



Franklin Fueling Systems

TOTAL SYSTEM SOLUTIONS

PRODUCT CATALOG

2022 / 2023

NEW PRODUCTS
AND UPDATES INSIDE

UL COMPLIANT PRODUCTS

YOUR PARTNER EVERY STEP OF THE WAY

At Franklin Fueling Systems, everything we do focuses on providing the optimal Total System Solution for retail petroleum. We set the standard for quality and innovation, industry-leading availability, and consolidated shipments from one manufacturer. Our service extends far beyond the product itself, helping your business plan, build, and maintain systems that work together while providing the lowest total cost of ownership. Franklin is here to help petroleum retailers stay at the forefront of the industry.



Franklin Fueling Systems

**P/V VENT WITH
IN-LINE VAULT**

**EASY-ACCESS
SENSOR BRACKET**

**CORROSION CONTROL™
SYSTEM**

EVO™ 600



TOTAL SYSTEM SOLUTIONS

At Franklin our goal is to be an indispensable partner to our customers, and through that guidance, we develop solutions to solve our industry’s most pressing problems.

See what’s fueling our latest innovations.

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CORROSION CONTROL

- 1 EVO™ 600 or EVO™ 6000 Automatic Tank Gauge
- 2 Multiplexing Sensor Hub™
- 3 Corrosion Control™ Desiccant Pack
- 4 Corrosion Control™ Desiccant Sensor
- 5 Corrosion Control™ Advanced Protection Submersible Turbine Pump
- 6 Corrosion Control™ Water Separator
- 7 Corrosion Control™ Corrosion Detection Sensor
- 8 Low Level Water Float for Diesel



4

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CORROSION CONTROL SYSTEM

1 EVO™ 600/6000 AUTOMATIC TANK GAUGE

The EVO™ Series ATG provides automated control and monitoring for the entire system via the Corrosion Control™ Application which comes standard.

2 CORROSION CONTROL™ WATER SEPARATOR

The Water Separator captures water and acid from the bottom of the tank – the key causes of a corrosive environment.

3 CORROSION CONTROL™ DESICCANT PACK AND SENSOR

Absorb humidity and conveniently monitor the remaining life of the Desiccant Pack(s) installed within sumps via an EVO™ Series ATG. Efficiently manage the service intervals to maintain optimal low humidity and a corrosion-free environment.

4 ADVANCED PROTECTION SUBMERSIBLE PUMP

The Advanced Protection Submersible Pump is e-coated and contains stainless steel components to protect the submersible from corrosion.

5 LOW LEVEL WATER FLOAT FOR DIESEL

The Low Level Water Float for Diesel provides enhanced water level detection down to ¼" delivering earlier indication of the presence of water inside diesel tanks.

6 CORROSION DETECTION SENSOR

The Corrosion Detection Sensor provides ongoing monitoring of the tank environment, alerting when corrosion is present in the tank ullage space.

7 MULTIPLEXING SENSOR HUB™

The Multiplexing Sensor Hub™ (MSH) allows station owners to add the Corrosion Control™ Water Separator, Corrosion Detection Sensor, and other sensors to existing sites without having to break concrete to run new conduit and wires.



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 (STP) 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.



HIGHLIGHTS

- Compatible with any new or existing FE PETRO® 4" 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™ 600/6000 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 LL3 Probe monitors separator operation and provides a notification to empty the vessel via the ATG.

SPECIFICATIONS

- Vessel capacity: ¾ gallon of water/acid
- Eductor flow: 8 GPM flow to drive suction pickup
- Suction pickup: ¼ GPM

Containment Sump Requirements

- Minimum of 37" of height inside the tank sump.
- Accessible 4" port in the tank manway.
- At least 11" envelope for vessel and adjacent piping.
- High-voltage conduit for solenoid wiring.
- Intrinsically safe conduit for Water Separator probe.

Automatic Tank Gauge Requirements

- EVO™ 600 or EVO™ 6000 ATG.
- Access to in-tank product level readings (for delivery events and recirculation runtime).
- 1 open relay module port (for solenoid).
- 1 open probe module port (for vessel probe).

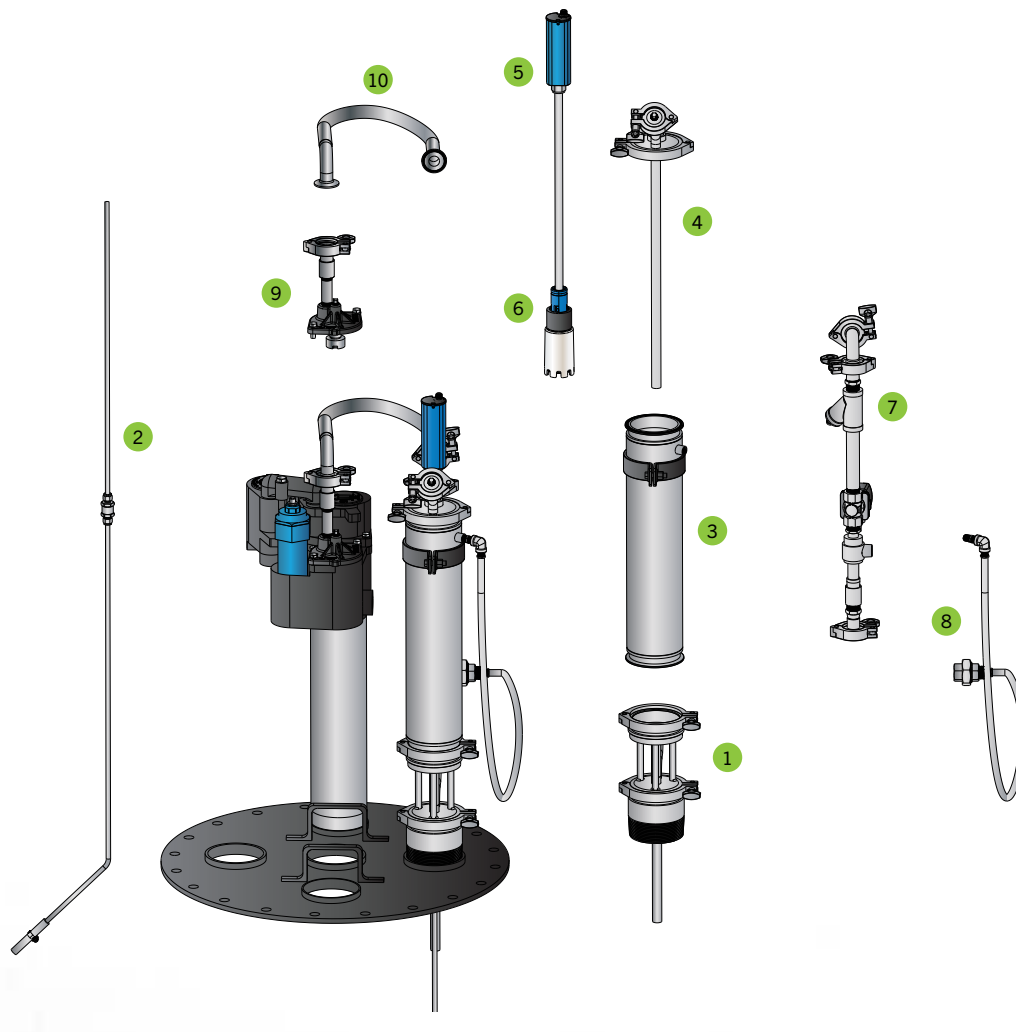
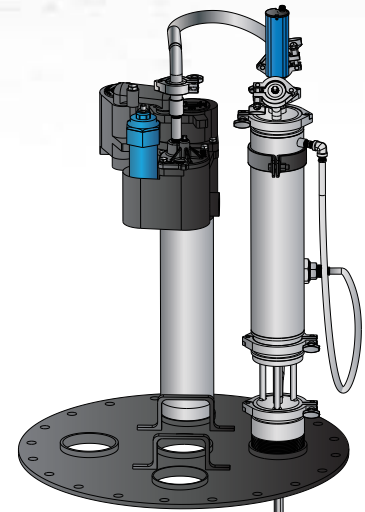
ORDERING INFORMATION

Corrosion Control™ Water Separator

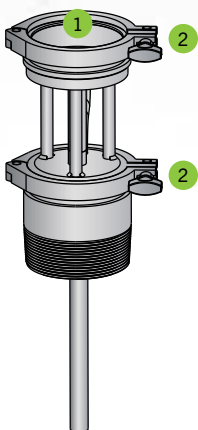
Model	Description
407985902	Corrosion Control™ Water Separator, includes items #1 through #11 below
407945910	Water removal hand pump
403963001	13" cable ties, 100 pack

Corrosion Control™ Water Separator Component Kits

Item	Model	Description
1	407945911	Water Separator suction adapter kit
2	407945912	Water Separator suction tube kit
3	407945914	Water Separator vessel kit
4	407945915	Water Separator vessel cover kit
5	FMP-LL3-18	18" LL3 probe kit
6	407945919	Water Separator float kit
7	407945916	Eductor manifold kit
8	407945917	Water Separator-to-eductor kit
9	407945908	STP-to-eductor kit
10	FF07X24EZXEZ90	Flexible connector, 3/4" x 24", EZ FIT x EZ FIT 90° elbow
11	407945918	Installation hardware (not shown)

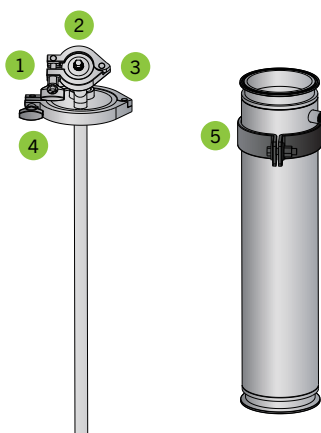


Water Separator Suction Adapter Kit Replacement Parts



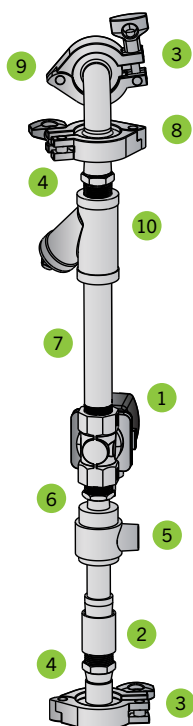
Item	Model	Description
1	407945913	Plunger valve
2	EZ40CLAMP 407493004	4" EZ FIT clamp 4" EZ FIT gasket

Water Separator Vessel & Cover Kit Replacement Parts



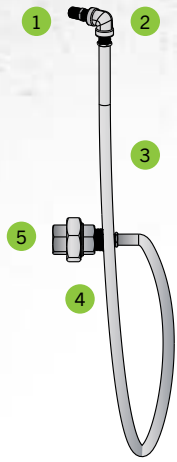
Item	Model	Description
1	EZ10CLAMP	1" EZ FIT clamp
	407493001	1" EZ FIT gasket
2	10000002180	1" EZ FIT removal cap
3	403499001	¼" NPT pipe plug
4	EZ40CLAMP	4" EZ FIT clamp
	407493004	4" EZ FIT gasket
5	407945920	Eductor clamp kit

Eductor Manifold Kit Replacement Parts



Item	Model	Description
1	407938001	¾" solenoid valve
2	Purchase locally	¾" NPT stainless steel coupling
3	EZ10CLAMP	1" EZ FIT clamp
	407493001	1" EZ FIT gasket
4	EZ10X07HMSS	1" EZ FIT X ¾" hex male adapter
5	407939001	¾" eductor
	405590908	¾" eductor replacement O-ring only
6	Purchase locally	¾" NPT X ½" NPT stainless steel bushing
7	Purchase locally	¾" NPT X 6" long stainless steel nipple
8	EZ10CLAMP	1" EZ FIT clamp
	407765001	1" EZ FIT orifice plate
9	407995001	1" EZ FIT X EZ FIT elbow
10	407941001	¾" Y strainer
	407774901	¾" Y strainer replacement screen only
	403499002	¾" NPT pipe plug

Water Separator-To-Eductor Kit Replacement Parts



Item	Model	Description
1	407764001	1/4" NPT flow orifice
2	Purchase locally	1/4" NPT stainless steel elbow
3	407984001	1/4" X 36" long flex connector
4	Purchase locally	1/4" NPT x 3/4" NPT stainless steel bushing
5	Purchase locally	3/4" NPT stainless steel union

CORROSION CONTROL™ EVO™ SERIES UPGRADE KITS

Leverage the power of your existing EVO™ 550 or EVO™ 5000 and upgrade to the latest evolution in automatic tank gauging. See details below for the newest features and enhancements.

HIGHLIGHTS

• User interface efficiency:

- Additional one-touch buttons.
- Shallow menu structure allows users to do more with fewer clicks.
- FFS PRO® Connect remote web access.

• Security features:

- Create unlimited user roles with customized system access.
- Individual user logins with tracking capability.
- ATG sends out information while remaining safely behind your firewall.
- Utilizes TLS/SSL protocols to ensure data encryption between browser and ATG.



• Faster processing speed & reboots:

- Reduced time required to reboot after system changes.
- An all new faster processor enables the ATG to reboot in just seconds after firmware updates, keeping stations open and operational.

• Facilitates site upgrades:

- Bring your station to the next level with a Corrosion Control™ water separator (CWS) for your existing site without purchasing a new ATG.
- Our Multiplexing Sensor Hub™ (FMP-MSH) enables CWS installations avoiding interruptions to fueling operations or adding costly new wiring.

ORDERING INFORMATION

EVO™ Series Upgrade Kits

Model	Description
EVO-600UPG	Upgrade kit for EVO™ 550 to EVO™ 600, includes control module, comm port cover, and EVO 600™ jewel
EVO-6000UPG	Upgrade kit for EVO™ 5000 to EVO™ 6000, includes control module, comm port cover, and EVO 6000™ jewel
EVO-600UPG-W	Upgrade kit for EVO™ 550 to EVO™ 600 with WiFi, includes control module, comm port cover, WiFi hardware, and EVO 600™ jewel
EVO-6000UPG-W	Upgrade kit for EVO™ 5000 to EVO™ 6000 with WiFi, includes control module, comm port cover, WiFi hardware, and EVO 6000™ jewel

CORROSION CONTROL™ ADVANCED PROTECTION SUBMERSIBLE PUMPS

Available as a factory installed option on STPAG and IST biofuel compatible Submersible Turbine Pumps (STPs), Corrosion Control™ Advanced Protection defends STPs from accelerated corrosion.

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.
- UL and cUL listed.

ORDERING INFORMATION

Advanced Protection STPs shipped from the factory will list the combined part number. Complete part numbers have a specific order and are created using the following guidelines:

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 (1½" 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 = ⅓ hp fixed speed

200 = 2 hp fixed speed

75 = ¾ hp fixed speed

VS2 = 2 hp variable speed**

150 = 1½ hp fixed speed VS4 = 4 hp variable speed***



Corrosion Control™ Advanced Protection STP shown with MLD+ and Intake Filter Screen (sold separately).

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).

**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.*

ORDERING INFORMATION

Corrosion Control™ Advanced Protection Submersible Turbine Pumps Common Configurations

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"

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.
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 4½" OD by ¾" WT tubing.
7. For riser pipe lengths 31" to 60", adder charge applies.

*Model length (A) defined as the dimension from the turbine manifold bottom to the 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

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, 110 Volt coil
402312931	STP-DHI + SPGC-220, combo DHI with factory wired SPGC-220 Guardian Series™ Single Phase Controller
402313921	STP-DHI-CBS, combo DHI with factory wired STP-CBS
402459931	Model 65 psi check valve (for secondary of manifolded STPs with Veeder-Root™ PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Controller, 220 Volt
5800300100	STP-DHI, dispenser hook isolation for 110 Volt dispenser handle switches, up to eight each

CORROSION CONTROL™ DESICCANT PACK AND DESICCANT PACK SENSOR (DPS)

As part of the Corrosion Control™ System, the Desiccant Pack absorbs humidity from the sump environment before it turns into corrosion-causing moisture. The Desiccant Pack Sensor provides remote monitoring of the remaining life of the Desiccant Pack via an EVO™ Series Automatic Tank Gauge (ATG) for efficient maintenance.

HIGHLIGHTS

- The Desiccant Pack is installed within the sump to maintain optimal non-corrosive levels of humidity, protecting hardware.
 - Enclosure material: Tyvek® spunbond olefin fiber
 - Desiccant blend: 400-450 grams calcium chloride/starch
 - Grommet: #4 stainless steel
 - Height: 24"
 - Width: 4¾"
 - Diameter: 3¼"
- The Desiccant Pack Sensor provides the percent of remaining life of the Desiccant Pack.
- The Desiccant Pack Sensor hangers allow for multiple mounting options and can accommodate 1 or 2 Desiccant Packs.
- ATG compatibility:
 - EVO™ 200 and EVO™ 400
 - EVO™ 600 and EVO™ 6000
- ATG data displayed:
 - Desiccant % remaining.
 - Sensor status (Ok, Desiccant Near Saturation, Desiccant Saturated - Service Needed, Desiccant Missing, Desiccant Sensor Overload).
 - Trend (Active Drying - Desiccant is actively absorbing water from environment or Passive Drying - Desiccant is holding required humidity level).



SPECIFICATIONS

Applications

Maintain a non-corrosive environment within the sump with the Desiccant Pack(s) and remotely monitor when the Desiccant Pack(s) need to be changed to maintain optimal low humidity.

Theory of Operation

The Desiccant Pack is installed within the sump environment to maintain optimal non-corrosive levels of humidity. The Desiccant Pack Sensor can be used to hang one or two Desiccant Packs. It measures the weight of the Desiccant Pack and calculates an estimated percent of life remaining via an EVO™ Series ATG.

ORDERING INFORMATION

Desiccant Pack and Desiccant Pack Sensor

Model	Description
FMP-DPS-U	Desiccant Pack Sensor with single and multi-pack hanger and installation kit
407750906	Desiccant Pack (qty 6)

Note: The FMP-DPS-U wires to the probe module on EVO™ 600 and EVO™ 6000 ATGs and to the UDP input channel on EVO™ 200 and EVO™ 400 ATGs.

*Tyvek® is a registered trademark of E.I. du Pont de Nemours and Company.
Unistrut® is a registered trademark Unistrut Corporation.*

LOW LEVEL WATER FLOAT FOR DIESEL

The Low Level Water Float for Diesel provides increased water level detection down to $\frac{1}{4}$ ", delivering early indication of the presence of water inside diesel tanks.

HIGHLIGHTS

- Detects water down to $\frac{1}{4}$ ", compared to existing water floats which can only detect water at $\frac{3}{4}$ ".
- On a typical 8' x 8,000 gallon tank, the enhanced float can detect the presence of as little as 4 gallons of water.
- Designed for applications involving 4" riser pipes.
- Each float kit contains a Diesel Product Float and a Low Level Water Float.
- Each float kit includes a compact probe foot for easy installation on new or existing probes.
- Recommended for use with bottom mounted Digital Inventory and Leak Detection Probes (LL3 models).
- Compatible with EVO™ 200, EVO™ 400, EVO™ 600, EVO™ 6000 Automatic Tank Gauges (ATGs).

ORDERING INFORMATION

Model	Description
FMP-IDF4E	4" Low Level Water Float for Diesel Kit, includes product float, water float, compact probe foot



CORROSION CONTROL™ CORROSION DETECTION SENSOR (CDS)

As part of the Corrosion Control™ System, the Corrosion Detection Sensor (CDS) provides automated notification of a corrosive environment in the tank ullage space. Keep the fuel system running at peak performance and avoid costly maintenance, equipment replacement, downtime, and system failure caused by excessive corrosion.

HIGHLIGHTS

- Sensor will detect the presence of corrosion on a sacrificial sample and provide an alarm.
- Protects the tank ullage from the formation of corrosion which can lead to fuel system deterioration.
- Displays a level reading for corrosion index via the EVO™ Series Automatic Tank Gauge (ATG) with programmable alarm types including:
 - Corrosive Environment Present
 - Corrosion Sensor Sample Error
 - Corrosion Sample Needs Replacement
- Compatible with all blends of gasoline, diesel, and Ethanol.
- ATG compatibility:
 - EVO™ 200 and EVO™ 400
 - EVO™ 550 and EVO™ 5000
 - EVO™ 600 and EVO™ 6000



SPECIFICATIONS

Applications

Monitoring for a corrosive environment within a tank ullage space.

Operation

The CDS can be installed in the ullage space of tanks or in dispenser or STP sumps. The intrinsically safe sensor utilizes an included quick disconnect cable to wire to any EVO™ Series ATG via the probe module (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000) or any Intrinsically Safe (IS) channel (EVO™ 200 and EVO™ 400). The sensor utilizes a sacrificial metal screen which is used to detect the formation of corrosion. This screen can be removed and replaced upon the formation of corrosion.

ORDERING INFORMATION

Corrosion Control™ Corrosion Detection Sensor

Model	Description
FMP-CDS-U	Corrosion Detection Sensor (all EVO™ Series ATGs)
FMSP-RDS1	Replacement detection screen, qty 1
FMSP-RDS10	Replacement detection screen, qty 10
TSP-KS	Unistrut® mounting kit

Note: this sensor communicates with the ATG via a TS-PRB probe module (EVO™ 550, EVO™ 5000, EVO™ 600, and EVO™ 6000) or via an IS channel (EVO™ 200 & EVO™ 400).

Unistrut® is a registered trademark Unistrut Corporation.

MULTIPLEXING SENSOR HUB™

The Multiplexing Sensor Hub™ (MSH) allows you to use a single 4-wire cable to connect up to six devices to an EVO™ 600 or EVO™ 6000 automatic tank gauge (ATG).

HIGHLIGHTS

- For retrofit applications: the MSH can use existing 4-wire probe and sensor cables to add additional probes or sensors, providing expanded monitoring capabilities without the need to break concrete to run additional cable.
- For new applications: the MSH delivers labor and materials savings by reducing the amount of conduit and cable required for monitoring devices within a containment sump.
- Ideal for use in adding a Corrosion Control™ Water Separator and corrosion detection sensors (FMP-CDS-U) to an existing tank sump and provides all necessary input capabilities for this system.

SPECIFICATIONS

General

- Inputs: (1) LL3 probe, (4) UDP devices, (1) switch/temperature sensor
- Output to EVO™ 600/6000 ATG: (1) RS-485

Theory of Operation

The FMP-MSH requires a minimum of four wires connected directly to an EVO™ 600 with an RS485 module. The four connections are power, ground, and A and B communication for the RS485 module. If a sump has two input field cables that are both 2-conductor cables, the A and B connections should be wired in the same cable that must be a twisted pair. Power and ground should be on the other cable. If it is a new installation, Belden™ cable #7962A, or a cable with equivalent parameters, is recommended. The FMP-MSH can power and accept input from 6 different probes or sensors.

Approvals & Certifications

- UL listed, ATEX / IECEx

ORDERING INFORMATION

Model	Description
FMP-MSH	Multiplexing Sensor Hub™



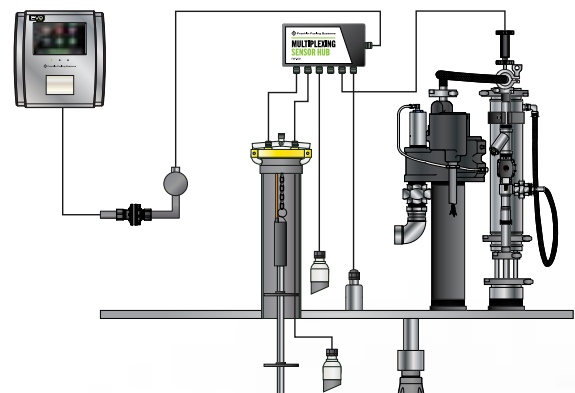
- Six input channels provide a wide assortment of device communication capabilities:
 - **Channel 1:** Always on, for FMP-LL3 digital inventory and leak detection probes.
 - **Channel 2-5:** Multiplexed, for 2-wire universal device protocol (UDP) communication devices.
 - **Channel 5:** Additional capability for 2-wire devices.
 - **Channel 6:** For any dry-contact single pole single throw (SPST) switch, a flow switch, two-wire device, or temperature sensor based on a 10k thermistor.

Input Capabilities

The FMP-MSH is capable of supporting the following devices:

Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
FMP-LL3-XX	FMP-DDS-U	FMP-DDS-U	FMP-DDS-U	FMP-DDS-U	FMP-ULS
--	FMP-DTS-U	FMP-DTS-U	FMP-DTS-U	FMP-DTS-U	FMP-UHS
--	FMP-EIS-U	FMP-EIS-U	FMP-EIS-U	FMP-EIS-U	FMP-HFS2
--	FMP-DIS-U	FMP-DIS-U	FMP-DIS-U	FMP-DIS-U	10k Temp. Sensor
--	FMP-HIS-U	FMP-HIS-U	FMP-HIS-U	FMP-HIS-U	--
--	FMP-CDS-U	FMP-CDS-U	FMP-CDS-U	FMP-CDS-U	--
--	FMP-LL3-18*	FMP-LL3-18*	FMP-LL3-18*	FMP-LL3-18*	--
--	--	--	--	FMP-ULS	--

*The FMP-LL3-18 is integrated into the Corrosion Control™ Water Separator to detect water level in the vessel.

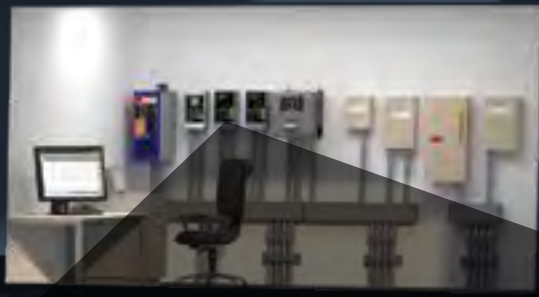


Belden™ is a trademark of Belden Technologies, Inc.

SUBMERSIBLE PUMPING SYSTEMS

- 1 Submersible Turbine Pumps
 - A. Variable Speed Submersible Pumps
 - B. Fixed Speed Submersible Pumps (2 hp, 1½ hp, 1/3 hp, 3/4 hp)
 - C. Fixed and Variable Length
 - D. High Capacity Submersible Pumps and Controllers (3 hp and 5 hp)
- 2 Mechanical Leak Detectors
- 3 MagVFC™ Variable Frequency Controller
- 4 Single-Phase Guardian Series™ Controller
- 5 Single-Phase Control Box
- 6 Dispenser Hook Isolation





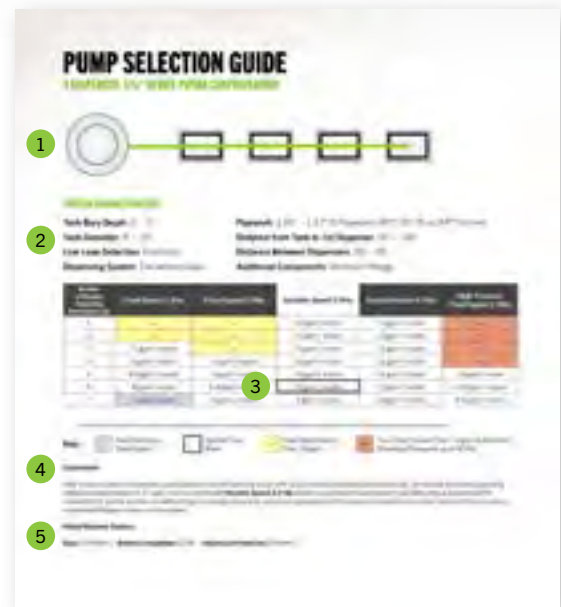
SELECTING THE RIGHT PUMP



HOW IT WORKS

Use these key system factors to help you determine the right pump for your application.

- 1 Find the system layout that best represents your application using the dispenser count, pipework diameter, and visual pipework layout guide.
- 2 Review the common system characteristics.
- 3 Select the appropriate pump to achieve optimal flow rates for the number of nozzles operating simultaneously (recommendation highlighted in green).
- 4 Review the pump recommendation explanation.
- 5 Choose the specific pump model from options including base, biofuel compatibility, and advanced protection models.



To flip through this guide, visit franklinfueling.com/pumpselection

4" SUBMERSIBLE TURBINE PUMPS

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

HIGHLIGHTS

Variable Speed

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

MagShell®

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

Biofuel Compatibility

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

Variable Length

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



Advanced Protection

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

Turbine Pump Interface

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

Intake Filter Screen

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

FEATURE SELECTION

	4 HP	2 HP	1 1/2 HP	1/3 3/4 HP
Variable Speed	✓	✓		
Fixed Speed		✓	✓	✓
MagShell®	✓	✓		
Biofuel Compatibility*	✓	✓	✓	✓
Variable Length	✓	✓	✓	✓
Fixed Length		✓	✓	✓
Advanced Protection	✓	✓	✓	✓
Turbine Pump Interface**	✓	✓	✓	✓
Intake Filter Screen	✓	✓	✓	✓

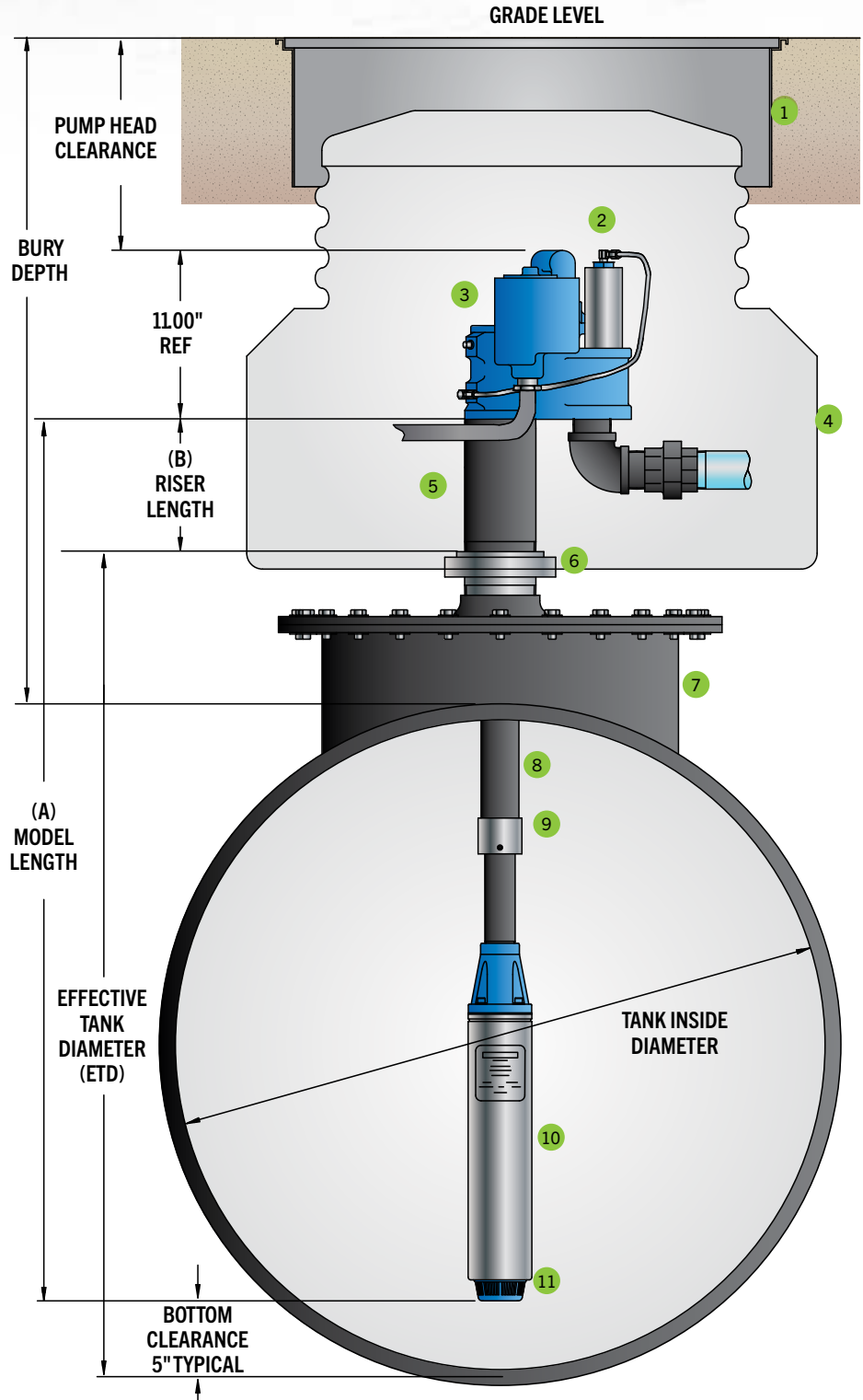
*Up to 85% Ethanol and up to 20% or 100% Biodiesel.

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

SPECIFICATIONS

4" Submersible Pump Components & Key Dimensions

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



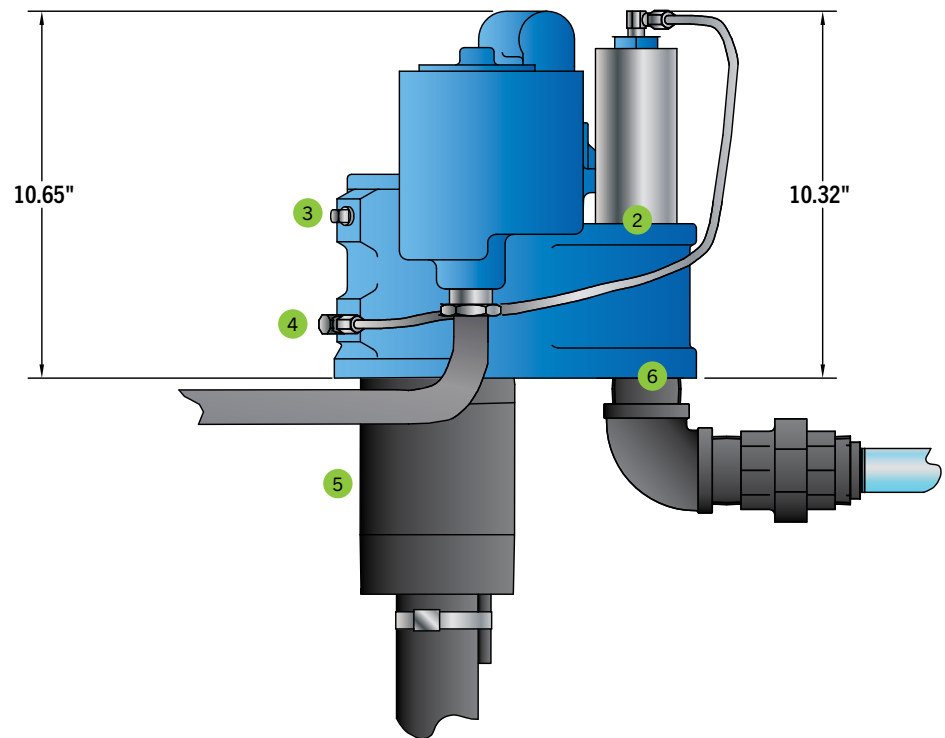
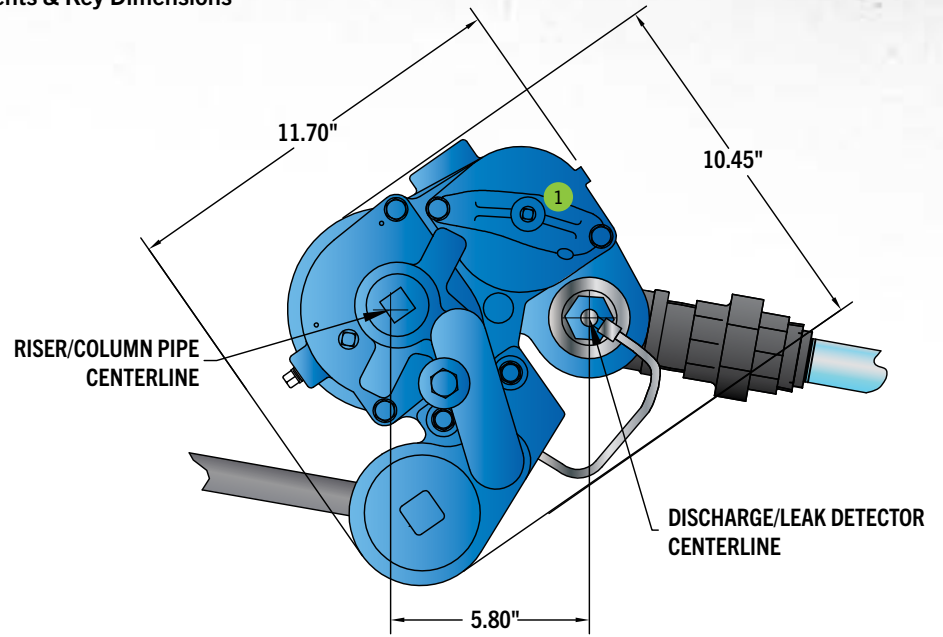
Notes:

1. Effective tank diameter (ETD) = Inside tank diameter (to top of 4" bung), including tank manway and/or sump adapter.
2. Model length (A) = ETD plus riser length minus bottom clearance minus 1" thread engagement.
3. Riser length (B) = Bury depth (to top of tank) minus pump head clearance minus tank manway and/or minus sump adapter.

SPECIFICATIONS CONTINUED

4" Submersible Pump Manifold Components & Key Dimensions

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



4 HP SUBMERSIBLE TURBINE PUMPS

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



HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

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

Advanced Protection

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

STANDARD FEATURES

Variable Speed

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

MagShell®

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

Variable Length

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

Active Air Eliminator

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

Safety and Ease of Maintenance

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

Turbine Pump Interface

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

Intake Filter Screen

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

Simple Servicing

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

Manual Pressure Relief

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

Outlast, Outperform with Franklin Electric Inside

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

Quality Certification

Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

SPECIFICATIONS

General

- Variable speed models are available in variable lengths only.
- Check valve: 2¾" diameter fluorocarbon seal constructed with cast aluminum body and steel backing washer.
- Pressure relief valve: available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi.
- Syphon: venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately.
- Air eliminator: every submersible includes a tank return path with one-way check valve to provide active air elimination.
- Electrical disconnect: electrical yoke for positive contractor disconnect during service.

Pump Motor

- 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.

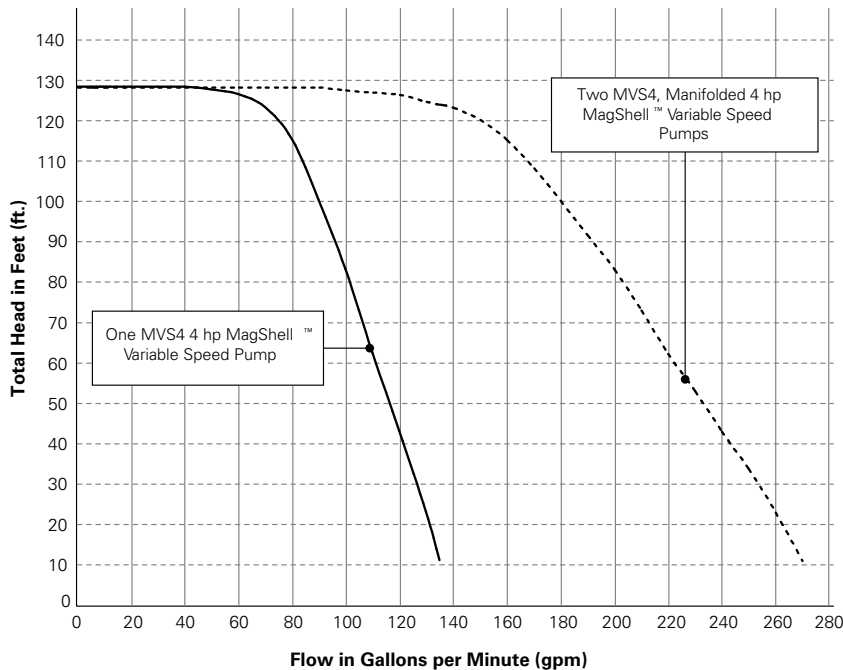
Power Requirements

- Variable speed pumps can only be controlled by a MagVFC™ variable frequency controller.
- 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.
- Max motor draw: 15 Amps.

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- STP variable speed models are UL listed for fuel mixtures containing up to 10% ethanol, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- IST/ISTAP variable speed 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 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.

4 Hp Variable Speed Pump Performance Chart



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

ORDERING INFORMATION

4 Hp Submersible Pump Ordering Guide

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

XXX YYYYY Z - A - B

XXX = Basic Model Designation

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

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

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

YYYYY = Factory Installed Options

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

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

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

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

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

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

Z = Pump Motor Horsepower Rating

VS4 = 4 Hp variable speed

A = Model Length (see table)

VL1 = STP variable length range #1

VL2 = STP variable length range #2

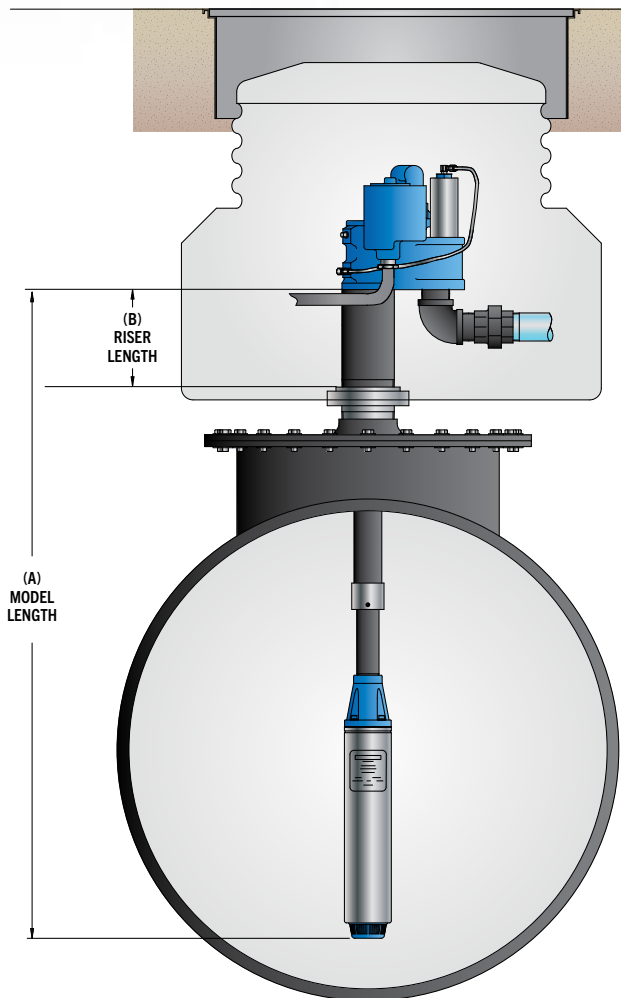
VL3 = STP variable length range #3

B = Riser Pipe Length (see diagram)

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

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).



Model Length (A)

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

ORDERING INFORMATION CONTINUED

4 Hp Variable Speed Submersible Turbine Pumps

Variable speed, variable length.

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

4 Hp Variable Speed Intelligent Submersible Turbine Pumps

Variable speed, variable length, and AG compatible.

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

Notes:

1. Remove "M" from model number for non-MagShell® pump motor assembly.
 2. All STP models are UL and cUL listed for compatibility with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
 3. All IST/ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
 4. All models are supplied with a standard check valve unless factory option "R" 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 4½" OD by ⅜" WT tubing.
 7. For riser pipe length 31" to 60", additional charge applies (call Customer Service for lead times).
- *Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet.

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
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 secondary of manifolded STPM VS2 or VS4 with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STPM VS2 or VS4)
5800300100	STP-DHI dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

2 HP SUBMERSIBLE TURBINE PUMPS

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

HIGHLIGHTS

OPTIONAL FEATURES

Variable Speed

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

Biofuel Compatibility

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

Advanced Protection

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

STANDARD FEATURES

MagShell®

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

Variable Length

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

Active Air Eliminator

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

Safety and Ease of Maintenance

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



Turbine Pump Interface

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

Intake Filter Screen

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

Simple Servicing

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

Manual Pressure Relief

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

Outlast, Outperform with Franklin Electric Inside

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

Quality Certification

Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

SPECIFICATIONS

General

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

Variable Speed Pump Motor

- 2 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.

Fixed Speed 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

- cULus listed.
- Consult factory for applicable approvals.

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.
- STPAG (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- All variable speed (non-AG) models can also be used with diesel fuels, fuel oils, kerosene, Avgas and jet fuels in a non-gelled pourable state.
- 2 Hp fixed speed 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.

Variable Speed Power Requirements

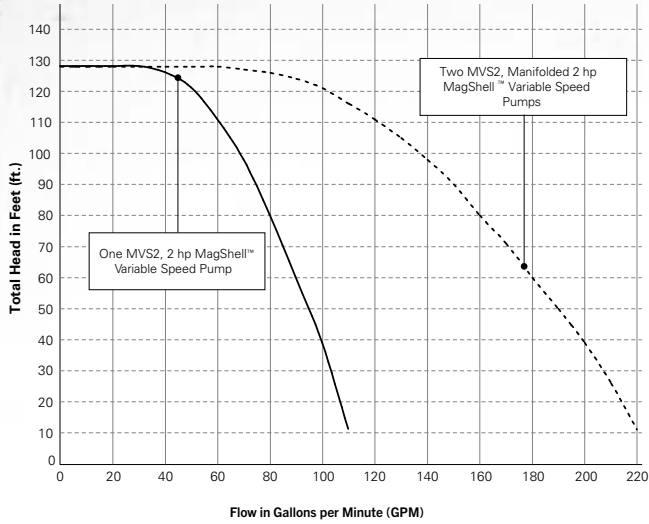
- Variable speed pumps can only be controlled by a MagVFC™ variable frequency controller.
- VS2 models can operate with single- or three-phase incoming power supply to the MagVFC™.
- Incoming power supply to the MagVFC™ can be 200-250 VAC, 50 or 60 Hz.
- MagVFC™ outputs a three-phase, variable frequency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

Fixed Speed 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.
- SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for 2 hp pump control.
- Max. motor draw: 12 Amps.

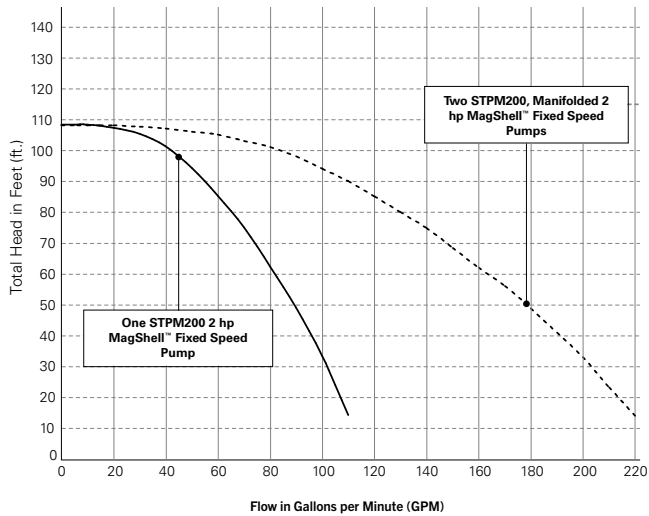
SPECIFICATIONS CONTINUED

2 Hp Variable Speed Pump Performance Chart



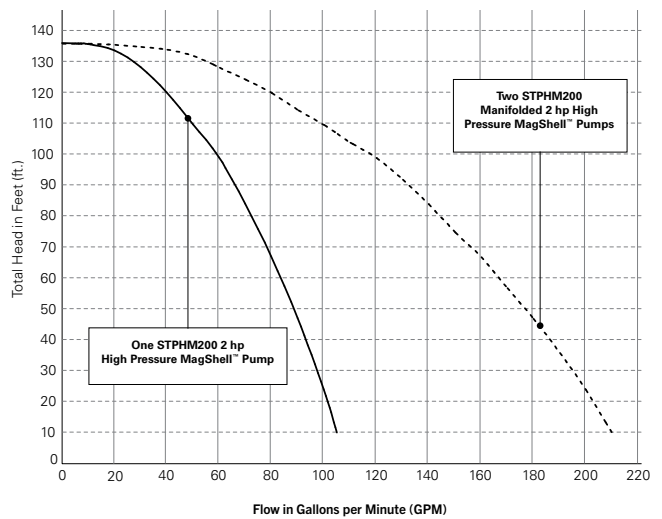
Performance based on pumping gasoline (0.76 specific gravity). Pressure is taken at the manifold discharge outlet. ISTM and STPMVS2 turbines can only be powered by a MagVFC with single or three phase incoming power.

2 Hp Fixed Speed Pump Performance Chart



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

2 Hp High Pressure Fixed Speed Pump Performance Chart



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

ORDERING INFORMATION

2 Hp Variable Speed Submersible Pump Ordering Guide

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

XXX YYYY Z - A - B

XXX = Basic Model Designation

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

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

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

YYYY = Factory Installed Options

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

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

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

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

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

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

Z = Pump Motor Horsepower Rating

VS2 = 2 Hp variable speed

A = Model Length (see table)

VL1 = STP variable length range #1

VL2 = STP variable length range #2

VL3 = STP variable length range #3

B = Riser Pipe Length (see diagram)

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

Notes:

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

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

2 Hp Fixed Speed Submersible Pump Ordering Guide

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

STP XXXXX Y - A - B

STP = Basic Model Designation

XXXXX = Factory Installed Options

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

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

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

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

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

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

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

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

Y = Pump Motor Horsepower Rating

200 = 2 Hp fixed speed

A = Model Length (see table)

VL1 = Variable length range #1

VL2 = Variable length range #2

VL3 = Variable length range #3

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

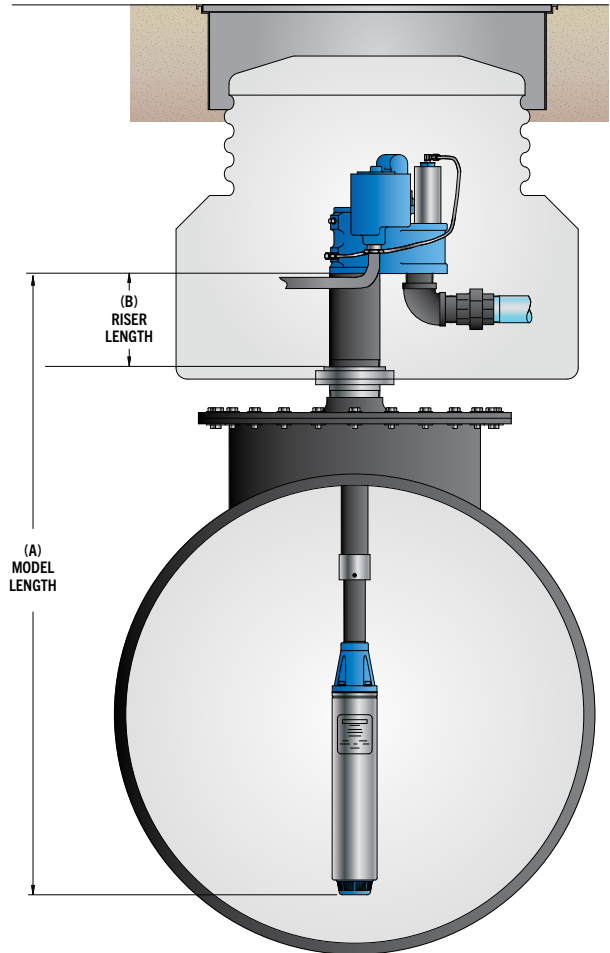
B = Riser Pipe Length (see diagram)

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

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



ORDERING INFORMATION

2 Hp Variable Speed Submersible Turbine Pumps

Variable speed, variable length.

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

2 Hp Variable Speed Intelligent Submersible Turbine Pumps

Variable speed, variable length, and AG compatible.

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

Standard 2 Hp Fixed Speed Submersible Turbine Pumps

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

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

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

Notes:

1. Remove "M" from model number for non-MagShell® pump motor assembly.
2. STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
3. All models are supplied with a standard check valve unless factory option "R" or "W" is specified.
4. All above models require single-phase, 208-230 VAC, 60 Hz incoming power.
5. 4" riser pipe, if supplied locally, must be 4½" OD by ⅜" WT tubing.
6. For riser pipe lengths 31" to 60", additional charges apply (call Customer Service for lead times).
7. All above IST and STPMVS2 models can only be powered by a MagVFC. MagVFC must be supplied with single- or three-phase incoming power for all above models.

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

ORDERING INFORMATION CONTINUED

Factory Installed Options

Specified in model number at time of STP order.

Model	Description
F	Floating suction adapter, 1½" NPT female, must be factory installed
K	IFS (intake filter screen) factory assembled to pump motor assembly
R	Model R check valve, factory installed, for Veeder-Root® PLLD Line Leak
W	Model W check valve, factory installed, for Red Jacket PPM4000 Line Leak

Field Installed Options

2 Hp submersible pump specific accessories.

Model	Description
400137908	Syphon check valve, alcohol-gasoline compatible (when ordered with STP)
5874202800	MagVFC™, 2 hp or 4 hp variable frequency controller, one required per STPM VS2 or VS4
400818921	STP-CBS, single-phase control box with lockout switch, 120 Volt coil
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

1½ HP SUBMERSIBLE TURBINE PUMPS

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



HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

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

Variable Length

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

Advanced Protection

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

STANDARD FEATURES

Active Air Eliminator

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

Safety and Ease of Maintenance

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

Simple Servicing

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

Turbine Pump Interface

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

Intake Filter Screen

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

Manual Pressure Relief

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

Outlast, Outperform with Franklin Electric Inside

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

Quality Certification

Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

SPECIFICATIONS

General

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

Pump Motor

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

Approvals

- cULus listed.
- Consult factory for applicable approvals.

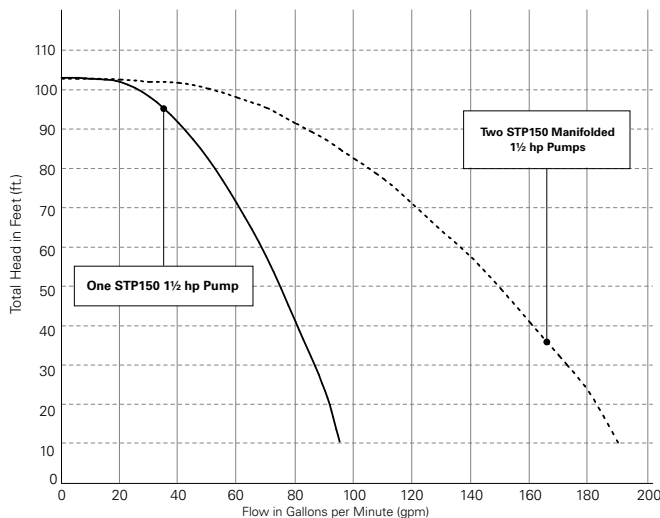
Power Requirements

- 1½ 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.
- SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for 1½ Hp pump control.
- Max. motor draw: 11 Amps.

Liquid Compatibility

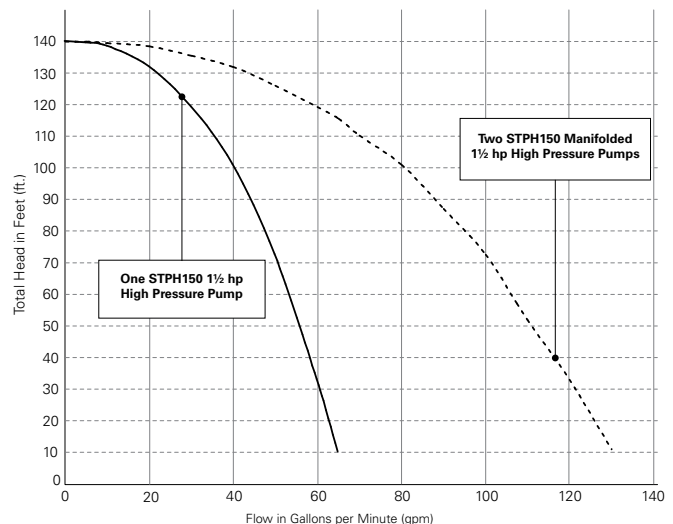
- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- Standard STP models are UL and cUL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- STPAP/STPAG (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- 1½ Hp 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.

1½ Hp Fixed Speed Pump Performance Chart



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

1½ Hp High Pressure Fixed Speed Pump Performance Chart



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

ORDERING INFORMATION

1½ Hp Fixed Speed Submersible Pump Ordering Guide

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

STP XXXXX Y - A - B

STP = Basic Model Designation

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

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

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

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

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

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

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

Y = Pump Motor Horsepower Rating

150 = 1½ hp fixed speed

A = Model Length (see table)

VL1 = Variable length range #1.

VL2 = Variable length range #2.

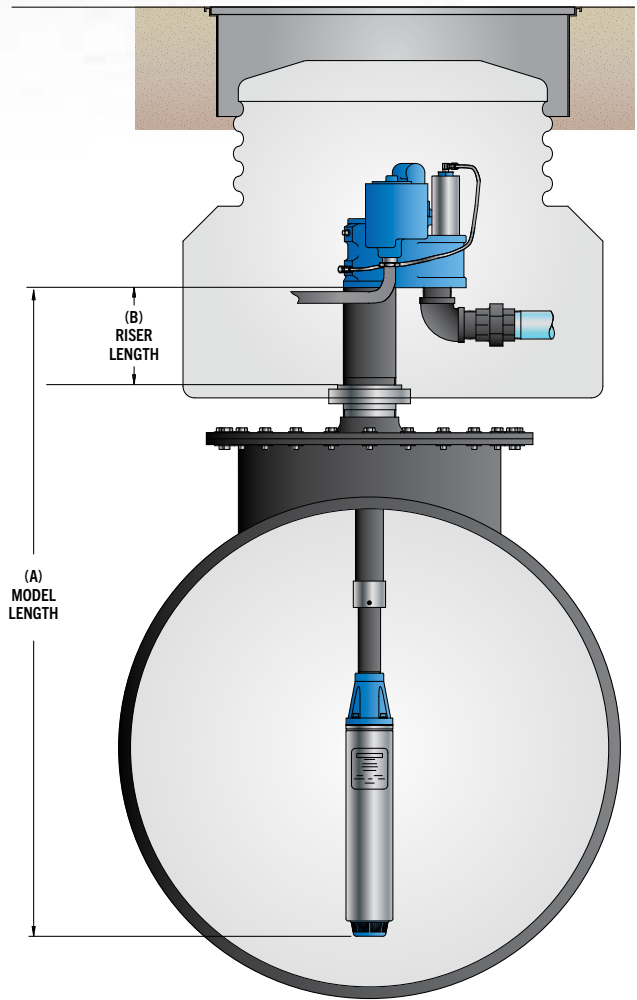
VL3 = Variable length range #3.

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

B = Riser Pipe Length (see diagram)

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

*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
1½ Hp	60" – 88"	VL1
	91" – 152"	VL2
	123" – 214"	VL3
1½ Hp High Pressure	61" – 89"	VL1
	92" – 152"	VL2
	124" – 215"	VL3

ORDERING INFORMATION CONTINUED

Standard 1½ Hp Fixed Speed Submersible Turbine Pumps

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

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

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

Notes:

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

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

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

4. 4" riser pipe, if supplied locally, must be 4½" OD by ¾" 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

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

1/3 & 3/4 HP SUBMERSIBLE TURBINE PUMPS

FE PETRO® 1/3 & 3/4 Hp fixed speed submersible pumps deliver consistent flow rates for low throughput fuels.



HIGHLIGHTS

OPTIONAL FEATURES

Biofuel Compatibility

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

Variable Length

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

Advanced Protection

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

STANDARD FEATURES

Active Air Eliminator

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

Safety and Ease of Maintenance

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

Simple Servicing

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

Turbine Pump Interface

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

Intake Filter Screen

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

Manual Pressure Relief

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

Outlast, Outperform with Franklin Electric Inside

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

Quality Certification

Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

SPECIFICATIONS

General

- 1/3 and 3/4 Hp fixed speed models are available in variable length and fixed length options.
- Check valve: 2 3/4" 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 3/4 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 27 psi.
- 3/4 Hp models have a max. pressure of 30 psi.

Approvals

- cULus listed.
- Consult factory for applicable approvals.

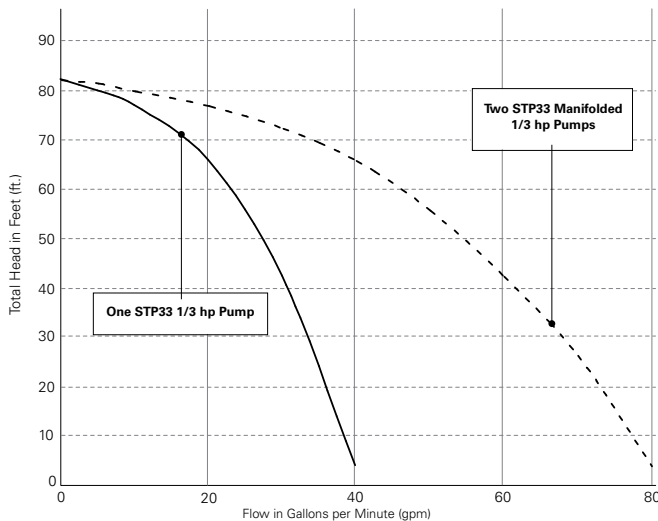
Power Requirements

- 1/3 and 3/4 hp fixed speed models require single-phase, 208-230 VAC, 60 Hz incoming power.
- 1/3 and 3/4 hp fixed speed models incorporate a starting and running capacitor, with internal bleed resistor, rated 370 Volt, 15 microfarad.
- SPGC-220 single-phase Guardian Series™ Controllers and STP-CBS single-phase control boxes are available for 1/3 and 3/4 hp pump control.
- 1/3 hp max. motor draw: 4 Amps.
- 3/4 hp max. motor draw: 7 Amps.

Liquid Compatibility

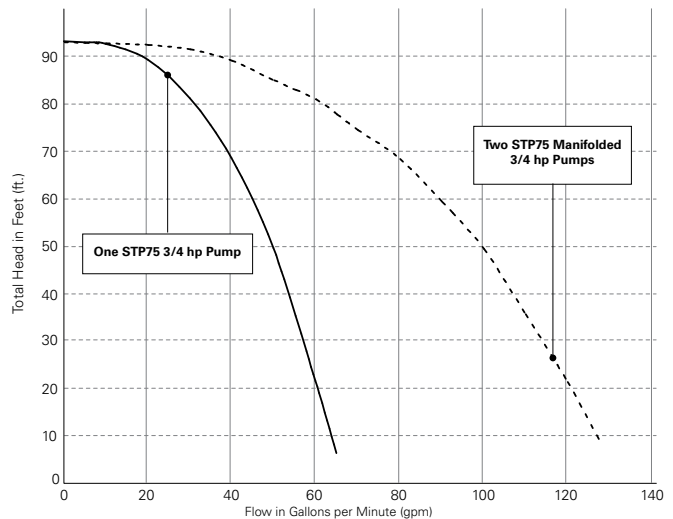
- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- Standard STP models are UL and cUL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- STPAG/STPAP (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- 1/3 and 3/4 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.

1/3 Hp Fixed Speed Pump Performance Chart



Note: Performance based on pumping gasoline (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.

3/4 Hp Fixed Speed Pump Performance Chart



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

ORDERING INFORMATION

1/3 & 3/4 Hp Fixed Speed Submersible Pump Ordering Guide

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

STP XXXXX Y - A - B

STP = Basic Model Designation

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

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

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

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

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

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

*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 = 3/4 Hp fixed speed

A = Model Length (see table)

VL1 = Variable length range #1.

VL2 = Variable length range #2.

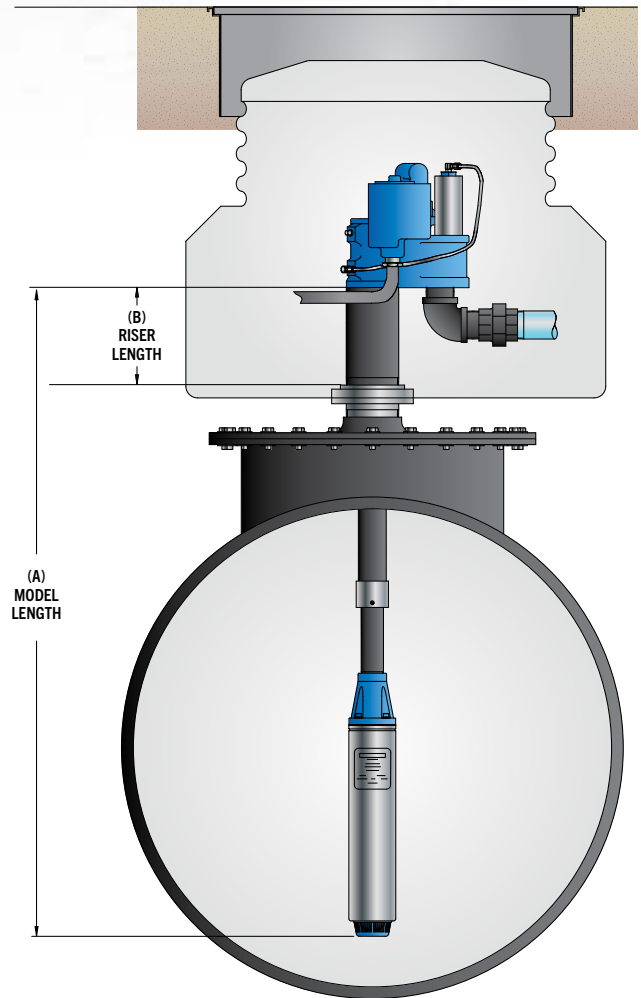
VL3 = Variable length range #3.

(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
1/3 Hp	55" – 83"	VL1
	86" – 147"	VL2
	118" – 209"	VL3
3/4 Hp	57" – 86"	VL1
	88" – 149"	VL2
	120" – 212"	VL3

ORDERING INFORMATION CONTINUED

Standard 1/3 and 3/4 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	3/4 Hp fixed speed	VL1	57" – 86"
STP75-VL2	3/4 Hp fixed speed	VL2	88" – 149"
STP75-VL3	3/4 Hp fixed speed	VL3	120" – 212"

Alcohol-Gas (AG) 1/3 and 3/4 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	3/4 Hp AG fixed speed	VL1	57" – 86"
STPAG75-VL2	3/4 Hp AG fixed speed	VL2	88" – 149"
STPAG75-VL3	3/4 Hp AG fixed speed	VL3	120" – 212"
STPAP33-VL1	1/3 Hp fixed speed with Advanced Protection	VL1	55" – 83"
STPAP33-VL2	1/3 Hp fixed speed with Advanced Protection	VL2	86" – 147"
STPAP33-VL3	1/3 Hp fixed speed with Advanced Protection	VL3	118" – 209"
STPAP75-VL1	3/4 Hp fixed speed with Advanced Protection	VL1	57" – 86"
STPAP75-VL2	3/4 Hp fixed speed with Advanced Protection	VL2	88" – 149"
STPAP75-VL3	3/4 Hp fixed speed with Advanced Protection	VL3	120" – 212"

Notes:

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

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

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

4. 4" riser pipe, if supplied locally, must be 4 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, 1 1/2" 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

1/3 and 3/4 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
402312931	STP-DHI + SPGC-220 Guardian Series™ Single Phase Smart Controller bundle
402313921	STP-DHI-CBS, combo DHI with factory-wired STP-CBS
402459931	Model 65 psi check valve AG compatible, (for secondary of manifolded STPs with Veeder-Root® PLLD)
402507930	Secondary syphon kit (when two syphon primes are required for one STP)
5800100220	SPGC-220 Guardian Series™ Single Phase Smart Controller
5800300100	STP-DHI, dispenser hook isolation for 120 Volt dispenser handle switches, up to eight each

FIXED LENGTH SUBMERSIBLE TURBINE PUMPS

FE PETRO® 2 Hp, 1½ Hp, ¾ Hp, and ½ Hp fixed speed submersible pumps are available with fixed lengths.



SPECIFICATIONS

General

- Check valve: 2¾" diameter fluorocarbon seal constructed on cast aluminum body and aluminum backing washer.
- Pressure relief valve: available in four pressure relief settings, integral to check valve. Standard model relieves at 40 psi and resets above 35 psi.
- Syphon: venturi-type syphon primer supplied with every submersible. Syphon check valve and secondary syphon sold separately.
- Air eliminator: every submersible includes a tank return path with one-way check valve to provide active air elimination.
- Electrical disconnect: electrical yoke for positive contractor disconnect during service.

Pump Motor

- Fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
- ½ 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.

Approvals

- cULus listed.
- Consult factory for applicable approvals.
- 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 ½, 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 ½, ¾, and 1½ Hp fixed length, fixed speed versions.
- A 370 Volt, 40 microfarad rated capacitor is used with 2Hp fixed length, fixed speed versions.
- SPGC-220 Guardian Series™ Single Phase Smart Controller and STP-CBS single-phase control boxes are available for fixed speed pump control.

Liquid Compatibility

- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- Fixed length STP models are UL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- STPAG/STPAP (AG compatible) models are UL listed for fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- 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.

ORDERING INFORMATION

Fixed Length Submersible Pump Ordering Guide

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

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

STP XXXXX Y - A - B

STP = Basic Model Designation

XXXXX = Factory Installed Options

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

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

Note: Standard models up to 10% ethanol capable.

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

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

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

M = MagShell® (2 Hp models only)

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

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

Y = Pump Motor Horsepower Rating

33 = ⅓ Hp fixed speed

75 = ¾ Hp fixed speed

150 = 1½ Hp fixed speed

200 = 2 Hp fixed speed

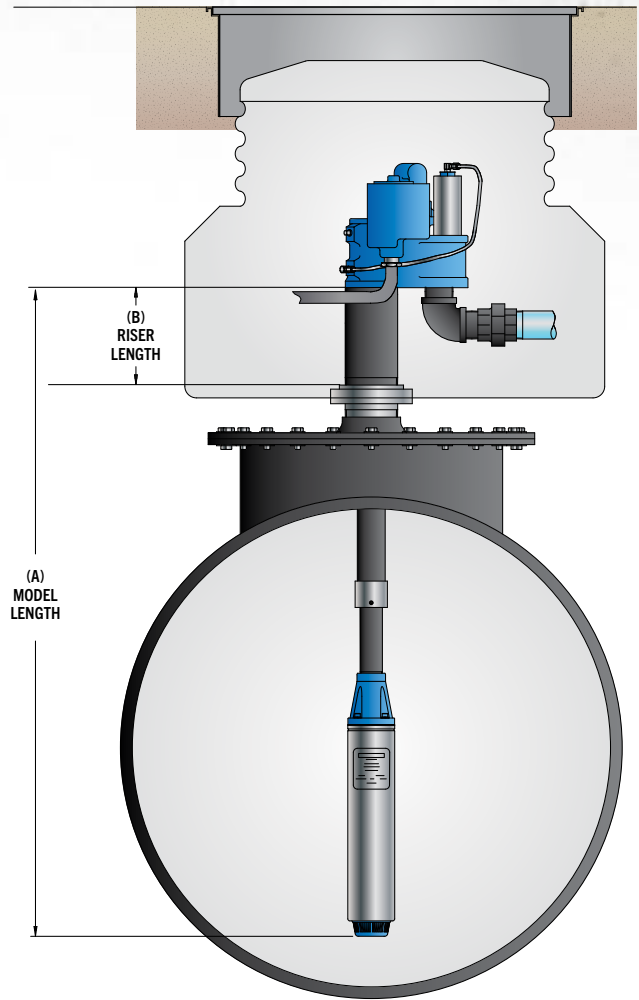
A = Model Length

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

B = Riser Pipe Length

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

*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).



ORDERING INFORMATION CONTINUED

Fixed Length Submersible Turbine Pumps

Model	Description	Model Length ¹ Range
STP33	1/3 Hp fixed speed	37" – 132"
STP75	3/4 Hp fixed speed	
STP150	1 1/2 Hp fixed speed	
STPH150	1 1/2 Hp high pressure fixed speed	
STPM200	2 Hp fixed speed with MagShell®	
STPHM200	2 Hp high pressure fixed speed with MagShell®	

Notes:

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

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

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

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

5. 4" riser pipe, if supplied locally, must be 4 1/2" OD by 3/16" WT tubing.

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

¹Model length (A) defined as the dimension from turbine manifold bottom to pump motor inlet. Model length (A) can be a minimum of 37" to a maximum of 211". Adder (p/n 400326912) applies if model length is 133" to 180" (charge is for boards to protect STP shipment). Adder (p/n 400326917) applies if model length is 181" to 211" and (p/n 400389112) applies if model length is 212" to 246" (additional charge is for crating to protect the STP).

Factory Installed Options

Model	Description
AG	Alcohol-gasoline compatible
F	Floating suction adapter, 1 1/2" 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

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

REPLACEMENT PARTS & ACCESSORIES

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



SUBMERSIBLE PUMPING SYSTEMS

ORDERING INFORMATION



Replacement Pump Motor Assemblies*

Model	Description
PMA33	1/3 Hp pump motor assembly (16" long)
PMA75	3/4 Hp 18 1/4" pump motor assembly (18 1/4" long)
PMA150	1 1/2 Hp pump motor assembly (21" long)
PMAH150	1 1/2 Hp high pressure pump motor assembly (21 3/4" long)
PMA200	2 Hp pump motor assembly (23 3/4" long)
PMAM200	2 Hp pump motor assembly with MagShell® (23 3/4" long)
PMAH200	2 Hp high pressure pump motor assembly (24 1/2" long)
PMAM200	2 Hp high pressure pump motor assembly with MagShell® (24 1/2" long)



Replacement Gasoline Motor Assemblies*

Model	Description
PMAAG33	1/3 Hp AG pump motor assembly (16" long)
PMAAG75	3/4 Hp AG pump motor assembly (18 1/4" long)
PMAAG150	1 1/2 Hp AG pump motor assembly (21" long)
PMAAGH150	1 1/2 Hp AG high pressure pump motor assembly (21 3/4" long)
PMAAG200	2 Hp AG pump motor assembly (23 3/4" long)
PMAAGM200	2 Hp AG high pressure pump motor assembly with MagShell® (23 3/4" long)
PMAAGH200	2 Hp AG high pressure pump motor assembly (24 1/2" long)
PMAAGHM200	2 Hp AG high pressure pump motor assembly with MagShell® (24 1/2" long)



Replacement Variable Speed Pump Motor Assemblies*

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



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

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

Note: Remove "M" from model number for non-MagShell® pump motor assemblies.

* For pump motor assemblies (PMAs) with floating section adapters (1 1/2" NPT female connections), specify "F" in the number; adder charge applies when ordering PMA. For PMAs with intake filter screen, specify "K" in the model number; adder charge applies when ordering PMA.

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

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

ORDERING INFORMATION CONTINUED

Intake Filter Screen

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



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

Check Valves



Model	Description
400988931	Standard check valve
400988934	Standard check valve, AG compatible
400988932	Model R check valve (for Veeder-Root® PLLD)
400988935	Model R check valve (for Veeder-Root® PLLD), AG compatible
400988933	Model W check valve (for Red Jacket® PPM4000)
400988936	Model W check valve (for Red Jacket® PPM4000), AG compatible
402459931	Model 65 psi check valve (for secondary manifolded STPs with Veeder-Root® PLLD), AG compatible

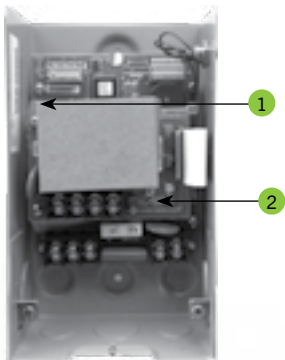
Secondary Syphon Kit

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



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

STP-SCI Single Phase Smart Controller



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

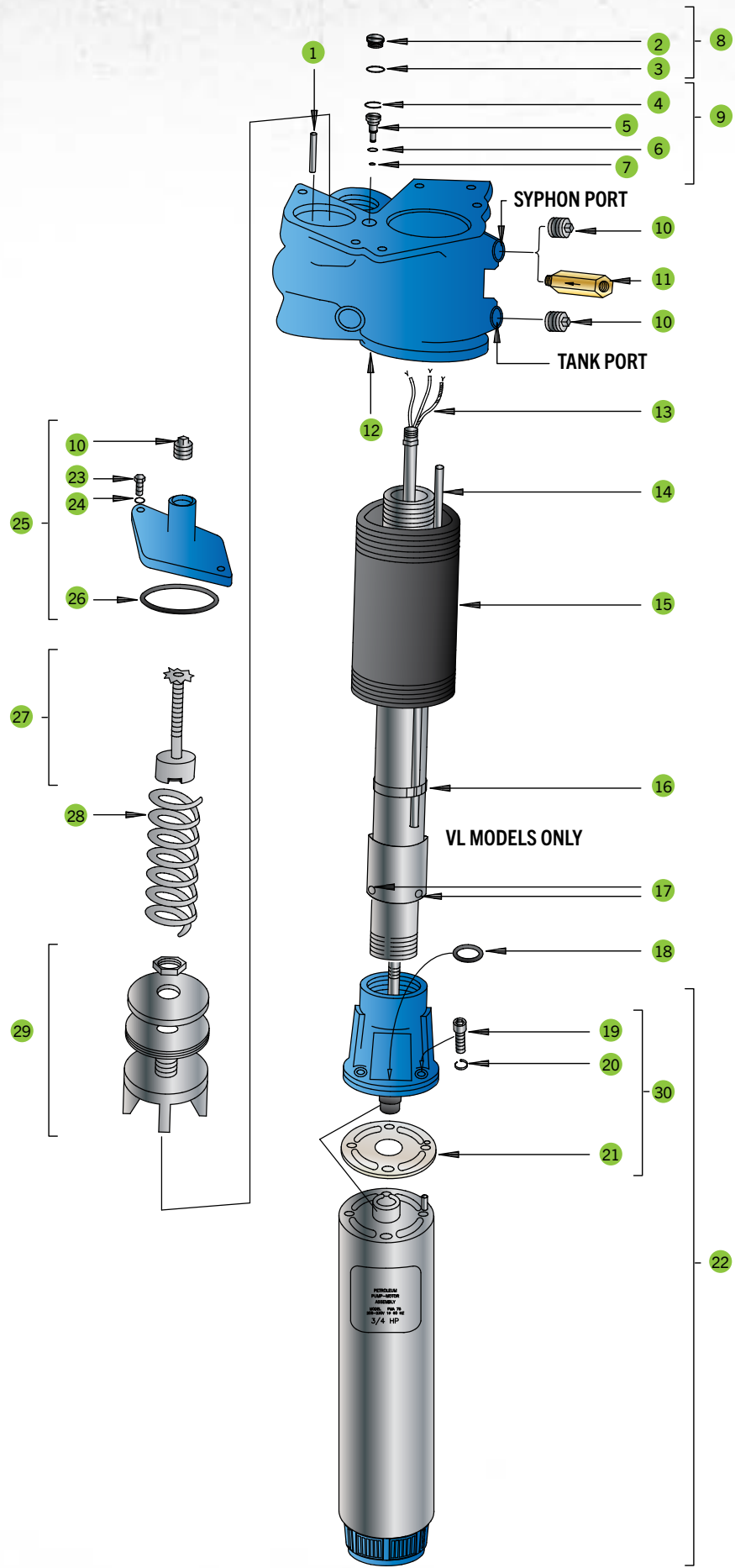
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ORDERING INFORMATION CONTINUED

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

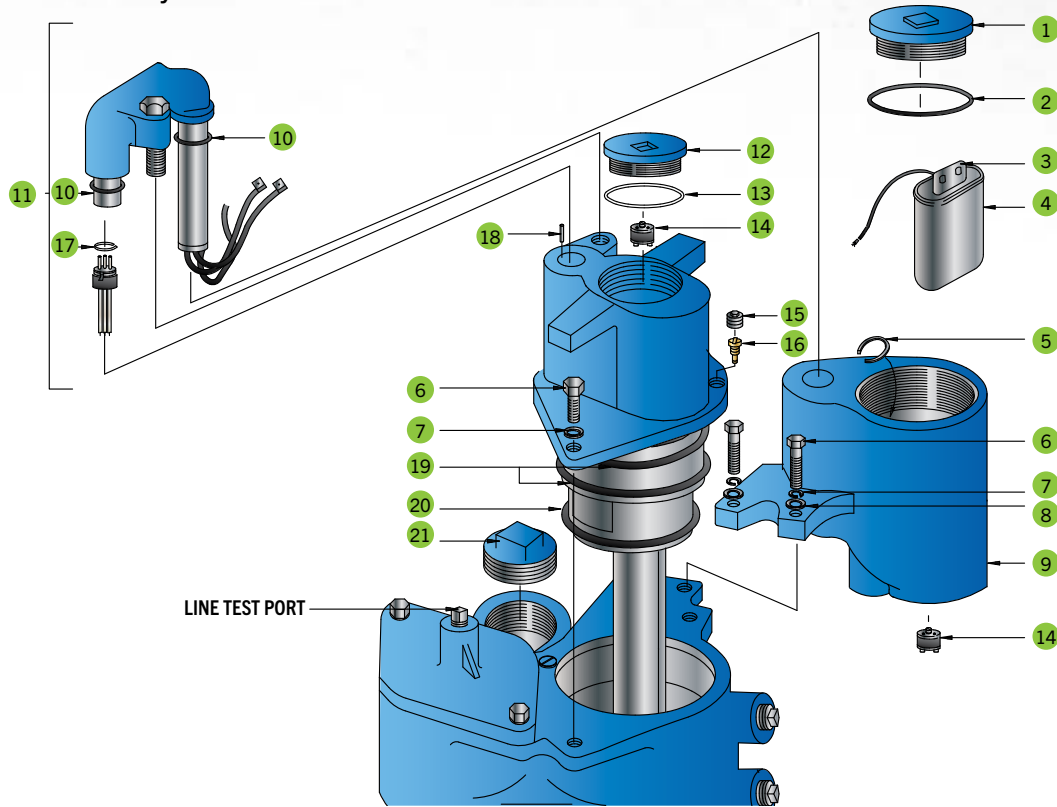
Use the parts drawing on the following page.

Item	Model	Description	Qty
1	400125001	3/16" x 1 5/8" spiral pin	1
2	400615001	Manual relief plug (400615002 AG compatible)	1
3	400211114	O-ring, MPR plug	1
4	400627001	Retaining ring, MPR	1
5	400616001	Manual relief screw (400616002 AG Compatible)	1
6	400333012	Relief screw, top O-ring	1
7	400333007	Relief screw, bottom O-ring	1
8	400628901	Manual relief plug assembly, includes items #2 and #3 (400628902 AG compatible)	1
9	400629901	Manual relief screw assembly, includes items #4, #5, #6, and #7 (400629902 AG compatible)	1
10	400259001	1/4" 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	156" lead assembly	1
	151213932	240" lead assembly	
14	Purchase locally	Stationary vapor tube, 3/8 OD x 7/20 WT	-
15	4001689XX (XX = length)	Riser, 4 1/2" OD x 3/16" WT steel tubing (consult factory for lead times for 31"-60" lengths) 7" - 19" 20" - 30" 31" - 49" 50" - 60"	1
	4035229XX (XX = length)	Riser, 4 1/2" OD x 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 x 7/16" set screw for variable lengths only	3
	403432002	5/16-24 x 7/16" set screw for VL models only (stainless steel, for AP models)	-
18	400333015	Lead assembly O-ring	4
19	400264009	5/16-18 x 1 1/8" socket head cap screw, may be purchased locally	4
	403506001	5/16-18 x 1 1/8" socket head cap screw, may be purchased locally (stainless steel, for AP models)	
20	400263004	5/16" high-collar lock washer, may be purchased locally	1
	403505001	5/16" high-collar lock washer, may be purchased locally (stainless steel, for AP models)	
21	403403001	PMA gasket (403403002 AG/AP compatible)	1
22	PMA XXX	Pump motor assembly, includes item #30 (XXX indicates options and horsepower)	1
23	400981001	3/8-16 x 1" Hex head screw	2
	403504001	3/8-16 x 1" Hex head screw (stainless steel, for AP models)	
24	400285002	3/8" standard lock washer, may be purchased locally	2
	1117703	3/8" standard lock washer (stainless steel, for AP models)	
25	400197930	Manifold assembly cover, includes #10, #26, two #23, and two #24	1
	400197931	Manifold Assembly Cover (includes item #10, #23, #24, and #26 for AP models)	
26	400333238	O-ring, manifold cover (AG compatible)	1
27	400147930	Clamp valve assembly (AG compatible)	1
28	400174930	Check valve spring	1
29	400988931	Standard check valve, includes item #26 (400988934 AG compatible)	1
	400988932	Model R check valve, (for Veeder-Root™ PLLD) includes item #26 (400988935 AG compatible)	
	400988933	Model W check valve, (for Red Jacket PPM4000) includes item #26 (400988936 AG compatible)	
	402459931	Model 65 psi check valve, AG compatible (for secondary manifolded STPs with Veeder-Root™ PLLD)	
30	152350902	PMA hardware pack, includes #21, and four #19 and #20 (152350904 AG compatible)	-
--	400216905	AG compatible O-ring kit, includes items #3, #6, #7, and #26 on this page and items #2, #10, #13, #19 and #20 on the Discharge Manifold Assembly page	-



ORDERING INFORMATION CONTINUED

Discharge Manifold Assembly



SUBMERSIBLE PUMPING SYSTEMS

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

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.

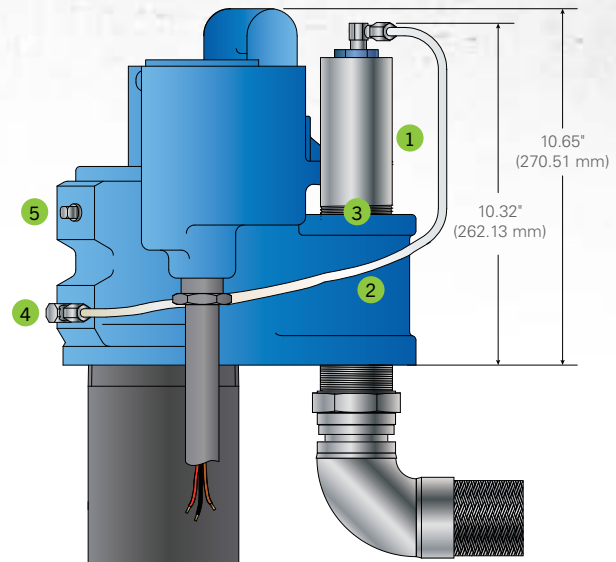
Approvals/Certifications

- 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

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.

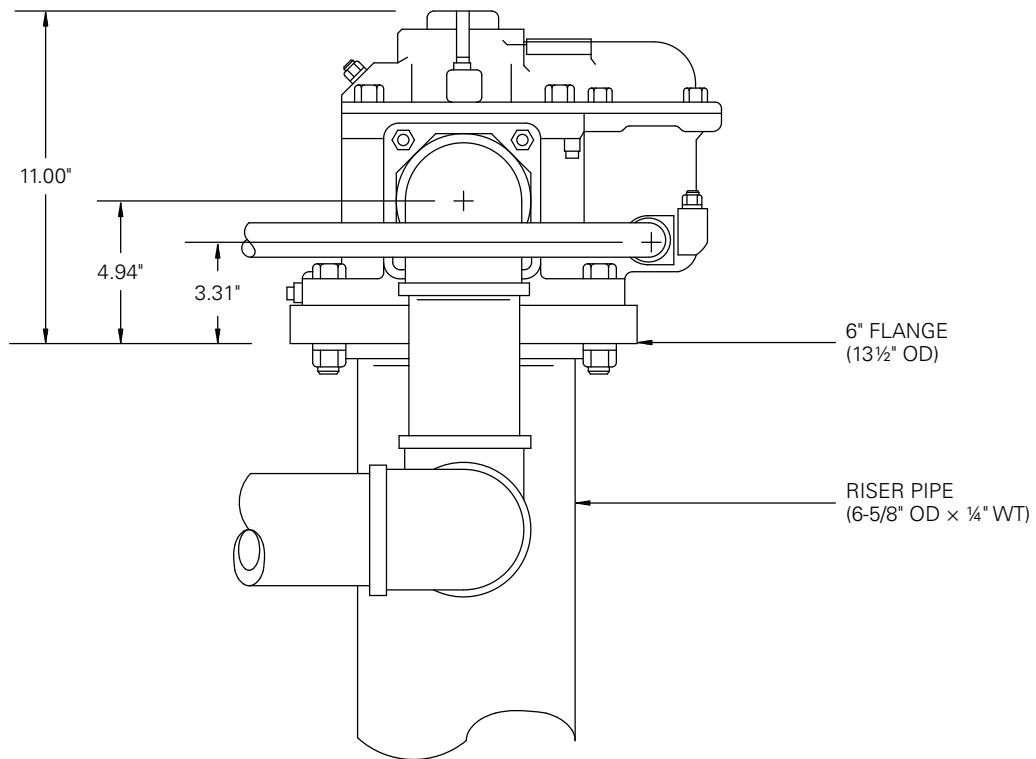
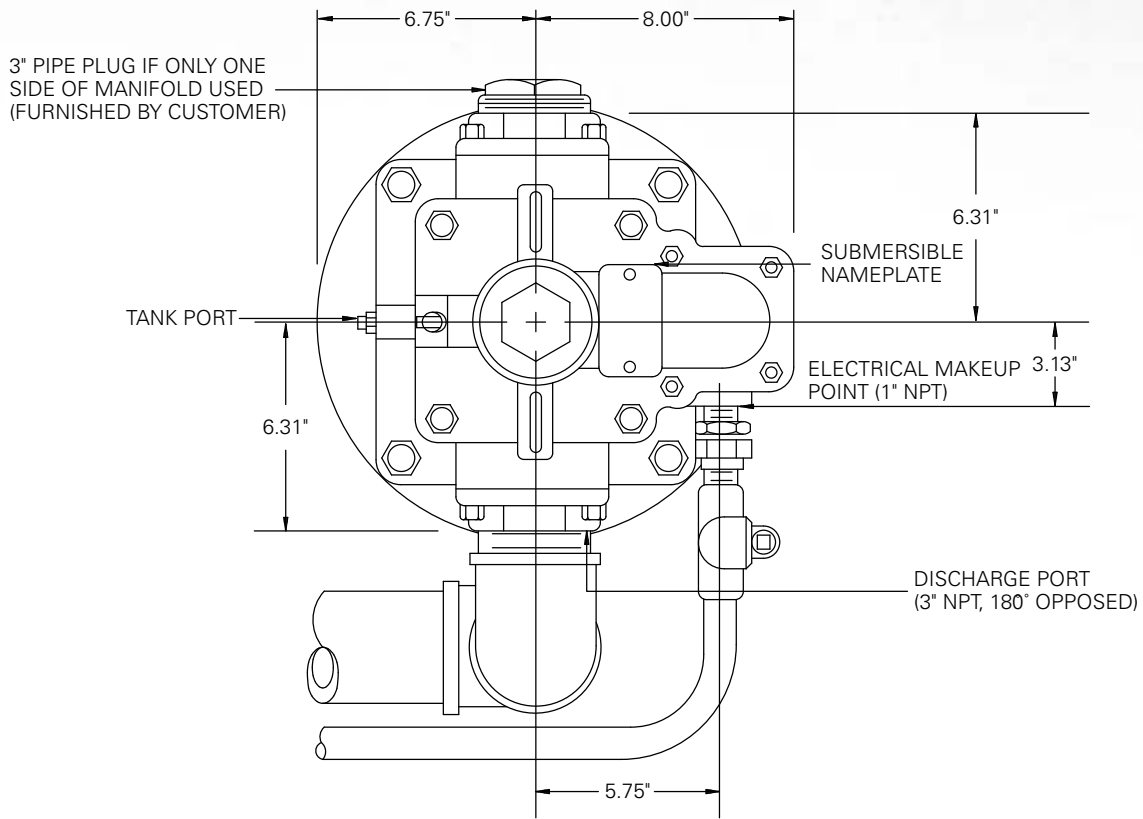


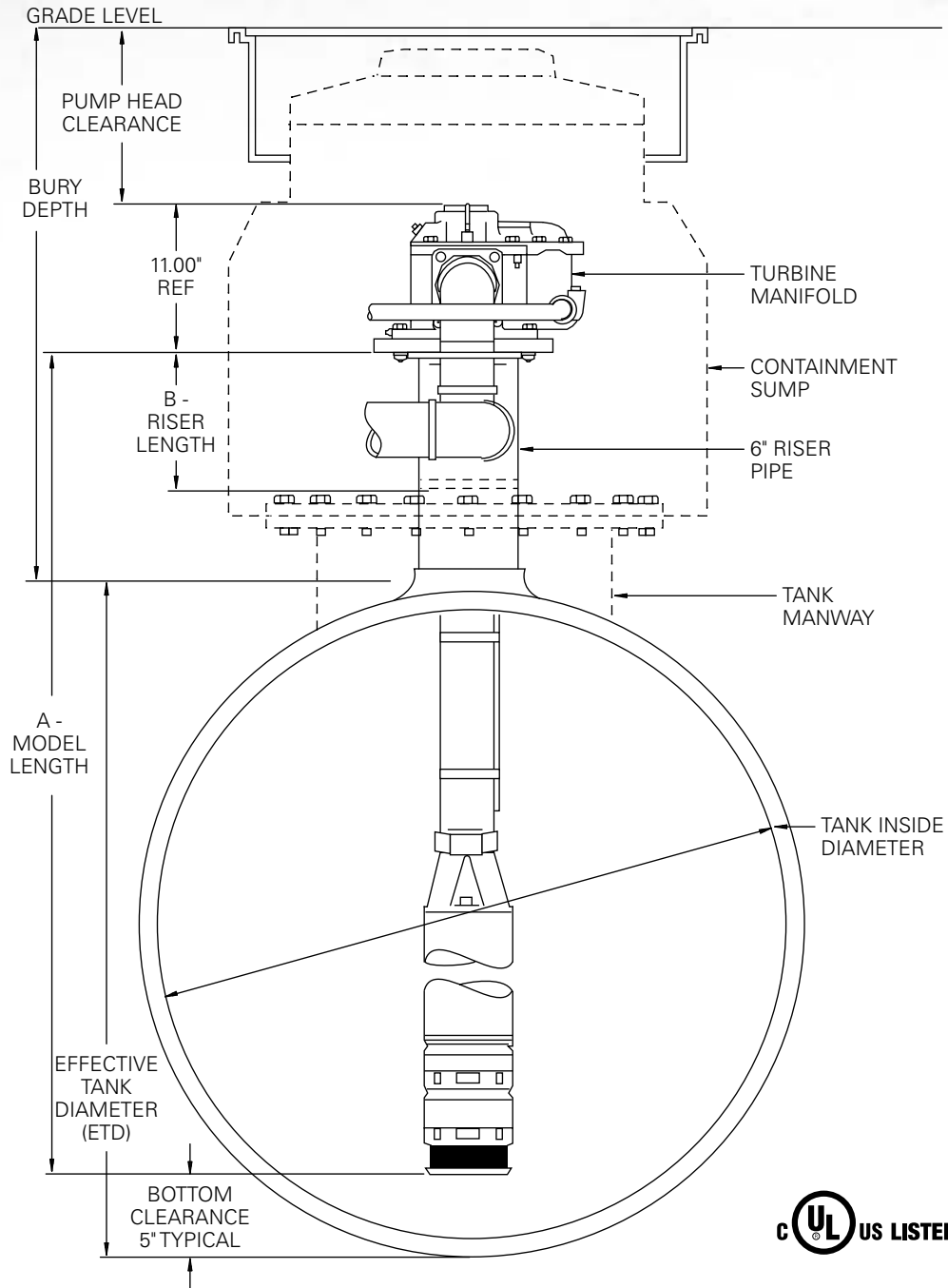
Reliability

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.
 2. Model length (A) = ETD plus riser length minus bottom clearance minus 2" thread engagement.
 3. Riser length (B) = Bury depth (to top of tank) minus pump head clearance minus tank manway and/or minus sump adapter.

SPECIFICATIONS

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

- 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.

Approvals

- Consult factory for applicable approvals.

Quality Certification

- Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

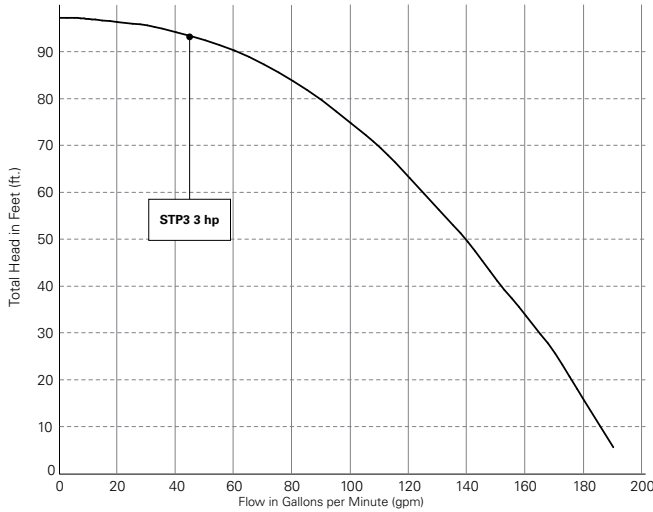
Power Requirements

- 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

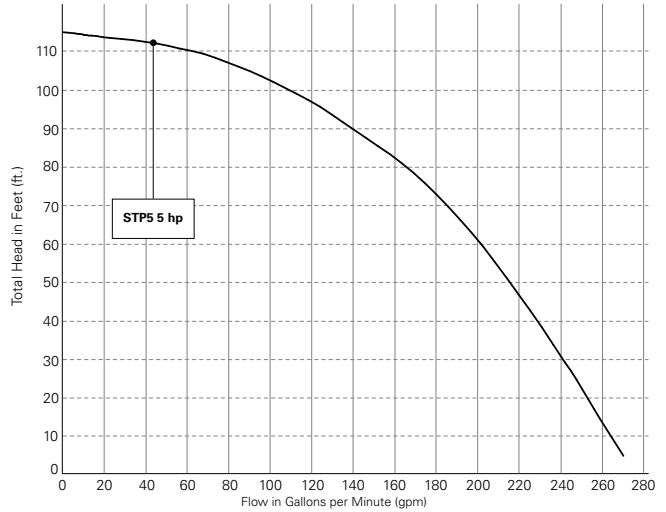
- Max. liquid viscosity: 70 SSU at 60 °F (15 °C).
- Standard models are UL and cUL listed for fuel mixtures containing up to 10% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.
- High capacity models can also be used with diesel fuels, fuel oils, kerosene, Avgas, and jet fuels in a non-gelled pourable state.
- All wetted elastomers are made of a high grade, fluorocarbon compound.

3 hp Fixed Speed High Capacity Performance Chart



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.

5 hp Fixed Speed High Capacity Performance Chart



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.

ORDERING INFORMATION

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

*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 1/4" 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

ORDERING INFORMATION CONTINUED

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 call Customer Service for lead times.*

ORDERING INFORMATION CONTINUED

Replacement Pump Motor Assemblies*

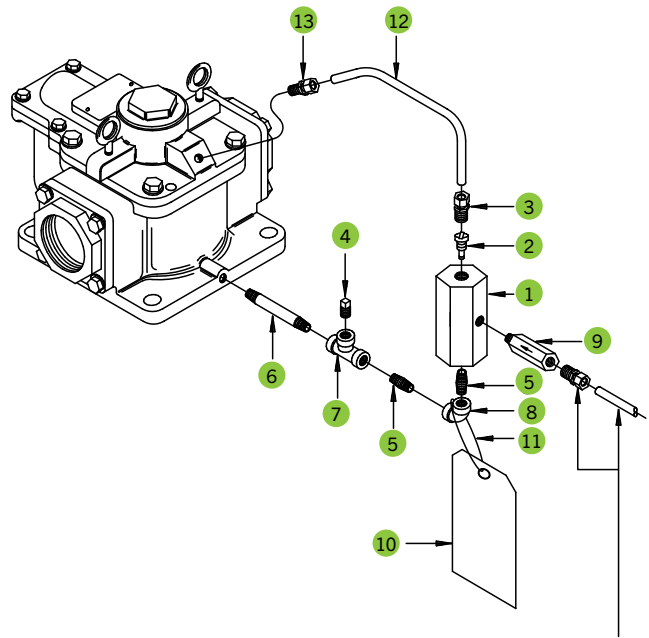
Model	Description
PMA3	3 hp 208-230 Volt 6" pump motor assembly
PMA3RJ	3 hp 208-230 Volt 6" pump motor assembly, replaces competitive model UMP300J4-2HB
PMA5	5 hp 208-230 Volt 6" pump motor assembly
PMA5RJ	5 hp 208-230 Volt 6" pump motor assembly, replaces competitive model UMP500J4-2K
PMA5H**	5 hp 460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

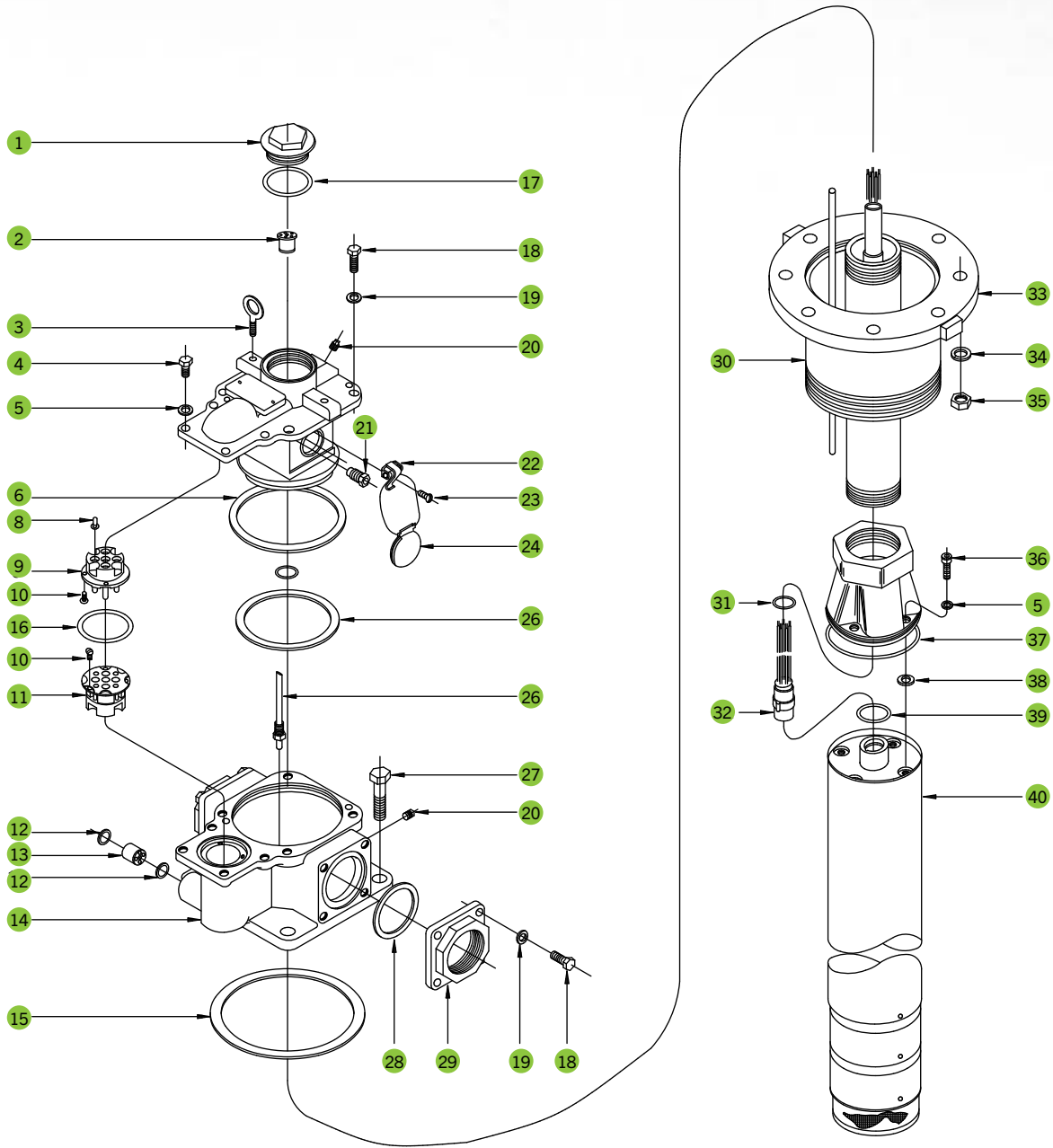
Item	Model	Description
1	402505001	Syphon block
2	400562901	Syphon jet assembly
3	400430004	3/8" P x 3/8" T compression fitting
4	400259001	1/4" pipe plug
5	400114001	1/4" close nipple, two required per system
6	400114003	1/4" nipple x 3" long
7	402510001	1/4" threaded tee
8	402511001	1/4" threaded elbow,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



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

ORDERING INFORMATION CONTINUED

High Capacity General Assembly



SUBMERSIBLE
PUMPING SYSTEMS

ORDERING INFORMATION CONTINUED

STP3 and STP5 High Capacity General Assembly

Item	Model	Description	Qty
1	401148101	Connection box cover	1
2	400236909	Seal off plug assembly, 5-wire	1
3	401149001	Eye bolt	2
4	400258001	3/8-16 x 1" large Hex head cap screw	4
5	400285002	3/8" lock washer	8
6	401236002	Upper manifold seal	1
8	400273004	12 gauge wire terminal	6
	400273006	14 gauge wire terminal	4
9	401142901	Plug assembly	1
10	401091001	6-32 x 3/8" large round head machine screw, three required per connector	6
11	401137901	Receptacle assembly	1
12	401238001	Bushing ring, electrical entry	2
13	401239001	Seal plug, electrical entry	1
14	401112101	Discharge manifold	1
15	401163001	6" flange gasket	1
16	400333235	O-ring, connectors	1
17	400333234	O-ring, connection box cover (400210234)	1
18	400258005	1/2-13 x 1 1/4" large Hex head cap screw	12
19	400285005	1/2" lock washer	12
20	400259001	1/4" pipe plug	2
21	401032901	Model 550 relief (old standard pressure, tire valve)	2
	401330901	Standard relief (units built since S/N 0302XXXX)	1
	401330902	Model "R" relief (units built since S/N 0302XXXX)	1
22*	401154001	Valve spring and bracket	2
23	400523001	10-24 x 3/8" long Sems fastener, two required per bracket	4
24*	401150101	Inset valve assembly (check valve)	2
25	401236001	Lower manifold seal	1
26	401158904	Air eliminator assembly (includes return check valve)	1
27	400258006	3/4-10 x 3" large Hex head cap screw	4
28	401162001	3" flange gasket	2
29	401113101	3" companion flange	2
30	4011910XX 6 5/8" OD x 1/4" WT (XX = length)	6" riser pipe	1
		9" riser pipe	
		12" riser pipe	
		15" riser pipe	
		18" riser pipe	
		21" riser pipe	
24" riser pipe			
31	400333218	O-ring, lead assembly	1
32	151593906	192" lead assembly	1
33	401161101	6" flange	1
34	993517	3/4" lock washer (400285006)	4
35	400274004	3/4-10 Hex nut	4
36	400264011	3/8-16 x 1 1/4" large SHCS	4
37	400333255	O-ring, motor discharge (large, shell)	1
38	402406001	Rubber washer	4
39	400333225	O-ring, motor discharge (small, electrical hub)	1
40	PMA XXX	Pump motor assembly, includes #37, #39, and four #5, #36, and #38 (XXX indicates options and horsepower)	1

*401154001 and 401150101 must be replaced together

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.

Piston Design

Piston cylinder has 5 3/4 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.

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 95.5 gallons for flexible pipelines, maximum of 492.10 gallons for combination of rigid and flexible pipelines.
- Size: 7 3/4" x 15" (197 mm x 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 9 1/2" (241 mm). Not position sensitive. Can be installed horizontally to reduce clearance to 3" (76.2 mm).
- 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.

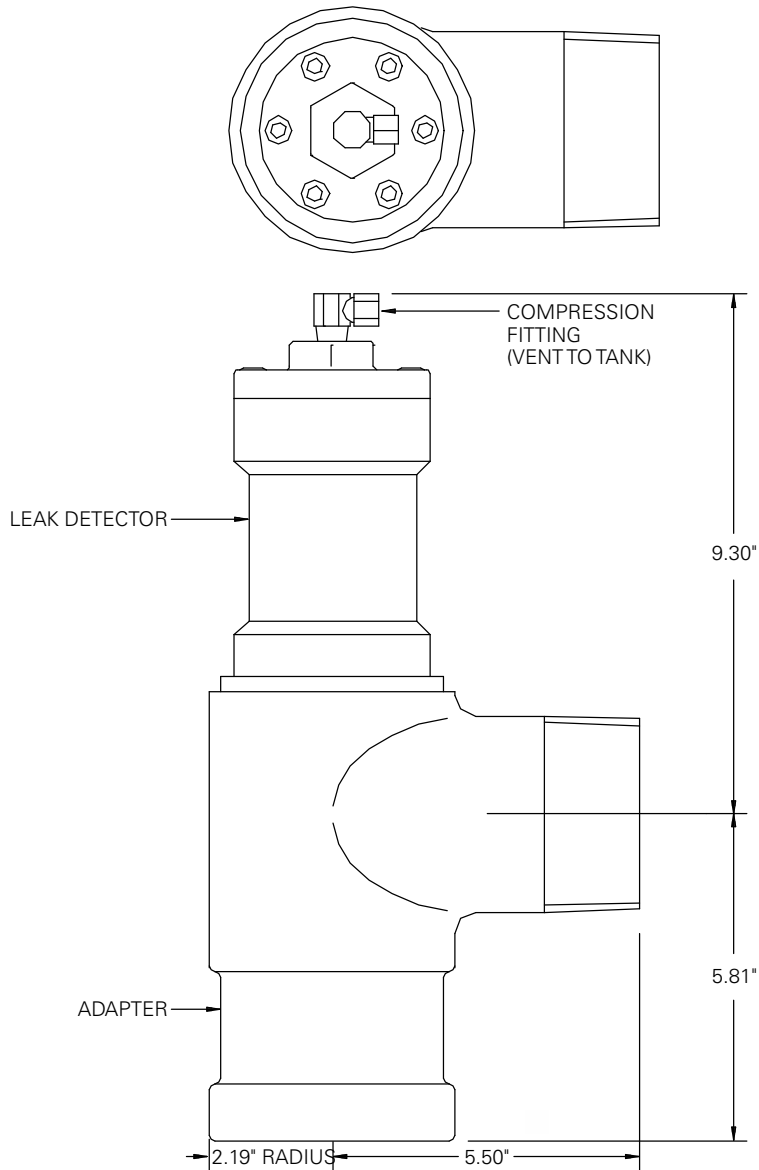
ORDERING INFORMATION

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.



MAGVFC™ VARIABLE FREQUENCY CONTROLLER

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.

SPECIFICATIONS

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

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

ORDERING INFORMATION

MagVFC™ Variable Frequency Controller

Model	Description
5874202800	MagVFC™, 2 Hp or 4 Hp variable frequency controller, one required per STPM VS2 or VS4

MagVFC™ Variable Frequency Controller Replacement Parts

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



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: 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.

GUARDIAN SERIES™ FIXED SPEED PUMP CONTROLLER

The Guardian Series™ single-phase controller takes a major leap forward in fixed speed Submersible Turbine Pump (STP) control. Built upon the solid FE PETRO® brand smart controller platform, Guardian Series™ controllers feature an enhanced user interface, greater functionality, and higher performance compared to standard control boxes.



HIGHLIGHTS

- Compatible with FE PETRO® single-phase 2 Hp, 1½ Hp, ½ Hp, and ¾ Hp fixed speed 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 non-volatile 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 pumping system equipment.
- With a single press of the “Calibrate” button, the controller will automatically learn the electrical characteristics of the STP for easy setup or retrofit.

