1¾" and 2" diameters in a variety of coil lengths.
- The D-Series piping is a single wall, direct bury piping.
- The SC-Series piping provides additional environmental security as a secondary contained direct bury pipe.
- XP pipe features a 3 ft. bend radius for all pipe diameters making it one of the most flexible, yet durable fuel pipes available.
- No possibility of piping layer delamination due to the layered piping construction of high-grade material.
- With long coils (1000+ ft.) and simple fittings, XP
 pipework can be installed quickly without specialized tools in any weather.

SPECIFICATIONS

- Primary layer construction of Nylon 12 the fuel line material contains no polyethylene.
- Do not store piping in direct sunlight.

Approvals/Certifications

- UL971 listed.
- Biofuel compatible (E85 and Biodiesel).

ORDERING INFORMATION

Madal	Description	F 4	Deel	Weight		
woder	Description		neei	Lbs.	Kg	
		250	Master	301	136	
XP-100-SC	1" secondary	500	Master	408	185	
	Contained	2500	S. Master	1299	589	
VR 100 D	1" oingle well	250	Master	258	117	
XF-100-D		500	Master	320	145	
		100	Master	250	113	
		250	Master	333	151	
XP-150-SC	1½" secondary contained	500	Master	470	213	
		1,000	S. Master	789	358	
		1,500	S. Master	1061	481	
		100	Master	225	102	
XP-150-D 1½" single wal		250	Master	270	122	
	1½" single wall	500	Master	570	259	
		1,000	S. Master	536	243	
		1,500	S. Master	686	311	
		100	Master	300	136	
VD 175 SC	1¾" secondary	250	Master	405	184	
XP-175-3C	contained	500	Master	580	263	
		1,000	S. Master	1076	488	
VP 200 SC	2" secondary	250	Master	552	250	
AF-200-3C	contained	500	S. Master	914	415	
	2" cingle well	250	Master	427	194	
AF-200-D	z single wall	500	S. Master	664	301	

PIPING

SPECIFICATIONS CONTINUED

Components

- 1 Interior primary (Nylon 12)
- 2 Metallized Mylar
- 3 Nylon Braid
- 4 Exterior Primary (Nylon 12)
- 5 Clear Mylar
- 6 Secondary Jacket (Nylon 12)
- Ø Metallized Mylar
- 8 Scuff Guard (Nylon 12)

Pipe Dimensions



Model	ID ± 0.010 Primary Layer	OD ± 0.020 Primary Layer	OD ± 0.030 SC Jacket	OD ± 0.030 Scuff Guard	Minimum Bend Radius
XP-100-D	1.00"	1.27"	n/a	n/a	36.00"
XP-100-SC	1.00"	1.27"	1.47"	1.502"	36.00"
XP-150-D	1.40"	1.70"	n/a	n/a	36.00"
XP-150-SC	1.40"	1.70"	1.90"	1.925"	36.00"
XP-175-SC	1.65"	1.95"	2.15"	2.175"	36.00"
XP-200-D	2.04"	2.45"	n/a	n/a	36.00"
XP-200-SC	2.04"	2.45"	2.65"	2.675"	36.00"

XP MARINA/ ABOVEGROUND PRODUCT PIPING

APT[™] metallic ducted (MD) pipe is the ideal choice for aboveground and marina fuel delivery systems. The MD-Series piping system contains our XP product piping inside a flexible metallic conduit. This superior construction adds fire protection, impact resistance, and UV stability to what is already the highest quality piping system. The MD-Series pipe is shipped with single wall or secondary contained pipe already installed into the metallic jacket, reducing installation time in the field. For marinas, the flexibility of this product easily handles variation in water levels and can be installed alongside or under docks.



PIPING

HIGHLIGHTS

• APT™'s XP marina/aboveground piping consists of XP pipe encased in metallic conduit, making it impact resistant and UV and fire protected.

Reel Size	Inches*	cm*
Master	91 × 33 × 74	231.1 × 83.8 × 187.9
Super Master (S. Mast.)	91 × 52 × 74	231.1 × 132.1 × 187.9
"Reel dia. × width × hub dia.		

Madal	Description	Drimony Dino	Ducting	Ducting	E+	Pool	Weight	
IVIOUEI	Description	Fillinary Fipe	Ducting	OD	гι	neei	Lbs	Kg
XP-100-MD-250 XP-100-MD-500	1" secondary contained inside metallic duct	XP-100-SC	MD-200	2.36"	250 500	Master Master	628 1,441	285 654
XP-100-MDD-250 XP-100-MDD-500	1" single wall inside metallic duct	XP-100-D	MD-150	1.88"	250 500	Master Master	566 1,316	257 597
XP-150-MD-250 XP-150-MD-500	11/2" secondary contained inside metallic duct	XP-150-SC	MD-250	2.85"	250 500	Master S. Master	755 1,700	342 771
XP-150-MDD-250 XP-150-MDD-500	11/2" single wall inside metallic duct	XP-150-D	MD-200	2.36"	250 500	Master Master	705 1,594	320 723
XP-175-MD-250 XP-175-MD-500	1¾" secondary contained inside metallic duct	XP-175-SC	MD-250	2.85"	250 500	Master S. Master	826 1,843	375 836
XP-200-MD-250	2" secondary contained inside metallic duct	XP-200-SC	MD-300	3.50"	250	S. Master	1,804	416
XP-200-MDD-250	2" single wall inside metallic duct	XP-200-D	MD-300	3.50"	250	S. Master	1,592	360

Note: Please contact customer service for availability and lead times

PIPING



HIGHLIGHTS

- Thick, corrugated polyethylene construction prevents collapse under the weight of backfill.
- Entries into sump walls are made easy with rigid or rubber ducted entry boot options available in all XP pipe diameters.
- Combine ducting with APT™ rigid entry boots to form a watertight seal.
- Integrated flat, non-corrugated sections provide flat sealing surfaces for tight entry boot connections.
- Installs directly to entry boot with no need for an extra bushing or V-seal.
- Recommended for future-proofing sites for pipe changes or as an empty line for future added lines.
- Available in 100' or 250' length coils.

ORDERING INFORMATION

Model	Description
DUCT-400-100	XP pipe ducting, 100 ft. coil
DUCT-400-250	XP pipe ducting, 250 ft. coil

XP PIPE DUCTING

APT[™] brand 4" XP Pipe ducting allows for simple and easy pipe removal without the need for extensive excavation. The 4" inside diameter of the ducting allows XP pipe to easily slide through during installation or removal. This updated design features integrated flat, non-corrugated sections which provide flat sealing surfaces for tight entry boot connections.

SPECIFICATIONS

Installation

- 1 XP Ducting
- 2 XP Pipe (secondary layer outside of sump)
- ③ XP Pipe (primary layer exposed inside sump)
- 4 Ducted rubber entry boot (sold separately)
- 5 Ducted rigid entry boot (sold separately)
- 6 Rubber test boot
- Rigid split test boot
- 8 Sump wall

Rubber Entry Boot Application



Rigid Entry Boot Application





XP PIPE CLAMSHELL FITTINGS

There are both swivel and non-swivel fittings. The swivel fitting action allows for easy installation in tight containment spaces. Non-swivel fittings provide the same environmental security as the swivel versions at an economical price.

HIGHLIGHTS

- Solid brass or stainless steel construction.
- E-coated clamps provide durability and corrosion resistance from gas/alcohol blends (including E85), diesel and Biodiesel.
- Integrated double O-ring design for leak-tight seal.
- NPT threads are compatible with locally available standard termination fittings.
- 100 psi rated working pressure.
- Stainless steel fittings are biofuel approved (E85, DEF, and Biodiesel).

SPECIFICATIONS

Approvals

cULus listed.

Dimensions



ORDERING INFORMATION

Swivel Fitting

Model	Description
MS-XP-150-150	Brass XP pipe clamshell swivel fitting, installs on the end of 1½" single/secondary contained XP pipe with 1½" NPT
MS-XP-175-200	Brass XP pipe clamshell swivel fitting, installs on the end of 1¾" single/secondary contained XP pipe with 2" NPT
MS-XP-200-200	Brass XP pipe clamshell swivel fitting, installs on the end of 2" single/secondary contained XP pipe with 2" NPT
MS-XP-150-150SS	Stainless steel XP pipe clamshell swivel fitting, installs on the end of 1½" single/secondary contained XP pipe with 1½" NPT
MS-XP-175-200SS	Stainless steel XP pipe clamshell swivel fitting, installs on the end of 1¾" single/secondary contained XP pipe with 2" NPT
MS-XP-200-200SS	Stainless steel XP pipe clamshell swivel fitting, installs on the end of 2" single/secondary contained XP pipe with 2" NPT

Non-Swivel Fitting

Model	Description
MN-XP-100-100	Brass XP pipe clamshell non-swivel fitting, installs on 1" single/secondary contained XP pipe with 1" NPT
MN-XP-100-100SS	Stainless steel XP pipe clamshell swivel fitting, installs on 1" single/secondary contained XP pipe with 1" NPT

Model	А	В	С
MS-XP-150-150	4.00"	4.00"	1.75"
MS-XP-175-200	4.00"	4.00"	1.75"
MS-XP-200-200	4.50"	4.75"	2.25"

Model	А	В	С
MN-XP-100-100	3.00"	3.00"	1.50"



XP PIPE SWAGE FITTINGS

Providing the same environmental security as the clamshell fitting using swage technology for installation.

HIGHLIGHTS

- Integrated double O-ring design for leak-tight seal.
- NPT threads are compatible with locally available standard termination fittings.
- 100 psi rated working pressure.
- Stainless steel design is biofuel approved (E85, DEF, and Biodiesel).

ORDERING INFORMATION

Model	Description
MS-XP-SW-150-150	Stainless steel XP pipe swage fitting, male, installs on $1\%''$ single/secondary contained XP pipe with $1\%''\text{NPT}$
MS-XP-SW-175-200	Stainless steel XP pipe swage fitting, male, installs on 1%" single/secondary contained XP pipe with 2" NPT
MS-XP-SW-200-200	Stainless steel XP pipe swage fitting, male, installs on 2" single/secondary contained XP pipe with 2" NPT

SPECIFICATIONS

- Approvals
- cULus listed.

Dimensions



Model	А	В	С
MS-XP-SW-150-150	1.50"	2.00"	1.75"
MS-XP-SW-175-200	1.75"	2.50"	1.75"
MS-XP-SW-200-200	2.00"	3.00"	2.25"



XP PIPE CLAMSHELL TEE AND ELBOW FITTINGS

Installing APT[™] XP flexible pipe inside of a narrow-base dispenser sump has never been easier. The XP pipe clamshell tee and elbow fittings allow for an easy space-saving installation by enabling an installer to connect flexible pipe directly into a shear valve riser. This eliminates the need for extra galvanized fittings. By eliminating the galvanized fittings, you also reduce the amount of potential leak points, giving you peace of mind that your installation is secure. With the tee and elbow fittings you can complete an XP pipe installation inside of a sump in less than 16" of linear space. The stainless steel design of the fittings makes them an ideal solution for any fueling application.

HIGHLIGHTS

- Ideal for retrofit installations where containment sump has limited space or a narrow base.
- Eliminate threaded pipe joints inside of containment space; freeing up valuable space in tight quarters.
- Solid stainless steel construction.
- E-coated clamps provide durability and corrosion resistance from gas/alcohol blends (including E85), diesel and Biodiesel.
- NPT threads are compatible with locally available standard termination fittings.
- 100 psi rated working pressure.
- Stainless steel fittings are biofuel approved (E85, DEF, and Biodiesel).

ORDERING INFORMATION

Model	Description
TEE-XP-150	Stainless steel XP pipe clamshell tee fitting, installs on the end of $1\%''$ single/secondary contained XP pipe with $1\%''\text{NPT}$
ELB-XP-150	Stainless steel XP pipe clamshell elbow fitting, installs on the end of 1½" single/secondary contained XP pipe with 1½" NPT
TEE-XP-175	Stainless steel XP pipe clamshell tee fitting, installs on the end of 1%" single/secondary contained XP pipe with 1½" NPT
ELB-XP-175	Stainless steel XP pipe clamshell elbow fitting, installs on the end of 1%" single/secondary contained XP pipe with 1½" NPT
TEE-XP-200	Stainless steel XP pipe clamshell tee fitting, installs on the end of 2" single/secondary contained XP pipe with 1½" NPT
ELB-XP-200	Stainless steel XP pipe clamshell elbow fitting, installs on the end of 2" single/secondary contained XP pipe with 11⁄2" NPT

SPECIFICATIONS

Approvals

• cULus listed.

Dimensions





Model	А	В	С	D	E
TEE/ELB-XP-150	4.75"	2.50"	2.50"	2.50"	4.75"
TEE/ELB-XP-175	4.75"	2.50"	2.50"	2.50"	7.00"
TEE/ELB-XP-200	5.00"	2.50"	2.50"	2.50"	7.00"

FITTINGS



XP PIPE CLAMSHELL TEE AND ELBOW FITTINGS

XP Pipe quick release fittings bring a new level of ease to APTTM XP pipe installation and servicing. These installer-friendly fittings combine the clamping system found on the original XP Pipe clamshell fittings with the capability to connect seamlessly with flexible connectors utilizing a clamp and gasket. Installation is made easier than ever with the removal of additional threaded connections. The flange and clamp also allow for quick disconnection of the pipe from a submersible pump for easy servicing.







Short Tee

HIGHLIGHTS

- Utilize any standard flexible connector's gasket and clamp to easily connect to the XP Pipe quick release fitting's standard flanged edge.
- Solid stainless steel construction.
- E-coated clamps provide durability and corrosion resistance from gas/alcohol blends (including E85), diesel and Biodiesel.
- 100 psi rated working pressure.
- Stainless steel fittings are biofuel approved (E85 and Biodiesel).
- Compact 2.85" fitting height.

SPECIFICATIONS

Approvals

• cULus listed.

ORDERING INFORMATION

Model	Description
QRS-XP-150-200	Stainless steel XP pipe quick release fitting, installs on the end of 1½" single/secondary contained XP pipe with 2" flange
QRS-XP-175-200	Stainless steel XP pipe quick release fitting, installs on the end of 1¼" single/secondary contained XP pipe with 2" flange
QRS-XP-200-200	Stainless steel XP pipe quick release fitting, installs on the end of 2" single/secondary contained XP pipe with 2" flange
407082001	Quick release clamp
407046001	Quick release clamp flourocarbon gasket

*Contact Customer Service for availability and lead times on all stainless steel end connections and fittings.

FITTINGS



END CONNECTIONS AND FITTINGS

Our objective is to utilize standard fittings whenever possible. Consequently, all APT™ swivel and non-swivel fittings are compatible with standard 1½", 2", and 2½" NPT plumbing fittings that can be purchased in your area.

HIGHLIGHTS

- Fittings are galvanized to prevent corrosion.
- Fittings are completely interchangeable with standard 1½", 2", and 2½" NPT fittings.
- Stainless steel fittings biofuel approved (E85 and Biodiesel).

Bushings

Model	Description
GHB-200-150	Galvanized Hex bushing, 2" NPT × 1½" NPT
SSHB-200-050	Stainless steel Hex bushing 2" NPT × .5" NPT
SSHB-150-050	Stainless steel Hex bushing 1.5" NPT \times .5" NPT
SSRB-150-050	Stainless steel reducing bell $1.5" \times .5"$ NPT

Caps

Model	Description
GC-150	Galvanized cap, 1½" NPT
GC-200	Galvanized cap, 2" NPT
SSC-150	Stainless steel cap, 1½" NPT
SSC-200	Stainless steel cap, 2" NPT

Elbow

Model	Description
GE90-150	Galvanized elbow, 90°, 1½" NPT
GE90-200	Galvanized elbow, 90°, 2" NPT
GE90-215	Galvanized reducing elbow, 90°, 2" NPT × 1½" NPT
GE90-252	Galvanized reducing elbow, 90°, 2½" NPT × 2" NPT
SSE90-150	Stainless steel elbow, 90°, 1½" NPT
SSE90-200	Stainless steel elbow, 90°, 2" NPT

Plugs

Model	Description
SSSHP-150	Stainless steel square head plug, 1½" NPT
GSHP-150	Galvanized steel square head plug, 1½" NPT
SSHP-050	Stainless square hex plug ½" NPT

Tees

Model	Description
GT-150	Galvanized tee, 11/2" NPT
GT-215	Galvanized reducing tee, $2" \times 2" \times 1\%$ NPT
GT-252	Galvanized reducing tee, $2\frac{1}{2} \times 2\frac{1}{2} \times 2^{"} \times 2^{"} \text{ NPT}$
SST-150	Stainless steel tee, 11/2" NPT
SST-200	Stainless steel tee, 2" NPT

Unions

Model	Description
GU-150	Galvanized union, 11/2" NPT
SSU-150	Stainless steel union, 1½" NPT















Ducted Entry Boot

HIGHLIGHTS

- Available in 1½", 1¾", and 2" models for use with APT[®] XP double wall flexible pipe.
- Suitable for use with flat and round sump surfaces, with polyethylene or fiberglass containment.
- Flexible ducting connectors are made from an oil and gasoline-resistant Nitrile rubber and employ stainless steel band clamps for maximum corrosion resistance.
- The body, clamp pate, and compression nut material are all glass-filled nylon, and the face and pipe seal material is Nitrile 1502.
- A simple design including only five parts (nine parts for ducted applications) makes for an easy installation process. The ducted model comes complete with flexible ducting connectors and three clamps.
- An integrated clamp plate allows you to seal the boot in place on the sump wall simply by tightening with a spanner wrench. Once tightened, the boot's gasketed face seal compresses into place providing a watertight connection between the boot and the sump surface. The interior ridges of the boot guide pipe into place to ensure a proper 90° entry into the containment sump, with an interior length of 314".

SPECIFICATIONS

Approvals/Certifications

SINGLE WALL RIGID ENTRY BOOTS

APT[®] ducted and non-ducted rigid entry boots allow you to connect XP double wall flexible pipe to single wall containment sumps with an unsurpassed level of installation ease, while also completely removing exposed rubber from the connection. The interior pipe seal compresses onto the pipe, providing watertight connections between the boot and pipe. This durable entry boot requires only a single 5" entry hole for installation, eliminating the time-consuming process of drilling multiple holes as well as the templates they require.

ORDERING INFORMATION

Model	Description
REB-150-SC	1½" rigid entry boot for flat sump surfaces
RDEB-150-SC	1½" ducted rigid entry boot for flat sump surfaces
REB-R-150-SC	1½" rigid entry boot for round sump surfaces
RDEB-R-150-SC	1½" ducted rigid entry boot for round sump surfaces
REB-175-SC	1¾" rigid entry boot for flat sump surfaces
RDEB-175-SC	1¾" ducted rigid entry boot for flat sump surfaces
REB-R-175-SC	1¾" rigid entry boot for round sump surfaces
RDEB-R-175-SC	1¾" ducted rigid entry boot for round sump surfaces
REB-200-SC	2" rigid entry boot for flat sump surfaces
RDEB-200-SC	2" ducted rigid entry boot for flat sump surfaces
REB-R-200-SC	2" rigid entry boot for round sump surfaces
RDEB-R-200-SC	2" ducted rigid entry boot for round sump surfaces
408051001	1½" pipe seal
408052001	1¾" pipe seal
408042001	2" pipe seal
408055001	1½" pipe snap fit body insert
408056001	1¾" pipe snap fit body insert
408058001	1½" compression nut insert
408059001	1¾" compression nut insert
408069001*	Plastic adapter for curved sump

*Used to convert a flat sump surface rigid entry boot into a round sump surface rigid entry boot.

ULc listed when installed with APT® ULc listed sumps.
 Components

 Compression nut
 Pipe seal
 Entry boot flange
 Body
 Compression insert
 Pipe guide
 Body



HIGHLIGHTS

- Available in 1½", 1¾", and 2" models for use with APT® XP double wall flexible pipe.
- Suitable for flat sump walls.
- Easy installation using included watertight adhesive.
- The pipe is sealed into place simply by tightening the integrated compression nut which provides a watertight connection, free of exposed rubber.
- Constructed of corrosion resistant e-coated aluminum and glass-filled nylon with Nitrile sealing gaskets.
- Compatible with sumps with wall thickness 3/8" up to 1" including Carbon Series[™] double wall fiberglass sumps.

DOUBLE WALL RIGID ENTRY BOOTS

APT[®] double wall rigid entry boots allow you to create watertight connects between APT[®] XP double wall flexible pipe and double wall fiberglass containment sumps. These boots are easily installed to the sump wall using the included adhesive with no additional messy fiberglass work required. Rigid entry boots require only a single 3¾" entry hole for installation, eliminating the time-consuming process of drilling multiple holes as well as the templates they require.

ORDERING INFORMATION

Model	Description
REB-DW-150-SC	1½" double wall entry boot, includes adhesive installation kit
REB-DW-175-SC	1¾" double wall entry boot, includes adhesive installation kit
REB-DW-200-SC	2" double wall entry boot, includes adhesive installation kit
1137205	Spare adhesive kit (50mL cartridge w/ nozzle)

Note: Each boot includes two test plugs for air tightness testing of the boot prior to pipe installation.

Approvals/Certifications

• ULc listed when installed with APT® ULc listed sumps.

SPECIFICATIONS

Components

- Compression nut
- 2 Compression insert

Pipe seal
 Pipe guide

6 Entry boot flange6 Joiner fitting w/ interstitial communication ports





HIGHLIGHTS

- Available in $1^{1}\!\!/_{2}"$ and $1^{3}\!\!/_{4}"$ models for use with APT® XP ducted pipe.
- Suitable for flat sump walls.
- The pipe is sealed into place simply by tightening the integrated compression nut which provides a watertight connection, free of exposed rubber.
- Constructed of corrosion resistant e-coated aluminum and glass-filled nylon with nitrile sealing gaskets.
- Compatible with sumps with wall thickness 3/8" up to 1" including Carbon Series[™] double wall fiberglass sumps.
- Ducted entry boots comes complete with flexible ducting connector and three clamps.

DUCTED DOUBLE WALL RIGID ENTRY BOOTS

APT[®] ducted double wall rigid entry boots allow you to create watertight connections between APT[®] 4" XP pipe and double wall fiberglass containment sumps. These boots are easily installed to the sump wall using adhesive (included) without the additional messy fiberglass work required. Rigid entry boots require only a single 3 ³/₄" entry hole for installation, eliminating the time-consuming process of drilling multiple holes as well as the templates they require.

ORDERING INFORMATION

Model	Description
RDEB-DW-150-SC	1½" ducted double wall entry boot, includes adhesive installation kit
RDEB-DW-175-SC	1¾" ducted double wall entry boot, includes adhesive installation kit
1137205	Spare adhesive kit (50mL cartridge w nozzle)

Approvals/Certifications

• ULc listed when installed with APT[®] ULc listed sumps.



ENTRY BOOTS



HIGHLIGHTS

- Design requires only a single 2.75" entry hole offering a significant reduction in installation time.
- Features a dual-seal design that will work with either galvanized or coated conduit.
- Suitable for use with flat and round sump surfaces and polyethylene or fiberglass sumps.
- Clamp plate and two gasketed face seal and pipe seal material: Nitrile seals ensure a watertight connection.

ORDERING INFORMATION

Each size of rigid entry boot utilizes the same body allowing you to switch out the conduit seal to fit different pipe sizes in the field if necessary.

Model	Description
REB-C-0075	¾" rigid entry boot for flat sump surfaces
REB-C-0100	1" rigid entry boot for flat sump surfaces
REB-C-R-0075	3/4" rigid entry boot for round sump surfaces
REB-C-R-0100	1" rigid entry boot for round sump surfaces
408066001	Conduit seal ¾" (replacement)
408066002	Conduit seal 1" (replacement)
408070001	Clamping seal (flat) (replacement)
408072001	Clamping seal (round) (replacement)
408073001*	Plastic adapter for curved sump (one per rigid boot entry)

*Used to convert a flat sump surface rigid entry boot into a round sump surface rigid entry boot.

ELECTRICAL CONDUIT RIGID ENTRY BOOTS

APT[™] rigid entry boots allow you to connect electrical conduit to containment sumps with a significant reduction in installation time, while also completely removing exposed rubber from the connection. This durable entry boot requires only a single 2.75" entry hole for installation, removing the time-consuming process of drilling multiple holes for fastening purposes.

SPECIFICATIONS

- Body material: glass-filled nylon
- Clamp nut and nut material: glass-filled nylon
- Face seal and pipe seal material: Nitrile
- Interior length once installed: 31/4"

Approvals/Certifications

• ULc listed when installed with APT™ ULc listed sumps.

Installation

A clamping nut and two clamping seals are used to compress the fitting into place against the sump wall simply by tightening it into place, providing a watertight connection between the boot and the sump surface. The same method is used to seal the pipe into place simply by tightening the integrated conduit seal nut.

- Electrical conduit rigid entry boot
- 2 Electrical conduit





FUSION DUCTED ENTRY BOOT

APT[™] fusion ducted entry boots provide a watertight seal between XP pipe and polyethylene constructed containment sumps. Utilizing the electrofusion welding process, the entry boot, ducting, and sump become one solid structure, creating a watertight entry into the containment space.



- The two-piece design includes the entry boot itself and a reducer fitting which seals off the secondary XP Pipe layer inside of the sump.
- Creates watertight entries into containment sumps.
- Features integrated test ports on both the entry boot and reducer fitting.
- The electrofusion welding process is safe and simple to complete in any climate and virtually any weather condition.
- The welding process uses the lightweight, portable electrofusion welder unit to form watertight connections.
- Ducting is recommended for future-proofing sites to accommodate pipe changes or as a pull chase for future station expansion.
- Available for use with 11/2", 13/4", and 2" XP pipe diameters.

ORDERING INFORMATION

Model	Description
FWEB-150-SC	Fusion ducted entry boot for 1½" XP pipe
FWEB-175-SC	Fusion ducted entry boot for 1¾" XP pipe
FWEB-200-SC	Fusion ducted entry boot for 2" XP pipe
EF1-230V	230 Volt handheld electrofusion welder
408032001	Step up transformer for handheld welder unit
304-CLAMP	Entry boot installation clamp tool
SCR.HAR	Hand scraper installation tool

Note: Installation involves the use of an electrofusion welder unit which requires the use of a step up transformer.

SPECIFICATIONS

Components

- 1 XP ducting
- 2 XP pipe (secondary layer outside of sump)
- 3 XP pipe (primary layer exposed inside sump)
- 4 Fusion ducted entry boot
- 5 Reducing boot (included with fusion ducted entry boot)
- 6 Rigid split test boot
- Polyethylene sump wall



TERMINATION BOOTS



HIGHLIGHTS

- Designed to be used with APT[™] product piping, the entry boots are also ideal for use with rigid piping and electrical conduits.
- Flexible entry boots available in sizes from 1/2" through 4".
- Ducted entry boots available in sizes from 1½" through 2½". APT™ offers these ducted entry boots in an air testable version for easy testing of the 4" corrugated ducting.
- Boot size designations correspond directly to the pipe size being used.
- Any boot for a single wall pipe can be converted to a boot for a double wall pipe by simply removing the insert in the pipe opening.
- Entry boot can be serviced from inside the sump, eliminating the need for sump excavation.
- Made from oil- and gasoline-resistant Nitrile rubber.
- Will work on round sumps of 36" or larger diameter.

FLEXIBLE ENTRY BOOTS

APT[™] flexible entry boots are two-piece boots that double the sealing power of your entry boots. Stainless steel studs and corrosion-resistant nuts and washer plates make for the highest quality entry boot. APT[™] offers a complete line of sizes for ½" through 4" single and secondary containment pipe. The 1½" through 2½" sizes are also available in a ducted boot version to accommodate the use of APT[™] DCT-400 corrugated ducting for easy retractability.

Model	Description
	Elevible entry best for 1/" electrical conduit
FEB-050-D	Flexible entry boot for 22 electrical conduit
FEB-050-SC	Flexible entry boot for % electrical conduit
FEB-075-D	Flexible entry boot for %" and 1" electrical conduit
FEB-075-D2	Double sided entry boot for ¾" and 1" electrical conduit
FEB-075-SC	Flexible entry boot for 1" electrical conduit
FEB-100-D	Flexible entry boot for XP-100-D
FEB-100-SC	Flexible entry boot for XP-100-SC
FEB-150-D	Flexible entry boot for XP-150-D
FEB-150-SC	Flexible entry boot for XP-150-SC
FEB-175-D	Flexible entry boot for XP-175-D
FEB-175-SC	Flexible entry boot for XP-175-SC and 2" single wall fiberglass
FEB-200-D	Flexible entry boot for XP-200-D
FEB-200-SC	Flexible entry boot for XP-200-SC
FEB-300	Flexible entry boot for 3" single wall fiberglass
FEB-300-R	Flexible entry boot for 3" single wall fiberglass
FEB-400-R	Flexible entry boot for 4" single wall fiberglass
FEB-400-F	Flexible entry boot for 4" double wall pipe
Model	Description
DEB-150-D	Ducted entry boot for XP-150-D
DEB-150-SC	Ducted entry boot for XP-150-SC
DEB-175-D	Ducted entry boot for XP-175-D
DEB-175-SC	Ducted entry boot for XP-175-SC
DEB-200-D	Ducted entry boot for XP-200-D
DEB-200-SC	Ducted entry boot for XP-200-SC
Model	Description
DEB-150-DA	Air testable ducted entry boot for XP-150-D
DEB-150-SCA	Air testable ducted entry boot for XP-150-SC
DEB-175-DA	Air testable ducted entry boot for XP-175-D
DEB-175-SCA	Air testable ducted entry boot for XP-175-SC
DEB-200-DA	Air testable ducted entry boot for XP-200-D
DEB-252-DA	Air testable ducted entry boot for XP-200-SC and P-250-D

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TERMINATION BOOTS



FLEXIBLE ENTRY BOOTS					
Model	А	В	С	Mtg. Hole Size	Mtg. Studs
FEB-050-D	0.84"	1.50"	4.75"	2.00"	4
FEB-050-SC	1.05"	1.50"	4.75"	2.00"	4
FEB-075-D	1.05"	1.50"	4.75"	2.00"	4
FEB-075-SC	1.32"	1.50"	4.75"	2.00"	4
FEB-100-D	1.32"	1.50"	4.75"	2.00"	4
FEB-100-SC	1.70"	1.50"	4.75"	2.00"	4
FEB-150-D	1.75"	1.50"	6.75"	3.50"	8
FEB-150-SC	2.00"	1.50"	6.75"	3.50"	8
FEB-175-D	2.00"	1.50"	6.75"	3.50"	8
FEB-175-SC	2.40"	1.50"	6.75"	3.50"	8
FEB-200-D	2.50"	1.50"	6.75"	3.50"	8
FEB-200-SC	2.88"	1.50"	6.75"	3.50"	8
FEB-300	3.50"	1.50"	8.00"	3.50"	10
FEB-300-R	3.50"	1.50"	6.75"	3.50"	8
FEB-400-R	4.50"	1.50"	8.00"	5.50"	10
FEB-400-F	4.94"	1.50"	8.00"	5.50"	10

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DUCTED I	ENTRY	BOOTS	6		
Model	А	В	С	Mtg. Hole Size	Mtç Stud
DEB-150-D	1.75"	1.50"	6.75"	3.50"	8
DEB-150-SC	2.00"	1.50"	6.75"	3.50"	8
DEB-175-D	2.00"	1.50"	6.75"	3.50"	8
DEB-175-SC	2.40"	1.50"	6.75"	3.50"	8
DEB-200-SC	2.88"	1.50"	6.75"	3.50"	8

С

AIRTESTABLE					
Model	А	В	С	Mtg. Hole Size	Mtg. Studs
DEB-150-DA	1.75"	1.50"	6.75"	3.50"	8
DEB-150-SCA	2.00"	1.50"	6.75"	3.50"	8
DEB-175-DA	2.00"	1.50"	6.75"	3.50"	8
DEB-175-SCA	2.40"	1.50"	6.75"	3.50"	8
DEB-200-DA	2.50"	1.50"	8.00"	5.50"	10
DEB-252-DA	3.00"	1.50"	8.00"	5.50"	10



FLEXIBLE DOUBLE ENTRY BOOTS

The APT[™] flexible double entry boot allows two pipes or conduits to go through a single sump entry boot opening. The APT[™] boot comes in two different styles, the flexible double boot for non-ducted applications and the ducted double boot when using APT[™] DCT-400 corrugated piping. Double entry boots accommodate ¾" and 1" pipe sizes or a combination of the two.

HIGHLIGHTS

- Designed to be used with APTTM product piping, the entry boots are also ideal for use with rigid piping and electrical conduits.
- Flexible double entry boots are ideal for generator, fuel oil return, and feed line applications.
- Boot can be serviced from inside the sump so there is no need to break concrete.
- Made from oil- and gasoline-resistant Nitrile rubber.
- Allows two pipes to go through one boot for easier installation.
- Combination of two different pipe diameters through one boot can be easily converted by simply removing the insert in the pipe opening.

FLEXIBLE DOUBLE ENTRY BOOTS

Model	А	Mtg. Hole Size	Mtg. Studs
FDB-100-D	1.32"	5.50"	10
FDB-100-SC	1.70"	5.50"	10

DUCTED DOUBLE ENTRY BOOTS			
Model	А	Mtg. Hole Size	Mtg. Studs
DDB-100-D	1.32"	5.50"	10
DDB-100-SC	1.70"	5.50"	10

Model	Description
FDB-100-D	Flexible double boot for XP-100-D or 1" electrical conduit
FDB-100-SC	Flexible double boot for XP-100-SC
Model	Description
DDB-100-D	Ducted double boot for XP-100-D or 1" electrical conduit
DDB-100-SC	Ducted double boot for XP-100-SC







FLEXIBLE BULKHEAD BOOTS

APT[™] bulkhead boots boast an enlarged gasket area to seal against the sump wall and incorporate the proven advantages of the APT[™] standard flexible entry boot seal. The bulkhead boot requires only a single hole to be drilled for installation, reducing labor time and cost. APT[™] offers a complete line of sizes for ½" through 2½" single and secondary contained pipe. The 1½" through 2½" sizes are also available in a ducted boot version to accommodate the use of APT[™] DCT-400 corrugated ducting for easy retractability.

HIGHLIGHTS

- Designed to be used with APT[™] product piping, the bulkhead boots are also ideal for use with rigid piping and electrical conduits.
- Flexible bulkhead boots available in sizes from ½" through 2½". Ducted bulkhead boots available in sizes from 1½" through 2½".
- Boot size designations correspond directly to the pipe size being used.
- Any boot for a single wall pipe can be converted to a boot for a double wall pipe by simply removing the insert in the pipe opening.
- Bulkhead boots can be serviced from inside the sump, eliminating the need for sump excavation.
- Made from oil- and gasoline-resistant Nitrile rubber.

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Model	А	В	С	Mtg. Hole Size
FBB-075-D	1.05"	2.50"	4.00"	2.38"
FBB-150-SC	2.00"	2.50"	6.00"	4.38"

DUCTED BULKHEAD BOOTS

Model	А	В	С	Mtg. Hole Size
DBB-150-SC	2.00"	2.50"	6.00"	4.38"
DBB-200-SC	2.88"	2.50"	6.00"	4.38"

Model	Description
FBB-075-D	Flexible bulkhead boot for P-075-D, ¾" and 1" electrical conduit
FBB-150-SC	Flexible bulkhead boot for XP-150-SC
Model	Description
DBB-150-SC	Ducted bulkhead boot for XP-150-SC
DBB-200-SC	Ducted bulkhead boot for XP-200-SC





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MD-SERIES FLEXIBLE ENTRY BOOTS

When using the APTTM metallic ducted (MD) pipe, the use of the MD-Series flexible entry boot is required. These boots are similar in design to our standard flexible entry boots, except they include an additional seal that faces outward to secure the MD layer of the pipe to the sump wall, and terminate the single or secondary contained piping on the inside of the sump for a watertight seal.

HIGHLIGHTS

- Same proven design features of APT™ standard flexible entry boots.
- Inner seal provides watertight seal around the single or secondary contained product pipe.
- The outer seal secures the MD layer to the sump wall.
- Double seals offer additional security for the harsh conditions of marina and aboveground applications.
- Made from gas- and oil-resistant Nitrile rubber.
- Will work on round sumps of 36" or larger diameter.



	Model	Description
	FEB-075-MDD	Flexible entry boot for P-075-MDD
	FEB-075-MD	Flexible entry boot for P-075-MD
	FEB-100-MDD	Flexible entry boot for XP-100-MDD
	FEB-100-MD	Flexible entry boot for XP-100-MD
	FEB-150-MDD	Flexible entry boot for XP-150-MDD
	FEB-150-MD	Flexible entry boot for XP-150-MD
	FEB-175-MDD	Flexible entry boot for XP-175-MDD
	FEB-175-MD	Flexible entry boot for XP-175-MD
	FEB-200-MDD	Flexible entry boot for XP-200-MDD
	FEB-200-MD	Flexible entry boot for XP-200-MD

MD-SERIES FLEXIBLE ENTRY BOOTS

Model	А	В	Mtg. Hole Size	Mtg. Studs
FEB-075-MDD	1.05"	1.70"	2.00"	4
FEB-075-MD	1.32"	2.00"	3.50"	8
FEB-100-MDD	1.32"	2.00"	3.50"	8
FEB-100-MD	1.70"	2.40"	3.50"	8
FEB-150-MDD	1.75"	2.40"	3.50"	8
FEB-150-MD	2.00"	2.88"	3.50"	8
FEB-175-MDD	2.00"	2.88"	3.50"	8
FEB-175-MD	2.40"	2.88"	3.50"	8
FEB-200-MDD	2.50"	3.50"	3.50"	8
FEB-200-MD	2.88"	3.50"	3.50"	8

200



SPLIT TEST BOOTS

APT[™] brand split test boots are designed to make the integrity testing of secondary contained XP Flexible Piping simple and easy. For use on both new or existing sites, these boots feature a hinged design that allows you to clamp the boot down over the pipe after it has been installed. The boot locks itself in position between the primary and secondary pipe layers using the stainless steel clamp.



HIGHLIGHTS

- The integrated Schrader valve allows you to apply air pressure (5-8 psi) while the Nitrile rubber seals create an airtight chamber for testing purposes.
- Once testing is complete the boot can be left in place for future testing or easily removed and used for testing on other sites.
- Boots can be installed during or after pipe installation.
- Boots are manufactured using fuel-resistant Nitrile rubber seals and a robust glass-filled nylon body with stainless steel valve and fittings.
- The O-ring hinge boot design provides easy, one-handed installation.
- The clamp is tightened using a ¹/₂" nut to form an airtight chamber between the primary and secondary pipe layer.
- No pipe disconnection necessary on existing lines.

ORDERING INFORMATION

Model	Description
SPTB-150	Split test boot for XP-150-SC (11/2") piping
SPTB-175	Split test boot for XP-175-SC (1¾") piping
SPTB-200	Split test boot for XP-200-SC (2") piping

SPECIFICATIONS

- Body material: Glass-filled nylon with Nitrile O-rings
- Clamp and valve material: Stainless steel
- Pressure rating: 5-8 psi
- Temperature rating: -4 °F to 100 °F

Installation

- Split test boot
- 2 XP pipe (secondary layer)
- 3 XP pipe (primary layer exposed)





HIGHLIGHTS

- Secondary test boots slip over the end of the pipe prior to installation of end fittings.
- Boots are manufactured using fuel-resistant Nitrile rubber and employ brass air chucks and stainless steel clamps for maximum corrosion resistance.
- Boots are easily clamped down with a screwdriver or 5/16" nut driver, forming an airtight chamber between the primary pipe and the secondary jacket.
- The secondary chamber is pressurized to 5-8 psi through air chuck to test system integrity.
- After pressure testing, the boots remain on the pipe for future use but are pulled back to permit back-flow of fuel leaks to the tank sump.

CLAMSHELL SECONDARY TEST BOOTS

APT[™] secondary test boots are designed for testing the integrity of secondary contained flexible piping when using APT[™] clamshell fittings. Each boot has an air chuck for applying air pressure to the secondary containment jacket. Placing a boot on each end of the secondary containment jacket forms an airtight chamber for testing. After the testing is completed slide the boots back on the pipe to open the secondary system. The boots remain on the pipe available for future testing as required by local regulations.



Model	А	В	С	D	E
STB-100	1.38"	1.32"	1.70"	1.76"	2.20"
STB-150	1.81"	1.75"	2.00"	2.06"	2.50"
STB-175	2.06"	2.00"	2.38"	2.44"	2.88"
STB-200	2.56"	2.50"	2.88"	2.94"	3.38"

Model	Description
STB-100	Secondary test boot for XP-100-SC pipe
STB-150	Secondary test boot for XP-150-SC pipe
STB-175	Secondary test boot for XP-175-SC pipe
STB-200	Secondary test boot for XP-200-SC pipe

TERMINATION BOOTS

Below Grade Typical Application Drawing



APT[™] Rigid Pipe-Boot Reference Chart

Thin Wall Electrical Conduit	OD	APT™ Entry Boot
1/2"		FEB-050-D
3⁄4 "		FEB-050-SC
1"		FEB-075-SC
Galvanized Electrical Conduit	OD	APT™ Entry Boot
1⁄2"		FEB-050-D
3⁄4 "		FEB-050-SC
1"		FEB-075-SC
Galvanized Pipe	OD	APT™ Entry Boot
1⁄2"		FEB-050-D
3⁄4 "		FEB-050-SC
1"		FEB-075-SC
11⁄2"		FEB-150-SC
2"		FEB-175-SC
Fiberglass Piping (Single Wall)	OD	APT™ Entry Boot
2"		FEB-175-SC
3"	3.50"	FEB-300-R
4"		FEB-400-R
Schedule 40/80 Pipe, Same OD	OD	APT™ Entry Boot
1⁄2"		FEB-050-D
3⁄4 "		FEB-050-SC
1"		FEB-075-SC
1 1⁄4 "	1.32"	FEB-100-SC
11⁄2"	1.70"	FEB-150-SC
2"		FEB-175-SC
21/2"		FEB-200-SC
3"		FEB-300-R
4"		FEB-400-R

TRANSITION SLEEVES



GRADE LEVEL TRANSITION SLEEVE

The transition sleeve is the practical, environmentally sound solution for above and below ground supply of generator or boiler applications from remote storage tanks. Steel piping enters the sleeve through APT[™] special flexible double entry boots. It is an economical alternative that allows a straightforward installation with no special tools.

HIGHLIGHTS

- Transition sleeve provides the transition for above and below ground level.
- Transition sleeve provides the transition of APT™ pipe to steel pipe.
- May be additionally used for through-wall installation, above or below ground.
- Low cost alternative to the AST-2922 transition sump.
- Designed to utilize APT[™] dual entry and ducted boots.
- Split design allows aboveground spill or leak containment. Ready access for maintenance or replacement of joint hardware and pipe.
- The transition sleeve can accommodate for fill/feed generator applications.

Transition Sleeve Top Boot Assembly

Model	А	Mtg. Hole Size	Mtg. Studs
TST-100-D	1.32" or 1.70"	5.50"	10

Transition Sleeve Bottom Boot Assembly

Model	А	Mtg. Hole Size	Mtg. Studs
TSB-100-D	1.32" or 1.70"	5.50"	10
TSB-100-SC	1.70"	5.50"	10

TSL-005 Includes

- Transition sleeve spool, 5" ID.
- HDPE pipe, 18" length, 4" ID.
- Bulkhead ducting boot.
- Hose clamps.
- Blue corrugated ducting, 48" length.
- ¼" formed steel rod.
- Installation instructions.



HDPE PIPE LENGTH MAY BE MODIFIED TO SUIT

Model	Description
TSL-005	Transition sleeve (top and bottom boot required, sold separately)
Model	Description
TST-100-D	Transition sleeve top flexible entry boot, 1" steel pipe
Model	Description
TSB-100-D	Transition sleeve bottom flexible entry boot for XP-100-D or 1" conduit
TSB-100-SC	Transition sleeve bottom flexible entry boot for XP-100-SC

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WALL TRANSITION SLEEVE

The wall transition sleeve is a practical, environmentally sound solution for below ground generator or boiler applications that pass through the walls of buildings or concrete structures. Piping enters the sleeve through APTTM's special flexible entry boots. The wall transition sleeve is an economical alternative that allows a straightforward installation with no tools.

HIGHLIGHTS

- Transition sleeve used for through-wall installation.
- Low cost alternative.
- Designed to utilize APT[™] ducted entry and single entry flexible boots.
- The transition sleeve can accommodate for fill/feed generator applications.

Model

WTS-400 Wall transition sleeve (ducted entry boot required, sold separately)





CARBON SERIES™ DISPENSER SUMPS

Carbon Series[™] single wall fiberglass sumps provide easy access to under-dispenser equipment and piping connections while delivering serious strength and protection from ground movement and liquid intrusion. The Light Resin Transfer Molding (Light RTM) technology used to manufacture Carbon Series[™] sumps gives them consistent wall thickness throughout the entire assembly for superior rigidity as well as an extremely smooth surface to facilitate watertight entry boot installation.

HIGHLIGHTS

- Available in models compatible with both Gilbarco Encore® dispensers and Wayne Ovation® dispensers.
- Large sump body accommodates up to five pipe entries and provides easy access to piping connections.
- Closed molding Light RTM manufacturing process provides consistent layup of fiberglass material for a precise thickness of sump walls.
- Sumps include factory-installed stabilizer bar tracks, dispenser top frame, and mounting hardware.
- Corrosion-resistant powder coated steel top frame provides durability and extended service life.
- Top frame provides conduitless electrical entry on both sides allowing electrical conduit to enter the dispenser directly from the bottom, avoiding penetrations and eliminating potential leak paths.
- Constructed with resin rich fiberglass material for lasting durability.
- Interior white gel coat provides increased visibility and protection during maintenance and testing.
- Gilbarco Encore[®] DEF sump option available with banded two-sump design for easy installation and allows for clear separation between regulated and non-regulated liquids.

SPECIFICATIONS

Components





SPECIFICATIONS CONTINUED

Gilbarco Encore[®] Carbon Series[™] Single Wall Fiberglass Dispenser Sump Dimensions



Gilbarco Encore[®] Carbon Series[™] Single Wall Fiberglass Dispenser Sump with Banded DEF Polyethylene Sump Dimensions



SPECIFICATIONS CONTINUED

Wayne Ovation[®] Carbon Series[™] Single Wall Fiberglass Dispenser Sump Dimensions



ORDERING INFORMATION

Carbon Series™ Single Wall Fiberglass Dispenser Sumps

Model	Description	Stabilizer Bar Kit
602375001	Carbon Series™ single wall fiberglass sump for Gilbarco Encore® bow-tie end dispenser models	SBK-3
602377001	Carbon Series™ single wall fiberglass sump for Gilbarco Encore® bow-tie end dispenser models with banded DEF polyethylene sump	SBK-3
602381001	Carbon Series™ single wall fiberglass sump for Wayne Ovation® dispenser models	SBK-25

Note: one stabilizer bar kit per shear valve is required.



CARBON SERIES™ DOUBLE WALL DISPENSER SUMPS

Carbon Series[™] double wall fiberglass sumps provide easy access to under-dispenser equipment and piping connections while delivering serious strength and protection from ground movement and liquid intrusion. The double wall design with vacuum gauge and optional integrated interstitial monitoring port provide the ability to constantly monitor the sump for tightness, avoiding the need for costly hydrostatic testing and the dispenser shutdown associate with it.

HIGHLIGHTS

- Available in models compatible with Gilbarco Encore[®] and Wayne Ovation[®] dispensers.
- Large sump body accommodates up to five pipe entries and provides easy access to piping connections.
- Dispenser top and top frame are joined together prior to leaving the factory saving field installation time.
- Included vacuum gauge ships under airtight vacuum to ensure the integrity of the interstitial space during shipment to the jobs site.
- Can be ordered with a pre-installed monitoring port for either mechanical, electronic, or hydrostatic continuous monitoring of the double wall interstitial space. The monitoring port is compatible with all three of the interstitial monitoring types and accessories. Monitoring accessories are sold separately.
- Monitoring port provides dual pathways (bottom and side) to the interstitial space of the containment to prevent vapor lock from causing false readings.
- Sumps include factory-installed stabilizer bar tracks, dispenser top frame, and mounting hardware.
- Corrosion-resistant powder coated steel top frame provides durability and extended service life.
- Top frame provides conduitless electrical entry allowing electrical conduit to enter the dispenser directly from the bottom, avoiding penetrations and eliminating potential leak paths.
- Constructed with resin rich fiberglass material for lasting durability.
- Interior white gel coat provides increased visibility and protection during maintenance and testing.

SPECIFICATIONS

Components

- Sump exterior
 White gel coat interior
- 2 White gel coat interior
 6 Vacuum g

 3 Conduitless top frame
 7 Monitoring
 - Stabilizer bar tracks
- 6 Vacuum gauge7 Monitoring port (shown

6 Mounting hardware

with electronic sensor)





SPECIFICATIONS CONTINUED

Gilbarco Encore[®] Carbon Series[™] Double Wall Fiberglass Dispenser Sump Dimensions



Wayne Ovation[®] Carbon Series[™] Double Wall Fiberglass Dispenser Sump Dimensions



ORDERING INFORMATION

Carbon Series[™] Double Wall Fiberglass Dispenser Sumps

Model	Description	Stabilizer Bar Kit
602383001	Carbon Series [™] double wall fiberglass sump for Gilbarco Encore [®] bow-tie end dispenser models with vacuum port	SBK-3
602383401	Carbon Series [™] double wall fiberglass sump for Gilbarco Encore [®] bow-tie end dispenser models with vacuum port and port for interstitial monitoring*	SBK-3
602385001	Carbon Series [™] double wall fiberglass sump for Wayne Ovation [®] dispenser models with vacuum port	SBK-25
602385401	Carbon Series [™] double wall fiberglass sump for Wayne Ovation [®] dispenser models with vacuum port and port for interstitial monitoring*	SBK-25

Consult Customer Service for lead times.

