



STI Updates For Shop Built Tanks/Generator Base Tanks

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March 20-23, 2023



25th California Unified Program
Annual Training Conference
March 20 – 23, 2023



TANKS | Horizontal Tank



Generator Tanks and Appurtenances



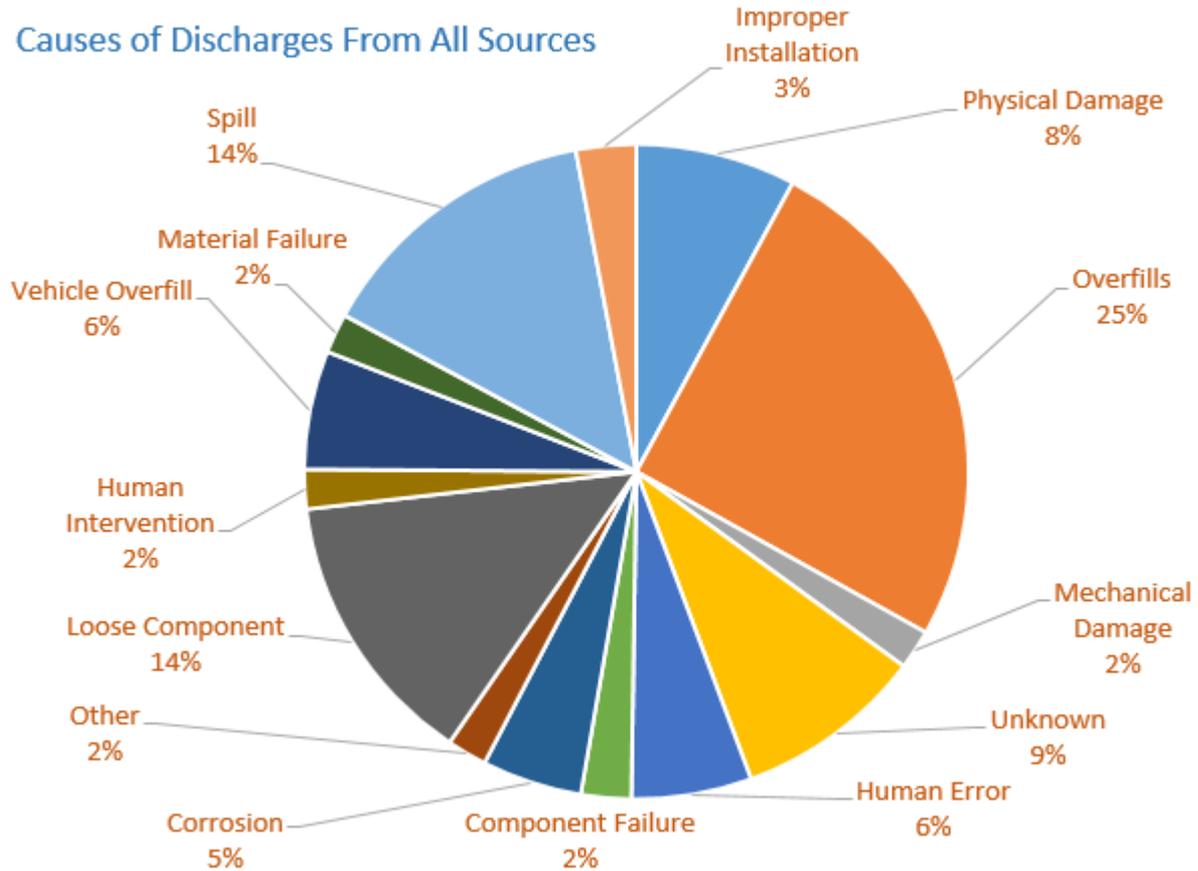
TANKS | Horizontal Tank



Generator Tanks and Appurtenances

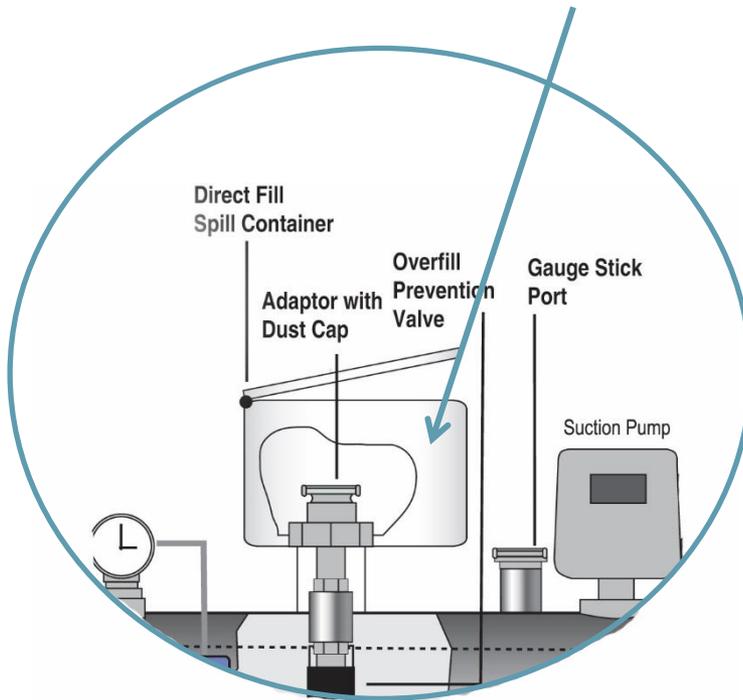


TANK DISCHARGES |





Direct Top Fill



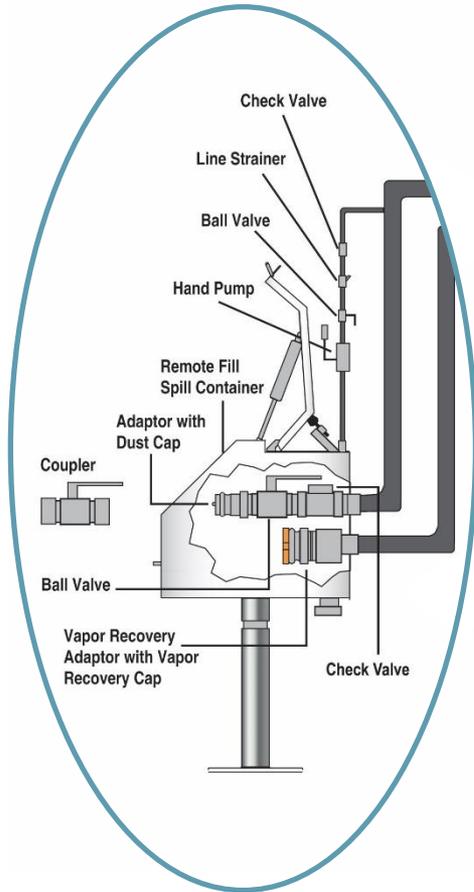
517



516 or 518



TANK FILLING | Spill Containers/Fill Boxes



515



715



TANK FILLING | Spill Containers/Fill Boxes



Florida DEP EQ-787



LISTED

CAN-ULC-S663-11



TANK FILLING | Connections



Dry Disconnect



Quick Disconnect
with Check Valves





Fill Adaptor Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Cap fitting snug on adaptor
- Check valve in connector not letting liquid pass by

Spill Container Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Inspect for physical damage
- Check for liquid within, liquid caused by other than normal loss during connection.



