



Montana DEQ-UST Program Annual Licensee Training


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 **Franklin Fueling Systems**

GLOBAL HEADQUARTERS
Fort Wayne, Indiana USA

A GLOBAL LEADER

Franklin Electric is a global leader in the production and marketing of systems and components for the movement of water and automotive fuels.

Recognized as a technical leader in its products and services, Franklin serves customers around the world in residential, commercial, agricultural, industrial, municipal, and fueling applications.



WANT MORE?

Visit franklin-electric.com
for more company information.

GLOBAL HEADQUARTERS
Madison, Wisconsin USA

THE TOTAL SYSTEM SOLUTION PROVIDER

Franklin Fueling Systems offers the world's most complete line of petroleum equipment and specializes in providing total system solutions to our customers and global partners around the world.

Plant tours are encouraged

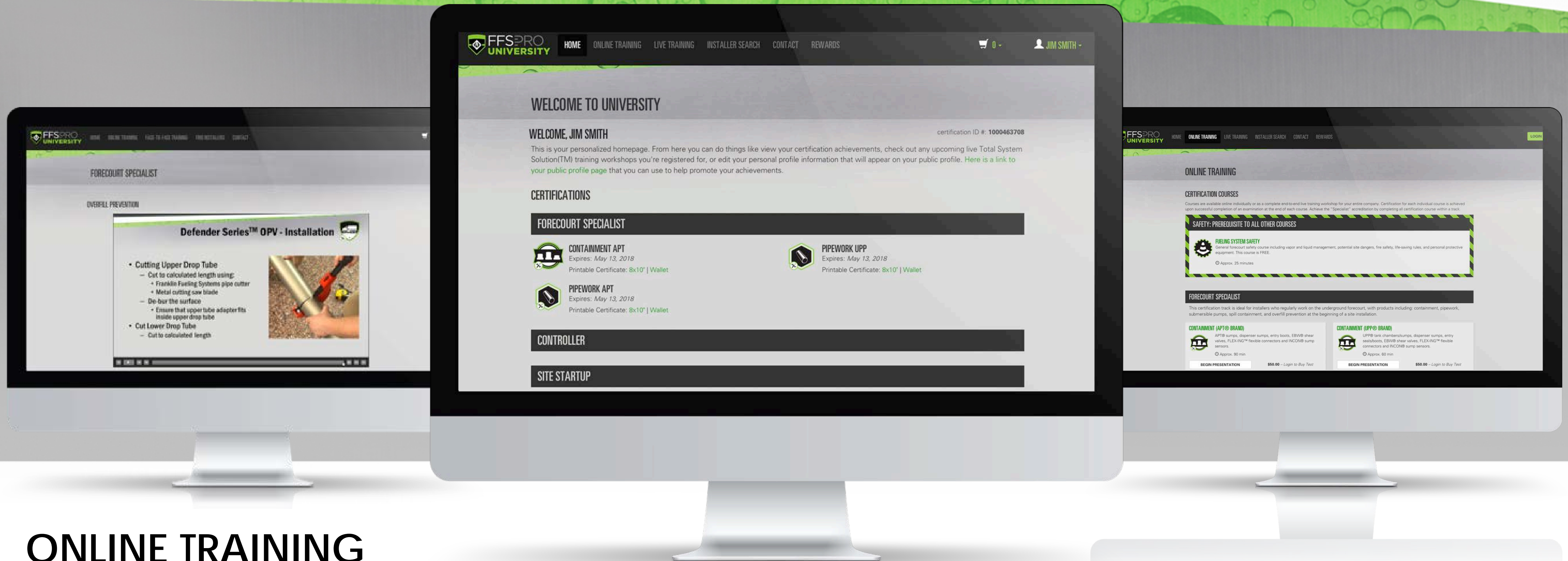


WANT MORE?

Visit franklinfueling.com
for more product information and
literature downloads.



**TRAINED
CERTIFIED**
READY TO WORK



ONLINE TRAINING

Built for today's on-the-go-installers and technicians.



SELF-GUIDED

Complete with step-by-step professional voiceover.



MANAGE CERTIFICATIONS

Keep track of expirations and download certification cards.



YOUR AREAS OF FOCUS

Choose the specific training track that meets your needs.

A SYSTEM APPROACH

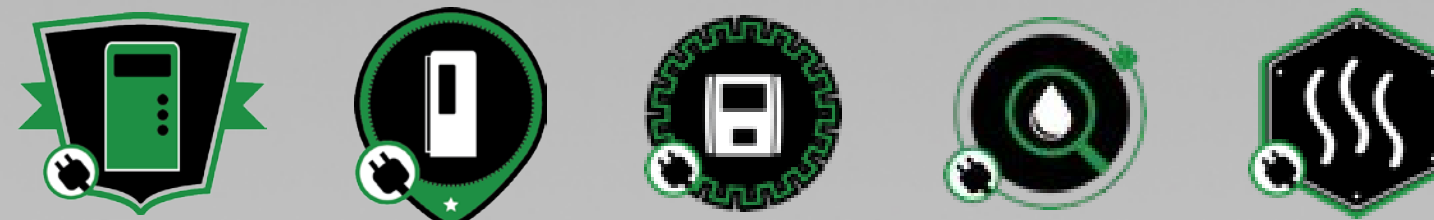
We focus on a system approach to training. By focusing on functional areas of the petroleum equipment system, we are able to give our certified installers **a holistic view of how the individual components are designed to work in harmony** as a complete system.

FORECOURT SPECIALIST



- Fueling System Safety
- Containment
- Piping
- Submersible Pumps
- Spill Containment
- Overfill Prevention
- Hanging Hardware
- Stage II VR*
- Wire Management*

CONTROLLER SPECIALIST



- Fixed Speed Controller Installation
- Variable Speed Controller Installation
- ATG Installation
- ELLD & Monitoring
- In-station Diagnostics*

SITE STARTUP SPECIALIST



- Pipe Testing
- Tank Sump Testing
- Fuel Management System Programming
- Leak Detection
- In-station Diagnostics*

THE RESULT

An informed, more knowledgeable installer with a better understanding of how one system component affects another.

STAYING CONNECTED

FFS PRO: University certified installers become part of a network that receives all of the latest in installation news via email from the leader in petroleum equipment.



STAY EDUCATED: TECH UPDATE

Keep updated on the newest product installation news from Franklin.



STAY CURRENT: THE CAMPUS

Hear from our industry experts on the latest trends from the field with a dedicated news site: *The Campus*.



STAY INFORMED: SHARED LEARNING

Learn about best practices to keep you safe on the job.

PLUS Our automatic reminders will help you manage your certifications before they expire and learn about new courses.



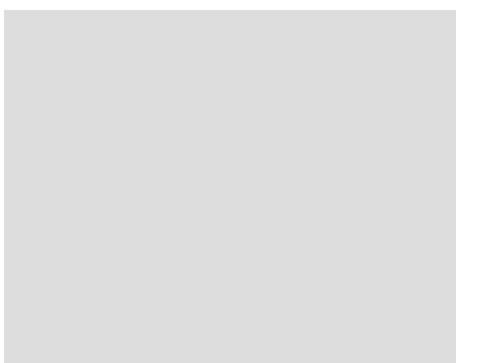


FFSERO
UNIVERSITY



Fuel System Installation Safety

Standard Operating Procedures





Follow all local laws governing installation of all components in the system.



Always refer to Installation Manuals for the most current safety and installation information.



Be aware of all site dangers at all times.

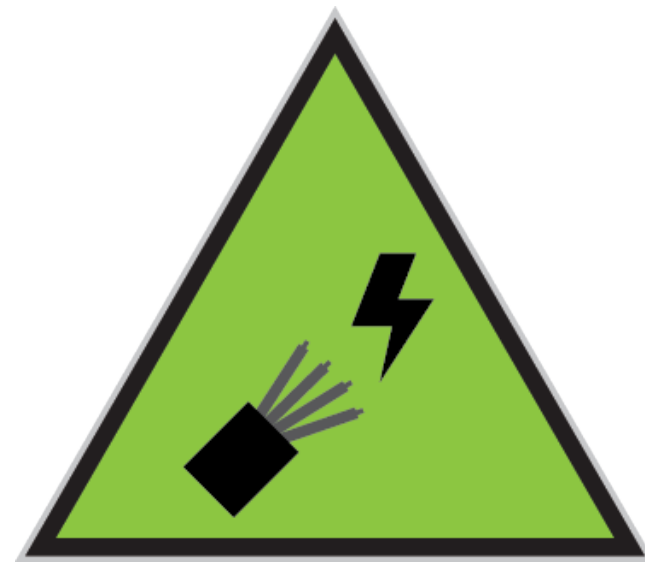
Forecourt Dangers



Public Access



Vehicles



Live Electrical Circuits

Fuel Dangers



Vapors



Oils



Fire



Do not modify equipment in any way.



Modifications may result in safety hazards, fuel in conduit, or leaks into the environment.



Modifications will void safety agency approvals and warranty.



Understand the Fire Triangle.



Remove at least one element to prevent fire.



Understand the Life Saving Rules.



Work with a valid work permit when required.



Conduct gas tests when required.



Verify isolation before work begins and use specified life protection equipment.



Obtain authorization before entering a confined space.



Obtain authorization before overriding or disabling safety critical equipment.



Protect yourself against fall when working at height.



Do not walk under a suspended load.



Do not smoke outside of designated areas.



No alcohol or drugs while working or driving.



While driving, do not use your phone and do not exceed speed limits.



Wear your seatbelt.



Follow prescribed journey management plan.



Wear Personal Protection Equipment (PPE).

Hard Hat



High Visibility Vest



Long Trousers



Safety Glasses



Long Sleeves



Gloves



Safety Boots





UNDERSTANDING THE NEW REGULATIONS AND WHAT THEY MEAN TO YOU

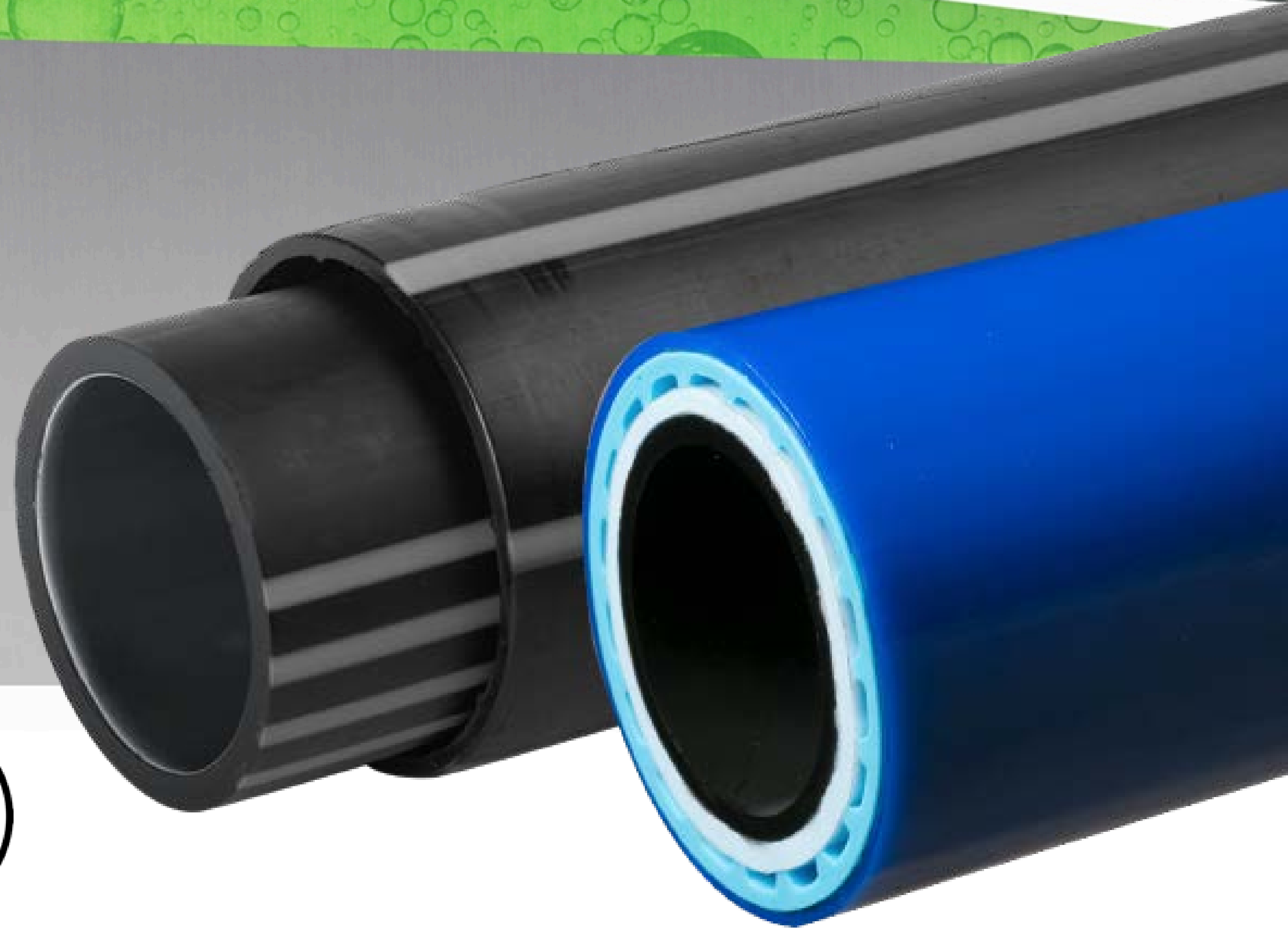
Franklin Fueling Systems is the expert in underground petroleum systems and we have the solutions to help you not only meet today's challenges, but also protect your investment in the future.

This represents Franklin Fueling Systems sole interpretation of the latest UST Federal regulations. Although these are federal level regulations, you must be aware of varying State/Local/County regulations as well. Contact Franklin for detailed solutions and technical advice.



SECONDARY CONTAINED PIPES & TANKS

REGULATION: Owners and operators are now required to install secondary contained piping and tanks on all new and replacement applications.



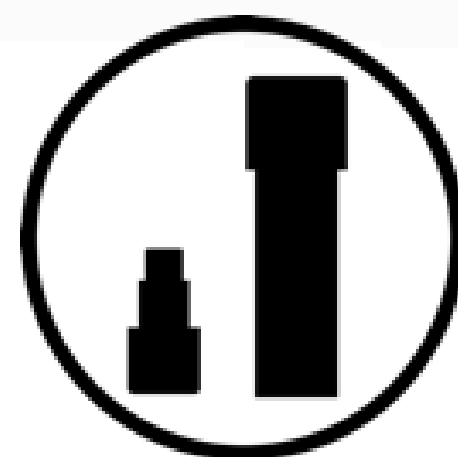
FLEXIBLE PIPE

APT™ brand flexible piping systems provide a time-proven, water-tight double-wall pipework solution.



SEMI-RIGID PIPE

UPP™ brand semi-rigid piping systems employ the electrofusion welding installation process for a water-tight double-wall pipework solution.



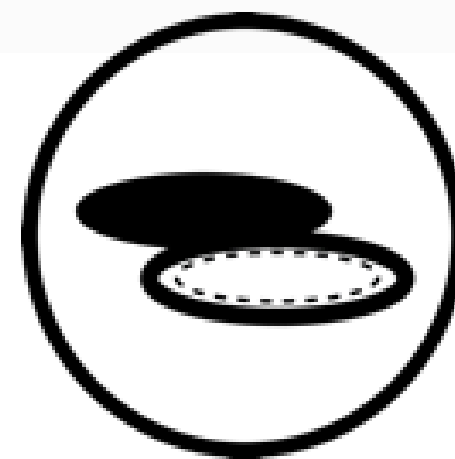
SENSORS

An assortment of INCON™ brand sensor options are available to detect the presence of liquid for both steel and fiberglass tank interstitial spaces.



WALK THROUGH INSPECTIONS

REGULATION: Visual inspections of spill prevention equipment and release detection equipment must occur every 30 days. Containment sumps must be inspected annually.



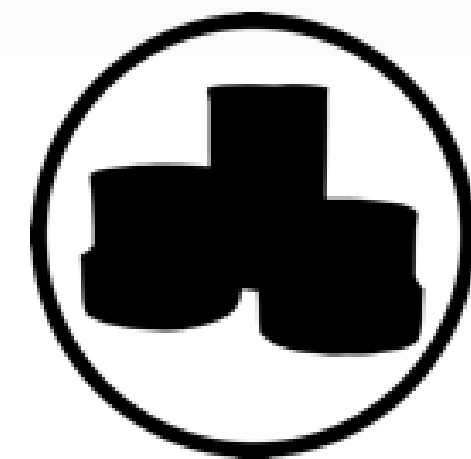
MANWAYS

FLEX-ING™ brand composite manways are light and easy to remove for safe and simple monthly inspections.



SPILL CONTAINERS

Defender Series™ double wall spill containers feature an integrated interstitial integrity monitor for fast visual inspection.



SUMPS

APT™ brand sumps feature a white HDPE construction or white gel inner lining (fiberglass) for enhanced visibility.



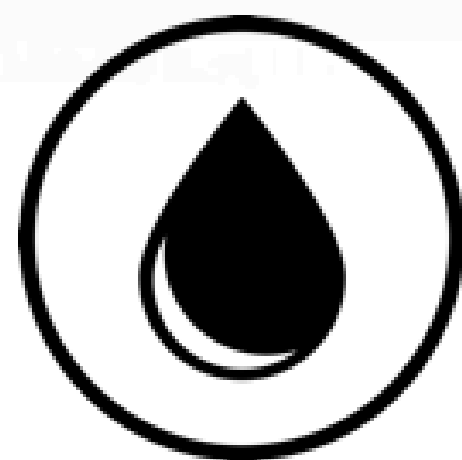
SPILL PREVENTION TESTING

REGULATION: Owners and operators must test spill prevention equipment for interstitial integrity once every three years.



INTEGRITY TESTING

Defender Series™ double wall spill containers feature two monitoring options, mechanical and electronic, to provide immediate testing.



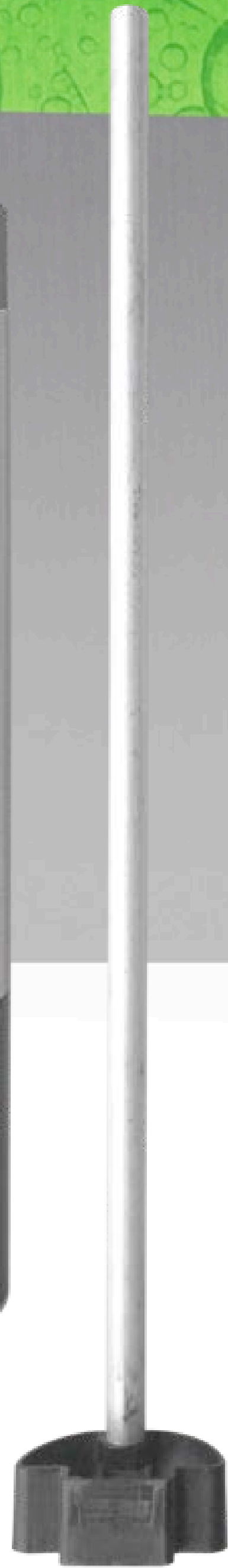
ELECTRONIC MONITORING

Electronic monitoring option interfaces with TS-550 evo™ fuel management system to provide continual monitoring and logging of interstitial integrity.



FIELD REPLACEMENT

Easily field replace the interior containment without having to break concrete should an issue arise.



OVERFILL PREVENTION TESTING

REGULATION: Owners and operators must inspect overfill prevention equipment for proper level shutoff once every three years.



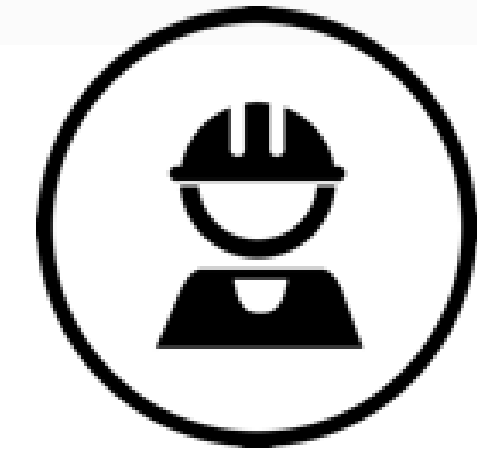
EASY TESTING

Defender Series™ overfill prevention valves (OPVs) can be tested for functionality without removing them from the riser.



NO SHUTDOWN

Eliminates the need to shut down the station to retest.



SINGLE PERSON TEST

Fast visual inspection can be conducted by a single person.



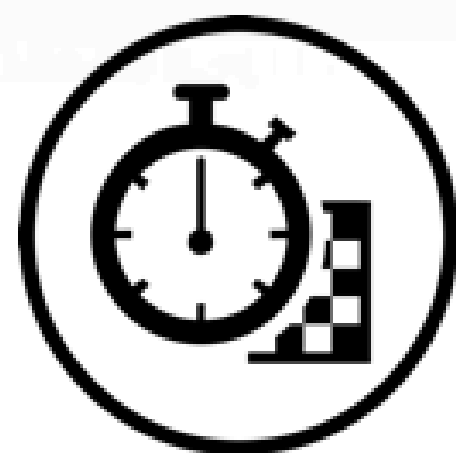
CONTAINMENT TESTING

REGULATION: Containment sumps must be tested for liquid tightness every three years.



WATERTIGHT PIPEWORK

Prevent liquid penetration up front with APT™ and UPP™ brand piping & containment systems featuring watertight containment entries.



FAST TESTING

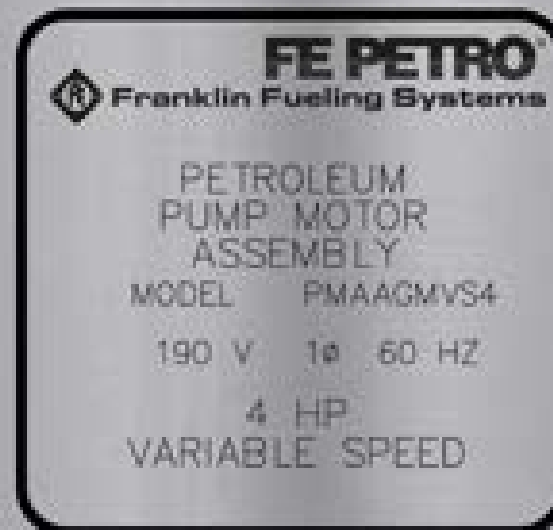
Utilize the portable INCON™ brand Sump Test System (STS) to test up to four containments at once in 15 minutes.



SUMPS OR SPILL CONTAINERS

Provides precision testing for both sumps or spill containment.





MagShell™
ALCOHOL GASOLINE
UL APPROVED FOR
0-85% ETHANOL



FUEL COMPATIBILITY

REGULATION: UST system components must be made of or lined with materials that are compatible with the substance stored in the UST system.



APPROVED

Franklin offers a broad selection of equipment that has independent third party certification to a biofuel standard such as UL.



SELF-CERTIFIED

When such a standard is not established/available/accepted, Franklin will certify products to our own rigid set of internal compatibility parameters.



COMPATIBILITY

Franklin offers a wide range of equipment that is compatible with most petroleum based fuels.



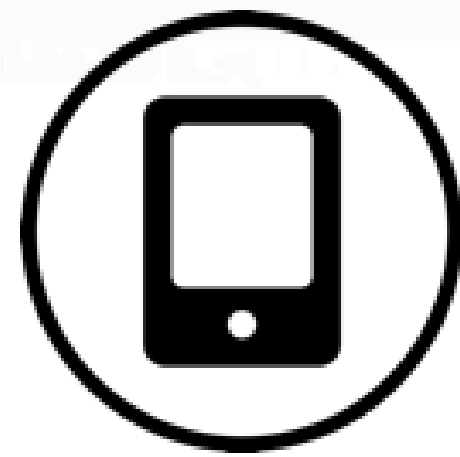
INTERSTITIAL MONITORING REPORTING

REGULATION: Suspected releases and system testing associated with release investigation/confirmation must be reported.



RULES ENGINE

The TS-550 evo™ employs a powerful rules engine that can be programed to provide instant alerts and reports automatically.



ALERTS ANYWHERE

Alerts can be sent via text message, email, or fax to personnel.



REMOTE MONITORING

Once notified, anyone with network access can open up any web-equipped device and log into the console to remotely view details on vital site data.





REPAIR WORK

REGULATION: Fixing system components not linked to a release is considered a repair. Therefore, testing following these activities is now required.



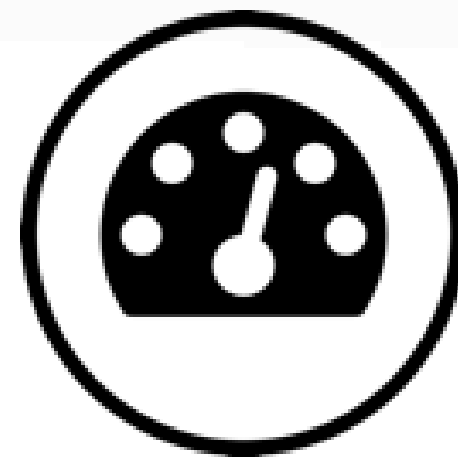
SIMPLE TESTING

All Franklin Fueling Systems release prevention products are designed for fast and easy testing.



OPV TESTING

Defender Series™ OPVs can be quickly tested by a single technician in minutes.

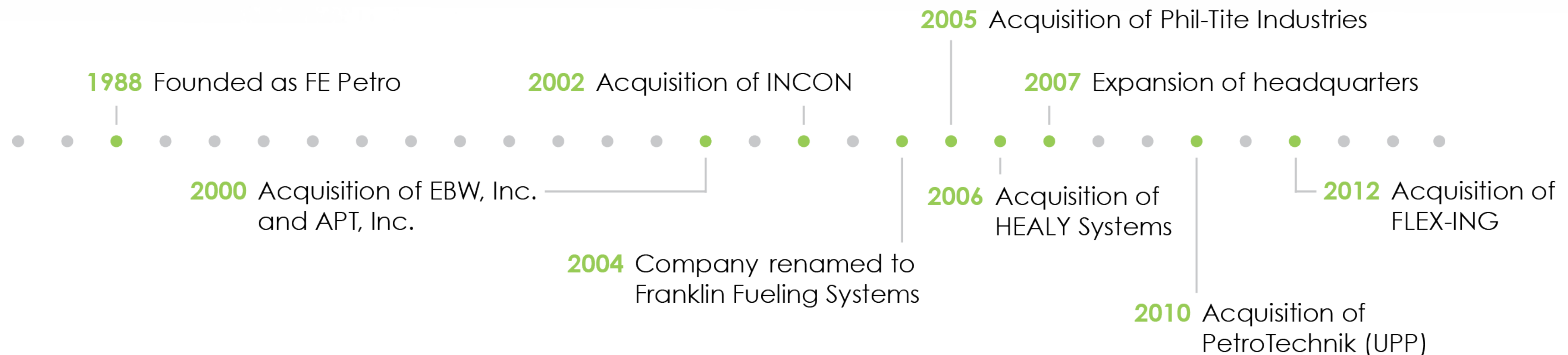


SPILL CONTAINER TESTING

Defender Series™ spill containers are easily pressure tested.