Note: one stabilizer bar kit per shear valve is required.

*Interstitial monitoring accessory must be ordered separately. Please see the following page for these accessories.



MECHANICAL MONITORING

Order the following accessories for use with Carbon Series[™] double wall fiberglass sumps purchased with an integrated interstitial monitoring port (Gilbarco Encore[®]: P/N 602383401 and Wayne Ovation[®]: P/N 602385401)



602370904

Mechanical monitoring port riser and mechanical interstitial integrity monitor gauge



ELECTRONIC MONITORING

Order the following accessories for use with Carbon Series[™] double wall fiberglass sumps purchased with an integrated interstitial monitoring port (Gilbarco Encore[®]: P/N 602383401 and Wayne Ovation[®]: P/N 602385401)

Model	Description
602370903	Electronic monitoring port riser
Note: Electronic se	nsor sold separately.

cable compression fitting



HYDROSTATIC MONITORING

FMP-ULS

Order the following accessories for use with Carbon Series[™] double wall fiberglass sumps purchased with an integrated interstitial monitoring port (Gilbarco Encore[®]: P/N 602383401 and Wayne Ovation[®]: P/N 602385401)



Model	Description		
602370906	Hydrostatic monitoring port adapter and hose barb		
Note: Hydrostatic monitoring installation kit and electronic sensor sold senarately			

Universal liquid sump sensor (EVO™ 200 & EVO™ 400, EVO™ 550 and EVO™ 5000) - includes ½" NPT sensor

Note: Hydrostatic monitoring installation kit and electronic sensor sold separate

	Model	Description
HM-KIT	Hydrostatic monitoring installation kit - includes flexible brine tube, sensor housing clamp, senso housing, sensor cap, and hardware	

Note: Electronic sensor sold separately.



Model	Description				
FMP-UHS	Universal hydrostatic sump sensor (EVO™ 200 & EVO™ 400, EVO™ 550 and EVO™ 5000)				
	Encore [®] is a registered trademark of Gilbarco Inc				

Ovation[®] is a registered trademark of Wayne Fueling Systems LLC.



CONDUIT-LESS ENTRY FIBERGLASS SUMP

The APT[™] brand 36" × 17" conduit-less entry fiberglass sump is designed specifically for use with Gilbarco Encore[®] dispensers. The dispenser sump comes completely pre-assembled from the factory including the dispenser mounting frame and the stabilizer bar kit mounting tracks. The stabilizer bar kit mounts into the track and is adjustable on all planes to ensure proper alignment of shear valves and pipework. The conduit-less entry frame allows electrical conduit to enter the dispenser directly from the bottom, avoiding sump penetration and eliminating potential leak paths.

HIGHLIGHTS

- Durable two-piece design comes pre-assembled from the factory, allowing quick and easy installation.
- Constructed of rigid three-layer hand lay up fiberglass.
- Available in single wall only.
- White gel coat interior provides enhanced visibility.

ORDERING INFORMATION

Model	Description	Stabilizer Bar Kit
DHW-3617	36" × 17" conduit-less entry fiberglass sump, single wall	SBK-3
DHW-3617-OVA	36" × 17" conduit-less entry fiberglass sump, single wall, Wayne Ovation top frame	SBK-25
ADPT-ENC-OVA	Top frame adapter for Gilbarco Encore to Wayne Ovation (compatible with DHW- 3617 only)	

SPECIFICATIONS

Approvals/Certifications

- ULc listed.
- Florida EQ-786 approved.

Dimensions





Encore[®] is a registered trademarks of Gilbarco Inc.

SINGLE AND DOUBLE WALL FIBERGLASS LARGE MOUTH DISPENSER SUMPS

Designed for the installer, single and double wall fiberglass large mouth dispenser sumps provide easy access to piping connections. The dispenser frame and top are factory assembled and field glassed onto the sump after piping connections are completed. Stabilizer bar kits (SBK) for mounting emergency shear valves are track mount designed and adjust in all planes for proper alignment of the shear valve to the dispenser piping.

Note: Consult Customer Service to verify lead time on all double wall dispenser sumps. Two-week lead time on all fiberglass parts.

HIGHLIGHTS

- Powder-coated steel frame.
- Dispenser frame factory assembled and watertight sealed.
- Water dam frame design prevents surface water from entering sump.
- Strong three-layer hand layup FRP.
- Sumps include dispenser frames and mounting hardware.
- Stackable for reduced freight and storage space (single wall only).
- Double wall sumps are available for hydrostatic (brine) or vacuum monitoring and are shipped under vacuum with factory installed vacuum gauge.

2400 Series



Model	A	В	С	SBK #
LMM-1410-X	28.00"	26.00"	33.50"	SBK-2
LMM-1913-T-X	28.00"	26.00"	33.50"	SBK-25
LMM-2010-X	28.00"	26.00"	33.50"	SBK-2
LMM-2018-X	28.00"	26.00"	33.50"	SBK-3
Model	Description			
HM-KIT	Hydrostatic monitoring system for dispenser sumps			
602-284-004	Drop down frame 2400 Series			

Note: Fiberglass models include base and top.

MODEL NUMBER REFERENCE CHART

XXX - XXXX - XX 1 2A 2B 3

1 = Sump Type and Depth

LMM = Large mouth, medium bury

2 = Dispenser Frame Size

2A = A length 2B = B length

3 = Single or Double Wall

- S = Single wall
- D = Double wall



3600 Series





Model	A		С	SBK #
LMM-2313-T-X	36.00"	26.00"	33.50"	SBK-25
LMM-2407-X	36.00"	26.00"	33.50"	SBK-1
LMM-2715-X	36.00"	26.00"	33.50"	SBK-3
LMM-2811-X	36.00"	26.00"	33.50"	SBK-25
LMM-2915-X	36.00"	26.00"	33.50"	SBK-3
LMM-3617-X Conduit-less	36.00"	26.00"	33.50"	SBK-3
LMM-3914-36-W-X Conduit-less	36.00"	26.00"	33.50"	SBK-25
Model	Description			
HM-KIT	Hydrostatic monitoring system for dispenser sumps			
602270004	Drop down frame 3600 Series			

Note: Fiberglass models include base and top.

4800 Series





Viodei	A	В	С	SBK #
_MM-3610-X	52.00"	26.00"	33.50"	SBK-2
_MM-3914-X	52.00"	26.00"	33.50"	SBK-25
_MM-4018-X	52.00"	26.00"	33.50"	SBK-3
_MM-4111-X	52.00"	26.00"	33.50"	SBK-25
_MM-4115-X	52.00"	26.00"	33.50"	SBK-3
Model	Description			
HM-KIT	Hydrostatic monitoring system for dispenser sumps			
502271004	Drop down frame 4800 Series			
LMM-3914-X LMM-4018-X LMM-4111-X LMM-4115-X Model HM-KIT 602271004	52.00" 52.00" 52.00" 52.00" Hydrostatic mor Drop down fran	26.00" 26.00" 26.00" 26.00" nitoring system for the 4800 Series	33.50" 33.50" 33.50" 33.50" Description or dispenser sum	SBK-25 SBK-3 SBK-25 SBK-3

Note: Fiberglass models include base and top.

Note: Fiberglass orders cannot be canceled.

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LARGE MOUTH POLYETHYLENE DISPENSER SUMPS

APT[™] brand large mouth polyethylene dispenser sumps feature a two-piece modular design and large sump opening to provide easy installation and ample space for under dispenser containment. With a variety of sump lengths, two depth options, an assortment of top frame options, and field height adjustability, there is a solution to match virtually any application and provide complete compatibility with the industry's most popular dispenser models.

HIGHLIGHTS

- The ribbed riser can be cut down in 3" increments in the field to adjust sump height and achieve proper pipe slopes with respect to grade.
- Available in medium (28") and deep(43") burial depths to properly maintain slope.
- 22" wide by 24", 36", or 48" long opening on base gives plenty of room for boot, fitting, and monitor installation.
- The sump base widens to a spacious 26" where entry boots and pipe connections are made.
- Corrosion-resistant powder coated steel top frames provide durability and extended service life.
- Stabilizer bar kits (SBKs) mount into welded strut channels for shear valve mounting (one SBK is required for each shear valve and must be purchased separately).

SPECIFICATIONS

Approvals/Certifications

- ULc listed.
- Florida EQ-423 approved.

Installation

Grade Level
ORDERING INFORMATION

Large Mouth Polyethylene Dispenser Sumps

Use the drawing diagram and the dimensions below to identify the appropriate dispenser sump for your application or use the Large Mouth Dispenser Sump Directory found on the following pages.

Model	Top Frame Mouth Length (A)	Top Frame Mouth Depth (B)	Sump Base Mouth Length (C)	Sump Base Bottom Length (D)	Sump Base Height (E)		Sump Base Height (E) Mouth Depth (F) Sump Base Bottom (G)		Sump Base Bottom Height (H)
		(87	(0)		Medium (M)	Deep (D)		(0)	(117
LM(M/D)-1410	13.50"	9.75"	24.00"	28.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-1913-T	19.00"	12.00"	24.00"	28.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-1916-HLX	19.75"	16.00"	36.00"	40.00"	32.00"	47.00"	22.00"	26.00"	15.50"
LM(M/D)-2010	20.50"	10.00"	24.00"	28.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2018	20.81"	18.31"	24.00"	28.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2313-T	23.00"	12.00"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2407	23.75"	7.50"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2715	27.00"	15.00"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2811	28.50"	11.00"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-2915	29.75"	15.75"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LMM-2915-HLX	29.75"	15.25"	36.00"	40.00"	28.00"	NA	22.00"	26.00"	15.50"
LMM-2916-DEF-O2- SAT	24.22"	15.94"	24.00"	28.00"	32.00"	NA	22.00"	26.00"	15.50"
LM(M/D)-3610	36.00"	10.25"	48.00"	52.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-3617*	36.00"	17.25"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-3914-36-W*	38.75"	14.00"	36.00"	40.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-3914	38.75"	14.00"	48.00"	52.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LMM-3915-HLX	39.75"	15.25"	48.00"	52.00"	28.00"	NA	22.00"	26.00"	15.50"
LM(M/D)-4018	39.75"	17.75"	48.00"	52.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-4111	41.50"	11.00"	48.00"	52.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LM(M/D)-4115	41.50"	15.75"	48.00"	52.00"	28.00"	43.00"	22.00"	26.00"	15.50"

Note: For "M/D" in part number use "M" for medium or "D" for deep when ordering. *Conduit-less top frame.









Grommets for Conduit-less Sumps

Model	Description
43605002	½" grommets for conduit-less sump
43607502	¾" grommets for conduit-less sump
43610002	1" grommets for conduit-less sump

Stabilizer Bar Kits

One SBK is required for each shear valve and must be purchased separately. Select the appropriate SBK with the compatibility chart below.

l	Model	Stabilizer Bar Kit Model
	LM(M/D)-1410	SBK-2
	LM(M/D)-1913-T	SBK-25
	LM(M/D)-1916-HLX	SBK-3
	LM(M/D)-2010	SBK-2
	LM(M/D)-2018	SBK-3
	LM(M/D)-2313-T	SBK-25
	LM(M/D)-2407	SBK-1
	LM(M/D)-2715	SBK-3
	LM(M/D)-2811	SBK-25
	LM(M/D)-2915	SBK-3
	LMM-2915-HLX	SBK-3
	LMM-2916-DEF-O2-SAT	SBK-3
	LM(M/D)-3610	SBK-2
	LM(M/D)-3617	SBK-3
	LM(M/D)-3914-36-W	SBK-25
	LM(M/D)-3914	SBK-3
	LMM-3915-HLX	SBK-3
	LM(M/D)-4018	SBK-3
	LM(M/D)-4111	SBK-25
	LM(M/D)-4115	SBK-3

ORDERING INFORMATION CONTINUED

Large Mouth Polyethylene Dispenser Sump Base Only

Use the drawing diagram and the dimensions below to identify the appropriate dispenser sump base for your application.

Model	Sump Base Mouth Length (C)	Sump Base Bottom Length (D)	Sump Base Height (E)	Sump Base Mouth Depth (F)	Sump Base Bottom Depth (G)	Sump Base Bottom Height (H)
LBM-2400	24.00"	28.00"	28.00"	22.00"	26.00"	15.50"
LBM-3600	36.00"	40.00"	28.00"	22.00"	26.00"	15.50"
LBM-4800	48.00"	52.00"	28.00"	22.00"	26.00"	15.50"
LBD-2400	24.00"	28.00"	43.00"	22.00"	26.00"	15.50"
LBD-3600	36.00"	40.00"	43.00"	22.00"	26.00"	15.50"
LBD-4800	48.00"	52.00"	43.00"	22.00"	26.00"	15.50"





Large Mouth Polyethylene Dispenser Top Frame Only

Use the drawing diagram and the dimensions below to identify the appropriate top frame for your application.

Model	Top Frame Mouth Length (A)	Top Frame Mouth Depth (B)	Sump Base Size
LMT-1410	13.50"	9.75"	2400
LMT-1913-T	19.00"	12.00"	2400
LMT-2010	20.50"	10.00"	2400
LMT-2018	20.81"	18.31"	2400
LMT-2313-T	23.00"	12.00"	3600
LMT-2407	23.75"	7.50"	3600
LMT-2715	27.00"	15.00"	3600
LMT-2811	28.50"	11.00"	3600
LMT-2915	29.75"	15.75"	3600
LMT-3610	36.00"	10.25"	4800
LMT-3617-36	36.00"	17.25"	3600
LMT-3914-36-W	38.75"	14.00"	3600
LMT-3914	38.75"	14.00"	4800
LMT-4018	39.75"	17.75"	4800
LMT-4111	41.50"	11.00"	4800
LMT-4115	41.50"	15.75"	4800
DST-1916-HLX	19.75"	16.00"	3600
DST-2916-DEF-O2-SAT	24.22"	15.94"	2400
DST-2915-HLX	29.75"	15.25"	3600
DST-3915-HLX	39.75"	15.25"	4800





DEF POLYETHYLENE DISPENSER SUMPS

APT[™] DEF (diesel exhaust fluid) large mouth polyethylene dispenser sumps feature a banded, two-sump design that allows for segregation of DEF equipment into a separate containment space. The secondary DEF sump is compact yet large enough to accommodate both in-line or tee pipework configurations required for a DEF recirculation system. The primary sump features a large sump opening to provide easy installation and ample space for under dispenser pipework containment.

HIGHLIGHTS

- Conduitless designs compatible with Gilbarco[®] Encore[®] DEF dispensers, Wayne[®] Vista[™] DEF dispensers, and Wayne[®] Ovation^{™2} DEF dispensers.
- The banded two-sump design provides easy installation and allows for clear separation between regulated and non-regulated liquids.
- One top frame covers both the primary and secondary sumps. The removable top frame panel can be removed during installation for expanded access to both piping areas. It is shown below removed.
- The large mouth design with removable top frame panel provides adequate space for installing system piping.
- Available as standalone sump or as kits which include all equipment for both APT™ in-line or tee pipework component configurations for DEF recirculation systems.
- Corrosion-resistant powder coated steel top frame is removable for easy access during installation.
- Ribbed sump riser can be cut down in 3" increments in the field to adjust sump height and achieve proper pipe slope with respect to grade.
- Stabilizer bar kits (SBKs) mount into welded strut channels for shear valve mounting (one SBK is required for each shear valve and must be purchased separately).

SPECIFICATIONS

- Approvals/Certifications
- ULc listed.

Components

- 1 Primary sump (for fuel equipment)
- 2 Secondary sump (for DEF equipment)
- 3 Retaining band
- 4 Removable top frame panel (allows for future expansion)
- 6 Access to DEF equipment containment space
- 6 Access to fuel equipment containment space
- 7 Top frame (single-piece)







SPECIFICATIONS CONTINUED

Wayne[®] Ovation^{™2} DEF Dispenser Sump Dimensions













Wayne® Vista™ DEF Dispenser Sump Dimensions







32″ 56″







SPECIFICATIONS CONTINUED

Gilbarco[®] Encore[®] DEF Dispenser Sump Dimensions







Secondary Sump (DEF)







ORDERING INFORMATION

DEF Polyethylene Dispenser Sumps

Model	Description			
LMM-2916-DEF-O2	DEF polyethylene dispenser sump (banded, two-sump design) for Wayne Ovation™2 DEF dispensers			
LMM-2916-DEF	DEF polyethylene dispenser sump (banded, two-sump design) for Wayne® Vista™ DEF dispensers			
LMM-3617-DEF	DEF polyethylene dispenser sump (banded, two-sump design) for Gilbarco® Encore® DEF dispensers			
Note: Two week lead time on DEF dispenser sumps.				

Stabilizer Bar Kits

Model	Recommended Stabilizer Bar Kit
LMM-2916-DEF-O2	DEF Sump = SBK-25 Product Sump = SBK-3
LMM-2916-DEF	DEF Sump = SBK-2 Product Sump = SBK-3
LMM-3617-DEF	DEF Sump = SBK-3 Product Sump = SBK-3

DEF RECIRCULATION SYSTEM SUMP KITS

DEF recirculation system sump kits are available which include the sump assembly as well as all equipment necessary for both 1½" APT™ brand XP pipe in-line or tee configurations for DEF recirculation systems.



LARGE MOUTH POLYETHYLENE DISPENSER SUMP DIRECTORY

Use the directory to identify the appropriate dispenser sump for your application based on the dispenser model it will be installed under. They are sorted by dispenser manufacturer.

ORDERING INFORMATION

Bennet®

Series	Model	Polyethylene Sump	FRP Sump	SBK #
Horizon/ Big Squirt	2200 Series	LM(X)-2010	LMM-2010-X	SBK-2
Horizon	2300 Series	LM(X)-2811	LMM-2811-X	SBK-25
	2400 Series	LM(X)-4111	LMM-4111-X	SBK-25
Mehanical	3000 Series, 6000 Series	LM(X)-1410	LMM-1410-X	SBK-2
Electronic	3000 Series	LM(X)-2313-T	LMM-2313-T-X	SBK-25
Electronic	3000 Series	LM(X)-2313-T		SBK-25

Gasboy®

Model	Polyethylene Sump	FRP Sump	SBK #
215A, 216A	LM(X)-1410	LMM-1410-X	SBK-2
9140A, 9140AX, 9152ATW1, 9152AXTW1, 9152AXTW2, 9153ATW1M, 9153ATW2, 9153AXTW2, 9850XTW2, 9852ATW2, 9852AXTW2, 9853ATW2, 9853AXTW2, 9153AXTW1, 9840A, 9840AX, 9850AXTW1, 9852ATW1, 9852AXTW1, 9853ATW1M, 9853AXTW1, ATLAS	LM(X)-2313-T	LMM-2313-T-X	SBK-25
9152A, 9152AX, 9153A, 9153AHC, 9153AX, 9753EXIL, 9850A, 9850AX, 9852A, 9852AX, 9853A, 9853AHC, 9853AX	LM(X)-1913-T	LMM-1913-T-X	SBK-25

RDR

Series	Polyethylene Sump	FRP Sump	SBK #
RDR	LM(X)-2018	LMM-2018-X	SBK-3

Schlumberger

Series	Model	Polyethylene Sump	FRP Sump	SBK#
Centurion Narrow	XXXX1	LM(X)-2915	LMM-2915-X	SBK-3
Centurion Wide	XXXX2	LM(X)-4115	LMM-4115-X	SBK-3
	435,440,640,650	LM(X)-1913-T	LMM-1913-T-X	SBK-25
	2300 Series	LM(X)-2811	LMM-2811-X	SBK-25
	2400 Series	LM(X)-4111	LMM-4111-X	SBK-25

ORDERING INFORMATION CONTINUED

Gilbarco®

Series	Model	Polyethylene Sump	FRP Sump	SBK #
Advantage	MPD, Single Hose (B71XXX), Six Hose, X+0 X+1 (48 inch frame) B7XXXX	LM(X)-4115	LMM-4115-X	SBK-3
	Quad/ Dual, X+0 (36 inch frame) B7AXXX	LM(X)-2915	LMM-2915-X	SBK-3
Commercial	High Gallonage, Ultra High Gallonage	LM(X)-2010	LMM-2010-X	SBK-2
Eclipse		LM(X)-2010	LMM-2010-X	SBK-2
Encore	40 inch sump length, Super Hi, Ultra Hi	LM(X)-3617		SBK-3
	40 inch sump length, Super Hi, Ultra Hi (Conduitless)	DS3617 ENCORE	"LMM-3617-S, DHW-3617, 602375001"	SBK-3
	40 inch sump length, Super Hi, Ultra Hi (Conduitless - Doublewall Fiberglass)		LMM-3617-D, 602383001, 602383401	SBK-3
Highhose	MPD-X	LM(X)-3610	LMM-3610-X	SBK-2
	Salesmaker-2H (AM62XXA)	LM(X)-2010	LMM-2010-X	SBK-2
	Salesmaker 4/4A, Salesmaker Pro (ABXXXXA)	LM(X)-2313-T	LMM-2313-T-X	SBK-25
Highline	111B 21 inch frame (AC6921A), 111B 27 inch frame (AC3921A), High Gallonage (AC6942A), Ultra Hi Gallonage (AC6992A-MS1), Stallite (AC-4093-S1, AC-6093-S1), Super Hi (AC4982A-MS1, AC7982A- MS1), Ultra Hi (AC4992A-MS1, AC7992A-MS-1)	LM(X)-2010	LMM-2010-X	SBK-2
	Salesmaker 21 inch frame (AC1921A-S1), Salesmaker 27 inch frame (AC1921A-S1)	LM(X)-1410	LMM-1410-X	SBK-2
Legacy	ALL	LM(X)-2407	LMM-2407-X	SBK-1
Trimline	252-0 with 21 inch or 27 inch frame	LM(X)-2010	LMM-2010-X	SBK-2
Highhose Salesmaker 4/4A		LM(X)-2313T		SBK-25
Highhose Salesmaker Pro	ABXXXXA	LM(X)-2313T		SBK-25
Highline 111B 21" frame	AC6921A	LM(X)-2010		SBK-2
Highline 111B 27" frame	AC3921A	LM(X)-2010		SBK-2
Highline High Gallonage	AC6942A	LM(X)-2010		SBK-2
Highline Ultra Hi Gallonage	AC6992A-MS1	LM(X)-2010		SBK-2
Highline Salesmaker 21" frame	AC1921A-S1	LM(X)-1410		SBK-2
Highline Salesmaker 27" frame	AC1921A-S1	LM(X)-1410		SBK-2
Highline Satellite	AC-4093-S1	LM(X)-2010		SBK-2
	AC-6093-S1	LM(X)-2010		SBK-2
Highline Super Hi	AC4982A-MS1	LM(X)-2010		SBK-2
	AC7982A-MS1	LM(X)-2010		SBK-2
Highline Ultra Hi	AC4992A-MS1	LM(X)-2010		SBK-2
	AC7992A-MS1	LM(X)-2010		SBK-2
Legacy	All	LM(X)-2407		SBK-1
Trimline 21" frame	252-0	LM(X)-2010		SBK-2
Trimline 27" frame	252-0	LM(X)-2010		SBK-2

ORDERING INFORMATION CONTINUED

Tokheim™

Series Model		Polyethylene Sump	FRP Sump	SBK #
	162, 262, 785, 1248, 1250	LM(X)-1913-T	LMM-1913-T-X	SBK-25
	220, 222, 330, 333, 793	LM(X)-1410	LMM-1410-X	SBK-2
	311, 312, 322, 324	LM(X)-2407	LMM-2407-X	SBK-3
	411, 413, 414, 422, 424, 426, 428	LM(X)-4018	LMM-4018-X	SBK-3
Centurion Narrow	XXXX1	LM(X)-2915	LMM-2915-X	SBK-3
Centurion Wide	XXXX2	LM(X)-4115	LMM-4115-X	SBK-3
	322	LM(X)-2407		SBK-3
	324	LM(X)-2407		SBK-3
	330	LM(X)-1410		SBK-2
	333	LM(X)-1410		SBK-2
	411	LM(X)-4018		SBK-3
	413	LM(X)-4018		SBK-3
	414	LM(X)-4018		SBK-3
	422	LM(X)-4018		SBK-3
	424	LM(X)-4018		SBK-3
	426	LM(X)-4018		SBK-3
	428	LM(X)-4018		SBK-3
	785	LM(X)-1913T		SBK-25
	793	LM(X)-1410		SBK-2
	1248	LM(X)-1913T		SBK-25
	1250	LM(X)-1913T		SBK-25
Centurion Narrow	XXXX1	LM(X)-2915		SBK-3
Centurion Wide	XXXX2	LM(X)-4115		SBK-3

Universal

Sorios	Madal	Polyothylopo Sump	EBD Sump	CBK #
Series	IVIOUEI	Polyethylene Sump	FRF Sullip	SDK#
Univision	UV-9100, UV-9200	LM(X)-2811	LMM-2811-X	SBK-25
	UV-9300, UV-9400	LM(X)-4111	LMM-4111-X	SBK-25
	3000 Narrow Base, 3000 Wide Base, 3500 Narrow Base, 3500 Wide Base, 4000 Narrow Base, 4000 Wide Base	LM(X)-1410	LMM-1410-X	SBK-2
	8000 Series	LM(X)-3914		SBK-25
3000 Narrow Base	All	LM(X)-1410		SBK-2
3000 Wide Base	All	LM(X)-1410		SBK-2
3500 Narrow Base	All	LM(X)-1410		SBK-2
3500 Wide Base	All	LM(X)-1410		SBK-2
4000 Narrow Base	All	LM(X)-1410		SBK-2
4000 Wide Base	All	LM(X)-1410		SBK-2
8000	All	LM(X)-3914		SBK-25

DEF Sumps

Series	Model	Polyethylene Sump	FRP Sump	SBK #
Wayne	Vista	LMM-2916-DEF		SBK-3
	Ovation 2	LMM-2916-DEF-O2		SBK-3
	Ovation 2 DEF Satellite	LM(X)-2916-DEF-O2-SAT*		SBK-3
Gibarco	Encore	LMM-3917-DEF	602377001	SBK-3

Note: Includes top frame and fuel under dispenser containment only. No containment included on DEF side.

ORDERING INFORMATION CONTINUED

Wayne™

Series	Model	Polyethylene Sump	FRP Sump	SBK #
Vista Series	V289, V387, V388, V889, V580, V585	LM(X)-2811	LMM-2811-X	SBK-25
	V390, V395, V399, V490, V590, V595	LM(X)-4111	LMM-4111-X	SBK-25
	DS/375/19, DS/585/19E, DS/585/EG, 350 Series, 360 Series, 370 Series, 387 Series, 389 Series	LM(X)-2407	LMM-2407-X	SBK-2
	390 Series, 490 Series	LM(X)-4111	LMM-4111-X	SBK-25
	Global (GXXXX) Series, Reliance, HS3/V387, Select	LM(X)-2715	LMM-2715-X	SBK-3
Ovation	Ovation Series	LM(X)-3914/LMM-3914-36-W	LMM-3914-X	SBK-25
	Ovation Series (Conduitless)	DS3915 OVATION	"LMM-3914-36-W-X, DHW- 3617-OVA, 602381001"	SBK-25
	Ovation Series (conduitless - double wall fiberglass)		602385001, 602385401	SBK-25
Helix	1000	LM(X)-2916-HLX		SBK-3
	2000, 4000	LM(X)-2915	LMM-2915-X	SBK-3
	2000, 4000 (Conduitless)	LM(X)-2915-HLX		SBK-3
	5000	LM(X)-4115	LMM-4115-X	SBK-3
	5000 (Conduitless)	LM(X)-3915-HLX		SBK-3
V590 Vista™ Series		LM(X)-4111		SBK-25
V595 Vista™ Series		LM(X)-4111		SBK-25
350 Series		LM(X)-2407		SBK-2
360 Series		LM(X)-2407		SBK-2
370 Series		LM(X)-2407		SBK-2
387 Series		LM(X)-2407		SBK-2
389 Series		LM(X)-2407		SBK-2
390 Series		LM(X)-4111		SBK-25
490 Series		LM(X)-4111		SBK-25
Global (GXXXX) Series		LM(X)-2715		SBK-3
Ovation™ Series	All	LM(X)-3914/LMM(3914-36)		SBK-25
Reliance		LM(X)-2715		SBK-3
HS3/V387		LM(X)-2715		SBK-3
Helix	2000, 4000	LMM-2915		SBK-3
Helix	5000	LMM-4115		SBK-3
Select		LMM-2715		SBK-3



CLASSIC DISPENSER PAN SUMPS

Dispenser pans are an extremely cost-effective alternative where shallow burial is permitted. Each model of dispenser pan is furnished with concrete anchor bolts and utilizes galvanized steel top frames for anchoring the dispenser.

Model	Description	А	В	С	SBK #
DP-1816	Dispenser pan, 13¾" × 11¼"	13.75"	11.25"	10.25"	SBK-2
DP-2014	Dispenser pan, 16½" × 10½"	16.50"	10.50"	8.75"	SBK-2
DP-2816	Dispenser pan, 23" × 11¾"	23.00"	11.75"	9.00"	SBK-2
DP-4721	Dispenser pan, 42" × 16"	42.00"	16.00"	8.75"	SBK-3





FIBERGLASS TANK SUMPS

Our extensive offering of world-class fiberglass tank sumps provide you with a solution for virtually any type of tank top containment. Manufactured using only the highest quality fiberglass reinforced polymer (FRP), these sumps come complete with a watertight sump shield and gasketed cover with strap-down toggles to keep your containment free from costly liquid intrusion. With options including 42" or 48" diameter, medium or deep burial, cylindrical or octagonal base, bottom or no-bottom, single-piece or two-piece configuration, and single wall or double wall construction, you are able to select the exact tank sump design to meet your specific site needs.

HIGHLIGHTS

- Each fiberglass tank sump includes a sump base, a riser, a reducer collar (factory-fiberglassed to the riser), and watertight sump shield with strap-down cover.
- Available in 42" and 48" base diameters.
- Reducer collars and reducer sump shields allow any tank sump to fit under a 36" manway while providing a 30" diameter clear opening for easy access to equipment.
- Constructed from rugged ¼" thick, three-layer, hand layup fiberglass reinforced polymer (FRP).
- White gel coat interior provides a vapor and watertight barrier and superior visibility.
- Single wall models are available with or without bottom for various mounting options.
- Double wall models are only available without a bottom for mounting to tank collar.
- Double wall models are shipped under vacuum with a vacuum gauge installed for verification at site of sealed interstitial.
- Octagonal base sumps feature a two-piece design that eliminates confined spaces and gives installers full access to the containment during installation.
- Once equipment installation is complete, the two-piece design is connected using a fiberglass seam kit (ordered separately) to ensure a seamless, watertight joint.
- Eight flat panels are molded into the bottom section of octagonal base sumps to provide 90° pipe entries.
- The watertight sump shield keeps liquid out of the containment space during normal operation while allowing easy access to the containment space for maintenance or inspection.
- Six strap down toggles and internal D-gasket ensure the cover stays in place.

SPECIFICATIONS



Octagonal Two-Piece Configurations





ORDERING INFORMATION

42" SINGLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Collar Mount Base



Medium Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.





Deep Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TD4236-0/0-OC-S	Single	Medium	42″	36″	2

- 1 Min. manway diameter: 36"
- 2 Clear opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base depth: 15"
- 5 Sump base diameter: 42¼"
- 6 Inside diameter: 39¼"
- Flat panel width: 12"
- 8 Flat panel height: 9"
- 9 Field height adjustment: 12"



ORDERING INFORMATION

42" SINGLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Base with Bottom



Medium Bury

The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place.





Deep Bury

The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TD4236-0/0-OB-S	Single	Medium	42″	36″	1

Dimensions

- 1 Min. manway diameter: 36
- 2 Clear opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base depth: 15"
- 5 Sump base diameter: 42¼"
- 👩 Inside diameter: 39¼″
- 7 Flat panel width: 12"
- 8 Flat panel height: 9"
- 9 Field height adjustment: 12"



ORDERING INFORMATION

42" SINGLE WALL FIBERGLASS TANK SUMPS

Round Single-Piece Collar Mount Base



Medium Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.





Deep Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TD4236-0/0-RC-S	Single	Deep	48″	36″	2

- 1 Min. manway size: 36"
- 2 Opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base diameter: 48"



ORDERING INFORMATION

48" SINGLE WALL FIBERGLASS TANK SUMPS

Round Single-Piece Collar Mount Base



Medium Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended	
TM4836-0/0-OB-S	Single	Medium	42″	36″	2	
Dimensions						
1 Min. manway d	iameter: 36	5″				
2 Clear opening d	liameter: 30)"		2		
3 Medium bury de	epth: 54″		<u>}</u>	1 1		
Sump hase diameter: 421/4 "						



Deep Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TD4836-0/0-OB-S	Single	Deep	42″	36″	2

- 1 Min. manway size: 36"
- 2 Opening diameter: 30"
- 3 Deep bury depth: 70"
- 4 Sump base diameter: 42¼"



ORDERING INFORMATION

48" SINGLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Base with Bottom



Medium Bury

The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place.





Deep Bury

The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TDA4836-0/0-OB-S	Single	Medium	48″	36″	2

- 1) Min. manway diameter: 36"
- 2 Clear opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base depth: 28½"
- 5 Sump base diameter: 48¼"
- 6 Inside diameter: 42"
- Flat panel width: 15"
- 8 Flat panel height: 21"
- 9 Field height adjustment: 12"



ORDERING INFORMATION

48" SINGLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Collar Mount Base



Medium Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.





Deep Bury

The sump base comes with an open bottom that is ideal for installations with a tank collar in place.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended
TDA4836-0/0-OC-S	Single	Medium	48″	36″	3

Dimensions

- 1 Min. manway diameter: 36"
- 2 Clear opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base depth: 28½"
- 5 Sump base diameter: 48¼"
- 6 Inside diameter: 42"
- 7 Flat panel width: 15"
- 8 Flat panel height: 21"
- 9 Field height adjustment: 12"



ORDERING INFORMATION

42" DOUBLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Collar Mount Base



Medium Bury

The sump base comes with open bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended	Interstitial Monitoring Type
TM4236-0/0-OC-H	Double	Medium	42″	36″	2	Hydrostatic
TM4236-0/0-OC-V	Double	Medium	42″	36″	4	Vacuum

- 1 Min. manway diameter: 36"
- 2 Clear opening diameter: 30"
- 3 Medium bury depth: 45"
- 4 Sump base depth: 15"
- 5 Sump base diameter: 42¼"
- 6 Inside diameter: 39¼"
- Flat panel width: 12"
- 8 Flat panel height: 9"
- Field height adjustment: 12"



ORDERING INFORMATION

48" DOUBLE WALL FIBERGLASS TANK SUMPS

Octagonal Two-Piece Collar Mount Base



Medium Bury

The sump base comes with open bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended	Interstitial Monitoring Type
TM4836-0/0-OC-H	Double	Medium	42″	36″	3	Hydrostatic
TM4836-0/0-OC-V	Double	Medium	42″	36″	4	Vacuum

Dimensions

- 1 Min. manway diameter: 36
- 2 Clear opening diameter: 30"
- 3 Medium bury depth: 45"
- 4 Sump base depth: 28½"
- 5 Sump base diameter: 48¼"
- 6 Inside diameter: 42"
- 7 Flat panel width: 15"
- 8 Flat panel height: 21"





Deep Bury

The sump base comes with open bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Minimum Manway Size	# of Seam Kits Recommended	Interstitial Monitoring Type
TD4836-0/0-OC-H	Double	Medium	42″	36″	3	Hydrostatic
TD4836-0/0-OC-V	Double	Medium	42″	36″	4	Vacuum

- 1 Min. manway diameter: 36
- 2 Clear opening diameter: 30"
- 3 Deep bury depth: 65"
- 4 Sump base depth: 28½"
- 5 Sump base diameter: 48¼"
- Inside diameter: 42"
- Flat panel width: 15"
- 8 Flat panel height: 21"
- 9 Field height adjustment: 12"



ORDERING INFORMATION CONTINUED

WATERTIGHT SUMP SHIELD PACKAGES

Used for repair and replacement work or if the tank sump or riser is provided by the tank manufacturer. Provides a watertight entry point for standard 42" and 48" tank sumps. Includes sump shield with strap-down cover and riser reducer.



Model	Riser Base Diameter	Access Opening	Min. Manway Diameter	# of Seam Kits Recommended
TSS-4236	42"	30″	36″	1
Model	Riser Base Diameter	Access Opening	Min. Manway Diameter	# of Seam Kits Recommended
TSS-4836	48″	30″	36″	1



Model	Riser Base Diameter	Access Opening	Min. Manway Diameter	# of Seam Kits Recommended
TSS-XS36	Xerxes®	30″	36″	1

Fiberglass Seam Kits



Model	Description
FIBERGLASS-KIT	Fiberglass seam kit for one seam - includes: matte, resin, putty, catalyst, ½" x 3" roller, 2" brush, quart cups (qty 3), stir sticks (qty 2), squeegee, glove - size large (qty 2 pairs)

Fiberglass Tank Sump Replacement Parts



Model	Description
TSS-36	36" watertight sump shield lid, with toggles
602212001	Sump shield lid gasket for 36" sump shield lid
602212002	Sump shield lid gasket for 42" sump shield lid







Model	Description
602329001	Keeper assembly, attaches on sump shield lid (top)
602330901	Bracket assembly, attaches on the riser adapter (bottom)
602331001	Rubber pull latch



WATER-RESISTANT TANK SUMPS

APT[®] brand water-resistant tank sumps feature a water-resistant, gasketed lid with integrated hold-down toggles to prevent liquid from entering into the tank sump. Four lid toggles provide compression between the lid gasket and the riser without the need for any penetrations - eliminating potential leak paths.

HIGHLIGHTS

- Durable, yet lightweight polyethylene construction with robust 0.3" (7 mm) wall thickness.
- The ribbed riser provides field height adjustablity, allowing the sump to be cut down in 4.3" (110 mm) increments on site using standard tools to easily conform to varying site conditions.
- Available in deep burial [58" (1,471 mm) maximum height, 31.9" (810 mm) minimum height] and medium burial depth [45" (1,140 mm) maximum height, 31.9" (810 mm) minimum height] models.
- Water-resistant, gasketed lid with integrated hold-down toggles prevent liquid from entering into the sump.
- 16 flat pipework entry surfaces surrounding the chamber base ensure proper 90° pipework entry into the chamber.
- Sized to fit under a standard 36" (900 mm) manway.

ORDERING INFORMATION

Model	Description
TSM-W-4736	Water-resistant tank sump, medium burial [45" (1,140 mm) maximum height, 31.9" (810 mm) minimum height], 47" (1,192 mm) base, fits 36" (900 mm) manway
TSD-W-4736	Water-resistant tank sump, deep burial [58" (1,471 mm) maximum height, 31.9" (810 mm) minimum height], 47" (1,192 mm) base, fits 36" (900 mm) manway
OCH-1400-LC	Mechanical toggle
OCH-1400-T1	Toggle latch

SPECIFICATIONS

Approvals/Certifications ULc listed.

Components

- Water-resistant lid
- 2 Lid toggle (aty 4)
- 3 Molded lid toggle peg
- 4 Gasketed seal
- 5 Sump riser
- 6 Sump base
- 🕖 Flat face panels (qty 16)



SPECIFICATIONS CONTINUED

Tank Sump Dimensions

The tank sump is available in both medium and deep bury models.





ONE-PIECE TANK SUMPS

APT[™] brand 4542 Series one-piece tank sumps are made of high-density polyethylene with factory installed gasket snap-on lids. The 16 side panels allow for pipe entry from virtually any direction. The 4542 Series is available in three burial depths. Each offers an optional inspection port for easy viewing of the interior of the sump without removal of the lid.

ORDERING INFORMATION

Model	Description
TSD-4542	Tank sump, deep burial, 45" base, fits 42" manway
TSM-4542	Tank sump, medium burial, 45" base, fits 42" manway
TSS-4542	Tank sump, shallow burial, 45" base, fits 42" manway
26004209	TSM-4542 sump lid replacement
MA-22	Manway adapter, 22"
MA-24	Manway adapter, 24"
IP-400-B	Inspection port, FEP style with well cap

Note: Replacement gaskets sold with cover only.

Sized to fit under a standard 42" manway.Central location for an optional inspection port.

• Ribbed riser allows for simple 3" height adjustments

• Lid designed with a large-grip handle for easy removal of the snap-on lid.

• Available in deep, medium, and shallow burial

• Utilizes a unique gasket, snap-on lid design.

• Economically priced one-piece design.

Approvals/Certifications

HIGHLIGHTS

depth models.

using standard tools.

• ULc listed.





BELOW GRADE TRANSITION TANK SUMPS

APT™'s TS-2430, TS-3630, and TS-4230 tank sumps are ideally suited for low cost retro fits and shallow burial applications. The TS-2430 is ideal for line branching points and for containing piping splices. The 36" or 42" bases provide ample space for submersibles and fittings. The bolt-on gasket-lid combination fits economically under a 30" manway.

HIGHLIGHTS

- TS-2430 utilizes an 18" bolt-down watertight lid.
- TS-3630 and TS-4230 utilize a 23½" bolt-down watertight lid.
- High density polyethylene construction is durable and chemical-resistant.
- All TS-Series sumps allow fittings to be installed with ease, while tapered design allows for installation under an economical 30" manway.
- Bolt-down cover can be easily removed for routine inspections.
- One-piece design enhances water resistance.

Model	Description
TS-2430	Transition sump, shallow burial, 24" base, fits under a 30" manway
TS-3630	Tank sump, shallow burial, 36" base, fits under a 30" manway
TS-4230	Tank sump, medium burial, 42" base, fits under a 30" manway
TS-KIT	TS-3630/4230 retro fit kit, replacement lid assembly for screw-on polyethylene lids
99985555	Replacement gasket





231/2" BOLT-DOWN RAINTIGHT ACCESS COVER



BELOW GRADE INTERMEDIATE PIPING SUMPS

The APT™ intermediate piping sump is a multifunctional component in the underground flexible piping system. The IPS-2424 and IPS-3636 can be used as a containment sump for fittings when utilizing a tee between dispenser islands, for contained piping splices, or for line branching points. These sumps are ideal for a low point sensor chamber between USTs and dispenser islands where required.

HIGHLIGHTS

- 18" bolt-down watertight lid.
- Design is engineered to be multi-functional.
- Sumps are constructed from high density polyethylene, making them durable and chemical-resistant.
- Two sizes available, 24" \times 24" square and 36" \times 36" square.
- Tapered top allows both intermediate piping sumps to fit securely under a 24" manway.
- One-piece design ensures environmental security and water resistance.



18" BOLT-DOWN RAINTIGHT ACCESS COVER



IPS-3636



18" BOLT-DOWN RAINTIGHT ACCESS COVER



IPS-2424

Model	Description
IPS-2424	Intermediate piping sump, 24" × 24", fits under a 24" manway
IPS-3636	Intermediate piping sump, 36" × 36", fits under a 36" manway
99985554	Replacement gasket
73510102	Replacement cover



GRADE LEVEL TRANSITION SUMP

The AST[®] above or below ground transition sump is the practical, environmentally sound solution for remote dispensing from aboveground storage tanks. Steel and flexible piping enter the sump through the APTTM flexible entry boot. Inside the sump, the steel piping easily connects to flexible piping for a fuel-tight, continuous run to dispensers or an intermediate sump.

HIGHLIGHTS

- Transition sumps help meet environmental regulations by isolating metal piping from the soil.
- Transition sumps can be installed either inside or outside containment dikes.
- 30" burial depth allows the transition sump to be used as the system low point for leak detection.
- Load rated composite cover.
- The sump is a HDPE design.
- Flexible entry boot provides a fuel-tight and watertight seal around the metal piping and flexible piping as it enters the sump lid and sidewall.
- H-20 load rating. Pipe entries installed in lids negate the load rating.

Model	Description		
AST-2922	Aboveground storage tank transition sump		
99985553	Replacement gasket		
25202923	Replacement AST-2922 lid, gray		
IP-400-B	Inspection replacement port, FEB style with replacement well cap		
42615004	Replacement AST-2922 steel frame, black		



- 24.00" WIDTH



Abovegrade Typical Application Drawing





TANK FITTING ADAPTERS

APT[™] tank fitting adapters provide a high quality, cost-effective way to mount tank sumps to a standard 4" NPT tank opening or 6" NPT tank opening. The bright zinc-plated cast iron construction is not only strong, but corrosion-resistant. The TFA-400-II and TFA-600 are easy to install and their single hole style mounting allows sumps to be rotated to properly align pipe entries.

HIGHLIGHTS

- Easily installs with standard tools.
- TFA-400-II fits onto a standard 4" NPT tank riser pipe with 4" NPT internal threads for mounting a submersible pump.
- TFA-600 fits onto a standard 6" NPT tank riser pipe with 6" NPT internal threads for mounting a submersible pump.
- Installs through one hole in the sump base, permitting the sump to be rotated on the adapter to properly align pipe penetrations.
- Compression ring design allows installation with a solid gasket ring to ensure a watertight sea and environmental security.

ORDERING INFORMATION	
Model	Description
TFA-400-II	Tank fitting adapter generation II, 4" NPT
TFA-600	Tank fitting adapter, 6" NPT
41110502	Compression plate for TFA-400-II (replacement)
42020002	Plate washer TFA-400-II (replacement)
44610002	Gasket for TFA-400-II

TFA-400-II TANK FITTING ADAPTER



TFA-600 TANK FITTING ADAPTER 6" NPT INATERNAL THREAD



TANK MANWAY ADAPTERS

APT[™] tank manway adapters permit tank sumps to be mounted directly to a tank's 22" or 24" manway.



wouer	Description	
MA-22	22" tank manway adapter	
MA-24	24" tank manway adapter	

STABILIZER BAR KITS

Model	Description	
SBK-1	Stabilizer bar kit 1, 7" - 8.38"	
SBK-2	Stabilizer bar kit 2, 8.25" - 10.88"	
SBK-3	Stabilizer bar kit 3, 13.50" - 21.25"	
SBK-25	Stabilizer bar kit 25, 10.12" - 14.38"	



XP PIPE AND CONTAINMENT INSTALLATION TOOLS

Use these specialized APT[™] tools to aid in your installation of XP pipework and containment systems.

HIGHLIGHTS

- The range of APTTM double wall cutting tools simplify secondary jacket removal without causing damage to the primary pipe. Exclusively for use with APTTM XP pipe - one tool per pipe diameter provides accurate secondary jacket removal for proper installation.
- Blade set tool aids in setting the blade position to ensure cutting at the proper depth without damaging the pipe's primary layer.
- Five blades included with each pipe cutter.
- Replacement handle comes with five replacement blades.
- The bulkhead tightening tools speed the installation of bulkhead boots while providing a more even distribution of torque than standard spanner wrenches.
- The reusable steel drill templates are a durable, faster alternative to the paper templates provided with each entry boot.
- The air test regulator provides a fast, accurate means of testing the secondary layer of XP pipe integrity prior to charging with product.

ORDERING INFORMATION

Model	Description
DWC-XP-100	1" double wall cutting tool with (5) blades
DWC-XP-150	1½" double wall cutting tool with (5) blades
DWC-XP-175	1¾" double wall cutting tool with (5) blades
DWC-XP-200	2" double wall cutting tool with (5) blades
DWC-XP-TOOL	Replacement handle with (5) replacement blades, blade set tool, and handle screws
88530002	Single replacement blades
BPT-200	Bypass tube, 30" length
BOS-103	Bostik 1100, 10.3 ounce tube (white)
DBT-100	Deburring tool
SDT-010	Steel drill template for 4, 8, and 10 stud entry boots
TRK-200	Air test regulator for secondary contained piping
STK-1	Single line secondary test system
STK-2	Dual line secondary test system
SWK-150	Swage tool kit, 1½"
SWK-175	Swage tool kit, 1¾"
SWK-200	Swage tool kit, 2"
26003608	TSM-4736 Sump Lid Replacement

UPP° SEMI-RIGID PIPEWORK SYSTEM

Since being introduced as the world's first electrofusion pipework system for fuel applications over thirty years ago, UPP® brand semi-rigid pipework has become known globally as the standard for watertight electrofusion welded pipework systems. UPP® brand pipework utilizes the advanced electrofusion welding process to effectively bond system components including pipework and containment together into one watertight system.







Hand-Held Electrofusion Welder Unit

Electrofusion Entry Boot F

Fittings and Adapters

HIGHLIGHTS

- The highly efficient electrofusion welding process that connects pipe, fittings, boots, and containment to create a seamless direct burial pipework system.
- The UPP® electrofusion welding process is safe and simple to complete in any climate and virtually any weather condition. An installer simply preps the components, fits them together attaching welder leads to the fitting, and then presses a single button on the welding unit to initiate the process.
- The welder unit itself calculates the exact settings required to complete the weld, regardless of the pipework diameter or temperature, leaving no settings for the installer to input.
- UPP[®] double wall semi-rigid pipe is flexible enough to coil and bend like flexible pipe, while UPP[®] single wall pipe is also rigid enough to be used in place of fiberglass pipe for vapor or vent lines.
- Available in both coils and straight sticks, UPP[®] pipe can accommodate the sweeping bends of a "loop" pipework system while the straight sticks make installation between dispenser sumps simple by providing a square pipe entry into containment.
- The flexibility of UPP[®] double wall semi-rigid pipe allows for easy installation through existing ducting.
- As a vital component to the UPP[®] pipework system, patented UPP[®] electrofusion entry boots weld directly to the wall of any polyethylene sump creating a watertight seal between the pipework system and containment spaces.