Capabilities

Capability	Standard Relay Box (STP-CBS)	Smart Controller (STP-SCI)	Guardian Series™ Controller (SPGC-220)
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
Primary/Secondary 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

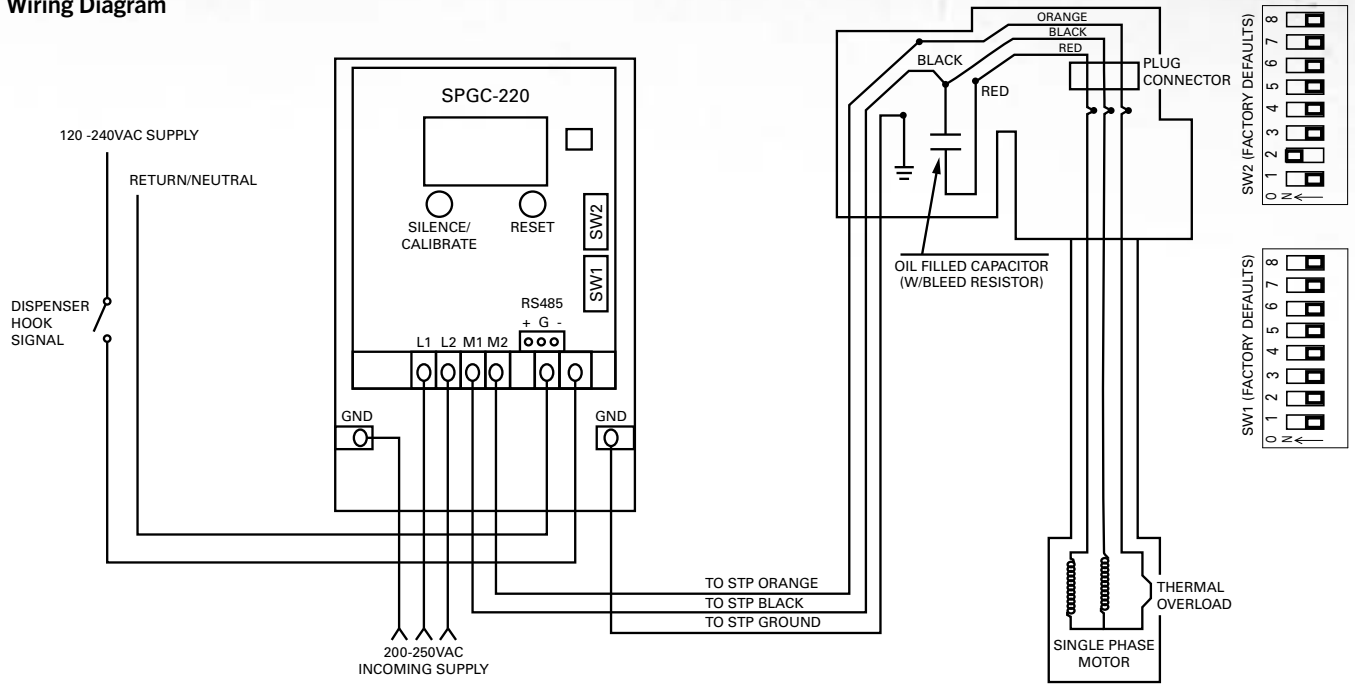
- Dimensions: 8½" × 5" × 3" (215 mm × 127 mm × 76 mm)
- Motor contact rating: 2 Hp, 200-250 VAC, 50/60 Hz, Single Phase
- Switch hook rating: 120-240 VAC, 50/60 Hz
- An integrated RS 485 com port is provided to connect Guardian Series™ Controllers to EVO™ Series Automatic Tank Gauges (ATGs) for enhanced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

Approvals & Certifications

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

SPECIFICATIONS

Wiring Diagram



SUBMERSIBLE PUMPING SYSTEMS

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

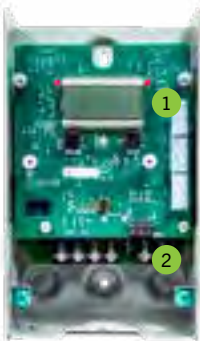


Guardian Series™ Single Phase Controller

Model	Description
5800100220	SPGC-220 Guardian Series™ Single-Phase Controller, 220 Volt
402312931	STP-DHI + SPGC-220 Guardian Series™ Single-Phase Controller bundle (220 Volt supply, 110 Volt hook)

Notes:

1. Compatible with all single-phase FE PETRO® and competitive model STPs.
2. One controller required for each submersible (up to 2 Hp).
3. Compatible for use in primary/secondary configurations with STP-SCI models.



Replacement Parts

Item	Model	Description
1	225000932	SPGC-220 upper (user input) replacement board
2	225005932	SPGC-220 lower (power, 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

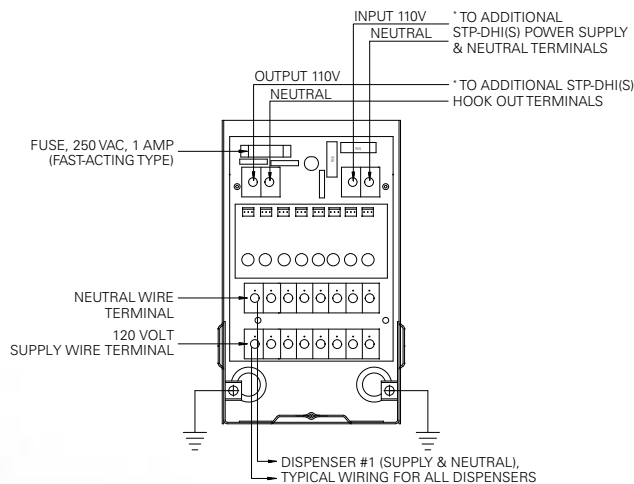
- Enclosure size: 8½" × 5" × 3" (215 mm × 127 mm × 76 mm).
- Eight optically isolated inputs from dispenser.
- One STP-DHI required per product grade for up to eight dispensers.
- STP-DHI: 120 V 30 V A input from supply, eight 120 V 10mA inputs from dispensers.
- Output fuse rating: 250 V 1A, fast-acting.
- 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.

Approvals

- Consult factory for other applicable approvals.

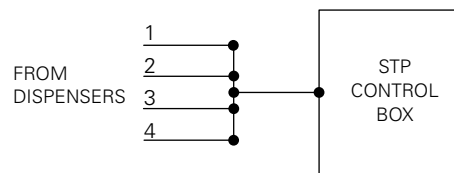
Quality Certification

- Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

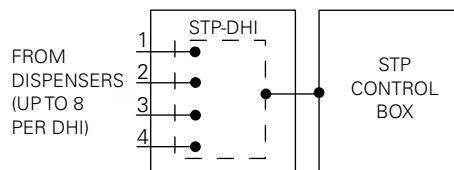


Wiring is polarity-sensitive when multiple units are connected together.

Conventional



STP-DHI



ORDERING INFORMATION

STP-DHI Dispenser Hook Isolation

Model	Description
402312931	STP-DHI + SPGC-220 bundle
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



STP-DHI +
SPGC-220



STP-DHI-CBS

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.



SPECIFICATIONS

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

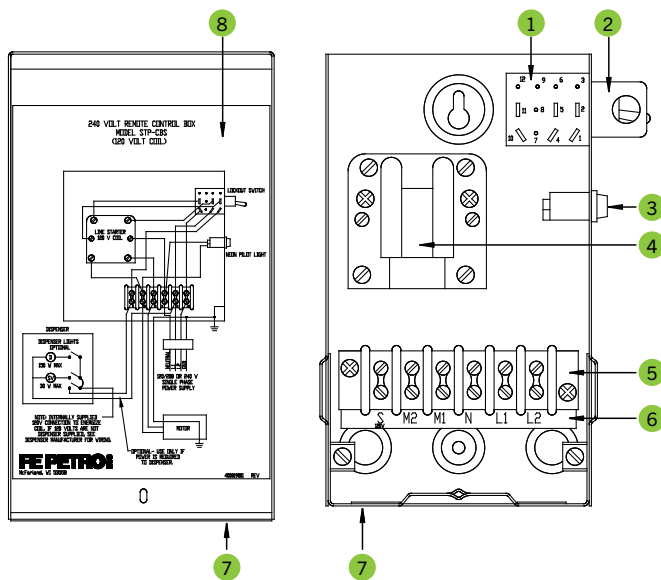
Notes:

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.

ORDERING INFORMATION

STP-CBS Repair Parts and Accessories

Item	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



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-SCIII. 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" x 7 5/8" x 5 1/2" (230 mm x 196 mm x 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.

ORDERING INFORMATION

STP-SCIII Three-Phase Smart Controller*

Model	Description
5800103200	STP-SCIII three-phase Smart Controller

Notes:

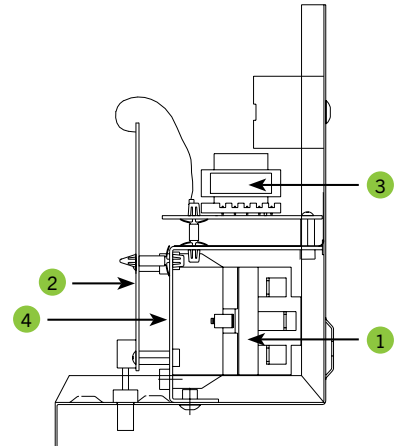
1. One STP-SCIII required per submersible, relay rated for 30 Amps.

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

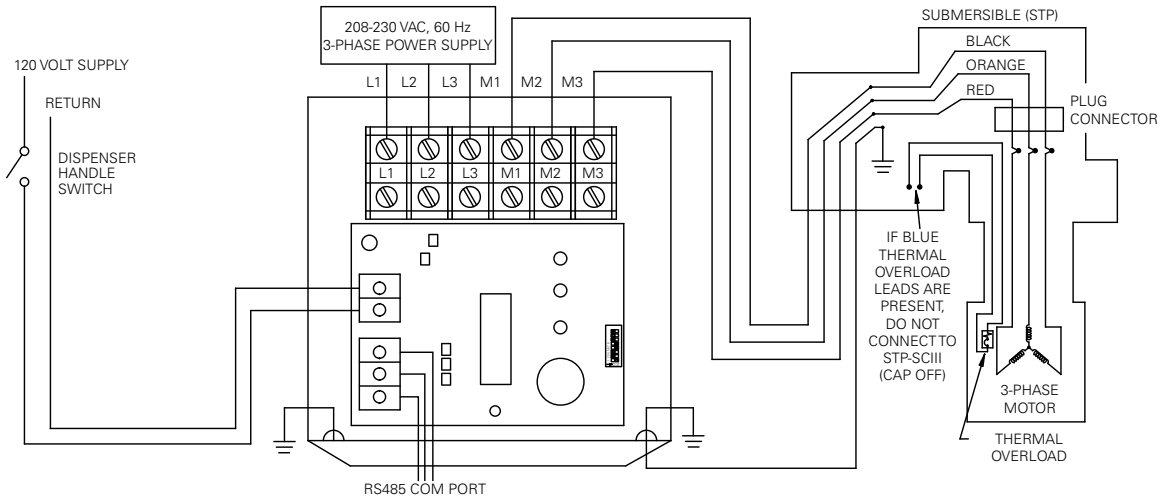
*STP-SCIII is compatible with FE PETRO® 3 and 5 hp submersibles and competitive makes except the 460 and 575 Volt models.

STP-SCIII Repair Parts

Item	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 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.



SUBMERSIBLE
PUMPING SYSTEMS

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.

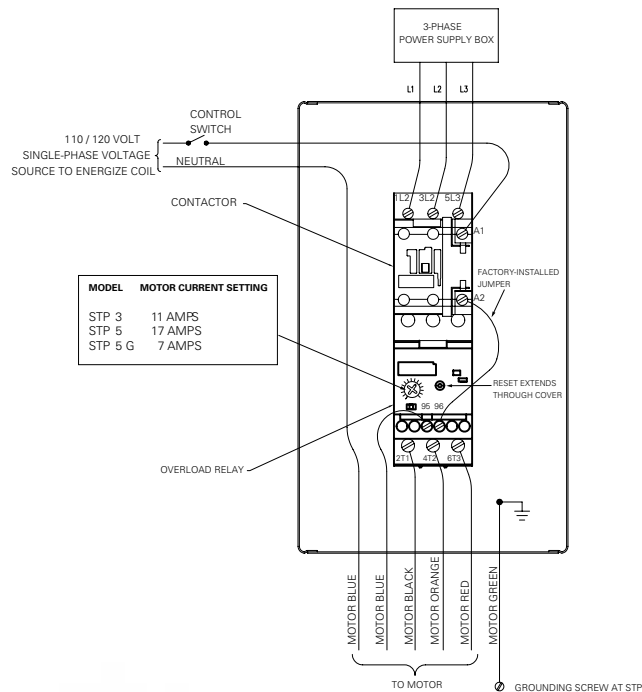
Approvals

- Consult factory for applicable approvals.

Quality Certification

- Franklin Fueling Systems is an ISO 9001 Certified Manufacturer.

STP-CB 3/5 Wiring Diagram



ORDERING INFORMATION

CB 3/5 Magnetic Starters

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

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

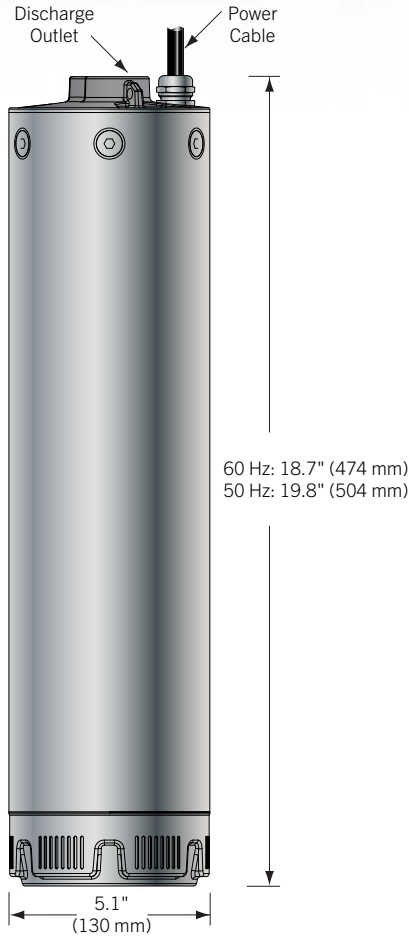
- Stainless steel, encapsulated motor ensures longevity and impermeability to DEF seepage.
- Heavy-duty shaft provides superior alignment and resistance to stress.
- Double mechanical shaft seals protect the oil-filled bearing chamber from DEF seepage, assuring minimal wear and proper bearing lubrication.
- 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®.

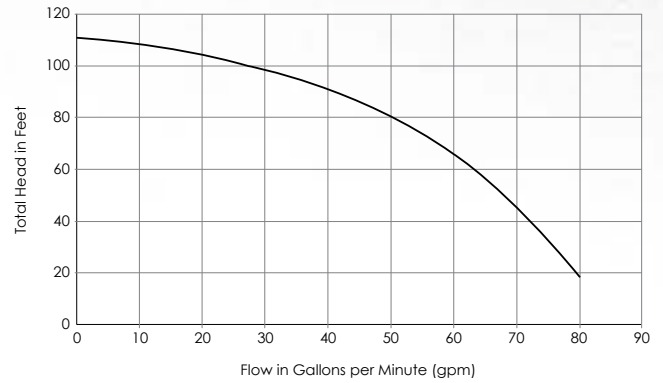
SPECIFICATIONS CONTINUED

Dimensions



60 Hz DEF Pump Motor Performance

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



Note: Performance is based on pumping water (1 specific gravity). Pressure is taken at the discharge outlet of the pump motor.

SUBMERSIBLE PUMPING SYSTEMS

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 = 1½ 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.



SPECIFICATIONS

Pump Motor Assembly

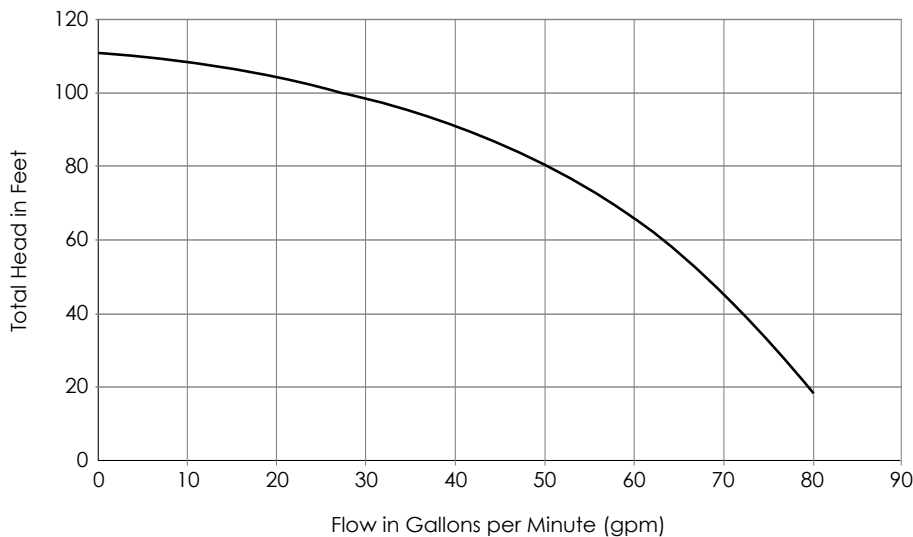
- Materials: Stainless steel construction including impellers/diffusers, inlet/outlet, and outer shell
- Pump type: All models are 5.1" (130 mm) outside diameter centrifugal type pump
- Power cable: 23' (7 m) black polyethylene jacketed power cable
- 60 Hz pump motor: Two-stage pump with 2" NPT female 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®

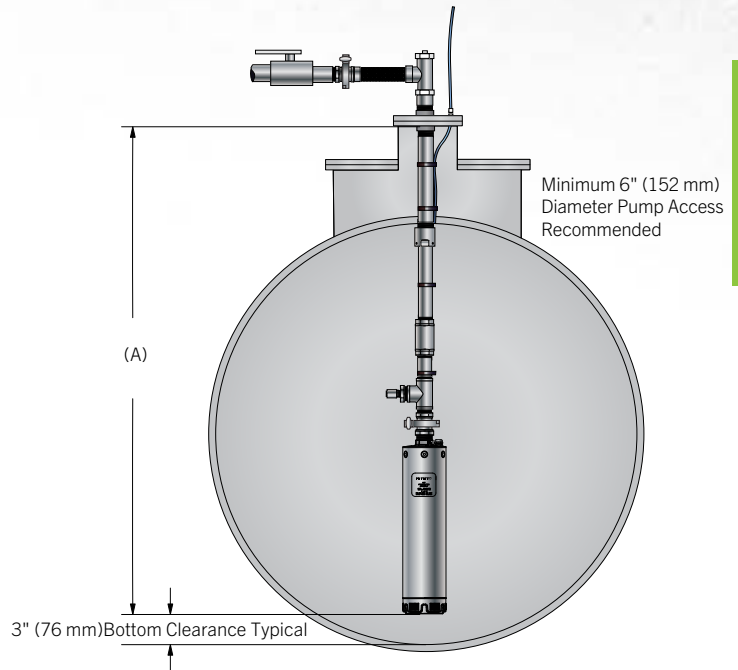
Pump Motor Performance

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



Note: Performance is based on pumping water (1 specific gravity). Pressure is taken at the discharge outlet of the pump motor.

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

SUBMERSIBLE PUMPING SYSTEMS

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Viton® is a registered trademark of E. I. du Pont de Nemours and Company.
AUS 32® is a registered trademark of GBZI Ltd.

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
- 3 Bypass kit
- 4 Pump motor assembly connection kit
- 5 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 1½" NPT non-return check valve and 1½" NPT x 4" long nipple on inlet)
3	403461901	Bypass kit (includes ½" NPT bypass relief valve, ½" NPT x 1½" NPT bushing in 1½" NPT tee)
4	403454901	Pump motor assembly connection kit (includes 2" NPT male inlet x 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	1½" 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)



ORDERING INFORMATION CONTINUED

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)

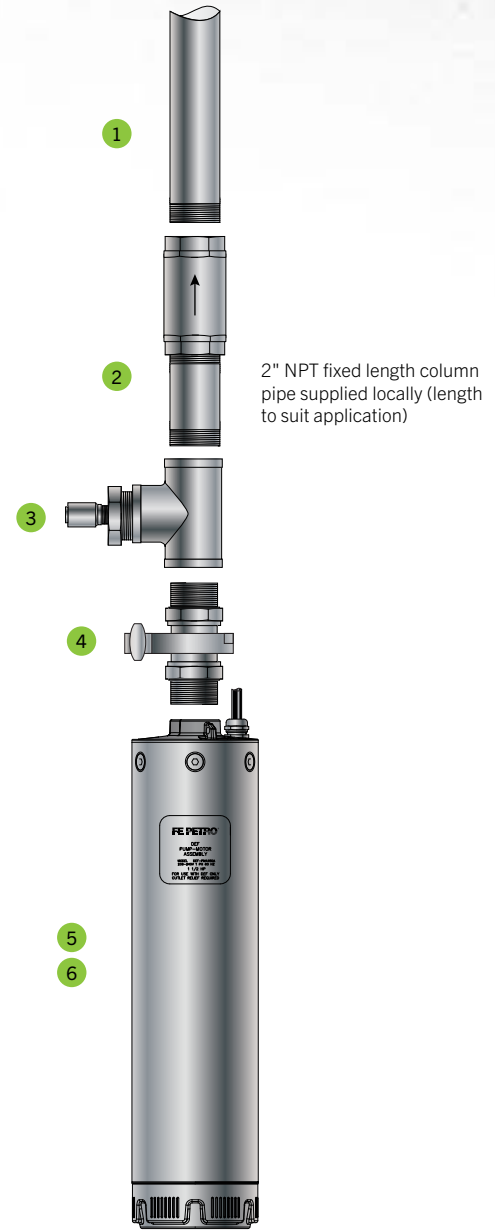
Fixed Length Diesel Exhaust Fluid Submersible Turbine Pump Kits

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

Item	Model	Description
2	403464901	Check valve kit (includes 2" NPT non-return check valve and 2" NPT x 4" long nipple on inlet)
3	403462901	Bypass kit (includes 1/2" NPT bypass relief valve, 1/2" NPT x 2" NPT bushing in 2" NPT tee)
4	403456901	Pump motor assembly connection kit (includes 2" NPT male inlet x 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)



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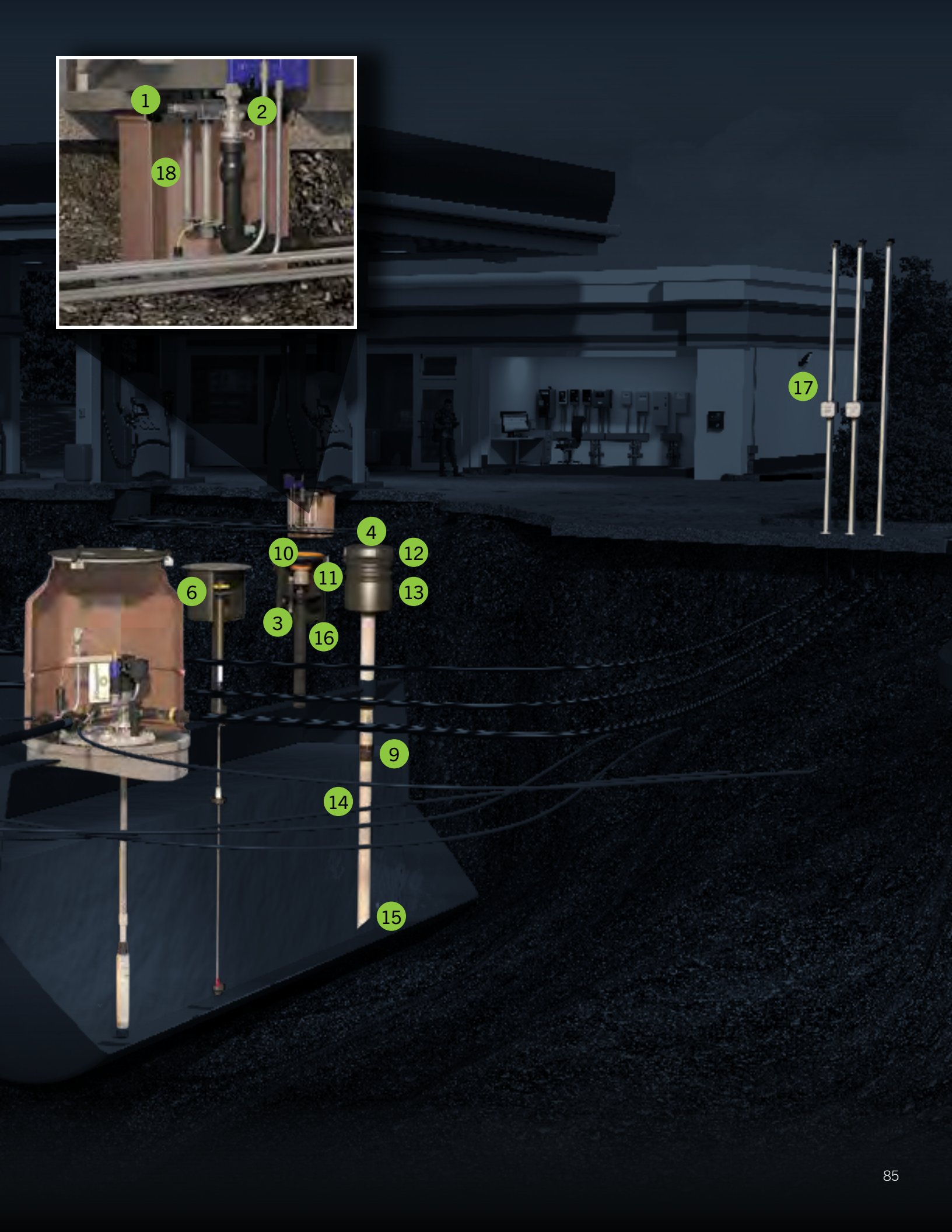
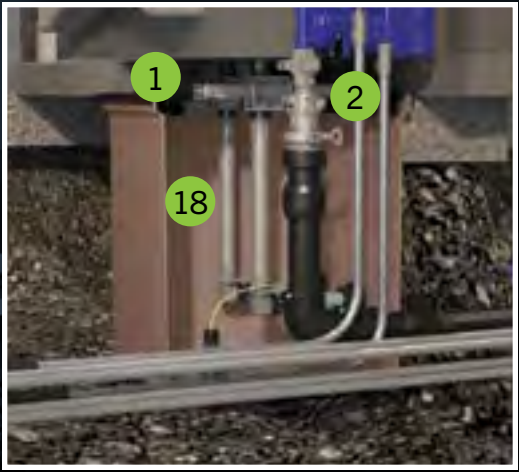
Viton® is a registered trademark of E. I. du Pont de Nemours and Company.

AUS 32® is a registered trademark of GBZI Ltd.

SERVICE STATION HARDWARE

- 1 Product Shear Valves
- 2 Vapor Shear Valves
- 3 Defender Series® Spill Containers without Drain (Single and Double Wall)
- 4 Defender Series® Spill Containers with Drain (Single and Double Wall)
- 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
- 14 Drop Tubes
- 15 Tank Bottom Protectors
- 16 Extractor Vents
- 17 Defender Series® P/V Vent with In-Line Vault
- 18 Flexible Connectors





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

	GRADE LEVEL	BELOW GRADE
Single wall containment option	✓	
Double wall containment option	✓	✓
Upgrade from single wall to double wall spill containment	✓	
Integrated monitor option (visual inspection testing)	✓	✓
Integrated electronic sensor option (continual ATG monitoring)	✓	✓
Push-pull drain option	✓	✓
Installs with 1" (2.5cm) slope to grade level	✓	
Installs flush with grade level		✓
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.	✓	
Containment protected by a solid steel manway skirt		✓

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

A B C

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

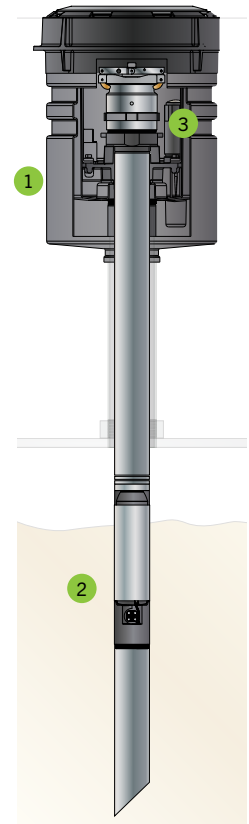
Defender Series® Spill Containers

Model	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 I2 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 lid
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

SPECIFICATIONS

Components

- 1 Defender Series® spill container
- 2 Defender Series® overfill prevention valve
- 3 Riser, cap, and adapter



ORDERING INFORMATION CONTINUED

Defender Series® Overfill Prevention Valves

Model	Alpha	Description
708591901	A	Overfill prevention valve with 5' top drop tube, 8' bottom drop tube
708591902	B	Overfill prevention valve with 5' top drop tube, 10' bottom drop tube
708591921	C	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	H	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	K	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	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.

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 / overflow 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.



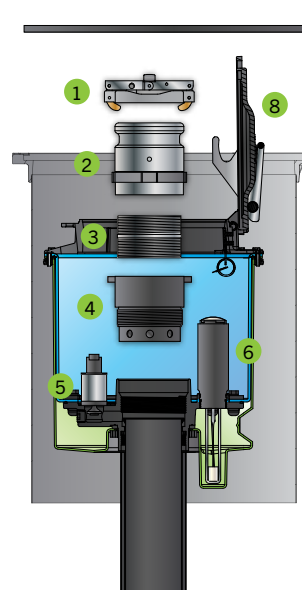
SPECIFICATIONS

Components

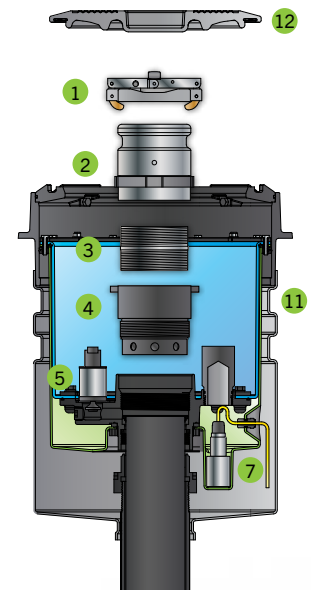
- | | |
|-----------------------|---------------------------|
| Primary containment | Visual monitor |
| Secondary containment | Electronic sensor monitor |
| Adapter cap* | Lock down lid |
| Swivel adapter* | 18" manway |
| Nipple* | Fiberglass manway lid |
| Drop tube adapter | Gravel guard |
| Drain | Cast iron gasketed lid |

* Sold separately

Below Grade



Grade Level

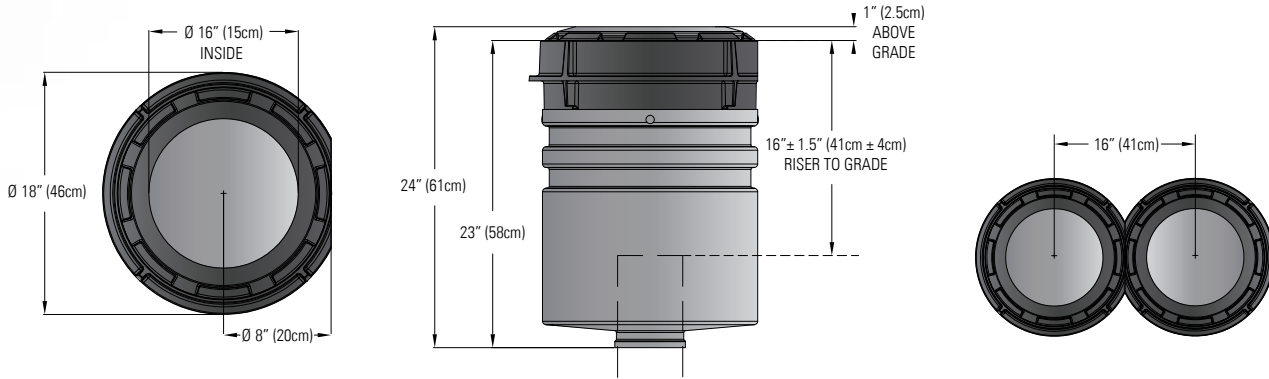


SPECIFICATIONS CONTINUED

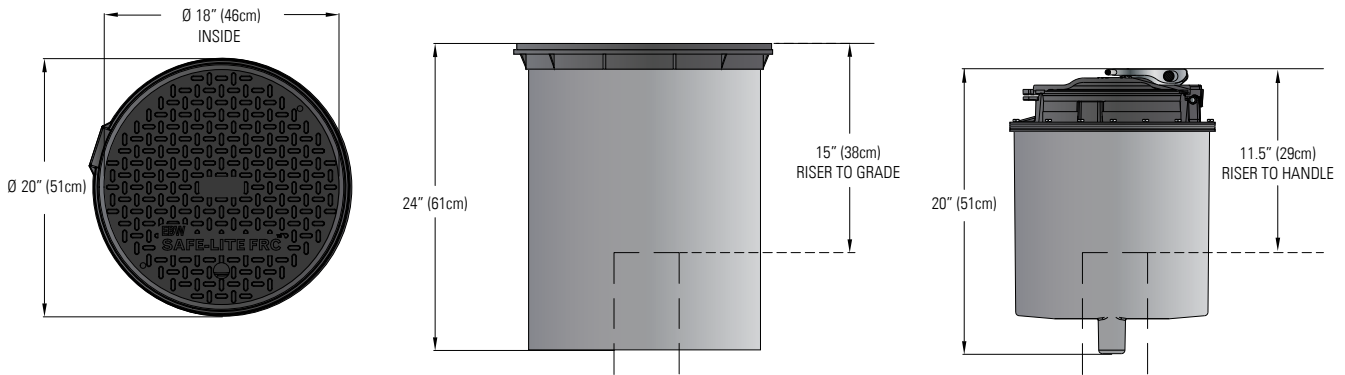
Approvals/Certifications

- 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).

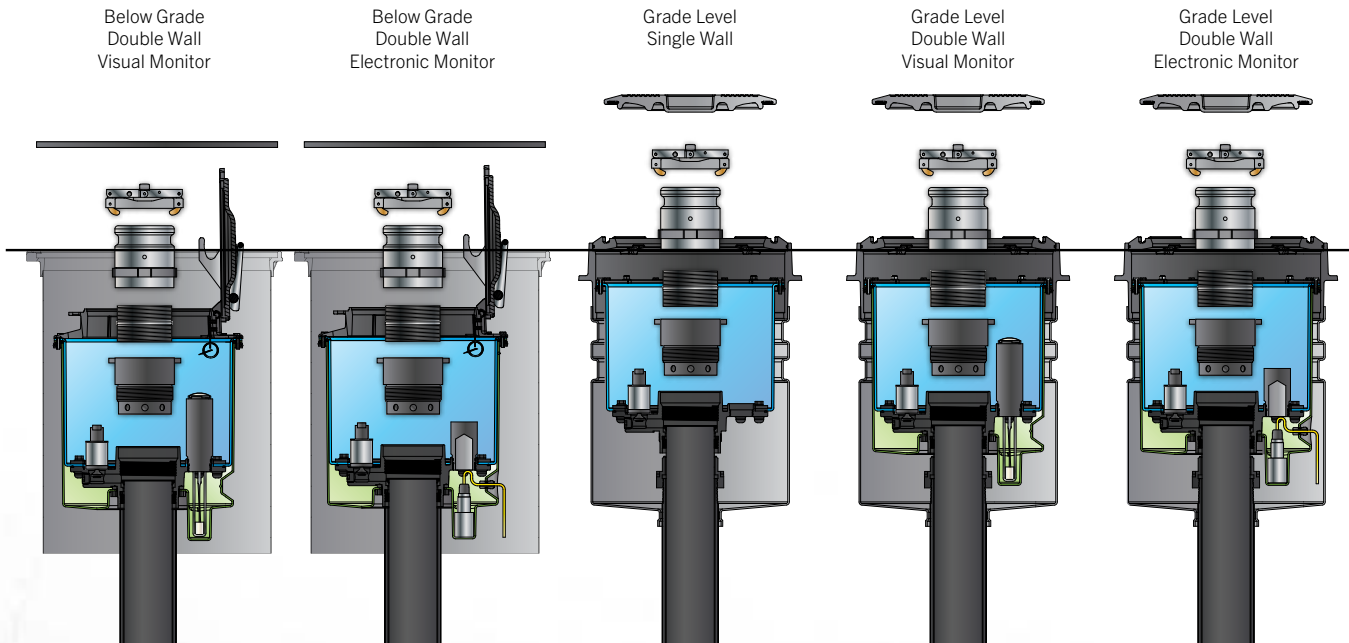
Grade Level Spill Container Dimensions



Below Grade Spill Container Dimensions



Configurations



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

- 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

B = Drain Options

- 1 = With drain
- 2 = Without drain

C = Lid/Cover*

- BLK = Black fiberglass 18" manway cover (below grade only)
- 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-ORG = Orange 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)

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

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 manway cover (manway included).

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)
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)

ORDERING INFORMATION CONTINUED

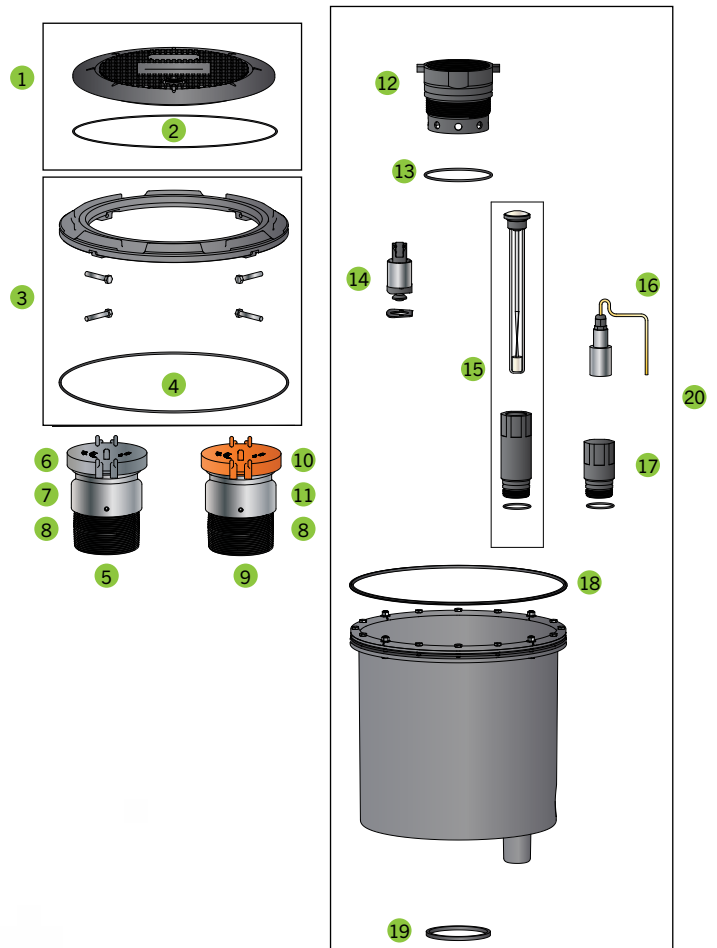
Grade Level Single Wall Replacement Parts

Item	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	70550311	Spill container seal ring gasket
16	602256001	Tank riser gasket
17	705545001SP	Spill container, NPSM, with drain
	705545002SP	Spill container, NPSM, no drain
	705545011SP	Spill container, NPT, with drain
	705545012SP	Spill container, NPT, no drain



Grade Level Double Wall Replacement Parts

Item	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	I ² 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
20	705555101SP	Spill container, I2, NPSM, with drain
	705555102SP	Spill container, I2, NPSM, no drain
	705555111SP	Spill container, I2, NPT, with drain
	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



ORDERING INFORMATION CONTINUED

Below Grade Double Wall Replacement Parts

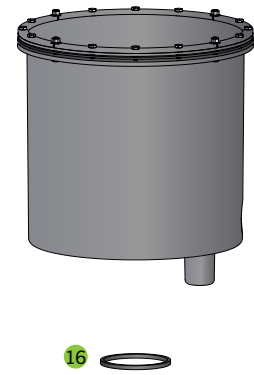
Item	Model	Description
1	78130401	Cover, 18", fiberglass (black)
2	705587901	Lock down cover assembly
--	71520201	Spare lift handle assembly
3	70541202	Fill riser cap and adapter kit
4	77720102	Top seal fill cap
5	SWF-100-SS	Fill swivel adapter
6	70521307	4" x 2.88" close nipple
7	70541302	Vapor riser, 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	I ² monitor and inspection port kit
14	TSP-ULS	Electronic leak detection sensor
15	70553302	Sensor inspection port
16	602256001	Tank riser gasket

Note: Order the Aboveground 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



SERVICE STATION
HARDWARE



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.

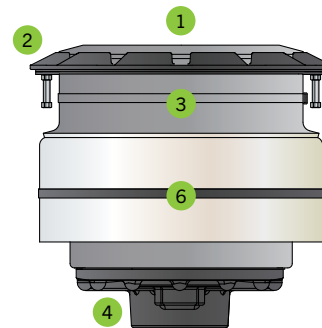


SPECIFICATIONS

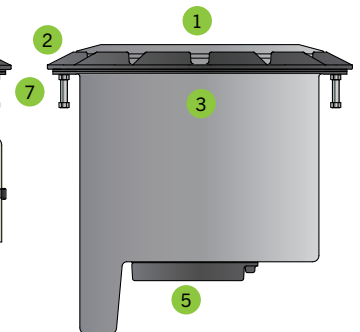
Components

- | | |
|-------------------------------|------------------------|
| 1 Cover | 6 Gravel guard |
| 2 Cast iron deflector ring | 7 Concrete anchors |
| 3 Flexible polyethylene shell | 8 Locking cover |
| 4 Cast iron threaded base | 9 18" Cast iron manway |
| 5 Cast iron slip-on base | |

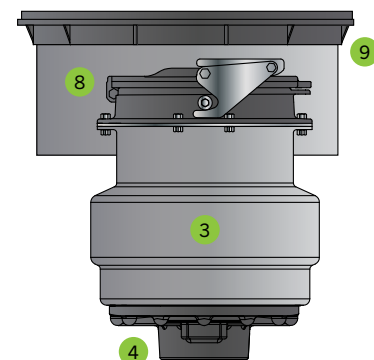
Grade Level



Grade Level Retrofit

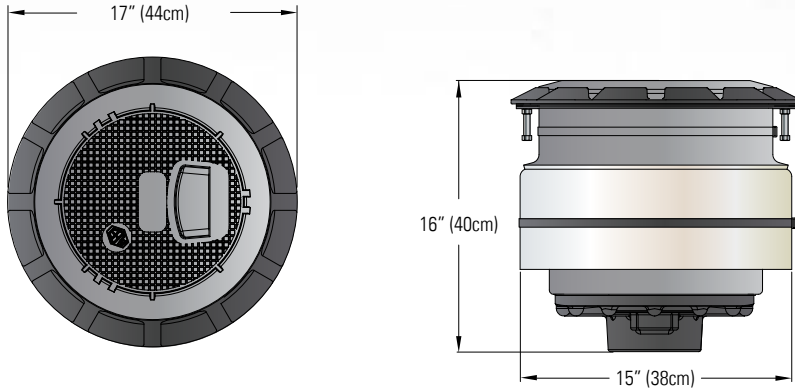


Below Grade

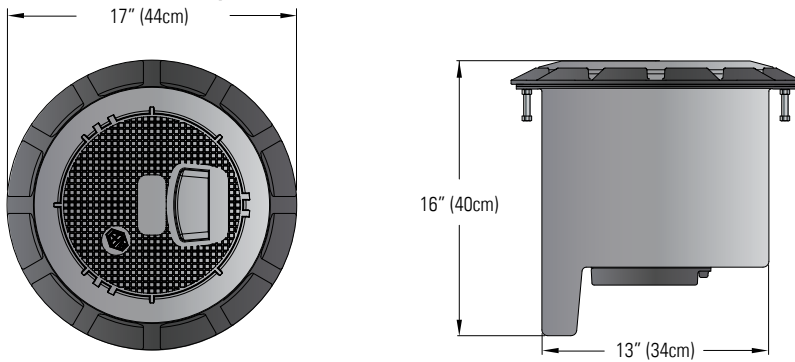


SPECIFICATIONS CONTINUED

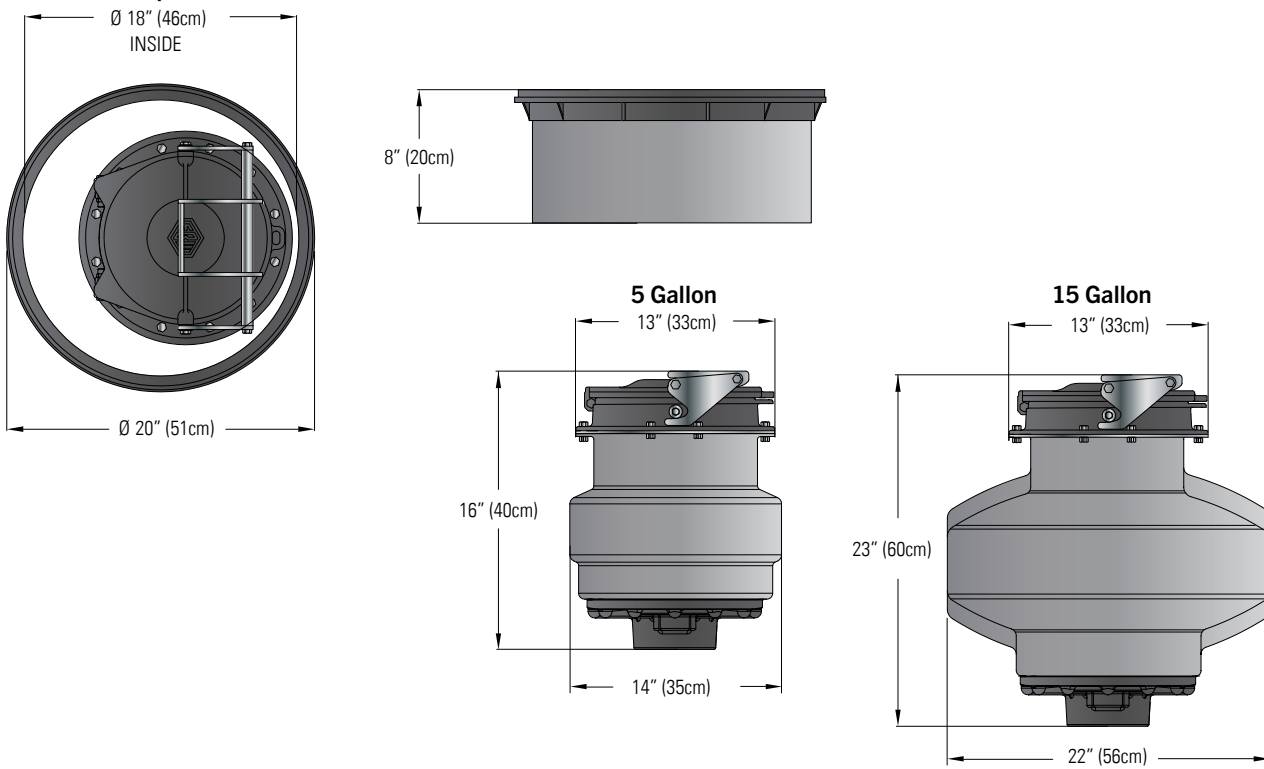
Grade Level Spill Container Dimensions



Grade Level Retrofit Spill Container Dimensions



Below Grade Spill Container Dimensions



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

Below Grade Spill Container Materials

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

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)

*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

Model	Description
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

ORDERING INFORMATION CONTINUED

EBW® Series Below Grade Spill Containers

Model	Description
70547401BLK*	Below grade spill container, 5 gallon capacity, with drain, NPT threads, 18" x 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)



SERVICE STATION
HARDWARE

*ULC listed, MH21091

**CARB Phase 1 EVR approved, VR-101

EBW® Series Manway Covers

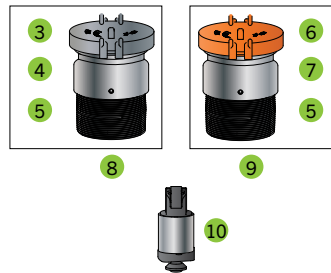
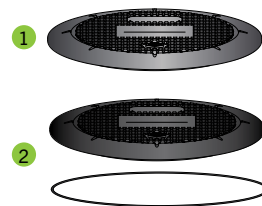
Replace the last letters in any standard spill container part number for these cover options.

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

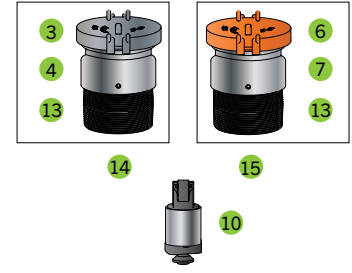
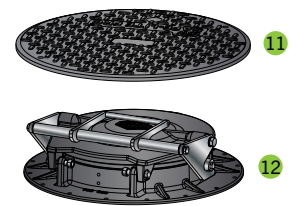
EBW® Series Spill Container Replacement Parts

Item	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	Lock down cover w/ base
	71040201	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.

MULTIPOINT PACKAGES

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

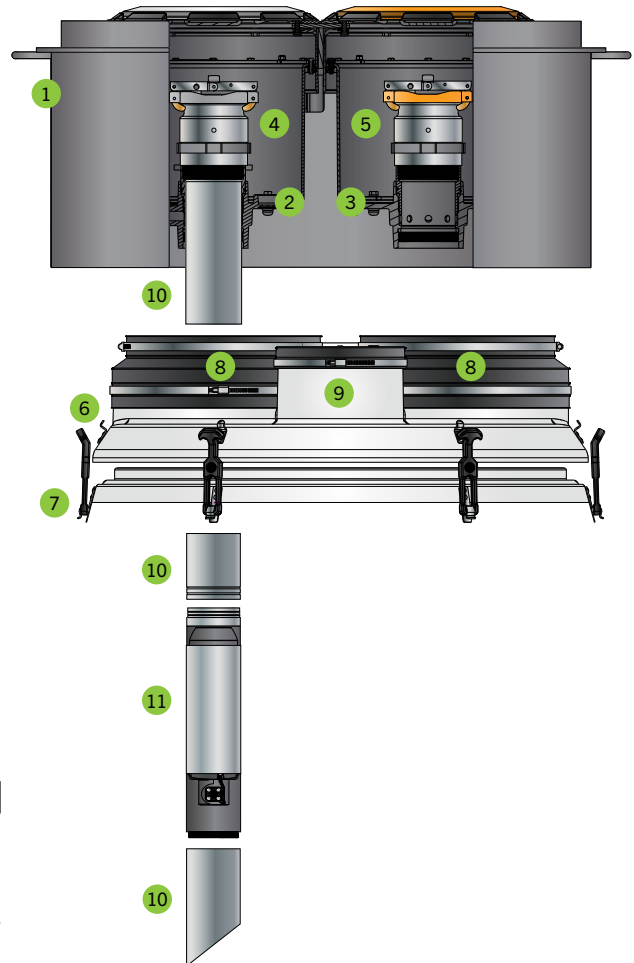
Available packages include 42" Defender Series® multiports, 42" PHIL-TITE™ multiports, or 36" PHIL-TITE™ - to - Defender Series® retrofit multiports for gas and diesel applications.



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
- 7 Watertight sump shield mounting reducer
- 8 Spill container opening with boots and clamps
- 9 Inspection port with boot and clamp
- 10 Drop tubes (top and bottom)
- 11 Overfill prevention valve



ORDERING INFORMATION

42" Diesel 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 mat, 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
708692902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

ORDERING INFORMATION CONTINUED

42" Gas 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
708692902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube

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)
708692902	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
708692902	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

Contact Franklin Fueling Systems for other configuration options.

DEFENDER SERIES® MULTIPOINT MANWAYS

The EBW® brand Defender Series® multipoint 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.



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.

SPECIFICATIONS

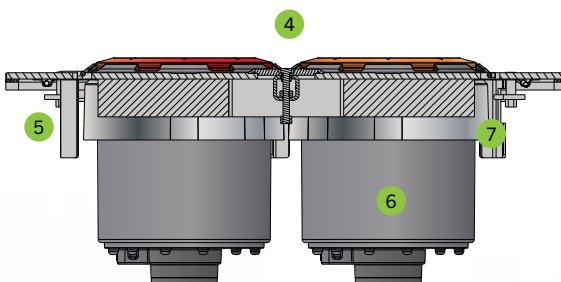
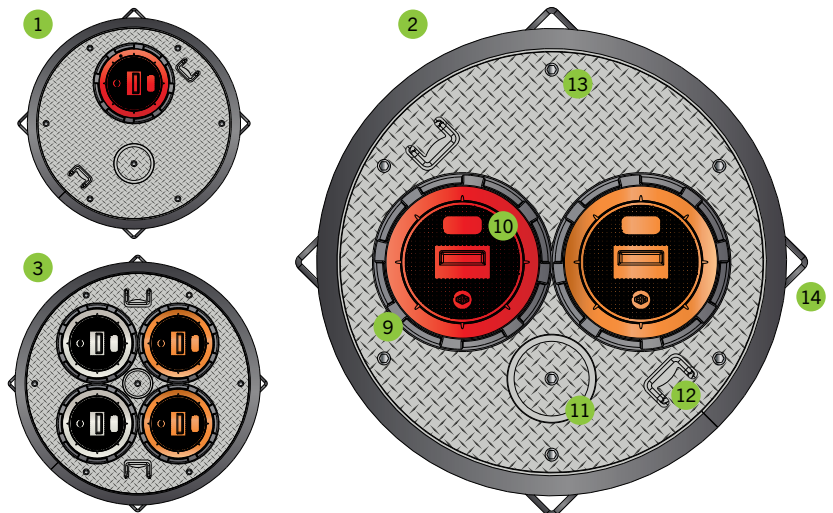
Exceeds H20 and HS20 load standards (maximum axle load requiring support for the 32,000 or 16,000 pounds for each set of dual tire wheels).

Approvals

- ULC listed (spill containers).
- CARB approved (spill containers).

Components

- 1 One spill container multipoint manway
- 2 Two spill container multipoint manway
- 3 Four spill container multipoint manway
- 4 Multipoint 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



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/ I² monitor

DWS = Double wall w/ TSP-ULS sensor

DWIT = Double wall w/ I² 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-WHT/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 Series® multiport, four spill containers, one 6" access port, two white/two orange cast iron lids

Retrofits

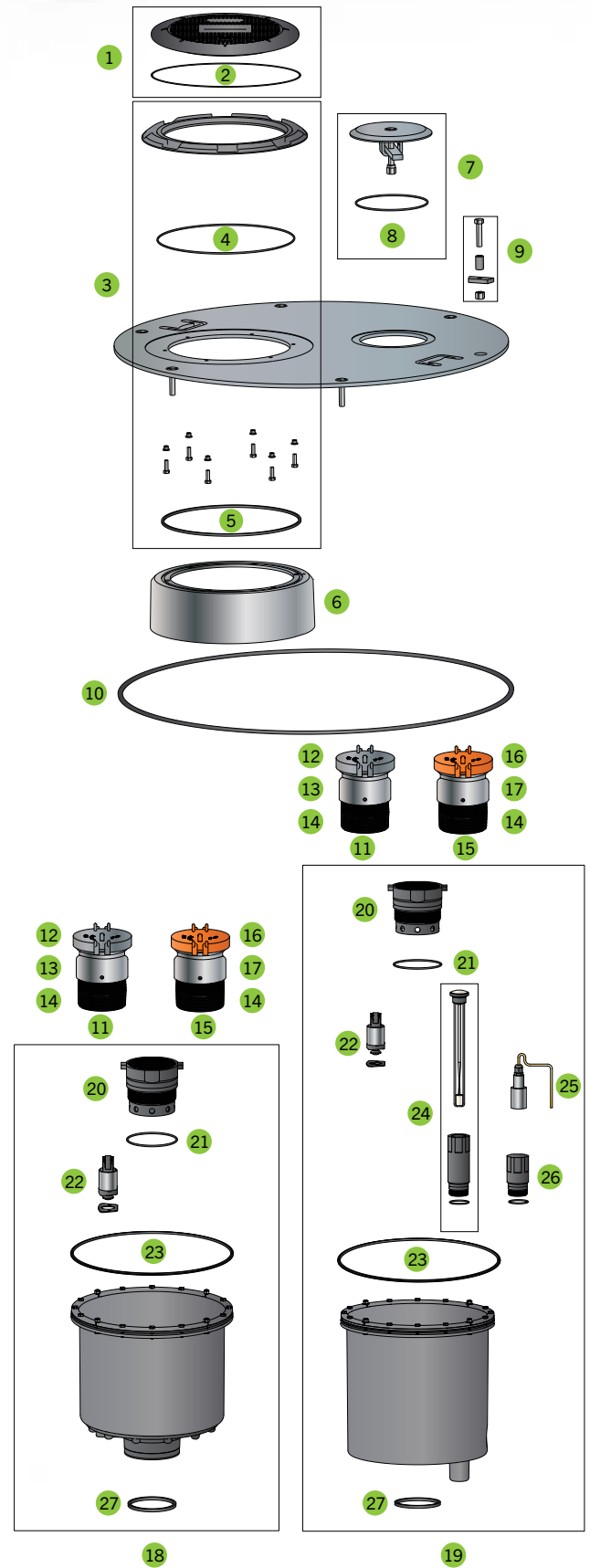
Model	Description
DMP36R-1-SW-YEL	36" Defender Series® multiport retrofit kit, one spill container, one 13" access port, yellow cast iron lid
DMP36R-2-SW-RED/ORG	36" Defender Series® multiport retrofit kit, two spill containers, one 8" access port, one red/one orange cast iron lid
DMP36R-2-SW-WHT/ORG	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.

ORDERING INFORMATION CONTINUED

Defender Series® Multiport Manway Replacement Parts

Item	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
11	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
17	SWV-101-SS	Vapor swivel adapter
18	705542001	Single wall spill container, NPSM, with drain
	705542002	Single wall spill container, NPSM, no drain
	705542011	Single wall spill container, NPT, with drain
	705542012	Single wall spill container, NPT, no drain
19	705552101	Double wall spill container, I2, NPSM, with drain
	705552102	Double wall spill container, I2, NPSM, no drain
	705552111	Double wall spill container, I2, NPT, with drain
	705552112	Double wall spill container, I2, NPT, no drain
	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
28	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
	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® MULTIPOINT SUMPS

EBW® brand Defender Series® multipoint 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® multipoint manways, these multipoint 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® Multipoint™ 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)

Example: DMM4236-1/0-OB-S = Defender Series® multipoint 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

ORDERING INFORMATION CONTINUED

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		
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™ MULTIPOINT 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.

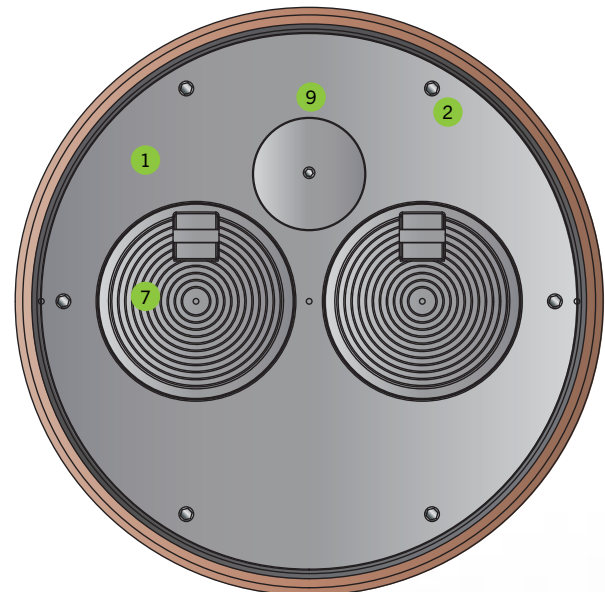
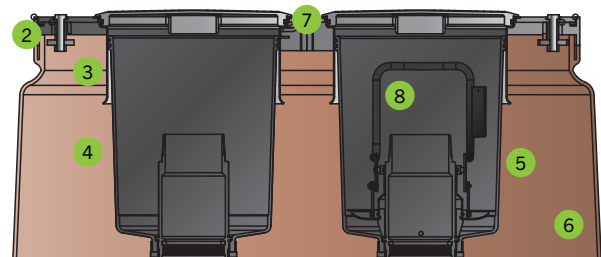


SERVICE STATION
HARDWARE

SPECIFICATIONS

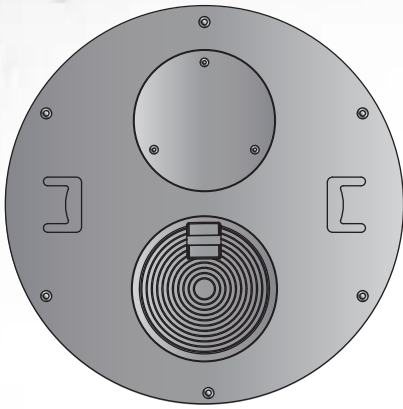
Components

- | | |
|---------------------------|------------------------|
| 1 Powder coated manway | 6 Fiberglass skirt |
| 2 Cam locks | 7 Spill container lids |
| 3 Spill container sleeves | 8 Drain valve |
| 4 Vapor spill container | 9 Access opening |
| 5 Fill spill container | |



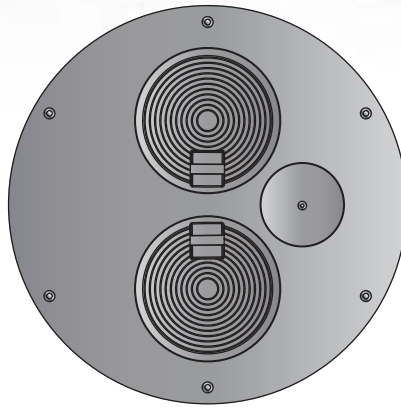
SPECIFICATIONS CONTINUED

Multiport Manway Configurations



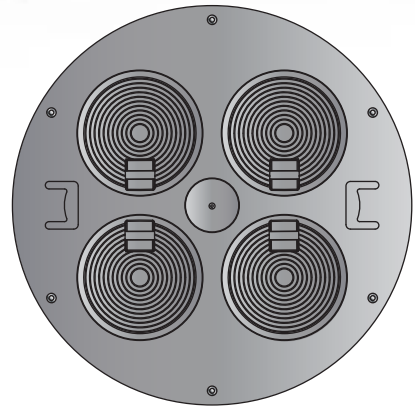
One Spill Container Configuration

- One spill container
- One 13" access opening



Two Spill Container Configuration

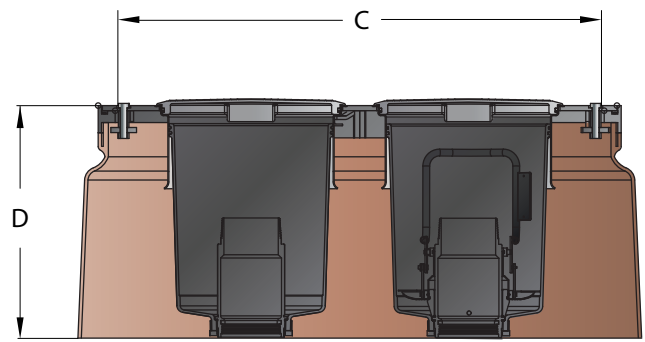
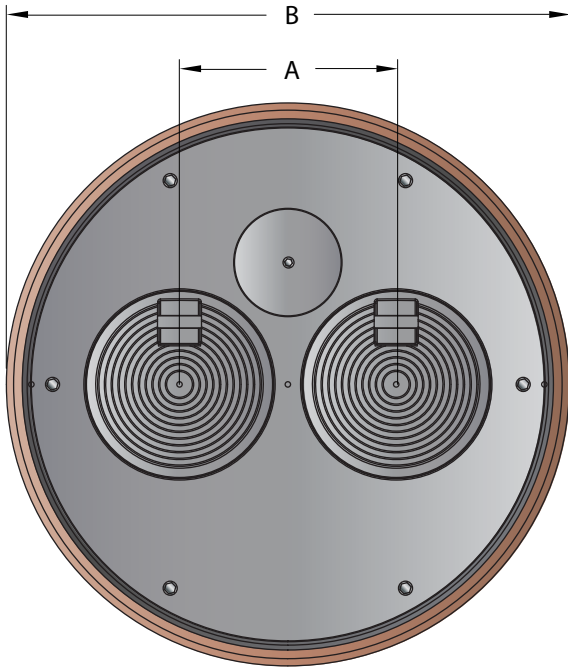
- Two spill containers
- One 8" access opening



Four Spill Container Configuration

- Four spill containers
- One 6" access opening

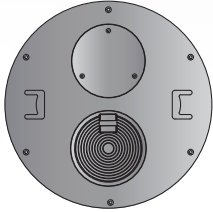
Multiport Manway Dimensions



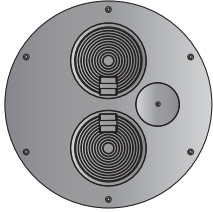
Model	A	B	C	D
	Spill Collection Separation	Cover Diameter	Clear Opening	Manway Skirt from Finished Grade Height
36" Multiport Manway	16"	38"	36"	18"
42" Multiport Manway	16"	45"	42"	18"

ORDERING INFORMATION

36" PHIL-TITE™ Multiport Manways

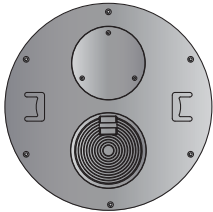


Model	Description
M36-1C-1-0-NPR	36" multiport manway, one spill container with drain, one 13" access opening, without plow ring
M36-1C-1-0-SPR	36" multiport manway, one spill container with drain, one 13" access opening, with plow ring
602132909	Replacement cover assembly for M36-1C-1-0-NPR
602132919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

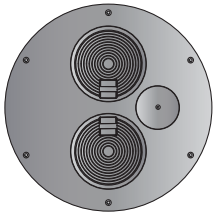


Model	Description
M36-2C-0-1-NPR	36" multiport manway, one spill container with drain, one spill container without drain, one 13" access opening, without plow ring
M36-2C-0-1-SPR	36" multiport manway, one spill container with drain, one spill container without drain, one 13" access opening, with plow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

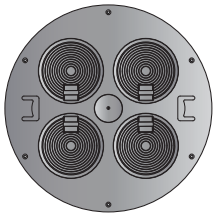
42" PHIL-TITE™ Multiport Manways



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 PHIL - TITE™ spill container requires a riser adapter for installation.



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
PP-1005-TB	Debris bucket without pump
PP-1005-TBP	Debris bucket with pump



Model	Description
M-1600	Riser alignment bracket for 16" center

ORDERING INFORMATION

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.



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



Model	Description
FIBERGLASS-KIT	Fiberglass seam kit for one seam - includes: mat, resin, putty, catalyst, 1/2" 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



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 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.

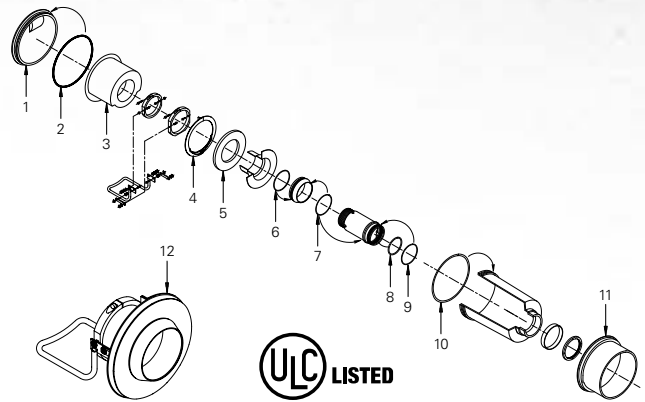
HIGHLIGHTS

- 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.

ORDERING INFORMATION

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.



SPECIFICATIONS

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

Item	Model	Description
1	85011-1	Gray ductile cast iron cover with wiper seal
2	SC-1513V	U-shaped seal for ductile cast iron lid
3	PP-1005-TB	Fill debris bucket insert, without pump
	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	85035	Shut-off collar to screen, upper O-ring
7		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

787 SERIES FUEL IDENTIFICATION

HIGHLIGHTS

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

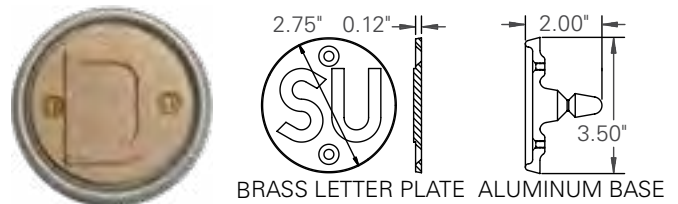
Tank contents and capacity are easily identified with this color-coded fill identifier. Colored identifiers allow instant identification of the tank's contents. A solid brass plate, inscribed with maximum fill levels, helps prevent tank overflow and product mixing. The identifier and brass plate are 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

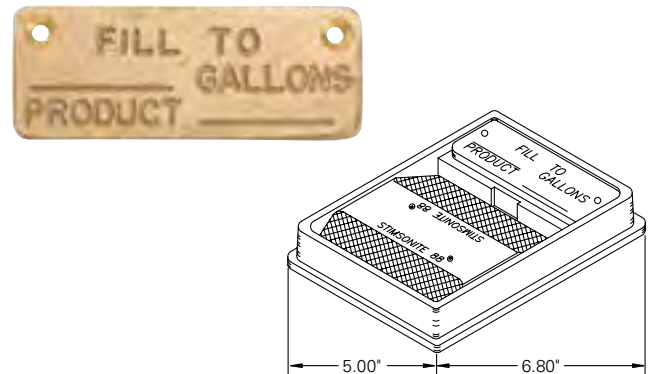
- Body: cast iron.
- Plate: brass.

SPECIFICATIONS

787 Series Fuel Identification Markers



Model	Description	Size	
		In	mm
78710003	D - diesel kit	3.5 × 2	89 × 51
78710006	SU - super unleaded kit	3.5 × 2	89 × 51
78710009	RU - regular unleaded kit	3.5 × 2	89 × 51
Model	Description		
78710101	Aluminum base only		
78710203	D - brass letter only		
78710206	SU - brass letter only		
78710209	RU - brass letter only		



Model	Description	Size	
		In	mm
78710302	Fill replacement plate	1.5 × 3.5	38 × 89
78720101	High-grade unleaded kit, red	4 × 5	102 × 127
78720102	Low-grade unleaded kit, white	4 × 5	102 × 127
78720103	Diesel kit, yellow	4 × 5	102 × 127
78720104	Mid-grade unleaded kit, blue	4 × 5	102 × 127

DEFENDER SERIES® OVERFILL PREVENTION VALVE

The Defender Series® Overfill Prevention Valve (OPV) prevents the overfill of an underground storage tank during a gravity-fed product delivery. It employs a revolutionary magnetically-coupled actuator system to provide positive shutoff. This unique method of shutoff eliminates any penetrations in the valve, making it both vapor and leak tight. This also allows for remote compliance testing of the primary functionality at grade level without having to remove the OPV from the tank.

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-cripped 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-cripp/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.



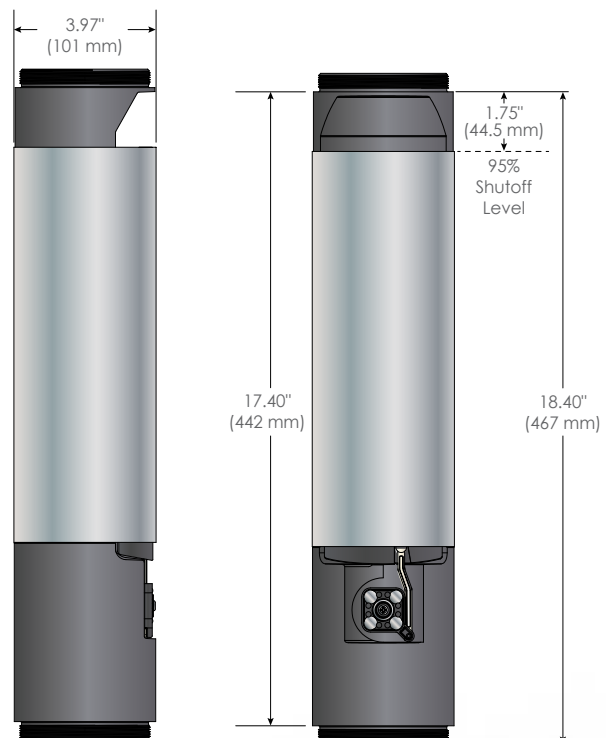
Drop Tube Adapter

SPECIFICATIONS

Approvals/Certifications

- UL 2583 listed and ULc listed, MH21090.
- CARB certified, VR-101-U (FFS) and VR-102 (OPW®).
- ATEX 2014/34/EU approved.
- EN13616 certified.
- KIWA BRL-K636/03 certified.

Dimensions



OPW® is a registered trademark of Dover, Corp.

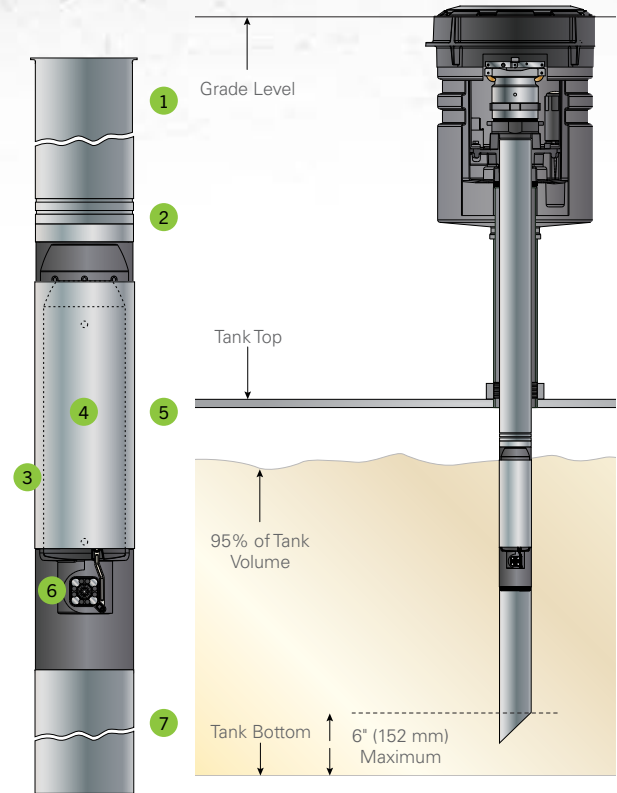
SPECIFICATIONS CONTINUED

Components

- 1 Pre-flanged aluminum top drop tube
- 2 Roll-crimped top fitting/drop tube
- 3 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
708691901	Defender Series® overfill prevention valve with 5' (1524 mm) top drop tube, 8' (2438 mm) bottom drop tube
708691902	Defender Series® overfill prevention valve with 5' (1524 mm) top drop tube, 10' (3048 mm) bottom drop tube
708691921	Defender Series® overfill prevention valve with 5' (1524 mm) top drop tube, 8' (2438 mm) bottom drop tube, AGB compatible*
708691922	Defender Series® overfill prevention valve with 5' (1524 mm) top drop tube, 10' (3048 mm) bottom drop tube, AGB compatible*
708692901	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 8' (2438 mm) bottom drop tube
708692902	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube
708692921	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 8' (2438 mm) bottom drop tube, AGB compatible*
708692922	Defender Series® overfill prevention valve with 10' (3048 mm) top drop tube, 10' (3048 mm) bottom drop tube, AGB compatible*
708693901	Defender Series® overfill prevention valve, coaxial with 6.5' (1981 mm) top drop tube, 8' (2438 mm) bottom drop tube
708693902	Defender Series® overfill prevention valve, coaxial with 6.5' (1981 mm) top drop tube, 10' (3048 mm) bottom drop tube
708693923	Defender Series® overfill prevention valve, poppeted coaxial with 6.5' (1981 mm) top drop tube, 8' (2438 mm) bottom drop tube, AGB compatible*
708693924	Defender Series® overfill prevention valve, poppeted coaxial with 6.5' (1981 mm) top drop tube, 10' (3048 mm) bottom drop tube, AGB compatible*
708694901	Defender Series® overfill prevention valve only with top adapter, AGB compatible*
708694902	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' (3353 mm) long sectional/collapsible
708534902	Coaxial remote testing tool, 11' (3353 mm) long sectional/collapsible

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

Replacement Parts

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

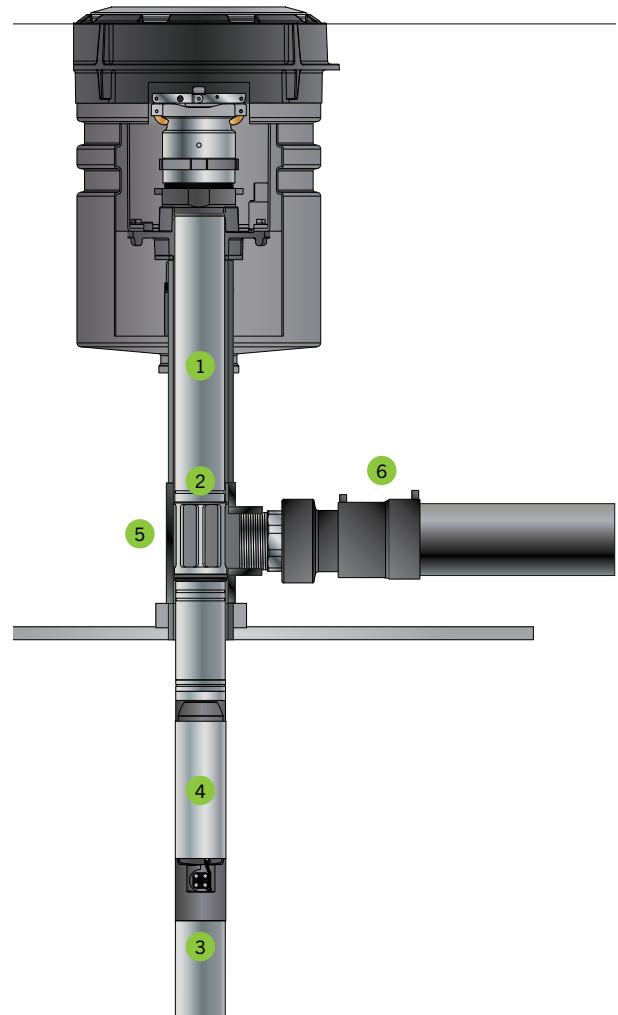
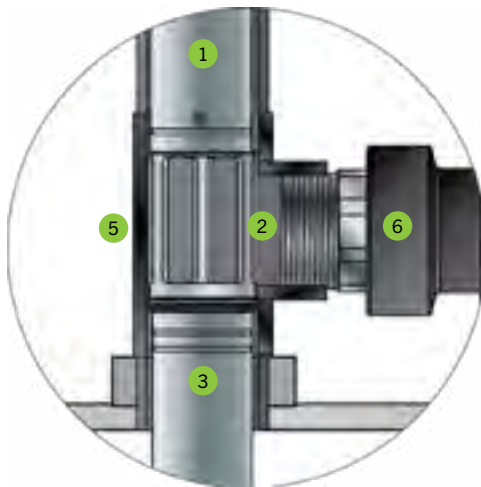


SERVICE STATION
HARDWARE

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.

ORDERING INFORMATION

Model	Tubes per Box	Size		Wall Thickness		OD		Weight	
		In x Ft.	mm x M	In	mm	In	mm	Lbs	Kg
78220212	6	2 x 12	51 x 3.66	0.42	10.67	1.88	48	45	20.41
78220312	4	3 x 12	76 x 3.66	0.42	10.67	2.94	75	32	14.51
78220410-2"	2	4 x 10	102 x 3.05	0.062	1.580	3.88	99	22	10
78220412-2"	2	4 x 12	102 x 3.66	0.062	1.580	3.88	99	26	11.80
78220415-2"	2	4 x 15	102 x 4.57	0.062	1.580	3.88	99	30	13.60
78220430-2"	2	4 x 10	102 x 3.05	0.062	1.580	3.88	99	22	10
78220432-2"	2	4 x 12	102 x 3.66	0.062	1.580	3.88	99	26	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.

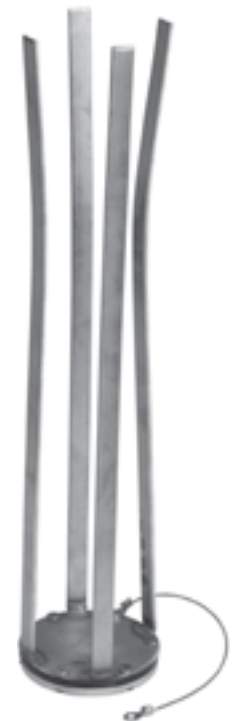
HIGHLIGHTS

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

ORDERING INFORMATION

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

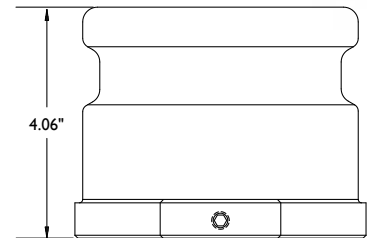
- Constructed of hard-coated aluminum.
- Set screw on the adapter prevents movement on the riser pipe, ensuring a tight seal.
- Bodies constructed of hard-coat anodized aluminum for compatibility with E-85 and Biodiesel.

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.



ORDERING INFORMATION

Model	Description	Weight	
		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" x 13' coaxial drop tube, two per box	24	10.89
708335901	Poppeted coax V.R. adapter	3.30	1.5
708336901	Poppeted coax adapter and drop tube kit	45	20.45
708340901	Tightening tool	Call	Call

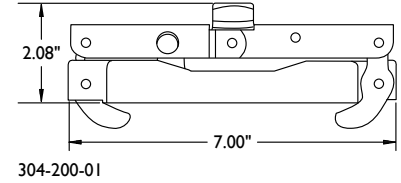
Note: 708335901 Poppeted Coaxial Vapor Recovery Adapter must be used with an EBW® poppeted coaxial Drop Tube.

4" VAPOR RECOVERY CAP

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.

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.



ORDERING INFORMATION

Model	Material	Weight	
		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 ADAPTORS

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.

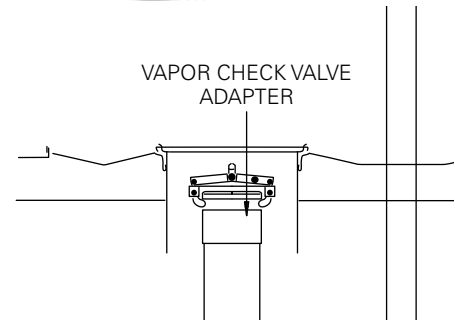


HIGHLIGHTS

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

ORDERING INFORMATION

Model	Riser Thread	Height		Body Material	Weight		Threads
		In	mm		Lbs	Kg	
30021001	4"	4.19	107	Anodized aluminum	4.30	1.95	NPSM
30021031	3"	5.44	139	Anodized aluminum	4.30	1.95	BSPP
30022001	4"	4.19	107	Brass	12.5	5.66	NPSM
30022031	4"	4.19	107	Brass	12.5	5.66	BSPP
30030001	3"	5.44	139	Anodized aluminum	4.30	1.95	NPSM
30030031	3"	5.44	139	Anodized aluminum	4.30	1.95	BSPP
Model	Description						
77020102	3" Replacement gasket						
77020103	4" Replacement gasket						



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.



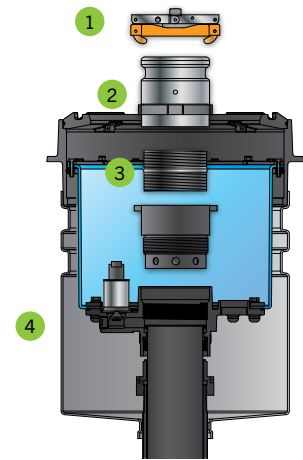
HIGHLIGHTS

- 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

- 1 Cap
- 2 Swivel adapter
- 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 Certification 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.



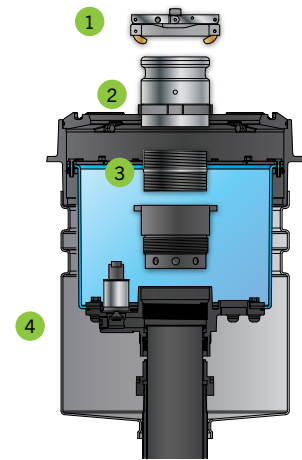
HIGHLIGHTS

- 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

Components

- 1 Cap
- 2 Swivel adapter
- 3 Riser nipple
- 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

*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.



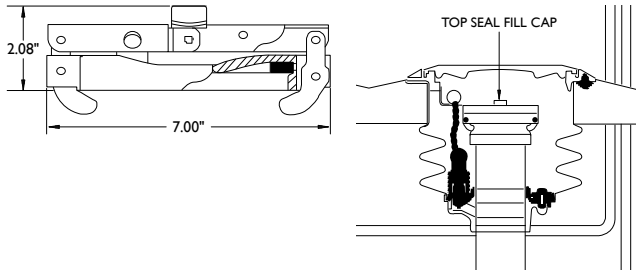
Model	Description
70541202	Fill swivel adapter kit for 5 gallon Defender Series® (grade level and below grade level) and EBW® Series (grade level) spill containers, includes stainless steel fill swivel adapter, 3" riser nipple, vapor top cap.
70541201	Fill swivel adapter kit for 5 gallon PHIL-TITE™ and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

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.



ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
77720102*	CARB EVR glass-filled PBT, AGB	1	0.45
77720202	Aluminum, epoxy-coated gray, AGB	1.12	0.51
95021501	CARB approved replacement gasket	0.20	0.90
Model	Description		
777201901*	Glass-filled PBT, 20 pack		

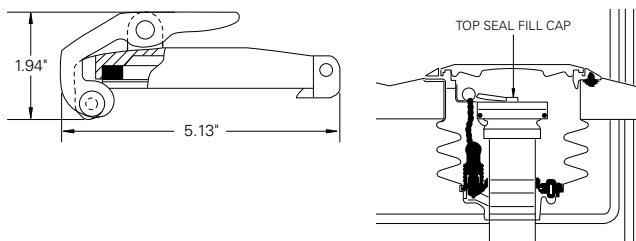
*Biofuel approved model (E85 and Biodiesel), CARB: Phase 1 Certification VR-101.

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.



ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
77920001	3" top seal fill cap	1	0.45
Model	Description		
77420203	3" replacement gasket		

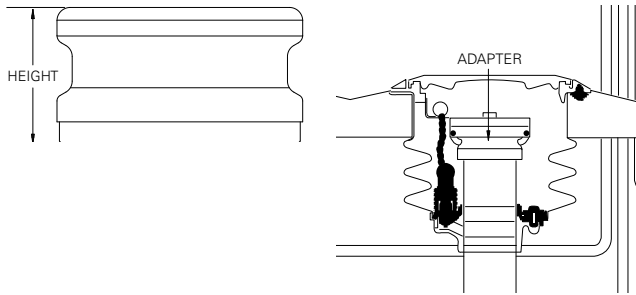
TOP SEAL FILL PIPE ADAPTERS

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.



SPECIFICATIONS

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 14.5" nipple, one 77720202 4" Aluminum Fill Cap and one 77830101 fill adapter)

ORDERING INFORMATION

Model	Height		Description	Weight	
	In	mm		Lbs	Kg
77830101	2.69	68.27	4" x 4" with lugs - NPSM	2	0.90
77830102	2.69	68.27	4" x 4" without lugs - NPSM	2	0.90
77830105	2.69	68.27	4" x 4" with lugs - NPSM	2	0.90
77830135	2.69	68.27	4" x 4" with lugs - BSPP	2	0.90
77830106	2.69	68.27	4" x 4" with lugs stainless steel - NPSM	2.08	0.95
77830132	2.69	68.27	4" x 4" without lugs - BSPP	2	0.90
77830201	2.25	57.15	4" x 3" with lugs - NPSM	2	0.90
77830231	2.25	57.15	4" x 3" with lugs - BSPP	2	0.90
77830302	2.69	68.27	4" x 4" composite with gasket - NPSM	2	0.90
77830330	2.69	68.27	4" x 4" composite - BSPP	0.49	0.22
77830332	2.69	68.27	4" x 4" composite with gasket - BSPP	0.49	0.22
78020001	1.75	44.45	3" x 3" without lugs - NPSM	2	0.90
Model	Description				
77020102	3" replacement gasket				
77020103	4" replacement gasket				

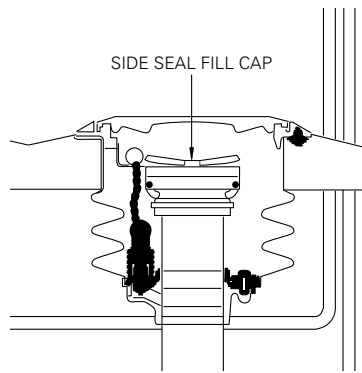
4" SIDE SEAL FILL CAP

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.



ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
77520201	4" side seal fill cap	2	0.90

Model	Description
77510401	Replacement gasket

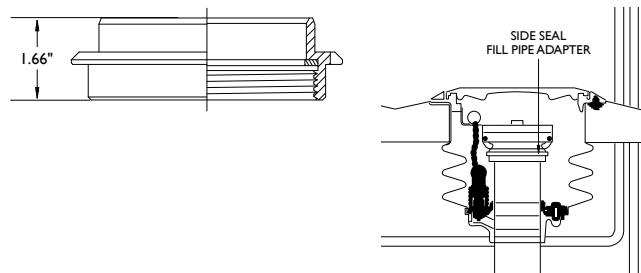
4" SIDE SEAL FILL ADAPTER

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.



ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
77630001	4" side seal fill adapter-NPT	2	0.90
77630031	4" side seal fill adapter-BSPT	2	0.90

Model	Description
77020103	4" replacement gasket

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, 1½" 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, 1½" 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)

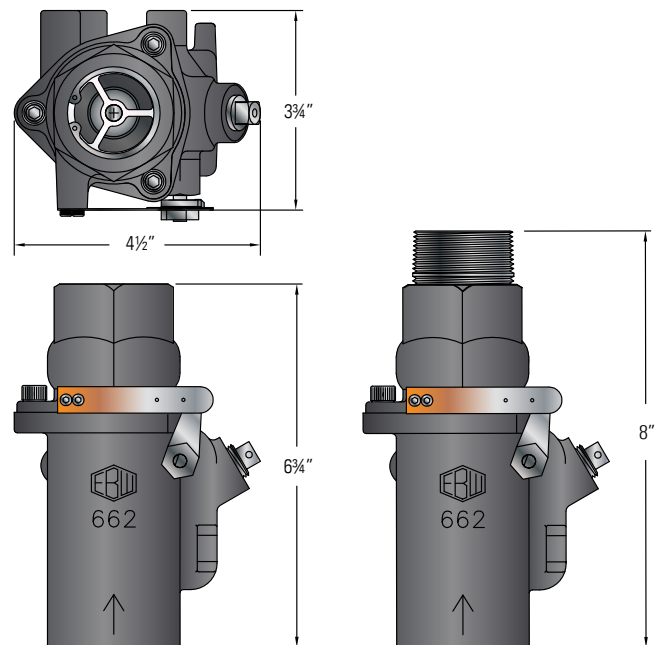
SPECIFICATIONS

- Fusible link closes poppet at 165° 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

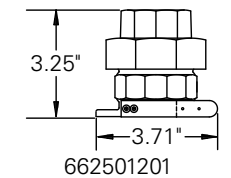
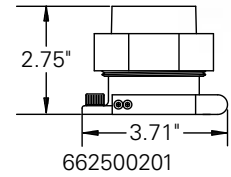
PRODUCT SHEAR VALVE ACCESSORIES AND REPLACEMENT TOPS

Shear Valve Replacement Parts

Model	Description
90074	Fulcrum arm kit

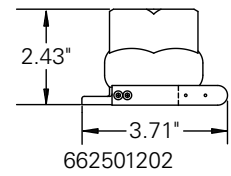
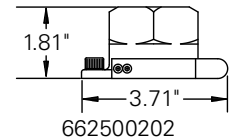
1½" Union Adapter Replacement Tops

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



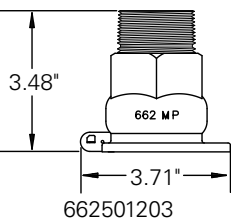
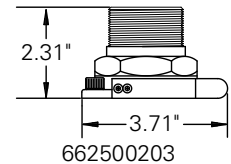
1½" Female Adapter Replacement Tops

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



1½" 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.

362 VAPOR SHEAR VALVE

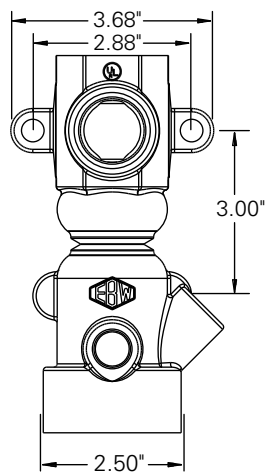
The EBW® 362 vapor shear valve is designed for use as an emergency breakaway on Stage II vapor recovery lines in fuel dispensers. The double poppet design allows spring-loaded poppets inside the valve to seal vapors within both the dispenser riser and vapor piping in the event of dispenser displacement,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

ORDERING INFORMATION

Model	Description
36220613	1" x 1½" NPT thread vapor shear valve
36220631	1" x 1½" BSPT thread vapor shear valve



SPECIFICATIONS

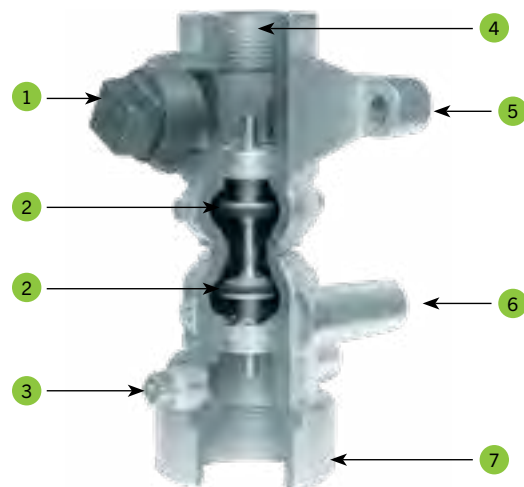
- Base thread includes 1½" female.
- California State Fire Marshal approved.

Approvals/Certifications

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

Components

- 1" test plug
- Double poppet design
- 3/8" test plug
- 1" dispensing side opening
- Boss mount
- U-bolt mount
- 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

- | | |
|------------------------------|-------------------------------|
| 1 EZ Fit flange only* | 8 Hex female fixed (NPT)* |
| 2 EZ Fit male* | 9 Hex male fixed (BSPT)* |
| 3 EZ Fit female* | 10 Hex male swivel (BSPT)* |
| 4 EZ Fit fiberglass (glued)* | 11 90° male swivel |
| 5 Male swivel | 12 EZ Fit tee flanges only* |
| 6 Female swivel | 13 Flat faced round flange* |
| 7 Hex male fixed (NPT)* | 14 Raised faced round flange* |

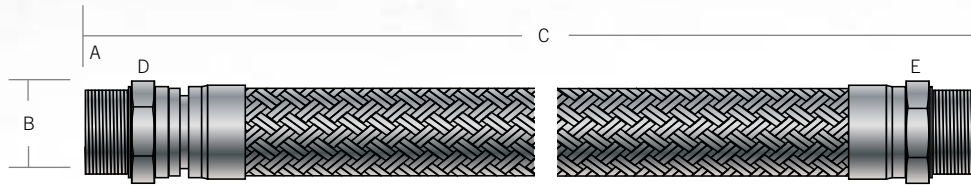
*Also available in stainless steel.



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.

A B X C D X E

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 = ¾"

10 = 1"

15 = 1½"

20 = 2"

30 = 3"

40 = 4"

C = Overall Length in Inches

Use two-digit format

Examples:

FF20X18M346XHM = Flexible connector with swivel end fitting(s), 2" hose diameter, 18" overall length, with one male swivel end fitting and one fixed Hex male end fitting.

FF20X18SSEZMXSSHM = 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.

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.

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.

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 1½" 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	1½" diameter flexible connector, hex male (BSPT) by male swivel (BSPT), 12" OAL
FF15X12HMXM346	1½" diameter flexible connector, hex male by male swivel, 12" OAL
FF15X12M346X2F	1½" diameter flexible connector, male swivel by 2" hex female, 12" OAL
FF15X12M346XEZ	1½" diameter flexible connector, male swivel by EZ Fit flange only, 12" OAL
FF15X12SSHMXEZ	1½" diameter flexible connector, stainless steel hex male by EZ Fit flange only, 12" OAL
FF15X15HMXM346	1½" diameter flexible connector, hex male by male swivel, 15" OAL
FF15X16BTXBTS	1½" diameter flexible connector, hex male (BSPT) by male swivel (BSPT), 16" OAL
FF15X16HMXM346	1½" diameter flexible connector, hex male by male swivel, 16" OAL
FF15X18EZMXEZFFT	1½" diameter flexible connector, EZ Fit male by EZ Fit tee, 18" OAL
FF15X18EZMXEZM	1½" diameter flexible connector, EZ Fit male by EZ Fit male 18" OAL
FF15X18HMXEZM	1½" diameter flexible connector, hex male by EZ Fit male, 18" OAL
FF15X18HMXM346	1½" diameter flexible connector, hex male by male swivel, 18" OAL
FF15X18M346X2F	1½" diameter flexible connector, male swivel by 2" hex female, 18" OAL
FF15X18M346XEZM	1½" diameter flexible connector, male swivel by EZ Fit male, 18" OAL
FF15X24HMXM346	1½" 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
FF20X18HMXEZM	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
FF15X12SSHMXSSTM	1½" diameter stainless steel flexible connector, hex male by hex male, 12" OAL
FF15X18SSHMXSSTM	1½" diameter stainless steel flexible connector, hex male by hex male, 18" OAL
FF15X24SSHMXSSTM	1½" diameter stainless steel flexible connector, hex male by hex male, 24" OAL
FF15X12SSHMXEZ	1½" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 12" OAL
FF15X18SSHMXEZ	1½" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 18" OAL
FF15X24SSHMXEZ	1½" diameter stainless steel flexible connector, hex male by EZ Fit flange only, 24" OAL
FF15X12EZXSSEZM	1½" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 12" OAL
FF15X18EZXSSEZM	1½" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 18" OAL
FF15X24EZXSSEZM	1½" diameter stainless steel flexible connector, EZ Fit male by EZ Fit flange only, 24" OAL
FF15X18SSHMXSSEZM	1½" diameter stainless steel flexible connector, hex male by EZ Fit male, 18" OAL
FF20X12SSHMXSSTM	2" diameter stainless steel flexible connector, hex male by hex male, 12" OAL
FF20X18SSHMXSSTM	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

ORDERING INFORMATION CONTINUED

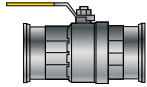
EZ Fit Accessories



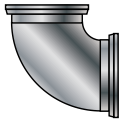
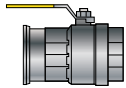
Model	Description
EZFITXEZFIT	2" EZ Fit × EZ Fit connector, stainless steel



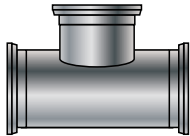
Model	Description
EZBLANK	2" EZ Fit blank, stainless steel
EZ30BLANK	3" EZ Fit blank, stainless steel



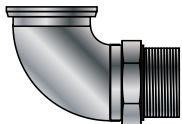
Model	Description
EZXEX20BV	2" EZ Fit × 2" EZ Fit ball valve
EZX20BV	2" EZ Fit × 2" ball valve, brass
EZXEX20BVSS	2" EZ Fit × 2" EZ Fit ball valve, stainless steel
EZX20BVSS	2" EZ Fit × 2" ball valve, stainless steel
EZ30XEZ30X30BV	3" EZ Fit × 3" EZ Fit ball valve, brass
EZ30XEZ30X30SSBV	3" EZ Fit × 3" EZ Fit ball valve, stainless steel



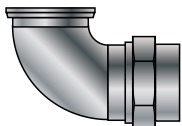
Model	Description
EZXEX90	2" EZ Fit × 2" EZ Fit 90° elbow, stainless steel
EZ30XEZ3090	3" EZ Fit × 2" EZ Fit 90° elbow, stainless steel



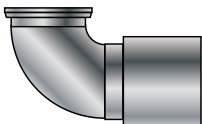
Model	Description
EZXEXEZTEE	2" EZ Fit × 2" EZ Fit × 2" EZ Fit 1½" tee, stainless steel
EZ20XEZ20TEEFF	2" EZ Fit × 2" EZ Fit × 2" EZ Fit, 2" tee, stainless steel
EZ30XEZ30XEZ30T	3" EZ Fit × 3" EZ Fit × 3" EZ Fit tee, stainless steel



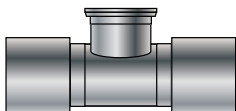
Model	Description
EZX15HM90	2" EZ Fit × 1½" hex male 90° elbow, nickel plated
EZX20HM90	2" EZ Fit × 2" hex male 90° elbow, nickel plated
EZX20HM90SS	2" EZ Fit × 2" hex male 90° elbow, stainless steel
EZX30M90	3" EZ Fit × 3" male 90° elbow, nickel plated



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

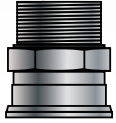


Model	Description
EZX20FG90	2" EZ Fit × 2" fiberglass glue pipe 90° elbow, nickel plated
EZX30FG90	3" EZ Fit × 3" fiberglass glue pipe 90° elbow, nickel plated

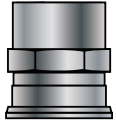


Model	Description
EZX20FGTEE	2" EZ Fit × 2" fiberglass glue pipe tee, nickel plated
EZX30FGTEE	3" EZ Fit × 3" fiberglass glue pipe tee, nickel plated

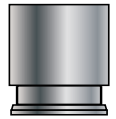
ORDERING INFORMATION CONTINUED



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 × 3" male, nickel plated



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

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.

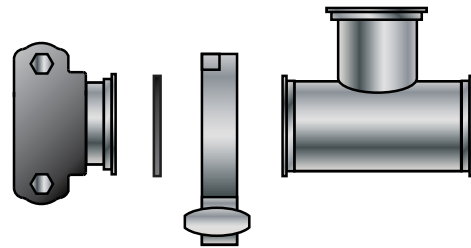
HIGHLIGHTS

How EZ FIT Connections Work

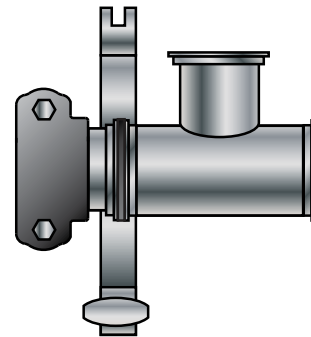
A variety of products come with integrated flange fitting options. These flanged fittings are mated together using a single EZ FIT clamp and gasket. These connections are watertight and allow easy connection during installation or fast reconnection for service and maintenance.



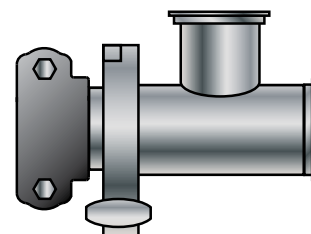
Step 1: Flanged components like fittings and flexible connectors can be connected using a single EZ FIT clamp and gasket.



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.



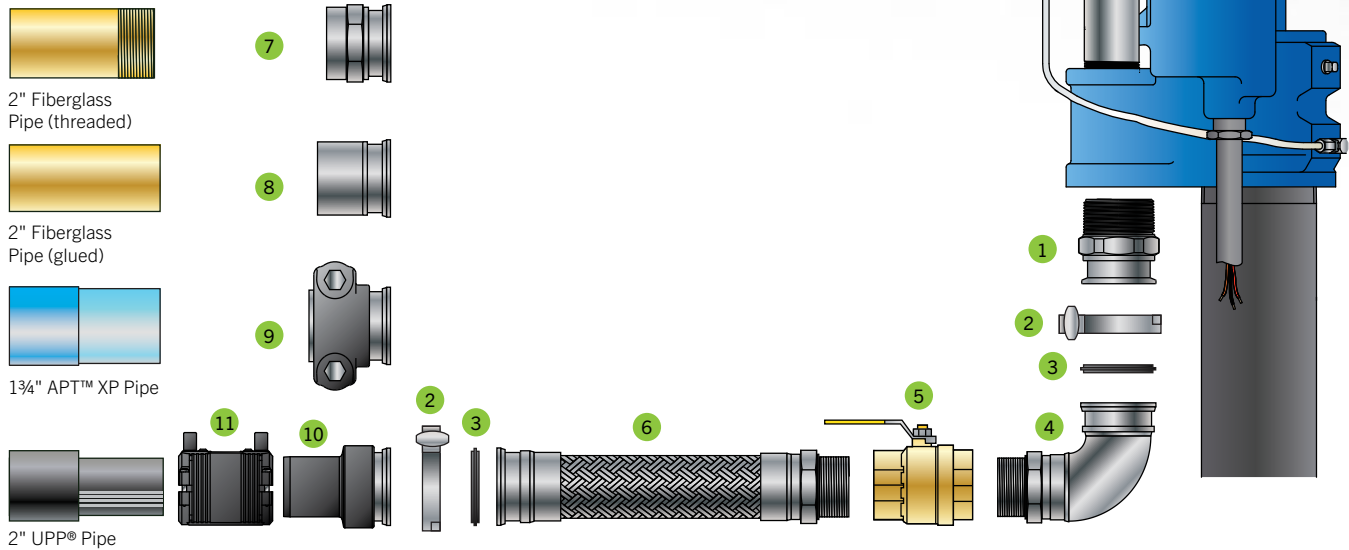
Step 3: Close the single-pin EZ FIT clamp around the flanged edges of both components and tighten the wing nut to seal them together.



SPECIFICATIONS

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.



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	FF20XYHMXEZ*	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 1 3/4" APT™ XP Pipe
10	90-063 QL-U	Quick release termination fitting for 2" UPP® pipe
11	02-63-L-U	2" electrofusion welding coupler

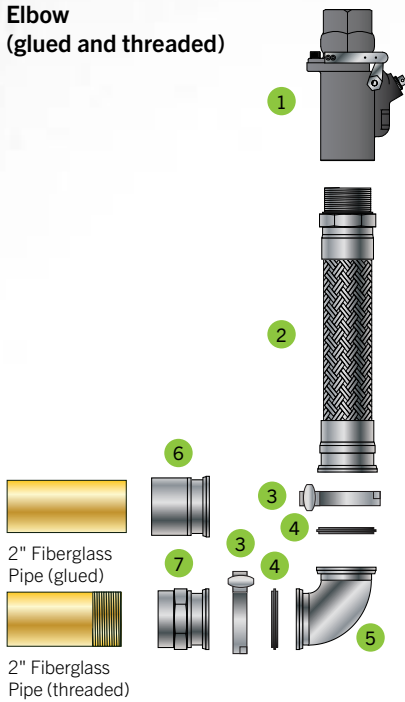
*For YY, enter flexible connector length in inches.

SPECIFICATIONS CONTINUED

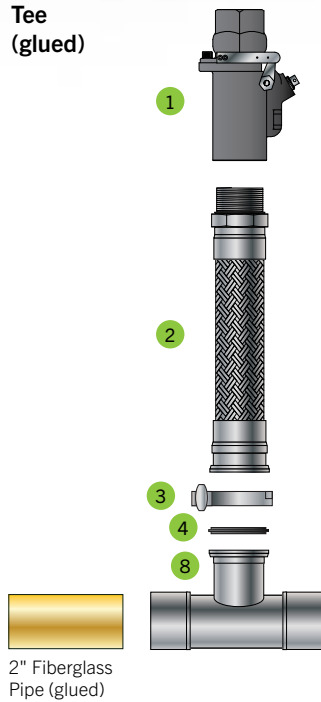
2" Fiberglass Pipe Shear Valve Risers

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.

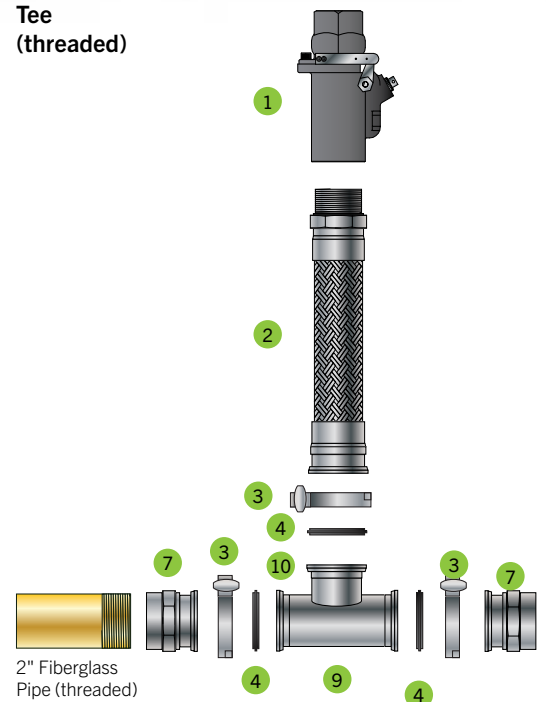
Elbow (glued and threaded)



Tee (glued)



Tee (threaded)



Components

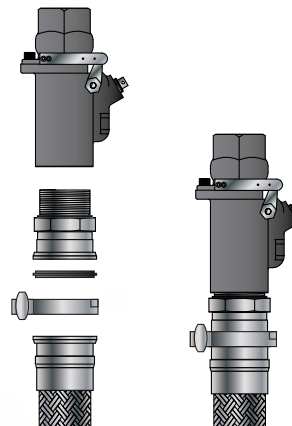
Item	Model	Description
1	662501902	1½" double poppet shear valve, female
2	FF15XYHHMZE*	1½" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	EZXEZ90	2" EZ FIT 90° elbow flange x flange
6	EZX20FGPL	Quick release glued 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: FF15XYEYMZE

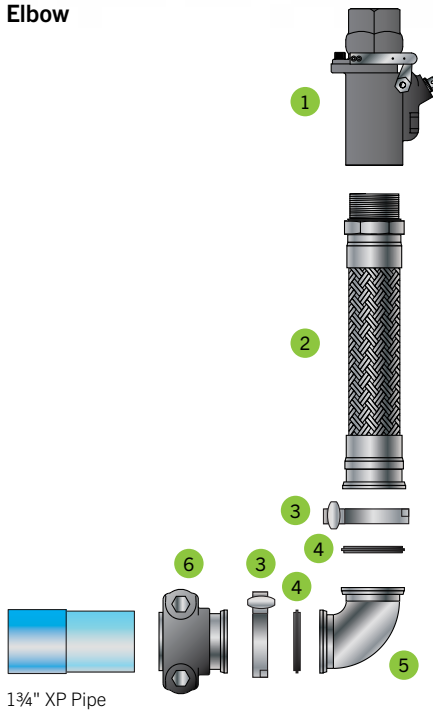


SPECIFICATIONS CONTINUED

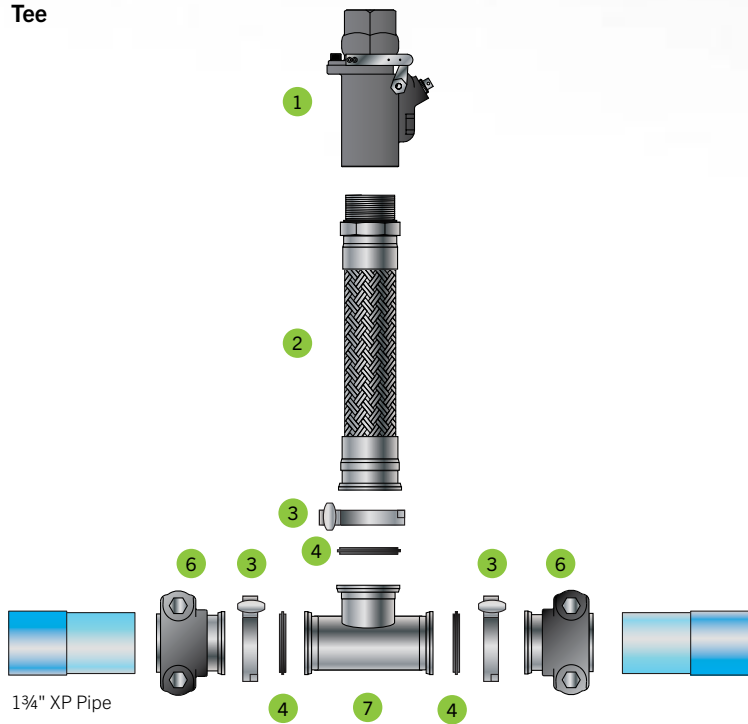
1 3/4" APT™ XP Pipe Shear Valve Risers

Use the FLEX-ING® flexible connector EZ FIT system to quickly and easily connect 1 3/4" APT™ XP pipe to the shear valve riser.