OUR BRANDS

Franklin Fueling Systems is comprised of well-known and trusted industry brands including:





DESIGNED TOGETHER, TO WORK TOGETHER



TOTAL – We represent the industry’s most complete product offering.



SYSTEM – We believe in providing added performance through system integration.



SOLUTIONS – We solve problems with total cost of ownership in mind.



INTEGRATED APPROACH

An integrated approach with a system of products that are specifically engineered to work with one another.



ADDED PERFORMANCE

These integrated systems provide added performance benefits.




TANGIBLE BENEFITS

Faster and safer installations, watertight containment, and system control so you can run your station as efficiently as possible.



SUBMERSIBLE PUMPING SYSTEMS

FE PETRO™ DRIVEN BY INNOVATION

 **Franklin Fueling Systems**

Submersible Pumping Systems – FE Petro

DRIVEN BY INNOVATION

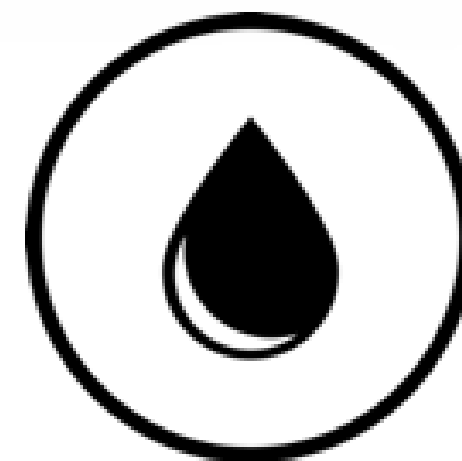
- ✓ Manual Pressure Relief (1996)
- ✓ Variable Length (1996) – enhanced in 2005
- ✓ Variable Speed (1997) – enhanced in 2002
- ✓ Smart Controllers (1998) – enhanced in 2002
- ✓ MagShell™ flow enhancement option (2002)
- ✓ UL 79A (E85) in 2010, UL 79B (B20, B100) in 2012
- ✓ UL 842A (E85) and UL 842B (B20, B100) in 2015
- ✓ Advanced Protection option in 2015





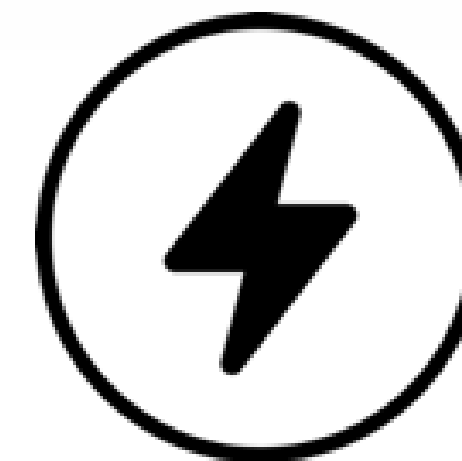
VARIABLE SPEED

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



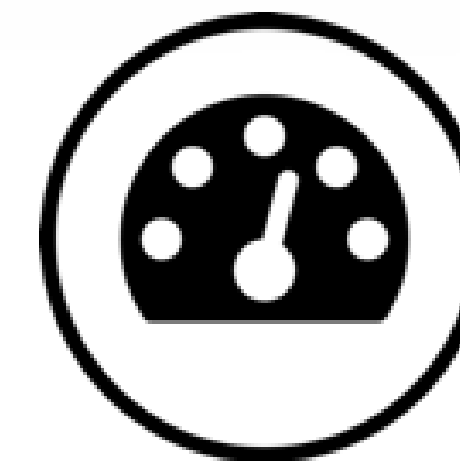
HIGHER FLOW RATES

The MagVFC™ variable speed controller ramps the STP up and down as needed for optimal flow rates.



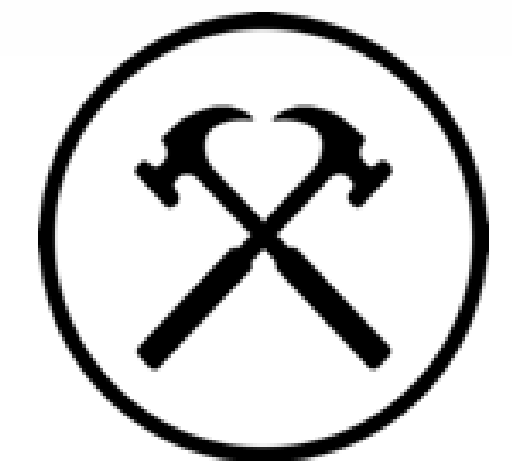
ENERGY CONSUMPTION

Systems provides only the necessary power to achieve desired flow rates, only Consuming as much energy as is needed.



MEET 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 site needs.

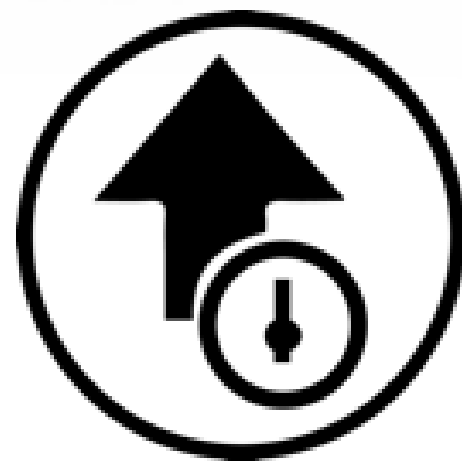


HYDRAULIC HAMMER

Minimizes this sudden pressure spike resulting from a stoppage in flow in a pressurized piping system which can be exaggerated in fixed speed systems.

INTELLIGENT CONTROLLERS

With running status and fault history of abnormal conditions to enhance troubleshooting, intelligent controllers keep your station up and running as efficiently as possible.



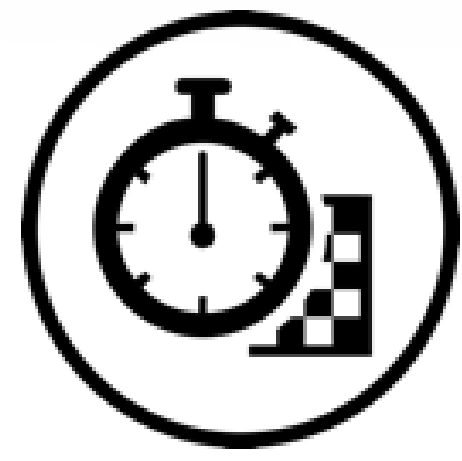
MORE UPTIME

The running status and fault readouts provide visual troubleshooting to help identify issues quickly so you can get the system back up and running.



MAXIMIZE PERFORMANCE

Intelligent controller technology will run your submersible pumps as efficiently as possible to conserve energy costs while still filling cars faster.



FAST INSTALLATION

With no special wiring or software required, intelligent controllers setup quickly and provide the control you need to optimize your system.





MagShell™
ALCOHOL GASOLINE

UL APPROVED FOR
UL 85% ETHANOL

FUEL COMPATIBILITY

Market demands for alternative fuel compatibility continue to change. As standards change, FE Petro™ systems are at the forefront, gaining the new approvals our customers need today and moving forward.



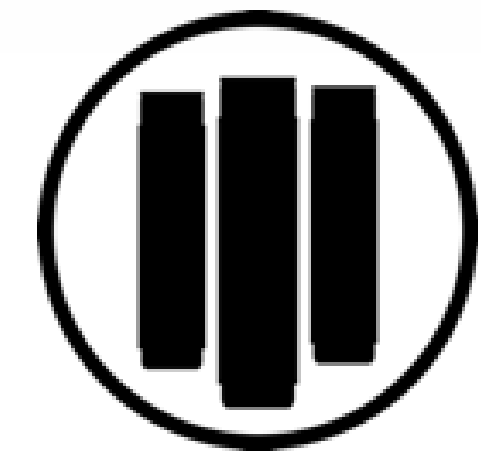
PROPER APPROVALS

UL listed products for both gasoline with up to 85% ethanol and diesel fuels with up to 20% or 100% biodiesel.



BIOFUEL COMPATIBLE

We offer a broad range of compatible pumps and MLDs to suit the needs of any application including fixed and variable speed models.



BUILT ON OUR STANDARD

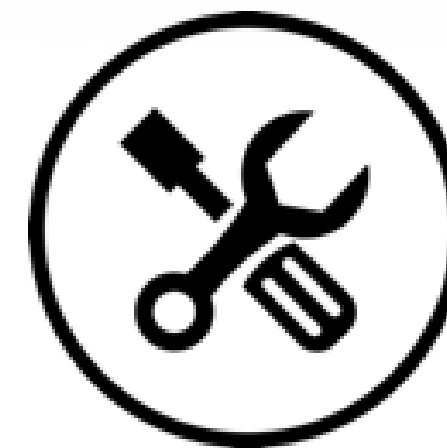
Replacement items like check valves and pump motor assemblies are directly interchangeable, eliminating the need to stock duplicates.





ADVANCED PROTECTION

Available as an option on AG compatible submersible turbine pumps, Advanced Protection defends STPs from accelerated corrosion caused by the acetic byproduct of microbial activity.



FACTORY INSTALLED

Factory installed option on STPAG and IST biofuel compatible models.



SUPERIOR PROTECTION

Powder-coated and E-coated finishes protect exterior cast surfaces, while fasteners, risers, variable length column pipes, and couplers are stainless steel.

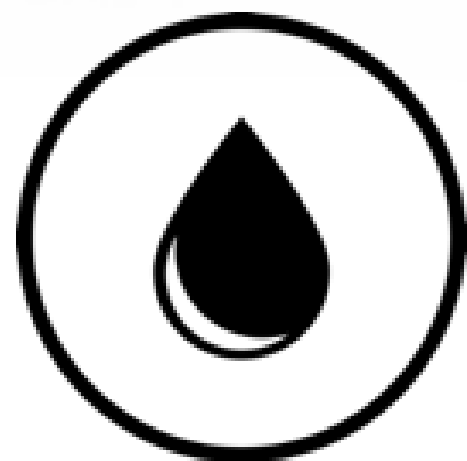
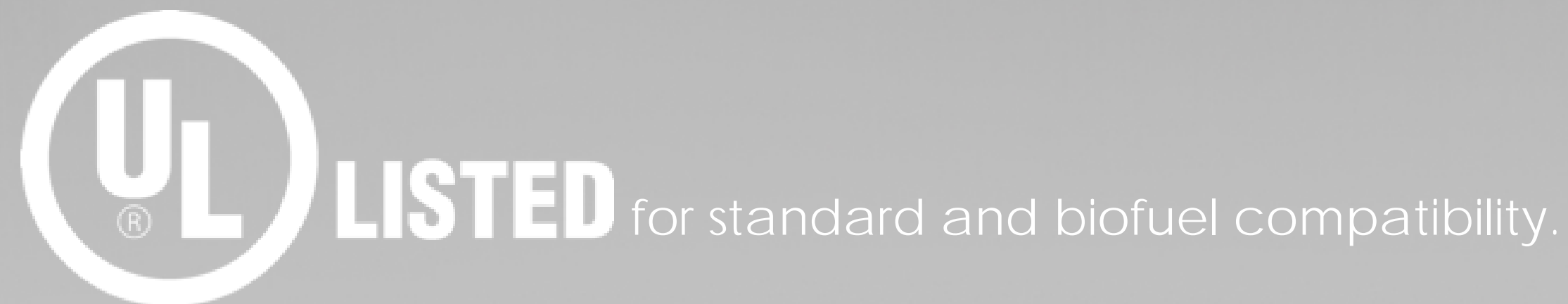


CORROSION RESISTANT

This superior construction is perfect for preventing accelerated corrosion in ULSD, high ethanol, AST, marina, and aviation applications.

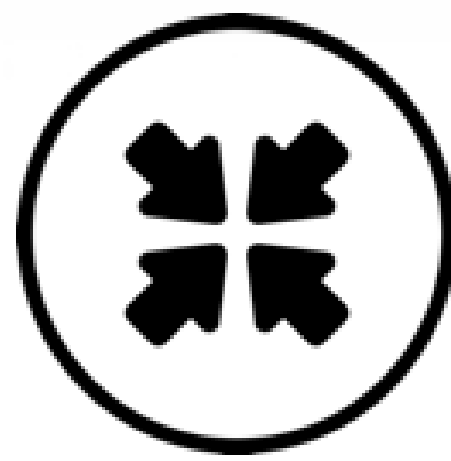
MLD+ MECHANICAL LEAK DETECTION

MLD+ mechanical leak detectors provide reliable leak detection for standard fuel and biodiesel applications on 4" submersible turbine pumps.



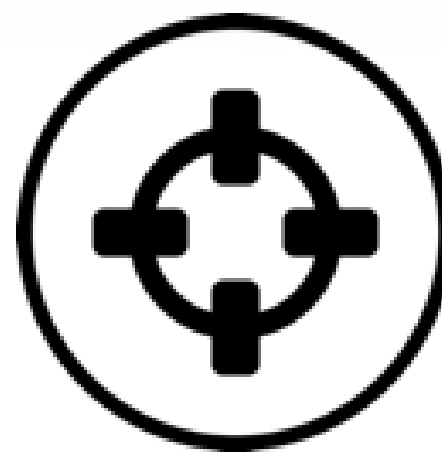
MAXIMUM FLOW

Opens completely to allow maximum product flow during fueling operation and remains open with discharge pressure as low as 1 PSI (0.07 bar).



COMPACT DESIGN

Compact, yet rugged design to reduce installation height and provide accurate, hassle-free operation of a piston style leak detector.



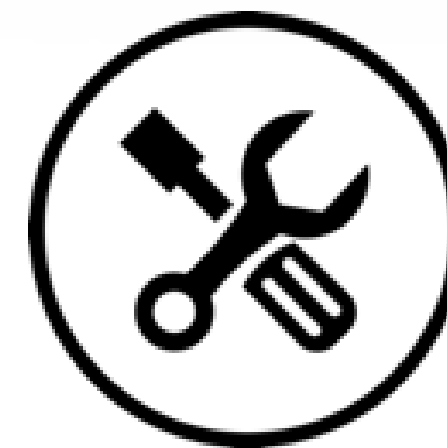
PRECISE LEAK DETECTION

A specialized metering pin unique to only the MLD+ provides precision leak detection for any type of pipework system including flexible, rigid and a combination of the two.



INTAKE FILTER SCREEN (IFS)

As biofuel use continues to grow, so does the potential for increased debris inside the storage tank. To stop this debris from entering the pumping system, use an FE Petro™ brand Intake Filter Screen (IFS).



FACTORY OR RETROFIT INSTALLED

Factory installed on STPs and Pump Motor Assemblies (PMAs) or they can be field-retrofitted onto existing FE Petro™ or competitive 4" PMAs, adding only about 1" to length PMA.



SELF-CLEANING

Provides filtration down to about the size of a grain of sand (0.009" openings) while also preventing debris to attach to the flat face.



PERFORMANCE MAINTAINED

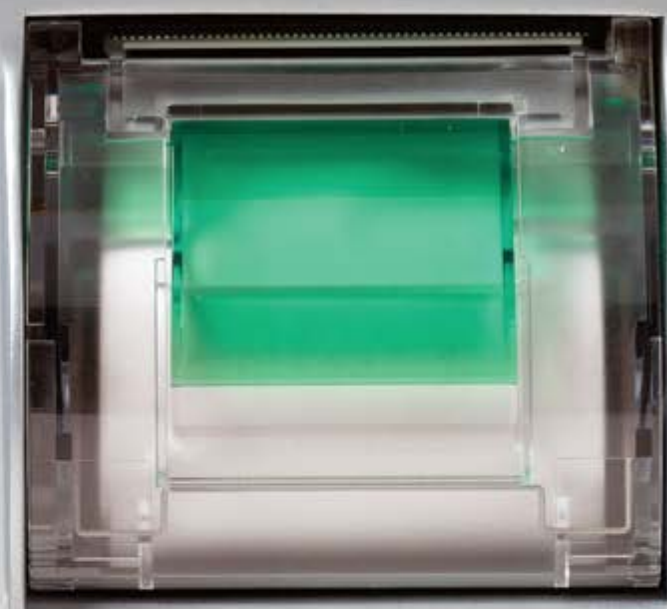
The output performance of the STP/PMA is maintained to that of a standard end bell while providing the added filtration for the entire pumping system.

FE Petro – Intake Filter Screen

TS-550
evo



 Franklin Fueling Systems



TOTAL SYSTEM SOLUTIONS

NEXT LEVEL TANK GAUGING

 Franklin Fueling Systems

INTUITIVE USER INTERFACE

We've given you the ability to be as productive as possible by making the user interface simple and easy to use by anyone who interfaces with the tank gauge.



INTUITIVE DESIGN

Easy to understand icons and buttons, just like on your mobile phone.



FAST PROCESSOR

Lightning fast 600 MHz processor for fast, responsive operation.



HUGE SCREEN

Brilliant full color, animated 7" display touch screen





ONE TOUCH BUTTONS

Programmable buttons that automate common tasks with one button push.



QUICK JUMP MENU

Jump to any screen, from any screen at any time for simple and easy navigation.



INTUITIVE ALARMS

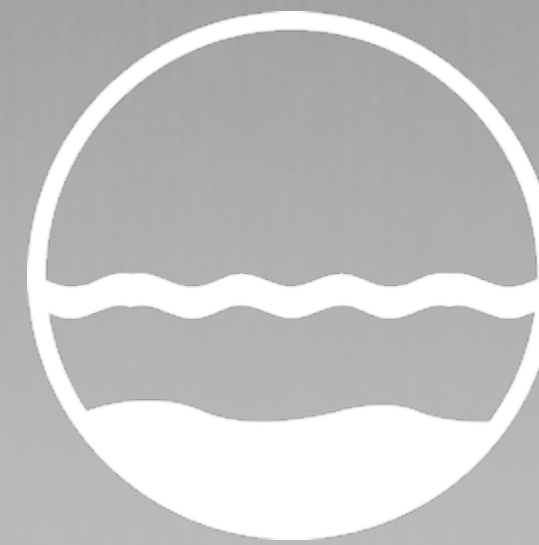
Pop-up and scrolling alarm status along with advanced detail screens help you effectively handle alarms.



•FMP-LL3-XXX: Leak Detection Probe

- Can report the level of up to three floats
 - Product, Water and Density (2" or 4")
- Magnetostrictive probe with exceptional linearity, resolution and stability
- Installs into a 2, 3, or 4 inch riser pipe
- Includes foot and centering ring for bottom mounting
- For use in all petroleum applications
- 316 stainless steel shaft
- Required for precision leak testing
 - .1 gph Test
 - .2 gph Test
 - SCALD Testing
- Sold in lengths up to 12 feet





PHASE SEPARATION

Detect harmful separated fuel in your storage tank before it becomes a problem for you and your customers.



WHAT IS IT?

Effectively manage product levels as well as alert you of water or phase separation levels in your tanks.



HOW TO USE IT?

Single-float solution for both water and phase separation that works with our gauge to indicate water and phase separation in tanks.










WHAT'S THE BENEFIT?

Effectively and automatically shut down a submersible pump before water or phase separation reaches the customer's vehicle.



SELECTING A SENSOR

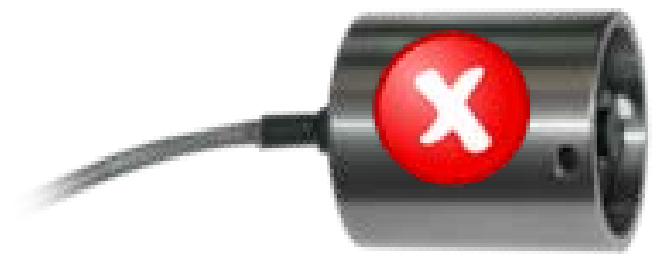
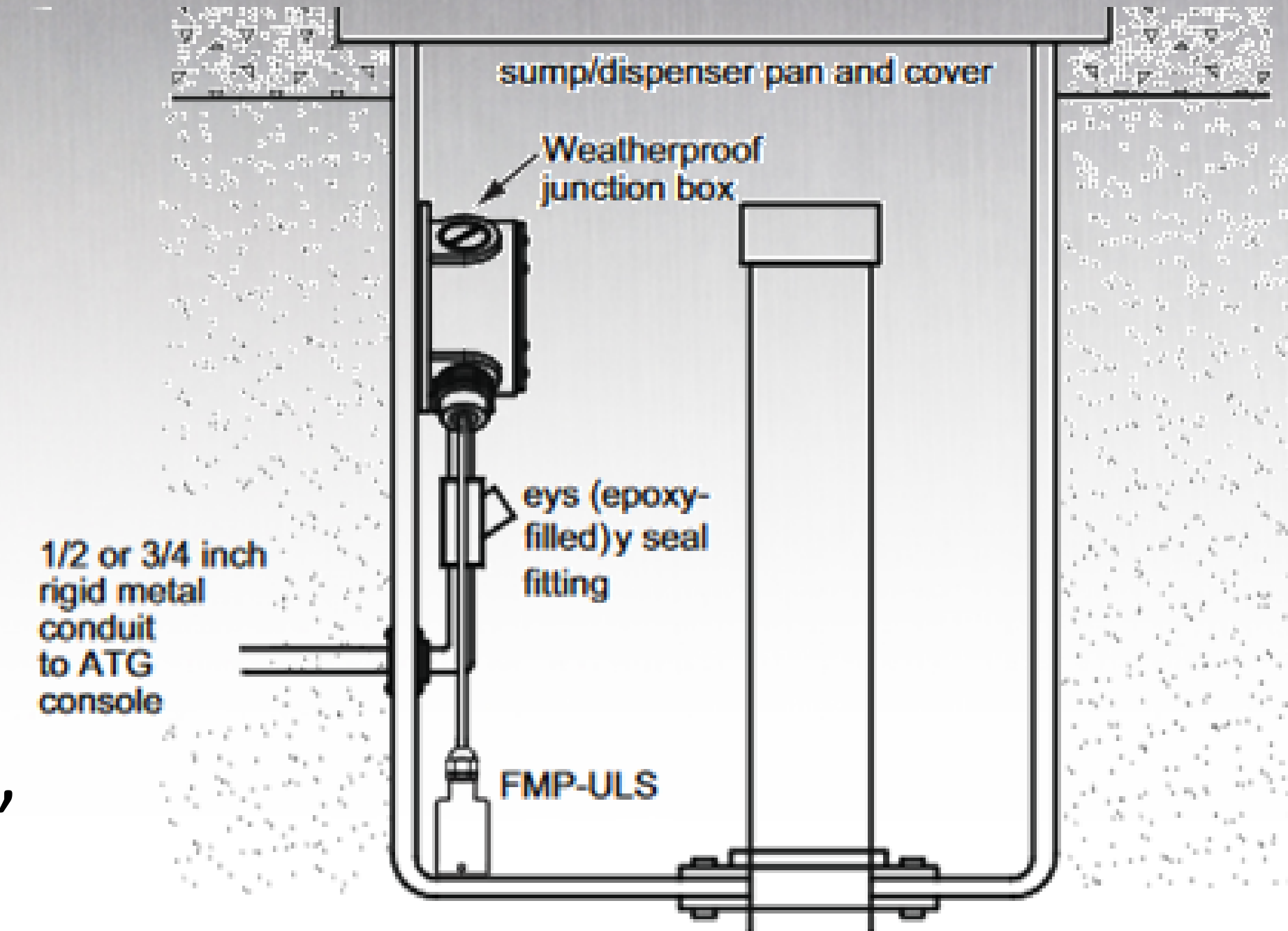
Use this side-by-side comparison of our sensor offering to make your selection.