SPECIFICATIONS

- Pipe outer layer: High Density Polyethylene (HDPE) grade PE100
- Pipe liner layer: Ethylene vinyl alcohol (EVOH) resin liner
- Pipe intermediate layer: Tie-layer which permanently bonds HDPE outer layer to EVOH resin liner layer
- Temperature rating: -22 °F to 122 °F
- Primary pipe pressure rating: 90 psi
- Secondary pipe pressure rating: 58 psi
- 11/2" and 2" double wall pipe bend radius: 3'3"
- 3" and 4" double wall pipe bend radius: 13'2"
- 2" single wall vent/vapor pipe bend radius: 3'3"
- 3" single wall vent/vapor pipe bend radius: 9'10"

Approvals

- UL-971 approved for fuels including:
- Motor vehicle fuels typically found in consumer dispensing facilities like gasoline or diesel including blended fuels with maximum 15% MTBE, 15% Methanol or 30% Ethanol.
- Concentrated fuels such as alternate unblended fuels containing up to 100% concentrations of Toluene, Methanol or Ethanol.
- High blend fuels with higher than normal gasoline blends with maximum 50% Methanol or 50% Ethanol.
- Aviation and marine specialty fuels containing up to 100% kerosene or leaded gasoline.
- Michigan, Wisconsin, and Florida EQ-816.

	ORDERING	INFOR	MATION
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		Nominal Primary Pipe		Nominal Secondary Pipe	
Model	Description	ID	OD	ID	OD
001-063-050-XXXPSE	1½" double wall pipe	1.67"	1.97"	2.18"	2.48"
001-075-063-XXXPSE	2" double wall pipe	2.12"	2.48"	2.59"	2.95"
001-110-090-019PSE	3" double wall pipe	3.02"	3.54"	3.82"	4.33"
001-125-110-019PSE	4" double wall pipe	3.69"	4.33"	4.34"	4.92"
001-063-019VE	2" single wall pipe	2.12"	2.48"		
001-090-019VE	3" single wall pipe	3.02"	3.54"		

11/2" Secondary Contained Pipework System



UPP[®] SEMI-RIGID PIPEWORK SYSTEMS

Model	Description	
04-050-EIF-U	1½" primary electrofusion 45° elbow fitting	See.
Model	Description	
04-050-L	1½" primary plain 45° elbow fitting	
Model	Description	
08-050-EIF-U	11/2" single wall electrofusion tee fitting	and the second sec
Model	Description	
08-050-L	11/2" primary plain tee fitting	A DA
Model	Description	
09-063-050-L	$2^* \times 1\%^*$ primary plain reducer fitting	C-1
Model	Description	
10-050-L	11 ¹ / ₂ * primary plug	
Model	Description	
02-63SC-U	11/2" secondary welding coupler	
Model	Description	
49-063-050-U	1½" secondary electrofusion reducer fitting	
49-063-050TP-U	11/2" secondary electrofusion reducer fitting with test port	
Model	Description	
49-110-063SC-U	$4^* \times 1\%^*$ secondary electrofusion reducer fitting	
Model	Description	
91-050 SS NPT-U	Stainless steel 1½" (pipe) \times 1½" NPT male threaded termination fitting	
91-050 NPT-U	1% (pipe) $\times 1\%$ NPT male threaded termination fitting	

UPP® SEMI-RIGID PIPEWORK SYSTEMS

Model	Description	
92-050 NPT-U	1½" (pipe) \times 1½" NPT female threaded termination fitting	
Model	Description	
92-050 UF NPT-U	$1\frac{1}{2}$ " (pipe) × $1\frac{1}{2}$ " NPT union adapter termination fitting	
11.50G	11/2" gasket	
Model	Description	
HEX 2	2" NPT X 1½" NPT Hex adapter	-
Model	Description	
303-063-EIF-U	11/2" double wall / 2" single wall electrofusion entry boot	Rep -
304-110-063-TP*	11/2" double wall ducted entry boot with ducting test port	3- 21
*For use with UPP® 4	l" ducting.	
Model	Description	
G3-063-050-U	SC 1½° Gemini 90° Elbow	S.11/

Model	Description
G4-063-050-U	SC 1½" Gemini 45° Elbow OR SC 1½" Gemini Inline Joint

Model	Description
G8-063-050-U	SC 1½" Gemini Tee



UPP® SEMI-RIGID PIPEWORK SYSTEMS



UPP® SEMI-RIGID PIPEWORK SYSTEMS

Model	Description
09-090-063-L-U	$3" \times 2"$ primary plain reducer fitting
Madal	Description
IVIOdel	Description
09-110-063-L-U	4" × 2" primary plain reducer fitting
Model	Description
10-063-L-U	2" primary plug
Model	Description
91-063 SS NPT-U	Stainless steel 2" (pipe) \times 2" NPT male threaded termination fitting
91-063-1 NPT-U	2" (pipe) \times 1½" NPT male threaded termination fitting
91-063 NPT-U	2" (pipe) \times 2" NPT male threaded termination fitting
Model	Description
02.062.1 NDT II	2" (nine) 11/" NDT female threaded termination fitting

Model	Description
92-063-1 NPT-U	2" (pipe) \times 1½" NPT female threaded termination fitting
92-063 NPT-U	2" (pipe) \times 2" NPT female threaded termination fitting

Model	Description
90-063 QL-U	2" (pipe) \times 2" quick release termination fitting

Model	Description
92-063 UF NPT-U	2" (pipe) \times 2" NPT union adapter termination fitting
11.63G	2" gasket

Model	Description
303-063-EIF-U	$1^{1\!\!2}$ double wall / 2" single wall electrofusion entry boot

Model	Description
FEB-075-M	2" (pipe) fiberglass entry boot






Franklin Fueling Systems



Model	Description	
91-090 SS NPT-U	Stainless steel 3" (pipe) \times 3" NPT male threaded termination fitting	
91-090 NPT-U	3" (pipe) \times 3" NPT male threaded termination fitting	
Model	Description	
92-090 NPT-U	3" (pipe) \times 3" NPT female threaded termination fitting	T
Model	Description	
90-090 QL-U	3^{\ast} (pipe) \times 3^{\ast} quick release termination fitting	
Model	Description	
304-110-090-U	3" electrofusion entry boot	- SP
		41 2
Model	Description	
FEB-110-M	3" electrofusion fiberglass entry boot for use with 3" pipework systems	



Model	Description	
49-110-090-U	4" × 3" secondary electrofusion reducer fitting	2
49-110-090TP-U	$4" \times 3"$ secondary electrofusion reducer fitting with test port	
Model	Description	
91-090 NPT-U	3" (pipe) $ imes$ 3" NPT male threaded termination fitting	
		100
Model	Description	
92-090 NPT-U	3" (pipe) \times 3" NPT female threaded termination fitting	
	·	
Model	Description	
10-090-L-U	3" primary plug	
Model	Description	
304-110-090-U	3" double wall electrofusion entry boot with integrated termination fitting	- 59
304-110-090TP-U	3" double wall electrofusion entry boot with integrated termination	the all
Model	Description	
FEB-110-M	3" electrofusion fiberglass entry boot for use with 3" secondary	
	contained pipework systems	
Madal	Description	.08
G3-110-090-11	SC 3" Gemini 90° Elbow	A CONTRACTOR OF
Madal		. alt
G4-110-090-U	SC 3" Gemini 45° Elbow OB SC 3" Gemini Inline Joint	And the second
2.110 000 0		
Madal		
mouer	Description	

Model	Description	10
G8-110-090-U	SC 3" Gemini Tee	



🚯 Franklin Fueling Systems

UPP[®] SEMI-RIGID PIPEWORK SYSTEMS

Model	Description	
08-110-EIF-U	4" single wall electrofusion tee fitting	
Model	Description	
10-110-L-U	4" primary plug	Or
Model	Description	-
08-110M-U	4" tee	A NA
08-200SC-U	8" tee	
Model	Description	
49-125-110-U	5" × 4" secondary electrofusion reducer fitting	
49-125-110TP-U	$5" \times 4"$ secondary electrofusion reducer fitting with test port	10
		1
Model	Description	
09.160.110(SC)	6" × 4" secondary plain reducer fitting	Carlos and
09-200-125SCM-U	8" x 4" secondary plain reduce fitting	
Model	Description	
RM-02-200-11-U	8" Coupling	
Model	Description	
91-110 NPT-U	4" (pipe) \times 4" NPT male threaded termination fitting	
		100
		A DESCRIPTION OF

Model	Description
92-110 NPT-U	4" (pipe) $ imes$ 4" NPT female threaded termination fitting

Model	Description
305-125-110-U	4" double wall electrofusion entry boot with integrated termination fitting
305-125-110TP-U	4" double wall electrofusion entry boot with integrated termination fitting and test port

Model	Description
FEB-S-125	4" electrofusion fiberglass entry boot for use with 4" pipework systems

Model	Description
G3-125-110-U	SC 4" Gemini 90° Elbow

Model	Description
G4-125-110-U	SC 4" Gemini 45° Elbow OR SC 4" Gemini Inline Joint













UPP° 4" DUCT SYSTEM

With a thick and robust wall, the new duct is equally flexible and can be welded to electrofusion entry seals and other 4" electrofusion fittings. The duct will provide a watertight chase for pipes or electrical cables when fully welded. This product is for use as an electrical duct or gravel guard for fuel pipework.

The following in-house testing has been satisfactorily carried out on the duct:

- Electrofusion trials.
- Cold temperature bending tests at -20.2 °F.
- Ball impact test at -20.2 °F.
- Pressure testing at 29 psi for 1 week.
- Drop test of coil from 6 feet.

Model DUCT-400-100	Description XP pipe ducting, 100 ft. coil	
DUCT-400-250	XP pipe ducting, 250 ft. coil	
Model 02-110-U	Description 4" primary welding coupler	
Model 02-125SC-U	Description 4" secondary welding coupler	
Model 10.125(SC)	Description 5" secondary plug	
Model 49-125-110-U 49-125-110TP-U	Description 5" × 4" secondary electrofusion reducer fitting 5" × 4" secondary electrofusion reducer fitting with test port	0

ENTRY BOOT



ELECTROFUSION FIBERGLASS ENTRY BOOT

UPP® brand electrofusion fiberglass entry boots allow you to seamlessly connect UPP® brand double wall semi-rigid pipework systems to fiberglass containment sumps.

HIGHLIGHTS

- Available in 2", 3", and 4" models for use with UPP[®] brand secondary contained pipework systems.
- Suitable for use on single and double wall containment sumps with wall thicknesses that do not exceed maximum thread width of each entry seal (4" models are not recommended for double wall or curved sump surfaces).
- Allows for electrofusion welding of secondary contained pipework directly to boot.
- Polyethylene sleeve is over-molded onto a bronze center section with multiple dovetail grooves tying the two materials together to create a watertight joint.

SPECIFICATIONS

Installation

During installation the entry seal's bronze flanges are bonded and covered with fiberglass, creating a solid bond between the boot and the sump walls. Installation requires a fiberglass seam adhesive kit, epoxy, and epoxy gun (see ordering information). Once properly installed, the boot is fully vacuum and pressure testable.

Components

- 1 Polyethylene sleeve
- 2 Brass threads
- 4 Compression disk (fixed)
- 5 Fiberglass sump wall
- Ompression disk (threading) 6 Maximum thread width







4" Fiberglass Entry Boots

Maximum Thread Width

This indicates the maximum width of the fiberglass sump wall the entry boot can accommodate.

Model	Thread With
2"Entry Boot	1-3/64" (26.5mm)
3"Entry Boot	1-3/64" (26.5mm)
4"Entry Boot	16/32" (15mm)

SPECIFICATIONS CONTINUED

2" Electrofusion Fiberglass Entry Boot

For use with 2" UPP® pipework.



3" Electrofusion Fiberglass Entry Boot

For use with 3" UPP® pipework.



4" Electrofusion Fiberglass Entry Boot

For use with 4" UPP® pipework.



ORDERING INFORMATION

Model	Description
FEB-075-M*	2" electrofusion fiberglass entry boot for use with 2" pipework
FEB-110-M*	3" electrofusion fiberglass entry boot for use with 3" pipework
FEB-S-125"	4" electrofusion fiberglass entry boot for use with 4" pipework
FG-SEAMKIT"	Fiberglass seam adhesive kit (includes matte, resin, putty and catalyst)
E32-2014-50**	Epoxy cartridge (50ml), qty 6
E32 GUN	Epoxy cartridge gun

*Additional fittings are required to complete the installation of these boots. See the Electrofusion Fiberglass Entry Boot Ordering Guide on the following page for details.

**(1) fiberglass seam adhesive kit and (1) epoxy cartridge can typically be used to complete 2 to 3 electrofusion fiberglass entry boot installations.

ENTRY BOOT

ELECTROFUSION FIBERGLASS ENTRY BOOT ORDERING GUIDE

11/2" Secondary Contained Fiberglass Sump Entry Fittings



2" Secondary Contained Fiberglass Sump Entry Fittings



3" Primary Fiberglass Sump Entry Fittings



3" Secondary Contained Fiberglass Sump Entry Fittings



4" Secondary Contained Fiberglass Sump Entry Fittings



CONTAINMENT



UPP° DISPENSER SUMPS

UPP® dispenser sumps feature a rigid 8mm thick HDPE body with reinforced contoured structure and integrated rain lip allowing them to stand up to harsh forecourt conditions such as ground movement or hydrostatic pressure. The neck of UPP® dispenser sumps can be trimmed to adjust for varying sump burial depths ensuring an efficient installation. In addition, the durable steel UPP® dispenser sump top frames feature conduit entry points which allow conduit to enter the dispenser through the top frame without having to penetrate the sump wall. The galvanized steel stabilizer bars feature pre-drilled shear valve mount plates and spring channel nuts for quick mounting. UPP® electrofusion entry boots allow you to connect UPP® pipework directly to the dispenser sump, creating a solid, one-piece construction and eliminating potential leak paths.





HIGHLIGHTS

- Rigid 8mm thick HDPE body with reinforced contoured structure and integrated rain lip provide maximum strength and durability.
- Adjustable sump neck, top frame conduit entry points, and stabilizer bar pre-drilled shear valve mounts ensure fast and efficient installation.
- Large, open entry boot face provides ample space for boot installation.
- Combine with patented UPP[®] electrofusion entry boots and pipework for fast installation while eliminating potential leak paths.

Approvals

ULc listed.

ORDERING INFORMATION

Model	Description
DS3617 ENCORE	Encore [®] dispenser sump with 36" × 17" top frame
SBK-3	Stabilizer bar kit for Encore® dispenser sump
DS3915 OVATION	Wayne® and Ovation® dispenser sump with 39" \times 15" top frame
SBK-25	Stabilizer bar kit for Wayne® and Ovation® dispenser sump

UPP° INSTALLATION TOOLS

Welding Unit Specifications

	230 V Model	110 V model
Model number	EF1-230 V	EF1-110V-A
Operating voltage	230 V AC supply	110 V AC supply
Operating frequency	45 to 65 Hz	
Operating temperature	5 °F to 113 °F	
	Color	Pin Size/Length
Single wall (primary) welding cable	Red	4mm/18'
Double wall (secondary) welding cable	Green	2mm/18'
Jumper welding cable*	Red	4mm/18'
Power supply eable	Disal	101

*Used to weld a series of single wall (primary) fittings.

230V EF1 Handheld Electrofusion Welder

Model	Description
EF1-230V	230 V EF1 handheld electrofusion welder
EF1-PC 4mm	Spare single wall (primary) welding cable (orange)
EF1-SC 2mm	Spare double wall (secondary) welding cable (green)
EF1-BC 4mm*	Spare jumper welding cable (red)
EF1-PC 2mm-10	10 amp weld lead

*Used to weld a series of single wall (primary) fittings.

110V EF1 Electrofusion Welder

Model	Description
EF1-110V-A	110 V EF1 electrofusion welder
EF1-PC 4mm	Spare single wall (primary) welding cable (orange)
EF1-SC 2mm	Spare double wall (secondary) welding cable (green)
EF1-BC 4mm*	Spare jumper welding cable (red)
EF1-PC 2mm-10	10 amp weld lead

*Used to weld a series of single wall (primary) fittings.

Pipe Cutter

Model	Description
P.CUT	11/2" to 5" pipe cutter - medium
P.CUT MED	4" to 6" pipe cutter - large

Adjustable Rotary Scraper

Model	Description
SCR-025-125	1" to 5" pipe adjustable rotary scraper
SCR-090-225	3" to 9" pipe adjustable rotary scraper
SCR-BLADE-025-225	Spare blades for adjustable rotary scraper
RS-63	63 mm (2" primary or 1.5" secondary) pipe scraper tool
RS-75	75 mm (2" primary) pipe scraper tool
RS-BLADE-40-315	Spare blade for pipe scraper tool

Handheld Scraper

Model	Description
SCR.HAR	Handheld scraper
SCR.HAR(B)	Spare blades for handheld scraper

Wooden Mallet

Model MAL1

Wooden mallet











UPP® INSTALLATION TOOLS

Pipe Clamps

Model	Description
CLAMP (S)	Straight clamp for straight joints (1" to 4" pipe)
CLAMP (A)	Angled clamp for straight and elbow joints (1" to 4" pipe)

Electrofusion Entry Boot Clamps

Model	Description
302-CLAMP	Clamp for 302 electrofusion entry boot (orange)
303-CLAMP-1	Clamp for 303 electrofusion entry boot (black)
304-CLAMP	Clamp for 304-110-090 electrofusion entry booth (yellow)

Hole Saws

Model	Description
MAN1	Mandrel (fits all hole saws)
HS3	4" hole saw for 303-063 and 303-075 electrofusion entry boots
HS3-58	3-5/8" (92mm) hole saw for FEB-075-M fiberglass entry boot
HS5	5½" hole saw for FEB-D-110-1 fiberglass entry boots
HS6	5-5/16" hole saw for 305 electrofusion entry boots
F.Driver	Driver tool
CW1	Cutting wheel

Ancillary Items

Model	Description
LDT60-1	Leak Detection (Nylon) Tube Kit (60 cm)

90 Series Wrenches

Model	Description
91-050-TOOL	PLT Spanner 50A/F 91-050
92-050-TOOL	PLT Spanner 55A/F 92-050
91-063-TOOL	PLT Spanner 62A/F 91-063
92-063-TOOL	PLT Spanner 67A/F 92-063

Towing Head for Pipe Retrofit Installations

Model	Description
TH50-SDR8	1½" single wall pipe towing head
TH63SC-SDR8	1½" double wall pipe towing head
TH75SC	2" double wall pipe towing head

Fiberglass Entry Boot Tool and Accessories

Model	Description
E32-2014-50	Epoxy cartridge (50ml)
E32 GUN	Epoxy cartridge (6 - 50ml tubs)
EMERY	Emery cloth for fiberglass entry booth sump surface preparation (sold in 1' lengths)
FIBERGLASS-KIT	Kit includes matte, resin, putty, catalyst, roller, gloves, stir sticks, squeegee, mixing containers, paint brush

*Two tools required for tightening.

Consumables Kit

Model	Description
408005901	UPP® consumables include: (1) pound of lint-free rags, (2) mark- ers, (2) one quart spray bottles, (1) box of Nitrile gloves, (2) silver markers, (1) sheet emery cloth, (2) paint scrapers

Set Up Transformer

Model	Description
408032001	Step up transformer

UPP® Essentials Tool Kit

Model	Description
408033901	UPP® essentials tool kit includes: (1) angled clamp, (1) straight clamp, (4) 303 entry boot clamps, (1) consumables kit, (1) pipe cutter, (1) rotary scraper, (1) EF1-230 V handheld welder, (1) step up transformer

🚯 Franklin Fueling Systems











CABLE TIGHT™ WIRE MANAGEMENT SYSTEM

The Cable Tight[™] wire management system provides a true watertight end-to-end solution for electrical, sensor, and data wire management. With the safe and easy electrofusion welding installation process the HDPE-constructed electrical conduit, entry seals, and sumps are joined together to form one seamless system. With no messy glues or adhesives to deal with, the electrofusion welding process is unaffected by weather or temperature. It yields consistent and accurate joints that are verified on the spot by the welder unit. The flexible conduit comes in 250', 500', 1,000' or 1,500' coils that can be rolled out into continuous runs, free of joints. These key system benefits allow you to eliminate potential leak paths from buried threaded or glued joints and rubber sump entries that may break down and leak over time.

HIGHLIGHTS

- Impact-resistant, corrosion-resistant HDPE construction stands up to harsh installation environment.
- Eliminates buried threaded, epoxy or glued joints.
- Components available in ³/₄" and 1" diameter for both polyethylene and fiberglass containment sumps.
- PE coated and spigotted rigid metal conduits can be bent using common conduit benders to accommodate junction box and electrical trough heights.

Components

SPECIFICATIONS Approvals/Certifications

- Flexible conduit (HDPE): UL Certification of Compliance to UL651A, (HPDE conduit meets NEC 2017 Code Requirements, NFPA 70-2017 (Section No. 514.8 Underground Wiring).
- Rigid metal conduits: UL Certificate of Compliance to UL6 & UL971.
- Electrofusion fittings: UL Certificate of Compliance to UL971.



ORDERING INFORMATION

¾" Cable Tight™ Wire Management System



Model	Description
000-075-250-EC	¾" flexible conduit, 250' coil
000-075-500-EC	¾" flexible conduit, 500' coil
000-075-1000-EC	¾" flexible conduit, 1,000' coil
000-075-1500-EC	¾" flexible conduit, 1,500' coil
Inside Ø 0.804" (20.4mm).	



Model	Description
000-075-06-ERMC-PE	¾" coated rigid metal conduit, 6' stick - 12 pack
Inside Ø 0.845" (21.5mm).	



Model	Description
000-075-06-ERMC	¾" spigotted rigid metal conduit, 6' stick - 12 pack
91-027 NPT	¾" spigotted rigid metal conduit, 8" stub
Inside Ø 0.845" (21.5mm).	



Model	Description
REB-C-0075	¾" fiberglass entry seal, flat surface
REB-C-R-0075	³ ⁄ ₄ " fiberglass entry seal, round surface



Model	Description
303-063	Polyethylene entry seal (used for both 34" and 1" systems)



Model	Description
49-063-031	³ / ₄ " polyethylene entry seal reducer



Model	Description
49-031-027	³ ⁄ ₄ " reducing coupler



Model	Description
02-027	³ ⁄4" coupler

ORDERING INFORMATION

1" Cable Tight™ Wire Management System



Model	Description
000-100-250-EC	1" flexible conduit, 250' coil
000-100-500-EC	1" flexible conduit, 500' coil
000-100-1000-EC	1" flexible conduit, 1,000' coil
Inside Ø 1.029" (26.0mm).	



Model	Description
000-100-06-ERMC-PE	1" coated rigid metal conduit, 6' stick - 12 pack
Inside Ø 1.063" (27.0mm).	



Model	Description
000-100-06-ERMC	1" spigotted rigid metal conduit, 6' stick - 12 pack
91-033 NPT	1" spigotted rigid metal conduit, 8" stub
Inside Ø 1.063" (27.0mm).	



Model	Description
REB-C-0100	1" fiberglass entry seal, flat surface
REB-C-R-0100	1" fiberglass entry seal, round surface



Model	Description
303-063	Polyethylene entry seal (used for both 34 " and 1" systems)



Model	Description
49-063-038	1" polyethylene entry seal reducer



Model	Description
49-038-033	1" reducing coupler



Model	Description
02-033	1" coupler

Cable Tight[™] Wire Management System Installation Tools

At the heart of the electrofusion welding process is the handheld 230 V EF1 electrofusion welder. The robust construction, water and dust-resistant housing, and easy-to-read graphic display of the electrofusion process provides installers with a durable, reliable, and simple means of installation. The handheld EF1 electrofusion welder automatically recognizes a fitting when connected with the welding cable and also checks the ambient temperature using a sensor positioned in the housing and adjusts the energy level to balance with the surrounding environment. It then applies the correct amount of energy necessary to achieve a successful weld. One welder can handle every type of electrofusion welding coupler, fitting, or entry seal and comes complete with welding leads in a lightweight carrying bag.













Model	Description
EF1-230V	Handheld electrofusion welder, 230 V, with carrying case and all necessary welding leads
408032001	Step - up transformer, required fer handheld welder operation
EF1-BC 2MM	EF1 welder bridging cable, green 2mm (for Cable Tight™ only)*
For bridge welding a maximum of (2) couplers at once	

Model	Description
408201001	Reusable flexible conduit reel

Model	Description
ROTOSCRAPER075	Drill attachment scraping tool for 3/4" (27mm) gray conduit
ROTOSCRAPER100	Drill attachment scraping tool for 1" (33mm) gray conduit

Model	Description
SCR-025-125	Rotary scraper

Model	Description
SCR.HAR	Handheld scraper
SCR.HAR(B)	Spare blades for handheld scraper

Model	Description
303-CLAMP-1	Polyethylene entry seal welding clamp (for use with P/N 303-063)

Model	Description	
408179001	¾" spigotted rigid metal conduit to ¾" flexible conduit clamp	
408179002	1" spigotted rigid metal conduit to 1" flexible conduit clamp	
408179003	¾" coated rigid metal conduit to ¾" flexible conduit clamp	
408179004	1" coated rigid metal conduit to 1" flexible conduit clamp	

Note: Either conduit clamps or straight clamps may be used to secure conduits in place during a weld.

Model	Description
408005901	Consumables kit, includes: (1) pound of lint-free rags, (2) markers, (2) one quart spray bottles, (1) box of Nitrile gloves, (2) silver markers, (1) sheet emery cloth, (2) paint scrapers

DISPENSING SYSTEMS

DISPENSING SYSTEMS

- 1 Swivel and in-line breakaways
- 2 Inverted coaxial hoses
- 3 Vapor recovery nozzles
- 4 Dispenser-mounted and central vacuum pumps



DISPENSING SYSTEMS





9961 CLEAN AIR SEPARATOR

The HEALY® clean air separator prevents excess emissions and product loss by controlling gasoline storage tank pressure. The unit works in combination with HEALY® ORVR/EVR type nozzles as part of a system that increases overall performance and efficiency.

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® EVR	VR-201	UST without ISD
components	VR-202	UST with ISD

HIGHLIGHTS

- High reliability and maintenance-free.
- No mechanical moving parts.
- No electrical connections needed.
- 5-year warranty.

Model	Description
9961*	Vertical clean air separator, includes breather assembly, 9466G float check, locking ball valves, locks and keys
9961H*	Horizontal clean air separator, includes breather assembly, 9466G float check, locking ball valves, locks and keys
9948	Breather assembly
996123	1" ball valve (4 per CAS)
996124	Brass lock for ball valve (includes key) (4 per CAS)
996125	Keys for brass lock
9466G	Float check (for use with CAS only)
405 025 001	CAS kit - parts
9943	CAS replacement bladder
*UL Listed	'

Enhanced Vapor Recovery Components



UNDERGROUND STORAGE TANKS

CARB Certified for Use With	Executive Order Number	Vacuum Source Description
600 bootless nozzle	G-70-183	VP1000
800 ORVR compatible nozzle	G-70-191	VP1000
900 ORVR compatible nozzle	G-70-191	VP1000
900 EVR/ORVR compatible nozzle with clean air separator	VR-201	VP1000 for EVR
900 EVR/ORVR compatible nozzle with clean air separator and ISD	VR-202	VP1000 for EVR and ISD

STAGE II. VAPOR RECOVERY DISPENSER -MOUNTED VACUUM SOURCES



VP1000 SERIES DISPENSER-MOUNTED VACUUM SOURCE

One vacuum pump per dispenser supplies both sides, reducing long term maintenance costs. The glass-filled Nylon vane and rotor kits power VP1000 Series dispenser-mounted vacuum sources to satisfy the vapor recovery needs of a blender or non-blender dispenser. Simple installation with no excavation minimizes downtime and labor. The VP1000 connects to the dispenser with a simple interface module without costly software changes or electronic board replacement. This is the most cost-effective dispenser-mounted vacuum-assist system on the market today.

HIGHLIGHTS

- Compatible with new and existing dispensers.
- Underground tank certification.
- Efficient vapor collection and hose clearing with a 1/8 Hp motor.
- Clean Air Separator mechanically and passively manages tank pressure to prevent fugitive emissions and eliminates evaporative product loss.
- Sensorless making for an easy install and maintenancefree solution.
- No motor binding.
- Near zero rotor replacement.

VP1000 Installation



SPECIFICATIONS

Approvals & Certifications

- UL 2447 listed
- CARB approved

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® 600 bootless nozzle	G-70-183	UST
HEALY® 800 ORVR nozzle	G-70-191	UST
HEALY® 900 EVR nozzle	VR-201 VR-202	UST UST

VP1000 Dimensions





ORDER INFO

VP1000 Dispenser Mounted Vacuum Source Kits

Each kit includes vapor and electrical conduits as listed below. One VP1000 per dispenser supplies both sides.

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MC100

ORDER INFO

VP1000 Dispenser Mounted Vacuum Source Kits (Non-Inclusive)

Kits do not include vapor and electrical conduits. Use Z070E and Z071V kits listed below. One VP1000 per dispenser supplies both sides.

Model	Description
VP1000A	For use with all dispenser types, use if a model-specific VP1000D-V is not available. Includes VP1000-5 vacuum pump, 1360A interface module and 1404 universal hardware/mounting kit.
VP1000D	Gilbarco® 300 blender dispensers only (early model AC solenoid valves, pre-April 2003). Includes VP1000-5 vacuum pump, 1368A interface module with harness and 1404 universal hardware/mounting kit.
VP1000E	International only, VP1000-220, 1380A, and 1404
VP1000G	Wayne™ DL non-blender dispensers only. Includes VP1000-5 vacuum pump, 1354A interface module with harness and 1404 universal hardware/mounting kit.
VP1000H	Tokheim™ Premier™ C blender dispensers with 24 VDC solenoids only. Includes VP1000-5 vacuum pump, 1362A interface module with harness and 1404 universal hardware/mounting kit.
VP1000J	Tokheim™ earlier-series blender dispenser with AC and DC solenoids. Includes VP1000-5 vacuum

Universal Vapor and Electrical Kits

For use with the VP1000 kits listed above.



Z070E	Electrical installation kit for VP1000 Series vacuum source, for use with VP1000A-J
Z071V	Vapor piping installation kit for VP1000 Series vacuum source, for use with VP1000A-J
Z069E	International only, 220 V electrical installation kit for VP1000E

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ORDER INFO

VP1000 Replacement Parts

Model	Description
1316	6" potted conduit assembly
1346	3" potted conduit assembly, used in Z078E, Z079E, Z080E, and Z084E
1354	Wire harness for use with Wayne™ DL non-blenders
1354A	1354 wire harness with interface module
1360	Wire harness, universal
1360A	1360 wire harness with interface module, universal
1362	Wire harness for use with Tokheim™ Premier™ C blender dispensers with 24 VDC solenoids
1362A	1362 wire harness with interface module
1363	Wire harness for use with Wayne™ 1 Vista™, and 2 Vista™ blender dispensers
1363A	1363 wire harness with interface module
1365	Wire harness for use with Wayne™ Ovation™, 3 Vista™, and 4 Vista™ dispensers
1365A	1365 wire harness with interface module
1368	Wire harness for use with Gilbarco [®] Encore [™] 300 blender dispensers, early AC solenoids, pre- April 2003
1368A	1368 wire harness with interface module
1372	For use with earlier version Tokheim [™] blender dispensers with AC and DC solenoids
1372A	1372 wire harness with interface module
1373	Wire harness for use with Gilbarco [®] Encore [™] 300 and 500 Series dispensers, with 24VDC solenoids
1373A	1373 wire harness with interface module
1374	Wire harness for use with Gasboy® 9800
1374A	1374 wire harness with interface module
1404	Universal mounting kit
144401	VP1000 front cover assembly (98008 O-ring sold separately)
13602	Spare fuse 5 A, 250 V
MC100-1	Universal interface module only
VP1000-5*	Vacuum pump only, 110 V
RVP1000-5	Rebuilt VP1000-5 vacuum pump only
VP1000-5 Core	VP1000-5 core in reusable condition for rebuild
VP1000VRC-G	VP1000 vacuum pump service kit containing glass fiber-filled vane, five vanes, and pump cover O-ring
VP1000-220*	International vacuum pump only, 220 V
MC200-1	International control module only, 220 V
131602901	International 6" potted conduit assembly, 220 V
1380	International wire harness, universal 220 V
1380A	International 1380 wire harness with interface module, universal 220 V
MC100-1 PLUG	Replacement jumper plug for interface module
98008	O-ring for VP1000 front cover
144402	VP1000 front cover assembly (international only)
VP1000VRC-G	Vane and rotor replacement, PPS
VP1000-5-B*	Vacuum pump only, 120 V, bronze rotor

*UL Recognized Component

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STAGE II. VAPOR RECOVERY DISPENSER -MOUNTED VACUUM SOURCES



VP1200 SERIES SELF-CONTAINED SUCTION PUMP DISPENSER-MOUNTED VACUUM SOURCE

Similar to the VP1000, except powered by a suction pump motor. One pump supplies both sides. Simple installation with no excavation minimizes downtime and labor; ideal for retrofitting new or existing dispensers, installs easily on a bracket or attached to the frame of the unit. High vacuum level assures clearing of flooded vapor hoses.

HIGHLIGHTS

- Small size: 5¼" × 5" × 4-3/8".
- Compatible with new and existing dispensers.
- International approvals, contact Franklin Fueling Systems.

Model	Description
VP1200-11*	Replacement for VP1200-1 bronze rotor
VP1200-13*	Replacement for VP1200-3 with flame arrester bronze rotor
VP1200-21*	Self-contained suction pump-mounted assembly with PPS rotor
VP1200-23*	Self-contained suction pump-mounted assembly with PPS rotor and with flame arrester.
VP1200VR-B	Vane and rotor kit (bronze)
VP1200VR	Vane and rotor kit
127434	Machine key, square

Note: For international markets, contact factory for additional information. Non-electric, powered by a suction dispenser pump motor.

*UL Recognized Compoenent (UL79)



VP1200 INSTALLATION



600 SERIES BOOTLESS NOZZLE

The 600 Series bootless vapor recovery nozzle is the international standard for Stage II components. For use on new or existing dispensers, it can be installed with both central or dispenser mounted vacuum sources.

HIGHLIGHTS

- Highest quality.
- Bootless design.
- Available as full-service with hold-open clip.
- Available as self-service without hold-open clip.

CARB Certified for Use With	Executive Order Number	Tank Type
9000 mini-jet	G-70-165	UST
VP500 vane pump	G-70-165	UST
VP1000 Series vacuum pump	G-70-183	UST

Model	Description
600-02G9 FS*	600 bootless nozzle, unleaded, full-service with black scuffguard** with G9 spout
600-02G9 SS*	600 bootless nozzle, unleaded, self-service with black scuffguard** with G9 spout
600-02G9 FS*	Bootless nozzle, unleaded, full-service with black scuffguard** with G9 Spout
600-02G9 FS*	Bootless nozzle, unleaded, full-service with black scuffguard** with G9 Spout
469	600 nozzle handle cover
600 Core	600 nozzle core, in reusable condition for rebuild
6030	600 nozzle scuffguard, black
6030BL	600 nozzle scuffguard, blue
6030G	600 nozzle scuffguard, green
6030GD	600 nozzle scuffguard, gold
6030R	600 nozzle scuffguard, red
6030TG	600 nozzle scuffguard, tangerine
6030W	600 nozzle scuffguard, white
6030Y	600 nozzle scuffguard, yellow
405219903	600 nozzle vapor escape guard and 6119 boot clamp, black
405220906	600 nozzle spout kit includes 6206-G9 spout, assembly, 6206-OR kit, 6188 vapor escape guard, and 6119 boot clamp
405221901	600 nozzle hold-open clip kit includes 6238-2 hold- open clip, 239-L rear guard rivet, 6249 spring, 6130- 4 lever assembly, 240-SS pal nut, 219 front guard rivet, 6358 handguard, and 235-C lever cover

"UL Listed (UL 2568)

**Nozzles are supplied with black scuffguards unless otherwise specified. To order a nozzle with a scuffguard color other than black, place appropriate "X" code after "G3" in model number, as follows: BL for blue, GD for gold, G for green, R for red, W for white or Y for yellow.

STAGE II. VAPOR RECOVERY NOZZLES



800 SERIES ORVR NOZZLE

The HEALY[®] 800 Series Onboard Refueling Vapor Recovery (ORVR) nozzle converts any new or existing dispenser to a CARB certified system for ORVR compatibility. The smart interface design will automatically detect whether a vehicle is equipped with ORVR to prevent over-pressurization caused by clean air being pulled back into the storage tank.

Available for use outside of the United States.

HIGHLIGHTS

- ORVR compatible for underground tank systems without the need for a back-end processor.
- Fills cars faster with high flow rates, while the vacuumassisted design keeps customers and forecourts clean with its dripless and spitless technology.
- Easy-to-use, durable design that captures the vapors through a reduced size boot.
- Over horizontal shut-off and no-pressure, no-flow technologies for safety.
- Available for full-service applications with three position hold-open clip.
- Available as self-service without hold-open clip.

SPECIFICATIONS

- Weight: 3.5 Lbs (1.6 Kg)
- Flow rate: 10 gpm (37.85 lpm)

Approvals/Certifications

- UL listed (UL 2586).
- CARB approved.

Replacement Spout Kit





Replacement Boot Kit

ORDERING INFORMATION

Model	Description
800-02G3 FS-3	800 ORVR compatible nozzle, unleaded, full-service, three position hold open-clip, with black scuffguard
800-02G3 SS-3	800 ORVR compatible nozzle, unleaded, self-service with black scuffguard
6408SL	800 nozzle scuffguard, silver
469	800 nozzle handle cover
6408	800 nozzle scuffguard, black
6408BL	800 nozzle scuffguard, blue
6408G	800 nozzle scuffguard, green
6408GD	800 nozzle scuffguard, gold
6408R	800 nozzle scuffguard, red
6408W	800 nozzle scuffguard, white
6408Y	800 nozzle scuffguard, yellow
405219902	800 nozzle mini-boot with face seal and 640956 boot clamp
405221902	800 nozzle three position hold-open clip kit includes 6238-2 hold-open clip, 239-L rear guard rivet, 6249 spring, 6130-4 lever assembly, 240-SS pal nut, 219 front guard rivet, 6358 hand guard, and 235-C lever cover
405220907	800 Series nozzle replacement spout kit, includes 405923901 spout assembly, 6206-OR O-ring kit, 405800901 boot assembly and 640956 boot clamp
405219902	800 Series nozzle replacement mini-boot kit, includes face seal and 640956 boot clamp

Note: Nozzles are supplied with black scuffguards unless otherwise specified. To order a nozzle with a scuffguard color other than black, place appropriate "X" code after "G3" in the model number as follows: BL for blue, GD for gold, G for green, R for red, W for white, SL for silver or Y for yellow.



900 SERIES EVR NOZZLE

HEALY® brand 900 Series EVR (enhanced vapor recovery) nozzles are the most efficient and durable gasoline nozzles on the market today. The state-of-the-art smart interface design will automatically detect whether a vehicle is equipped with Onboard Refueling Vapor Recovery (ORVR) to prevent clean air from being pulled back into the storage tank, protecting the station owner's fuel assets.

HIGHLIGHTS

- High quality, durability, and state-of-the-art engineering designed to reduce emissions caused by liquid retention and spillage.
- The boot interlock provides spitless refueling while also capturing vapors.
- Spout design provides dripless refueling.
- Features internal ORVR sensor.
- With the internal vapor flow control, vapor flow is matched to liquid flow by the nozzle itself, rather than by complex electronic controls or variable speed van pumps in the dispenser.
- This internal vapor flow control helps simplify installation, reduce system costs, and can significantly reduce downtime, system diagnostics, and maintenance costs.
- External parts are field-replaceable.
- The lightweight design makes this a very user-friendly Stage II Vapor Recovery nozzle.
- Comes with standard pressure sensing safety feature that terminates flow at the end of a prepaid sale even if the hook is still engaged.

SPECIFICATIONS

- Weight: 3.5 Lbs (1.6 Kg)
- Flow rate: 10 gpm (37.85 lpm)

Approvals/Certifications

- UL listed (UL 2586).
- CARB approved.
- CARB certified for use with VP1000 Series vacuum pumps and under ground storage tanks. (Executive Orders: G-70-191, VR-202, G-7-191)

ORDERING INFORMATION

Model	Description
900-02G3 FS	900 Series EVR/ORVR compatible nozzle, unleaded, full-service with black scuffguard*
900-02G3 RFS	Rebuilt 900 Series EVR/ORVR compatible nozzle, unleaded, full-service with black scuffguard*
900-02G3 SS	900 Series EVR/ORVR compatible nozzle, unleaded, self-service with black scuffguard*
900-02G3 RSS	Rebuilt 900 Series EVR/ORVR compatible nozzle, unleaded, self-service with black scuffguard*
469	900 Series nozzle handle cover
6408	900 Series nozzle scuffguard, black
6408BL	900 Series nozzle scuffguard, blue
6408G	900 Series nozzle scuffguard, green
6408GD	900 Series nozzle scuffguard, gold
6408R	900 Series nozzle scuffguard, red
6408W	900 Series nozzle scuffguard, white
6408Y	900 Series nozzle scuffguard, yellow
900 Core	900 Series nozzle core, in reusable condition for rebuild
405219906	900 Series nozzle replacement mini-boot kit, includes face seal and 640956 boot clamp**
405220901-EOR	900 Series nozzle replacement spout kit, includes 405765901 spout assembly, 6206-OR O-ring kit, 405800901 boot assembly and 640956 boot clamp
405221901	900 Series nozzle hold-open clip kit, includes 6238-2 hold-open clip, 239-L rear guard rivet, 6249 spring, 6130-4 lever assembly, 240-SS pal nut, 219 front guard rivet, 6358 hand guard and 235-C lever cover

*Nozzles are supplied with black scuffguards unless otherwise specified. To order a nozzle with a scuffguard color other than black, place appropriate "X" code after "G3" in model number, as follows: BL for blue, GD for gold, G for green, R for red, W for white or Y for yellow.



**Mini boot kits are replaceable only where newer style mini boots are already present. Newer style boots will have an "E" engraved inside the boot as seen to the left. All others require full spout replacement.





HOSES AND SYSTEM ACCESSORIES

Number	Description
1	75 Series coaxial hose
2	F2F2 whip hose
3	CX6-A non-vapor ready dispenser hose adapter
4	F3F2 metric-type whip hose
5	S4F2 balance-type whip hose
6	8701VV breakaway
7	807 swivel breakaway with scuffguard
8	Swivel breakaway replacement scuffguard
9	761 and 762 replacement scuffguards for 8701VV breakaway

75 SERIES COAXIAL HOSE

Manufactured with a swivel on each end to provide the ease of handling customers prefer. Inverted coaxial design reduces hose size and the steel braided, premium, abuse-resistant outer hose assures long service life and low maintenance. Available in up to 20' lengths.

F2F2 WHIP HOSE

Standard inverted coaxial with fixed, Healy® thread hose ends.

CX6-A NON-VAPOR READY DISPENSER HOSE ADAPTER

Converts a non-vapor ready conventional dispenser thread to Healy®'s inverted coaxial hose thread.

F3F2 METRIC-TYPE WHIP HOSE

Adapter-type whip hose allows direct connection to the metric balance hose outlet without the need for a hose adapter.

S4F2 BALANCE-TYPE WHIP HOSE

Adapter-type whip hose allows direct connection to the balance hose outlet without the need for a hose adapter.

S3F3 METRIC-TO-METRIC (WITH SWIVEL)

Vapor recovery hose or whip hose

8701VV BREAKAWAY

Full product and vapor shut-off, with 350 lbs separation force. Spare shear screw allows ease of field repair in the event of a drive-off.

807 SWIVEL BREAKAWAY

Breakaway and nozzle swivel in one. Allows for easier far side fueling. Full product and vapor path shut-off, with 350 lbs separation force. Spare shear screw allows ease of field repair in the event of a drive-off. All 807 swivel break away valves will come with the new scuffguard installed as a standard feature.

SWIVEL BREAKAWAY VALVE REPLACEMENT SCUFFGUARD

This CARB-approved addition to the already robust swivel break away valve design will lessen user impact, preventing premature separation of the valve.

STANDARD HEALY® AND WHIP HOSES HANGING HARDWARE SELECTION OPTIONS WITH 8701VV BREAKAWAY AND 1301 FLOW LIMITER



*UL Listed (UL 330) – Swivel and Fixed



75 Series 3/4" Standard HEALY® Hose

HEALY® straight threaded swivels at nozzle and breakaway ends.

Model	Description
75B-030-S2S2	3' standard HEALY® coaxial hose
75B-035-S2S2	3½' standard HEALY® coaxial hose
75B-040-S2S2	4' standard HEALY® coaxial hose
75B-045-S2S2	4½' standard HEALY® coaxial hose
75B-050-S2S2	5' standard HEALY® coaxial hose
75B-055-S2S2	5½' standard HEALY® coaxial hose
75B-060-S2S2	6' standard HEALY® coaxial hose
75B-065-S2S2	6½' standard HEALY® coaxial hose
75B-070-S2S2	7' standard HEALY® coaxial hose
75B-075-S2S2	7½' standard HEALY® coaxial hose
75B-080-S2S2	8' standard HEALY® coaxial hose
75B-085-S2S2	8½' standard HEALY® coaxial hose
75B-090-S2S2	9' standard HEALY® coaxial hose
75B-095-S2S2	9½' standard HEALY® coaxial hose
75B-100-S2S2	10' standard HEALY® coaxial hose
75B-105-S2S2	10½' standard HEALY® coaxial hose
75B-110-S2S2	11' standard HEALY® coaxial hose
75B-115-S2S2	11½' standard HEALY® coaxial hose
75B-120-S2S2	12' standard HEALY® coaxial hose
75B-125-S2S2	12½' standard HEALY® coaxial hose
75B-130-S2S2	13' standard HEALY® coaxial hose
75B-135-S2S2	13½' standard HEALY® coaxial hose
75B-140-S2S2	14' standard HEALY® coaxial hose

Note: HEALY® hoses are available from three feet up to 20 feet; contact factory for pricing and availability of lengths not shown. Hoses are supplied in black unless otherwise specified. To order a hose in a color other than black, replace "B" with the code as follows: BL = blue, G = green, R = red. Consult factory for pricing.

75 Series 3/4" Standard Whip Hose

For use with 8701VV breakaway and HEALY® product hose.

Model	Description
75B-008-F2F2	HEALY® straight thread, fixed ends on breakaway and dispenser ends
75B-008-F3F2	HEALY® straight thread, fixed end on breakaway end, metric thread on dispenser end
75B-008-S2F2	HEALY® straight thread, fixed end on breakaway end, swivel end on dispenser end
75B-008-S3F2	HEALY® straight thread, fixed end on breakaway end, metric swivel thread end on dispenser end
75B-010-S4F2	Fixed end on breakaway end, balance swivel end on dispenser end

Note: Hose ends are defined as follows: F2 = fixed ends with HEALY® straight thread, F3 = fixed ends with metric M-34 thread, S2 = swivel ends with HEALY® straight thread, S3 = swivel ends with metric M-34 thread, S4 = swivel ends with balance-type thread. Hoses are supplied in black unless otherwise specified. To order a hose in a color other than black, replace "B" with the code as follows: BL = blue, G = green, R = red. Consult factory for pricing.

METRIC- AND BALANCE-READY HOSES HANGING HARDWARE SELECTION OPTIONS WITH 807 SWIVEL BREAKAWAY AND 1302 FLOW LIMITER



VaporVac® is a registered trademark of Gilbarco Inc.

75 Series 3/4" HEALY® Hose for Metric-Ready Dispensers

HEALY® straight thread fixed at 807 swivel breakaway or nozzle and metric thread swivel at dispenser outlet.

Model	Description
75B-080-S3F2	8' metric-ready dispenser coaxial hose
75B-085-S3F2	8½' metric-ready dispenser coaxial hose
75B-090-S3F2	9' metric-ready dispenser coaxial hose
75B-095-S3F2	9½' metric-ready dispenser coaxial hose
75B-100-S3F2	10' metric-ready dispenser coaxial hose
75B-105-S3F2	10½' metric-ready dispenser coaxial hose
75B-110-S3F2	11' metric-ready dispenser coaxial hose
75B-115-S3F2	11½' metric-ready dispenser coaxial hose
75B-120-S3F2	12' metric-ready dispenser coaxial hose
75B-125-S3F2	12½' metric-ready dispenser coaxial hose
75B-130-S3F2	13' metric-ready dispenser coaxial hose
75B-135-S3F2	13½' metric-ready dispenser coaxial hose
75B-140-S3F2	14' metric-ready dispenser coaxial hose

Hoses are supplied in black unless otherwise specified. To order a hose in a color other than black, replace "B" with the code as follows: BL = blue, G = green, R = red. Consult factory for pricing.

75 Series 3/4" HEALY® Hose for Balance-Ready Dispensers

HEALY® straight thread fixed at 807 swivel breakaway or nozzle and balance-type thread swivel at dispenser outlet.

Model	Description
75B-080-S4F2	8' balance-ready dispenser coaxial hose
75B-085-S4F2	8½' balance-ready dispenser coaxial hose
75B-090-S4F2	9' balance-ready dispenser coaxial hose
75B-095-S4F2	9½' balance-ready dispenser coaxial hose
75B-100-S4F2	10' balance-ready dispenser coaxial hose
75B-105-S4F2	10½' balance-ready dispenser coaxial hose
75B-110-S4F2	11' balance-ready dispenser coaxial hose
75B-115-S4F2	11½' balance-ready dispenser coaxial hose
75B-120-S4F2	12' balance-ready dispenser coaxial hose
75B-125-S4F2	12½' balance-ready dispenser coaxial hose
75B-130-S4F2	13' balance-ready dispenser coaxial hose
75B-135-S4F2	13½' balance-ready dispenser coaxial hose

75B-140-S4F2 14' balance-ready dispenser coaxial hose

Note: HEALY® hoses are available from three feet up to 20 feet; contact factory for pricing and availability of lengths not shown. Hoses are supplied in black unless otherwise specified. To order a hose in a color other than black, replace "B" with the code as follows: BL = blue, G = green, R = red. Consult factory for pricing.
HOSES AND SYSTEM ACCESSORIES

75 Series Hose Adapter

Model CX6-A Description

Hose adapter, non-vapor ready, NPT (CARB and UL Recognized Component)

75 Series Standard and Balance-Ready HEALY® Hose Breakaways

Model	Description
715VV	Repair kit for 8701VV breakaway, includes valves and O-rings
761	Nozzle end for 8701VV breakaway scuffguard
762	Dispenser end for 8701VV breakaway scuffguard
787	Nickel-plated brass shear screw for 8701VV
787-1	Nickel-plated brass shear screw for 807 swivel breakaway
795	Clamp repair tool for 8701VV and 807 breakaway
807	Swivel breakaway installed between hose and nozzle (CARB)
8701VV	Standard hose breakaway with vapor path shut-off, 350 lbs strength (CARB)
Z055	O-ring kit for 8701VV with nickel-plated shear screw
405417001	807 Swivel breakaway replacement scuffguard

Dispenser Vapor Retrofit Kits*

Description
Standard for single-hose dispenser
Standard for dual-hose dispenser
Universal for six-hose multi-product dispenser
Universal for four-hose multi-product dispenser
Universal for two-hose multi-product dispenser

"Hose adapters are not included in retrofit kits.