TANK FILLING | Check Valves

Inline Check



Wafer Check

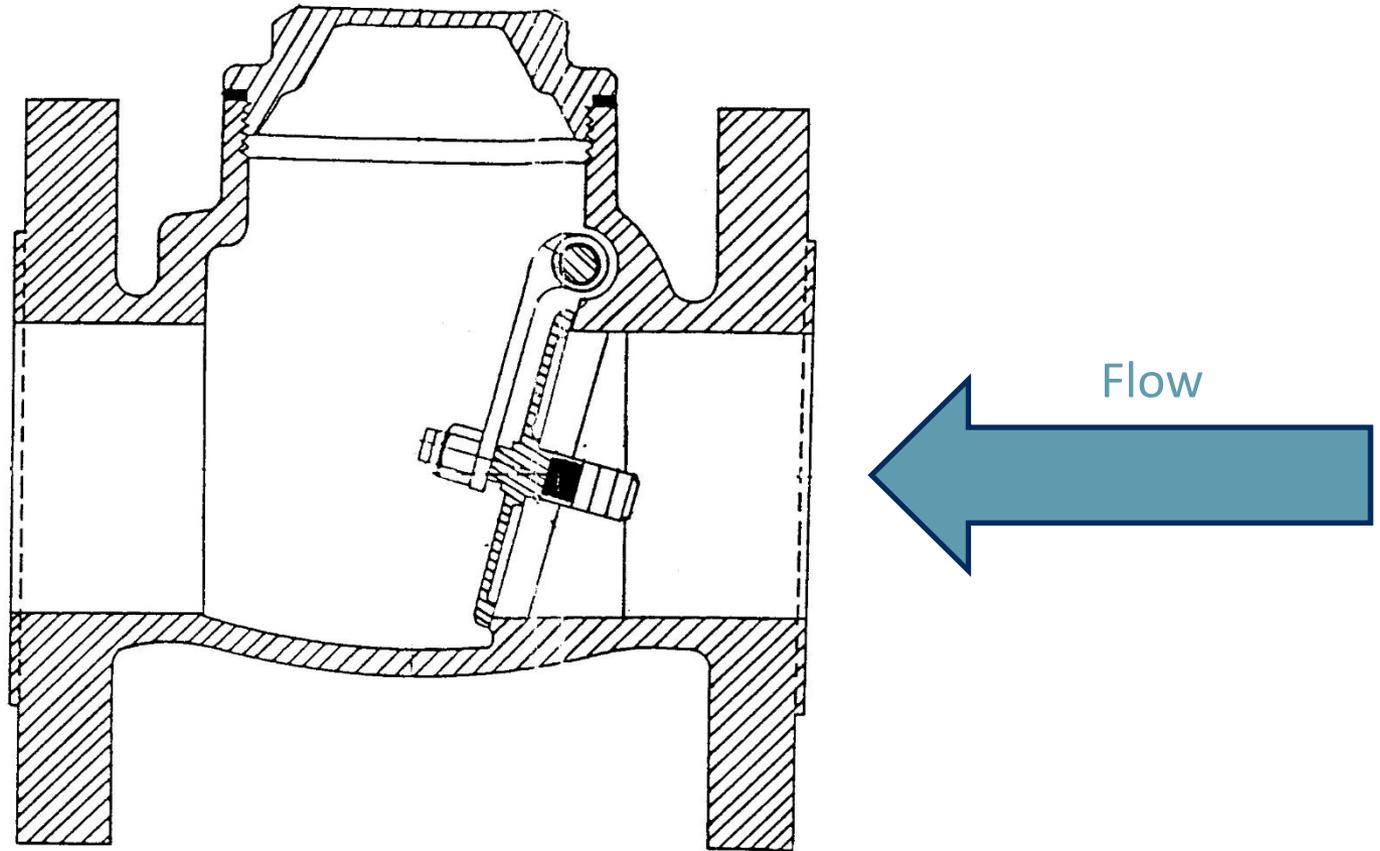


Swing Check





TANK FILLING | Check Valves





Check Valve Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Is there fluid leaking by when the valve should be closed
- Is the check valve seated correctly
- Is the gasket material deteriorating



Ball Valves



691

Gate Valves



235 & 535



Top Cleanout



286

Bottom Cleanout



285



284S

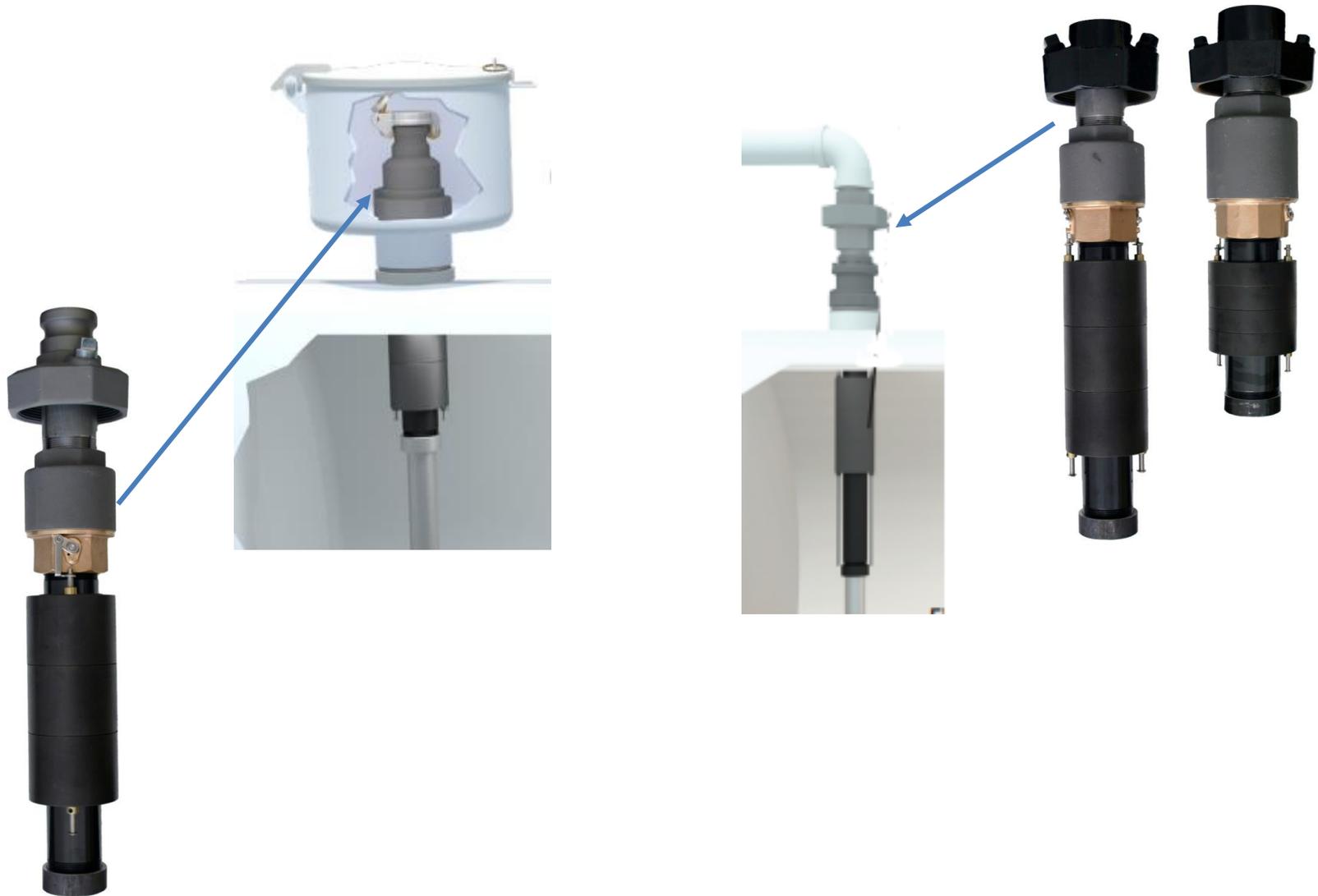


Line Strainer Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Is the basket full and needing cleaned out