Elbow



Tee



Components

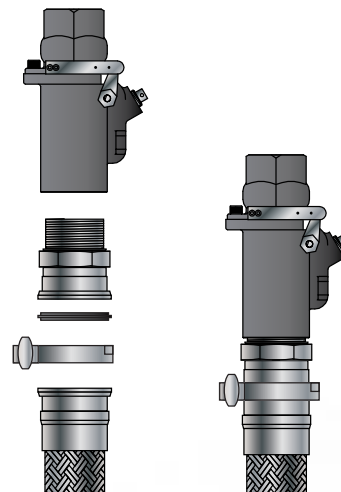
Item	Model	Description
1	662501902	1 1/2" double poppet shear valve, female
2	FF15XYHMXEZ*	1 1/2" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	EZXEZ90	2" EZ FIT 90° elbow flange x flange
6	QRS-XP-175-200	Quick release fitting for 1 3/4" 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: FF15XYEZXMXEZ

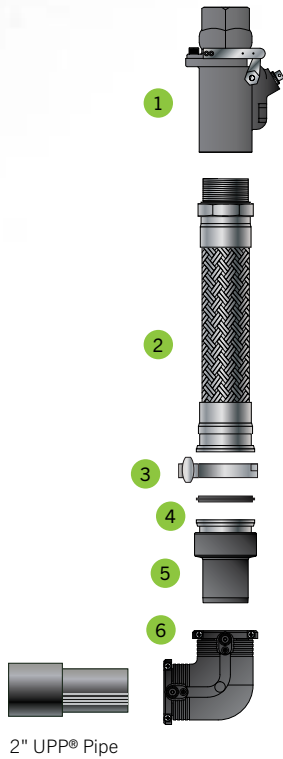


SPECIFICATIONS CONTINUED

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.

Elbow



Tee



Components

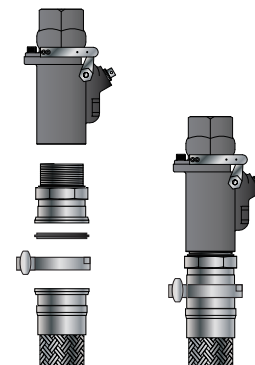
Item	Model	Description
1	662501902	1½" double poppet shear valve, female
2	FF15XYHHMXEZ*	1½" flexible connector, EZ FIT flange x hex male
3	EZCLAMP	EZ FIT clamp
4	407493002	2" EZ FIT gasket (one required per EZ FIT connection)
5	90-063 QL-U	Quick release termination fitting for 2" UPP® pipe
6	03-063-EIF-U	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: FF15XYEZXMEZ

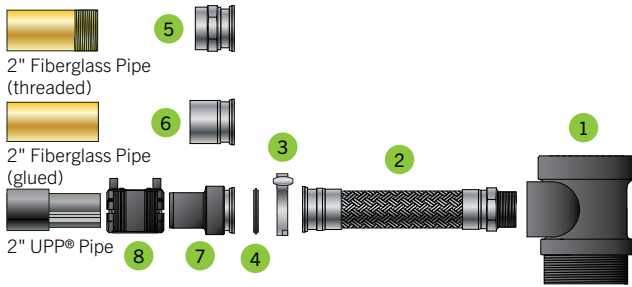


SPECIFICATIONS CONTINUED

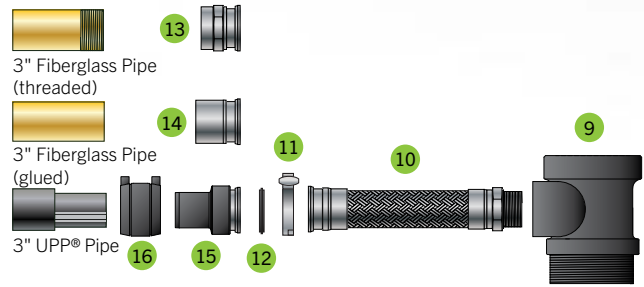
2" and 3" Vent Line EZ FIT Connections

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.

2" Vent Line



3" Vent Line



Components

Item	Model	Description
1	31040011	4" x 4" x 2" extractor vent valve
2	FF20XYHMXEZ*	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	FF30XYHMXEZ*	3" flexible connector, EZ FIT flange x hex male
11	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 1½" 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	3½" ID × 30" Yellow Jacket Boot
YJ32BOOTKIT-40	3½" ID × 40" Yellow Jacket Boot, adhesive, straps, and two mounting collars

Note: For 1½" and 2" dia flex connectors



Yellow Jacket Heat Shrink Sleeve

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

Note: For 1½" 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.

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

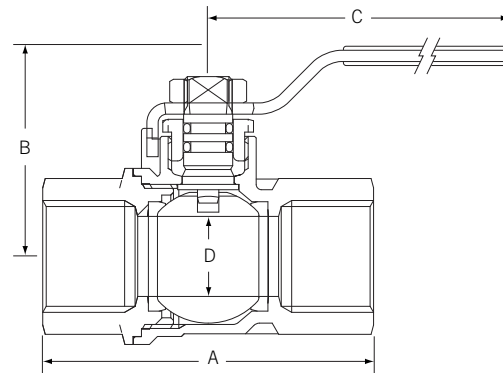


SPECIFICATIONS

- 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

Approvals

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



Model	A	B	C	D
BV150FPBRASS	4.16"	3.22"	6"	1.49"
BV200FPBRASS	5"	3.40"	6"	1.99"
BV300FPBRASS	7.08"	4.90"	8"	2.99"
BV150SS	4.16"	3.22"	6"	1.49"
BV200FPSS	5"	3.40"	6"	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.

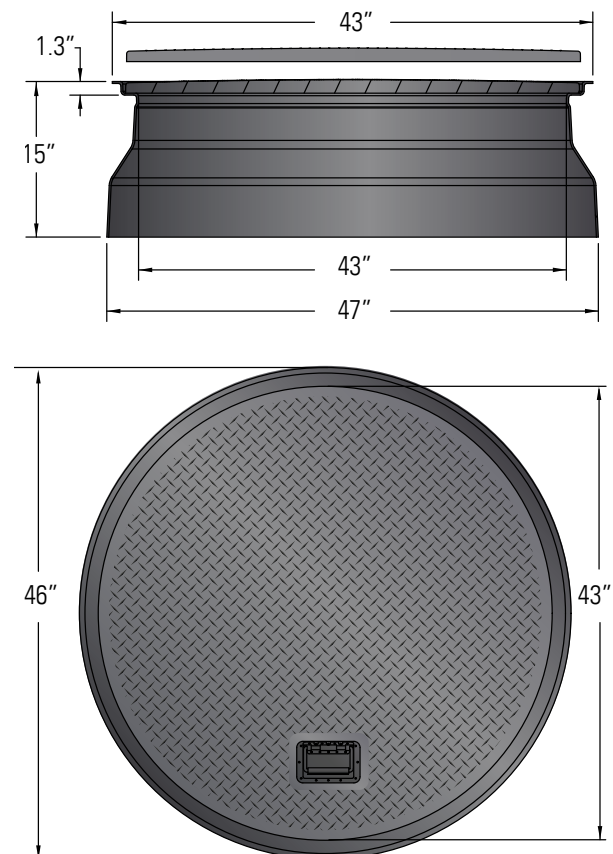
ORDERING INFORMATION

Fiberglass Access Covers

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

SPECIFICATIONS

Dimensions



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 1¼" 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 high-impact 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.

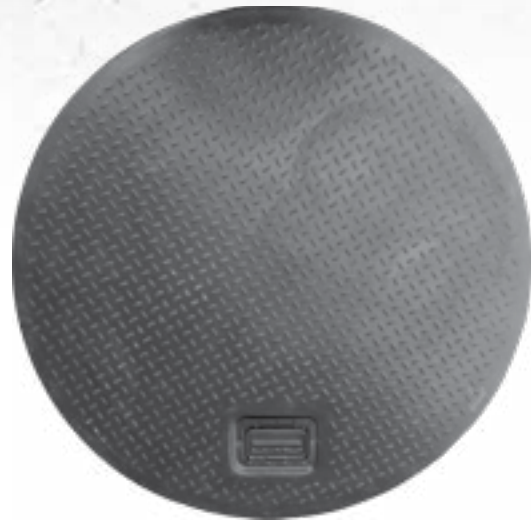
Dimensions

Model	Diameter	Lid Thickness	Frame ID	Skirt Height	Skirt ID
38"	39"	1"	39.25"	10.75"	37"
42"	44"	1"	44.25"	10.75"	42"

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.

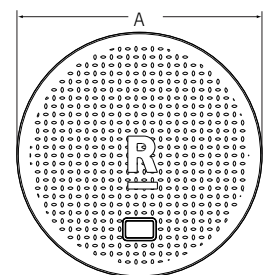


ORDERING INFORMATION

R Line Composite Access Replacement Lid Replaces OPW Conquistador™ Lids

Model	Description	A		B	
		In	cm	In	cm
14U-39R	39" R Line replacement lid	39.3 +/- .125	100.01	1	2.54
14U-44R	44" R Line replacement lid	44 +/- .125	112.07	1	2.54

R Line Replacement Lid

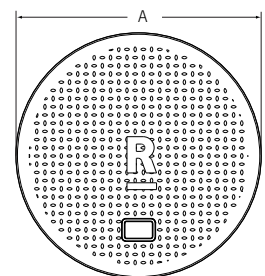


MoreCore Composite Access Replacement Lid Replaces Morrison Bros. Lids

Model	Description	A		B		C	
		In	cm	In	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	2.17	5.51	1.25	3.2



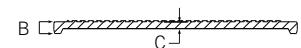
MoreCore Replacement Lid



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.

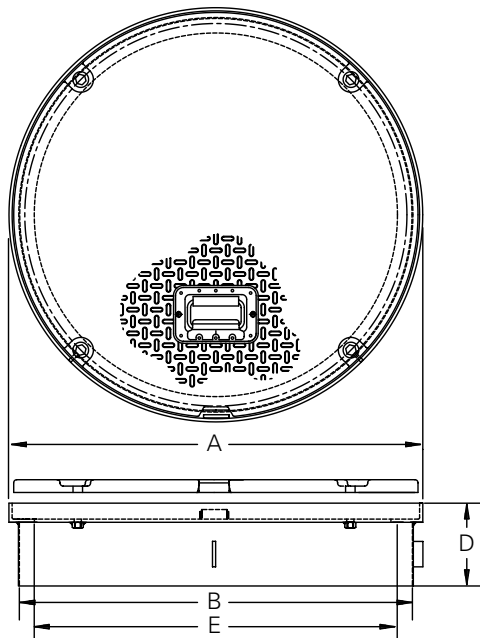
Model	Description
BOLT KIT	Replacement gasket and bolt kit for bolt-down style lids (includes gasket material and four bolts)
NONBOLT KIT	Replacement gasket kit for non bolt-down (lay in and cam lock) style lids (includes gasket material only, 12' roll, 3/8" wide x 1/8" deep)
CAMLOCK	Replacement gasket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

FIBER REINFORCED COMPOSITE ACCESS COVER

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.



SPECIFICATIONS



Model	A		B		D		E	
	In	cm	In	cm	In	cm	In	cm
12"	13.75	34.93	12	30.48	8.5	21.59	12	30.48
30"	32.75	83.19	31.12	79.38	12	30.48	28.75	73.03
36"	40.25	102.24	38.62	98.09	12	30.48	36.25	92.08
42"	45	114.30	43.38	110.19	12	30.48	41	104.14

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

36" Round Access Way with FRC Covers

Model	Cover OD	Description
78143312GRY	39.5"	Gray, bolted cover with 12" skirt
78143313GRY	39.5"	Gray with 12" skirt
78148512GRY	39.5"	Gray, slide action cover with 12" skirt

30" Round Access Way with FRC Covers

Model	Cover OD	Description
78143012GRY	32"	Gray, bolted cover with 12" skirt
78143013GRY	32"	Gray 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" x 52"	Gray, bolted cover with 42" x 8" top skirt and 52" x 14" bottom skirt
78144313GRY	44.25"	Gray with 12" skirt
78148612GRY	44.25"	Gray, slide action cover with 12" skirt

ORDERING INFORMATION CONTINUED

12" Round Covers

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

30" Round Covers

Model	Cover OD	Description
78145906	32"	Gray, bolted cover
78149006	32"	Gray

36" Round Covers

Model	Cover OD	Description
78145606	39.5"	Gray, bolted cover
78144806	39.5"	Gray
78148206	39.5"	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	39.5"	Gray
78045606	39.5"	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	39.5"	Bolted cover with 12" skirt
780492NB	39.5"	12" skirt
780492SA	39.5"	Slide cover
780492SB	39.5"	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.
- 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" (900 mm) Composite Access Cover Specifications

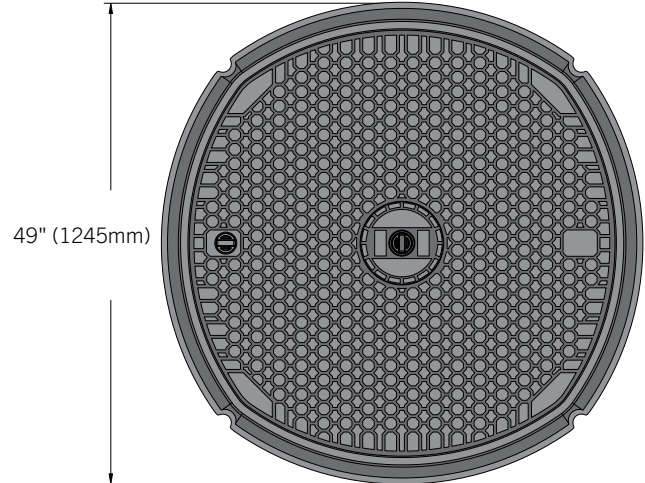
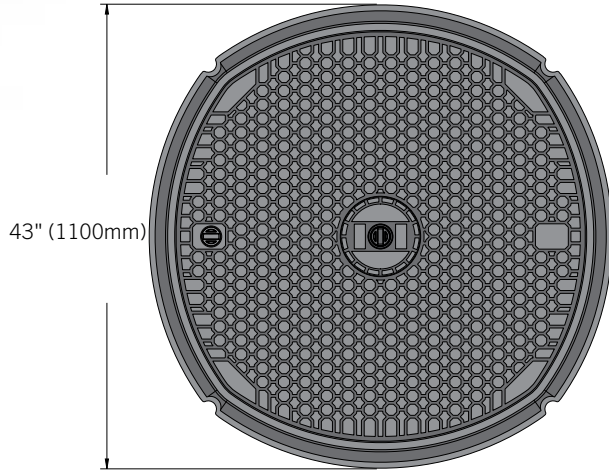
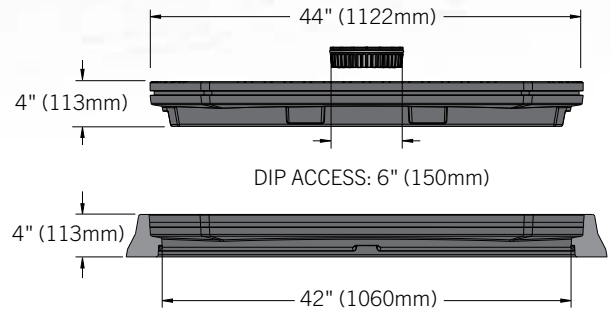
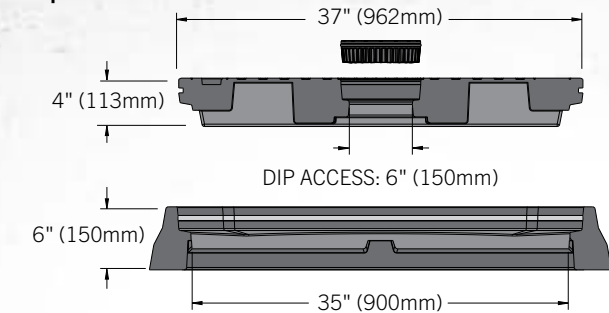
- Load rating: EN124 Class C250 & D400
- Clear opening: 35 $\frac{7}{16}$ " (900mm) diameter
- Cover external dimension: 37 $\frac{7}{8}$ " (962mm) diameter
- Frame external dimension: 43 $\frac{5}{16}$ " (1,100mm) diameter
- Cover weight PCR090: 75lbs (34kg),
- Cover weight PDR090: 101lbs (46kg)
- Frame weight: 33 lbs (15kg)
- Tread: Embedded aggregate – uni-directional, complies with EN124
- Material: Advanced fiberglass composite.

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

- Load rating: EN124 Class C250 and D400
- Clear opening: 41 $\frac{3}{4}$ " (1,060mm) diameter
- Cover external dimension: 44 $\frac{3}{16}$ " (1,122mm) diameter
- Frame external dimension: 49 $\frac{1}{16}$ " (1,245mm) diameter
- Cover weight PCR106: 93lbs (42kg)
- Cover weight PDR106: 109lbs (49kg)
- Frame weight: 29 lbs (13kg)
- Tread: Embedded aggregate – uni-directional, complies with EN124
- Material: Advanced fiberglass composite.

SPECIFICATIONS CONTINUED

Components



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
PDR106	42" (1,060mm) composite access cover, D400 rating
PCR106-DIP	42" (1,060mm) composite access cover with integrated dip inspection port, C250 rating
PDR106-DIP	42" (1,060mm) composite access cover with integrated dip inspection port, D400 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

COMPOSITE ACCESS COVERS

UPP® Composite Access Covers feature a watertight design that is lighter than steel and designed 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

- 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.
- Cover secured using 8mm hex key.
- 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).

ORDER INFORMATION

Model	Description
FC090	35" (900mm) Composite Access Cover, C250 rating
FC090-DIP	35" (900mm) Composite Access Cover with integrated dip inspection port, C250 rating
FD090	35" (900mm) Composite Access Cover, D400 rating
FD090-DIP	35" (900mm) Composite Access Cover with integrated dip inspection port, D400 rating
FX090-SK	35" (900mm) Fiberglass Skirt, for use with OCH tank cambers
FX-LIFT	Lifting Handle
FX-SLBRK	Access Cover Seal Breaker Foot Tool
FX-LT	Access Cover Lifting Trolley for assisted lifting

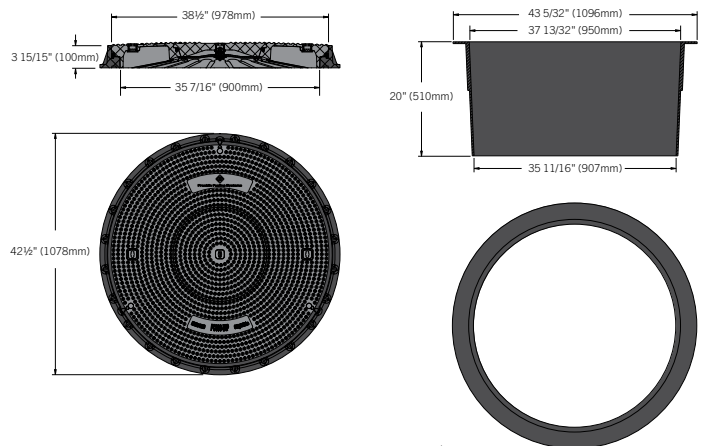


SPECIFICATIONS

35" (900mm) Composite Access Cover Specifications

- Load rating: EN124 Class C250 & D400
- Cover weight FC090: 110lbs (50kg),
- Cover weight FC090-DIP: 143lbs (65kg)
- Cover weight FD090: 141lbs (64 kg)
- Cover weight FD090-DIP: 148lbs (67 kg)
- Tread: Embedded aggregate – uni-directional, complies with EN124
- Material: Fiberglass composite.

35" (900mm) Composite Access Cover Dimensions



CAST IRON COVERS

Available in 7½", 12", and 18" diameters, EBW® cast iron covers feature a durable cast iron cover and skirt built to withstand heavy traffic loads.



HIGHLIGHTS

Cast Iron Cover and Rings

EBW® 7½" 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)

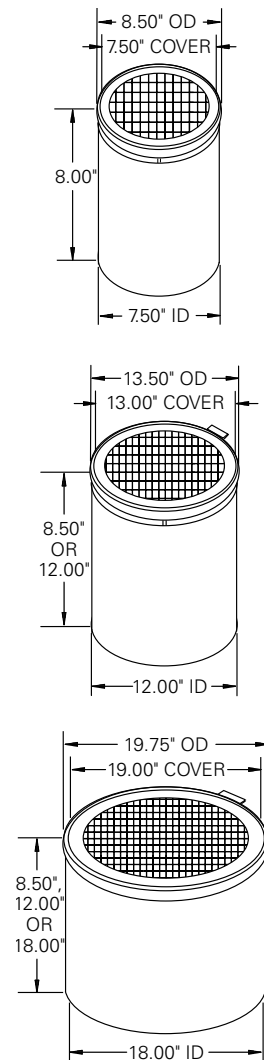
All EBW® spill containers and manways exceed the D.O.T. H20 requirement.

ORDERING INFORMATION

Model	Manway Size		Cover	Skirt Depth		Weight	
	In	mm		In	mm	Lbs	Kg
78120808	7.5	191	Cast iron	8	203	22	10
78121212BLK	12	305	FRC	12	305	29	13
78121212CI	12	305	Cast iron	12	305	36	16
78121212CI-H	12	305	Cast iron with handle	12	305	36	16
78121212ORG	12	305	FRC	12	305	29	13
78121224CI	12	305	Cast iron	24	610	70	32
78141808BLK	18	457	FRC	8.5	216	30	14
78141812BLK	18	457	FRC	12	305	33	15
78141818BLK	18	457	FRC	18	457	39	18
78147865	18	457	FRC bolted	8.5	216	30	14

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

Model with drain	Manway Size		Cover	Weight	
	In	mm		Lbs	Kg
78140201	7.5	191	Cast iron	6	3
78140001	12	305	Cast iron	17	8
78130201	12	305	FRC black	10	5
78130207	12	305	FRC orange	10	5
78140701	12	305	Cast iron with handle	18	8.10
78130401	18	457	FRC black	10	5
78130601	18	457	Steel with finger hole	33	15
78133401	18	457	FRC black, bolt-down, cover only	10	5



STEEL MANWAYS

Steel Manway Covers are available in round or square options, 18" and 24" diameters, and meet or exceed D.O.T. H20 load ratings.

HIGHLIGHTS

- Available in a bolted versions including bolts and gasket.
- Painted rustproof black.
- Square manway is manufactured using all welded construction with matched corners to ensure proper fit with covers.



SERVICE STATION
HARDWARE

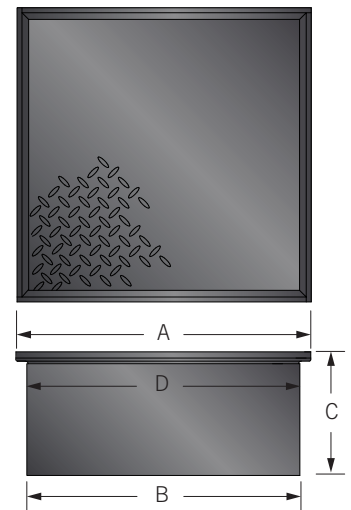
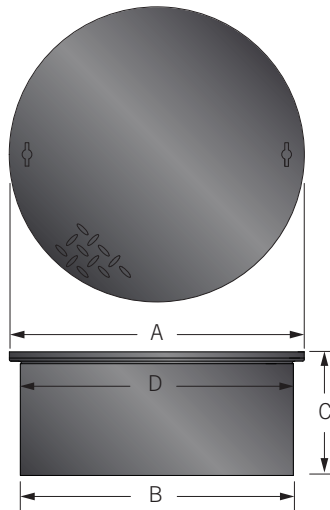
SPECIFICATIONS

Round Steel Manway Dimensions

Model	A	B	C	D
78141808STL	19"	18"	8"	18"
78141812STL	19"	18"	12"	18"
78141818STL	19"	18"	18"	18"
SR1809 WT	18"	17"	9"	16"
SR2409 HD	24"	23"	9"	22"

Square Steel Manway Dimensions

Model	A	B	C	D
SSQ2409	24"	23"	9"	22.5"



ORDERING INFORMATION

Round Steel Manways

Model	Description
78141808STL	Round 18" steel manway, 8" skirt, non-bolted
78141812STL	Round 18" steel manway, 12" skirt, non-bolted
78141818STL	Round 18" steel manway, 18" skirt, non-bolted
SR1809 WT	Round 18" steel manway, 9" skirt, bolted
SR2409 HD	Round 24" steel manway, 9" skirt, non-bolted

Square Steel Manways

Model	Description
SSQ2409	Square 24" x 24" steel manway, 9" skirt, bolted

Steel Manway Replacement Parts

Model	Description
1117632	Steel manway replacement bolt, qty 1
602017007	Steel manway replacement bolt washer, qty 1
SRCORD12	Steel manway replacement gasket, 12' roll

STEEL KNOCK DOWN MANWAYS

EBW® Steel Knock Down Manways feature a 3/8" diamond back steel plate cover with a galvanized steel skirt. Available in 16" x 16" and 24" x 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

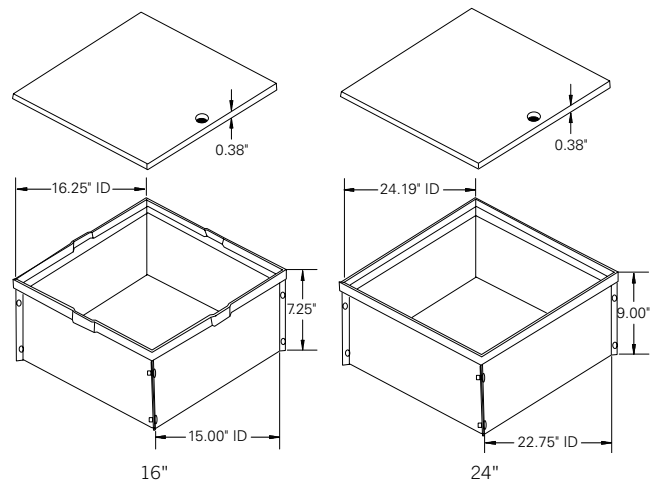
Shipped in individual boxes with knock down skirts, making handling and storage easy. Skirts are easily assembled using the provided hardware.

ORDERING INFORMATION

Square Manway Replacement Covers

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

Model	Dimensions		Skirt Size		Weight	
	In	cm	In	cm	Lbs	Kg
98710001	16 x 16	40.60 x 40.60	7.5	19.05	38.5	17.5
98720001	24 x 24	60.96 x 60.96	9	22.86	82	37



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" manway 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

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.

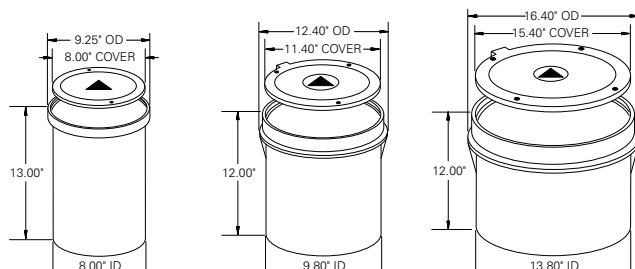
MONITORING WELL MANWAYS

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
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

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

ORDERING INFORMATION

Model	Description
77210601	2" monitoring well cap plug (51 mm)
77210201	4" monitoring 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.



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.

ORDERING INFORMATION

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

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

ORDERING INFORMATION

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

PROBE ACCESS MANHOLE

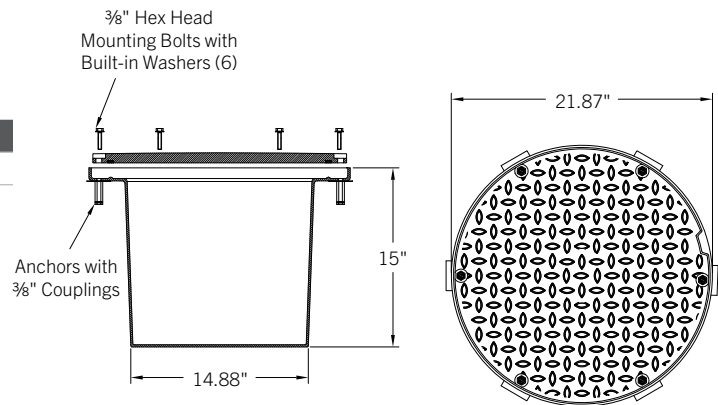
FLEX-ING™ probe access manholes offer an ideal solution for housing fuel management systems electronics and providing tank access with isolation from backfill.

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



SERVICE STATION
HARDWARE

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.

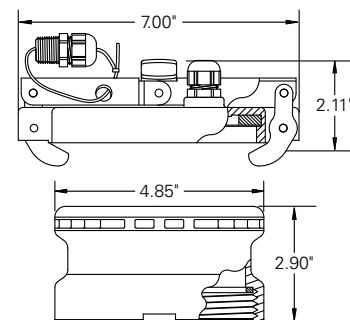
The 90037 adapter kit includes a 4" nylon cap with 1/2" and 3/8" cable bushing and a 4" composite adapter.

HIGHLIGHTS

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

ORDERING INFORMATION

Model	Bushing		Weight	
	In	mm	Lbs	Kg
90037-E*	0.5 and 0.38	12.70 and 9.5	1.92	0.87
Model	Description			
95021501*	Replacement Nitrile gasket for cap			



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

DEFENDER SERIES® 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.



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.

SPECIFICATIONS

- Pressure setting: 2.5" to 6.0" WC
- Vacuum setting: -6.0" to -10.0" WC
- Pressure leak rate: $\leq .05$ CFH at +2" WC
- Vacuum leak rate: $\leq .21$ 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

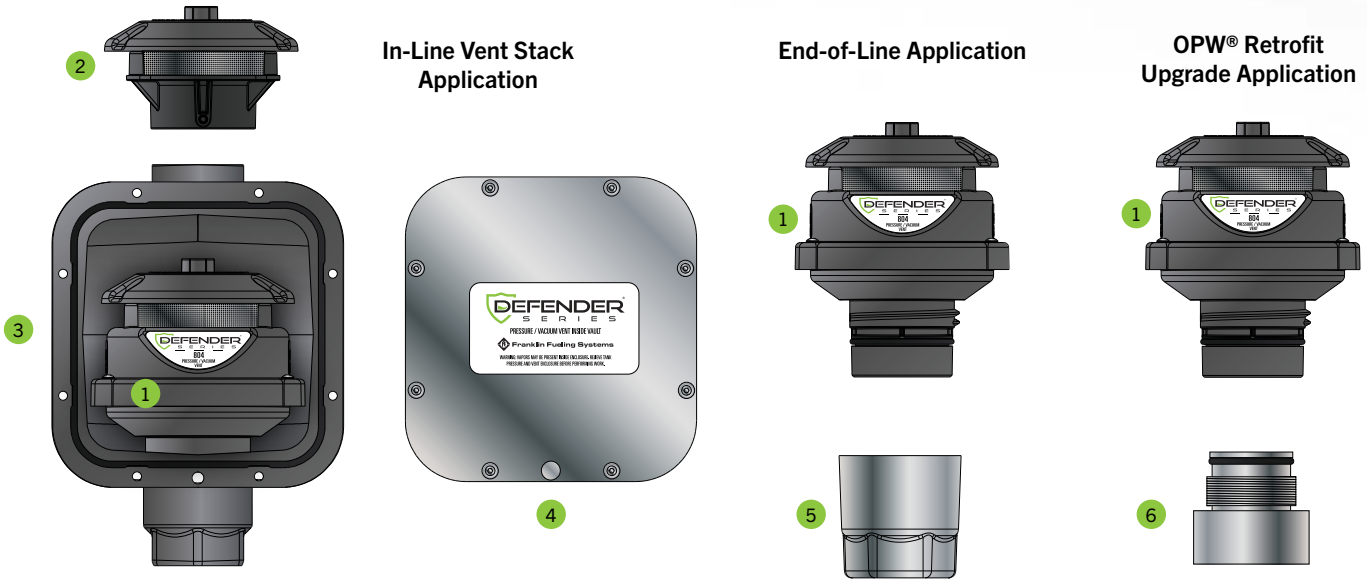
Approvals/Certifications

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

SPECIFICATIONS CONTINUED

Components

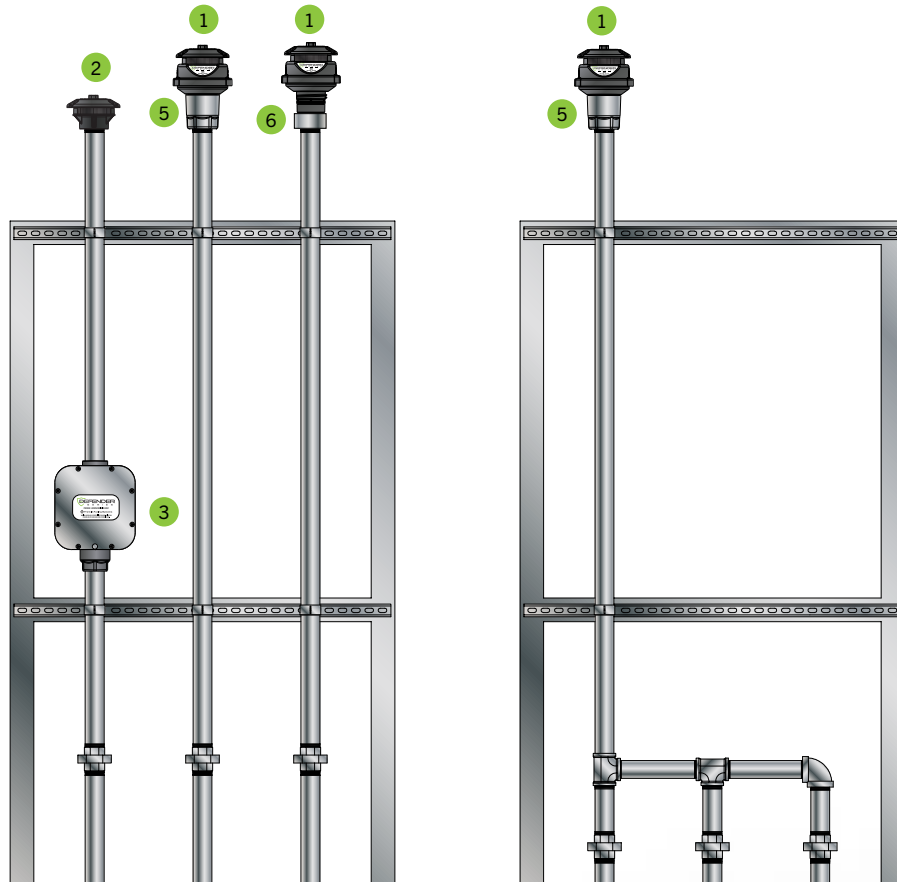
- 1 P/V vent
- 2 Vent cap
- 3 In-line vault
- 4 In-line vault faceplate
- 5 Defender Series® vent stack adapter
- 6 OPW® vent stack adapter (not available for purchase)



SERVICE STATION
HARDWARE

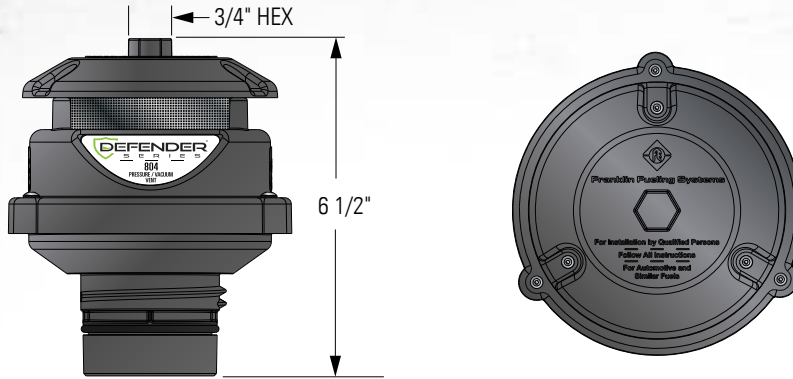
Installation Options

Install in-line at grade with the in-line vault and vent cap or end-of-line with the Defender Series® vent stack adapter. The P/V vent is also compatible for retrofit onto existing OPW® vent stack adapters. All installation methods are compatible with manifolded vent lines as well.

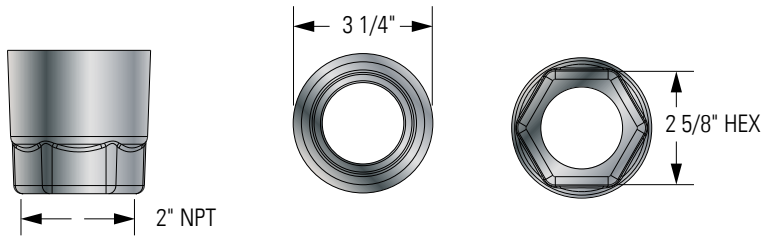


SPECIFICATIONS CONTINUED

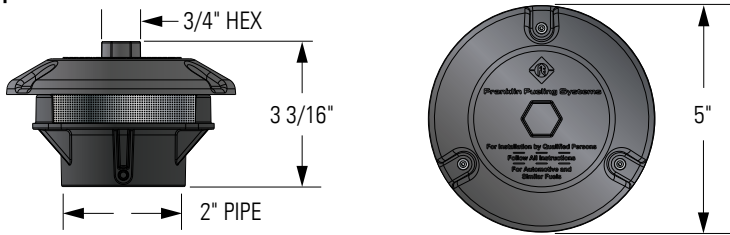
Pressure/Vacuum Vent



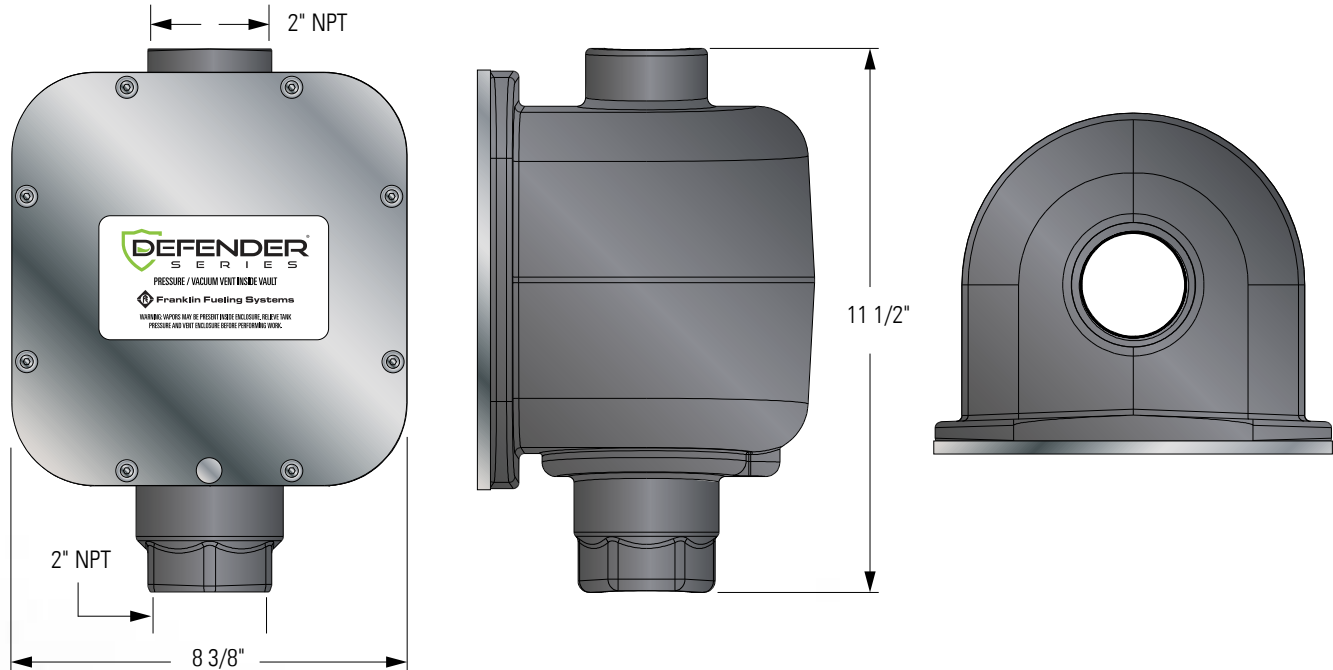
Vent Stack Adapter



Vent Cap



In-Line Vault



ORDERING INFORMATION

In-Line Tank Venting



Model	Description
DPW	(1) Defender 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

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.



HIGHLIGHTS

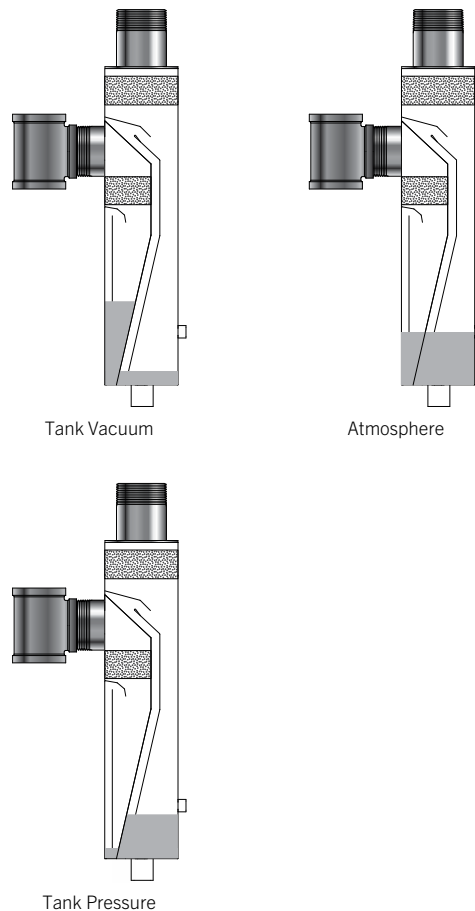
- Installed, serviced, and tested from ground level, eliminating the need for ladder or costly boom truck.
- Liquid-based pressure and vacuum venting system with no leak rate.
- Stainless steel construction.
- Biofuels compatible.
- Stage I EVR approved to VR-101, 102, 104, and 105 for use with gas and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

ORDERING INFORMATION

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

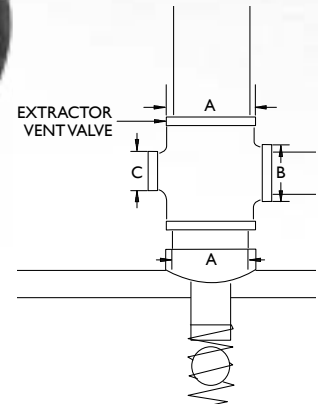
Note: May require four to eight week lead time. Consult factory for availability.

SPECIFICATIONS



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.

ORDERING INFORMATION

Model	Description 4" x A x B	A		B		C		Weight	
		In	mm	In	mm	In	mm	Lbs	Kg
31040011	4" x 2" extractor valve w/o adaptor-NPT	4	102	2	51	--	--	13	5.90
31140011	4" x 3" extractor valve w/o adaptor-NPT	4	102	3	76	--	--	13	5.90
33040011	4" x 3" x 2" extractor valve w/o adaptor-NPT	4	102	3	76	2	51	18	8.16
33140011	4" x 3" x 3" extractor valve w/o adaptor-NPT	4	102	3	76	3	76	15	6.80
34040011	4" x 2" x 2" extractor valve w/o adaptor-NPT	4	102	2	51	2	51	17	7.71
34040041	4" x 2" x 2" extractor valve w/o adaptor-BSPP	4	102	2	51	2	51	17	7.71
31040042	4" x 2" extractor valve w/o adaptor-BSPT	4	102	2	51	--	--	13	5.90
31140042	4" x 3" extractor valve w/o adaptor-BSPT	4	102	3	76	--	--	13	5.90
33040042	4" x 3" x 2" extractor valve w/o adaptor-BST	4	102	3	76	2	51	18	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	Description	Weight	
		Lbs	Kg
39120101	4" test plug	3.60	1.63

Adapters, for use with EBW® Ball Floats

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

4" Pipe Cap

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

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	6.35



308 BALL FLOAT VENT VALVES

The EBW® ball float vent valves are used in conjunction with extractor vent valves in the Stage I vapour riser or tank vent line on underground storage tanks. The ball float vent valve will restrict vapour venting should a full tank condition occur and protects against product mixing and vapour locks due to vent pipe flooding. The bleed hole allows for delivery hose drainage after an overflow.

The valve includes a brass installation cage and will fit all EBW® extractor vent fittings. All ball floats are made of materials fully compatible with alcohol/gas blends and biofuels (E-85, Biodiesel, B-20).



HIGHLIGHTS

2" Ball Float Advantages

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

SPECIFICATIONS

WARNING: EBW® 308 Series float vents 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 vapour recovery drop tubes.

ORDER INFORMATION

2" Ball Floats

Model	Nipple Length		Bleed Hole		Thread
	In	mm	In.	mm	
308020003	3	76.2	0.06	1.524	NPT
308020205	5.12	130.04	0.06	1.524	NPT
308020107	7	177.8	0.06	1.524	NPT
308020112	12	304.8	0.06	1.524	NPT
308020116	16	406.4	0.06	1.524	NPT
308023003	3	76.2	0.06	1.524	BSPT
308023107	7	177.8	0.06	1.524	BSPT
308023112	12	304.8	0.06	1.524	BSPT
308023116	16	406.4	0.06	1.524	BSPT
308024115	15	381	0.06	1.524	BSPT
3080241117	17	431.8	0.06	1.524	BSPT
308024119*	19	482.6	0.06	1.524	BSPT

*Does not include installation cage.

Installation Cages

Model	Size		Thread
	In	mm	
30822802	2	50.8	NPT
30822803	3	76.2	NPT

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.

ORDERING INFORMATION

Foot Valves

Model	Description	A		B		Weight	
		In	mm	In	mm	Lbs	Kg
5010501	½" single	1.44	37	2.75	70	0.75	0.34
5110001	½" double	1.44	37	4	102	1.18	0.54
7510501	¾" single	1.69	43	2.75	70	0.94	0.43
7610001	¾" double	1.69	43	4	102	1.31	0.60
10010501	1" single	2	51	3	76	1.12	0.51
10110001	1" double	2	51	4.25	108	1.56	0.71
15020201	1½" single	2.75	70	4.25	108	3.12	1.42
15120001	1½" double	2.75	70	5.38	137	4.38	1.99
20020001	2" single	3.44	87	4.88	124	4.38	1.99
20120001	2" double	3.44	87	6.75	172	6.44	2.92

Foot Valve Extractors

Model	Size		A		B	
	In	mm	In	mm	In	mm
32030201	4 × 4 × 1.5	102 × 102 × 38	5.5	139.7	7.25	184.15
32030202	4 × 4 × 2	102 × 102 × 51	5.5	139.7	7.25	184.15

Thread Size

Model	Inlet Female Thread		Inlet Male Thread		Outlet Thread		Top Thread	
	In	mm	In	mm	In	mm	In	mm
32030201	1.5	38	4	102	1.5	38	4	102
32030202	1.5	38	4	102	2	51	4	102

Replacement Parts

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

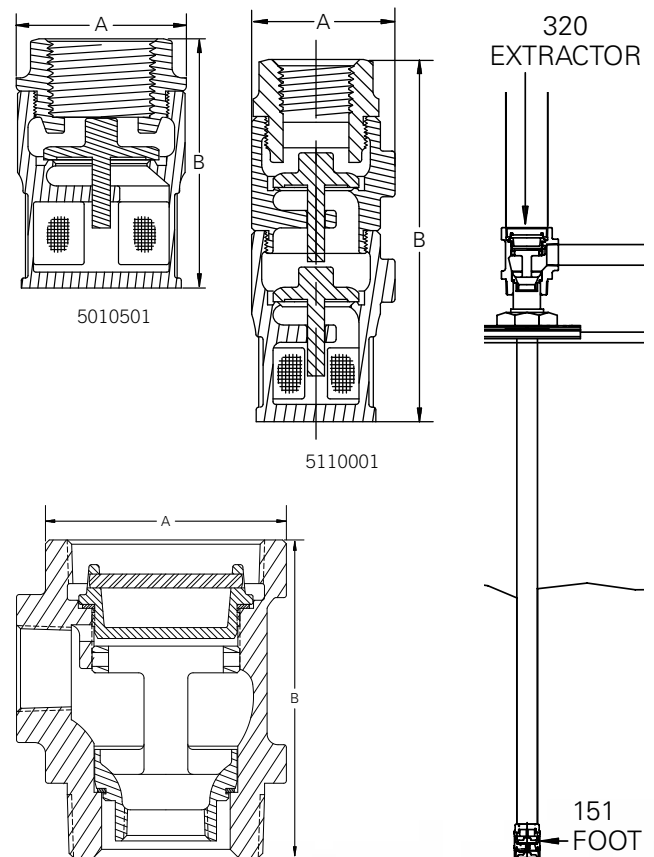
SPECIFICATIONS

Foot Valves

- Body: brass.
- Poppet: brass.
- Screen: 24 mesh brass.
- ½" foot valve has a stainless steel screen

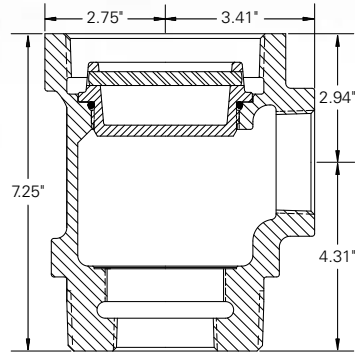
Foot Valve Extractors

- 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.

SPECIFICATIONS

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

ORDERING INFORMATION

Model	Size		Description	Weight	
	In	M		Lbs	Kg
32530001	4 × 4 × 2	102 × 102 × 51	PLIV	17	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.

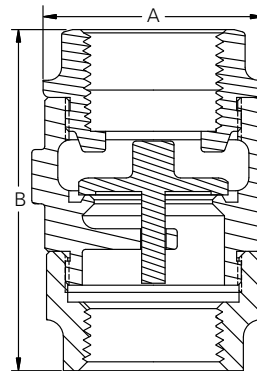


HIGHLIGHTS

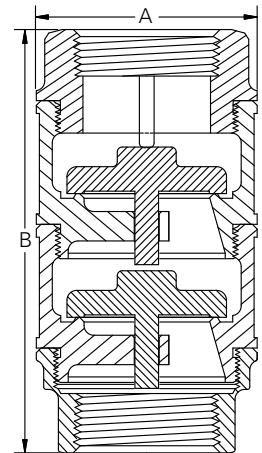
- Metal-to-metal poppet seating.
- All valves are pressure tested to ensure accuracy.

SPECIFICATIONS

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



Single Poppet



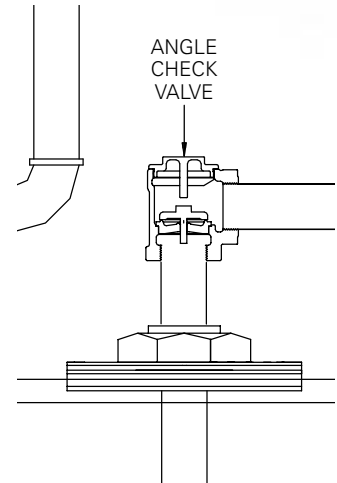
Double Poppet

ORDERING INFORMATION

Model	Size		Poppet Type	A		B		Weight	
	In	mm		In	mm	In	mm	Lbs	Kg
51520001	1.5	38.10	Single	2.81	71.30	3.83	97.20	3.13	1.42
51620001	1.5	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.



HIGHLIGHTS

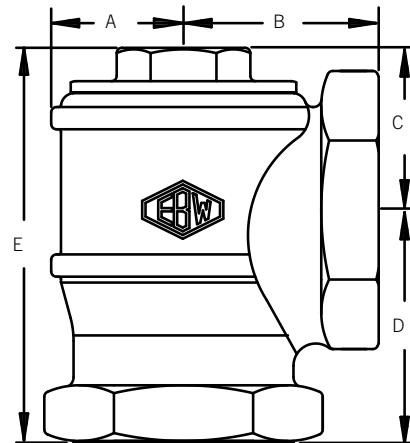
- Body: zinc-plated cast iron.
- Seat: brass.
- Poppet: brass.
- NPT: brass.
- Spring: stainless steel.

SPECIFICATIONS

Model	A		B		C		D		E	
	In	mm	In	mm	In	mm	In	mm	In	mm
61530101	1.5	38.10	2.19	55.60	1.82	46.20	2.62	66.5	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 loaded.

Model	Size		Poppet Type	Weight	
	In	mm		Lbs	Kg
61530101	1.5	38.1	Single	3.80	1.70
61530201*	1.5	38.1	Single	3.90	1.80
63520101	2	51	Single	7.25	3.30



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

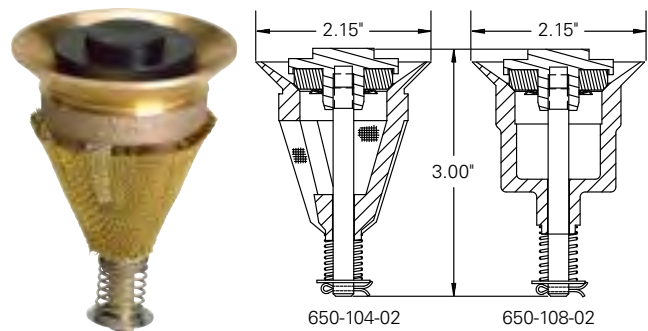
Model	Size		Pressure Relief	Thread	Weight	
	In	mm			Lbs	Kg
62020101*	1.5	38.1	No	NPT	1.31	0.59
62120001	1.5	38.1	No	NPT	1.31	0.59
62130001	1.5	38.1	Yes	NPT	1.61	0.73
62220001	2	51	No	NPT	1.11	0.5
62230001**	2	51	Yes	NPT	1.87	0.85
62130021	1.5	38.1	Yes	BSPT	1.61	0.73

* 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.



HIGHLIGHTS

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

SPECIFICATIONS

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

ORDERING INFORMATION

Model	Size		Screen	Weight	
	In	mm		Lbs	Kg
65010402	1.5	38.10	Yes	0.5	0.23
65010802	1.5	38.10	No	0.5	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®.



SERVICE STATION
HARDWARE

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

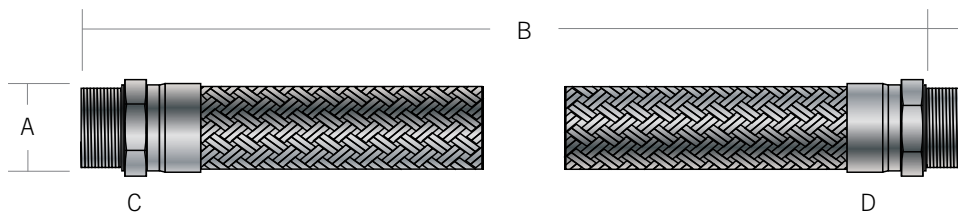
- All metal construction means one flexible connector for both above and below ground applications
- An 18-8 alloy outer wrap, 321 stainless Steel inner core provides a long service life
- Thick, schedule 80 Hex end fittings protect against deformation of the ends
- 100% pressure tested to assure quality
- 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.

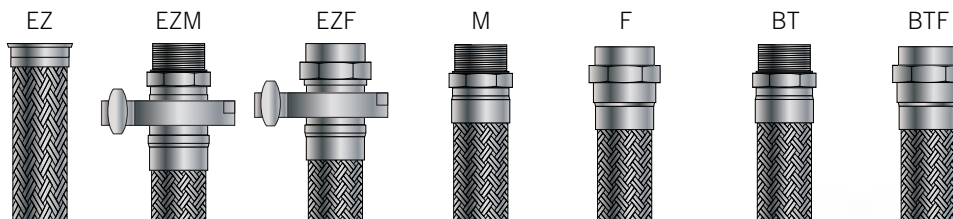
Ordering Options Diagram

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).



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 = ¾"

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, 1½" hose diameter, 18" overall length, with one 1½" 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 1½" fitting, 1½" 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	1½" 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	1½" 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 1½" 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 1½" NPT or BSPT inlet (bottom) and 1" NPT or BSPT outlet (top) options.

ORDERING INFORMATION

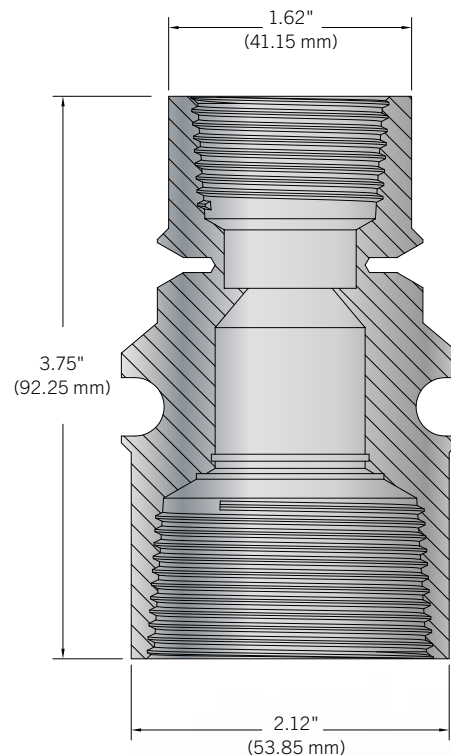
Model	Description
663100001	DEF shear valve, 1½" NPT inlet, 1" outlet
663100021	DEF shear valve, 1½" BSPT inlet, 1" outlet
66320000	Mounting bracket for DEF shear valve including U-bolt, nuts and bracket guides



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



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

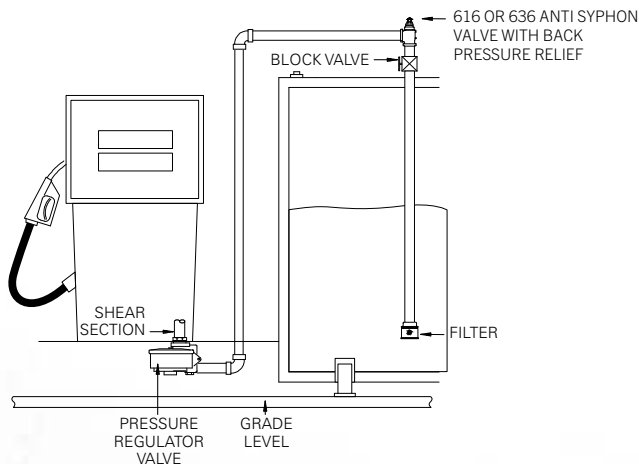
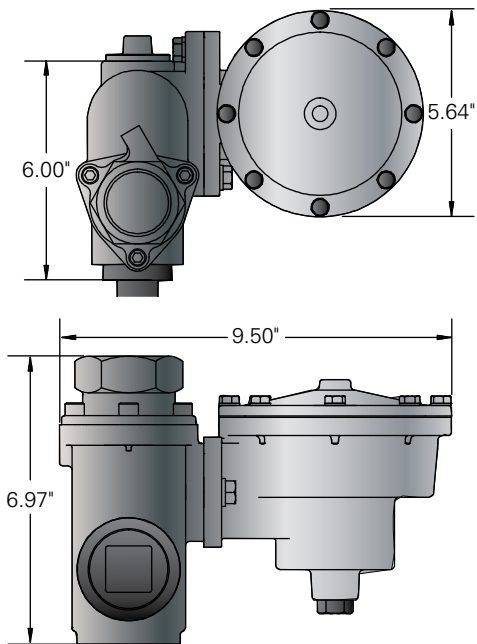
- Hydrostatic pressure adjusting mechanism with durable weather cap.
- Built in thermal expansion pressure relief valve.
- Shear section is standard, eliminating need for an additional shear valve.
- NFPA 30.
- API/RP 2000.

SPECIFICATIONS

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

ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
66430201	Male-NPT	19	8.62
66430202	Union	19.30	8.75
66430203	Female-NPT	19	8.62
66430206	Female-Poppeted	19	8.62
66430226	Female-BSPT	19	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.

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 reseal. 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.

ORDERING INFORMATION

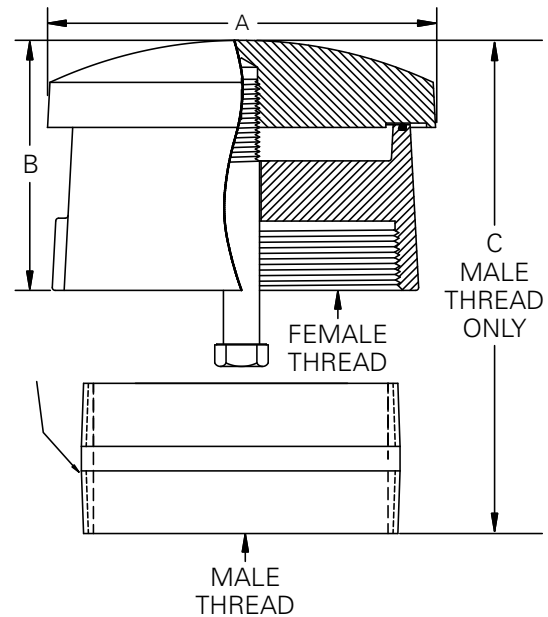
Model	A		B		Thread
	In	mm	In	mm	
80320001	6	154.80	4.5	115.14	4" NPT
80320501	8.06	204.73	5.19	131.95	6" NPT
80330801	10.5	268.17	5.5	141.94	8" NPT

Model	Size		Connection	Weight	
	In	mm		Lbs	Kg
80320001	4	102	Female	14	6.35
80320501	6	152	Female	30	13.60
80330801	8	203	Female	40.20	18.23

Vent Size		@ 2.5 PSI =SCFH
In	mm	
4	102	96,000 SCFH
6	152	233,000 SCFH
8	203	411,000 SCFH

SPECIFICATIONS

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



Note: Pipe nipple shown for male thread models only.

ANTI SYPHON VALVES

EBW™ 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.



HIGHLIGHTS

- Each valve has an adjusting mechanism accommodating various liquid head pressure settings.
- Adjusting mechanism is lockable after the preferred setting is made.
- Valves are set to maximum head pressure when shipped from the factory.
- Includes built-in pressure relief valve to eliminate thermal expansion of fluid in the lines.
- Hydrostatic pressure adjusting mechanism with durable weather cap.
- ¾" and 1" models are ideal for fuel oil and generator applications.
- Install in vertical position only.
- Can be used in pressure systems.

SPECIFICATIONS

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

Approvals/Certifications

- ULc listed.
- NFPA 30 fire rating.

ORDERING INFORMATION

Model	Description
60530001	¾" NPT anti syphon valve, 0' to 12' head pressure
60630001	1" NPT anti syphon valve, 0' to 12' head pressure
61630003	1½"NPT anti syphon valve, 0' to 5' head pressure
61630001	1½" NPT anti syphon valve, 5' to 12' head pressure
61630002	1½" NPT 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

NOTE: ALCOHOL, GAS, BIOFUEL COMPATIBLE (E-85, GASOLINE AND BIODIESEL) MODELS COME WITH E-COATED BODY FOR FULL COMPATIBILITY.

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.

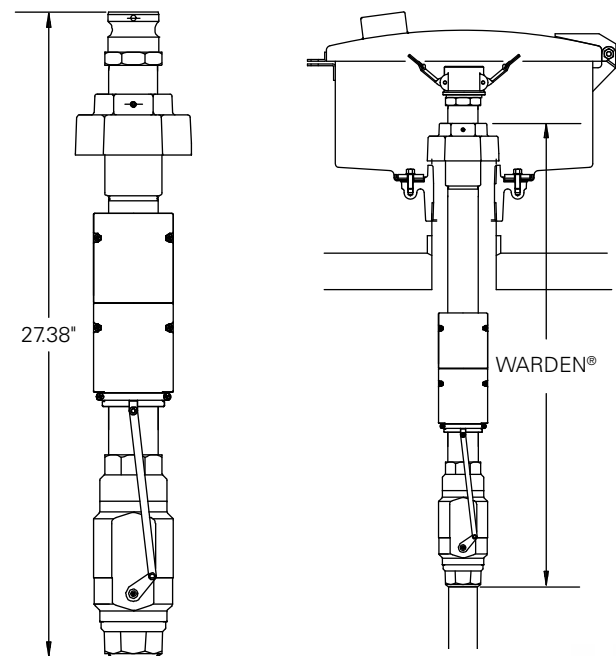
ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
70942001	Warden®, 4" overfill with inverted floats	12.5	5.67
77421220	2" dust cap	1.25	0.57



SPECIFICATIONS

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



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.

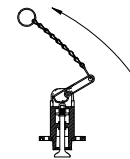
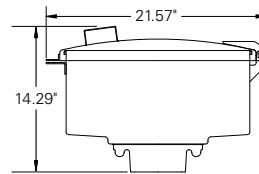
ORDERING INFORMATION

Model	Description	Weight	
		Lbs	Kg
70534101	Replacement drain valve	0.5	0.20
706500901	Standard, 7.5 gallon	40	18.14

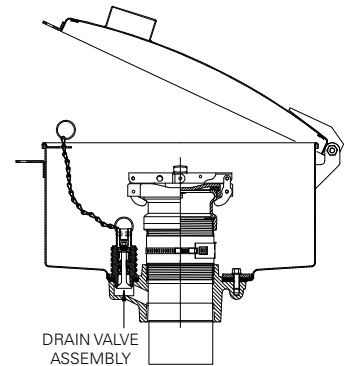


SPECIFICATIONS

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



DRAIN VALVE ASSEMBLY

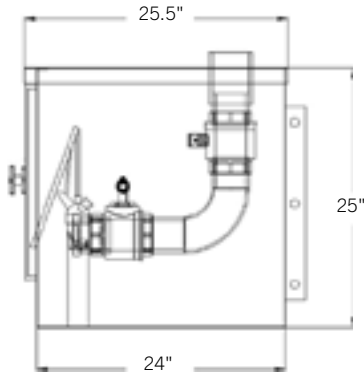


DRAIN VALVE ASSEMBLY

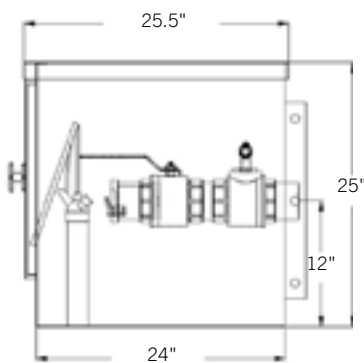
REMOTE FILL BOXES

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.

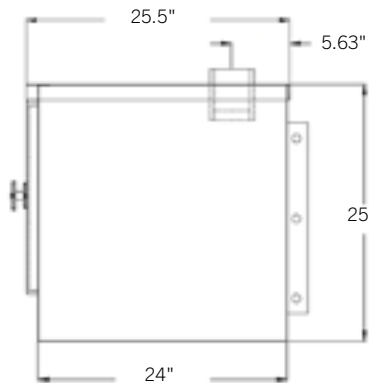
SPECIFICATIONS



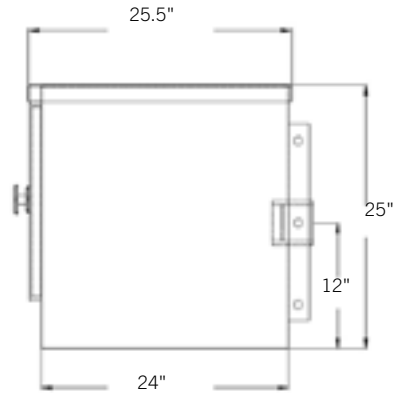
Top Inlet Pre-Plumbed



Rear Inlet Pre-Plumbed



Top Inlet Not Plumbed



Rear Inlet Not Plumbed

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.

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 plumbed), 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

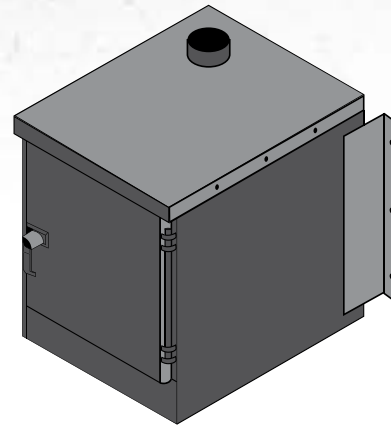
Note: Contact Franklin Fueling Systems for custom plumbing options.

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.

HIGHLIGHTS

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



ORDERING INFORMATION

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

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.

HIGHLIGHTS

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.

Model	Thread	Size		Weight	
		In	mm	Lbs	Kg
77010101	NPT	2	51	2.62	1.19
77010121	BSPT	2	51	2.62	1.19
Model	Description				
7702101	2" replacement gasket				

770

SPECIFICATIONS

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



751 Locking Fill Cap

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

Model	Description	Weight	
		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

751

SPECIFICATIONS

- Body: aluminum.
- Cap: aluminum.

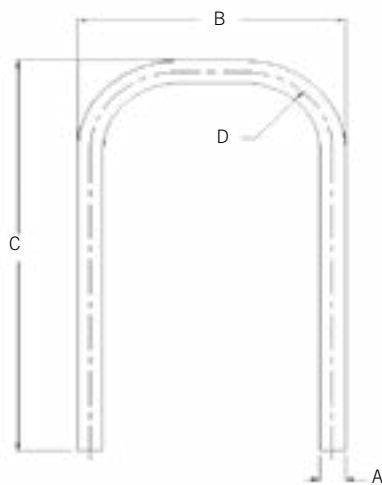


FLEX-ING[®] PIPE GUARDS AND BOLLARDS

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



ORDERING INFORMATION



U-Shaped Pipe Guards

Model	A	B	C	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	B
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"

*#4 finish stainless steel

SPILL CONTAINER, OVERFILL PREVENTION VALVE, AND MANWAY TOOLS & ACCESSORIES

ORDERING INFORMATION

Defender Series® Spill Container Tools



Model	Description
T-0074	Defender Series® spill container tool kit includes T-handle (T-7001), spill container tool (T-7106), and swivel adapter tool (T-7102)



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



Model	Description
T-7106	Defender Series® spill container tool, used to install and remove both below grade and grade level 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-7107	Defender Series® spill container double wall vacuum test tool



Model	Description
T-7100	Red non-swivel adapter tool, used to install and remove legacy non-swivel adapters



Model	Description
T-7103	Blue OPW swivel adapter tool, used to install and remove OPW swivel adapters



Model	Description
T-7104	Green swivel adapter torque testing tool, used to torque test any swivel adapter

ORDERING INFORMATION CONTINUED

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



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 CONTINUED

Manway Cover Tools



Model	Description
T-7200	Cast iron cover removal tool



Model	Description
PCR-LIFT	Lifting handle tool for composite access covers

Chain Wrench Tools



Model	Description
32110001	3/4" chain wrench, 60" length for removing and installing, 14 Lbs / 6.40 Kg
90110101	3/4" chain wrench, 26" length for removing and installing, 3 Lbs / 1.40 Kg

NEED HELP CHOOSING THE RIGHT EQUIPMENT FOR YOUR NEXT SITE?

FEATURING:

- Total System Solutions Site Map
- Tank Top Hardware
- APT® XP Pipework for Poly Dispenser Sumps
- UPP® Pipework for Poly Dispenser Sumps
- UPP® Pipework for Fiberglass Dispenser Sumps
- APT® & UPP® Sump Equipment
- FLEX-ING™ Flexible Connectors
- Turbine Pump Interface
- UPP® DEF System
- APT® DEF System
- CableTight™ for Poly Sumps
- CableTight™ for Fiberglass Sumps
- Vent Line Pipework
- Corrosion Control System™
- Generator System

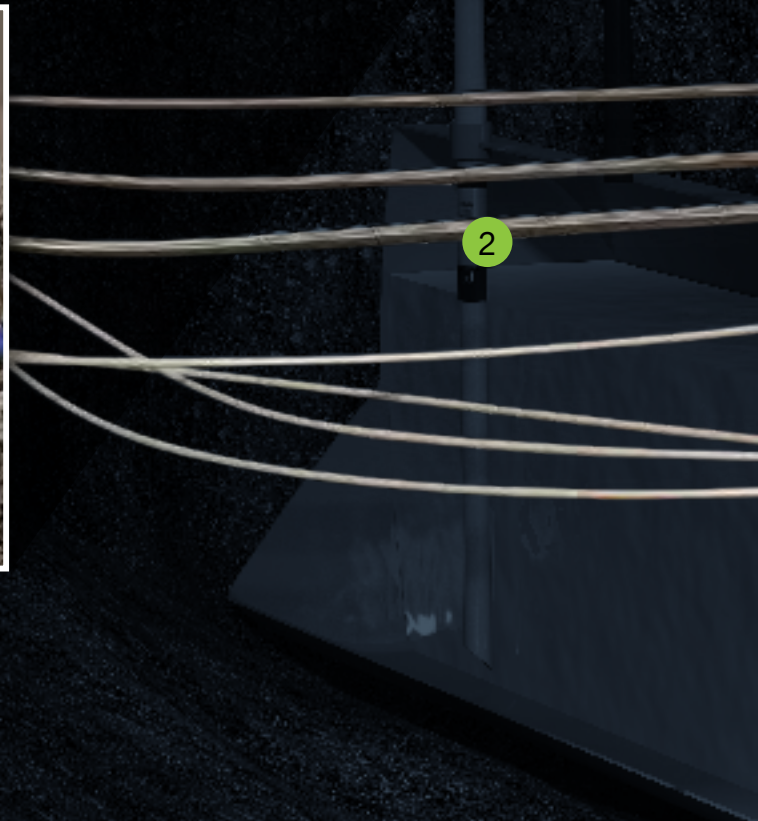
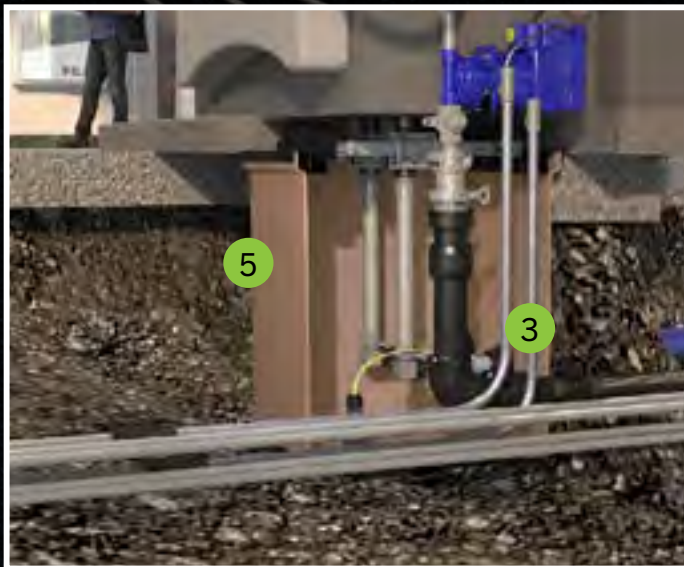


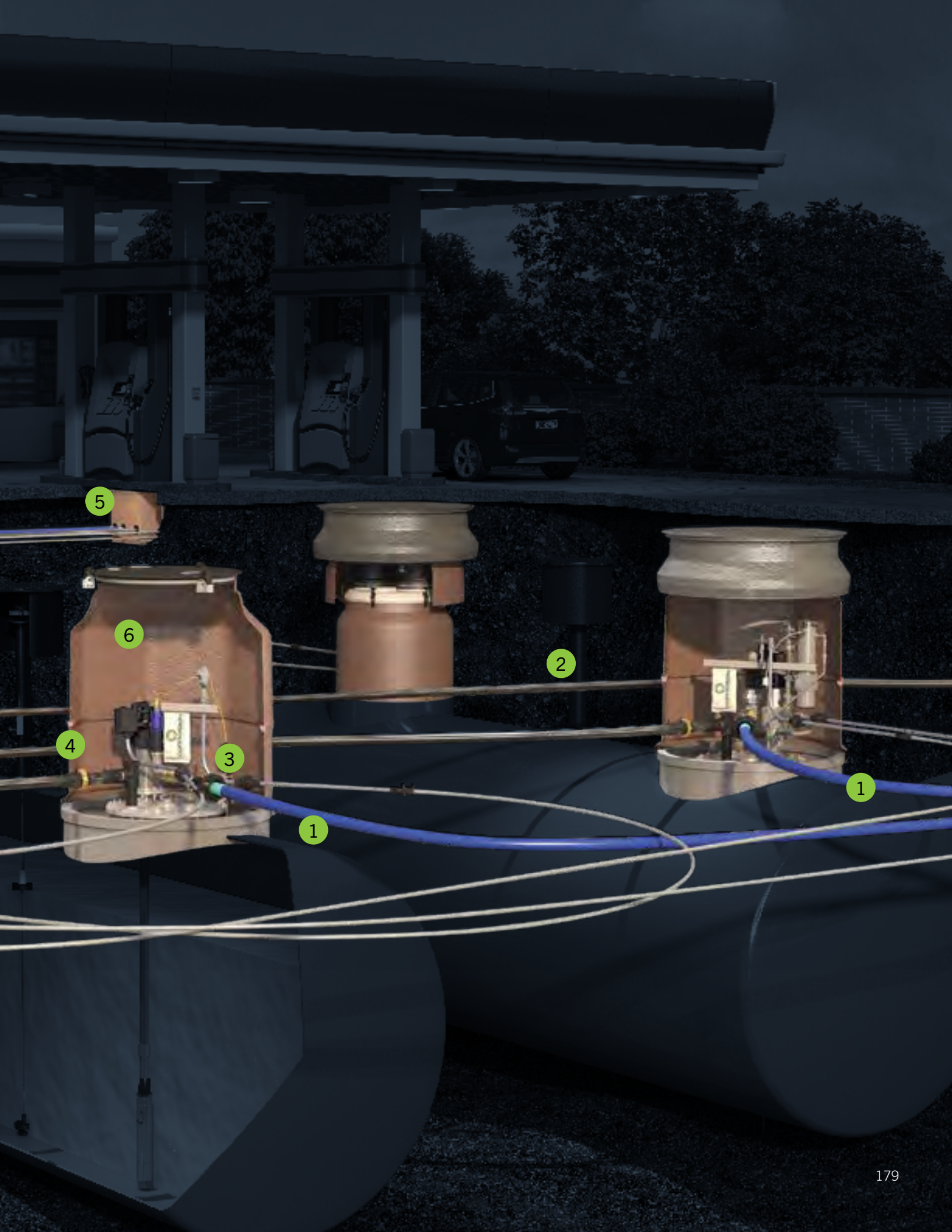
Whether you're new to the industry or just looking to brush up on the latest equipment, the Site Starter Ordering Guide provides detailed system diagrams with a complete bill of materials for easy ordering. Start your next site here.

To flip through this guide, visit franklinfueling.com/sitestarters

PIPING & CONTAINMENT

- 1 APT® XP Flexible Pipe
- 2 UPP® Semi-Rigid Electrofusion Weld Pipe
- 3 APT® XP Pipe Fittings and Test Boots
- 4 Flexible Entry Boots
- 5 Polyethylene and Fiberglass Dispenser Sumps
- 6 Polyethylene and Fiberglass Tank Sumps





5

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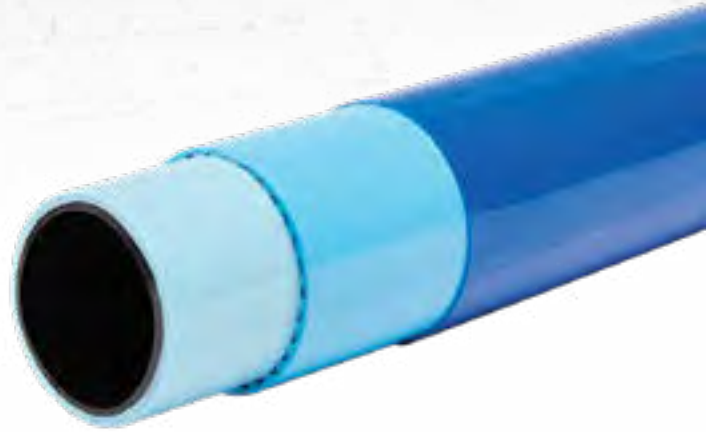
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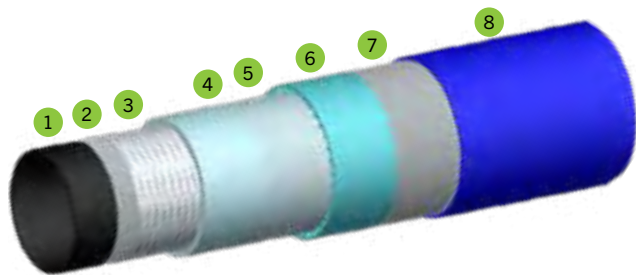
XP FLEXIBLE PIPEWORK

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.



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).

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.

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)
- 7 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"	1.27"	--	--	36"
XP-100-SC	1"	1.27"	1.47"	1.502"	36"
XP-150-D	1.40"	1.70"	--	--	36"
XP-150-SC	1.40"	1.70"	1.90"	1.925"	36"
XP-175-SC	1.65"	1.95"	2.15"	2.175"	36"
XP-200-D	2.04"	2.45"	--	--	36"
XP-200-SC	2.04"	2.45"	2.65"	2.675"	36"

ORDERING INFORMATION

Model	Description	Ft.	Reel	Weight	
				Lbs.	Kg
XP-100-SC	1" secondary contained	250	Master	301	136
		500	Master	408	185
		2500	S. Master	1299	589
XP-100-D	1" single wall	250	Master	258	117
		500	Master	320	145
XP-150-SC	1½" secondary contained	250	Master	333	151
		500	Master	470	213
		1,000	S. Master	789	358
		1,500	S. Master	1061	481
XP-150-D	1½" single wall	250	Master	270	122
		500	Master	570	259
		1,000	S. Master	536	243
		1,500	S. Master	686	311
XP-175-SC	1¾" secondary contained	250	Master	405	184
		500	Master	580	263
		1,000	S. Master	1076	488
XP-200-SC	2" secondary contained	250	Master	552	250
		500	S. Master	914	415
XP-200-D	2" single wall	250	Master	427	194
		500	S. Master	664	301

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.

HIGHLIGHTS

APT®'s XP marina/aboveground piping consists of XP pipe encased in metallic conduit, making it impact resistant and UV and fire protected.

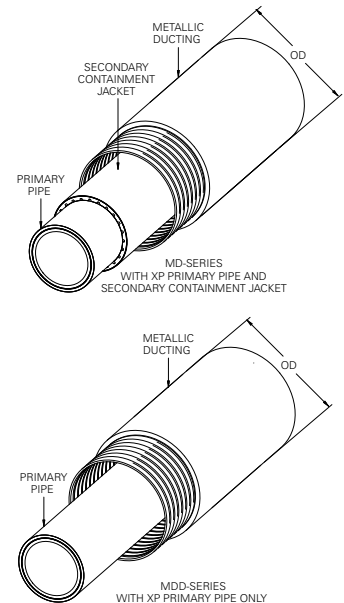
SPECIFICATIONS

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.

ORDERING INFORMATION

Model	Description	Primary Pipe	Ducting	Ducting OD	Ft	Reel	Weight	
							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	1½" 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	1½" 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	3.5"	250	S. Master	1,804	416
XP-200-MDD-250	2" single wall inside metallic duct	XP-200-D	MD-300	3.5"	250	S. Master	1,592	360



Note: Please contact customer service for availability and lead times.

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.

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

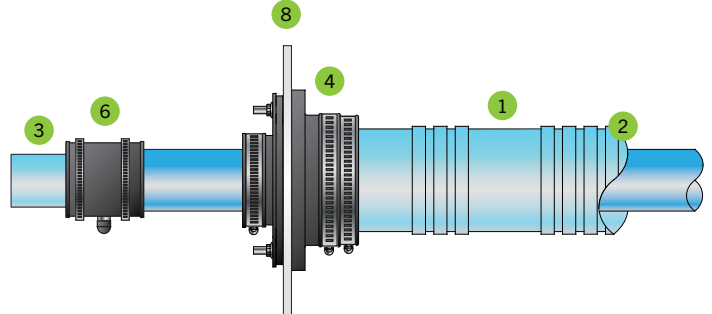


SPECIFICATIONS

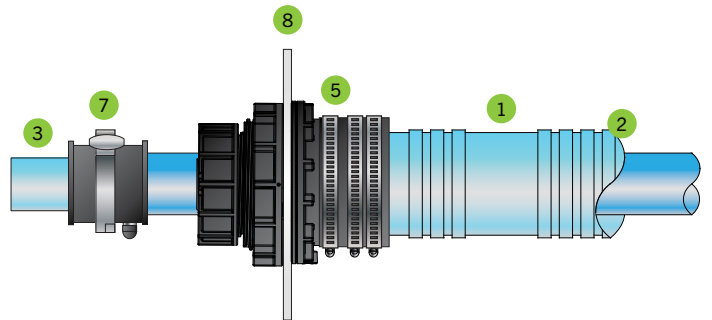
Installation

- 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
- 7 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).

ORDERING INFORMATION

Swivel Fitting

Model	Description	A	B	C
MS-XP-150-150	Brass XP pipe clamshell swivel fitting, installs on the end of 1½" single/secondary contained XP pipe with 1½" NPT	4"	4"	1.75"
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-175-200	Brass XP pipe clamshell swivel fitting, installs on the end of 1¾" single/secondary contained XP pipe with 2" NPT	4"	4"	1.75"
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-200-200	Brass XP pipe clamshell swivel fitting, installs on the end of 2" single/secondary contained XP pipe with 2" NPT	4.5"	4.75"	2.25"
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

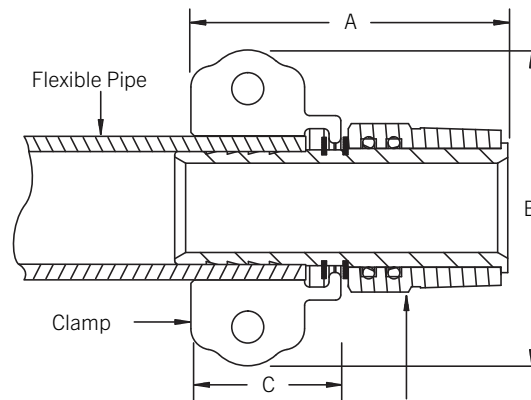
Model	Description	A	B	C
MN-XP-100-100	Brass XP pipe clamshell non-swivel fitting, installs on 1" single/secondary contained XP pipe with 1" NPT	3"	3"	1.5"
MN-XP-100-100SS	Stainless steel XP pipe clamshell non-swivel fitting, installs on 1" single/secondary contained XP pipe with 1" NPT			

SPECIFICATIONS

Approvals

- cULus listed.

Dimensions



XP PIPE SWAGE FITTINGS

Providing the same environmental security as the clamshell fitting using swage technology for installation.



HIGHLIGHTS

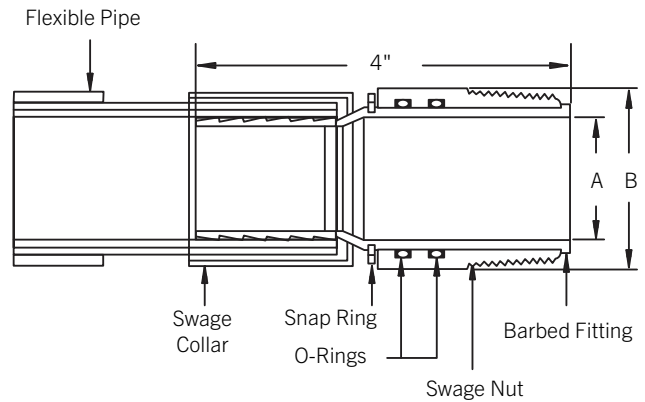
- Integrated double O-ring design for leak-tight seal.
- NPT threads are compatible with locally available standard termination fittings.
- 100 psi rated working pressure.
- Stainless steel design is biofuel approved (E85, DEF, and Biodiesel).

SPECIFICATIONS

Approvals

- cULus listed.

Dimensions



ORDERING INFORMATION

Model	Description	A	B	C
MS-XP-SW-150-150	Stainless steel XP pipe swage fitting, male, installs on 1½" single/secondary contained XP pipe with 1½" NPT	1.5"	2"	1.75"
MS-XP-SW-175-200	Stainless steel XP pipe swage fitting, male, installs on 1¾" single/secondary contained XP pipe with 2" NPT	1.75"	2.5"	1.75"
MS-XP-SW-200-200	Stainless steel XP pipe swage fitting, male, installs on 2" single/secondary contained XP pipe with 2" NPT	2"	3"	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

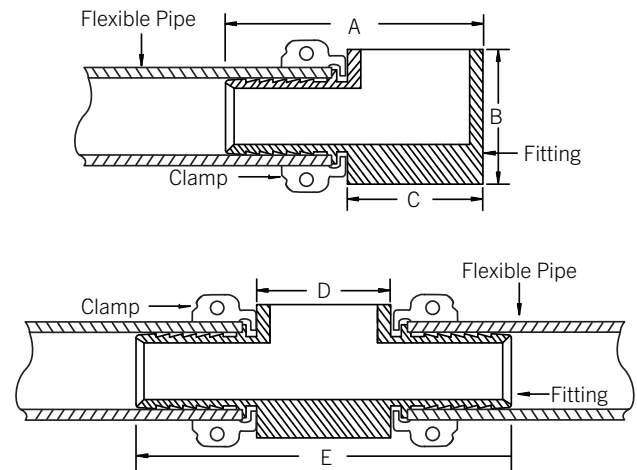
- Ideal for retrofit installations where containment sump has limited space or a narrow base.
- Eliminate threaded pipe joints inside of containment space; freeing up valuable space in tight quarters.
- Solid stainless steel construction.
- E-coated clamps provide durability and corrosion resistance 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).

SPECIFICATIONS

Approvals

- cULus listed.

Dimensions



ORDERING INFORMATION

Model	Description	A	B	C	D	E
TEE-XP-150	Stainless steel XP pipe clamshell tee fitting, installs on the end of 1½" single/secondary contained XP pipe with 1½" NPT	4.75"	2.5"	2.5"	2.5"	4.75"
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 1¾" single/secondary contained XP pipe with 1½" NPT	4.75"	2.5"	2.5"	2.5"	7"
ELB-XP-175	Stainless steel XP pipe clamshell elbow fitting, installs on the end of 1¾" 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	5"	2.5"	2.5"	2.5"	7"
ELB-XP-200	Stainless steel XP pipe clamshell elbow fitting, installs on the end of 2" single/secondary contained XP pipe with 1½" NPT					

XP PIPE QUICK RELEASE FITTINGS

XP Pipe quick release fittings bring a new level of ease to APT® 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.



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 1¾" 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 flouorocarbon gasket



Short Elbow



Clamp and Gasket



Short Tee

*Contact Customer Service for availability and lead times on all stainless steel end connections and 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).

ORDERING INFORMATION

Bushings

Model	Description
GHB-200-150	Galvanized Hex bushing, 2" NPT x 1½" NPT
SSHB-200-050	Stainless steel Hex bushing 2" NPT x 1½" NPT
SSHB-150-050	Stainless steel Hex bushing 1½" NPT x 1½" NPT
SSRB-150-050	Stainless steel reducing bell 1½" x 1½" 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 x 1½" NPT
GE90-252	Galvanized reducing elbow, 90°, 2½" NPT x 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 steel square hex plug 1½" NPT



Tees

Model	Description
GT-150	Galvanized tee, 1½" NPT
GT-215	Galvanized reducing tee, 2" x 2" x 1½" NPT
GT-252	Galvanized reducing tee, 2½" x 2½" x 2" NPT
SST-150	Stainless steel tee, 1½" NPT
SST-200	Stainless steel tee, 2" NPT



Unions

Model	Description
GU-150	Galvanized union, 1½" NPT
SSU-150	Stainless steel union, 1½" NPT



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.



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 plate, 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 3¼".

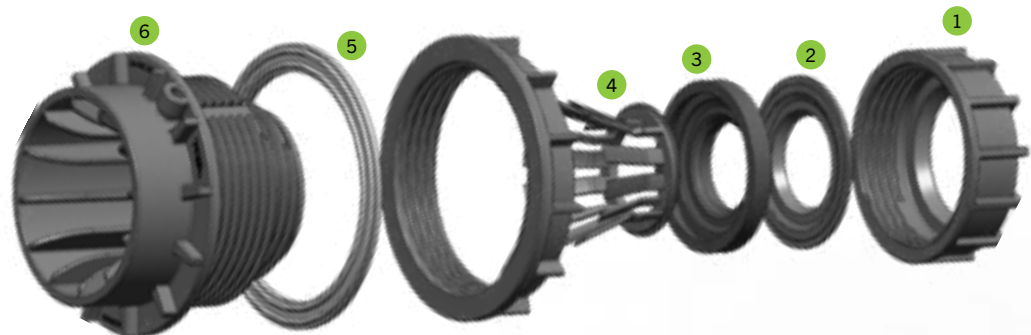
SPECIFICATIONS

Approvals/Certifications

- ULC listed when installed with APT® ULC listed sumps.

Components

- 1 Compression nut
- 2 Compression insert
- 3 Pipe seal
- 4 Pipe guide
- 5 Entry boot flange
- 6 Body



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.

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.

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.

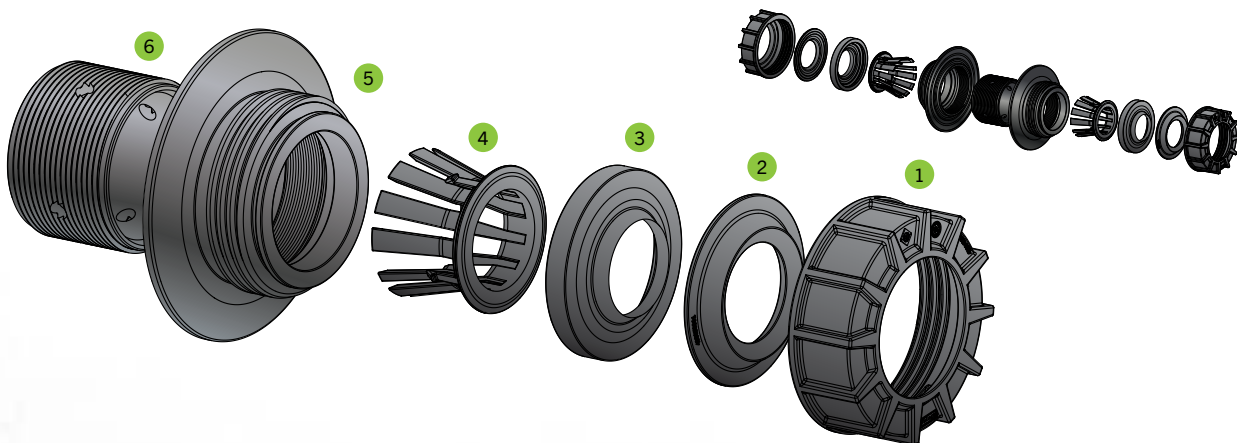
SPECIFICATIONS

Approvals/Certifications

- ULc listed when installed with APT® ULc listed sumps.

Components

- 1 Compression nut
- 2 Compression insert
- 3 Pipe seal
- 4 Pipe guide
- 5 Entry boot flange
- 6 Joiner fitting w/ interstitial communication ports



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 (50 mL cartridge w/ nozzle)

Note: Each boot includes two test plugs for air tightness testing of the boot prior to pipe installation.

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 3¾" entry hole for installation, eliminating the time-consuming process of drilling multiple holes as well as the templates they require.



HIGHLIGHTS

- Available in 1½" and 1¾" 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 ¾" up to 1" including Carbon Series™ double wall fiberglass sumps.
- Ducted entry boots comes complete with flexible ducting connector and three clamps.

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)

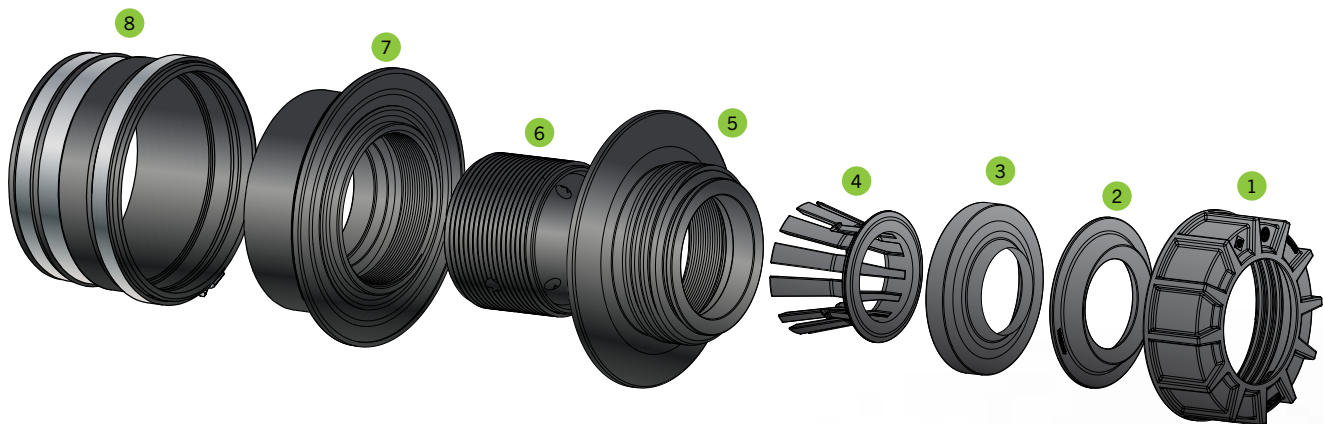
SPECIFICATIONS

Approvals/Certifications

- ULc listed when installed with APT® ULc listed sumps.

Components

- 1 Compression nut
- 3 Pipe seal
- 5 Entry boot flange
- 7 Entry ducted boot flange
- 2 Compression insert
- 4 Pipe guide
- 6 Joiner fitting
- 8 Ducting boot with clamps



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.

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	¾" 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.



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: 3¼"

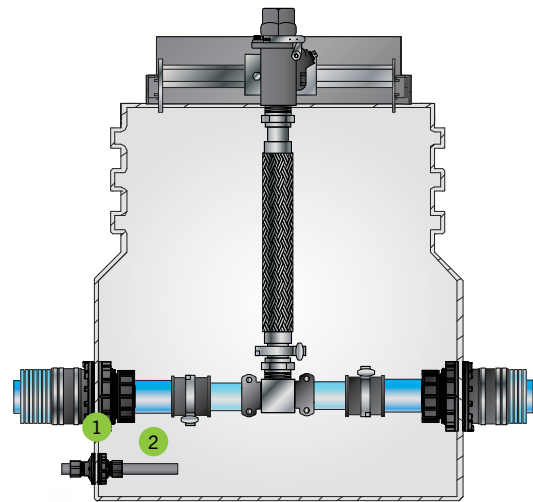
Approvals/Certifications

- 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.

- 1 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.

HIGHLIGHTS

- 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 1½", 1¾", 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.

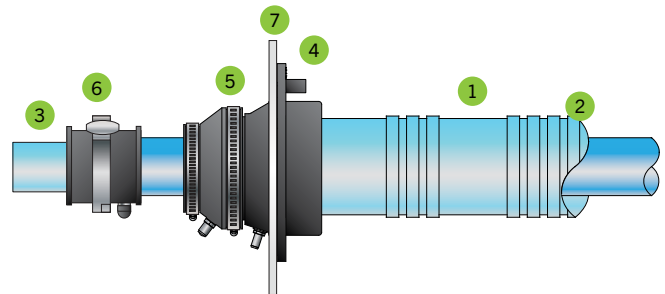


PIPING &
CONTAINMENT

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
- 7 Polyethylene sump wall



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.



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 ½" 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.

ORDERING INFORMATION

Flexible Entry Boot

Model	Description
FEB-050-D	Flexible entry boot for ½" electrical conduit
FEB-050-SC	Flexible entry boot for ¾" electrical conduit
FEB-075-D	Flexible entry boot for ¾" 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

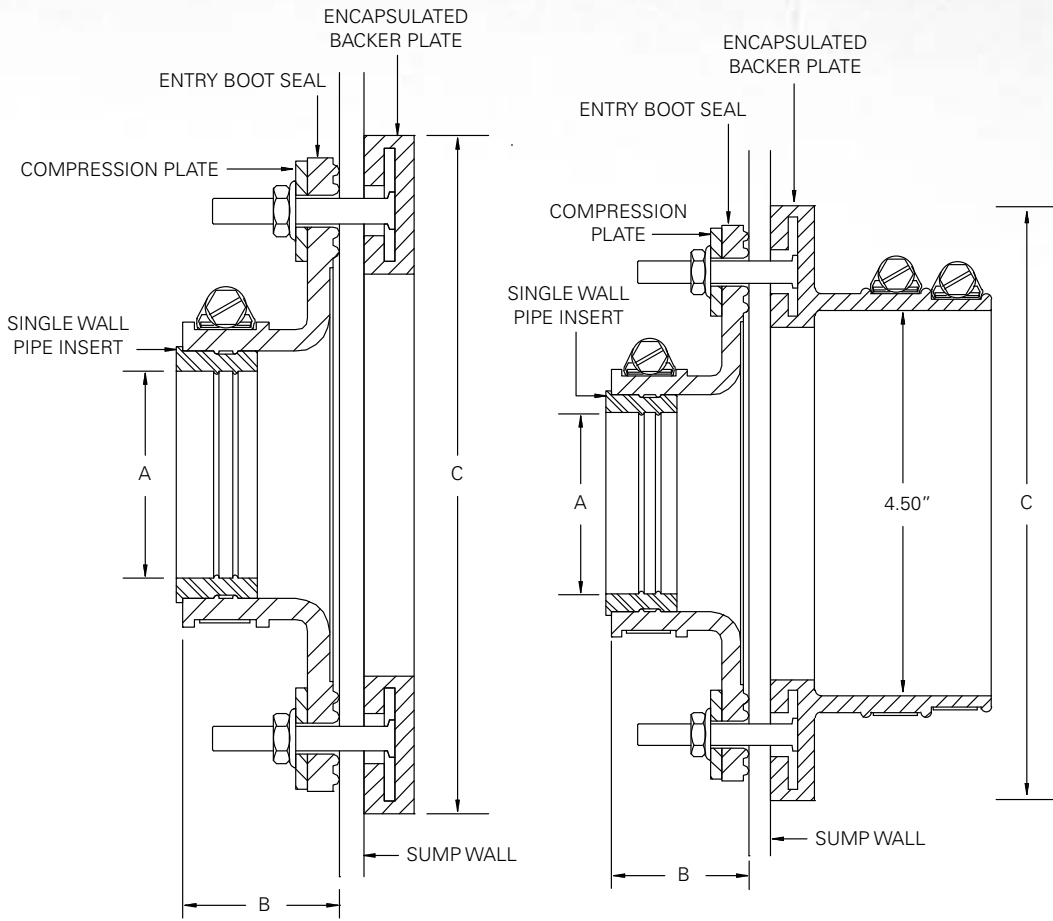
Ducted Entry Boot

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

Air Testable Ducted Entry Boot

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

SPECIFICATIONS



PIPING & CONTAINMENT

Flexible Entry Boot

Model	A	B	C	Mtg. Hole Size	Mtg. Studs
FEB-050-D	0.84"	1.5"	4.75"	2"	4
FEB-050-SC	1.05"	1.5"	4.75"	2"	4
FEB-075-D	1.05"	1.5"	4.75"	2"	4
FEB-075-SC	1.32"	1.5"	4.75"	2"	4
FEB-100-D	1.32"	1.5"	4.75"	2"	4
FEB-100-SC	1.70"	1.5"	4.75"	2"	4
FEB-150-D	1.75"	1.5"	6.75"	3.5"	8
FEB-150-SC	2"	1.5"	6.75"	3.5"	8
FEB-175-D	2"	1.5"	6.75"	3.5"	8
FEB-175-SC	2.40"	1.5"	6.75"	3.5"	8
FEB-200-D	2.5"	1.5"	6.75"	3.5"	8
FEB-200-SC	2.88"	1.5"	6.75"	3.5"	8
FEB-300	3.5"	1.5"	8"	3.5"	10
FEB-300-R	3.5"	1.5"	6.75"	3.5"	8
FEB-400-R	4.5"	1.5"	8"	5.5"	10
FEB-400-F	4.94"	1.5"	8"	5.5"	10

Ducted Entry Boot

Model	A	B	C	Mtg. Hole Size	Mtg. Studs
DEB-150-D	1.75"	1.5"	6.75"	3.5"	8
DEB-150-SC	2"	1.5"	6.75"	3.5"	8
DEB-175-D	2"	1.5"	6.75"	3.5"	8
DEB-175-SC	2.40"	1.5"	6.75"	3.5"	8
DEB-200-SC	2.88"	1.5"	6.75"	3.5"	8

Air Testable Ducted Entry Boot

Model	A	B	C	Mtg. Hole Size	Mtg. Studs
DEB-150-DA	1.75"	1.5"	6.75"	3.5"	8
DEB-150-SCA	2"	1.5"	6.75"	3.5"	8
DEB-175-DA	2"	1.5"	6.75"	3.5"	8
DEB-175-SCA	2.40"	1.5"	6.75"	3.5"	8
DEB-200-DA	2.5"	1.5"	8"	5.5"	10
DEB-252-DA	3"	1.5"	8"	5.5"	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 APT® 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.

SPECIFICATIONS

Flexible Double Entry Boots

Model	A	Mtg. Hole Size	Mtg. Studs
FDB-100-D	1.32"	5.5"	10
FDB-100-SC	1.70"	5.5"	10

Ducted Double Entry Boots

Model	A	Mtg. Hole Size	Mtg. Studs
DDB-100-D	1.32"	5.5"	10
DDB-100-SC	1.70"	5.5"	10



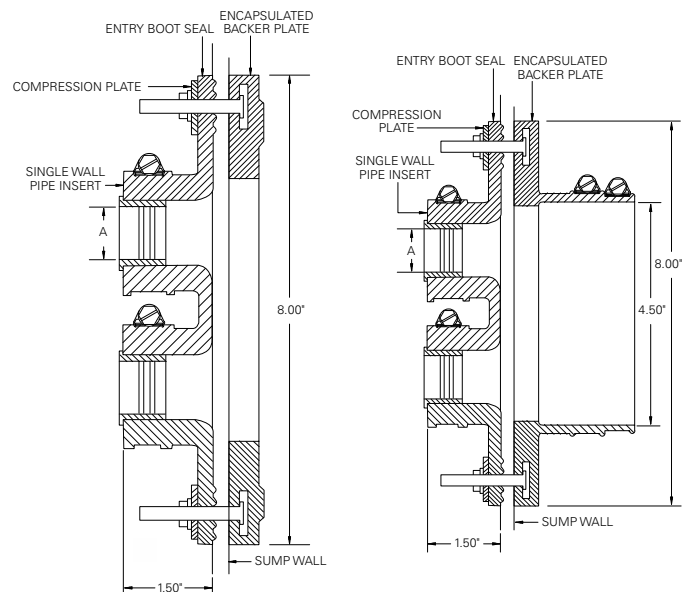
ORDERING INFORMATION

Flexible Double Entry Boots

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

Ducted Double Entry Boots

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.

SPECIFICATIONS

Flexible Bulkhead Boots

Model	A	B	C	Mtg. Hole Size
FBB-075-D	1.05"	2.5"	4"	2.38"
FBB-150-SC	2"	2.5"	6"	4.38"

Ducted Bulkhead Boots

Model	A	B	C	Mtg. Hole Size
DBB-150-SC	2"	2.5"	6"	4.38"
DBB-200-SC	2.88"	2.5"	6"	4.38"

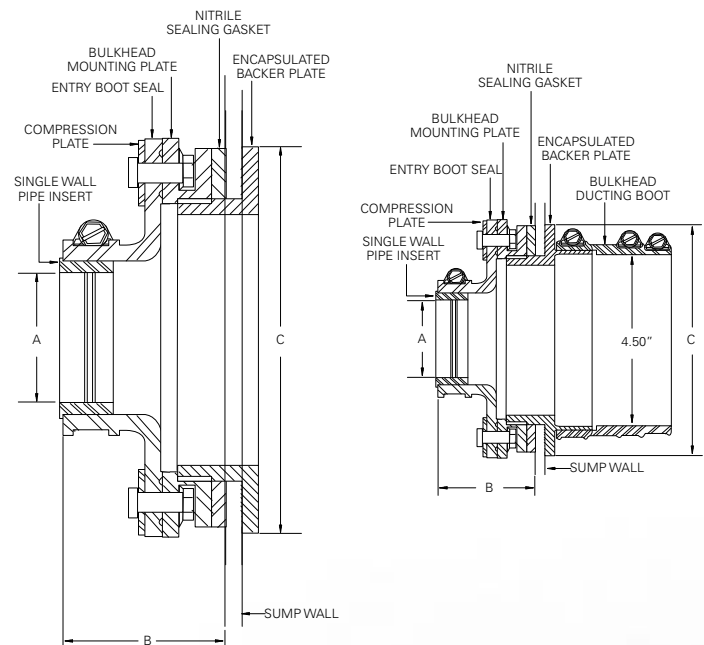
ORDERING INFORMATION

Flexible Bulkhead Boots

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

Ducted Bulkhead Boots

Model	Description
DBB-150-SC	Ducted bulkhead boot for XP-150-SC
DBB-200-SC	Ducted bulkhead boot for XP-200-SC



MD-SERIES FLEXIBLE ENTRY BOOTS

When using the APT® 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.

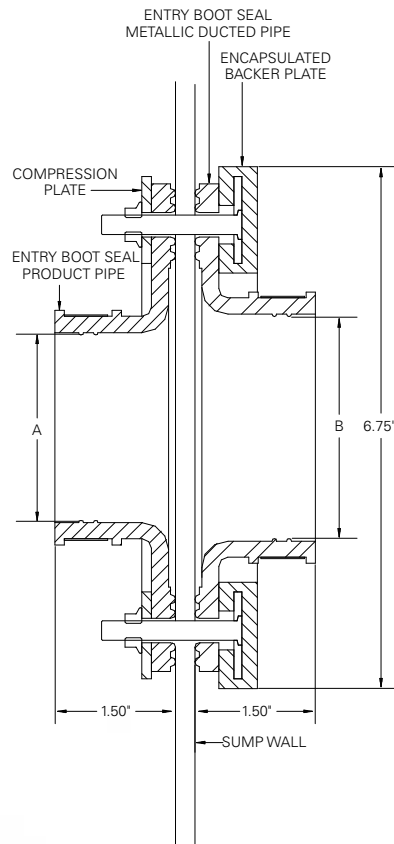
SPECIFICATIONS

MD-Series Flexible Entry Boots

Model	A	B	Mtg. Hole Size	Mtg. Studs
FEB-075-MDD	1.05"	1.70"	2"	4
FEB-075-MD	1.32"	2"	3.5"	8
FEB-100-MDD	1.32"	2"	3.5"	8
FEB-100-MD	1.70"	2.40"	3.5"	8
FEB-150-MDD	1.75"	2.40"	3.5"	8
FEB-150-MD	2"	2.88"	3.5"	8
FEB-175-MDD	2"	2.88"	3.5"	8
FEB-175-MD	2.40"	2.88"	3.5"	8
FEB-200-MDD	2.5"	3.5"	3.5"	8
FEB-200-MD	2.88"	3.5"	3.5"	8

ORDERING INFORMATION

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



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 ½" nut to form an airtight chamber between the primary and secondary pipe layer.
- No pipe disconnection necessary on existing lines.

ORDERING INFORMATION

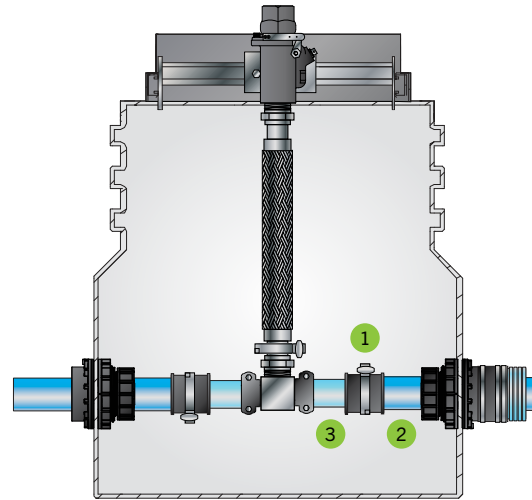
Model	Description
SPTB-150	Split test boot for XP-150-SC (1½") piping
SPTB-175	Split test boot for XP-175-SC (1¾") piping
SPTB-200	Split test boot for XP-200-SC (2") piping

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

- 1 Split test boot
- 2 XP pipe (secondary layer)
- 3 XP pipe (primary layer exposed)



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.



