

California Environmental Protection Agency



ARB Approved

Installation, Operation and Maintenance Manual

**For the EMCO Wheaton Retail Phase I Vapor Recovery System
As Certified by Executive Order VR-105-D**

NOTICE:

The **ARB Approved Installation, Operation and Maintenance Manual for the EMCO Wheaton Retail Phase I EVR System** describes the tools and methods required to install and maintain the EMCO Phase I EVR System. Unless specified otherwise, only technicians that are trained and certified by EMCO (i.e. EMCO Certified Technicians) are able to perform installation, maintenance or repairs of components manufactured by EMCO or the warranty will be void. A list of EMCO certified technicians can be viewed on EMCO Wheaton Retail's website at www.emcoretail.com.

To schedule a training class, EMCO can be contacted at the following:

Jose E. Rodriguez
Director of Technical Services,
CARB Liaison, West Coast Sales & Marketing
EMCO Wheaton Retail Corporation
Phone: 619-846-9882
Email: jerodriguezsd@aol.com

Only technicians that are trained and certified by FFS (i.e. FFS Certified Technicians) are able to perform installation, maintenance or repairs of the PV-Zero, manufactured by FFS, or the warranty will be void. A list of FFS Certified Technicians can be viewed at <http://www.franklinfueling.com/service/>

To schedule a training class, FFS can be contacted at the following:

Stan Brodecki, Allan Busch, or Steve Langlie
Enhanced Vapor Recovery Systems
Franklin Fueling Systems
Phone: 800-225-9787
Email: brodecki@franklinfueling.com
busch@franklinfueling.com
langlie@franklinfueling.com

It is the responsibility of each EMCO and/or FFS Certified Technician to be familiar with the current requirements of state, federal and local codes for installation and repair of gasoline dispensing equipment. It is also the responsibility of the EMCO and/or FFS Certified Technician to be aware of all necessary safety precautions and site safety requirements to assure a safe and trouble free installation.

Any hazardous waste generated from installation, maintenance and/or cleaning activities must be disposed of properly.

Summary of Guidelines for Maintenance Activities Required of the EMCO Wheaton Retail Phase I Vapor Recovery System¹

Component

Interval

Pressure/Vacuum Vent Valve: FFS Model PV-Zero

Annually

- 1.) Visually inspect the housing, pipe, fittings and rain cap for obvious signs of damage, missing parts or fluid leaks.
- 2.) Visually inspect the rain cap from ground level for signs of bird's nests or insect activity.
- 3.) Every year drain and inspect fill fluid per the **Fluid Inspection Procedures**.

Pressure/Vacuum Vent Valve: Husky Model 5885

Annually

Annually inspect the P/V vent valve for foreign objects without removing the P/V vent valve from the vent pipe by using the following procedure:

- 1.) Remove the screws that hold the top cover on.
- 2.) Remove any debris that might be sitting inside the lower cover.
- 3.) Check the drain holes in the lower cover for blockage.
- 4.) The two (2) screens should not be removed.
- 5.) Reinstall the top cover and retaining screws.
- 6.) Tighten the screws firmly.

Spill Containment: EMCO A1004EVR-X Single or Double Wall

**Quarterly &
After Each Delivery**

- 1.) Quarterly verify that the inside of the A1004EVR Spill Containment bucket is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR Spill Containment bucket using soapy water and a disposable towel.
- 2.) After each delivery, the station operator must remove any standing gasoline from the inside of the A1004EVR Spill Containment.
 - a. For spill containment buckets that do not contain a drain valve, the fuel must be removed manually. Any components that become contaminated with gasoline must be disposed of properly.
 - b. For spill containment buckets that contain the #494118 Drain Valve, if the gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

Drain Valve Assembly (if equipped): EMCO 494118

Quarterly

- 1.) Quarterly test the operation of the drain valve assembly by pulling up on the chain located inside the A1004EVR Spill Containment bucket.
- 2.) If gasoline does not drain when actuating the drain valve assembly perform steps (a) through (d) below:
 - a. Remove the filter from the drain valve. Using a pair of needle nose pliers, remove both cotter pins and disassemble the linkage from the top of the drain valve. Soak the filter in soapy water and use

¹ These maintenance requirements shall not circumvent use of the manufacturer's maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found here for the EMCO Wheaton Retail System to ensure that all maintenance and torque requirements are met.

Summary of Guidelines for Maintenance Activities Required of the EMCO Wheaton Retail Phase I Vapor Recovery System (Continued)²

<u>Component</u>	<u>Interval</u>
Drain Valve Assembly (if equipped): EMCO 494118 (Continued from page iii) high pressure air to clean and remove all debris. Replace the filter #569131 only if the screen is damaged. b. Using the Emco Wheaton Retail #493820 Drain Wrench unscrew the drain valve and remove from the bottom of the A1004EVR Spill Containment bucket. Soak the drain valve in soapy water and use high pressure air to clean and remove all debris. Replace the flat gasket #567108 before re-installing. c. To re-install the drain valve assembly, refer to installation instruction steps 3 through 5. Verify leak tightness integrity of the drain valve assembly by performing CARB test procedure TP-201.1D. d. If the drain valve assembly fails to pass CARB test procedure TP-201.1D, replace with new and refer to installation instructions steps 1 through 5.	Quarterly
Dust Caps: EMCO A0097-005 Product 1.) Annually verify that the gasket seal is installed and properly secured and is free of tears. If cap fails to comply, replace with new cap.	Annually
EMCO A0099-X Vapor: X=002, No Chain or 003, With Chain 1.) Annually verify that the gasket seal is installed and properly secured and is free of tears. If cap fails to comply, replace with new cap.	Annually
All “non-EMCO” Dust Caps : 1.) Visually inspect the seal in cap and replace if damaged or missing.	Annually
Product Adaptor: EMCO A0030-124S <u>Static Torque Test:</u> 1.) Using the EMCO Wheaton Retail #494240 Swivel Adaptor Torque Wrench, annually verify the static torque of the swivel adaptor by performing CARB test procedure TP-201.1B. 2.) If the swivel adaptor fails to meet the static torque test requirements, replace both O-rings with the EMCO Wheaton O-ring kit #494301.	Annually
<u>Leak Tightness Integrity Test:</u> 1.) Annually verify leak tightness integrity of the swivel adaptor by performing CARB test procedure TP-201.1D. 2.) If the swivel adaptor fails to meet the leak tightness integrity test requirements, replace both O-rings with the EMCO Wheaton O-ring kit #494301 and/or gasket #568793.	
Vapor Adaptor: EMCO A0076-124S <u>Static Torque Test:</u> 1.) Using the EMCO Wheaton Retail #494240 Swivel Adaptor Torque Wrench, annually verify the static torque of the swivel adaptor by performing CARB test procedure TP-201.1B.	Annually