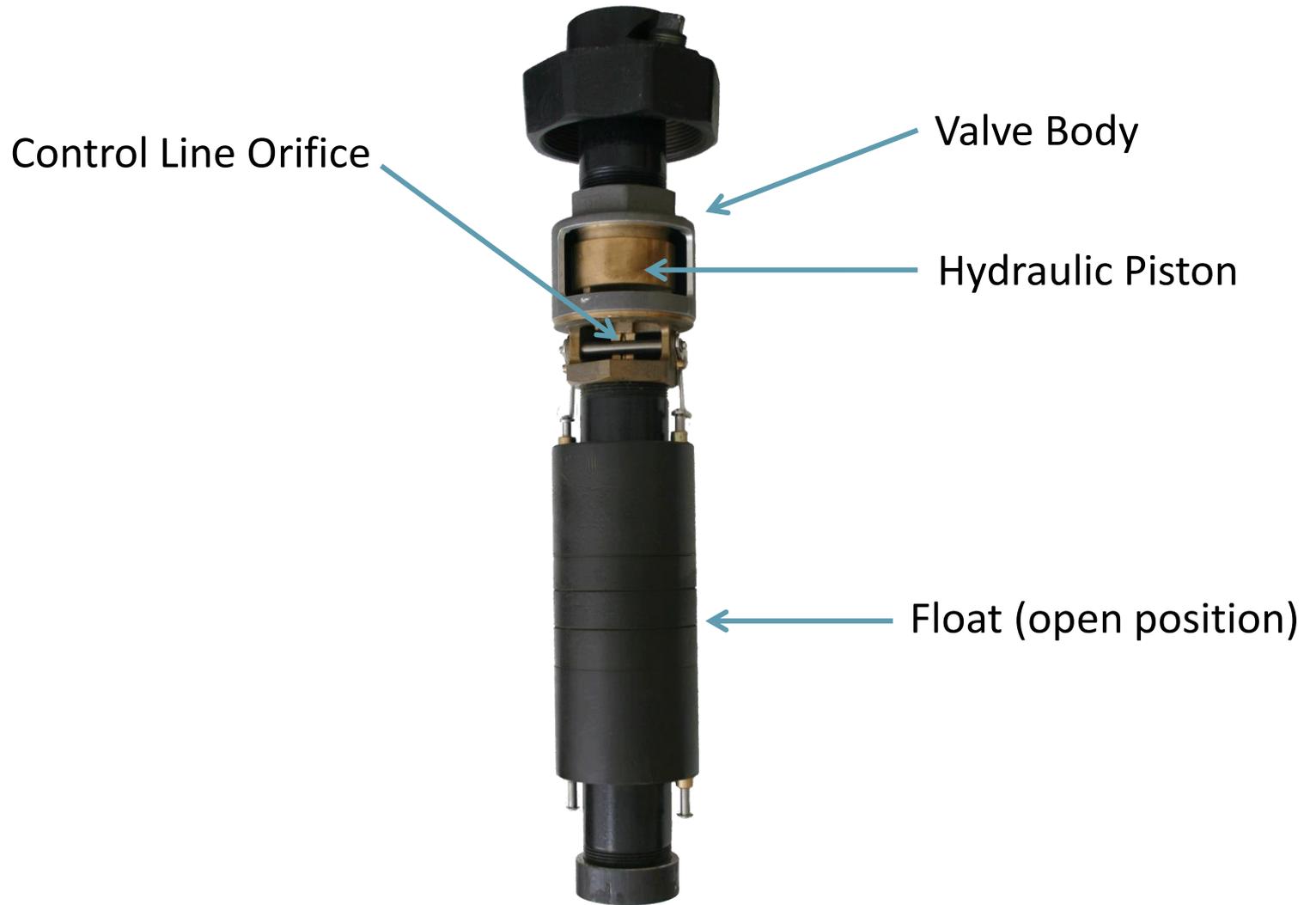


TANK FILLING | Overfill Prevention Valves



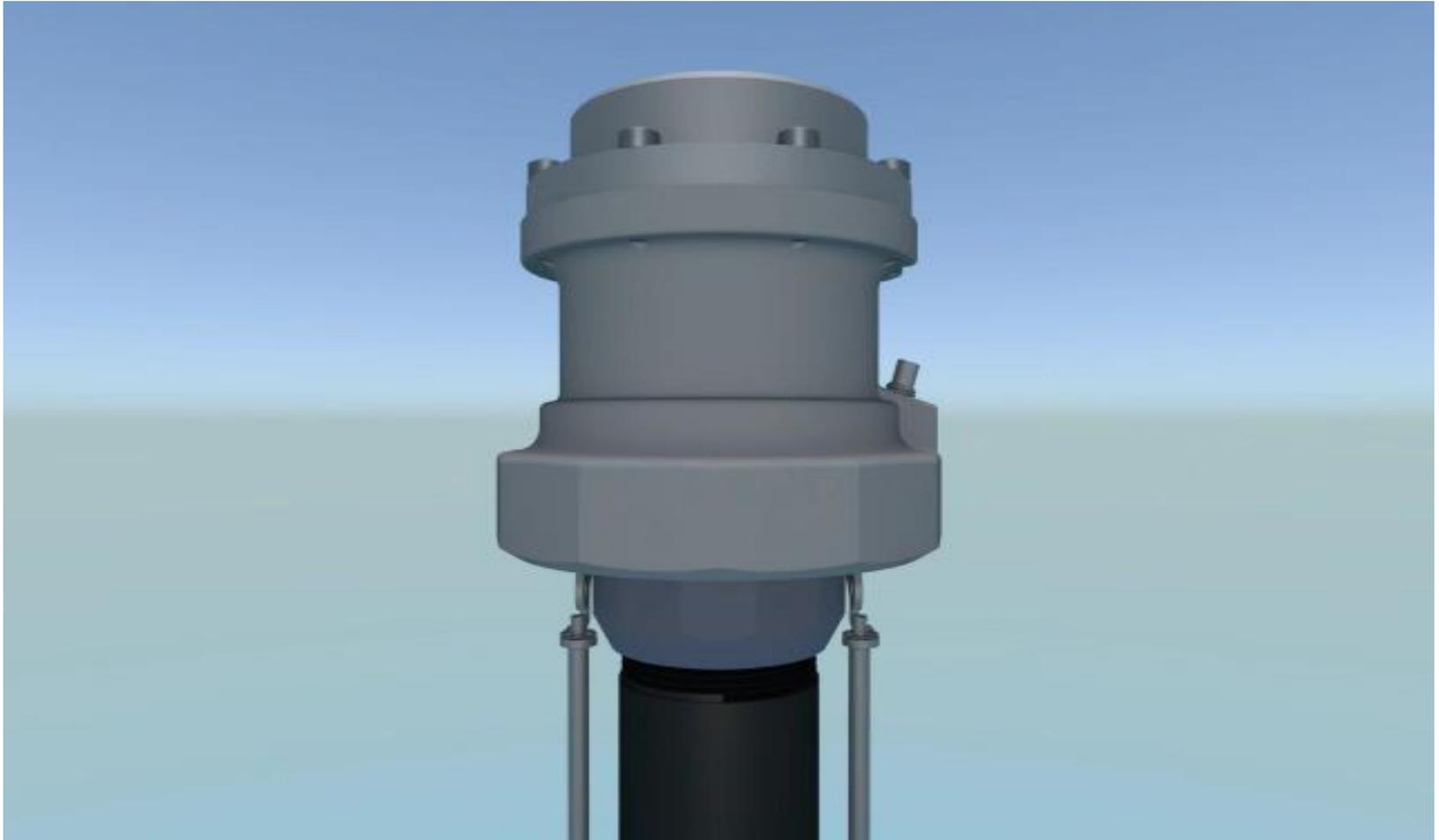


TANK FILLING | Overfill Prevention Valves





TANK FILLING | Overfill Valve Operation





TANK FILLING | Overfill Prevention Valves

Manual Test Device



9095AA



9095X



9095SA