Part Number	 TSP-DDS	 TSP-DTS	 TSP-DMS	 TSP-ULS	 TSP-EIS	 TSP-DIS	 TSP-HIS
Sensor	Discriminating Dispenser Sump Sensor	Discriminating Turbine Sump Sensor	Discriminating Magnetostrictive Sump Sensor	Universal Liquid Sensor	Electro-Optic Interstitial Sensor	Discriminating Interstitial Sensor	Hydrostatic Interstitial Sensor
Discriminating Capability	✓	✓	✓			✓	
Non-Discriminating				✓	✓		✓
Turbine Sump Applications		✓	✓	✓			
Dispenser Sump Applications	✓		✓	✓			
Tank Interstitial Space Applications				✓	✓	✓	✓
Position Sensitive (Tamper Protection)			✓				
Hydrostatic Monitoring Capability							✓
Typical Application	Dispenser sump applications requiring discriminating capabilities	Turbine sump applications requiring discriminating capabilities	Turbine or dispenser sump applications with tamper protection regulations in place	Turbine and dispenser sumps or drop-down tank interstitial space	Dry double wall tank applications including fiberglass and wrap-around	Dry double wall tank applications requiring discriminating capabilities	Double wall tank interstitial space filled with brine solution



- FMP-ULS:

- Standard sensor that is used to detect presence of liquid in dispenser sumps, turbine sumps and interstitial areas of steel tanks.
- Uses magnetic-float/reed-switch technology
- Normally closed circuit will open when float rises ½" (12mm)
- Must be installed suspended or standing

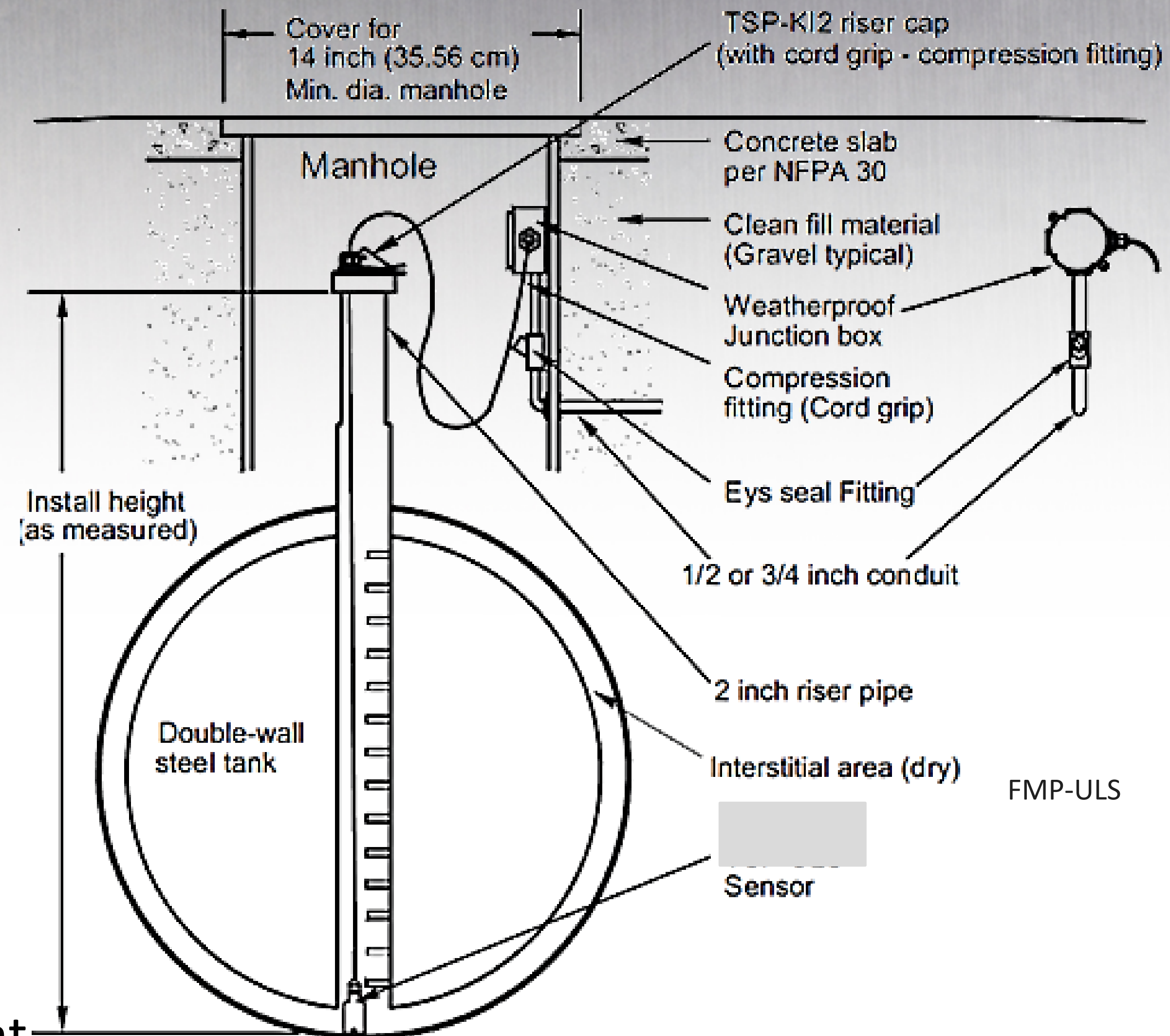




• FMP-ULS:

• Installation In Storage Tank Interstitial Space

- Pull sensor cable through TSP-KI2 riser cap and cord-grip until mark reaches top of cord-grip fitting
- Tighten cord-grip fitting
- Suspend sensor vertically then lower into tank interstitial area
- Pull sensor cable through cord-grip fitting at junction box





- FMP-EIS-U & FMP-DIS-U:
 - Standard (EIS) and enhanced (DIS) BriteSensors™ used to detect liquids in dry interstitial of double wall tanks
 - EIS: Normally close circuit opens at presence of liquid
 - DIS: Uses enhanced conductivity pins to discriminate between water and hydrocarbons
 - Alarms include:
 - Water
 - Product
- Communicates a sensor ID to ATG



FMP-DIS-U

FMP-EIS-U



- Remote Alarms: Models

- TS-RA1

- Audible annunciator
 - Best located in tank field

- TS-RA2

- High intensity annunciator
 - Best located at distance from tank field

- TS-RK



TS-RA1



TS-RA2



TS-RK

Fuel Management Systems – TS-550 EVO

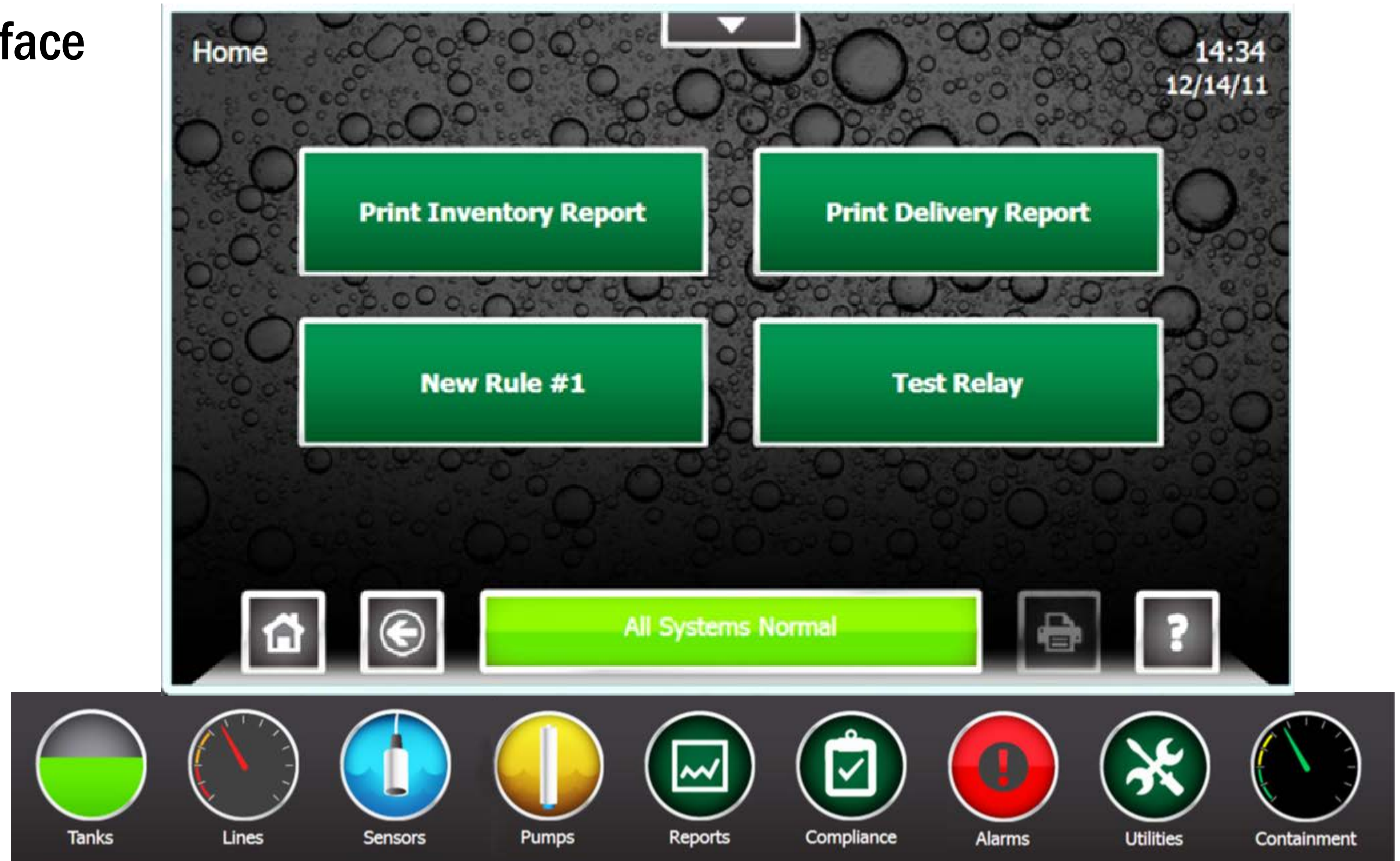
EVO™ Series Models & Features

- TS-550 evo: Complete Fuel Management System
 - Tank Inventory and Leak Detection
 - Sensors & Line Leak
 - Reconciliation & Autocalibration
 - Turbine Pump Interface (TPI)
 - Secondary Containment Monitoring
 - Quick Jump Menu
 - One Touch Programmable Buttons
 - Faster Processor
 - Simplified User Interface
 - Upgraded Alarm Interface
 - Programmable Product Colors
 - Standard Ethernet Port



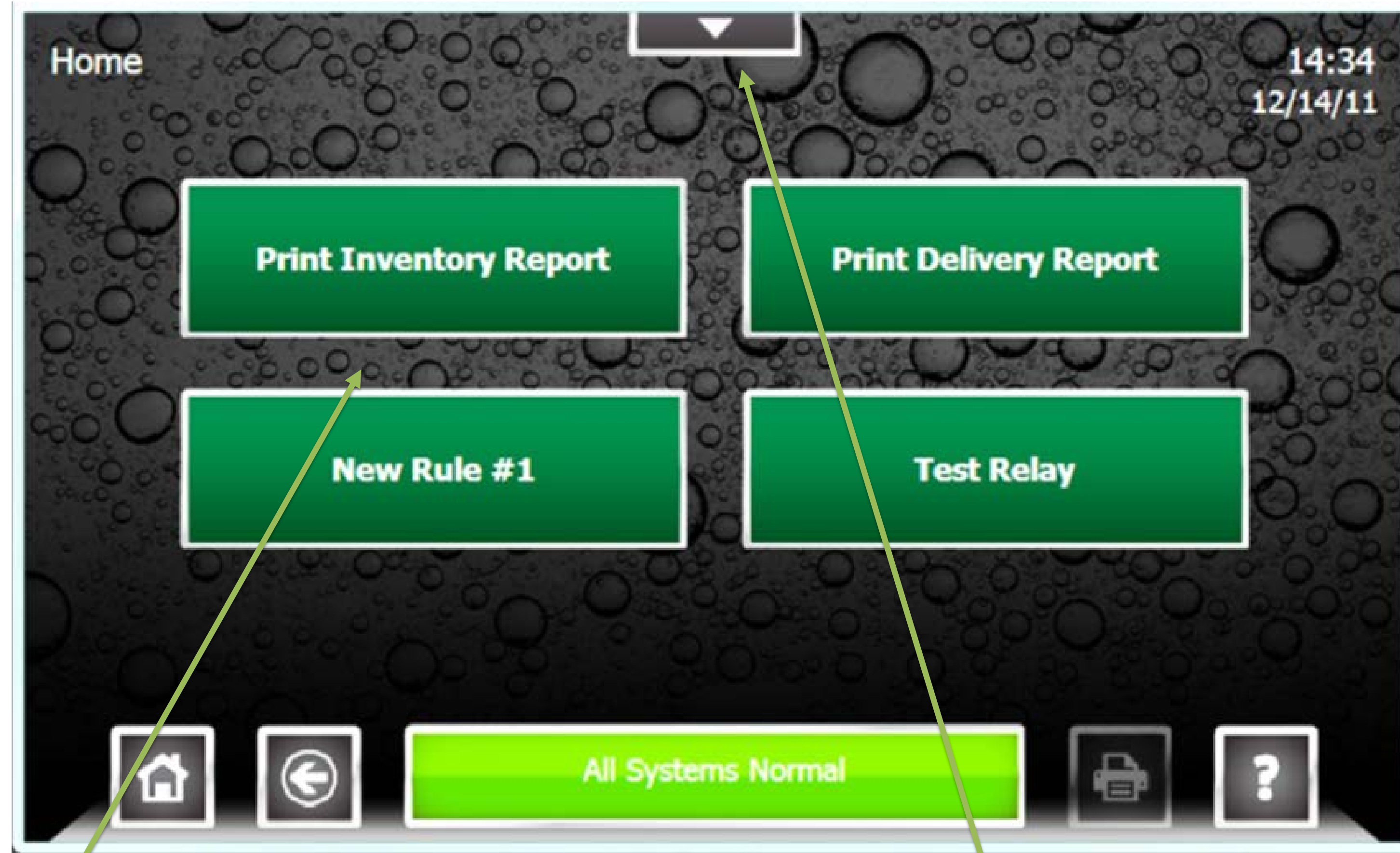
Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface



Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface

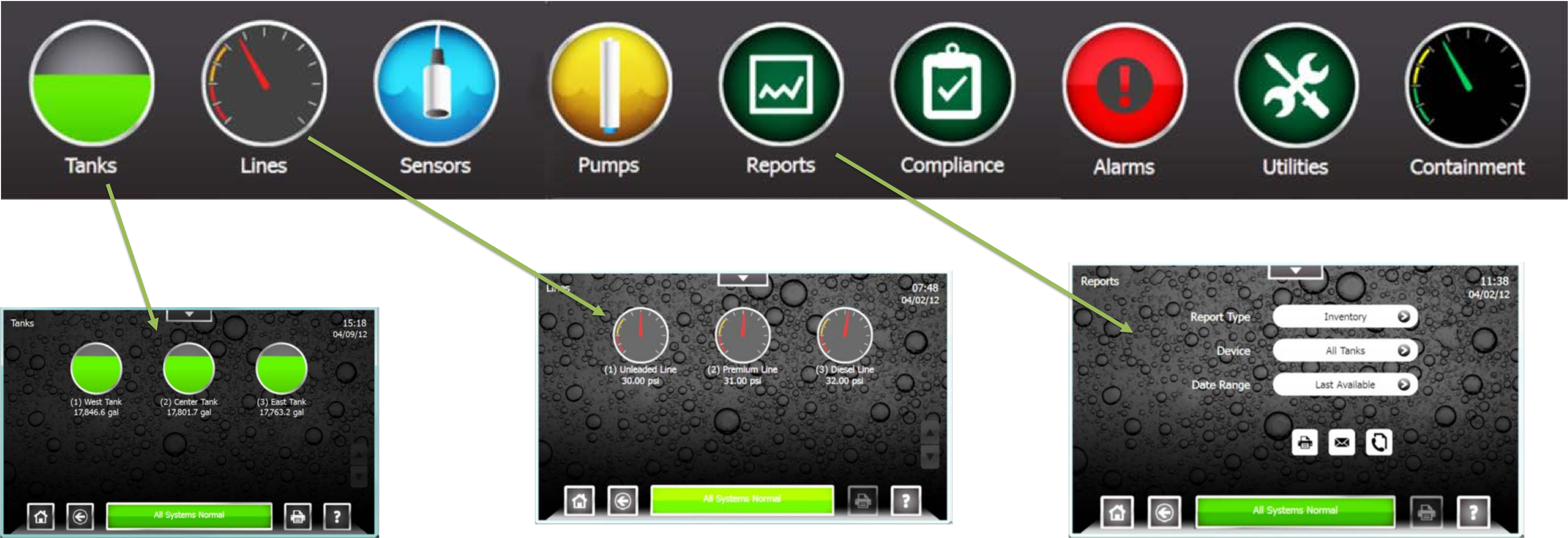


One Touch Button: Run customized and specific rule for various controls functions

Quick Jump Menu:
Allows rapid access to console functions

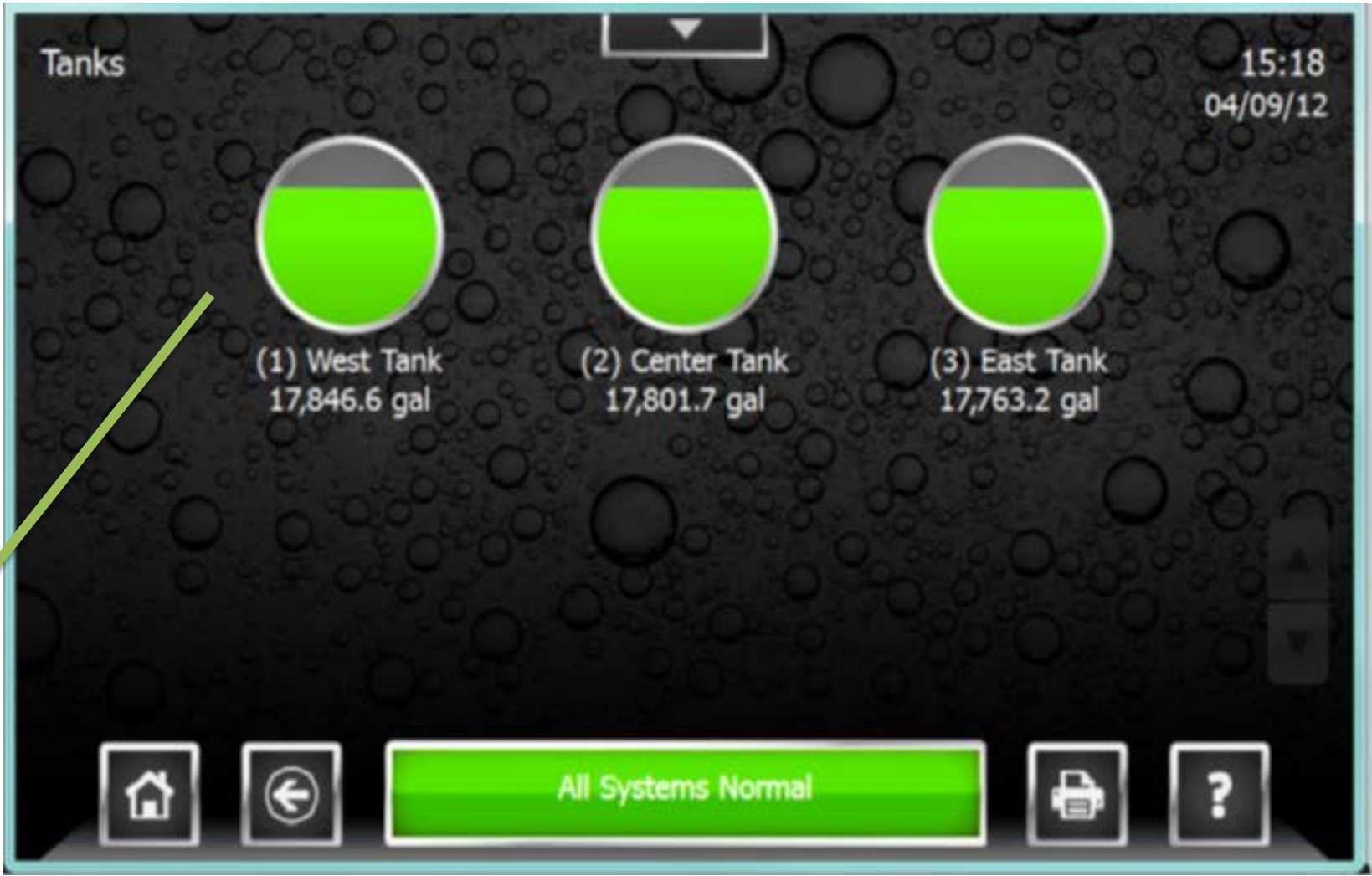
Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface
 - Quick Jump Menu



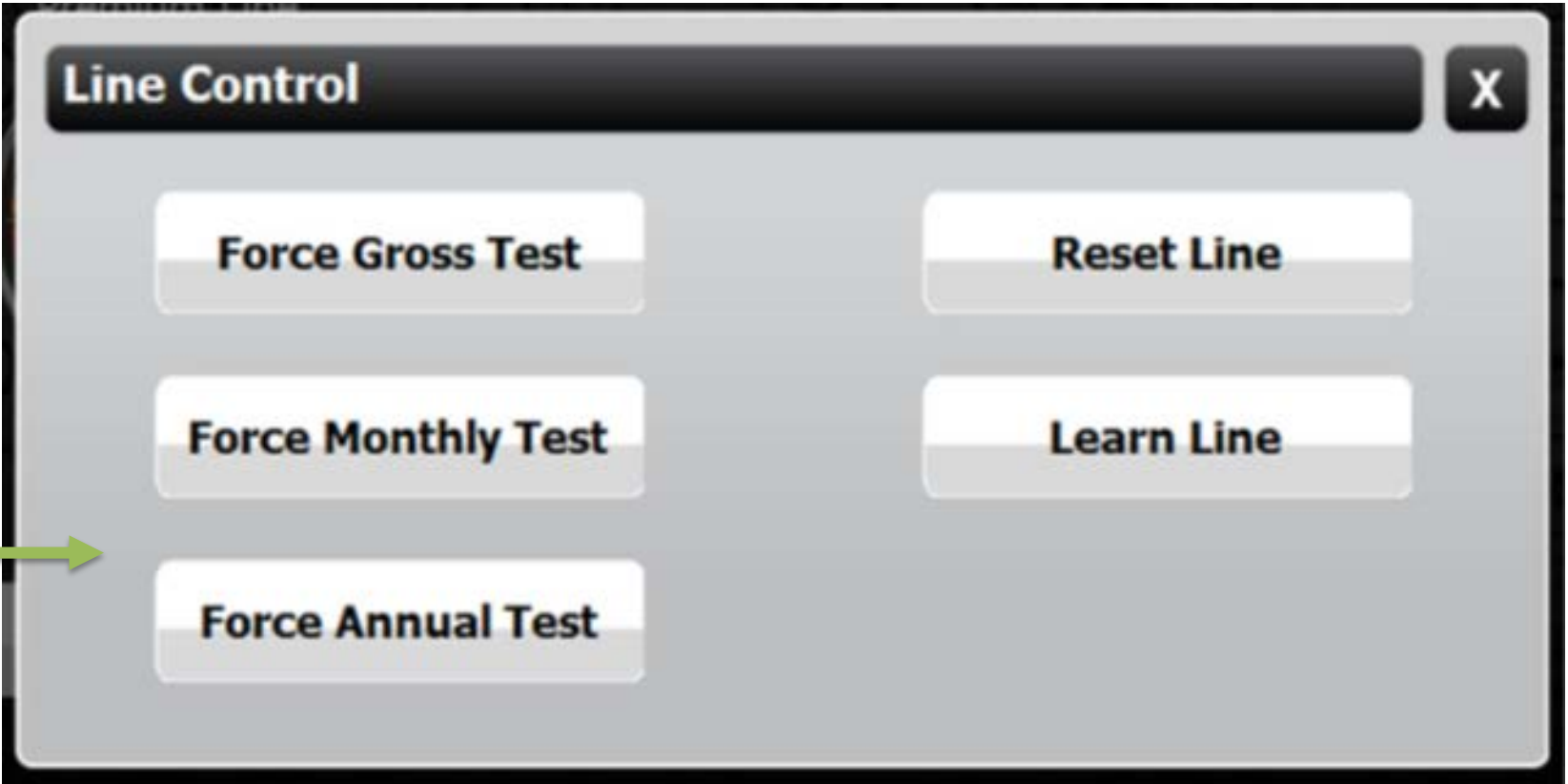
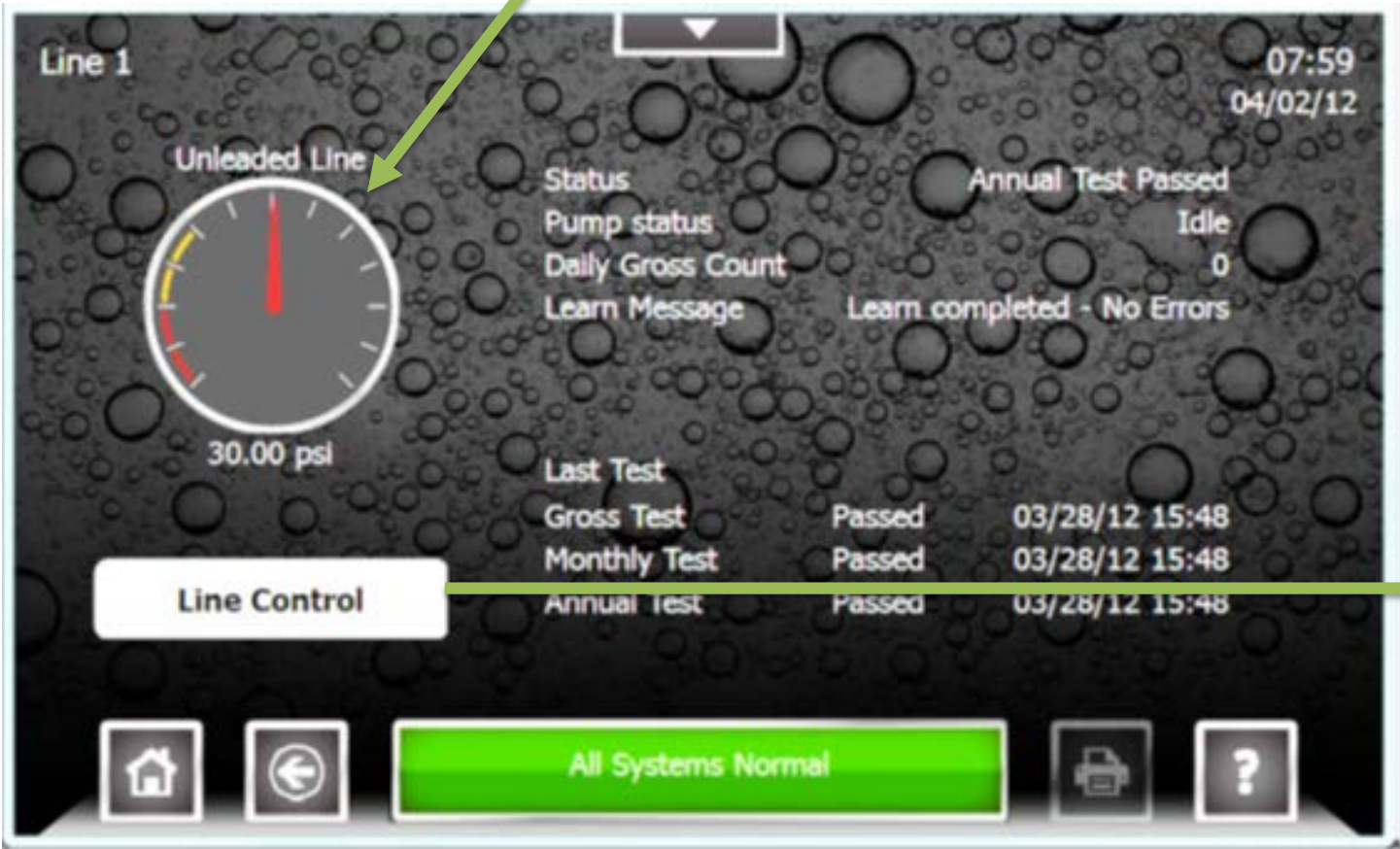
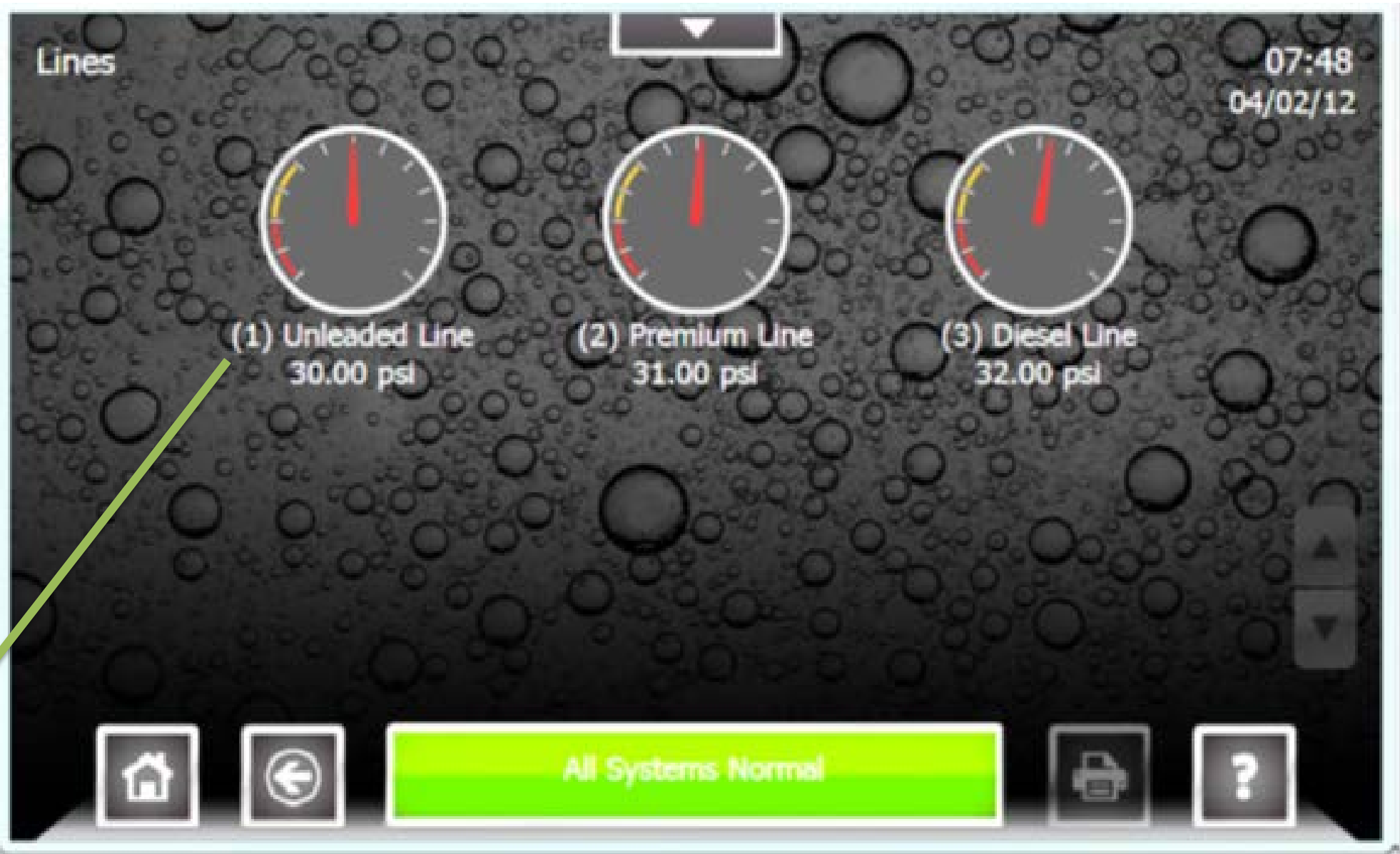
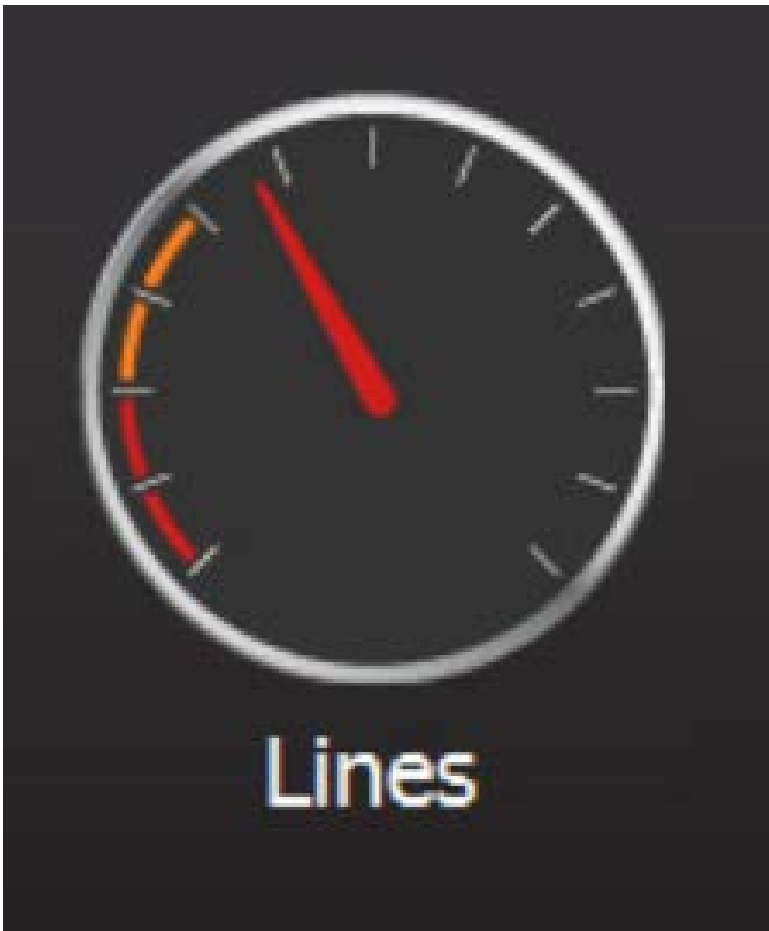
Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface
 - Tanks Menu