² These maintenance requirements shall not circumvent use of the manufacturer’s maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found here for the EMCO Wheaton Retail System to ensure that all maintenance and torque requirements are met.

Summary of Guidelines for Maintenance Activities Required of the EMCO Wheaton Retail Phase I Vapor Recovery System (Continued)³

Component

Interval

Vapor Adaptor:

EMCO A0076-124S (continued from page iv)

Annually

- 2.) If the swivel adaptor fails to meet the static torque test requirements, replace both O-rings with the EMCO Wheaton O-ring kit #494301.

Leak Tightness Integrity Test:

- 1.) Annually verify leak tightness integrity of the swivel adaptor by performing CARB test procedure TP-201.1D.
- 2.) If the swivel adaptor fails to meet the leak tightness integrity test requirements, replace both O-rings with the EMCO Wheaton O-ring kit #494301 and/or gasket #568793.

Extractor Assembly:

EMCO A0079-X

None Required

X=043, 044, 050, 051, 052, 150 or 152

- 1.) No preventative maintenance is required for this product.

Extractor Cage:

EMCO A0179-002

None Required

- 1.) No preventative maintenance is required for this product.

Ball Float Valve:

EMCO A0075-X

None Required

X=001, 002, 004, 006, 010, 013, 015 or 017

- 1.) No preventative maintenance is required for this product.

Riser Seal:

EMCO 494096

Annually

- 1.) Annually verify leak tightness integrity of the riser seal by performing CARB test procedure TP-201.1D.
- 2.) If the riser fails to meet the leak tightness integrity test requirements, replace the bottom O-ring with the EMCO Wheaton O-ring kit #494242.

Drop Tube Overfill Prevention Device:

EMCO A1100EVR

Annually

- 1.) Annually, conduct a visual inspection of the flapper valve assembly located inside the A1100EVR Overfill Prevention Valve. Begin by removing the spill containment lid and fill adaptor cap, looking down over the fill opening, verify that the flapper valve assembly is open and free of any foreign objects that can block or restrict the flow of gasoline into the underground storage tank during a fuel delivery.
- 2.) Annually, verify leak tightness integrity of the A1100EVR Overfill Prevention Valve by performing CARB test procedure TP-201.1D.

Straight Drop Tube:

EMCO A0020EVR Flared Collar & A0020EVRC Machined Collar

Annually

- 1.) Annually, verify leak tightness integrity of the A0020EVR or A0020EVRC Straight Drop Tube by performing CARB test procedure TP-201.1D.

³ These maintenance requirements shall not circumvent use of the manufacturer's maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found here for the EMCO Wheaton Retail System to ensure that all maintenance and torque requirements are met.

Summary of Guidelines for Maintenance Activities Required of the EMCO Wheaton Retail Phase I Vapor Recovery System (Continued)⁴

<u>Component</u>	<u>Interval</u>
EMCO A0020EVR Flared Collar & A0020EVRC Machined Collar (continued from page v)	Annually
2.) If the A0020EVR or A0020EVRC Straight Drop Tube fails to meet the leak tightness integrity test requirements, replace the drop tube O-ring with the EMCO Wheaton O-ring kit #569461.	
Tank Gauge Port Components:	
EMCO A0097-010 Cap	Annually
1.) Annually verify that the gasket seal is installed and properly secured and is free of tears. If cap fails to comply, replace with new cap.	
EMCO A0030-014 Adaptor	Annually
<u>Leak Tightness Integrity Test:</u>	
1.) Annually verify leak tightness integrity of the probe adaptor by performing CARB test procedure TP-201.3.	
2.) If the probe fails to meet the leak tightness integrity test requirements, replace the gasket #568793.	

⁴ These maintenance requirements shall not circumvent use of the manufacturer’s maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found here for the EMCO Wheaton Retail System to ensure that all maintenance and torque requirements are met.

Summary of Component Torque Values of the EMCO Wheaton Retail Phase I Vapor Recovery System