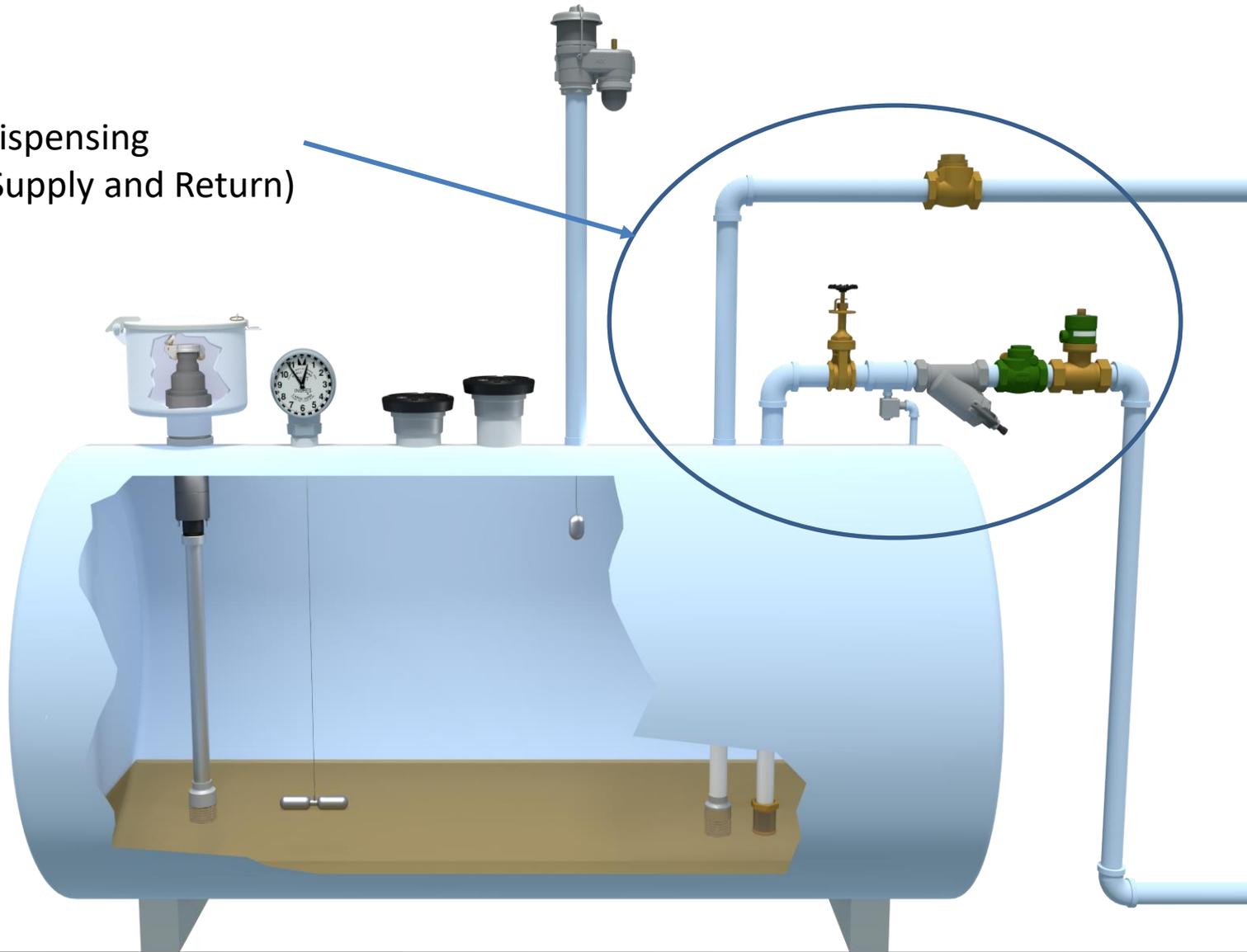
Overfill Prevention Valve Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Test- Does the OPV have a test mechanism and does it shut off flow.
- Is the OPV installed correctly per installation instructions



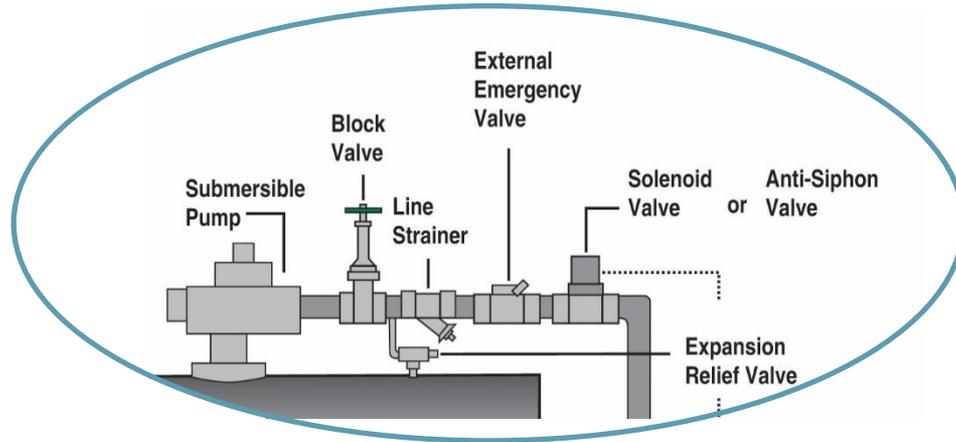
TANK EQUIPMENT

Dispensing
(Supply and Return)