HIGHLIGHTS

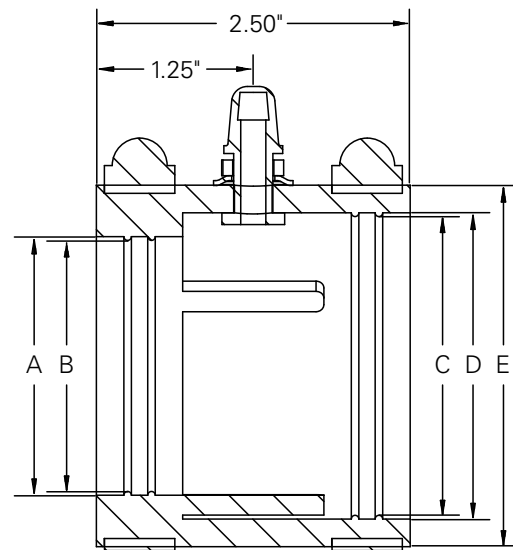
- Secondary test boots slip over the end of the pipe prior to installation of end fittings.
- Boots are manufactured using fuel-resistant Nitrile rubber and employ brass air chucks and stainless steel clamps for maximum corrosion resistance.
- Boots are easily clamped down with a screwdriver or 5/16" 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.

ORDERING INFORMATION

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

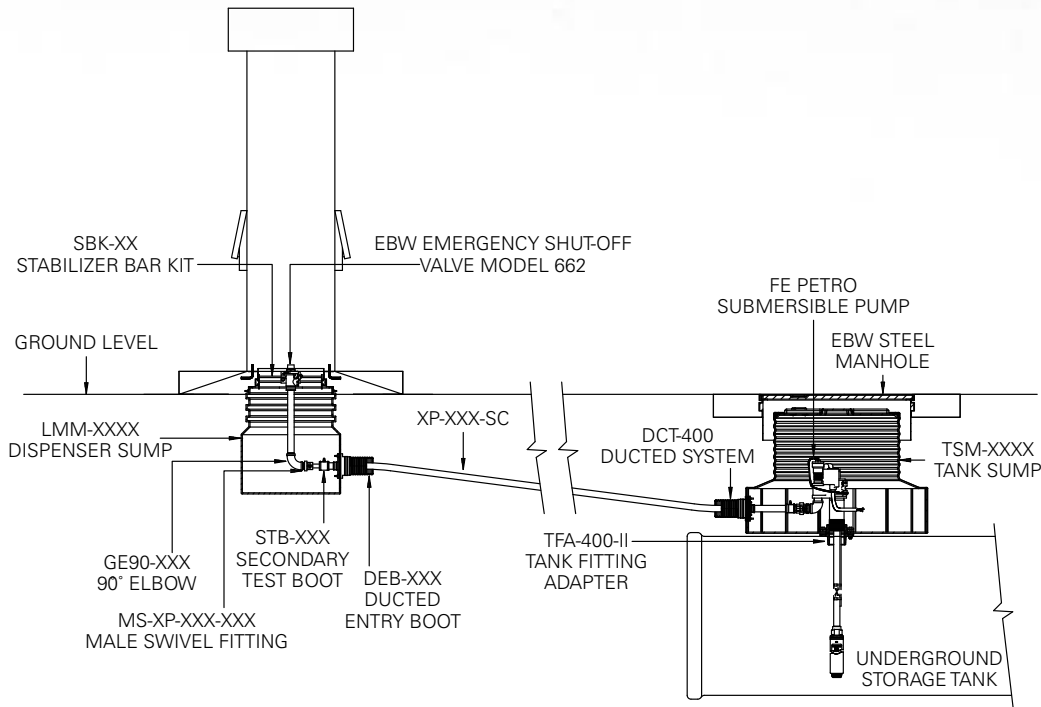
SPECIFICATIONS

Model	A	B	C	D	E
STB-100	1.38"	1.32"	1.70"	1.76"	2.20"
STB-150	1.81"	1.75"	2"	2.06"	2.5"
STB-175	2.06"	2"	2.38"	2.44"	2.88"
STB-200	2.56"	2.5"	2.88"	2.94"	3.38"



SPECIFICATIONS CONTINUED

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
1 1/2"	--	FEB-150-SC
2"	--	FEB-175-SC
Fiberglass Piping (Single Wall)	OD	APT® Entry Boot
2"	--	FEB-175-SC
3"	3.5"	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
1 1/2"	1.70"	FEB-150-SC
2"	--	FEB-175-SC
2 1/2"	--	FEB-200-SC
3"	--	FEB-300-R
4"	--	FEB-400-R

PIPING & CONTAINMENT

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.

ORDERING INFORMATION

Model	Description
TSL-005	Transition sleeve (top and bottom boot required, sold separately)
TST-100-D	Transition sleeve top flexible entry boot, 1" steel pipe
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



SPECIFICATIONS

Transition Sleeve Top Boot Assembly

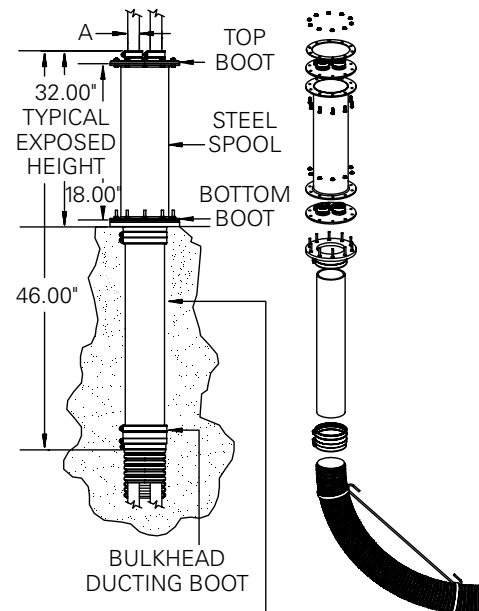
Model	A	Mtg. Hole Size	Mtg. Studs
TST-100-D	1.32" or 1.70"	5.5"	10

Transition Sleeve Bottom Boot Assembly

Model	A	Mtg. Hole Size	Mtg. Studs
TSB-100-D	1.32" or 1.70"	5.5"	10
TSB-100-SC	1.70"	5.5"	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

WALL TRANSITION SLEEVE

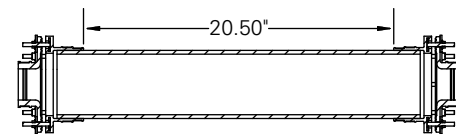
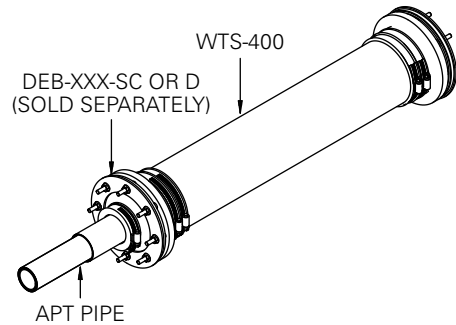
The wall transition sleeve is a practical, environmentally sound solution for below ground generator or boiler applications that pass through the walls of buildings or concrete structures. Piping enters the sleeve through APT®'s special flexible entry boots. The wall transition sleeve is an economical alternative that allows a straightforward installation with no tools.

HIGHLIGHTS

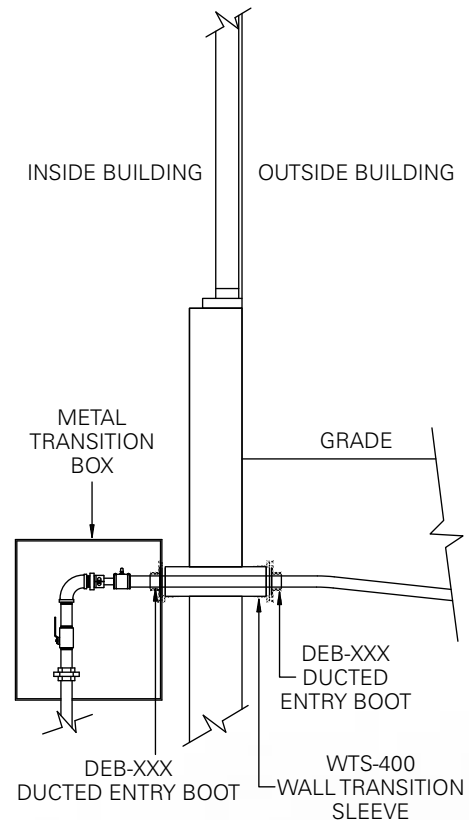
- Transition sleeve used for through-wall installation.
- Low cost alternative.
- Designed to utilize APT® ducted entry and single entry flexible boots.
- The transition sleeve can accommodate for fill/feed generator applications.

ORDERING INFORMATION

Model	Description
WTS-400	Wall transition sleeve (ducted entry boot required, sold separately)



MAKE SURE SCUFF GUARD IS REMOVED WHERE ENTRY BOOTS CLAMP TO PIPE.



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 APT® double wall cutting tools simplify secondary jacket removal without causing damage to the primary pipe. Exclusively for use with APT® 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 its introduction as the world's first electrofusion pipework system for fuel applications over thirty years ago, UPP® semi-rigid pipework has become known globally as the standard for liquid tight pipework systems. UPP® pipework utilizes the advanced electrofusion welding process to effectively bond system components together into one, leak proof system.

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: 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
- 1½" 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.

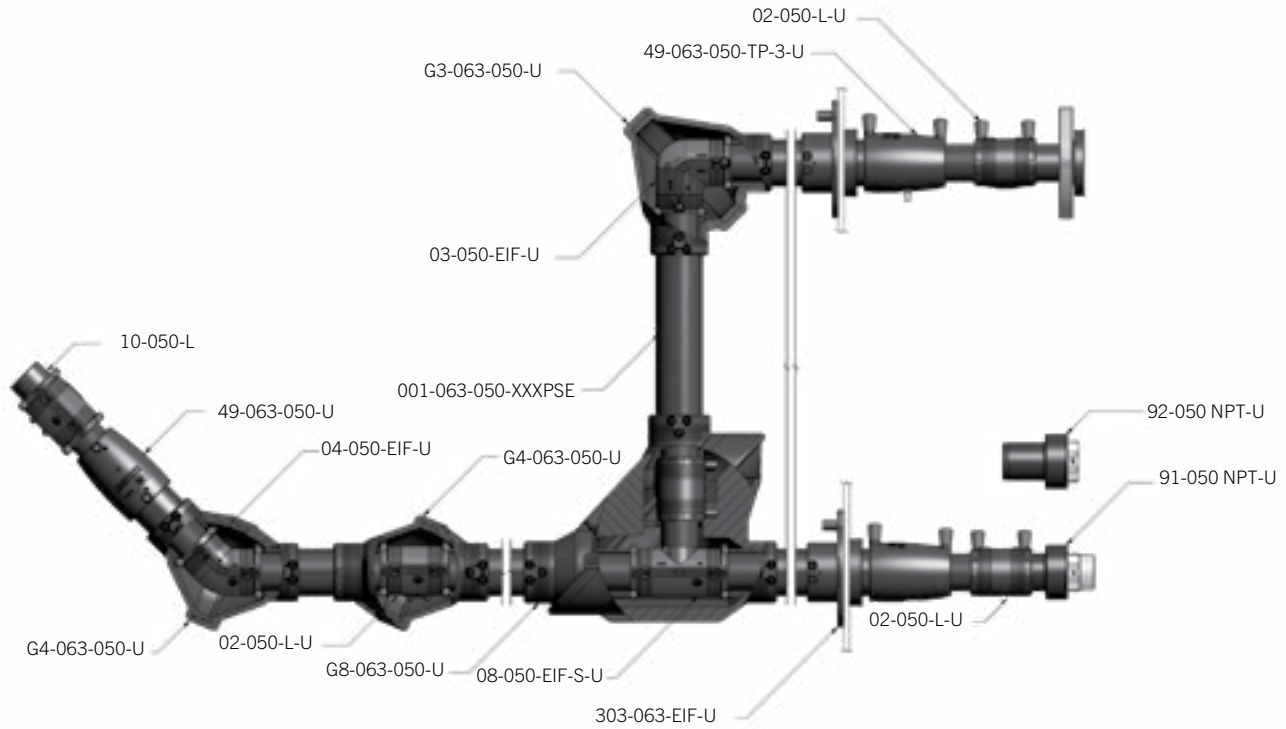
ORDERING INFORMATION

Pipework

Model	Description	Nominal Primary Pipe		Nominal Secondary Pipe	
		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"	--	--

Note: For "XXX" enter pipe lengths from available unit options found in the following pages.

1½" Secondary Contained Pipework System



Model	Description	Unit
001-063-050-028PSE	1½" double wall pipe	28' stick
001-063-050-033PSE	1½" double wall pipe	33' stick
001-063-050-165PSE	1½" double wall pipe	165' coil



Model	Description
02-050-L-U	1½" primary welding coupler



Model	Description
03-050-EIF-U	1½" primary electrofusion 90° elbow fitting



ORDERING INFORMATION CONTINUED

Model	Description
04-050-EIF-U	1½" primary electrofusion 45° elbow fitting



Model	Description
04-050-L	1½" primary plain 45° elbow fitting



Model	Description
08-050-EIF-U	1½" single wall electrofusion tee fitting



Model	Description
08-050-L	1½" primary plain tee fitting



Model	Description
09-063-050-L	2" x 1½" primary plain reducer fitting



Model	Description
10-050-L	1½" primary plug



Model	Description
02-63SC-U	1½" secondary welding coupler



Model	Description
49-063-050-U	1½" secondary electrofusion reducer fitting



49-063-050-TP-3-U	1½" secondary electrofusion reducer fitting with press fit test port
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Model	Description
49-110-063SC-U	4" x 1½" secondary electrofusion reducer fitting



Model	Description
91-050 SS NPT-U	Stainless steel 1½" (pipe) x 1½" NPT male threaded termination fitting
91-050 NPT-U	1½" (pipe) x 1½" NPT male threaded termination fitting

ORDERING INFORMATION CONTINUED

Model	Description
92-050 NPT-U	1½" (pipe) × 1½" NPT female threaded termination fitting



Model	Description
92-050 UF NPT-U	1½" (pipe) × 1½" NPT union adapter termination fitting
11.5G	1½" gasket



Model	Description
HEX 2	2" NPT X 1½" NPT Hex adapter



Model	Description
303-063-EIF-U	1½" double wall / 2" single wall electrofusion entry boot
304-110-063-TP-3*	1½" double wall ducted entry boot with ducting press fit test port

*For use with UPP® 4" ducting.



Model	Description
G3-063-050-U	SC 1½" Gemini 90° Elbow



Model	Description
G4-063-050-U	SC 1½" Gemini 45° Elbow OR SC 1½" Gemini Inline Joint

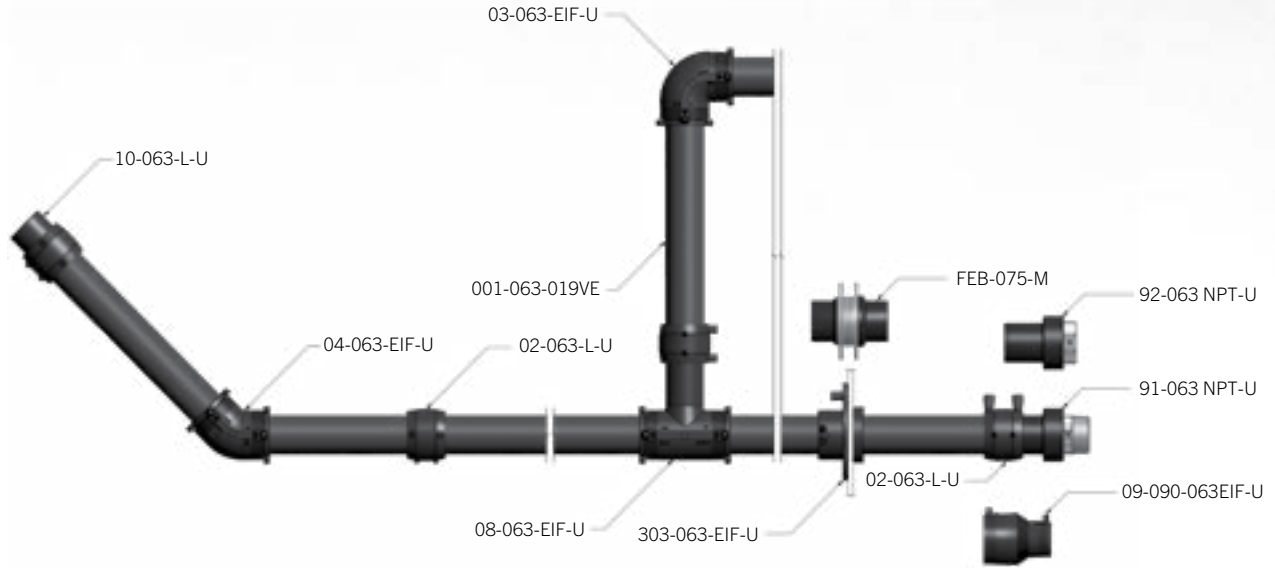


Model	Description
G8-063-050-U	SC 1½" Gemini Tee



ORDERING INFORMATION CONTINUED

2" Primary Pipework System



Model	Description	Unit
001-063-019VE	2" single wall pipe	19' stick



Model	Description
02-63-U	2" primary welding coupler



Model	Description
02-063-L-U	2" primary welding coupler, long



Model	Description
03-063-EIF-U	2" primary electrofusion 90° elbow fitting



Model	Description
03-063-L	2" primary plain 90° elbow fitting



Model	Description
04-063-EIF-U	2" primary electrofusion 45° elbow fitting



Model	Description
08-063-EIF-U	2" single wall electrofusion tee fitting



Model	Description
08-063-L	2" primary plain tee fitting



PIPING & CONTAINMENT

ORDERING INFORMATION CONTINUED

Model	Description
08-063-L	2" primary plain tee fitting



Model	Description
09-090-063-L-U	3" x 2" primary plain reducer fitting



Model	Description
09-110-063-L-U	4" x 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) x 2" NPT male threaded termination fitting

91-063-1 NPT-U	2" (pipe) x 1½" NPT male threaded termination fitting
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91-063 NPT-U	2" (pipe) x 2" NPT male threaded termination fitting
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Model	Description
92-063-1 NPT-U	2" (pipe) x 1½" NPT female threaded termination fitting

92-063 NPT-U	2" (pipe) x 2" NPT female threaded termination fitting
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Model	Description
90-063 QL-U	2" (pipe) x 2" quick release termination fitting



Model	Description
92-063 UF NPT-U	2" (pipe) x 2" NPT union adapter termination fitting

11.63G	2" gasket
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Model	Description
303-063-EIF-U	1½" double wall / 2" single wall electrofusion entry boot

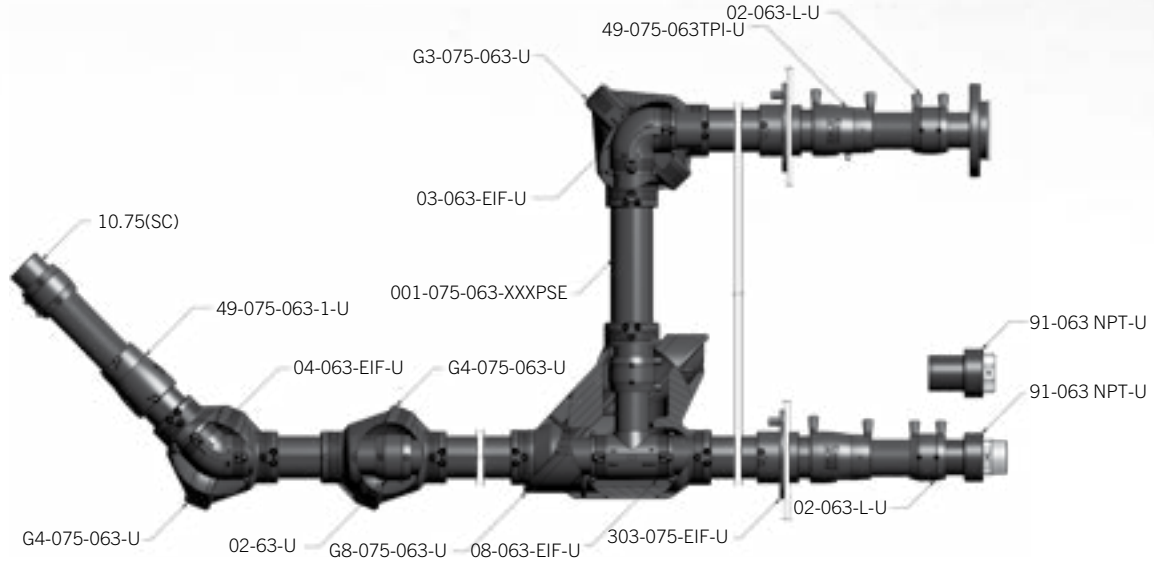


Model	Description
FEB-075-M	2" (pipe) fiberglass entry boot



ORDERING INFORMATION CONTINUED

2" Secondary Contained Pipework System



Model	Description	Unit
001-075-063-028PSE	2" double wall pipe	28' stick
001-075-063-033PSE	2" double wall pipe	33' stick
001-075-063-038PSE	2" double wall pipe	38' stick
001-075-063-100PSE	2" double wall pipe	100' coil
001-075-063-165PSE	2" double wall pipe	165' coil



Model	Description
02-63-U	2" primary welding coupler



Model	Description
02-063-L-U	2" primary welding coupler, long



Model	Description
02-75SC-U	2" secondary welding coupler



Model	Description
03-063-EIF-U	2" primary electrofusion 90° elbow fitting



Model	Description
04-063-EIF-U	2" primary electrofusion 45° elbow fitting



Model	Description
08-063-EIF-U	2" single wall electrofusion tee fitting



PIPING & CONTAINMENT

ORDERING INFORMATION CONTINUED

Model	Description
49-075-063-1-U	2" secondary electrofusion reducer fitting
49-075-063-TP-3-U	2" secondary electrofusion reducer fitting with press fit test port



Model	Description
49-110-75SC-U	4" x 2" secondary electrofusion reducer fitting



Model	Description
09-110-75SC-U	4" x 2" secondary plain reducer fitting



Model	Description
91-063 SS NPT-U	Stainless steel 2" (pipe) x 2" NPT male threaded termination fitting
91-063-1 NPT-U	2" (pipe) x 1½" NPT male threaded termination fitting
91-063 NPT-U	2" (pipe) x 2" NPT male threaded termination fitting



Model	Description
92-063-1 NPT-U	2" (pipe) x 1½" NPT female threaded termination fitting
92-063 NPT-U	2" (pipe) x 2" NPT female threaded termination fitting



Model	Description
90-063 QL-U	2" (pipe) x 2" quick release termination fitting
90-063 QL SS-U	2" (pipe) x 2" quick release termination fitting, stainless steel



Model	Description
92-063 UF NPT-U	2" (pipe) x 2" NPT union adapter termination fitting
11.63G	2" gasket



Model	Description
303-075-EIF-U	2" double wall electrofusion entry boot
304-110-075-TP-3*	2" double wall ducted entry boot with ducting press fit test port

*For use with UPP® 4" ducting.



Model	Description
FEB-075-M	2" (pipe) fiberglass entry boot



Model	Description
G3-075-063-U	SC 2" Gemini 90° Elbow



Model	Description
G4-075-063-U	SC 2" Gemini 45° Elbow OR SC 2" Gemini Inline Elbow

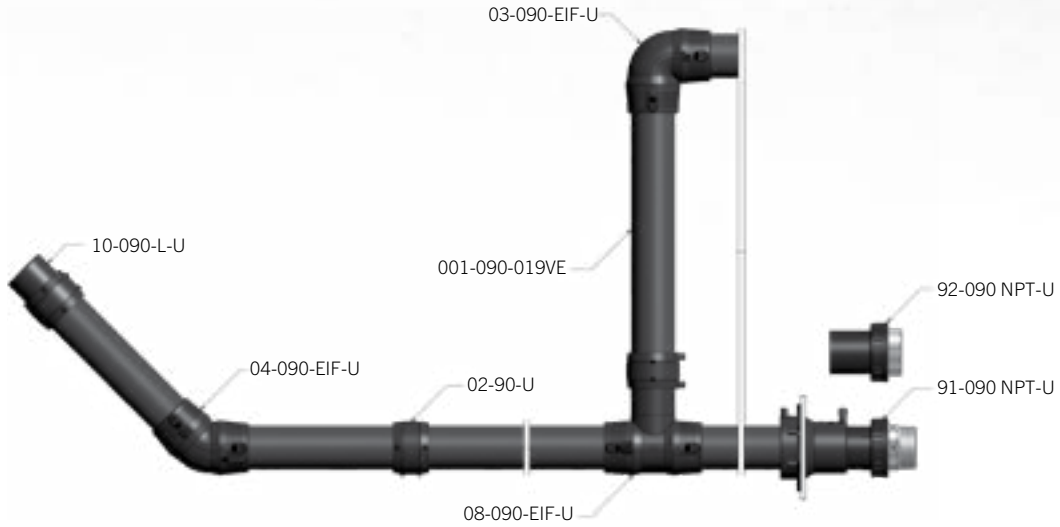


Model	Description
G8-075-063-U	SC 2" Gemini Tee



ORDERING INFORMATION CONTINUED

3" Primary Pipework System



Model	Description	Unit
001-090-019VE	3" single wall vent pipe	19' stick



Model	Description
02-90-U	3" primary welding coupler



Model	Description
03-090-EIF-U	3" primary electrofusion 90° elbow fitting



Model	Description
04-090-EIF-U	3" primary electrofusion 45° elbow fitting



Model	Description
08-090-EIF-U	3" single wall electrofusion tee fitting



Model	Description
08-090-L-U	3" primary plain tee fitting



Model	Description
09-110-090EIF-U	4" x 3" primary electrofusion reducer fitting



Model	Description
10-090-L-U	3" primary plug



ORDERING INFORMATION CONTINUED

Model	Description
91-090 SS NPT-U	Stainless steel 3" (pipe) × 3" NPT male threaded termination fitting
91-090 NPT-U	3" (pipe) × 3" NPT male threaded termination fitting



Model	Description
92-090 NPT-U	3" (pipe) × 3" NPT female threaded termination fitting



Model	Description
90-090 QL-U	3" (pipe) × 3" quick release termination fitting



Model	Description
304-110-090-U	3" electrofusion entry boot, reducing 110/90

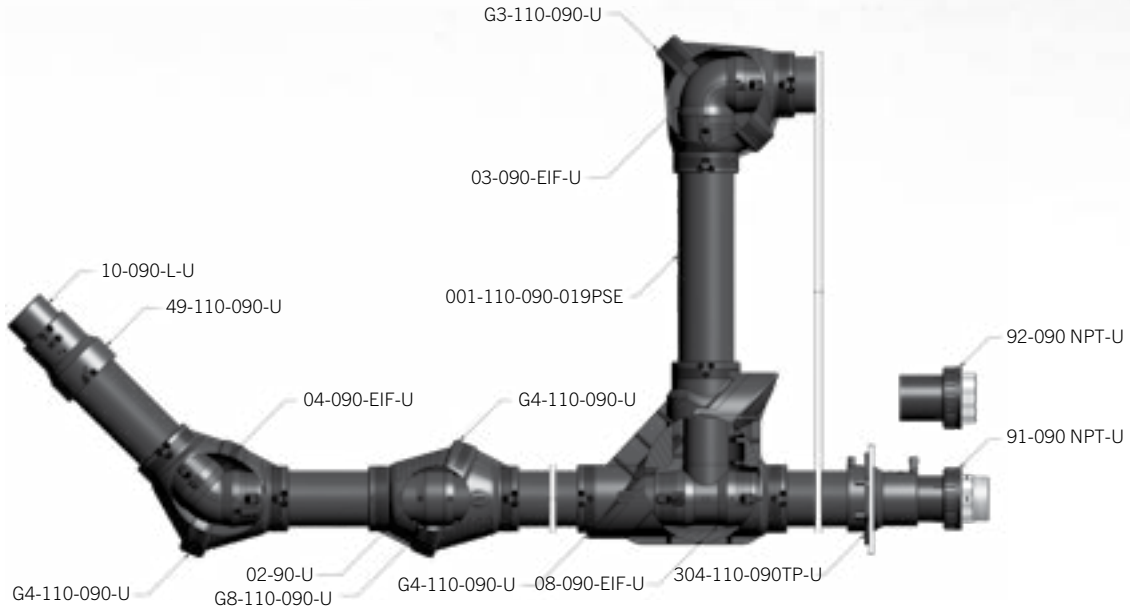


Model	Description
FEB-110-M	3" electrofusion fiberglass entry boot for use with 3" pipework systems



ORDERING INFORMATION CONTINUED

3" Secondary Contained Pipework System



Model	Description	Unit
001-110-090-019PSE	3" double wall pipe	19' stick



Model	Description
02-90-U	3" primary welding coupler



Model	Description
02-110SC-U	3" secondary welding coupler



Model	Description
03-090-EIF-U	3" primary electrofusion 90° elbow fitting



Model	Description
04-090-EIF-U	3" primary electrofusion 45° elbow fitting



Model	Description
08-090-EIF-U	3" single wall electrofusion tee fitting



PIPING & CONTAINMENT

ORDERING INFORMATION CONTINUED

Model	Description
49-110-090-U	4" x 3" secondary electrofusion reducer fitting
49-110-090TP-U	4" x 3" secondary electrofusion reducer fitting with test port



Model	Description
91-090 NPT-U	3" (pipe) x 3" NPT male threaded termination fitting



Model	Description
92-090 NPT-U	3" (pipe) x 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
304-110-090-TP-3-U	3" electrofusion entry seal reducer boot 110/90, with press fit test port



Model	Description
FEB-110-M	3" electrofusion fiberglass entry boot for use with 3" secondary contained pipework systems



Model	Description
G3-110-090-U	SC 3" Gemini 90° Elbow



Model	Description
G4-110-090-U	SC 3" Gemini 45° Elbow OR SC 3" Gemini Inline Joint

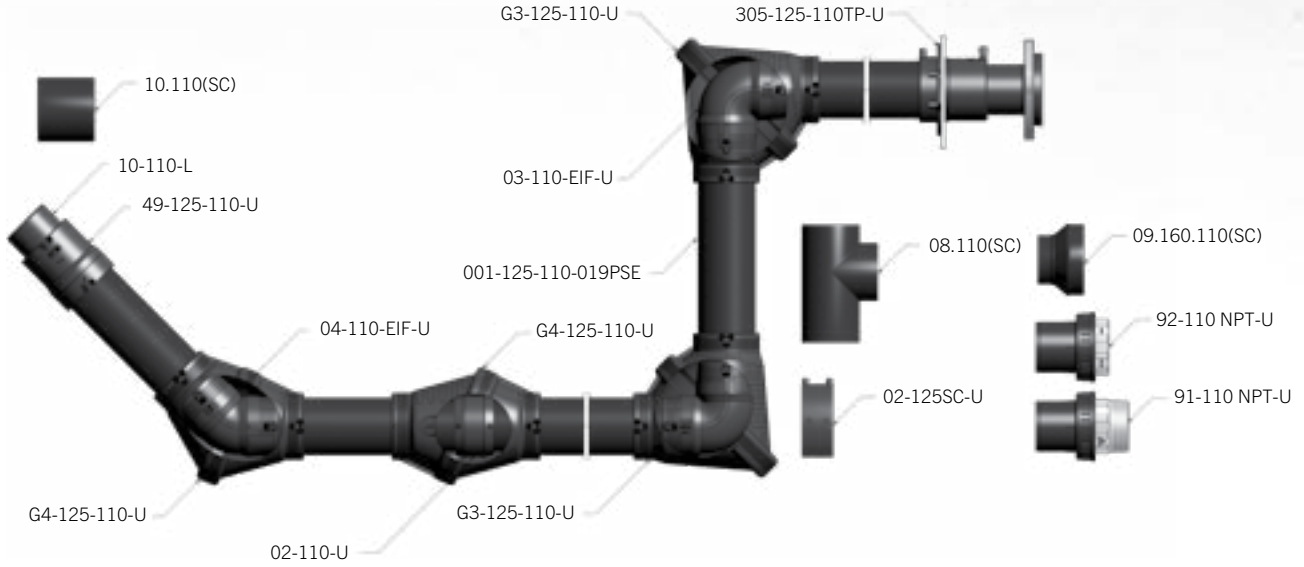


Model	Description
G8-110-090-U	SC 3" Gemini Tee



ORDERING INFORMATION CONTINUED

4" Secondary Contained Pipework System



Model	Description	Unit
001-125-110-019PSE	4" double wall pipe	19' stick



Model	Description
02-110-U	4" primary welding coupler



Model	Description
02-125SC-U	4" secondary welding coupler



Model	Description
03-110-EIF-U	4" primary electrofusion 90° elbow fitting



Model	Description
04-110-EIF-U	4" primary electrofusion 45° elbow fitting



Model	Description
08-110-EIF-U	4" single wall electrofusion tee fitting



Model	Description
10-110-L-U	4" primary plug



ORDERING INFORMATION CONTINUED

Model	Description
08-110M-U	4" tee
08-200SC-U	8" tee



Model	Description
49-125-110-U	5" x 4" secondary electrofusion reducer fitting
49-125-110-TP-3-U	5" x 4" secondary electrofusion reducer fitting with press fit test port



Model	Description
09.160.110(SC)	6" x 4" secondary plain reducer fitting
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) x 4" NPT male threaded termination fitting



Model	Description
92-110 NPT-U	4" (pipe) x 4" NPT female threaded termination fitting



Model	Description
305-125-110-U	4" double wall electrofusion entry boot with integrated termination fitting
305-125-110-TP-3-U	4" double wall electrofusion entry boot with integrated termination fitting and press fit test port



Model	Description
FEB-125-M	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.

ORDERING INFORMATION

Model	Description
DUCT-400-100	XP pipe ducting, 100 ft. coil
DUCT-400-250	XP pipe ducting, 250 ft. coil



Model	Description
02-110-U	4" primary welding coupler



Model	Description
02-125SC-U	4" secondary welding coupler



Model	Description
10.125(SC)	5" secondary plug



Model	Description
49-125-110-U	5" x 4" secondary electrofusion reducer fitting
49-125-110-TP-3-U	5" x 4" secondary electrofusion reducer fitting with press fit test port



ELECTROFUSION FIBERGLASS ENTRY BOOT

UPP® Electrofusion Fiberglass Entry Boots provide a seamless connection between UPP® single wall and double wall semi-rigid pipework and 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 center section with multiple dovetail grooves tying the two materials together to create a watertight joint.



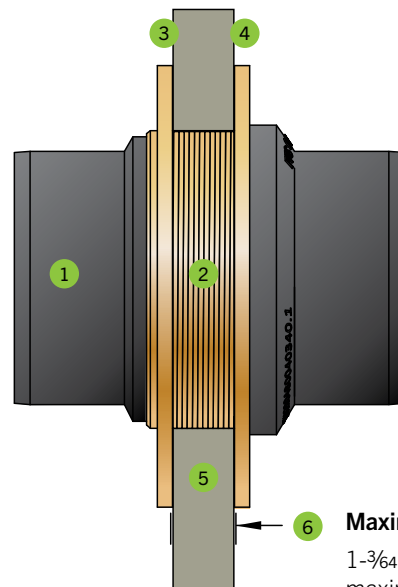
SPECIFICATIONS

Installation

The boot's flanges are bonded to the fiberglass sump wall with the adhesive kit (sold separately), creating a solid connection between the boot and sump wall. The flanges are then covered with adhesive. Once properly installed, the boot is fully vacuum and pressure testable.

Components

- | | |
|--------------------------------|----------------------------|
| 1 Polyethylene sleeve | 4 Compression disk (fixed) |
| 2 Threads | 5 Fiberglass sump wall |
| 3 Compression disk (threading) | 6 Maximum thread width |

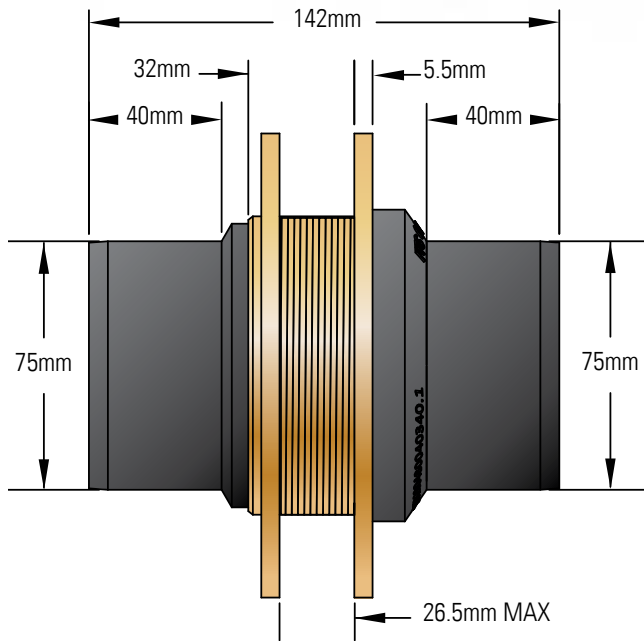


Maximum Thread Width
1-3/64" (26.5 mm) is the maximum width of the fiberglass sump wall the entry boot can accommodate.

SPECIFICATIONS CONTINUED

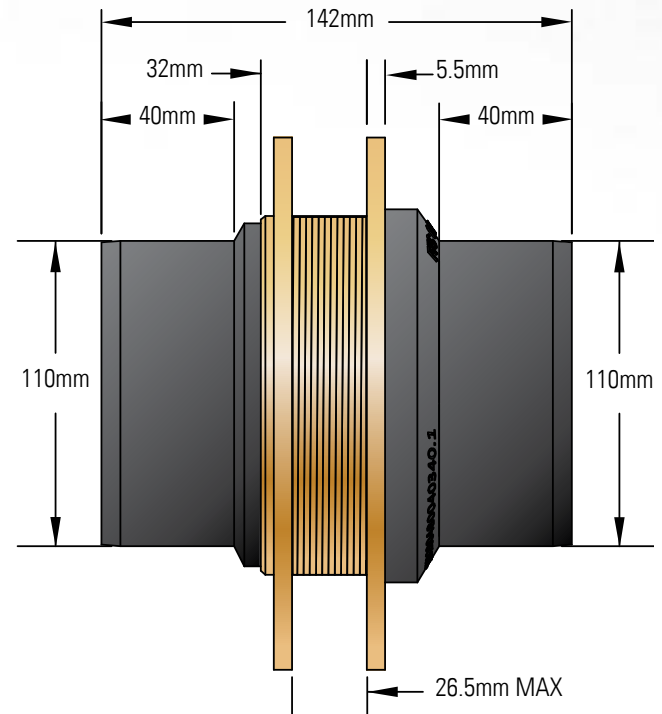
2" Electrofusion Fiberglass Entry Boot

For use with 2" UPP® pipework.



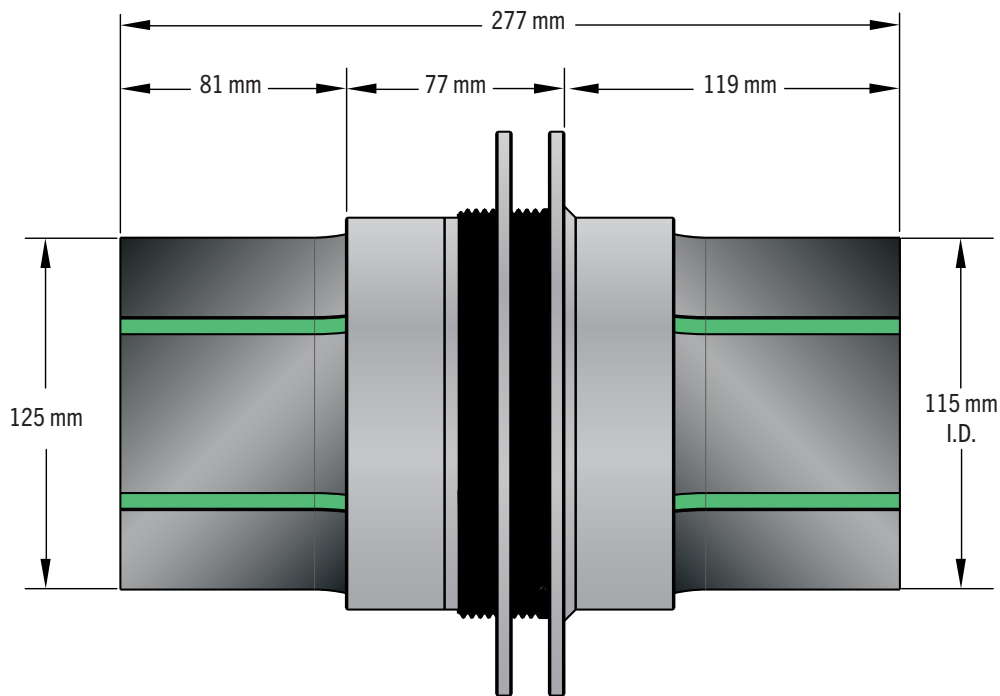
3" Electrofusion Fiberglass Entry Boot

For use with 3" UPP® pipework.



4" Electrofusion Fiberglass Entry Boot

For use with 4" UPP® pipework.



ORDER INFORMATION

Electrofusion Fiberglass Entry Boots

Additional Electrofusion fittings are required to complete the installation of these boots. See the Electrofusion Fiberglass Entry Boot Ordering Guide below for details.

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-125-M	4" Electrofusion Fiberglass Entry Boot, for use with 4" pipework
1137205	Adhesive Kit (50 ML cartridge w/ nozzle)

Note: Order (1) Adhesive Kit per boot.

Pipe Slope Wedges

Pipe Slope Wedges (sold in pairs of 2) are for use in applications where continuation of the pipe slope is required through the sump wall to the tank access point.

Model	Description
10000008764	1/4" Pipe Slope Wedge (2), for use with 2" Electrofusion Fiberglass Entry Boots
10000008765	3/8" Pipe Slope Wedge (2), for use with 2" Electrofusion Fiberglass Entry Boots
10000008766	1/4" Pipe Slope Wedge (2), for use with 3" Electrofusion Fiberglass Entry Boots
10000008767	3/8" Pipe Slope Wedge (2), for use with 3" Electrofusion Fiberglass Entry Boots

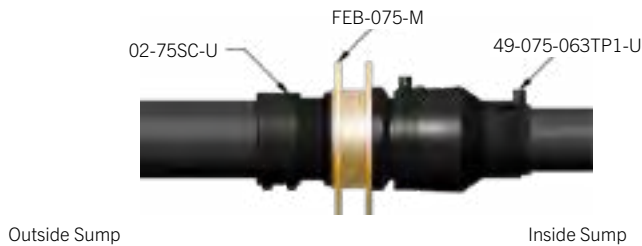
1 1/2" Secondary Contained Fiberglass Sump Entry Fittings



2" Primary Fiberglass Sump Entry Fittings



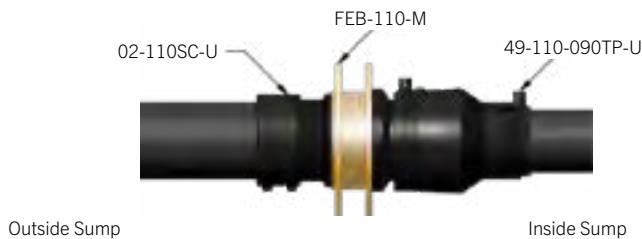
2" Secondary Contained Fiberglass Sump Entry Fittings



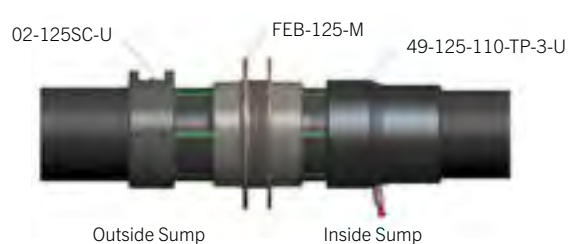
3" Primary Fiberglass Sump Entry Fittings



3" Secondary Contained Fiberglass Sump Entry Fittings



4" Double Wall Fiberglass Sump Entry Fittings



UPP® INSTALLATION TOOLS

230V EF1 Handheld Electrofusion Welder

Model	Description
EF1-230V	230 V EF1 handheld electrofusion welder
EF1-PC 4 MM	Spare single wall (primary) welding cable (orange)
EF1-SC 2 MM	Spare double wall (secondary) welding cable (green)
EF1-BC 4 MM*	Spare jumper welding cable (red)
EF1-PC 2 MM-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, Nema 5-15 Wall Plug
EF1-PC 4 MM	Spare single wall (primary) welding cable (orange)
EF1-SC 2 MM	Spare double wall (secondary) welding cable (green)
EF1-BC 4 MM*	Spare jumper welding cable (red)
EF1-PC 2 MM-10	10 amp weld lead

*Used to weld a series of single wall (primary) fittings.



Pipe Cutter

Model	Description
P.CUT	1½" 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	Description
MAL1	Wooden mallet



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)



PIPING & CONTAINMENT

UPP® INSTALLATION TOOLS CONTINUED

Leak Detector Tube

Model	Description
LDT60-2	23" leak detector tube, for -3 models of 49, 304, and 305 interstitial testing



Turbo Rotary Scrapers

Model	Description
ROTOSCRAPER32MM	Turbo Rotary Scraper for 32 mm UPP Pipe
ROTOSCRAPER50MM	Turbo Rotary Scraper for 50 mm Primary UPP Pipe
ROTOSCRAPER63MM	Turbo Rotary Scraper for 63 mm Primary UPP Pipe



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	35/8" (92 mm) hole saw for FEB-075-M fiberglass entry boot
HS5	5 1/2" 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

UPP® INSTALLATION TOOLS CONTINUED

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
1137205	E20 adhesive for FEB entry seal range
EMERY	Emery cloth for fiberglass entry booth sump surface preparation (sold in 1' lengths)
FIBERGLASS-KIT	Kit includes mat, 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) markers, (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

LOW PROFILE DISPENSER SUMPS

Low profile, single wall fiberglass dispenser sumps provide easy access to under-dispenser equipment and piping connections. The low-profile, tapered sump top facilitates optimal installation with non-island dispenser applications while also accommodating island forms. Designed with the electrician in mind, the flat ends of the sump allow electrical conduit to be installed with minimized bending while an integrated conduit mounting channel expedites conduit installation.

HIGHLIGHTS

- Available in models compatible with Gilbarco Encore® dispensers and Gilbarco Encore® DEF dispensers.
- Tapered top frame is designed to evenly distribute the weight of backfill and sloped concrete for non-island form applications.
- Flat sump ends allow electrical conduit to easily be installed without additional conduit bending required.
- 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 delivering a smooth surface for watertight entry boot connections as well strong, consistent sump wall thickness.
- 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 dispenser sump option available with banded two-sump design that allows for clear separation between regulated and non-regulated liquids.



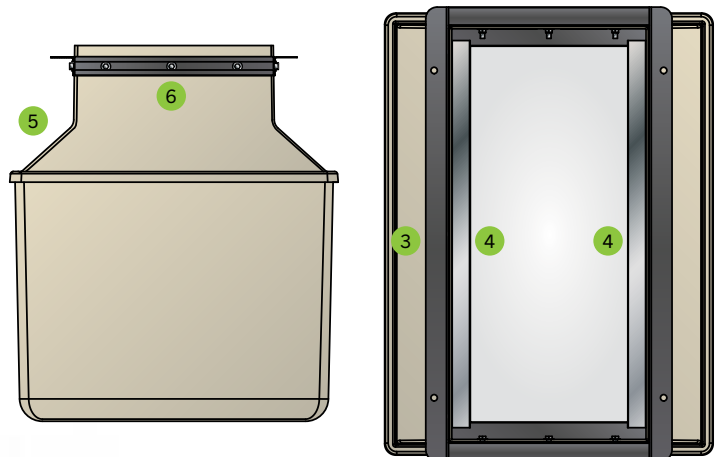
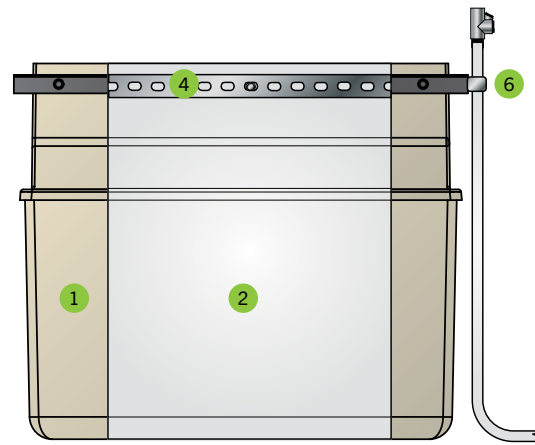
SPECIFICATIONS

Approvals & Certifications

- UL2447 listed.

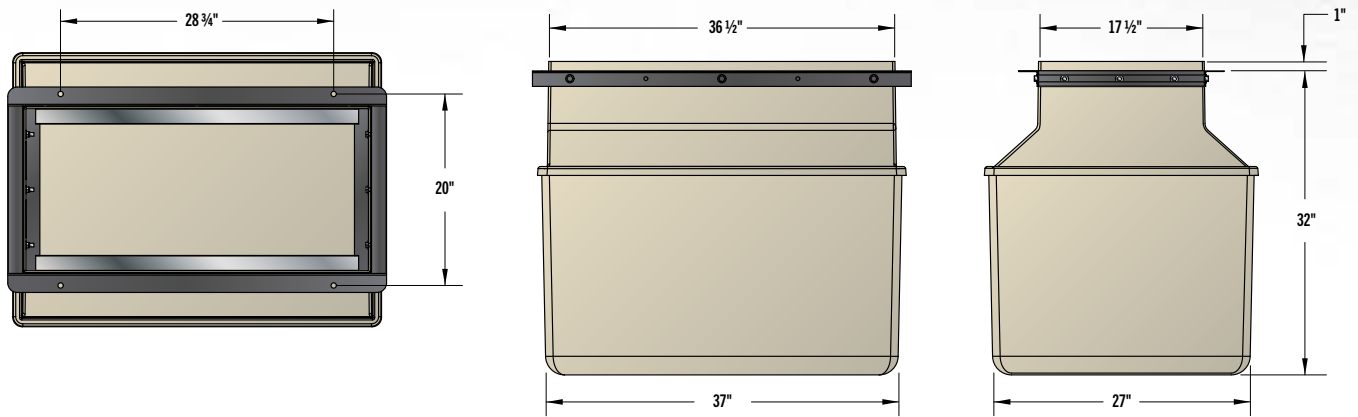
Components

- 1 Smooth sump exterior
- 2 White gel coat interior
- 3 Conduitless top frame
- 4 Stabilizer bar tracks
- 5 Tapered top
- 6 Conduit mounting channel

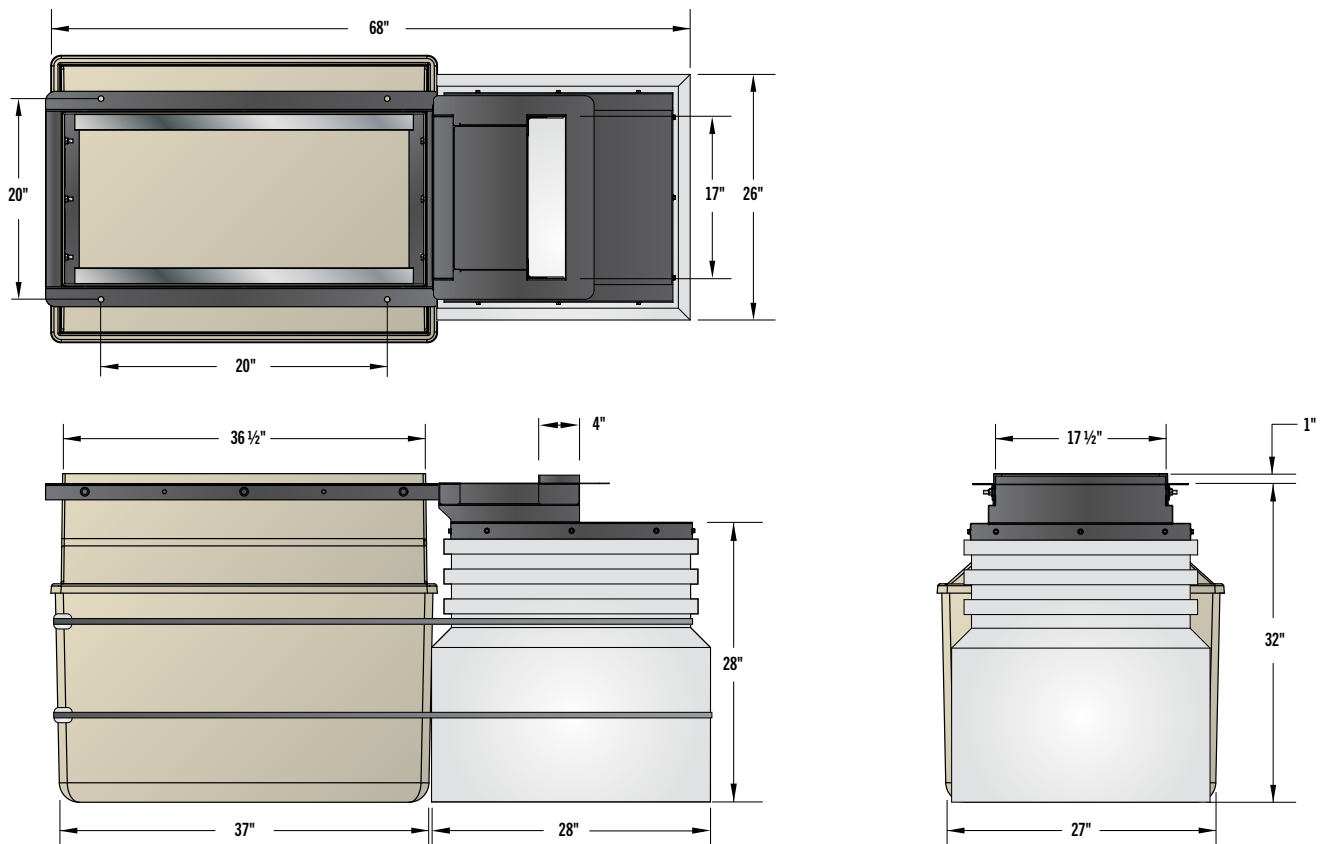


SPECIFICATIONS CONTINUED

Low Profile Single Wall Fiberglass Dispenser Sump Dimensions



Low Profile Single Wall Fiberglass Dispenser Sump Dimensions with Banded DEF Polyethylene Sump Dimensions



ORDERING INFORMATION

Low Profile Single Wall Fiberglass Dispenser Sump



Model	Description	Stabilizer Bar Kit
602375004	Low profile single wall fiberglass sump for Gilbarco Encore® bow-tie end dispenser models	SBK-3-U
602377904	Low profile single wall fiberglass sump for Gilbarco Encore® bow-tie end dispenser models with banded DEF polyethylene sump	SBK-3-U

Notes: One stabilizer bar kit per shear valve is required.
-U indicates UL compliance.

CARBON SERIES™ SINGLE WALL 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.

HIGHLIGHTS

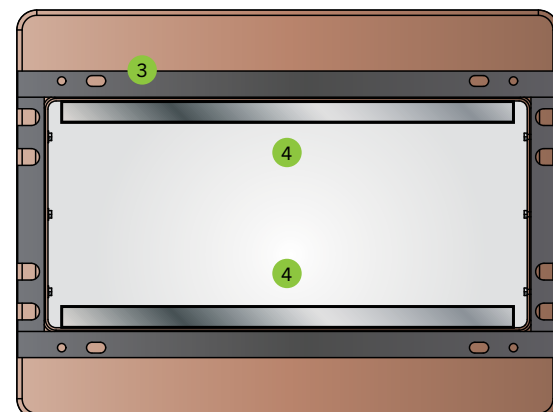
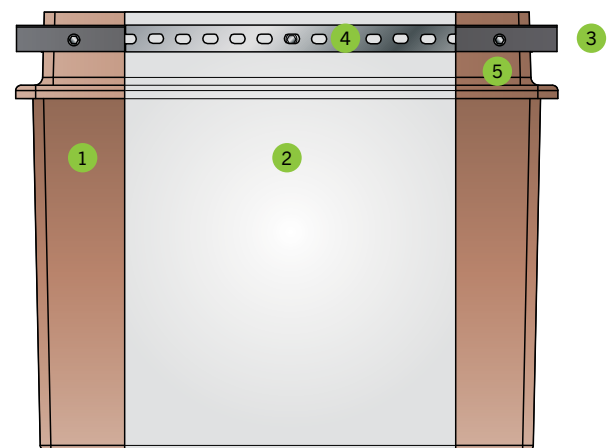
- The Light Resin Transfer Molding (Light RTM) technology used to manufacture Carbon Series™ sumps gives them consistent wall thickness throughout the entire assembly for superior rigidity as well as an extremely smooth surface to facilitate watertight entry boot installation.
- Available in models compatible with Wayne Ovation® dispensers.
- Large sump body accommodates up to five pipe entries and provides easy access to piping connections.
- 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.



SPECIFICATIONS

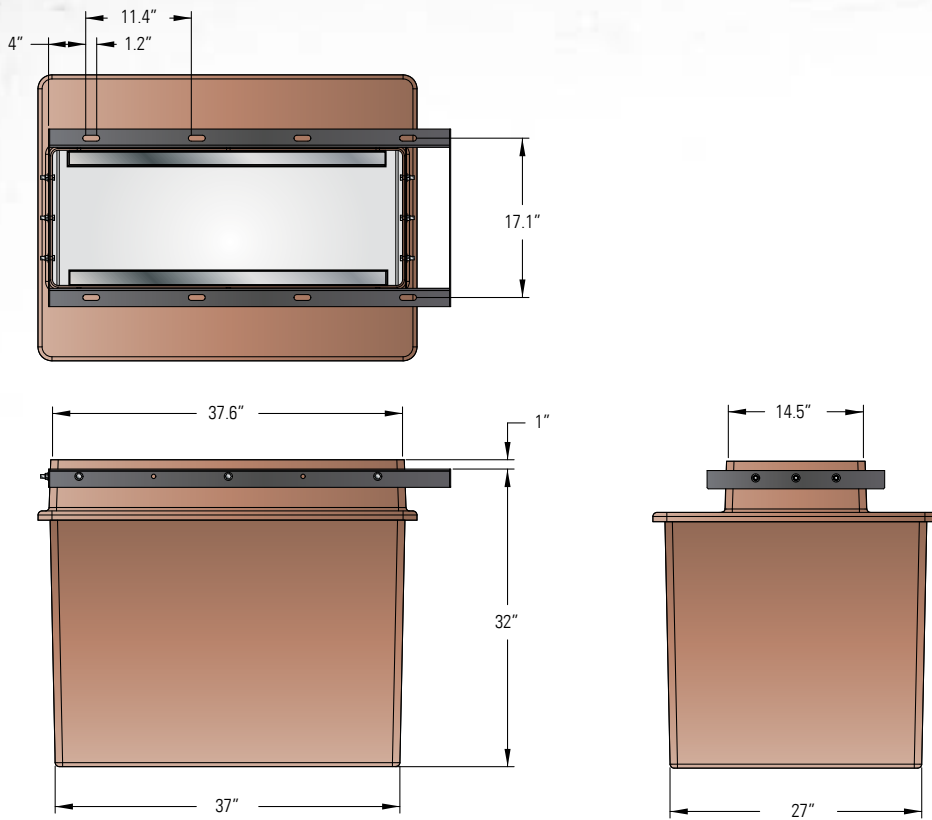
Components

- 1 Smooth sump exterior
- 2 White gel coat interior
- 3 Conduitless top frame
- 4 Stabilizer bar tracks
- 5 Mounting hardware



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
602381001	Carbon Series™ single wall fiberglass sump for Wayne Ovation® dispenser models	SBK-25

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

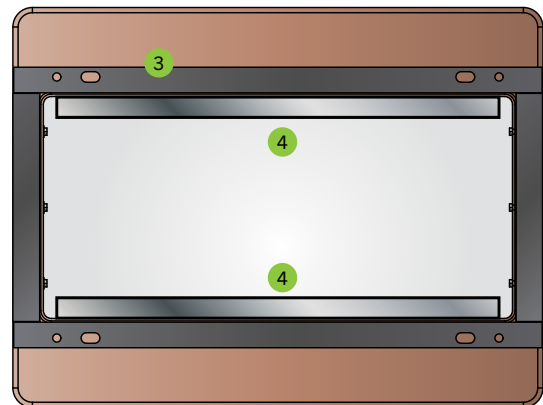
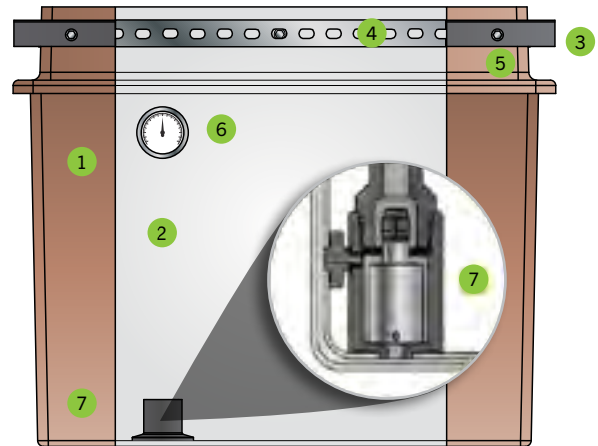
- Available in models compatible with Gilbarco Encore® and Wayne Ovation® dispensers.
- Large sump body accommodates up to five pipe entries and provides easy access to piping connections.
- Dispenser top and top frame are joined together prior to leaving the factory saving field installation time.
- 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

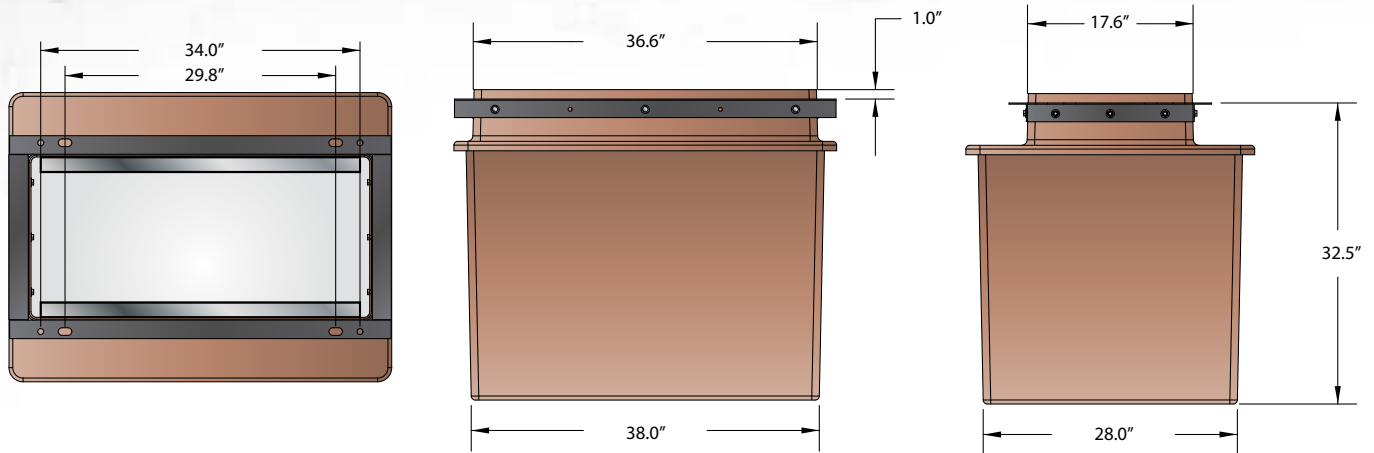
Components

- | | |
|---------------------------|--|
| 1 Sump exterior | 5 Mounting hardware |
| 2 White gel coat interior | 6 Vacuum gauge |
| 3 Conduitless top frame | 7 Monitoring port (shown with electronic sensor) |
| 4 Stabilizer bar tracks | |

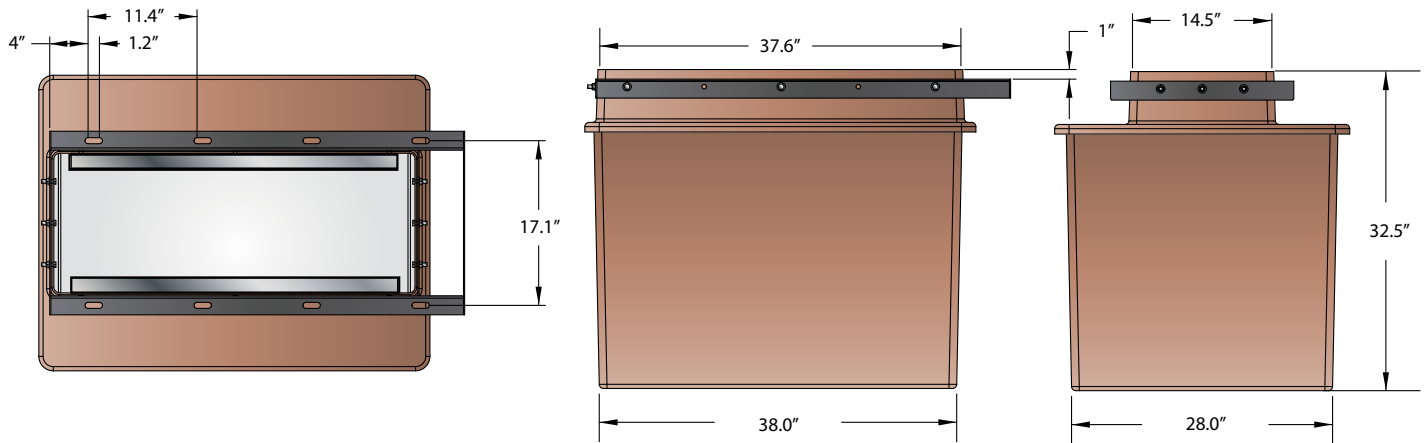


SPECIFICATIONS CONTINUED

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)

Model	Description
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 sensor sold separately.

Model	Description
FMP-ULS	Universal liquid sump sensor (EVO™ 200 & EVO™ 400, EVO™ 550 and EVO™ 5000) - includes ½" NPT sensor cable compression fitting



HYDROSTATIC 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
602370906	Hydrostatic monitoring port adapter and hose barb

Note: Hydrostatic monitoring installation kit and electronic sensor sold separately.

Note: Electronic sensor sold separately.

Model	Description
HM-KIT	Hydrostatic monitoring installation kit - includes flexible brine tube, sensor housing clamp, sensor housing, sensor cap, and hardware

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

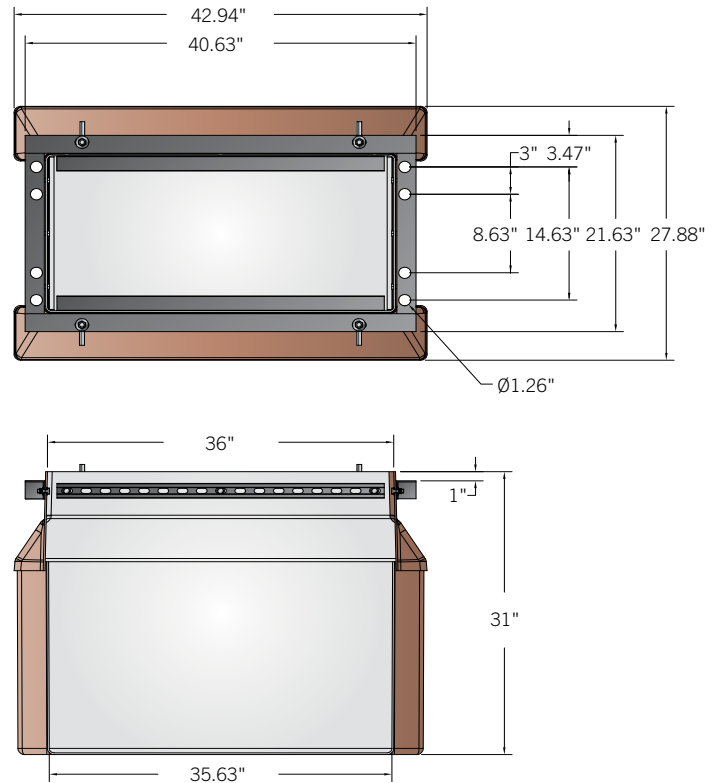


SPECIFICATIONS

Approvals/Certifications

- ULc listed.
- Florida EQ-786 approved.

Dimensions



LARGE MOUTH FIBERGLASS DISPENSER SUMPS



APT® Large Mouth Fiberglass Dispenser Sumps come in single and double wall options and feature large sump opening to provide easy installation and ample space for under dispenser containment. The dispenser frame and top are factory assembled and field glassed onto the sump after piping connections are completed.

Note: Consult Customer Service to verify lead time on all double wall dispenser sumps.

HIGHLIGHTS

- Powder coated steel frame.
- Dispenser frame factory assembled and watertight sealed.
- Water dam frame design prevents surface water from entering the sump.
- Strong three-layer hand layup FRP.
- Sumps include dispenser frames and mounting hardware.
- Stackable for reduced freight and storage space (single wall only).
- 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.
- Double wall sumps are available for hydrostatic (brine) or vacuum monitoring and are shipped under vacuum with factory installed vacuum gauge.

PIPING & CONTAINMENT

ORDERING INFORMATION

Large Mouth Fiberglass Dispenser Sumps (2400 Series)

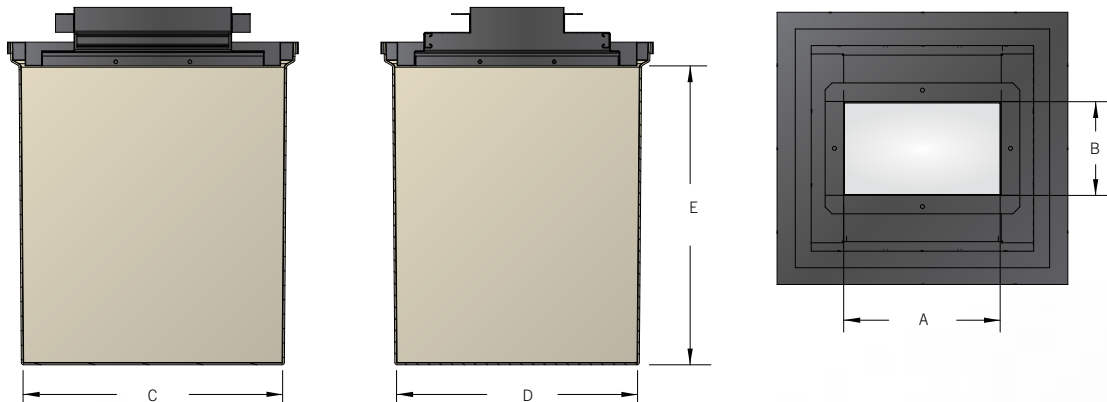
Use the drawing diagram and the dimensions below to identify the appropriate dispenser sump for your application or use the Large Mouth Dispenser Sump Directory found on the following pages.

Model	Top Frame Mouth Length (A)	Top Frame Mouth Depth (B)	Sump Base Bottom Length (C)	Sump Base Bottom Depth (D)	Sump Base Bottom Depth (E)	Stabilizer Bar Kit
LMM-1410-(S/D)	14.00"	10.00"	28.00"	26.00"	33.50"	SBK-2
LMM-1913-T-(S/D)	19.00"	13.00"	28.00"	26.00"	33.50"	SBK-25
LMM-2010-(S/D)	20.00"	10.00"	28.00"	26.00"	33.50"	SBK-2
LMM-2018-(S/D)	20.00"	18.00"	28.00"	26.00"	33.50"	SBK-3

Accessories

Model	Description
HM-KIT	Hydrostatic monitoring system for dispenser sumps
602284004	Drop down frame for 2400 Series dispenser sumps

Note: For "S/D" in part number use "S" for single wall or "D" for double wall when ordering.



Large Mouth Fiberglass Dispenser Sumps (3600 Series)

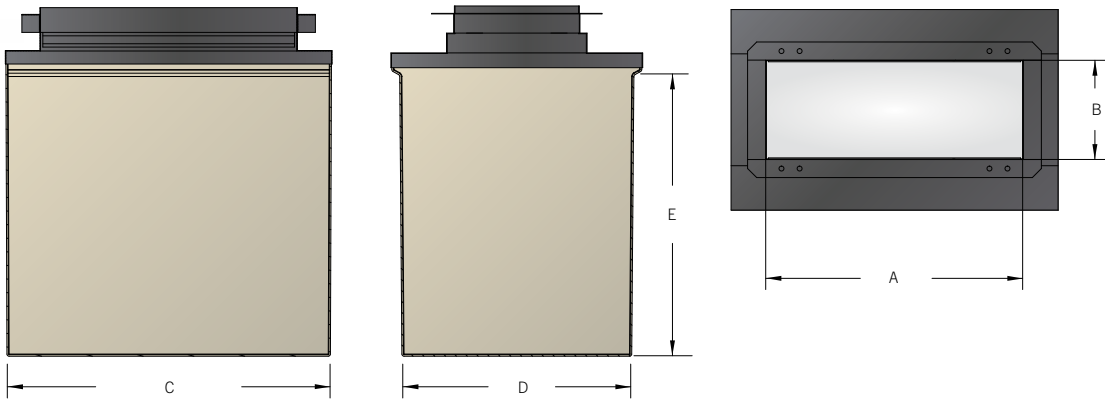
Use the drawing diagram and the dimensions below to identify the appropriate dispenser sump for your application or use the Large Mouth Dispenser Sump Directory found on the following pages.

Model	Top Frame Mouth Length (A)	Top Frame Mouth Depth (B)	Sump Base Bottom Length (C)	Sump Base Bottom Depth (D)	Sump Base Bottom Depth (E)	Stabilizer Bar Kit
LMM-2313-T-(S/D)	23.00"	13.00"	36.00"	26.00"	33.50"	SBK-25
LMM-2407-(S/D)	24.00"	7.00"	36.00"	26.00"	33.50"	SBK-1
LMM-2715-(S/D)	27.00"	15.00"	36.00"	26.00"	33.50"	SBK-3
LMM-2811-(S/D)	28.00"	11.00"	36.00"	26.00"	33.50"	SBK-25
LMM-2915-(S/D)	29.00"	15.00"	36.00"	26.00"	33.50"	SBK-3
LMM-3617-(S/D)*	36.00"	17.00"	36.00"	26.00"	33.50"	SBK-3
LMM-3914-36-W-(S/D)*	39.00"	14.00"	36.00"	26.00"	33.50"	SBK-25

Accessories

Model	Description
HM-KIT	Hydrostatic monitoring system for dispenser sumps
602270004	Drop down frame for 3600 Series dispenser sumps

Note: For "S/D" in part number use "S" for single wall or "D" for double wall when ordering.
*Conduit-less top frame.



Large Mouth Fiberglass Dispenser Sumps (4800 Series)

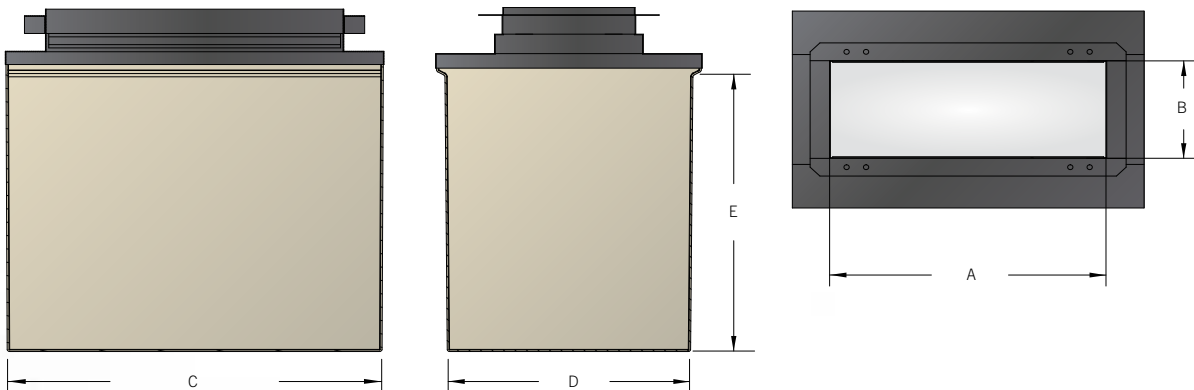
Use the drawing diagram and the dimensions below to identify the appropriate dispenser sump for your application or use the Large Mouth Dispenser Sump Directory found on the following pages.

Model	Top Frame Mouth Length (A)	Top Frame Mouth Depth (B)	Sump Base Bottom Length (C)	Sump Base Bottom Depth (D)	Sump Base Bottom Depth (E)	Stabilizer Bar Kit
LMM-3610-(S/D)	36.00"	10.00"	52.00"	26.00"	33.50"	SBK-2
LMM-3914-(S/D)	39.00"	14.00"	52.00"	26.00"	33.50"	SBK-25
LMM-4018-(S/D)	40.00"	18.00"	52.00"	26.00"	33.50"	SBK-3
LMM-4111-(S/D)	41.00"	11.00"	52.00"	26.00"	33.50"	SBK-25
LMM-4115-(S/D)	41.00"	15.00"	52.00"	26.00"	33.50"	SBK-3

Accessories

Model	Description
HM-KIT	Hydrostatic monitoring system for dispenser sumps
602271004	Drop down frame for 4800 Series dispenser sumps

Note: For "S/D" in part number use "S" for single wall or "D" for double wall when ordering.



ORDERING INFORMATION

Large Mouth Fiberglass 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.

Bennet®

Series	Model	FRP Sump	SBK #
Horizon/ Big Squirt	2200 Series	LMM-2010-(S/D)	SBK-2
Horizon	2300 Series	LMM-2811-(S/D)	SBK-25
	2400 Series	LMM-4111-(S/D)	SBK-25
Mechanical	3000 Series, 6000 Series	LMM-1410-(S/D)	SBK-2
Electronic	3000 Series	LMM-2313-T-(S/D)	SBK-25

Gasboy®

Model	FRP Sump	SBK #
215A, 216A	LMM-1410-(S/D)	SBK-2
9140A, 9140AX, 9152ATW1, 9152AXTW1, 9152AXTW2, 9153ATW1M, 9153ATW2, 9153AXTW2, 9850XTW2, 9852ATW2, 9852AXTW2, 9853ATW2, 9853AXTW2, 9153AXTW1, 9840A, 9840AX, 9850AXTW1, 9852ATW1, 9852AXTW1, 9853ATW1M, 9853AXTW1, ATLAS	LMM-2313-T-(S/D)	SBK-25
9152A, 9152AX, 9153A, 9153AHC, 9153AX, 9753EXIL, 9850A, 9850AX, 9852A, 9852AX, 9853A, 9853AHC, 9853AX	LMM-1913-T-(S/D)	SBK-25

RDR

Series	FRP Sump	SBK #
RDR	LMM-2018-X	SBK-3

Schlumberger

Series	Model	FRP Sump	SBK#
Centurion Narrow	XXXX1	LMM-2915-(S/D)	SBK-3
Centurion Wide	XXXX2	LMM-4115-(S/D)	SBK-3
	435,440,640,650	LMM-1913-T-(S/D)	SBK-25
	2300 Series	LMM-2811-(S/D)	SBK-25
	2400 Series	LMM-4111-(S/D)	SBK-25

Universal

Series	Model	FRP Sump	SBK #
Univision	UV-9100, UV-9200	LMM-2811-(S/D)	SBK-25
	UV-9300, UV-9400	LMM-4111-(S/D)	SBK-25
	3000 Narrow Base, 3000 Wide Base, 3500 Narrow Base, 3500 Wide Base, 4000 Narrow Base, 4000 Wide Base	LMM-1410-(S/D)	SBK-2

Tokheim®

Series	Model	FRP Sump	SBK #
	162, 262, 785, 1248, 1250	LMM-1913-T-(S/D)	SBK-25
	220, 222, 330, 333, 793	LMM-1410-(S/D)	SBK-2
	311, 312, 322, 324	LMM-2407-(S/D)	SBK-3
	411, 413, 414, 422, 424, 426, 428	LMM-4018-(S/D)	SBK-3
Centurion Narrow	XXXX1	LMM-2915-(S/D)	SBK-3
Centurion Wide	XXXX2	LMM-4115-(S/D)	SBK-3

ORDERING INFORMATION CONTINUED

Gilbarco®

Series	Model	FRP Sump	SBK #
Advantage	MPD, Single Hose (B71XXX), Six Hose, X+0 X+1 (48 inch frame) B7XXXX	LMM-4115-(S/D)	SBK-3
	Quad/ Dual, X+0 (36 inch frame) B7AXXX	LMM-2915-(S/D)	SBK-3
Commercial	High Gallonage, Ultra High Gallonage	LMM-2010-(S/D)	SBK-2
Eclipse		LMM-2010-(S/D)	SBK-2
	40 inch sump length, Super Hi, Ultra Hi (Conduitless)	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	LMM-3610-(S/D)	SBK-2
	Salesmaker-2H (AM62XXA)	LMM-2010-(S/D)	SBK-2
	Salesmaker 4/4A, Salesmaker Pro (ABXXXXA)	LMM-2313-T-(S/D)	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)	LMM-2010-(S/D)	SBK-2
	Salesmaker 21 inch frame (AC1921A-S1), Salesmaker 27 inch frame (AC1921A-S1)	LMM-1410-(S/D)	SBK-2
Legacy	ALL	LMM-2407-(S/D)	SBK-1
Trimline	252-0 with 21 inch or 27 inch frame	LMM-2010-(S/D)	SBK-2

Wayne®

Series	Model	FRP Sump	SBK #
Vista Series	V289, V387, V388, V889, V580, V585	LMM-2811-(S/D)	SBK-25
	V390, V395, V399, V490, V590, V595	LMM-4111-(S/D)	SBK-25
	DS/375/19, DS/585/19E, DS/585/EG, 350 Series, 360 Series, 370 Series, 387 Series, 389 Series	LMM-2407-(S/D)	SBK-2
	390 Series, 490 Series	LMM-4111-(S/D)	SBK-25
Ovation	Global (GXXXX) Series, Reliance, HS3/V387, Select	LMM-2715-(S/D)	SBK-3
	Ovation Series	LMM-3914-(S/D)	SBK-25
	Ovation Series (Conduitless)	LMM-3914-36-W-(S/D), DHW-3617-OVA, 602381001	SBK-25
	Ovation Series (conduitless - double wall fiberglass)	602385001, 602385401	SBK-25
Helix	2000, 4000	LMM-2915-(S/D)	SBK-3
	5000	LMM-4115-(S/D)	SBK-3

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Wayne® and Tokheim® is a trademark of Dover Corporation.
Bennet® is a trademark of Bennet Pump Company

WATERTIGHT FIBERGLASS TANK SUMPS

Available in either 42" or 48" diameters, Watertight Fiberglass Tank Sumps deliver maximum protection from liquid intrusion while providing easy access to submersible pumps, tank top hardware, and pipework connections. The two-piece design and octagonal collar-mount base provide full access during installation. At the same time, the pour-in-place fill channel makes connecting the sump riser to the base simple, fast, and watertight once installation is complete.



HIGHLIGHTS

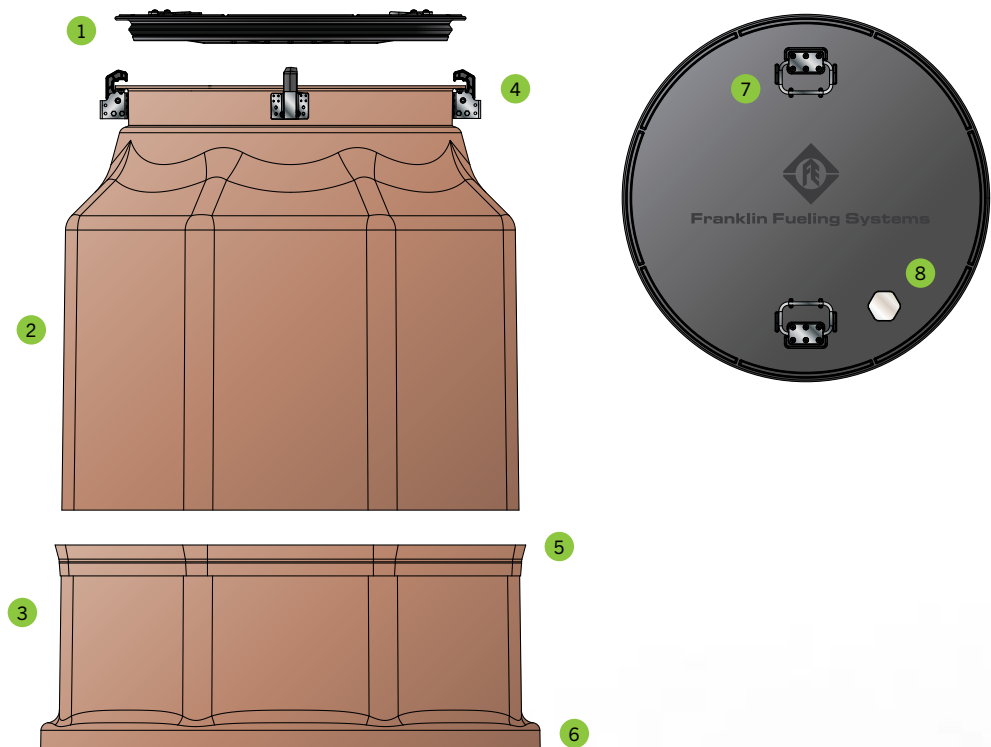
- Single wall, collar mounted base with or without bottom.
- Available at a standard height of 60" and adjustable in the field down to 34" to accommodate shallow-buried tanks.
- Lightweight, 21 lbs, injection molded HDPE lid with integrated ribs for added strength.
- The lightweight lid features a side-sealing gasket that locks liquid and debris out.
- Three lid latches provide visual confirmation that the lid is appropriately seated and remains in place.
- The pour-in-place fill channel makes connecting the riser to the octagonal base quick and easy for installers with no messy, time-consuming fiberglass seam work to do.
- Fits under any 36" manway while providing a 31" diameter clear opening for easy access to equipment.
- Two-piece design eliminates confined spaces during installation by allowing the installer to assemble the pipework through the octagonal base without the sump riser in the way.
- Octagonal base and riser are constructed with eight flat panels to maximize flexibility of pipe entry locations.
- The vapor pressure vent's thin membrane balances pressure without letting liquid in, making it easier to remove the cover during maintenance.
- Two stainless-steel handles are surface-mounted to eliminate any potential leak paths into the lid.

PIPING & CONTAINMENT

SPECIFICATIONS

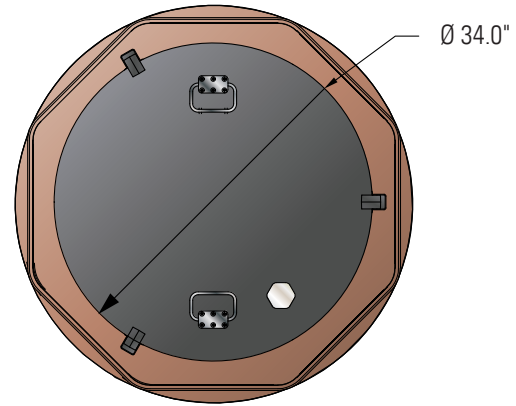
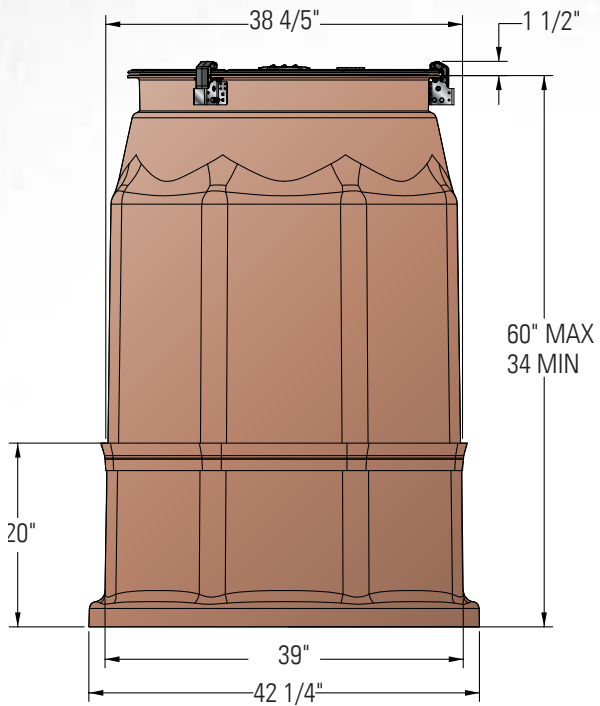
Components

- 1 Lid with side-sealing gasket
- 2 Riser
- 3 Base
- 4 Lid latches
- 5 Fill channel
- 6 Collar with open bottom
- 7 Retractable handles
- 8 Vapor pressure vent

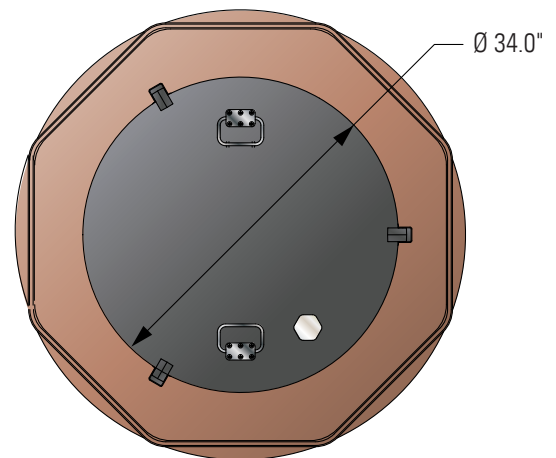
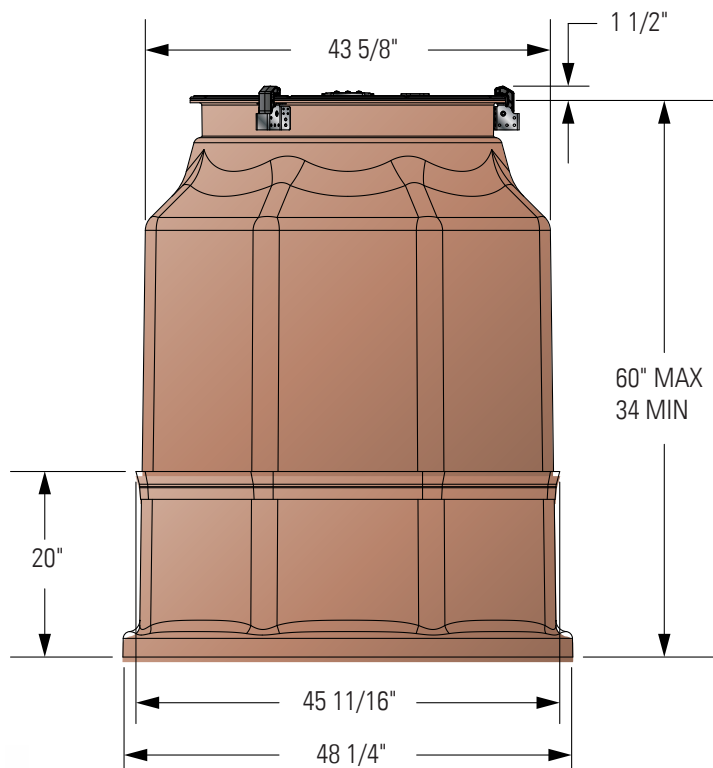


SPECIFICATIONS CONTINUED

42" Watertight Fiberglass Tank Sump Dimensions



48" Watertight Fiberglass Tank Sump Dimensions



ORDERING INFORMATION

Watertight Fiberglass Tank Sumps

Model	Description
602402922	42" watertight fiberglass tank sump, collar mount, includes base, riser, and lid
602402932	42" watertight fiberglass tank sump, with bottom, includes base, riser and lid
602402901	48" watertight fiberglass tank sump, collar mount, includes base, riser, and lid
602402911	48" watertight fiberglass tank sump, with bottom, includes base, riser and lid

Note: Each tank sump requires (1) pour-in-place slurry kit and (1) collar mount seam kit shown below.

Watertight Fiberglass Tank Sump Installation Tools



Model	Description
602366924	Pour-in-place slurry kit includes: (1) gallon resin, (1) pint catalyst, gloves, mixing stick, sand paper

Note: One kit required per tank sump.



Model	Description
602366901	Collar mount seam kit includes: (2) wooden stir sticks, (2) pair rubber gloves, (3) quart containers of resin, (4) tubes of catalyst, (2) rolls of fiberglass reinforced plastic (FRP) mat, 6" x 27", (1) quart container of putty, (1) plastic putty mixing knife

Note: One kit required per tank sump.



Model	Description
602366933	Installation accessories kit includes: (1) FRP roller, (2) plastic putty mixing knives, (2) wooden stir sticks, (1) scissors, (4) pair rubber gloves, (6) brushes

Note: One kit required per site.

Watertight Fiberglass Tank Sump Replacement Parts



Model	Description
602388901	Replacement Watertight Tank Sump lid with gasket
602390001	Replacement gasket for Watertight Tank Sump lid



Model	Description
602395930	Replacement latch assembly with adhesive
602395940	Replacement latch only

FIBERGLASS TANK SUMP COLLARS

Available in either 42" or 48" diameters, fiberglass tank sump collars allow for watertight installation of tank sumps to the top of the tank.



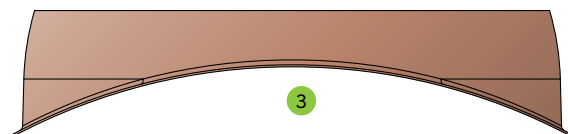
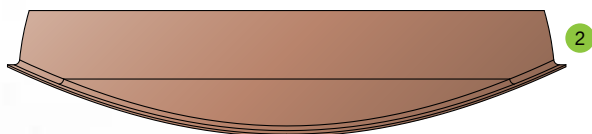
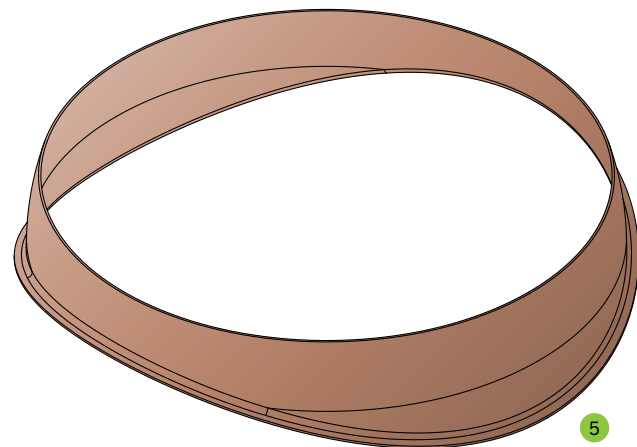
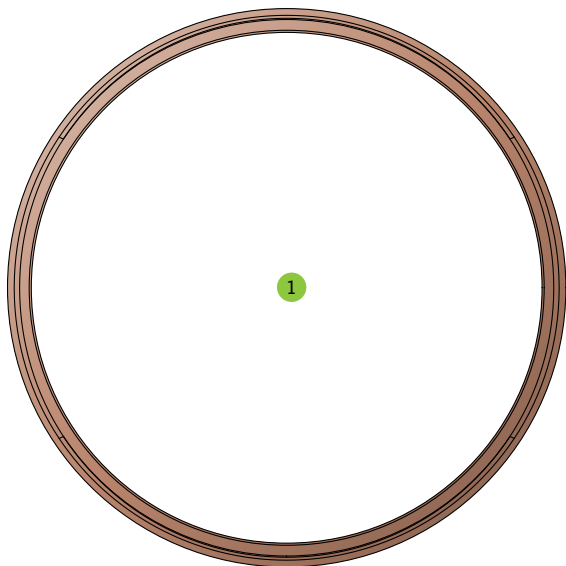
HIGHLIGHTS

- Available for installation at the fiberglass tank manufacturer or field retrofit applications.
- Available for 8', 9', 10', and 11' diameter tanks and fiberglass tank sump diameter sizes 42" or 48".
- Patent-pending parabolic design curves inward on top edge of the collar to facilitate adjustment of the tank sump to align with grade level.
- Designed to work with Franklin Fueling Systems fiberglass collar mount tank sumps in 42" and 48" diameters.
- Natural resin color ensures installers can easily see that the fiberglass matting is fully saturated with resin and all air pockets and bubbles are visible and can be removed.
- Field retrofit installation kit available.

SPECIFICATIONS

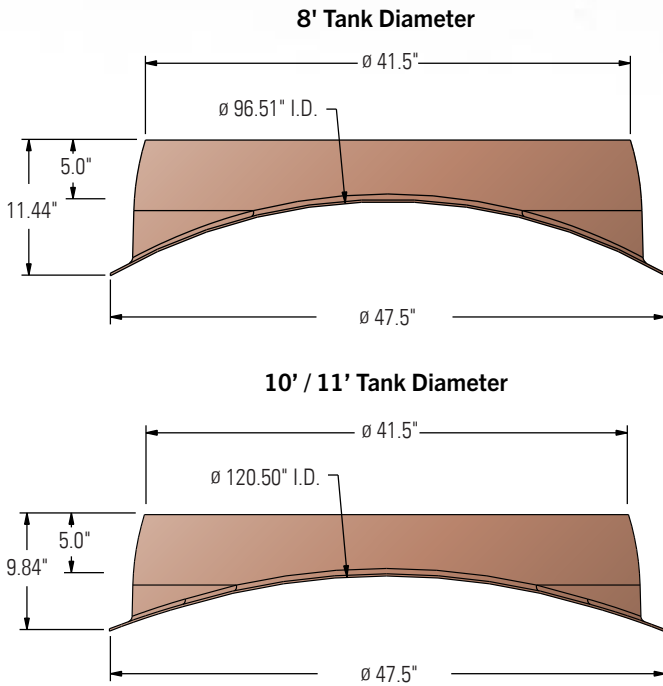
Components

- 1 42" or 48" opening for tank top access
- 2 Curved edge for sump alignment to grade level
- 3 8', 9', or 10' tank radius
- 4 $\frac{3}{16}$ " thick fiberglass construction
- 5 Extended lip for fibreglassing to tank surface

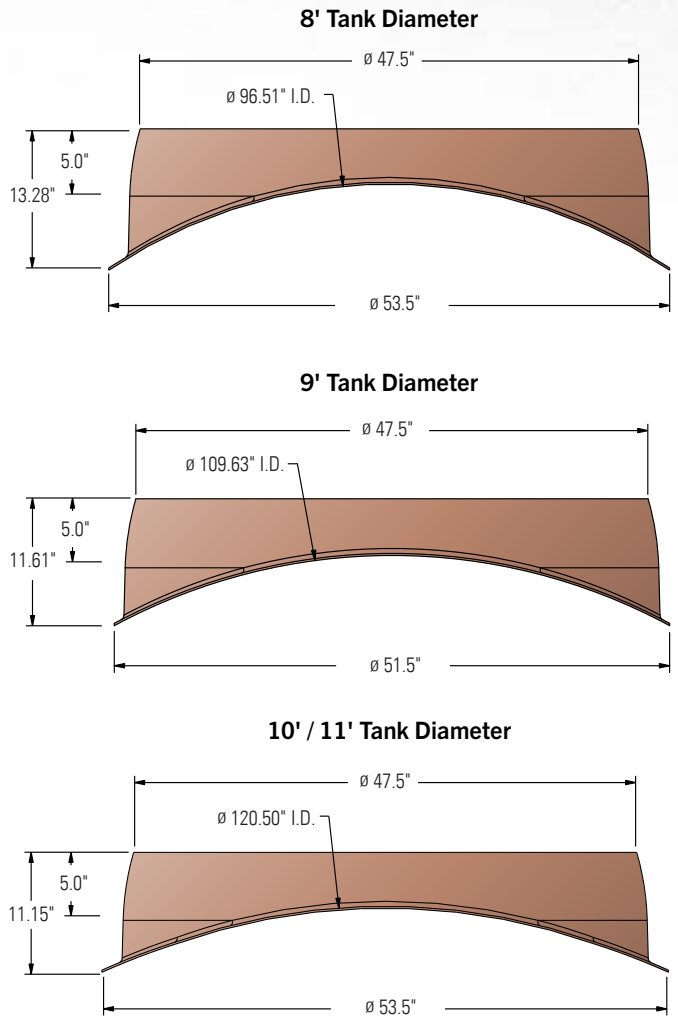


SPECIFICATIONS CONTINUED

42" Tank Sump Collars



48" Tank Sump Collars



PIPING & CONTAINMENT

ORDERING INFORMATION

Fiberglass Tank Sump Collars



Model	Description
602367004	42" tank sump collar for 8' tank diameters
602367002	42" tank sump collar for 10' / 11' tank diameters
602367005	48" tank sump collar for 8' tank diameters
602367001	48" tank sump collar for 9' tank diameters
602367003	48" tank sump collar for 10' / 11' tank diameters

Note: Each tank sump collar requires (1) tank sump collar installation kit shown below.

Fiberglass Tank Sump Collar Installation Kit



Model	Description
602366925	Fiberglass tank sump collar installation kit includes: (2) wooden stir sticks, (2) pair rubber gloves, (3) quart containers of putty, (4) quart containers of resin, (7) tubes of catalyst, (5) 6" x 15' rolls of fiberglass reinforced plastic (FRP) mat, (1) plastic putty mixing knife, (1) laminate spreader

Note: (1) fiberglass tank sump collar installation kit is required per collar for field retrofits. Kit ships in (2) boxes.

DOUBLE WALL FIBERGLASS TANK SUMPS

Our double wall 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, octagonal base bottom, two-piece configuration, and double wall construction, you are able to select the exact tank sump design to meet your specific site needs.



HIGHLIGHTS

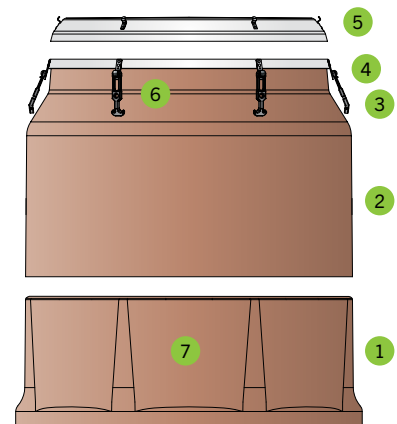
- Each fiberglass tank sump includes a sump base, a riser, a reducer collar (factory-fiberglassed to the riser), and watertight sump shield with strap-down cover.
- Available in 42" and 48" base diameters.
- Reducer collars and reducer sump shields allow virtually any tank sump to fit under a 36" manway 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.
- Double wall models are only available with 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

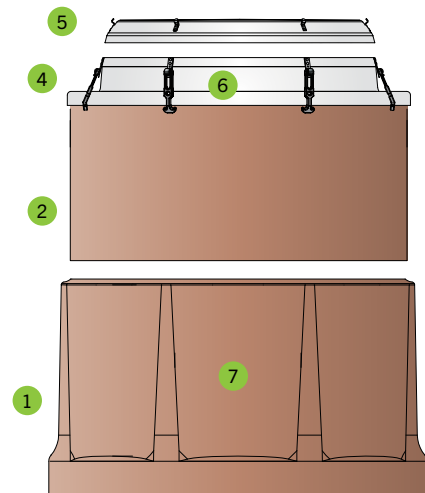
Components

- 1 Base
- 2 Riser
- 3 Reducer collar
- 4 Sump shield
- 5 Cover (gasketed)
- 6 Strap-down toggles
- 7 Flat panels

Octagonal Two-Piece Configurations



42" Base Diameter



48" Base Diameter

ORDERING INFORMATION

48" Double Wall Fiberglass Tank Sumps

Octagonal Two-Piece Base with Bottom

Medium Bury

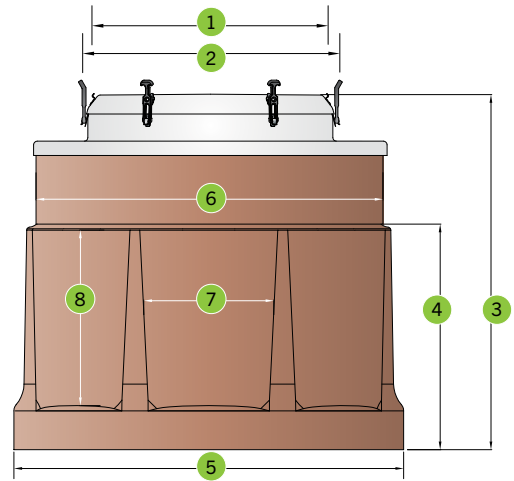
The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Min. Manway Size	# of Seam Kits Recommended	Interstitial Monitoring Type
TM4836-0/0-OC-H	Double	Medium	48"	36"	3	Hydrostatic
TM4836-0/0-OC-V	Double	Medium	48"	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

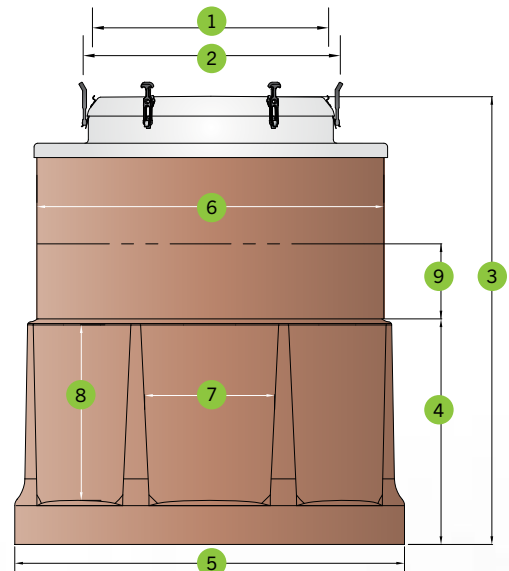
The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Min. Manway Size	# of Seam Kits Recommended	Interstitial Monitoring Type
TD4836-0/0-OC-H	Double	Deep	48"	36"	3	Hydrostatic
TD4836-0/0-OC-V	Double	Deep	48"	36"	4	Vacuum



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 CONTINUED

42" Double Wall Fiberglass Tank Sumps

Octagonal Two-Piece Base with Bottom

Medium Bury

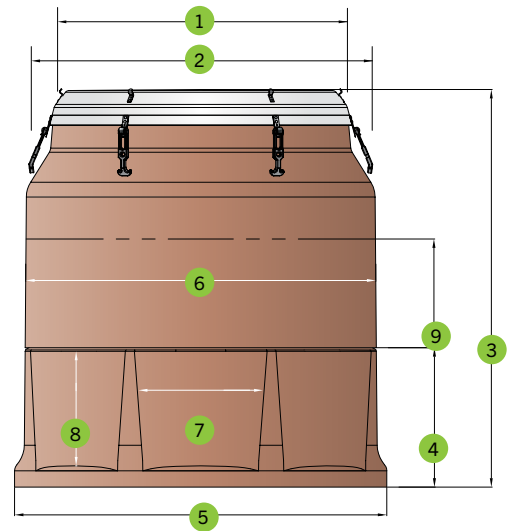
The sump base comes with a solid fiberglass bottom that is ideal for installations with an existing tank fitting adapter or tank manway adapter in place. Choose between hydrostatic (brine) or vacuum interstitial monitoring options.

Model	Wall Type	Depth	Riser Base Diameter	Min. 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



Dimensions

- 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"
- ⑦ Flat panel width: 12"
- ⑧ Flat panel height: 9"
- ⑨ Field height adjustment: 12"



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: mat, resin, putty, catalyst, 1/2" 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
602221902	Sump adapter for 42" sump base to 36" lid adapter
602221904	Sump adapter for 42" sump base to 42" lid adapter
602226901	Sump adapter for 48" sump base to 36" lid adapter

Model	Description
602329001	Keeper assembly, attaches on sump shield lid (top)
602330901	Bracket assembly, attaches on the riser adapter (bottom)
602331001	Rubber pull latch

LARGE MOUTH POLYETHYLENE DISPENSER SUMPS

APT® 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).



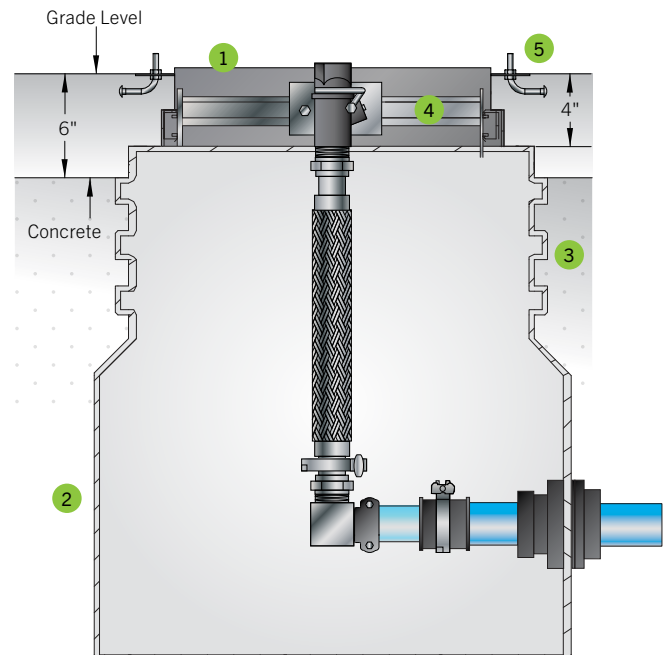
SPECIFICATIONS

Approvals/Certifications

- ULC listed.
- Florida EQ-423 approved.

Components

- 1 Top frame
- 2 Base
- 3 Riser, field adjustable
- 4 Stabilizer bar kit
- 5 Concrete anchors



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 Mouth Depth (F)	Sump Base Bottom Depth (G)	Sump Base Bottom Height (H)
					Medium (M)	Deep (D)			
LM(M/D)-1410	13.5"	9.75"	24"	28"	28"	43"	22"	26"	15.5"
LM(M/D)-1913-T	19"	12"	24"	28"	28"	43"	22"	26"	15.5"
LM(M/D)-2010	20.5"	10"	24"	28"	28"	43"	22"	26"	15.5"
LM(M/D)-2018	20.81"	18.31"	24"	28"	28"	43"	22"	26"	15.5"
LM(M/D)-2313-T	23"	12"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-2407	23.75"	7.5"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-2715	27"	15"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-2811	28.5"	11"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-2915	29.75"	15.75"	36"	40"	28"	43"	22"	26"	15.5"
LMM-2915-HLX*	29.75"	15.25"	36"	40"	28"	--	22"	26"	15.5"
LM(M/D)-3610	36"	10.25"	48"	52"	28"	43"	22"	26"	15.5"
LM(M/D)-3617*	36"	17.25"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-3914-36-W*	38.75"	14"	36"	40"	28"	43"	22"	26"	15.5"
LM(M/D)-3914	38.75"	14"	48"	52"	28"	43"	22"	26"	15.5"
LMM-3915-HLX*	39.75"	15.25"	48"	52"	28"	--	22"	26"	15.5"
LM(M/D)-4018	39.75"	17.75"	48"	52"	28"	43"	22"	26"	15.5"
LM(M/D)-4111	41.5"	11"	48"	52"	28"	43"	22"	26"	15.5"
LM(M/D)-4115	41.5"	15.75"	48"	52"	28"	43"	22"	26"	15.5"

Note: For "M/D" in part number use "M" for medium or "D" for deep when ordering.
*Conduit-less top frame.