Component	Tool Required	Torque Value
Pressure/Vacuum Vent Valve: Husky Model 5885, 2-inch threaded	Standard Wrench and Socket	20 to 50 ft-lbs
FFS Model PV-Zero, 3-inch threaded	Chain/Strap Wrench	See Page 4 of the PV-Zero IOM Document for Specific Instructions
Spill Containment: EMCO A1004EVR Single or Double Wall	EMCO #494241 Spill Containment Wrench	100 to 150 ft-lbs
Drain Valve Assembly: EMCO 494118	EMCO #493820 Drain Wrench	13 to 15 ft-lbs
Dust Caps: EMCO A0097-005 Product EMCO A0099-X Vapor (all models) All Non-EMCO Dust Caps	None Required None Required None Required	None Required None Required None Required
Product Adaptor: EMCO A0030-124S	EMCO #A0081-001C Adaptor Wrench	60 to 75 ft-lbs
Base Screws (Part of A0030-124S)	Standard Wrench and Socket	20 in-lbs
Vapor Adaptor: EMCO A0076-124S	EMCO #A0081-001C Adaptor Wrench	60 to 75 ft-lbs
Base Screws (Part of A0076-124S)	Standard Wrench and Socket	20 in-lbs
Extractor Assembly: EMCO A0079-X (all models)	Standard Chain Wrench with a ½ inch Off-Set	100 to 150 ft-lbs
Extractor Cage: EMCO A0179-002	EMCO #A0560-003 Extractor Wrench	25 to 35 ft-lbs
Ball Float Valve: EMCO A0075-X (all models)	Strap Wrench with a ½ inch Off-Set	15 to 25 ft-lbs
Riser Seal: EMCO Wheaton Retail #494096	EMCO #A0081-001C Adaptor Wrench	80 ft-lbs
Center Insert (Part of #494096)	EMCO #494120 Riser Seal Wrench	35 to 45 ft-lbs
Drop Tube Overfill Prevention Device: EMCO A1100EVR	None Required	None Required
Straight Drop Tube: EMCO A0020EVR Flared Collar	None Required	None Required
EMCO A0020EVR Machined Collar	None Required	None Required
Tank Gauge Port Components: EMCO A0097-010 Cap	None Required	None Required
EMCO A0030-014 Adaptor	EMCO #A0081-001C Adaptor Wrench	60 to 75 ft-lbs
Base Screws (Part of A0030-014)	Standard Wrench and Socket	20 in-lbs

EMCO Wheaton Retail Phase I EVR Equipment Installation Checklist for Installing Components per ARB Executive Order VR-105-D

Date: _____ Signature: _____

Site Location and Name:	Installing Contractor:
Street Address:	Business Address:
City/State/Zip:	City/State/Zip:
Contact/Phone:	Contact/Phone:
Installing Technician (name):	Technician Certification Number:

Tank Number: _____ Product Grade: _____ Capacity (Gal): _____

Tank Number: _____ Product Grade: _____ Capacity (Gal): _____

Tank Number: _____ Product Grade: _____ Capacity (Gal): _____

Tank Number: _____ Product Grade: _____ Capacity (Gal): _____

Note: Because this checklist serves a dual purpose as an installation and retrofit checklist, there are some items that will be non-applicable (e.g. cut riser pipe). The technician should note “N/A” for Non-Applicable in the “Yes/No” box in those instances.

Yes/No	Initials	1. Is all the installed equipment for the Phase I EVR listed in ARB Executive Order VR-105-D? Note: All Phase I EVR installed equipment must be listed in Executive Order (E.O.) VR-105-D.
Yes/No	Initials	2. A1004EVR Spill Containment Single or Double Wall Configurations
Yes/No	Initials	2a. Before installing the fill and vapor spill containment buckets verify that the 4 inch diameter riser Pipes have been properly sized and threads cut to either NPT or BSP standards.
Yes/No	Initials	2b. Before installing the fill and vapor spill containment buckets verify that the top edges of the 4 inch diameter riser pipes have been filed flat and square with threads free of all debris to insure a proper sealing surface.
Yes/No	Initials	2c. Using a non-hardening, gasoline resistant pipe thread seal compound, manually install the fill and vapor spill containment buckets on to the 4 inch diameter riser pipes and torque between 100 – 150 ft-lbs.
Note: For installations of the EMCO A0020EVR or A0020EVRC Straight Drop Tube, proceed to Step 4.		
Yes/No	Initials	3. A1100EVR Overfill Prevention Valve (OPV) IMPORTANT: Do not apply a 45° miter cut to the very bottom of the lower drop tube.
Yes/No	Initials	3a. Has the A1100EVR OPV been properly sized for the required tank burial depth and tank riser pipe length?

**EMCO Wheaton Retail Phase I EVR Equipment Installation Checklist for
 Installing Components per ARB Executive Order VR-105-D (Continued)**

Note: If the underground storage tank is also equipped with a ball float vent valve, the ball float vent valve cannot extend below the shut-off point of the EMCO A1100EVR overfill prevention valve.		
Yes/No	Initials	3b. Has the A1100EVR collar and lower drop tube been properly assembled?
Yes/No	Initials	3c. Once completely assembled, has the A1100EVR OPV sealant cured for a minimum of 24 hours before installing into the underground storage tank (UST)?
Yes/No	Initials	A1100 EVR OPV Sealant Applied Date: _____ Time: _____
Yes/No	Initials	A1100 EVR OPV Installed into UST Date: _____ Time: _____
Yes/No	Initials	3d. Once completely assembled, has the A1100EVR OPV passed the leak tightness integrity test (≤ 0.17 cfh @ 2.00" wc) before installing into the UST?
Yes/No	Initials	3e. Before installing the A1100EVR OPV into the tank fill riser pipe, verify that the sealing O-ring is installed and properly secured. Proceed to step 5.
Note: When installing the EMCO A0020EVR or A0020EVRC Straight Drop Tube, a Ball Float Valve must be installed to serve as an overfill prevention device.		
Yes/No	Initials	4. A0020EVR Flared Collar or A0020EVRC Machined Collar Straight Drop Tube IMPORTANT: Do not apply a 45° miter cut to the very bottom of the lower drop tube.
Yes/No	Initials	4a. Has the A0020EVR or A0020EVRC been properly sized for the required tank burial depth and tank riser pipe length?
Yes/No	Initials	4b. Before installing the A0020EVR or A0020EVRC into the tank fill riser pipe, verify that the sealing O-ring is installed and properly secured.
Yes/No	Initials	5. 494096 Riser Seal
Yes/No	Initials	5a. Before installing the 494096 into the fill side spill containment bucket, verify that the sealing O-ring is installed and properly secured. Torque to 80 ft-lbs.
Yes/No	Initials	5b. Has the center insert of the 494096 been manually installed and torqued between 35 – 45 ft-lbs.?
Yes/No	Initials	6. A0076-124S Vapor and A0030-124S Product Rotatable Adaptors
Yes/No	Initials	6a. Before installing the A0076-124S, verify that the top edge of the top containment nipple has been filed flat and square with threads free of all debris to insure a proper sealing surface.