TANK DISPENSING | Block Valves



Ball Valves



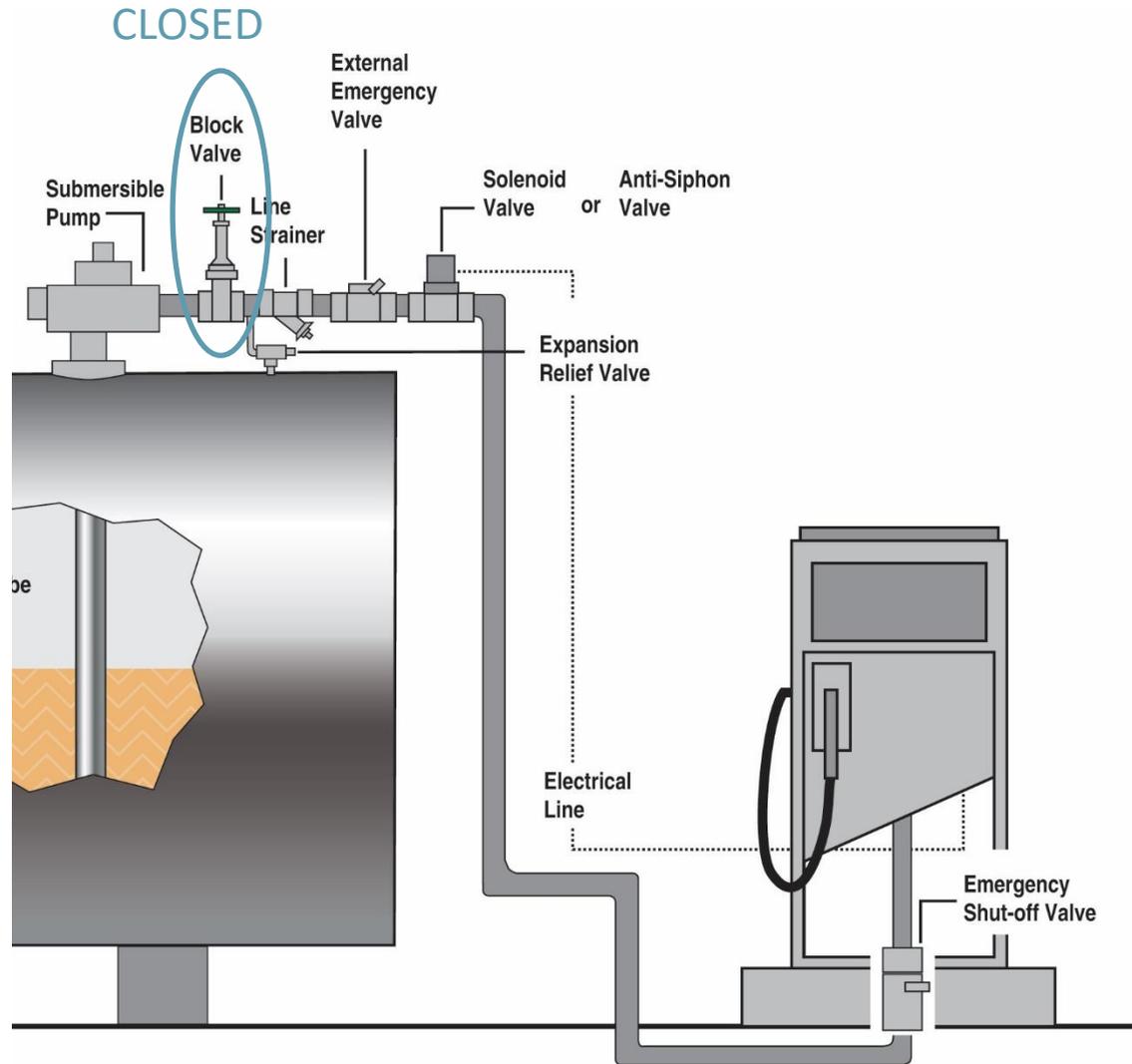
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Gate Valves



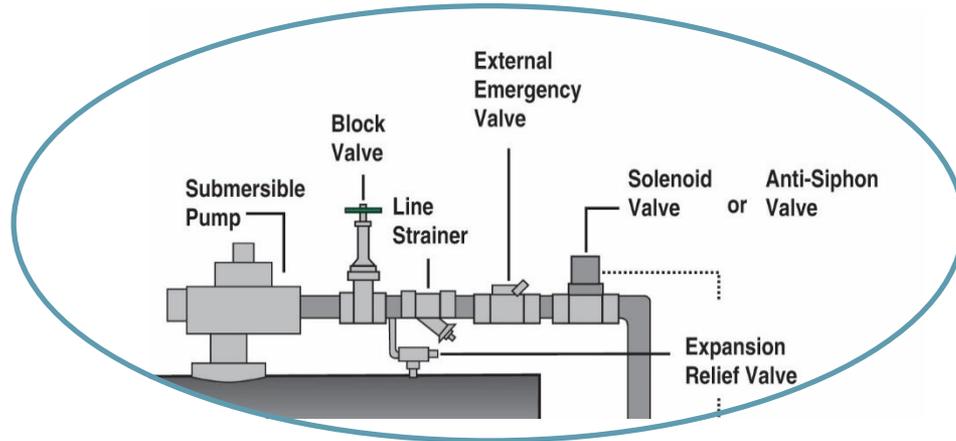


TANK DISPENSING | Thermal Expansion





TANK DISPENSING | Thermal Expansion



76DI

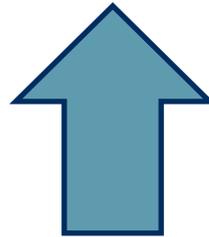
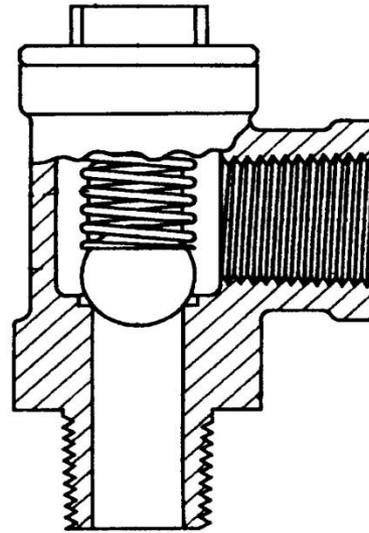


78DI





TANK DISPENSING | Thermal Expansion



Flow

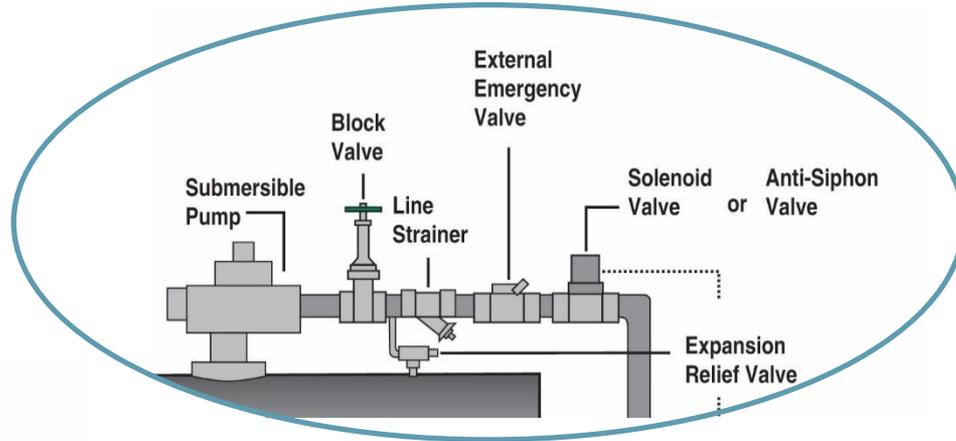


Thermal Expansion Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Does pressure alleviate when the desired pressure is met I.G 25,40,50 100 psi
- Does the valve stop when the are below the desired pressure