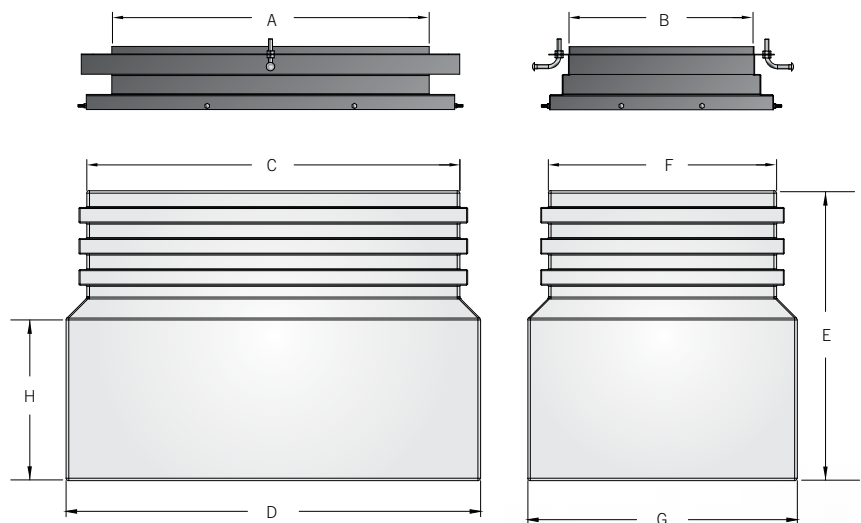
PIPING & CONTAINMENT

Stabilizer Bar Kits

Model	Stabilizer Bar Kit Model
LM(M/D)-1410	SBK-2
LM(M/D)-1913-T	SBK-25
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
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

Grommets for Conduit-less Sumps

Model	Description
43605002	1/2" grommets for conduit-less sump
43607502	3/4" grommets for conduit-less sump
43610002	1" grommets for conduit-less sump



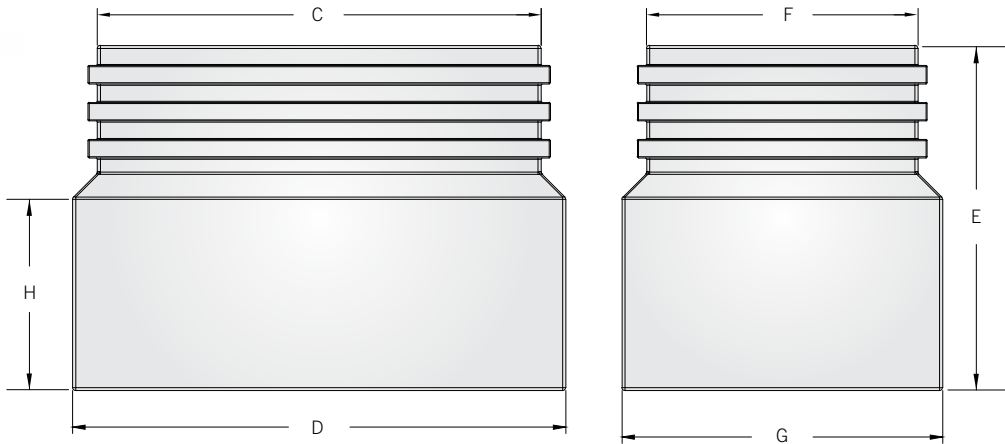
One SBK is required for each shear valve and must be purchased separately. Select the appropriate SBK with the compatibility chart.

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.

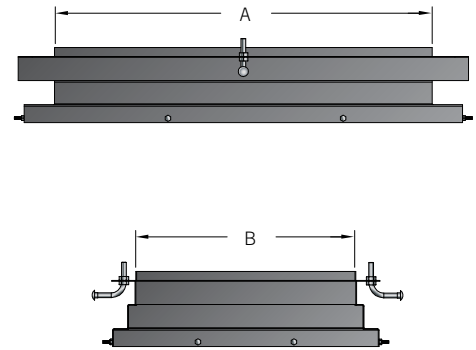
Model	Sump Base Mouth Length (C)	Sump Base Bottom Length (D)	Sump Base Height (E)	Sump Base Mouth Depth (F)	Sump Base Bottom Depth (G)	Sump Base Bottom Height (H)
LBM-2400	24"	28"	28"	22"	26"	15.5"
LBM-3600	36"	40"	28"	22"	26"	15.5"
LBM-4800	48"	52"	28"	22"	26"	15.5"
LBD-2400	24"	28"	43"	22"	26"	15.5"
LBD-3600	36"	40"	43"	22"	26"	15.5"
LBD-4800	48"	52"	43"	22"	26"	15.5"



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	13.5"	9.75"	2400
LMT-1913-T	19"	12"	2400
LMT-2010	20.5"	10"	2400
LMT-2018	20.81"	18.31"	2400
LMT-2313-T	23"	12"	3600
LMT-2407	23.75"	7.5"	3600
LMT-2715	27"	15"	3600
LMT-2811	28.5"	11"	3600
LMT-2915	29.75"	15.75"	3600
LMT-3610	36"	10.25"	4800
LMT-3617-36	36"	17.25"	3600
LMT-3914-36-W	38.75"	14"	3600
LMT-3914	38.75"	14"	4800
LMT-3915-HLX	39.75"	15.25"	4800
LMT-4018	39.75"	17.75"	4800
LMT-4111	41.5"	11"	4800
LMT-4115	41.5"	15.75"	4800
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



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.

Bennet®

Series	Model	Polyethylene Sump	SBK #
Horizon/Big Squirt	2200 Series	LM(X)-2010	SBK-2
Horizon	2300 Series	LM(X)-2811	SBK-25
	2400 Series	LM(X)-4111	SBK-25
Mechanical	3000 Series	LM(X)-1410	SBK-2
	6000 Series	LM(X)-1410	SBK-2
Electronic	3000 Series	LM(X)-2313-T	SBK-25

Gasboy®

Series	Model	Polyethylene Sump	SBK #
	215A	LM(X)-1410	SBK-2
	216A	LM(X)-1410	SBK-2
	9140A	LM(X)-2313T	SBK-25
	9140AX	LM(X)-2313T	SBK-25
	9152A	LM(X)-1913T	SBK-25
	9152ATW1	LM(X)-2313T	SBK-25
	9152AX	LM(X)-1913T	SBK-25
	9152AXTW1	LM(X)-2313T	SBK-25
	9152AXTW2	LM(X)-2313T	SBK-25
	9153A	LM(X)-1913T	SBK-25
	9153AHC	LM(X)-1913T	SBK-25
	9153ATW1M	LM(X)-2313T	SBK-25
	9153ATW2	LM(X)-2313T	SBK-25
	9153AXTW2	LM(X)-2313T	SBK-25
	9850XTW2	LM(X)-2313T	SBK-25
	9852ATW2	LM(X)-2313T	SBK-25
	9852AXTW2	LM(X)-2313T	SBK-25
	9853ATW2	LM(X)-2313T	SBK-25
	9853AXTW2	LM(X)-2313T	SBK-25
	9153AX	LM(X)-1913T	SBK-25
	9153AXTW1	LM(X)-2313T	SBK-25
	9753EXIL	LM(X)-1913T	SBK-25
	9840A	LM(X)-2313T	SBK-25
	9840AX	LM(X)-2313T	SBK-25
	9850A	LM(X)-1913T	SBK-25
	9850AX	LM(X)-1913T	SBK-25
	9850AXTW1	LM(X)-2313T	SBK-25
	9852A	LM(X)-1913T	SBK-25
	9852ATW1	LM(X)-2313T	SBK-25
	9852AX	LM(X)-1913T	SBK-25
	9852AXTW1	LM(X)-2313T	SBK-25
	9853A	LM(X)-1913T	SBK-25
	9853AHC	LM(X)-1913T	SBK-25
	9853ATW1M	LM(X)-2313T	SBK-25
	9853AX	LM(X)-1913T	SBK-25
	9853AXTW1	LM(X)-2313T	SBK-25
	ATLAS	LM(X)-2313T	SBK-25

Gilbarco®

Series	Model	Polyethylene Sump	SBK #
Advantage MPD		LM(X)-4115	SBK-3
Advantage Quad/Dual		LM(X)-2915	SBK-3
Advantage Single Hose	B71XXX	LM(X)-4115	SBK-3
Advantage Six Hose		LM(X)-4115	SBK-3
Advantage X+0 (36" frame)	B7AXXX	LM(X)-2915	SBK-3
Advantage X+0, X+1 (48" frame)	B7XXXX	LM(X)-4115	SBK-3
Commercial High Gallonage		LM(X)-2010	SBK-2
Commercial Ultra High Gallonage		LM(X)-2010	SBK-2
Eclipse	All	LM(X)-2010	SBK-2
Encore™ (40" sump length)	All	LM(X)-3617	SBK-3
Encore™ Super Hi	All	LM(X)-3617	SBK-3
Encore™ Ultra Hi	All	LM(X)-3617	SBK-3
Highhose MPD-X		LM(X)-3610	SBK-2
Highhose Salesmaker-2H	AM62XXX	LM(X)-2010	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

RDR

Series	Model	Polyethylene Sump	SBK #
RDR		LM(X)-2018	SBK-3

Schlumberger

Series	Model	Polyethylene Sump	SBK #
Centurion Narrow	XXXX1	LM(X)-2915	SBK-3
Centurion Wide	XXXX2	LM(X)-4115	SBK-3
	435, 440, 640, 650	LM(X)-1913T	SBK-25
2300 Series		LM(X)-2811	SBK-25
2400 Series		LM(X)-4111	SBK-25

Universal

Series	Model	Polyethylene Sump	SBK #
Univision	UV-9100	LM(X)-2811	SBK-25
	UV-9200	LM(X)-2811	SBK-25
	UV-9300	LM(X)-4111	SBK-25
	UV-9400	LM(X)-4111	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

Tokheim®

Series	Model	Polyethylene Sump	SBK #
	162	LM(X)-1913T	SBK-25
	220	LM(X)-1410	SBK-2
	222	LM(X)-1410	SBK-2
	262	LM(X)-1913T	SBK-25
	311	LM(X)-2407	SBK-3
	312	LM(X)-2407	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

Wayne®

Series	Model	Polyethylene Sump	SBK #
	DS/375/19	LM(X)-2407	SBK-2
	DS/585/19E	LM(X)-2407	SBK-2
	DS/585/EG	LM(X)-2407	SBK-2
V289 Vista™ Series		LM(X)-2811	SBK-25
V387 Vista™ Series		LM(X)-2811	SBK-25
V388 Vista™ Series		LM(X)-2811	SBK-25
V389 Vista™ Series		LM(X)-2811	SBK-25
V390 Vista™ Series		LM(X)-4111	SBK-25
V395 Vista™ Series		LM(X)-4111	SBK-25
V399 Vista™ Series		LM(X)-4111	SBK-25
V490 Vista™ Series		LM(X)-4111	SBK-25
V580 Vista™ Series		LM(X)-2811	SBK-25
V585 Vista™ Series		LM(X)-2811	SBK-25
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 (GX) 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-HLX	SBK-3
Helix™	5000	LMM-39-15-HLX	SBK-3
Select		LMM-2715	SBK-3

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.

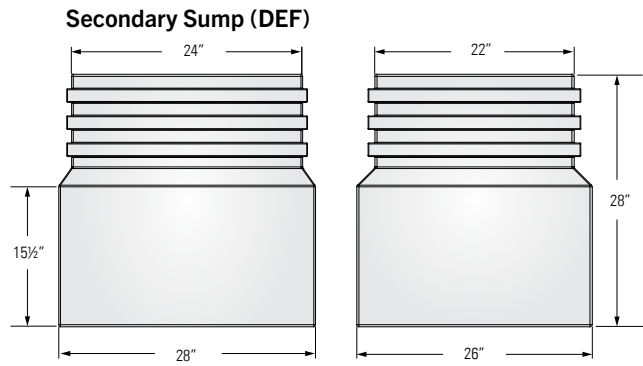
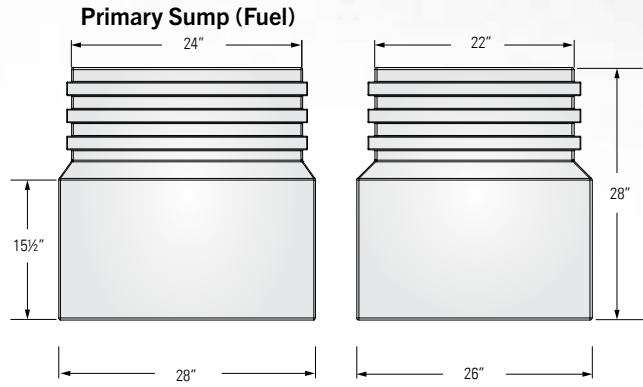
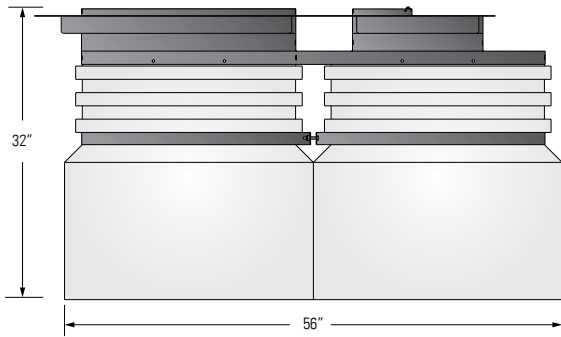
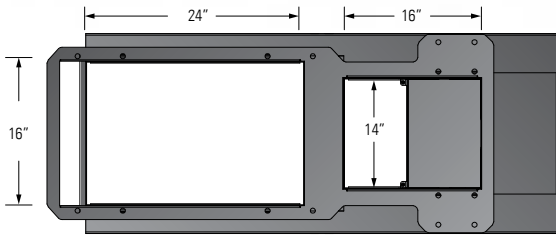
Components

- 1 Primary sump (for fuel equipment)
- 2 Secondary sump (for DEF equipment)
- 3 Retaining band
- 4 Removable top frame panel (allows for future expansion)
- 5 Access to DEF equipment containment space
- 6 Access to fuel equipment containment space
- 7 Top frame (single-piece)

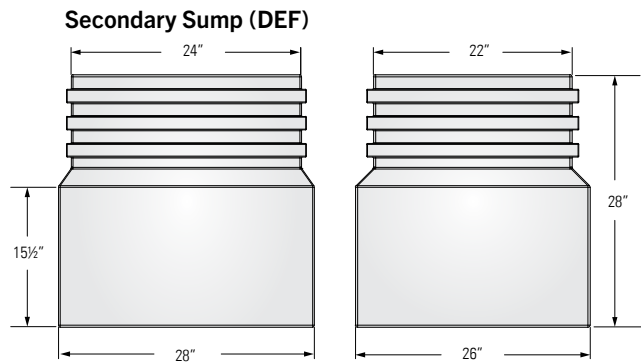
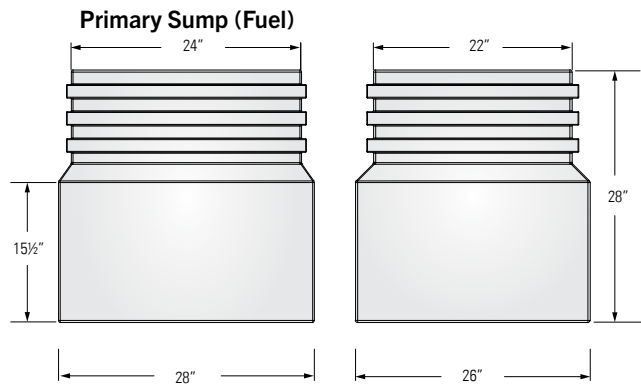
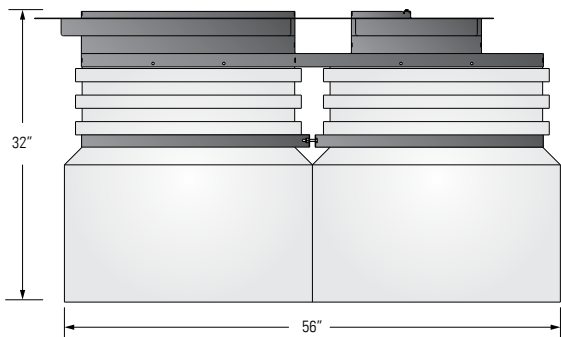
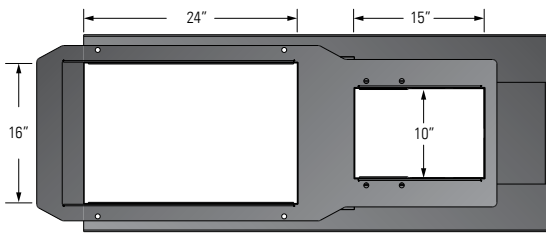


SPECIFICATIONS CONTINUED

Wayne® Ovation™ DEF Dispenser Sump Dimensions



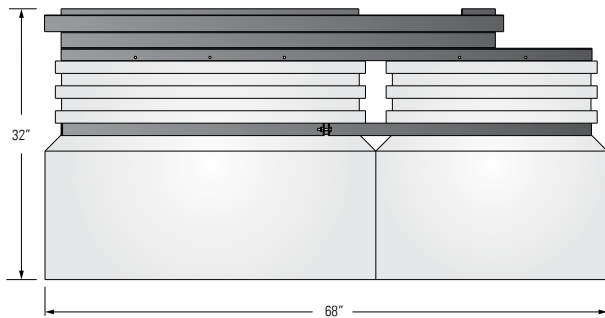
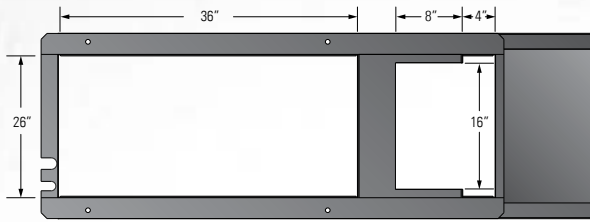
Wayne® Vista™ DEF Dispenser Sump Dimensions



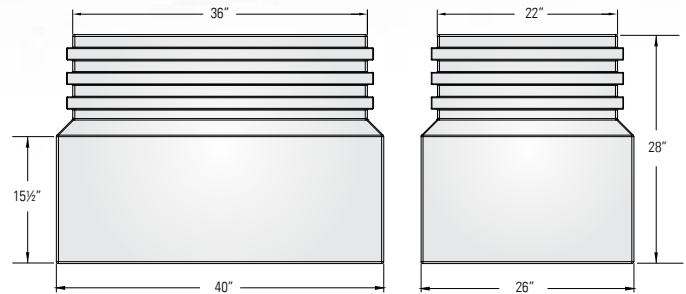
**PIPING &
CONTAINMENT**

SPECIFICATIONS CONTINUED

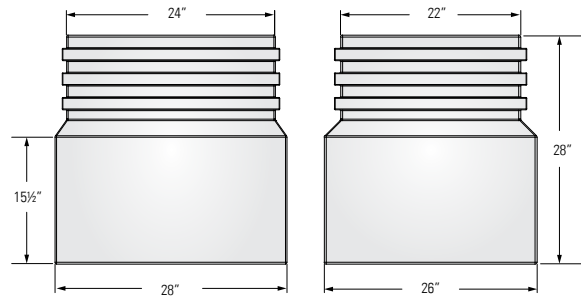
Gilbarco® Encore® DEF Dispenser Sump Dimensions



Primary Sump (Fuel)



Secondary Sump (DEF)



ORDERING INFORMATION

DEF Polyethylene Dispenser Sumps

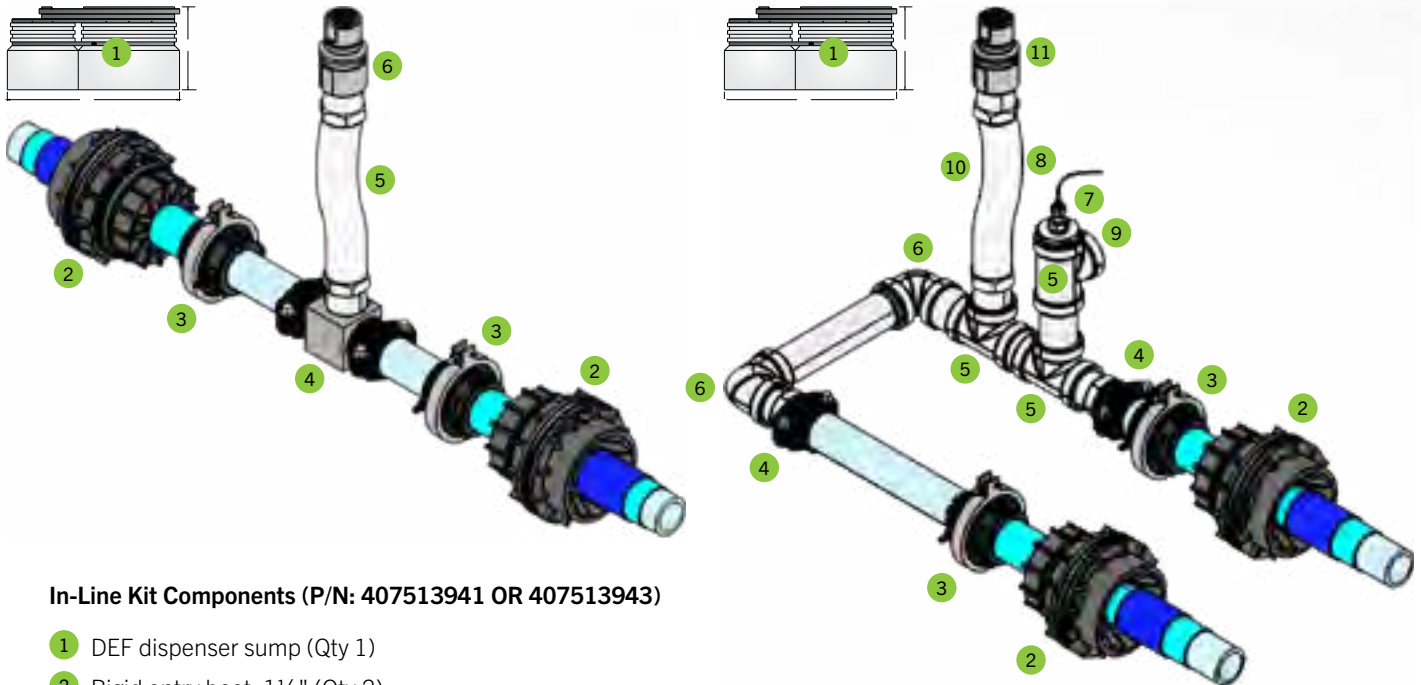
Model	Description
LMM-2916-DEF-02	DEF polyethylene dispenser sump (banded, two-sump design) for Wayne Ovation™ DEF dispensers
LMM-2916-DEF	DEF polyethylene dispenser sump (banded, two-sump design) for Wayne® Vista™ DEF dispensers
LMM-3617-DEF	DEF polyethylene dispenser sump (banded, two-sump design) for Gilbarco® Encore® DEF dispensers

Stabilizer Bar Kits

Model	Recommended Stabilizer Bar Kit
LMM-2916-DEF-02	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.



In-Line Kit Components (P/N: 407513941 OR 407513943)

- 1 DEF dispenser sump (Qty 1)
- 2 Rigid entry boot, 1½" (Qty 2)
- 3 Split test boot, 1½" (Qty 2)
- 4 Tee fitting, 1½" (Qty 1)
- 5 Flexible connector, 1½" x 18" (Qty 1)
- 6 Shear valve 1½", with bracket (Qty 1)
- 7 Stabilizer bar kit, not shown (Qty 1)

Note: XP Pipe not included in kits.

Tee Kit Components (P/N: 407513942 OR 407513944)

- 1 DEF dispenser sump (Qty 1)
- 2 Rigid entry boot, 1½" (Qty 2)
- 3 Split test boot, 1½" (Qty 2)
- 4 Male swivel fitting, 1½" (Qty 2)
- 5 Tee fitting, 1½" (Qty 3)
- 6 90 fitting, 1½" (Qty 2)
- 7 Hex busing, 1½" x ½" (Qty 1)
- 8 Temperature sensor, (Qty 1)
- 9 Square head plug, 1½" (Qty 1)
- 10 Flexible connector, 1½" x 18" (Qty 1)
- 11 Shear valve 1½", with bracket (Qty 1)
- 12 Stabilizer bar kit, not shown (Qty 1)

Note: XP Pipe and stainless steel pipe not included in kits.

ORDERING INFORMATION

Model	Description
407513941	In-line dispenser DEF recirculation system kit for Gilbarco® Encore® DEF dispensers (includes LMM-3617-DEF and all components)
407513942	Tee dispenser DEF recirculation system kit for Gilbarco® Encore® DEF dispensers (includes LMM-3617-DEF and all components)
407513943	In-line dispenser DEF recirculation system kit for Wayne® Vista™ DEF dispensers (includes LMM-2916-DEF and all components)
407513944	Tee dispenser DEF recirculation system kit for Wayne® Vista™ DEF dispensers (includes LMM-2916-DEF and all components)

UPP® DISPENSER SUMPS

UPP® dispenser sumps feature a rigid 8 mm 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 8 mm 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.

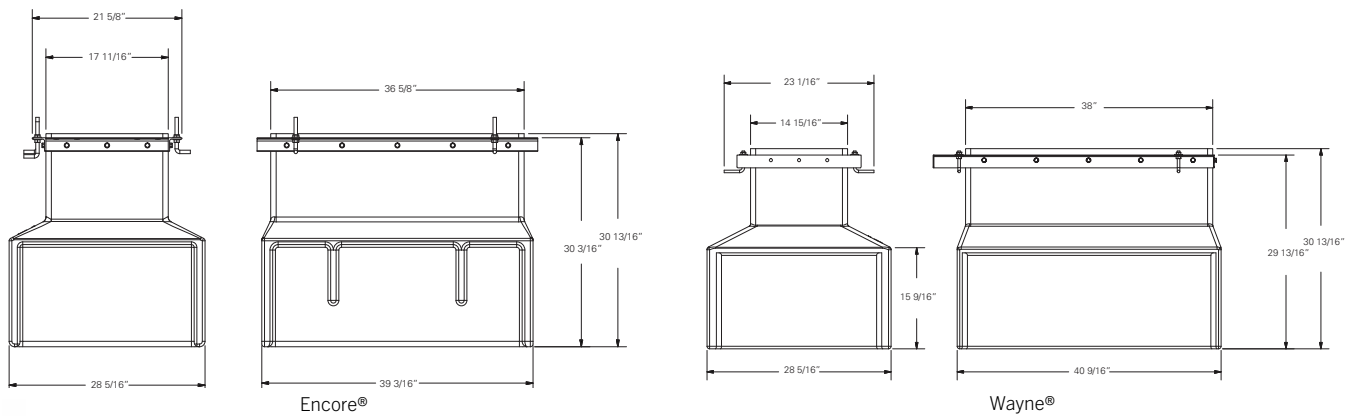
ORDERING INFORMATION

Model	Description
DS3617 ENCORE	Encore® dispenser sump with 36" x 17" top frame
SBK-3	Stabilizer bar kit for Encore® dispenser sump
DS3915 OVATION	Wayne® and Ovation® dispenser sump with 39" x 15" top frame
SBK-25	Stabilizer bar kit for Wayne® and Ovation® dispenser sump

SPECIFICATIONS

Approvals

- ULC listed.



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.

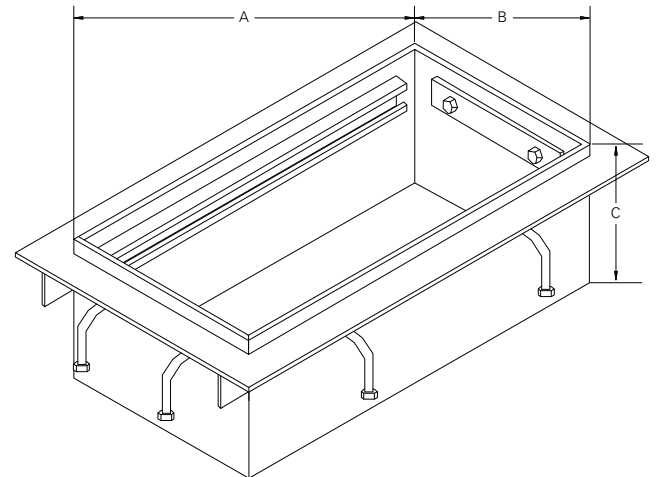


ORDERING INFORMATION

Dispenser Pans

Model	Size	A	B	C	SBK #
DP-1816	13¾" × 11¼"	13.75"	11.25"	10.25"	SBK-2
DP-2014	16½" × 10½"	16.5"	10.5"	8.75"	SBK-2
DP-2816	23" × 11¾"	23"	11.75"	9"	SBK-2
DP-4721	42" × 16"	42"	16"	8.75"	SBK-3

SPECIFICATIONS



**PIPING &
CONTAINMENT**

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 adjustability, 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

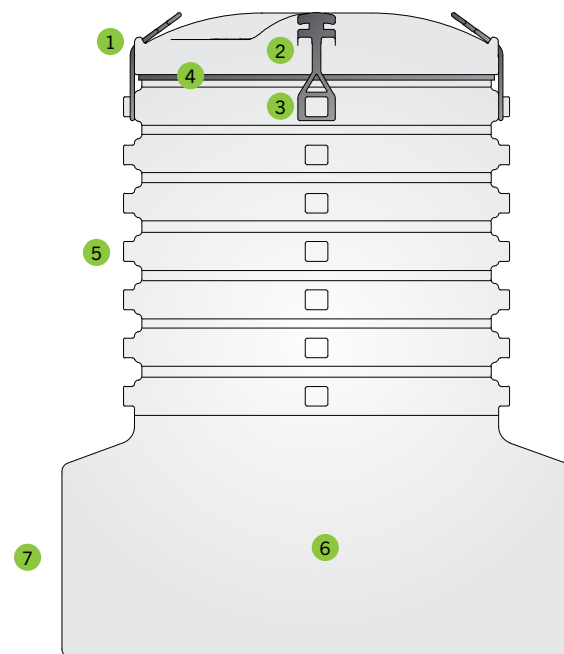
SPECIFICATIONS

Approvals/Certifications

- ULc listed.

Components

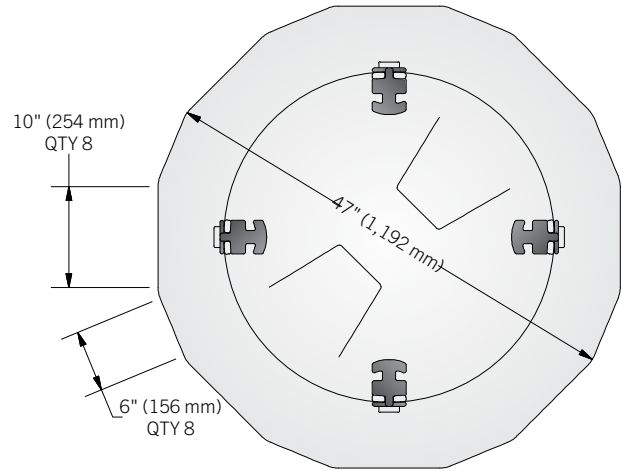
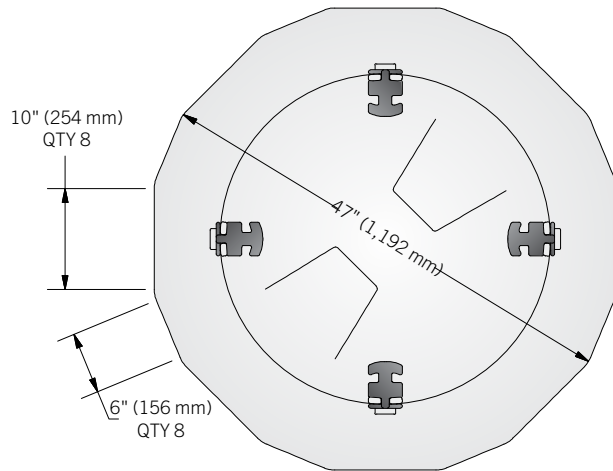
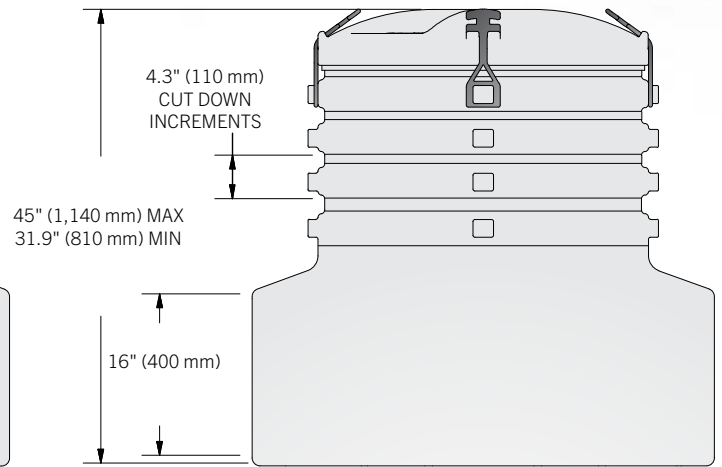
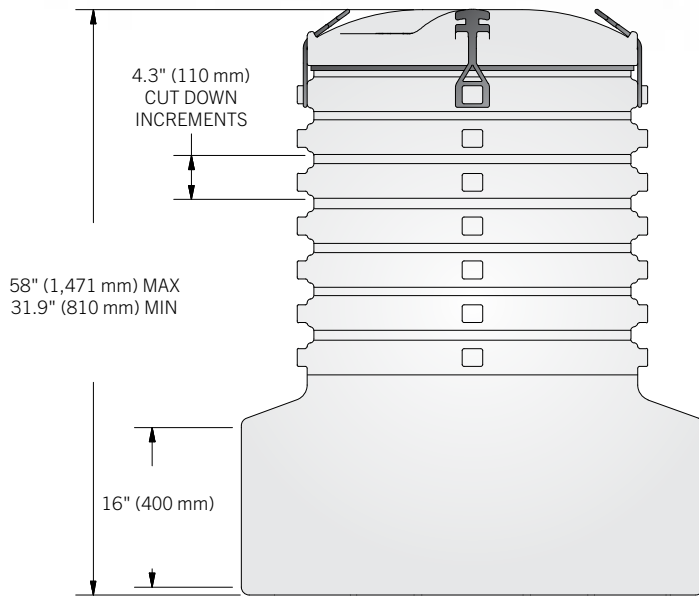
- 1 Water-resistant lid
- 2 Lid toggle (qty 4)
- 3 Molded lid toggle peg
- 4 Gasketed seal
- 5 Sump riser
- 6 Sump base
- 7 Flat face panels (qty 16)



SPECIFICATIONS CONTINUED

Tank Sump Dimensions

The tank sump is available in both medium and deep bury models.



PIPING &
CONTAINMENT

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.



HIGHLIGHTS

- Economically priced one-piece design.
- Ribbed riser allows for simple 3" height adjustments using standard tools.
- Available in deep, medium, and shallow burial depth models.
- Utilizes a unique gasket, snap-on lid design.
- Sized to fit under a standard 42" manway.
- Central location for an optional inspection port.
- Lid designed with a large-grip handle for easy removal of the snap-on lid.

ORDERING INFORMATION

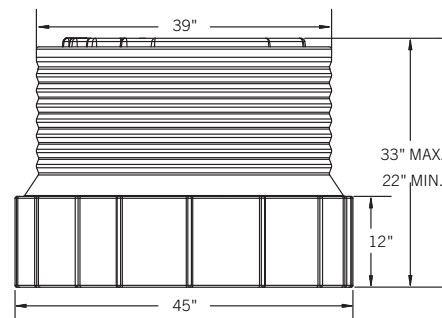
Model	Description
TSD-4542	Tank sump, deep burial, 45" base, fits 42" manway
TSM-4542	Tank sump, medium burial, 45" base, fits 42" manway
TSS-4542	Tank sump, shallow burial, 45" base, fits 42" manway
26004209	TSM-4542 sump lid replacement
MA-22	Manway adapter, 22"
MA-24	Manway adapter, 24"
IP-400-B	Inspection port, FEP style with well cap

Note: Replacement gaskets sold with cover only.

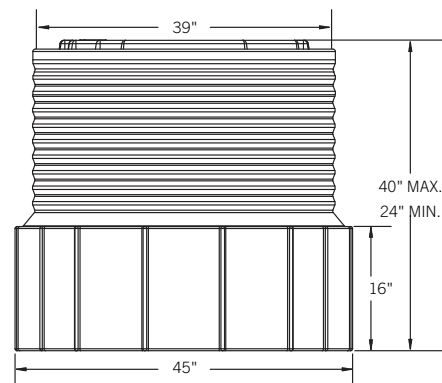
SPECIFICATIONS

Approvals/Certifications

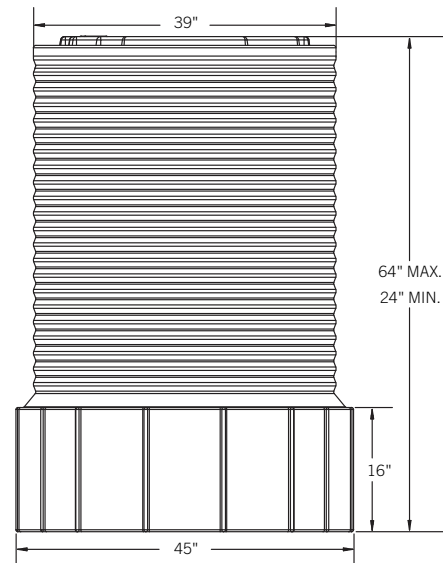
- ULc listed.



TSS-4542
Shallow Burial



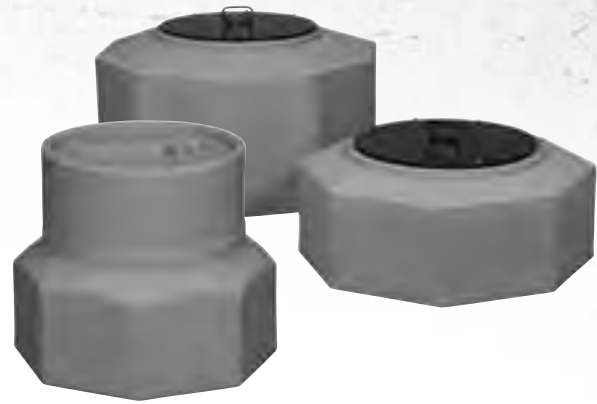
TSM-4542
Medium Burial



TSD-4542
Deep Burial

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

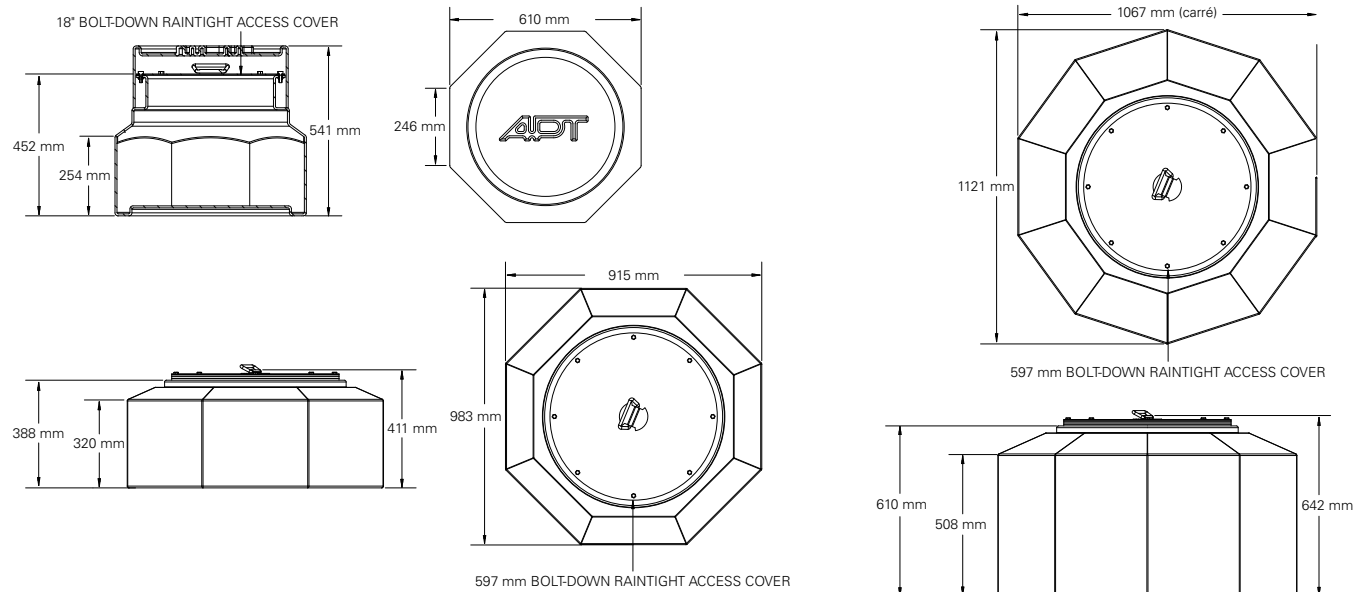
- TS-2430 utilizes an 18" bolt-down watertight lid.
- TS-3630 and TS-4230 utilize a 23½" bolt-down watertight lid.
- High density polyethylene construction is durable and chemical-resistant.
- All TS-Series sumps allow fittings to be installed with ease, while tapered design allows for installation under an economical 30" manway.
- Bolt-down cover can be easily removed for routine inspections.
- One-piece design enhances water resistance.

ORDERING INFORMATION

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

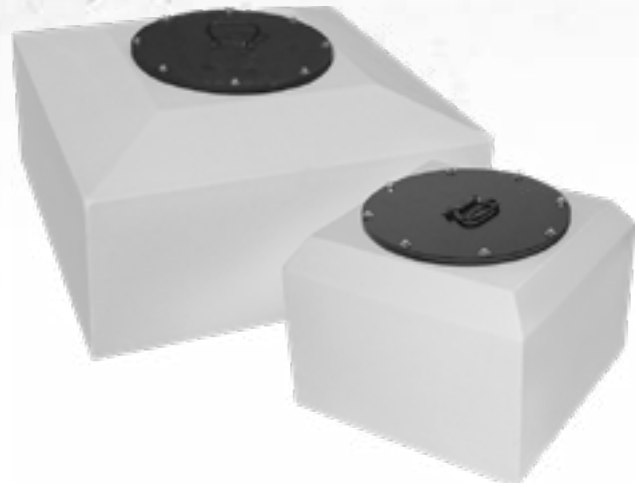
PIPING &
CONTAINMENT

SPECIFICATIONS



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.



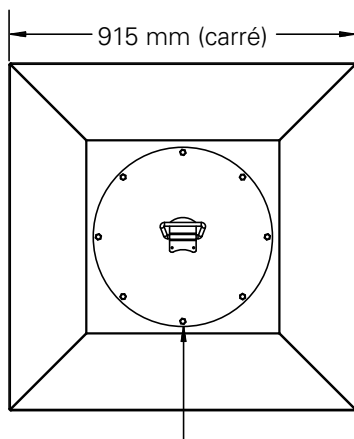
HIGHLIGHTS

- 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" x 24" square and 36" x 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.

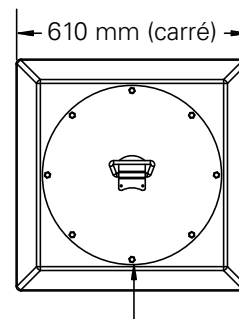
ORDERING INFORMATION

Model	Description
IPS-2424	Intermediate piping sump, 24" x 24", fits under a 24" manway
IPS-3636	Intermediate piping sump, 36" x 36", fits under a 36" manway
99985554	Replacement gasket
73510102	Replacement cover

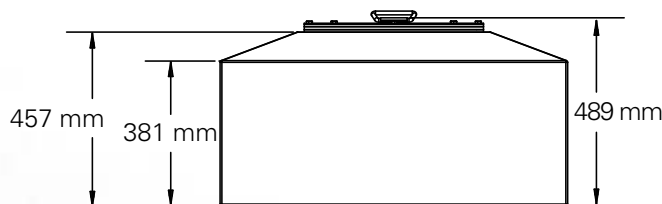
SPECIFICATIONS



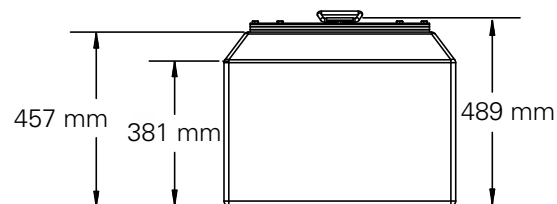
18" BOLT-DOWN
RAINTIGHT ACCESS COVER



18" BOLT-DOWN
RAINTIGHT ACCESS COVER



IPS-3636



IPS-2424

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 APT® 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.



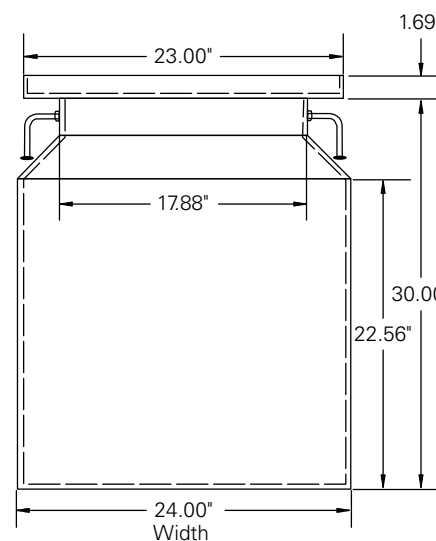
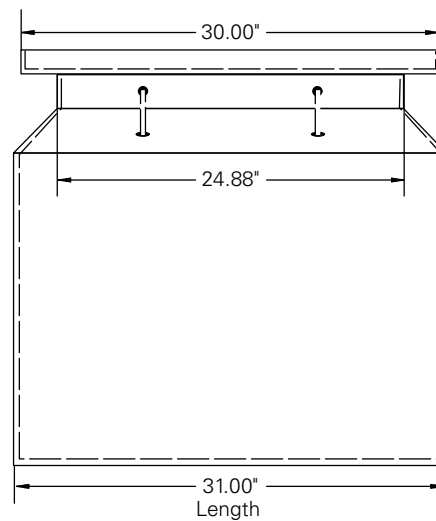
HIGHLIGHTS

- 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.

ORDERING INFORMATION

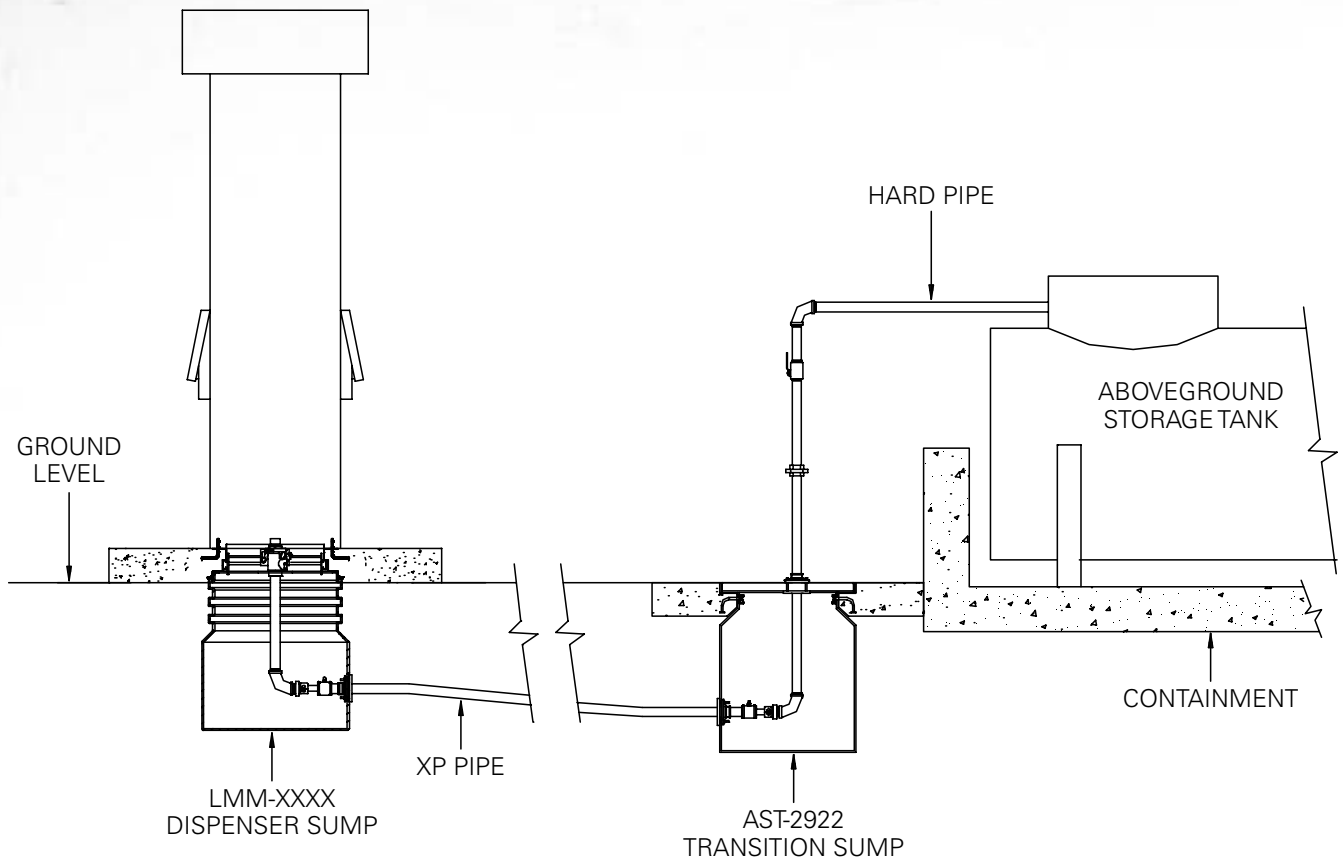
Model	Description
AST-2922	Aboveground storage tank transition sump
99985553	Replacement gasket
25202923	Replacement AST-2922 lid, gray
IP-400-B	Inspection replacement port, FEB style with replacement well cap
42615004	Replacement AST-2922 steel frame, black

SPECIFICATIONS



SPECIFICATIONS CONTINUED

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

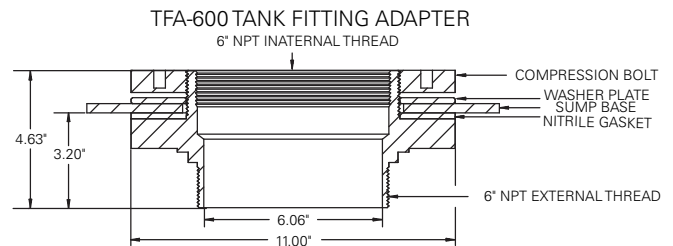
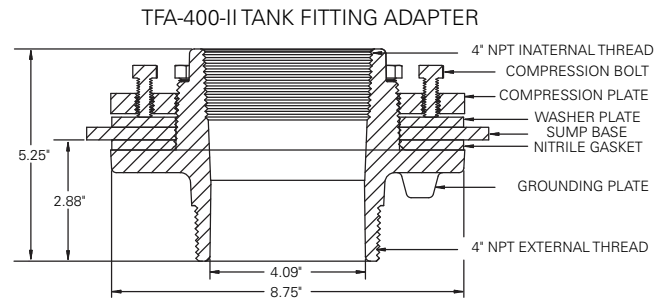
- Easily installs with standard tools.
- TFA-400-II fits onto a standard 4" NPT tank riser pipe with 4" NPT internal threads for mounting a submersible pump.
- TFA-600 fits onto a standard 6" NPT tank riser pipe with 6" NPT internal threads for mounting a submersible pump.
- Installs through one hole 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

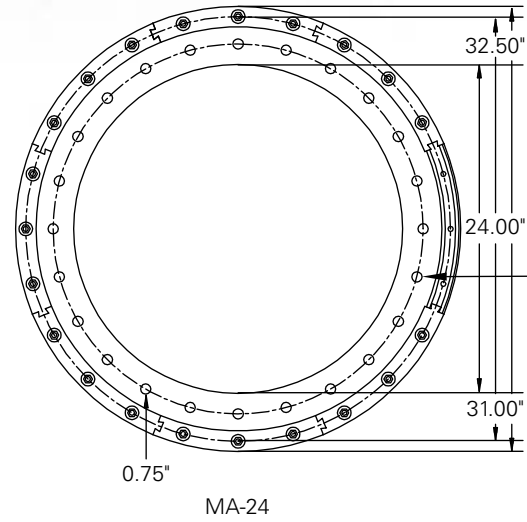
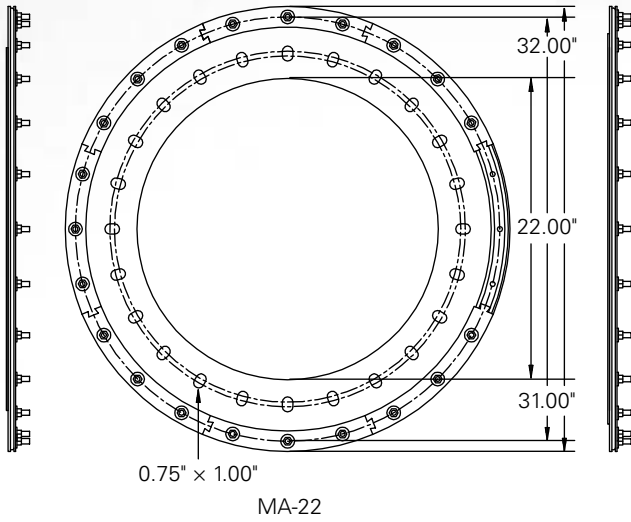


SPECIFICATIONS



TANK MANWAY ADAPTERS

APT® tank manway adapters permit tank sumps to be mounted directly to a tank's 22" or 24" manway.



Model	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, 13.5" - 21.25"
SBK-25	Stabilizer bar kit 25, 10.12" - 14.38"

CABLETIGHT™ WIRE MANAGEMENT SYSTEM

The CableTight™ 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 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 ¾" 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.

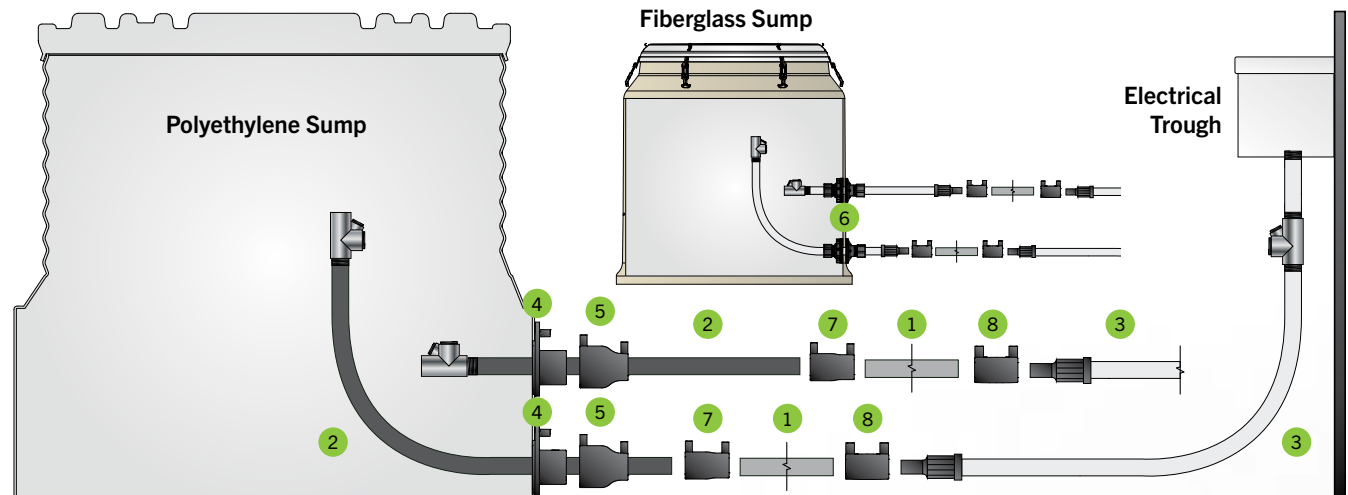
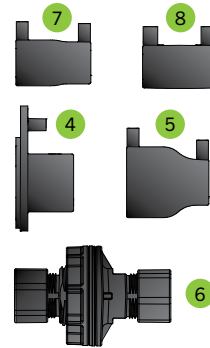
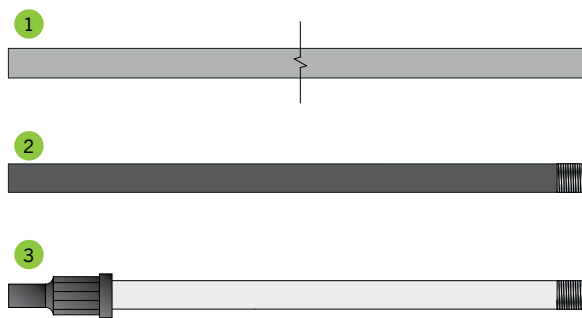
SPECIFICATIONS

Approvals/Certifications

- Flexible conduit (HDPE): UL Certification of Compliance to UL651A, (HDPE 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.

Components

- 1 Flexible conduit (coils)
- 2 6' coated rigid metal conduit
- 3 6' spigotted rigid metal conduit
- 4 Polyethylene sump entry seal
- 5 Polyethylene sump entry seal reducer
- 6 Fiberglass sump entry seal
- 7 Reducing coupler
- 8 Coupler



ORDERING INFORMATION

3/4" CableTight™ Wire Management System



Model	Description
000-075-1000-EC-U	3/4" flexible conduit, 1,000' reel, pre-loaded on compact reel
000-075-1500-EC-U	3/4" flexible conduit, 1,500' reel, pre-loaded on compact reel

Inside Ø 0.804" (20.4 mm)



Model	Description
000-075-06-ERMC-PE	3/4" coated rigid metal conduit, 6' stick - 12 pack

Inside Ø 0.845" (21.5 mm)



Model	Description
000-075-06-ERMC	3/4" spigotted rigid metal conduit, 6' stick - 12 pack
91-027 NPT	3/4" spigotted rigid metal conduit, 8" stub

Inside Ø 0.845" (21.5 mm)



Model	Description
REB-C-0075	3/4" 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 3/4" and 1" systems)



Model	Description
49-063-031-U	3/4" polyethylene entry seal reducer



Model	Description
49-031-027-U	3/4" reducing coupler



Model	Description
02-027	3/4" coupler

ORDERING INFORMATION CONTINUED

1" CableTight™ Wire Management System



Model	Description
000-100-1000-EC-U	1" flexible conduit, 1,000' reel, pre-loaded on compact reel

Inside Ø 1.029" (26.0 mm)



Model	Description
000-100-06-ERM-C-PE	1" coated rigid metal conduit, 6' stick - 12 pack

Inside Ø 1.063" (27.0 mm)



Model	Description
000-100-06-ERM-C	1" spigotted rigid metal conduit, 6' stick - 12 pack
91-033 NPT	1" spigotted rigid metal conduit, 8" stub

Inside Ø 1.063" (27.0 mm)



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 ¾" and 1" systems)



Model	Description
49-063-038-U	1" polyethylene entry seal reducer



Model	Description
49-038-033-U	1" reducing coupler



Model	Description
02-033	1" coupler

ORDERING INFORMATION CONTINUED

CableTight™ Wire Management System Tools & Accessories

At the heart of the electrofusion welding process is the EF1 electrofusion welder. The handheld EF1 electrofusion welder automatically recognizes a fitting when connected with the welding cable. The EF1 welder 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.



Model	Description
EF1-110V-A	Electrofusion welder, 110 V, in hard carrying case, and all necessary welding leads
EF1-230V	Handheld electrofusion welder, 230 V, with carrying case and all necessary welding leads
408032001	Step - up transformer, required for handheld welder operation
EF1-BC 2MM	EF1 welder bridging cable, green 2 mm (for Cable Tight™ only)*

*For bridge welding a maximum of (2) couplers at once.



Model	Description
ROTOSCRAPER075	¾" Turbo rotary scraper
ROTOSCRAPER100	1" Turbo rotary scraper



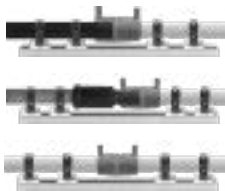
Model	Description
SCR-025-125	Rotary scraper



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

ORDERING INFORMATION CONTINUED

CableTight™ Wire Management System Tool Kits



Model	Includes	Description
CTINSTALL-KIT-1	EF1-110V-A	(1) Electrofusion Welder
	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179001*	(2) Welder clamps for 3/4" Flexible to Flexible -OR- Flexible to Spigot Conduit
	408179002*	(2) Welder clamps for 1" Flexible to Flexible -OR- Flexible to Spigot Conduit
	408179003	(2) Welder clamps for 3/4" Flexible to Coated Conduit
408179004	(2) Welder clamps for 1" Flexible to Coated Conduit	



Model	Includes	Description
CTINSTALL-KIT-2	EF1-110V-A	(1) Electrofusion Welder
	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179001*	(4) Welder clamps for 3/4" Flexible to Flexible -OR- Flexible to Spigot Conduit
408179002*	(4) Welder clamps for 1" Flexible to Flexible -OR- Flexible to Spigot Conduit	

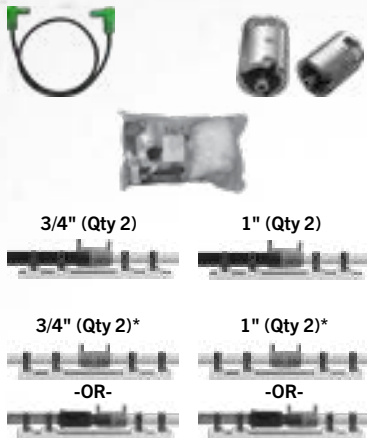


Model	Includes	Description
CTINSTALL-KIT-3	EF1-110V-A	(1) Electrofusion Welder
	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179003	(4) Welder clamps for 3/4" Flexible to Coated Conduit
	408179004	(4) Welder clamps for 1" Flexible to Coated Conduit

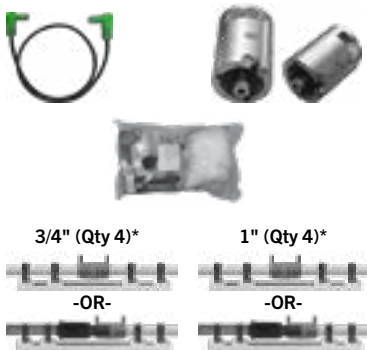
*Part numbers: 408179001 and 408179002 accommodate both Flexible to Flexible and Flexible to Spigot Rigid Metal Conduit installation applications.

ORDERING INFORMATION CONTINUED

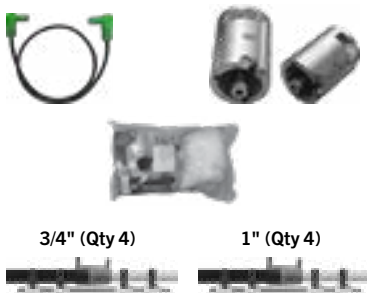
CableTight™ Wire Management System Tool Kits



Model	Includes	Description
CTINSTALL-KIT-4	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179001*	(2) Welder clamps for 3/4" Flexible to Flexible -OR- Flexible to Spigot Conduit
	408179002*	(2) Welder clamps for 1" Flexible to Flexible -OR- Flexible to Spigot Conduit
	408179003	(2) Welder clamps for 3/4" Flexible to Coated Conduit
	408179004	(2) Welder clamps for 1" Flexible to Coated Conduit



Model	Includes	Description
CTINSTALL-KIT-5	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179001*	(4) Welder clamps for 3/4" Flexible to Flexible -OR- Flexible to Spigot Conduit
	408179002*	(4) Welder clamps for 1" Flexible to Flexible -OR- Flexible to Spigot Conduit



Model	Includes	Description
CTINSTALL-KIT-6	EF1-BC 2MM	(1) Green jumper leads
	ROTOSCRAPER075	(1) Turbo rotary scraper for 3/4" conduit
	ROTOSCRAPER100	(1) Turbo rotary scraper for 1" conduit
	408005901	(1) UPP® consumables kit
	408179003	(4) Welder clamps for 3/4" Flexible to Coated Conduit
408179004	(4) Welder clamps for 1" Flexible to Coated Conduit	

*Part numbers: 408179001 and 408179002 accommodate both Flexible to Flexible and Flexible to Spigot Rigid Metal Conduit installation applications.

CABLETIGHT™ DEMO KITS

Introduce your customers to the CableTight™ wire management system with a sample demo kit. Each kit includes 18" sections of the three types of conduit, entry seals, and couplers. These kits are for sales team members only and available to order directly through Customer Service.

SPECIFICATIONS

Components

- 1 Flexible Conduit, 18"
- 2 Spigotted Rigid Metal Conduit, 18"
- 3 Coated Rigid Metal Conduit, 18"
- 4 Fiberglass Entry Seal
- 5 Polyethylene Entry Seal
- 6 Polyethylene Entry Seal Reducer
- 7 Coupler
- 8 Reducing Coupler



PIPING &
CONTAINMENT

ORDERING INFORMATION

CableTight™ Demo Kit 3/4"

SINGLE PART NUMBER: 408189902

Model	Description
	3/4" coated rigid metal conduit, 18"
	3/4" flexible conduit, 18"
	3/4" spigotted rigid metal conduit, 18"
REB-C-0075	3/4" fiberglass entry seal, flat surface
303-063	Polyethylene entry seal (used for both 3/4" and 1" systems)
49-063-031	3/4" polyethylene entry seal reducer
49-031-027	3/4" reducing coupler
02-027	3/4" coupler

CableTight™ Demo Kit 1"

SINGLE PART NUMBER: 408189901

Model	Description
	1" coated rigid metal conduit, 18"
	1" flexible conduit, 18"
	1" spigotted rigid metal conduit, 18"
REB-C-0100	1" fiberglass entry seal, flat surface
303-063	Polyethylene entry seal (used for both 3/4" and 1" systems)
49-063-038	1" polyethylene entry seal reducer
49-038-033	1" reducing coupler
02-033	1" coupler

DISPENSING SYSTEMS

- 1 Swivel and In-Line Breakaways
- 2 Inverted Coaxial Hoses
- 3 Vapor Recovery Nozzles
- 4 Dispenser-Mounted and Central Vacuum Pumps





1

2

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.



HIGHLIGHTS

- High reliability and maintenance-free.
- No mechanical moving parts.
- No electrical connections needed.
- 5-year warranty.

SPECIFICATIONS

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

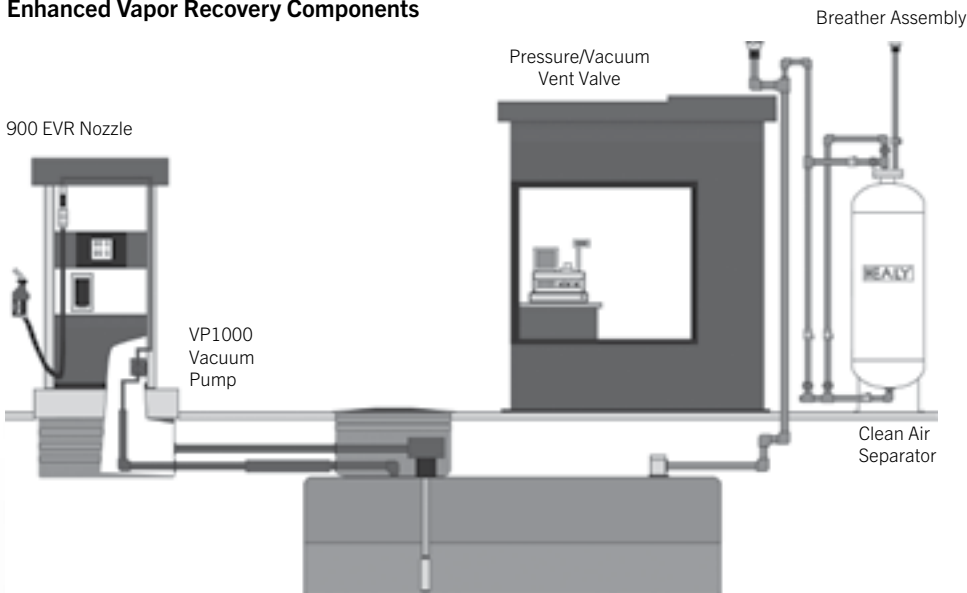
ORDERING INFORMATION

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

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® EVR components	VR-201 VR-202	UST without ISD UST with ISD

Enhanced Vapor Recovery Components



VP1000 SERIES DISPENSER-MOUNTED VACUUM SOURCE

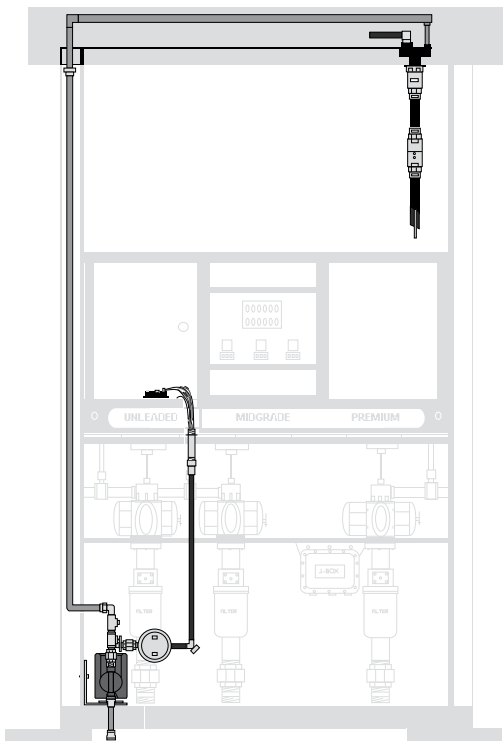
One vacuum pump per dispenser supplies both sides, reducing long term maintenance costs. THE GLASS-FILLED NYLON VANE AND ROTOR KITS POWER VP1000 SERIES DISPENSER-MOUNTED VACUUM SOURCES to satisfy the vapor recovery needs of a blender or non-blender dispenser. Simple installation with no excavation minimizes 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 maintenance-free solution.
- No motor binding.
- Near zero rotor replacement.

VP1000 Installation



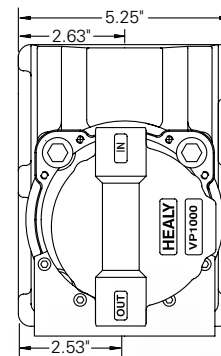
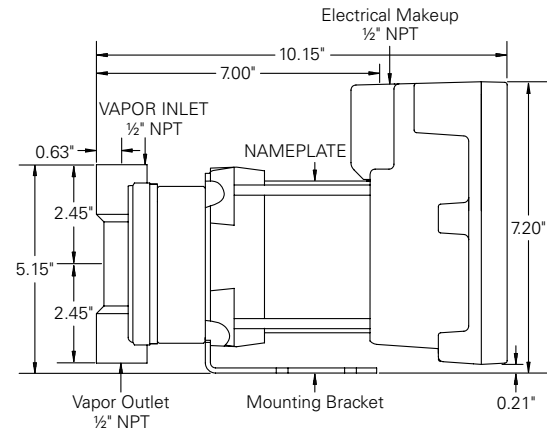
SPECIFICATIONS

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	UST
	VR-202	UST

VP1000 Dimensions



ORDERING INFORMATION

VP1000 Dispenser Mounted Vacuum Source Kits

Each kit includes vapor and electrical conduits as listed below. One VP1000 per dispenser supplies both sides.

Model	Description
VP1000M*	Gasboy® 9800 Series - Non-Vapor Ready to HEALY®
Includes:	Z081H hardware kit
	Z081E electrical kit
	Z081V vapor kit
	VP1000-5 vacuum pump
	1374A MC100-1 interface module with harness

*UL Listed



MC100

VP1000 Dispenser Mounted Vacuum Source Kits (Non-Inclusive)

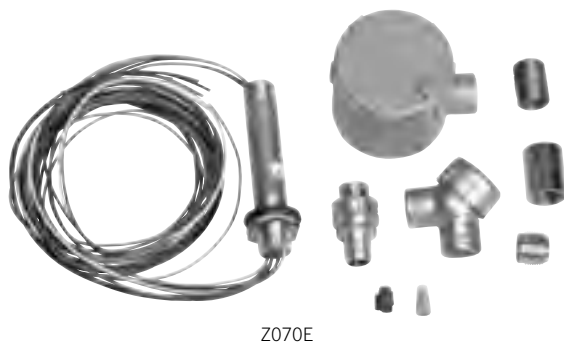
Kits do not include vapor and electrical conduits. Use Z070E and Z071V kits listed below. One VP1000 per dispenser supplies both sides.

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 pump, 1372A interface module with harness and 1404 universal hardware/mounting kit.

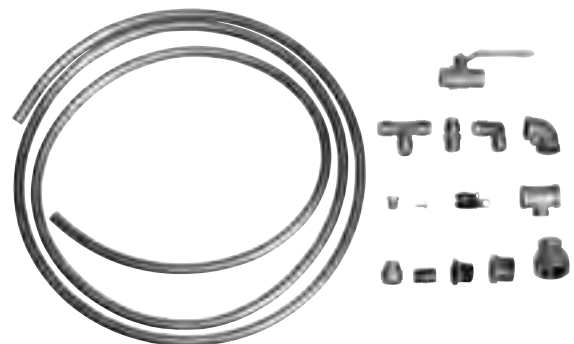
Universal Vapor and Electrical Kits

For use with the VP1000 kits listed above.

Model	Description
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



Z070E



Z071V

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 VaporVac® is a registered trademark of Gilbarco Inc.
 Wayne™ is a trademark of Dresser Equipment Group Inc.
 Ovation™, Harmony™, and Vista™ are trademarks of Dresser Inc.
 Gasboy®, Gilbarco®, Encore™, and G-Site™ are trademarks of Gilbarco Inc.

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

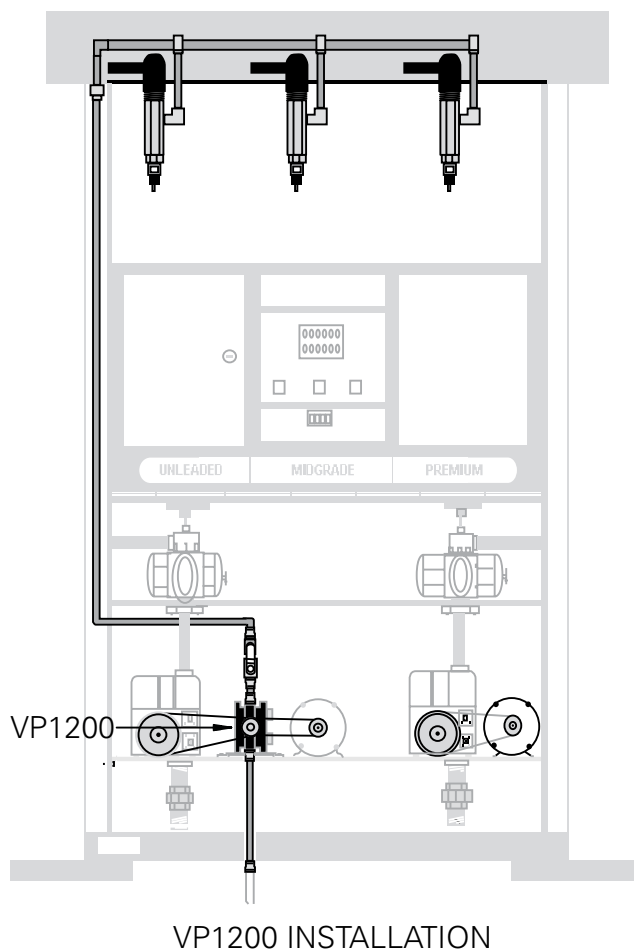
- Small size: 5¼" x 5" x 4¾".
- Compatible with new and existing dispensers.
- International approvals, contact Franklin Fueling Systems.

ORDERING INFORMATION

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 Component (UL79)



CENTRAL VACUUM PUMP 9000 MINI-JET

The 9000 Mini-Jet is a non-electric central vacuum pump that uses the product flow of a submersible turbine pump to create a vacuum for vapor recovery. One Mini-Jet can handle eight fueling positions with four nozzles in simultaneous full flow operation. Additional Mini-Jet can be added for larger sites. Provides high reliability and low maintenance. High vacuum level assures clearing of flooded vapor hoses.

HIGHLIGHTS

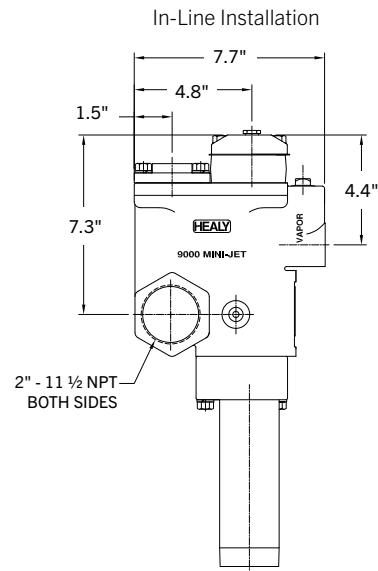
- Handles up to eight fueling positions with four nozzles in simultaneous full flow.
- No electrical hook-up.
- No moving parts creating vacuum.
- Installs in standard existing submersible turbine pump tank sump.
- UL listed (UL 79).

SPECIFICATIONS

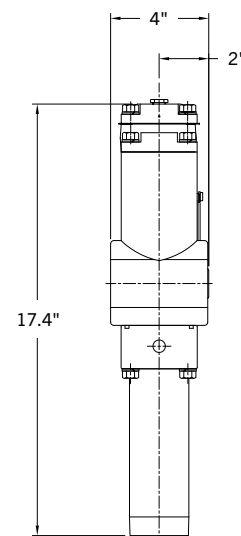
CARB Certified	Executive Order Number	Tank Type
9000-02	G-70-165	UST

ORDER INFORMATION

Model	Description
9000-02	9000 Mini-Jet, non-electric with syphon port, can handle eight fueling positions with four nozzles in simultaneous full flow
65010402	1.5" Union check valve
940A	Vacuum regulator retrofit kit
965	O-ring (1 per cover)
CV4	O-ring, for strainer assembly
94666	Ball Float, 3/4"
930	O-ring
912A	Strainer Assembly



HEALY® Port Installation



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.

Note: Central vacuum source installation may require the use of a vapor recovery monitor assembly.

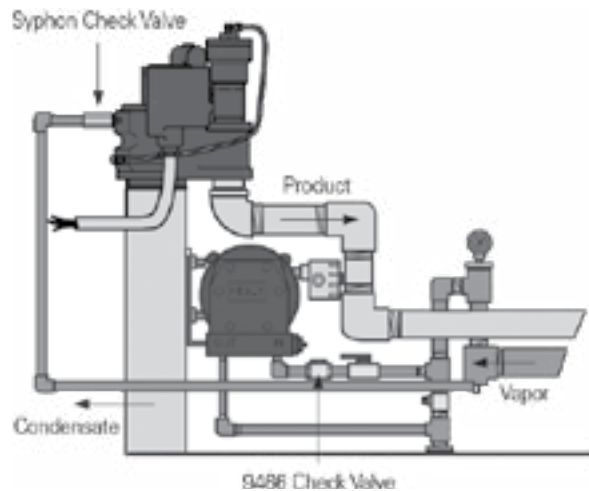
ORDERING INFORMATION

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

*UL Listed (UL 79)

SPECIFICATIONS

CARB Certified for Use With	Executive Order Number	Tank Type
HEALY® 600 bootless nozzle	G-70-165	UST



DISPENSING SYSTEMS

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 × ½" NPT reducer, 6' × ¾" hose, ORVR nozzle spout adapter and two ½" NPT × ¾" hose barb fittings
63034	O-ring, for 8034-3 spout adapter
8006	Magnet Strip Assembly (for use with spout adapter 8034-3)

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.

SPECIFICATIONS

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

ORDERING INFORMATION

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
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.

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 vacuum-assisted design keeps customers and forecourts clean with its driplless 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
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, 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 SS	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
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, 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.

COAXIAL VAPOR RECOVERY HOSE

HEALY™ brand 3/4" coaxial hose is designed for use in vapor recovery refueling applications 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 non-swivel), 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

75B = 3/4" 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

Curb hose example 1: 75B-115-F3F2 = 3/4" 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 = 3/4" vapor recovery hose, 0 feet 8 inches length, one fixed metric M-34 thread fitting and one fixed HEALY™ straight thread fitting.

Replacement Parts

Model	Description
HB-2	Hose end O-ring for S2/F2 fitting, large
6094	Hose end O-ring for S3/F3 fitting, large
516	Hose end O-ring for S4 fitting, large
HB-4	Vapor end quad ring (2 required per adapter)
291	Vapor end O-ring, small (2 required per adapter)

SPECIFICATIONS

- Tube: Nitrile synthetic rubber with fluorothermoplastic barrier layer
- Cover: Synthetic rubber
- Reinforcement: Single wire braid
- End fittings: Stainless steel

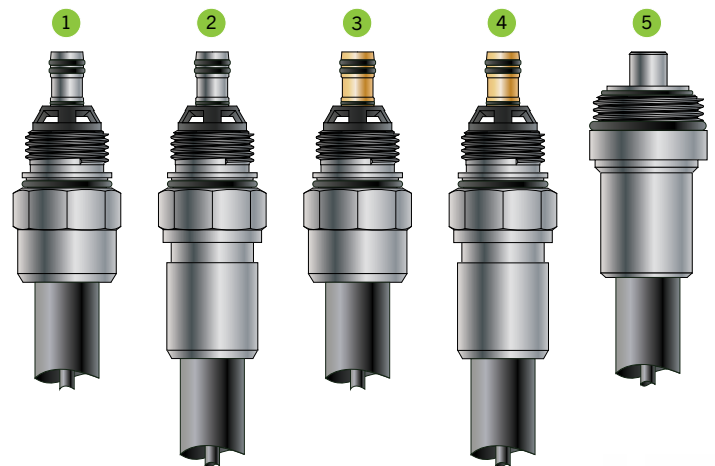
Approvals/Certifications

- Meets UL330
- UL Listed (Swivel and Fixed)
- CARB certified

End Fitting Options

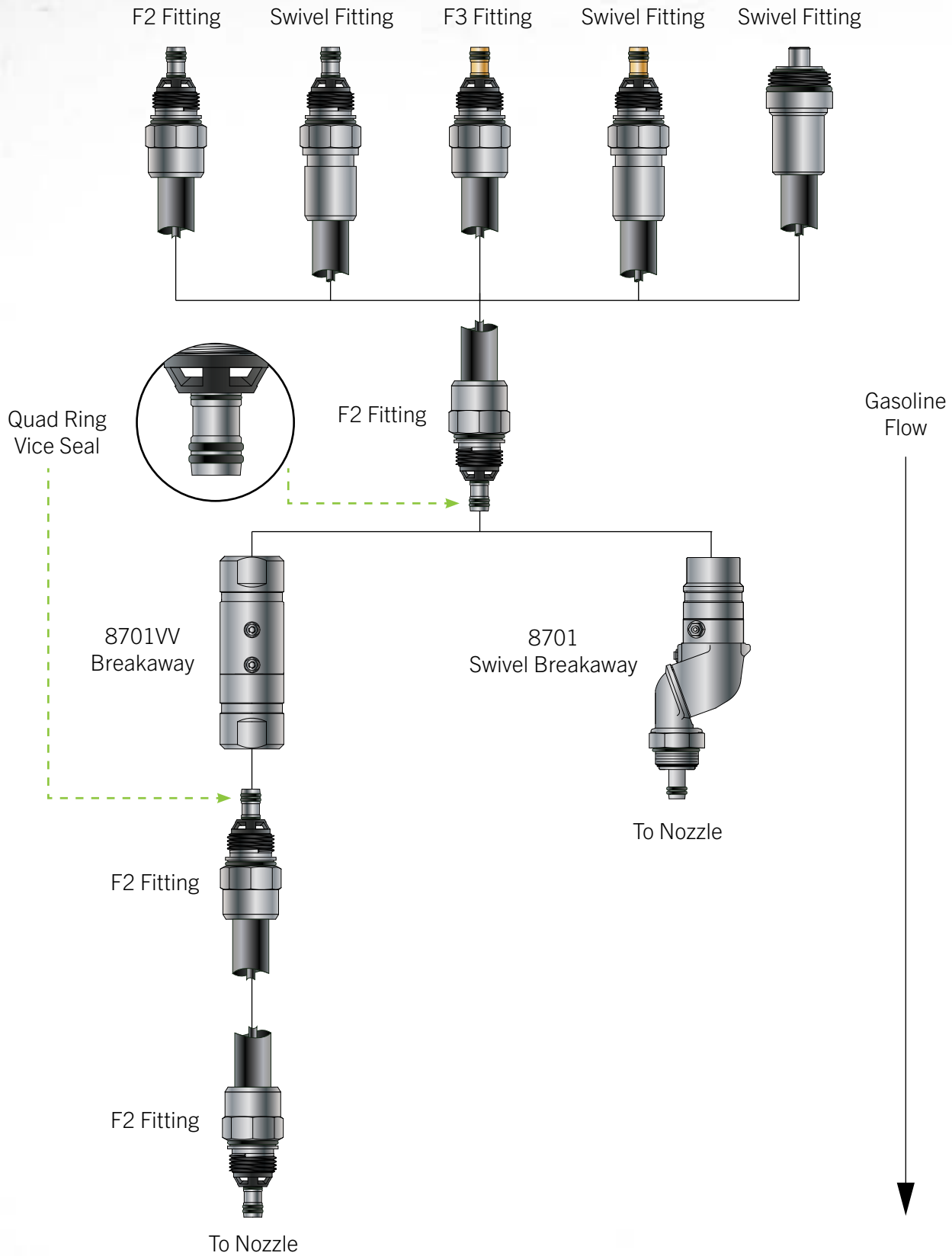
See following page for hose fitting Breakaway Valve configuration options.

- 1 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)



SPECIFICATIONS CONTINUED

Hose Fitting & Breakaway Valve Configurations



LOW PERMEATION COAXIAL VAPOR RECOVERY HOSE

HEALY® brand 3/4" low permeation coaxial vapor recovery hose is designed for use in refueling applications requiring reduced permeation rates of 10 g/m²/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 non-swivel), 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 = 3/4" 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-LP = 3/4" 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-LP = 3/4" vapor recovery hose, 0 feet 8 inches length, one fixed metric M-34 thread fitting and one fixed HEALY® straight thread fitting.

Replacement Parts

Model	Description
HB-2	Hose end O-ring for S2/F2 fitting, large
6094	Hose end O-ring for S3/F3 fitting, large
516	Hose end O-ring for S4 fitting, large
HB-4	Vapor end quad ring (2 required per adapter)
291	Vapor end O-ring, small (2 required per adapter)

SPECIFICATIONS

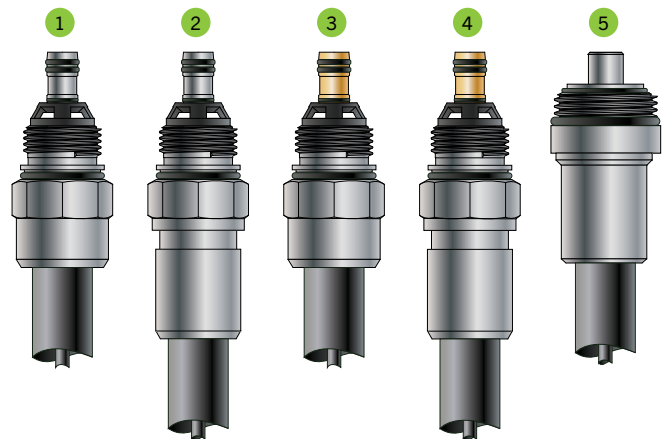
- Tube: Nitrile synthetic rubber with fluorothermoplastic barrier layer
- Cover: Synthetic rubber
- Reinforcement: Single wire braid
- End fittings: Stainless steel

Approvals/Certifications

- Meets UL330 permeation limit of 10g/m²/day.
- UL Listed (Swivel and Fixed)
- CARB certified.

End Fitting Options

- 1 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 breakaway 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.



**EVR/EOR
Nozzle**

**Curb & Whip
Hose**

**Breakaway &
Scuff Guard**

ORDERING INFORMATION

New Nozzle Hanging Hardware Kits

Model	Description
405903902	<p>Hanging hardware kit for Phase II Vapor Recovery with new RED nozzle, includes:</p> <ul style="list-style-type: none"> - 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 breakaway valve (8701VV) - Breakaway valve scuff guard top and bottom (761, 762) - Anti-Kink Hose Clamp (407924901)
405903904	<p>Hanging hardware kit for Phase II Vapor Recovery with new BLACK nozzle, includes:</p> <ul style="list-style-type: none"> - 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 breakaway valve (8701VV) - Breakaway valve scuff guard top and bottom (761, 762)



Re-Built Nozzle Hanging Hardware Kits

Model	Description
405903903	<p>Hanging hardware kit for Phase II Vapor Recovery with re-built RED nozzle, includes:</p> <ul style="list-style-type: none"> - 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 breakaway valve (8701VV) - Breakaway valve scuff guard top and bottom (761, 762) - Anti-Kink Hose Clamp (407924901)
405903905	<p>Hanging hardware kit for Phase II Vapor Recovery with re-built BLACK nozzle, includes:</p> <ul style="list-style-type: none"> - 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 breakaway valve (8701VV) - Breakaway valve scuff guard top and bottom (761, 762)



FLEX-ON™ 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.

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

A = Hose Diameter

1 = 5/8" 3 = 1"
2 = 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 = Green
YL = Yellow BL = Blue
RD = Red

E = Swivel Options

Blank = No Swivels
SWOE = Swivel on one end
SWEE = Swivel on both ends

Example: FLHFR200806YLSWOE = FLEX-ON™ hardwall hose, 3/4" diameter, 8 feet, 6 inches length, yellow color, swivel on one end.



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).

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.

HIGHLIGHTS

- Available in ¾" 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 ¾" hose to provide extra strength and prevent kinking at hose ends.

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 = ¾"

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-ON™ softwall hose, ¾" diameter, 10 feet, 6 inches, swivel on one end.



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™ 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 ¾" 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 ¾" hose to provide extra strength and prevent kinking at hose ends.

Approvals/Certifications

- UL and ULc listed (UL 330, CAN/ULC-S612).

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)

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 = ¾"

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: FLXBM201006SWOE = FLEX-ON™ marina hose, ¾" diameter, 10 feet, 6 inches, swivel on one end.

FLXBM201006BLSWOE = FLEX-ON™ Marina Hose, BLUE, ¾" diameter, 10 feet, 6 inches, swivel on one end.

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.

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 = ¾"

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, ¾" diameter, 9 feet, 6 inches.



SPECIFICATIONS

- Tube: Black, low-temperature synthetic rubber
- Cover: Black, low temperature synthetic rubber (wrapped finish)
- Fittings: Machined nickel-plated 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

- UL and cUL listed (UL 330, CAN/ULC-S612) fixed end fittings only.

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.

ORDERING INFORMATION

Ordering Guide

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

FLXE2 A B

FLXE2 = 3/4" E-85 Ethanol Hose

A = Hose Length Feet

Use three-digit format

B = Hose Length Inches

Use two-digit format

Example: FLXE200009 = 3/4" E-85 Ethanol Hose, 0 feet, 9 inches in length (whip hose)

Example: FLXE200906 = 3/4" E-85 Ethanol Hose, 9 feet, 6 inches in length (curb hose)

Common Hose Lengths

Model	Description
FLXE200009	9" (whip) E-85 ethanol hose, 3/4"
FLXE200100	1' E-85 ethanol hose, 3/4"
FLXE200800	8' E-85 ethanol hose, 3/4"
FLXE200806	8½' E-85 ethanol hose, 3/4"
FLXE200900	9' E-85 ethanol hose, 3/4"
FLXE200906	9½' E-85 ethanol hose, 3/4"
FLXE201000	10' E-85 ethanol hose, 3/4"
FLXE201100	11' E-85 ethanol hose, 3/4"
FLXE201200	12' E-85 ethanol hose, 3/4"
FLXE201400	14' E-85 ethanol hose, 3/4"
FLXE201600	16' E-85 ethanol hose, 3/4"
FLXE201700	17' E-85 ethanol hose, 3/4"
FLXE201800	18' E-85 ethanol hose, 3/4"
FLXE202000	20' E-85 ethanol hose, 3/4"
FLXE205000	50' E-85 ethanol hose, 3/4"

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.

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.

ORDERING INFORMATION

Ordering Guide

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

FL25E2 A B

FL25E2 = 3/4" E-25 Ethanol Hose

A = Hose Length Feet

Use three-digit format

B = Hose Length Inches

Use two-digit format

Example: FL25E200009 = 3/4" E-25 Ethanol Hose, 0 feet, 9 inches in length (whip hose)

Example: FL25E200906 = 3/4" E-25 Ethanol Hose, 9 feet, 6 inches in length (curb hose)

Common Hose Lengths

Model	Description
FL25E200008	8" (whip) E-25 ethanol hose, 3/4"
FL25E200009	9" (whip) E-25 ethanol hose, 3/4"
FL25E200100	1' E-25 ethanol hose, 3/4"
FL25E200300	3' E-25 ethanol hose, 3/4"
FL25E200500	5' E-25 ethanol hose, 3/4"
FL25E200600	6' E-25 ethanol hose, 3/4"
FL25E200800	8' E-25 ethanol hose, 3/4"
FL25E200806	8½' E-25 ethanol hose, 3/4"
FL25E200900	9' E-25 ethanol hose, 3/4"
FL25E201000	10' E-25 ethanol hose, 3/4"
FL25E201200	12' E-25 ethanol hose, 3/4"
FL25E201800	18' E-25 ethanol hose, 3/4"

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.

LOW PERMEATION HOSE

Low permeation hose is designed for use in refueling applications requiring reduced permeation rates of 10 g/m²/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.

ORDERING INFORMATION

Model	Description
FLHLP200009	3/4" x 9' low permeation whip hose, non-swivel
FLHLP200010	3/4" x 10' low permeation whip hose, non-swivel
FLHLP200100	3/4" x 8' low permeation hose, non-swivel
FLHLP200800	3/4" x 8' low permeation hose, non-swivel
FLHLP200900	3/4" x 9' low permeation hose, non-swivel
FLHLP200906	3/4" x 9'6" low permeation hose, non-swivel
FLHLP201000	3/4" x 10' low permeation hose, non-swivel
FLHLP201100	3/4" x 11' low permeation hose, non-swivel
FLHLP201200	3/4" x 12' low permeation hose, non-swivel
FLHLP200800SWOE	3/4" x 8' low permeation whip hose, swivel on one end
FLHLP200806SWOE	3/4" x 8'6" low permeation whip hose, swivel on one end
FLHLP200900SWOE	3/4" x 9' low permeation whip hose, swivel on one end
FLHLP200906SWOE	3/4" x 9'6" low permeation whip hose, swivel on one end
FLHLP201000SWOE	3/4" x 10' low permeation whip hose, swivel on one end
FLHLP201006SWOE	3/4" x 10'6" low permeation whip hose, swivel on one end
FLHLP201100SWOE	3/4" x 11' low permeation whip hose, swivel on one end
FLHLP201200SWOE	3/4" x 12' low permeation whip hose, swivel on one end

SPECIFICATIONS

- Tube: Nitrile synthetic rubber with fluorothermoplastic barrier layer
- Cover: Synthetic 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/m²/day
- Continental™ / ContiTech™ branding on hose

Approvals/Certifications

- CARB and UL330 listed.
- Meets UL330 permeation limit of 10g/m²/day.

Note: The minimum order quantity is 10 hoses.

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.

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
¾	19.1	1.11	28.2	0.27	0.40
1	25.4	1.40	35.6	0.52	0.77



ORDERING INFORMATION

FTSW A B C

FTSW = AGRI-FLEX™ Farm Hose

A = Hose Diameter

2 = ¾"

3 = 1"

B = Hose Length Feet

Use three-digit format

C = Hose Length Inches*

Use two-digit format

Example:

FTSW201006 =

AGRI-FLEX™ Farm Hose, ¾" 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)

Approvals/Certifications

- Meets API Bulletin 1529-6th edition, 2005 and N.F.P.A. Bulletin #407 (2007 revision)

ID		Nom. OD		Max. WP		Weight	
In	mm	In	mm	psi.	Mpa	Lb/Ft	kg/m
1	25.4	1.58	40.1	300	2.07	0.63	0.94
1.25	31.8	1.89	48.0	300	2.07	0.84	1.25
1.5	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
2.5	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 INFORMATION

AV A X B MXMWING

AV = Aviation Hose

A = Hose Diameter

16 = 1"

20 = 1¼"

24 = 1½"

32 = 2"

40 = 2½"

48 = 3"

64 = 4"

B = Hose Length Feet

Use three-digit format

MXMWING = Male X Male Fittings

Example:

AV24X025MXMWING =

Aviation hose, 1½" diameter, 25 feet length, male x male fittings.

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.

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

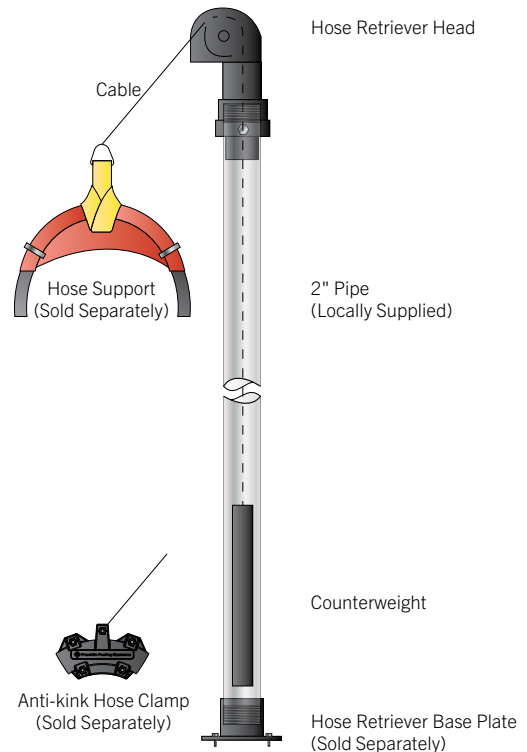
Model	Description
HRTRVR	Hose retriever kit including head with 2" NPT inlet, cable, counterweight, pulley, and clamps
HRTRVRBASE	Hose retriever base plate, 2" NPT inlet
407924901	Anti-kink hose clamp for 5/8" or 3/4" hose
HB100	1" hose diameter hose support
HB125	1 1/4" hose diameter hose support
HB150	1 1/2" hose diameter hose support
HRTRTR	Hose retractor, 20 lbs counterweight, 30 lbs



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



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	¾" 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.



SPECIFICATIONS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.

Model	Inlet Size		Outlet Size		Weight	
	In	mm	In	mm	Lbs	Kg
41030003	1.25	31.90	1.25	31.90	1.31	0.59
41040103	1.5	38.30	1.5	38.30	1.31	0.59

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.

SPECIFICATIONS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.

Model	Inlet Size		Weight	
	In	mm	Lbs	Kg
41511001	1.5	38.10	7.30	3.31

ORDERING INFORMATION

Model	Description
415415001	415 nozzle replacement spout assembly

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.

SPECIFICATIONS

- Body: aluminum.
- Stem: stainless steel.
- Packing: PTFE-impregnated graphite.
- Discs: fluorocarbon.

Model	Inlet Size		Outlet Size		Weight	
	In	mm	In	mm	Lbs	Kg
49030105	1	25.5	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	1.5	38.3	1.38	0.62

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 (lead)ed
- 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	3/4" manual nozzle, leaded spout, with check valve
498303902	1" manual nozzle, leaded spout, with check valve
498303903	1" manual nozzle, leaded spout

495 AIRCRAFT FUELING NOZZLE

Standard features include a 100 mesh tube strainer, a dust cap assembly and a 6¹/₂' static discharge ground wire. 1¹/₄" and 1¹/₂" 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.

SPECIFICATIONS

- Body: cast aluminum.
- Stem: stainless steel.
- Packing: PTFE - impregnated graphite.
- Discs: fluorocarbon.

Model	Inlet Size		Outlet Size		Weight	
	In	mm	In	mm	Lbs	Kg
49540001	1.5	38.30	1.5 NPT	38.30	6.5	3
49540101	1.25	31.90	1.25 NPT	31.90	5.30	2.40
49540201	1	25.5	1.25 NPT	31.90	4.15	1.90

ORDERING INFORMATION

495 Replacement Parts

Part	495-400-01	495-401-01	495-402-01	495-404-01
	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	1 ¹ / ₂ " aluminum tube and brass strainer assembly
49512002	1 ¹ / ₂ " tube and strainer assembly, brass
49512201	1 ¹ / ₄ " aluminum tube and brass strainer assembly

NOZZLE ACCESSORIES

SPECIFICATIONS

- Body: wrought aluminum with hard coat anodized finish for durability.
- Stem: two fluorocarbon O-ring seals and waterproof dust seal.

ORDERING INFORMATION

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	1.5	38.3	1.38	35.20	8.5	216.80	1	0.45
41012201	1.25	31.9	1.12	28.60	8.5	216.80	0.88	0.40
41012901	1.5	38.3	1.62	41.30	8.5	216.80	1	0.45
41013301	1.25	31.9	1.38	35.20	8.5	216.80	1	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	8.5	216.80	0.56	0.25
49110101	1.5 NPT	38.3	1.91	48.70	8.5	216.80	0.69	0.31
49110701	1.25 NPT	31.9	1.31	33.40	8.5	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.

Model	Size		Description	Weight	
	In	mm		Lbs	Kg
46510101	1.25" x 1.25"	31.90 x 31.90	Without check	0.69	0.31
46510102	1.25" x 1.25"	31.90 x 31.90	With check	0.69	0.31
46510201	1.5" x 1.5"	38.30 x 38.30	Without check	0.72	0.33
46510202	1.5" x 1.5"	38.30 x 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.

Model	Size		Weight	
	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 1.5" nozzle.
^{**}For use with 1.25" nozzle
^{***}For use with 1" nozzle.

Ground Wire Assembly

6½' of preformed galvanized steel cable with a terminal eye and heavy-duty battery clip.

Model	Size		Weight	
	In	M	Lbs	Kg
49510701	78	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.

Model	Size		Description	Weight	
	In	M		Lbs	Kg
49512501	1.25	31.90	Brass	0.19	0.09
49520401	1	25.5		0.13	0.06
49520901	1.5	38.30		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.



ORDERING INFORMATION

Model	Description
VAX075FNPT	Vapor recovery conversion adapter, vac-assist to 3/4" standard conventional
BAX075FNPT	Balance vapor recovery conversion adapter, balance to 3/4" standard conventional
HEX075FNP	HEALY® vac-assist conversion adapter, HEALY® vac-assist to 3/4" standard conventional

SAFETY-SEVER™ BREAKAWAYS

EBW® brand Safety-Sever™ breakaways 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 breakaway force provides ample protection for dispensers, while preventing accidental disconnection caused by ordinary aggressive hose handling.



HIGHLIGHTS

- Easy breakaway 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

Model	Description
69713701	3/4" NPT Safety-Sever™ breakaway
69813321*	3/4" BSPT Safety-Sever™ breakaway
69713301	3/4" Safety-Sever™ breakaway replacement shear screw
79722501	1" NPT Safety-Sever™ breakaway
79713301	1" Safety-Sever™ breakaway replacement shear screw

UTILITY BREAKAWAYS

FLEX-ING™ brand utility breakaways are designed to provide protection for dispensing equipment at high capacity fueling locations. These heavy-duty breakaways 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 breakaway
BRK15-N	1½" NPT utility breakaway
BRK2-2-N	2" NPT utility breakaway
BRK3-3-N	3" NPT utility breakaway
BRK14-K	Repair kit for 1¼" NPT utility breakaway
BRK15-K	Repair kit for 1½" NPT utility breakaway
BRK2-K	Repair kit for 2" NPT utility breakaway
BRK3-K	Repair kit for 3" NPT utility breakaway

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.
 - 1½" - 400 lbs.
 - 2" - 500 lbs.
 - 3" - 1,000 lbs.
- Utility breakaways are not intended for use in commercial retail applications.
- For use with gasoline 10% ethanol blend and diesel fuel.

VAPOR RECOVERY BREAKAWAY VALVES & HOSE ACCESSORIES

HEALY™ vapor recovery Breakaway 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 Breakaway valve options are certified to be reconnected in the field to help mitigate the cost of separations.



HIGHLIGHTS

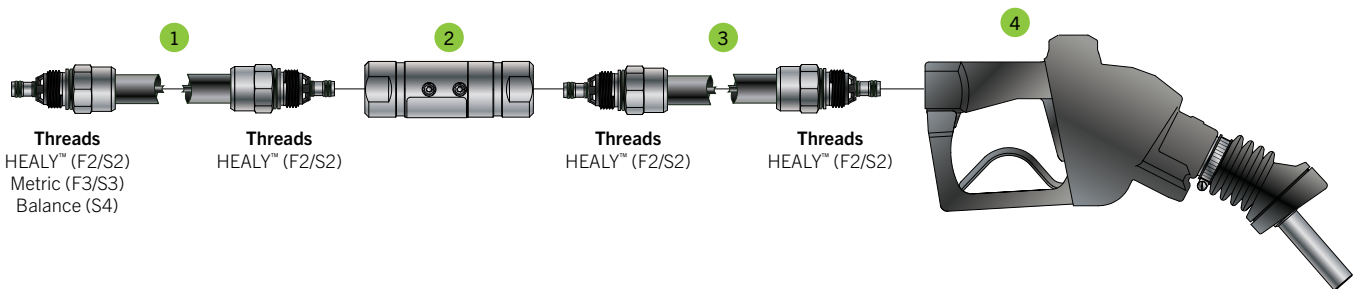
- Provides full-rated product flow of up to 10 GPM.
- Easy on-site reassembly.
- Includes spare shear screw conveniently mounted on the Breakaway valve.
- Reduces fuel spillage and vapor emissions.
- Optional two-piece scuffguard available for in-line option.
- Swivel option includes scuffguard.
- UL listed and CARB VR-201/202 approved.

SPECIFICATIONS

In-Line Breakaway Valve Components & Thread Types

For fitting threads F = fixed, S = swivel.

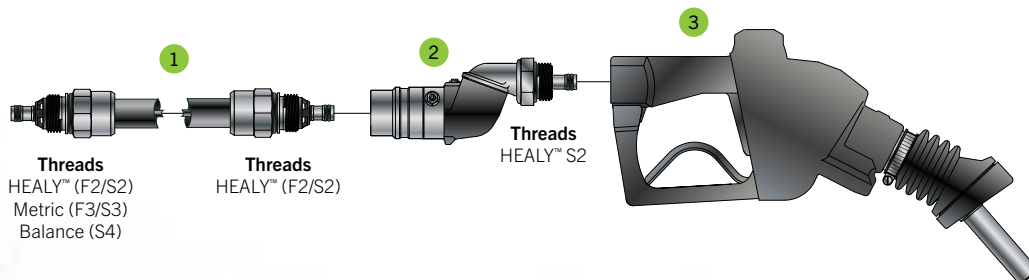
- 1 Whip hose
- 2 In-line Breakaway valve
- 3 Curb hose
- 4 All HEALY™ nozzles



Swivel Breakaway Valve Components & Thread Types

For fitting threads F = fixed, S = swivel.

- 1 Curb hose
- 2 Swivel Breakaway valve
- 3 All HEALY™ nozzles



ORDERING INFORMATION

In-Line Breakaway Valves



Model	Description
8701VV	In-line Breakaway valve with vapor path shut-off, 350 lbs strength, installed between whip hose and hose, includes one spare shear screw
762	In-line Breakaway scuffguard top (dispenser end)
761	In-line Breakaway scuffguard bottom (nozzle end)
715VV	Repair kit for in-line Breakaway, includes valves and O-rings
787	Replacement shear screw for in-line Breakaway valve, nickle-plated brass
Z055	O-ring kit for in-line Breakaway with nickel-plated shear screw

In-Line Breakaway Valves



Model	Description
807	Swivel Breakaway valve with vapor path shut-off, 350 lbs strength, installed between hose and nozzle, includes scuffguard
405417001	Replacement swivel Breakaway scuffguard
787-1	Replacement shear screw for 807 swivel Breakaway valve, nickle-plated

Breakaway Valve Reconnection Tool



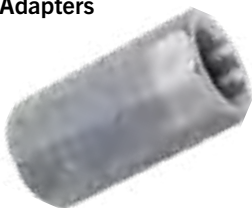
Model	Description
795	Clamp repair tool for in-line and swivel Breakaway valves

Flow Limiter



Model	Description
1301	Hose flow limiter for 8701VV standard breakaway, installed between breakaway and main hose(CARB and UL Listed)

Hose Adapters



Model	Description
CX6-A	Hose Adapter, non-vapor ready, NPT
CX6-AE	Hose adapter, non-vapor ready, BSP, international only

DEF/ADBLUE® HANGING HARDWARE

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.

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:
 $\frac{3}{4}$ " (19 mm)
INLETS:
 $\frac{3}{4}$ " 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:
 $\frac{3}{4}$ " (19 mm)
OUTLETS:
 $\frac{3}{4}$ " NPT, $\frac{3}{4}$ " BSPP,
 and 1" BSPP



BREAKAWAYS

This in-line breakaway solution provides **protection from drive-offs** by sealing at both ends to prevent any fuel from being released.

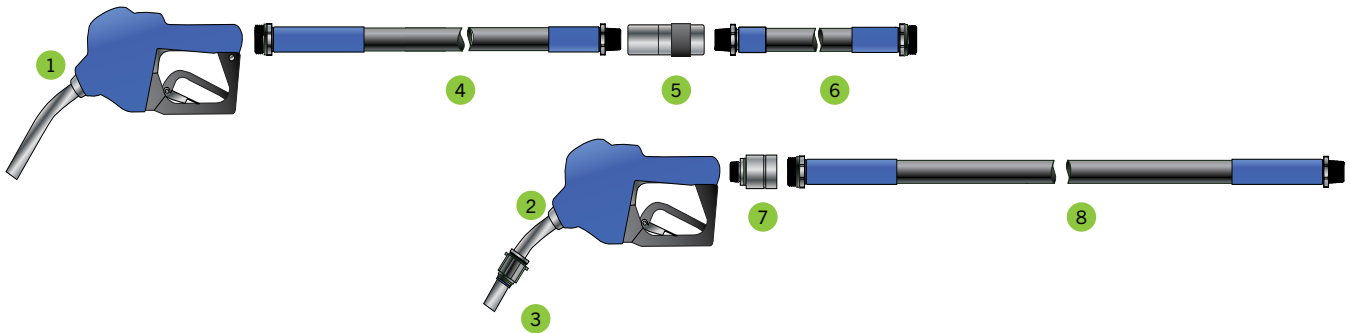
SIZES:
 $\frac{3}{4}$ " (19 mm)
INLETS:
 $\frac{3}{4}$ " NPT and $\frac{3}{4}$ " BSPP



SWIVEL BREAKAWAYS

This breakaway's integrated swivel action promotes **easy nozzle rotation during vehicle filling** while also helping to reduce hose wear and kinking.

SIZES:
 1" (25 mm)
INLETS:
 1" BSPP
OUTLETS:
 $\frac{3}{4}$ " NPT, $\frac{3}{4}$ " BSPP, M34



TYPICAL CONFIGURATIONS

Item	Description	Model
1	$\frac{3}{4}$ " automatic nozzle	DURADEF-LB
2	$\frac{3}{4}$ " automatic nozzle with mis-filling prevention spout	DURADEF-MPD
3	Mis-filling prevention device	DEF-MPD
4	$\frac{3}{4}$ " BSPP x $\frac{3}{4}$ " NPT hose	FLDEF2XXXXX-2P-2N

Item	Description	Model
5	$\frac{3}{4}$ " breakaway valve NPT	BRK34SS-N
6	$\frac{3}{4}$ " NPT x $\frac{3}{4}$ " BSPP whip hose	FLDEF2XXXXX-2N-2P
7	$\frac{3}{4}$ " BSPP x 1" BSPP swivel breakaway valve	OMNIDEF1X34P
8	1" BSPP x $\frac{3}{4}$ " NPT hose	FLDEF2XXXXX-3P-2N

DURADEF™ 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 mis-fill prevention device (MPD). The MPD is available separately.



Mis-Fill Prevention Device
(Sold 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.

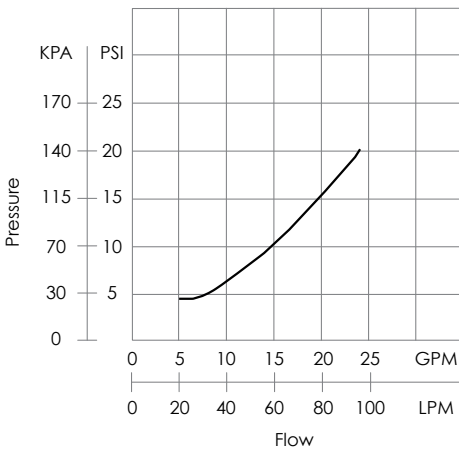
SPECIFICATIONS

- Inlet: ¾" BSPP
- Spout: ¾" (19 mm) 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"

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

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.