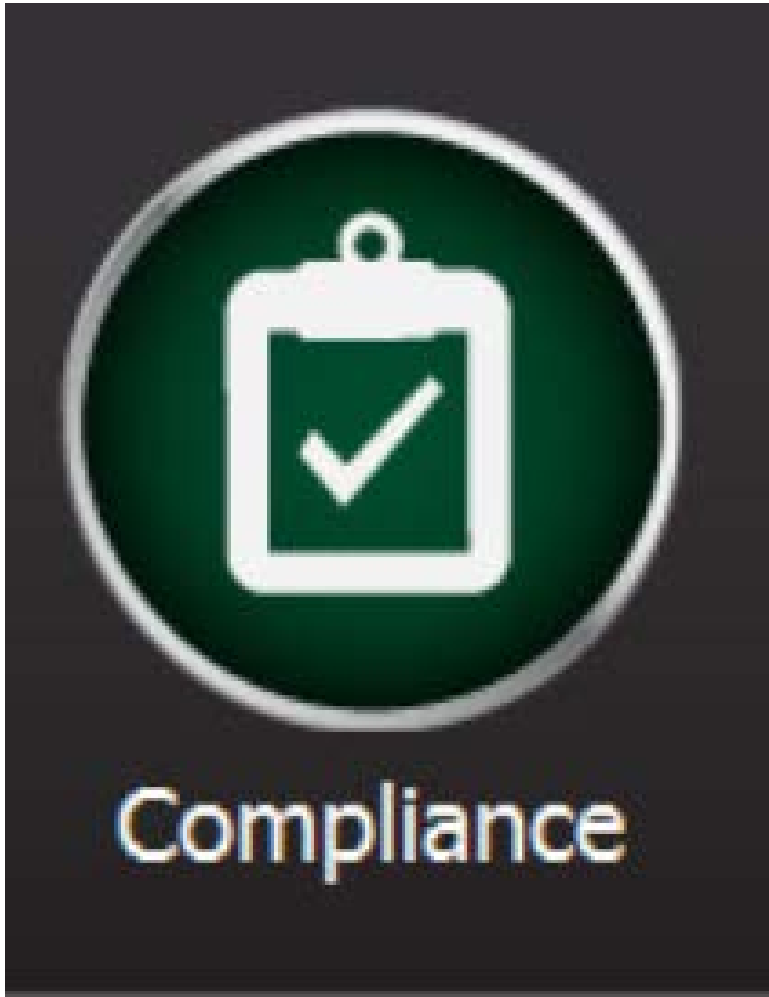
Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface
 - Lines Menu



Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface
 - Compliance Menu

The screenshot shows a "Tank Compliance" screen with a dark background and a pattern of bubbles. At the top left is the title "Tank Compliance". At the top right is the time "13:16" and date "04/02/12". Below the title is a table with columns: "Device", "Name", "Type", "Last Passed", "Status", "Days Left", and "Out of Compliance". The table lists nine tanks, all with green status indicators. To the left of the table is a green circular gauge with a white needle. At the bottom of the screen is a green bar with the text "All Systems Normal". Navigation icons for home, back, print, and help are at the bottom right.

Device	Name	Type	Last Passed	Status	Days Left	Out of Compliance
Monthly						
Tank 1	Tank &1	Static		●	26	04/28/12 12:56
Tank 2	Tank '2	SCALD	03/30/12 15:07	●	27	04/29/12 15:07
Tank 3	Tank "3	SCALD	03/30/12 15:07	●	27	04/29/12 15:07
Tank 4	Tank >4	Static	03/30/12 07:07	●	27	04/29/12 07:07
Tank 5	Tank <5	SCALD	03/30/12 15:11	●	27	04/29/12 15:11
Tank 6	Tank 6	Static	04/02/12 08:14	●	30	05/02/12 08:14
Tank 7	Tank 7	Static	04/02/12 08:14	●	30	05/02/12 08:14
Tank 8	Tank 8	Static	04/02/12 08:14	●	30	05/02/12 08:14
Tank 9	Tank 9	Static	04/02/12 08:14	●	30	05/02/12 08:14

Compliance Status

- Compliant: The device is in compliance
- Compliance Alert: The device will be out of compliance in 8 to 14 days
- Compliance Warning: The device will be out of compliance in 1 to 7 days
- Compliance Alarm: The device is out of compliance

Automatic Tank Gauge (ATG) Navigation

- Graphic User Interface:
 - Reports Menu



Report Type	
Inventory	Delivery
Tank Test	Generator
SCALD	Lines Gross
Lines Monthly	Lines Annual

Automatic Tank Gauge (ATG) Navigation

•Web Interface: Navigation

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Franklin Fueling Systems

Tank Status

















TS-550


System FMS Setup

Status Alarms Control Compliance Reports

Tanks Lines Sensors Pumps

Auto Refresh 07/17/2017 19:24:49

TANKS													
Image	Manifold ID	Tank ID	Name	Product	Alarms	Level	Gross Volume	Net Volume	Ullage	Water Level	Temperature	Max Capacity	Capacity %
		1	T#1 Unleaded 20K	Unleaded		91.85	13,512.85	13,433.79	1,212.68	25.94	68.31	19,782.00	68.31
		2	T#2 Auto Diesel 12K	Auto Diesel		91.54	8,228.39	8,195.52	712.52	25.79	68.78	11,904.00	69.12
		3	T#3 Premium 8K	Premium		91.37	5,278.68	5,248.27	564.42	25.57	69.25	7,901.00	66.81
	1	4	T#4 West Diesel 30K	Truck Diesel		91.09	20,431.94	20,292.09	2,113.42	25.30	69.72	30,172.00	67.72
	1	5	T#5 East Diesel 30K	Truck Diesel		90.89	20,421.25	20,274.69	2,167.61	25.13	70.19	30,172.00	67.68
		6	T#6 Bio 20K	Bio		90.76	13,503.33	13,409.65	1,403.27	24.89	70.67	19,782.00	68.26
		7	T#7 DEF 12K	DEF		69.41	9,612.29	9,542.65	834.91	0.00	71.14	11,608.00	82.81
		8	T#Oil/Water Sperator	Oil/Water		93.75				0.00	71.61	5,000.00	

MANIFOLDS							
Manifold ID	Name	Product	Alarms	Gross Volume	Net Volume	Max Capacity	Capacity %
1	Manifold 1	Truck Diesel		40,853.20	40,566.78	60,344.00	67.70

56

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Tank Status:

- Landing page when first logging in
- Provides all details of tanks
 - Name, product, level, water level etc.
- Red, yellow light in upper right navigates to alarms page
- Link in upper left allow navigation to other devices, applications

Automatic Tank Gauge (ATG) Navigation

- Web Interface: Navigation

 - Links:

 - Upper left of every page will have selection based on location within web interface
 - Highlighted in blue indicating current location

 - Access Level

 - Informs user of current access level
 - Can be clicked to change level; prompt password request entry

 - Site Identifier

 - Set in System ID under setup parameters

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Franklin Fueling Systems

Tank Status









TS-550

System FMS Setup Auto Refresh

Status Alarms Control Compliance Reports 07/17/2017 19:24:49

Tanks Lines Sensors Pumps

TANKS

Image	Manifold ID	Tank ID	Name	Product	Alarms	Level	Gro Volu
		1	T#1 Unleaded 20K	Unleaded		91.83	13,512.
		2	T#2 Auto Diesel 12K	Auto Diesel		91.54	8,228.
		3	T#3 Premium 8K	Premium		91.37	5,278.
	1	4	T#4 West Diesel 30K	Truck Diesel		91.09	20,431.

Automatic Tank Gauge (ATG) Navigation

- Web Interface: System Status

- List all modules installed in console
- Identifies slot module installed
- State: operational or in operational
- Version
- CM-Version: software version of ATG

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Franklin Fueling Systems

System Status

TS-550

Auto Refresh

07/17/2017 19:45:32

Module Type	Slot	State	Version
AC Input Module	1	Operational	0.9.0
Relay Module	2	Operational	0.9.1
Probe Module	4	Operational	1.1.9
4-20mA Input Module	5	Operational	1.1.0
3-Wire Sensor Module	6	Operational	0.9.1
2-Wire Sensor Module	7	Operational	0.9.0
Controller Module	CM	Operational	2.10.0.8346
Power Supply Module	PS	Operational	1.2.2
Printer Module	30	Operational	1.0.1

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Automatic Tank Gauge (ATG) Navigation

- Web Interface: Programming

- Setup: Parameters

- Links

- Download:

- »Allows user to download set file in .XML format

- Upload:

- »Allows set file to uploaded to console; must be .XML format

- Reset:

- »Resets setup parameters to default settings

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Franklin Fueling Systems

Setup

TS 550

System FMS **Setup** Expand Collapse Edit Download Upload Reset

Configuration FAST **Parameters** Correction Table

Group Name	Parameter Name	Parameter Value
System Preferences	»	...
System ID	»	...
System Configuration	»	...
Communications	»	...
Data Logging	Mode	Disabled
AC Input Modules	»	...
Probe Modules	»	...
2-Wire Sensor Modules	»	...
3-Wire Sensor Modules	»	...
4-20mA Input Modules	»	...
Power Supply	»	...
Relay Modules	»	...
Dispenser Interface	»	...

Automatic Tank Gauge (ATG) Navigation

- Web Interface: Programming

- Setup: Configuration

- Allows technician to edit:

- Passwords

- Network settings

- »IP Address

- »DNS address

- Date/time

- Web Secondary port

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Franklin Fueling Systems

Configuration

TS-550
evo

Edit

System FMS Setup

Configuration FAST Parameters Correction Table

Passwords

Administrator *****

User *****

Guest *****

Network Settings

Use DHCP No

IP Address 192.168.168.168

Subnet Mask 255.255.255.0

Default Gateway 192.168.168.1

Preferred DNS Server [unknown]

Alternate DNS Server [unknown]

Date/Time

Time Zone United States - Chicago

System Clock Monday, July 17, 2017 19:54:16

Time Server [unknown]

Diagnostics

Remote Logging Host [unknown]

Statistics timeout 20

Protocol Settings

Web Server Secondary Port 10001

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Automatic Tank Gauge (ATG) Navigation

- Web Interface: Reports

- FMS Reports:

- Provides list of available reports and selection of dates ranges.

- Date Range:

- Options will vary based on type or report selected

- Generate Link:

- In upper right will generate report on separate tab of browser

Loves #670 - Administrator access level

Personal Preferences | xml en es pt ru fr hi he it pl sk de zh_CN zh_TW bu tr ar (en)

Franklin Fueling Systems

FMS Reports

TS-550

Generate

07/17/2017 19:32:19

System FMS Setup

Status Alarms Control Compliance Reports

Available Reports

Date Range

☒ Alarm History ☒ Alarm ☒ Warning ☒ Failure

☐ Application Event History

☐ Inventory All Tanks & Manifolds

☐ Delivery History All Tanks & Manifolds

☐ Tank Test ☒ Static ☒ SCALD

☐ Generator

☐ Line Test ☒ Gross ☒ Monthly ☒ Annual

☐ Regulatory

☐ Sensor Status

☐ Pump Status

☐ Last 1 Day(s)

☐ Today

☒ Last 30 Days

☐ Month July Year 2017

☐ Year 2017

☐ Last Available

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Automatic Tank Gauge (ATG) Navigation

- Web Interface: Reports

- System Reports:

- Provides list of available reports and selection of dates ranges.

- Date Range:

- Range desired for report generated

- Generate Link:

- In upper right will generate report on separate tab of browser

Loves #670 - Administrator access level Personal Preferences | xml en es pt ru fr hi he it pl sk de zh_CN zh_TW bu tr ar (e

Franklin Fueling Systems

Reports

TS-550

System FMS Setup Generate

Status Alarms Reports Registration Diagnostic Tools About XML 07/17/2017 19:48:18

Available Reports	Date Range
<div><div><input checked="" type="radio"/> Alarm History <input checked="" type="checkbox"/> Alarm <input checked="" type="checkbox"/> Warning <input checked="" type="checkbox"/> Failure</div><div><input type="radio"/> Application Event History</div></div>	<div><div><input type="radio"/> Last 1 Day(s)</div><div><input type="radio"/> Today</div><div><input checked="" type="radio"/> Last 30 Days</div><div><input type="radio"/> Month July Year 2017</div><div><input type="radio"/> Year 2017</div><div><input type="radio"/> Last Available</div></div>

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UST Inspector Training Workshop

Tank Testing

Tank Testing

- Static Tank Testing Capabilities
 - Uses existing INCON® magneto-strictive probe
 - TSP-LL2-XXX or FMP-LL3-XXX
 - Performs annual or monthly static leak test programmable or force tests from any user interface
 - Static Tanks Testing (Scheduled Testing)
 - EPA and 3rd party approval for static testing
 - 15,000 gallon tank @ annual 0.1 gph
 - 30,000 gallon tank @ monthly 0.2 gph
 - No manifolded tanks

Tank Testing

- Statistical Continuous Automatic Leak Detection (SCALD)
 - SCALD 2.0 is 3rd party approved for ONLY three manifolded tanks
 - Maximum Tank Volume: 49,336 gallons
 - Maximum Throughput: 257,818 gallons
 - SCALD 3.0 is 3rd party approved for ONLY three manifolded tanks
 - Maximum Tank Volume: 32,891 gallons
 - Maximum Throughput: 445,408 gallons
 - Compliance via Sensors (CVS)
 - Utilize interstitial and sump sensors to meet compliance

Tank Testing

Issue Date: November 16, 2015
Revision Date: October 17, 2017

Franklin Fueling Systems

INCON T5 Series, TS-5, TS-550, TS-5000, TS-550evo, TS-5000evo, Colibri, EVO 200 and EVO 400 consoles with SCALD 3 (INCON TSP-LL2 and FMP-LL3 Magnetostrictive Probe)

CONTINUOUS IN-TANK LEAK DETECTION METHOD (Continuous Automatic Tank Gauging)

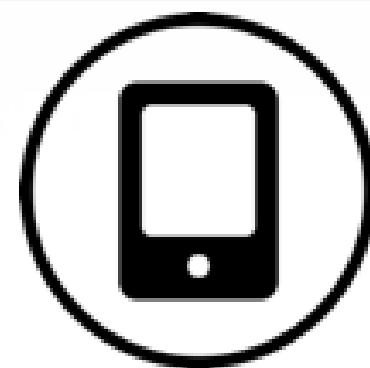
Certification	Leak rate of 0.2 gph with PD > 95% and PFA < 0.001%.
Leak Threshold	0.17 gph for single tanks at 95% PD. 0.155 gph for manifolded tank systems at 95% PD. 0.16 gph for single tanks at 99% PD. 0.135 gph for manifolded tank systems at 99% PD. A tank system should not be declared tight and a message printed for the operator, if the test results indicate a loss or gain that exceeds this threshold.
Applicability	Gasoline, diesel, aviation fuel, fuel oil #4, biodiesel blends B6-B20 meeting ASTM D7467, biodiesel B100 meeting ASTM D6751.
Tank Capacity	Maximum of 32,891 gallons for single tanks and for all tanks manifolded together.
Throughput	Monthly maximum of 445,408 gallons.
Waiting Time	None. The algorithm tests the data for stability and discards those before the tank is stable.
Test Period	Data collection time ranges from 5 to 26 days. Data sampling frequency is at least once per minute. System collects data at naturally occurring product levels without interfering with normal tank operation, and discards data from unstable periods when system performs test.

TURBINE PUMP INTERFACE

Run your business as efficient as possible by networking your FE Petro™ submersible pumping system with intelligent controllers to an INCON™ fuel management system. Sharing pumping and fuel management intelligence, this synergy provides your pumping system with these enhanced capabilities:



REMOTE PUMP
INTERFACE



E-MAIL & TEXT
NOTIFICATIONS



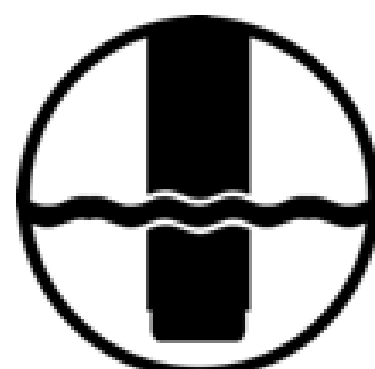
CLOGGED STP ESCALATION



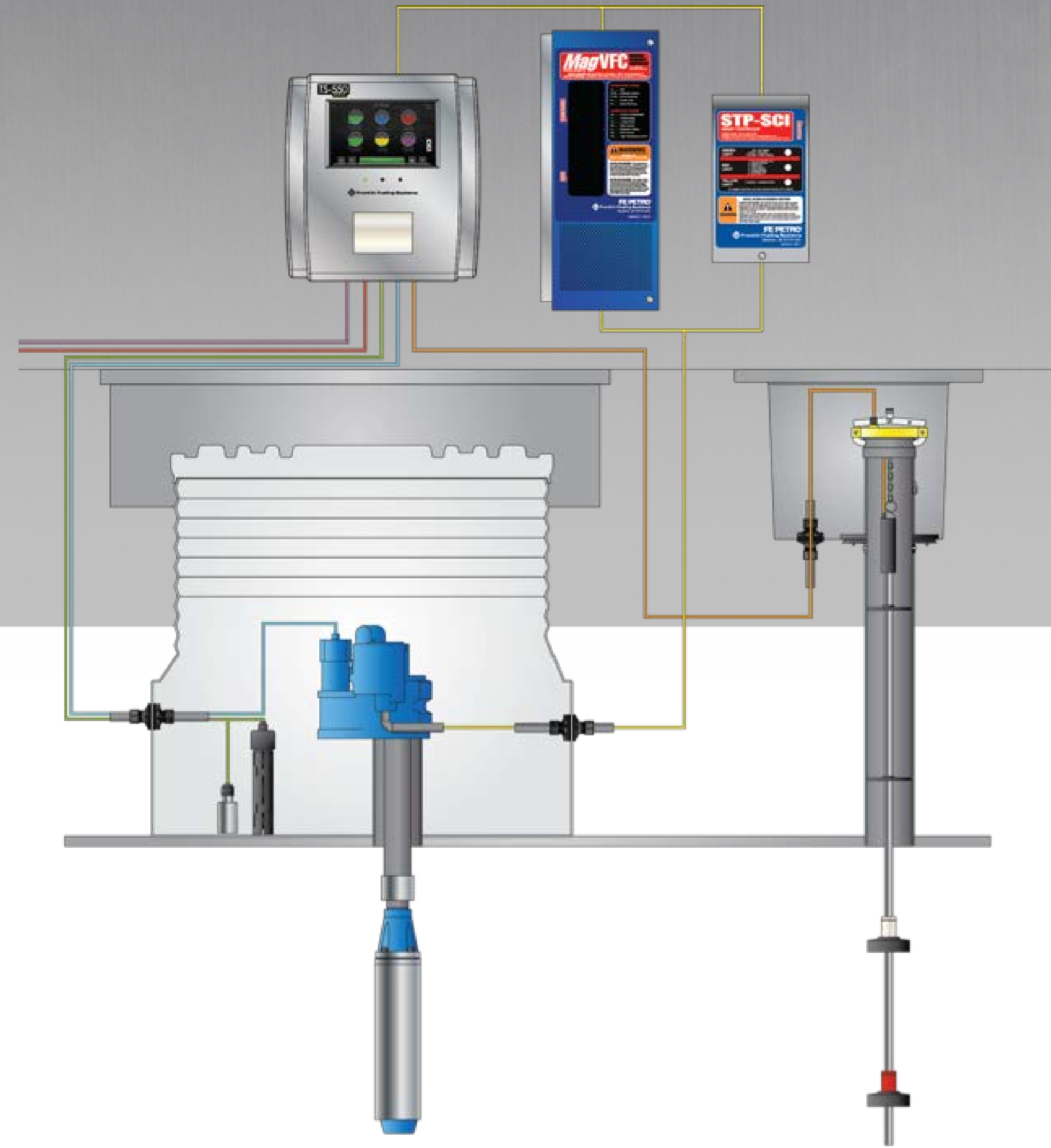
TANK LEVELING



ENHANCED OVERFILL PREVENTION

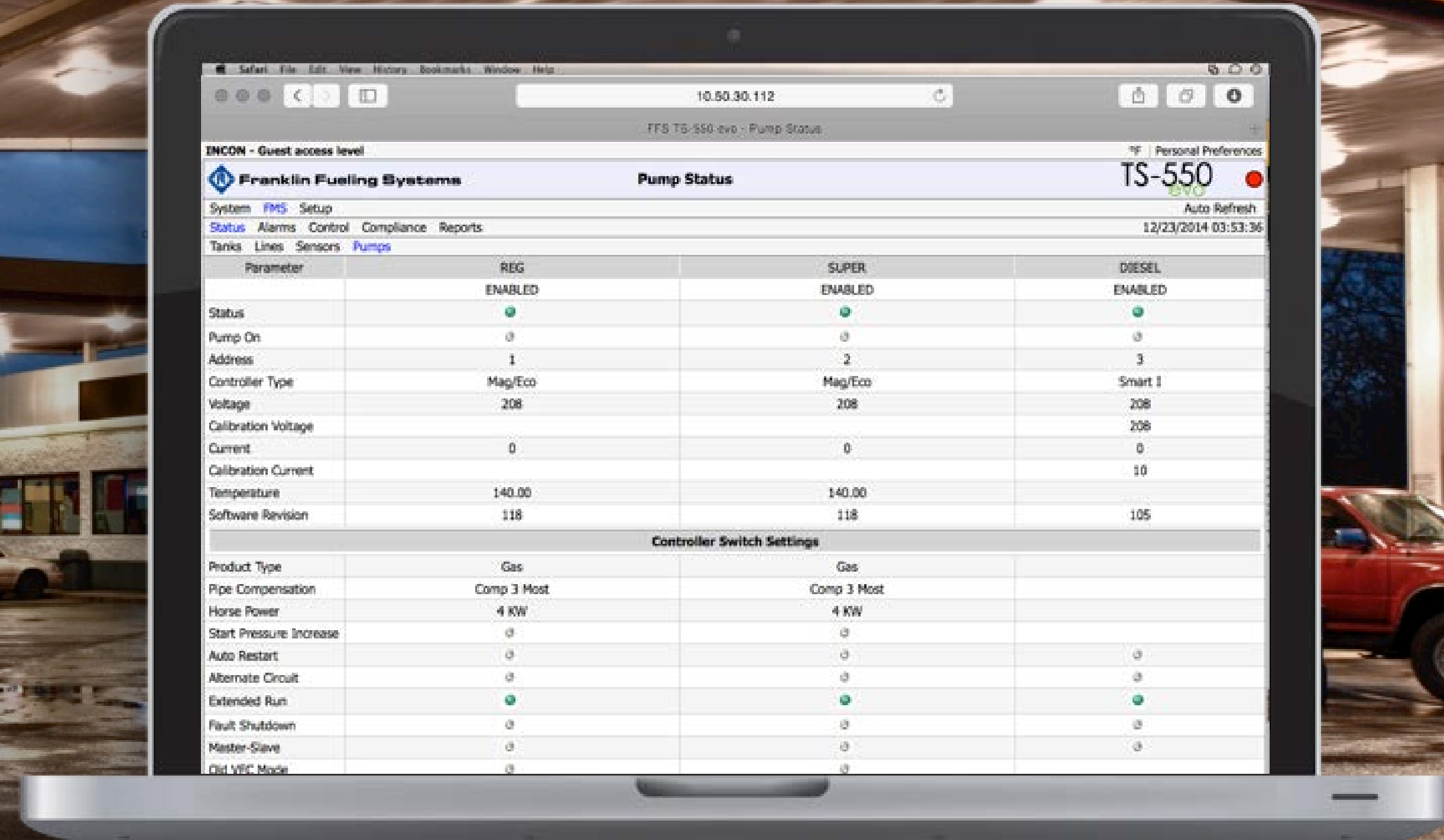


PUMP-IN WATER AUTOMATION



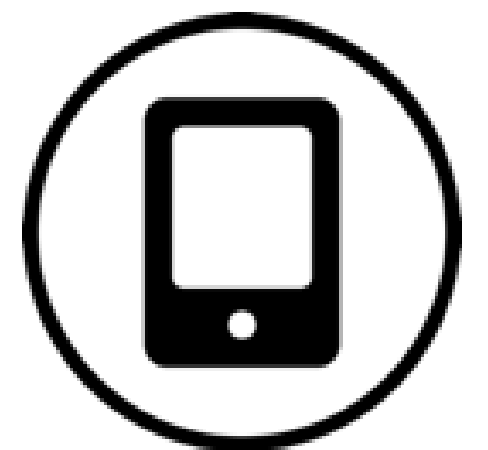
TPI SCENARIO:

A site reports an intermittent problem with the pumping system, but cannot provide any detailed feedback of the alarms being issued by the intelligent controllers and the tank gauge.