TANK DISPENSING | Emergency Valves



346DI



446



346 FDI



346S

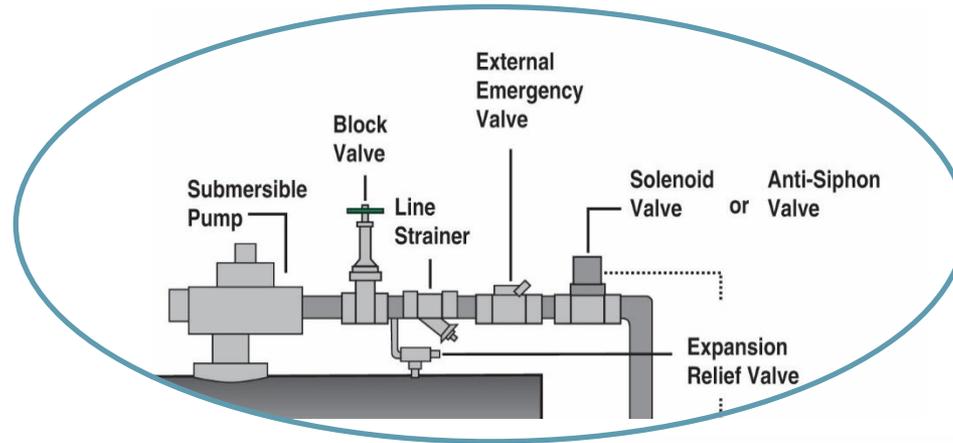


Emergency Valve Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Verify correct fusible link 165 degrees F, 212 degrees F
- Is the Fusible link holding the valve open and not some foreign material
- Does flow stop if the valve is closed



TANK DISPENSING | Anti-siphon: Electric Solenoid Valves



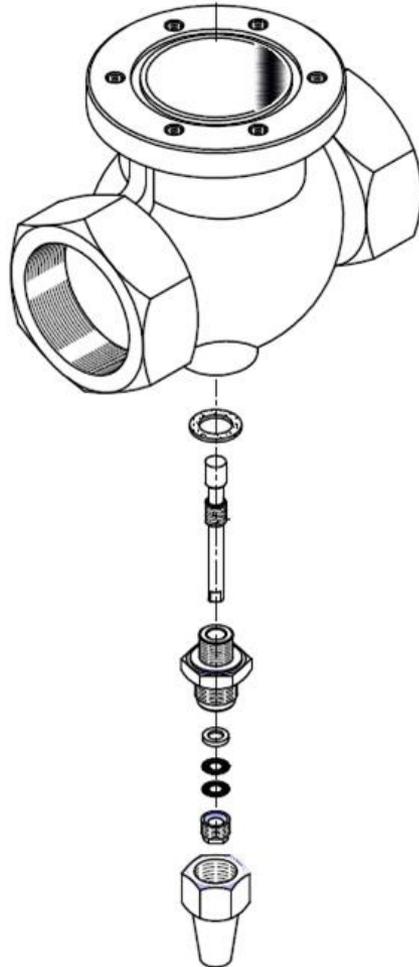
710



711



710 Manual Override



- **710MO has a manual override Feature. Available in sizes ranging from ¾" to 2" for operation during a power outage.**

This valve will remain open until the valve has been manually closed. It is imperative that when power is restored this valve is put back in normal working condition.