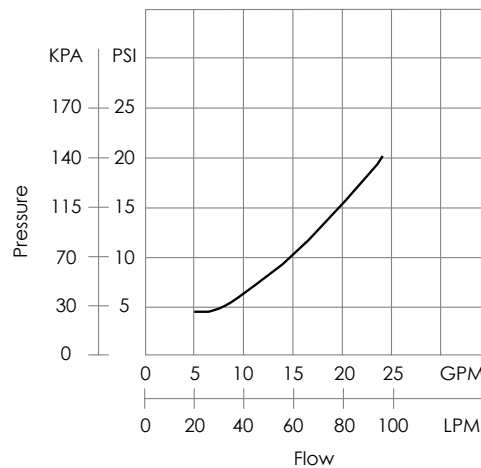
SPECIFICATIONS

- Inlet: ¾" BSPB
- Spout: 19 mm 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



AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA)
 Viton® is a registered trademark of E. I. du Pont de Nemours and Company.

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 anti-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 = ¾"

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, ¾" diameter, 9 feet, 6 inches length, ¾" NPT fitting on both ends.



SPECIFICATIONS

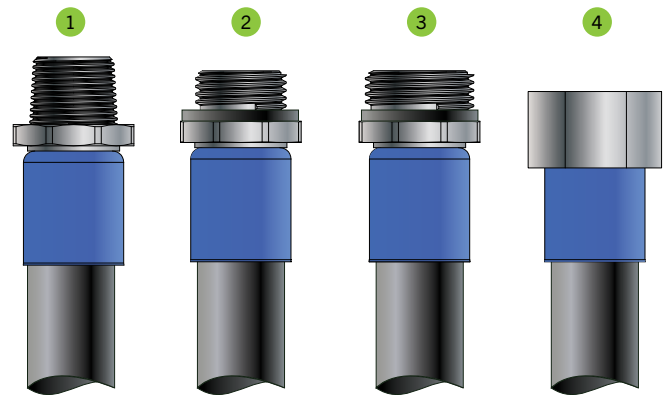
- Tube: Specially formulated low-extraction EPDM rubber, peroxide cured
- Reinforcement: Polyester braid
- Cover: Specially formulated EPDM
- Temperature: -40 °F to 257 °F (-40 °C to 125 °C)

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



DIESEL EXHAUST FLUID BREAKAWAY

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

- Consistent separation force.
- Ball check valves seal both halves of the breakaway instantly upon separation.
- Machined from solid stainless steel bar stock.
- The two halves of the breakaway are sealed before the check valves open, creating a completely dry break.

ORDERING INFORMATION

Model	Description
BRK34SS-N	¾" NPT DEF breakaway
BRK34SS-P	¾" BSPP DEF breakaway

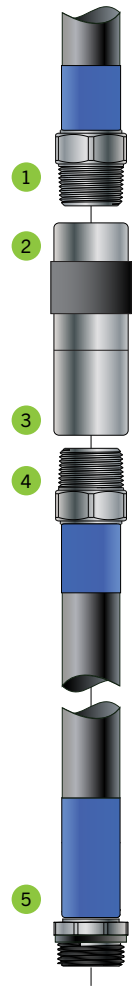


SPECIFICATIONS

- 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

- 1 ¾" BSPP or NPT whip hose end fitting
- 2 ¾" BSPP or NPT breakaway inlet
- 3 ¾" BSPP or NPT breakaway inlet
- 4 ¾" BSPP or NPT curb hose end fitting
- 5 Hose end fitting to nozzle



Viton® is a registered trademark of E. I. du Pont de Nemours and Company.

DIESEL EXHAUST FLUID SWIVEL BREAKAWAY

FLEX-ING® brand diesel exhaust fluid swivel breakaways provide in-line protection for hanging hardware in the event of a drive-off. These breakaways feature a stainless steel body that makes them extremely durable and completely compatible with DEF/AdBlue®. The breakaway 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®.
- Breakaway valves separate with axial or up to 30° angular force.
- Fluid release limited to less than 10 ml upon breakaway 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 breakaway and the nozzle inlet.

ORDERING INFORMATION

Model	Description
OMNIDEF1X34N	¾" NPT nozzle outlet, 1" BSPP female inlet DEF swivel breakaway
OMNIDEF1X34P	¾" BSPP nozzle outlet, 1" BSPP female inlet DEF swivel breakaway
OMNIDEF1PXM34	M34 (metric) nozzle outlet, 1" BSPP female inlet DEF swivel breakaway

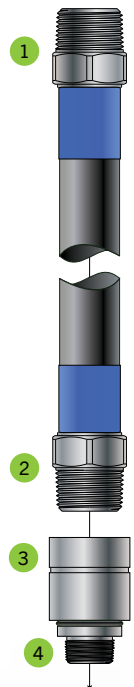


SPECIFICATIONS

- 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

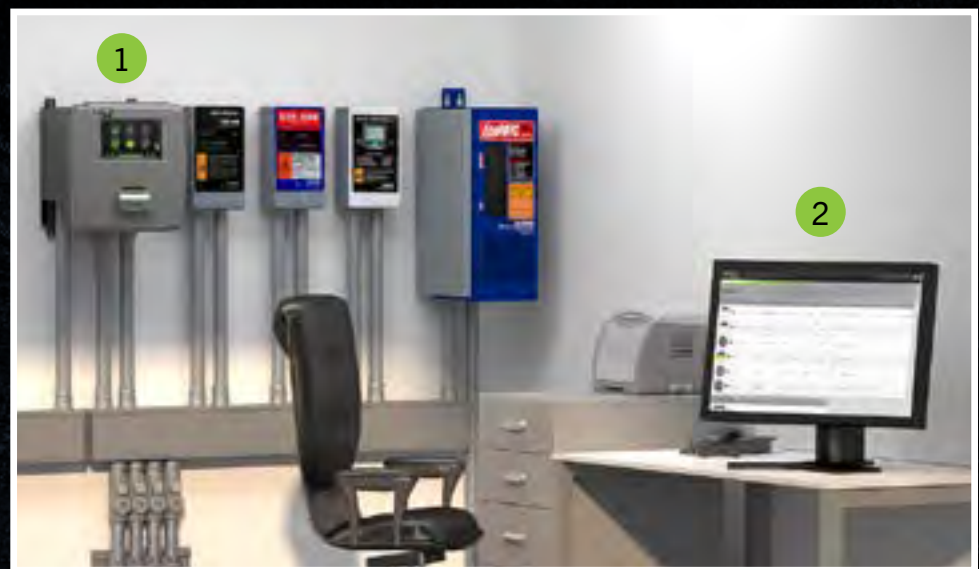
Installation

- 1 Hose end fitting to dispenser
- 2 1" BSPP hose end fitting
- 3 1" BSPP breakaway female inlet for hose
- 4 ¾" NPT, ¾" BSPP, or M34 (metric) breakaway male outlet to nozzle



FUEL MANAGEMENT SYSTEMS

- 1 EVO™ Series Automatic Tank Gauges
- 2 FFS PRO® Connect ATG Remote Access & SSA-2 Remote Fuel Management Software
- 3 Discriminating Dispenser or Tank Sump Sensors
- 4 Leak Detection and Inventory Control Probes
- 5 Float Kits for All Common Applications
- 6 Probe Installation Kits
- 7 Electronic Line Leak Detection
- 8 Corrosion Control™ Desiccant Pack Sensor (DPS)





6

8

7

3

4

5

FIND THE RIGHT ATG FOR YOUR SITE.




EVO™ 200

6 Maximum Tank Capacity

6 Maximum Sensor Capacity


6 Total # of Inputs


 Turbine Pump Interface

Optional features
below dashed line

 FFS PRO® Connect

 Inventory Reconciliation

 Tank Autocalibration

 Flow Rate Monitoring



EVO™ 400

14 Maximum Tank Capacity


14 Maximum Sensor Capacity


14 Total # of Inputs

 Turbine Pump Interface

 FFS PRO® Connect

 Inventory Reconciliation

 Tank Autocalibration

 Flow Rate Monitoring

* Additional capacity available with expansion console






¹ EVO™ 600/6000 only








² EVO™ 550/5000 only

³ EVO™ 600/6000 call customer service for availability








EVO™ 600 / EVO™ 550








-  Maximum Tank Capacity*
-  Maximum Sensor Capacity*
-  Total # of Inputs
-  Turbine Pump Interface
-  FFS PRO® Connect¹

-  Inventory Reconciliation
-  Tank Autocalibration
-  Flow Rate Monitoring
-  Corrosion Control™ Integration¹
-  Electronic Line Leak Detection
-  Secondary Containment Monitoring^{2,3}
-  DEF/AdBlue Recirculation



EVO™ 6000 / EVO™ 5000

-  Maximum Tank Capacity*
-  Maximum Sensor Capacity*
-  Total # of Inputs
-  Turbine Pump Interface
-  FFS PRO® Connect¹

-  Inventory Reconciliation
-  Tank Autocalibration
-  Flow Rate Monitoring
-  Corrosion Control™ Integration¹
-  Electronic Line Leak Detection
-  Secondary Containment Monitoring^{2,3}
-  DEF/AdBlue Recirculation

Optional features
below dashed line

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 different options with right-sized features to meet the requirements of your specific application, size, and compliance needs.

Which ATG is right for your application?



EVO™ 200

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
Color LCD Size	7" (17.78 cm)
Printer options	External
Internal audible alarm	✓
Email/SMS notifications	✓
Inventory and delivery management	✓
Leak detection sensors	✓
Static and continuous tank testing	✓
Static and statistical electronic line leak detection	-
High/low product, water, and temperature alarm set points	✓
Inventory reconciliation/tank autocalibration	✓
Flow rate monitoring	✓
Density and mass measurement	✓
Phase separation detection	✓
Turbine Pump Interface	✓
AdBlue®/DEF recirculation system	-
Back-up generator monitoring	✓
Conditional programming	✓
MODBUS® compatibility	✓
Compatible with Multiplexing Sensor Hub	-
Compatible with Corrosion Control™ integration	-
Secondary containment monitoring	-



EVO™ 400

14
14
14
-
2
-
-
2

7" (17.78 cm)

External

✓
✓
✓
✓
✓
-
✓
✓
✓
✓
✓
✓
✓
✓
-
✓
✓
✓

-
-
-



EVO™ 550 & EVO™ 600

36*
48*
48
24
2
36
24
26

7" (17.78 cm)

Internal & External

✓
✓
✓
✓
✓
✓
✓
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✓

EVO™ 600 only
EVO™ 600 only
EVO™ 550 only**



EVO™ 5000 & EVO™ 6000

36*
96*
96
24
2
36
24
44

7" (17.78 cm)

Internal & External

✓
✓
✓
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✓
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✓
✓
✓
✓
✓

EVO™ 6000 only
EVO™ 6000 only
EVO™ 5000 only**

**EVO™ 600/6000 call customer service for availability.

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. With pre-configured hardware and customizable software options, these ATGs provide straightforward tank level monitoring and compliance. 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

- Included Features: inventory monitoring, Turbine Pump Interface (TPI) capability for enhanced and automated submersible turbine pump control, static tank testing, and containment compliance monitoring.
- Optional Features: 24-hour Statistical Continuous Automatic Leak Detection (SCALD), continuous tank testing, tank autocalibration, inventory reconciliation, and flow rate monitoring.
- Both ATGs feature the capability to interface with probes and sensors in any combination up to 6 (EVO™ 200) or 14 (EVO™ 400).
- Customizable user roles and log-in security features protect against unwanted access while keeping track of user activity within your system.
- 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" (17.78 cm) touch screen interface provides simplified on-site access features including:
 - Six available 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.
- Web interface allows you to directly connect to your ATG via FFS PRO® Connect from any web-enabled device.
- Optional WiFi allows secure and protected on-site viewing of inventory levels for fuel delivery drivers.

Approvals/Certifications

- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities

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: 17.78 cm (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" (205 mm), Width: 13 ¾" (350 mm), Depth: 3 ¼" (83 mm)

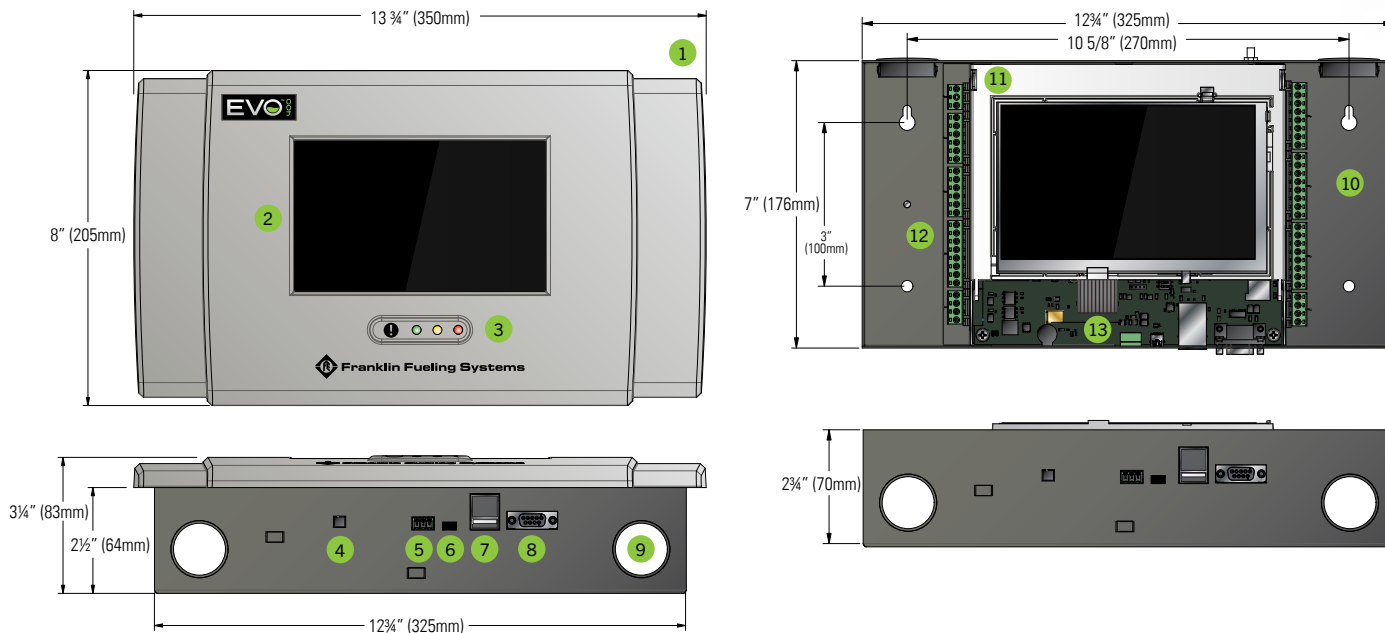
Capabilities

- High/low product, water, and temperature alarm set points
- Inventory reconciliation/tank autocalibration, flow rate monitoring (optional)
- Density, mass, and phase separation measurement
- Conditional programming
- Email and SMS notifications
- Back-up generator monitoring
- MODBUS™ support

SPECIFICATIONS CONTINUED

Components

- | | | |
|-------------------------------|----------------------------|---------------------------------|
| 1 Cover | 6 Mini USB port | 10 Mounting holes |
| 2 LCD touch screen | 7 Ethernet / USB port | 11 Flip up panel (touch screen) |
| 3 LED indicators | 8 RS-232 | 12 Termination blocks |
| 4 Annunciator (audible alarm) | 9 Top and bottom knockouts | 13 Main board |
| 5 RS-485 | | |



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:

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

TRFC = Software Options (choose all that apply)

T = SCALD 24-hour tank testing

R or F

R = Reconciliation/Autocalibration

F = Reconciliation/Autocalibration with flow rate monitoring

C = Enhanced logic conditions including value, counter, value compare, and latch

Example: EVO400DW-TF = EVO™ 400 base model, up to 14 channels with display, with WiFi, with SCALD, and with reconciliation/autocalibration and flow rate monitoring.

ORDERING INFORMATION CONTINUED

EVO™ 200 & EVO™ 400 Base Models

Model	Description
EVO200	EVO™ 200 base model automatic tank gauge
EVO400	EVO™ 400 base model automatic tank gauge

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 Hardware Options

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

Internal Software Options / Field Upgrades

Model	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-CON	(C) Enhanced logic conditions including value, counter, value compare, and latch

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 142 mm X 132 mm X 204 mm (w x h x d) and can be mounted to wall next to the EVO™ Series ATG using the included hardware.

EVO™ 200 and EVO™ 400 Replacement 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

Note: The serial number of the old SOM must be provided when ordering the FMSP-SOM-R or the FMSP-SOMW-R.

EVO™ 600 & EVO™ 6000 AUTOMATIC TANK GAUGES

EVO™ 600 & EVO™ 6000 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.
- Included Features: inventory monitoring, Turbine Pump Interface (TPI) capability for enhanced and automated submersible turbine pump control, static tank testing, and containment compliance monitoring.
- Optional Features: 24-hour Statistical Continuous Automatic Leak Detection (SCALD), continuous tank testing, tank autocalibration, inventory reconciliation, and flow rate monitoring.
- With the EVO™ 600, 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™ 6000, 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.
- 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 17.78 cm touch screen interface provides simplified on-site access features including:
 - Up to Six (6) 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.
- Web interface allows you to directly connect to your ATG from any web enabled device.
- Compatible with the Multiplexing Sensor Hub™ (FMP-MSH).
- Compatible with Corrosion Control™ Water Separator.

SPECIFICATIONS

- Maximum tanks monitored: 36 (EVO™ 600) / 36 (EVO™ 6000)
- Maximum sensor input capacity: 48 (EVO™ 600)/96 (EVO™ 6000)
- Lines capacity: 24 (EVO™ 600)/24 (EVO™ 6000)
- Dry contact input channels: 2
- AC input channels: 36 (EVO™ 600)/36 (EVO™ 6000)
- Relay output channels: 26 (EVO™ 600)/50 (EVO™ 6000)
- Connectivity: Ethernet (qty 2), RS-485, standard USB, mini-USB
- 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, 1.5 Amps
- Operating temperature: 32° to 104°F (0° to 40 °C)
- Humidity: 0-90% non-condensing
- EVO™ 600: H: 11.75"(300 mm), W: 10¼"(260 mm), D: 9"(229 mm)
- EVO™ 6000: H: 11.75"(300 mm), W: 16½"(419 mm), D: 9"(229 mm)

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

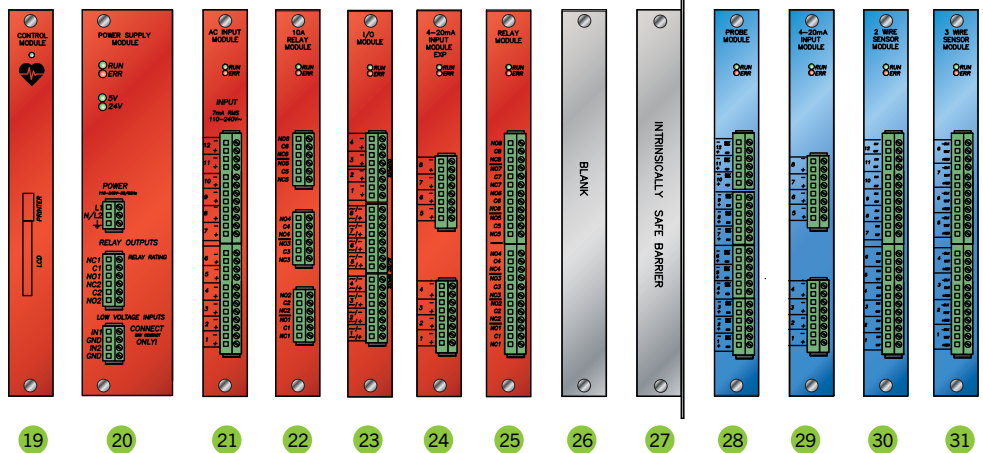
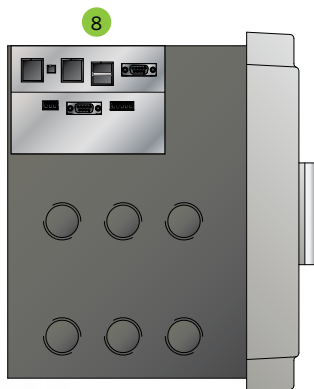
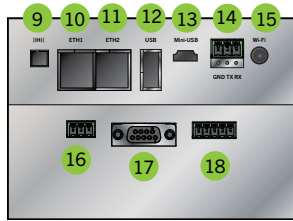
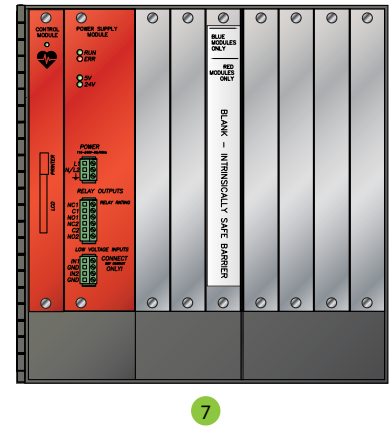
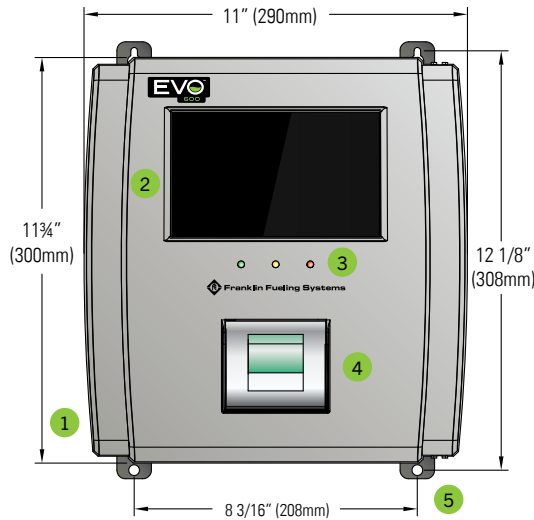
Approvals/Certifications

- UL, cUL, ATEX, IECEx
- Third party certification of leak detection capabilities

SPECIFICATIONS CONTINUED

Components

- 1 Cover
- 2 LCD touch screen
- 3 LED indicators
- 4 Printer
- 5 Mounting tabs
- 6 Cooling vents
- 7 Module slots
- 8 Communication ports
- 9 Annunciator (audible alarm)
- 10 Ethernet port
- 11 Ethernet port
- 12 USB port (Type-A)
- 13 USB port (Mini)
- 14 Ground comm port
- 15 WiFi
- 16 Bus extension
- 17 Serial comm port 2
- 18 RS-485 comm port
- 19 Controller module
- 20 Power supply module
- 21 AC input module
- 22 10 Amp relay module
- 23 I/O module
- 24 4-20mA module EXP
- 25 Relay module
- 26 Blank
- 27 Intrinsically safe barrier
- 28 Probe module
- 29 4-20mA module
- 30 2 wire sensor module
- 31 3 wire sensor module



- 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 DPWIE / TRFLGC

TX = Base Model Options

- EVO600 = EVO™ 600 base ATG
- EVO6000 = EVO™ 6000 base ATG

DPWIE = Hardware Options (choose all that apply)*

- D = Display
- P = Printer
- W = WiFi
- I = Dispenser interface module
- E = LON module

TRFLGC = 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
- C = DEF/AdBlue® recirculation, enhanced logic conditions including value, counter, value compare, and latch

*Only one EVO™-DIM or EVO™-LON module can be installed per ATG.

Example: EVO600DPWI/TRL = EVO™ 600 base model with display, with printer, with WiFi, with dispenser interface module, with SCALD, with reconciliation/autocalibration, and line leak detection.

EVO™ 600 & EVO™ 6000 Base Models

Model	Description
EVO600	EVO™ 600 base model automatic tank gauge
EVO6000	EVO™ 6000 base model automatic tank gauge

EVO™ 600 & EVO™ 6000 Hardware & Software Options

EVO™ 600 and EVO™ 6000 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
FMP-WIFI	(W) EVO WiFi Upgrade
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 EVO™-DIM or EVO™-LON module can be installed per ATG.

Internal Software Options / Field Upgrades

Model	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-CON	(C) Enhanced logic conditions including value, counter, value compare, and latch

Note: For Secondary Containment Monitoring on EVO™ 600/6000 call customer service for availability.

Expansion Consoles

Model	Description
EVO-EXPC2	Secondary console to add six additional plug-in modules to the primary EVO™ 600 or EVO™ 6000 ATG, comes without a display or printer
EVO-EXPC	Secondary console to add eleven additional plug-in modules to the primary EVO™ 600 or EVO™ 6000 ATG, comes without a display or printer

Note: The expansion consoles can also be used with the EVO™ 550 and EVO™ 5000.

EVO™ 600 & EVO™ 6000 ACCESSORIES

EVO™ 600 and EVO™ 6000 Automatic Tank Gauges Interface Modules

The EVO™ 600 and EVO™ 6000 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™ 600: 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™ 6000: 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, FMP-HFS, and FMP-HFS2 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, FMP-HFS2, TSP-ULS, TSP-UHS, TSP-HLS, TSP-HLSXL and TSP-DVS sensors. Can also support 2-wire sensors (FMP-ULS, FMP-UHS, TSP-HLS, TSP-ULS, TSP-UHS, TSP-HLSXL, FMP-HFS, FMP-HFS2)*
TS-420IB	8 input 4-20 mA module, LSU500 transducers and VPS and SCCM pressure sensors
FMP-485IS	RS485 module to connect up to four (4) Multiplexing Sensor Hubs (MSH)

Note: -U sensors are only supported on the Probe Module (PRB), not the 2-wire nor the 3-wire sensor modules.

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 (11.4 lph), 0.2 gph (.76 lph) monthly and 0.1 gph (.38 lph) annual precision line leak detection for the EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000 ATGs. Statistical Line Leak Detection (SLLD) is a standard feature that can provide 0.2 gph (.76 lph) 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

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

Bennett® is a registered trademark of Bennett Pump Company.
Wayne™ is a trademark of Dresser Equipment Group Inc.
Gasboy®, Gilbarco®, Encore™, and G-Site™ are trademarks of Gilbarco Inc.
Tokheim™ is a trademark of Tokheim Holding B.V.

Printer Supplies

Model	Description
Thermal Printer Supplies	
TS-TP2	One box of 5 rolls of thermal printer paper for EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000
TS-TP2C	One case (100 rolls) of thermal printer paper for EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000

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, EVO™ 5000
24 hour tank testing	TS-TT SCALD tank testing			EVO™ 200, EVO™ 400, EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000
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, EVO™ 5000, EVO™ 600, EVO™ 6000
Tank inventory reconciliation	TS-TRAC tank inventory reconciliation and autocalibration	TS-DIMIB module* Appropriate DIM interface cables		EVO™ 200, EVO™ 400, EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000
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, EVO™ 5000, EVO™ 600**, EVO™ 6000**

*TS-DIMIB Module can be added to EVO™ 550, EVO™ 5000 or EVO™ 600, EVO™ 6000 but not EVO™ 200, EVO™ 400. **EVO™ 600/6000 call customer service for availability. 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

EVO™ 600 and EVO™ 6000 Replacement Parts

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-TRMBLK	Package of 10 assorted terminal blocks
TSSP-EXPPS	Expansion console power supply

Note: The serial number of the old CM must be provided when ordering the EVO-6CM/R or the EVO-6CM-W/R.

Only one TS-DIM or TS-LON module can be installed per ATG.

Encore® is a registered trademark of Gilbarco Inc.
Ovation® is a registered trademark of Wayne Fueling Systems LLC.

Model	Description
EVO-6CM	Spare EVO™ 600/600 controller module, standard features only, no software options
EVO-6CM/R	Replacement EVO™ 600/6000 controller module, factory programmed with required options
EVO-6CM-W	Spare EVO™ 600/600 controller module w/ Wifi, standard features only, no software options
EVO-6CM-W/R	Replacement EVO™ 600/6000 controller module w/ Wifi, factory programmed with required 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 EVO™ ATG, comes without a display or printer
EVO-EXPC2	Secondary console to add six additional plug-in modules to the primary TS-550/5000 EVO™ ATG, comes without a display or printer
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

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 business with Flow Rate Monitoring. This software is available on new EVO™ Series Automatic Tank Gauges (ATGs) or as a field upgrade option. In addition to delivering ongoing flow rate performance data, the software calculates flow rates for each fueling point and provides a notification if transactions dip below a user-defined set point.

HIGHLIGHTS

- Monitor for and ensure fast and consistent dispenser throughput with daily reports and alarm notifications regarding flow rate performance.
- Sales and dispensing duration data are automatically reconciled to help you better understand the flow performance of every fueling point.
- Often, slow flow rates can indicate that a dispenser filter needs to be changed. Flow Rate Monitoring allows site personnel to be proactive in calling for maintenance, getting dispensers back to peak performance sooner.



SPECIFICATIONS

How It Works

STEP 1: DEVICE INTEGRATION

- Flow Rate Monitoring begins with making a connection between an EVO™ Series ATG and intelligent dispenser devices, including Forecourt Controllers and Point-Of-Sale Units.

STEP 2: COMPARING DATA

- Through this connection, dispenser transaction data is delivered to the EVO™ Series ATG and automatically compared to tank reconciliation data collected by the ATG.

STEP 3: ANALYZING & REPORTING

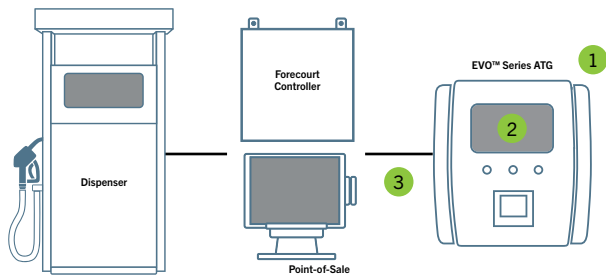
- The EVO™ Series ATG uses the data to produce flow rate readings for each dispenser fueling point and provides reporting and automated alarm notifications for any slow flow fueling points.

ORDERING INFORMATION

Which Forecourt Controller or Point-Of-Sale Do You Have?

- Wayne® Fusion
- Verifone® Commander
- Allied (ANDI or NexGen) Forecourt Controller
- Radiant Point-of-Sale
- Gilbarco® Forecourt Controllers that support the Business Inventory Reconciliation (BIR) communication protocol*

YOUR CONFIGURATION: DIRECT ATG CONNECTION



With this method of achieving Flow Rate Monitoring, an EVO™ Series Automatic Tank Gauge (ATG) can connect directly to a Point-of-Sale or Forecourt Controller without the need for a Dispenser Interface Module to be installed in the ATG.

WHAT TO ORDER

1 EVO™ Series ATG

Part #	Description
EVOXXX	EVO™ 200, EVO™ 400, EVO™ 550, EVO™ 5000, EVO™ 600, or EVO™ 6000

EVO™ Series Hardware

- The EVO™ Series ATG must have either an open and available RS-232 port - **OR** - Ethernet port.

2 EVO™ Series Software

If (R) Reconciliation Software is already installed on an existing EVO™ Series ATG, the (TS-FLOW) Flow Rate Monitoring Field Upgrade Software can be added. If (R) Reconciliation Software is not installed, (TS-TRAC-F) Reconciliation & Flow Rate Monitoring Field Upgrade Software should be added.

Part #	Description
R	Reconciliation Factory Installed Software
TS-FLOW	Flow Rate Monitoring Field Upgrade Software
- OR -	
TS-TRAC-F	Reconciliation & Flow Rate Monitoring Field Upgrade Software

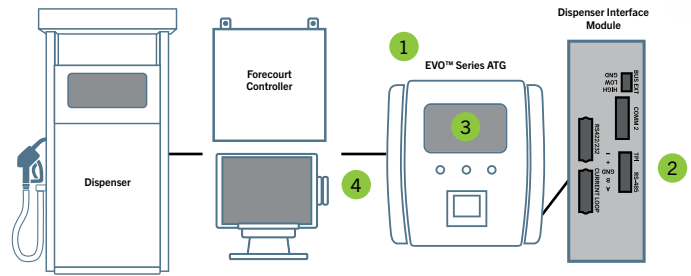
3 Customer Supplied Cables

- RS-232 Cable - **OR** - Ethernet Cable

*Contact Franklin Fueling Systems Technical Support to confirm if your existing Forecourt Controller or Point-of-Sale can support Flow Rate Monitoring.

- Wayne® Fusion
- Wayne® EC Box
- Gilbarco® Universal D-Box
- Gilbarco® Passport
- Gilbarco® G-Site
- Gilbarco® CEM-44 Box
- Verifone® Smart Controller

YOUR CONFIGURATION: ATG W/ DISPENSER INTERFACE MODULE CONNECTION



With this method of achieving Flow Rate Monitoring, a Dispenser Interface Module must be installed in the ATG to provide the appropriate communication capabilities and physical cable connection to the Forecourt Controller or Point-of-Sale device.

WHAT TO ORDER

1 EVO™ Series ATG

Part #	Description
EVOXXX	EVO™ 550, EVO™ 5000, EVO™ 600, or EVO™ 6000

2 EVO™ Series Hardware

Part #	Description
I	Dispenser Interface Module Factory Installed Hardware
- OR -	
TS-DIMIB	Dispenser Interface Module Field Upgrade Hardware

3 EVO™ Series Software

If (R) Reconciliation Software is already installed on an existing EVO™ Series ATG, the (TS-FLOW) Flow Rate Monitoring Field Upgrade Software can be added. If (R) Reconciliation Software is not installed, (TS-TRAC-F) Reconciliation & Flow Rate Monitoring Field Upgrade Software should be added.

Part #	Description
R	Reconciliation Factory Installed Software
TS-FLOW	Flow Rate Monitoring Field Upgrade Software
- OR -	
TS-TRAC-F	Reconciliation & Flow Rate Monitoring Field Upgrade Software

4 EVO™ Series Cables

Part #	Description
TSP-WDCBL	Wayne® Adapter Cable
- OR -	
TSP-GSDBCL	Gilbarco® G-Site or Passport Adapter Cable
- OR -	
TSP-GDCBL	Gilbarco® Universal D-Box or Verifone® Smart Controller Adapter Cable, Loop Communication

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, EVO™ 5000, EVO™ 600, and EVO™ 6000 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, EVO™ 5000, EVO™ 600, EVO™ 6000.
- 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.



SPECIFICATIONS

- Dimensions: 6¼" × 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.

ORDERING INFORMATION

Minimum ATG Requirements

- EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000 fuel management systems
- TS-ELLD software options (TS-ELLD-G software option for generator-specific applications)
- TS-ACI, TS-420IB or TS-420EXP, *TS-RLY modules

* TS-RLY module is not required when utilizing turbine pump interface (TPI) communications. Franklin Fueling Systems intelligent controllers required.

Intrinsically Safe

For new installations where separate low voltage conduits can be used. Use TS-420IB module.

Model	Description
TS-LS500/2	2-line transducer kit
TS-LS500/3	3-line transducer kit
TS-LS500/4	4-line transducer kit

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

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 only compatible with EVO™ 550, EVO™ 5000, EVO™ 600, and EVO™ 6000.



SPECIFICATIONS

- Operating vacuum level: -2 to -6 inHg
- Available software option on EVO™ 550, EVO™ 5000, EVO™ 600, and EVO™ 6000.
- 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.

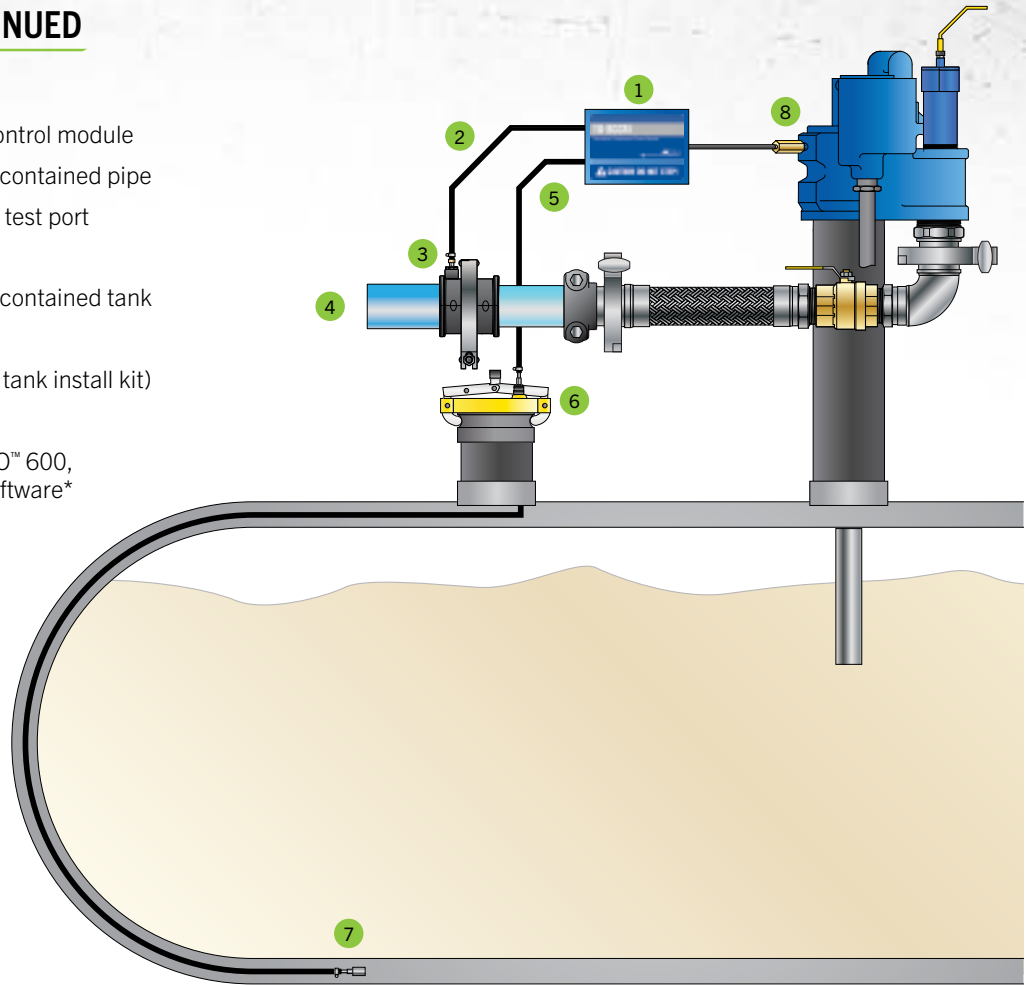
Operation

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.

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, EVO™ 5000, EVO™ 600, or EVO™ 6000 with SCM software*



*EVO™ 600/6000 call customer service for availability.

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

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
TSP-SCVLV-PF	Push-Fit stem to Barb fitting (Qty 5)

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" BSP risers, in-tank hose sold separately

MULTIPLEXING SENSOR HUB™

The Multiplexing Sensor Hub™ (MSH) allows you to use a single 4-wire cable to connect up to six devices to an EVO™ 600 or EVO™ 6000 automatic tank gauge (ATG).



HIGHLIGHTS

- For retrofit applications: the MSH can use existing 4-wire probe and sensor cables to add additional probes or sensors, providing expanded monitoring capabilities without the need to break concrete to run additional cable.
- For new applications: the MSH delivers labor and materials savings by reducing the amount of conduit and cable required for monitoring devices within a containment sump.
- Ideal for use in adding a Corrosion Control™ Water Separator and corrosion detection sensors (FMP-CDS-U) to an existing tank sump and provides all necessary input capabilities for this system.

- Six input channels provide a wide assortment of device communication capabilities:
 - **Channel 1:** Always on, for FMP-LL3 digital inventory and leak detection probes.
 - **Channel 2-5:** Multiplexed, for 2-wire universal device protocol (UDP) communication devices.
 - **Channel 5:** Additional capability for 2-wire devices.
 - **Channel 6:** For any dry-contact single pole single throw (SPST) switch, a flow switch, two-wire device, or temperature sensor based on a 10k thermistor.

SPECIFICATIONS

General

- Inputs: (1) LL3 probe, (4) UDP devices, (1) switch/temperature sensor
- Output to EVO™ 600/6000 ATG: (1) RS-485

Theory of Operation

The FMP-MSH requires a minimum of four wires connected directly to an EVO™ 600 with an RS485 module. The four connections are power, ground, and A and B communication for the RS485 module. If a sump has two input field cables that are both 2-conductor cables, the A and B connections should be wired in the same cable that must be a twisted pair. Power and ground should be on the other cable. If it is a new installation, Belden™ cable #7962A, or a cable with equivalent parameters, is recommended. The FMP-MSH can power and accept input from 6 different probes or sensors.

Approvals & Certifications

- UL listed, ATEX / IECEx

ORDERING INFORMATION

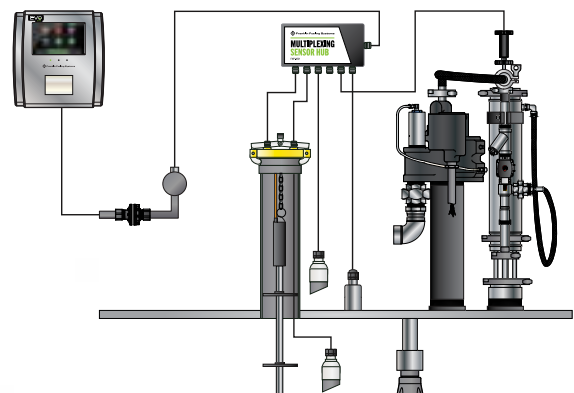
Model	Description
FMP-MSH	Multiplexing Sensor Hub™

Input Capabilities

The FMP-MSH is capable of supporting the following devices:

Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
FMP-LL3-XX	FMP-DDS-U	FMP-DDS-U	FMP-DDS-U	FMP-DDS-U	FMP-ULS
--	FMP-DTS-U	FMP-DTS-U	FMP-DTS-U	FMP-DTS-U	FMP-UHS
--	FMP-EIS-U	FMP-EIS-U	FMP-EIS-U	FMP-EIS-U	FMP-HFS2
--	FMP-DIS-U	FMP-DIS-U	FMP-DIS-U	FMP-DIS-U	10k Temp. Sensor
--	FMP-HIS-U	FMP-HIS-U	FMP-HIS-U	FMP-HIS-U	--
--	FMP-CDS-U	FMP-CDS-U	FMP-CDS-U	FMP-CDS-U	--
--	FMP-LL3-18*	FMP-LL3-18*	FMP-LL3-18*	FMP-LL3-18*	--
--	--	--	--	FMP-ULS	--

*The FMP-LL3-18 is integrated into the Corrosion Control™ Water Separator to detect water level in the vessel.



Belden™ is a trademark of Belden Technologies, Inc.

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.



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.

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.

ORDERING INFORMATION

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

Model	Description
TS-SCM	(S) Secondary containment monitoring

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 software, 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.
2. 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.
3. 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™ cable
TSP-GDCBL	Gilbarco® cable
TSP-GSDCBL	Gilbarco® G-Site™ cable
TSP-BDCBL	Bennett® 512 cable

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

External Modules

Model	Description
TS-DTU/P	Data transfer unit for wired-less VFM and VPS communications

Note: Order one TS-DTU/P and one TS-DRK/x install kit per dispenser. Order one additional TS-DTU/P for the console.

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

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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.

HIGHLIGHTS

- Dispenser-based disabling prevents the entire site from shutting down in the event of an EVR failure.
- 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.



ORDERING INFORMATION

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-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. TS-ACI modules and hook signal wiring are only required for balance site applications.

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 Gasboy®, Gilbarco®, Encore™, and G-Site™ are trademarks of Gilbarco Inc.
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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.



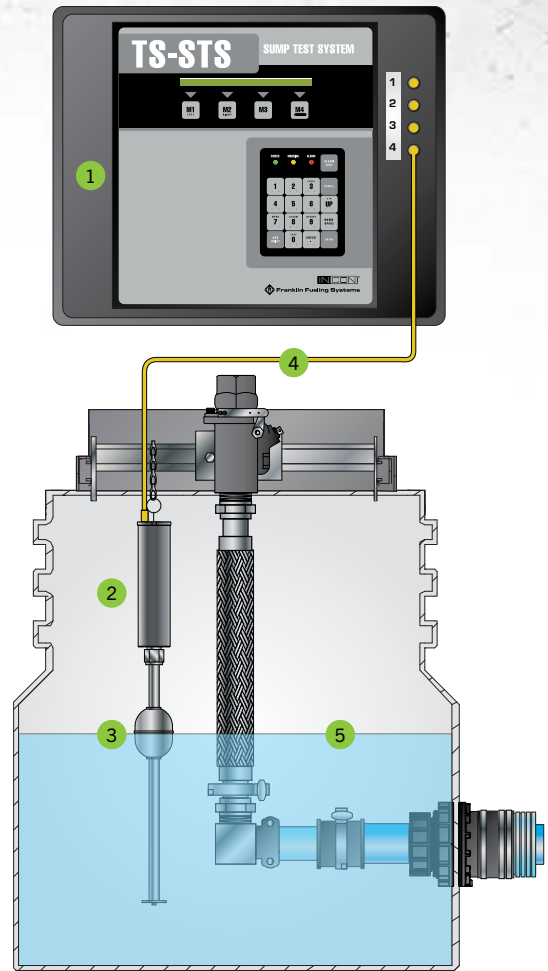
SPECIFICATIONS

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" x 19" x 8½" (62 cm x 49 cm x 22 cm).
Leak test probes - 30 lbs. (13.5 kg), 38" x 18" x 6" (97 cm x 45 cm x 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

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.

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 in WC for more than 30 minutes.
 - Pressure At Atmosphere: pressure within +/- 0.15 in WC 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.



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

LINE SENTINEL™

The INCON® TS-LLD line leak detector uses patented, flow-based technology to perform multiple line tightness tests.



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.

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.

SPECIFICATIONS

- Dimensions: Console - 4 $\frac{3}{8}$ " × 3 $\frac{3}{8}$ " × 2 $\frac{5}{16}$ ".
Line leak detector - 23 $\frac{1}{2}$ " × 2 $\frac{3}{8}$ ".
- 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.

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

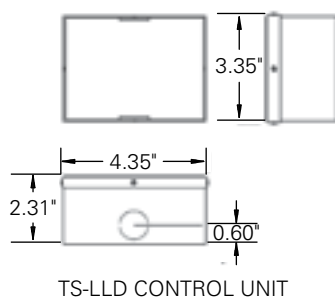
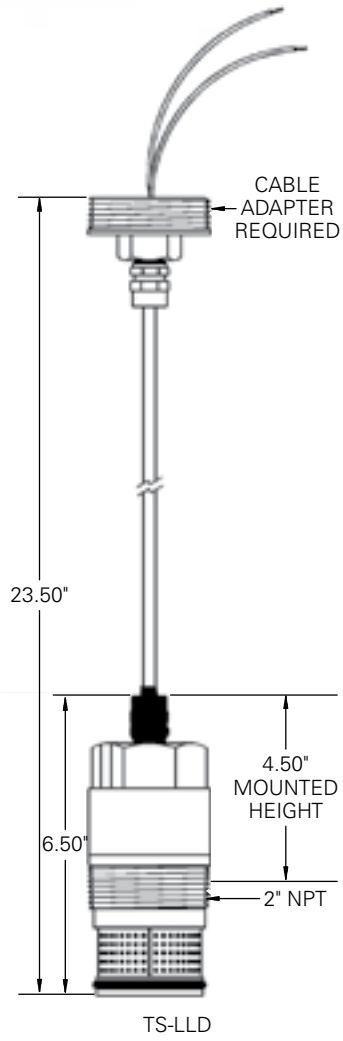
- UL, cUL
- Third party certification of leak detection capabilities

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:

1. Where it is imperative to achieve 10 gpm.
2. 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.

ORDERING INFORMATION

Model	Description
TS-LLD/FE	Electronic line leak detector with an FE PETRO® installation adapter, one required for each submersible pump
TS-LLD/RJ	Electronic line leak detector with a Red Jacket™ installation adapter, one required for each submersible pump
TS-LLD/RJQ	Electronic line leak detector with a Red Jacket™ Quantum™ installation adapter, one required for each submersible pump



*Veeder-Root® is a trademark of Danaher Corporation.
 Quantum™ is a trademark of Gilbarco Inc.
 Red Jacket™ is a trademark of Veeder-Root Company.*

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.



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.

ORDERING INFORMATION

Model	Description
S940	Four channel sensor alarm console

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" x 6" x 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

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 - 20,726 mm). Flexible probes provide an ideal solution for tall spaces, tight spaces, aboveground, and indoor applications.



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.

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 fluoride)
- 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, EVO™ 5000, EVO™ 600, and EVO™ 6000 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

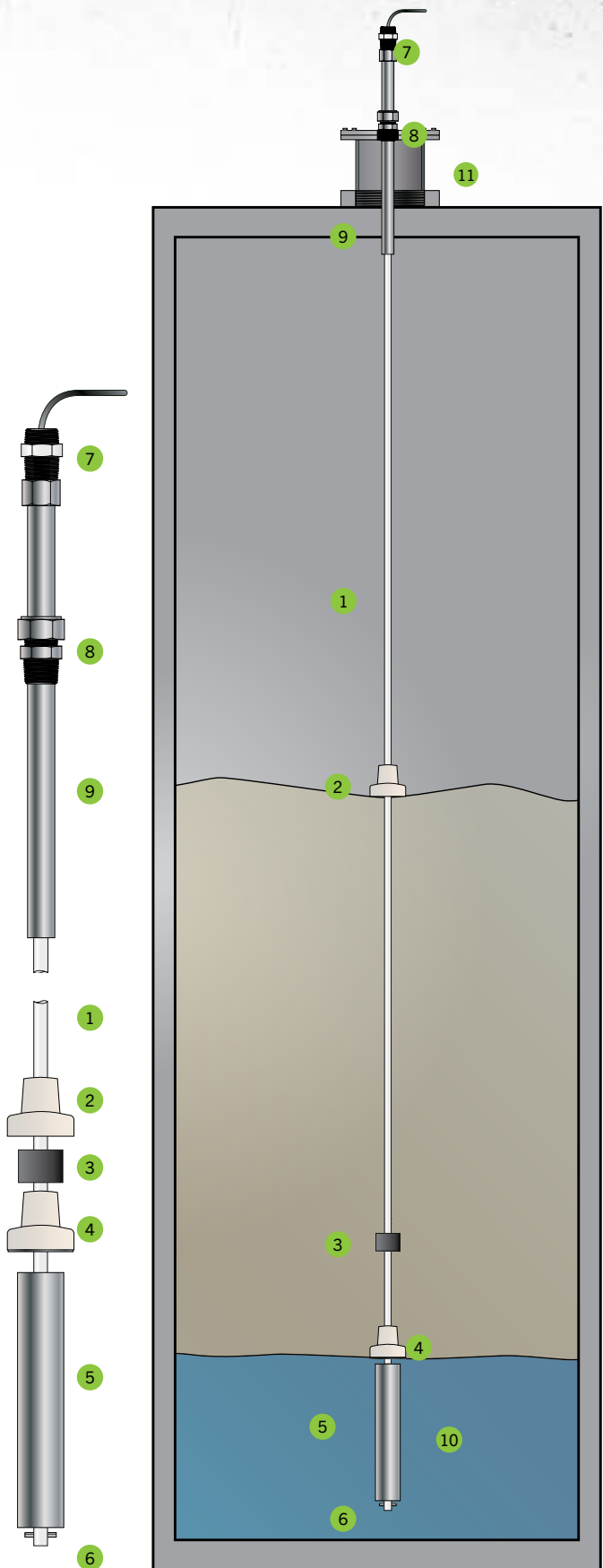
SPECIFICATIONS CONTINUED

Components

- 1 Flexible probe shaft
- 2 Product float
- 3 Spacer (included on probe length models 23' and greater)
- 4 Water float
- 5 Weight
- 6 Weight pin
- 7 Probe head, 3/4" NPT
- 8 Adjustable compression fitting, 1" NPT
- 9 16" (610 mm) installation sleeve, 3/4" NPT (optional)
- 10 Dead Band Space (between 6.35" and 19.35")
- 11 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.

- 1 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 _____ inches

+

B Riser Height _____ inches

C 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.

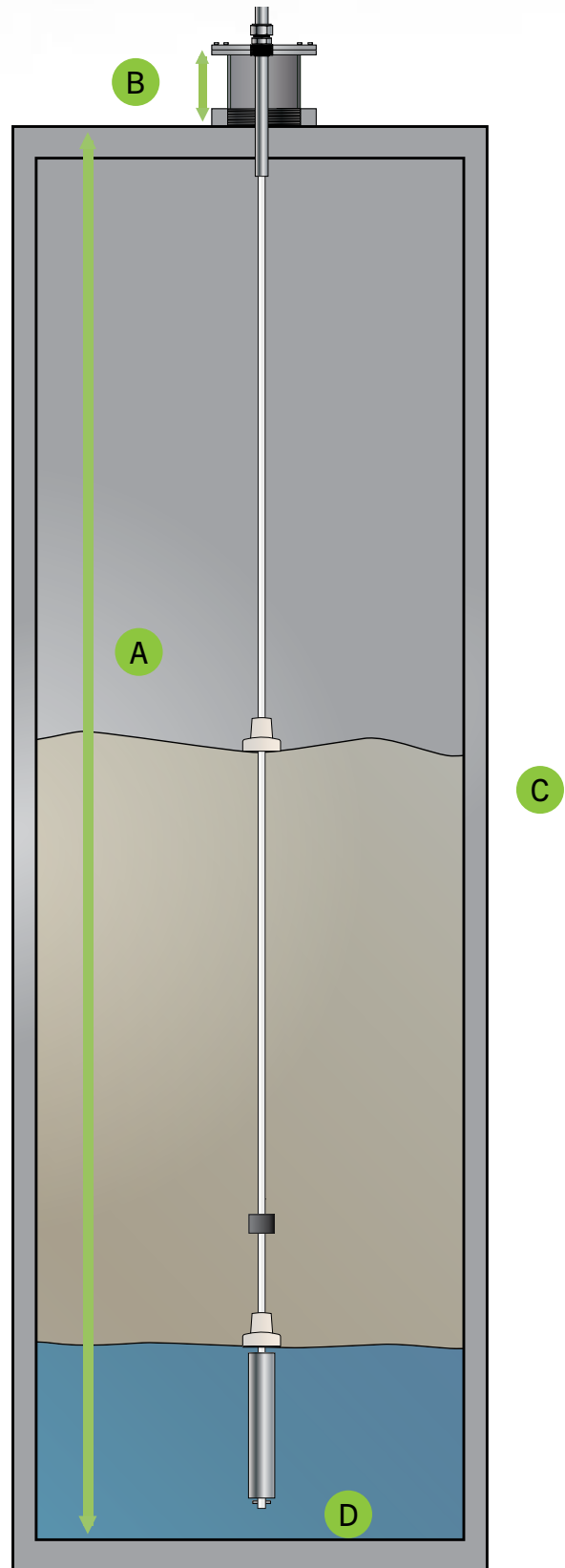
C Total Tank Depth _____ inches

—

D Tank Bottom Clearance _____ inches

Max Probe Length _____ inches

- 5 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.



ORDERING INFORMATION CONTINUED

Flexible Probes

Model	Max Probe Length (inches)	Model	Max Probe Length (inches)	Model	Max Probe Length (inches)	Model	Max Probe Length (inches)
FMP-FLX-4	64	FMP-FLX-21	268	FMP-FLX-38	472	FMP-FLX-55	676
FMP-FLX-5	76	FMP-FLX-22	280	FMP-FLX-39	484	FMP-FLX-56	688
FMP-FLX-6	88	FMP-FLX-23	292	FMP-FLX-40	496	FMP-FLX-57	700
FMP-FLX-7	100	FMP-FLX-24	304	FMP-FLX-41	508	FMP-FLX-58	712
FMP-FLX-8	112	FMP-FLX-25	316	FMP-FLX-42	520	FMP-FLX-59	724
FMP-FLX-9	124	FMP-FLX-26	328	FMP-FLX-43	532	FMP-FLX-60	736
FMP-FLX-10	136	FMP-FLX-27	340	FMP-FLX-44	544	FMP-FLX-61	748
FMP-FLX-11	148	FMP-FLX-28	352	FMP-FLX-45	556	FMP-FLX-62	760
FMP-FLX-12	160	FMP-FLX-29	364	FMP-FLX-46	568	FMP-FLX-63	772
FMP-FLX-13	172	FMP-FLX-30	376	FMP-FLX-47	580	FMP-FLX-64	784
FMP-FLX-14	184	FMP-FLX-31	388	FMP-FLX-48	592	FMP-FLX-65	796
FMP-FLX-15	196	FMP-FLX-32	400	FMP-FLX-49	604	FMP-FLX-66	808
FMP-FLX-16	208	FMP-FLX-33	412	FMP-FLX-50	616	FMP-FLX-67	820
FMP-FLX-17	220	FMP-FLX-34	424	FMP-FLX-51	628	FMP-FLX-68	832
FMP-FLX-18	232	FMP-FLX-35	436	FMP-FLX-52	640		
FMP-FLX-19	244	FMP-FLX-36	448	FMP-FLX-53	652		
FMP-FLX-20	256	FMP-FLX-37	460	FMP-FLX-54	664		

Note: Flexible probe orders cannot be canceled 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

DIGITAL INVENTORY & 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 communications and 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.
- Leak detection probes include a vibration motor integrated into the probe head which 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: $\pm 0.025\%$ of full scale
- Repeatability: $\pm 0.001"$
- Temperature sensors: 5 thermistors located in the shaft
- Temperature resolution: $\pm 0.02^\circ\text{F}$ ($\pm 0.01^\circ\text{C}$)
- 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 Automatic Tank Gauges (ATGs) including: EVO™ 600, EVO™ 6000, EVO™ 550, EVO™ 5000, TS-5, TS-550, TS-5000, Colibri®, TS-1001/2011/750/504/508.



Inventory & Leak Detection Probe (Shown with optional precision density diesel float kit)

Inventory Probe (Shown with optional 4" gas float kit)

Low Level Water Float for diesel

Approvals/Certifications

- UL & 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.

SPECIFICATIONS CONTINUED

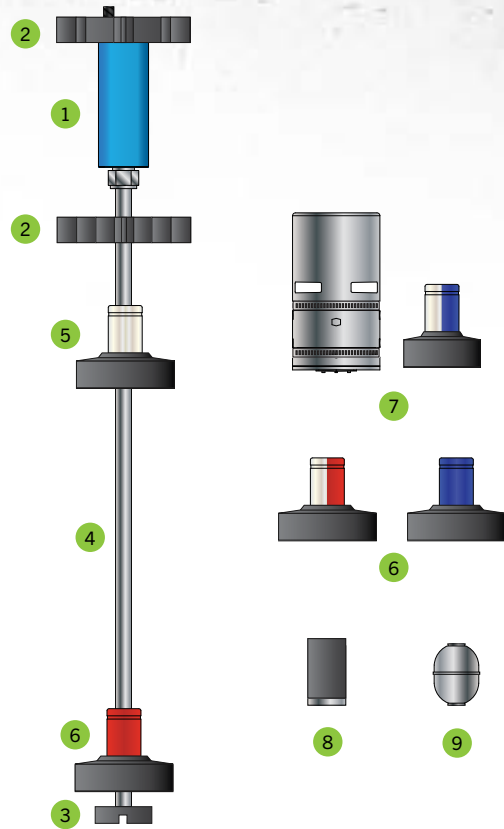
Components

- 1 Probe head
- 2 Guides
- 3 Bottom mount fitting
- 4 Probe shaft
- 5 Product float
- 6 2" or 4" gas, diesel or phase separation water floats
- 7 Precision or standard density float
- 8 LPG float
- 9 Chemical 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

Include a vibration motor integrated into the probe head which pulses every 5 minutes to reduce the effects of stiction on level reading and leak detection.

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

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

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 desirable 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.



ORDERING INFORMATION

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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3M™ is a trademark of 3M Company.

FLOAT KITS



2" and 4" Floats

Chemical Floats

LPG Floats

HIGHLIGHTS (2" AND 4" FLOATS)

- Designed for applications involving 2", 3" or 4" riser pipes.
- Each float set contains a product and water float.
- Compatible with a wide variety of petroleum products.
- Water floats are colored red for gasoline and blue for diesel to assure compatibility with most liquids.

HIGHLIGHTS (LPG FLOATS)

- Designed for applications involving tank openings of at least 2".
- Single float used for monitoring the level of LPG (propane) fuel.
- Suitable for monitoring pressurized products.
- For use in USTs or ASTs with FFS probes. TSP-LPG/EU float can be used with locally supplied tank isolation sleeves.

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.

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, EVO™ 600, EVO™ 6000

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/m ³
TSP-IGF4D3	Standard gasoline density float kit	690-800 kg/m ³

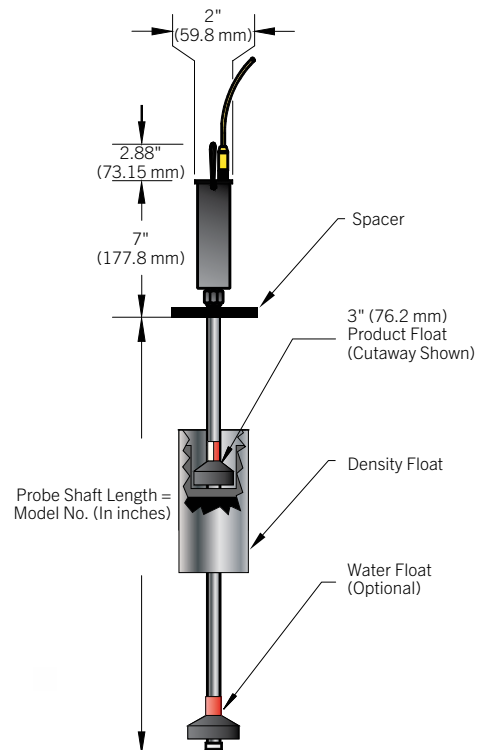
Note: Order one density measurement float kit for each magnetostrictive probe.
Probes used with density float kits must have serial numbers greater than 6000000



SPECIFICATIONS

- 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, EVO™ 600, EVO™ 6000

System Diagram



LOW LEVEL WATER FLOAT FOR DIESEL

The Low Level Water Float for Diesel provides increased water level detection down to ¼", delivering early indication of the presence of water inside diesel tanks.

HIGHLIGHTS

- Detects water down to ¼", compared to existing water floats which can only detect water at ¾".
- On a typical 8' x 8,000 gallon tank, the enhanced float can detect the presence of as little as 4 gallons of water, which is almost 70% less than current floats
- Designed for applications involving 4" riser pipes.
- Each float kit contains a Diesel Product Float and a Low Level Water Float.
- Each float kit includes a compact probe foot for easy installation on new or existing probes.
- Recommended for use with bottom mounted Digital Inventory and Leak Detection Probes (LL3 models).
- Compatible with EVO™ 200, EVO™ 400, EVO™ 600, EVO™ 6000 Automatic Tank Gauges (ATGs).

ORDERING INFORMATION




Model	Description
FMP-IDF4E	4" Low Level Water Float for Diesel Kit, includes product float, water float, compact probe foot



SENSORS

No matter what the monitoring application is, Franklin Fueling Systems offers a sensor solution tailored to the specific requirements of each application.



					
Sensor	Discriminating Dispenser Sump Sensor	Discriminating Turbine Sump Sensor	Discriminating Magnetostrictive Sump Sensor	Universal Liquid Sensor	Universal Hydrostatic Sensor
Discriminating Capability	✓	✓	✓		
Non-Discriminating				✓	✓
Turbine Sump Applications		✓	✓	✓	
Dispenser Sump Applications	✓		✓	✓	
Tank Interstitial Space Applications					✓
Tank Ullage Applications					
Position Sensitive (Tamper Protection)			✓		
Hydrostatic Monitoring Capability					✓
EVO™ 200 / EVO™ 400 Model Number	FMP-DDS-U	FMP-DTS-U	TSP-DMS	FMP-ULS	FMP-UHS
EVO™ 550 / EVO™ 5000 Model Number*	FMP-DDS	FMP-DTS	TSP-DMS	FMP-ULS	FMP-UHS
EVO™ 600 / EVO™ 6000 Model Number*	FMP-DDS, FMP-DDS-U	FMP-DTS, FMP-DTS-U	TSP-DMS	FMP-ULS	FMP-UHS
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	Monitoring for the presence of a liquid in a containment sump	Dry double wall tank applications including fiberglass and wrap-around

EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000 may support additional sensors. Sensors with "-U" are used with the EVO™ 600 and EVO™ 6000 to wire to the probe module. FMP-DDS, FMP-TDS, FMP-EIS, FMP-DIS, FMP-HIS and FMP-HIS-XL all require a 3-wire sensor module.

SENSOR SELECTION GUIDE

Does your application require the need to tell the difference between fuel and water?

Discriminating Sensors are able to detect and send an alarm signal if the presence of liquid is detected inside a containment space and can also differentiate between liquid and hydrocarbons” to “and can also differentiate between hydrocarbons and non-hydrocarbons.

Does your application only require the need to detect any type of liquid?

Non-Discriminating Sensors are able to detect and send an alarm signal if the presence of liquid is detected inside of a containment space.

What type of Automatic Tank Gauge (ATG) are you connecting to?

Select the appropriate model number of sensor that’s compatible with your ATG using the chart below.

					
Electro-Optic Interstitial Sensor	Horizontal Float Switch Sensor	Discriminating Interstitial Sensor	Hydrostatic Interstitial Sensor	Corrosion Detection Sensor	Corrosion Desiccant Pack Sensor
		✓			
✓	✓		✓		
				✓	✓
✓	✓	✓	✓	✓	
				✓	
			✓		
FMP-EIS-U	-	FMP-DIS-U	FMP-HIS-U FMP-HIS-XL-U	FMP-CDS-U	FMP-DPS-U
FMP-EIS	FMP-HFS2	FMP-DIS	FMP-HIS FMP-HIS-XL	FMP-CDS-U	
FMP-EIS FMP-EIS-U	FMP-HFS2	FMP-DIS FMP-DIS-U	FMP-HIS FMP-HIS-XL FMP-HIS-U FMP-HIS-XL-U	FMP-CDS-U	FMP-DPS-U
Dry double wall tank applications including fiberglass and wrap-around	Dry double wall fiberglass tank applications	Dry double wall tank applications requiring discriminating capabilities	Double wall tank interstitial space filled with brine solution	Monitoring for corrosive environments	Monitoring remaining life of the Desiccant Pack(s)

DISCRIMINATING DISPENSER SUMP SENSOR (DDS)

The DDS is a discriminating dispenser sump sensor which provides reliable monitoring of dispenser pans and containment sumps.

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 1½" (38 mm) from base.
- Detects hydrocarbons on sensor and floating on water.
- Digitally encoded status information sent from microcomputer to ATG from 775+ feet (236 m).
- Alarms to indicate liquid in sump, hydrocarbon detected, sump is full, and sensor malfunction.
- Variety of mounting methods possible depending on location. Bracket provided for quick installation.



SPECIFICATIONS

Applications

For dispenser sump monitoring.

ORDERING INFORMATION

Model	Description
FMP-DDS	Discriminating dispenser sump sensor (EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000)
FMP-DDS-U	Discriminating dispenser sump sensor (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
TSP-KS	Unistrut™ mounting kit

Note: The FMP-DDS wires to the 3-wire sensor module and the FMP-DDS-U wires to the probe module.

DISCRIMINATING TURBINE SUMP SENSOR (DTS)

The DTS is a discriminating turbine sump sensor that detects the presence of liquid and hydrocarbons when installed in tank containment sumps.

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 1½" (38 mm) from base.
- Detects hydrocarbons on sensor and floating on water.
- Digitally encoded status information sent from microcomputer to ATG from 775+ feet (236 m).
- Alarms to indicate liquid in sump, hydrocarbon detected, full sump, and sensor malfunction.



SPECIFICATIONS

Applications

For containment sump monitoring.

ORDERING INFORMATION

Model	Description
FMP-DTS	Discriminating turbine sump sensor (EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000)
FMP-DTS-U	Discriminating turbine sump sensor (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
TSP-KS	Unistrut™ mounting kit

Note: The FMP-DTS wires to the 3-wire sensor module and the FMP-DTS-U wires to the probe module.

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.



HIGHLIGHTS

- Utilizes proven magnetostrictive technology.
- Water warning, water alarm, and product alarm.
- Tamper protection feature will alarm if sensor is moved from installed position.
- Alarms and recovers quickly when hydrocarbons are present.

SPECIFICATIONS

Applications

For containment sump monitoring.

ORDERING INFORMATION

Model	Description
TSP-DMS-12	Discriminating magnetostrictive sensor, monitors 12" (305 mm) of liquid & measures 22" (559 mm) in length (all EVO™ Series ATGs)
TSP-DMS-24	Discriminating magnetostrictive sensor, monitors 24" (610 mm) of liquid & measures 34" (864 mm) in length (all EVO™ Series ATGs)
TSP-KS	Unistrut™ mounting kit

Note: This sensor communicates with the ATG via the TS-PRB probe module.

UNIVERSAL LIQUID SENSOR (ULS)

Based on float-switch technology and made of chemically-resistant materials, the ULS is a low-cost sensor that can 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.
- Each ULS sensor comes with a 25' (7.6 m) 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.

SPECIFICATIONS

Applications

For containment sump monitoring.

ORDERING INFORMATION

Model	Description
FMP-ULS	Universal liquid sump sensor (all EVO™ Series ATGs)
TSP-ULS	Universal liquid sump sensor (for use with S940 only)
TSP-KI2	Interstitial sensor riser cap kit for 2" (51 mm) riser pipes

Note: This sensor communicates to the ATG using 2 wires on the 2-wire sensor modules or the 3-wire sensor module. It cannot be wired to the probe module.

UNIVERSAL HYDROSTATIC SENSOR (UHS)

The 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.
- Each UHS sensor comes with a 25' (7.6 m) 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.



SPECIFICATIONS

Applications

Typically used for hydrostatic monitoring of the liquid in a double wall sump interstice.

ORDERING INFORMATION

Model	Description
FMP-UHS	Universal hydrostatic sensor (all EVO™ Series ATGs)
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: The FMP-UHS wires to the 2 wire sensor module or the 3 wire sensor module. It cannot be wired to the probe module.

ELECTRO-OPTIC INTERSTITIAL SENSOR (EIS)

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.
- Each EIS comes with 25' (7.6 m) 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.



SPECIFICATIONS

Applications

For dry tank interstitial monitoring.

ORDERING INFORMATION

Model	Description
FMP-EIS	Electro-optic interstitial sensor (EVO™ 550, EVO™ 5000 EVO™ 600 & EVO™ 6000)
FMP-EIS-U	Electro-optic interstitial sensor (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
TSP-K12	Interstitial sensor riser cap kit for 2" riser pipes

Note: The FMP-EIS wires to the 3 wire sensor module and the FMP-EIS-U wires to the probe module.

HORIZONTAL FLOAT SWITCH SENSOR (HFS)

The HFS is designed for liquid detection in dry fiberglass tank interstitial spaces. These 2-wire, non-discriminating liquid sensors are used with all EVO™ Series Automatic Tank Gauges (ATGs).



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.
- Easily fits tight interstitial spaces.
- Rounded design makes it easy to remove for cleaning and reinstall after an alarm condition has been triggered or for maintenance and testing.
- Each HFS comes with a 25' (7.6 m) oil-resistant cable. For fiberglass tanks, the 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.

SPECIFICATIONS

Applications

For dry tank interstitial monitoring.

ORDERING INFORMATION

Model	Description
FMP-HFS2	Horizontal float switch sensor (all EVO™ Series ATGs)
TSP-KI2	Interstitial sensor riser cap kit for 2" riser pipes
TSP-KW4	Interstitial sensor riser cap kit for 4" riser pipes

Note: The FMP-HFS2 wires to the 2 wire sensor module or the 3 wire sensor module. It cannot be wired to the probe module.

DISCRIMINATING INTERSTITIAL SENSOR (DIS)

The DIS installs in the interstitial space of steel and fiberglass double wall tanks and sumps and detects the presence of various liquids in tanks as well as sumps and other locations.



HIGHLIGHTS

- Uses light beam traveling through probe to determine if sensor is wet.
- Microprocessor inside sensor interprets readings and communicates data to the EVO™ Series ATG.
- Fail-safe digital communications with built-in alarm if sensor malfunctions.
- Alarms indicate petroleum present, water present, and sensor malfunction.
- Each DIS comes with 25' (7.6 m) 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.

SPECIFICATIONS

Applications

For dry tank interstitial monitoring.

ORDERING INFORMATION

Model	Description
FMP-DIS	Discriminating interstitial sensor (EVO™ 550, EVO™ 5000 EVO™ 600 and EVO™ 6000)
FMP-DIS-U	Discriminating interstitial sensor (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
TSP-KI2	Interstitial sensor riser cap kit for 2" riser pipes

Note: The FMP-DIS wires to the 3 wire sensor module and the FMP-DIS-U wires to the probe module.

HYDROSTATIC INTERSTITIAL SENSOR (HIS)

The HIS detects leaks in double wall tanks where the interstitial space is filled with a liquid brine solution. The 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 sensor digital communication system to fuel management system or Tank Sentinel® ATGs, alerting of any alarm conditions.
- For installation, lower the 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 FMP-HIS/FMP-HIS-XL wire to the 3 wire sensor module, and the FMP-HIS-U/FMP-HIS-XL-U wire to the probe module.

**One TSP-KV4 is already included with each HIS or HIS-XL sensor.*

SPECIFICATIONS

Applications

For liquid-filled tank interstitial monitoring.

ORDERING INFORMATION

Model	Description
FMP-HIS	Hydrostatic interstitial sensor, 11"* (EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000)
FMP-HIS-XL	Hydrostatic interstitial sensor, 21"* (EVO™ 550, EVO™ 5000, EVO™ 600 and EVO™ 6000)
FMP-HIS-U	Hydrostatic interstitial sensor, 11" (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
FMP-HIS-XL-U	Hydrostatic interstitial sensor, 21" (EVO™ 200, EVO™ 400, EVO™ 600 and EVO™ 6000)
TSP-KV4*	Hydrostatic sensor vented riser pipe cap kit for 4" riser pipes

HIGH PRODUCT LEVEL SENSOR (HLS)

The HLS level sensor is an overfill prevention switch that 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.



HIGHLIGHTS

- Each sensor is supplied with jacketed cable five feet in length.
- The normally-closed output circuit provides supervised operation, ensuring that broken wires and similar failures will not go undetected.
- 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.

Note: The TSP-HLS connects to the 2 wire sensor module or the 3 wire sensor module. It cannot be wired to the probe module.

SPECIFICATIONS

Applications

Overfill protection switch.

ORDERING INFORMATION

Model	Description
TSP-HLS-15	High product level sensor, 15" long, installed in tank (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000 ATGs)
TSP-HLS-15/SS	High product level sensor, stainless steel 15" long, installed in tanks containing alternative fuels (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000 ATGs)
TSP-HLS-30	High product level sensor, 30" long, installed in tank (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000 ATGs)
TSP-HLS-30/SS	High product level sensor, stainless steel 30" long, installed in tanks containing alternative fuels (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000 ATGs)

CORROSION CONTROL™ CORROSION DETECTION SENSOR (CDS)

As part of the Corrosion Control™ System the Corrosion Detection Sensor (CDS) provides automated notification of a corrosive environment in the tank ullage space. Keep the fuel system running at peak performance and avoid costly maintenance, equipment replacement, downtime, and system failure caused by excessive corrosion.

HIGHLIGHTS

- Sensor will detect the presence of corrosion on a sacrificial sample and provide an alarm.
- Protects the tank ullage from the formation of corrosion which can lead to fuel system deterioration.
- Displays a level reading for corrosion index via the EVO™ Series Automatic Tank Gauge (ATG) with programmable alarm types including:
 - Corrosive Environment Present
 - Corrosion Sensor Sample Error
 - Corrosion Sample Needs Replacement
- Compatible with all blends of gasoline, diesel, and Ethanol.
- ATG compatibility:
 - EVO™ 200 and EVO™ 400
 - EVO™ 550 and EVO™ 5000
 - EVO™ 600 and EVO™ 6000



SPECIFICATIONS

Applications

Monitoring for a corrosive environment within a tank ullage space.

Theory of Operation

The CDS is installed in the tank ullage space. The intrinsically safe sensor utilizes an included quick disconnect cable to wire to any EVO™ Series ATG via the probe module (EVO™ 550, EVO™ 5000, EVO™ 600, EVO™ 6000) or any Intrinsically Safe (IS) channel (EVO™ 200 and EVO™ 400). The sensor utilizes a sacrificial metal screen which is used to detect the formation of corrosion. This screen can be removed and replaced upon the formation of corrosion.

ORDERING INFORMATION

Corrosion Control™ Corrosion Detection Sensor

Model	Description
FMP-CDS-U	Corrosion Detection Sensor (all EVO™ Series ATGs)
FMSP-RDS1	Replacement detection screen, qty 1
FMSP-RDS10	Replacement detection screen, qty 10
TSP-KS	Unistrut® mounting kit

Note: this sensor communicates with the ATG via a TS-PRB probe module (EVO™ 550, EVO™ 5000, EVO™ 600, and EVO™ 6000) or via an IS channel (EVO™ 200 & EVO™ 400).

CORROSION CONTROL™ DESICCANT PACK SENSOR (DPS)

As part of the Corrosion Control™ System, the Desiccant Pack Sensor provides remote monitoring of the remaining life of the Desiccant Pack via an EVO™ Series Automatic Tank Gauge (ATG) for efficient maintenance. The Desiccant Pack absorbs humidity from the sump environment before it turns into corrosion-causing moisture.

HIGHLIGHTS

- The Desiccant Pack Sensor provides the percent of remaining life of the Desiccant Pack.
- The Desiccant Pack Sensor hangers allow for multiple mounting options and can accommodate 1 or 2 Desiccant Packs.
- ATG compatibility:
 - EVO™ 200 and EVO™ 400
 - EVO™ 600 and EVO™ 6000
- ATG data displayed:
 - Desiccant % remaining.
 - Sensor status (Ok, Desiccant Near Saturation, Desiccant Saturated - Service Needed, Desiccant Missing, Desiccant Sensor Overload).
 - Trend (Active Drying - Desiccant is actively absorbing water from environment or Passive Drying - Desiccant is holding required humidity level).



SPECIFICATIONS

Applications

Maintain a non-corrosive environment within the sump with the Desiccant Pack(s) and remotely monitor when the Desiccant Pack(s) need to be changed to maintain optimal low humidity.

Theory of Operation

The Desiccant Pack is installed within the sump environment to maintain optimal non-corrosive levels of humidity. The Desiccant Pack Sensor can be used to hang one or two Desiccant Packs. It measures the weight of the Desiccant Pack and calculates an estimated percent of life remaining via an EVO™ Series ATG.

ORDERING INFORMATION

Model	Description
FMP-DPS-U	Desiccant Pack Sensor with single and multi-pack hanger and installation kit
407750906	Corrosion Control™ desiccant pack, includes (6) packs and (6) cable ties

Note: The FMP-DPS-U wires to the probe module on EVO™ 600 and EVO™ 6000 ATGs and to the UDP input channel on EVO™ 200 and EVO™ 400 ATGs.

SENSOR INSTALLATION ACCESSORIES

INTERSTITIAL SENSOR RISER CAP INSTALLATION KIT

Installation kit for installing the DIS, EIS or ULS sensors in dry interstitial spaces with 2" (5 cm) riser pipe openings. The cap is compression-fit into the riser pipe via the use of a lever.

HIGHLIGHTS

- 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.

ORDERING INFORMATION

Model	Description
TSP-KI2	Interstitial sensor riser cap kit for 2" (5 cm) riser pipes



HYDROSTATIC SENSOR VENTED RISER CAP INSTALLATION KIT

Vented installation kit for use with the FMP-HIS-U or FMP-HIS XL-U sensor installed in a 4" (10 cm) reservoir opening on double wall fiberglass tanks. The cap is compression-fit into the riser pipe via the use of a lever.

HIGHLIGHTS

- 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.

ORDERING INFORMATION

Model	Description
TSP-KV4	Hydrostatic sensor vented riser cap kit for 4" (10 cm) riser pipes



INTERSTITIAL/MONITORING WELL PIPE CAP INSTALLATION KIT

Installation kit for installing sensors in a dry tank interstitial or monitoring well with a 4" (10 cm) riser. The interstitial/monitoring well cap is compression-fit into the riser pipe via the use of a lever.

HIGHLIGHTS

- 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.

ORDERING INFORMATION

Model	Description
TSP-KW4	Interstitial/monitoring well pipe cap kit for 4" (10 cm) riser pipes



UNISTRUT® 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.



ORDERING INFORMATION

Model	Description
TSP-KS	Unistrut® mounting kit

DIRECT BURIAL SPLICE CONNECTOR KITS

For direct burial cable applications or when weatherproof junction boxes are not used.

HIGHLIGHTS

- Each direct burial splice connector kit includes a receptacle, three splice connectors, and epoxy for the dispensing tool.



ORDERING INFORMATION

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

SPLICE CONNECTORS

Save time and ensure accurate wire connections with splice connectors. Available in either 22-14 AWG (blue) or 26-19 AWG (red) options, both splice connector models employ a specially designed wire insulation displacement contact to make a reliable electrical connection to each wire.

HIGHLIGHTS

- Three ports accept two or three conductors for splicing.
- Includes a factory-installed sealant to protect against corrosion and seal out moisture.
- Self-stripping, flame retardant, and moisture resistant.



ORDERING INFORMATION

Model	Description
TSP-KW30	22-14 AWG (blue) splice connectors, 30 pack
FMP-CON30	26-19 AWG (red) compact splice connectors, 30 pack

Unistrut® is a registered trademark of Unistrut Corporation.

EASY-ACCESS SENSOR BRACKET SYSTEM

The Easy-Access Sensor Bracket System eliminates the high risk activity of confined space entry by enabling sensors to be removed from both tank sumps and dispenser sumps at grade level for safe maintenance and testing.

HIGHLIGHTS

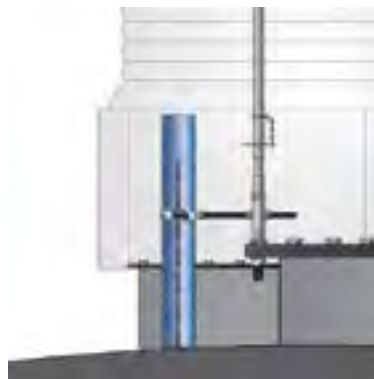
- System includes a removable sensor mounting bracket, extendable lifting handle (sold separately), and optional conversion kit for use in dispenser sumps (sold separately).
- Compatible with all versions of Franklin Fueling Systems' ULS, DDS, DTS, and DMS sensors.
- Suitable for use with alternative sensors with similar dimensions. Please contact Franklin Fueling System Technical Support for questions regarding sensor compatibility beyond those sensors listed.
- Delivers labor cost savings with faster, one-person inspections that do not require the additional safety precautions associated with a two-person confined space entry including mechanical retrieval.
- Securely bolts to any new or existing tank manway with included M16 x 80 mm bolt to stabilize the sensor and optimize its position to ensure that the sensor sits at the lowest point of the containment.
- Provides a wide range of sensor height adjustment.
- Lifting handle extends from 43" (109 cm) to 79" (200 cm), accommodating both medium and deep bury containment.
- Stainless steel bracket components provide compatibility with all fuel types including standard fuel, biofuel, and alcohol blend fuels.

SPECIFICATIONS

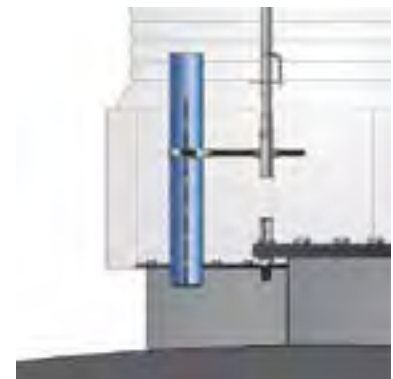
Operation



Sensor installed in bracket



Engage lifting handle from grade



Lift to grade for inspection

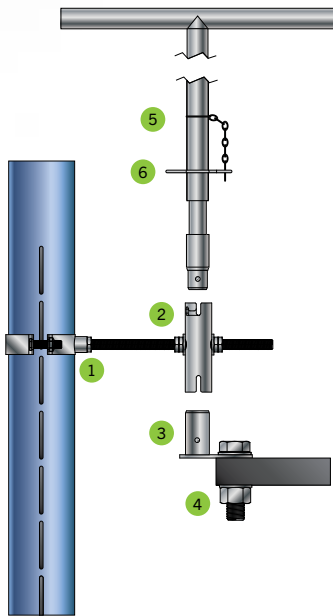


SPECIFICATIONS CONTINUED

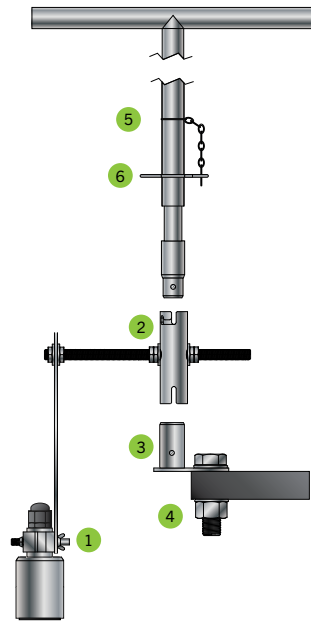
Components

- 1 Sensor clamp
- 2 Sensor bracket holder
- 3 Bracket seat
- 4 Mounting bolt
- 5 Extendable lifting handle
- 6 Spring clip to fix handle length
- 7 Conversion kit arm (bolts to stabilizer bar kit)

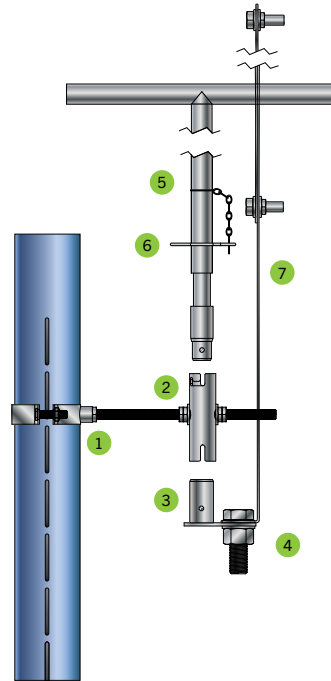
**DTS, DDS, DMS
Easy-Access Sensor Bracket**



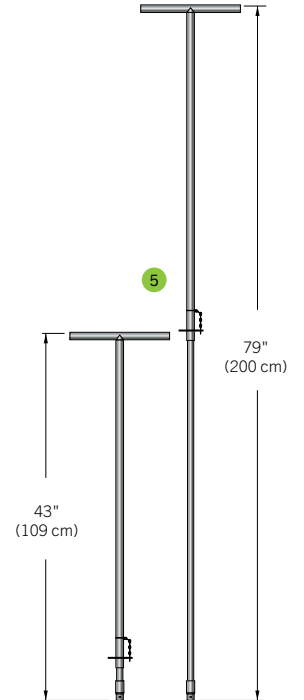
**ULS Easy-Access
Sensor Bracket**



**Easy-Access Sensor Bracket
Conversion Kit for Dispenser
Sumps**

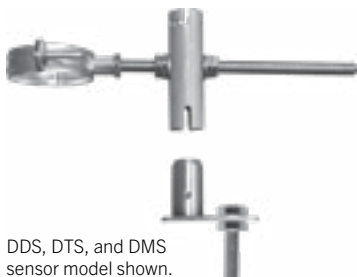


**Easy-Access Sensor
Lifting Handle**



ORDERING INFORMATION

Easy-Access Sensor Brackets



DDS, DTS, and DMS sensor model shown.

Model	Description
FMP-SIB-DMS	Easy-Access Sensor Bracket for all models of the DDS, DTS, and DMS sensors
FMP-SIB-ULS	Easy-Access Sensor Bracket for all models of the ULS sensors



Model	Description
FMP-SIB-UDC	Easy-Access Sensor Bracket conversion kit for dispenser sumps

Note: The conversion kit must be installed with the FMP-SIB-DMS or FMP-SIB-ULS Easy-Access Sensor Bracket.



Model	Description
FMP-SIB-HDL	Easy-Access Sensor Bracket lifting handle, extends from 43" (109 cm) to 79" (200 cm)

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.

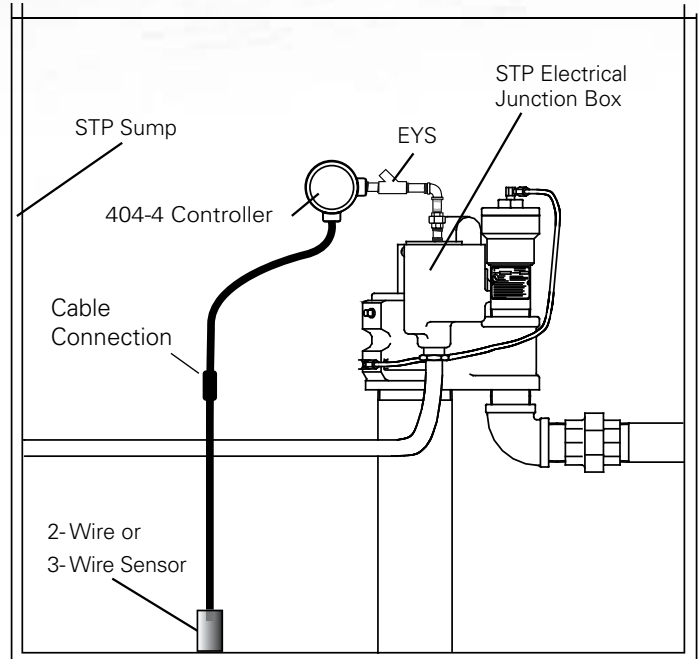
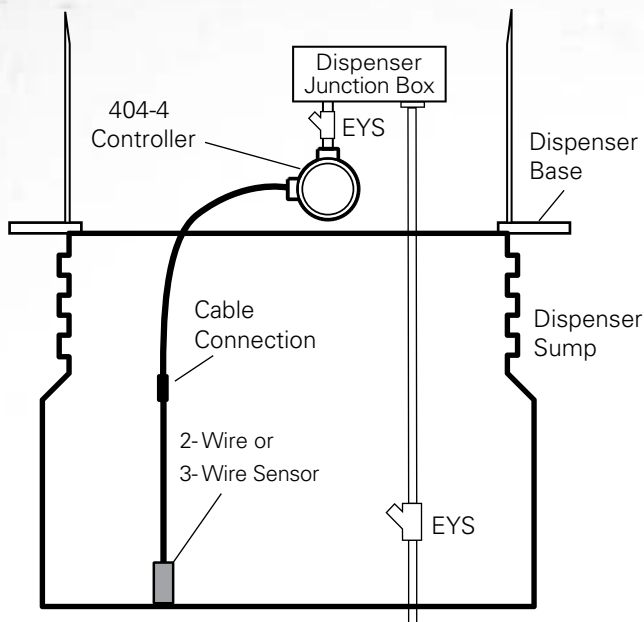
Approvals

- 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.

SPECIFICATIONS CONTINUED



ORDERING INFORMATION

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.

DC400 Replacement Parts

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-RA1 REMOTE AUDIBLE AND VISIBLE ALARM UNIT

HIGHLIGHTS

- 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.



ORDERING INFORMATION

Model	Description
TS-RA1	Standard intensity, tank overfill alarm with light and horn
TS-RK	Remote tank overfill alarm acknowledge unit

TS-RA2 REMOTE AUDIBLE AND VISIBLE ALARM UNIT

HIGHLIGHTS

- 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.



ORDERING INFORMATION

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

HIGHLIGHTS

- 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-RA1 or 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.



ORDERING INFORMATION

Model	Description
TS-RK	Remote tank overfill alarm acknowledge unit

NEMA® is a registered trademark of National Electrical Manufacturers Association.



FUEL MANAGEMENT SYSTEMS

REMOTE FUEL MONITORING SELECTION GUIDE

Franklin Fueling Systems offers several different remote monitoring options to address the specific requirements of your automatic tank gauge (ATG) network.



Site network type
Total # of ATG connections
Software hosted
ATG support/compatibility
Basic data
Configuration management
Remote ATG setup and configuration
ATG setup change reporting
User level security roles
In-house IT team required
Report generation
Customized reporting
On-demand polling
Email notifications
Alarm notifications
Pay structure
Custom export



Our premier remote fuel monitoring software consolidates your network to view data faster and configure your ATGs, allowing you to control ATG setup across your entire network at once.

Provides direct one-to-one access to a single EVO™ Series ATG from any web enabled device. Gathers and displays specified data in a user-defined polling schedule, or in real-time.

Enterprise-level	Single ATG
Unlimited	One (accessed individually)
Cloud or on-premise	Web browser
EVO™ Series, INCON®, Veeder-Root® (including TLS-450PLUS), Red Jacket®, OPW®, FAFNIR®, Hectronic®, Caldwell, OMNTEC*	EVO™ Series
Inventory, testing, alarm, compliance	Inventory, testing, alarm, compliance
Yes	No
Yes	Yes
Yes	No
Yes	Yes
Cloud: no On-premise: yes	No
Automated, entire network	Automated, single ATG
Yes	No
Yes	No
Yes	Yes
Yes, entire network	Yes, single ATG
Monthly fee billed annually—includes maintenance, support, and feature/function upgrades	Free with qualified ATG purchase
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 cloud and on-premise hosting options, site minimums may apply. Please check with your Franklin Fueling System sales representative.

SSA-2 ADVANCED REMOTE FUEL MONITORING

System Sentinel AnyWare™-2 (SSA-2) Advanced Remote Fuel Monitoring Software fully connects owners, operators, and compliance personnel to diverse networks of Automatic Tank Gauges (ATGs) from any web-enabled device. This enterprise level platform can be hosted on the cloud or with a customer's on-premise servers.

HIGHLIGHTS

- Get instant remote access to consolidated network alarm, inventory, and compliance data and reporting with the ability to export in a variety of formats for on-demand use.
- SSA-2 hosting options: cloud or customer's on-premise servers.
- Multiple levels of customizable user access allow admins to configure administrative functionality and grant role-based access to the secure database.
- Configuration management allows Operators to remotely program ATGs and monitor for configuration changes — saving time, travel, and expense.
- Operators can save ATG setup and configuration templates and remotely apply them to one ATG, a group of ATGs, or all ATGs simultaneously.
- Configuration management provides added security by automatically flagging any ATG setting in the network that has been changed.
- An automated report allows Operators to review any changes in ATG setups and either accept the change or revert back to the baseline setup.
- Make informed decisions on fuel management, deliveries, and compliance data from one centralized location.
- The advanced reporting engine enables users to automate report generation on all tanks, lines, inventory, reconciliation, deliveries, sensors and more.
- Restricted access and view-only roles provide basic visibility, while full-access roles grant system-wide visibility. Security logs provide a record of all user logins.
- SSA-2 is compatible with a wide variety of the industry's most common ATGs, providing consolidated fuel management for a diverse network of ATGs (see following page for a full list of compatible ATGs).
- 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.



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

SPECIFICATIONS CONTINUED

General Requirements for Application Hosted On-Premise

- 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™ 600 / EVO™ 6000*
- 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
- TLS4B
- TLS4c
- 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

Electronic Sensors, Inc.

- Level Devil®

OMNTEC

- OEL8000II
- OEL8000III
- Proteus-X

Caldwell

- TM-2000
- TMW-650

Hectronic®

- Mineo Controller Touch
- OptiLevel Supply

*Supports configuration management feature.

Note: Some legacy ATGs may not support all SSA-2 functionality.

ORDERING INFORMATION

SSA-2 Advanced Remote Fuel Monitoring

Model	Description
SSA-2C	SSA-2 cloud license for (1) site, purchased by an authorized distributor
SSA-2CM	SSA-2 cloud license for (1) site, purchased directly
SSA-2 Connect	Connectivity fee to connect 1 site to the Cloud
SSA-2P	SSA-2 on-premise license for (1) site, purchased by an authorized distributor
SSA-2PM	SSA-2 on-premise license for (1) site, purchased directly
FFSPROSSA2	Premium on-site installation support service, one day

Note: For SSA-2 cloud and on-premise hosting options, site minimums may apply. Please check with your Franklin Fueling System sales representative.

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.

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.

**FFS PRO[®] Connect currently comes standard with any EVO™ 200, EVO™ 400, EVO™ 600, or EVO™ 6000 Automatic Tank Gauge.*

SPECIFICATIONS

Get remote access to vital site information including:

Monitoring

- Tank status
- Sensor status
- Pump status
- Conditions
- Active events
- Alarm history
- Event history

Reports

- Active alarm
- Active events
- Alarm history
- Inventory
- Delivery history
- Tank test history
- Sensor status
- Regulatory

Settings

- Preferences
- Configuration
- Tank correction tables
- Printers

Accessories

Model	Description
430-0033	3 amp fuse for TS-ROM2/4 or /8
TSP-ENCD	Replacement encoder for TS-VFM

LEGACY AUTOMATIC TANK GAUGE REPLACEMENT PARTS

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-T550MB	TS-550 motherboard (for use with TS-EMS also)
TSSP-T5000MB	TS-5000 motherboard
TSSP-SP5FUSE	Spare fuse kit
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

TS-550, TS-5000 & EMS

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
TS-EXPC	Secondary console to add eleven additional plug-in modules to the primary TS-550/5000 console, comes without a display or printer
TS-EXPC2	Secondary console to add six additional plug-in modules to the primary TS-550/5000 console, comes without a display or printer
TS-DIMIB (I)	Internal dispenser interface module, dispenser interface cable must be ordered separately

TS-5 Only Replacement Parts

Model	Description
TSSP-T5MB	TS-5 motherboard
TSSP-LCDIFB5	LCD display and interface board kit for TS-5

Model	Description
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™
TS-EXPC	Secondary console to add eleven additional plug-in modules to the primary TS-550/5000 console, comes without a display or printer
TS-EXPC2	Secondary console to add six additional plug-in modules to the primary TS-550/5000 console, comes without a display or printer
TS-TT (T)	Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
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 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 ATG.

Model	Description
TS-LON (E)	EcheLON™ communication module, IFSF protocol capability
TS-MDMIB (M)	Internal modem, includes fax and data software capability
TSSP-CM	Spare controller module, fuel management system application only, no software options
TSSP-CM/R	Replacement controller module, factory programmed with required options
TSA-CMUPG	Upgrade kit for TSSP-CM in stock to add original options
TSSP-LCDIFB5X	LCD display and interface board kit for TS-550, TS-5000
TSSP-T550MB	TS-550 motherboard (for use with TS-EMS also)
TSSP-T5000MB	TS-5000 motherboard
TSSP-SP5FUSE	Spare fuse kit
TS-TP5000	TS-550 and TS-5000 impact printer paper
TS-TP5000C	12 rolls of impact printer paper
TS-INKRB	TS-550 and TS-5000 ink ribbon

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 ATG.

TS-EMS Only Replacement Parts

Model	Description
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

Colibri™

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
TS-TT (T)	Statistical Continuous Automatic Leak Detection, 24 hour continuous tank testing software
TS-TRAC (R)	Tank inventory reconciliation and autocalibration

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-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

ORDERING INFORMATION CONTINUED

TS-ST5 Sump Test Kit

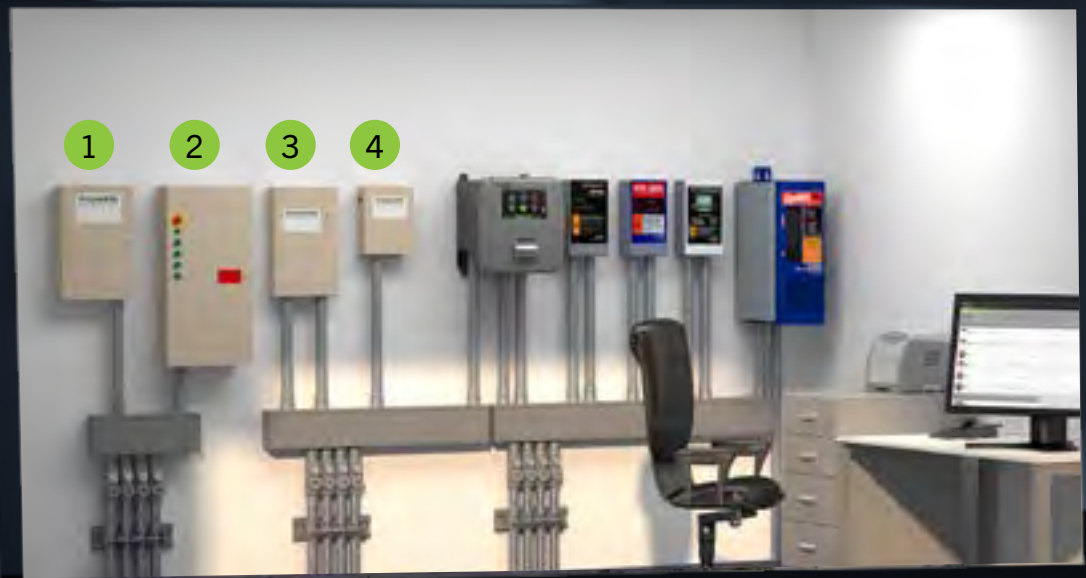
Model	Description
282-0027	Chain, including split ring
282-0058	Split ring
600-0200	Probe cable 50'
TS-PRB-1	12" leak test probe kit*
TS-ST5	Replacement ST5 console and case
TS-TP2	One box of 5 rolls of thermal printer paper
TSP-SSP	Stainless steel probe float
ST5-CASE	ST5 probe case
ST5-PRB-12	12" leak test probe
ST5-REPAIR	ST5 system repair
ST5-REPAIR-CASE	ST5 system repair with case
TSSP-BAT	3 Volt lithium battery
TSSP-DSP1	Keypad/display PC board
TSSP-DSPK1	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

Note: Repair price includes labor and return shipping only.

**Probe kit includes probe, float, chain and cable.*

INTEGRATED ELECTRICAL CONTROLS

- 1 Power Integrity™ Surge Management Systems
- 2 Power Integrity™ Petroleum Control Solutions
- 3 Power Integrity™ Primary Dispenser Disconnect Solutions
- 4 Power Integrity™ Secondary Dispenser Disconnect Solutions
- 5 Power Integrity™ E-Stop Solutions





5

POWER™ INTEGRITY

OUR NEWEST PRODUCT LINE OF INTEGRATED ELECTRICAL CONTROLS

The Integrated Electrical Controls product line allows marketers and commercial/fleet fueling facilities to operate their fuel dispensing operations more efficiently and safely — protecting their employees, customers, equipment, and facilities.

Products include a broad offering of UL listed, stand-alone products and integrated control systems that:

- Make installation, operation, and maintenance quicker, simpler, and safer.
- Deliver compliance with national and local codes.
- Save valuable wall and floor space.

ACHIEVE COMPLIANCE: NFPA 70® CODE REQUIREMENTS

Adopted in all 50 states, NFPA 70® National Electrical Code® (NEC) is the benchmark for safe electrical design, installation, and inspection to protect people and property from electrical hazards.



INTEGRATED ELECTRICAL CONTROLS ADDRESS KEY CODE REQUIREMENTS:

NEC 514.11(A) – EMERGENCY STOP DISCONNECT

All circuits leading to or through dispensing equipment shall be provided with a clearly identified means to disconnect simultaneously from the source of supply all conductors of the circuits.

NEC 514.13 – MAINTENANCE & SERVICE DISCONNECT

Each dispensing device shall be provided with a means to remove all external voltage sources during periods of maintenance and service of the dispensing equipment, including power, communications, data, and video circuits.

NFPA 30A, SECTION 6.7 & NEC 514.11(C)

Fuel dispensing systems shall be provided with one or more clearly identified emergency shutoff devices or electrical disconnects (E-Stops).



DISPENSER DISCONNECT SOLUTIONS

Emergency stop controls and service disconnects for power, data, communication, and video.

Power Integrity™ brand products have been installed by the largest retail/c-store/marketers and commercial/fleet fueling facility operators for over 40 years.



E-STOP SOLUTIONS

Indoor and outdoor customer and cashier emergency stops.



SURGE SUPPRESSION SOLUTIONS

Dispenser, electronic circuit, data circuit, point of sale, and telephone surge protection.



CONFIGURED CONTROLS

Petroleum control solutions, fleet fueling solutions, and configured C-store panels.

PRIMARY & SECONDARY DISPENSER DISCONNECTS

Primary and Secondary Disconnects provide emergency stop control and safe service disconnection for dispenser low voltage circuits including power, data, credit cards, communication, and video/media in UL Type 1 enclosures.



HIGHLIGHTS

Primary Disconnects

- Provides emergency stop interface and service switches.
- Disconnects dispenser data and card reader circuits with either two 2-wire circuits per dispenser or one Ethernet circuit per dispenser.
- Data circuit protection available for current loop and RS-485 circuits.
- Lockable cover for lockout/tagout requirements.
- Compact design saves valuable wall space.
- Available in a variety of modular configurations to fit varying dispenser models, quantities, and capabilities.
- Optional series connected surge suppression for protection of sensitive electronic circuits.

Secondary Disconnects

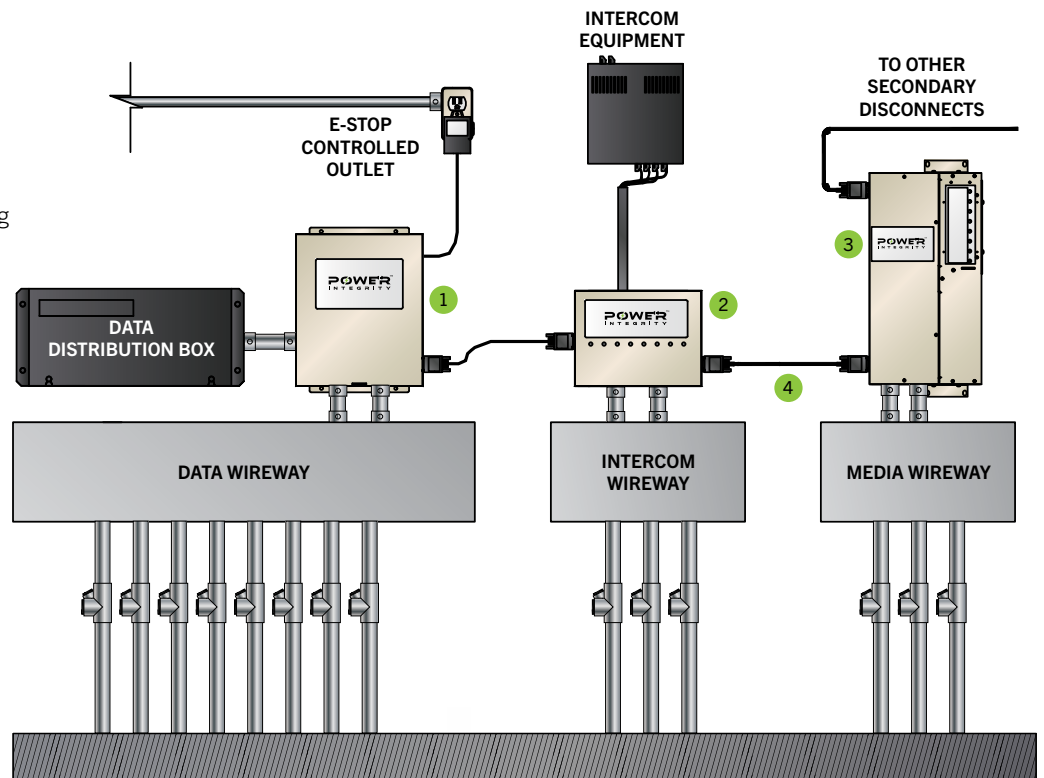
- Controlled by the primary, secondaries provide disconnects for additional circuits connecting to a dispenser.
- Disconnects dispenser communication/intercom and video/media.
- Secondary intercom wiring disconnects are available for either 4 or 8 conductors per dispenser.
- Secondary Ethernet cabling disconnects are available with either 1 or 2 Ethernet cables per dispenser for video/media disconnect and can be rack or wall mounted.
- Can be mounted in an area away from the primary for easy installation near the circuits being disconnected.
- Include 6' and 25' DB-9 cables for connection to the primary.

SPECIFICATIONS

System Components

Disconnects are installed in-line with dispenser data wiring and adjacent to site controls. The primary provides individual disconnect switches. Each switch disconnects both the corresponding dispenser data circuits and associate channels in secondary disconnects.

- 1 Primary low voltage dispenser data wiring disconnect for dispenser data / credit card circuits
- 2 Secondary low voltage dispenser data wiring disconnect for intercom wiring
- 3 Secondary low voltage dispenser data wiring disconnect for Ethernet (video/media) circuits
- 4 DB-9 cables (6' / 25')



QUICK SELECTION GUIDE

PRIMARY DISPENSER DISCONNECTS

The primary dispenser disconnect provides the emergency stop interface and the service switches. The primary is used to disconnect dispenser data and credit card data. One primary disconnect must be selected when configuring a system.

Dispenser Data Twisted Pairs

- Disconnect cards are provided for both dispenser data pairs and credit card data pairs.

Dispenser Data Ethernet

- Newer dispenser technologies use Ethernet for dispenser data. Solutions are available in both wall and rack mount enclosures.



Feature/Model	Twisted Pair Disconnects	Ethernet Disconnects
Dispenser Circuit Type	Twisted Pairs	Ethernet
Circuit Disconnects	Data & Credit Card Data	Data & Credit Card Data
Dispenser Channels	8, 12, or 16	8 or 16
Number of Conductors Disconnected per Dispenser	4 (14 Gauge Max)	1-2 Ethernet Cables per Dispenser
Surge Protection	Optional	No
Mounting Method	Wall	Wall or Rack

SECONDARY DISPENSER DISCONNECTS

Secondary dispenser disconnects are controlled by a primary dispenser disconnect and are used to add additional disconnects for other circuits connecting to a dispenser. The secondary can be located in an area away from the primary for easy installation near circuits.

Communication / Intercom Disconnects

- Secondary communication and intercom disconnects are available for either 4 or 8 conductors per dispenser.

Ethernet Disconnects

- Secondary Ethernet disconnects are available for either 1 or 2 Ethernet cables per dispenser.



Feature/Model	Communication / Intercom	Ethernet Disconnects	Ethernet Disconnects
Dispenser Circuit Type	Twisted Pairs	Ethernet	Ethernet
Circuit Disconnects	Communication / Intercom & Media / Video	Communication / Intercom & Media / Video	Communication / Intercom & Media / Video
Dispenser Channels	8	8 or 16	8 or 16
Number of Conductors Disconnected per Dispenser	4 or 8	1-2 Ethernet Cables per Dispenser	1-2 Ethernet Cables per Dispenser
Surge Protection	Optional	No	No
Mounting Method	Wall	Wall	Rack

PRIMARY DISCONNECT TWISTED PAIR DISPENSER DISCONNECTS

By connecting to the site's emergency stop system, Twisted Pair Primary Dispenser Disconnects are designed to disconnect low voltage communication conductors. These conductors include dispenser data and credit card data two-wire, twisted pair circuits for a total of 4 conductors for up to 8, 12, or 16 dispensers.



HIGHLIGHTS

- Primary disconnect for dispenser data and credit card communication.
- Aids in compliance with NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Expandable for the future.
- Compact modular design.
- Lockable cover for lockout/tagout requirements.
- The 8 dispenser models connect to the emergency stop system by the means of a Class 2 transformer that is plugged into an outlet controlled by the emergency stop system.
- The 12 or 16 dispenser models connect to the emergency stop system by the means of an AC power cord (or optional hardwire) that is plugged into an outlet controlled by the emergency stop system.
- Toggle switches, located behind a lockable cover, allow you to isolate the conductors of a single dispenser for servicing purposes.
- Expandable to allow disconnecting of additional secondary communication circuits such as intercom and media circuits. This is easily done by connecting the secondary disconnects to the remote expansion port located on the side of the primary disconnect.
- Individual disconnects for each circuit types allows the disconnect to be located where the conductors enter the building. This can eliminate costly additional wiring and downtime that maybe required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.