**EMCO Wheaton Retail Phase I EVR Equipment Installation Checklist for
 Installing Components per ARB Executive Order VR-105-D (Continued)**

Yes/No	Initials	6b. Before installing the A0076-124S and A0030-124S onto the vapor and fill spill buckets, verify that the flat gaskets for each are installed and properly secured.
Yes/No	Initials	6c. IMPORTANT: Do not use pipe thread sealant compound when installing the rotatable adaptors.
Yes/No	Initials	6d. Have the A0076-124S and A0030-124S set screws been installed with lock-tite model #222MS threadlocker and torqued to 20 in-lbs.?
Yes/No	Initials	7. A0097-005 Product and A0099-002,003 Vapor Dust Caps (if using caps from a different manufacturer, write in NO and skip to section 8).
Yes/No	Initials	7a. Before installing the A0097-005 and A0099-002,003 caps onto the appropriate rotatable adaptors, verify that the gasket seals are free of tears and installed and properly secured. If a cap fails to comply, replace with new cap. Proceed to step 9.
Yes/No	Initials	8. All “non-EMCO” Product and Vapor Dust Caps (if EMCO caps are used, write in NO and skip to section 9).
Yes/No	Initials	8a. Provide the manufacturer name and model number for the product and vapor dust caps used. Refer to the appropriate section of the Installation, Operation and Maintenance Manual (IOM) for proper installation instructions.
Yes/No	Initials	Product Cap Manufacturer: _____ Model #: _____
Yes/No	Initials	Vapor Cap Manufacturer: _____ Model #: _____
Yes/No	Initials	9. A0030-014 ATG Probe Adaptor
Yes/No	Initials	9a. Before installing the A0030-014, verify that the top edge of the tank riser pipe has been filed flat and square with threads free of all debris to insure a proper sealing surface.
Yes/No	Initials	9b. Before installing the A0030-014 onto the riser pipe, verify that the flat gasket is installed and properly secured. Torque between 60 – 75 ft-lbs.
Yes/No	Initials	9c. IMPORTANT: Do not use pipe thread sealant compound when installing the ATG probe adaptor.
Yes/No	Initials	9d. Has the A0030-014 set screws been installed with lock-tite model #222MS threadlocker and torqued to 20 in-lbs.?
Yes/No	Initials	10. A0097-010 ATG Probe Adaptor Cap

**EMCO Wheaton Retail Phase I EVR Equipment Installation Checklist for
 Installing Components per ARB Executive Order VR-105-D (Continued)**

Yes/No	Initials	10a. Before installing the A0097-010 onto the appropriate ATG probe adaptor, verify that the gasket seal is installed and properly secured and is free of tears.
Yes/No	Initials	10b. Has the ATG probe signal cable been properly installed and secured by manually tightening the leak tight connector nut?
Yes/No	Initials	11. A0079 Extractor Assembly (optional)
Yes/No	Initials	11a. Has the A0079 been manually installed onto the tank bung collar using a non-hardening, gasoline resistant pipe seal compound and torqued between 100 – 150 ft-lbs.?
Yes/No	Initials	12. Pressure/Vacuum Vent (P/V) Valve
Yes/No	Initials	12a. Provide the manufacturer name, model number and quantity of the P/V valve(s) installed. Refer to the appropriate section of the IOM for proper installation instructions.
Yes/No	Initials	P/V Vent Manufacturer: _____ Model: _____ Quantity: _____

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Spill Container	EMCO Wheaton Retail A1004EVR-X		
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	Primary Kits		
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	494350EVR, 494467EVR	B-7	53
	494602EVR, 494661EVR	B-8	61
	Primary and Secondary Kit		
	494550EVR, 494660EVR	B-9	69
Drain Valve	EMCO Wheaton Retail 494118	C-1	81
Drop Tube Overfill Prevention Device	EMCO Wheaton Retail A1100EVR	D-1	84
Straight Drop Tube	EMCO Wheaton Retail A0020EVR or A0020EVRC	D-2	92
Riser Seal	EMCO Wheaton Retail 494096	E-1	94
Product Adaptor	EMCO Wheaton Retail A0030-124S	F-1	96
Vapor Adaptor	EMCO Wheaton Retail A0076-124S	F-2	98
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Extractor Assembly ⁵	EMCO Wheaton Retail A0079	I-1	105
Adaptor O-Ring Kit	EMCO Wheaton Retail 494301	J-1	107
Adaptor Gasket Kit	EMCO Wheaton Retail 409628	J-2	111
Installation and Maintenance Tools	EMCO Wheaton Retail	K-1	113

⁵ Extractor Assembly instructions provided for those installations that use Ball Float Vent Valves as means for Overfill protection. Extractor (Model A0179-X) and Ball Float Vent Valves (Model A0075-X) are also available in a kit under the EMCO part number Model A0078-X series. Installation torque values also listed for both components for clarity during installations.