Anti-siphon Valves



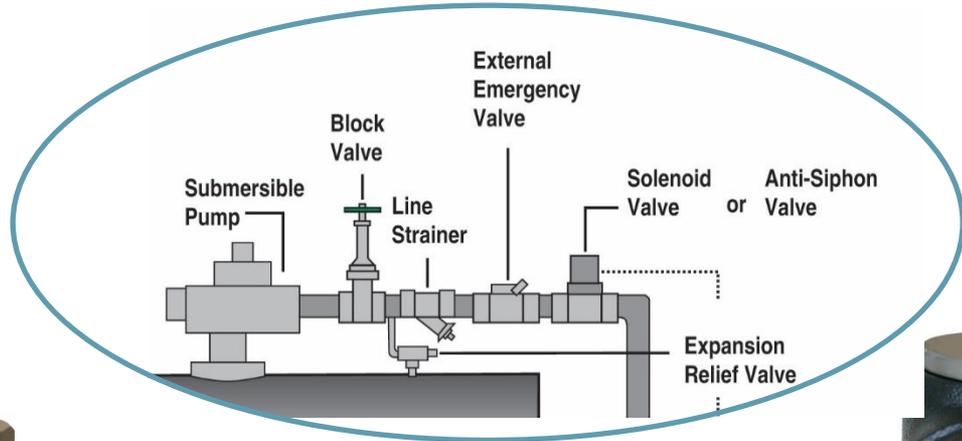


Anti-siphon Valves Installed Upside Down





TANK DISPENSING | Anti-siphon: Mechanical Valves



912

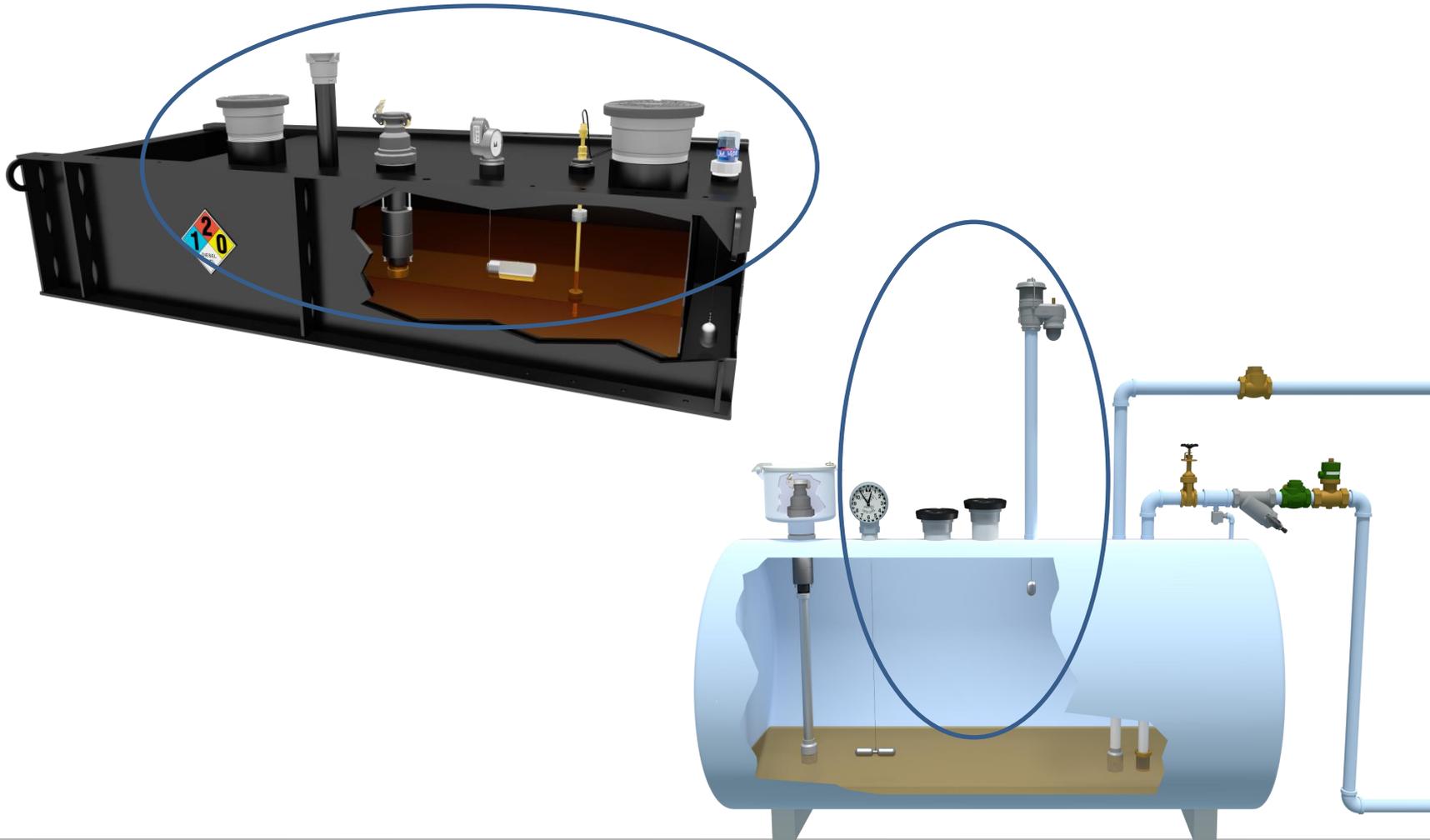


910



TANK EQUIPMENT

VENTING & GAUGING



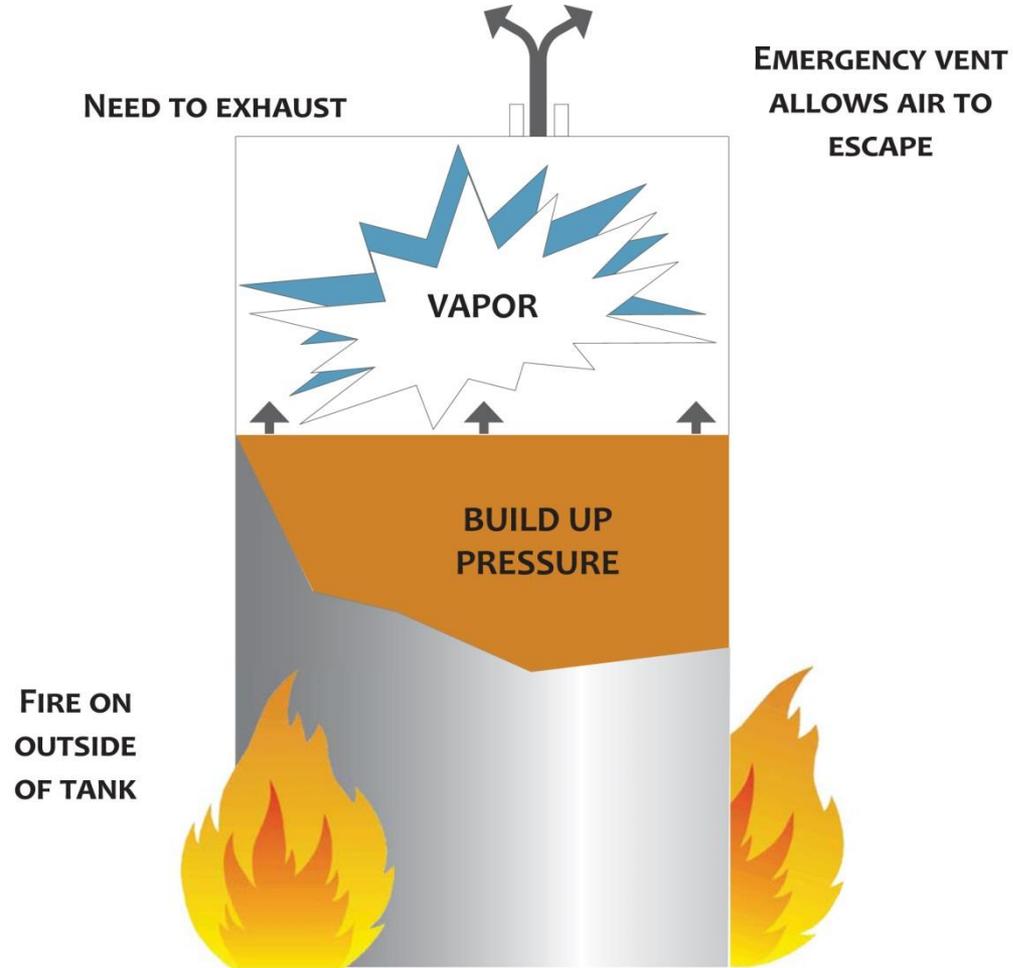
Generator Tanks and Appurtenances



Emergency Venting & Normal Venting



VENTING & GAUGING | Emergency Venting





Types of Emergency Vents

- Pop-Up Style
- Flip-Up Style
- Long-Bolt Manhole



244



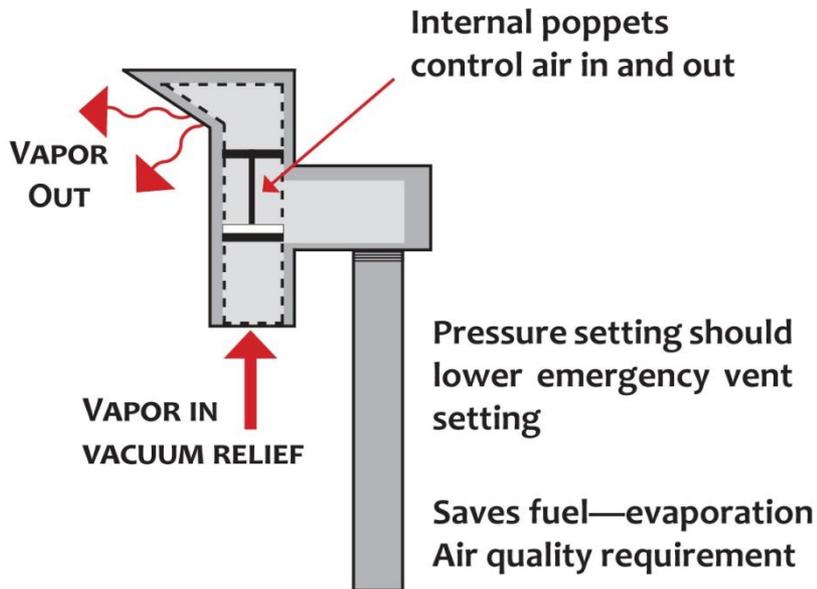
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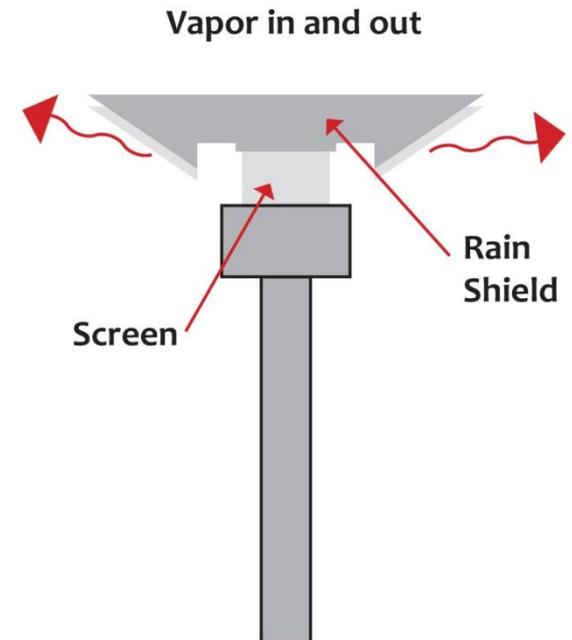
NORMAL VENTING

VENTING UNDER “NORMAL” (NON-EMERGENCY) CONDITIONS

PRESSURE/VACUUM VENT



OPEN VENT





- Normal Venting—Venting Under “Normal” (Non-Emergency) Conditions
 - Open vent allows free movement of air in and out of tank.
 - Rain hood keeps water out.
 - Vent height determined by authority having jurisdiction.
 - Screen keeps bugs and debris out of tank.
 - Vents outward and upward.