REMOTE PUMP INTERACTION

By networking the intelligent controllers to the fuel management system via TPI, a technician can **remotely connect to the site** to review the logged event history and view the status of the pump controllers.

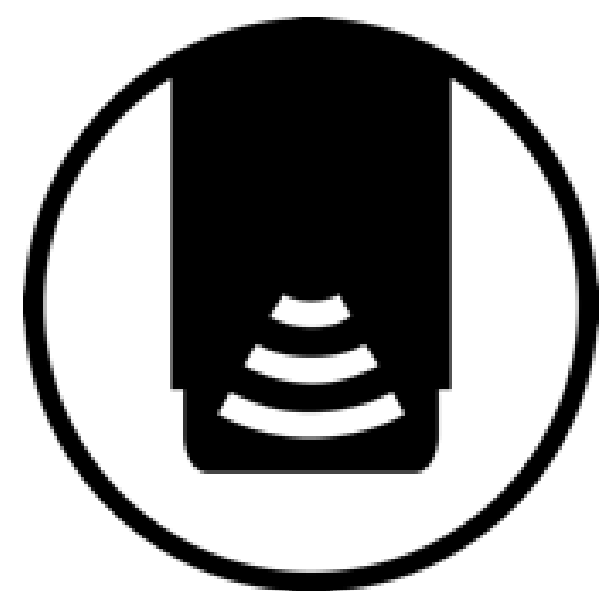


E-MAIL & TEXT NOTIFICATIONS

Additionally, the fuel management rules engine can automatically notify the proper off-site personnel to ensure a timely and accurate response.

TPI SCENARIO:

When the pump controller reports a dry run, the tank gauge automatically verifies against product levels and determines whether a clogged intake has occurred. If clogged, the tank gauge on its own automatically will attempt to clear the intake.

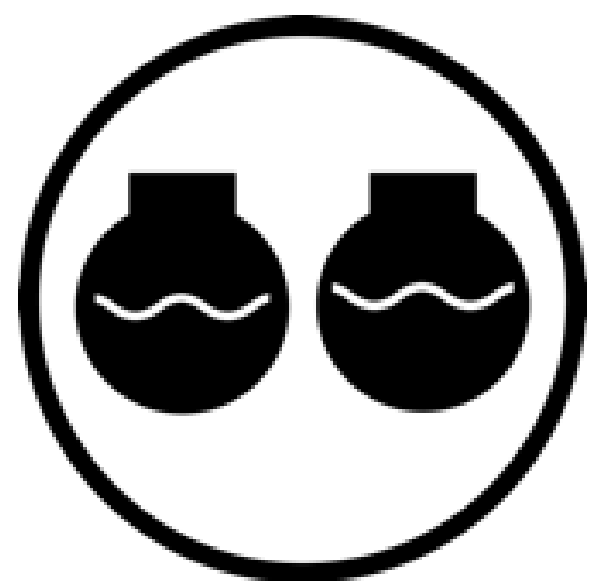


CLOGGED INTAKE ESCALATION

By attempting to clear the intake on its own, **TPI can eliminate the need for a service call.** Whether the intake is cleared or not, TPI will log the alarm to provide detailed history to expedite service in the event of a future dry run versus clogged intake alarms.

TPI SCENARIO:

When managing two storage tanks of the same product 'Leveling Mode' can keep both tanks at the same percentage full without the use of a syphon bar between the two tanks. Alternately, 'Priority Mode' will pump one tank down to a certain level before turning on the other pump.



LEVELING & PRIORITY MODES

Leveling Mode mimics a traditional syphon system **without the upfront cost of piping between the two storage tanks**. You can also avoid the on-going maintenance costs of servicing the syphon bar as well as the additional piping penetrations in the tank sumps.

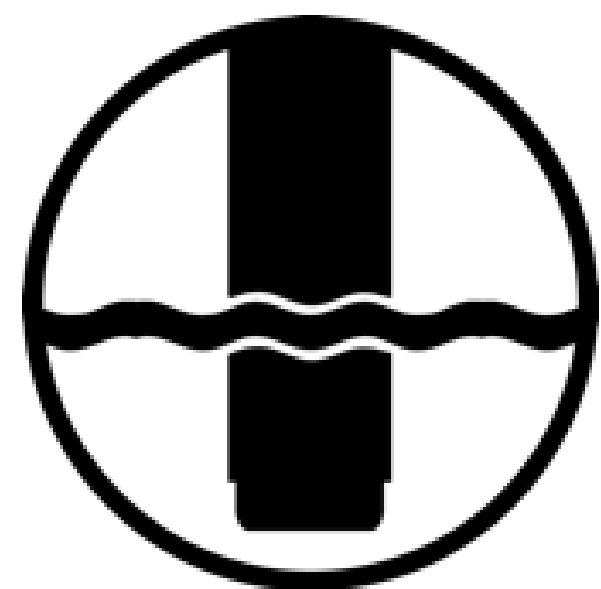


ENHANCED OVERFILL PREVENTION

With TPI, the system is able to react automatically to prevent overfill conditions.

TPI SCENARIO:

When the water level in a tank approaches the pump intake, the tank gauge will enter alarm mode and automatically shut down the pump, protecting the system and consumers from water being pumped from that tank.



PUMP IN WATER AUTOMATION

By shutting off the affected pump, TPI prevented water from being pumped into the customer's vehicle, avoiding potential damage and lost customer loyalty.

WANT MORE?

Visit franklinfueling.com/TPI for more product information and literature downloads.





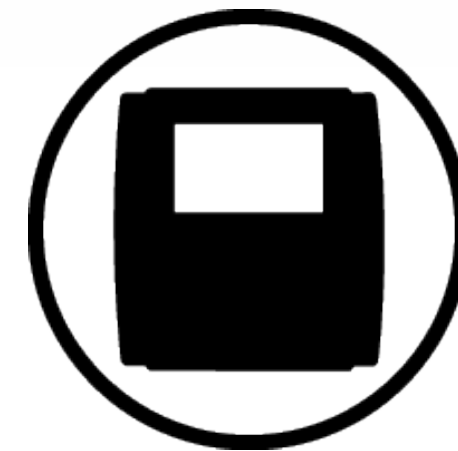
Line Leak Testing



HOW IT WORKS

ELLD is a pressure-based system that uses line information to monitor changes in pressure during periods of no dispensing.

It determines if a line is tight or if there is a leak and will provide 3.0 gph hourly, 0.2 gph monthly and 0.1 gph annual precision line leak detection. Here's what you'll need:



TS-550 evo™

A fuel management system with the TS-ELLD software option, a TS-420 input module, and a TS-RLY Relay module or TPI Turbine Pump Interface.



TS-LS500 Transducer Kits

A transducer which plugs into the submersible, available in 2, 3, or 4-line kits with cables included.

AUTOLEARN™ TECHNOLOGY

As a standard feature of ELLD, AutoLearn™ automatically learns the pressure characteristics of each pipeline, for precision leak detection.



NO INPUT NEEDED

Automatically learning the pressure characteristics eliminates the need to enter pipe lengths and diameters, removing the potential for human error.



TAMPER PROOF

Users are unable to manipulate setup parameters in order to clear alarms.



Electronic Line Leak Detection, ELLD – TS-550 EVO



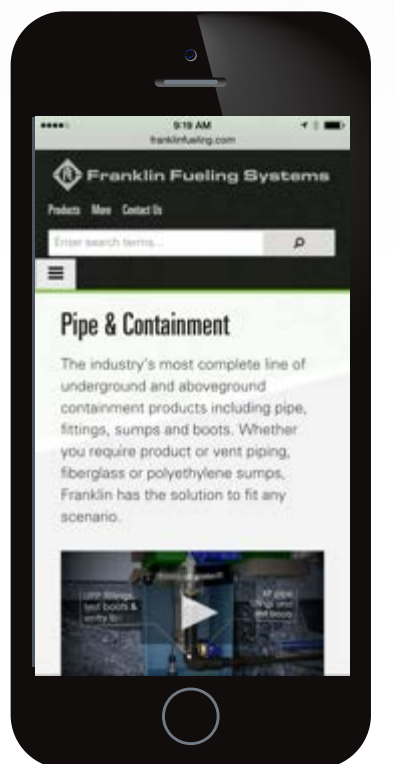
TRUE WATERTIGHT SYSTEMS

Water intrusion into containment spaces is one of the biggest expenses that marketers face today. Additionally, tightening regulations continue to drive the need for true watertight containment solutions that are **easy to install and can be relied upon for the entire life of the system** once concrete is laid.

Check out these complete watertight solutions to meet the needs of any application.



FLEX-ING™



WANT MORE?

Visit franklinfueling.com/P&C for more product information and literature downloads.

Piping and Containment – APT

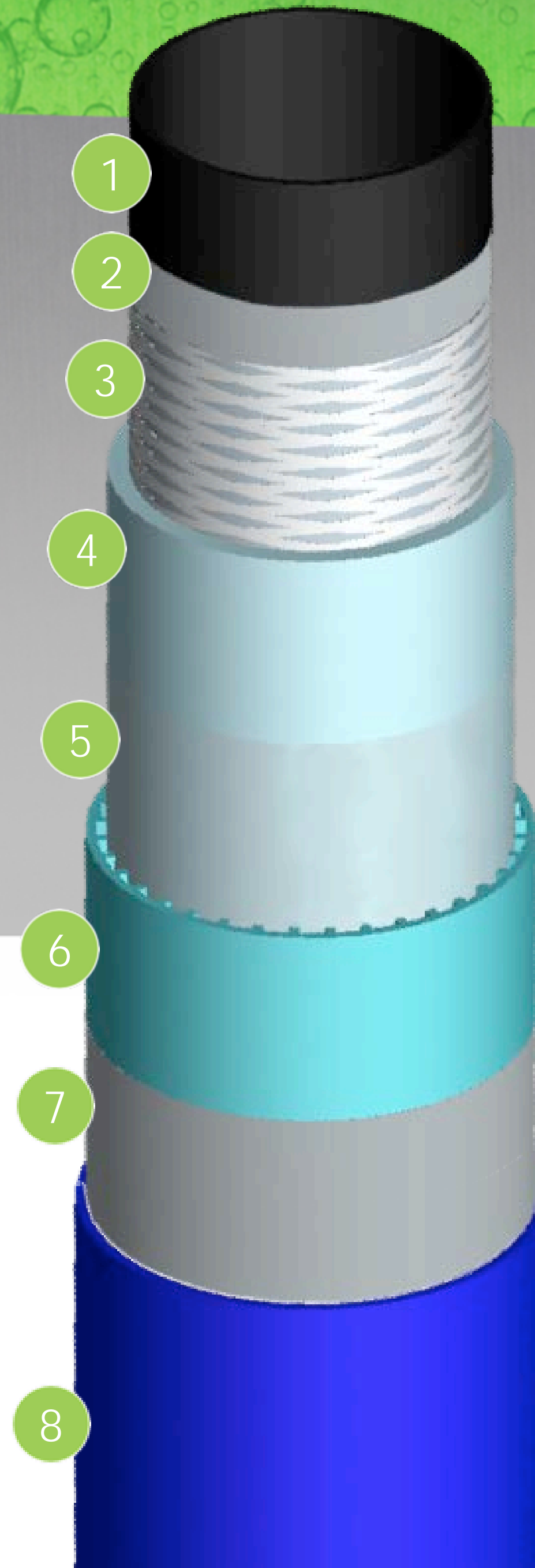
XP PIPE CONSTRUCTION

Double wall (or secondary contained) XP pipe features a premium multi-layer construction designed to:

- Provide double wall protection
- Give the pipe enhanced strength
- Allow the pipe to flex to accommodate sweeping bends in forecourt design

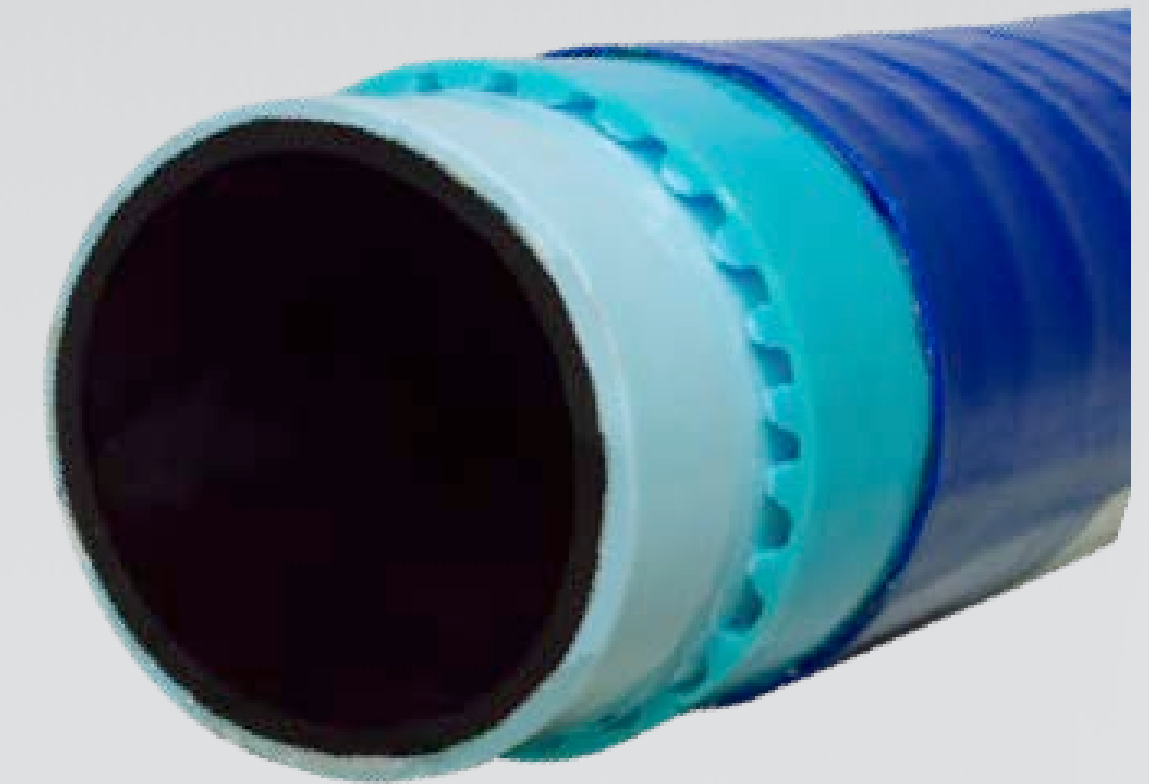
XP Pipe Construction:

- | | |
|---------------------------------|---------------------------------|
| 1 • Interior Primary (Nylon 12) | 6 • Secondary Jacket (Nylon 12) |
| 2 • Metallized Mylar | 7 • Metallized Mylar |
| 3 • Nylon Braid | 8 • Scuff Guard (Nylon 12) |
| 4 • Exterior Primary (Nylon 12) | |
| 5 • Clear Mylar | |



DID YOU KNOW?

Nylon 12 is the same material used by the automotive industry to make fuel and brake lines in vehicles.



PIPE DIAMETERS

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



RIGID ENTRY BOOTS

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



FAST ACCURATE INSTALLATION

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.



ENSURE 90° ENTRY

The interior ridges of the boot guide XP flexible pipe into place to assure a proper 90° entry into the containment sump.

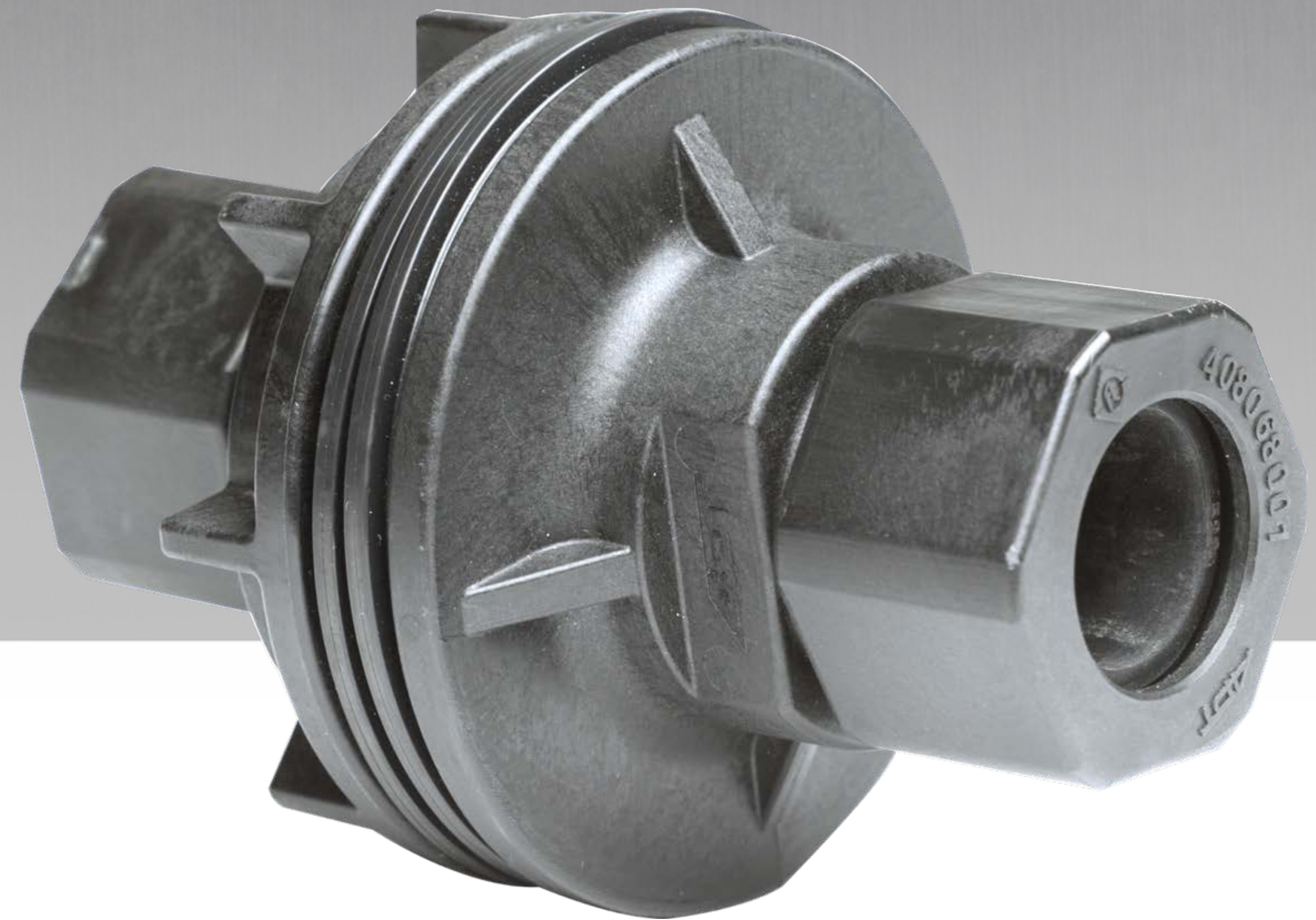


ANY APPLICATION

Suitable for use on flat and round sump surfaces with models available for both ducted and non-ducted applications.

ELECTRICAL CONDUIT RIGID ENTRY BOOTS

Allow you to connect both 1" and ¾" electrical conduit to containment sumps with a significant reduction in installation time, while also completely removing exposed rubber from the connection.



FAST ACCURATE INSTALLATION

Requires only a single 2¾" entry hole for installation, eliminating the time-consuming process of drilling multiple holes as well as the templates they require.



WATERTIGHT SEAL

Features a dual-seal design that will provide a watertight seal with either galvanized or coated conduit.



ANY APPLICATION

Suitable for use on flat and round sump surfaces with models available for both ducted and non-ducted applications.

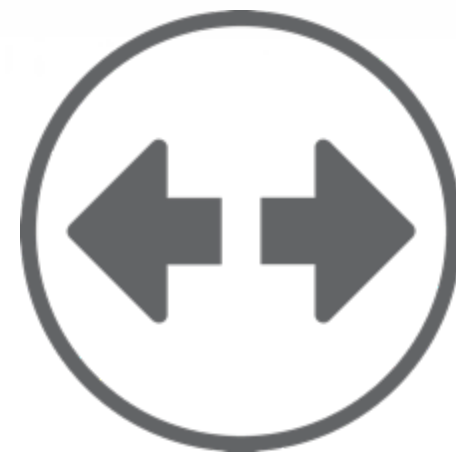
TEE & ELBOW FITTINGS

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 while also eliminating the need for additional fittings and threaded connections.



REDUCE LEAK PATHS

Reducing threaded connections eliminates potential leak paths inside of the containment space.



MORE SPACE

Tee and elbow fittings free up valuable space inside of already tight containment sumps where space is already at a premium.



FUEL COMPATIBILITY

E-coated clamps and stainless steel fittings provide durability and biofuel compatibility.

APT™ FIBERGLASS DISPENSER SUMP SYSTEM

With a high quantity of sump entry points, under dispenser containment sumps present a large opportunity for potential leak paths. Thwart these leak paths with watertight rigid entry boots and keep fuel safely inside the system by reducing threaded connections with tee/elbow fittings and flexible connectors.