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	FFS PV-Zero	L-2	117
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Dust Caps	CompX Security Products		
	CSP1-634LPC (product)		
	CSP2-634LPC (product)		
	CSP3-1711LPC (vapor)		
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Fuel Lock	McGard		
	FL1 (Stick Only Version)		
	FL2 (Stick/Sample Version)	O-1	133
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Figure A-1
Typical Product Side Installation of a Multi-port Configuration
of the EMCO Wheaton Retail System



Typical Fill Riser Installation
 for Multi-Port Configuration

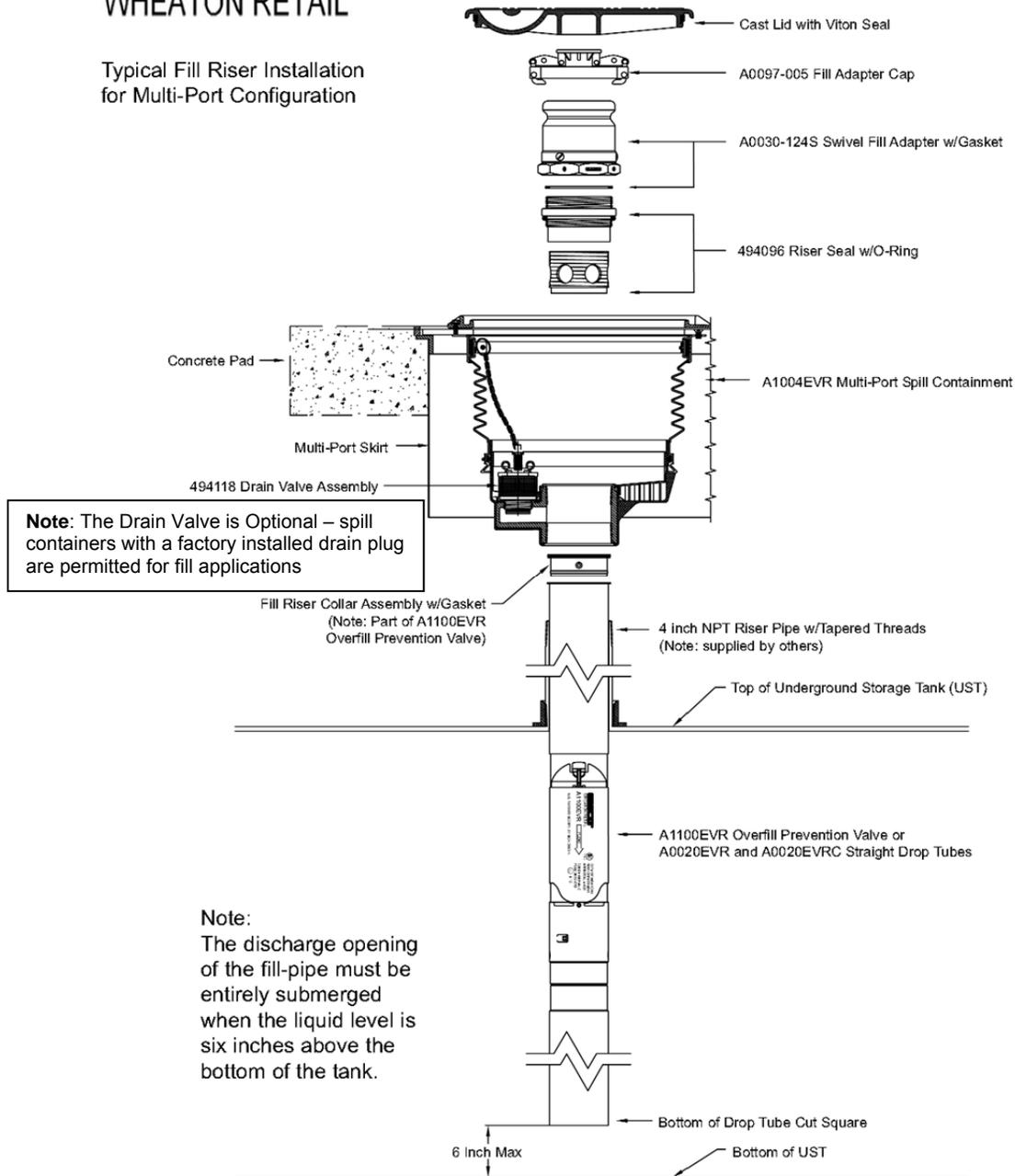


Figure A-2
Typical Vapor Side Installation of a Multi-port Configuration
of the EMCO Wheaton Retail System