SPECIFICATIONS

Certifications/Approvals

- UL (1238) Listed
- cUL (CSA 22.2) Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

SPECIFICATIONS

General

Number of Dispenser Channels	8, 12, or 16 Dispensers
E-Stop Control Input	8 Dispenser Models: Powered by Class 2 24VAC Transformer Connected to 120VAC E-Stop Controlled Outlet 12 Or 16 Dispenser Models: NEMA 5-15P Cord Connected to 120VAC E-Stop Controlled Outlet
Number of Conductors Disconnected per Dispenser	4 (14 Gauge Max)
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	Optional
Individual Channel Control Switches	Yes
Lockable Channel Control Switches	Yes
Secondary Remote Expansion Output	Yes

Surge Protection Specifications (Gilbarco® Dispensers)

Dispenser Data Circuit & Credit Card Communication Circuit	2 Wire Current Loop
Standoff Voltage	47.8V
Breakdown Voltage	56V Max +/- 5%
Clamp Voltage	77V Max
Peak Pulse Current	19.7A

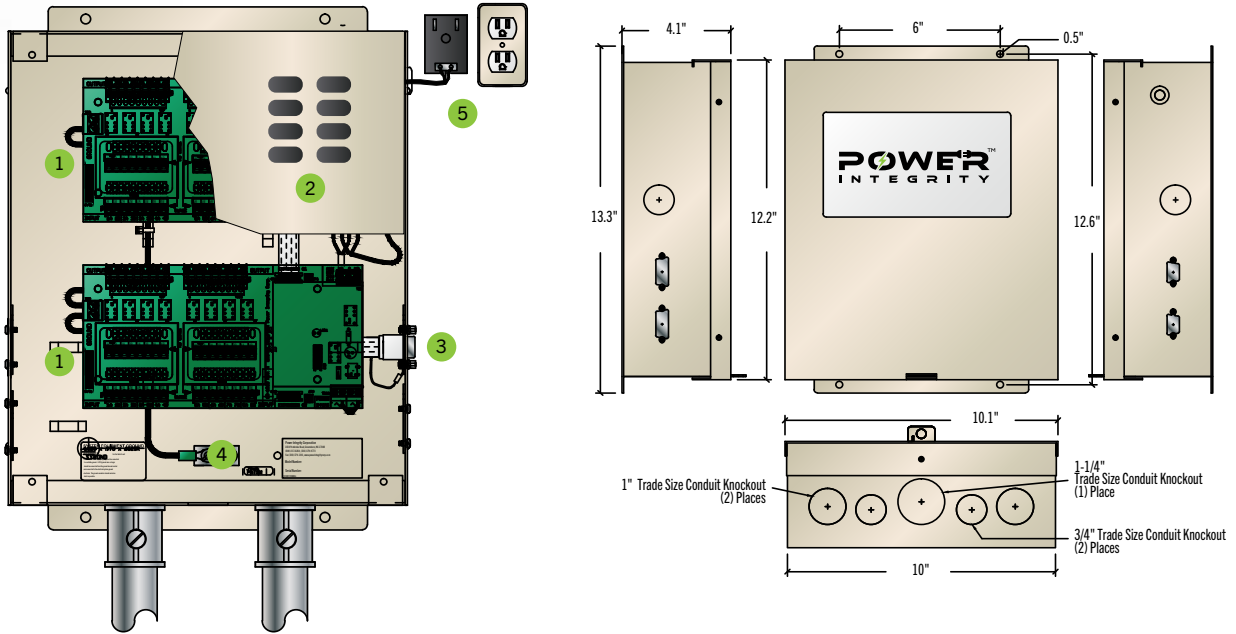
Surge Protection Specifications (Wayne® Dispensers)

Dispenser Data Communication Circuit	2 Wire Current Loop
Standoff Voltage	47.8V
Breakdown Voltage	56V Max +/- 5%
Clamp Voltage	77V Max
Peak Pulse Current	19.7A
Credit Card Communication Circuit	2 Wire RS-485
Standoff Voltage	5.8V
Breakdown Voltage	6.8V Max +/- 5%
Clamp Voltage	10.5V Max
Peak Pulse Current	144.8A

SPECIFICATIONS

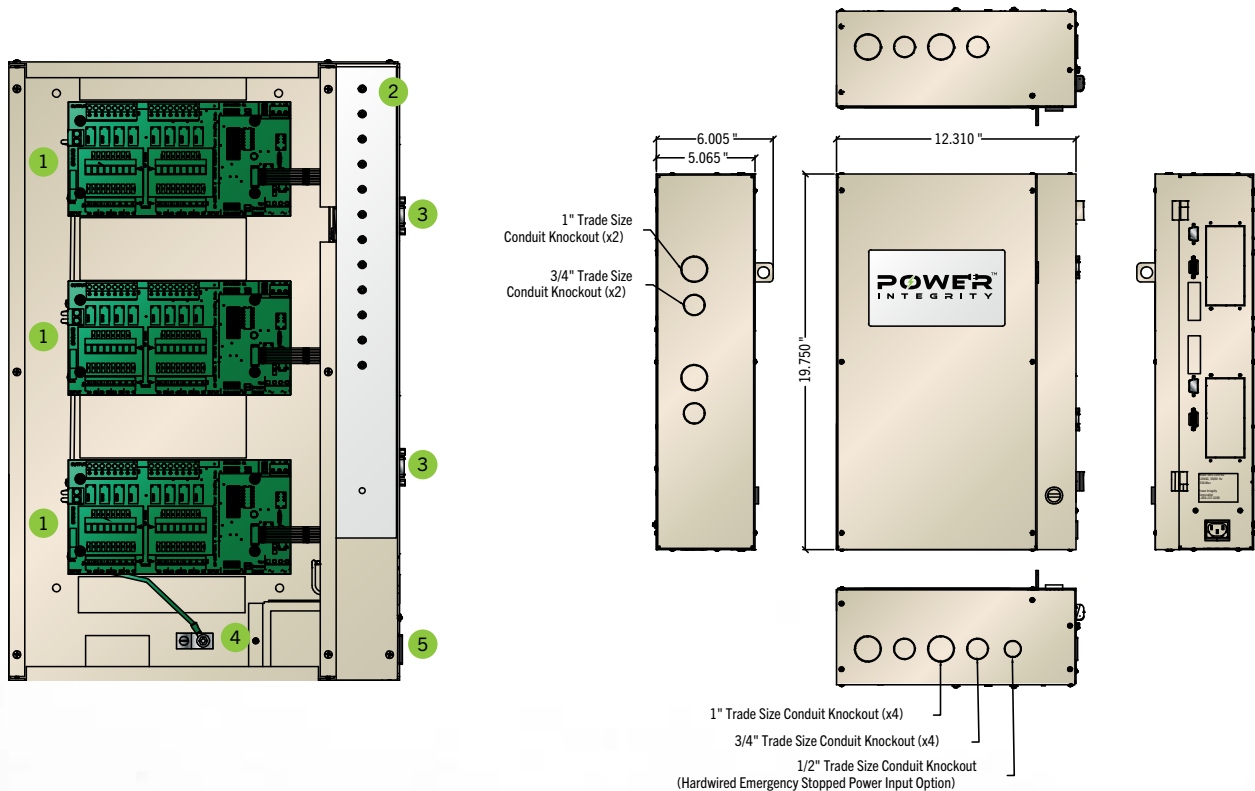
8 Dispenser Primary Disconnect Components & Dimensions

- 1 Dispenser Control Board 3 Control Output to Secondary Disconnect Controller 5 Output Power, Controlled by Site E-Stop
- 2 Disconnect Switches 4 Ground Connection



12 & 16 Dispenser Primary Disconnect Components & Dimensions

- 1 Dispenser Control Board 3 Control Output to Secondary Disconnect Controller 5 Output Power, Controlled by Site E-Stop or Hardwire
- 2 Disconnect Switches 4 Ground Connection



ORDER INFORMATION

8 Dispenser Primary Disconnects



Part Number	Description
DDS-8DM4GE	Primary Dispenser Disconnect, 4 Conductors x 8 Dispensers (Wayne® or Gilbarco®), for dispenser data and card reader circuits
DDS-8DM4GPE	Primary Dispenser Disconnect, 4 Conductors x 8 Gilbarco® Dispensers, for dispenser data and card reader circuits, with data surge protection for current loop
DDS-8DM4WPE	Primary Dispenser Disconnect, 4 Conductors x 8 Wayne® Dispensers, for dispenser data and card reader circuits, with data surge protection for current loop and RS-485

12 & 16 Dispenser Primary Disconnects



Part Number	Description
DDS-12DT4GE	Primary Dispenser Disconnect, 4 Conductors x 12 Dispensers (Wayne® or Gilbarco®), for dispenser data and card reader circuits
DDS-12DT4GPE	Primary Dispenser Disconnect, 4 Conductors x 12 Gilbarco® Dispensers, for dispenser data and card reader circuits, with data surge protection for current loop
DDS-12DT4WPE	Primary Dispenser Disconnect, 4 Conductors x 12 Wayne® Dispensers, for dispenser data and card reader circuits, with data surge protection for current loop and RS-485

Note: For 16 dispenser Primary Disconnects, contact Customer Service.

PRIMARY DISCONNECT ETHERNET DISPENSER DISCONNECTS

By connecting to the site's emergency stop system, Ethernet Primary Dispenser Disconnects provide low voltage disconnection for dispensers that use Ethernet network cabling for primary dispenser communication. Models are available that will disconnect 1 or 2 Ethernet cables for 8 dispensers or disconnect one Ethernet cable for 16 dispensers.



HIGHLIGHTS

- Primary disconnect for dispensers using Ethernet connectivity for data and credit card communication.
- Aids in compliance with NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Expandable for the future.
- Compact modular design.
- Lockable cover for lockout/tagout requirements.
- Wall or rack mounted options available.
- Primary disconnect models disconnect the conductors when the emergency stop system is activated.
- Connect to the emergency stop system by the means of a Class 2 transformer that is plugged into an outlet controlled by the emergency stop system.
- Toggle switches, located behind a lockable cover, allow you to isolate the conductors of a single dispenser for servicing purposes.
- Expandable to allow disconnecting of additional secondary communication circuits such as intercom and media circuits. This is easily done by connecting the secondary disconnects to the remote expansion port located on the side of the primary disconnect
- Individual disconnects for each circuit types allows the disconnect to be located where the conductors enter the building. This can eliminate costly additional wiring and downtime that maybe required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.

SPECIFICATIONS

General

Number of Dispenser Channels	8 or 16 Dispensers
E-Stop Control Input	Powered by Class 2 24VAC Transformer Connected to 120VAC E-Stop Controlled Outlet
Number of Conductors Disconnected per Dispenser	8D and 16D Models = 1 Ethernet Cable per Dispenser 88D = 2 Ethernet Cables per Dispenser
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	No
Individual Channel Control Switches	Yes
Lockable Channel Control Switches	Yes
Secondary Remote Expansion Output	Yes

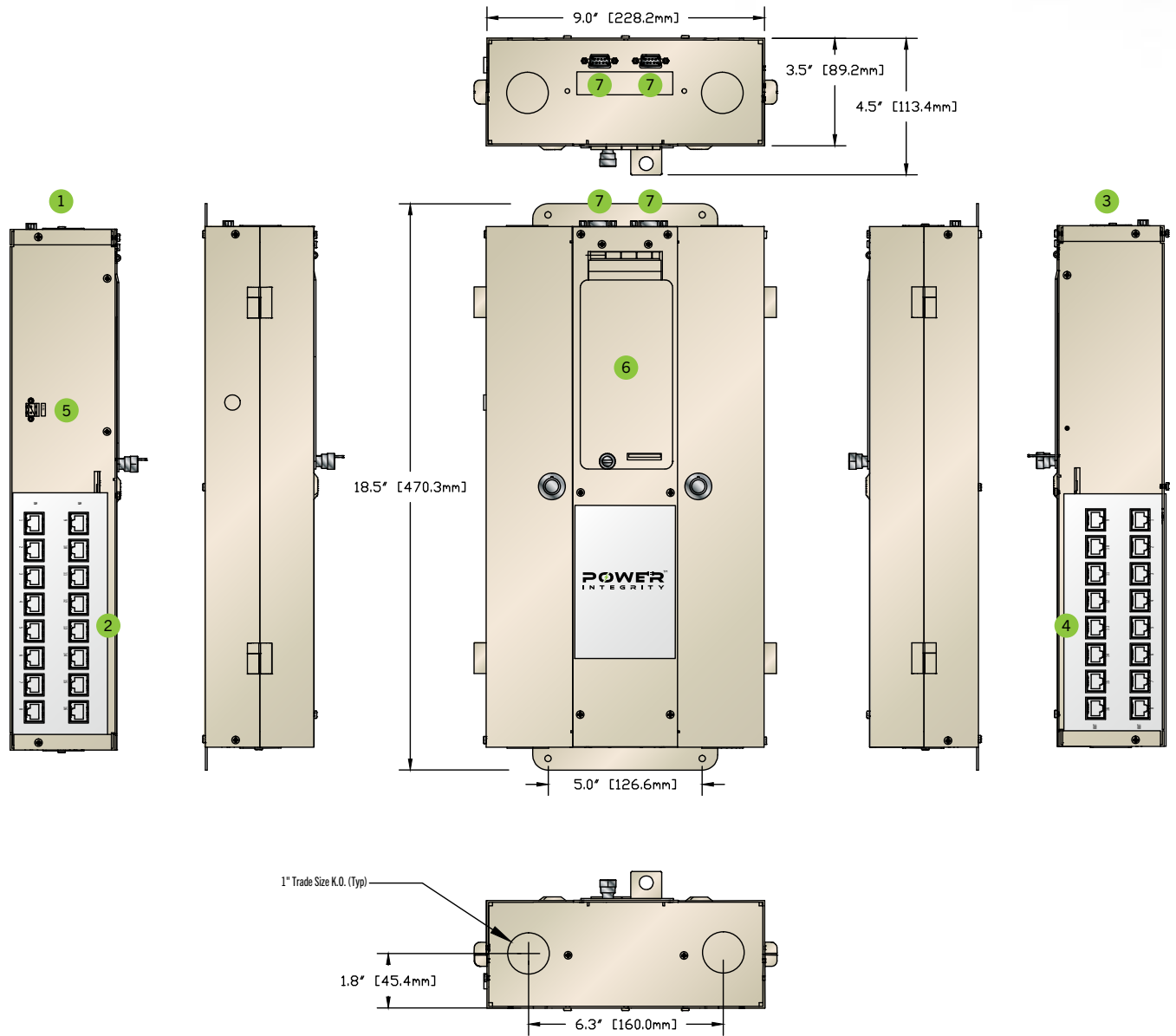
Certifications/Approvals

- UL (1238) Listed
- cUL (CSA 22.2) Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

SPECIFICATIONS

Wall Mounted Primary Ethernet Disconnect Components & Dimensions

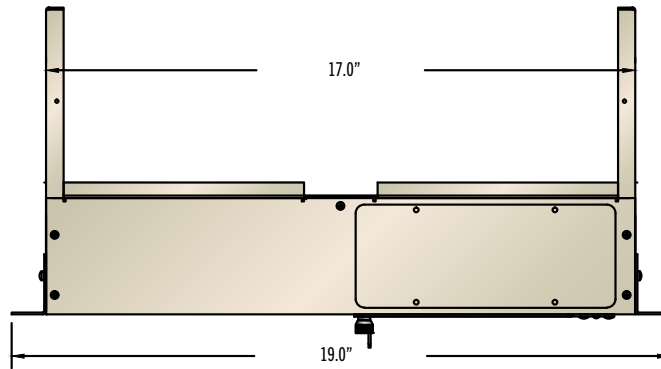
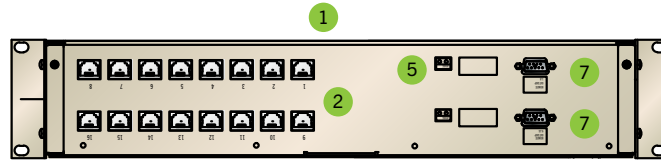
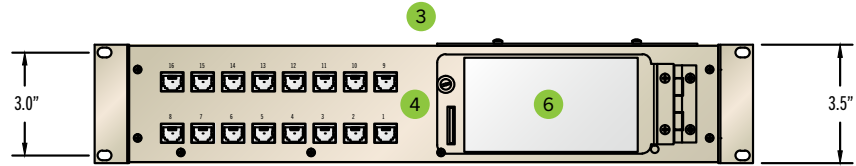
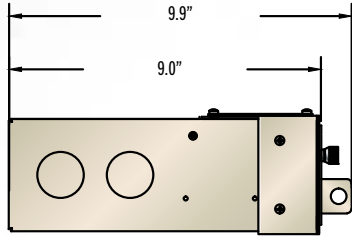
- 1 Input Connection Panel
- 2 Ethernet Input Jacks
- 3 Output Connection Panel
- 4 Ethernet Output Jacks
- 5 Input Power Connection
- 6 Service Disconnects (Behind Cover)
- 7 Control Output to Secondary Disconnect Controller



SPECIFICATIONS

Rack Mounted Primary Ethernet Disconnect Components & Dimensions

- 1 Input Connection Panel
- 2 Ethernet Input Jacks
- 3 Output Connection Panel
- 4 Ethernet Output Jacks
- 5 Input Power Connection
- 6 Service Disconnects (Behind Cover)
- 7 Control Output to Secondary Disconnect Controller



ORDER INFORMATION

Wall Mounted Primary Ethernet Disconnects



Part Number	Description
DDS-EXP8D	Primary Ethernet Dispenser Disconnect, 1 Ethernet Cable for 8 Dispensers
DDS-EXP88D	Primary Ethernet Dispenser Disconnect, 2 Ethernet Cables for 8 Dispensers
DDS-EXP16D	Primary Ethernet Dispenser Disconnect, 1 Ethernet Cable for 16 Dispensers

Rack Mounted Primary Ethernet Disconnects



Part Number	Description
DDS-ERP8D	Rack Mounted Primary Ethernet Dispenser Disconnect, 1 Ethernet Cable for 8 Dispensers
DDS-ERP88D	Rack Mounted Primary Ethernet Dispenser Disconnect, 2 Ethernet Cables for 8 Dispensers
DDS-ERP16D	Rack Mounted Primary Ethernet Dispenser Disconnect, 1 Ethernet Cable for 16 Dispensers

SECONDARY DISCONNECT COMMUNICATION/ INTERCOM DISCONNECTS

Communication/Intercom Secondary Disconnects are designed to expand the number and type of circuits that can be disconnected. They are used for intercom wiring and can also be used to disconnect additional communication conductors connected to a dispenser.



HIGHLIGHTS

- Secondary intercom disconnect expands the capability of the primary disconnect.
- Used for communication circuits with 4 or 8 conductors per dispenser.
- Aids in compliance of the NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Connects to and controlled by any primary disconnect.
- Expandable for the future.
- Compact modular design.
- Pluggable terminal blocks for easy wiring.
- Disconnects 4 or 8 conductors per dispenser channel.
- Handles any intercom configuration that uses 1 call button & 1 speaker, 2 call buttons, or 2 speakers per dispenser OR an intercom configuration that uses 2 call buttons & 2 speakers per dispenser.
- Secondary disconnect models connect to the primary disconnect allowing secondary circuit conductors to be disconnected when the emergency stop system is activated.
- Individual disconnects for each circuit types allows the disconnect to be located where the conductors enter the building. This can eliminate costly additional wiring and downtime that maybe required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.
- Include 6' and 25' DB-9 cables for connection to the primary.

SPECIFICATIONS

General

Number of Dispenser Channels	8 or 16
E-Stop Control Input	Connects to Remote Control Output of Primary Disconnect
Number of Conductors Disconnected per Dispenser	4 Conductors + (Shield – Not Disconnected) 8 Conductors + (Shield – Not Disconnected)
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	No
Individual Channel Control Switches	Provided by the Primary Disconnect
Secondary Remote Expansion Output	Yes

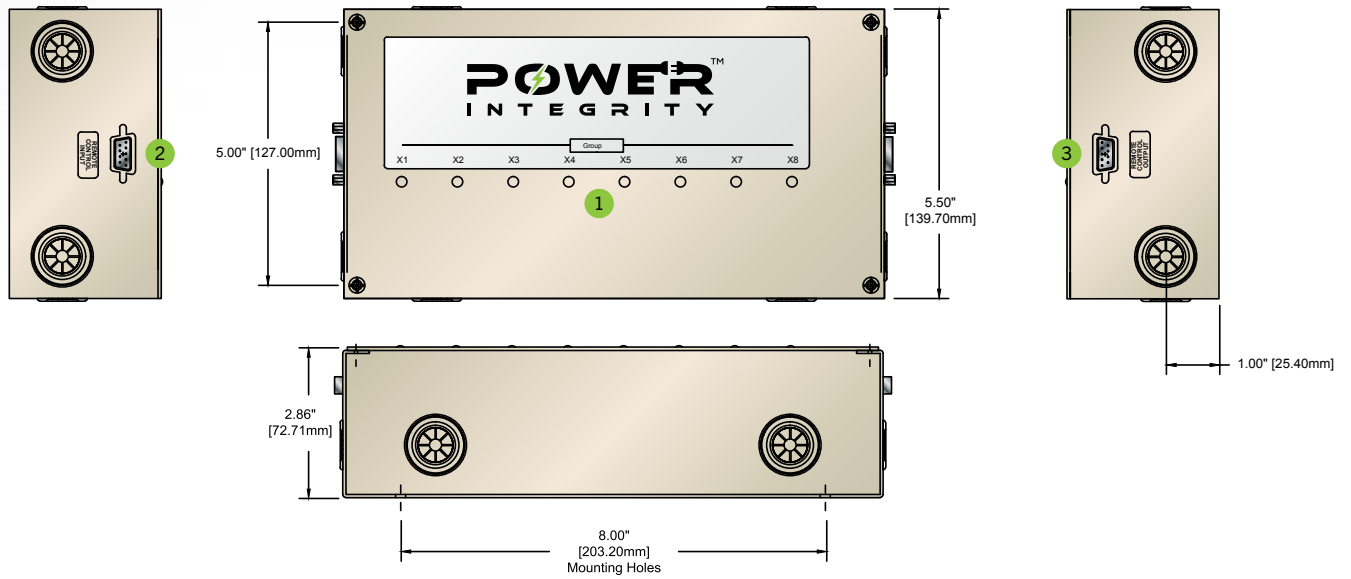
Certifications/Approvals

- UL (1238) Listed
- cUL (CSA 22.2) Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

SPECIFICATIONS

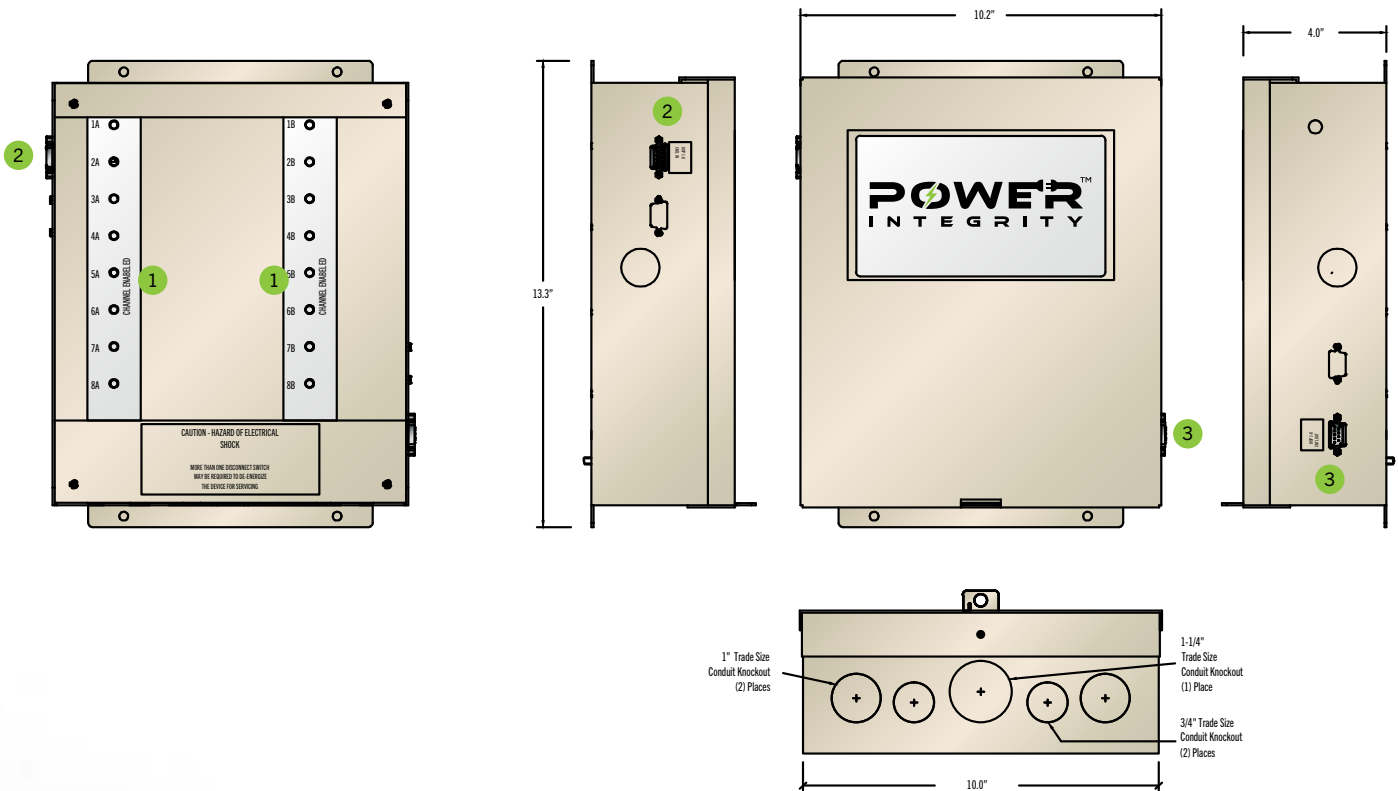
8 Dispenser, 4 Conductor Communication/Intercom Secondary Disconnects Components & Dimensions

- 1 Active Status Indicators
- 2 Control Input
- 3 Control Output



8 Dispenser, 8 Conductor & 16 Dispenser, 4 Conductor Communication/Intercom Secondary Disconnects Components & Dimensions

- 1 Active Status Indicators
- 2 Control Input
- 3 Control Output



ORDER INFORMATION

8 Dispenser, 4 Conductor Communication/Intercom Secondary Disconnects



Part Number	Description
DDS-8DB4C	Communication/Intercom Secondary Disconnect, 4 Conductors 1-8 Dispensers (for (4) intercom conductors for (8) dispensers ie: (1) call button & (1) speaker per dispenser)

8 Dispenser, 8 Conductor & 16 Dispenser, 4 Conductor Communication/Intercom Secondary Disconnects



Part Number	Description
DDS-8DA44CE	Communication/Intercom Secondary Disconnect, 8 Conductors 1-8 Dispensers (for (8) intercom conductors for (8) dispensers ie: (2) call buttons & (2) speakers per dispenser)
DDS-16DA4CE	Communication/Intercom Secondary Disconnect, 4 Conductors 1-16 Dispensers (for (4) intercom conductors for (16) dispensers ie: (1) call button & (1) speaker per dispenser)

SECONDARY DISCONNECT

ETHERNET DISCONNECTS

Ethernet Secondary Disconnects are secondary dispenser wiring disconnects designed to expand the number and type of cabling that can be disconnected. They are designed for dispensers that use Ethernet network cabling for secondary dispenser communication. Models are available that will disconnect 1 or 2 Ethernet cables for 8 dispensers or disconnect 1 Ethernet cable for 16 dispensers.



HIGHLIGHTS

- Secondary Ethernet disconnect expands the capability of the primary disconnect.
- Wall mounted.
- Aids in compliance of the NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Connects to and controlled by any primary disconnect.
- Secondary disconnect models connect to the primary disconnect allowing secondary circuit conductors to be disconnected when the emergency stop system is activated.
- Additional secondary expansion disconnects can be added now or in the future.
- Individual disconnects for each circuit types allows the disconnect to be located where the conductors enter the building. This can eliminate costly additional wiring and downtime that maybe required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.

SPECIFICATIONS

General

Number of Dispenser Channels	8 or 16
E-Stop Control Input	Connects to Remote Control Output of Primary Disconnect
Number of Conductors Disconnected per Dispenser	8D and 16D Models = 1 Ethernet Cable per Dispenser 88D = 2 Ethernet Cables per Dispenser
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	No
Individual Channel Control Switches	Provided by the Primary Disconnect
Secondary Remote Expansion Output	Yes
Dimensions	19" H x 9" W x 3.4"D

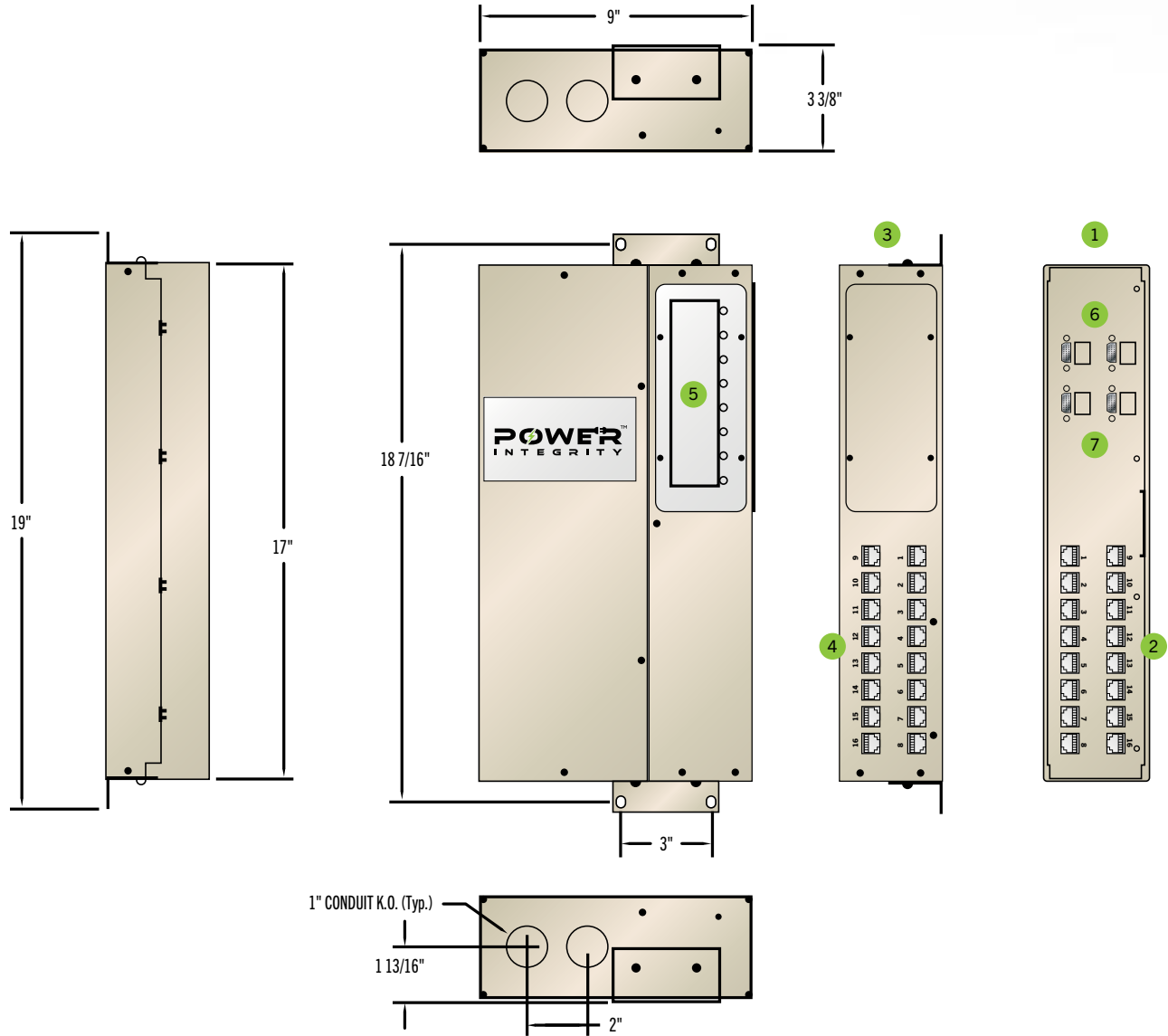
Certifications/Approvals

- UL (1238) Listed
- cUL (CSA 22.2) Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

SPECIFICATIONS

Components & Dimensions

- 1 Input Connection Panel
- 2 Ethernet Input Jacks
- 3 Output Connection Panel
- 4 Ethernet Output Jacks
- 5 Active Status Indicators
- 6 Control Output to Secondary Disconnect Controller
- 7 Control Output from Secondary Disconnect Controller



ORDER INFORMATION



Part Number	Description
DDS-EWS8D	Ethernet Secondary Disconnect, 1 Ethernet Cable for 8 Dispensers
DDS-EWS88D	Ethernet Secondary Disconnect, 2 Ethernet Cables for 8 Dispensers
DDS-EWS16D	Ethernet Secondary Disconnect, 1 Ethernet Cable for 16 Dispensers

INTEGRATED ELECTRICAL CONTROLS

SECONDARY DISCONNECT

RACK MOUNTED ETHERNET DISCONNECTS

Rack Mounted Ethernet Secondary Disconnects are secondary dispenser wiring disconnects designed to expand the number and type of cabling that can be disconnected. They are designed for dispensers that use Ethernet network cabling for secondary dispenser communication. Models are available that will disconnect 1 or 2 Ethernet cables for 8 dispensers or disconnect 1 Ethernet cable for 16 dispensers.



HIGHLIGHTS

- Secondary Ethernet disconnect expands the capability of the primary disconnect.
- 19" rack mounted.
- Aids in compliance of the NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Connects to and controlled by any primary disconnect.
- Secondary disconnect models connect to the primary disconnect allowing secondary circuit conductors to be disconnected when the emergency stop system is activated.
- Additional secondary expansion disconnects can be added now or in the future.
- Individual disconnects for each circuit types allows the disconnect to be located where the conductors enter the building. This can eliminate costly additional wiring and downtime that maybe required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.

SPECIFICATIONS

General

Number of Dispenser Channels	8 or 16
E-Stop Control Input	Connects to Remote Control Output of Primary Disconnect
Number of Conductors Disconnected per Dispenser	8D and 16D Models = 1 Ethernet Cable per Dispenser 88D = 2 Ethernet Cables per Dispenser
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	No
Individual Channel Control Switches	Provided by the Primary Disconnect
Secondary Remote Expansion Output	Yes
Dimensions	3.5" (2U) H x 19" W x 9" D

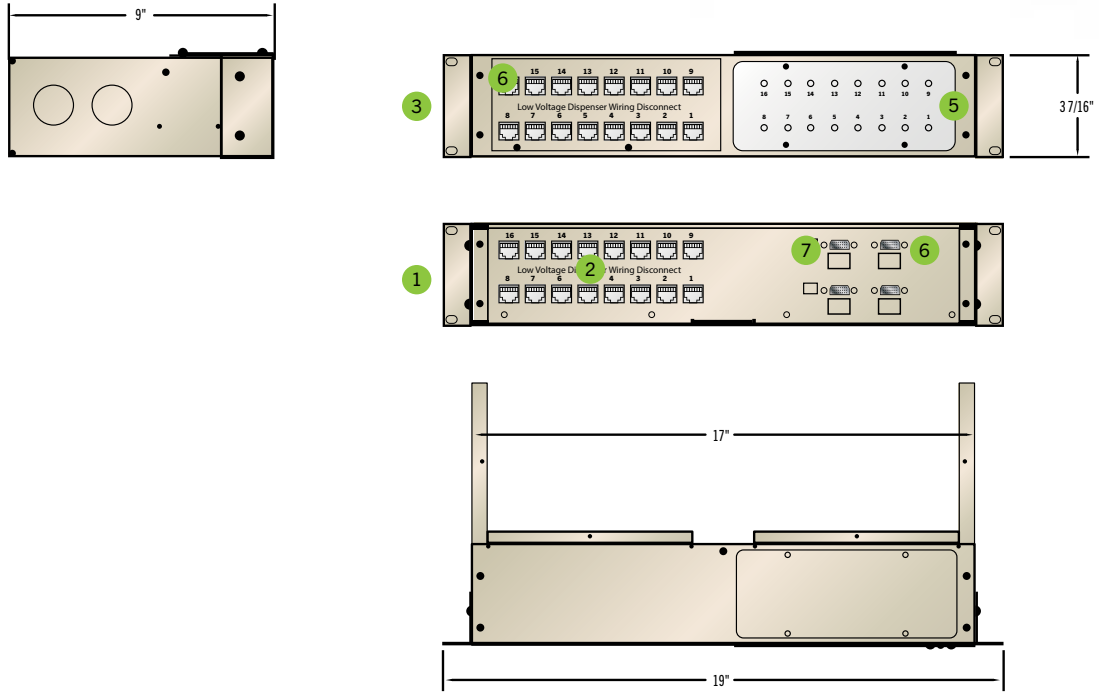
Certifications/Approvals

- UL (1238) Listed
- cUL (CSA 22.2) Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

SPECIFICATIONS

Components & Dimensions

- 1 Input Connection Panel
- 2 Ethernet Input Jacks
- 3 Output Connection Panel
- 4 Ethernet Output Jacks
- 5 Active Status Indicators
- 6 Control Output to Secondary Disconnect Controller
- 7 Control Output from Secondary Disconnect Controller



ORDER INFORMATION



Part Number	Description
DDS-ERS8D	Rack Mounted Ethernet Secondary Disconnect, 1 Ethernet Cable for 8 Dispensers
DDS-ERS88D	Rack Mounted Ethernet Secondary Disconnect, 2 Ethernet Cables for 8 Dispensers
DDS-ERS16D	Rack Mounted Ethernet Secondary Disconnect, 1 Ethernet Cable for 16 Dispensers

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 Wayne® is a registered trademark Wayne Fueling Systems LLC.

INTEGRATED ELECTRICAL CONTROLS

ALL-IN-ONE DISPENSER DISCONNECTS

All-In-One Dispenser Disconnects offer a flexible approach to disconnecting low voltage circuits including, data, credit cards, intercom/communication, and video/media circuit conductors connected to dispensers. Primary and secondary disconnects for both twisted pair and Ethernet circuits are combined into one space-saving, pre-configured enclosure.



HIGHLIGHTS

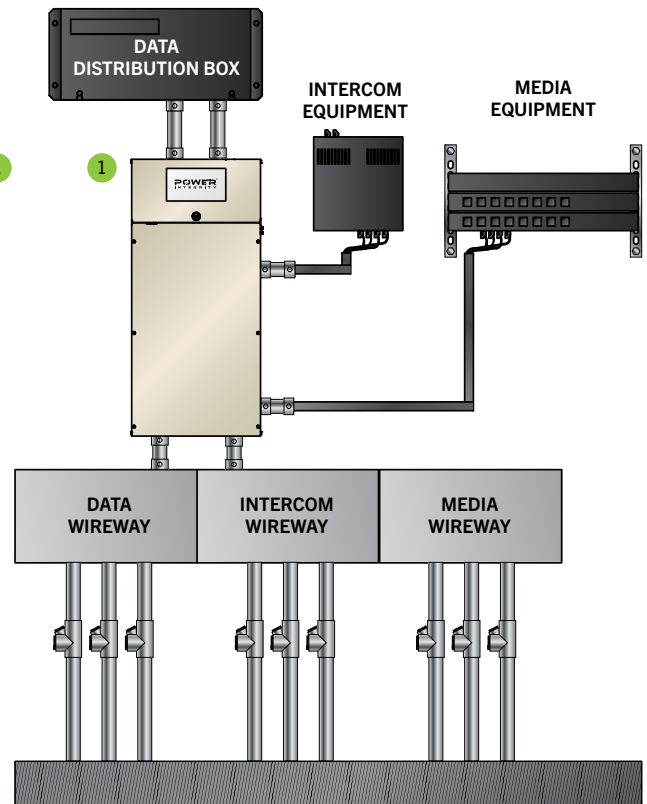
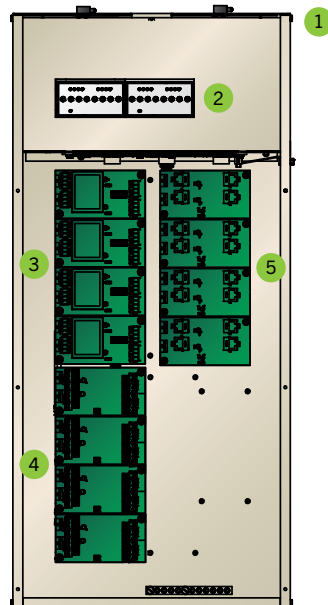
- Disconnects all low voltage dispenser wiring conductors including twisted pair and Ethernet.
- Aids in compliance with NFPA® and NEC® codes.
- Suitable for new and retrofit applications.
- Expandable for the future.
- Compact modular design.
- Lockable cover for lockout / tagout requirements.
- Dispenser power monitoring interface.
- Hard wired emergency stop connection.
- Disconnect cards grouped by wiring type for easy identification.
- An AC dispenser interface provides monitoring of the status of each dispenser power circuit.
- Optional surge protection for dispenser and credit card data pairs.
- Low voltage dispenser wiring can be disconnected simultaneously when the dispenser power is interrupted by the dispenser breaker or other disconnect.
- Toggle switches, located behind a lockable cover, allow for the isolation of conductors for a single dispenser for servicing purposes.
- Easily expandable to disconnect additional low voltage dispenser circuits by connecting a secondary disconnect using the remote expansion connector located on the side.
- Additional secondary disconnects can be installed remotely near the location of the conductor entry into the building, eliminating costly wiring and downtime that may be required to re-route conductors to a central location such as the electrical room, during a retrofit or site upgrade.

SPECIFICATIONS

System Components

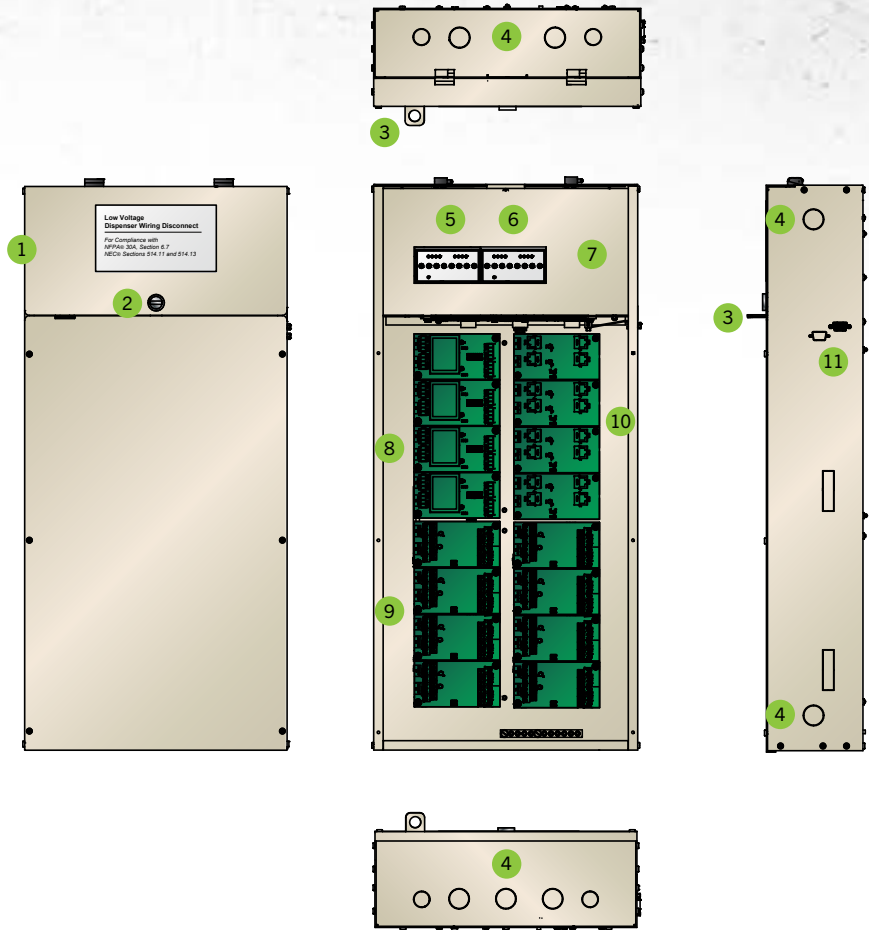
The disconnect is installed in-line with dispenser data wiring and adjacent to site controls. The disconnect provides individual disconnect cards. Each card disconnects the corresponding dispenser data circuits.

- 1 All-In-One low voltage dispenser disconnect
- 2 Disconnect AC interface
- 3 Dispenser & credit card reader data cards
- 4 Dispenser intercom cards
- 5 Dispenser Ethernet / media cards

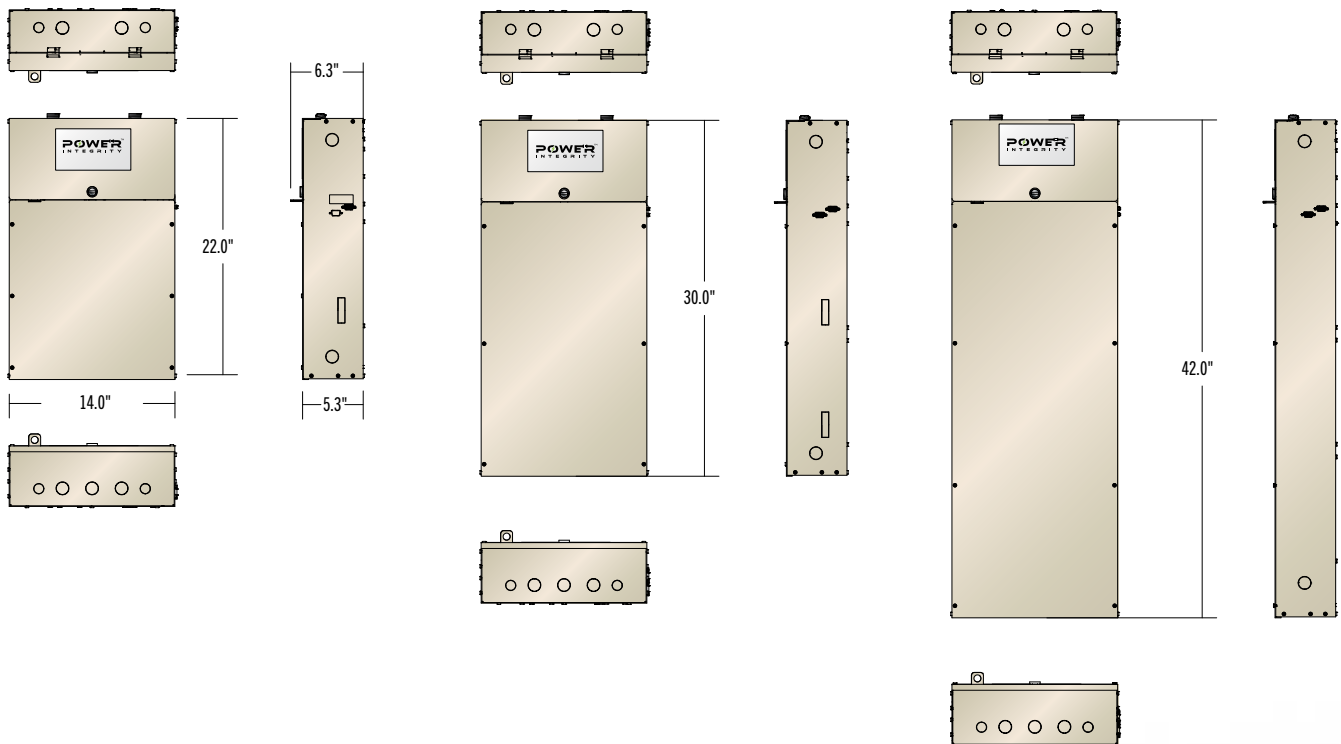


Components

- 1 Switch access door
- 2 Door latch
- 3 Padlock hasp
- 4 Conduit knockouts
- 5 Dispenser isolation switches
- 6 AC power interface
- 7 AC power section
- 8 Dispenser & credit card reader data cards
- 9 Dispenser intercom cards
- 10 Dispenser Ethernet / media cards
- 11 Remote outputs
(add additional disconnects)



Dimensions



SPECIFICATIONS CONTINUED

General

Number of Dispenser Channels	4 to 12 Dispensers
E-Stop Control Input	120VAC Hard-Wired Connection
Number of Conductors Disconnected per Dispenser (Dependent on Model)	Dispenser Data: 4 Conductors Intercom Circuits: 4 or 8 Conductors Ethernet: RJ45
Signal Circuit Rating	Class 2, 48V Max, 3 Amp
Surge Protection Available	Optional for Dispenser Data Circuits
Individual Channel Control Switches	Yes
Dispenser Power Sensing	Yes
Lockable Channel Control Switches	Yes
Secondary Remote Expansion Output	Yes

Certifications/Approvals

- UL Listed 508A
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

Surge Protection Specifications (Generic “P” Option)

Dispenser Data & Credit Card Circuits	2 Wire Current Loops
Standoff Voltage	47.8V
Breakdown Voltage	56V Max +/- 5%
Clamp Voltage	77V Max
Peak Pulse Current	19.7A

Surge Protection Specifications (Wayne® Dispensers “W” Option)

Dispenser Data Circuit	2 Wire Current Loops
Standoff Voltage	47.8V
Breakdown Voltage	56V Max +/- 5%
Clamp Voltage	77V Max
Peak Pulse Current	19.7A
Credit Card Circuit	2 Wire RS-485
Standoff Voltage	5.8V
Breakdown Voltage	6.8V Max +/- 5%
Clamp Voltage	10.5V Max
Peak Pulse Current	144.8A

ORDER INFORMATION

Ordering Guide

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

DDS-A X D Y E P

DDS-A = All-In-One Dispenser Disconnect

XD = # of Dispensers

4, 6, 8, 10, 12, 16 = 4, 6, 8, 10, 12 Dispensers

Y = # of Intercom Conductors

4 = 4 Intercom Conductors per Dispenser

8 = 8 Intercom Conductors per Dispenser

E = Ethernet Circuits

E = 1 Ethernet Circuit per Dispenser

P = Surge Protection

P = Surge Protection

W = Surge Protection for Wayne® Dispensers

Example:

DDS-A10D8EP = All-In-One Dispenser Disconnect, 10 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, with Surge Protection.

Common All-In-One Dispenser Data, Credit Card Data, Intercom Disconnects

Part Number	Description
DDS-A4D8	All-In-One Dispenser Disconnect, 4 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, 22" enclosure
DDS-A6D8	All-In-One Dispenser Disconnect, 6 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, 22" enclosure
DDS-A8D8	All-In-One Dispenser Disconnect, 8 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, 22" enclosure
DDS-A10D8	All-In-One Dispenser Disconnect, 10 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, 30" enclosure
DDS-A12D8	All-In-One Dispenser Disconnect, 12 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, 30" enclosure

Common All-In-One Dispenser Data, Credit Card Data, Intercom, & Ethernet Disconnects

Part Number	Description
DDS-A4D8E	All-In-One Dispenser Disconnect, 4 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, 22" enclosure
DDS-A6D8E	All-In-One Dispenser Disconnect, 6 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, 30" enclosure
DDS-A8D8E	All-In-One Dispenser Disconnect, 8 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, 30" enclosure
DDS-A10D8E	All-In-One Dispenser Disconnect, 10 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, 42" enclosure
DDS-A12D8E	All-In-One Dispenser Disconnect, 12 Dispensers, Data & Credit Card Twisted Pairs, 8 Intercom Conductors, Ethernet Cable Disconnect, 42" enclosure

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E-STOP SOLUTIONS

EMERGENCY STOP OPERATORS

Emergency Stop Controls provide immediate shut off of dispensers and submersible pumps for compliance with National Electrical Code requirements. A full line of emergency stop operators are available to meet the specific site requirements of every application.



HIGHLIGHTS

- Available in momentary, twist-to-reset, key-to-reset, and break glass configurations.
- Clear cover protects against accidental activation, damage, and vandalism.
- Optional alarm protects against nuisance activation.
- Standard operator includes (1) NO and (1) NC contact.
- Outdoor rated.

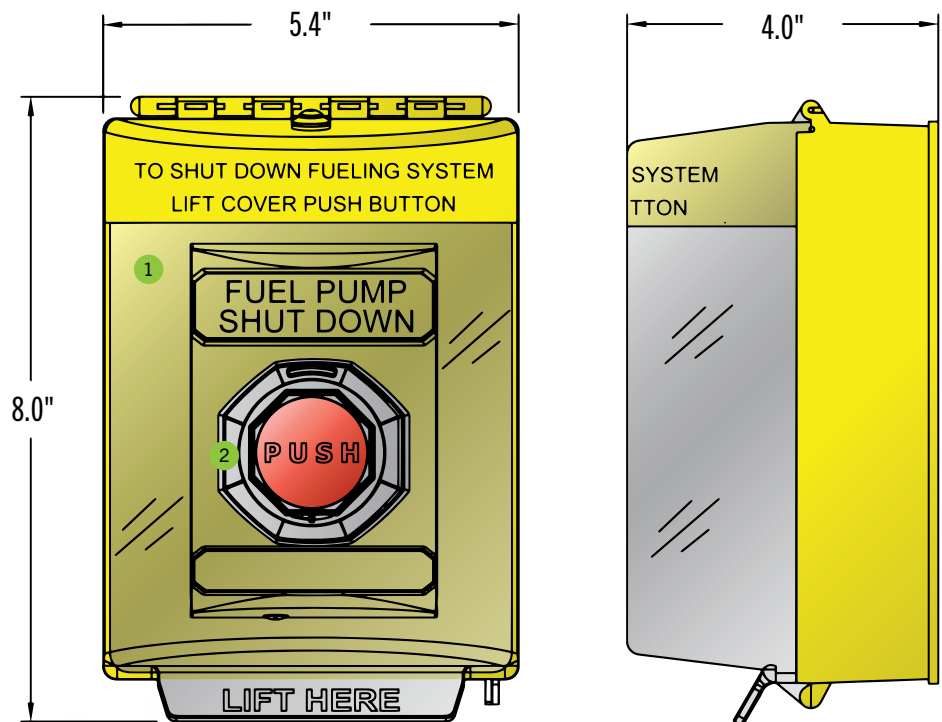
SPECIFICATIONS

Certifications/Approvals

- UL Listed
- cUL Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).

Components & Dimensions

- 1 Clear protective cover
- 2 Emergency stop push bottom



ORDER INFORMATION

Emergency Stop Operators

Part Number	Description
IA-ESOC	Emergency Stop Operator with lift-up clear cover (yellow)
IA-ESOCA	Emergency Stop Operator with lift-up clear cover and alarm (yellow)
IA-ESOCA-RD	Emergency Stop Operator with lift-up clear cover and alarm (red)
IA-ESOC-T	Emergency Stop Operator, twist to release with lift-up clear cover (yellow)
IA-ESOCA-T	Emergency Stop Operator, twist to release with lift-up clear cover and alarm (yellow)
IA-ESOCA-T-RD	Emergency Stop Operator, twist to release with lift-up clear cover and alarm (red)
IA-ESOC-F-T	Emergency Stop Operator, twist to release with lift-up clear cover, French language (yellow)
IA-ESOC-F	Emergency Stop Operator with lift-up clear cover, French language (yellow)

Emergency Stop Operator Accessories

Part Number	Description
IA-ESPLATE	Emergency Stop Operator mounting plate with “EMERGENCY FUEL SHUTOFF” nameplate
IA-ESPLATE-F	Emergency Stop Operator mounting plate with “EMERGENCY FUEL SHUTOFF” nameplate, French language

E-STOP SOLUTIONS

CASHIER CONTROL STATIONS

Cashier Control Stations provide immediate shut off and resetting of dispensers and submersible pumps for compliance with National Electrical Code requirements. A full line of Cashier Control Stations are available to meet the specific site requirements of each application.



HIGHLIGHTS

- Allows employees to activate emergency stop system without leaving the cashier area.
- Standard configurations include both an emergency stop push button and system reset push button.
- Available with optional lighting bypass switch.
- Custom configurations available including:
 - Product status lights.
 - Timed lighting override.
 - Individual dispenser shut-down.

SPECIFICATIONS

Certifications/Approvals

- UL Listed
- cUL Listed
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).

ORDER INFORMATION

Part Number	Description
IA-ESOS	Cashier Control Station with emergency stop button
IA-ESORS	Cashier Control Station with emergency stop button, with shroud to prevent accidental pressing, and reset button

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HIGH VOLTAGE SURGE PROTECTION

SURGE MANAGEMENT SYSTEM

The Surge Management System provides surge protection for dispensers as well as multiple types of common electronic circuits in one, consolidated enclosure.



HIGHLIGHTS

- Delivers individual series surge protector for each piece of sensitive electronic equipment in the petroleum network.
- Provides AC power protection for multiple circuits.
- Compatible circuits include:
 - Dispensers
 - Point-of-sale terminals
 - Office computers
 - Leak detection equipment
- Each circuit is protected by a dedicated ZTAS surge module.
- Circuits remain protected if the ZTAS surge module sacrifices itself, preventing remaining energy from entering or damaging equipment.
- Each ZTAS surge module has an easy-to-replace fuse.
- An indicator light integrated into each ZTAS surge module provides operating condition status.
- ZTAS surge modules are for use on a 20 amp circuit, and 5 position terminal strip.
- Constructed with heavy-duty components for maximum surge protection.

SPECIFICATIONS

Surge Management System

Protection Type	Series Connected
Number of Circuits	6, 9, or 12 Circuits
Connection	Hardwired (12-14 Ga) Line-In, Line-Out, Neutral-In, Neutral-Out Surge Ground (#4 CU)
Installation Type	Indoor

Surge Protection Module

Nominal Operating Ratings	120VAC, 1ph, 50/60 Hz, 15A
Max Continuous Operating Voltage	130 VAC
In	3kA
SCCR	5kA
VPR	
L-N	900Vpk
L-G	900Vpk
N-G	800Vpk

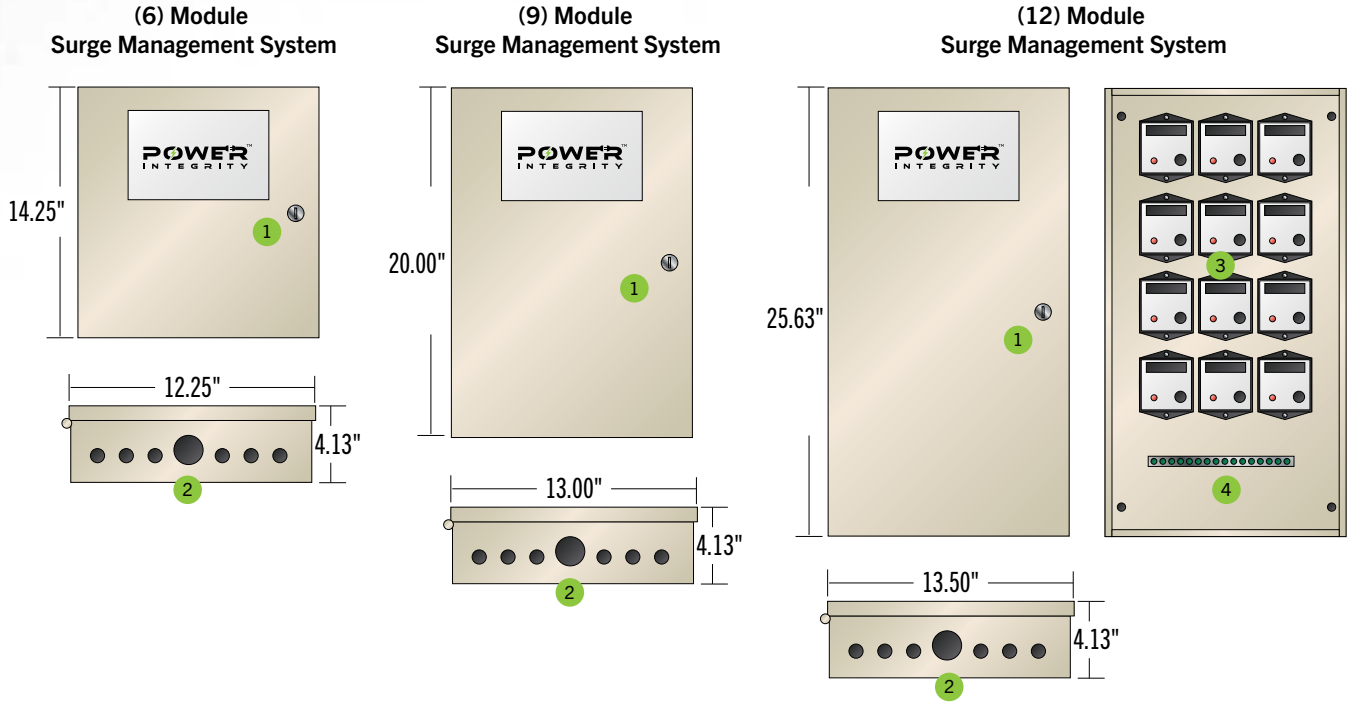
Certifications/Approvals

- UL Listed 1449.

SPECIFICATIONS CONTINUED

Components & Dimensions

- 1 Lock
- 2 Conduit knockouts
- 3 Surge Modules
- 4 Grounding Bar



ORDER INFORMATION

Surge Management Systems

Part Number	Description
SMS-06	Surge Management System with (6) ZTAS-03 modules
SMS-09	Surge Management System with (9) ZTAS-03 modules
SMS-12-09	Surge Management System with (9) ZTAS-03 modules, plus 3 spaces
SMS-12	Surge Management System with (12) ZTAS-03 modules

Replacement ZTAS Surge Modules

Part Number	Description
ZTAS-3-15-H2	Replacement ZTAS Surge Module with lower mounting feet, for Surge Management System enclosures (230 VAC)
ZTAS-03-15-2	Replacement ZTAS Surge Module with upper mounting feet, for Power Integrity control backpans (130 VAC)

HIGH VOLTAGE SURGE PROTECTION DISPENSER SURGE SUPPRESSION KITS

Dispenser Surge Suppression Kits provides surge protection for single dispenser AC power and data circuits.



HIGHLIGHTS

- Installs directly inside a dispenser.
- Includes AC power circuit protection and dispenser data circuit protection.
- Circuit is protected by a dedicated ZTAS surge module.
- Circuits remain protected if the ZTAS surge module sacrifices itself, preventing remaining energy from entering or damaging equipment.
- Each ZTAS surge module has an easy-to-replace fuse.
- An indicator light integrated into each ZTAS surge module provides operating condition status.
- Constructed with heavy-duty components for maximum surge protection.

SPECIFICATIONS

ZTAS Surge Modules

- 120 VAC, 15 amp fused protection modules for use on a 20 amp circuit, and 5 position terminal strip

Certifications/Approvals

- UL Listed 1449.

ORDER INFORMATION

Part Number	Description
SPK-G4CL	Dispenser Surge Protection Kit for (1) Gilbarco® Dispenser
SPK-W4CLRS	Dispenser Surge Protection Kit for (1) Wayne® Dispenser

LOW VOLTAGE SURGE PROTECTION

DISPENSER DATA CIRCUIT PROTECTORS

Dispenser Data Circuit Protectors provide surge protection for the credit card and dispenser data that transmits between fuel dispensers and the dispenser data distribution box.



HIGHLIGHTS

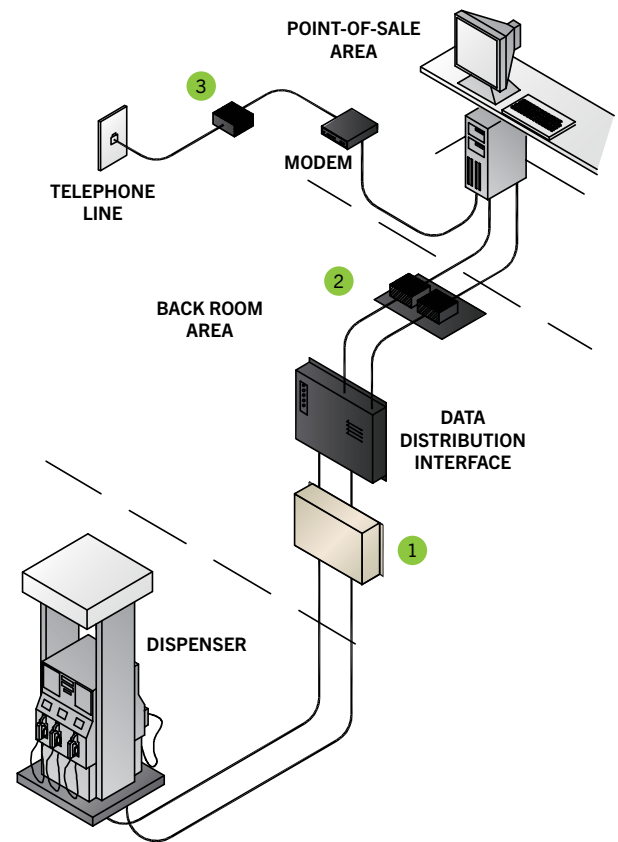
- Provide protection against excessive voltages that can damage equipment and cause erroneous data.
- Available in two sizes for a single protector module or up to 4 protector modules.
- Each protector can protect up to 8 circuits.
- Systems can be configured in either RS-485, Current Loop, or a combination dependent on the site.
- Installed in-line with the circuits running between the dispensers and the distribution box.

SPECIFICATIONS

General

Connection Method	Screw terminals, 22-14 awg wire
Wiring Configurations	8 data circuit pairs per module
Protection Modes	L - G all lines protected
Max Surge Current	120A (per pair)
Max Energy Dissipation	1200 Watts (per pair)
Over Current Protection	180 mAmp
Module Service Voltage	50V
Module Typical Let Through Voltage	56V

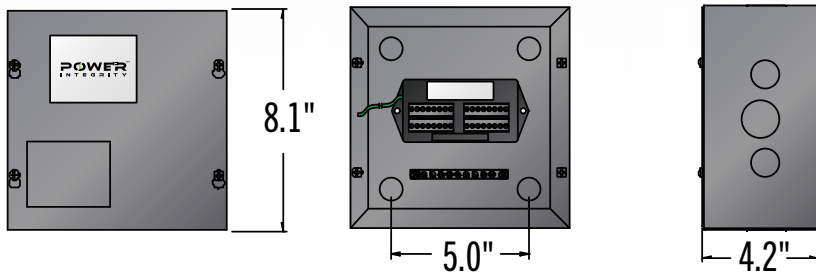
Surge Protection System Components



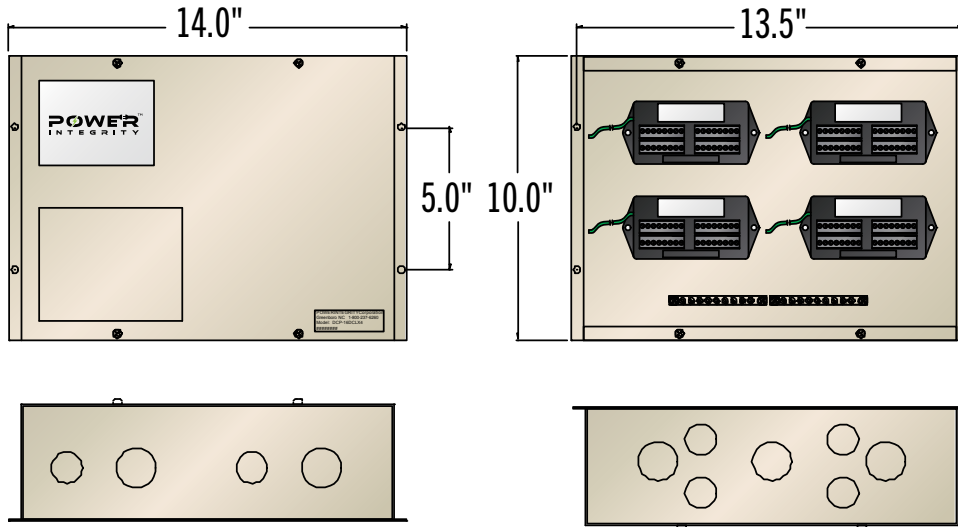
- 1 Dispenser Data Circuit Protector
- 2 Point-of-Sale Data Circuit Protector
- 3 Telephone Line Circuit Protector

SPECIFICATIONS

1 Module Dispenser Data Circuit Protector Dimensions



4 Module Dispenser Data Circuit Protector Dimensions



ORDER INFORMATION

Dispenser Data Circuit Protectors

Part Number	Description
DCP-8CLH1	Dispenser Data Circuit Protector, (8) current loop circuits - up to (8) Gilbarco® dispensers
DCP-16CLH4	Dispenser Data Circuit Protector, (16) current loop circuits - up to (8) Gilbarco® dispensers
DCP-4CLRS4H1	Dispenser Data Circuit Protector, (4) current loop circuits & (4) RS-485 circuits - up to (4) Wayne® dispensers
DCP-8CLRS4H4	Dispenser Data Circuit Protector, (8) current loop circuits & (8) RS-485 circuits - up to (8) Wayne® dispensers
DCP-16CLRS4H4	Dispenser Data Circuit Protector, (16) current loop circuits & (16) RS-485 circuits - up to (16) Wayne® dispensers

Replacement Individual Dispenser Data Protection Modules

Part Number	Description
DCP-4PCL	Replacement module for individual dispenser Data Circuit Protector, 4 Pair, 50V, Plug In Module, Current Loop
DCP-4PRS4	Replacement module for individual dispenser Data Circuit Protector, 4 Pair, 5V, Plug In Module, RS-485

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LOW VOLTAGE SURGE PROTECTION

POINT-OF-SALE DATA CIRCUIT PROTECTORS

Point-of-Sale Data Circuit Protectors provide surge protection for low voltage network lines between the distribution box and the system controller or point-of-sale terminals.



HIGHLIGHTS

- Designed for the protection of RS-232, current loop, and Ethernet data circuits such as those used in the communications of point-of-sale and dispenser networks.
- Absorb surges and spikes to protect the electronic equipment on the network from disruptive disturbances.
- Includes two RS-232 protector modules and a mounting bracket equipped with a grounding termination bar.
- Installed in-line as close as possible to the equipment it is intended to protect.

SPECIFICATIONS

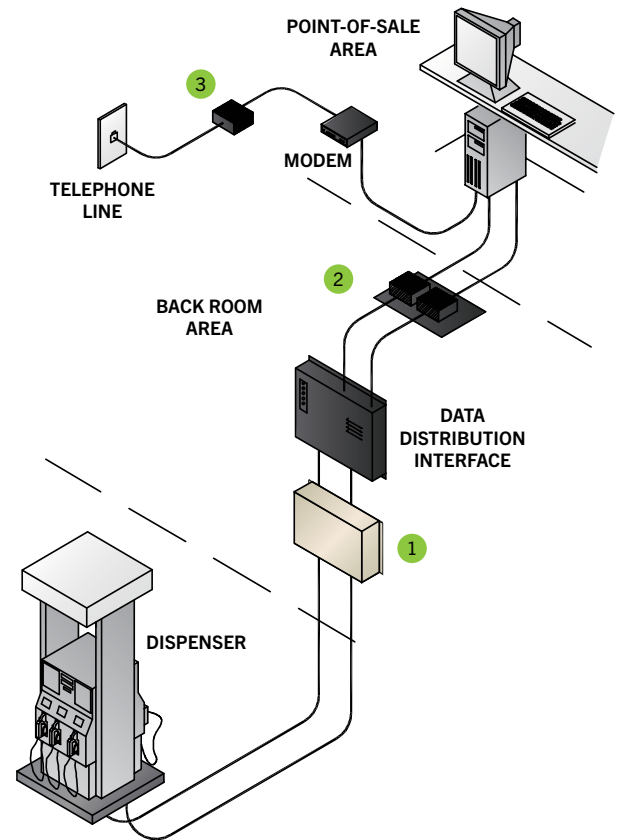
Certifications/Approvals

- Circuit protection modules are UL Listed 497A.

General

Class	Modular Line Protector (4 pair)
Installation Point	In-line with the data circuits
Connection Method	8 Pin Modular Female In & Out
Protection Modes	L - G (all modes)
Continuous Current	.150 Amps
Response Time	<5 nSec
Maximum Continuous Operating Voltage	18VDC
Service Voltage	15V
Maximum Surge Current	2000A (per pair)
Maximum Energy Dissipation	8 Joules (per pair)
Typical Let Through Voltage	20.0 - 24.0 (per pair)

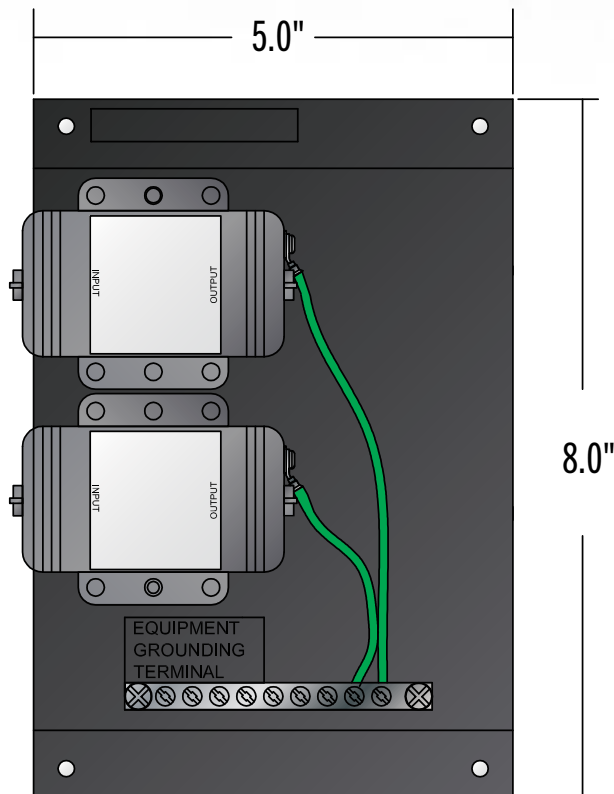
Surge Protection System Components



- 1 Dispenser Data Circuit Protector
- 2 Point-of-Sale Data Circuit Protector
- 3 Telephone Line Circuit Protector

SPECIFICATIONS

Dimensions



ORDER INFORMATION

Point-of-Sale Data Circuit Protectors

Part Number	Description
DCP-2MB22	Point-of-Sale Data Circuit Protector with (2) RS-232 circuit protectors, modular plug
DCP-2MBCC	Point-of-Sale Data Circuit Protector with (2) current loop protectors, modular plug
DCP-2MBEE	Point-of-Sale Data Circuit Protector with (2) Ethernet circuit protectors, modular plug

Replacement Individual Point-of-Sale Data Protection Modules

Part Number	Description
DCP-AM8-232	Replacement module for individual Point-of-Sale data protector, single RS-232 circuit, 12V, in-line, modular 8 pin connectors with cable
DCP-AM8CL	Replacement module for individual Point-of-Sale data protector, single current loop circuit, 50V, in-line with modular 8 pin connectors with cable
DCP-CM8-CAT5	Replacement module for individual Point-of-Sale data protector, single Cat 5 circuit, 5V, in-line with modular 8 pin connectors with cable

CONFIGURED CONTROLS

The range of Configured Controls is designed to simplify operation, installation, and maintenance of petroleum control, power distribution, and facility control systems with consolidated panels configured to the specific needs of each application.

- UL Listed & cUL Listed.
- NEC® and NFPA® code compliant.
- Lowers installation costs.
- Maximizes wall space savings.
- Standardizes electrical control across a network of sites.



CONFIGURED CONTROLS SELECTION GUIDE

Feature/Model	Petroleum Control Solutions	Fleet Petroleum Solutions	Configured Panel Solutions	Power Distribution Solutions
AC POWER DISTRIBUTION				
Electrical Distribution Fuel Panel		X	X	X
Electrical Distribution Lighting Panel		O	O	X
Electrical Distribution Store Branch Panels				X
Electrical Main Service Entrance Panel				X
AC POWER CONTROLS				
E-Stop & Reset	X	X	X	X
Emergency Stop Controls	X	X	X	X
Pump Hook Isolation	X	X	X	X
Pump Status Lights	X	X	O	O
Pump Contactors	X	X	X	X
Dispenser Contactors	X	X	X	X
AC Surge Suppression		O	O	O
Lighting Controls		O	O	O
Third Party Control Devices			O	O
Card Reader / EPT / FMU Terminals		X		
Backup Power / Generator Transfer Switching				O
DISPENSER				
Low Voltage Disconnect	O	O	O	O
Low Voltage Protection	O	O	O	O
ENCLOSURE				
UL Type 1 Indoor	X	X	X	X
UL Type 3R Outdoor		O	O	O

X - STANDARD FEATURE O - OPTIONAL FEATURE

CONFIGURED CONTROLS

PETROLEUM CONTROL SOLUTIONS

For retail fueling applications, Petroleum Control Solutions provide AC power controls, emergency stop and maintenance disconnects, pump controls, low voltage circuit disconnects, and surge suppression in one cost-effective, space-saving, and time-saving solution.



HIGHLIGHTS

- Provides AC power controls required for a typical retail petroleum application.
- Includes emergency stop and service disconnects for dispenser low voltage wiring.
- Optional low voltage circuit disconnects.
- Optional series connected surge suppression for protection of sensitive electronic circuits.
- Individual pump and dispenser contactors allow connection of remote control or monitoring system.
- Pump handle isolation using solid state technology with error detection.
- Marked terminals for easy connection of dispensers, pumps, card readers, fuel management systems and tank monitors.
- Factory assembled and pre-wired, eliminating mounting and wiring of separate components in the field.

SPECIFICATIONS

Certifications/Approvals

- UL Listed.
- cUL Listed.
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

AC Power Control Capabilities

- E-stop & reset push buttons
- Emergency stop controls.
- Pump hook isolation.
- Pump status lights.
- Pump contactors.
- Dispenser contactors.

Dispenser Capabilities

- Low voltage disconnect.
- Low voltage protection.

Enclosure Options

- UL Type 1 indoor.

SPECIFICATIONS

General

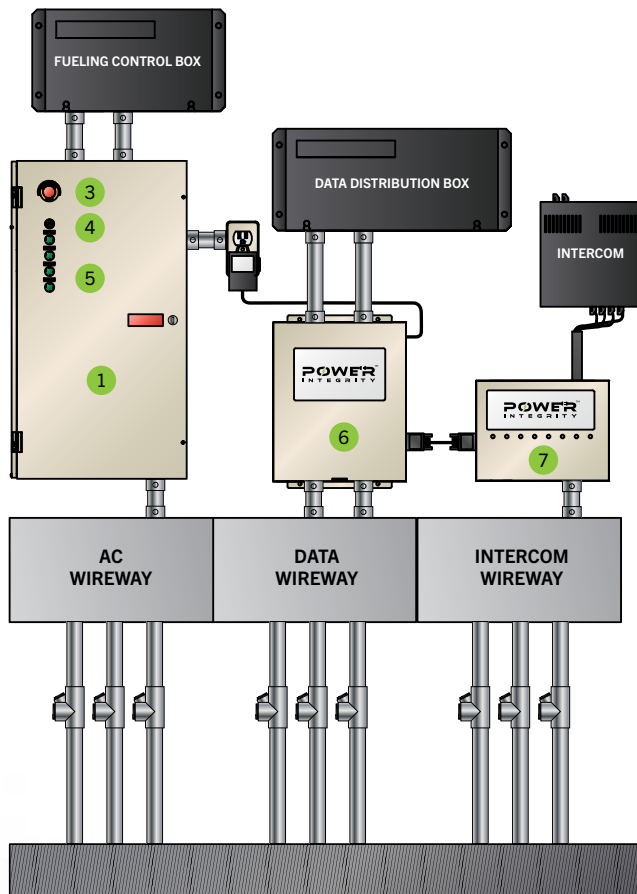
Dispenser Capacity	4, 6, 8, 10, & 12
Submersible Pump Capacity	2 - 6
Dispenser Data Circuits	1 Data Pair, 1 Credit Card Pair
Intercom Circuits	1 Speaker, 1 Call Button per Dispenser (4 Conductors) 2 Speakers, 2 Call Buttons per Dispenser (8 Conductors)
Media Circuits	Ethernet Circuits 2-Wire Circuits

System Components

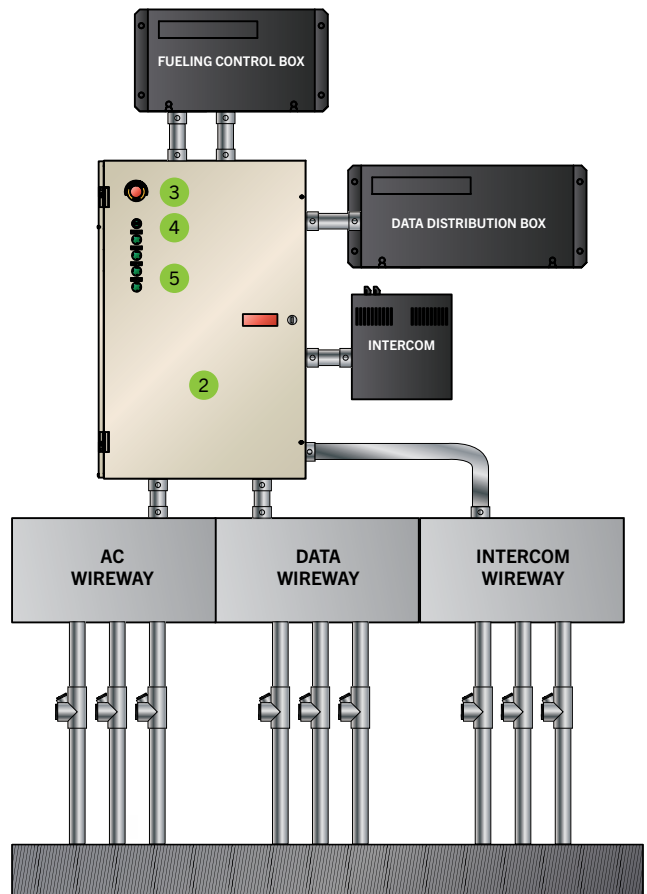
The Petroleum Control Solutions can be installed with or without integrated low voltage circuit disconnects.

- 1 Petroleum Control Solution
- 3 E-Stop Operator
- 5 Pump Run Indicators
- 7 Secondary Disconnect
- 2 Petroleum Control Solution with Low Voltage Disconnects
- 4 Reset Operator
- 6 Primary Disconnect

Petroleum Control Solutions



Petroleum Control Solutions + Low Voltage Disconnects



ORDER INFORMATION

Ordering Guide

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

PCS-XDS YPS-N DGWT CB EQR

PCS = Petroleum Control System

XD = # of Dispensers

- 4 = 4 Dispensers
- 6 = 6 Dispensers
- 8 = 8 Dispensers
- 10 = 10 Dispensers
- 12 = 12 Dispensers

S = Dispenser Disconnect Switch (optional)

YP = # of Pumps

- 2 = 2 Pumps
- 3 = 3 Pumps
- 4 = 4 Pumps
- 5 = 5 Pumps
- 6 = 6 Pumps

S = Pump Disconnect Switch (optional)

N DGWT CB EQR = Low Voltage Circuit Disconnects

N = No Low Voltage Disconnect Options

or

DGWT CB EQR = Low Voltage Disconnect Options

D or **G** or **W** or **E** = Dispenser Data (choose one)

D = Twisted Pair (No data surge protection)

G = Twisted Pair with data surge protection for current loop

W = Twisted Pair with data surge protection for current loop & RS-485

T = Ethernet

C or **B** = Intercom Data (choose one)*

C = 4 conductors per dispenser

B = 8 conductors per dispenser

E or **Q** or **R** = Media/Network Data (choose one)*

E = Ethernet

Q = 4 conductors per dispenser

R = 8 conductors per dispenser

Examples:

PCS-6DS4PGB = Petroleum Control Solution, (6) Dispensers, Dispenser Disconnect Switches, (4) Pumps, with Twisted Pair (with Data Surge Protection for Current Loop) Low Voltage Dispenser Data Disconnects, with (2) Speakers & (2) Call Buttons per Dispenser.

PCS-12D6PTCE = Petroleum Control Solution, (12) Dispensers, (6) Pumps, with Ethernet Low Voltage Dispenser Data Disconnects, with (1) Speaker & (1) Call Button per Dispenser, with Ethernet Media/Network Data circuit.

PCS-6D4PSN = Petroleum Control Solution, (6) Dispensers, (4) Pumps, Pump Disconnect Switches, No Low Voltage Disconnects.

**Dispenser Data Disconnect must be selected for secondary Disconnect Options (e.g. D,G,W, or T)*

CONFIGURED CONTROLS

FLEET PETROLEUM SOLUTIONS

For commercial fleet fueling applications, Fleet Petroleum Solutions provide card reader terminals, AC power controls, electrical distribution, emergency stop and maintenance disconnects, pump controls, low voltage circuit disconnects, and surge suppression in one cost-effective, space-saving, and time-saving solution.



HIGHLIGHTS

- Provide Card Reader / EPT / FMU Terminals required for typical commercial fleet fueling applications.
- Provides AC power controls required for a typical retail petroleum application.
- Includes emergency stop and service disconnects for dispenser low voltage wiring.
- Optional low voltage circuit disconnects.
- Optional series connected surge suppression for protection of sensitive electronic circuits
- Individual pump and dispenser contactors allow connection of remote control or monitoring system.
- Pump handle isolation using solid state technology with error detection.
- Lock-offs on dispenser, pump, and card reader circuits to properly and safely isolate a single device for servicing.
- Provides isolated ground terminations for proper network communications.
- Marked terminals for easy connection of dispensers, pumps, card readers, fuel management systems and tank monitors.
- Door-in-door enclosure to help protect against arc flash.
- Factory assembled and pre-wired, eliminating mounting and wiring of separate components in the field.

SPECIFICATIONS

Certifications/Approvals

- UL Listed.
- cUL Listed.
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

AC Power Distribution Capabilities

- Electrical distribution fuel panel.
- Electrical distribution lighting panel.

AC Power Control Capabilities

- E-stop & reset push buttons
- Emergency stop controls.
- Pump hook isolation.
- Pump status lights.
- Pump contactors.
- Dispenser contactors.
- AC surge suppression.
- Lighting controls.
- Card reader / EPT / FMU terminals

Dispenser Capabilities

- Low voltage disconnect.
- Low voltage protection.

Enclosure Options

- UL Type 1 indoor.
- UL Type 3R outdoor.

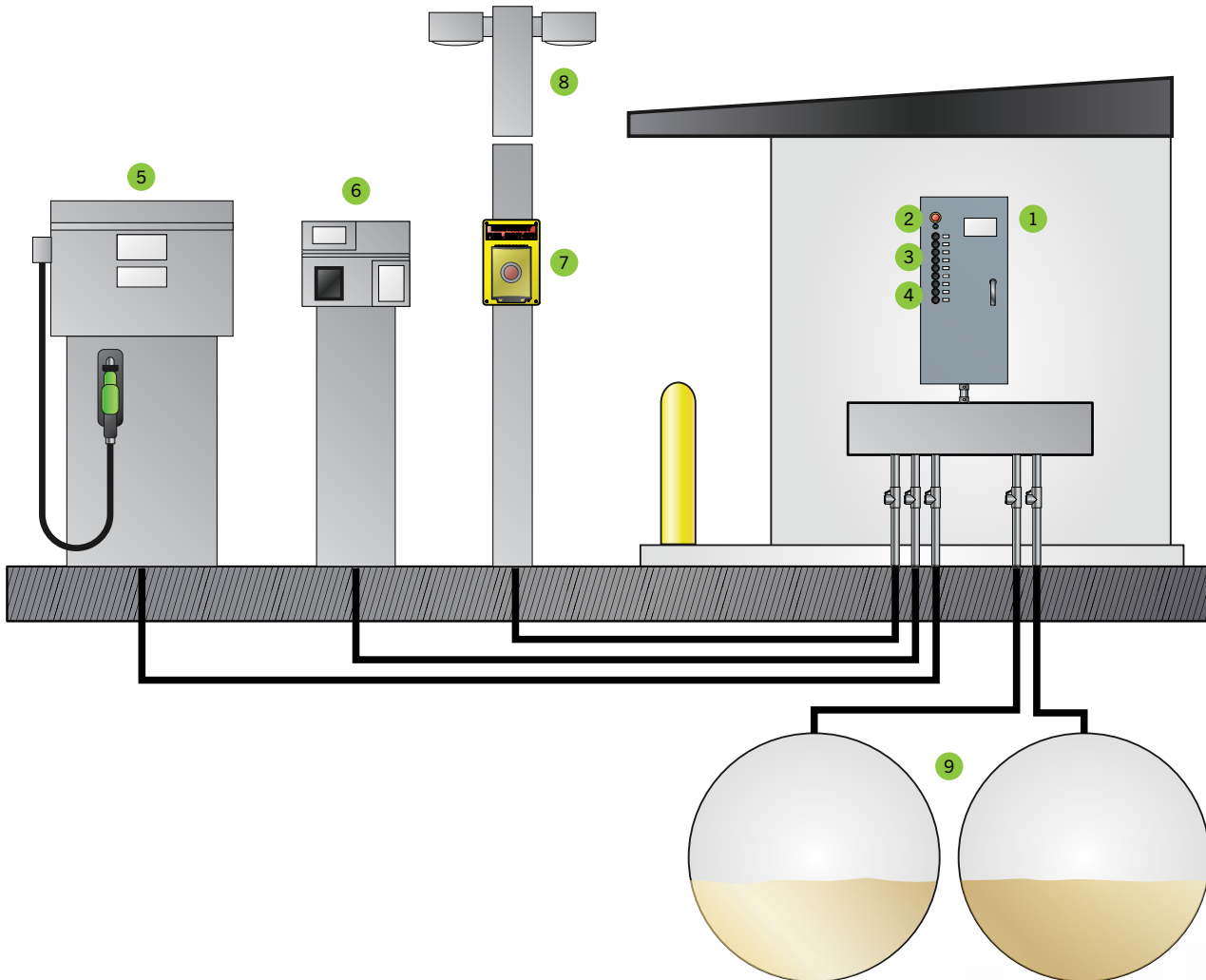
SPECIFICATIONS

General

Dispenser Capacity	1 - 4
Submersible Pump Capacity	1 - 4
Card Reader / EPT / FMU Terminal Capacity	1 to 4
Low Voltage Conductors Per Dispenser	4 or 8
Main Connections	120/240 VAC, 1 Phase, 3 Wire 208Y/120 VAC, 3 Phase, 4 Wire

System Components

- 1 Fleet Petroleum Solution
- 2 E-Stop & Reset Operator
- 3 Disconnect Lockout Switches
- 4 Light Switches
- 5 Dispenser
- 6 Card Reader
- 7 E-Stop
- 8 Lighting
- 9 Fuel Pumps



INTEGRATED ELECTRICAL CONTROLS

CONFIGURED CONTROLS

CONFIGURED PANEL SOLUTIONS

For retail fueling and convenience store applications, Configured Panel Solutions provide a complete petroleum control and power distribution solution for an entire location.



HIGHLIGHTS

- Configured to a specific site application.
- Replaces Fuel Panel, In-Line E-Stop Contactor, Isolation Boxes, and Pump Control Boxes, plus all associated conduit, wire, fittings and on-site labor.
- A single panel to replace the Fuel Panel and the Emergency Stop Contactor feeding the Fuel Panel.
- Provides AC power controls required for a typical retail petroleum application.
- Includes emergency stop and service disconnects for dispenser low voltage wiring.
- Optional low voltage circuit disconnects.
- Optional series connected surge suppression for protection of sensitive electronic circuits.
- Individual pump and dispenser contactors allow connection of remote control or monitoring system.
- Pump handle isolation using solid state technology.
- Lock-offs on dispenser, pump, and card reader circuits to properly and safely isolate a single device for servicing.
- Provides isolated ground terminations for proper network communications.
- Marked terminals for easy connection of dispensers, pumps, card readers, fuel management systems and tank monitors.
- Door-in-door enclosure to help protect against arc flash.
- Factory assembled and pre-wired, eliminating mounting and wiring of separate components in the field.

AC Power Distribution Capabilities

- Electrical distribution fuel panel.
- Electrical distribution lighting panel.

AC Power Controls Capabilities

- E-stop & reset push buttons
- Emergency stop controls.
- Pump hook isolation.
- Pump status lights.
- Pump contactors.
- Dispenser contactors.
- AC surge suppression.
- Lighting controls.
- Third party control devices.

Dispenser Capabilities

- Low voltage disconnect.
- Low voltage protection.

Enclosure Options

- UL Type 1 indoor.
- UL Type 3R outdoor.

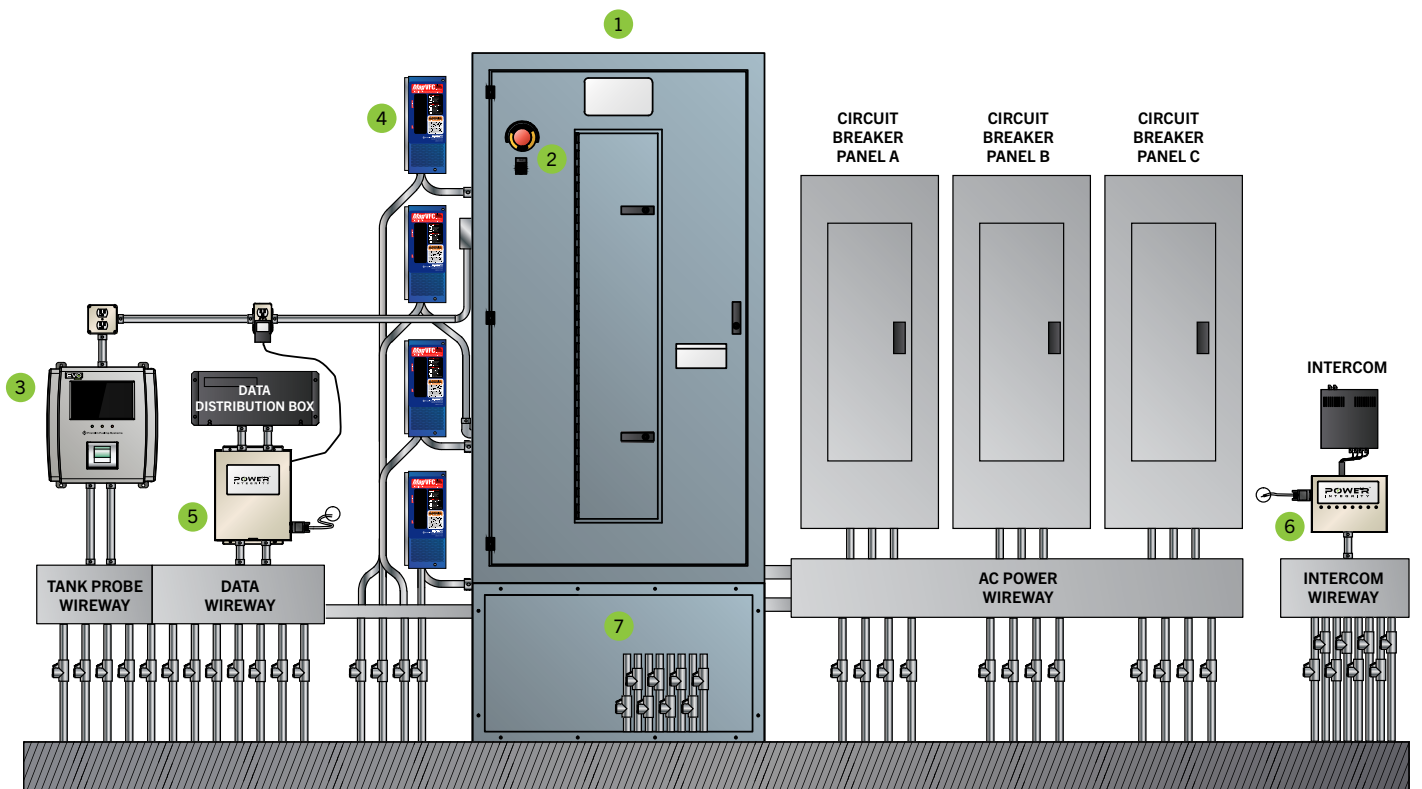
SPECIFICATIONS

Certifications/Approvals

- UL Listed.
- cUL Listed.
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

System Components

- 1 Configured Panel Solution
- 2 E-Stop & Reset Operator
- 3 Automatic Tank Gauge
- 4 Submersible Pump Controller
- 5 Primary Disconnect
- 6 Secondary Disconnect
- 7 Open-Bottom Conduit Pedestal (Optional)



INTEGRATED ELECTRICAL CONTROLS

CONFIGURED CONTROLS

POWER DISTRIBUTION SOLUTIONS

For retail fueling and c-store applications, Power Distribution Solutions provide a complete petroleum control, power distribution, and backup power / generator transfer switching solution for an entire location.

HIGHLIGHTS

- Configured to a specific site application.
- Integrated electrical distribution store branch panel and main service entrance panel.
- Integrated uninterruptible power supply, security, and communications equipment.
- Automatic or manual generator transfer switching.
- Replaces Fuel Panel, In-Line E-Stop Contactor, Isolation Boxes, and Pump Control Boxes, plus all associated conduit, wire, fittings and on-site labor.
- A single panel to replace the Fuel Panel and the Emergency Stop Contactor feeding the Fuel Panel.
- Provides AC power controls required for a typical retail petroleum application.
- Includes emergency stop and service disconnects for dispenser low voltage wiring.
- Optional low voltage circuit disconnects.
- Optional series connected surge suppression for protection of sensitive electronic circuits
- Individual pump and dispenser contactors allow connection of remote control or monitoring system.
- Pump handle isolation using solid state technology.
- Lock-offs on dispenser, pump, and card reader circuits to properly and safely isolate a single device for servicing.
- Provides isolated ground terminations for proper network communications.
- Marked terminals for easy connection of dispensers, pumps, card readers, fuel management systems and tank monitors.
- Door-in-door enclosure to help protect against arc flash.
- Factory assembled and pre-wired, eliminating mounting and wiring of separate components in the field.



AC Power Distribution Capabilities

- Electrical distribution fuel panel.
- Electrical distribution lighting panel.
- Electrical distribution store branch panel.
- Electrical main service entrance panel.

AC Power Controls Capabilities

- E-stop & reset push buttons
- Emergency stop controls.
- Pump hook isolation.
- Pump status lights.
- Pump contactors.
- Dispenser contactors.
- AC surge suppression.
- Lighting controls.
- Third party control devices.
- Backup power / generator transfer switching.

Dispenser Capabilities

- Low voltage disconnect.
- Low voltage protection.

Enclosure Options

- UL Type 1 indoor.
- UL Type 3R outdoor.

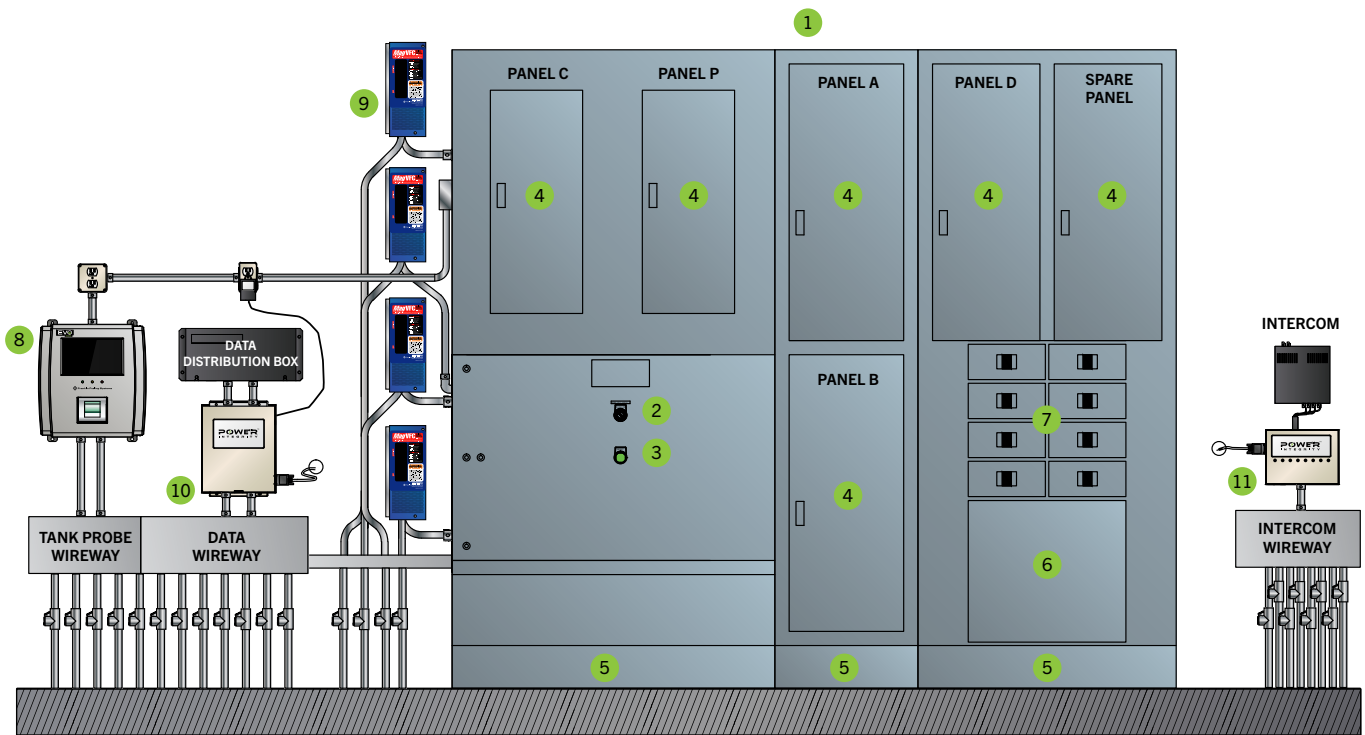
SPECIFICATIONS

Certifications/Approvals

- UL 891 switchboard.
- UL 508A industrial control panel.
- UL 1449 second edition surge suppression.
- cUL listed.
- For compliance with NEC® 514.11 and NFPA® 30A Section 6.7 requirements for Emergency Disconnects at Motor Fuel Dispensing Facilities (controlled by E-Stop system).
- For compliance with NEC® 514.13 requirements for Maintenance Disconnects at Motor Fuel Dispensing Facilities (switches to disconnect individual dispenser circuits for servicing).

System Components

- | | | |
|-----------------------------------|-------------------------|-------------------------------|
| 1 Power Distribution Solution | 5 Conduit Area | 9 Submersible Pump Controller |
| 2 Light Control (Manual/Off/Auto) | 6 Main Power | 10 Primary Disconnect |
| 3 E-Stop & Reset Operator | 7 Electrical Disconnect | 11 Secondary Disconnect |
| 4 Circuit Breaker Panel | 8 Automatic Tank Gauge | |



INTEGRATED ELECTRICAL CONTROLS

ORDER INFORMATION

Power Distribution Solutions are configured for specific applications. Contact your Franklin Fueling Systems Sales Manager to review your requirements and create your solution.

VAPOR SUPPRESSION SYSTEM

- 1 TankSafe™ Delivery Unit
- 2 TankSafe™ Vapor Suppressant Solution





NANO VAPOR™



SAFE SUPPRESSANT

The TankSafe™ suppressant is non-toxic, non-reactive, and safe to store. The delivery unit is portable, compact, and operates using compressed air with no electrical or moving parts.



FAST ACTING

The NanoVapor™ Vapor Suppression System dramatically reduces the time needed to degas a tank – as fast as 45 minutes for a 20,000 liter tank to less than 10% LEL. A single application can be used for cold work lasting one day.



NO WASTE

TankSafe™ is derived from renewable materials, and is readily biodegradable. It leaves no residue or waste product behind, eliminating the costly cleanup and disposal of hazardous materials.

VAPOR SUPPRESSION SYSTEM

The NanoVapor™ Vapor Suppression System rapidly suppresses harmful and potentially explosive storage tank Volatile Organic Compounds (VOCs), leaving breathable air for safe tank cleaning, inspection, maintenance, or removal. The NanoVapor™ system improves air quality so service personnel can work in a non-explosion, non-toxic environment.



HIGHLIGHTS

- TankSafe™, when activated with the TankSafe™ Delivery Unit, reduces the amount of time spent reaching a safe Lower Explosive Limit (LEL), increases the amount of time that VOCs stay suppressed, and produces no hazardous by-products.
- Safely perform facility upgrades, piping repairs, gasket replacement, and other hot/cold work that otherwise could ignite the highly flammable fuel vapors.
- Faster than conventional air purging, nitrogen gas tank inerting, or water-filling.
- Available in 5 liter containers (1-1½ liters to degass an average size 38,000 gallon tank when the tank is properly prepared)
- Patented process stops organic evaporation through complex molecular action that rapidly reduces vapor concentrations to safe levels.
- Proprietary TankSafe™ solution forms a molecular barrier suppressing further fuel vapors during the work process and for extended periods of time depending on tank preparation and TankSafe™ application rates.
- Leaves very little detectable residue.
- Water-soluble, fuel-soluble, and does not affect fuel quality.

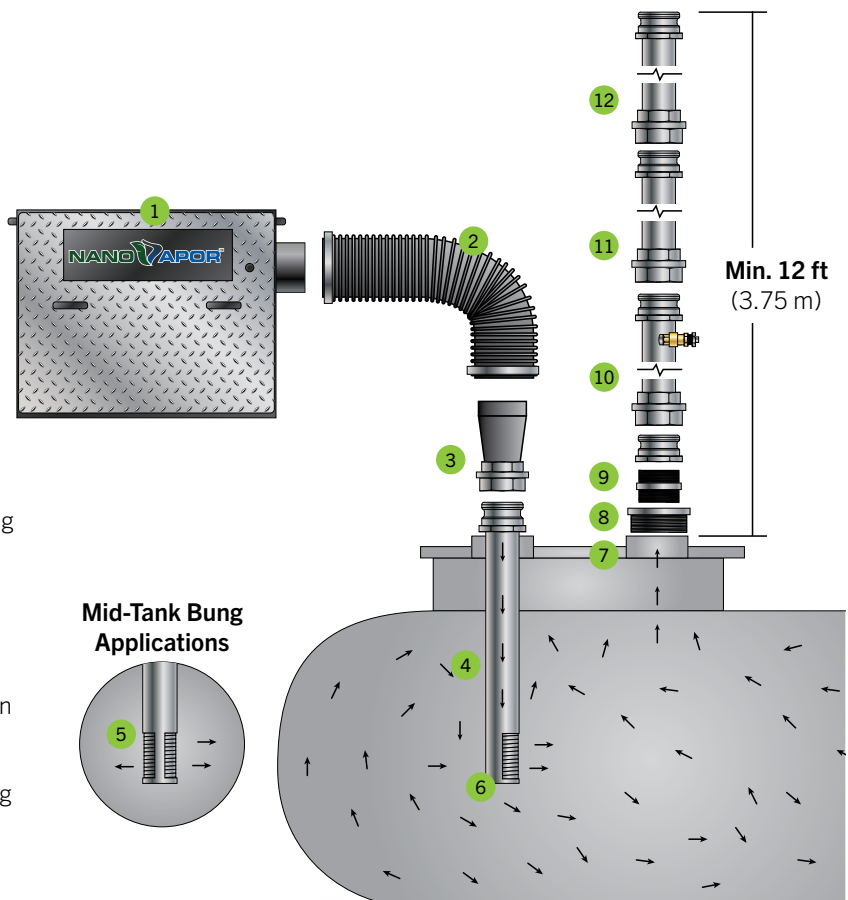
SPECIFICATIONS

NanoVapor™ System Components

- 1 TankSafe™ Delivery Unit
- 2 Flexible ducting
- 3 Camlock Adapter
- 4 Drop tube, single outlet (end-tank bung)
- 5 Drop tube, double outlet (mid-tank bung)
- 6 Diffuser
- 7 Female tank adapter
- 8 Male cam lock adapter
- 9 Cam lock adapter
- 10 Vent section with sample boss, 6.5 ft (2 m) long
- 11 Vent section, middle, 3ft (1 m) long
- 12 Vent section, top, 6.5 ft (2 m) long

How It Works

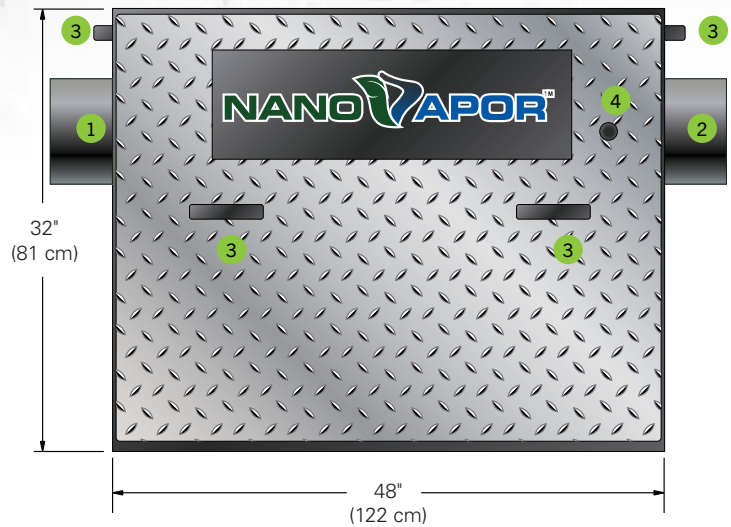
The non-toxic TankSafe™ vapor suppressant solution is activated within the TankSafe™ delivery unit powered by compressed air. TankSafe™ forms an effective VOC barrier at a molecular level, stopping further VOC formation and allowing maintenance personnel to avoid asphyxiation and explosion hazards inside tank and containment spaces.



SPECIFICATIONS CONTINUED

TankSafe™ Delivery Unit Components

- 1 Outlet
- 2 Inlet
- 3 Lifting handles
- 4 View port
- 5 TankSafe™ product connection
- 6 TankSafe™ pick up tube
- 7 Compressed air connections
- 8 Air filters
- 9 Air valves
- 10 Nozzle
- 11 Earthing wire

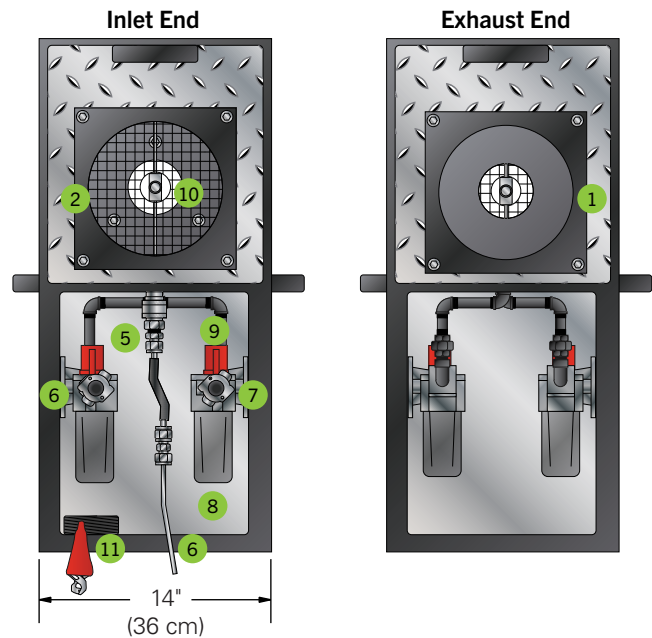


TankSafe™ Vapor Suppressant

- Aqueous surfactant solution
- Non-reactive
- Non-toxic
- Biodegradable
- Typically <0.5 ppm in a 13,200 gallon (50,000 liter) tank

TankSafe™ Delivery Unit

- 100 lbs (45 kg)
- 14" x 32" x 48" (36 cm x 81 cm x 122 cm)
- Compressed air driven by twin-tool compressor
- Max pressure 150 PSI
- ATEX Zone 2, CE marked



ORDERING INFORMATION

TankSafe™ Vapor Suppressant



Model	Description
NV-TS-5	TankSafe™ Vapor Suppressant, 1.3 gallon (5 liter) container

TankSafe™ Delivery Unit



Model	Description
NV-ST-1000	TankSafe™ Delivery Unit

Vent Sections

Vent sections attach to the top of the tank outlet connection. The vent section with an integrate sample boss includes a valve and reducer to allow safe sampling of the exhaust air for Lower Explosive Limit measurement.



Model	Description
NV-001	Vent section, top, 6.5 ft (2 m) long
NV-001a	Vent section, middle, 3 ft (1 m) long
NV-002	Vent section with sample boss, (1) 6.5 ft (2 m) long, includes ½" (13 mm) valve and spigot for a gas meter hose

½" (13 mm) valve and spigot for a gas meter hose



Drop Tubes

Drop tubes include a male camlock fitting to allow the inlet adapter to be connected to it. The single outlet is designed for tanks where the tank top is at one end. The double outlet is designed for tanks where the tank top is in the middle.