RIGID ENTRY BOOTS



ELECTRICAL CONDUIT RIGID ENTRY BOOTS



SPLIT TEST BOOTS



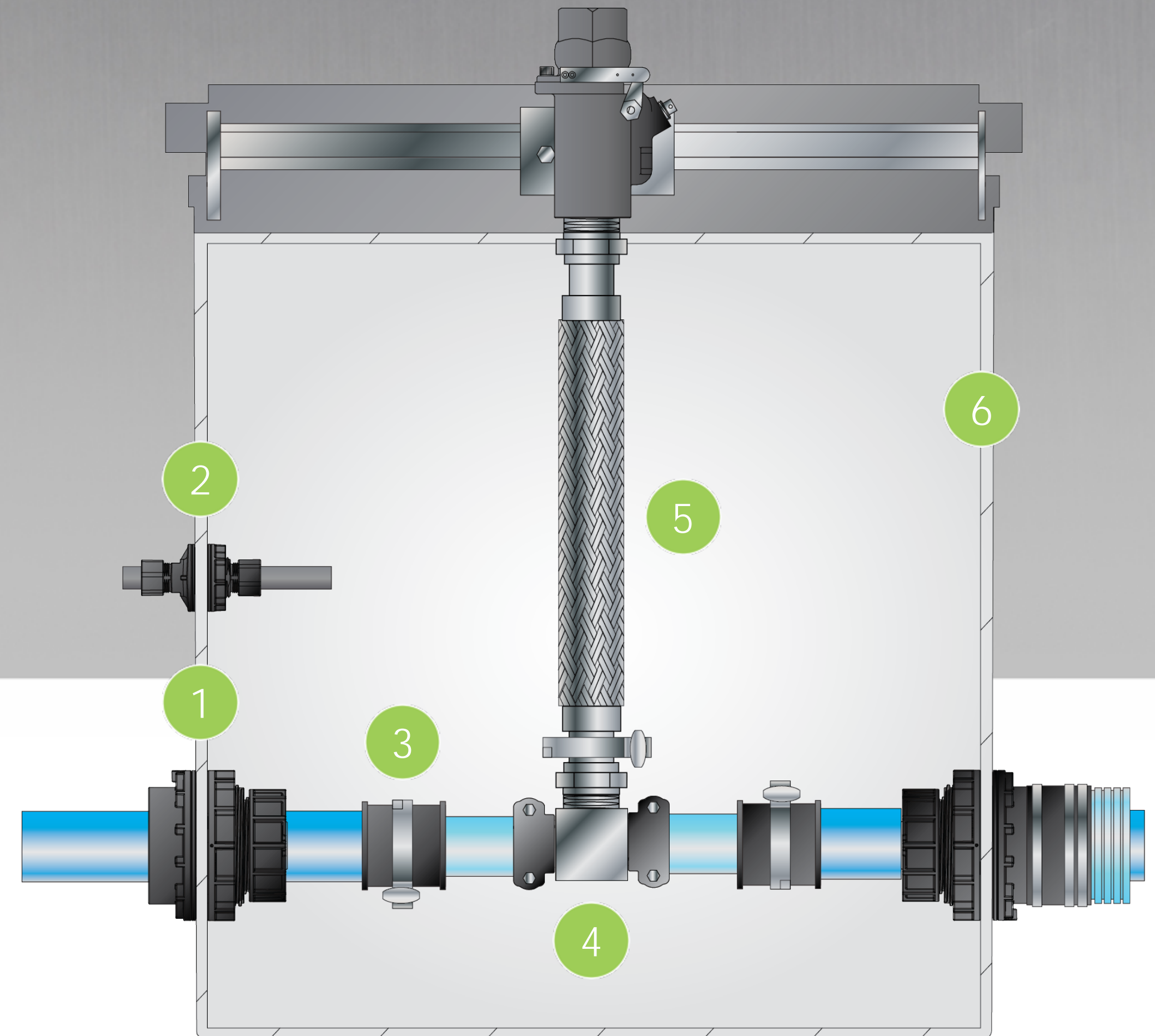
TEE & ELBOW FITTINGS

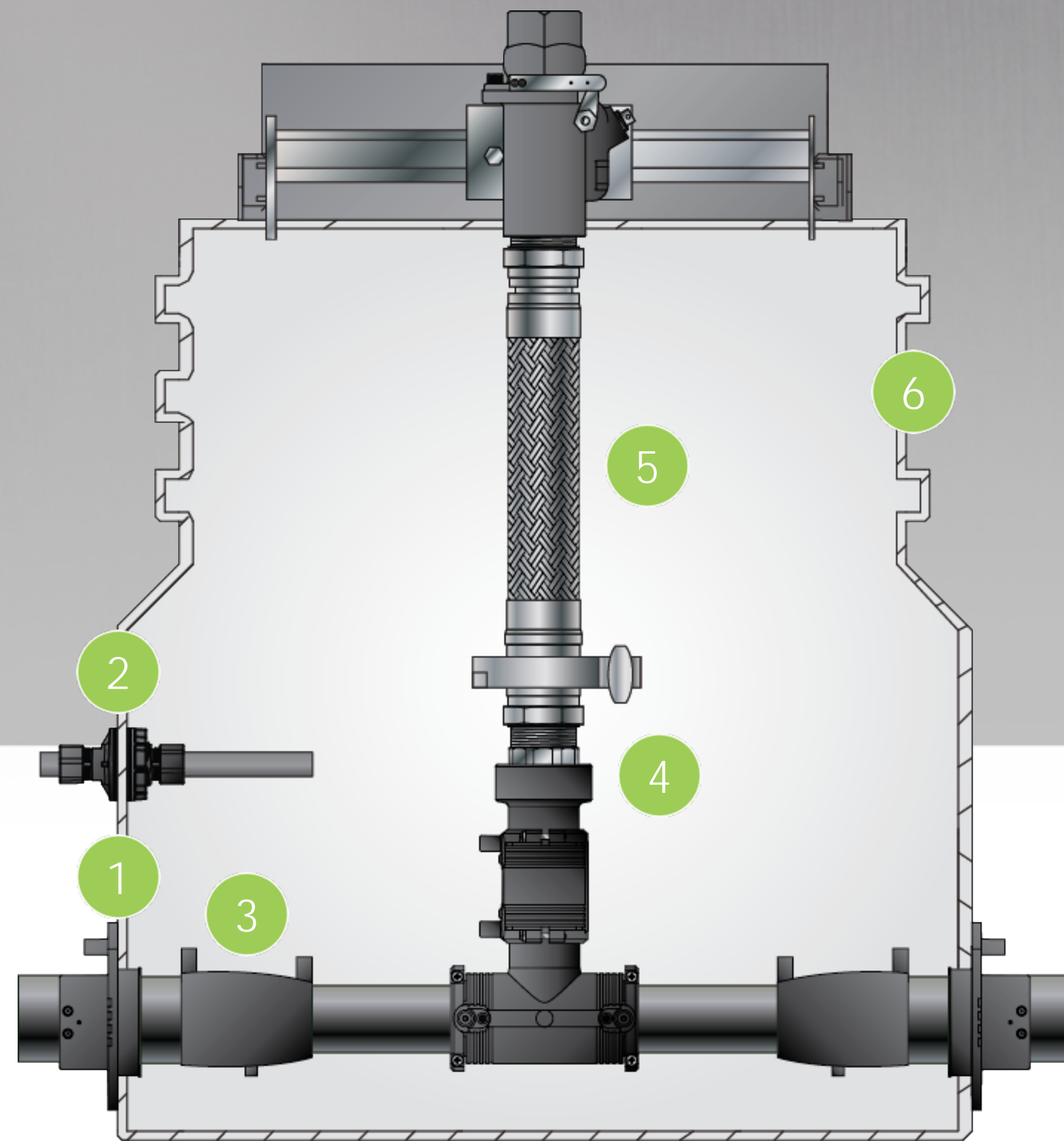


FLEXIBLE CONNECTORS



FIBERGLASS DISPENSER SUMPS





UPP™ POLYETHYLENE DISPENSER SUMP SYSTEM

The UPP™ brand pipework system utilizes the advanced electrofusion welding process to effectively bond system components including pipework and containment together into one, watertight system.



ELECTROFUSION ENTRY BOOTS



ELECTRICAL CONDUIT RIGID ENTRY BOOTS



REDUCER WITH TEST PORT



TEE & ELBOW FITTINGS



FLEXIBLE CONNECTORS



POLY DISPENSER SUMPS



PIPING & CONTAINMENT SYSTEMS

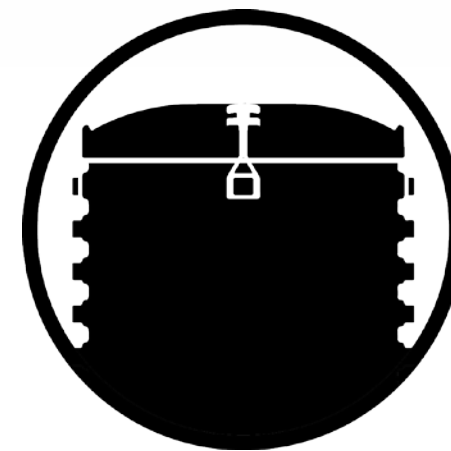
WATER-RESISTANT TANK SUMPS

 **Franklin Fueling Systems**



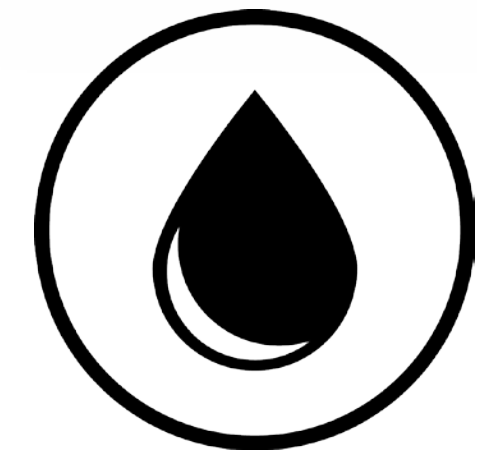
WATER-RESISTANT SUMP LID

The water-resistant design of the gasketed sump lid is critical to keeping liquids out of the sump.



HOLD-DOWN LID

Four integrated hold-down lid toggles provide compression between the lid gasket and the riser, preventing liquid from entering into the sump.



ELIMINATE LEAK POINTS

The lid toggle pegs are molded into the riser and do not penetrate the lid or riser, eliminating these areas as potential leak points.

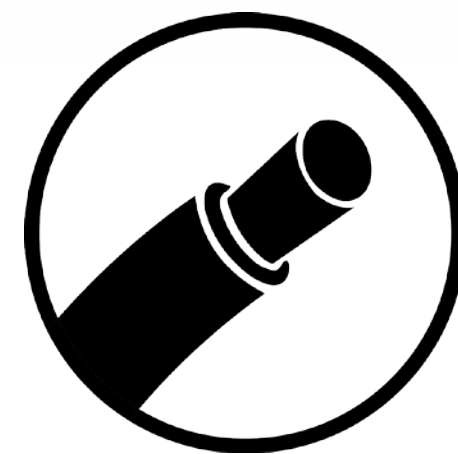
ENSURE 90° PIPEWORK ENTRY

16 flat surfaces around the sump base provide an ideal entry surface for pipework.



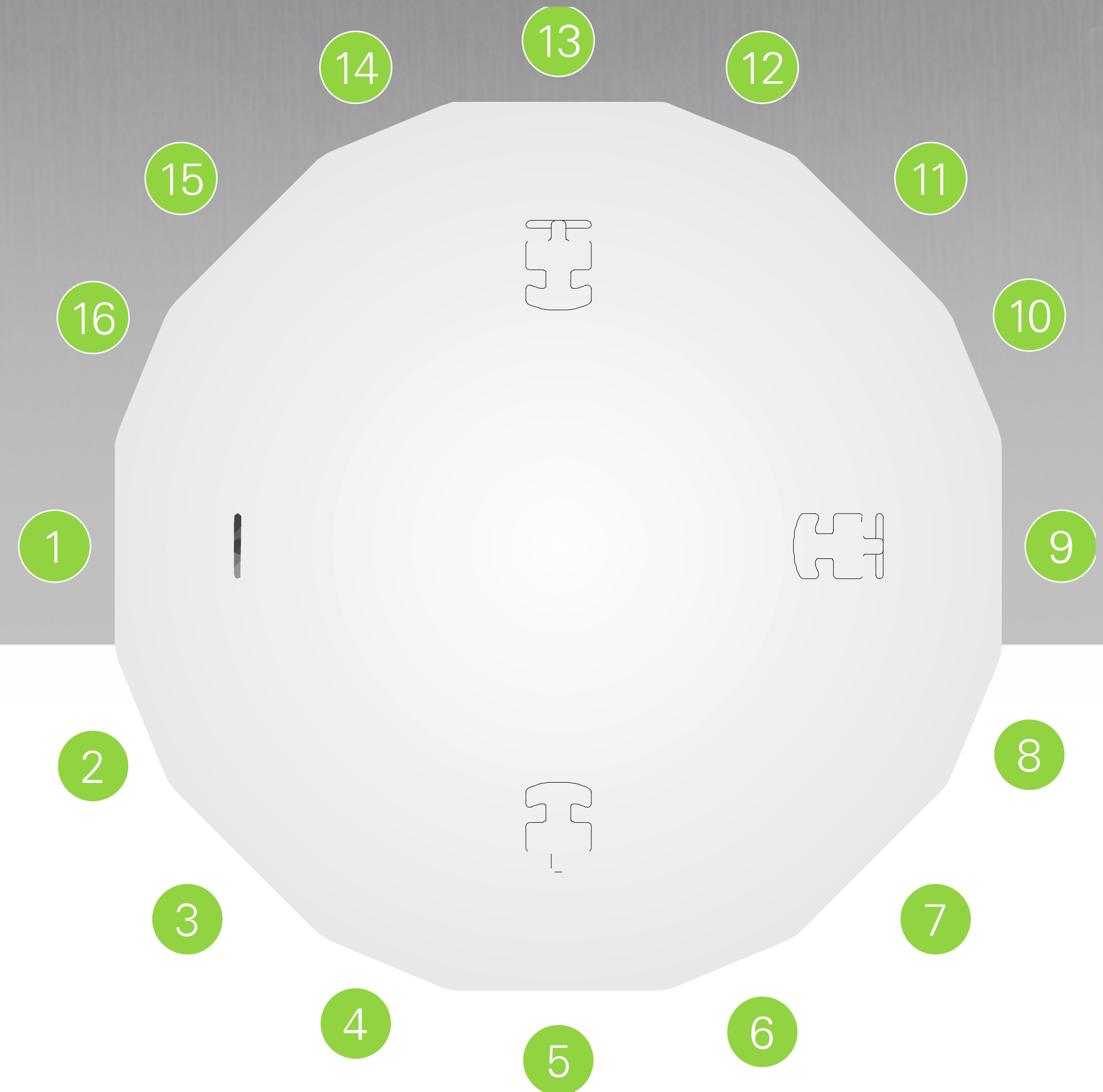
PROPER PIPE ENTRY

These 16 flat surfaces help to facilitate proper 90° sump entry for pipework from multiple angles.



AVOID PIPE STRESS

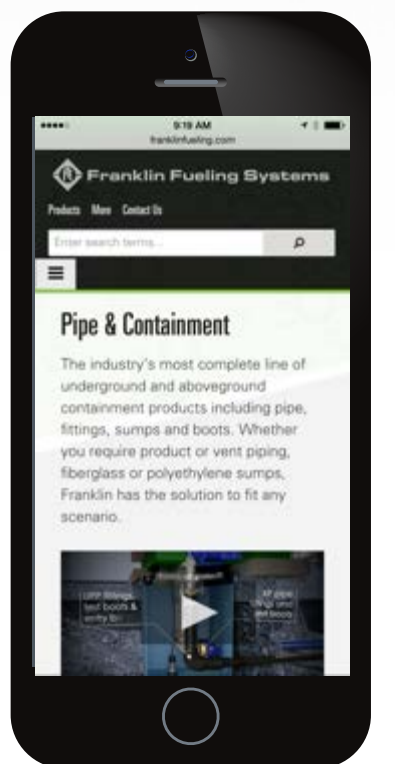
Avoid creating stress on the pipe entry which can weaken the system over time.





REMEMBER THIS

- ✓ Effective sump entry is crucial to ensuring a true watertight containment system.
- ✓ Ensuring a 90° angle for pipework into containment spaces is vital to eliminate leak paths.
- ✓ Eliminating additional threaded components or additional threaded connections eliminates potential leak paths.
- ✓ Ample working space inside containment spaces will lend to better, more accurate and watertight installations.
- ✓ Once in place, testing and continuously monitoring a system is key to ensuring a long service life.



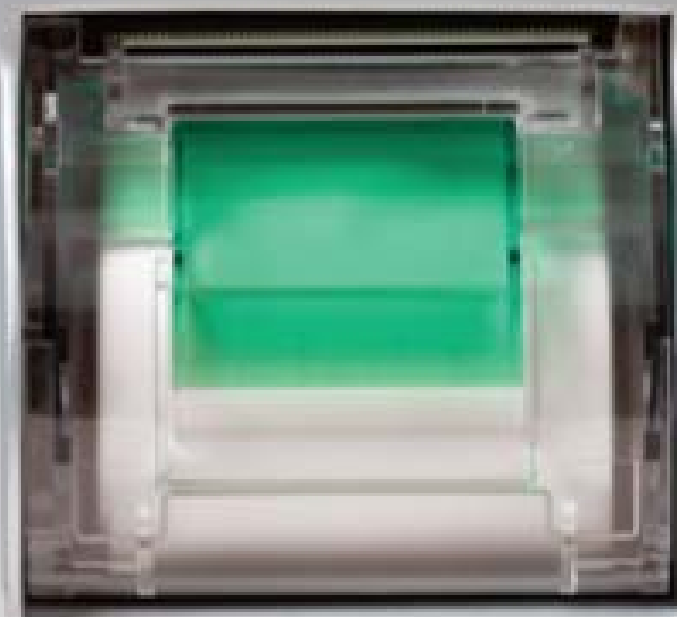
WANT MORE?

Visit franklinfueling.com/P&C
for more product information and
literature downloads.

TS-550
evo



 Franklin Fueling Systems



DEF RECIRCULATION SYSTEM

Diesel exhaust fluid (DEF) will freeze at around ° F (-11° C). No DEF system is complete without a means to prevent this fuel additive from freezing in the lines and costing you loss of potential sales.

HOW WE DO IT

- We network our powerful TS-550 evo™ tank gauge to temperature sensors placed within the product pipelines.
- When temperatures drop, the system triggers the pump to recirculate the fluid – preventing it from freezing in the lines.


11:29 AM

Franklin Fueling Systems Conditions TS-550


System FMS Setup

Status Alarms Conditions Reports Registration Diagnostic Tools About

DEF Recirculation Far Pump #1

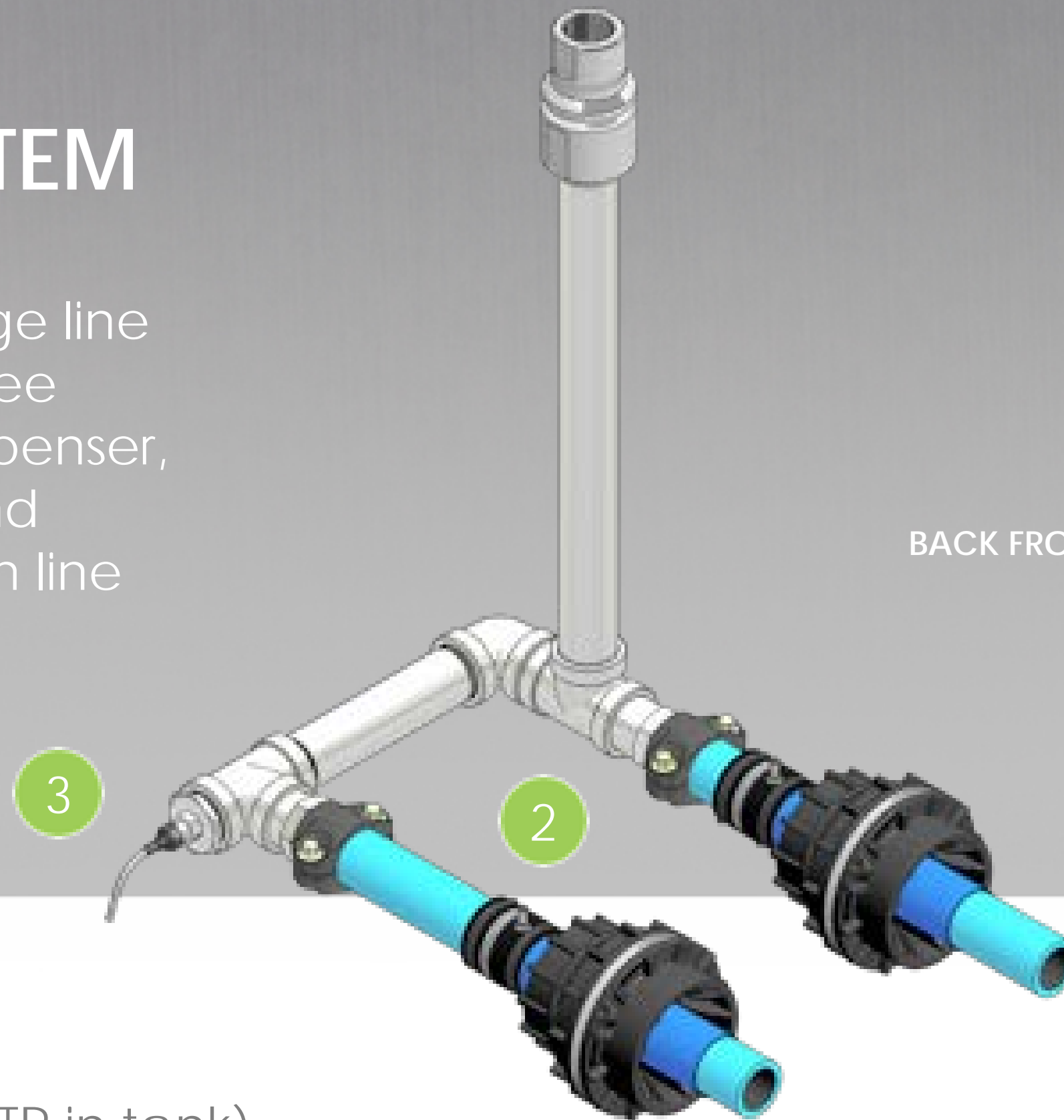
	DEF Needs Recirculation	DEF Recirculation Timeout
Status		0
Last Changed	12/20/2014 04:19:00	
Type	Value	Timer
Current Value	37.18	
Active Below	33.00	
Reset Above	40.00	
Input Is Active		Yes
Reset On Input		Yes
Running Time		4.7 min
Timer Type		Active After
Duration		15.0 min

DEF Recirculation Near Pump #2

	DEF Needs Recirculation	DEF Recirculation Timeout
Status		0
Last Changed	12/20/2014 04:19:00	
Type	Value	Timer
Current Value	36.18	
Active Below	33.00	
Reset Above	40.00	
Input Is Active		Yes
Reset On Input		Yes
Running Time		4.7 min
Timer Type		Active After
Duration		15.0 min

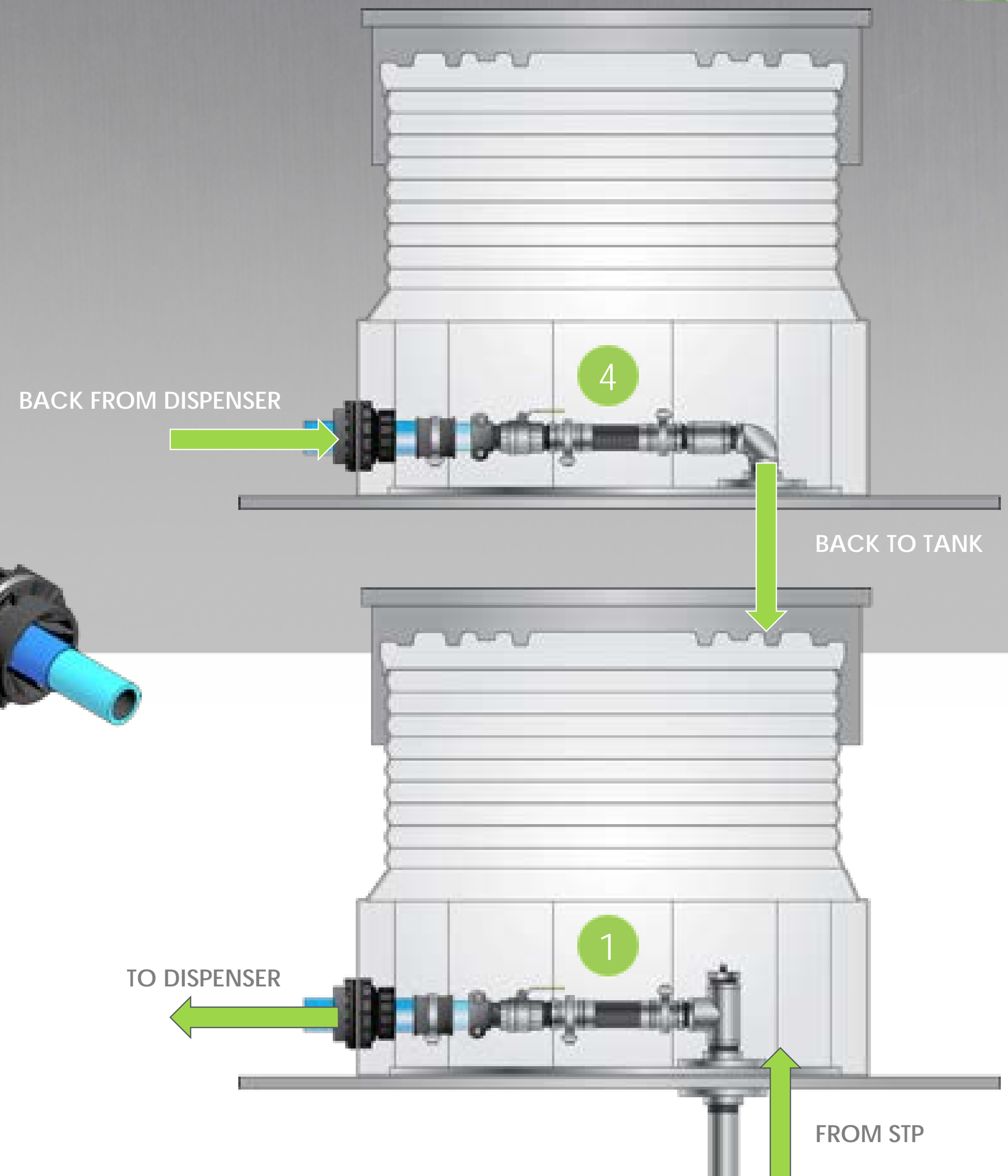
DEF RECIRCULATION: THE FLOW OF THE SYSTEM

Product flows up from Submersible Turbine Pump through the discharge line (1), through the dispensers to the tee configuration (2) in the furthest dispenser, past the temperature sensor (3) and back to the tank through the return line (4).



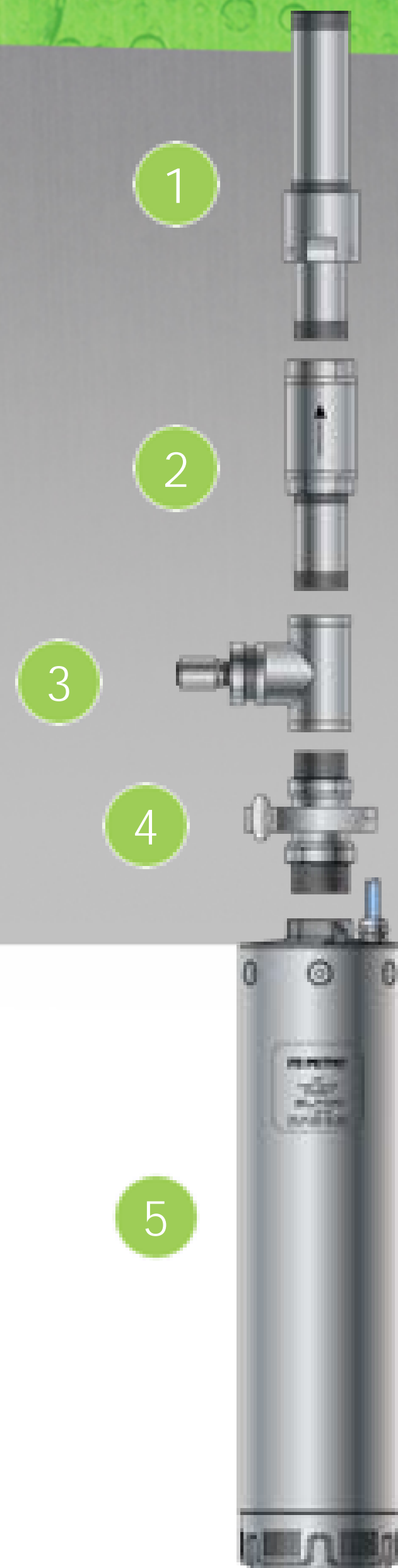
Recirculation system components:

- 1 Product discharge line (from STP in tank)
- 2 Dispenser Tee Configuration (farthest dispenser only)
- 3 Temperature sensor
- 4 Product return line (back into tank)



DEF VARIABLE LENGTH STP KIT COMPONENTS

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.