Hose Accessories and Spare Parts

Model	Description
516	Hose end O-ring for S4 fitting, large
1301	Hose flow limiter for 8701VV standard breakaway, installed between breakaway and main hose (CARB and UL Listed)
1302	Hose flow limiter for 807 swivel breakaway, installed between main hose and nozzle (CARB and UL Listed)
HB-2	Hose end O-ring for S2 fitting, large
HB-4	Vapor end quad ring (2 required per adapter)
291	Vapor end O-ring, small (2 required per adapter)
6094	Hose end O-ring for S3 fitting, large
407924901	Anti-kink hose clamp for use with 5/8" and 3/4" hose



LOW PERMEATION COAXIAL VAPOR RECOVERY HOSE

HEALY® brand ¾" low permeation coaxial vapor recovery hose is designed for use in refueling applications requiring reduced permeation rates of 10 g/m^2/day to improve air quality and emissions. This premium hose provides long-lasting service with multi-fuel compatibility.

HIGHLIGHTS

- Premium abuse-resistant cover compound with enhanced ozone resistance for service longevity.
- Coaxial HEALY® straight thread (swivel and nonswivel), metric M-34 thread (swivel and non-swivel) and balance-type swivel thread fitting options available.

ORDERING INFORMATION

Complete model numbers have a specific order and are created using the following guidelines:

75B - A B - C D - LP

75B = ¾" Vapor Recovery Hose

A = Hose Length Feet

Use two-digit format

B = Hose Length Inches

- 0 = None
- 5 = 6" (for curb length hoses only)
- 8 = 8" (for whip length hoses only)

C and D = End Fitting Options

- F2 = Fixed HEALY® straight thread
- S2 = Swivel HEALY® straight thread
- F3 = Fixed metric M-34 thread
- S3 = Swivel metric M-34 thread
- S4 = Swivel balance-type thread

LP = Low Permeation

Curb hose example 1: 75B-115-F3F2 = $\frac{34}{2}$ vapor recovery hose, 11 feet 6 inches length, one fixed metric M-34 thread fitting and one fixed HEALY® straight thread fitting.

Whip hose example 1: 75B-008-F3F2 = 34" vapor recovery hose, 0 feet 8 inches length, one fixed metric M-34 thread fitting and one fixed HEALY® straight thread fitting.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber with fluorothermoplastic barrier layer
- Cover: Synthetic rubber
- Reinforcement: Single wire braid

• End fittings: Stainless steel

Approvals/Certifications

- Meets UL330 permeation limit of 10g/m^2/day.
- UL Listed (Swivel and Fixed)
- CARB certified.

End Fitting Options

- Fixed HEALY® straight thread (F2)
- 2 Swivel HEALY® straight thread (S2)
- 3 Fixed metric M-34 thread (F3)
- 4 Swivel metric M-34 thread (S3)
- 5 Swivel Balance-type thread (S4)



HANGING HARDWARE KITS

HEALY[®] hanging hardware kits make ordering Phase II Vapor Recovery hanging hardware for vacuum-assisted systems easy by combining everything you need into one part number. Each kit includes a 900 Series nozzle with red scuffguard, 8½' curb hose, 6' whip hose, and an in-line break away valve complete with scuffguards. Kits are available with a new nozzle as well as an option including a re-built nozzle for those participating in the HEALY[®] Trade-In Program.





Break Away & Scuff Guard

ORDERING INFORMATION

New Nozzle Hanging Hardware Kits

Model	Description
405903902	Hanging hardware kit for Phase II Vapor Recovery with new RED nozzle, includes: - EVR/EOR 900 Series nozzle with red scuff guard (900-02G3R FS) - 6' low permeation vapor recovery whip hose, swivel HEALY® thread x swivel balance thread (75B-060-S4S2-LP) - 8.5' low permeation vapor recovery curb hose swivel HEALY® thread x swivel HEALY® thread (75B-085-S2S2-LP) - In-line break away valve (8701VV) - Break away valve scuff guard top and bottom (761, 762) - Anti-Kink Hose Clamp (407924901)
405903904	Hanging hardware kit for Phase II Vapor Recovery with new BLACK nozzle, includes: - EVR/EOR 900 Series nozzle with black scuff guard (900-02G3 FS) - 1' low permeation vapor recovery whip hose, swivel HEALY® thread x swivel balance thread (75B-010-S4S2-LP) - 8' low permeation vapor recovery curb hose swivel HEALY® thread x swivel HEALY® thread (75B-080-S2S2-LP) - In-line break away valve (8701VV) - Break away valve scuff guard top and bottom (761, 762)

Re-Built Nozzle Hanging Hardware Kits

Model	Description	
405903903	Hanging hardware kit for Phase II Vapor Recovery with re-built RED nozzle, includes: - EVR/EOR 900 Series nozzle with red scuff guard (900-02G3R RFS) - 6' low permeation vapor recovery whip hose, swivel HEALY® thread x swivel balance thread (75B-060-S4S2-LP) - 8.5' low permeation vapor recovery curb hose swivel HEALY® thread x swivel HEALY® thread (75B-085-S2S2-LP) - In-line break away valve (8701VV) - Break away valve scuff guard top and bottom (761, 762) - Anti-Kink Hose Clamp (407924901)	Anti-Kink Hose Clamp
405903905	Hanging hardware kit for Phase II Vapor Recovery with re-built BLACK nozzle, includes: - EVR/EOR 900 Series nozzle with black scuff guard (900-02G3 RFS) - 1' low permeation vapor recovery whip hose, swivel HEALY® thread x swivel balance thread (75B-010-S4S2-LP) - 8' low permeation vapor recovery curb hose swivel HEALY® thread x swivel HEALY® thread (75B-080-S2S2-LP) - In-line break away valve (8701VV) - Break away valve scuff guard top and bottom (761, 762)	



STAGE II. VAPOR RECOVERY CENTRAL VACUUM SOURCES



9000 SERIES MINI-JET CENTRAL VACUUM PUMP

The popular, non-electric mini-jet offers the ultimate in versatility utilizing an existing STP's product flow to create vacuum for vapor recovery. One mini-jet can handle eight fueling positions with four nozzles in simultaneous full flow operation. Additional mini-jets can be added for larger sites. Provides high reliability and low maintenance. High vacuum level assures clearing of flooded vapor hoses.

HIGHLIGHTS

- No electrical hook-up.
- No moving parts creating vacuum.
- Installs in standard existing STP tank sump.

Model	Description	
9000-02*	9000 mini-jet, non-electric with syphon port, can handle eight fueling positions with four nozzles in simultaneous full flow	
650-104-02	9000 mini-jet check valve strainer assembly (replaces 912A)	
940A	Vacuum regulator upgrade kit	
965	O-ring (1 per cover)	
CV4	O-ring, for strainer assembly	

Note: Central vacuum source installations may require the use of a vapor recovery monitor assembly.

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® 600 bootless nozzle	G-70-165	UST
HEALY® 400 nozzle	G-70-187	AST

*UL Listed (UL 79)





STAGE II. VAPOR RECOVERY CENTRAL VACUUM SOURCES



VP500 CENTRAL VACUUM VANE PUMP

Provides the ultimate in central vacuum versatility. 115/230 VAC ----50/60 Hz application. High vacuum level assures clearing of flooded vapor hoses. Available in two versions. VP500B for mounting in a STP sump. Handles 10 fueling positions with five nozzles in simultaneous full flow operation.

HIGHLIGHTS

- Flexible installation options.
- Low cost installation and operation.
- Unsurpassed low maintenance.

Model	Description
VP500B*	VP500 vane pump with U-bolts and angle bracket for mounting, handles 10 fueling positions with five nozzles in simultaneous full flow
VP500*	Replacement VP500 vane pump with regulator and flame arrester assembly
VP500VR-3	VP500 vane and rotor replacement kit, pin drive
5007A	Regulator assembly
9214	VP500 flame arrester

Note: Central vacuum source installation may require the use of a vapor recovery monitor assembly.

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® 600 bootless nozzle	G-70-165	UST
*UL Listed (UL 79)		



9466 Check Valve

VAPOR RECOVERY TEST EQUIPMENT

This testing equipment is for use with HEALY® Stage II Vapor Recovery equipment.

ORDERING INFORMATION

Model	Description
405803901	Surrogate spout assembly, for use with 800/900 Series nozzles only
9968	Clean air separator test port assembly
2302A	Gauge kit, 1-0-1" water column
6059	Spout adapter, air/liquid ratio test, for use with 600 Series nozzle only
8034-3	Spout adapter, air/liquid ratio test, for use with 800/900 Series nozzles only
8175-3	Surrogate spout assembly including 8034-3 for use with 800/900 Series nozzles only
939349A	Gauge kit, 0-100" water column
Z076	Roots® meter package, 600 Series nozzle, includes Roots® vapor recovery meter, flange kit, 2" NPT × ½" NPT reducer, 6' × ¾" hose, 600 Series nozzle spout adapter and two ½" NPT × ¾" hose barb fittings
Z077	Roots [®] meter package, 700/800/900 ORVR nozzle, includes Roots [®] vapor recovery meter, flange kit, 2" NPT $\times \frac{1}{2}$ " NPT reducer, 6' $\times \frac{3}{4}$ " hose, ORVR nozzle spout adapter and two $\frac{1}{2}$ " NPT $\times \frac{3}{4}$ " hose barb fittings
63034	O-ring, for 8034-3 spout adapter
8006	Magnet Strip Assembly (for use with spout adapter 8034-3)

Roots[™] is a trademark of Dresser Inc.





FLEX-ONTM HARDWALL HOSE

FLEX-ING[®] brand FLEX-ON[™] hardwall hose features an abuse-resistant, solid wire braid construction that prevents kinking and assures a long service life and minimal maintenance. The ozone-resistant outer hose construction prevents ozone cracking and wear. This high quality hose offering features robust hose and fitting designs built to stand up to the harshest forecourt conditions.

HIGHLIGHTS

- Available in 5/8", 3/4", and 1" diameters, a variety of curb and whip hose lengths, and fixed or swivel fitting options.
- Resistant to ozone cracking and wear.
- High gloss cover retains color quality.
- Stainless steel ferrules and fluoroelastomer seals to ensure compatibility with gasoline, diesel, Ethanol blends (up to E10) and Biodiesel blends (up to B5).
- Compatible with reel or retractable cable dispensing applications.

SPECIFICATIONS

- Tube: Synthetic rubber
- Cover: Ozone-resistant rubber
- Fittings: Machined nickel-plated carbon steel with chrome finish
- Reinforcement: Hardwall wire braided
- Temperature rating: -40 °F to 140 °F (-40 °C to 60 °C)
- For use with gasoline, diesel, Ethanol blends (up to E10) and Biodiesel blends (up to B5).

Approvals/Certifications

• UL and cUL listed (UL 330, CAN/ULC-S612).

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

FLHFR A B C D E

FLHFR = FLEX-ON[™] Hardwall Hose

3 = 1"

A = Hose Diameter

1 = 5/8" $2 = \frac{3}{4}$ "

B = Hose Length Feet

Use three-digit format

C = Hose Length Inches Use two-digit format

D = Hose Color Options

Blank = Black	GR = Greer
YL = Yellow	BL = Blue
RD = Red	

E = Swivel Options

Blank = No Swivels

SWOF = Swivel on one end

SWEE = Swivel on both ends

Example: FLHFR200806YLSWOE = FLEX-ON™ hardwall hose, ¾" diameter, 8 feet, 6 inches length, yellow color, swivel on one end.



HIGHLIGHTS

- Available in ³/₄" and 1" diameters, a variety of curb and whip hose lengths, and fixed or swivel fitting options.
- Available with swivel fitting option for enhanced ease of use.
- The minimally designed structure promotes the high flexibility perfect for longer length applications requiring a retractor or reel.
- The lightweight design is ideal for longer length applications to ensure easy maneuverability of the hose over long distances.
- An integrated fitting spring extends inside the 3/4" hose to provide extra strength and prevent kinking at hose ends.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber
- Cover: Synthetic rubber
- Fittings: Machined nickel-plated carbon steel with chrome finish
- Reinforcement: Spiral synthetic yarn with static wire
- Temperature rating: -40 °F to 140 °F (-40 °C to 60 °C)
- For use with gasoline, diesel, Ethanol blends (up to E10) and Biodiesel blends (up to B5).

Approvals/Certifications

• UL and cUL listed (UL 330, CAN/ULC-S612).

FLEX-ON™ SOFTWALL HOSE

FLEX-ING[®] brand FLEX-ON[™] softwall hoses provide a highly flexible, economical alternative to hardwall hose. Softwall hoses offer additional flexibility making them ideal for reel or retractor applications where longer hose lengths are required.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

FLXSW A B C D FLXSW = FLEX-ON™ Softwall Hose

A = Hose Diameter

- 2 = 3/4"
- 3 = 1"
- B = Hose Length Feet

Use three-digit format

C = Hose Length Inches Use two-digit format

D = Swivel Options

- Blank = No Swivels
- SWOE = Swivel on one end

SWEE = Swivel on both ends

Example: FLXSW201006SWOE = FLEX-ONTM softwall hose, $\%^*$ diameter, 10 feet, 6 inches, swivel on one end.





FLEX-ON™ MARINA HOSE

FLEX-ING[®] brand FLEX-ON[™] marina hose is designed for dispensing gasoline to personal watercraft, boats, and commercial boats at both fresh and salt water marinas. These hoses feature robust hose and fitting designs that are built to stand up to the harshest conditions.



HIGHLIGHTS

- Available in blue and green
- Available in 3/4" and 1".
- Available with swivel fitting option for enhanced ease of use.
- The minimally designed structure promotes the high flexibility perfect for longer length applications requiring a retractor or reel.
- The lightweight design is ideal for longer length applications to ensure easy maneuverability of the hose over long distances.
- An integrated fitting spring extends inside the 3/4" hose to provide extra strength and prevent kinking at hose ends.

SPECIFICATIONS

- Tube: Synthetic rubber, oil resistant sheet
- Cover: Synthetic rubber, oil resistant sheet, non-marking
- Fittings: Machined nickel-plated steel with chrome finish and aluminum ferrules
- Reinforcement: Braided two-layer synthetic yarn with static wire
- Temperature rating: -40 °F to 140 °F (-40 °C to 60 °C)

Approvals/Certifications

• UL and ULc listed (UL 330, CAN/ULC-S612).

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

FLXBM A B C D

FLXBM = FLEX-ON[™] Marina Hose

A = Hose Diameter

- 2 = 3/4"
- 3 = 1"
- B = Hose Length Feet

Use three-digit format

C = Hose Length Inches Use two-digit format

D = Swivel Options

- Blank = No Swivels
- SWOE = Swivel on one end
- SWEE = Swivel on both ends

Example: FLXBM201006SWOEBL = FLEX-ON™ marina hose, ¾* diameter, 10 feet, 6 inches, swivel on one end.

 $\mathsf{FLXBM201006BLSWOE}=\mathsf{FLEX-ON^{IM}}$ Marina Hose, <code>BLUE</code>, % " diameter, 10 feet, 6 inches, swivel on one end.



HARDWALL SERVICE STATION AIR HOSE

FLEX-ING® brand ¼" hardwall service station air hose is designed for tire inflation service from towers, reels or curb connections.

HIGHLIGHTS

- Black or red color options to match station branding.
- Available with female swivel on one end.
- Durable synthetic rubber cover resists cracking.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber, RMA Class B (medium/high oil resistance)
- Cover: Red or black Nitrile synthetic rubber, abrasion- and oil-resistant, RMA Class B (medium/ high oil resistance)
- Reinforcement: Braided (1) steel wire braid
- Fittings: Brass NPT
- Working pressure: 250 psi
- Temperature: -20 °F to 160 °F (-40 °C to 71 °C)

ORDERING INFORMATION

Model	Description
FLBAH25X025	$\frac{1}{4}$ " \times 25' service station air hose, black
FLRAH25X025	$\frac{1}{4}$ " \times 25' service station air hose, red
FLBAH25X025-FSWOE	Hose, air, swivel one end, BLK 1/4" \times 25' ASM
FLRAH25X025-FSWOE	Hose, air, swivel one end, RED ¼" × 25' ASM
FLBAH25X050	$\ensuremath{^{\prime\prime}}\xspace \times$ 50' service station air hose, black
FLRAH25X050	$\frac{1}{4}$ " \times 50' service station air hose, red
FLBAH25X050-FSWOE	Hose, air, swivel one end, BLK 1/4" \times 50' ASM
FLRAH25X050-FSWOE	Hose, air, swivel one end, RED ¼" × 50' ASM

DIMENSIONS									
ID		Nom. OD		Max. WP		Weight			
	mm	In	mm	psi.	Мра	Lb/Ft	kg/m		
1⁄4	6.4	0.61	15.5	250	1.72	0.18	0.28		



SOFTWALL SERVICE STATION AIR HOSE

FLEX-ING[®] brand ¹/₄" softwall service station air hose is an economical air and water hose ideal for a wide range of industrial, construction, and agricultural applications.



HIGHLIGHTS

- Black, red, or blue color options to match station branding.
- Durable synthetic rubber cover resists cracking.
- * Available with female swivel on one end.

SPECIFICATIONS

- Tube: Versigard[®] synthetic rubber, RMA Class C (limited oil resistance)
- Cover: Black, red, yellow, green or blue Versigard® synthetic rubber
- Reinforcement: Spiral synthetic yarn
- Fittings: Brass NPT
- Working pressure: 200 psi
- Temperature: -40 °F to 160 °F (-40 °C to 71 °C)

ORDERING INFORMATION

Model	Description
FLXAH25X025BK	$\frac{1}{2} \times 25'$ service station air hose, black
FLXAH25X025BL	$\frac{1}{4} \times 25$ ' service station air hose, blue
FLXAH25X025RD	$\ensuremath{^{\prime\prime}}\times25'$ service station air hose, red
FLXAH25X025-FSWOEBK	Hose, air, swivel one end, black $\frac{1}{4}$ × 25' ASM
FLXAH25X025-FSWOEBL	Hose, air, swivel one end, blue $^{1\!\!/}_{4}$ \times 25' ASM
FLXAH25X025-FSWOERD	Hose, air, swivel one end, red ¼" × 25' ASM
FLXAH25X050BK	$\ensuremath{^{\prime\prime}}\xspace \times$ 50' service station air hose, black
FLXAH25X050BL	$\frac{1}{4}$ " \times 50' service station air hose, blue
FLXAH25X050RD	$\ensuremath{^{\prime\prime}}\xspace \times$ 50' service station air hose, red
FLXAH25X050-FSWOEBK	Hose, air, swivel one end, black $\frac{1}{4}$ × 50' ASM
FLXAH25X050-FSWOEBL	Hose, air, swivel one end, blue $\frac{1}{4}$ × 50' ASM
FLXAH25X050-FSWOERD	Hose, air, swivel one end, red $\frac{1}{4}$ × 50' ASM

DIMENSIONS

ID		Nom. OD		Max. WP		Weight	
In	mm	In	mm	psi.	Мра	Lb/Ft	kg/m
1⁄4	6.4	0.53	13.5	200	1.38	0.10	0.15



COLD WEATHER HOSE ASSEMBLY

FLEX-ING[®] brand cold weather hose is designed for dispensing gasoline in extremely cold environments. This hose is designed to remain flexible in environments where temperatures reach as low as -65 °F (-54 °C). Each end fitting is assembled onto the hose with exacting precision and then fully tested before leaving the factory.

HIGHLIGHTS

- Available in ¾" and 1".
- Premium extra thick hose construction for superior performance in cold environments.
- Available with fixed fittings.
- Compatible with reel or retractable cable dispensing applications.

SPECIFICATIONS

- Tube: Black, low-temperature synthetic rubber
- Cover: Black, low temperature synthetic rubber (wrapped finish)
- Fittings: Machined nickel-platted steel with chrome finish and aluminum ferrules
- Reinforcement: Braided synthetic yarn with antistatic wire
- Temperature rating: -65 °F to 140 °F (-54 °C to 60 °C)
- For use with gasoline, diesel, ethanol blends and biodiesel blends (up to E10)

Approvals/Certifications

298

• UL and cUL listed (UL 330, CAN/ULC-S612) fixed end fittings only.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

FLXCW A B C

FLXCW = FLEX-COLD Cold Weather Hose

A = Hose Diameter

- 2 = 3/4 "
- 3 = 1"
- **B** = Hose Length Feet

Use three-digit format

C = Hose Length Inches

Use two-digit format

Example: FLXCW200906 = FLEX-COLD Cold Weather Hose, 4'' diameter, 9 feet, 6 inches.



E-85 ETHANOL HOSE ASSEMBLY

E-85 Ethanol Hose is designed for dispensing applications with ethanol blends up to 85%. These hoses feature an abuse-resistant, solid wire braid construction that prevents kinking and assures a long service life and minimal maintenance.

HIGHLIGHTS

- Available in 3/4" with NPT fixed end fittings in a variety of curb and whip hose lengths.
- Resistant to ozone cracking and wear.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber
- Cover: Synthetic rubber (wrapped finish)
- Fittings: Zinc alloy, 3/4" NPT
- Reinforcement: Wire braid
- Temperature rating: -40 °F to 140 °F (-40 °C to 60 °C)
- For use with ethanol blends up to E-85

Approvals/Certifications

• UL listed to UL330 / UL330A.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

Example: FLXE200009 = ¾" E-85 Ethanol Hose, 0 feet, 9

inches in length (whip hose)

Example: FLXE200906 = 34"

E-85 Ethanol Hose, 9 feet, 6

inches in length (curb hose)

FLXE2 A B

FLXE2 = ¾" E-85 Ethanol Hose

- A = Hose Length Feet
- Use three-digit format
- B = Hose Length Inches

Use two-digit format

Common Hose Lengths

Model	Description
FLXE200009	9" (whip) E-85 ethanol hose, ¾"
FLXE200100	1' E-85 ethanol hose, ¾"
FLXE200800	8' E-85 ethanol hose, ¾"
FLXE200806	8½' E-85 ethanol hose, ¾"
FLXE200900	9' E-85 ethanol hose, ¾"
FLXE200906	9½' E-85 ethanol hose, ¾"
FLXE201000	10' E-85 ethanol hose, ¾"
FLXE201100	11' E-85 ethanol hose, ¾"
FLXE201200	12' E-85 ethanol hose, ¾"
FLXE201400	14' E-85 ethanol hose, ¾"
FLXE201600	16' E-85 ethanol hose, ¾"
FLXE201700	17' E-85 ethanol hose, ¾"
FLXE201800	18' E-85 ethanol hose, ¾"
FLXE202000	20' E-85 ethanol hose, ¾"
FLXE205000	50' E-85 ethanol hose, ¾"



E-25 ETHANOL HOSE ASSEMBLY

E-25 Ethanol Hose is designed for dispensing applications with ethanol blends up to 25%. These hoses feature an abuse-resistant, solid wire braid construction that prevents kinking and assures a long service life and minimal maintenance.

HIGHLIGHTS

- Available in 3/4" with NPT fixed end fittings in a variety of curb and whip hose lengths.
- Resistant to ozone cracking and wear.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber
- Cover: Synthetic rubber (wrapped finish)
- Fittings: Zinc alloy, 3/4" NPT
- Reinforcement: Wire braid
- Temperature rating: -40 °F to 140 °F (-40 °C to 60 °C)
- For use with ethanol blends up to E-25

Approvals/Certifications

• UL listed to UL330 / UL330A.

ORDERING INFORMATION

Ordering Guide

Complete part numbers have a specific order and are created using the following guidelines:

Example: FL25E200009 = 3/4"

E-25 Ethanol Hose, 0 feet, 9

inches in length (whip hose)

Example: FL25E200906 = 34"

E-25 Ethanol Hose, 9 feet, 6

inches in length (curb hose)

FL25E2 A B

FL25E2 = ¾" E-25 Ethanol Hose

- A = Hose Length Feet
- Use three-digit format
- B = Hose Length Inches
 - Use two-digit format

Common Hose Lengths

Model	Description
FL25E200008	8" (whip) E-25 ethanol hose, ¾"
FL25E200009	9" (whip) E-25 ethanol hose, ¾"
FL25E200100	1' E-25 ethanol hose, ¾"
FL25E200300	3' E-25 ethanol hose, ¾"
FL25E200500	5' E-25 ethanol hose, ¾"
FL25E200600	6' E-25 ethanol hose, ¾"
FL25E200800	8' E-25 ethanol hose, ¾"
FL25E200806	8½' E-25 ethanol hose, ¾"
FL25E200900	9' E-25 ethanol hose, ¾"
FL25E201000	10' E-25 ethanol hose, ¾"
FL25E201200	12' E-25 ethanol hose, ¾"
FL25E201800	18' E-25 ethanol hose, ¾"



LOW PERMEATION HOSE

Low permeation hose is designed for use in refueling applications requiring reduced permeation rates of 10 g/m^2/ day to improve air quality and emissions. This premium hose provides long-lasting service with multi-fuel compatibility.

HIGHLIGHTS

- Premium abuse-resistant cover compound with enhanced ozone resistance for service longevity.
- Male end fittings available as non-swivel or with swivel on one end.

SPECIFICATIONS

- Tube: Nitrile synthetic rubber with fluorothermoplastic barrier layer
- Cover: Synthtic rubber
- Reinforcement: Single wire braid
- Non-swivel end fittings: Zinc alloy with aluminum ferrule
- Swivel end fittings: Chrome plated brass swivel, zinc alloy nut with aluminum ferrule
- Permeation: Meets UL330 permeation limit of 10g/ m^2/day
- Continental[™] / ContiTech[™] branding on hose

Approvals/Certifications

- CARB and UL330 listed.
- Meets UL330 permeation limit of 10g/m^2/day.

Note: The minimum order quantity is 10 hoses.

ORDERING INFORMATION

Model	Description
FLHLP200009	$^{3\!\!4"}\times9"$ low permeation whip hose, non-swivel
FLHLP200010	$\frac{3}{4}$ " \times 10" low permeation whip hose, non-swivel
FLHLP200100	$\frac{3}{4}$ " \times 8' low permeation hose, non-swivel
FLHLP200800	$\frac{3}{4}$ " \times 8' low permeation hose, non-swivel
FLHLP200900	$\frac{3}{4}$ " \times 9' low permeation hose, non-swivel
FLHLP200906	$\frac{3}{4}$ " × 9'6" low permeation hose, non-swivel
FLHLP201000	$\frac{3}{4}$ " \times 10' low permeation hose, non-swivel
FLHLP201100	$\frac{3}{4}$ " \times 11' low permeation hose, non-swivel
FLHLP201200	$\frac{3}{4}$ × 12' low permeation hose, non-swivel
FLHLP200800SWOE	$^{3\!\!/}$ \times 8' low permeation whip hose, swivel on one end
FLHLP200806SWOE	$3\!\!\!/^{\!\!\!\!\!\!}\times8'6"$ low permeation whip hose, swivel on one end
FLHLP200900SWOE	$3\!$
FLHLP200906SWOE	$3\!\!\!/ ^{\!$
FLHLP201000SWOE	$3\!\!\!/ ^{\!$
FLHLP201006SWOE	$3\!\!\!/ 4" \times 10'6"$ low permeation whip hose, swivel on one end
FLHLP201100SWOE	$3\!$
FLHLP201200SWOE	$3\!\!\!/4"\times12'$ low permeation whip hose, swivel on one end



SPECIFICATIONS

- Tube: Nitrile synthetic rubber (ORS)
- Cover: Black Chemivic[™] synthetic rubber (ORS)
- Reinforcement: Spiral synthetic yarn
- Temperature: -30 °F to 140 °F (-34 °C to 60 °C)
- Packaging: Available in bulk or coupled lengths, 10 hoses per box
- Couplings: Zinc w/Zinc-plated fittings and aluminum ferrules
- Non-Stock/Sizes: For special lengths not contained in our price book, contact Customer Service

ID		Nom	. OD	Weight		
In	mm	In	mm	Lb/Ft	kg/m	
3⁄4	19.1	1.11	28.2	0.27	0.40	
1	25.4	1.40	35.6	0.52	0.77	

AGRI-FLEX™ FARM HOSE WITH STATIC WIRE

FLEX-ING[®] brand AGRI-FLEX[™] farm hose is a multi-use type hose for dispensing gasoline, grease, kerosene, and petroleum oils from farm and barrel-type pumps. This hose features an integrated static wire and is ideal for agricultural, construction, and industrial service applications where UL approval is not required.

ORDERING GUIDE

FTSW A B C FTSW = AGRI-FLEX™ Farm Hose A = Hose Diameter

2 = 3/4"

3 = 1"

B = Hose Length Feet

Use three-digit format

C= Hose Length Inches*

Use two-digit format

Example:

FTSW201006 =

AGRI-FLEXTM Farm Hose, 34" diameter, 10 feet, 6 inches in length.*

*Note: Available in 6" increments only.



AVIATION HOSE

FLEX-ING[®] brand aviation hose is designed for fueling or defueling commercial and private aircraft. The hose is compatible with jet fuel and higher aromatic aviation fuels. A high working pressure allows use in fuel cart hydrant service applications.

SPECIFICATIONS

- Tube: Black Nitrile synthetic rubber
- Cover: Black Wingprene[®] (oil resistant sheet) static dissipating/static conductive synthetic rubber
- Reinforcement: Spiral-plied synthetic fabric
- Fittings: Brass NPT
- Temperature: -35 °F to 200 °F (-37 °C to 93 °C)

ID		Nom. OD		Max. WP		Weight	
	mm	In	mm	psi.	Mpa	Lb/Ft	kg/m
1	25.4	1.58	40.1	300	2.07	0.63	0.94
1¼	31.8	1.89	48.0	300	2.07	0.84	1.25
1½	38.1	2.13	69.1	300	2.07	0.96	1.43
2	50.8	2.72	81.1	300	2.07	1.43	2.13
21⁄2	63.5	3.22	80.3	300	2.07	1.72	2.56
3	76.2	3.70	94.0	300	2.07	2.02	3.01
4	101.6	4.80	121.9	300	2.07	2.89	4.30

Note: This product may require up to a 30 day lead time. No returns of this product will be accepted unless it is returned due to a warranty issue

ORDERING GUIDE

AV A X B MXMWING

AV = Aviation Hose

A = Hose Diameter

16 =	1"
20 =	1¼"
24 =	11⁄2"
32 =	2"
40 =	21⁄2"
48 =	3"
64 =	4"

B = Hose Length Feet

Use three-digit format

MXMWING = Male X Male Fittings

Example:

AV24X025MXMWING =

Aviation hose, $1\frac{1}{2}$ " diameter, 25 feet length, male \times male fittings.

APPROVALS

• Meets API Bulletin 1529-6th edition, 2005 and N.F.P.A. Bulletin #407 (2007 revision)



Anti-Kink Hose Clamp



HIGHLIGHTS

- Rust-resistant epoxy-coated cast iron body.
- Swivel head with 360° rotation for service in any direction and 2" NPT female inlet threads directly onto locally supplied 2 " pipe.
- Hose retriever kit (HRTRVR) includes 20' of 1/8" stainless steel aircraft cable, 20 lbs steel counterweight, plated steel pulley, two adjustable stainless steel clamps, and all necessary hardware for easy installation.
- Hose retriever base plate and hose clamp or hose support available to complete the hose retriever system.
- Installs on a locally supplied 2" pipe.
- Hose retriever base plate allows you to avoid breaking concrete for installation.

ORDERING INFORMATION

Model	Description				
HRTRVR	Hose retriever kit including head with 2" NPT inlet, cable, counterweight, pulley, and clamps				
HRTRVRBASE	Hose retriever base plate, 2" NPT inlet				
407924901	Anti-kink hose clamp for 5/8" or 3/4" hose				
HB100	1" hose diameter hose support				
HB125	1¼" hose diameter hose support				
HB150	1½" hose diameter hose support				
HRTRTR	Hose retractor, 20 lbs counterweight, 30 lbs				

HOSE RETRIEVER SYSTEM

FLEX-ING[®] brand hose retrievers are used to keep excess hose raised off the ground at sites which typically use long hoses such as truck refueling sites. The hose retriever prevents safety hazards, kinks, tangles, and prolongs the life of the hose. Combine the hose retriever with the hose retriever base plate and hose support for a complete hose retriever system.

SPECIFICATIONS

- Head and body: Cast iron
- Cable: Stainless steel
- Base: Steel
- Recommended installation height if installed with hose retriever base plate is 10'6" maximum pipe length.
- Recommended installation height if installed without hose retriever base plate is 17' maximum pipe length with minimum of 18" buried in concrete.

System Diagram



(Sold Separately)

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402 SERIES UTILITY NOZZLE

The economical EBW®[®] brand 402 Series utility nozzle is constructed of high tensile strength aluminum alloy. Its angled design allows more efficient fueling positions by reducing hose wear and pinch points.

SPECIFICATIONS

- Spout: 15/16" aluminum (leaded), 13/16" aluminum (unleaded)
- Body: Heat-treated aluminum
- Poppet seal: UL listed Nitrile
- Weight: 1.31 Lbs (0.59 Kg)
- For use with gasoline, diesel and Ethanol blends up to E15.

Approvals/Certifications

• UL listed (UL 2586).

ORDERING INFORMATION

Model	Description
402315901	¾" utility nozzle, leaded spout
402315902	1" utility nozzle, leaded spout
402315903	34" utility nozzle, unleaded spout
402315904	1" utility nozzle, unleaded spout
90003	Utility nozzle service kit, includes: O-ring, seal ring, and poppet assembly



410 FUEL OIL DELIVERY NOZZLE

The EBW® 410 fuel oil delivery nozzle has hold-open notches and a lever pin bushing made of Nylafil, which resists wear five times longer than metal and is unaffected by temperature extremes. This is the most rugged nozzle available with a heavy-duty body and increased wear lugs. Dashpot construction ensures smooth opening, shockproof closure, and maximum flow.

Note: Tubes not included and must be ordered separately.

WARNING: This is a non-automatic nozzle with a manually operated latch which will not shut-off automatically. Use should be limited to applications sanctioned by OSHA, State Fire Marshal Codes, and other appropriate regulating bodies and/or safety codes.

HIGHLIGHTS

- 100 psi rating.
- Aluminum body.
- Stainless steel stem.
- PTFE-impregnated graphite package.
- Fluorocarbon disc.
- Patent number 3285564.

Madal	Inlet Size		Outlet Size		Weight	
woder	In	mm	In	mm	Lbs	Kg
41030003	1.25	31.90	1.25	31.90	1.31	0.59
41040103	1.50	38.30	1.50	38.30	1.31	0.59

MATERIALS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.



415 AUTOMATIC BULK FUELING NOZZLE

The automatic bulk fueling nozzle is an extra heavy-duty, high flow fuel dispensing nozzle designed for bulk fueling operations such as marine/truck/bus dispensing or home fuel oil delivery. This nozzle comes complete with automatic venturi shut-off and a dual position, hold-open mechanism.

HIGHLIGHTS

- Extra large hand opening to accommodate gloves or mittens.
- Check valve is in nozzle body, not spout, for inexpensive, fast spout replacement.
- Self-adjusting stem packing means no field adjustment is required.
- Automatic shut-off with dual poppets for easy opening.
- Two position hold-open latch.
- Right angle design allows nozzle to fit close to walls and corners.
- Cast-in protective standoffs provide durability with rough usage.

Madal	Inlet	Size	Weight			
IVIOUEI	In	mm	Lbs	Kg		
41511001	1.50	38.10	7.30	3.31		
Model		Desci	ription			
415415001	415 nozzle replacement spout assembly					

MATERIALS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.



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490 DUAL POPPET NOZZLE

This nozzle fulfills your requirements when dashpot construction is not required. The same rugged construction and long wear features of the 410 dashpot nozzle have also been built into this model.

Note: Tubes not included and must be ordered separately.

WARNING: This is a non-automatic nozzle with a manually operated latch which will not shut-off automatically. Use should be limited to applications sanctioned by OSHA, State Fire Marshal Codes, and other appropriate regulating bodies and/or safety codes.

HIGHLIGHTS

- 50 psi rating.
- Aluminum body.
- Stainless steel stem.
- PTFE-impregnated graphite.
- Patent number 3,285,564.

Madal	Inlet Size		Outle	t Size	Weight	
IVIOUEI	In	mm	In	mm	Lbs	Kg
49030105	1.00	25.50	1.25	31.90	1.38	0.62
49030106	1.25	31.90	1.25	31.90	1.38	0.62
49030201	1.25	38.30	1.50	38.3	1.38	0.62

MATERIALS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.



498 MANUAL NOZZLE

The 498 manual nozzle has a cast aluminum body, stainless steel trim, and aluminum chrome plated parts for trouble-free service and easy operation. In addition, this nozzle's high flow, minimum pressure loss and excellent throttling characteristics provide fast and accurate deliveries with top-off control.

SPECIFICATIONS

- Spout: 15/16" aluminum (leaded)
- Body: Heat-treated aluminum
- Packing: PTFE-impregnated graphite
- Poppet seal: UL listed Nitrile
- Weight: 1.38 Lbs (0.62 Kg)
- For use with gasoline, diesel and Ethanol blends up to E15.

Approvals/Certifications

• UL listed (UL 2586).

ORDERING INFORMATION

Model	Description
498303901	¾" manual nozzle, leaded spout, with check valve
498303902	1" manual nozzle, leaded spout, with check valve
498303903	1" manual nozzle, leaded spout

NOZZLES



495 AIRCRAFT FUELING NOZZLE

Standard features include a 100 mesh tube strainer, a dust cap assembly and a $6\frac{1}{2}$ ' static discharge ground wire. $1\frac{1}{4}$ " and $1\frac{1}{2}$ " models have an aluminum discharge tube with a knurled area for hand assembly; the 1" model has a brass tube standard. Dashpot construction ensures smooth opening, shock-proof closure, and maximum flow.

WARNING: This is a non-automatic nozzle with a manually operated latch which will not shut-off automatically. Use should be limited to applications sanctioned by OSHA, State Fire Marshal Codes, and other appropriate regulating bodies and/or safety codes.

HIGHLIGHTS

• Patent number 3,285,564.

MATERIALS

- Body: cast aluminum.
- Stem: stainless steel.
- Packing: PTFE impregnated graphite.
- Discs: fluorocarbon.



Madal	Inlet	Inlet Size		Outlet Size		
Iviodei		mm	In	mm	Lbs	Kg
49540001	1.50	38.30	1.50 NPT	38.30	6.50	3.00
49540101	1.25	31.90	1.25 NPT	31.90	5.30	2.40
49540201	1.00	25.50	1.25 NPT	31.90	4.15	1.90

495 Replacement Parts

Deut	495-400-01	495-401-01	495-402-01	495-404-01
Part	Model	Model	Model	Model
Spout	495-210-01	495-211-01	495-112-01	495-210-01
Strainer	495-208-01	495-125-01	495-204-01	
Dust cap assembly	495-105-01	495-106-01	495-111-01	495-105-01
Ground wire assembly	495-107-01	495-107-01	495-107-01	497-107-01

Model	Description
49512001	1½" aluminum tube and brass strainer assembly
49512002	1½" tube and strainer assembly, brass
49512201	1¼" aluminum tube and brass strainer assembly

NOZZLE ACCESSORIES

Brass Nozzle Tubes

Nozzle tubes fit EBW® 410 and 490 nozzles, are constructed of brass for durability and include a cast brass nut for a secure attachment to the nozzle.

Model	Thread Size		Tube Dia.		Tube Length		Weight	
	In	mm	In	mm	In	mm	Lbs	Kg
41011601	1.50	38.3	1.38	35.20	8.50	216.80	1.00	0.45
41012201	1.25	31.9	1.12	28.60	8.50	216.80	0.88	0.40
41012901	1.50	38.3	1.62	41.30	8.50	216.80	1.00	0.45
41013301	1.25	31.9	1.38	35.20	8.50	216.80	1.00	0.45

Aluminum Nozzle Tubes

Nozzle tubes fit EBW® 410 and 490 nozzles and are constructed of schedule 40 aluminum. 491-107-01 includes a 1¼" brass nut for a secure attachment to the nozzle.

Model	Thread Size		Tube Dia.		Tube Length		Weight	
	In	mm	In	mm	In	mm	Lbs	Kg
49110001	1.25 NPT	31.9	1.66	42.30	8.50	216.80	0.56	0.25
49110101	1.50 NPT	38.3	1.91	48.70	8.50	216.80	0.69	0.31
49110701	1.25 NPT	31.9	1.31	33.40	8.50	216.80	0.63	0.29

465 Hose Swivel

This swivel was designed for ease of delivery. It features free swivel action up to 125 psi with fluorocarbon O-ring seals, enabling it to turn smoothly with little effort while remaining leakproof. A waterproof dust seal assures constant free-turning action.

Madal	Size		Description	Weight		
Iviodei	In	mm	Description	Lbs	Kg	
46510101	1.25" × 1.25"	31.90 × 31.90	Without check	0.69	0.31	
46510102	1.25" × 1.25"	31.90 × 31.90	With check	0.69	0.31	
46510201	1.50" × 1.50"	38.30 × 38.30	Without check	0.72	0.33	
46510202	1.50" × 1.50"	38.30 × 38.30	With check	0.72	0.33	



Dust Cap Assembly

Dust cap assembly consists of a cast aluminum cap, zinc coated chains and a phosphor bronze spring for corrosion resistance.

Madal	Si	ze	Weight		
MODEI	In	mm	Lbs	Kg	
49510501*	1.91	48.7	0.25	0.11	
49510601**	1.66	42.3	0.19	0.09	
49511101***	1.12	28.6	0.19	0.09	
"For use with 1.50" n	ozzle.		•		

"For use with 1.25" nozzle

"For use with 1.00" nozzle.

MATERIALS

- Body: wrought aluminum with hard coat anodized finish for durability.
- Stem: two fluorocarbon O-ring seals and waterproof dust seal.



NOZZLES



GROUND WIRE ASSEMBLY

 $6\%^{\prime}$ of preformed galvanized steel cable with a terminal eye and heavy-duty battery clip.

Madal	Si	ze	Weight		
IVIOUEI	In	М	Lbs	Kg	
49510701	78.00	1.90	0.13	0.06	



STRAINERS

495-125 strainers are made of a six mesh brass outer screen, 100 mesh brass inner screen, two O-rings and a thrust ring. The 495-204 strainer is made of an eight mesh brass outer screen and 100 mesh brass inner screen.

Madal	Size		Description	Weight		
IVIOUEI	In	М	Description	Lbs	Kg	
49512501	1.25	31.90	Brass	0.19	0.09	
49520401	1.00	25.50	Brass	0.13	0.06	
49520901	1.50	38.30	Brass	0.31	0.14	





FLEX-ING° RE-STAGE[™] STAGE II REPLACEMENT ADAPTERS

These Stage II Vapor Recovery replacement adapters are all efficient, effective conversions from Stage II systems to conventional hardware for areas where Stage II Vapor Recovery is no longer required.

Model	Description
VAX075FNPT	Vapor recovery conversion adapter, vac-assist to ¾" standard conventional
BAX075FNPT	Balance vapor recovery conversion adapter, balance to ¾" standard conventional
HEX075FNP	HEALY® vac-assist conversion adapter, HEALY® vac-assist to ¾" standard conventional



SAFETY-SEVER™ BREAK AWAYS

EBW®[®] brand Safety-Sever[™] break aways prevent drive offs from becoming major disasters by uncoupling and instantly sealing both ends of the break. They prevent costly damage to dispensers, eliminate downtime, and avert the major danger of runaway fuel spillage. A safety-sever coupler can be reconnected in minutes by simply replacing the metal-tipped shear screw. The break away force provides ample protection for dispensers, while preventing accidental disconnection caused by ordinary aggressive hose handling.

HIGHLIGHTS

- Easy break away field reconnection with replacement shear screw.
- Available in 3/4" NPT and BSPT and 1" NPT inlet options.
- 1" model provides greater flow rates ideal for truck stops and other high-capacity flow rate applications.

Approvals

• cULus listed for use with gas 10% ethanol blend and diesel.

ORDERING INFORMATION

Description
¾" NPT Safety-Sever™ break away
¾" BSPT Safety-Sever™ break away
¾" Safety-Sever™ break away replacement shear screw
1" NPT Safety-Sever™ break away
1" Safety-Sever™ break away replacement shear screw

*Non-reconnectable.



UTILITY BREAK AWAYS

FLEX-ING[™] brand utility break aways are designed to provide protection for dispensing equipment at high capacity fueling locations. These heavy-duty break aways are ideal for applications including marinas, truck and bus terminals, off road refueling, fuel oil delivery and other industrial applications.

HIGHLIGHTS

- Brass break rings provide consistent separation force.
- Ball check valves seal both halves instantly upon separation eliminating fuel loss.
- No fuel is lost during reassembly as the two halves seal before the check valves open.
- Available in 1¼," 1½," 2," and 3" NPT inlet options.

ORDERING INFORMATION

Model	Description
BRK14-N	1¼″ NPT utility break away
BRK15-N	1½" NPT utility break away
BRK2-2-N	2" NPT utility break away
BRK3-3-N	3" NPT utility break away
BRK14-K	Repair kit for 1¼" NPT utility break away
BRK15-K	Repair kit for 1½" NPT utility break away
BRK2-K	Repair kit for 2" NPT utility break away
BRK3-K	Repair kit for 3" NPT utility break away

Note: Repair kits come with brass rings, 2 O-rings, cover, spacer, and retainer.

SPECIFICATIONS

- Body and ring cover: Machined solid aluminum bar stock with nickel plating
- Seals: Nitrile
- Check valve: PTFE
- Working pressure: 50 Psi max
- Break ring break force:
 - 1¼" 400 lbs.
 - 11/2" 400 lbs.
 - 2" 500 lbs.
 - 3" 1,000 lbs.
- Utility break aways are not intended for use in commercial retail applications.
- For use with gasoline 10% ethanol blend and diesel fuel.



VAPOR RECOVERY BREAK AWAY VALVES

HEALY® vapor recovery break away valves provide full product and vapor shut-off in the event of a drive-off with 350 lbs of separation force. Reduce damage to the dispenser, vehicle, and forecourt with the immediate sealing of both fuel and vapor pathways. Both in-line and swivel break away valve options are certified to be reconnected in the field to help mitigate the cost of separations.

HIGHLIGHTS

- Provides full-rated product flow of up to 10 GPM.
- Easy on-site reassembly.
- Includes spare shear screw conveniently mounted on the break away valve.
- Reduces fuel spillage and vapor emissions.
- Optional two-piece scuffguard available for in-line option.
- Swivel option includes scuffguard.

SPECIFICATIONS

In-Line Break Away Valve Components & Thread Types For fitting threads F = fixed, S = swivel.



Swivel Break Away Valve Components & Thread Types



HOSES & SYSTEM ACCESSORIES

ORDERING INFORMATION



IN-LINE BREAK AWAY VALVES

In-line break away valves are UL listed and CARB VR-201/202 approved.

Model	Description
8701VV	In-line break away valve with vapor path shut-off, 350 lbs strength, installed between whip hose and hose, includes one spare shear screw
762	In-line break away scuffguard top (dispenser end)
761	In-line break away scuffguard bottom (nozzle end)
715VV	Repair kit for in-line break away, includes valves and O-rings
787	Replacement shear screw for in-line break away valve, nickle-plated brass
Z055	O-ring kit for in-line break away with nickel-plated shear screw

SWIVEL BREAK AWAY VALVES

Swivel break away valves are UL listed and CARB VR-201/202 approved.

Model	Description
807	Swivel break away valve with vapor path shut-off, 350 lbs strength, installed between hose and nozzle, includes scuffguard
405417001	Replacement swivel break away scuffguard
787-1	Replacement shear screw for 807 swivel break away valve, nickle-plated



RECONNECTION TOOL

Model	Description
795	Clamp repair tool for in-line and swivel break away valves includes case



Our complete diesel exhaust fluid hanging hardware solution includes everything you need to safely dispense DEF/AdBlue[®] and protect you and your customers from costly mis-fills. Our comprehensive offering includes a wide assortment of options, allowing you to fully customize your hanging hardware solution to fit the needs of any application.



HANGING HARDWARE

A complete offering of hanging hardware products, **ALL ISO 22241 CERTIFIED**, to meet the needs of any DEF/AdBlue[®] application.



NOZZLES

Available with a mis-fill prevention spout, the DuraDEF-MPD nozzle will **prevent dispensing in non-DEF fill pipes**, eliminating potentially costly contamination.

SIZES: 34" (19mm) **INLETS:** 34" BSPP



HOSE

The anti-kink sleeves on the hose ends **prevent accelerated wear and kinking** in the hose while shielding the end fitting ferrule from harsh forecourt environments.

SIZES: 34" (19mm) OUTLETS: 34" NPT, 34" BSPP, and 1" BSPP



BREAK AWAYS

This in-line break away solution provides **protection from driveoffs** by sealing at both ends to prevent any fuel from being released.