Typical Vapor Riser Installation
for Multi-Port Configuration

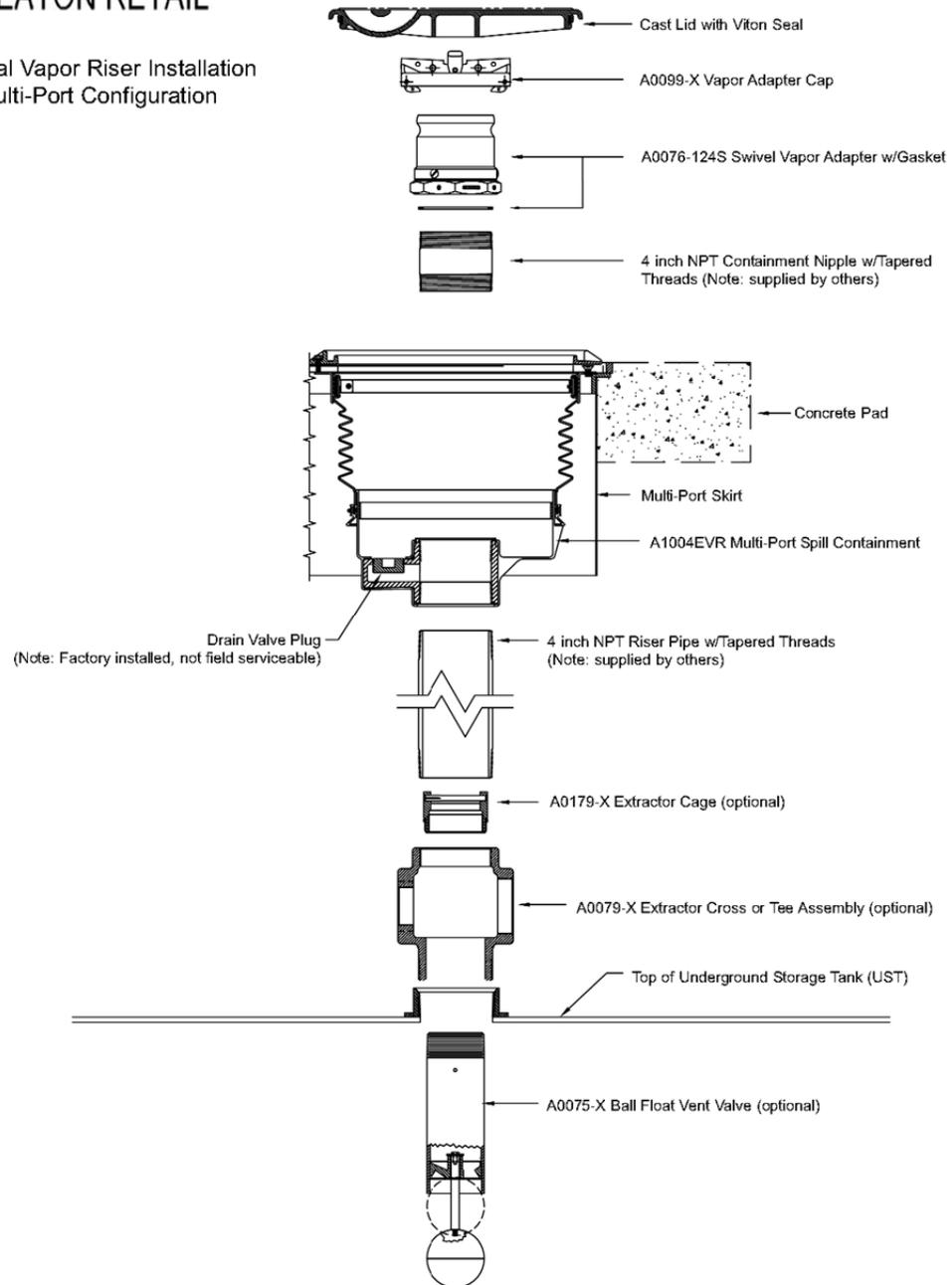


Figure A-3
Typical Product Side Installation of a Direct Burial Configuration
of the EMCO Wheaton Retail System

EMCO[®]
WHEATON RETAIL

Typical Fill Riser Installation
 for Direct Burial Configuration

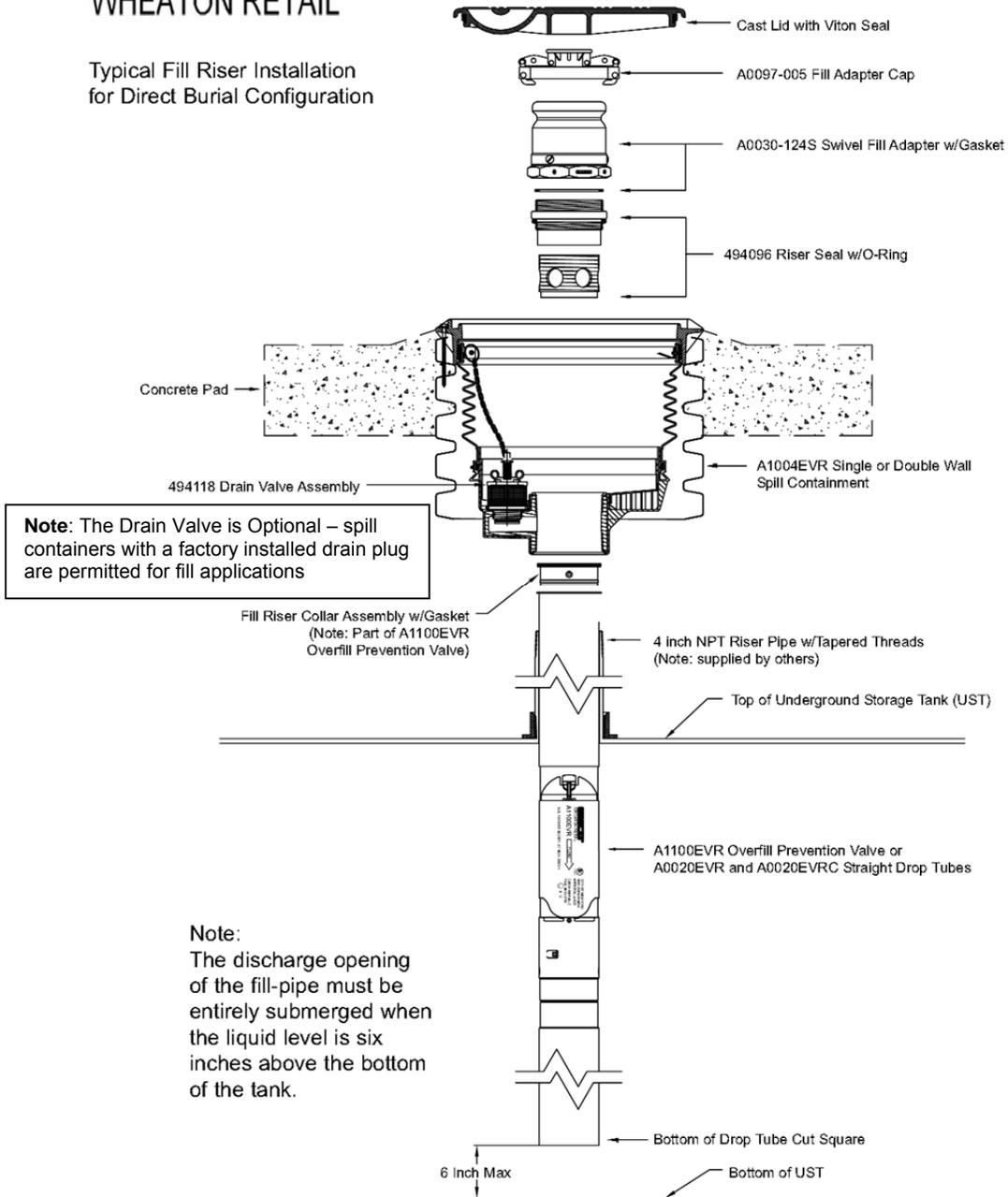


Figure A-4
Typical Vapor Side Installation of a Direct Burial Configuration
of the EMCO Wheaton Retail System