DID YOU KNOW?

Each STP is powered by a Franklin Electric centrifugal motor. As the global leader in submersible motors, Franklin Electric motors are known throughout the world as proven performers with a track record for reliability and dependability.



DEF STP components:

- 1 Variable length column pipe
- 2 Check valve kit
- 3 Bypass kit
- 4 Pump motor assembly connection kit (quick release)
- 5 Pump motor assembly

FIXED LENGTH

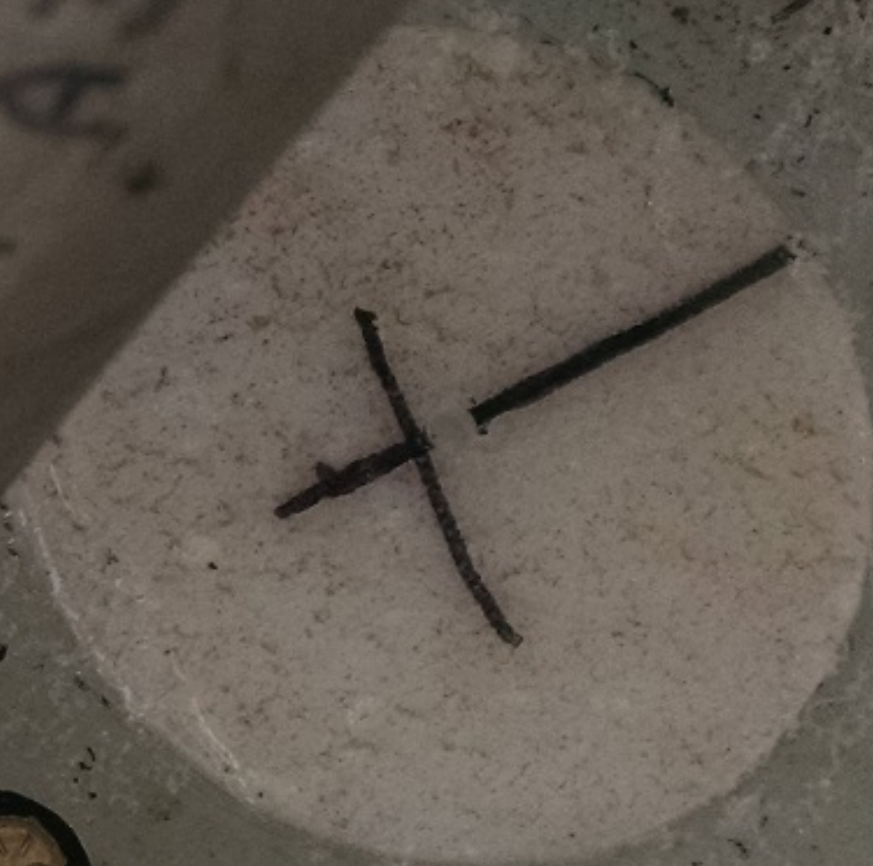
Individual assembly kits can be ordered for fixed length kit applications as well.







ASTM A312-19



DEF HARDWARE

All products are composed of DEF compatible materials including stainless steel and various compatible elastomers.



EASY CONNECTIONS

Our DEF flexible connectors allow you to easily connect the pipework system to the STP and make disconnection for maintenance fast and easy.



CRASH PROTECTION

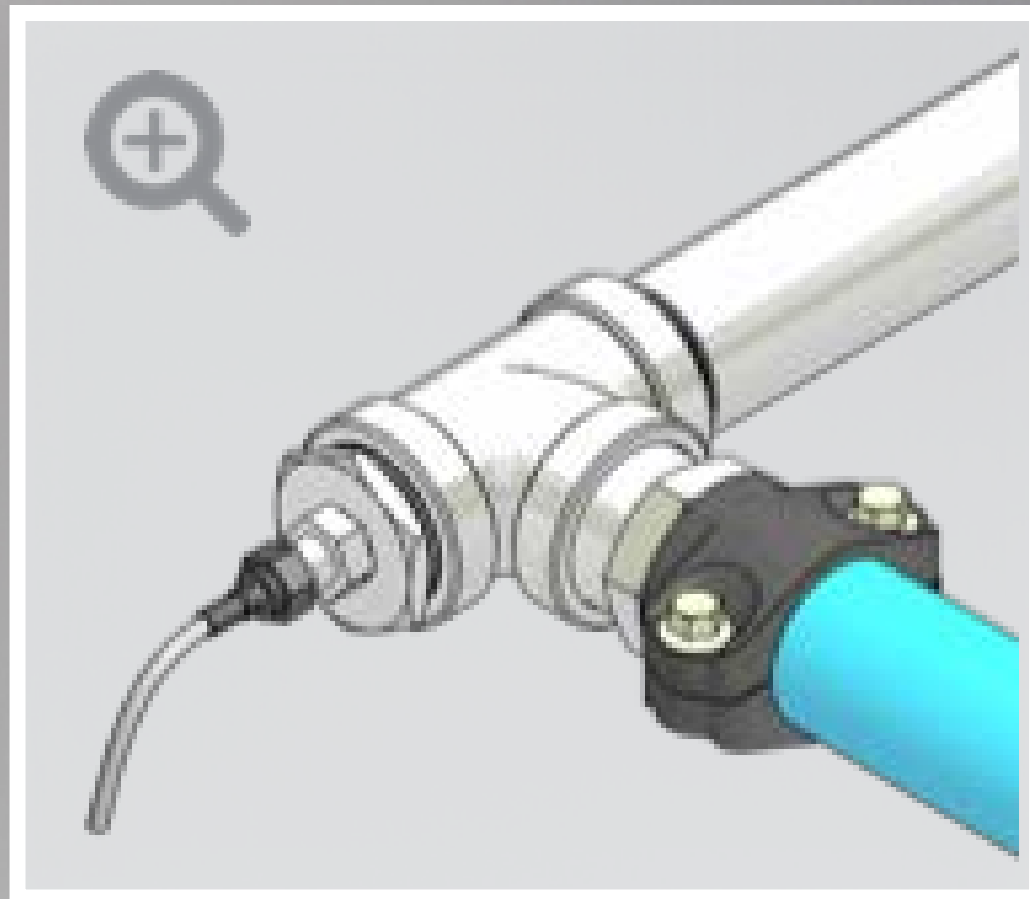
Our DEF shear valves shut off the flow of product in the event of a vehicle collision, preventing an uncontrolled release into the environment.



VENTILATION

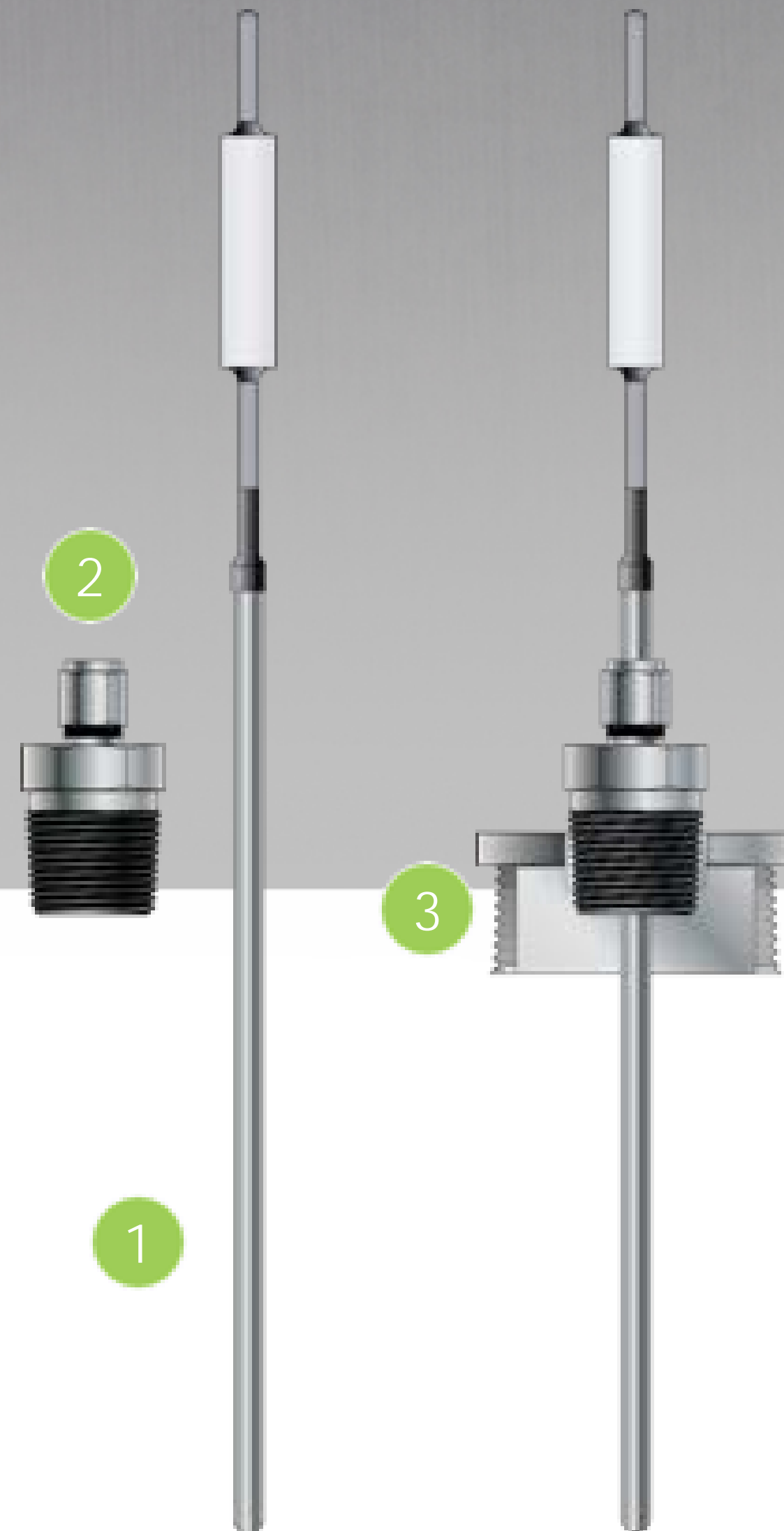
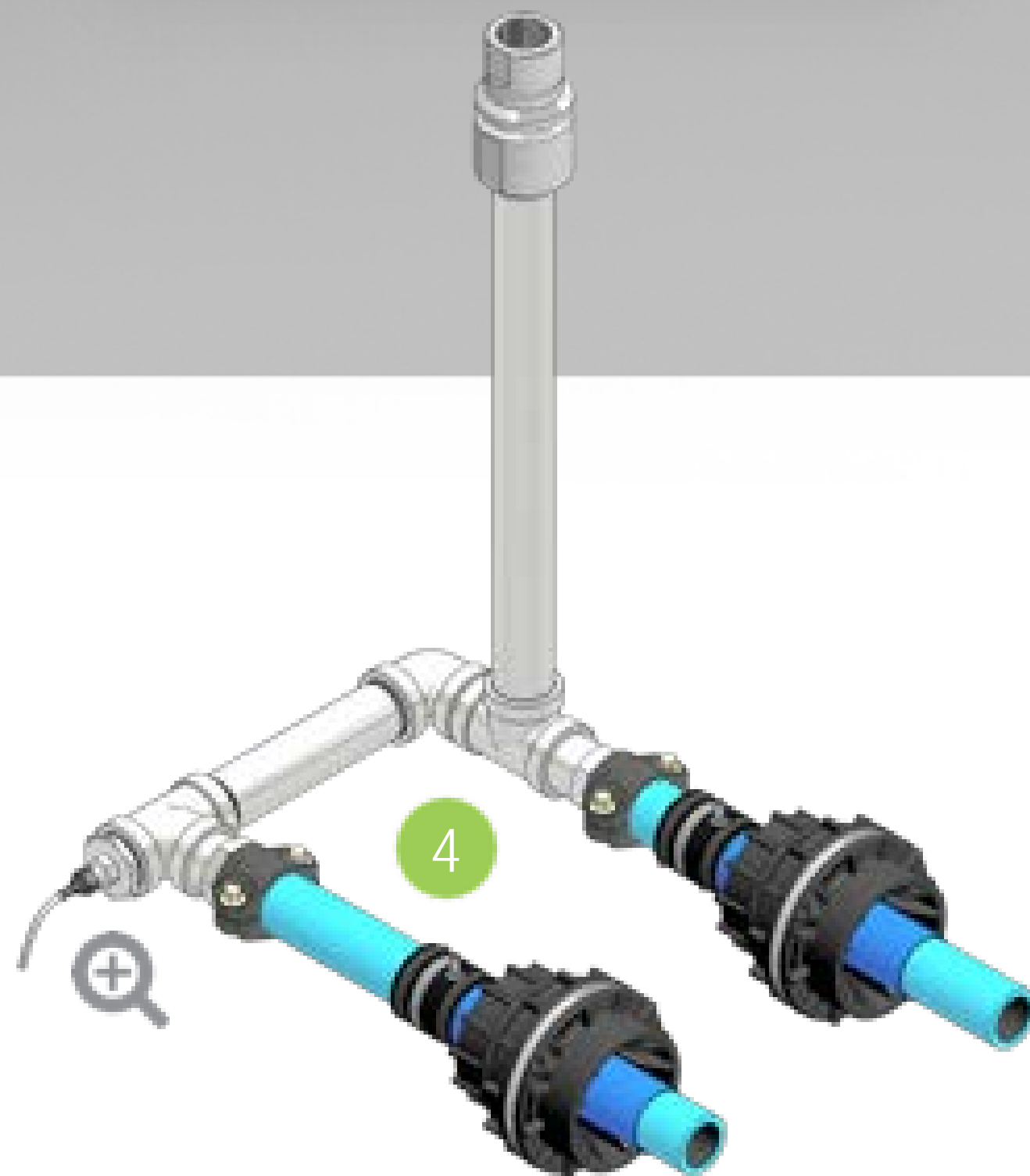
Just like fuels, DEF needs to be properly ventilated. Our E-coated extractor vent valves serve as a compatible method for ventilation.





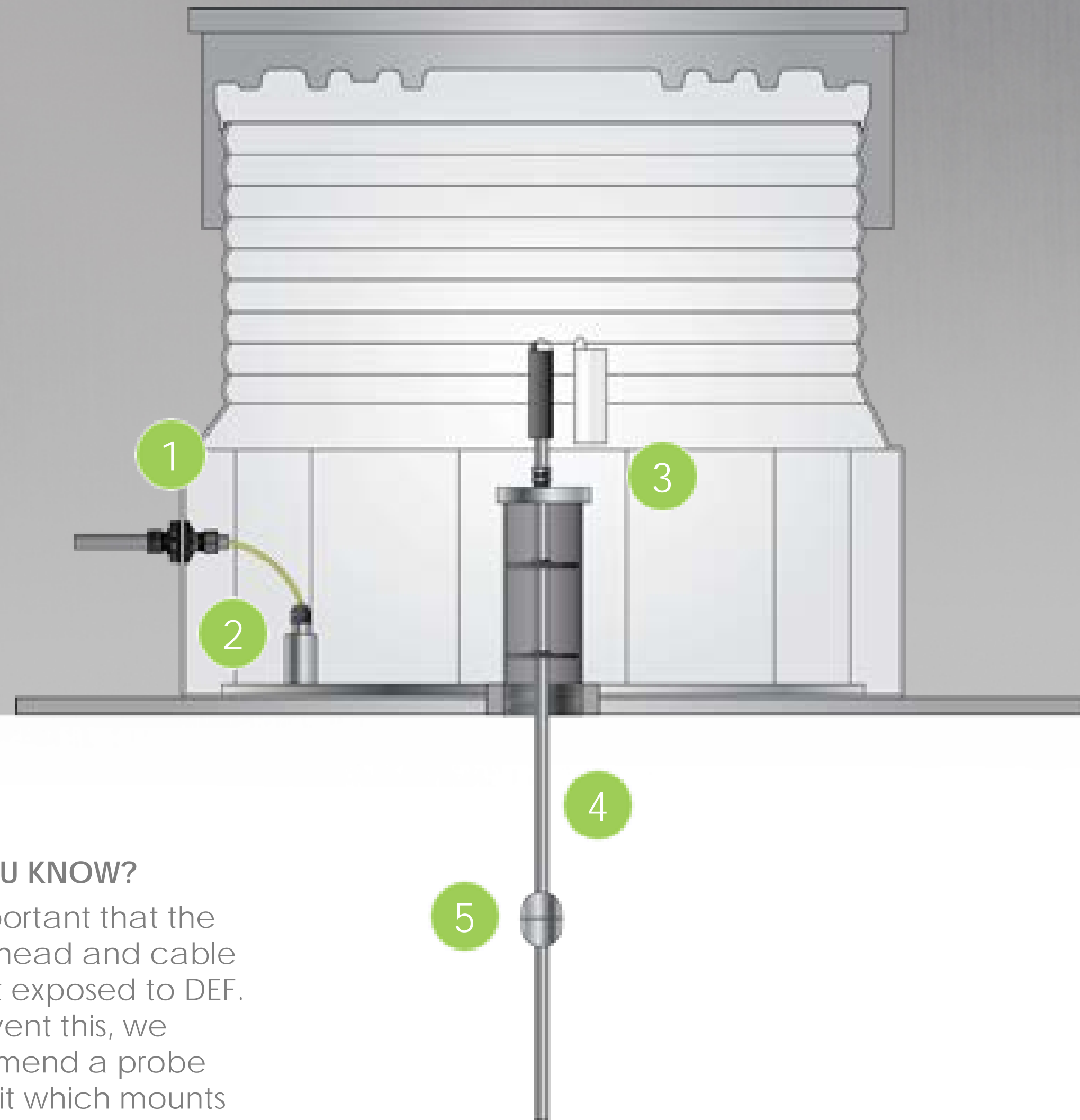
APPLICATION: TEMPERATURE SENSOR

The temperature sensor is installed into the APT™ pipework system using a “tee” pipework configuration. This allows the sensor to come into direct contact with the DEF all times, providing accurate temperature readings.



Temperature sensor components:

- 1 Temperature sensor
- 2 1/2" compression fitting (included with sensor)
- 3 1/2" to 1/2" hex bushing(sold separately)
- 4 DEF tee dispenser sump configuration



DID YOU KNOW?

It is important that the probe head and cable are not exposed to DEF. To prevent this, we recommend a probe install kit which mounts the probe head outside of the riser as show here.

DEF PROBES, FLOATS, & SENSORS

Product level management and containment monitoring are easy when you combine our stainless steel probes, floats and sensors with the TS-550 evo™ tank gauge.

Fuel management components:

- 1 Rigid conduit entry boot
- 2 Liquid sensor
- 3 Probe install kit (includes probe head protector)
- 4 Inventory probe
- 5 Stainless steel float

DEF RECIRCULATION: TOTAL CONTROL OF YOUR DEF SYSTEM

The DEF recirculation system utilizes the powerful rules engine inside the TS-550 evo™ to give you complete control of how your recirculation system operates



CUSTOM CLIMATE RULES

You have the flexibility of writing your own rules for automated recirculation based on your climate.



THE DATA YOU NEED

The powerful fuel management system provides valuable data including system status, product levels, and usage.



WITH YOU ANYWHERE

Monitor your system remotely on a PC or mobile device as well as receive timely system notifications.





DEF RECIRCULATION: MAXIMUM ENERGY EFFICIENCY

Instead of turning on a heated-pipework system at the beginning of winter and constantly running it, the temperature sensors in the DEF recirculation system will trigger the system to only run when it's absolutely needed.



EFFICIENT OPERATION

With no need to constantly heat the entire system, the DEF recirculation system only consumes energy as needed.



ENERGY SAVINGS

Avoid high energy bills during the colder winter months that can result from heated pipe systems.



SYSTEM AUTOMATION

Even with fluctuating temperatures of spring and fall, the system will know when it's time to run.



DEF RECIRCULATION: FUTURE PROOF YOUR SYSTEM

With regulations constantly changing, our 1½" DEF pipework system is large enough to be used with other fuel types should the need arise in the future.



WANT MORE?

Visit franklinfueling.com/DEF for more product information and literature downloads.



READY FOR NEW FUELS

Protect your equipment investment by ensuring it's usable with other fuel types should the demand for DEF cease.



ADVANCED FEATURES

With a full-feature tank gauge in place, you can take advantage of advanced features like electronic leak detection or containment monitoring



EXPANDABLE

The modular design of the TS-550 evo™ will let you expand the system as needed in the future.



REMEMBER THIS

- ✓ Franklin Fueling Systems offers a complete system solution for your DEF needs.
- ✓ DEF will freeze 12° F (-11° C). No DEF system is complete without a means to prevent this fuel additive from freezing in the lines and costing you potential sales.
- ✓ Our DEF recirculation system prevents your system from freezing up, but also provides you with **energy cost savings** throughout the life of the system as well as **upfront cost savings on equipment**.
- ✓ Our STPs are designed specifically for DEF applications and come as complete, easy-to-order kits.
- ✓ We offer a one-stop-shop for all hardware, management and hanging hardware needs.



WANT MORE?

Visit franklinfueling.com/DEF for more product information and literature downloads.

Defender Series™ Spill Containment

Unprecedented protection



Service Station Hardware – Defender/EBW

Spills In, Water Out

The foremost function of a spill container is to keep spills in and keep water out all while enduring constant attack from weather, forecourt traffic and continuous fuel delivery handling. The rugged concrete ring, sturdy snow plow ring, integrated liquid dam and gasketed lid keep the Defender Series capturing spills and repelling water intrusion for maximum protection of your liquid investment.



On its way to receiving a ULC rating, the Defender Series was put through its paces including total submersion testing, no-cover liquid deflection testing and even 100 passes of a snow plow blade.

Easy Installation and Retrofit

Let's face it; installations don't always go exactly as planned. Installers will love the variable height adjustment feature of the Defender Series, which allows for 3 inches of adjustment in installation height, making it easy to ensure proper grade level installation. This feature also allows for easy replacement of most any other spill container in retrofit applications.



Approximately 3" of
height adjustment.

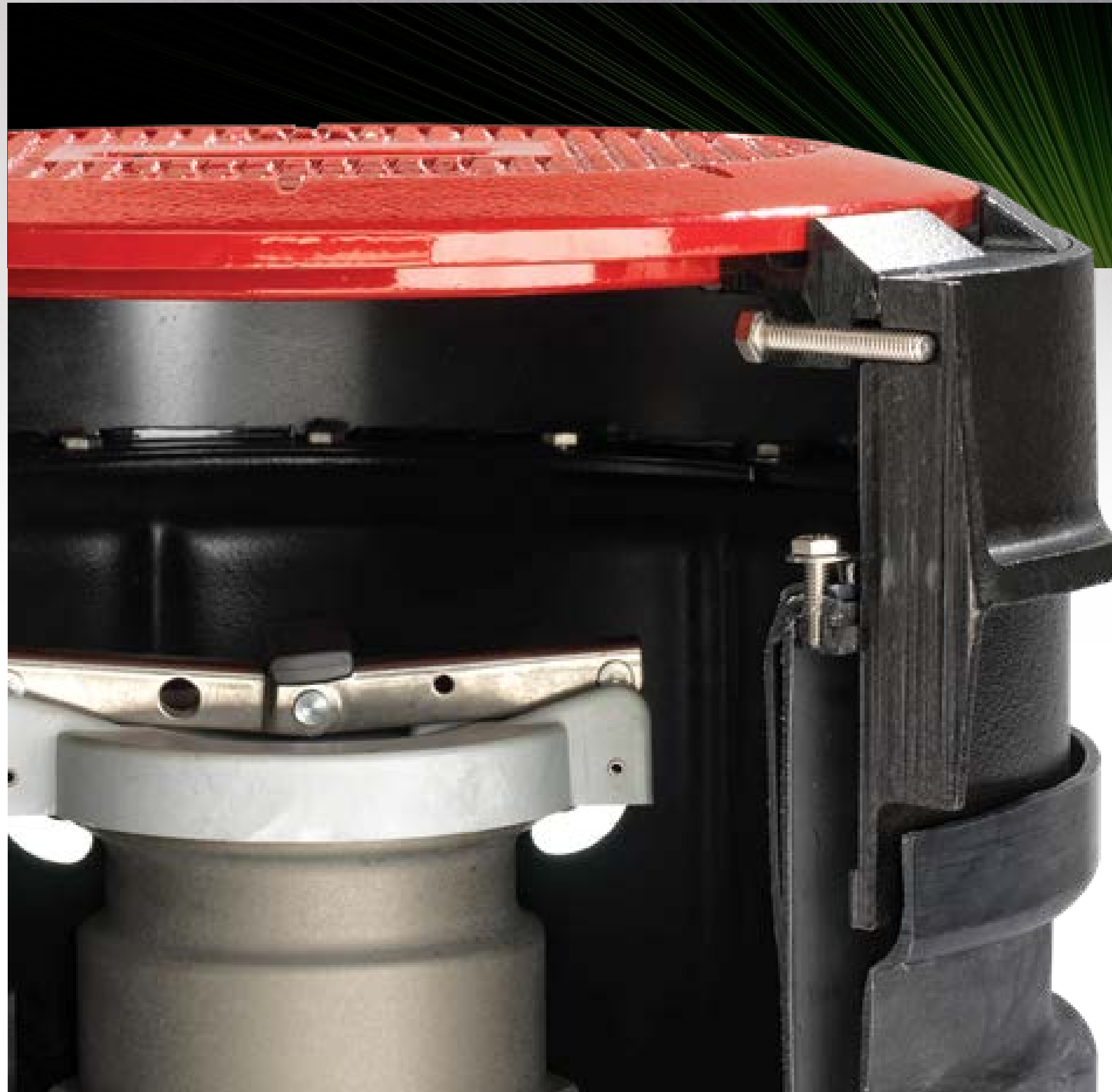
The Defender Series is available in three different thread configurations at the riser to spill container connection (NPSM, NPT, and BSPT) providing a global solution for varying installation requirements



Simple Maintenance

Maintenance with the Defender Series is a breeze. With the direct bury models, you can easily replace interior containment without having to break concrete.

A feature truly unique to the Defender Series, the plow ring bolts are completely protected - located inside of the container shielding them from the potential wear and tear of the forecourt environment.