SIZES: 34" (19mm) **INLETS:** 34" NPT and 34" BSPP



SWIVEL BREAK AWAYS

This break away's integrated swivel action promotes easy nozzle rotation during vehicle filling while also helping to reduce hose wear and kinking.

SIZES: 1" (25mm) INLETS: 1" BSPP OUTLETS: 34" NPT, 34" BSPP, M34

TYPICAL CONFIGURATIONS

Description	Model
1. ¾" automatic nozzle	DURADEF-LB
2. ¾" automatic nozzle with mis-filling prevention spout	DURADEF-MPD
3. Mis-filling prevention device	DEF-MPD
4. ¾" BSPP × ¾" NPT hose	FLDEF2XXXXX-2P-2N
5. ¾" break away valve	BRK34SS-N
6. ¾" BSPP × 1" BSPP swivel break away valve	OMNIDEF1X34P
7. 1" BSPP × ¾" NPT hose	FLDEF2XXXXX-3P-2N



XXXXX = hose length in feet and inches.



DURADEFTM DIESEL EXHAUST FLUID NOZZLE WITH MIS-FILL PREVENTION SPOUT

The FLEX-ING[®] brand DuraDEF[™] nozzle features a specially encapsulated aluminum casting which is lightweight yet completely DEF/AdBlue[®] compatible. It provides the performance and construction specifications required for DEF/AdBlue[®] delivery in a familiar, user-friendly design. This nozzle features a mis-fill prevention spout that prevents DEF from being dispensed unless the spout is engaged with a miss-fill prevention device (MPD). The MPD is available separately.

HIGHLIGHTS

- High strength aluminum body and stainless steel spout.
- Protective vinyl scuffguard.
- Available with or without hold-open clip.
- Spout designed for use with mis-fill prevention device.
- Internal components are manufactured from stainless steel or plastic for full DEF/AdBlue® compatibility.
- Sealed in a plastic bag to ensure no contamination.
- Meets all required specifications set by ISO 22241 for DEF/AdBlue[®] delivery.
- Mis-fill device available separately.

ORDERING INFORMATION

Model	Description
DURADEF-MPD	DuraDEF nozzle with mis-fill prevention spout, hold- open clip, light blue scuffguard
DURADEF-MPD-O	DuraDEF nozzle with mis-fill prevention spout no hold-open clip, light blue scuffguard
DEF-MPD	Mis-fill prevention device for ¾" spout

SPECIFICATIONS

- Inlet: ¾" BSPP
- Spout: ¾" (19mm) stainless steel
- Seals and poppet disc: Viton® A
- Packing: PTFE
- Body casting: Coated aluminum
- Hand guard and vac cap: Nylon
- Body cap: Coated zinc
- Lever: Electroless nickel-plated steel and nylon
- Scuffguard: Vinyl
- Weight / length / height: 2.5 lbs / 13.5" / 9"

Pressure vs. Flow Chart





DURADEF[™] DIESEL EXHAUST FLUID NOZZLE

The FLEX-ING[®] brand DuraDEF[™] nozzle features a specially encapsulated aluminum casting that makes it lightweight yet completely compatible with DEF (Diesel Exhaust Fluid)/AdBlue[®]. This nozzle provides the performance and construction specifications required for DEF/AdBlue[®] delivery with a lightweight, more user-friendly design.

HIGHLIGHTS

- High strength aluminum body and stainless steel spout.
- Protective vinyl scuffguard available in green, yellow, red, blue, black, and light blue to match station branding.
- Available with or without hold-open clip.
- Internal components are manufactured from stainless steel or plastic for full DEF/AdBlue[®] compatibility.
- Sealed in a plastic bag to ensure no contamination.
- Meets all required specifications set by ISO 22241 for DEF/AdBlue[®] delivery.

SPECIFICATIONS

- Inlet: ¾" BSPP
- Spout: 19mm stainless steel
- Seals: Viton® A
- Packing: PTFE
- Poppet disc: Viton® A
- Weight / length / height: 2.5 lbs / 13.5" / 9"
- Body casting: Coated aluminum
- Handguard: Nylon
- Vac cap: Nylon
- Lever: Electroless nickel-plated steel and nylon
- Scuffguard: Vinyl
- Body cap: Coated zinc

ORDERING INFORMATION

Model	Description
DURADEF-LB	Light blue DuraDEF nozzle with hold-open clip
DURADEF-LB-O	Light blue DuraDEF nozzle no hold-open clip

Pressure VS. Flow Chart



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DIESEL EXHAUST FLUID HOSE

FLEX-ING[®] brand diesel exhaust fluid hose features a specially formulated low-extraction EPDM rubber tube making it completely compatible with DEF/AdBlue[®]. The flexible softwall construction provides superior handling for both standard and reel applications. Each curb hose length features dual anit-kink sleeves at each end to protect the hose from accelerated wear and kinking. The anti-kink sleeves are factory installed over the end fitting ferrule to ensure maximum wear protection.

HIGHLIGHTS

- Peroxide-cured tube provides superior extraction levels and significantly reduces contamination.
- Premium polyester braided construction reduces volumetric expansion.
- Integrated static wire.
- All curb hoses over 2' in length are outfitted with factory installed anti-kink sleeves on both ends.
- BSPP outlets include a fluoroelastomer flat seal to ensure compression tightness.

ORDERING INFORMATION

FLDEF A B C - D - E

FLDEF = DEF/AdBlue® Hose

A = Hose Diameter

2 = 3/4"

B = Hose Length Feet

Use three-digit format

C = Hose Length Inches

Use two-digit format

- D and E = End Fitting Options
 - 2N = ¾" NPT
 - 2P = ¾" BSPP
 - 3P = 1" BSPP
 - 3PF = 1" BSPP Female Swivel
- Example: FLDEF200906-2N-2N = Def/Adblue[®] hose, ³/₄" diameter, 9 feet, 6 inches length, ³/₄" NPT fitting on both ends.

SPECIFICATIONS

- Tube: Specially formulated low-extraction EPDM rubber, peroxide cured
- Reinforcement: Polyester braid
- Cover: Specially formulated EPDM
- Temperature: -40 °F to 257 °F (-40 °C to 125 °C)

Approvals

• Meets ISO 22241 standard ensuring desirable characteristics of AUS 32 (DEF) are met, such as quality, safety, reliability, and contamination.

Installation

- 1 ¾" NPT end fitting (2N)
- 2 ¾" BSPP end fitting (2P)
- 3 1" BSPP end fitting (3P)
- 4 1" BSPP Female Swivel



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DIESEL EXHAUST FLUID BREAK AWAY

FLEX-ING[®] brand diesel exhaust fluid ³/4" break aways provide in-line protection for hanging hardware in the event of a drive-off. These break aways feature a stainless steel design and internal components that make them completely compatible with DEF/AdBlue[®]. Upon separation the check valve in each half of the break away seals instantly, preventing fuel from escaping at both ends.

HIGHLIGHTS

- Consistent separation force.
- Ball check valves seal both halves of the break away instantly upon separation.
- Machined from solid stainless steel bar stock.
- The two halves of the break away are sealed before the check valves open, creating a completely dry break.

ORDERING INFORMATION

Model	Description
BRK34SS-N	¾" NPT DEF break away
BRK34SS-P	34" BSPP DEF break away

SPECIFICATIONS

- Body and valve: Stainless steel
- Check valve: PTFE
- Seals: Viton[®]
- Ring cover: Nylon (integrated)
- Maximum working pressure: 50 psi
- Break rings break force: 325 lbs.
- Height: 3.25"

Installation

- 4" BSPP or NPT whip hose end fitting
- 2 ¾" BSPP or NPT break away inlet
- 34" BSPP or NPT break away inlet
- 4 ¾" BSPP or NPT curb hose end fitting
- 5 Hose end fitting to nozzle



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DIESEL EXHAUST FLUID SWIVEL BREAK AWAY

FLEX-ING[®] brand diesel exhaust fluid swivel break aways provide in-line protection for hanging hardware in the event of a drive-off. These break aways feature a stainless steel body that makes them extremely durable and completely compatible with DEF/AdBlue[®]. The break away design ensures proper drive-off protection and allows for easy installation directly between the nozzle and hose. The integrated swivel action provides easy nozzle rotation during vehicle filling while also helping to reduce hose wear and kinking.

HIGHLIGHTS

- High strength stainless steel body with internal components that are completely compatible with DEF/AdBlue[®].
- Break away valves separate with axial or up to 30° angular force.
- Fluid release limited to less than 10 ml upon break away valve separation.
- Atmospheric inner seal protects from corrosion.
- Integrated swivel action provides easy nozzle rotation during vehicle filling while also helping to reduce hose wear and kinking.
- Available with either ¾" NPT, ¾" BSPP, or M34 (metric) nozzle outlet and standard 1" BSPP female inlet.
- BSPP nozzle outlet includes a fluoroelastomer flat seal to ensure compression tightness between the break away and the nozzle inlet.

ORDERING INFORMATION

Model	Description
OMNIDEF1X34N	¾" NPT nozzle outlet, 1" BSPP female inlet DEF swivel break away
OMNIDEF1X34P	34" BSPP nozzle outlet, 1" BSPP female inlet DEF swivel break away
OMNIDEF1PXM34	M34 (metric) nozzle outlet, 1" BSPP female inlet DEF swivel break away

SPECIFICATIONS

- Body: Stainless steel
- Separation force: Between 180 lbs and 340 lbs force (800 N and 1,500 N force)
- Temperature rating: -22 °F to 131 °F (-30 °C to 55 °C)
- Internal pressure: Factory tested to 76.8 psi (5.3 bar)
- Electric conductivity: Factory tested to < 100k Ohm
- Nozzle flow rate compatibility: Up to 21 gpm (80 lpm)
- Working pressures compatibility: 0.5 bar up to 3.5 bar

Installation

- Hose end fitting to dispenser
- 2 1" BSPP hose end fitting
- 3 1" BSPP break away female inlet for hose
- 4 ¾" NPT, ¾" BSPP, or M34 (metric) break away male outlet to nozzle



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FUEL MANAGEMENT SYSTEMS

- Liquid dispenser or tank sump sensors
- 2 Discriminating dispenser or tank sump sensors (also interstitial tank sensors – not pictured)
- 3 Leak detection and inventory control probes
- 4 Float kits for all common applications including LPG and chemical
- 6 Probe installation kits
- 6 Electronic line leak detection
- 7 Fuel management system tank gauges
- 8 Web access to ATGs and remote monitoring software and services



FUEL MANAGEMENT SYSTEMS


NEVER STOP EVOLVING

INTRODUCING THE EVO™ SERIES FAMILY OF AUTOMATIC TANK GAUGES

Driven by our pursuit to innovate, simplify, and better connect every station owner to their secure system data, we introduce the EVO[™] 200 and EVO[™] 400 to our lineup of world class Automatic Tank Gauges (ATGs). These new models feature everything you've come to expect from our EVO[™] 550 and EVO[™] 5000 ATGs in packages that are right-sized for small sites and up-and-coming station networks. See how the EVO[™] Series can help evolve your business.





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SELECTING AN AUTOMATIC TANK GAUGE

When you fully understand both your current site needs and where you might be headed in the future, you are able to make a sound ATG selection. Be sure to address your compliance needs and operational requirements when considering which ATG is right for you. The EVO[™] Series offers you four different options with right-sized features to meet the requirements of your specific application, size, and compliance needs.



EVO[™] 200

Which ATG is right for your application?

Maximum tank capacity	6
Maximum sensor input capacity	6
Total # of inputs	6
Line capacity	-
Dry contact input channels	2
AC input channels	-
4-20 ma input channels	-
Relay output channels	2
Display type	7" Color LCD
Printer options	External
Internal audible alarm	\checkmark
Email/SMS notifications	\checkmark
Inventory and delivery management	\checkmark
Leak detection sensors	\checkmark
Static and Continuous tank testing	\checkmark
Static and Statistical Electronic Line Leak Detection	
High/low product, water, and temperature alarm set points	\checkmark
Inventory reconciliation / tank autocalibration	\checkmark
Flow rate monitoring	
Density and mass measurement	\checkmark
Phase separation detection	\checkmark
Secondary Containment Monitoring (vacuum)	
Turbine Pump Interface	\checkmark
DEF/AdBlue® recirculation system	
Back-up generator monitoring	\checkmark
Conditional programming	
MODBUS [®] compatibility	



EVOT 400	EVOT 550	EVO ^M 5000
14	36*	36*
14	48*	96*
14	48	96
-	24	24
2	2	2
-	36	36
-	24	24
2	26	50
7" Color LCD	7" Color LCD	7" Color LCD
External	Internal & External	Internal & External
\checkmark	\checkmark	\checkmark
	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
	\checkmark	\checkmark
\checkmark	\checkmark	\checkmark
	\checkmark	\checkmark
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*Additional capacity available with expansion console.

USER INTERFACE SIMPLICITY & VISIBILITY

A full-color 7" LCD touchscreen serves up one of the most intuitive user interfaces available with simplified user features you won't find anywhere else. Whether you're a station owner, technician, or station employee, the patented design presents your inventory and compliance data with an easy-to-understand, easy-to-navigate approach.

ICON-BASED DESIGN

Designed to be understood easily and operated intuitively, the icon-based user interface makes fuel management like second nature. It's simple to operate for new users and can reduce the amount of training required to operate.

ONE TOUCH BUTTONS

You can customize these home screen buttons to automate and carry out anything from complex, multifunction processes to simple daily delivery report generation - all with the touch of a single button.

QUICK JUMP MENU

Navigate quickly from application to application with ease. This time-saving menu makes the interface's structure extremely shallow, simple to navigate, and reduces the amount of steps it takes to accomplish tasks.

CUSTOMIZABLE TO YOUR BUSINESS

You choose your home screen, you choose what shows up on your favorites screen, and you program your product colors. Customize the interface to meet your business needs the way you operate.







FUEL MANAGEMENT SYSTEM CAPABILITIES



DENSITY MEASUREMENT

The EVOTM Series Automatic Tank Gauges have the ability to continuously monitor the density of fuel stored in underground and above ground storage tanks. We can detect cross-dropping and ensure that the product quality is consistent.

How We Do It

Using a density float kit with an inventory probe, the gauge can be configured for high and low density alarm points based on the customer's acceptable density fluctuations.

*Feature available for EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000



PHASE SEPARATION DETECTION

Protect your system with continuous monitoring of tank levels to avoid costly damage. With phase separation detection, we can effectively manage product levels as well as alert you of water or phase separation levels in your tanks before they can do damage.

How We Do It

We utilize a single-float solution for both water and phase separation that works with our gauge to indicate water and phase separation in tanks. It can shut down a submersible pump before water or phase separation reaches a customer's vehicle. *Feature available for EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000



TURBINE PUMP

Maximize station uptime with the industry's only direct communication between a pump and a tank gauge which provides expanded control, fault, and reporting characteristics.

How We Do It

We network your fuel management ATG together with your submersible pump to get features like pump-in-water detection, dry tank detection, clogged pump intake detection, tank leveling, overfill protection and automated pump control.

*Feature available for EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000



ELECTRONIC LINE LEAK DETECTION

Avoid downtime associated with SLLD, eliminate configuration errors, and ensure unparalleled leak detection accuracy. This feature learns the characteristics of each line during the installation process to provide precision leak detection and ensure line integrity.

How We Do It

During the installation process a calibrated leak is introduced during the Learn Process which allows the system to learn the pressure characteristics of the line. The system uses this information to continuously monitor changes in pressure during periods of no dispensing to determine if the line is tight. *Feature available for EVOTM 550, EVOTM 5000



SECONDARY CONTAINMENT MONITORING

Ensure containment space is free of leaks with secondary containment monitoring, designed to vacuum-monitor single or multiple secondary containment spaces like double walled tanks, piping, and sumps.

How We Do It

The secondary containment monitoring (SCM) system is designed to detect leaks in double-wall piping, tanks, and sumps. The system utilizes the siphon/vacuum port of a submersible turbine pump to draw a vacuum on these interstitial spaces. The vacuum levels are then continuously monitored to detect any potential leaks in these double-wall containments. *Feature available for EVO[™] 550, EVO[™] 5000



EVO[™] 200 & EVO[™] 400 AUTOMATIC TANK GAUGES

EVO[™] 200 & EVO[™] 400 Automatic Tank Gauges (ATGs) provide highly accurate inventory management and containment monitoring for small to mid-size fuel systems. Both ATGs feature the capability to interface with probes and sensors in any combination up to 6 (EVO[™] 200) or 14 (EVO[™] 400). Their simple setup and operation, remote connectivity, and advanced security features protect your fuel system while keeping you directly connected to vital site data whenever, and wherever. The highly-intuitive, full-color, icon-based touch screen provides user-friendly on-site access to inventory, alarm, and compliance data, while the FFS PRO[®] Connect web interface provides remote access from any web device.

HIGHLIGHTS

- Allows you to make informed, data-driven inventory management decisions while keeping your site in compliance and protected from security threats.
- Provides inventory monitoring, static (included feature) and continuous tank testing (optional feature), tank autocalibration, inventory reconciliation, and containment compliance monitoring.
- Streamlined setup and programming includes hardware auto-detection and wiring confirmation, extensive multipoint tank charting, network printer auto-detection, and the ability to copy and paste or move sections of the programming profile within the ATG or download and upload entire programming profiles from one ATG to another.
- Customizable user roles and log-in security features protect against unwanted access while keeping track of user activity within your system.
- Stores 5 years worth of critical data to provide back-up security from power outages or other system interruptions.
- Intuitive full-color 7" touch screen interface provides simplified on-site access features including:
 - One Touch buttons that are custom programmed to carry out common automated tasks with a single tap.
 - Quick Jump menu allows you to quickly maneuver from application to application using a single button.
 - Select your home screen, program your product colors, and customize your favorites screen - customize the interface the way you want it.
- FFS PRO[®] Connect web interface allows you to directly connect to your ATG from any web enabled device that automatically scales for tablets and smart phones.
- Optional Wifi allows secure and protected on-site viewing of inventory levels for fuel delivery drivers.
- Available with optional 24-hour statistical continuous automatic leak detection (SCALD) and the industry's only Turbine Pump Interface (TPI) capability for enhanced and automated submersible turbine pump control.

SPECIFICATIONS

- Maximum tanks monitored: 6 (EVO[™] 200) / 14 (EVO[™] 400)
- Maximum sensor input capacity: 6 (EVO[™] 200) / 14 (EVO[™] 400)
- Total # of inputs: 6 (EVO[™] 200) / 14 (EVO[™] 400)
- Dry contact input channels: 2
- Relay output channels: 2
- Connectivity: Ethernet, RS-232, RS-485, standard USB, mini USB, and Wifi (optional)
- Display type: 7" (17.78 cm) color LCD touch screen
- Printer type: External (network or USB)
- Alarm: Internal audible alarm
- LEDs: Alarm, warning, and power
- Tank chart correction points: 7,500
- Applicable liquids: Petroleum, chemicals, and waste
- Level units: Inches, centimeters, and millimeters
- Volume units: gallons or liters (mass with density option)
- Power requirements: 110 to 240 VAC, 50/60 hz, 2.6 Amps
- Operating temperature: 32° to 104 °F (0° to 40 °C)
- Humidity: 0-95% non-condensing
- Dimensions: Height: 8" (205mm), Width:13 ¾" (350mm), Depth: 3¼" (83mm)

Capabilities

- High/low product, water, and temperature alarm set points
- Inventory reconciliation / tank autocalibration (optional)
- Density, mass, and phase separation measurement
- Email and SMS notifications
- Back-up generator monitoring
- MODBUS[™] support

Approvals/Certifications

- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities



Components Cover LCD touch screen

- 3 LED indicators
- 4 Anunciator (audible alarm)
- 5 RS-485
- 6 Mini USB port
- 7 Ethernet / USB port
- 8 RS-232
- 9 Knockouts
- 10 Mounting holes
- 1 Flip up panel (touch screen)
- 12 Termination blocks
- 1 Main board



- 12¾″ (325mm)





ORDERING INFORMATION

Ordering Guide

ATG model, hardware, and software options should be combined when ordering. Complete part numbers have specific order and are created using the following guidelines. A complete list of the all available configurations is shown for convenience.

Example: EVO400DW-TR = EVO™ 400 base model, up to 14 channels with display, with Wifi, with

SCALD, and with Reconciliation/Autocalibration.

EVOX DW - TR

EVOX = Base Model Options

EVO200 = EVO[™] 200 base model, up to 6 channels

EVO400 = EVO[™] 400 base model, up to 14 channels

DW = Hardware Options (choose all that apply)

D = Display (color LCD touch screen)

W = Wifi

TR = Software Options (choose all that apply)

- T = SCALD 24-hour tank testing
- R = Reconciliation/Autocalibration

EVO™ 200 Automatic Tank Gauges

Descriptior EVO200 EVO™ 200 ATG base (no display) EVO200D EVO™ 200 ATG with display EVO200W EVO™ 200 ATG with Wifi EVO200DW EVO™ 200 ATG with display, Wifi EVO™ 200 ATG with SCALD 24-hour tank testing EVO200-T EVO200-R EVO[™] 200 ATG with Reconciliation/Autocalibration EVO200-TR EVO[™] 200 with SCALD 24-hour tank testing, Reconciliation/Autocalibration EVO200D-T EVO™ 200 ATG with display, SCALD 24-hour tank testing EVO200D-R EVO™ 200 ATG with display, Reconciliation/Autocalibration EVO200D-TR EVO™ 200 ATG with display, SCALD 24-hour tank testing, Reconciliation/Autocalibration EVO200W-T EVO™ 200 ATG with Wifi, SCALD 24-hour tank testing EVO200W-R EVO[™] 200 ATG with Wifi, Reconciliation/Autocalibration EVO200W-TR EVO™ 200 ATG with Wifi, SCALD 24-hour tank testing, Reconciliation/Autocalibration EVO200DW-T EVO™ 200 ATG with display, Wifi, SCALD 24-hour tank testing EVO200DW-R EVO™ 200 ATG with display, Wifi, Reconciliation/Autocalibration EVO™ 200 ATG with display, Wifi, SCALD 24-hour tank testing, Reconciliation/Autocalibration EVO200DW-TR

Note: An external printer must be ordered separately (see following page for ordering information).

EVO[™] 400 Automatic Tank Gauges

Model	Description
EVO400	EVO™ 400 ATG base (no display)
EVO400D	EVO™ 400 ATG with display
EVO400W	EVO™ 400 ATG with Wifi
EVO400DW	EVO™ 400 ATG with display, Wifi
EVO400-T	EVO™ 400 ATG with SCALD 24-hour tank testing
EVO400-R	EVO™ 400 ATG with Reconciliation/Autocalibration
EVO400-TR	EVO™ 400 ATG with SCALD 24-hour tank testing, Reconciliation/Autocalibration
EVO400D-T	EVO™ 400 ATG with display, SCALD 24-hour tank testing
EVO400D-R	EVO™ 400 ATG with display, Reconciliation/Autocalibration
EVO400D-TR	EVO™ 400 ATG with display, SCALD 24-hour tank testing, Reconciliation/Autocalibration
EVO400W-T	EVO™ 400 ATG with Wifi, SCALD 24-hour tank testing
EVO400W-R	EVO™ 400 ATG with Wifi, Reconciliation/Autocalibration
EVO400W-TR	EVO™ 400 ATG with Wifi, SCALD 24-hour tank testing, Reconciliation/Autocalibration
EVO400DW-T	EVO™ 400 ATG with display, Wifi, SCALD 24-hour tank testing
EVO400DW-R	EVO™ 400 ATG with display, Wifi, Reconciliation/Autocalibration
EVO400DW-TR	EVO™ 400 ATG with display, Wifi, SCALD 24-hour tank testing, Reconciliation/Autocalibration

Note: An external printer must be ordered separately (see following page for ordering information).

ORDERING INFORMATION CONTINUED

External Printer

Model	Description
FMP-ETP	External printer (EVO [™] 200 and EVO [™] 400, includes USB cable, power cord, one roll of thermal printer paper, and wall mount hardware)
FMP-EPPC	Case of 25 thermal printer paper rolls

Note: The external printer measures 142mm X 132mm X 204mm (w x h x d) and can be mounted to wall next to the EVO™ Series ATG using the included hardware.

EVO[™] 200 & EVO[™] Hardware & Software Field Upgrades

EVO[™] 200 and EVO[™] 400 ATGs come standard with the ability to perform in-tank static leak detection. The following software and hardware options can be added to customize your ATG once it's been installed in the field.

Internal Software Field Upgrades

Model	Description
TS-TT	Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC	Tank inventory reconciliation and autocalibration

Spare Parts

Model	Description
FMSP-LCD	EVO™ 200 and EVO™ 400 LCD replacement
FMSP-WIFI	EVO™ 200 and EVO™ 400 replacement antenna
FMSP-UDP400	EVO™ 400 replacement input PCB
FMSP-UDP200	EVO™ 200 replacement input PCB
FMSP-SOM	Unregistered, replacement SOM (no WIFI)
FMSP-SOMW	Unregistered replacement SOM with WIFI
FMSP-SOM-R	Registered replacement SOM (no WIFI)
FMSP-SOMW-R	Registered replacement SOM with WIFI
FMSP-24CVRWD	EVO™ 200 and EVO™ 400 with LCD replacement cover
FMSP-24CVR	EVO™ 200 and EVO™ 400 without LCD replacement cover
FMSP-24MB	EVO™ 200 and EVO™ 400 replacement main board
FMP-24FUSE	EVO™ 200 and EVO™ 400 replacement fuse kit
FMP-24TRMBLK	EVO™ 200 and EVO™ 400 replacement terminal blocks
FMP-ETP	External thermal printer
FMP-EPPC	Case of 25 thermal printer paper rolls

Field Upgrade Parts

Model	Description
FMP-LCD	EVO™ 200 and EVO™ 400 LCD upgrade
FMP-WIFI	EVO™ 200 and EVO™ 400 WIFI upgrade
FMP-SOMW-U	Unregistered upgrade SOM with WIFI
FMP-SOMW-UR	Registered upgrade SOM with WIFI



FFS PRO° CONNECT REMOTE WEB INTERFACE

The FFS PRO[®] Connect web interface allows you to securely connect directly to your EVO[™] Series ATG^{*} from any web enabled device. It automatically scales for tablets and smart phones, meaning no app to download.



HIGHLIGHTS

- Gathers and displays specified data in a user-defined polling schedule, or in real-time.
- Inventory can be monitored as needed to precisely schedule deliveries.
- Deliveries can be forecasted from current inventory usage rates.
- Provides centralized control of all compliance information such as tank testing data and leak detection sensor status.
- Access to information can be controlled for multiple users.
- A wide variety of reports can be custom-scheduled, displayed, printed, or emailed at specific times.
- Offers immediate notification of alarms for corrective action.
- Simplifies setup and programming with the ability to copy entire programming profiles from one ATG to another.
- Provides direct one-to-one access to a single ATG from any web enabled device.

SPECIFICATIONS

Get remote access to vital site information including:

Monitoring

• Tank status

- Sensor status
- Pump status
- Conditions
- Active events
- Alarm history
- Event history

Settings

- Preferences
- Configuration
- Tank correction tables
- Printers

- Reports
- Active alarm
- Active events
- Alarm history
- Inventory
- Delivery history
- Tank test history
- Sensor status
- Regulatory

*FFS PRO[®] Connect currently comes standard with any EVO[™] 200 or EVO[™] 400 Automatic Tank Gauge. For a comparison of all remote fuel monitoring solutions, see page 380-381.

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🚯 Franklin Fueling Systems



EVO™ 550 & EVO™ 5000 AUTOMATIC TANK GAUGES

EVO[™] 550 & EVO[™] 5000 Automatic Tank Gauges (ATGs) provide highly accurate inventory management and full-featured compliance monitoring for any size fuel system. These module-based ATGs are highly configurable for site-specific probe and sensor requirements. Their simple setup and operation, remote connectivity, and advanced security features protect your fuel system while keeping you directly connected to vital site data whenever, and wherever. The highly-intuitive, full-color, icon-based touch screen provides user-friendly on-site access to inventory, alarm, and compliance data.

HIGHLIGHTS

- Allows you to make informed, data-driven inventory management decisions while keeping your site in compliance and protected from security threats.
- Provides inventory monitoring, static (included feature) and continuous tank testing (optional feature), tank autocalibration, inventory reconciliation, containment compliance monitoring, and flow rate monitoring.
- With the EVO[™] 550, six total modules can be installed with a maximum of four intrinsically safe modules and a maximum of three of any one kind of module. With the EVO[™] 5000, eleven total modules can be installed with a maximum of nine intrinsically safe modules and a maximum of three of any one kind of module.
- Patented AutoLearn[™] electronic line leak detection capability including Statistical Line Leak Detection for high throughput sites.
- Secondary containment monitoring provides the ability to vacuum-monitor single or multiple secondary containment spaces like double walled tanks, piping, and sumps.
- Streamlined setup and programming includes hardware auto-detection and wiring confirmation, multipoint tank charting, network printer auto-detection, and the ability to download and upload entire programming profiles from one ATG to another.
- Intuitive full-color 7" touch screen interface provides simplified on-site access features including:
 - One Touch buttons that are custom programmed to carry out common automated tasks with a single tap.
 - Quick Jump menu allows you to quickly maneuver from application to application using a single button.
 - Programmable product colors.
- Available with optional 24 hour statistical continuous automatic leak detection (SCALD) and the industry's only Turbine Pump Interface (TPI) capability for enhanced and automated submersible turbine pump control.
- Web interface allows you to directly connect to your ATG from any web enabled device.

SPECIFICATIONS

- Maximum tanks monitored: 36 (EVO[™] 550) / 36 (EVO[™] 5000)
- Maximum sensor input capacity: 48 (EVO[™] 550) / 96 (EVO[™] 5000)
- Lines capacity: 24 (EVO[™] 550) / 24 (EVO[™] 5000)
- Dry contact input channels: 2
- AC input channels: 36 (EVO[™] 550) / 36 (EVO[™] 5000)
- Relay output channels: 26 (EVO[™] 550) / 50 (EVO[™] 5000)
- Connectivity: Ethernet, RS-485, standard USB (qty 2)
- Display type: 7" (17.78 cm) color LCD touch screen
- Printer type: Thermal (also network or USB)
- Alarm: Internal audible alarm
- LEDs: Alarm, warning, and power
- Applicable liquids: Petroleum, chemicals, and waste
- Level units: Inches, centimeters, and millimeters
- Volume units: gallons or liters (mass with density option)
- Power requirements: 110 to 240 VAC, 50/60 hz, 2.6 Amps
- Operating temperature: 32° to 104 °F (0° to 40 °C)
- Humidity: 0-90% non-condensing
- EVO[™] 550: H: 11.75"(300mm), W: 10¼"(260mm), D: 9"(229mm)
- EVO[™] 5000: H: 11.75" (300mm), W: 16½" (419mm), D: 9" (229mm)

Capabilities

- High/low product, water, and temperature alarm set points
- Inventory reconciliation / tank autocalibration / flow rate monitoring
- Density, mass, and phase separation measurement
- Email and SMS notifications
- Back-up generator monitoring / conditions programming
- Advanced logic control for DEF/AdBlue® recirculation system

MODBUS[™] support

- **Approvals/Certifications**
- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities

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• There can only be three types of one module in an EVO[™] Series ATG.

• If you require more than three types of one module, please contact your FFS sales representative to review your needs.

• The intrinsically safe barrier must be installed in the third slot or greater. (The third slot after the power supply module.)

ORDERING INFORMATION

Ordering Guide

ATG model, software and hardware options can be listed separately or combined when ordering. Systems shipped from the factory will list the combined part number. Complete part numbers have a specific order and are created using the following guidelines:

TX DPMIE / TRFLGSC

TX = Base Model Options

T550E = EVO™ 550 base ATG

T5000E = EVO™ 5000 base ATG

DPMIE = Hardware Options (choose all that apply)*

- D = Display
- P = Printer
- M = Internal modem
- I = Dispenser interface module
- E = LON module

TRFLGSC = Software Options (choose all that apply)

- T = SCALD 24-hour tank testing
- R or F = (R) Reconciliation/autocalibration or
 - (F) Reconciliation/autocalibration with flow rate monitoring
- L or G = (L) Line leak detection or
 - (G) Generator line leak detection
- S = Secondary containment monitoring
- C = Recirculation, scheduling, and timer conditions

*Only one EVO[™]-DIM or EVO[™]-LON module can be installed per ATG.

Example: T550EDPMI/TRLS = EVOTM 550 base model with display, with printer, with internal modem, with dispenser interface module, with SCALD, with reconciliation/autocalibration, with line leak detection, and with secondary containment monitoring.

EVO[™] 550 & EVO[™] 5000 Base Models

Model	Description		
T550E	EVO™ 550 base model automatic tank gauge		
T5000E	EVO™ 5000 base model automatic tank gauge		

EVO[™] 550 & EVO[™] 5000 Hardware & Software Options

EVO[™] 550 and EVO[™] 5000 ATGs come standard with the ability to perform in-tank static leak detection. The following software and hardware options can be added to customize your ATG. The internal hardware options will be factory installed when ordered with the ATG.

Internal Hardware Options

Model	Description
TS-MDMIB	(M) Internal modem, includes fax and data software capability
EVO-DIMIB	(I) Internal dispenser interface module, dispenser interface cable must be ordered separately
EVO-LON	(E) Lon™ communication module, IFSF protocol capability
Note: Only one EVOT	M-DIM or EVO™-LON module can be installed per ATG.

Internal Software Options / Field Upgrades

Madal	Departmen
IVIOUEI	Description
TS-TT	(T) Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC	(R) Tank inventory reconciliation and autocalibration
TS-TRAC-F	(F) Reconciliation/autocalibration and flow rate monitoring software
TS-FLOW	Flow Rate Monitoring software (Field upgrade for ATGs with Reconciliation/Autocalibration)
TS-ELLD	(L) Electronic line leak detection
TS-ELLD-G	(G) Electronic line leak detection for generator applications
TS-SCM	(S) Secondary containment monitoring
TS-CON	(C) DEF/AdBlue® recirculation, scheduling, and timer conditions

Expansion Consoles

Model	Description
EVO-EXPC2	Secondary console to add six additional plug-in modules to the primary EVO™ 550 or EVO™ 5000 ATG, comes without a display or printer
EVO-EXPC	Secondary console to add eleven additional plug-in modules to the primary EVO™ 550 or EVO™ 5000 ATG, comes without a display or printer

Note: Both of these consoles are for the EVO $^{\rm \tiny M}$ 550 and EVO $^{\rm \tiny M}$ 5000

Franklin Fueling Systems

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	-	
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	EV	EVO

Fueling Point	Mater	Grade	Flow Bate
acting rome		Grade	THOW MALE
3	3.00	Diesel	18.60 gpm
4. 6.		Unleaded	9.20 gpm
40 0	2	Premium	9.01 gpm
.4	30	Diesel	7.98 gpm
5	C1	Unleaded	8.74 gpm
5	2	Premium	7.73 gpm
5	3	Diesel	9.62 gpm
6	1	Unleaded	9.48 gpm
6	2	Premium	8.53 gpm
6	3	Diesel	8.79 gpm

FLOW RATE MONITORING

Improve dispenser throughput and maintain fast flow rates with the ability to detect and react to potential slow flow issues before they impact your business with Flow Rate Monitoring. This software is available on new EVO[™] 550 and EVO[™] 5000 Automatic Tank Gauges (ATGs) or as a field upgrade option^{*}. In addition to delivering ongoing flow rate performance data, this software calculates flow rates for each fueling point and provides a notification if any transaction dips below a set, user-defined point.

KNOW YOUR FLOW

Monitor for and ensure fast and consistent dispenser throughput with daily reports and alarm notifications regarding flow rate performance.

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PROACTIVE MAINTENANCE

Often times slow flow can indicate a dispenser filter needs to be changed react sooner and get your dispenser back to peak performance.

SMART MONITORING

Sales and dispensing duration data are automatically reconciled to help you better understand the flow performance of every fueling point.

*Requirements: firmware release 2.19.0.8796 or later, EVO™ Series software with option "F" registered, and access to sales data. Consult Technical Support for sales data connection options and compatibility.

EVO™ 550 & EVO™ 5000 ACCESSORIES

EVO™ 550 and EVO™ 5000 Automatic Tank Gauges Interface Modules

The EVO[™] 550 and EVO[™] 5000 Automatic Tank Gauges come standard with a power supply module and a controller module. Additional interface modules can be installed. Interface modules ordered with an ATG will be installed at the factory. The following guidelines must be followed:

- EVO[™] 550: Six total modules can be installed with a maximum of four intrinsically safe modules and a maximum of three of any one kind of module.
- EVO[™] 5000: Eleven total modules can be installed with a maximum of nine intrinsically safe modules and a maximum of three of any one kind of module.

Intrinsically Safe Modules

Model	Description
TS-PRB	12 input probe module, LL2 and LL3 Series mag probes, VFM flow meters and DMS Mag sensors, and all -U sensors
TS-2WSNS	12 input 2-wire sensor module, FMP-ULS, FMP-UHS, TSP-HLS, TSP-ULS, TSP-UHS, TSP-HLSXL, and FMP-HFS sensors
TS-3WSNS	8 input 3-wire sensor module, FMP-EIS, FMP-DIS, FMP-DDS, FMP-DTS, FMP-HIS, FMP-ULS, FMP-UHS, TSP-MWS, FMP-HFS, TSP-ULS, TSP-UHS, TSP-HLS, TSP-HLSXL and TSP-DVS sensors. Can also support 2-wire sensors (FMP-EIS-U, FMP-DIS-U, FMP-DIS-U, FMP-DIS-U, FMP-HIS-U)
TS-420IB	8 input 4-20 mA module, LSU500 transducers and VPS and SCCM pressure sensors

Non-Intrinsically Safe Modules

Model	Description
TS-ACI	12 input AC input module, dispenser hook inputs
TS-RLY	8 output relay module, SCCM solenoid and STP control
TS-10ARLY	6 output 10 Amp relay output module, dispenser power
TS-IO	Input output module, 4 output 4-20 mA, 8 input 3-240 VAC/DC
TS-420EXP	8 input 4-20 mA module, LSU500E transducers and external devices

Note: TS-RLY Module is not required for STP control when utilizing turbine pump interface (TPI) communications. Do not include Power Supply and Controller Module when calculating total modules allowed.

TS-LS500 AutoLearn[™] with Statistical Line Leak Detection

Pressurized line leak detection provides automatic 3.0 gph hourly, 0.2 gph monthly and 0.1 gph annual precision line leak detection for the EVO[™] 550 and EVO[™] 5000 ATGs. Statistical Line Leak Detection (SLLD) is a standard feature that can provide 0.2 gph monthly results on even high throughput lines. Available in intrinsically safe and explosion proof models. Use explosion proof when low voltage conduit is not available. The TS-420IB or TS-420EXP, TS-ACI and TS-RLY module and TS-ELLD software option must be ordered and installed in the fuel management system ATG.

Intrinsically Safe

For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Model	Description
TS-LS500/1	1-line transducer kit
TS-LS500/2	2-line transducer kit
TS-LS500/3	3-line transducer kit
TS-LS500/4	4-line transducer kit

Note: Using turbine pump interface (TPI) communications eliminates the need for a TS-RLY module; FFS intelligent controllers required.

Dispenser Interface Module Cables

Model	Description
TSP-WDCBL	Wayne™ cable
TSP-TDCBL	Tokheim™ cable
TSP-GDCBL	Gilbarco® cable
TSP-GSDCBL	Gilbarco® G-Site™ cable
TSP-BDCBL	Bennett® 515 only cable

Note: For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Explosion Proof

For retrofit installations where only a high voltage conduit can be used. Use TS-420EXP module.

Model	Description
TS-LS500E/2	2-line transducer kit, explosion proof
TS-LS500E/3	3-line transducer kit, explosion proof
TS-LS500E/4	4-line transducer kit, explosion proof

Note: Using turbine pump interface (TPI) communications eliminates the need for a TS-RLY module; FFS intelligent controllers required.

Alternative Fuels Accessories

Model	Description
TS-AFALNIP	Leak generator needle valve kit required for E85 installations

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EVO™ 550 KITS

For a simplified Automatic Tank Gauge ordering process, EVO[™] 550 kits provide a single part number for our most popular configurations. Both kits come complete with all of the modules and software options needed to connect you to your vital fuel system data.

HIGHLIGHTS

- The EVO™ 550 Base Kit includes modules tailored for sites with up to 12 tanks and up to 12 sensors.
- The EVO™ 550 Expanded Kit + Electronic Line Leak Detection (ELLD) includes modules tailored for sites that require ELLD for up to 8 lines, with up to 12 tanks and up to 24 sensors.

SPECIFICATIONS

Modules

- Blank
- 2 Intrinsically Safe Barrier
- 3 Probe Module
- 4 2-Wire Sensor Module
- 5 12 Input AC Module
- 6 8 Output Relay Module
- 7 4-20mA Module



ORDERING INFORMATION



EVO[™] 550 Base Kit Model: T550EDP/T/KIT1

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Includes	Description
T550EDP	EVO™ 550 base model ATG with display and printer
TS-TT	(T) SCALD 24-hour tank testing
TS-PRB	12 input probe module, (Required for LL2 and LL3 Series Mag probes, VFM flow meters and DMS Mag sensors)
TS-2WSNS	12 input 2-wire sensor module, (Required for FMP-ULS, FMP-UHS, TSP-HLS, and FMP-HFS sensors)



EVO[™] 550 Expanded Kit + Electronic Line Leak Detection Model: T550EDP/TL/KIT2

Includes	Description
T550EDP	EVO™ 550 base model ATG with display and printer
TS-TT	(T) SCALD 24-hour tank testing
TS-ELLD	(L) Electronic line leak detection
TS-PRB	12 input probe module, (Required for LL2 and LL3 Series Mag probes, VFM flow meters and DMS Mag sensors)
TS-2WSNS	(Qty 2) 12 input 2-wire sensor module, (Required for FMP- ULS, FMP-UHS, TSP-HLS, and FMP-HFS sensors)
TS-RLY	8 output 2 Amp relay module, SCCM solenoid and STP control
TS-ACI	12 input AC input module, (Required for dispenser hook inputs)
TS-420IB	8 input 4-20 mA module, (Required for LSU500 transducers and VPS and SCCM pressure sensors)





TS-LS500 AUTOLEARN™ ELECTRONIC LINE LEAK DETECTION

TS-LS500 AutoLearn[™] electronic line leak detection (ELLD) learns the characteristics of each line, eliminating possible configuration errors and ensures unparalleled leak detection accuracy. It is an optional feature of the EVO[™] 550 and EVO[™] 5000 fuel management systems. The TS-LS500 AutoLearn[™] ELLD system includes a statistical line leak detection (SLLD) feature which can be activated at high throughput sites that cannot accommodate the prolonged downtime necessary for static line leak detection testing.

HIGHLIGHTS

- Automatically learns exact pipeline characteristics.
- No pipe type and length programming required.
- Monitors flexible, steel, and/or fiberglass pipelines in any combination up to certified maximum values.
- Works with submersible pumps generating 25 psi or more.
- Automatically performs 3.0 gph, 0.2 gph and 0.1 gph line tests, as well as other line pressure checks.
- Includes the industry's only statistical line leak detection (SLLD).
- Positive submersible pump shutdown in the event of a leak.
- Optional feature of the EVO[™] 550 and EVO[™] 5000.
- Intrinsically safe and explosion-proof options.
- Dispenser hook isolation and turbine pump interface (TPI) pump control options.
- Remote access to line pressure, test, and alarm information.
- Generator versions to prevent shut-down of critical systems. (TS-ELLD-G software required).

Note: Product compatible with EVO[™] 550 and EVO[™] 5000 only.

ORDERING INFORMATION

Minimum ATG Requirements

- EVO[™] 550 and EVO[™] 5000 fuel management systems
- TS-ELLD software options
- TS-ACI, TS-420IB or TS-420EXP, *TS-RLY modules

 * TS-RLY module is not required when utilizing turbine pump interface (TPI) communications.

Intrinsically Safe

For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Model	Description
TS-LS500/1	1-line transducer kit
TS-LS500/2	2-line transducer kit
TS-LS500/3	3-line transducer kit
TS-LS500/4	4-line transducer kit

SPECIFICATIONS

- Dimensions: 61/4" × 2" NPT
- Operating temperature: -40 °F to 149 °F (-40 °C to 66 °C)
- Operating pressure: 0 to 100 psi (0 to 689 kPa)
- Belden™ cable: #9363-22 AWG, #9364-20 AWG or #9365-18 AWG
- Maximum sensor to ATG cable distance: 500' (152.4 m)
- Sensor port fitting: 2" female NPT
- Sensor material: Anodized aluminum body and stainless steel sensor

Capabilities

- Performs a 3.0 gph leak and pressure test after every dispense cycle or 45 min. Positive shutdown of the affected turbine(s) on test failure.
- Performs a 0.2 gph monthly and 0.1 gph annual precision leak test during the thermally stable periods of dispensing. Optional positive shutdown of the affected turbine(s) on test failure.
- Performs pressure up, catch pressure, and other additional checks. Alarm only on test failure.

Approvals

- TS-LSU500: UL, cUL, ATEX, IECEx
- TS-LSU500E: UL, cUL
- Third party certification of leak detection capabilities.

Explosion Proof

For retrofit installations where only a high voltage conduit can be used. Use TS-420EXP module.

Model	Description
TS-LS500E/2	2-line transducer kit, explosion proof
TS-LS500E/3	3-line transducer kit, explosion proof
TS-LS500E/4	4-line transducer kit, explosion proof

Note: Using turbine pump interface (TPI) communications eliminates the need for a TS-RLY module; Franklin Fueling Systems intelligent controllers required.

Alternative Fuels Accessories

For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Model	Description
TS-AFALNIP	Leak generator needle valve kit required for E85 installations



SECONDARY CONTAINMENT MONITORING

The secondary containment monitoring (SCM) system is designed to detect leaks in double-wall piping, tanks, and sumps. The system utilizes the siphon/vacuum port of a submersible turbine pump to draw a vacuum on these interstitial spaces. The vacuum levels are then continuously monitored to detect any potential leaks in these double-wall containments.

HIGHLIGHTS

- Up to four different containments can be connected to each submersible turbine pump using a combination of single and dual channel TS-SCCM secondary containment control modules and secondary syphon ports.
- The secondary containment control module collects information on all interstitial spaces.
- Gathers system status, replenish rate, alarm, and diagnostic information.
- Utilizes AUTO-LEARN[®] technology to learn the actual interstitial space being monitored based on the vacuum flow rate through a calibrated orifice for precise leak detection.
- Alarms when vacuum cannot be maintained or when liquid is detected in secondary space.
- Optional positive submersible turbine pump shut-down upon alarm.
- Compatible with FE PETRO® brand submersible turbine pumps as well as Red Jacket® STPs.
- All components necessary for installation including syphon check valve,vacuum hose, fittings and other installation accessories are available from Franklin Fueling systems.

Note: Product compatible with EVO[™] 550 and EVO[™] 5000 only.

SPECIFICATIONS

- Operating vacuum level: -2 to -6 inHg
- Available software option on EVO[™] 550 and EVO[™] 5000.
- TS-420IB, TS-RLY and TS-ACI modules and the TS-SCM software option must be ordered and installed in the tank gauge ATG.
- Requires TS-SCCM secondary containment control module consisting of pressure sensor(s) and solenoid valve(s).
- Requires syphon check valve to connect to STP manifold.
- Containments to be monitored must terminate inside the submersible turbine pump containment.
- Installer must verify the vacuum limitation of each containment with its manufacturer prior to installation.

Approvals/Certifications

- Meets all requirements of California AB2481.
- National Work Group approved.

Operation

Secondary containment monitoring uses the siphon port of the submersible turbine pump to draw and maintain a vacuum on the secondary containments of lines, sumps, tanks and vapor lines. During installation a calibrated leak is introduced during the AUTO-LEARN® process which allows the system to learn the vacuum characteristics of each containment space. The vacuum level is continuously monitored and compared to established leak rates to ensure that the secondary containment is tight.

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SPECIFICATIONS CONTINUED

Components

- 1 Secondary containment control module
- 2 Vacuum line to secondary contained pipe
- 3 Pipe fitting with integrated test port
- 4 Secondary contained pipe
- 5 Vacuum line to secondary contained tank
- 6 Tank installation kit
- 7 Line weight (included with tank install kit)
- 8 Syphon check valve
- 9 EVO[™] 550 with SCM software





ORDERING INFORMATION

Secondary Containment Control Modules

-	
Model	Description
TS-SCCM/1	Single channel secondary containment control module
TS-SCCM/2	Dual channel secondary containment control module
TS-SCMCAL	Leak generator kit, one per station
VS-SCCM/1	220 VAC single channel secondary containment control module
VS-SCCM/2	220 VAC dual channel secondary containment control module

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Accessories

Model	Description
TSP-SCBRB	¼" NPT barbed fittings (Qty 5)
TSP-SCBRBT	¼" NPT barbed T-fitting
TSP-SCCLP	Hose clamps (Qty 5)
TSP-SCTB25	25' vacuum hose
TSP-SCTB50	50' vacuum hose
TSP-SCTB100	100' vacuum hose
TSP-SCVLV	Schreader valves (Qty 5)
400137937	Syphon check valve

Installation Kits

Model	Description
TSP-SCLSI	Product, vapor line and sump containment install kit
TSP-SCTK2	Tank containment install kit for 2" NPT risers, in-tank hose sold separately
TSP-SCTK2B	Tank containment install kit for 2" BSP risers, in-tank hose sold separately
TSP-SCTK4	Tank containment install kit for 4" NPT risers, in-tank hose sold separately
TSP-SCTK4B	Tank containment install kit for 4" NSP risers, in-tank hose sold separately



ORDERING INFO

Printer Supplies

Model	Description
TS-TP2	One box of 5 rolls of thermal printer paper for EVO™ 550 and EVO™ 5000
TS-TP2C	One case (100 rolls) of thermal printer paper for EVO [™] 550 and EVO [™] 5000

Upgrading Installed Fuel Management System ATGs

Two types of upgrades can be done on a fuel management system ATG: feature upgrades and software upgrades. The latest software versions are included with all feature upgrades. Most feature upgrades require ordering a software option, hardware options, and interface modules. Some modules may already be installed.