Model	Description
NV-003	4" (102 mm) drop tube, single outlet, 5 ft (1.5 m) long
NV-004	4" (102 mm) drop tube, double outlet, 5 ft (1.5 m) long
NV-005	3" (76 mm) drop tube, single outlet, 5 ft (1.5 m) long
NV-006	3" (76 mm) drop tube, double outlet, 5 ft (1.5 m) long
NV-007	2" (51 mm) drop tube, single outlet, 5 ft (1.5 m) long

Camlock Adapter

The camlock adapter is used to connect the 8" (200 mm) diameter flexible ducting to the drop tube inlet or offset fill.



Model	Description
NV-008	4" (102 mm) female camlock adapter, 8" (198 mm)

ORDERING INFORMATION

Camlock & Tank Adapters



Model	Description
NV-009	4" (102 mm) BSSP male x 3" (76 mm) BSSP male tank adapter



Model	Description
NV-009a	3" (76 mm) male x 3" (76 mm) male BSSP tank adapter



Model	Description
NV-009b	4" (102 mm) male cam lock x 4" (102 mm) BSSP female thread tank adapter
NV-009c	Aluminum 4" (102 mm) male cam lock x 4" (102 mm) female NPT
NV-009d	Aluminum 4" (102 mm) male cam lock x 4" (102 mm) male NPT

Flexible Ducting

Both 10 ft (3 m) and 20 ft (6 m) ducting are ATEX compliant. The 10 ft (3 m) duct connects the TankSafe™ Delivery Unit to the plain adapter for the inlet connection. The 20 ft (6 m) duct connects to the suction side and can be inserted into the chamber or tank to remove VOC or to vent the tank.



Model	Description
NV-010	8" (200 mm) x 10 ft (3 m) flexible ducting
NV-010a	Spiral hose bridging clamp, 2 pack
NV-011	8" (200 mm) x 20 ft (6 m) flexible ducting
NV-011a	Spiral hose bridging clamp, 1 pack

Air Line Whip Checks

Two whip checks are needed for the TankSafe™ Delivery Unit end of the air hose and two whip checks are needed for the compressor end of the air hoses.



Model	Description
NV-012	Air line whip checks, 4 pack

Mini Rocket

Mini rocket acts as a vapor collection vessel to link various small outlets on either the tank top or the pump line, vapor recovery line, or offset fill outlets.



Model	Description
NV-013	Mini Rocket, 8" (200 mm) outlet with four inlets that are 2" (50 mm) each

Anti-Static Lay Flat Duct

The 6" (152 mm wide) anti-static flat duct is used to connect various small outlets on the pump line, vapor recovery line, or offset fill outlets that connect to the Mini Rocket inlet. The 8¼" (210 mm) anti-static flat is used on the Mini Rocket outlet and allows venting to the atmosphere.



Model	Description
NV-014	8¼" (210 mm) anti-static lay flat duct x 164 ft (50 m) roll (black)
NV-015	6" (152 mm) anti-static lay flat duct x 256 ft (75 m) roll (pink)
NV-016	Large Rocket for vapor collection

Drop Tube Diffusers

Drop Tube Diffusers are used inside the drop tube to produce laminar flow for sludge or excess fuel in the bottom of the tank.



Model	Description
NV-017	Drop tube diffuser, 4" (102 mm) insert
NV-018	Drop tube diffuser, 3" (76 mm) insert
NV-019	Drop tube diffuser, 2" (51 mm) insert

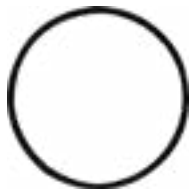
Air Filters & Spare Parts



Model	Description
NV-020	Air filter spares pack, includes (2) air filter bowls, (4) O-rings, (6) filters, (4) compressor hose rubber seals.



Model	Description
NV-020a	Air filter bowl



Model	Description
NV-020b	Filter bowl O-ring



Model	Description
NV-020c	Air filters, 2 pack



Model	Description
NV-020d	Compressor hose rubber seals, 4 pack

Fuel & Sludge Removal Pipe



Model	Description
NV-022	706 ft ³ (20 m ³) tank fuel and sludge removal pipe, includes (6) pipes and (5) swivels
NV-022a	1059 ft ³ (30 m ³) tank fuel and sludge removal pipe, includes (7) pipes and (6) swivels
NV-022b	1413 ft ³ (40 m ³) tank fuel and sludge removal pipe, includes (8) pipes and (7) swivels
NV-022c	1766 ft ³ (50 m ³) tank fuel and sludge removal pipe, includes (9) pipes and (8) swivels
NV-022d	2119 ft ³ (60 m ³) tank fuel and sludge removal pipe, includes (10) pipes and (9) swivels

Note: The 1" (25.4 mm) diameter aluminum pipe includes a 1" (25.4 mm) BSPP male thread on one end and a 1" (25.4 mm) BSPP female thread with sealing O-ring on the other end. The aluminum swivels are used to connect the pipes and allow articulation into the tank.

NANOVAPOR™ QUICK START GUIDE

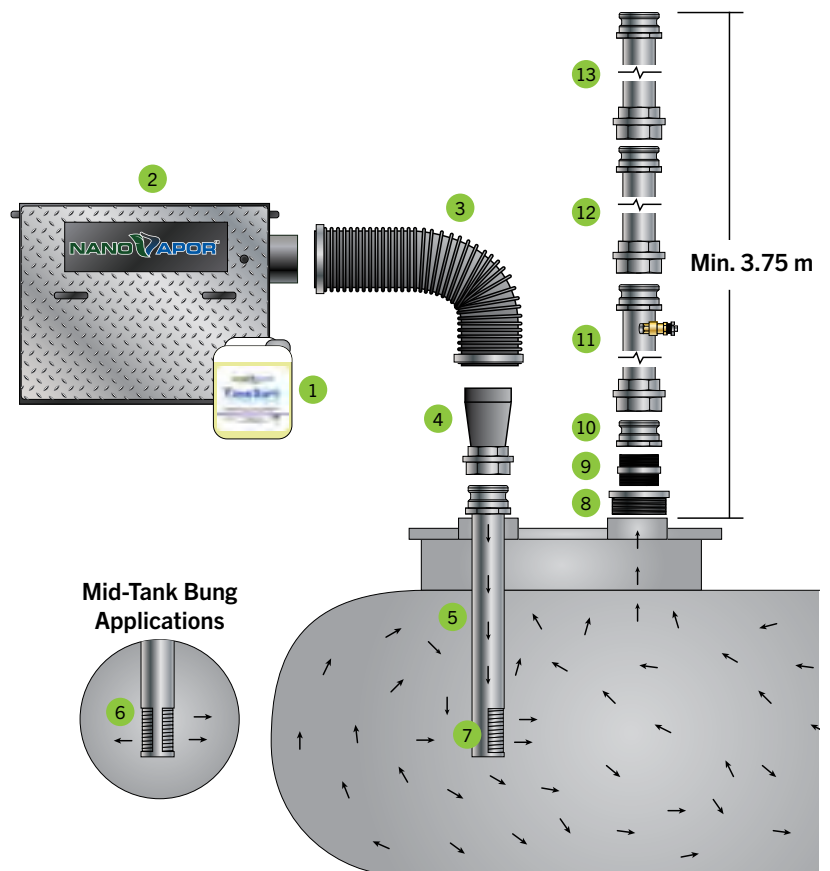
Get started with the NanoVapor™ Vapor Suppression System. Below is a bill of materials with all of the equipment needed to degass most common storage tanks.

ORDERING INFORMATION

NanoVapor™ System Quick Start Kit

Order one of each of the following to handle most typical tank degassing applications.

Item	Model	Description
1	NV-TS-5	TankSafe™ Vapor Suppressant, 5 liter container (1-1½ liters to degass an average size 18,000 gallon tank when the tank is properly prepared)
2	NV-ST-1000	TankSafe™ Delivery Unit
3	NV-010	200 mm x 3 m flexible ducting
4	NV-008	4" female camlock adapter, 198 mm
5	NV-003	4" drop tube, single outlet, 1.5 m long
6	NV-004	4" drop tube, double outlet, 1.5 m long
7	NV-017	Drop tube diffuser, 4" insert
8	NV-009	4" BSPP male x 3" BSPP female tank adapter
9	NV-009a	3" male x 3" male BSPP tank adapter
	NV-009d	Aluminum 4" male cam lock x 4" male NPT
10	NV-009b	4" male camlock x 4" BSPP female thread tank adapter
	NV-009c	Aluminum 4" male cam lock x 4" female NPT
11	NV-002	Vent section with sample boss, (1) 2 m long, includes ½" valve and spigot for a gas meter hose
12	NV-001a	Vent section, middle, 1 m long
13	NV-001	Vent section, top, 1 m long



HOW IT WORKS

TankSafe™ Vapor Suppressant, when activated with the TankSafe™ Delivery Unit, reduces the amount of time spent reaching a safe Lower Explosive Limit (LEL), increases the amount of time that VOCs stay suppressed, and produces no hazardous by-products.

1. Air Compressor

A portable jobsite twin-tool air compressor is used to generate the air that safely powers the system.

2. Delivery Unit

The non-toxic TankSafe™ Vapor Suppressant Solution is activated within the TankSafe™ Delivery Unit.

3. Molecular Barrier

TankSafe™ forms an effective VOC barrier at a molecular level, stopping VOC formation and lowering the LEL to safe levels.

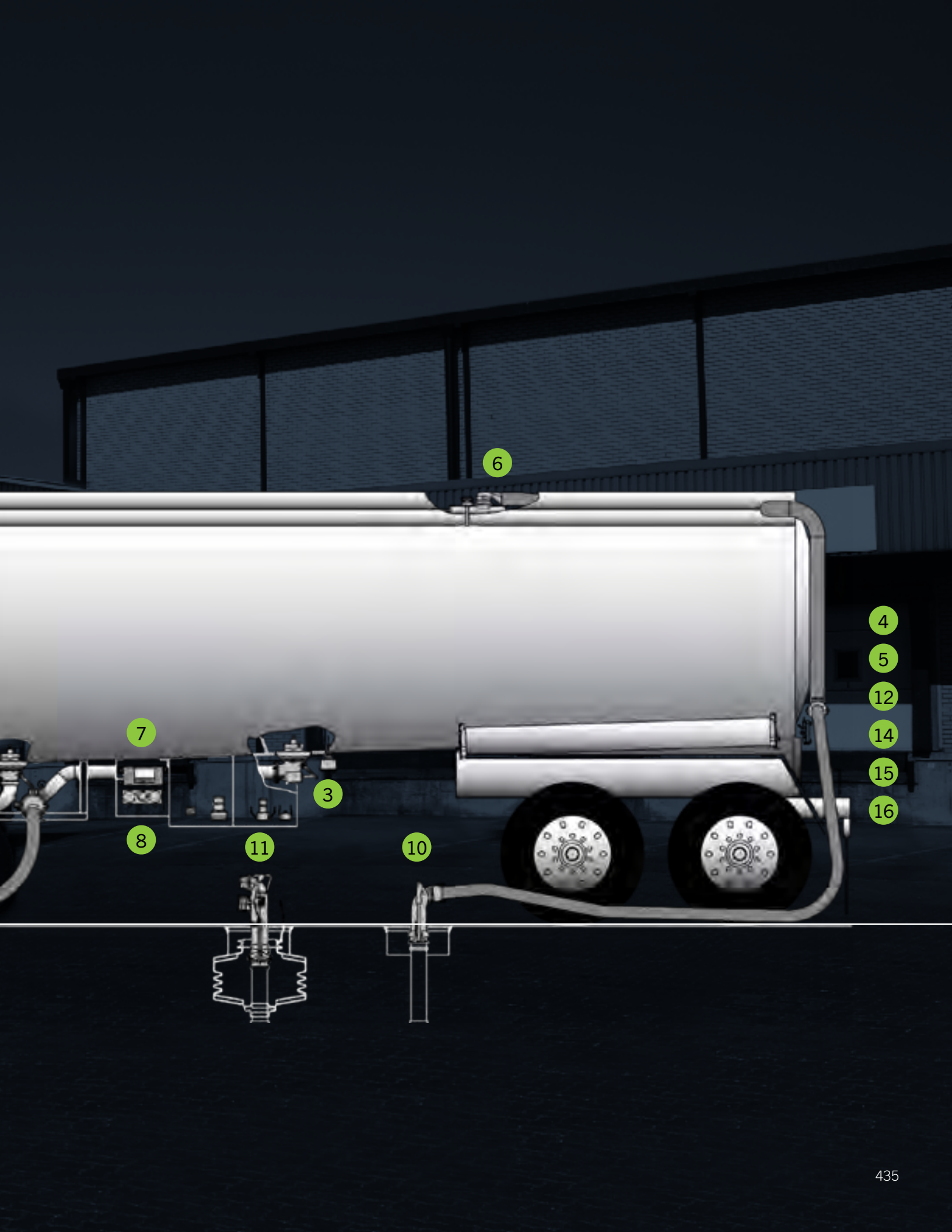
4. Vent Stack

Harmful VOCs are safely vented out of the 12' vent stack, so work can be safely performed.

TRANSPORT SYSTEM SOLUTION

- 1 API Adapters
- 2 Gravity Drop Adapters
- 3 Emergency Valves
- 4 Vapor Recovery Adapters
- 5 Vapor Check Valves
- 6 Air-Operated Sequential Vapor Valves
- 7 Two-Wire Controller
- 8 Optic Socket
- 9 Product Drop Elbow
- 10 Dual Point Vapor Recovery Elbow
- 11 Coaxial Delivery Elbow
- 12 Three-Way Air Interlock Valve
- 13 API Adapter Dust Cap
- 14 Vapor Cap
- 15 Vapor Return Hose Coupler
- 16 Hose Tube Door





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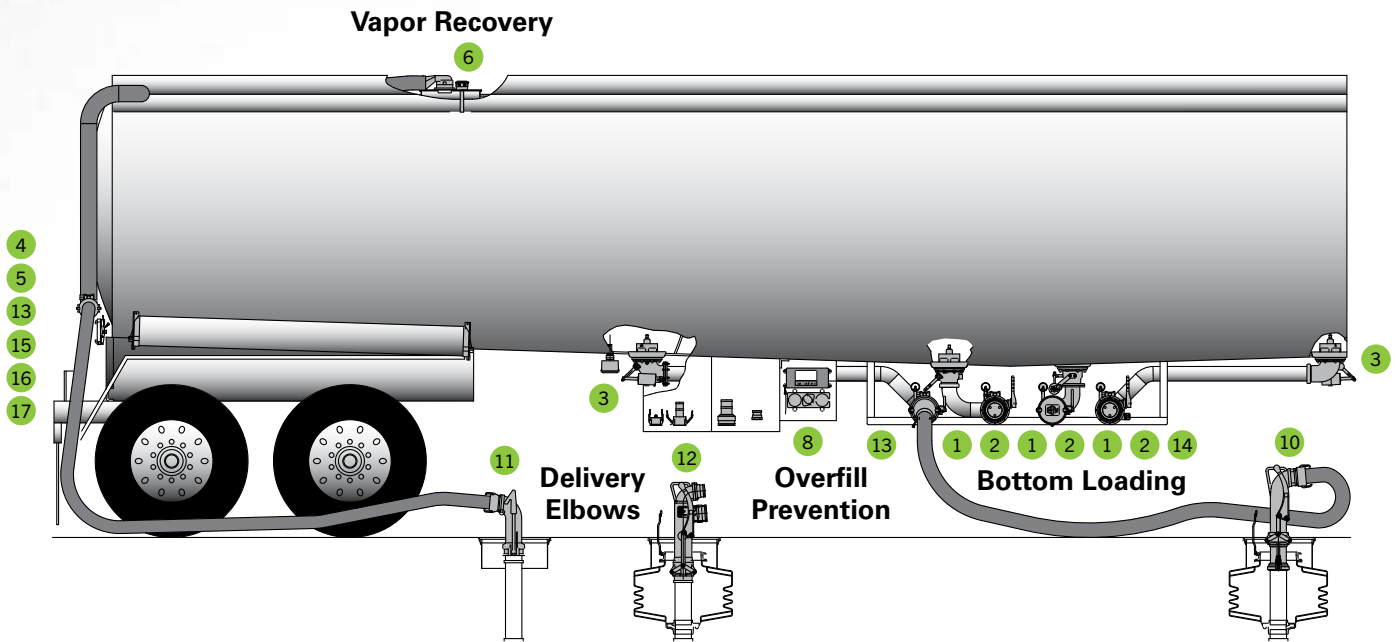
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FUEL AND VAPOR TRANSFER SOLUTIONS



Bottom Loading

Item	Model	Description
1	88050002	API adapter, short stroke three position, no sight glass
	88050004	API adapter, short stroke three position, 3" bubbled sight glass
	88050005	API adapter, short stroke three position, 3" bubbled sight glass, no handle
	88050007	API adapter, short stroke three position, no sight glass, removable handle
2	88033001	Female gravity drop adapter
	88041101	Male gravity drop adapter
3	88043001	Mechanically-operated 90 degree emergency valve (Victaulic™)
	88043201	Air assisted 90 degree emergency valve (Victaulic™)

Vapor Recovery

Item	Model	Description
4	30130001	3" N.P.S.M. vapor recovery adapter with poppet
	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

Item	Model	Description
8	90822101	Optic socket

Product Drop Elbows

Item	Model	Description
10	88049302	Product drop elbow with cam and groove adapter and sight glass
	88045501	Product drop elbow with sight glass
11	88046501	Dual point vapor recovery elbow
12	88049001	Coaxial delivery elbow

Accessories

Item	Model	Description
13	88015001	Three-way air interlock valve
	88015002	Three-way air interlock valve with roller top
	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

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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.



HIGHLIGHTS

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.

SPECIFICATIONS

LONG LIFE

- Front API head may be rotated up to seven times to maximize the life of the adapter.
- Enhanced 3½" sight glass provides greater impact strength and is compatible with biofuels including E85 and Biodiesel.

SAFETY

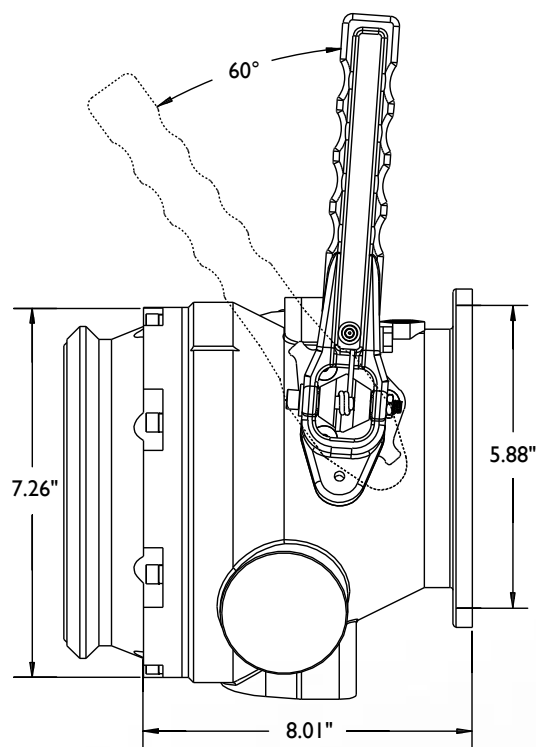
- Free-floating poppet is opened by pressure from the terminal adapter probe to minimize spills during loading.

SPEED OF DELIVERY

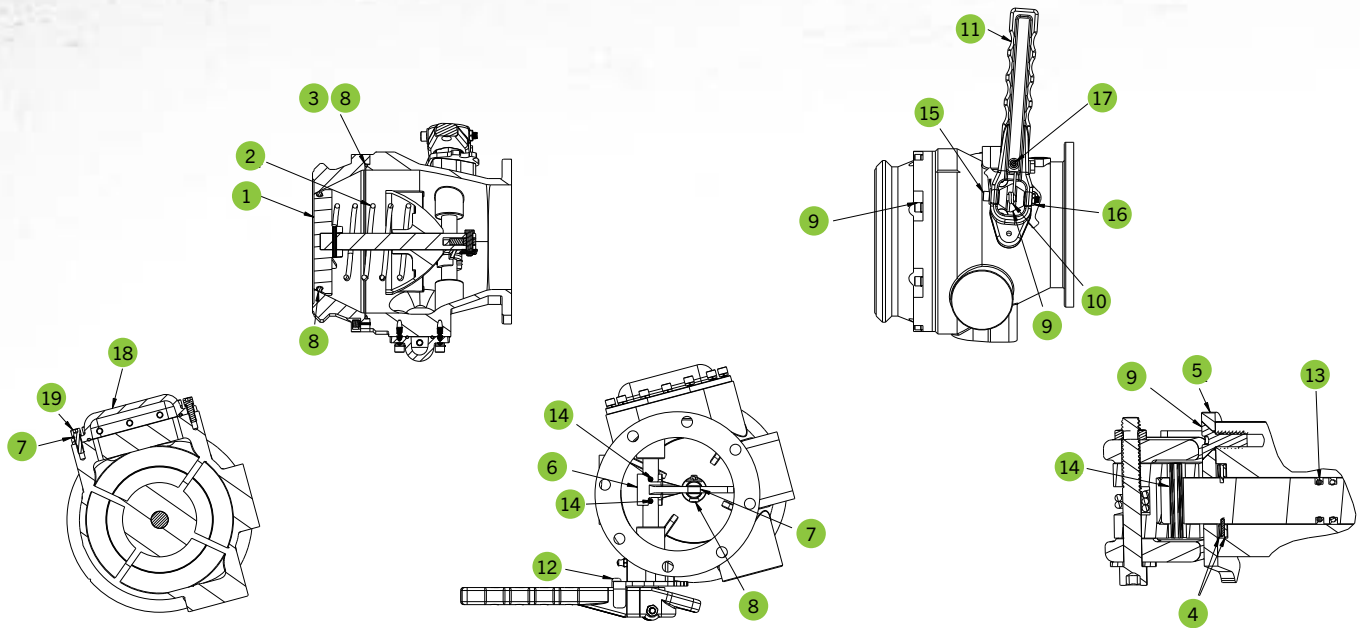
- The cam design utilized to retract the adapter poppet minimizes product flow restriction during off-loading and loading.

ORDERING INFORMATION

Model	Description
88050002	Short stroke, three position, no sight glass
88050004	Short stroke, three position, 3½" 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



Item	Model	Description	880-500 Model
1	88050901	Poppet head	-02, -04, -07
2	88012701	Spring, poppet	-02, -04, -07
3	1103938	O-ring	-02, -04, -07
4	88019101	Washer, flat, 5/8" ID	-02, -04, -07
5	88050601	Latch dual	-02, -04, -07
6	88021501	Cam, loading arm	-02, -04, -07
7	88019001	Roller, cam	-02, -04, -07
8	88018901	Pin, roller cam	-02, -04, -07
9	88019801	Hex, permanent handle	-02, -04
10	88010201	Spring, handle	-02, -04
11	88050501	Handle, dual latching	-02, -04
	88050503	Handle, dual latching (Canada)	-07
12	88019201	Pin, latch	-02, -04, -07
13	1103912	O-ring, cross shaft	-02, -04, -07
14	1108604	Pin, 3/16", spiral	-02, -04, -07
15	1117016	Cap screw, socket head 1/4-20 x 2"	-02, -04
16	1104105	Locknut, 1/4-20	-02, -04
17	1103010	Cap screw, socket head, 10-24 x 5/8"	-02, -04, -07
18	88051201	Sight glass, 3 1/2" bubble	-04
19	1117017	Cap screw, socket head, 1/4-20 x 3/4"	-04
--	1103937	O-ring, sight glass, 3.5" bubble	-04
--	88050101AN	Replacement anodized adapter face	-02, -04, -05, -07

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.



HIGHLIGHTS

- Compatible with any new or existing FE PETRO® 4" 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™ 600/6000 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 LL3 Probe monitors separator operation and provides a notification to empty the vessel via the ATG.

SPECIFICATIONS

Model Unit	88040301	88020601
Description	Dust Cap	Gasket
Inches	4	4
Millimeters	101.6	101.6
Pounds	3.06	--
Kilograms	1.39	--

ORDERING INFORMATION

Model	Description
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.



HIGHLIGHTS

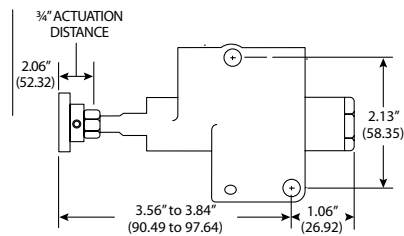
- Heat-treated, anodized aluminum construction
- 1/4" NPT connection ports
- Field serviceable
- Adjustable stem button

Model Unit	88015001	88015002	88015003
Width (Inches/Millimeters)	3"/76.2 mm	3"/76.2mm	3"/76.2mm
Length (Inches/Millimeters)	4.25"/ 107.96mm	4.25"/ 107.96 mm	4.25"/ 107.95 mm
Pounds	0.69	0.69	0.69
Kilograms	0.31	0.31	0.31

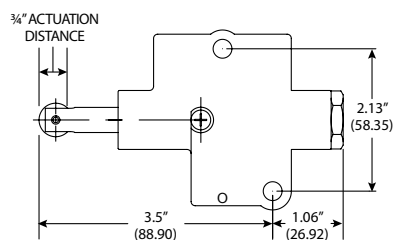
SPECIFICATIONS



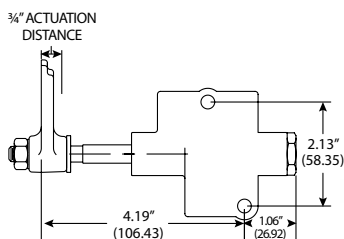
88015001



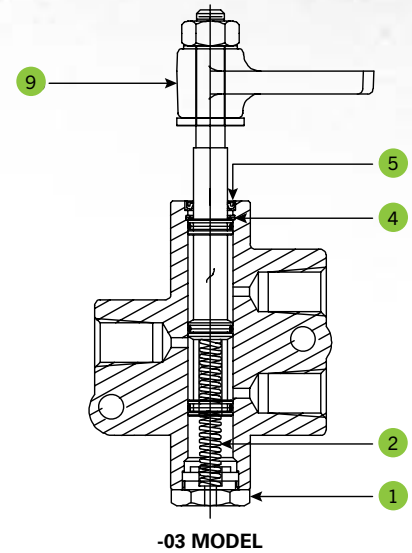
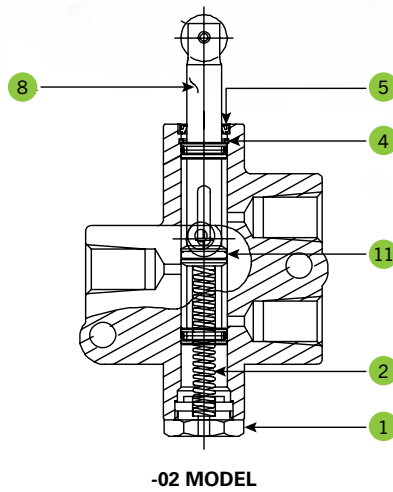
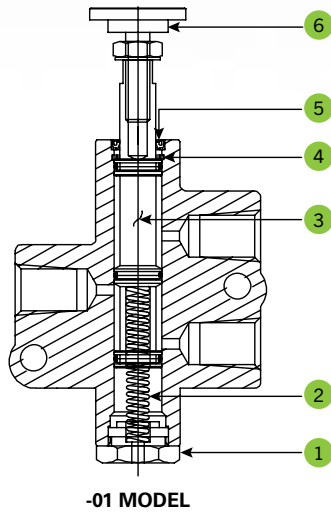
88015002



88015003



SPECIFICATIONS CONTINUED



Item	Model	Description	Qty. Req.		
			-01	-02	-03
1	88014501	Plug - nut	1	1	1
2	88014801	Spring	1	1	1
3	88017101	Spool and O-ring assembly	1	0	1
4	1109004	Retaining ring	1	1	1
5	88014201	Dust Seal	1	1	1
6	88014401	Screw adjuster 1.0"	1	0	0
7 <i>(not shown)</i>	1106307	Screw ¼-20 × 1¾" Hex head	2	2	2
8	88017102	Spool and O-ring assembly, roller tip	0	1	0
9	88112001	Actuator - offset	0	0	1
<i>Not shown</i>	90012	88015001 Service kit*	1	0	0
<i>Not shown</i>	90055	88015002 Service kit**	0	1	0
<i>Not shown</i>	90056	88015003 Service kit***	0	0	1

*Note: Service Kit includes: (1) #2, (1) #3, (1) #4, (1) #5, (1) #6

**Note: Service Kit includes: (1) #2, (1) #4, (1) #5, (1) #8

***Note: Service Kit includes: (1) #2, (1) #4, (1) #5, (1) #9

ORDERING INFORMATION

Model	Description
88011301	Screw adjuster assembly 1½" button
88015001	Three-way air interlock valve
88015002	Three-way air interlock valve, roller tip
88015003	Three-way air interlock valve, offset actuator

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.



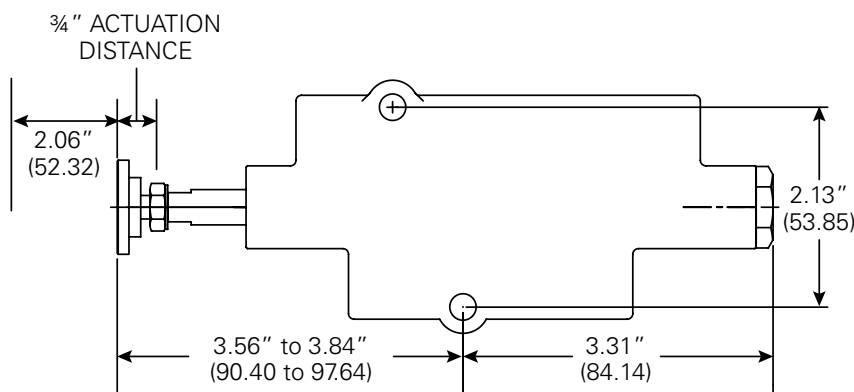
HIGHLIGHTS

- Heat-treated, anodized aluminum construction.
- 1/4" NPT connection ports.
- Field serviceable.
- Adjustable stem button.

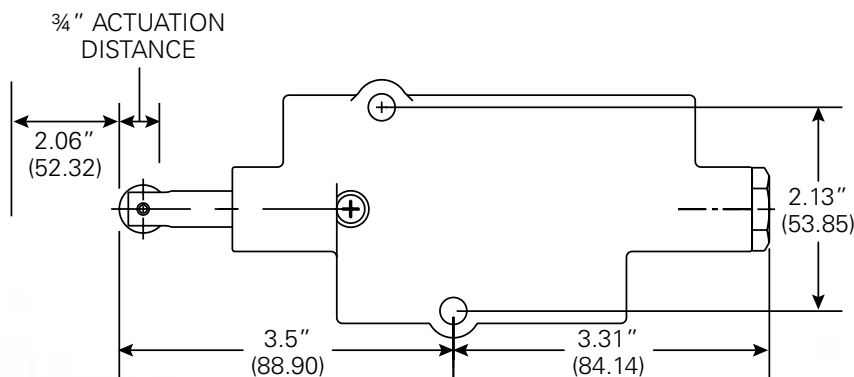
Model Unit	88025601	88025602	88025603
Width (Inches/Millimeters)	3"/76.2 mm		
Pounds	0.69		
Kilograms	0.31		

SPECIFICATIONS

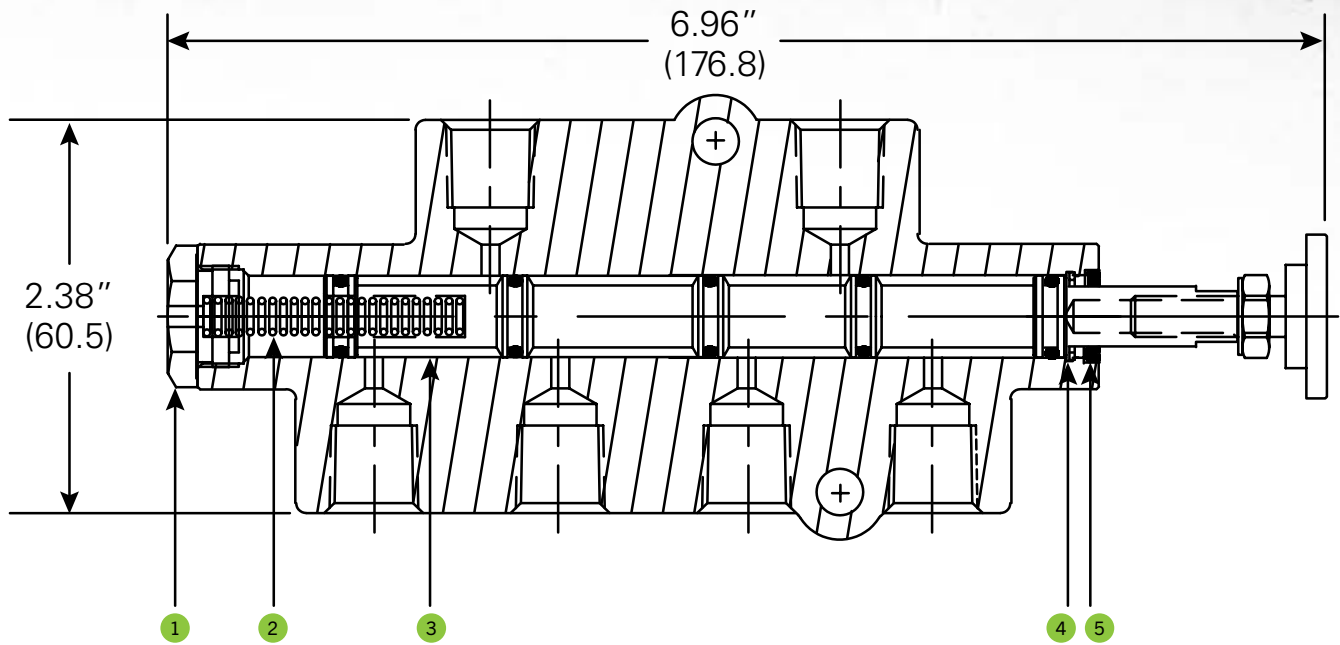
88025601



88025602



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88014501	Plug - nut
2	88014801	Spring
3	88025801	Spool and O-ring assembly
4	1109004	Retaining ring
5	88014201	Dust seal

ORDERING INFORMATION

Model	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

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.



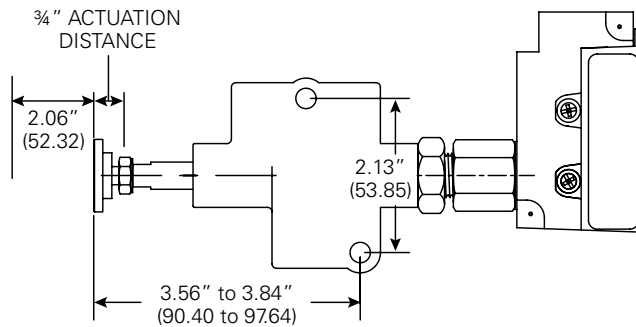
HIGHLIGHTS

Model Unit	88015501	88015502
Pounds	1.25	1.25
Kilograms	0.57	0.57

ORDERING INFORMATION

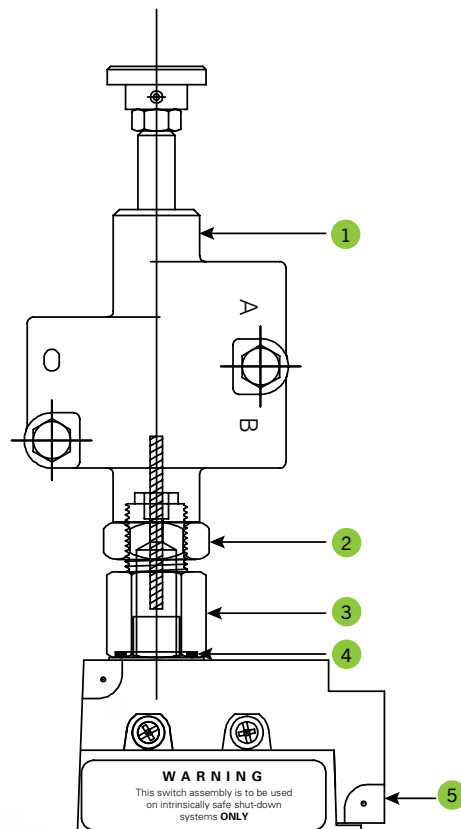
Model	Description
88015501	¼" - 1" Button with limit switch
88015502	¼" - 1" Roller Tip with limit switch

SPECIFICATIONS



Item	Description	Model
1	Air valve assembly	88115601
2	*Nut - Hex jam	1102104
3	*Adapter - valve to switch	88115501
4	O-ring	1100325
5	Limit switch	1121902
--	Service kit for 880-155-01	90012

* Note: These items are components of Air Valve Assembly 88115601



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.

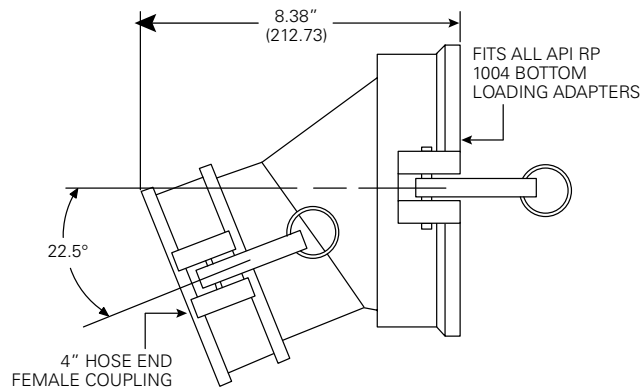


HIGHLIGHTS

- 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"/101.6 mm
Weight (pounds/kilograms)	6.06 lbs/2.75 kg

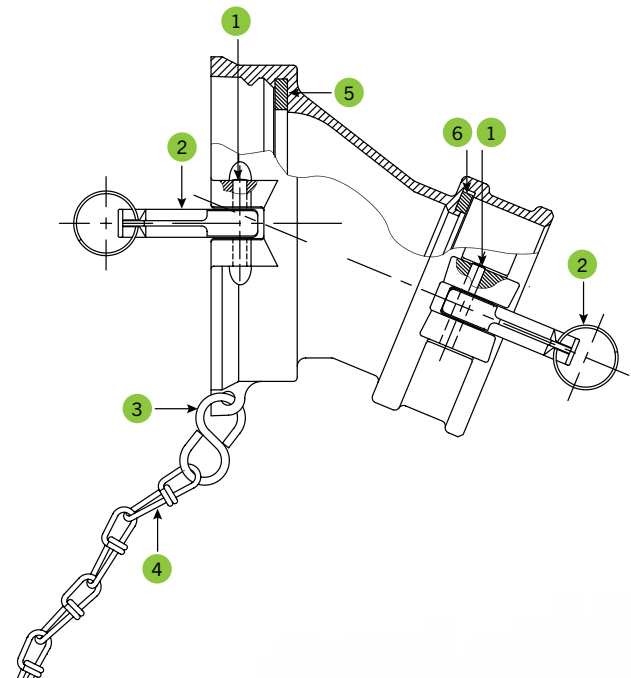
SPECIFICATIONS



Item	Model	Description
1	1112507	Groove pin
2	77411603	Cam arm and ring assembly
3	1111001	S-Hook
4	88011502	Double loop chain
5	88020601	Gasket
6	77420204	Gasket

ORDERING INFORMATION

Model	Description
88033001	Female gravity drop adapter
88020601	Gasket - API end
77420204	Gasket - hose end



MALE GRAVITY DROP ADAPTER



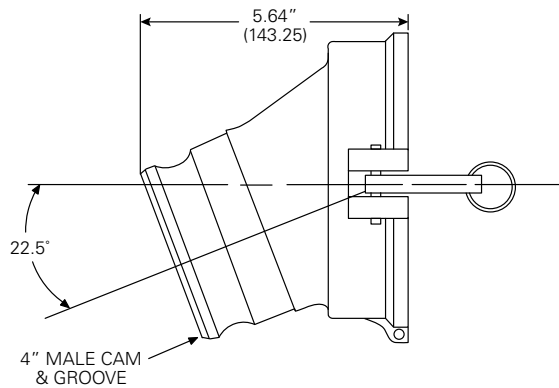
HIGHLIGHTS

Model Unit	88041001	88041101
Size (inches/millimeters)	3"/76.2 mm	4"/101.6 mm
Weight (pounds/kilograms)	4 lbs/1.81 kg	5 lbs/2.27 kg

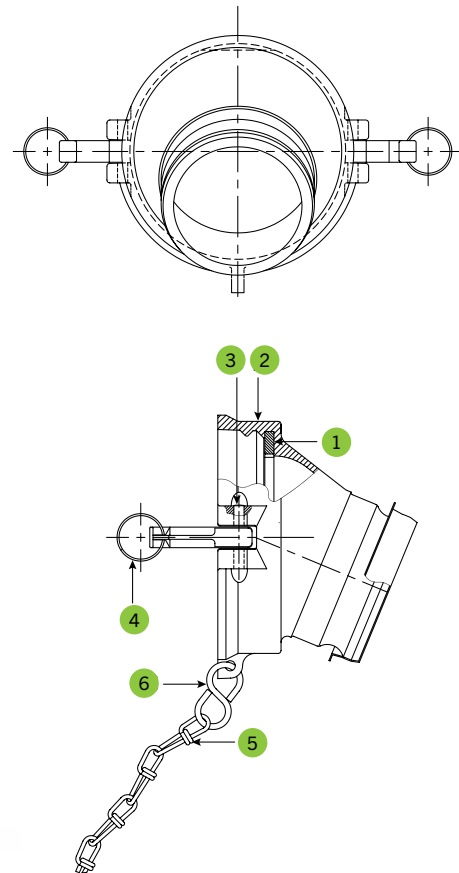
ORDERING INFORMATION

Model	Description
88041001	3" Male cam and groove
88041101	4" Male cam and groove
88020601	Gasket - API end

SPECIFICATIONS



Item	Model	Description
1	88020601	Rubber gasket
2	88041201	4" Drop adapter - body only
3	1112507	Groove pin
4	77411603	Cam arm and pull ring assembly
5	88011502	Double loop chain
6	1111001	S-Hook



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 Series is available without a poppet to serve as a male quick coupler with an air interlock valve mounting pad.



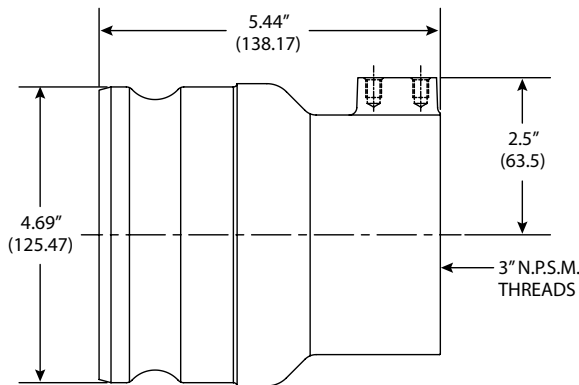
HIGHLIGHTS

- Anodized aluminum construction
- Stainless steel stem and spring
- Buna-N gasket
- Aluminum guide

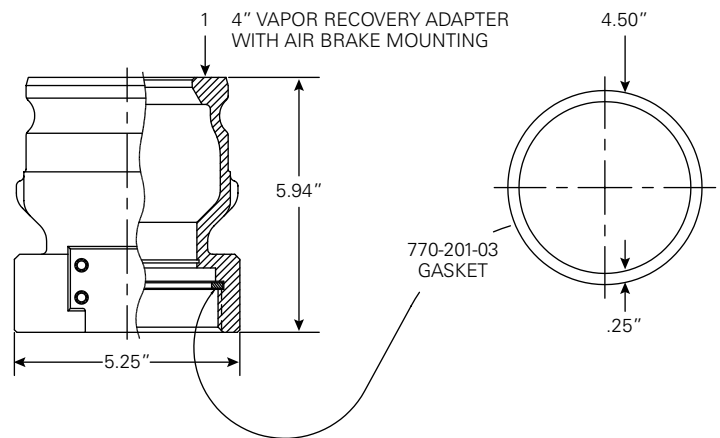
Model	Poppet	Thread Size	Weight (lbs/kg)
30130001	Yes	3-NPSM	4.5 lbs/2.04 kg
30130002	Yes	4-NPSM	4.81 lbs/2.18 kg
30130003	Yes	3-BSPF	2.55 lbs/1.16 kg
30333303	No	3-NPSM	3.81 lbs/1.73 kg
30344404	No	4-NPSM	4.31 lbs/1.96 kg

SPECIFICATIONS

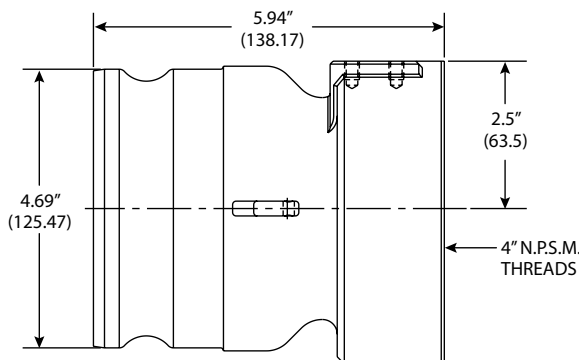
30130001



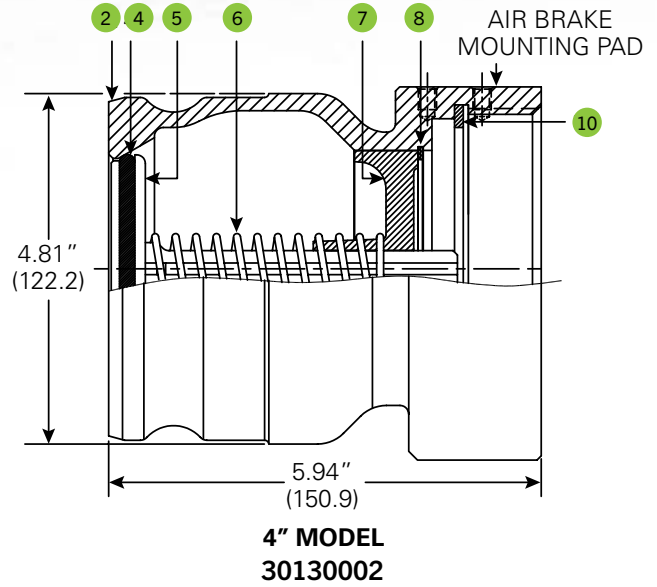
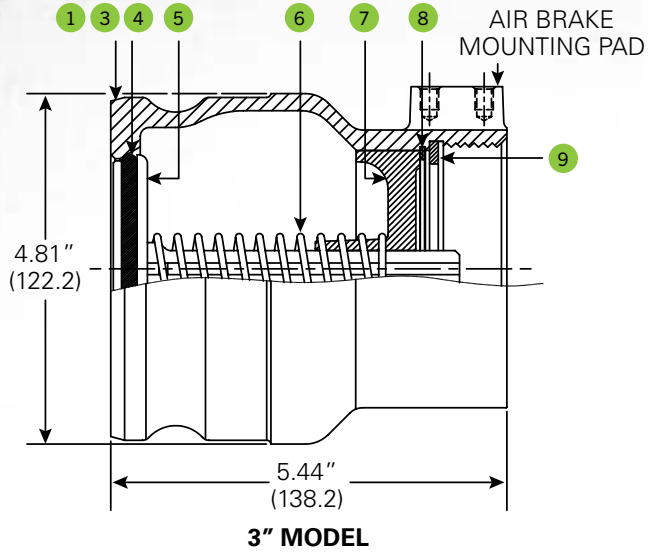
30130003



30344404



SPECIFICATIONS CONTINUED



Item	Model	Description
1	30030502	Vapor recovery adapter - 3" N.P.S.M.
2	30030202	Vapor recovery adapter - 4" N.P.S.M.
3	30030532	Vapor recovery adapter - 3" B.S.P.P.
4	1103915	O-ring
5	30020301	Poppet

Item	Model	Description
6	30010501	Spring - poppet
7	30020501	Guide - poppet stem
8	1109002	Retaining ring
9	77020102	3" Gasket cover
10	77020103	4" Gasket cover

ORDERING INFORMATION

Model	Description
30130001	3" N.P.S.M. vapor recovery adapter, with poppet
30130003	3" BSPP vapor recovery adapter, with poppet
30130002	4" N.P.S.M. vapor recovery adapter, with poppet
30333303	3" N.P.S.M. vapor recovery adapter, no poppet
30344404	4" N.P.S.M. vapor recovery adapter, no poppet

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



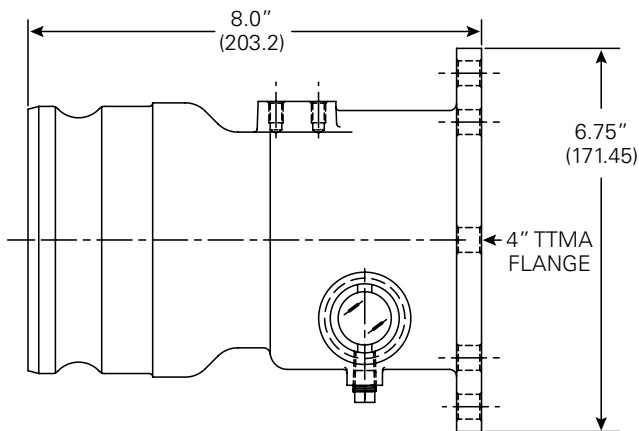
30230012

HIGHLIGHTS

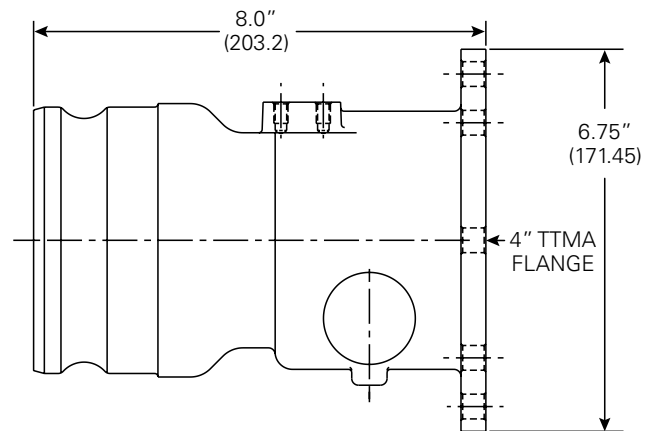
Model Unit	30230011	30230012
Size (inches/millimeters)	4/101.6	4/101.6
Weight (pounds/kilograms)	6/2.72	6/2.72

SPECIFICATIONS

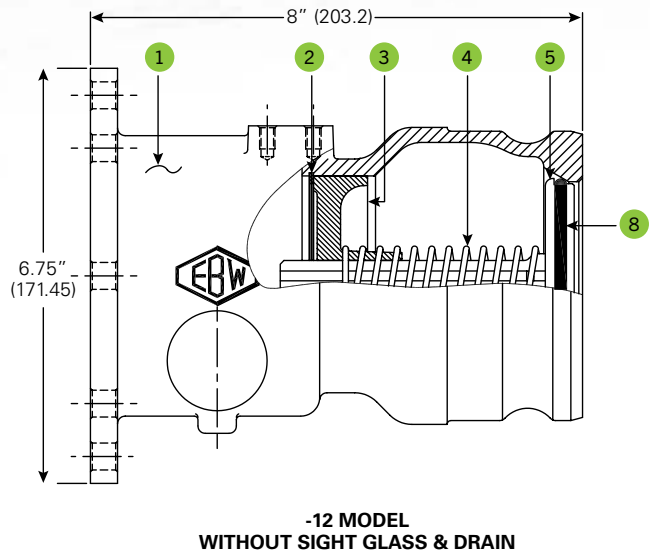
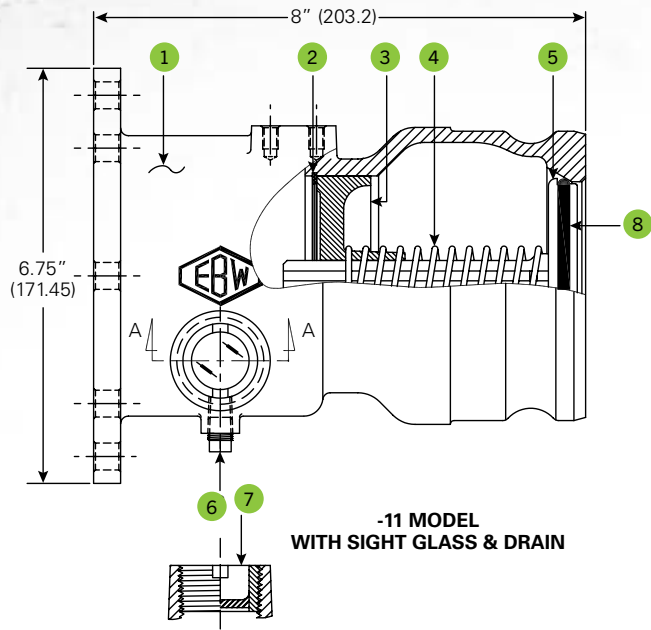
30230011



30230012



SPECIFICATIONS CONTINUED



Item	Model	Description
2	1109002	Retaining ring
3	30020501	Poppet stem guide
4	30010501	Poppet spring
5	30020301	4" Poppet vapor recovery adapter
6	1101002	Pipe Plug
7	1121504	Sight glass
8	1103915	O-ring

ORDERING INFORMATION

Model	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.

HIGHLIGHTS

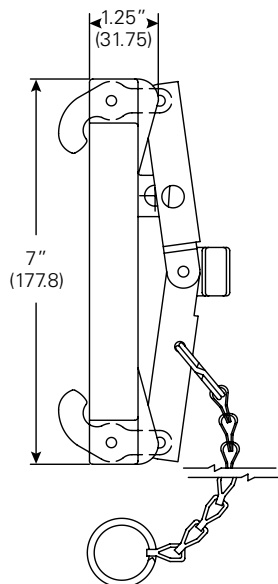
- Meets API RP 1004 standard
- Aluminum- or glass-filled nylon construction
- Iron-copper infiltrated cams and steel latches
- Lockable

Model	Size (inches/millimeters)	Weight (pounds/kilograms)	Gasket No.
30420001	4/101.6	1.19/.54	77711101
30420002	4/101.6	1.19/.54	77711102
30420004	4/101.6	1.19/.54	30410501
30420005	4/101.6	1.19/.54	30410501
30430101	4/101.6	1.19/.54	77711004
30430102	4/101.6	1.19/.54	77711004

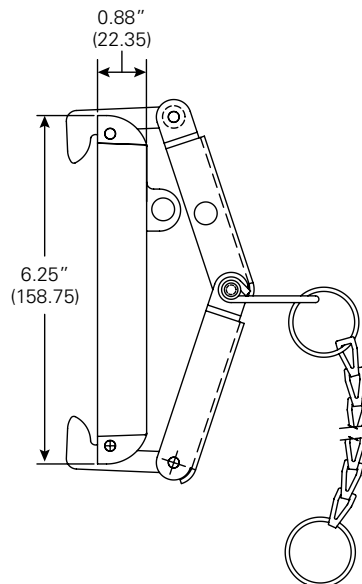


SPECIFICATIONS

30420005

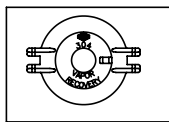
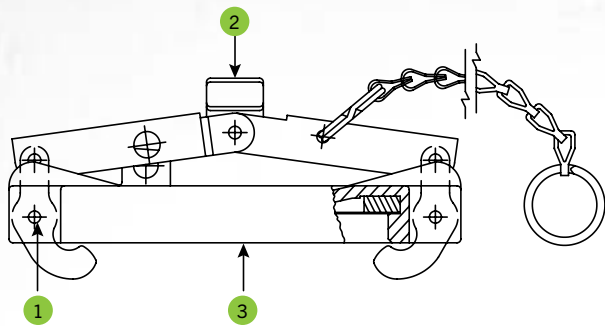


30430102



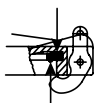
SPECIFICATIONS CONTINUED

30420001/30420002/30420004/30420005



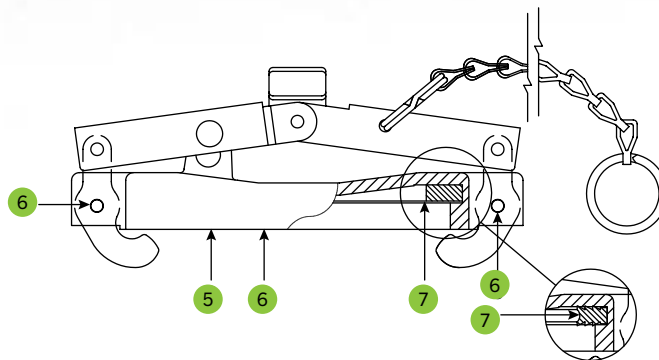
3

MODEL -04 & -05 ONLY
CHEVRONS THIS SIDE



0.06 R. THIS SIDE

30430102



Item	Model	Description
1	1102409	Spiral pin
2	30411201	Handle assembly
3	30430501	Vapor recovery cover

Item	Model	Description
4	95021501	Gasket
5	30430601	Aluminum body cover
6	1102403	Spiral pin
7	30430101	Cover assembly

ORDERING INFORMATION

Model	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-chevrons gasket
304-200-05	Nylon vapor cap with chain-chevrons 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 heat-treated anodized aluminum with forged bronze cams and stainless steel pins, and the poppet has a replaceable fluorocarbon seal.



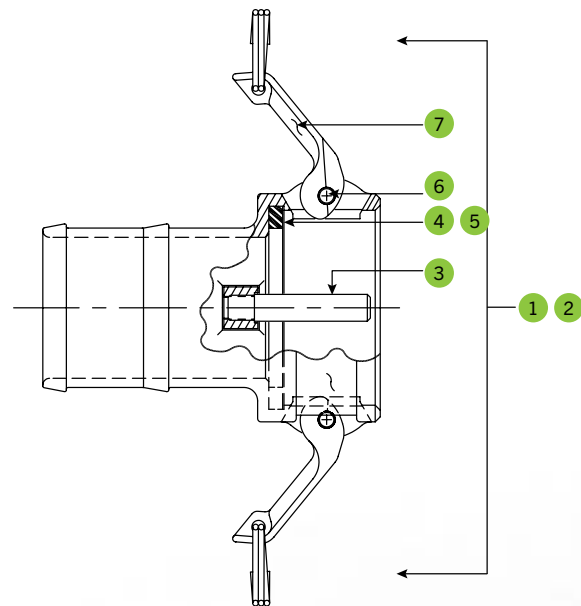
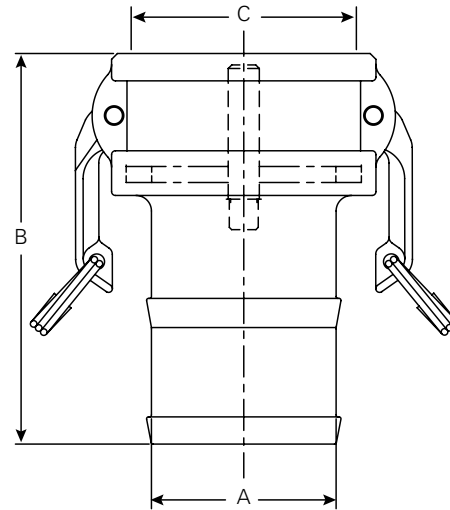
HIGHLIGHTS

- 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.

SPECIFICATIONS

Model Unit	77432002	77432003
Dim. A (inches/millimeters)	3/76.2	4/101.6
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)	3/1.36	3.38/1.53

Item	Model	Description
1	77432002	774-CV 4" x 3" assembly
2	77432003	774-CV 4" x 4" assembly
3	77411201	Probe
4	77420203	3" gasket
5	77420204	4" gasket
6	1112507	Groove pin
7	77411603	Cam and ring assembly



AIR-OPERATED SEQUENTIAL VAPOR VALVES

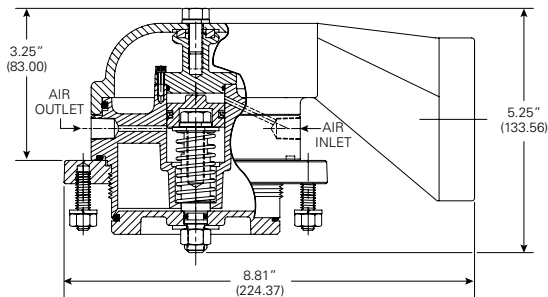
Handle fuel vapors safely and efficiently with this lightweight aluminum vapor valve. The air-operated valve allows fast vapor flow during loading and unloading. The poppet is designed to open into the tank, preventing accidental leakage from product surges or from a tank truck rollover. Easy-to-use air line connections are located outside the compartment for convenient installation and maintenance. The 3½" vapor valve comes with male NPT threads or a TTMA flange for installation in conventional 16" or 20" manholes.

HIGHLIGHTS

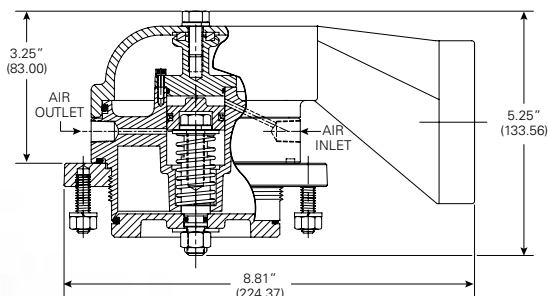
- Lightweight aluminum body and hood
- Fluorocarbon seal
- TTMA specifications

SPECIFICATIONS

88034301



88034501

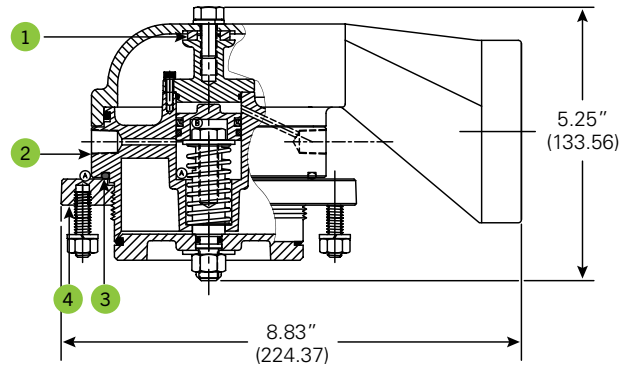


88034301

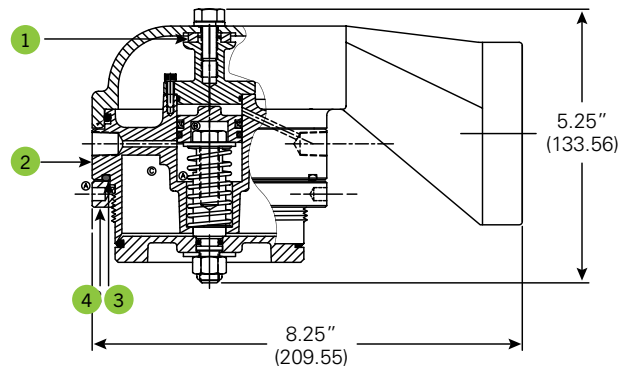


88034501

88034301



88034501



Item	Model	Description
1	1103403	Square cut seal ring
2	88034401	Sequential vapor valve body assembly
3	1100326	O-ring
4	88026701	Mounting assembly flange

ORDERING INFORMATION

Model	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.



HIGHLIGHTS

- Cast aluminum frame and cap
- Spring steel, chrome, and plated hardware
- Nylon bushing
- Name embossed upon request

SPECIFICATIONS

Model Unit	78430003	78440003
Style	Plain	Plain
Size (inches/millimeters)	6/152.4	8/203.2
Weight (pounds/kilograms)	3/1.36	4/1.81

ORDERING INFORMATION

Model	Description
78430003	6" plain door
78430003	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.



88049302



88045501

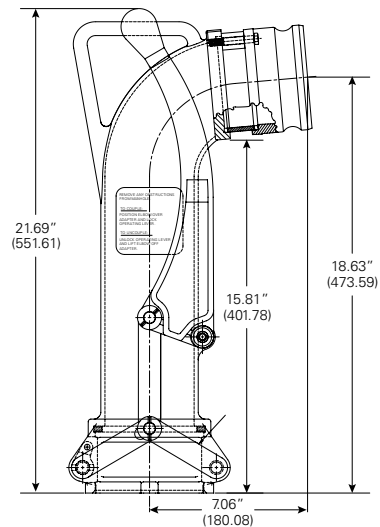
HIGHLIGHTS

- 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.

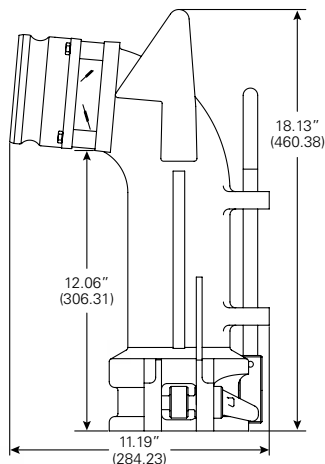
Model	Weight (pounds/kilograms)	Size (inches/millimeters)
88049301	12.3/5.58	--
88049302	13/5.9	4/101.6
88049303	14.5/6.59	3/76.2
88049304	14.5/6.59	4/101.6
88049305	14.5/6.59	3/76.2
88045001	13.75/6.24	--
88045501	16/7.26	4/101.6
88045502	18/8.18	3/76.2
88045504	18/8.18	3/76.2
88045505	18/8.18	4/101.6

SPECIFICATIONS

88049302

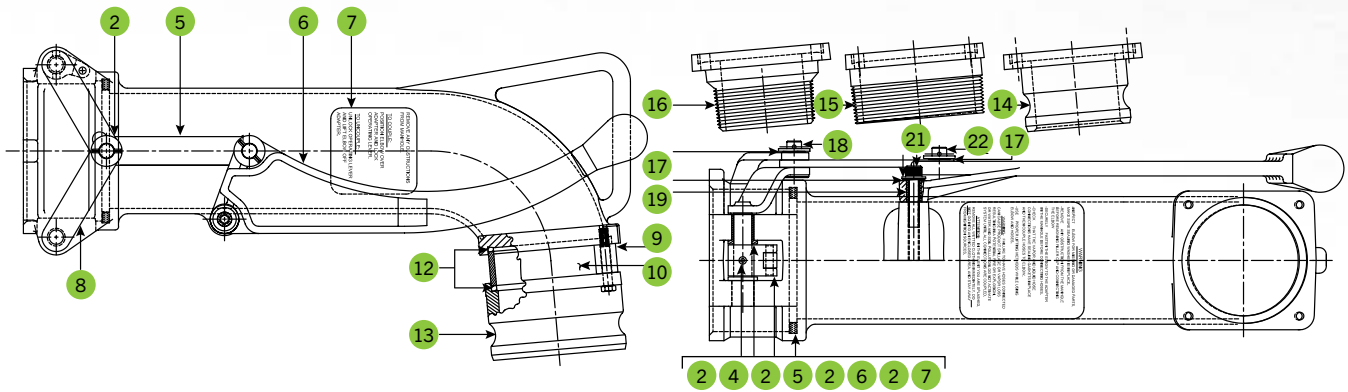


88045501



SPECIFICATIONS CONTINUED

88049302



Item	Model	Description
2	88013601	Rear arm assembly
5	88013901	Connecting link
6	88048201	Operating handle
7	--	Operational instruction
8	88013501	Front arm assembly
9	88015101	Sight tube spacer
10	88016201	Sight tube
12	88014001	Sight glass seal
13	88028401	4" Dia. coupling adapter
14	88039601	3" Cam and groove adapter

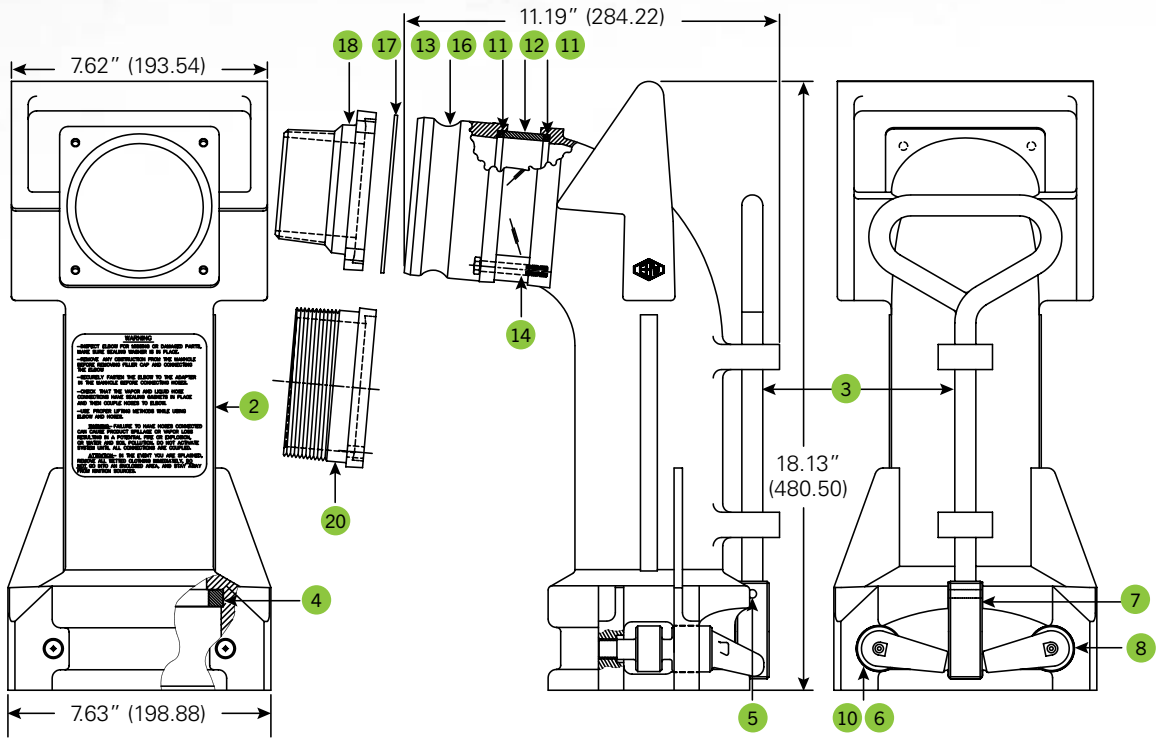
Item	Model	Description
15	88028901	4" NPT adapter
16	88039701	3" NPT adapter
17	1119001	Wave spring
18	88013801	Connecting pin
19	88014901	Shoulder spacer
21	1119601	Screw - 3/8-16 × 1½" Hex socket
22	88013802	Connecting pin
24	1118801	High alloy groove pin
25	1118601	Flanged bushing
26	88012101	Cam assembly insert
27	88014101	Seal

ORDERING INFORMATION

Model	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 sight glass

SPECIFICATIONS CONTINUED

88045501



Item	Model	Description
2	88045901	Product elbow body
3	88023701	Product elbow handle
4	1130801	Product elbow seal
5	1108605	Pin spiral
6	88031001	Locking "right" cam
7	88023801	Handle block
8	88031002	Locking "left" cam

Item	Model	Description
11	88014001	Sight tube seal
12	88016201	Sight tube
13	88028401	4" Cam and groove adapter
14	88015101	Sight tube spacer
16	88039601	3" Cam and groove adapter
17	88024701	Adapter flange gasket
18	88039701	3" NPT adapter

ORDERING INFORMATION

Model	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.

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.

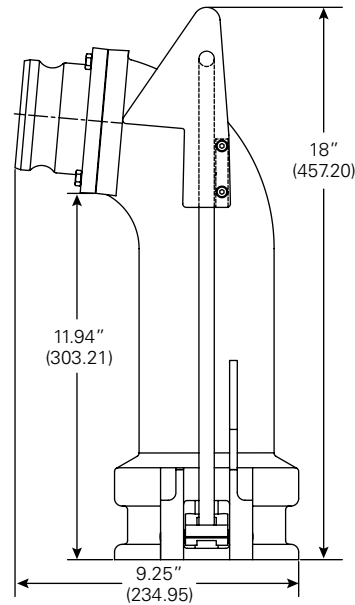


HIGHLIGHTS

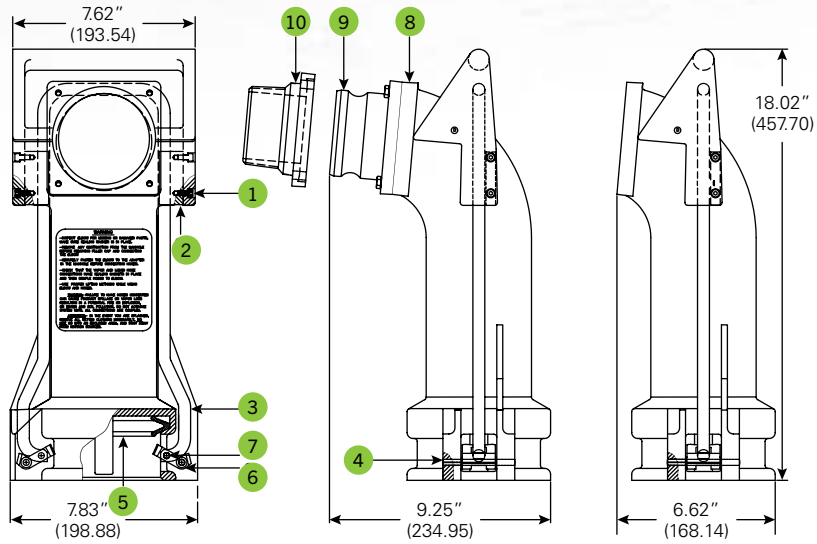
- Cast aluminum
- Compact, low profile design
- Four bolt flange pattern
- Protective base shield

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

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	1117012	#10 - 24 x 1/2" socket head cap screw
2	88024601	Handle retainer block
3	88039101	Vapor elbow locking bar
4	1112607	Grooved (straight) pin
5	87020001	Elbow seal

Item	Model	Description
6	88024501	Locking cam
7	1112601	Grooved (straight) pin
8	88024701	Adapter flange gasket
9	88039601	3" Coupling adapter
10	88039701	3" NPT adapter

ORDERING INFORMATION

Model	Description
88046001	Body only
88046501	3" Male cam and groove adapter
88046502	3" Male NPT adapter

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.

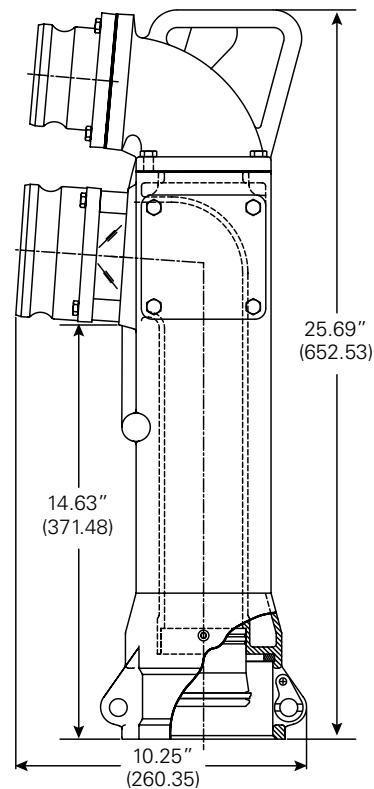


HIGHLIGHTS

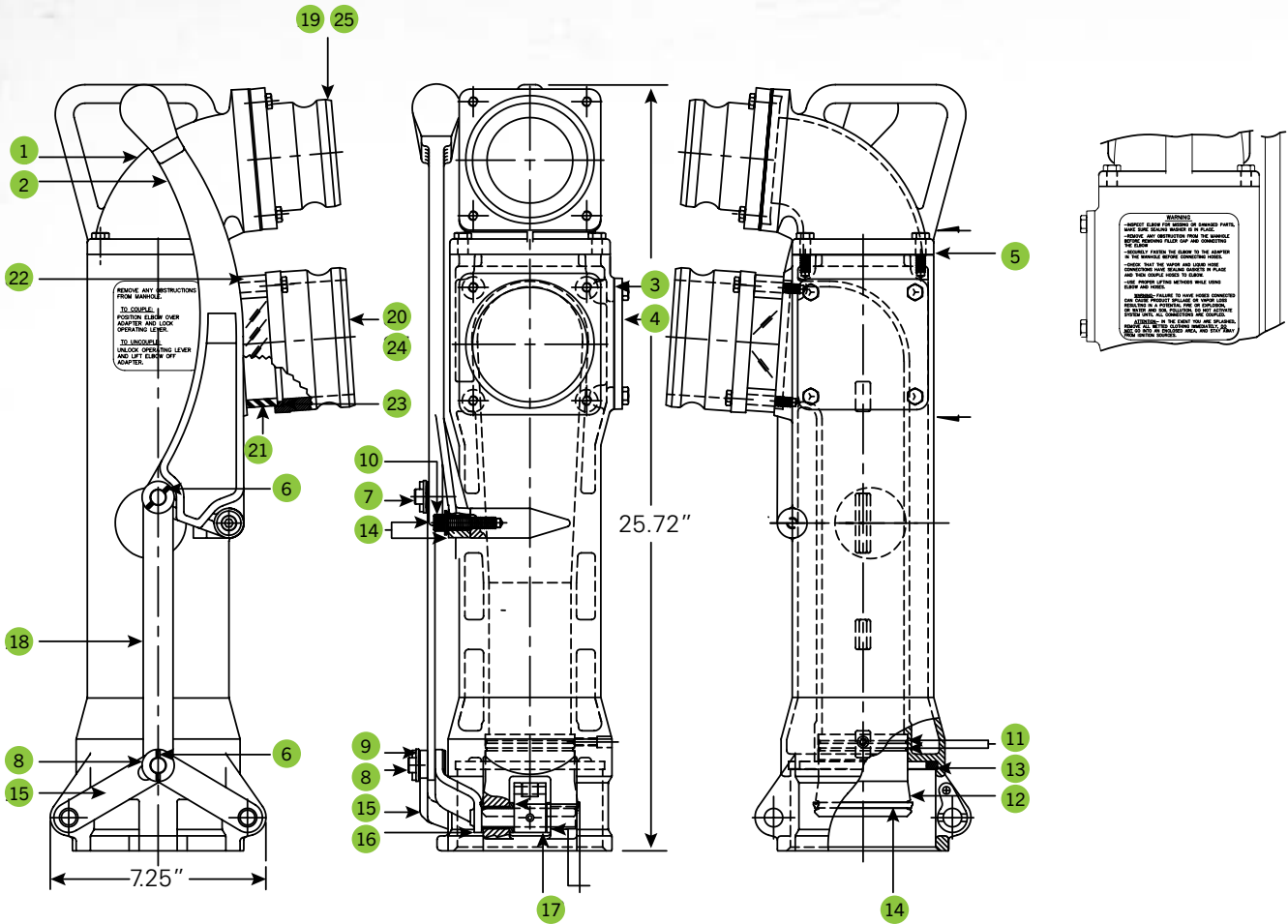
- Cast aluminum.
- 4" product line inlet (male cam and groove adapter).
- 3" vapor line outlet (male cam and groove adapter).
- Unique cam locking handle for easy on/off coupling.
- Accommodates all coaxial drop tube adapters.
- Four bolt flange pattern vs. threaded.

Model Unit	88049001	88049003
Size (inches)	4 x 3	4 x 3
Weight (pounds/kilograms)	22.0/9.98	22.0/9.98

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88038001	Flanged, coaxial elbow
2	88048201	Operating handle
3	88028101	Gasket
4	88022901	Vapor outlet block off plate
5	88028201	Top gasket
6	1100403	Rollpin - 1/8" x 1"
7	88013802	Connecting pin
8	88013801	Connecting pin
9	1119001	Wave spring
10	1119601	Screw - 3/8", 16 x 1/2" Hex socket
11	88014701	O-ring seal
12	88028501	Fuel connection adapter

Item	Model	Description
13	88014101	Coaxial elbow seal
14	88014601	Fuel connection seal
15	88013601	Rear arm assembly
16	88013501	Front arm assembly
17	88012101	Cam assembly insert
18	88013902	Long connecting link
19	88039601	Cam and groove 3" adapter
20	88028401	Cam and groove 4" adapter
21	88016201	Sight tube
22	88015101	Sight tube spacer
23	88014001	Sight tube seal
24	88028901	4" NPT adapter
25	88039701	3" NPT adapter

ORDERING INFORMATION

Model	Description
88049001	Over and under tall 4" x 3" cam and groove
88049003	Over and under tall 4" NPT x 3" cam and groove

GASKET KIT*

Model Unit	Weight (pounds/kilograms)
88024801	6.0/0.17



SIGHT GLASS KIT*

Model Unit	Weight (pounds/kilograms)
88024901	13.0/0.37



3" CAM AND GROOVE ADAPTER

Model Unit	Weight (pounds/kilograms)
88039601	1.19/0.45

4" CAM AND GROOVE ADAPTER

Model Unit	Weight (pounds/kilograms)
88028401	1.44/0.65



3" NPT MALE ADAPTER

Model Unit	Weight (pounds/kilograms)
88039701	1.44/0.65



4" NPT MALE ADAPTER

Model Unit	Weight (pounds/kilograms)
88028901	1.5/0.68



CAM AND GROOVE ADAPTERS

Hose shank end bands to hose. The coupler comes in two sizes for use with most hose configurations.

HIGHLIGHTS

- Heat-treated, aluminum alloy body and brass probe.
- Forged bronze cams and stainless steel pins.

Model	Description
77421220	2" Cam and groove dust cap
77421240	2" Cam and groove dust cap

MECHANICALLY OPERATED 90° EMERGENCY VALVE

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.

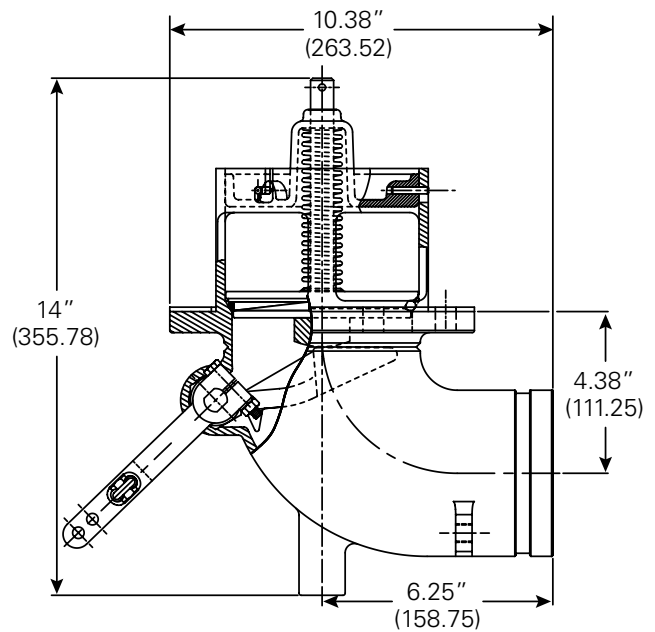


HIGHLIGHTS

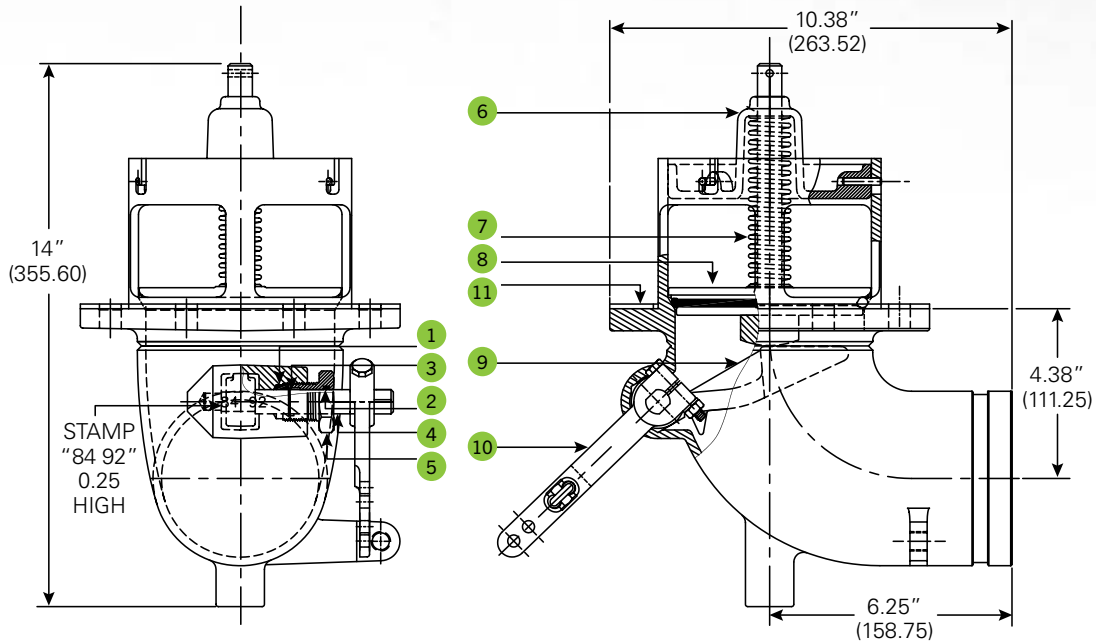
- High flow rate.
- Fits standard 4" TTMA sump.
- Shear section per TTMA, RP84-92 and meets DOT 49 CFR 178.345-8.
- Force ratings from TTMA RP86-92.
- Shear groove meets DOT 406 requirement.
- Optional external air cylinder available.
- Available in Victaulic™ or flanged version.
- Fluorocarbon O-ring.

Model Unit	Weight (pounds/kilograms)
88043001	11.0/4.99

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	1135801	3/16" SYN PTFE packing
2	1103920	O-ring FLC #2-114
3	1109008	Spiral retaining ring
4	88024101	Cam shaft
5	88024201	Stuffing box nut
6	88026401	Emergency valve retainer assembly
7	1135701	Poppet spring
8	88026301	Poppet assembly
9	88023301	Cam
10	88026501	Cam lever assembly
11	1138801	Emergency valve sump gasket
12 not shown	1114401	Anti-seize Lubricant

ORDERING INFORMATION

Model	Description
88043001	4" standard Victaulic™ outlet seal

MECHANICALLY OPERATED 90° EMERGENCY VALVE (FLANGED)

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.

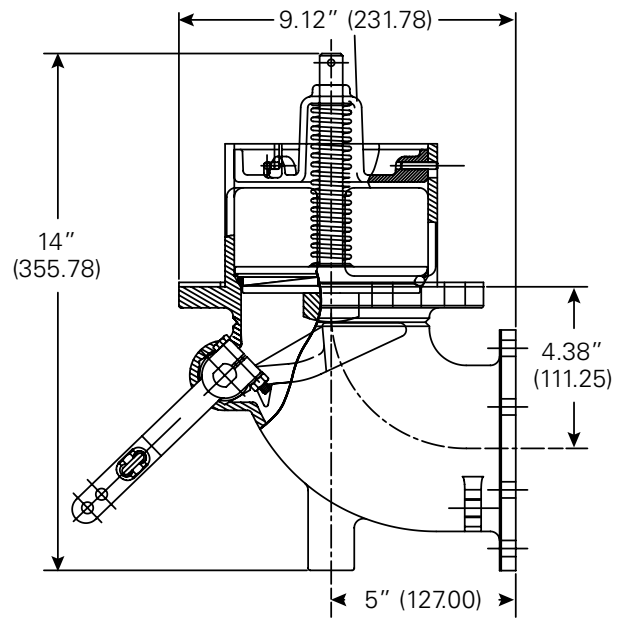
This valve gives you the advantage of a faster flow rate while fitting a standard 4" TTMA sump. The high flow rate is established by a full opening throat area. Emergency valves are available in 90 degree elbow type or straight type, 4" TTMA flanges or Victaulic™ outlet, and mechanical or air assisted.



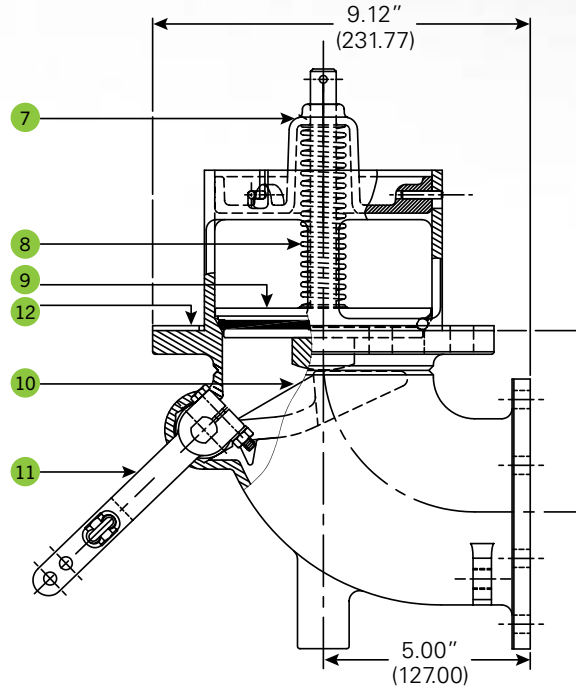
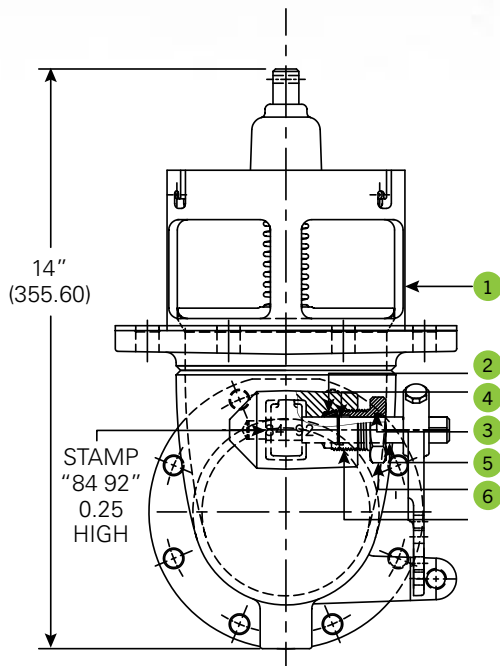
HIGHLIGHTS

Model	Weight (pounds/kilograms)
88043101	11.0/4.99

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88042901	Emergency valve flanged 4" body
2	1135801	3/16" SYN PTFE packing
3	1103920	O-ring FLC #2-114
4	1109008	Spiral retaining ring
5	88024101	Cam shaft
6	88024201	Stuffing box nut

Item	Model	Description
7	88026401	Emergency valve retainer assembly
8	88042901	Poppet spring
9	1135801	Poppet assembly
10	1103920	Cam
11	1109008	Cam lever assembly
12	88024101	Emergency valve sump gasket

ORDERING INFORMATION

Model	Description
88043101	4" Standard flanged outlet seal

AIR-ASSISTED 90° EMERGENCY VALVE (VICTAULIC™)

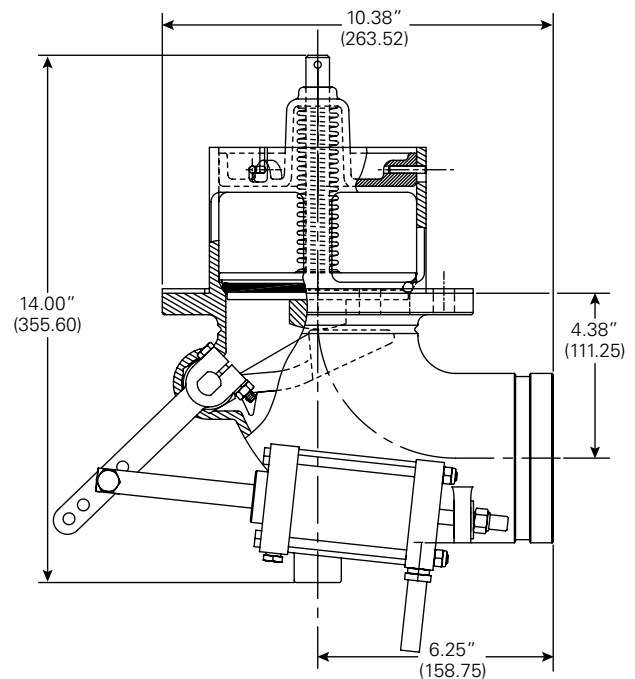
Air-assisted emergency valves make product handling safer and installation more convenient. The emergency valve has a shear groove that meets 49 CFR 179.345-7. The seat of the valve is located inside of the tank shell as required by DOT regulations. One valve has the capability to be converted to either right- or left-hand control.



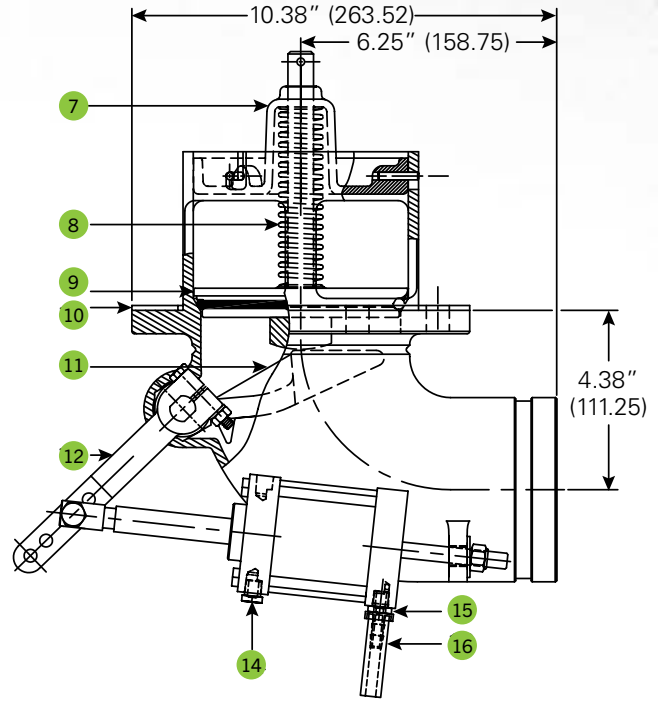
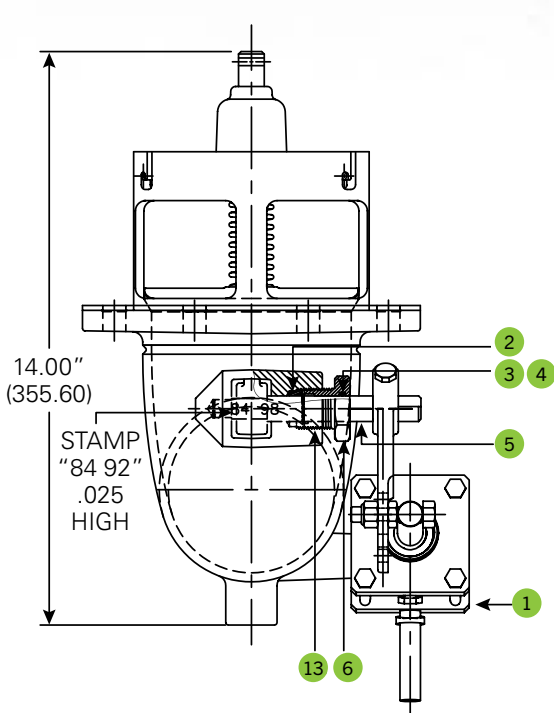
HIGHLIGHTS

Model	Weight (pounds/kilograms)
88043201	13.0/5.9

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88035002	Emergency valve air cylinder
2	88042901	4" Victaulic™ emergency valve body
3	1135801	3/16" SYN PTFE packing
4	1103920	O-ring FLC #2-114
5	1109008	Spiral retaining ring
6	88024101	Cam shaft
7	88024201	Stuffing box nut
8	88026401	Emergency valve retainer assembly

Item	Model	Description
9	1135701	Poppet spring
10	88026301	Poppet assembly
11	1138801	Emergency valve sump gasket
13	88026501	Cam lever assembly
14	1152601	Fusible metal pipe plug, 1/8-27" NPT
15	1149401	Male push-on hose fitting
16	88015901	Rubber hose - push-on fitting

ORDERING INFORMATION

Model	Description
88043201	4" Standard Victaulic™ Outlet Seal with External Air Cylinder

AIR-ASSISTED 90° EMERGENCY VALVE (FLANGED)

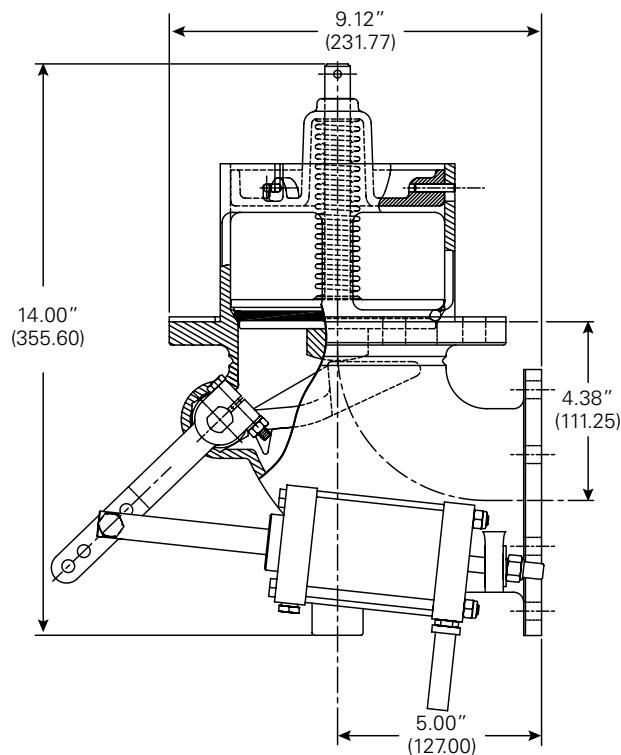
Air-assisted emergency valves make product handling safer and installation more convenient. The emergency valve has a shear groove that meets 49 CFR 179.345-7. The seat of the valve is located inside of the tank shell as required by DOT regulations. One valve has the capability to be converted to either right- or left-hand control.



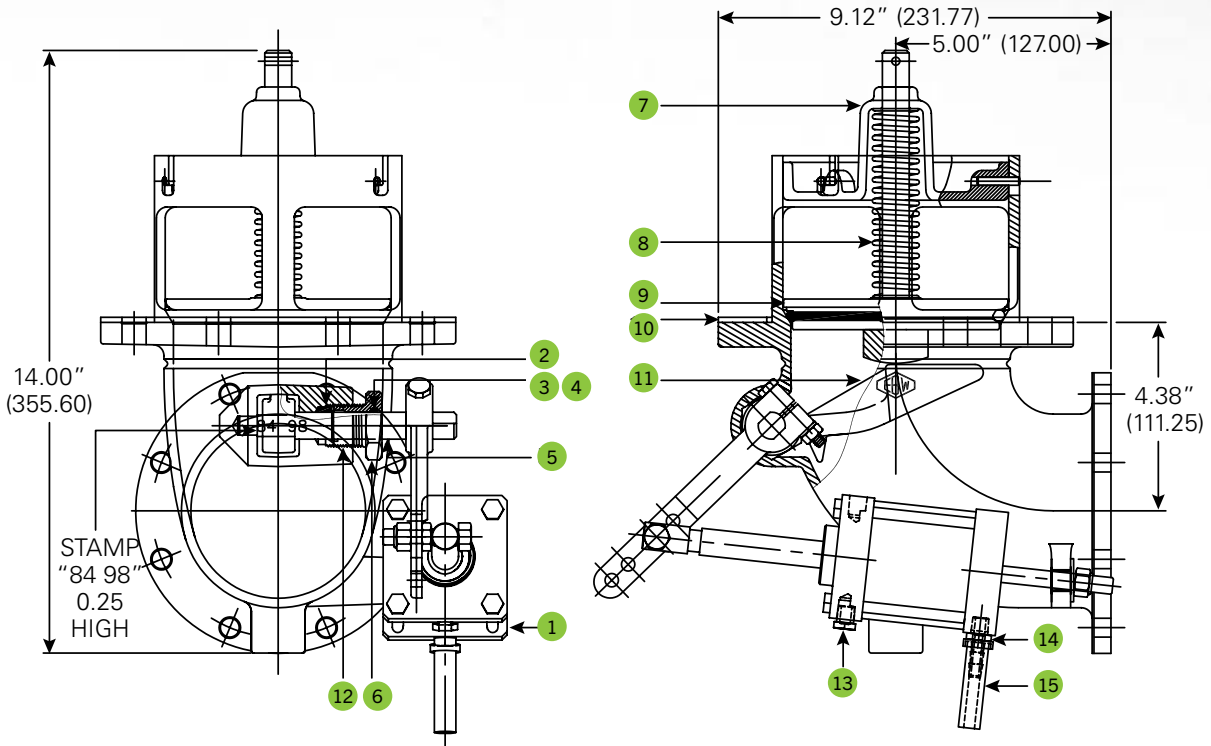
HIGHLIGHTS

Model	Weight (pounds/kilograms)
88043301	13.0/5.9

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88035002	Air cylinder
2	88042801	4" Flanged emergency valve body
3	1135801	3/16" SYN PTFE packing
4	1103920	O-ring FLC #2-114
5	1109008	Spiral retaining ring
6	88024101	Cam shaft
7	88024201	Stuffing box nut
8	88026401	Emergency valve retainer assembly

Item	Model	Description
9	1135701	Poppet spring
10	88026301	Poppet assembly
11	1138801	Emergency valve sump gasket
12	88026501	Cam lever assembly
13	1152601	Fusible metal pipe plug, 1/8-27" NPT
14	1149401	Male push-on hose fitting
15	88015901	Rubber hose - push-on fitting

ORDERING INFORMATION

Model	Description
880-433-01	4" Standard flanged outlet seal with external air cylinder

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.

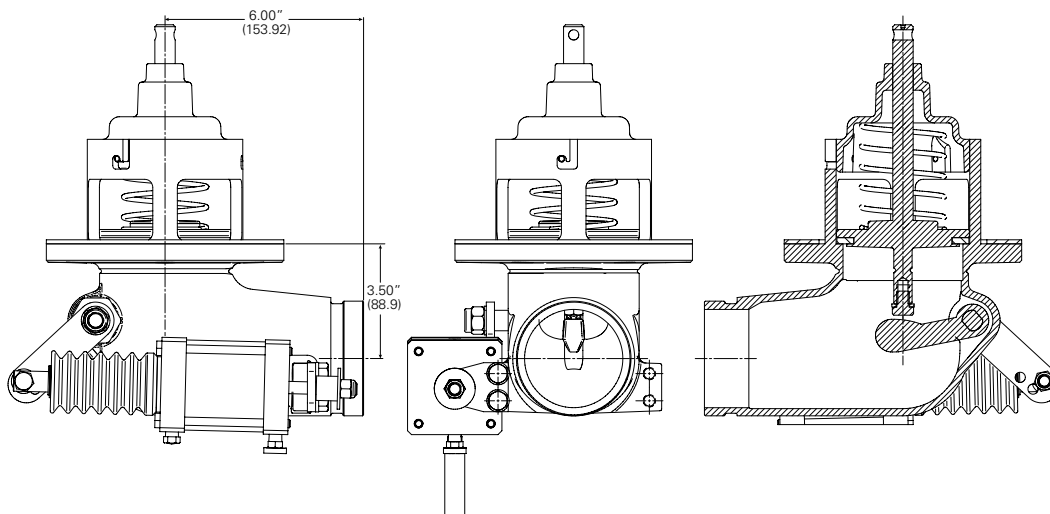
SPECIFICATIONS

Certifications/Listings

- TTMA, RP84-92: shear section.
- DOT 49 CRF 178.345-8: shear section.
- DOT 406: shear groove.
- TTMA, RP86-92: force rating.

ORDERING INFORMATION

Model	Description	Size
88045601	Air operated valve	3" TTMA flanged × 3" Victaulic™ outlet
88044901	Cable operated valve	3" TTMA flanged × 3" Victaulic™ outlet



SIDE SEAL ADAPTOR

The side seal adaptor 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.

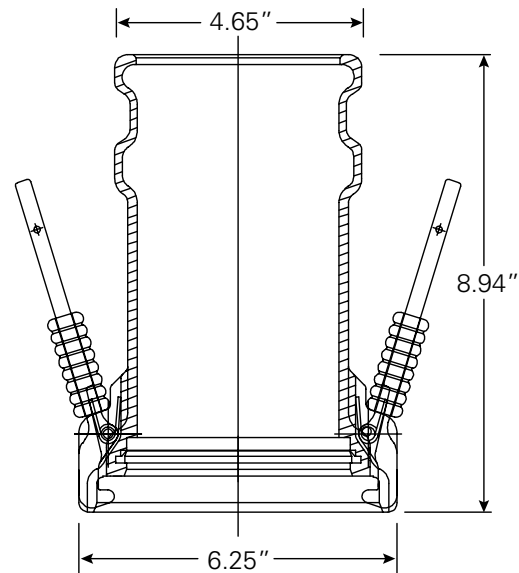
Two lever clamps secure the adapter to the station's side seal fitting and allow a 4" elbow to attach to the adapter. Special locking rings prevent accidental cam arm release during filling. Cast aluminum makes the side seal adaptor light and strong. The specially designed seal gives you the added insurance that no leaks will occur.



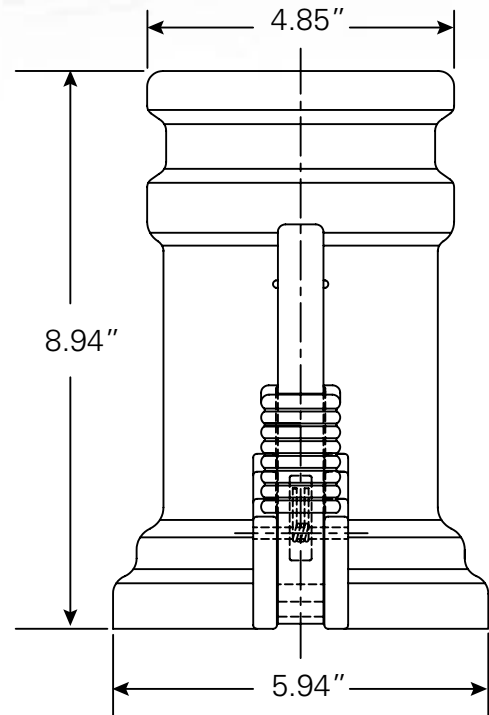
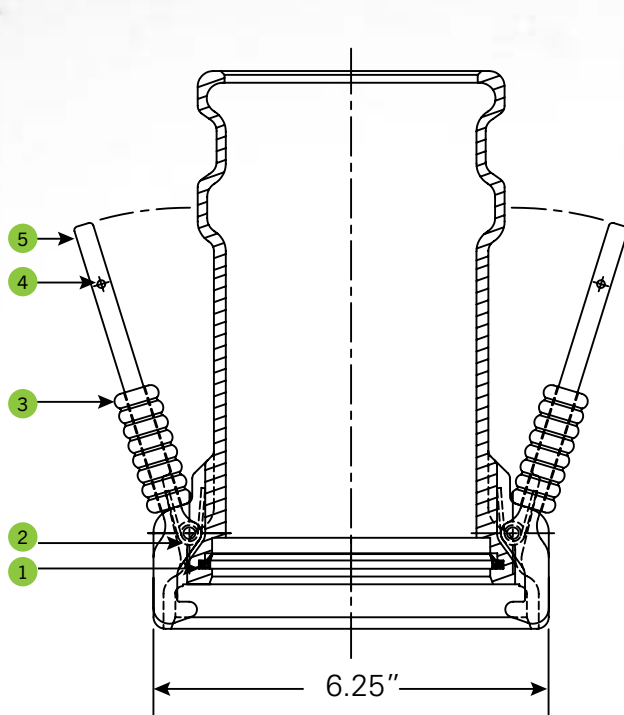
HIGHLIGHTS

Model	Weight (pounds/kilograms)
880-445-01	10.0/4.58

SPECIFICATIONS



SPECIFICATIONS CONTINUED



Item	Model	Description
1	88120201	Seal
2	88110301	Release lever spring
3	88120100	Release lever interlock

Item	Model	Description
4	1145901	Pin, 0.125 × 0.875", groove type "E"
5	88120001	Release lever

ORDERING INFORMATION

Model	Description
88044501	Side seal adapter

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).



HIGHLIGHTS

- Anodized aluminum construction
- ½" 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

ORDERING INFORMATION

Model	Description
90826202	Probe holder with 2" NPT male thread, tall cap
90826301	Probe holder with 2" cast lock nut
90820801	Tall probe holder cover

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.



HIGHLIGHTS

- Ease of installation.
- Moisture-proof.
- Stainless steel contact pins.
- Produced in accordance with API 1004.
- Available in all three API standard socket configurations.

ORDERING INFORMATION

Model	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

Model	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	--
90813206	100' Seven conductor cable only	--
90813203	25' 7-CON cable	--



908-315-01



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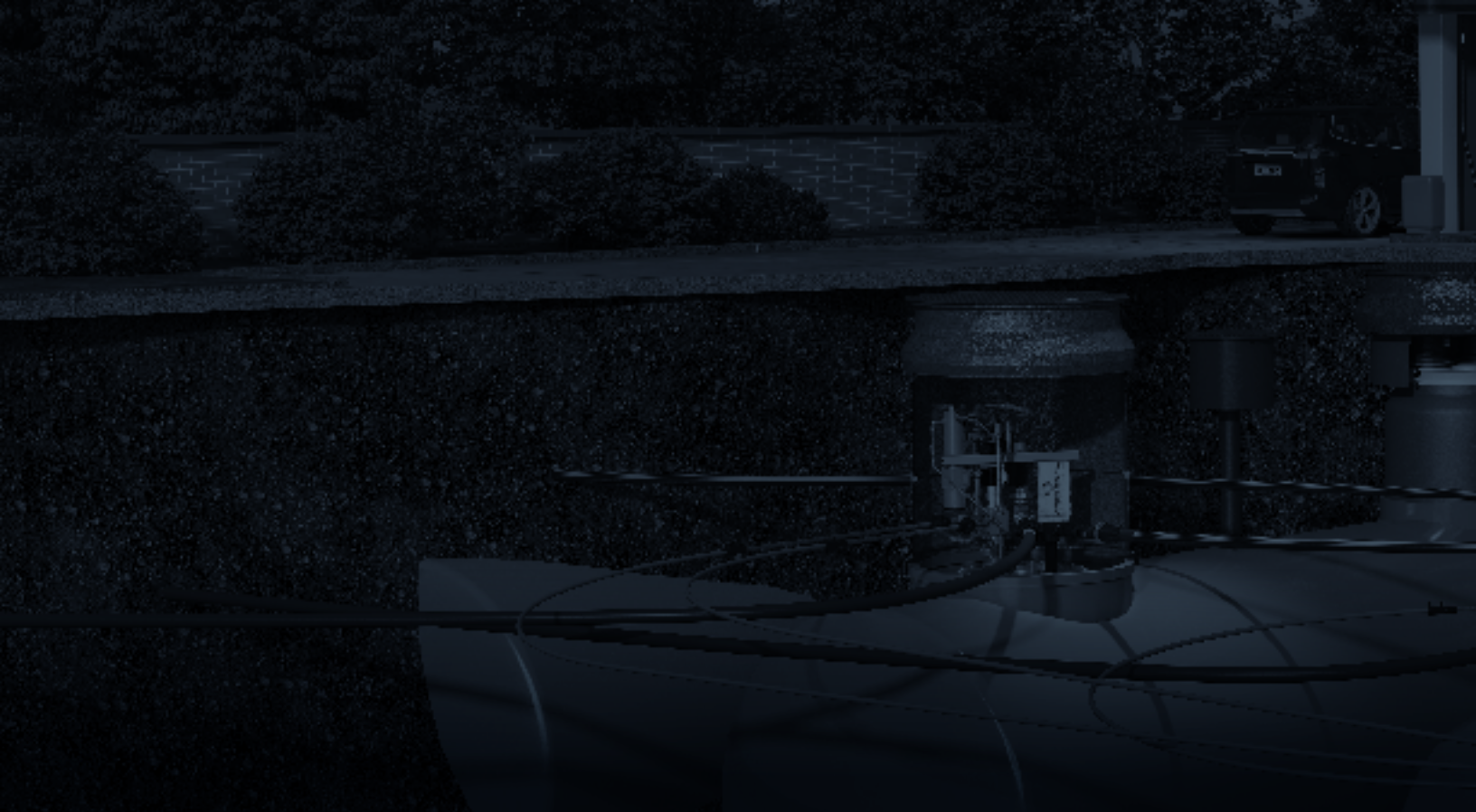


INSTALLATION QUALITY ASSURANCE

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TOTAL
SYSTEM SOLUTIONS