Typical Vapor Riser Installation
for Direct Burial Configuration

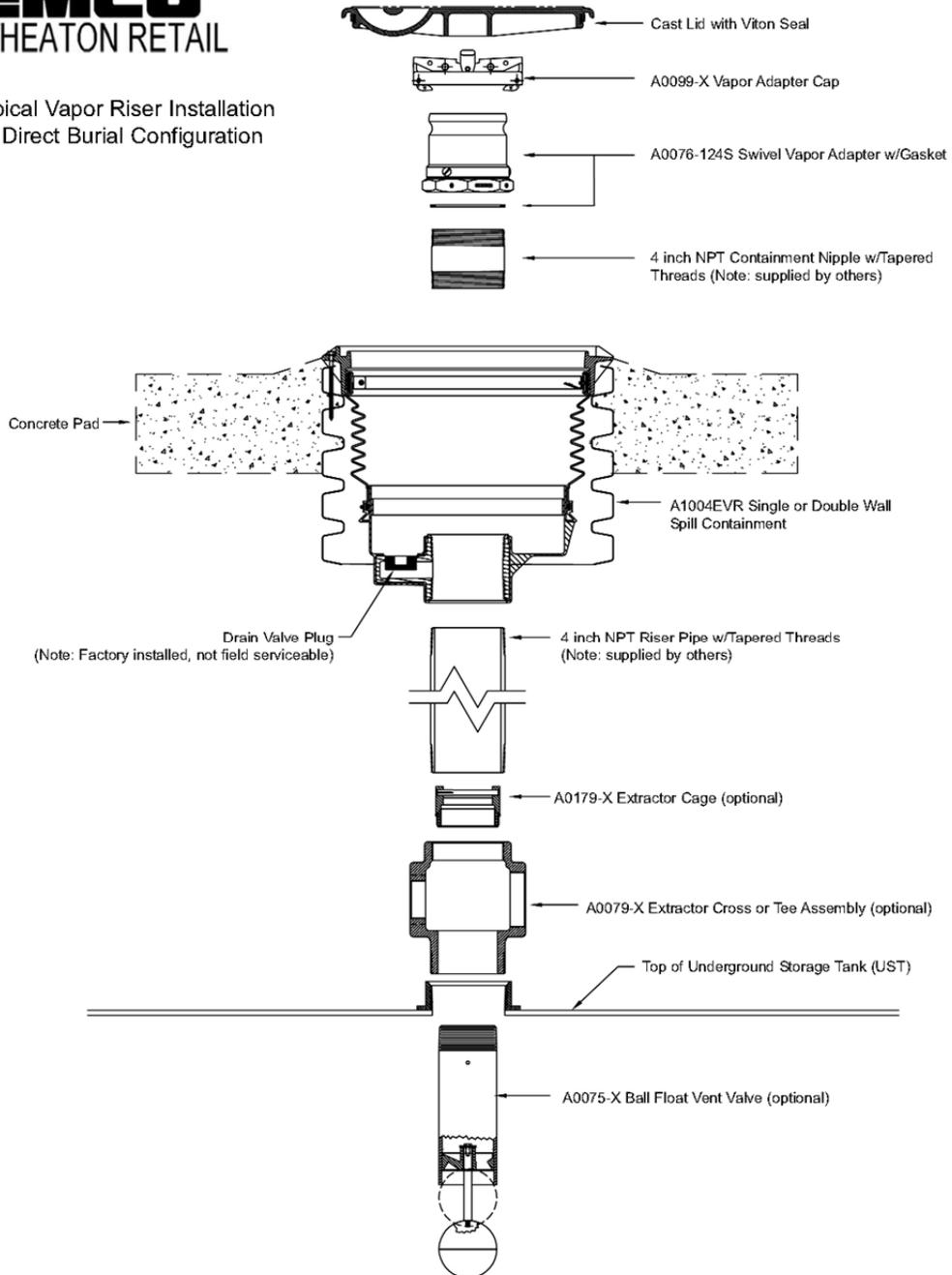


Figure A-5 Typical Automatic Tank Gauge Probe Riser Installation of the EMCO Wheaton Retail System