Feature Upgrade

Upgrade	Software	Hardware	Interface Module	Compatibility
Internal modem		TS-MDMIB internal modem		EVO [™] 550 and EVO [™] 5000
24 hour tank testing	TS-TT SCALD tank testing			EVO [™] 200, EVO [™] 400, EVO [™] 550 and EVO [™] 5000
Line leak	TS-ELLD electronic line leak detection	Appropriate TS-LS500/N transducer kit	TS-RLY module, not needed with TPI TS-420IB module TS-ACI module	EVO [™] 550 and EVO [™] 5000
Tank inventory reconciliation	TS-TRAC tank inventory reconciliation and autocalibration	TS-DIMIB module* Appropriate DIM interface cables		EVO [™] 200, EVO [™] 400, EVO [™] 550 and EVO [™] 5000
Secondary containment monitoring	TS-SCM secondary containment monitoring	Appropriate TS-SCCM modules, installation kits and accessories	TS-ACI module TS-RLY module TS-420IB module	EVO™ 550 and EVO™ 5000

Note: When placing an order for a feature upgrade, the serial number of the ATG to be upgraded must be supplied.

Software Version Upgrade Only

Model	Description
TSA-UPGMS	Software version upgrade shipped on a USB memory stick
*Required on EVO [™] 550 and EVO [™] 5000 in some hardware configurations.	

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TS-EMS ENVIRONMENTAL MONITORING SYSTEM

The TS-EMS environmental monitoring system can perform in-station diagnostic vapor recovery monitoring (VRM) and secondary containment monitoring (SCM) and interface to an existing tank gauge.

SPECIFICATIONS

- Number of dispensers monitored: 16.
- Input channels: 2.
- Output only channels: 2.
- Display type: touch screen LCD.
- Printer type: thermal.
- Volume units: gallons or liters.
- Display size: 320 × 240 pixels.
- Power requirements: 110 to 220 VAC, +15%, -10%, 150 Watt maximum, 1½ Amps.
- Operating temperature: 32° to 104 °F (0° to 40 °C).
- Storage temperature: -4° to 140 °F (-20° to 60 °C).
- LCD backlight contains mercury, dispose of properly.

Applications

The flexible architecture of the TS-EMS allows multiple applications to run concurrently, satisfying multiple monitoring needs.

- The vapor recovery monitoring application gauges the effectiveness of a station's vapor recovery equipment through continuous monitoring of gasoline vapors during fueling operations.
- Secondary containment monitoring application continuously monitors the interstitial spaces of double wall tanks, lines and sumps, and notifies station owners when a release of product into the environment has occurred.

Approvals

- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities

Capabilities

The TS-EMS is built on an established open-system software platform.

- Standard Ethernet connection allows easy integration to existing wide area networks.
- XML-based software allows remote access to data without additional software.
- Graphical touch screen LCD allows text to be displayed in native language.
- Generic interface modules give flexibility in configuring station monitoring requirements.
- E-mail notification gives station owners real-time status information.
- Multiple printing options give flexibility in style and format of reports.

HIGHLIGHTS

- Standalone ISD system.
- Approved by the California Air Resources Board EO VR-202 and VR-204.
- Includes VRM vapor recovery monitoring software and optional secondary containment monitoring.
- Dispenser-based disabling prevents the entire site from shutting down in the event of an EVR failure.
- Wired-less Flow Meter and Pressure Sensor interface option.
- Ethernet-ready, web-based remote access provides the user with remote access to VRM status information, reports, and alarm information using any web browser.
- Create custom rules to send e-mails and text messages on alarms and events directly from the console to service and compliance personnel.
- User-friendly touch screen interface with icon-based navigation.
- Scalable open architecture for easy and cost-saving future upgrades.

TS-EMS Ordering Guide

The TS-EMS environmental monitoring system comes standard with display, printer, and dispenser interface module. An internal TS-MDMIB modem can be added as a hardware option. Order the TEMSDPI/VS if the secondary containment monitoring software option is required.

TS-EMS Console Hardware and Software Options

TS-EMS consoles come standard with the ability to perform vapor recovery monitoring. The following software and hardware options can be added to customize your console. The internal hardware options will be factory installed when ordered with the console.

Internal Hardware Options

Model	Description
TS-MDMIB	(M) Internal modem, includes fax and data software capability

Internal Software Options

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TS-SCM	(S) Secondary containment monitoring

TS-EMS FUEL MANAGEMENT SYSTEM CONSOLE INTERFACE MODULES

TS-EMS consoles come standard with a power supply module, a controller module, and a model-dependent set of interface modules that can support up to 6 or 12 dispensers. In some situations non-standard module configurations may be required. Additional modules will be shipped separately from the EMS console. Six total modules can be installed with a maximum of four intrinsically safe modules and a maximum of three of any one kind of module.

Intrinsically Safe Modules

Model	Description
TS-PRB	12 input probe module, VFM flow meters
TS-4201B	8 input 4-20 mA module, VPS and SCCM pressure sensors

Non-Intrinsically Safe Modules

Model	Description
TS-RLY	8 output relay module, low power dispensers, and SCCM solenoids
TS-10ARLY	6 output 10 Amp relay output module, high power dispensers and SCCM solenoids

External Modules

Model	Description	
TS-DTU/P	Data transfer unit for wired-less VFM and VPS communications	
Note: Order one TS-DT	I/P and one TS-DRK/y install kit per dispenser. Ord	

Note: Order one TS-DTU/P and one TS-DRK/x install kit per dispenser. Order one additional TS-DTU/P for the console.

Model	Description
TEMSDPI/V	TS-EMS console with display, printer, DIM, VRM software, and one TS-PRB, TS-420IB and TS-10ARLY
TEMS2DPI/V	TS-EMS console with display, printer, DIM, VRM soft- ware, one TS-PRB and TS-420IB, and two TS-10ARLY
TEMS3DPI/V	TS-DTU ready TS-EMS console with display, printer, DIM, VRM software, and one TS-10ARLY module
TEMSDPI/VS	TS-EMS console with display, printer, DIM, VRM and SCM software, and one TS-PRB, TS-420IB and TS-10ARLY
TEMS2DPI/VS	TS-EMS console with display, printer, DIM and SCM software, one TS-PRB and TS-420IB, and two TS-10ARLY

Notes:

1. Appropriate DIM cable must be ordered separately.

- TEMS and TEMS3 systems can support up to six dispensers. TEMS2 systems can support up to twelve dispensers. All models can be expanded to support up to 16 dispensers with additional modules.
- The appropriate number of TS-VFM vapor flow meters and one TS-VPS vapor pressure sensor must be ordered separately to perform vapor recovery monitoring.
- 4. TS-ACI modules and hook signal wiring are only required for balance site installs.
- 5. When placing the order you must specify the Executive Order the system will be installed under, EO-202 or EO-204.

Dispenser Interface Module Cables

Model	Description
TSP-WDCBL	Wayne™ cable
TSP-TDCBL	Tokheim™ cablez
TSP-GDCBL	Gilbarco® cable
TSP-GSDCBL	Gilbarco® G-Site™ cable
TSP-BDCBL	Bennett® 512 cable

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IN-STATION DIAGNOSTICS (ISD)

The INCON® vapor recovery monitoring (VRM) option meets or exceeds all ISD requirements for ensuring that all components of the vapor recovery system are functioning normally. Recorded sales transactions are compared to data obtained from a TS-VFM vapor flow meter installed in each dispenser to verify that equivalent vapors are recovered from the vehicle when fuel is dispensed. The pressure of the vapor containment space is constantly monitored by the TS-VPS vapor pressure sensor and tested for over pressure and leakage conditions. Local and remote notification options alert the user of abnormalities and dispenser-based disabling keeps the rest of the site up and running when a single dispenser EVR system has a problem. The wired-less option, featuring the TS-DTU, prevents the need to break concrete to install new conduit or even pull wires and reduces the cost of the console.

HIGHLIGHTS

- Dispenser-based disabling prevents the entire site from shutting down in the event of an EVR failure.
- Wired-less Flow Meter and Pressure Sensor interface option when conduit is not present.
- Ethernet-ready, web-based remote access provides the user with remote access to VRM status information, reports, and alarm information using any web browser.
- Create custom rules to send e-mails and text messages on alarms and events directly from the console to service and compliance personnel.
- User-friendly touch screen interface with icon-based navigation.
- Scalable open architecture for easy and cost-saving future upgrades.

TS-DTU

- Uses dispenser power wires to transmit data.
- Multi-industry proven power line communications technology.
- Save weeks of installation time.
- Save thousands of dollars in costly conduit installation and avoid damaged and blocked conduit.
- Save on the cost of the console due to a reduction in modules needed.
- No disruption of forecourt by having to break concrete.
- No need to pull wires.
- Will not interfere with dispenser operation.
- UL approved for installation in most common dispenser models.
- Works even if some dispensers are on different phases.







TS-FMS











Vapor Flow Meter Vapor Pressure Sensor

Model	Description
TS-VFM	Vapor flow meter, one per dispenser
TS-VPS	Vapor pressure sensor, one per site
VRMEO202	Vapor Recovery Monitoring, ISD, CARB Executive Order 202 (Vac Assist)
VRMEO204	Vapor Recovery Monitoring, ISD, CARB Executive Order 204 (Balance)
TS-DTU/P	Data transfer unit for wired-less VFM and VPS communications
TS-DRK/A	Gilbarco® Advantage dispenser retrofit install kit
TS-DRK/E	Gilbarco® Encore™ dispenser retrofit install kit
TS-DRK/T	Tokheim™ dispenser retrofit install kit
TS-DRK/W	Wayne™ dispenser retrofit install kit
Notes:	·

- 1. Approved by California Air Resources Board EO VR-202 and VR-204.
- 2. Minimum module requirements include one TS-PRB, TS-420IB, TS-RLY or TS-10ARLY.
- 3. VRMEO202 and VRMEO204 software is included in the TS-EMS console.
- 4. Order one TS-DTU/P and one TS-DRK/x install kit per dispenser. Order one additional TS-DTU/P for the console. Controller Module software 9.5 or areater required.
- 5. Consoles using the wired-less option do not require the TS-PRB or TS-420IB modules for communication with the TS-VFM and TS-VPS
- 6. TS-ACI modules and hook signal wiring are only required for balance site applications.

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Tokheim™ is a trademark of Tokheim Holding B.V.



SUMP TEST SYSTEM

The INCON™ brand Sump Test System (STS) is designed specifically to test containment for leaks. Up to four containments can be leak-tested simultaneously with accurate compliance test results available in just 15 minutes.

HIGHLIGHTS

- Designed to deliver cost-effective environmental compliance test data.
- Easily transported in two supplied carrying cases.
- Easily set-up and programmed with site-specific data and sump identification before a test. Site and test data can also be saved to a laptop.
- Laptop interface optional using System Sentinel[™] Tech Software.
- Accommodates up to four probes for testing of up to four spill containers, dispenser sumps, or tank sumps simultaneously.
- Uses INCON[™] brand magnetostrictive probe technology for unparalleled accuracy and reliable results.
- Highly accurate leak test detects level changes greater than 0.002 inches during the fifteen minute test.
- Provides accurate test fluid levels for each sump monitored.
- Automatically prints out passed or failed test reports in just fifteen minutes after starting a leak test. Printer included.
- Shows the date and time of the test, test fluid levels, and the leak test results on sump leak test reports.
- Additional sump leak test reports can also be printed at the console before other tests are completed.



SPECIFICATIONS

Components

- 1 TS-STS sump test kit console
- 2 Leak test probe
- 3 Float
- 4 Probe cable
- 5 Test fluid (filled above all openings)

Specifications

- Operating temperature: Console - 32 °F to 122 °F (0 °C to 50 °C). Leak test probes - -40 °F to 140 °F (-40 °C to 60 °C).
- Storage temperature: Console - -4 °F to 140 °F (-20 °C to 60 °C). Leak test probes - -40 °F to 158 °F (-40 °C to 70 °C).
- Intrinsic safety rating: Leak test probes - Class 1, Div. 1, Group D.
- Carry case weight and dimensions: Console - 33 lbs. (15 kg), 24" × 19" × 8½" (62 cm × 49 cm × 22 cm). Leak test probes - 30 lbs. (13.5 kg), 38" × 18" × 6" (97 cm × 45 cm × 16 cm).
- Number of sumps monitored: Console - 4. Leak test probes - 1.
- Applicable liquids: Leak test probes - testing solution.
- Level units: Console - inches.
- Display type and size: Console - alphanumeric LCD, 2 lines of 40 characters.
- Printer type: Console - 24 column thermal printer.
- Power requirements: Console - 115 VAC, 50 Watts, 6' power cord with 3-prong plug supplied. Leak test probes - 50' cable supplied.

ORDERING INFORMATION

Model	Description	
TS-STS-2K	Sump test system with two probes	
TS-STS-3K	Sump test system with three probes	
TS-STS-4K	Sump test system with four probes	
STS-REPAIR	Sump test system repair service	







HIGHLIGHTS

- Pressure records stored every 5 minutes, storing 12 months worth of data.
- Audible & visual alarm notifications include:
 - Pressure out of range: pressure is outside of range of -6 to 2 inWC for more than 30 minutes.
- Pressure At Atmosphere: pressure within +/- 0.15 inWC for more than 60 minutes
- Alarms persistent for more than 72 hours, site shutdown is activated.
- Sensors measure from -8 to 8 iwg.

Report Capabilities

- Support external printer via USB.*
- Available reports include: Status, Event History, and Alarm History.

*Contact Franklin Fueling System Technical Support for details.

Ullage Monitor Status Conditions

- The Status Indicator indicates if the site is exceeding the allowable threshold if the pressure is exceeding the allowable threshold, the indicator shows "Over Pressure", otherwise "OK".
- The Ullage Pressure indicator shows the actual pressure in units defined in system preferences.
- The Accumulated Over-Pressure indicator shows the accumulated time that the site has been in the overpressure state during the rolling 24-hour interval.
- The Alarm Status indicator shows the current status of the alarm either "Normal," "Warning," or "Alarm".

Vacuum Monitor Status Conditions

- The Motor Status indicator shows when the vacuum motor is running or idle.
- The Vacuum Status indicator shows the state of the vacuum sensor / switch.
- The Alarm Status shows the status of the Vacuum Monitor by showing if the system is in Warning, Alarm, or OK.

CENTRAL VACUUM MONITOR KIT

The central vacuum monitor (CVM) is a complete, automatic, continuous vapor monitoring system that performs all essential Stage II Vapor Recovery system monitoring functions. The CVM is paired with sensors to perform functions including the monitoring of both vacuum pump performance and tank ullage pressure. The CVM also provides alarm notification of system status as well as operational history reports.

SPECIFICATIONS

Central Vacuum Monitor

- Line voltage: 110-240 V~, 1.0 A
- AC input rating: 7 mA RMS, 110-240 V~
- Frequency & power: 50/60 Hz, 150 W maximum
- Storage temperature: 20° to 60° C (- 4° to 140° F)
- Operating temperature: 0° to 40° C (32° to 104° F)
- Operating humidity: 0 to 95%, non-condensing
- Communication ports: RS-232 Comm 1, Ethernet, USB (2)
- Cleaning: Cloth or sponge slightly dampened in mild detergent
- Splash resistance: Not to be exposed to direct spray, splash or drips
- Location: Indoors in an office or in a non-hazardous pollution degree 2 environment per IEC60664
- Relay rating: 10A @ 240V~
- UL, ATEX, IECEx, PESO
- Complies with Mexican NOM-004-ASEA-2017

Vapor Pressure Sensor & Vacuum Pump Sensor

- Class I Div 1 Intrinsically Safe Groups C & D
- Operating Temperature -40 to 80°C (-40 to 176°F)
- Storage Temperature -40 to 100°C (-40 to 212°F)
- UL/ATEX/IECEx certified

ORDERING INFORMATION

Model	Description
CVMD	Central vacuum monitor kit
CVMD-M	Replacement central vacuum monitor, with display
TS-TPS	Tank pressure sensor
TS-PVS	Pressure vacuum sensor

ELECTRONIC LINE LEAK DETECTORS





HIGHLIGHTS

- The TS-LLD leak detector performs gross leak tests after each 3.0 gph dispense, the monthly 0.2 gph test and the annual 0.1 gph test.
- Performs positive shutdown if a leak is detected.
- Tests performed at full pump pressure to ensure integrity of lines.
- Carries numerous regulatory approvals.
- · Low-cost, wireless installation retrofits easily into the existing submersible turbine pump housings without excavation.

SPECIFICATIONS

- Dimensions: Console 4-3/8" × 3-3/8" × 2-5/16". Line leak detector - $23\frac{1}{2}$ " × 2-3/8".
- Applicable liquids: Gasoline and diesel motor fuels.
- Gross leak test (3.0 gph): Yes.
- Monthly test (0.2 gph): Yes.
- Annual test (0.1 gph): Yes.
- Indicates days since 0.2 gph test passed: Yes.
- LED unit: Yes.
- Positive shut-down: Yes.
- Tank Sentinel® interface: Yes.

LINE SENTINEL™

The INCON TS-LLD line leak detector uses patented, flowbased technology to perform multiple linetightness tests.

Applications

The TS-LLD can be used in most pressurized applications, in any new or existing turbine pump housing and can be used in place of a mechanical leak detector.

- Third party certified with 100% probability of leak detection and a 0% probability of false alarm.
- Supports rigid, fiberglass, and flexible piping systems.
- Line leak test failure indicated by alarm.
- Works as a stand-alone unit or interfaced with INCON Tank Sentinel® consoles.
- Note: The presence of the integral in-line check valve of the TS-LLD during normal operation creates a pressure drop which will reduce the total flow potential of the submersible pump. Some of the pressure drop can be compensated by upgrading the submersible pump motor. To ensure desirable flow rates are achieved, we do not recommend TS-LLD in the following sites:
 - where it is imperative to achieve 10 gpm.
 - sites that frequently have more than 4 nozzles open at a time. In such cases we recommend our AutoLearn™ pressure-based electronic leak line detector

Capabilities

The INCON TS-LLD line leak detector performs a variety of tests for environmental compliance.

- Eliminates slow-flow problems associated with mechanical leak detectors.
- Immediately identifies leaks even in changing thermal conditions, unlike mechanical LLDs.
- Performs continuous testing using highly sensitive volumetric flow technology.
- Continuously performs self-diagnostic test to ensure proper system operation.

Approvals

- UL, cUL
- Third party certification of leak detection capabilities

ELECTRONIC LINE LEAK DETECTORS



Veeder-Root® is a trademark of Danaher Corporation. Quantum™ is a trademark of Gilbarco Inc. Red Jacket™ is a trademark of Veeder-Root Company.



HIGHLIGHTS

- Monitors up to 4 sensors for overfill or leak detection.
- Simple to install and configure.
- Can be installed indoors or outdoors.
- Cost effective leak detection or overfill solution.
- Connect to remote alarms or external devices.

S940

Four channel sensor alarm console

S940 SENSOR ALARM CONSOLE

The S940 Sensor Alarm Console is a cost effective solution for tank overfill protection and sensor leak detection needs. This easy-to-install-and-operate device monitors up to four tanks, containment sumps or interstitial spaces and provides an audible and visual indication of an alarm condition. Two programmable relay outputs are included to sound an external alarm or send a signal to a building control or monitoring system. The weatherproof enclosure allows the S940 Sensor Alarm Console to be conveniently installed indoors or out.

SPECIFICATIONS

- Input channels: 4 (2-wire float switch sensor inputs)
- Output channels: 2 (dry contact relay outputs)
- Internal audible alarm
- Alarm, power and output LEDs
- Compatible Franklin Fueling Systems 2-wire sensors
 TSP-ULS universal liquid sensor
- TSP-HLS high level sensor
- TSP-HFS horizontal float switch
- TSP-UHS universal hydrostatic sensor
- Dimensions: $6" \times 6" \times 4"$
- Power requirements: 100-240 VAC +/- 10%, 50/60 Hz, 15 W max
- Operating temperature: -13 °F to +140 °F (-25 °C to +60 °C)
- Enclosure: NEMA[®] 4, indoor / outdoor (non-hazardous locations only)

Capabilities

- Tank overfill alarm
- Steel or fiberglass tank interstitial monitoring
- Containment sump monitoring
- General liquid sensor monitoring
- Programmable relay outputs for remote alarm or external device interface

Approvals

- UL, cUL, associated apparatus, non hazardous location
- Third party certification of leak detection capabilities

INVENTORY MONITORING

Each station has to accommodate different site-specific and even tankspecific conditions. Ensure you have the right probe and float combination for your particular application.



PROBES

Pair with a tank gauge and float kit for accurate tank level measurement. Available in two model options:

Inventory Control Precision product and water level measurement.

Leak Detection Upgrade Tank level measurement plus tank leak detection testing.



STANDARD GAS AND DIESEL FLOAT KITS

Standard gas and diesel floats kits come complete with a product and water float. A single set is paired with each probe to collect tank level information.





PHASE SEPARATION FLOAT KITS

Protect your site from the dangers of undetected ethanol phase separation. Detect both water and phase separation with a single float kit. Manage product levels and be alerted to high water or phase separation levels in tanks. Phase separation that goes undetected can cause serious damage if pumped into a customer's vehicle.

Float Options

Standard gas, diesel, and phase separation floats are all available in 2" models for 2" riser applications, and 4" models for 4" riser applications.





DENSITY MEASUREMENT FLOAT KITS

Ensure fuel quality and detect cross-dropping with density measurement float kits. When paired with leak detection probes these kits not only allow you to monitor product and water levels, they also give you the ability to monitor the quality of the fuel being dropped to ensure you are always getting exactly what you paid for and detect cross-drops so you can react quickly.



Plus Additional flexible probe and chemical/LPG float options available.

DIGITAL PROBES



MITIGATE STATIC FRICTION

With any probe, naturally occurring static friction between the float and the probe shaft can cause the float to remain in place when the product level drops and even when it rises.

Our digital probes feature a unique and innovative vibration motor mounted inside the probe head. Every 5 minutes, the vibration motor automatically pulses. This frees the floats from any static friction with the probe shaft and mitigates the negative effects static friction can have on level readings or leak detection accuracy.



Diagram has been exaggerated for illustrative purposes.

SIMPLE INSTALLATION AND SETUP

The digital probes advanced communication capabilities allow for a faster installation and setup.





FASTER SETUP

The probe automatically sends important setup data to the tank gauge eliminating manual input by technicians.

This data includes:

- Gradient
- Probe type
- Length
- Serial number



DIGITAL INVENTORY AND LEAK DETECTION PROBES

Digital inventory and leak detection probes provide accurate tank level monitoring and reporting with optional leak detection capabilities. These probes employ digital magnetostrictive position measurement technology for highly accurate tank readings.

HIGHLIGHTS

- Models available for inventory control or inventory control with leak detection.
- Capable of precise leak detection, density measurement, and inventory monitoring.
- Suitable for use with gasoline, diesel, DEF/AdBlue[®], and other manufacturer approved products.
- Bottom mounted installation for fast and simple install.
- Vibration motor integrated into probe head pulses every 5 minutes to reduce the effects of stiction on level reading and leak detection, providing readings with higher accuracy.
- Screw-in electrical connector provides quick installation or removal, eliminating the need to re-splice wires.
- Highly accurate digital communication between the probe and the tank gauge.
- Probes are available in many sizes that are suitable for all common tanks.
- Easily installed into 2", 3" or 4" riser pipes.

SPECIFICATIONS

- Operating temperature: -40° to 140 °F (-40° to 60 °C)
- Storage temperature: -40° to 158 °F (-40° to 70 °C)
- Non-linearity: ±0.025% of full scale
- Repeatability: ±0.001"
- Temperature sensors: 5 thermistors located in the shaft
- Temperature resolution: ±0.02 °F (±0.01 °C)
- Probe pigtail: 10' long three conductor cables with shields and polyurethane jacket
- Compatible with up to three floats for product, water, phase separation detection, or density measurement.
- Compatible with Franklin Fueling Systems tank gauges including: EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000.

Approvals/Certifications

• UL and cUL listed, ATEX, IECEx

Applications

Digital probes feature exceptional linearity, resolution, and stability, and are used in underground and aboveground storage tanks. Two types of probes are available for the following applications:

- The leak detection probes are typically used for underground storage tanks and petroleum applications when static or SCALD leak detection is required.
- The inventory control probes are typically used for aboveground storage tanks, chemical or oil waste, or underground storage tanks that do not require in-tank leak detection.

Inventory and Leak Detection Probe (Shown with optional precision density diesel float kit)

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Inventory Probe (Shown with optional 4" gas

float kit)

SPECIFICATIONS CONTINUED

Components

- Probe head
- 2 Guides
- 3 Bottom mount fitting
- 4 Probe shaft
- 6 Product float
- 6 2" or 4" gas, diesel or phase separation water floats
- Precision or standard density float
- 8 LPG float

Ohemical float

Note: All float kits sold separately.

Operation

An electromagnetic field is created inside the probe head and forms around a long waveguide within the probe shaft when position measurements are taken. The electromagnetic field interacts with the magnetic field of the float(s) and produces a shock wave in the waveguide that travels at a known speed. When the shock wave is detected at the probe head, the probe creates a signal that corresponds precisely to the product level. Product expansion calculations are enabled by temperature sensors that are located at various points in the probe shaft.



ORDERING INFORMATION

Leak Detection Probes

Model	Description
FMP-LL3-29	2' digital leak detection probe
FMP-LL3-41	3' digital leak detection probe
FMP-LL3-53	4' digital leak detection probe
FMP-LL3-65	5' digital leak detection probe
FMP-LL3-69	5'4" digital leak detection probe
FMP-LL3-77	6' digital leak detection probe
FMP-LL3-81	6'4" digital leak detection probe
FMP-LL3-89	7' digital leak detection probe
FMP-LL3-101	8' digital leak detection probe
FMP-LL3-113	9' digital leak detection probe
FMP-LL3-125	10' digital leak detection probe
FMP-LL3-131	10'6" digital leak detection probe
FMP-LL3-137	11' digital leak detection probe
FMP-LL3-149	12' digital leak detection probe

Notes:

1. DEF, AdBlue, and chemical installations require that head of the probe be installed outside of the tank and riser. Order a probe length that is greater than the tank height/diameter plus the riser.

FMP-LL3 probes are available in standard lengths up to 149 inches only.
Longer probes are available in TSP-LL2 models, contact Customer Service

for price and availability. 4. Custom probe lengths are available, contact Customer Service for price

and availability.

5. Float kits must be ordered separately.

 ${\rm 6.\ FMP-LL3}$ probes come with bottom mount hardware. For replacement hardware kits, order TSSP-BMKT.

Inventory Control Probes

Model	Description
FMP-LL3-29-I	2' digital inventory control probe
FMP-LL3-41-I	3' digital inventory control probe
FMP-LL3-53-I	4' digital inventory control probe
FMP-LL3-65-I	5' digital inventory control probe
FMP-LL3-69-I	5'4" digital inventory control probe
FMP-LL3-77-I	6' digital inventory control probe
FMP-LL3-81-I	6'4" digital inventory control probe
FMP-LL3-89-I	7' digital inventory control probe
FMP-LL3-101-I	8' digital inventory control probe
FMP-LL3-113-I	9' digital inventory control probe
FMP-LL3-125-I	10' digital inventory control probe
FMP-LL3-131-I	10'6" digital inventory control probe
FMP-LL3-137-I	11' digital inventory control probe
FMP-LL3-149-I	12' digital inventory control probe

FLEXIBLE PROBES

Flexible probes provide accurate and reliable inventory management for otherwise difficult to install applications.



ABOVEGROUND STORAGE TANKS

Flexible probes are ideal for aboveground storage tank applications where probes are installed at higher levels.

HIGHLIGHTS

- The flexibility of the probe allows the installer to take the entire probe to the top of the tank, uncoil it, and then install it.
- A long rigid probe can be difficult and dangerous to position and install at large heights.
- Transporting a longer rigid probe takes up significantly more space than a flexible probe.



LOW OVERHEAD CLEARANCE

Flexible probes make installing in spaces with little overhead clearance, like indoor generator tank applications, easy to carry out.

HIGHLIGHTS

- Fitting a rigid probe down into a tank indoors can be next to impossible, unlike flexible probes that can be installed with minimal space required.
- A flexible probe can be uncoiled and fed directly into the tank within a small amount of space.
- The included probe weight fits at the bottom of the probe and helps to guide it into place.



ACCURATE INSTALLATION

The flexible probe installation kit includes several design features which ensure accurate installation for proper performance.

HIGHLIGHTS

- A 16" stainless steel sleeve guides the probe into place and ensures proper vertical alignment.
- The adjustable compression fitting allows for variable height adjustment, giving you the ability to set the probe depth with precision.
- The guides and fitting make sure that the probe is installed correctly, thereby ensuring accurate and consistent level readings.



ACCURATE LEVEL MONITORING

The water and product level float kits are designed specifically to provide accurate inventory levels on flexible probes.

HIGHLIGHTS

- Float kits are available in 2", 3", and 4" diameters.
- Both diesel and gasoline float kits are available.
- With longer probes, inaccuracies can develop due to the larger span of the probe shaft. To avoid this, each flexible probe float kit comes with a spacer designed to ensure that accurate level readings are relayed over longer probe shaft distances.



HIGHLIGHTS

- Available in lengths for tanks ranging from 4' to 68' (1,219 mm 20,726 mm).
- All probe components are packaged within a 5/8" flexible probe shaft, eliminating a bulky probe head. The compact design provides a better environmental seal and offers flexibility in mounting the probe.
- Each probe comes with a stainless steel weight and weight pin to keep the flexible probe aligned vertically in the storage tank.
- A 16" (406 mm) installation sleeve with adjustable compression fitting (sold separately) allows for variable height adjustment during installation and ensures accurate placement of the probe within the tank.
- Flexible probe float kits (sold separately) come with product float, water float, and a spacer which ensures accurate readings for these longer length probes.

FLEXIBLE PROBES

Whether you are working in a tight, low-overhead space or have a high aboveground storage tank, our flexible probes are designed to accommodate your tanks. These probes, like our standard rigid probes, provide reliable and accurate inventory management for otherwise difficult installation applications. Available in lengths for tanks ranging from 4' to 68' (1,219 mm - 20,726mm). Flexible probes provide an ideal solution for tall spaces, tight spaces, aboveground, and indoor applications.

SPECIFICATIONS

- Input voltage: 16 to 31 VDC
- Resolution: 0.010" (0.254 mm)
- Linearity: +/- 0.01% of full scale, +/- 0.010 inch (.254 mm), whichever is greater
- Repeatability: +/- 0.001% of full scale, +/- 0.00025 inch (0.0064 mm), whichever is greater
- Temperature accuracy: Absolute +/- 2 °F (+/- 1.11 °C)
- Temperature measurement resolution: +/- 0.01 °F (0.02 °C)
- Temperature sensing range: -40 °F to 150 °F (-40 °C to 66 °C)
- Operating temperature range: -40 °F to 158 °F (-40 °C to 70 °C)
- Maximum tank capacity: 5,875,000 gal (22,200,000 liters)
- Total float capability: Two floats
- Environment: NEMA 4
- Probe material: PVDF (polyvinylidene flouride)
- Weight and weight pin material: stainless steel
- Includes 2' (610 mm) cable (for additional cable, order P/N 88761 for 500 feet (305 m) or P/N 88760 for 1,000 feet (305 m).
- Compatible with EVO[™] 200, EVO[™] 400, EVO[™] 550 and EVO[™] 5000 fuel management systems with software version 2.6.2.8040 or later.
- Use appropriate flexible probe installation kit for installing flexible probes.
- Use appropriate flexible probe float kits only.

Capabilities

- Flexible probes can report the level of up to two floats.
- Flexible probes are capable of inventory monitoring.

Approvals/Certifications

• UL, cUL, ATEX, IECEx
SPECIFICATIONS CONTINUED

Components

- Flexible probe shaft
- 2 Product float
- 3 Spacer (included on probe length models 23' and greater)
- 4 Water float
- 5 Weight
- 6 Weight pin
- Probe head, 3/4" NPT
- 8 Adjustable compression fitting, 1" NPT
- 9 16" (610 mm) installation sleeve, 3/4" NPT (optional)
- Dead Band Space (between 6.35" and 19.35")
- 1 Null Zone (no detection for top 12" to 16")

Operation

When a flexible probe takes a measurement an electromagnetic pulse is created inside the probe and travels down a long waveguide within the probe shaft. When the pulse encounters the magnetic field of one of the floats a portion of the pulse is reflected back to the probe head. When the reflected pulse is detected at the probe head the data is sent to the automatic tank gauge and a precise product level is displayed. Temperature sensors located at various points on the probe shaft allow the automatic tank gauge to compensate for temperature related expansion or contraction of the product.



Note: A vertical tank is depicted, however, flexible probes can also be used in a horizontal tank application.

ORDERING INFORMATION

Ordering Guide

Use the guide and diagram below to determine the maximum probe length based on the dimensions of your tank. Then use the maximum probe length to choose the appropriate flexible probe model from the tables below.

Begin by measuring the internal depth of your tank (A) from top to bottom (in inches). If applicable, measure the tank riser (B) as well.

2 Add your two measurements (if applicable), to determine your tank and riser depth.

A	Tank	Depth	inche	s
---	------	-------	-------	---

- +
- B Riser Height _____inches
- O Total Tank Depth _____inches

3 In the chart below, find the range your Total Tank Depth is in. Record the corresponding Tank Bottom Clearance in step 4.

Total Tank Depth (Inches)	Tank Bottom Clearance
47-144	1"
145-288	2"
289-432	3"
433-600	4"
601-720	5"
721-840	6"

4 Subtract your tank bottom clearance from your Total Tank Depth to determine your Max Probe Length in inches.

- O Total Tank Depth_____inches
- D Tank Bottom Clearance_____inches

Max Probe Length_____inches

Choose the probe model in the following table by selecting the model with the closest Max Probe Length to the length calculated in step 4. If your calculation is in between two lengths, choose the longer length. For example, if your Max Probe Length is 260", your application would require an FMP-FLX-21. Please note, if your calculation in step 4 does not exactly match a Max Probe Length value in the following table, then you will need to order the installation kit that allows you to adjust your install height so your flexible probe fits to your total tank depth.



PROBES AND SENSORS

ORDERING INFORMATION

Flexible Probes

Model	Max Probe Length (inches)	Model	Max Probe Length (inches)
FMP-FLX-4	64	FMP-FLX-21	268
FMP-FLX-5	76	FMP-FLX-22	280
FMP-FLX-6	88	FMP-FLX-23	292
FMP-FLX-7	100	FMP-FLX-24	304
FMP-FLX-8	112	FMP-FLX-25	316
FMP-FLX-9	124	FMP-FLX-26	328
FMP-FLX-10	136	FMP-FLX-27	340
FMP-FLX-11	148	FMP-FLX-28	352
FMP-FLX-12	160	FMP-FLX-29	364
FMP-FLX-13	172	FMP-FLX-30	376
FMP-FLX-14	184	FMP-FLX-31	388
FMP-FLX-15	196	FMP-FLX-32	400
FMP-FLX-16	208	FMP-FLX-33	412
FMP-FLX-17	220	FMP-FLX-34	424
FMP-FLX-18	232	FMP-FLX-35	436
FMP-FLX-19	244	FMP-FLX-36	448
FMP-FLX-20	256	FMP-FLX-37	460

Model	Max Probe Length (inches)
FMP-FLX-38	472
FMP-FLX-39	484
FMP-FLX-40	496
FMP-FLX-41	508
FMP-FLX-42	520
FMP-FLX-43	532
FMP-FLX-44	544
FMP-FLX-45	556
FMP-FLX-46	568
FMP-FLX-47	580
FMP-FLX-48	592
FMP-FLX-49	604
FMP-FLX-50	616
FMP-FLX-51	628
FMP-FLX-52	640
FMP-FLX-53	652
FMP-FLX-54	664

Max Probe Length (inches)
676
688
700
712
724
736
748
760
772
784
796
808
820
832

Note: Flexible probe orders cannot be cancelled or returned.

Flexible Probes Floats & Accessories

Model	Description
FMP-SLVF	Installation kit, includes sleeve and adjustable height compression fitting
FMP-AGF2	2" gasoline float kit for flexible probes, includes product float and water float
FMP-AGF3	3" gasoline float kit for flexible probes, includes product float and water float
FMP-AGF4	4" gasoline float kit for flexible probes, includes product float and water float
FMP-ADF2	2" diesel float kit for flexible probes, includes product float and water float
FMP-ADF3	3" diesel float kit for flexible probes, includes product float and water float
FMP-ADF4	4" diesel float kit for flexible probes, includes product float and water float

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PROBES AND SENSORS

FLOAT KITS





HIGHLIGHTS (CHEMICAL FLOATS)

- Suitable for use in a wide variety of chemical applications; consult factory for chemical compatibility issues.
- Use one float per probe.
- Float specific gravity 0.55 to 0.63.
- Collapse pressure 500 psi/g minimum.

Model	Description
TSP-IDF2	2" float set for diesel tanks
TSP-IGF2	2" float set for gasoline tanks
TSP-IDF4	4" float set for diesel tanks
TSP-IGF4	4" float set for gasoline tanks
TSP-LPGF	2" float for LPG tanks, with or without isolation sleeve
TSP-SSP	2-1/16" OD, #316 stainless steel float for chemical applications only

Note: Order one float set for each FFS Mag probe.



2" and 4" Floats

• Each float set contains a product and water float.

• Designed for applications involving 2", 3" or 4" riser pipes.

• Compatible with a wide variety of petroleum products.

Designed for applications involving tank openings of at least 2".Single float used for monitoring the level of LPG (propane) fuel.

• For use in USTs or ASTs with FFS probes. TSP-LPG/EU float can be used with locally supplied tank isolation sleeves.

Water floats are colored red for gasoline and blue for

diesel to assure compatibility with most liquids.

• Suitable for monitoring pressurized products.

HIGHLIGHTS (LPG FLOATS)

HIGHLIGHTS (2" AND 4" FLOATS)

PHASE SEPARATION FLOAT KITS

2" and 4" phase separation float kits detect both water and phase separation with a single float kit. The water and phase separation detection float kit allows you to effectively manage product levels as well as alert you of water or phase separation levels in your tanks. A single float is used to detect the presence of both water or phase separated fuel to ensure the detection of either from reaching customer's vehicles.

HIGHLIGHTS

- Optional float kit for gasoline and Ethanol blend users.
- Product float determines fuel level.
- Water float will rise with the presence of water or phase separated fuel.
- Simple single-float solution for both water and phase separation.
- Improved minimum water level detection capability.
- Allows you to easily shut down a submersible pump before water or phase separation reaches the customer's vehicle.

SPECIFICATIONS

- Designed for applications using 2" or 4" risers.
- Each float kit contains both product float and water and phase separation float.
- Appropriate for use with gasoline and Ethanol blends up to E15.
- Compatible with all FFS probes.
- Options available for EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000

ORDERING INFORMATION

Model	Description
TSP-IGF2P	2" phase separation float kit for gasoline and up to E15
TSP-IGF4P	4" phase separation float kit for gasoline and up to E15



DENSITY MEASUREMENT FLOAT KITS

With density float kits, EVO[™] Series fuel management systems have the ability to continuously monitor the density of fuel stored in underground and aboveground storage tanks. The same magnetostrictive probe that provides inventory management and leak detection capabilities can also supply product density and mass without the addition of extra probes or sensors. Programmable high and low density alarm points allow the user to determine the range of acceptable density fluctuations.

HIGHLIGHTS

- Designed for applications involving 4" riser pipes.
- Each float set contains a product, density, and water float.
- Available in Standard (3 kg/m3 accuracy).
- Floats are constructed of Nitrile rubber and PVDF (precision model density floats are also nickel-plated).
- Water and product floats are colored red for gasoline and blue for diesel.
- Density and product floats are calibrated and must be maintained as a set.
- Theory of Operation: Density measurement is based on the distance between the calibrated product and density floats. As the density of the fuel changes, the gap between the floats will increase or decrease in proportion to the change. The tank gauge receives this information from the probe and uses it to calculate and display the current density of the fuel.

ORDERING INFORMATION

Model	Description	Density Range
TSP-IDF4D3	Standard diesel/fuel oil density float kit	790-900 kg/m3
TSP-IGF4D3	Standard gasoline density float kit	690-800 kg/m3

Note: Order one density measurement float kit for each magnetostrictive probe. Probes used with density float kits must have serial numbers greater than 6000000

SPECIFICATIONS

PROBES AND SENSORS

- Measurement accuracy: ±3.0 kg/m3
- Measurement resolution: ±0.1 kg/m3
- Minimum detectable product level with water float: 10.70"
- Minimum detectable product level without water float: 6.70"
- Options available for EVO[™] 200, EVO[™] 400, EVO[™] 550, EVO[™] 5000

System Diagram





PROBE INSTALLATION KITS

The new digital inventory & leak detection probes come with hardware that allows them to be installed at the bottom of the tank. The install kits below provide a tight seal to either 2" or 4" risers pipes preventing water intrusion and meet regulatory requirements. The 4" models also provide a quick release cap for easy access to the probe for inspection or maintenance.

HIGHLIGHTS

- The TSP-K4AS/ASL install kits are for use with chemical or other installations where it is desireable for the probe head to be outside of the riser. It consists of a #316 SS 4" cap and compression fitting that is installed on the probe shaft so that only the floats and shaft are exposed to the tank contents. Includes TSP-UVPK probe head protection kit.
- The TSP-LPGK install kit is for use with pressurized LPG tanks where the probe head will reside outside of the tank opening. It consists of a special compression fitting, designed to retain the contents of the pressurized tank, that is installed on the probe shaft and then inserted into a user-supplied cap with a 3/4" NPT hole. Includes TSP-UVPK probe head protection kit.

Bottom Mount Kits

Model	Description
TSP-C2A	Mag probe install kit for 2" risers
TSP-C2B	Mag probe install kit for 2" risers with BSP threads
TSP-C4A	Mag probe install kit for 4" risers
TSP-C4B	Mag probe install kit for 4" risers with BSP thread

Other Kits

Model	Description
TSP-K4AS	#316 stainless steel mag probe install kit for 4" riser pipes
TSP-K4ASL	#316 stainless steel install kit for probes larger than 149"
TSP-LPGK	LPG probe install kit, 149" maximum LL3 probe length

Note: TSP-LPGK install kit is not needed when locally supplied tank isolation sleeve is utilized.

Cables

Model	Description
600-0180	Quick disconnect probe cable

Notes:

1. Cable is sold in 500' increments.

2. Contact technical service for more information on cable requirements and runs greater than 500'.

ACCESSORIES

Model	Description
TSP-DB1	One direct burial splice connector kit
TSP-DB10	Pack of 10 direct burial splice connector kits
TSP-DBTOOL	Epoxy dispensing tool
TSP-KW30	Pack of 30 3M™ splice connectors
TSP-UVPK	Ultraviolet protection kit - protects probe electronics when installed in AST applications

Notes:

1. Use the TSP-DB1 or TSP-DB10 for direct burial cable applications or when weatherproof junction boxes are not used.

2. The DBTOOL is required to dispense the epoxy.

3. Each direct burial splice connector kit includes a receptacle, three splice connectors, and epoxy for the dispensing tool.

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SELECTING CONTAINMENT MONITORING SENSORS

No matter what the application is, we have a containment monitoring solution to fit your needs. From dispenser sumps and turbine sumps, to tank interstitial spaces and monitoring wells, we have a sensor option to meet your requirements.



TANK GAUGE REQUIREMENTS

All sensors require an EVO[™] Series fuel management system. Depending on the sensor type, either two-wire or three-wire sensor modules are used to power and control the sensors.

THERE ARE TWO TYPES OF SENSORS...

NON-DISCRIMINATING SENSORS

These two-wire sensors are able to detect and send an alarm signal if the presence of liquid appears inside of a containment space.



1.10

DISCRIMINATING SENSORS

These three-wire sensors are able to detect and send an alarm signal if the presence of liquid appears inside of a containment space and can also differentiate between liquid and hydrocarbons (fuel).

					V			
Sensor	Discriminating Dispenser Sump Sensor	Discriminating Turbine Sump Sensor	Discriminating Magnetostrictive Sump Sensor	Universal Liquid Sensor	Universal Hydrostatic Sensor	Electro-Optic Interstitial Sensor	Discriminating Interstitial Sensor	Hydrostatic Interstitial Sensor
Discriminating Capability	\sim	 Image: A second s	 Image: A second s				 Image: A second s	
Non-Discriminating				>	>	\checkmark		~
Turbine Sump Applications		 Image: A second s	\sim	 Image: A second s				
Dispenser Sump Applications	\checkmark		\checkmark	~				
Tank Interstitial Space Applications				>		 Image: A second s	\checkmark	 Image: A second s
Position Sensitive (Tamper Protection)			\checkmark					
Hydrostatic Monitoring Capability					>			\sim
EVO™ 200 / EVO™ 400 Model Number	FMP-DDS-U	FMP-DTS-U	TSP-DMS	FMP-ULS	FMP-UHS	FMP-EIS-U	FMP-DIS-U	FMP-HIS-U FMP-HIS-XL-U
EVO™ 550 / EVO™ 5000 Model Number*	FMP-DDS	FMP-DTS	TSP-DMS	FMP-ULS	FMP-UHS	FMP-EIS	FMP-DIS	FMP-HIS FMP-HIS-XL
Typical Application	Dispenser sump applications requiring discriminating capabilities	Turbine sump applications requiring discriminating capabilities	Turbine or dispenser sump applications with tamper protection regulations in place	Turbine and dispenser sumps or drop-down tank interstitial space	Hydrostatic monitoring of a liquid in a double wall sump interstitial space	Dry double wall tank applications including fiberglass and wrap-around	Dry double wall tank applications requiring discriminating capabilities	Double wall tank interstitial space filled with brine solution

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*EVO[™] 550 and EVO[™] 5000 may support additional sensors

DISCRIMINATING DISPENSER SUMP BRITE[™] SENSOR (DDS)



The DDS is a discriminating dispenser sump Brite[™] sensor which provides reliable monitoring of dispenser pans and containment sumps. Combining magnetic float switch sensors with an innovative polymer strip, the DDS generates three different alarms for the detection of hydrocarbons, for liquid in sump, and when the sump is full. The DDS may be used with EVO[™] Series fuel management system ATGs.

HIGHLIGHTS

- Uses magnetic float switches to detect liquid at two levels.
- Innovative polymer strip detects hydrocarbons along sensor and floating on water.
- Compatible with common fuels and chemicals.
- Detects liquid at 11/2" from base.
- Detects hydrocarbons on sensor and floating on water.
- Digitally encoded status information sent from microcomputer to ATG from 775+ feet.
- Alarms to indicate liquid in sump, hydrocarbon detected, sump is full, and sensor malfunction.

APPLICATION

For containment sump monitoring.

INSTALLATION

Variety of mounting methods possible depending on location. Bracket provided for quick installation.

Model	Description
FMP-DDS	Discriminating dispenser sump Brite™ sensor (EVO™ 500 and EVO™ 5000)
FMP-DDS-U	Discriminating dispenser sump Brite™ sensor (EVO™ 200 and EVO™ 400)
TSP-KS	Unistrut™ mounting kit

Note: The DDS and the DDS-U sensor communicates with the ATG using 3 wires and 2 wires, respectively.

DISCRIMINATING TURBINE SUMP BRITE[™] SENSOR (DTS)



The DTS is a discriminating turbine sump Brite[™] sensor that detects the presence of liquid and hydrocarbons when installed in turbine and containment sumps. The DTS is designed to interface with EVO[™] Series fuel management system ATGs.

HIGHLIGHTS

- Uses magnetic float switches to detect liquid at two levels.
- Innovative polymer strip detects hydrocarbons along sensor and floating on water.
- Compatible with common fuels and chemicals.
- Detects liquid at 11/2" from base.
- Detects hydrocarbons on sensor and floating on water.
- Digitally encoded status information sent from microcomputer to ATG from 775+ feet.
- Alarms to indicate liquid in sump, hydrocarbon detected, full sump, and sensor malfunction.

APPLICATION

For containment sump monitoring.

Model	Description
FMP-DTS	Discriminating turbine sump Brite™ sensor (EVO™ 500 and EVO™ 5000)
FMP-DTS-U	Discriminating turbine sump Brite [™] sensor (EVO [™] 200 and EVO [™] 400)
TSP-KS	Unistrut™ mounting kit

Note: The DTS and the DTS-U sensor communicates with the ATG using 3 wires and 2 wires, respectively.

DISCRIMINATING MAGNETOSTRICTIVE SENSOR (DMS)



The DMS sensor is a fast acting discriminating sensor that utilizes magnetostrictive technology to provide reliable monitoring of dispenser pans and containment sumps. Its floats can detect the presence of water or hydrocarbons and also ensure that the sensor installation has not been tampered with. The DMS sensor can report water warnings and programmable water alarm points as well as product alarms. The DMS sensor is used with EVO[™] Series fuel management system ATGs.

HIGHLIGHTS

- Utilizes proven magnetostrictive technology.
- Water warning, water alarm, and product alarm.
- Tamper protection feature will alarm if sensor is moved from installed position.
- Will alarm and recover quickly when hydrocarbons are present.

APPLICATION

For containment sump monitoring.

Model	Description
TSP-DMS-12	Discriminating magnetostrictive sensor, monitors 12" of liquid & measures 22" in length (EVO™ 200, EVO™ 400, EVO™ 550 and EVO™ 5000).
TSP-DMS-24	Discriminating magnetostrictive sensor, monitors 24" of liquid & measures 34" in length (EVO™ 200, EVO™ 400, EVO™ 550 and EVO™ 5000).
TSP-KS	Unistrut™ mounting kit

Note: This sensor communicates with the ATG via the TS-PRB probe module.