Fully Biofuel Compatible

The Defender Series incorporates only the highest-grade, fully biofuel compatible components, which allow for use with petroleum, petroleum/alcohol blends (including E-85), diesel and biodiesel.

With full biofuel compatibility the Defender Series provides an even greater level of value by allowing you to carry one spill container for all fuel applications; reducing carrying costs and inventory while increasing turns.



- Single or Double-Wall:
 - Field replaceable without breaking concrete
 - Variable height provides flexibility for shallow or deep applications
 - Single-wall models can be upgraded to double-wall as regulations evolve
 - Interstitial space can be monitored mechanically or by electronic sensor





- Interstitial Monitoring:

- Electronic:

- TSP-ULS liquid sensor can be paired with a fuel management system for immediate notification

- Mechanical:

- The Interstitial Monitoring System (IMS) provides a visual inspection of the fuel tank for water and debris.



Electronic



Mechanical





TESTING:

Defender Series™ Spill Containers



Testing: Defender Series™ Spill Containers

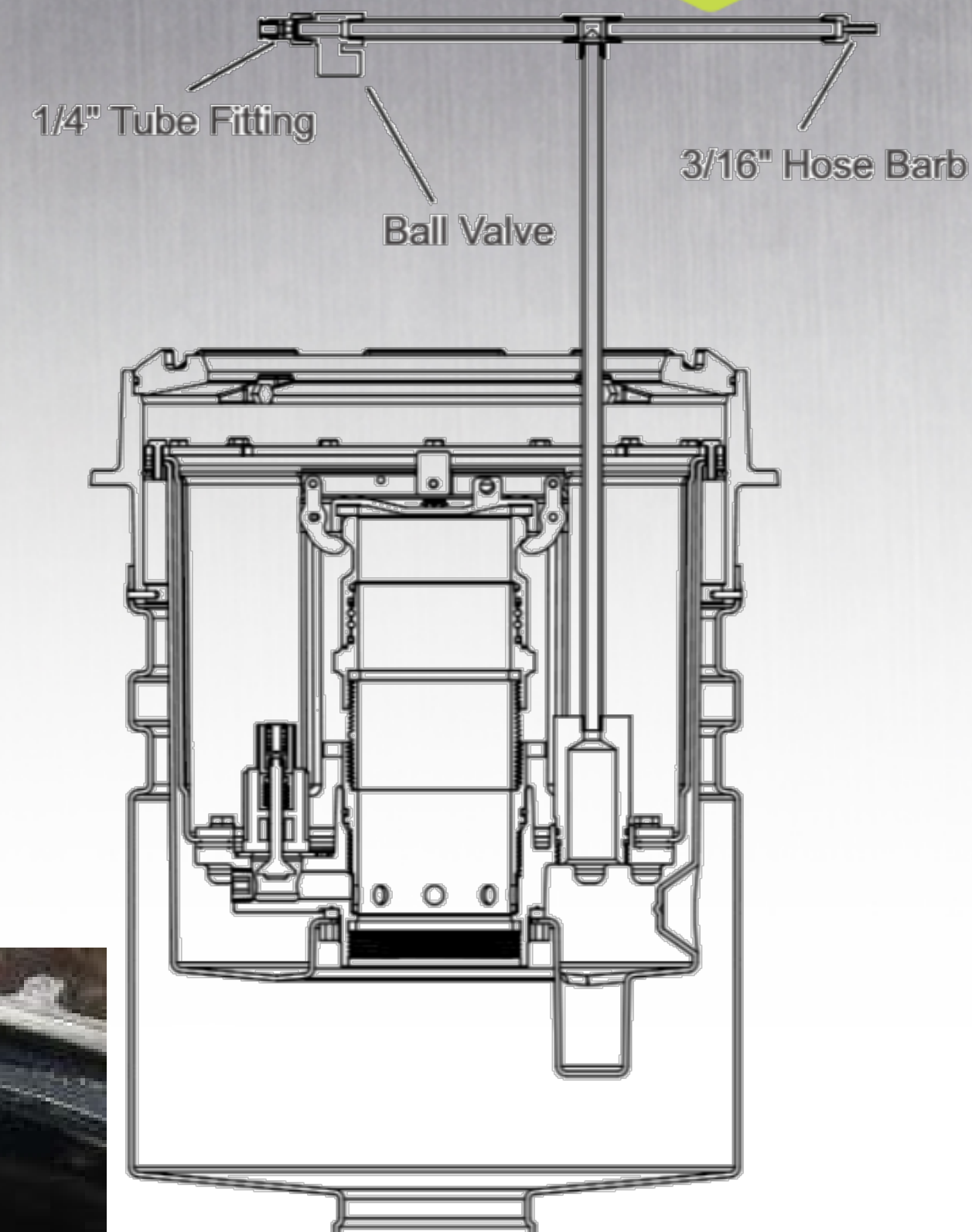
- Hydrostatic Testing (All Models):
 - Fill spill container with water until the level is just below the snowplow ring
 - Mark water level
 - Wait one hour to see if level drops
 - If level drops, test fails





Testing: Defender Series™ Spill Containers

- Vacuum Interstitial Testing (Double Wall Models):
 - Remove inspection port pipe from spill container
 - Install T-7107 test kit into inspection port
 - Connect vacuum source and manometer
 - Apply vacuum until 30in W.C or 7.5 kPa achieved
 - Allow one minute to stabilize interstitial space
 - Reapply vacuum if necessary





SERVICE STATION HARDWARE

DEFENDER SERIES™ OVERFILL PREVENTION VALVE



INSTALLATION STEPS

No more flaring, drilling, riveting, or epoxy.



1. CUT PRE-FLARED DROP TUBES TO LENGTH



2. INSERT & ROLL-CRIMP TOP FITTING



3. THREAD DROP TUBES TO TOP & BOTTOM



4. INSERT DROP TUBE INTO SPILL CONTAINER



WANT MORE?

Visit franklinfueling.com/OPVINSTALL to download the full installation, operation, and maintenance manual.



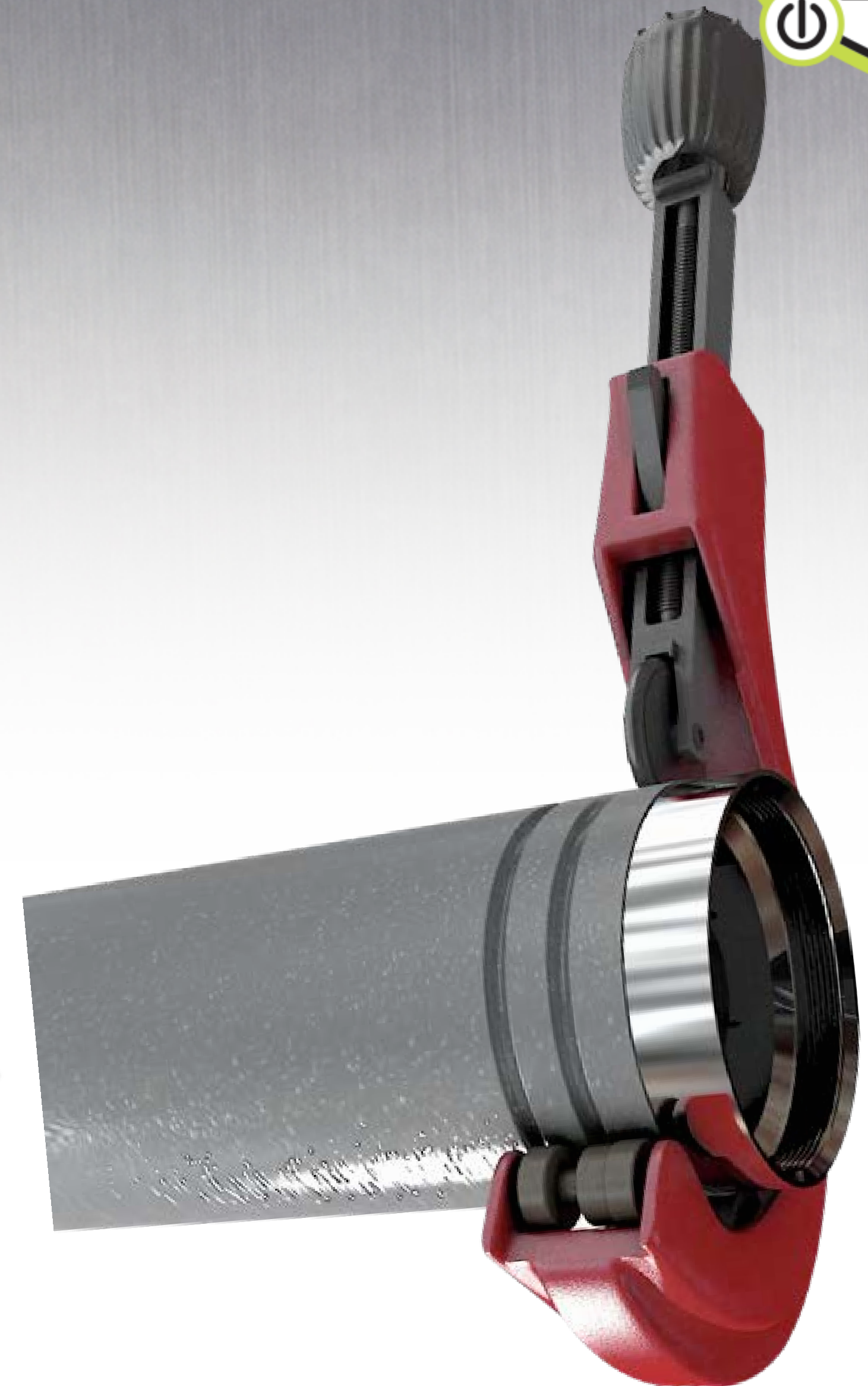
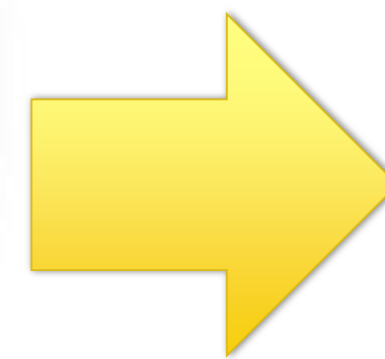
- Defender Series™ Overfill Prevention Valve
 - Magnetically-coupled actuator
 - Zero-body penetrations
 - Valve itself cannot leak
 - Factory tested
 - Compliance ready





- Defender Series™ Overfill Prevention Valve:

- Thread on upper adapter
 - Dual gasketed: no epoxy or rivets needed
- Dual crimp grooves
 - No flaring tool needed





- Operational Testing Procedure:



Assemble remote test tool with enough extensions to reach OPV



Flapper in

Insert remote test tool. You should feel a “pull” when the magnets are positioned correctly

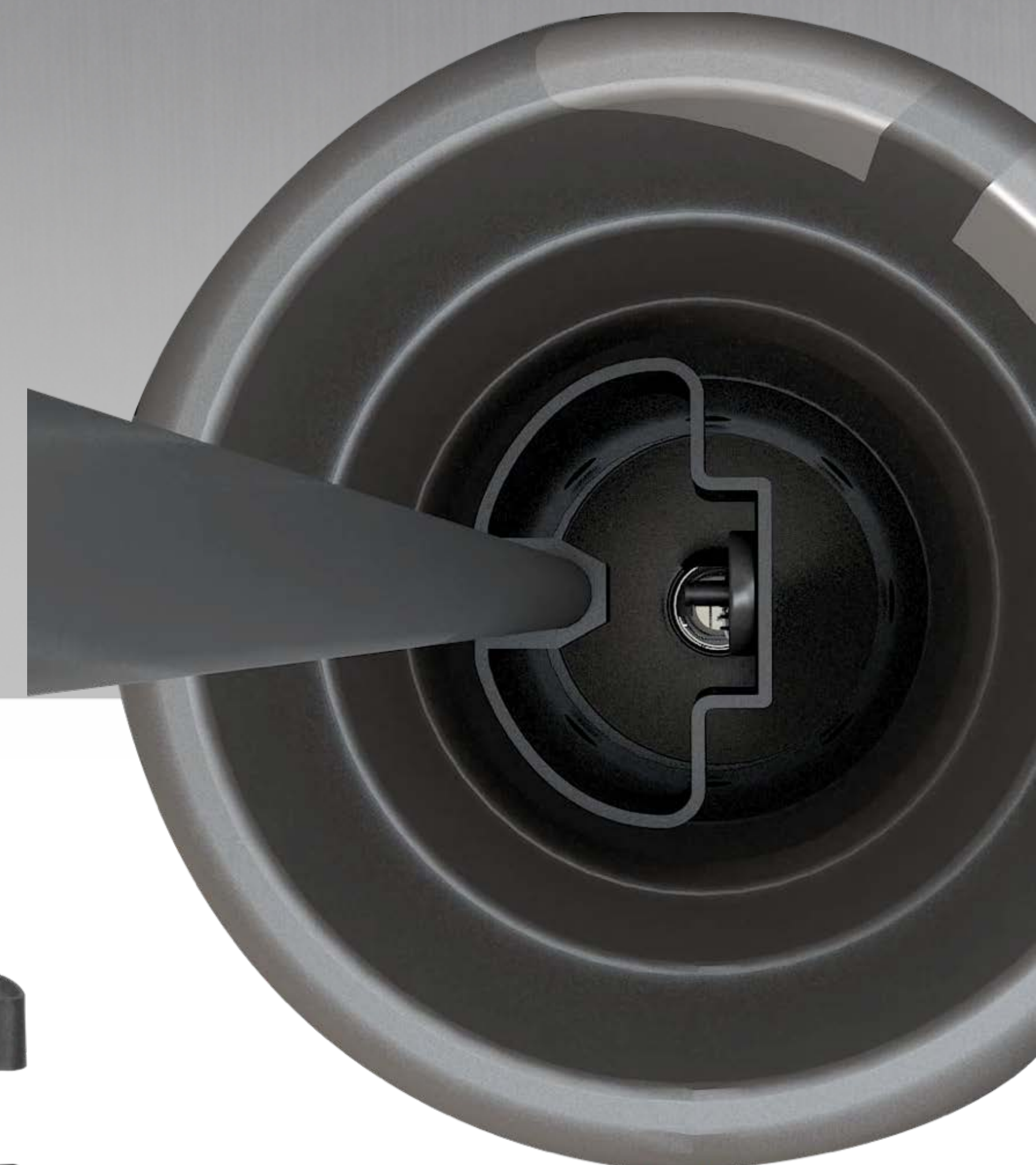


Flapper out

Raise the tool 1 ½” (38mm) and you should see the flapper move into the flow path

REMOTE TESTING

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



VISUAL TESTING

The remote testing tool will actuate the flapper when inserted down the drop tube and slid by the actuator - this is confirmed visually through a window in the tool.



CUSTOM TESTING TOOL

To accommodate varying tank sizes, the testing tool handle is segmented into six sections for customization up to 11 feet (3.35 meters) in length.



FAST INSPECTION

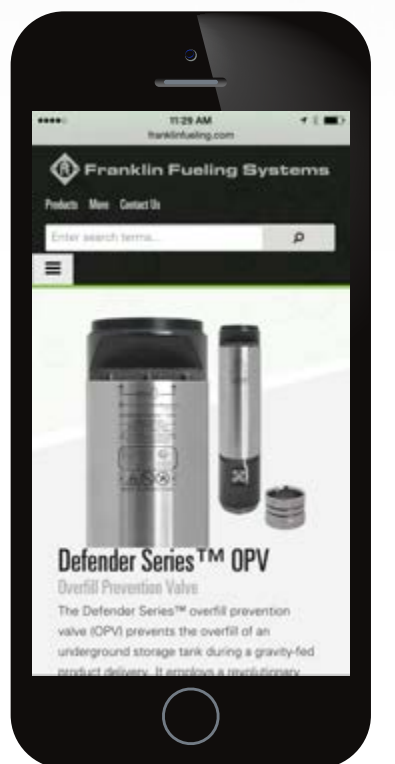
Fast visual inspection can be conducted by a single person in minutes without having to remove the complete drop tube and OPV assembly.





REMEMBER THIS

- ✓ The innovative magnetically-coupled actuator provides positive shutoff with zero leak points.
- ✓ Simplified installation eliminates flaring, drilling, riveting, and epoxy for fast installation.
- ✓ Reliable shutoff for both high flow or low flow fuel drops from 25 to 370 gpm (95 to 1,400 lpm).
- ✓ Primary functionality testing capability without having to remove the assembly from the riser.
- ✓ For use in all markets, fuel types and applications with simplified model offering.



WANT MORE?

Visit franklinfueling.com/OPV for more product information and literature downloads.



Flexing Hardwall Hose

FLEX-ING™

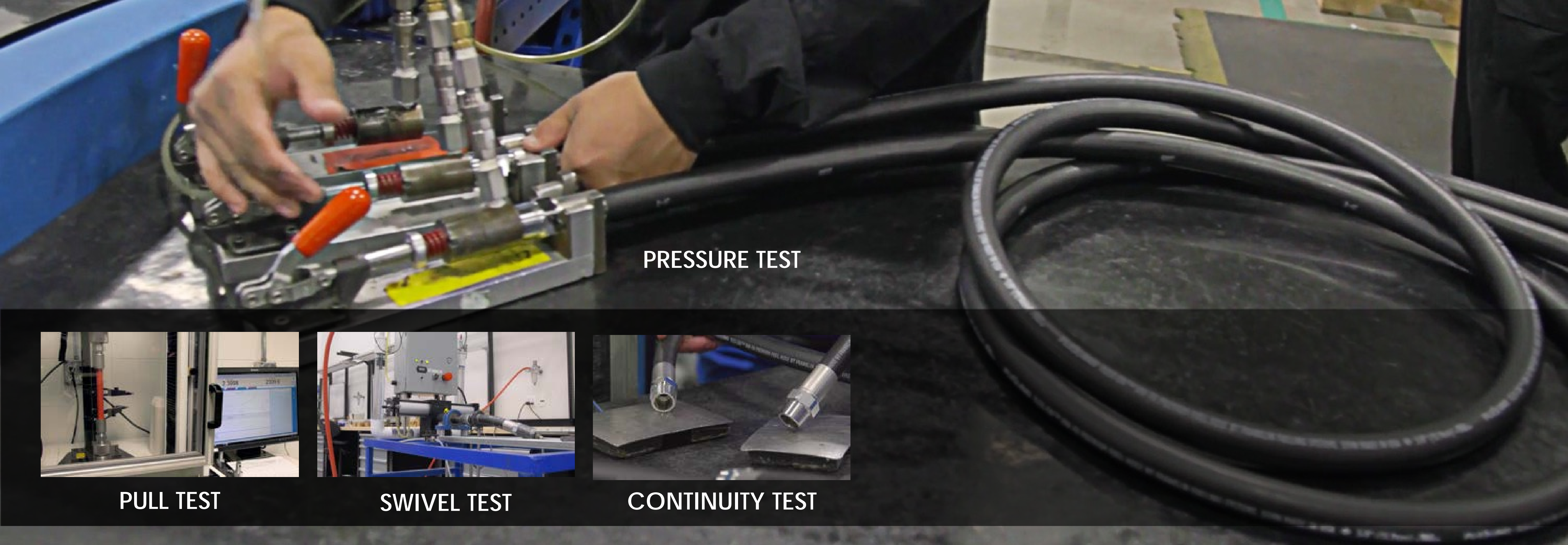
NEW Crimping Equipment

Modernized tooling
Improved performance
Precise assembly



FLEX-ING

CONVENTIONAL
HARDWALL HOSES



PRESSURE TEST



PULL TEST



SWIVEL TEST



CONTINUITY TEST



TEST, TEST, & TEST AGAIN

The new fitting design exceeds UL pull testing requirements of 400 lbs by more than double. Our fittings consistently withstand **over 1,000 lbs of pull force** in lab testing. The swivels also successfully withstood **over 100,000 rotations** in testing to simulate excessive wear.

Additionally, we **pressure test** and **continuity test** every hose before it leaves the factory to give you complete confidence that our hoses will perform in the field.

NEW Date Coding

Now laser-etched into SSTL ferrule instead of stamped into nut.

Improves and protects identification marking.

Beginning Q1 2016



FLEX-ING™

CONVENTIONAL
HARDWALL HOSES

Online Resource Tour

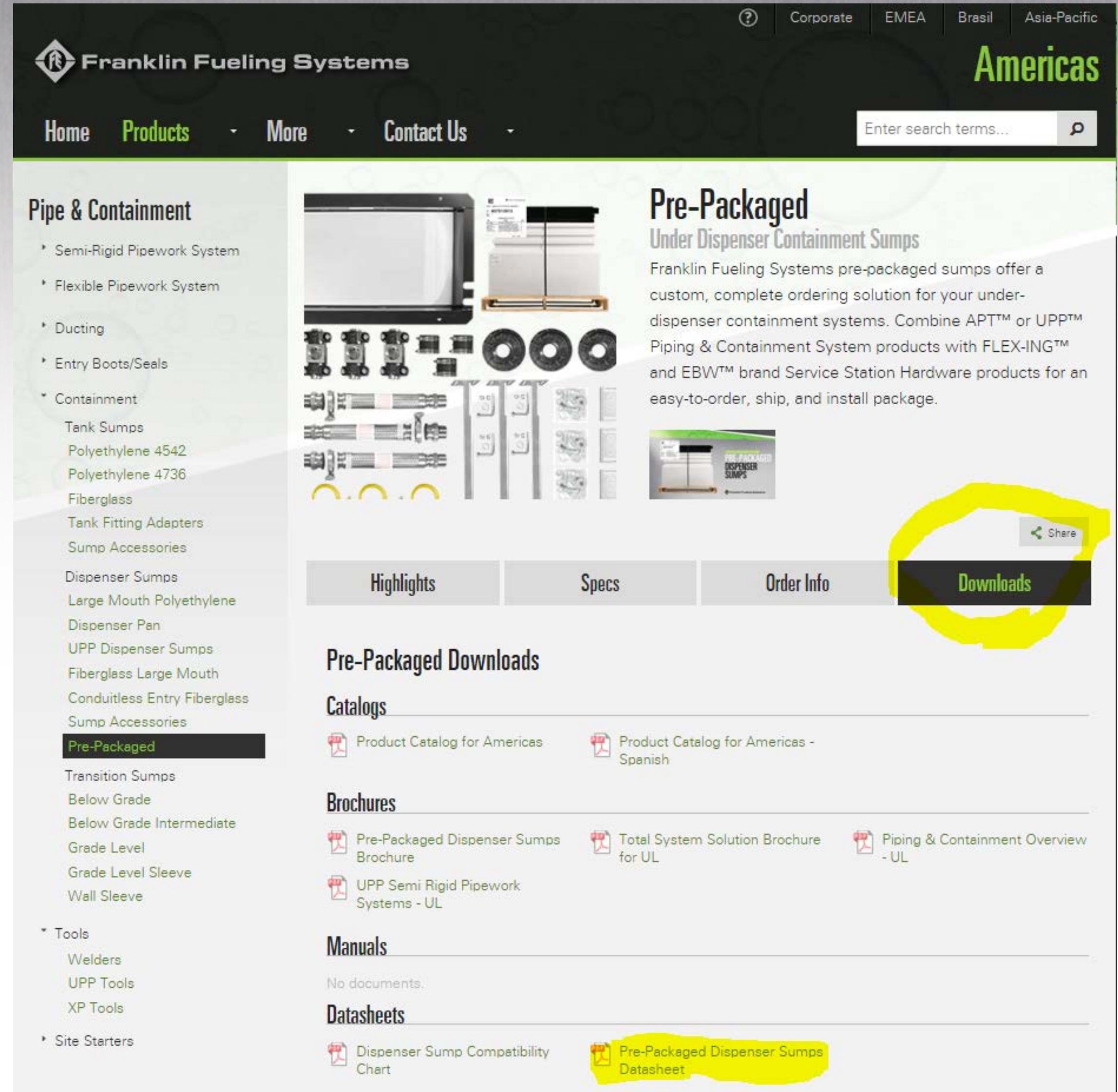
Datasheets: Download PDF datasheets 24/7 from our public domain website

www.franklinfueling.com

Choose the product line, then **drill down the left margin navigation menu** to the item you're after.

Once on the individual product page, click the **Downloads tab** on the right side of the page

Scroll down to the **Datasheets heading** and click the one you want.



Franklin Fueling Systems Americas

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Pipe & Containment

- Semi-Rigid Pipework System
- Flexible Pipework System
- Ducting
- Entry Boots/Seals
- Containment
 - Tank Sumps
 - Polyethylene 4542
 - Polyethylene 4736
 - Fiberglass
 - Tank Fitting Adapters
 - Sump Accessories
 - Dispenser Sumps
 - Large Mouth Polyethylene
 - Dispenser Pan
 - UPP Dispenser Sumps
 - Fiberglass Large Mouth
 - Conduitless Entry Fiberglass
 - Sump Accessories
 - Pre-Packaged
 - Transition Sumps
 - Below Grade
 - Below Grade Intermediate
 - Grade Level
 - Grade Level Sleeve
 - Wall Sleeve
- Tools
 - Welders
 - UPP Tools
 - XP Tools
- Site Starters

Pre-Packaged Under Dispenser Containment Sumps

Franklin Fueling Systems pre-packaged sumps offer a custom, complete ordering solution for your under-dispenser containment systems. Combine APT™ or UPP™ Piping & Containment System products with FLEX-ING™ and EBW™ brand Service Station Hardware products for an easy-to-order, ship, and install package.

Highlights Specs Order Info **Downloads**

Pre-Packaged Downloads

Catalogs

- Product Catalog for Americas
- Product Catalog for Americas - Spanish

Brochures

- Pre-Packaged Dispenser Sumps Brochure
- UPP Semi Rigid Pipework Systems - UL
- Total System Solution Brochure for UL
- Piping & Containment Overview - UL

Manuals

No documents.

Datasheets

- Dispenser Sump Compatibility Chart
- Pre-Packaged Dispenser Sumps Datasheet**

- FE Petro
- INCON
- EBW
- APT
- DEF
- Flexing

Submersible Pumping Systems Fuel Management Systems Service Station Hardware Piping and Containment Recirculation System Dispensing Systems



SERVICE STAION HARDWARE

- Shear valves
- Spill containers
- Manholes
- Flexible connectors
- Overfill prevention valves



FUEL MANAGEMENT SYSTEM

- Tank gauges
- Probes
- Float kits
- Float kits
- External alarms



SUBMERSIBLE PUMPING SYSTEMS

- Submersible pumps
- Mechanical leak detectors
- Controllers



PIPING & CONTAINMENT

- XP or UPP pipework
- Dispenser sumps
- Tank sumps



DISPENSING SYSTEMS (OPTIONAL)

- Hoses
- Hanging hardware
- Vapor recovery systems



Thank You
State of Montana!

Matt Smith
Territory Manager
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720-201-8621