354



- Pressure/Vacuum Vent (Conservation Vent)—Poppeted control of relief.
 - Typical setting 2 oz. – 8 oz. Pressure/1 oz. Vacuum.
 - Conserves product and reduces vapor discharge.
 - Vents outward and upward.



948A

UL 2583



Normal Venting is Very Important





- Sizing Normal Vents with Emergency Vents
 - The emergency vent relief setting should be higher than the normal vent relief setting.



- Flame Arrestor—Prevents the transmission of heat and/or an ignition source into the tank.

Open Vent
Arrestor
352



Pressure
Vacuum Vent
Arrestor
351S

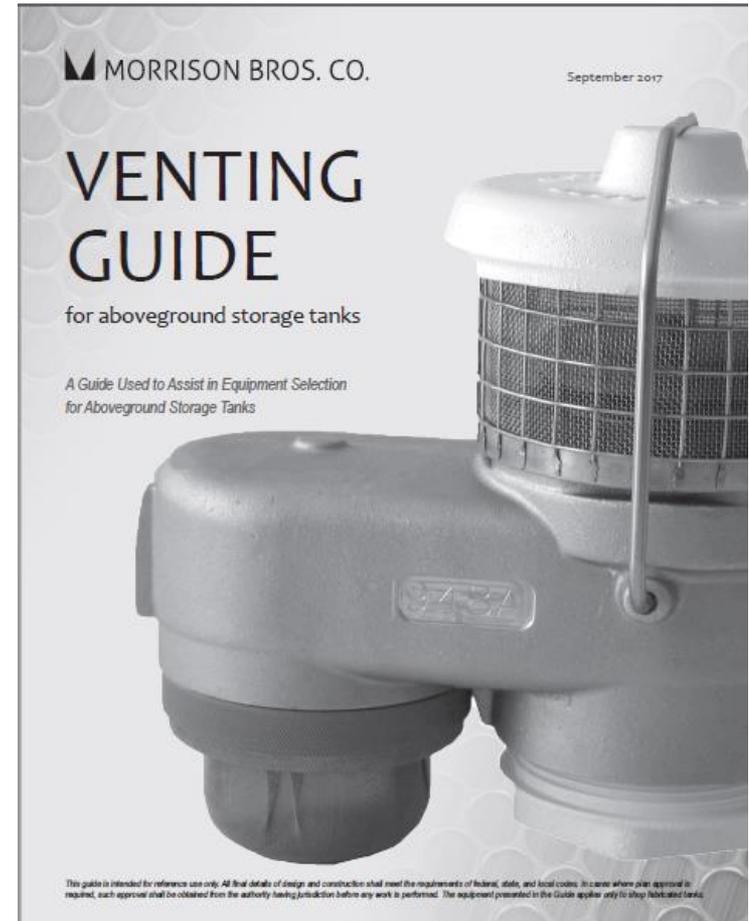




Morrison Venting Guide References

- UL 142
- NFPA 30
- ULC S601-07
- PEI RP 200

**Used to assist in the
selection of equipment for
aboveground shop-
fabricated storage tanks.**





VENTING & GAUGING | Level Gauges



Generator Tanks and Appurtenances



- Liquid Level Gauge:
Reads feet and inches



818

- Liquid Level Gauge:
Reads meters and centimeters





INCHES



GALLONS



718



Mechanical Gauge Troubleshooting and Maintenance

- Leaking or weeping from the connections
- Verify reading, does gauge match stick reading
- Is float or probe able to move freely and not get hung up



Provides signal indicating when a tank is entering an overfill condition or when there is liquid present in the interstitial space.



724



- Gauge Alarm Combination

918





- 918 Alarm Boxes Battery Powered





ELECTRONIC GAUGES

DIGITAL ELECTRONIC GAUGE



1218



VENTING & GAUGING | Level Gauges

At the network connection...

- Wireless Client (1218C-0163 2C)
- Antenna
- Base Station
- Long Range Wireless Base Station Kit (1218C-0164 AK)
- Wireless Access Point (1218C-0154 2A)
- FUEL CLOUD

At the tank...

- 924 and 924S Adjustable
- 918TCP Level Sensor
- 1218 Sensor
- 925 Multi-Level Sensor (1 or 2 float only)
- 924LS Liquid Sensor
- 918 Clock Gauge

At the console...

- 1218 Console (2 tanks: 1218C-0200 AC) (4 tanks: 1218C-0400 AC)
- Cellular Gateway Assembly (1218C-0169 AG)
- External Input/Output Expansion Module (1218C-6600 AM)
- Wireless Client (1218C-0163 2C)
- Remote Horn with Strobe (918AC-0157 AHS)
- Remote Horn (918AC-0154 AH)
- Outdoor Ethernet Switch Assembly (5-Port: 1218C-0171 AS) (8-Port: 1218C-0172 AS)
- Remote Strobe (918AC-0156 2L)
- 711 Solenoid Valve
- Belden 7933A Cable



Level Gauge Troubleshooting and Maintenance

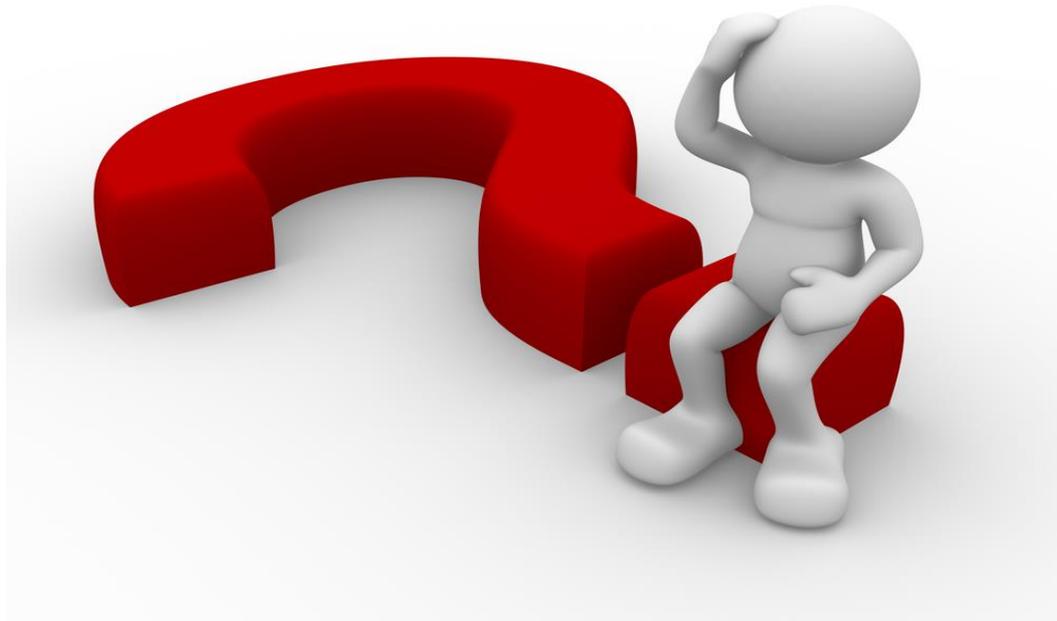
- Leaking or weeping from the connections
- Does the test function work on the level gauge
- Does the audible and visual alarm activate when a set point is reached E.G. overfill, low level



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QUESTIONS ???





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Generator Base Tanks and More

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