LIQUID SENSOR (ULS)

The liquid sensor (ULS) is a low cost sensor which may be used with all EVO[™] Series fuel management systems. This sensor is also compatible with S940 Sensor Alarm Console. Based on float-switch technology and made of chemically-resistant materials, the ULS may be installed in sumps, dispenser pans, steel double wall tanks or other locations where the presence of liquid indicates a leak has occurred.

HIGHLIGHTS

- Highly reliable float technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant materials assure compatibility with most liquids.

Model	Description	
FMP-ULS	Universal liquid sump sensor (EVO™ 200, EVO™ 400, EVO™ 550 and EVO™ 5000)	
TSP-ULS	Universal liquid sump sensor (for use with S940 only)	
TSP-K12	Interstitial sensor riser cap kit for 2" riser pipes	
Note: This sensor communicates with the ATG using 2 wires		

Note: This sensor communicates with the ATG using 2 wires.

APPLICATION

For dry steel tank interstitial and containment sump monitoring.

INSTALLATION

Each ULS sensor comes with a 25' cable. ½" NPT thread is provided on the compression gland fitting attached to the sensor's cable, allowing it to be suspended from standard electrical boxes and fittings. The sensor may be positioned vertically by adjusting cable length. For steel interstitial tanks, ULS is lowered into the opening provided on the tank and is suspended by optional TSP-KI2 installation kit. Other mounting methods available depending upon application and location.



UNIVERSAL HYDROSTATIC SENSOR (UHS)

The Universal Hydrostatic Sensor (UHS) uses float switch technology to continuously monitor liquid filled double wall containment sumps. Normally submerged, the single float UHS will provide an indication if there is a loss of monitoring liquid.

HIGHLIGHTS

- Highly reliable float technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant materials.

Model	Description
FMP-UHS	Universal hydrostatic sensor (EVO™ 200, EVO™ 400, EVO™ 550 and EVO™ 5000)
TSP-UHS	Universal hydrostatic sensor (for use with S940 only)
HM-KIT	Hydrostatic monitoring installation kit. Includes: flexible brine tube, sensor housing clamp, sensor housing, sensor cap, and hardware

Note: This sensor communicates with the ATG using 2 wires.

APPLICATION

Typically used for hydrostatic monitoring of the liquid in a double wall sump interstice.

INSTALLATION

Each UHS sensor comes with a 25' cable. The sensor can be installed into the reservoir of a liquid filled double wall containment sump. The sensor must be installed in a vertical position at a level where it is normally submerged. The UHS sensor will alert if the liquid level drops below the bottom of the sensor.



ELECTRO-OPTIC INTERSTITIAL SENSOR (EIS)

The electro-optic interstitial sensor (EIS) may be used with all EVO[™] Series fuel management system ATGs. Utilizing electro-optic technology and made of chemically-resistant polysulfone plastic, the EIS may be installed in sumps, double wall tanks or other locations where the presence of liquid indicates a leak has occurred.

HIGHLIGHTS

- Highly accurate electro-optic technology and closed output circuit ensures that leaks are detected.
- Chemical-resistant materials.
- Can be installed in fiberglass or steel double wall tanks.
- Utilizes light-emitting diodes and prisms to indicate if a leak has occurred.

Model	Description
FMP-EIS	Electro-optic interstitial sensor (EVO™ 550 & EVO™ 5000)
FMP-EIS-U	Electro-optic interstitial sensor (EVO™ 200 & EVO™ 400)
TSP-K12	Interstitial sensor riser cap kit for 2" riser pipes

Note: Thie EIS and the EIS-U communicates with the ATG using 3 wires and 2 wires, respectively.

APPLICATION

For dry tank interstitial monitoring.

INSTALLATION

Each EIS comes with 25' of oil-resistant cable. For fiberglass tanks, the EIS is pulled into the interstitial space using a "fish" string or wire. For steel interstitial tanks, the EIS is lowered directly to the bottom of the interstitial space through a 2" NPT fitting provided for that purpose on the tank. Optional installation kits are available which include a riser cap and other parts required to complete installation.



DISCRIMINATING INTERSTITIAL BRITETM SENSOR (DIS)

The discriminating interstitial Brite[™] sensor (DIS) detects the presence of various liquids in tanks as well as sumps and other locations. The DIS is designed to interface with the EVO[™] Series fuel management systems.

For dry tank interstitial monitoring.

APPLICATION

HIGHLIGHTS

- Installs in the interstitial space of steel and fiberglass double wall tanks and sumps.
- Uses light beam traveling through probe to determine if sensor is wet.
- Microprocessor inside sensor interprets readings and communicates data to the EVO[™] Series fuel management system.
- Fail-safe digital communications with built-in alarm if sensor malfunctions.
- Sensor can distinguish between petroleum and water.
- Alarms indicate petroleum present, water present, and sensor malfunction.

Model	Description
FMP-DIS	Discriminating interstitial Brite™ sensor (EVO™ 550 and EVO™ 5000)
FMP-DIS-U	Discriminating interstitial Brite $^{\text{TM}}$ sensor (EVO $^{\text{TM}}$ 200 and EVO $^{\text{TM}}$ 400)

TSP-KI2 Interstitial sensor riser cap kit for 2" riser pipes

Note: The DIS and the DIS-U communicates with the ATG using 3 wires and 2 wires, respectively.



WATER DETECTION SENSOR

This sensor can detect water based on conductive technology to indicate when there is water in the Corrosion Control[™] System's water separator. By removing the water from the bottom of the tank, the system reduces a key ingredient for a corrosive environment.

HIGHLIGHTS

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- Highly accurate conductive technology and closed output circuit ensures that water is detected.
- Chemical-resistant materials.
- Utilizes conductive technology and communicates the value to the ATG to determine the presence of water.

Iviodei	Description
FMP-WDS	Water detection sensor (EVO™ 200, EVO™ 400, EVO™ 550 and EVO™ 5000)

APPLICATION

The sensor is to be used with the Corrosion Control[™] System during the water suction phase from the bottom of a tank. The fuel/water mixture enters into a separator where the water detection sensor detects when the fluid in the separator is mostly water, thus requiring a technician to empty the container.

rmine INSTALLATION

Each DIS comes with 25' of oil-resistant cable. For fiberglass tanks, the DIS is pulled into the interstitial space using a "fish" string or wire. For steel interstitial tanks, the DIS is lowered directly to the bottom of the interstitial space through a 2" NPT fitting provided for that purpose on the tank. Optional installation kits are available which include a riser cap and other parts required to complete installation.



CORROSION CONTROL[™] SENSOR

The Corrosion Control[™] Sensor has dual purpose functionality; detecting and alerting station owners to the presence of a corrosive atmosphere in sumps or tank ullages as well as the ability to detect high levels of humidity that could lead to corrosion.

HIGHLIGHTS

- Highly accurate, novel, solid state technology and closed output circuit detects humidity and communicates the level to the ATG for interpretation.
- Chemical-resistant materials.
- Utilizes light-emitting diode, sacrificial sample, photodetector and unique algorithm to indicate a corrosive environment.
- Please see website for ordering information.
- Compatible with EVO[™] 550 and EVO[™] 5000.



APPLICATION The sensor can be used

The sensor can be used with the Corrosion Control[™] System in the ullage space of the underground storage tank, tank sump or dispenser sump.

HYDROSTATIC INTERSTITIAL BRITE[™] SENSOR (HIS)

The hydrostatic interstitial Brite[™] sensor (HIS) detects leaks in double wall tanks where the interstitial space is filled with a liquid brine solution. For use with all EVO[™] Series fuel management systems, the HIS polyester, Nitrile, and epoxy construction is compatible with all types of brine.

HIGHLIGHTS

- Versatile sensor for virtually all fiberglass double wall tanks equipped for hydrostatic leak detection.
- Microcomputer monitors liquid at varying levels within tanks and relays digitally encoded status information via the fail-safe Brite[™] sensor digital communication system to fuel management system or Tank Sentinel[®] ATGs, alerting of any alarm conditions.

Model	Description
FMP-HIS	Hydrostatic interstitial Brite™ sensor, 11"" (EVO™ 550 and EVO™ 5000)
FMP-HIS-XL	Hydrostatic interstitial Brite™ sensor, 21" (EVO™ 550 and EVO™ 5000)
FMP-HIS-U	Hydrostatic interstitial Brite™ sensor, 11" (EVO™ 200 and EVO™ 400)
FMP-HIS-XL-U	Hydrostatic interstitial Brite™ sensor, 21" (EVO™ 200 and EVO™ 400)
TSP-KV4**	Hydrostatic sensor vented riser pipe cap kit for 4" riser pipes

APPLICATION

For liquid-filled tank interstitial monitoring.

INSTALLATION

- Lower HIS to the bottom of the brine reservoir of double wall tank.
- The normal brine level should reside half way up the sensor.
- Sensors include the TSP-KV4 vented 4" riser cap.

Note: The HIS and HIS-XL communicates with the ATG using 3 wires. The HIS-U and the HIS-XL-U communicates with the ATG using 2 wires. *Not including cable.

** One TSP-KV4 is already included with each HIS or HIS-XL sensor



HORIZONTAL FLOAT SWITCH SENSOR (HFS)

The HFS sensor is designed for liquid detection in dry fiberglass tank interstitial spaces. These 2-wire, non-discriminating liquid sensors may be used with EVO[™] 550 and EVO[™] 5000 Automatic Tank Gauges (ATGs) as well as the S940 alarm console.

HIGHLIGHTS

- Fiberglass interstitial monitoring using a 2-wire sensor.
- For dry fiberglass tank interstitial monitoring.
- Highly reliable magnetic-float/reed-switch technology.
- Chemical-resistant materials.
- UL listed.

Model	Description
FMP-HFS*	Horizontal float switch sensor
TSP-HFS**	Horizontal float switch sensor
TSP-KI2	Interstitial sensor riser cap kit for 2" (51 mm) riser pipes

*The FMP-HFS is 3rd party certified for use with the EVO[™] 550 and EVO[™] 5000. **The TSP-HFS is 3rd party certified for use with the S940 console.

APPLICATION

For dry fiberglass tank interstitial monitoring.

INSTALLATION

Each HFS comes with 25' of oil-resistant cable. For fiberglass tanks, the HFS sensor is pulled into the interstitial space using a "fish" string wire. Optional installation kits are available which include a riser cap and other parts required to complete the installation.



DISCRIMINATING VAPOR SENSOR (DVS)

The discriminating vapor Brite[™] sensor (DVS) detects the presence of gas or vapor molecules when installed in dry monitoring wells or containment space where vapor detection is necessary. The DVS is designed to interface with EVO[™] 550 and EVO[™] 5000 Automatic Tank Gauges.

HIGHLIGHTS

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- Detects vapor, gas and rising groundwater when installed in a monitoring well.
- Fail-safe digital communication with built-in alarm if sensor malfunctions.
- Senses ambient temperature to minimize false alarms as well as vapor, gas and groundwater.
- Alarms to indicate sensor malfunction.

Model	Description
TSP-DVS	Discriminating vapor Brite™ sensor (EVO™ 550 and EVO™ 5000)
TSP-KW4	Vapor sensor monitoring well pipe cap kit for 4" (102mm) riser pipes

Note: This sensor communicates with the ATG using 3 wires.

APPLICATION

For use in dry monitoring wells.

INSTALLATION

Equipped with twenty feet of oil-resistant cable for installation in 2" (51mm) and 4" (102mm) monitoring wells located around underground tanks. Communicates with console from 775+ feet (236m).



LEVEL SENSOR (HLS)

The HLS level sensor is an overfill prevention switch which is compatible with all EVO[™] 550 and EVO[™] 5000 fuel management system ATGs. This sensor is also compatible with S940 Sensor Alarm Console. It may be adjusted to operate over a wide range of levels. The HLS is based on float-switch technology and is made of chemical-resistant materials to assure compatibility with most liquids. Each sensor is supplied with jacketed cable five feet in length. The HLS's normally closed output circuit provides supervised operation, ensuring that broken wires and similar failures will not go undetected.

The HLS sensor is installed in a 2" NPT fitting on the tank. The level at which it operates may be adjusted by loosening a fitting and moving the sensor's shaft in or out of the tank as required.

APPLICATION

Overfill protection switch.

OPERATION

The secret to the HLS sensor's reliability is its float switch technology. A small magnetically-activated read switch is located inside the body of the sensor. Tiny magnets are positioned inside a lightweight float which is free to move up and down along the shaft so that the magnets are below the read switch. When the sensor is immersed in liquid, the float rises and the magnet activates the read switch, signaling the ATG that the high limit has been reached.

Model	Description
TSP-HLS-15	High product level sensor, 15" long, installed in tank (EVO™ 550 and EVO™ 5000)
TSP-HLS-15/SS	High product level sensor, stainless steel 15" long, installed in tanks containing alternative fuels (EVO™ 550 and EVO™ 5000)
TSP-HLS-30	High product level sensor, 30° long, installed in tank (EVO™ 550 and EVO™ 5000)
TSP-HLS-30/SS	High product level sensor, stainless steel 30" long, installed in tanks containing alternative fuels (EVO™ 550 and EVO™ 5000)

Note: This sensor communicates with the ATG using 2 wires.



DC400 DISPENSING CUTOFF SYSTEM

The DC400 dispensing cutoff system is a stand-alone, solid state two-part system which includes a controller and sensor, designed to automatically shut down product flow if liquid is detected inside containment spaces. Ideal for retrofit applications, the DC400 allows for easy compliance with new and evolving regulations, without the added expenses of shutting down your site to break concrete for new conduit and wiring installation. The DC400 can be mounted inside any turbine sump to provide complete pump shut down or mounted directly into dispenser sumps, allowing only the affected dispenser to be shut down as liquid is detected.

HIGHLIGHTS

- Automatically stops fuel from dispensing in the event of liquid detection.
- Easily installed in either turbine or dispenser sumps.
- Ideal for retrofit applications as system connects to existing turbine or dispenser wiring, eliminating the need to pull new wires or break concrete.

APPLICATION

Containment sump liquid detection resulting in dispensing cutoff.*

INSTALLATION

- Simply mount the 404-4 controller inside any containment sump and connect it to the existing turbine or dispenser wiring. (Dispenser installations require an electrical junction box with an open conduit hub).
- Connect the liquid sensor using the supplied watertight splice kit. Suspend it so it is just touching the bottom of the containment sump.
- ** Not for use with 3-phase motors or Variable Frequency Drive installations.

SPECIFICATIONS

• 404-4 controller is compatible with: S404 liquid sensor Note: Previous versions of the 404-4, S406, and S404 are not compatible. Both the controller and sensor must be replaced if either requires it. Core credit available for legacy items.

Dimensions

- 04-4 Controller: 6.6" × 6.2" × 3.2"
- 404-4 Input power: 90-250 VAC, 50/60 Hz, 0.25 A
- 404-4 Relay contacts: 12A, 2 hp @ 250 VAC, 12A, 1.5 hp @ 120 VAC
- Operating temperature: -4 °F to 140 °F (-20 °C to +60 °C)
- Enclosures: All sensors intrinsically safe, controller explosion-proof
- Detection time: <1 second
- S404 sensor minimum detectable water limit: 0.98" (25 mm)

Capabilities

- Cutoff power to submersible pumps or dispensers when liquid is detected in containment sumps.
- Automatic reset on liquid removal.

Approvals

- UL, cUL
- Third party certification of leak detection capabilities

Model	Description
DC404	S404 liquid sensor and controller
DC404C	S404 liquid sensor and controller for Canadian applications
TS-FE	FE PETRO [®] STP electric junction box adapter
TS-RJ	Red Jacket™ STP electric junction box adapter
TS-RJQ	Red Jacket™ Quantum™ STP electric junction box adapter

Note: Electric junction box adapters for STP installations.





Quantum[™] is a trademark of Gilbarco Inc. Red Jacket[™] is a trademark of Veeder-Root Company.



TSP-K12 INTERSTITIAL SENSOR RISER CAP INSTALLATION KIT

Installation kit for installing the DIS, EIS or ULS sensors in dry interstitial spaces with 2" riser pipe openings.

Model

Μ

TSP-K12

HIGHLIGHTS

- Supplied with a cord grip and butt splices for wiring connections.
- Easily installs into a two-inch riser pipe with a compression fit against the walls of the pipe.
- Provided with security holes that fit a padlock to prevent unauthorized access into the riser pipe.



TSP-KV4 HYDROSTATIC SENSOR VENTED RISER CAP INSTALLATION KIT

Replacement vented installation kit for use with the FMP-HIS or FMP-HIS XL sensor installed in a 4" reservoir opening on double wall fiberglass tanks. One TSP-KV4 is already included with each FMP-HIS or FMP-HIS-XL.

HIGHLIGHTS

- The riser cap is compression fit into a 4" riser pipe via the use of a lever.
- Supplied with a cord grip and butt splices for wiring connections.
- Provided with security holes that fit a padlock to prevent unauthorized access into the riser pipe.

lodel	Description

TSP-KV4 Hydrostatic sensor vented riser cap kit for 4" riser pipes

Interstitial sensor riser cap kit for 2" riser pipes



TSP-KW4 INTERSTITIAL/ MONITORING WELL PIPE CAP INSTALLATION KIT

Installation kit for installing sensors in a dry tank interstitial or monitoring well with a 4" riser.

HIGHLIGHTS

- The interstitial/monitoring well cap is compression-fit into the riser pipe via the use of a lever.
- Supplied with a cord grip and butt splices for wiring connections.
- Provided with security holes that fit a padlock to prevent unauthorized access into the riser pipe.

Vodel Description

TSP-KW4 Interstitial/monitoring well pipe cap kit for 4" riser pipes

SENSOR INSTALLATION ACCESSORIES UNI-STRUT[®] MOUNTING KIT

Installation kit for installing the DDS, DTS, and DMS sensors in sump space.

HIGHLIGHTS

- Easily customized to fit virtually any sump by cutting the Unistrut[™] assembly to desired length.
- Provided with 2", 3", and 4" pipe clamps for mounting to sump piping.
- Sensor location easily adjusted by the unique sliding feature of the Unistrut[™] assembly.

SENSOR INSTALLATION ACCESSORIES

Model	Description
TSP-DB1	One direct burial splice connector kit
TSP-DB10	Pack of 10 direct burial splice connector kits
TSP-DBTOOL	Epoxy dispensing tool
TSP-KW30	Pack of 30 3M™ splice connectors

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1. Use the TSP-DB1 or TSP-DB10 for direct burial cable applications or when weatherproof junction boxes are not used.

2. The DBTOOL is required to dispense the epoxy.

3. Each direct burial splice connector kit includes a receptacle, three splice connectors, and epoxy for the dispensing tool.

Model	Description
TSP-KS	Unistrut™ mounting kit for TSP-DDS and TSP-DTS sensors

TS-RA1

TS-RK



TS-RA1 REMOTE AUDIBLE AND VISIBLE ALARM UNIT

Description

Standard intensity, tank overfill alarm with light and horn

Remote tank overfill alarm acknowledge unit

SPECIFICATIONS

- Pulsating light and piezoelectric buzzer warns of alarm conditions.
- Can be combined with TS-RK remote acknowledge unit to provide choice of alarm silencing options.
- Programmable with EVO[™] Series ATGs.
- Overfill alarm or general purpose remote alarm annunciator
- Install within 1000' of ATG.
- Wiring: Type THHN, TFFN or THWN, 18 AWG or larger installed in conduits and completely separated from probe and sensor circuits.
- Operates directly from 110 VAC line power.
- For use in indoor/outdoor applications that have low background noise.



TS-RA2 REMOTE AUDIBLE AND VISIBLE ALARM UNIT

SPECIFICATIONS

- Pulsating light and electromechanical buzzer warn of alarm conditions.
- Can be combined with TS-RK remote-acknowledge schemes.
- Has adjustable sound level with useful range of over 200'.
- Install within 1000' of ATG.
- Wiring: Type THHN, TFFN or THWN, 18 AWG or larger installed in conduits and completely separated from probe and sensor circuits.
- Operates directly from 110 VAC line power.
- For use in indoor/outdoor applications that have high background noise.

Model	Description
TS-RA2	High intensity, tank overfill alarm with light and horn
TS-RK	Remote tank overfill alarm acknowledge unit



TS-RK REMOTE ALARM ACKNOWLEDGE UNIT

SPECIFICATIONS

- Locks or silences audible and visible alarms up to 1000'.
- Facilitates rapid response during emergencies in either indoor or outdoor locations.
- Can be combined with TS-RA1or TS-RA2 remote alarm units to provide a choice of alarm silencing options.
- Housed in rugged, nonmetallic NEMA® 4X unit ideal for any weather condition.
- Install within 1000' of ATG.
- Wiring: Type THHN, TFFN or THWN, 18 AWG or larger installed in conduits and completely separated from probe and sensor circuits.
- In conjunction with TS-RA1 or TS-RA2 and operates directly from 110 VAC line power.

Model	Description
TS-RK	Remote tank overfill alarm acknowledge unit

NEMA® is a registered trademark of National Electrical Manufacturers Association.

FUEL MANAGEMENT SYSTEMS 379



REMOTE FUEL MONITORING SELECTION GUIDE

Franklin Fueling Systems offers three different remote monitoring options with right-sized features to meet the requirements of your specific needs and Automatic Tank Gauge (ATG) network. Provides direct one-to-one access to a single EVO[™] Series ATG from any web enabled device. Gathers and displays specified data in a userdefined polling schedule, or in real-time.

Site network type	Single ATG
Total # of ATG connections	One (accessed individually)
Software type	Web
ATG support / compatibility	EVO™ Series
Basic data	Inventory, testing, alarm, compliance
Configuration management	No
Remote ATG setup and configuration	Yes
ATG setup change reporting	No
Customizable user security roles	Yes
Customizable views	No
In-house IT team required	No
Report generation	Automated, single ATG
Customized reporting	No
On-demand polling	No
Email notifications	Yes
Alarm notifications	Yes, single ATG
Pay structure	Free with qualified ATG purchase

Custom export



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Connect any number of mixed-manufacturer ATGs in your network to unlimited users for on-demand polling and reporting. Provides automated alarm, leak test, and inventory data to multiple users.



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Expands upon the capabilities of SSA with the addition of consolidated network views for faster analysis plus configuration management, allowing you to control ATG setup across an entire network at once.

Enterprise-level, server-based	Enterprise-level, server based
Unlimited	Unlimited
On-premise	On-Premise
EVO [™] Series, INCON [™] , Veeder-Root [®] (excluding TLS-450PLUS), Red Jacket [®]	EVO [™] Series, INCON [™] , Veeder-Root [®] (including TLS-450PLUS), Red Jacket [®] , OPW [®] , FAFNIR [®] , Hectronic [®] , Caldwell, OMNTEC [*]
Inventory, testing, alarm, compliance	Inventory, testing, alarm, compliance
No	Yes
No	Yes
No	Yes
Yes	Yes
Yes	Yes
Yes	Yes
Automated, entire network	Automated, entire network
No	Yes
Yes	Yes
Yes	Yes
Yes, entire network	Yes, entire network
One-time fee - plus annual maintenance and support fee	Monthly fee billed annually - includes maintenance, support, and feature/function upgrades
CSV, Excel, TelaPoint™, Trimac, PDF	CSV, HTML, Microsoft® Office® formats, Atom-compliant data fields

*Common ATGs listed. Contact your sales team member for a full list of compatible ATGs. Note: For SSA-2, minimum site quantities may apply.

SSA REMOTE FUEL MONITORING

Monitor your sites with System Sentinel AnyWare[™] (SSA), a web-based software platform for fuel monitoring and data analysis. Hosted on your local server, SSA allows your critical personnel to have instant access to all your Automatic Tank Gauge (ATG) data, keeping you totally connected.

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HIGHLIGHTS

- Provides centralized collection of all compliance information such as tank and line leak testing data and leak detection sensor status.
- Visibility into present inventory and history helps you make informed fuel management and delivery decisions.
- Multiple levels of customizable user roles allow you to configure access and administrative functionality to best fit your organization.
- Connect any number of mixed-manufacturer ATGs* in your network for on-demand polling and reporting.
- A wide variety of reports can be custom-scheduled, displayed and printed at specific times.
- Offers immediate notification of alarms for corrective action.
- All of your data is safely stored in a secure database that can be exported as text, Excel, or CSV for on-demand use.
- Broad communication capabilities via modem, local or wide area networks, satellites, DSL, cable or other high-speed web-based methods.
- Compatible with most major ATGs including: EVO[™] Series, INCON[™], Veeder-Root[®], and FAFNIR[™] (full compatibility list on following page).
- Multiple language options: English, Spanish, French, Russian, Chinese, Hindi, and Portuguese.

*See compatibility list

SPECIFICATIONS

Get remote access to vital site information including:

Groups

- Status
- Setup
- List
- Sites
- Status
- Alarms
- Compliance
- Inventory
- Usage
- Forecast
- Setup
- Grouping
- Report
- Chart

Standard Reports

- Inventory
- Delivery
- Forecast
- Alarm status
- Alarm history
- Tank test
- Line test
- Regulatory
- Sensor status
- Pump status
- Vapor sensor
- Reconciliation
- ISD

SPECIFICATIONS CONTINUED

General Requirements

Server

- Microsoft Windows server operating system
 - Windows Server 2019
 - Windows Server 2016
 - Windows Server 2012 R2
- Minimum processor 64 bit 1.4 GHz, recommended 2 GHz
- 1 GB memory required, 4 GB recommended
- Hard drive space requirement 40 GB plus room for database

Veeder-Root®

• TLS-2

• TLS-350

• TLS-450

FAFNIR™

• VISY-X

Third Party Application

- LaTeX reports server
- Microsoft Internet Server (IIS) web server
- Microsoft SQL 2017 server

Compatible ATGs

Franklin Fueling Systems

- EVO[™] 200
- EVO™ 400 TLS-4
- EVO[™] 550
- EVO[™] 5000
- INCON[™]TS-1000
- INCON[™] TS-2000
- INCON[™] TS-5
- INCON™TS-550
- INCON™TS-5000
- Colibri[™]

ORDERING INFORMATION

Model	Description				
SSA-SU25	1-25 Sites License				
SSA-SU50	1-50 Sites License				
SSA-SU100	1-100 Sites License				
SSA-SU10	Additional increments of 10 sites				
FFSPROSSA2	Premium on-site support service				
SSA-ULMAINT	Maintenance				

Notes:

- 1. When placing orders, the following information must be supplied along with email addresses to issue a software license:
 - Address of company.
 - Phone number of company.
- Contact name at company.
- 2. Licenses may not be returned after purchase.
- An additional fee will be charged for optional on-site installation and training. The charge is \$625/day plus travel expenses.
- 4. The purchase of an annual maintenance contract is required for continued technical support and to receive any software updates. The maintenance fee is 15% of the list price of the user's system at the time of renewal.

Veeder-Root[®] is a registered trademark of Danaher. Fafnir[®] is a registered trademark of Fafnir GmbH.

SSA-2 REMOTE FUEL MONITORING

Systems Sentinel AnyWare[™]-2 (SSA-2) on-premise remote fuel monitoring software keeps you totally connected to your diverse network of automatic tank gauges (ATGs) from any web-enabled device. This enterprise level platform gives you instant access to consolidated alarm, inventory, compliance data, and reporting anytime.

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HIGHLIGHTS

- Connect any number of mixed-manufacturer ATGs in your network to unlimited users for on-demand polling and reporting.
- Get a consolidated network view of critical information on all tanks, lines, inventory, reconciliation, deliveries, and sensors.
- The advanced reporting engine is capable of delivering totally customized and automated reporting.
- Inventory can be monitored as needed to precisely schedule deliveries.
- Program and configure your entire network remotely.
 Create configuration templates and apply them to one gauge, a group of gauges, or all ATGs simultaneously.
- Advanced configuration management provides added security by flagging any ATG in the network that has had a setting changed during polling (see following page for list of compatible ATGs).
- Multiple levels of customizable user roles allow you to configure access and administrative functionality to best fit your organization.
- Single-source visibility into present and historical inventory helps you make informed fuel management and delivery decisions.
- All data is safely stored in a secure database that can be exported as CSV, HTML, Microsoft[®] Office[®] formats, and Atom-compliant data fields for on-demand use.
- Compatible with all major ATG brands including: Franklin Fueling Systems, Veeder-Root[®], Red Jacket[®], OPW[®], FAFNIR[®], Hectronic[®], and OMNTEC (see full compatibility list on following page).

SPECIFICATIONS

Get remote access to vital site information including:

Standard Reports

- Alarm history
- Alarm status
- Business inventory reconciliation
- Configuration active
- Configuration compare
- Configuration changes
- Configuration core
- SCALD/CSLD
- Current inventory
- Delivery
- Inventory
- Line test
- Mail dispatch
- Sensor
- Setup
- Site
- Tank history
- Tank test result

Security Settings

- Users
- Security audit log

- **Global Settings**
- General
- License management
- Fuel carrier setup
- Fuel terminal setup
- Fuel division setup

Site Settings

- Groups
- Sites
- Compliance exclusion
- Site details
- Tank setup

Polling

- Collection profile
- Sets
- Event log

Alarm Notifications

- Email users
- Email groups
- Alarm groups
- Email subscriptions
- Email templates

Franklin Fueling Systems

SPECIFICATIONS CONTINUED

General Requirements

- Server-based, 64-bit components
- Microsoft SQL server 2012 or greater
- Microsoft .NET framework 4.6
- Microsoft SQL Server Reporting Services (SSRS) login with system administrator privileges to install reports
- VMware & multiple server configurations supported
- Internet or modem access to ATG network (internet recommended)
- If modem, 4 or 8 multi-port modem with PCI or PCI-express Interface
- Number of modem ports driven by number of ATGs with modems and desired response time
- For owner/operators with more than 250 sites, a distributed deployment architecture is recommended
- Separate machine (or VMs) for database server and application server
- Machine sizing recommendations are available given number of sites, frequency of polling, number of concurrent users, and data retention policy

Compatible ATGs

Franklin Fueling Systems

- EVO[™] 200
- EVO[™] 400
- EVO[™] 550*
- EVO[™] 5000*
- Colibri[™]
- INCON™TS-504/508
- INCON[™]TS-750
- INCON[™] TS-1000/1
- INCON[™] TS-2000/1
- INCON[™]TS-5
- INCON[™] TS-550*
- INCON[™] TS-5000*
- EBW[®] AutoStik

- Veeder-Root®
- TLS-2
- TLS4BTLS4c
- 11.54
- TLS4i
- TLS-250
- TLS-300*
- TLS-350*
 TLS-450*
- TLS-450PLUS*
- Simplicity

All Line Equipment Co.

Fuel Boss

- OPW®
- SiteSentinel[®] Integra 100[™]
- SiteSentinel[®] Integra 500[™]
- SiteSentinel[®] Nano[®]
- Petro Vend 100®
- Petro Vend 200
- Petro Vend FSC 3000[®]

FAFNIR®

- VISY-Command
- VISY-Command XL
- SECON-X
- Mineo Controller Touch

 - OptiLevel Supply

*Supports configuration management feature. Note: Some legacy ATGs may not support all SSA-2 functionality.

ORDERING INFORMATION

SSA-2 Remote Fuel Management Software

Model	Description
SSA-2P	One SSA-2 subscription per ATG, billed annually, purchased through an authorized distributor
SSA-2PM	One SSA-2 subscription per ATG, billed annually, purchased directly

FFSPROSSA2 Premium on-site installation support service, one day

Note: For SSA-2, minimum site quantities may apply.

Veeder-Root[®] is a registered trademark of Danaher. Red Jacket[®] is a registered trademark of Veeder-Root, Inc. OPW[®] is a registered trademark of Dover Co. Fafnir[®] is a registered trademark of Fafnir GmbH. Hectronic[®] is a registered trademark of Hectronic AG. Level Devil[®] is a registered trademark of Electronic Sensors, Inc. Microsoft[®] Office[®] is a registered trademark of Microsoft Corporation. SYSTEMS

- Electronic Sensors, Inc.
 - Level Devil®

OMNTEC

- OEL8000II
- OEL8000III
- Proteus-X

Caldwell

- TM-2000
- TMW-650

Hectronic®

Common to EVO[™] 550 and EVO[™] 5000

Model	Description
TSSP-10ARLY	Spare 6 output 10 amp relay module
TSSP-2WSNS	Spare 12 input 2-wire sensor module
TSSP-3WSNS	Spare 8 input 3-wire sensor module
TSSP-420IB	Spare 8 input 4-20ma module
TSSP-420EXP	Spare 8 input EXP 4-20ma module
TSSP-ACI	Spare 12 input AC input module
TSSP-IO	Spare input output module
TSSP-PRB	Spare 12 input probe module
TSSP-RLY	Spare 8 output relay module
TSSP-PS	Power supply module
TSSP-TMPTR	Thermal printer assembly for TS-550, TS-5000, TS-EMS
TSSP-TRMBLK	Package of 10 assorted terminal blocks
TSSP-EXPPS	Expansion console power supply
EVO-CM	Spare TS-550/5000 evo controller module, standard features only, no software options
EVO-CM/R	Replacement TS-550/5000 evo controller module, factory programmed with required options
EVO-CMUPG	Upgrade kit for EVO™-CM in stock to add original options
EVO-LCD	Replacement color LCD display
EVO-IFB	Replacement display/printer interface board
EVO-TMPTR	Thermal printer assembly for TS-550/5000 evo
EVO-EXPC	Secondary console to add eleven additional plug-in modules to the primary TS-550/5000 ATG, comes without a display or printer
EVO-EXPC2	Secondary console to add six additional plug-in modules to the primary TS-550/5000 ATG, comes without a display or printer
TS-TT (T)	Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC (R)	Tank inventory reconciliation and autocalibration
TS-DIMIB (I)	Internal dispenser interface module, dispenser interface cable must be ordered separately
TS-LON (E)	EcheLON™ communication module, IFSF protocol capability
TS-MDMIB (M)	Internal modem, includes fax and data software capability

Note: The serial number of the old CM must be provided when ordering the TSSP or EVOTM-CM/R. Provide the serial number of the old and new CM when ordering the TSA or EVOTM-CMUPG.

Only one TS-DIM or TS-LON module can be installed per ATG.

Spare Parts

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Model	Description						
FMSP-LCD	EVO™ 200 and EVO™ 400 LCD replacement						
FMSP-WIFI	EVO™ 200 and EVO™ 400 replacement antenna						
FMSP-UDP400	EVO™ 400 replacement input PCB						
FMSP-UDP200	EVO™ 200 replacement input PCB						
FMSP-SOM	Unregistered, replacement SOM (no WIFI)						
FMSP-SOMW	Unregistered replacement SOM with WIFI						
FMSP-SOM-R	Registered replacement SOM (no WIFI)						
FMSP-SOMW-R	Registered replacement SOM with WIFI						
FMSP-24CVRWD	EVO™ 200 and EVO™ 400 with LCD replacement cover						
FMSP-24CVR	EVO™ 200 and EVO™ 400 without LCD replacement cover						
FMSP-24MB	EVO™ 200 and EVO™ 400 replacement main board						
FMP-24FUSE	EVO™ 200 and EVO™ 400 replacement fuse kit						
FMP-24TRMBLK	EVO™ 200 and EVO™ 400 replacement terminal blocks						
FMP-ETP	External thermal printer						
FMP-EPPC	Case of 25 thermal printer paper rolls						

T5 Series and TS-EMS Consoles

Model	Description
Common To All (TS-5 use	
TSSP-10ARLY	Spare 6 output 10 amp relay module
TSSP-2WSNS	Spare 12 input 2-wire sensor module
TSSP-3W/SNIS	Spare 8 input 3-wire sensor module
TSSP-420IB	Spare 8 input 4-20ma module
TSSP-420EXP	Spare 8 input EXP 4-20ma module
TSSP-ACI	Spare 12 input AC input module
TSSP-IO	Spare input output module
ISSP-PRB	Spare 12 input probe module
TSSP-RLY	Spare 8 output relay module
TSSP-PS	Power supply module
TSSP-TMPTR	Thermal printer assembly for TS-550, TS-5000, TS-EMS
TSSP-TRMBLK	Package of 10 assorted terminal blocks
TSSP-EXPPS	Expansion console power supply
TS EVDC	Secondary console to add eleven additional plug-in modules to the primary TS-550/5000
I J-LAFC	console, comes without a display or printer
TO EVECO	Secondary console to add six additional plug-in modules to the primary TS-550/5000console,
IS-EXPUZ	comes without a display or printer
TS-TT (T)	Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC (R)	Tank inventory reconciliation and autocalibration \$843.00
TS-DIMIB (I)	Internal dispenser interface module, dispenser interface cable must be ordered separately
TS-LON (E)	EcheLON [™] communication module, IFSF protocol capability
TS-MDMIB (M)	Internal modem, includes fax and data software capability
EVO [™] 550 and EVO [™] 500	n Only
TSSP-CM	Spare controller module, fuel management system application only, no software options
TSSP-CM/B	Benjacement controller module, factory programmed with required ontions
TSA-CMUPG	Ingrade kit for TSSP-CM in stock to add grining ontions
TSSP-I CDIEB5y	LCD display and interface hoard kit for TS-550 TS-5000
TSSP-T550MB	TS-550 motherboard (for use with TS-FMS also)
TSSP TEOOOMB	TS 500 motherbord
	Spare fune kit
	Justanal madam includes fay and date software conshility
	Thermain modelli, includes fax and data software capability
	Election chile leak delection
	Vapor recovery monitoring, ISD, CARB Executive Order 202
	Vapor recovery monitoring, ISD, CARB Executive Order 204
	Secondary containment monitoring
IS-IP5000	15-550 and 15-5000 impact printer paper
TS-TP5000C	12 rolls of impact printer paper
I S-INKRB	IS-550 and IS-5000 ink ribbon
IS-5 Only	
ISSP-I5MB	IS-5 motherboard
TSSP-LCDIFB5	LCD display and interface board kit for TS-5
TS-EMS Only	
TSSP-CM/EMS	Spare controller module for TS-EMS, vapor recovery monitoring application only
TSSP-CM/EMSB	Spare controller module for TS-EMS (balance site), VRM (1.1) application only
TS-550/5000 evo Only	
EVO-CM	Spare EVO [™] 550 an EVO [™] 5000 controller module, standard features only, no software options
EVO-CM/R	Replacement TS-550/5000 evo controller module, factory programmed with required options
EVO-CMUPG	Upgrade kit for EVO-CM in stock to add original options
EVO-LCD	Replacement color LCD display
EVO-IFB	Replacement display/printer interface board
EVO-TMPTR	Thermal printer assembly for EVO™ 550 an EVO™

Note: The serial number of the old CM must be provided when ordering the TSSP or EVO-CM/R. Provide the serial number of the old and new CM when ordering the TSA or EVO-CMUPG.

Only one TS-DIM or TS-LON module can be installed per console.

Model	Description
CL-MBWD	Replacement main board/display
CL-MBWD/R	Replacement main board/display, factory programmed with required options
CL-MB	Replacement main board (no display systems)
CL-MB/R	Replacement main board (no display systems), factory programmed with required options
CL-CVRWD	Replacement cover with display opening
CL-CVR	Replacement cover without display opening
CL-MBUPG	Upgrade kit for CL-MBWD in stock to add original options

Note: The serial number of the old main board must be provided when ordering the CL-MBWD/R. Provide the serial number of the old and new main boards when ordering the CL-MBUPG

TS-504 and TS-750 Consoles

Model	Description
TSSP-BAT	3 Volt lithium battery
TSSP-DSP1	Keypad/display PC board
TSSP-ENCLK	Enclosure lock and key
TSSP-PSTB4-SM	Surface mount probe/sensor terminal board, serial numbers 100000 and higher
TSSP-PTR	Printer assembly
TSSP-PTRC1	Printer cable
TSSP-SMSB4	Surface mount system PC board, 110 VAC, serial numbers 100000 and higher
TSSP-SPFUSE	Spare fuse kit
TSSP-SVKT4-SM	TS-504 and TS-750 service kit for surface mount boards*
VSSP-SMSB4	Surface mount system PC board, 220 VAC, serial numbers 100000 and higher

*TSSP-SVKT4-SM includes one of the following: TSSP-SMSB4, TSSP-DSP1, TSSP-PSTB4-SM, TSSP-PTR, TSSP-PTRC1, TSSP-DSPKC1, TSSP-SPFUSE, TSSP-ENCLK and TSSP-BAT.

Note: TSSP-MSB4 boards are no longer available. Order TSSP-SMSB4 main board and TSSP-PSTB4-SM terminal board as replacement.

TS-508 Console

	Model	Description	
	TSSP-BAT	3 Volt lithium battery	
	TSSP-DSP1	Keypad/display PC board	
	TSSP-DSPKC1	Display/keypad cable	
	TSSP-ENCLK	Enclosure lock and key	
	TSSP-PSTB8-SM		Surface mount probe/sensor terminal board, serial numbers 100000 and higher
	TSSP-PTR	Printer assembly	
	TSSP-PTRC1	Printer cable	
	TSSP-SMSB8	Surface mount system PC board, 110 VAC, serial numbers 100000 and higher	
	TSSP-SPFUSE	Spare fuse kit	
	TSSP-SVKT8-SM	TS-508 service kit for surface mount boards*	
	VSSP-SMSB8	Surface mount system PC board, 220 VAC, serial numbers 100000 and higher	

*TSSP-SVKT8-SM includes one of the following: TSSP-SMSB8, TSSP-DSP1, TSSP-PSTB8-SM, TSSP-PTR, TSSP-PTRC1, TSSP-DSPKC1, TSSP-SPFUSE, TSSP-ENCLK and TSSP-BAT.

Note: TSSP-MSB8 boards are no longer available. Order TSSP-SMSB8 main board and TSSP-PSTB8-SM terminal board as replacement.

TS-1001 Console

Model	Description
TSSP-BAT	3 Volt lithium battery
TSSP-DSP1	Keypad/display PC board
TSSP-DSPKC1	Display/keypad cable
TSSP-ENCLK	Enclosure lock and key
TSSP-PSTB1-SM	Surface mount probe/sensor terminal board, serial numbers 100000 and higher
TSSP-PTR	Printer assembly
TSSP-PTRC1	Printer cable
TSSP-SMSB4	Surface mount system PC board, 110 VAC, serial numbers 100000 and higher
TSSP-SPFUSE	Spare fuse kit
TSSP-SVKT1-SM	TS-1001 service kit for surface mount boards
TSSP-T1KEY	Replacement key
VSSP-SMSB4	Surface mount system PC board, 220 VAC, serial numbers 100000 and higher

*TSSP-SVKT1-SM includes one of the following: TSSP-SMSB4, TSSP-DSP1, TSSP-PSTB1-SM, TSSP-PTR, TSSP-PTRC1, TSSP-DSPKC1, TSSP-SPFUSE, TSSP-ENCLK and TSSP-BAT.

Note: TSSP-MSB4 boards are no longer available. Order TSSP-SMSB4 main board and TSSP-PSTB1-SM terminal board as replacement.

TS-2001 Console

Model	Description
TSSP-BAT	3 Volt lithium battery
TSSP-DSP2	Keypad/display PC board
TSSP-DSPKC2	Display/keypad cable
TSSP-ENCLK	Enclosure lock and key
TSSP-PSTB2-SM	Surface mount probe/sensor terminal board, serial numbers 100000 and higher
TSSP-PTR	Printer assembly
TSSP-PTRC2	Printer cable
TSSP-SMSB8	Surface mount system PC board, 110 VAC, serial numbers 100000 and higher
TSSP-SPFUSE	Spare fuse kit
TSSP-SVKT2-SM	TS-2001 service kit for surface mount boards*
VSSP-SMSB4	Surface mount system PC board, 220 VAC, serial numbers 100000 and higher

*TSSP-SVKT2-SM includes one of the following: TSSP-SMSB8, TSSP-DSP2, TSSP-PSTB2-SM, TSSP-PTR, TSSP-PTRC2, TSSP-DSPKC2, TSSP-SPFUSE, TSSP-ENCLK and TSSP-BAT.

Note: TSSP-MSB2 boards are no longer available. Order TSSP-SMSB8 main board and TSSP-PSTB2-SM terminal board as replacement.

DC400

Model	Description
404-4	Controller
404-4C	Controller for Canadian applications
S404	Float switch sensor

Note: Replacement parts not compatible with legacy DC400 systems. Both controller and sensor must be replaced. Order DC404 system to replace legacy components.

TS-LLD

Model	Description
010-0072	Control unit terminal interface board
020-1503	Hardware kit
430-0010	0.5 Amp fuse
TS-CU	Control unit
TS-FC	Line filter capacitor
TS-FPU	Face plate unit
TS-LSU	Leak sensor unit

TS-LS300

Model	Description
600-0180	Transducer quick disconnect cable
TS-ALCAL	3.0 gph calibration kit
TS-ALFUSE	AutoLearn™ fuse kit
TS-AFALNIP	Alternative fuels needle valve kit
TS-ALNIP	Needle valve kit
TS-LSU300	Intrinsically safe pressure transducer
TS-LSU300E	Explosion-proof pressure transducer
TSSP-ALDB2	2-line display board
TSSP-ALDB4	4-line display board
TSSP-ALMB2	2-line intrinsically safe main board, 110 VAC
TSSP-ALMB2E	2-line explosion proof main board, 110 VAC
TSSP-ALMB4	4-line intrinsically safe main board 110 VAC
TSSP-ALMB4E	4-line explosion proof main board 110 VAC
TSSP-ALPTRC	Ribbon cable, display board to main board
TSSP-ALTPI	TPI turbine pump interface board
VSSP-ALMB2	2-line I/S main board, 220 VAC
VSSP-ALMB4	4-line I/S main board, 220 VAC

TS-LS500

Model	Description	
600-0080	Transducer quick disconnect cable	
TS-ALCAL	3.0 gph calibration kit	
TS-AFALNIP	Alternative fuels needle valve kit	
TS-ALNIP	Needle and valve kit	
TS-LSU500	Intrinsically safe 4-20 mA pressure transducer	
TS-LSU500E	Explosion proof 4-20 mA pressure transducer	

Note: For parts for the TS-STS unit itself, reference the TS-1001 parts list. Repair price includes labor and return shipping only. *Probe kit includes probe, float, chain and cable.

TS-STS Sump Test Kit

Model	Description
282-0027	Chain, including split ring
282-0058	Split ring
600-0200	Probe cable 50'
TS-PRB-1	12" leak test probe kit*
TS-STS	Replacement STS console and case
TS-TP2	One box of 5 rolls of thermal printer paper
TSP-SSP	Stainless steel probe float
STS-CASE	STS probe case
STS-PRB-12	12" leak test probe
STS-REPAIR	STS system repair
STS-REPAIR- CASE	STS system repair with case

Note: For parts for the TS-STS unit itself, reference the TS-1001 parts list. Repair price includes labor and return shipping only. *Probe kit includes probe, float, chain and cable.

ACCESSORIES		
Model	Description	
430-0033	3 amp fuse for TS-ROM2/4 or /8	
TSP-ENCD	Replacement encoder for TS-VFM	

TRANSPORT SYSTEM SOLUTION

Franklin Fueling Systems offers a complete line of tank transport systems for applications involving fuel and vapor transfer management solutions. A broad line of adapters, elbows and valves makes connecting to loading terminals and underground storage tanks easy. Preventing overfills at the loading rack is a top priority to any transport, and the optic control overfill protection system (OCS) ensures a safe delivery and compatibility with all existing racks and monitors. FFS has a solution to handle any product drop or vapor recovery situation, including a full line of delivery elbows and bottom loading adapters.





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BOTTOM LOADING

API Adapters:

Free floating API poppet and 3.5" sight glass maximize terminal and UST fuel transfers.



DELIVERY ELBOWS

Dual Point and Coaxial:

The lightweight, robust design of FFS delivery elbows ensures a true connection with minimal strain to the delivery driver.



VAPOR RECOVERY

Vapor Vent Valves:

FFS vapor vent valves can be serviced in place by removing the head, saving time and money.

FUEL AND VAPOR TRANSFER SOLUTIONS



Bottom Loading

No.	Model	Description
1	88050002	API adapter, short stroke three position, no sight glass
1	88050004	API adapter, short stroke three position, 3" bubbled sight glass
1	88050005	API adapter, short stroke three position, 3" bubbled sight glass, no handle
1	88050007	API adapter, short stroke three position, no sight glass, removable handle
2	88033001	Female gravity drop adapter
2	88041101	Male gravity drop adapter
3	88043001	Mechanically-operated 90 degree emergency valve (Victaulic™)
3	88043201	Air assisted 90 degree emergency valve (Victaulic™)

Vapor Recovery

I	No.	Model	Description
	4	30130001	3" N.P.S.M. vapor recovery adapter with poppet
	4	30344404	4" N.P.S.M. vapor recovery adapter, no poppet
	5	30230011	Flanged vapor check valve
	6	88034301	Air-operated sequential vapor valve

Overfill Prevention

No.	Mode
8	90822101

Optic socket

Product Drop Elbows

No.	Model	Description
10	88049302	Product drop elbow with cam and groove adapter and sight glass
10	88045501	Product drop elbow with sight glass
11	88046501	Dual point vapor recovery elbow
12	88049001	Coaxial delivery elbow

ACCESSORIES

No.	Model	Description
13	88015001	Three-way air interlock valve
13	88015002	Three-way air interlock valve with roller top
13	88015003	Three-way air interlock valve with offset actuator
14	88040301	API adapter dust cap
15	30420005	Vapor cap with chain-chevroned gasket
16	77432002	Vapor return hose coupler
17	78430003	Hose tube door

Victaulic[™] is a trademark of Vitaulic Company of America.

FUEL AND VAPOR TRANSFER SOLUTIONS



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1	88050005	API adapter, short stroke three position, 3" bubbled sight glass, no handle
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Short Stroke, 3.5" Sight Glass 88050004



88050002

API BOTTOM-LOADING ADAPTERS

Loading and off-loading fuel from a transport truck is easier than ever with the bottom loading adapters from Franklin Fueling Systems. While loading, the free-floating poppet opens under pressure, allowing the handle to remain in the closed position. This minimizes spillage caused by leaving the handle in the open position when disconnected from the bottom loader. The adapter handle is offered in aluminum or nylon and provides two open positions of flow, allowing the delivery driver to manage the flow rate while off-loading fuel from the truck.

The lightweight, heavy-duty adapter is engineered and tested to meet API RP 1004 specifications. The outer end is made of hard coated aluminum and rotates seven times to maximize the product's life and prevent wear that can be caused by terminal off-loading couplings. The inner wall of the adapter is fully tapered, minimizing product retention inside of the valve when off loading is complete. Each model is compatible with all API dry disconnect couplers and are constructed with a standard TTMA 4" tank truck flange and mounting lugs for FFS air interlock valves. Sight glass options are mounted on the side of the valve to maximize visibility during fuel transfer and are available in 3.5" sizes. Fuel-loading and off-loading management has never been easier, safer or more efficient.

HIGHLIGHTS

• Long Life

Front API head may be rotated up to seven times to maximize the life of the adapter.

8.01

Enhanced 3.5" sight glass provides greater impact strength and is compatible with biofuels including E85 and Biodiesel.

Safety

Free-floating poppet is opened by pressure from the terminal adapter probe to minimize spills during loading.

• Speed of Delivery

The cam design utilized to retract the adapter poppet minimizes product flow restriction during off-loading and loading.

Model	Description
88050002	Short stroke, three position, no sight glass
88050004	Short stroke, three position, 3.5" sight glass
88050005	Short stroke, three position, no handle, 3" sight glass
88050007	Short stroke, removable handle, no sight glass
88012001	Dust boot air cylinder
88050701	Replacement poppet kit with handles
88050702	Replacement poppet kit for bottom loaders, with handles

API BOTTOM- LOADING ADAPTER SPARE PARTS



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ltem	Description	Part Number	880-500 Model
3	Poppet head	88050901	-02, -04, -07
4	Spring, poppet	88012701	-02, -04, -07
5	O-ring	1103938	-02, -04, -07
11	Washer, flat, 5/8" ID	88019101	-02, -04, -07
12	Latch dual	88050601	-02, -04, -07
13	Cam, loading arm	88021501	-02, -04, -07
14	Roller, cam	88019001	-02, -04, -07
15	Pin, roller cam	88018901	-02, -04, -07
16	Hex, permanent handle	88019801	-02, -04
17	Spring, handle	88010201	-02, -04
10	Handle, dual latching	88050501	-02, -04
18	Handle, dual latching (Canada)	88050503	-07
19	Pin, latch	88019201	-02, -04, -07
21	O-ring, cross shaft	1103912	-02, -04, -07
22	Pin, 3/16", spiral	1108604	-02, -04, -07
27	Cap screw, socket head ¼-20 × 2"	1117016	-02, -04
28	Locknut, ¼-20	1104105	-02, -04
30	Cap screw, socket head, 10-24 × 5/8"	1103010	-02, -04, -07
31	Sight glass, 3.5" bubble	88051201	-04
33	Cap screw, socket head, $\frac{1}{2} - 20 \times \frac{3}{4}$ "	1117017	-04
	O-ring, sight glass, 3.5" bubble	1103937	-04
	Replacement anodized adapter face	88050101AN	-02, -04, -05,-07

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API BOTTOM- LOADING ADAPTERS



DUST CAP

This lightweight API dust cap shields valuable bottom-loading valves from destructive outside elements. The cap easily couples on all EBW® API bottom-loading adapters using a reliable Buna-N gasket. The corrosion-resistant cap comes with forged brass cam arms and a heavy-duty attachment chain. This dust cap also meets API RP 1004 specifications.

Model Unit	88040301	88020601	
Description	Dust Cap	Gasket	
Inches	4.00	4.00	
Millimeters	101.6	101.6	
Pounds	3.06	—	
Kilograms	1.39	—	
Part Number	Descr	ription	
99040201	A PI bottom leading adapter dust cap		

88040301	API bottom-loading adapter dust cap
88020601	API bottom-loading adapter gasket
THREE-WAY AIR VALVES

Play it safe with this lightweight valve that locks up the brakes on the trailer, preventing it from leaving the loading rack while connected to the loading arm. This three-way air valve can be used normally open or normally closed, has an adjustable stem, and comes with standardized TTMA and API mounting holes. The anodized aluminum valve is used on all API bottom-loading adapters and all vapor check valves.





34" ACTUATION







88015002





88015003

- Heat-treated, anodized aluminum construction.
- ¼" NPT connection ports.
- Field serviceable.
- Adjustable stem button.

Model Unit	88015001	88015002	88015003
Width (Inches/Millimeters)	3.00/76.2	3.00/76.2	3.00/76.2
Length (Inches/Millimeters)	4.25/107.96	4.25/107.96	4.25/107.95
Pounds	0.69	0.69	0.69
Kilograms	0.31	0.31	0.31



THREE-WAY AIR INTERLOCK VALVES PARTS LIST







-03 MODEL

# Dort Name		Qty. Req.		q.	Part Number
#			-02	-03	Fait Number
1	Plug - nut	1	1	1	88014501
3	Spring	1	1	1	88014801
4	Spool and O-ring assembly	1	0	1	88017101
5	Retaining ring	1	1	1	1109004
6	Dust Seal	1	1	1	88014201
8	Screw adjuster 1.0"	1	0	0	88014401
9	Screw ¼-20 × 1.75" Hex head	2	2	2	1106307
14	Spool and O-ring assembly, roller tip	0	1	0	88017102

Part Number	Description
88011301	Screw adjustor assembly 1.5" button
88015001	Three-way air interlock valve
88015002	Three-way air interlock valve, roller tip
88015003	Three-way air interlock valve, offset actuator

# Part Name -		Qty. Req.			Dort Number
		-01	-02	-03	r alt Nulliper
20	Actuator - offset	0	0	1	88112001
	88015001 Service kit*	1	0	0	90012
	88015002 Service kit**	0	1	0	90055
	88015003 Service kit***	0	0	1	90056

*Note: Service Kit includes: (1) #3, (1) #4, (1) #5, (1) #6, (1) #7, (1) #8, (1) #12 **Note: Service Kit includes: (1) #3, (1) #5, (1) #6, (1) #14, (1) #15, (1) #16, (1) #17 ***Note: Service Kit includes: (1) #3, (1) #5, (1) #6, (1) #18, (1) #19, (1) #20, (1) #21, (1) #22

SIX-WAY AIR VALVES

These air interlock valves were designed to operate two different air systems at the same time. The lightweight valves are designed to lock the trailer brakes and open the air-operated vapor valve at the same time. These six-way air valves can be used in the normally open (N/O) and normally closed (N/C) configurations of N/O, N/C, or N/O, N/O, or N/C, N/C positions. They have an adjustable stem and come standard with TTMA and API mounting holes.







3.5" 3.31" 3.5" 3.5" 3.31" (88.90)

88025602

- Heat-treated, anodized aluminum construction.
- ¼" NPT connection ports.
- Field serviceable.
- Adjustable stem button.

Model Unit	88025601	88025602	88025603
Width (Inches/Millimeters)	3.00/76.2	3.00/76.2	3.00/76.2
Pounds	0.69	0.69	0.69
Kilograms	0.31	0.31	0.31

SIX-WAY AIR INTERLOCK VALVES PARTS LIST



	Part Name	Part Number
1	Plug - nut	88014501
3	Spring	88014801
4	Spool and O-ring assembly	88025801
7	Retaining ring	1109004
8	Dust seal	88014201

Part Number	Description
88025601	¼" - 1" Button six-way air valve
88025602	¼" - 1" Roller tip six-way air Valve
88025603	¼" - 1" Duckfoot six-Way air Valve
90020	Service kit for 880-256-01
90059	Service kit for 880-256-02



34" ACTUATION

DISTANCE

3.56" to 3.84" (90.40 to 97.64)

2.06"

(52, 32)

AIR INTERLOCK WITH LIMIT SWITCH

Ensure proper vapor recovery every time by using the air interlock with limit switch. With the limit switch, bottom-loading cannot begin until a vapor recovery hose is connected to the vapor check valve. The switch does its job by breaking a connection in the secondary over-fill prevention system, thus preventing the rack monitor from giving a green light to the transport. Once a vapor line is connected, loading can begin. The coupler first depresses the plunger button of the interlock, which then locks the trailer brake system and completes the connection to the rack monitor. The vapor hose must be disconnected before the brakes will release, allowing the truck to be driven away.

Model Unit	88015501	88015502
Pounds	1.25	1.25
Kilograms	0.57	0.57

2.13"

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AIR INTERLOCK WITH LIMIT SWITCH PARTS LIST

	Part Name	Part Number
1	Air valve assembly	88115601
4	*Nut - Hex jam	1102104
5	*Adapter - valve to switch	88115501
6	O-ring	1100325
7	Limit switch	1121902
	Service kit for 880-155-01	90012

* Note: These items are components of Air Valve Assembly 881-156-01

Part Number	Description
88015501	¼" - 1" Button with limit switch
88015502	14" - 1" Roller Tip with limit switch



FEMALE GRAVITY DROP ADAPTER

Let gravity do all the work with these high strength, corrosion-resistant adapters. A 22.5 degree angle makes service station drops a breeze with easy hose coupling and fast, unrestricted off-loading. Engineered to mate with API RP 1004 bottom-loading adapters, each adapter comes with a heavy-duty attachment chain and uses a large, resilient gasket that guarantees minimum product loss. The lightweight adapters are available in 3" male NPT or male cam and groove; 4" male NPT, male cam and groove or female cam and groove.

HIGHLIGHTS

- Heat-treated, anodized alloy body.
- Buna-N gaskets.
- Forged bronze cams and stainless steel pins.
- Meets API RP 1004 specifications.

Model Unit	88033001
Size (inches/millimeters)	4.00/101.6
Weight (pounds/kilograms)	6.06/2.75





FEMALE GRAVITY DROP ADAPTER PARTS LIST

#	Part Name	Part Number
1	Groove pin	1112507
2	Cam arm and ring assembly	77411603
3	S-Hook	1111001
4	Double loop chain	88011502
5	Gasket	88020601
7	Gasket	77420204

Part Number	Description
88033001	Female gravity drop adapter
88020601	Gasket - API end
77420204	Gasket - hose end

MALE GRAVITY DROP ADAPTER





Model Unit	88041001	88041101
Size (inches/millimeters)	3.00/76.2	4.00/101.6
Weight (pounds/kilograms)	4.00/1.81	5.00/2.27



MALE GRAVITY DROP ADAPTER PART LIST

	Part Name	Part Number
1	Rubber gasket	88020601
2	4" Drop adapter - body only	88041201
3	Groove pin	1112507
4	Cam arm and pull ring assembly	77411603
5	Double loop chain	88011502
6	S-Hook	1111001

Part Number	Description
88041001	3" Male cam and groove
88041101	4" Male cam and groove
88020601	Gasket - API end

THREADED VAPOR CHECK VALVE

Use this vapor check valve to return vapor to the truck during terminal loading and service station drops. The 3" poppet opens when coupled and closes when disconnected, preventing the vapors from escaping into the atmosphere. The valve has 3" or 4" female NPSM threads, a 4" cam and groove, and tapped mounting holes for the EBW® air interlock brake. The 303 Sseries is available without a poppet to serve as a male quick coupler with an air interlock valve mounting pad.



- Anodized aluminum construction.
- Stainless steel stem and spring.
- Buna-N gasket.
- Aluminum guide.

Model Unit	30130001	30130002	30130003	30333303	30344404
Poppet	Yes	Yes	Yes	No	No
Thread size	3.00-NPSM	4.00-NPSM	3.00-BSPP	3.00-NPSM	4.00-NPSM
Weight (Ibs/kg)	4.50/2.04	4.81/2.18	2.55/1.16	3.81/1.73	4.31/1.96

THREADED VAPOR CHECK VALVE PARTS LIST







#	Part Name	Part Number	#	Part Name	Part Number
1	Vapor recovery adapter - 3" N.P.S.M.	30030502	6	Spring - poppet	30010501
2	Vapor recovery adapter - 4" N.P.S.M.	30030202	7	Guide - poppet stem	30020501
3	Vapor recovery adapter - 3" B.S.P.P.	30030532	8	Retaining ring	1109002
4	O-ring	1103915	9	3" Gasket cover	77020102
5	Poppet	30020301	10	4" Gasket cover	77020103



Part Name	Part Number
3" N.P.S.M. vapor recovery adapter, with poppet	30130001
3" BSPP vapor recovery adapter, with poppet	30130003
4" N.P.S.M. vapor recovery adapter, with poppet	30130002
3" N.P.S.M. vapor recovery adapter, no poppet	30333303
4" N.P.S.M. vapor recovery adapter, no poppet	30344404

FLANGED VAPOR CHECK VALVE

The sight glasses featured on this vapor recovery fitting can help detect liquid accumulation in the vapor manifold of a transport. A drain plug lets any extra fuel drain out, and the poppet prevents vapors from escaping when disconnected from the hose. A low pressure drop makes flow rates faster and vapor recovery safer. The adapter is constructed with a standard 4" TTMA flange, a 4" cam and groove, and a mounting pad for the air interlock valve.



30230011



4.00/101.6

6.00/2.72

Model Unit

Size (inches/millimeters)

Weight (pounds/kilograms)

4.00/101.6

6.00/2.72

12		-
The second		
	30230012	





FLANGED VAPOR CHECK VALVE PARTS LIST





-12 MODEL WITHOUT SIGHT GLASS & DRAIN

	Part Name	Part Number
2	Retaining ring	1109002
3	Poppet stem guide	30020501
4	Poppet spring	30010501
5	4" Poppet vapor recovery adapter	30020301
6	Pipe Plug	1101002
7	Sight glass	1121504
8	O-ring	1103915

Part Number	Description
30230011	Flanged vapor check valve with sight glass
30230012	Flanged vapor check valve without sight glass

VAPOR CAPS

These lockable vapor caps act like dust covers, but won't activate the air interlock valve when used on vapor check valves and adapters. Iron-copper infiltrated cams create a solid push-down-and-pull-up movement for quick, easy removal and replacement; steel latches hold the caps secure. Orange in color to indicate vapor recovery, the caps can be used with any 4" male cam and groove. Caps also available with finger ring and chains.



- Meets API RP 1004 standard.
- Aluminum- or glass-filled nylon construction.
- Iron-copper infiltrated cams and steel latches.
- Lockable.

Model Unit	30420001	30420002	30420004
Size (inches/millimeters)	4.00/101.6	4.00/101.6	4.00/101.6
Weight (pounds/kilograms)	1.19/.54	1.19/.54	1.19/.54
Gasket No.	77711101	77711102	30410501
Model Unit	30420005	30430101	30430102
Size (inches/millimeters)	4.00/101.6	4.00/101.6	4.00/101.6
Weight (pounds/kilograms)	1.19/.54	1.19/.54	1.19/.54
Gasket No.	30410501	77711004	77711004

VAPOR CAPS

VAPOR CAPS PARTS LIST





MODEL -04 & -05 ONLY CHEVRONS THIS SIDE

0.06 R. THIS SIDE

30420001/30420002/30420004/30420005

#	Part Name	Part Number	#	Part Name	Part Number
1	Spiral pin	1102409	4	Vapor recovery cover	30430501
3	Handle assembly	30411201			



30430102

#	Part Name	Part Number
1	Gasket	95021501
2	Aluminum body cover	30430601

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#	Part Name	Part Number
3	Spiral pin	1102403
4	Cover assembly	30430101

Part Number	Description
304-200-01	Nylon vapor cap without chain
304-200-02	Nylon vapor cap with chain
304-200-04	Nylon vapor cap without chain-chevroned gasket
304-200-05	Nylon vapor cap with chain-chevroned gasket
304-301-01	Aluminum vapor cap without chain
304-301-02	Aluminum vapor cap with chain



VAPOR RETURN HOSE COUPLERS

Fast, safe vapor recovery is easy with probed hose couplers. Hose shank end bands to a vapor recovery hose and the probe automatically opens the poppet of the vapor check valve when coupled. The coupler comes in three sizes for use with most vapor check valves and hose configurations. The poppetted vapor return hose coupler design prevents vapor from escaping when disconnected. The probe automatically opens the vapor check valve when connected properly. The design also offers low restrictive vapor passage. The body and probe are made of heattreated anodized aluminum with forged bronze cams and stainless steel pins, and the poppet has a replaceable fluorocarbon seal.

HIGHLIGHTS

- Meets API RP 1004 standard.
- Heat-treated, aluminum alloy body and brass probe.
- Forged bronze cams and stainless steel pins.
- Used with probe for opening vapor check valve.

Model Unit	77432002	77432003
Dim. A (inches/millimeters)	3.00/76.2	4.00/101.6
Dim. B (inches/millimeters)	6.62/168.15	6.62/168.15
Dim. C (inches/millimeters)	4.75/120.65	4.75/120.65
Weight (pounds/kilograms)	3.00/1.36	3.38/1.53



VAPOR RETURN HOSE COUPLERS PARTS LIST

#	Part Name	Part Number
2	774-CV 4" × 3" assembly	77432002
3	774-CV 4" × 4" assembly	77432003
7	Probe	77411201
8	3" gasket	77420203
9	4" gasket	77420204
10	Groove pin	1112507
11	Cam and ring assembly	77411603

AIR-OPERATED SEQUENTIAL VAPOR VALVES

Handle fuel vapors safely and efficiently with this lightweight aluminum vapor valve. The air-operated valve allows fast vapor flow during loading and unloading. The poppet is designed to open into the tank, preventing accidental leakage from product surges or from a tank truck rollover. Easy-to-use air line connections are located outside the compartment for convenient installation and maintenance. The 3.5" vapor valve comes with male NPT threads or a TTMA flange for installation in conventional 16" or 20" manholes.



88034301



88034501







HIGHLIGHTS

- Lightweight aluminum body and hood.
- Fluorocarbon seal.

410

• TTMA specifications.

AIR-OPERATED SEQUENTIAL VAPOR VALVE PARTS LIST





#	Part Name	Part Number
4	Square cut seal ring	1103403
6	Sequential vapor valve body assembly	88034401
7	O-ring	1100326
8	Mounting assembly flange	88026701

Part Number	Description
88034101	Flanged without hood
88034201	Threaded without hood
88034301	Flanged with hood
88034401	Vent valve only
88034501	Threaded with hood



HOSE TUBE DOORS

Total protection from the elements is what you get with the heavy-duty hose tube door. Beyond durable, this door withstands rusting, rugged use, and continuous road wear. The cap closes securely and can be used with a padlock for theft protection.

784-300-03

HIGHLIGHTS

- Cast aluminum frame and cap.
- Spring steel, chrome, and plated hardware.
- Nylon bushing.
- Name embossed upon request.

Model Unit		78430003	78440003
Style		Plain	Plain
Size (inches/millimeters)		8.00/203.2	
Weight (pounds/kilograms)	3.00/1.36	4.00/1.81	
Part Number	Descriptio	on	
78430003	6" plain door		
78440003	8" plain door		

PRODUCT DROP ELBOWS

This durable 22" tall product elbow was designed for those deep tank burial applications and has a high flow rate as a result of the unrestricted flow pattern. It fits all 4-inch top seal adapters and can also be ordered with a variety of different adapters to meet any requirement. The single four bolt flange design allows for easy replacement of adapters over competitive threaded styles and is designed for extremely easy on- and off-coupling as a result of aluminum bronze alloy docking.

- Lightweight cast aluminum.
- Four bolt flange pattern fits all 4" seal adapters.
- Protective base shield.
- Unique cam locking handle for easy on/off coupling.
- 22" tall for deep tank burial applications.







Model Unit	88049301	88049302	88049303	88049304	88049305
Weight (pounds/kilograms)	12.3/5.58	13/5.9	14.5/6.59	14.5-6.59	14.5/6.59
Size (inches/millimeters)	—	4.00/101.6	3.00/76.2	4.00/101.6	3.00/76.2

PRODUCT DROP ELBOW PARTS LIST



#	Part Name	Part Number
2	Rear arm assembly	88013601
5	Connecting link	88013901
6	Operating handle	88048201
7	Operational instruction	
8	Front arm assembly	88013501
9	Sight tube spacer	88015101
10	Sight tube	88016201
12	Sight glass seal	88014001
13	4" Dia. coupling adapter	88028401
14	3" Cam and groove adapter	88039601

Part Number	Description
88049301	Product elbow dual point - no adapter
88049302	4" Cam and groove adapter with sight glass 21" tall
88049303	3" Cam and groove adapter with sight glass
88049304	4" NPT adapter with sight glass
88049305	3" NPT adapter with slght glass

	Part Name	Part Number
15	4" NPT adapter	88028901
16	3" NPT adapter	88039701
17	Wave spring	1119001
18	Connecting pin	88013801
19	Shoulder spacer	88014901
21	Screw - 3/8-16 \times 1.5" Hex socket	1119601
22	Connecting pin	88013802
24	High alloy groove pin	1118801
25	Flanged bushing	1118601
26	Cam assembly insert	88012101
27	Seal	88014101

PRODUCT DROP ELBOWS





Model Unit	88045001	88045501	88045502	88045504	88045505
Weight (pounds/kilograms)	13.75/6.24	16/7.26	18/8.18	18/8.18	18/8.18
Size (inches/millimeters)	—	4.00/101.6	3.00/76.2	3.00/76.2	4.00/101.6

PRODUCT DROP ELBOW PARTS LIST



	Part Name	Part Number
2	Product elbow body	88045901
3	Product elbow handle	88023701
4	Product elbow seal	1130801
5	Pin spiral	1108605
6	Locking "right" cam	88031001
7	Handle block	88023801
8	Locking "left" cam	88031002

Part Number	Description
88045001	Body only
88045501	4" Male cam and groove with S.G.
88045502	3" Male cam and groove with S.G.
88045504	3" Male NPT with S.G.
88045505	4" Male NPT with S.G.

#	Part Name	Part Number
11	Sight tube seal	88014001
12	Sight tube	88016201
13	4" Cam and groove adapter	88028401
14	Sight tube spacer	88015101
16	3" Cam and groove adapter	88039601
17	Adapter flange gasket	88024701
18	3" NPT adapter	88039701

DUAL POINT VAPOR RECOVERY ELBOW

This durable cast aluminum elbow ensures complete vapor recovery for dual point systems and can be ordered with a variety of different adapters to meet any requirement. The simple four bolt flange design allows for easy replacement of adapters over competitive threaded styles. Its low profile design allows for convenient storage and the specially designed quick grip one hand operation handle allows for easy on and off attachments.





- Cast aluminum.
- Compact, low profile design.
- Four bolt flange pattern.
- Protective base shield.

Model Unit	880460	88046501	88046502
Size (inches/millimeters)	_	3/76.2	3/76.2
Weight (pounds/kilograms)	11/4.99	12.38/5.62	12.38/5.62

DUAL POINT VAPOR RECOVERY ELBOW PARTS LIST

10

6

9.25"

(234.95)





#	Part Name	Part Number
1	#10 - 24 \times ½" socket head cap screw	1117012
2	Handle retainer block	88024601
5	Vapor elbow locking bar	88039101
6	Grooved (straight) pin	1112607
7	Elbow seal	87020001

#	Part Name	Part Number
8	Locking cam	88024501
9	Grooved (straight) pin	1112601
10	Adapter flange gasket	88024701
12	3" Coupling adapter	88039601
13	3" NPT adapter	88039701

Part Number	Description
88046001	Body only
88046501	3" Male cam and groove adapter
88046502	3" Male NPT adapter

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COAXIAL DELIVERY ELBOW

This longer Coaxial Delivery Elbow is designed to accommodate the needs of the tank truck industry. The longer elbow is made of durable lightweight cast aluminum. The elbow connects to the product line and vapor recovery line at the same time, allowing for single point drop and vapor recovery. This elbow meets Stage I and II vapor recovery standards.





- Cast aluminum.
- 4" product line inlet (male cam and groove adapter).
- 3" vapor line outlet (male cam and groove adapter).
- Unique cam locking handle for easy on/off coupling.
- Accommodates all coaxial drop tube adapters.
- Four bolt flange pattern vs. threaded.

Model Unit	88049001	88049003
Size (inches)	4 × 3	4 × 3
Weight (pounds/kilograms)	22.0/9.98	22.0/9.98

COAXIAL DELIVERY ELBOW PARTS LIST



#	Part Name	Part Number	
1	Flanged, coaxial elbow	88038001	
4	Operating handle	88048201	
5	Gasket	88028101	
6	Vapor outlet block off plate	88022901	
7	Top gasket	88028201	
9	Rollpin - 1/8" × 1"	1100403	
11	Connecting pin	88013802	
13	Connecting pin	88013801	
14	Wave spring	1119001	
15	Screw - 3/8", $16 \times \frac{1}{2}$ " Hex socket	1119601	
17	O-ring seal	88014701	
20	Fuel connection adapter	88028501	
Part Number Description			

88049001	Over and under tall $4" \times 3"$ cam and groove
88049003	Over and under tall 4" NPT × 3" cam and groove

GASKET KIT*

Model Unit Weight (pounds/kilograms)

6.0/0.17

SIGHT GLASS KIT*

Model Unit

Weight (pounds/kilograms)



#	Part Name	Part Number
21	Coaxial elbow seal	88014101
22	Fuel connection seal	88014601
23	Rear arm assembly	88013601
24	Front arm assembly	88013501
26	Cam assembly insert	88012101
28	Long connecting link	88013902
29	Cam and groove 3" adapter	88039601
30	Cam and groove 4" adapter	88028401
31	Sight tube	88016201
32	Sight tube spacer	88015101
33	Sight tube seal	88014001
37	4" NPT adapter	88028901
38	3" NPT adapter	88039701





ATTACHMENTS

3" CAM AND GROOVE ADAPTER

Model Unit

Weight (pounds/kilograms)

88039601 1.19/0.45



88039601

4" CAM AND GROOVE ADAPTER

Model Unit

Weight (pounds/kilograms)

88028401 1.44/0.65



88028401

3" NPT MALE ADAPTER

Model Unit

Weight (pounds/kilograms)

88039701 1.44/0.65



88039701

4" NPT MALE ADAPTER

Model Unit Weight (pounds/kilograms)

88028901 1.50/0.68



88028901



CAM AND GROOVE ADAPTERS

Hose shank end bands to hose. The coupler comes in two sizes for use with most hose configurations.

- Heat-treated, aluminum alloy body and brass probe.
- Forged bronze cams and stainless steel pins.

Part Number	Description
77421220	2" Cam and groove dust cap
77421240	4" Cam and groove dust cap

EMERGENCY VALVES

MECHANICALLY OPERATED 90 DEGREE EMERGENCY VALVE AND PARTS LIST

Emergency valves make product handling safer. These emergency valves have a shear groove that meets 49 CFR 178.345-8. The seat area of the valve is located inside the tank shell as required by DOT regulations.

This valve gives you the advantage of a faster flow rate while fitting a standard 4" TTMA sump. The high flow rate is established by a full opening throat area. Emergency valves are available in 90 degree elbow type or straight type, 4" TTMA flanges or Victaulic[™] outlet, and mechanical or air assisted.

HIGHLIGHTS

- High flow rate.
- Fits standard 4" TTMA sump.
- Shear section per TTMA, RP84-92 and meets DOT 49 CFR 178.345-8.
- Force ratings from TTMA RP86-92.
- Shear groove meets DOT 406 requirement.
- Optional external air cylinder available.
- Available in Victaulic[™] or flanged version.
- Fluorocarbon O-ring.

Model Unit Weight (pounds/kilograms)







88043001



#	Part Name	Part Number
1	Emergency valve Victaulic™ 4" body	88042801
2	3/16" SYN PTFE packing	1135801
3	O-ring FLC #2-114	1103920
4	Spiral retaining ring	1109008
5	Cam shaft	88024101
6	Stuffing box nut	88024201
7	Emergency valve retainer assembly	88026401

88043001

4" standard Victaulic™ outlet seal

	Part Name	Part Number
8	Poppet spring	1135701
9	Poppet assembly	88026301
10	Cam	88023301
11	Cam lever assembly	88026501
12	Emergency valve sump gasket	1138801
13	Anti-seize Lubricant	1114401

MECHANICALLY OPERATED 90 DEGREE EMERGENCY VALVE (FLANGED)



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	υu	I S I	U		

88043101

Weight (pounds/kilograms)

MECHANICALLY OPERATED 90 DEGREE EMERGENCY VALVE (FLANGED) PARTS LIST

11.0/4.99





#	Part Name	Part Number
1	Emergency valve flanged 4" body	88042901
2	3/16" SYN PTFE packing	1135801
3	O-ring FLC #2-114	1103920
4	Spiral retaining ring	1109008
5	Cam shaft	88024101
6	Stuffing box nut	88024201
7	Emergency valve retainer assembly	88026401

4" Standard flanged outlet seal

#	Part Name	Part Number
8	Poppet spring	1135701
9	Poppet assembly	88026301
10	Cam	88023301
11	Cam lever assembly	88026501
12	Emergency valve sump gasket	1138801

NK TRANSPORT

AIR-ASSISTED 90 DEGREE EMERGENCY VALVE (VICTAULIC[™]) AND PARTS LIST

Air-assisted emergency valves make product handling safer and installation more convenient. The emergency valve has a shear groove that meets 49 CFR 179.345-7. The seat of the valve is located inside of the tank shell as required by DOT regulations. One valve has the capability to be converted to either right- or left-hand control.





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Weight (pounds/kilograms)

Model Unit

13.0/5	.9
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#	Part Name		Part Number
1	Emergency valve ai	r cylinder	88035002
2	4" Victaulic™ emerg	gency valve body	88042901
3	3/16" SYN PTFE pad	cking	1135801
4	O-ring FLC #2-114		1103920
5	Spiral retaining ring		1109008
6	Cam shaft		88024101
7	Stuffing box nut		88024201
8	Emergency valve retainer assembly		88026401
Part Number Description			

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4" Standard Victaulic™ Outlet Seal with External Air Cylinder

	Part Name	Part Number
9	Poppet spring	1135701
10	Poppet assembly	88026301
11	Emergency valve sump gasket	1138801
13	Cam lever assembly	88026501
14	Fusible metal pipe plug, 1/8-27" NPT	1152601
15	Male push-on hose fitting	1149401
16	Rubber hose - push-on fitting	88015901

Victaulic[™] is a trademark of Vitaulic Company of America.

AIR-ASSISTED 90 DEGREE EMERGENCY VALVE (FLANGED) AND PARTS LIST





Model Unit

Weight (pounds/kilograms)

13.0/5.9



#	Part Name	Part Number
1	Air cylinder	88035002
2	4" Flanged emergency valve body	88042801
3	3/16" SYN PTFE packing	1135801
4	O-ring FLC #2-114	1103920
5	Spiral retaining ring	1109008
6	Cam shaft	88024101
7	Stuffing box nut	88024201
8	Emergency valve retainer assembly	88026401

Part Number	Description
880-433-01	4" Standard flanged outlet seal with external air cylinder

#	Part Name	Part Number
9	Poppet spring	1135701
10	Poppet assembly	88026301
11	Emergency valve sump gasket	1138801
13	Cam lever assembly	88026501
14	Fusible metal pipe plug, 1/8-27" NPT	1152601
15	Male push-on hose fitting	1149401
16	Rubber hose - push-on fitting	88015901

3" EMERGENCY VALVE

Emergency valves make product handling safer and installation more convenient. The emergency valve has a shear groove that meets 49 CFR 179.345-7. The seat of the valve is located inside of the tank shell as required by DOT regulations. One valve has the capability to be converted to either right- or left-hand control.



HIGHLIGHTS

- High flow rate.
- Fits standard TTMA sump.
- Cable operator can be mounted right-handed or left-handed.
- Optional external air cylinder available.
- Air cylinder can be mounted right-handed or left-handed.
- 3" Victaulic™ outlet only.

CERTIFICATIONS/LISTINGS

- TTMA, RP84-92: shear section.
- DOT 49 CRF 178.345-8: shear section.
- DOT 406: shear groove.
- TTMA, RP86-92: force rating.

Part Number	Description	Size
88045601	Air operated valve	3" TTMA flanged × 3" Victaulic™ outlet
88044901	Cable operated valve	3" TTMA flanged × 3" Victaulic™ outlet

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SIDE SEAL ADAPTER

The side seal adapter is designed to give flexibility to top seal drop elbows. Your 4" top seal delivery elbow can now be used on a side 4" seal fill adapter. You don't have to bring a separate side seal elbow, which reduces cost and the number of fittings required on your truck.

Two lever clamps secure the adapter to the station's side seal fitting and allow a 4" elbow to attach to the adapter. Special locking rings prevent accidental cam arm release during filling. Cast aluminum makes the side seal adapter light and strong. The specially designed seal gives you the added insurance that no leaks will occur.



EL UNIT

Weight (pounds/kilograms)

88044501

880-445-01 10.0/4.58

SIDE SEAL ADAPTER PARTS LIST



4 .85″	
8.94"	
	2
◀──── 5.94"───	•

	Part Name	Part Number
1	Seal	88120201
2	Release lever spring	88110301
4	Release lever interlock	88120100

Side seal adapter

	Part Name	Part Numbe
5	Pin, 0.125 × 0.875", groove type "E"	1145901
6	Release lever	88120001

TANK TRANSPO

PROBE HOLDER SOLUTIONS

Probe holders are anodized aluminum with ½" NPT openings positioned for easy access and wiring. An O-ring seal is standard for short and tall caps. The three bolt locking ring prevents probe movement and seals the housing from product splash and vapors. Two styles are available: a 2" male NPT thread (90826201) or a cast lock nut (90826301).







89025702 Two-Wire Probe 90826301

90826202

90826301

90820801

90820801

Probe holder with 2" NPT male thread, tall cap

Probe holder with 2" cast lock nut

Tall probe holder cover

HIGHLIGHTS

- Anodized aluminum construction.
- 1/2" NPT connection ports.
- 2" NPT male thread.
- 2" NPT cast lock nut.
- Tall or short cover.
- O-ring sealed.
- Three bolt locking ring.
- For use with all EBW® and other manufacturers' probes.



SINGLE SOCKET SOLUTIONS

Single sockets are manufactured in accordance to API RP1004 and are compatible with all overfill monitor plugs. These sockets are moisture-proof and have stainless steel contact pins in a bakelite housing. Hard-coated aluminum faceplates and J-Slots are long-lasting and come standard with black plastic caps. Optic, thermistor, and float styles are available.

- Ease of installation.
- Moisture-proof.
- Stainless steel contact pins.
- Produced in accordance with API 1004.
- Available in all three API standard socket configurations.

Dort Number	Description
Part Number	Description
90821101	Thermistor socket with plastic cap
90822101	Optic socket with plastic cap
90811901	Plastic cap only
90811001	Thermistor conversion kit
90812001	Optic conversion kit





WIRING KITS

Part Number	Description	Parts Included
90831301	Three compartment wiring kit	100' Cable and 12 watertight fittings
90831401	Four compartment wiring kit	100' Cable and 16 watertight fittings
90831501	Five compartment wiring kit	100' Cable and 22 watertight fittings
90831601	Six compartment wiring kit	100' Cable and 30 watertight fittings
90813101	Watertight fitting only	N/A
90813206	100' Seven conductor cable only	N/A
90813203	25' 7-CON cable	N/A

CROSS REFERENCE GUIDE

Description	EBW®	Civacon	Emco Wheaton	Ваусо	
Bottom Loading Adapters				1	
Short stroke	88050002	861-0400	F-501-003	N/A	
Short stroke with S.G.	88050003	861SG	N/A	N/A	
Female Gravity Drop Adapters					
4" API	88033001	871-B	N/A	N/A	
Buna-N gasket for hose end	77420204	H-8347-M	N/A	N/A	
Male Gravity Drop Adapters					
3" Male cam groove	88041001	871-A	F459-006	N/A	
4" Male cam groove	88041101	871-A-0074	F459-007	N/A	
3" Male thread	N/A	N/A	N/A	N/A	
3" NPSM thread with poppet	30130001	633FPV	N/A	N/A	
3" NPSM thread no poppet	30333303	N/A	N/A	N/A	
4" NPSM thread with poppet	30130002	611-T-AL40-NPT	F529-001	N/A	
4" NPSM thread no poppet	30344404	610-T-0610	F529-002	N/A	
Flanged Vapor Check Valves					
Poppetted with sight glass	30230011	611FB	F530-010	N/A	
Vapor Caps			-		
Nylon without chain	N/A	N/A	N/A	N/A	
Nylon with chain	30420002	N/A	F532-001	N/A	
Aluminum without chain	N/A	N/A	N/A	N/A	
Air Interlock Valves				1	
¼" - 1" button	88015001	100-0001	F527-002	N/A	
¼" Six-way 1" button	88025601	101-002	F-528-001	N/A	
Dust Cap				1	
4" API dust cap	88040301	873-0070 874-0874	F499-001	5000-24	
Air Operated Sequential Vapor Vent Va	alves		-		
Flanged without hood	88034101	N/A	N/A	N/A	
Threaded without hood	88034201	N/A	N/A	N/A	
Flanged with hood	88034301	1998	F592-001	N/A	
Vent valve only	88034401	T1966SV	F592-001	N/A	
Threaded with hood	N/A	T195SV	N/A	N/A	
$4" \times 3"$ with probe	77432002	633-CV-6070, 633-CPP-6051, 633-CPV-6053	F800-002	VR403CS	
$4" \times 4"$ with probe	77432003	633-CV-6075, 633-CPP-6051	N/A	N/A	

CROSS REFERENCE GUIDE

4" Emergency Valves

Description	EBW®	Civacon	Emco Wheaton	Ваусо		
Cable Operated 90 Degree						
4" TTMA flange/4" Victaulic™ outlet	880-430-01	VA-1111	N/A	N/A		
Cable Operated Straight						
4" TTMA flange/4" Victaulic™ outlet	880-451-01	VA-3111	N/A	N/A		
Air Operated 90 Degree						
4" TTMA flange/4" Victaulic™ outlet	880-432-01	VA-1121	N/A	N/A		
4" TTMA flange/4" TTMA flanged outlet	880-433-01	VA-2121	N/A	N/A		
Air Operated Straight	Air Operated Straight					
4" TTMA flange/4" Victaulic™ outlet	880-453-01	VA-3121	N/A	N/A		
4" TTMA flange/4" TTMA flanged outlet	880-454-01	VA-4121	N/A	N/A		
Product Delivery Elbow - Dual Point						
4" Grooved male cam with sight glass	880-455-01	60TT-0095	F523-006	N/A		
Vapor Recovery Elbow - Dual Point						
3" Grooved male cam	880-465-01	1711-VL-0300	N/A	VR6200		

Overfill Controllers

Description	EBW®	Civacon	Flotech	Scully
2-Wire OCS controller	890-400-02	3100	FT103	8687
Sockets and Caps				
Thermistor socket with plastic cap	908-211-01	4402	FT301	7720
Optic socket with plastic cap	908-221-01	4102	FT300	7974
7-Pin socket with cap	908-230-01	4600	FT302	8116
OCS Probes and Holders				
8" 2-Wire optic probe	890-110-01	1650	FT150	22389/09409
2-Wire optic probe with 908-263-01 holder	890-257-02	1550	FT151	8501
Watertight fitting only	908-131-01	2510	FT402	N/A
100' Seven conductor cable 18AWG	908-132-06	2310	FT401	27382

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CORROSION CONTROL^{TT} SYSTEM

- ① Corrosion Control[™] Advanced Protection STP
- 2 Corrosion Control[™] Water Separator
- 3 Corrosion Control[™] Desiccant Pack
- 4 EVO™ Series Automatic Tank Gauge




CORROSION CONTROL[™] SYSTEMS

Corrosion Control[™] Advanced Protection (AP) submersible pumps feature powderand e-coated finishes as well as stainless steel components to combat the formation of corrosion.

CORROSION CONTROL" SYSTEM

IN-TANK & IN-SUMP CORROSION PROTECTION

Attack corrosion before it has a chance to develop with the fully integrated in-tank and in-sump Corrosion Control[™] System. By proactively monitoring for and removing the main corrosion-causing elements including water, moisture and humidity, from both tanks and containment sumps, the Corrosion Control[™] System takes an active role in protecting your fuel system from accelerated corrosion and the equipment deterioration it leads to. Keep your system running at peak performance and avoid costly maintenance, equipment replacement, downtime, and even system failure caused by excessive corrosion.

CORROSION CONTROL" WATER SEPARATOR REMOVE TANK WATER

The Water Separator suctions the tank bottom and separates out water and other corrosion contributors from the tank.

CORROSION CONTROL" DESICCANT PACK

The Desiccant Pack acts to absorb humidity within the sump before it turns into corrosion-causing condensation within the containment.

CORROSION CONTROL[™] SENSOR

MONITOR FOR CORROSION

The sensor has dual purpose functionality; detecting and alerting station owners to the presence of a corrosive atmosphere in sumps or tank ullages as well as the ability to detect high levels of humidity that could lead to corrosion.



CORROSION

Corrosion Control

Desiccant Pack

Corrosion Control™ Sensor



Franklin Fueling Systems

Corrosion Control[™] Water Separator

HOW DOES IT WORK?

The Water Separator suctions the tank bottom to eliminate water and other corrosion contributors from the tank. System suctioning is driven by diverted fuel flow through an eductor. Clean fuel is returned to the tank and the water/acid is stored for removal.



SYSTEM CONTROL

The Corrosion Control[™] Water Separator is paired with an EVO[™] Series Automatic Tank Gauge (ATG) to completely automate operation. From controlling scheduled run time, to alerting the station owner when it's time to clear the collected water - the EVO[™] Series ATG handles it all.

The Corrosion Control[™] Sensor's data is routed through the ATG to alert station owners to the potential formation of corrosion. It also provides a warning for high levels of moisture which may indicate it's time for the Desiccant Pack to be replaced.

WATCH THE SYSTEM IN ACTION AT GO.FRANKLINFUELING.COM/CORROSION



HIGHLIGHTS

- Compatible with any new or existing FE PETRO[®] 4" submersible turbine pump (STP).
- Mounts to any 4" riser including either an STP riser or probe riser.
- Element-free vessel has no filter to change, eliminating ongoing replacement costs.
- All stainless steel construction for corrosion resistance.
- Comprised of UL recognized components.
- Height adjustable tank bottom suctioning kit can accommodate tanks up to 10' in diameter.
- Automated control and monitoring is provided via an EVO[™] Series automatic tank gauge (ATG).
- The ATG runs the Water Separator for 45 minutes after each delivery as well as once a day during a non-peak time to remove any water/acid mixture that drops to the tank bottom.
- During scheduled operation, the ATG opens the water separator's solenoid valve to allow fuel to begin flowing through the separator vessel while a flow switch monitors the system for positive flow.
- An integrated water detection sensor provides a notification to empty the vessel via the ATG.

CORROSION CONTROL" WATER SEPARATOR

The Corrosion Control[™] Water Separator provides proactive in-tank corrosion control by removing tank bottom corrosion contributors including water and acid. The water separator uses the flow of fuel created by a 4" FE PETRO[®] submersible turbine pump to generate a vacuum which suctions the tank bottom. The separator vessel collects any water/acid mixture and the clean fuel is directed back into the tank. The water/acid mixture is then removed by a service technician, keeping the tank clear of the harmful corrosion-causing mixture.

SPECIFICATIONS

- Vessel capacity: 1 Gallon of water/acid
- Eductor flow: 8 GPM flow to drive suction pickup
- Suction pickup: ¼ GPM
- Suction vacuum: 10 in/Hg

Containment Sump Requirements

- Minimum of 32" of height inside the tank sump.
- Accessible 4" port in the tank manway.
- At least 12" of riser height for mounting.
- High voltage conduit for solenoid wiring.
- Intrinsically safe conduit for water detection sensor and flow switch sensor wiring.

Automatic Tank Gauge Requirements

- EVO[™] 550 or EVO[™] 5000 ATG.
- EVO[™] Series ATG firmware version 2.19 or later.
- Conditions software (TS-CON).
- 1 open relay module port (for solenoid).
- 2 open 3-wire module ports (for water detection sensor and flow switch).



ORDERING INFORMATION

Corrosion Control[™] Water Separator

Model	Description	
407985901	Corrosion Control [™] Water Separator, includes items #1 though #12 below	
407945910	Water removal hand pump	
403963001	13" cable ties, 100 pack	

Corrosion Control[™] Water Separator Component Kits

ltem	Model	Description
1	407945901	Water Separator return kit
2	407945902	Water Separator suction kit
3	407945903	Water Separator mounting kit
4	407945904	Eductor manifold kit
5	407945905	21" Separator vessel kit
6	407945906	Separator to eductor kit
7	407945907	Separator to suction kit
8	407945908	STP to eductor supply kit
9	407945909	Installation hardware kit (not shown)
10	FMP-WDS	Water Detection Sensor
11	FF07X30EZXEZ90	Flexible connector, ¾" x 30", EZ FIT x 1" EZ FIT 90° elbow
12	FF07X24EZXEZ90	Flexible connector, ¾" x 24", EZ FIT x 1" EZ FIT 90° elbow





ORDERING INFORMATION

Separator Return Kit Replacement Parts

$\square \Omega = (2)$			
	ltem	Model	Description
(40)F5	1	407957001	¼" NPT x 3/8" suction tube coupler
	2	407493001	1" EZ FIT gasket
	2	EZ10CLAMP	1" EZ FIT clamp
30	3	407995001	1" EZ FIT x 1" EZ FIT 90° elbow
4	4	407493004	4" EZ FIT gasket
	4	EZ40CLAMP	4" EZ FIT clamp

Eductor Manifold Kit Replacement Parts



Item	Model	Description
1	407938001	¾" solenoid valve
2	407493001	1″ EZ FIT gasket
	EZ10CLAMP	1" EZ FIT clamp
3	EZ10X07HMSS	1" EZ FIT x 34 " NPT hex male adapter
4	407995001	1" EZ FIT x 1" EZ FIT 90° elbow
F	407765001	1" EZ FIT orifice plate
5	EZ10CLAMP	1" EZ FIT clamp
6	407941001	¾″Y strainer
	407774901	¾"Y strainer replacement screen only
7	407939001	¾" eductor
	405590908	Eductor replacement O-ring
8	EZ10X07X712MSS	1" EZ FIT x ¾" NPT adapter

CORROSION CONTROL[™] SYSTEMS

Separator Vessel Kit Replacement Parts



Item	Model	Description
1	407761001	4" EZ FIT Water Separator cap
I	403499001	¼" NPT pipe plug
2	407493004	4" EZ FIT gasket
Ζ	EZ40CLAMP	4" EZ FIT clamp

Separator Eductor Kit Replacement Parts



Item	Model	Description
1	407941002	3/8" Y strainer
I	407774902	3/8" Y strainer replacement screen only
2	407775001	3/8" flow switch
3	407984001	¼" male x 36" male flexible connector

Separator Suction Kit Replacement Parts





HIGHLIGHTS

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- Protects submersible pumps, fittings, and other tank sump hardware from the formation of corrosion which can lead to equipment deterioration.
- Compact, economical, simple design with no replacement parts or servicing necessary.
- Includes stainless steel hanging grommet and cable ties.
- Desiccant blend is formulated specifically for petroleum applications to ensure maximum moisture absorption is contained within an easy to service and dispose of package.
- Tested for a typical service life of 4 to 6 months in a 75-100 cubic foot tank sump.
- Each pack comes individually packaged in a foil barrier bag to ensure long storage life.
- Fits through 4" multiport inspection openings for easy install.
- Use the Desiccant Pack alone or pair it with the Corrosion Control[™] Sensor. The sensor allows you to monitor your containment for increasing levels of moisture to indicate when it's time for the desiccant to be replaced.

CORROSION CONTROL^{TT} DESICCANT PACK

The Corrosion Control[™] Desiccant Pack provides economical proactive in-sump corrosion protection by absorbing humidity from the sump environment before it can turn into corrosion-causing moisture. Keep your system running at peak performance and avoid costly maintenance, equipment replacement, downtime, and system failure caused by excessive corrosion.

SPECIFICATIONS

- Enclosure material: Tyvek® spunbond olefin fiber
- Desiccant blend: 400-450 grams calcium chloride/starch
- Grommet: #4 stainless steel
- Height: 24"
- Width: 4¾"
- Diameter: 3¼"

ORDERING INFORMATION

Corrosion Control[™] Desiccant Pack

Model	Description
407750906	Corrosion Control [™] desiccant pack, includes (6) packs and (6) cable ties
403963001	13" cable ties, 100 pack
TSP-KS	Unistrut [®] mounting kit



CORROSION CONTROL[™] SENSOR

The Corrosion Control[™] Sensor has dual purpose functionality; detecting and alerting station owners to the presence of a corrosive atmosphere in sumps or tank ullages as well as the ability to detect high levels of humidity that could lead to corrosion.

HIGHLIGHTS

- Highly accurate, novel, solid state technology and closed output circuit detects humidity and communicates the level to the ATG for interpretation.
- Chemical-resistant materials.
- Utilizes light-emitting diode, sacrificial sample, photodetector and unique algorithm to indicate a corrosive environment.
- Please see website for ordering information.
- Compatible with EVO[™] 550 and EVO[™] 5000.

APPLICATION

The sensor can be used with the Corrosion Control[™] System in the ullage space of the underground storage tank, tank sump or dispenser sump.

Franklin Fueling Systems

franklinfueling.com 3760 Marsh Rd. • Madison, WI 53718, USA Tel: +1 608 838 8786 • Fax: +1 608 838 6433 Tel: USA & Canada +1 800 225 9787 • Tel: UK +44 (0) 1473 243300 Tel: Mex 001 800 738 7610 • Tel: DE +49 6571 105 380 • Tel: CN +86 10 8565 4566



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