Typical Automatic Tank Gauge
(ATG) Probe Riser Configuration

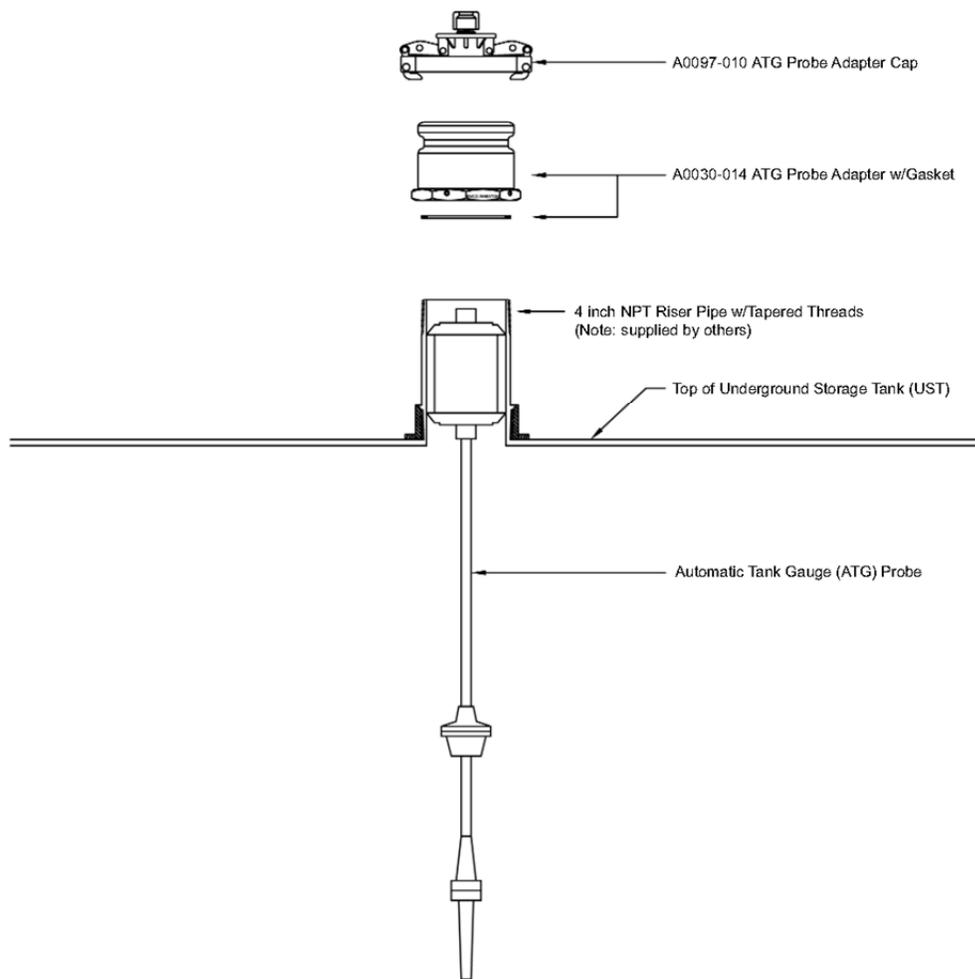


Figure B-1 Installation Instructions for Multi-port Containment Assembly

EMCO®
WHEATON RETAIL

A1004EVR
SPILL CONTAINMENT
MULTI-PORT APPLICATION

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
A1004EVR-237	Multi-port 37"
A1004EVR-242	Multi-port 42"
A1004EVR-248	Multi-port 48"

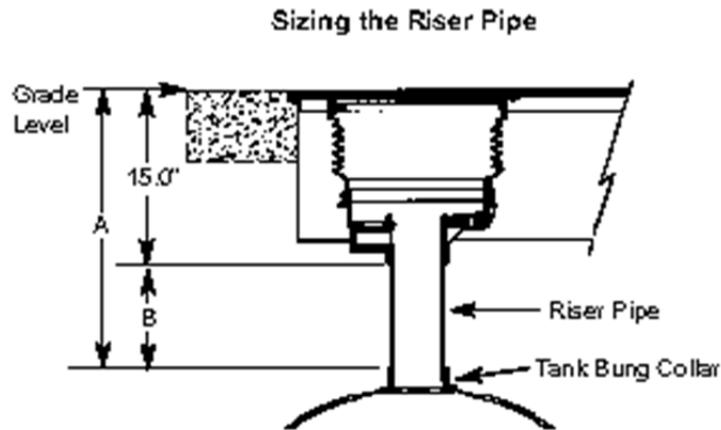
Required Service Tools:

- Tape Measure
- Ratchet
- 5/16" Socket
- 5/16" Allen Hex Driver
- Torque Wrench w/ 100 to 150 ft-lbs Setting
- Pipe Thread Sealant Compound
- Spill Containment Wrench p/n 494241
- Torque Wrench w/ 9 to 11 ft-lbs Setting

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-1 (continued)



1. Find measurement A, the distance between grade level to the top of the tank bung collar.

IMPORTANT: The A1004EVR spill containment fill or vapor are 15.0 inches in height when the factory installed spacer bars are mounted in place.

2. Find measurement B, by subtracting the height of the A1004EVR spill containment fill or vapor from measurement A, then add 2.0 inches for the riser pipe threads.
3. After properly sizing the 4-inch diameter riser pipe, cut threads to either NPT or BSPT standards. Use a non-hardening, gasoline resistant pipe thread sealant compound, and fasten the 4-inch diameter riser pipe to the tank bung collar.

IMPORTANT: Do not use hacksaw to cut riser pipe.

Installation Example for A1004EVR Spill Containment

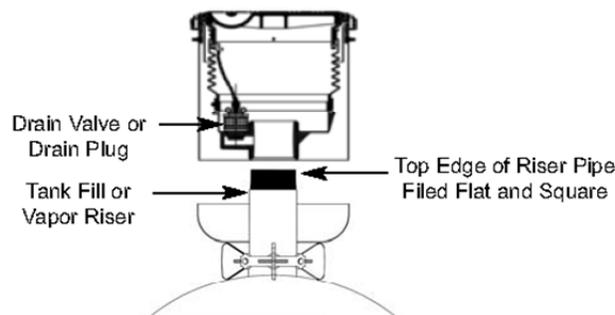
1. The tank burial is 36 inches from grade level to the top of the tank bung collar. Measurement A equals 36 inches.
2. The height of the A1004EVR spill containment fill or vapor is 15.0 inches. Subtract the height of 15.0 inches from measurement A, 36 inches, then add 2 inches for the riser pipe threads.
3. The required length for the 4-inch diameter riser pipe is measurement B, 23.0 inches.

Figure B-1 (continued)

A1004EVR Spill Containment Backfill and Concrete Finish

1. Complete the backfill over the tank and around the manhole skirting of the A1004EVR spill containment. Be sure the height of the backfill meets the depth requirements for the concrete pad.
2. Concrete must completely fill around the A1004EVR spill containment manhole rim and skirting to insure proper anchoring.
3. Once the concrete sets remove all excess concrete from the top of the manhole rim and lid.
4. Clean and remove all debris from the inside of the A1004EVR spill containment.
5. Paint the A1004EVR spill containment rim and lid to the desired fuel grade color code.

Spill Containment to Riser Pipe



1. Before installing the A1004EVR spill containment fill or vapor, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the A1004EVR spill containment.

IMPORTANT: The A1004EVR spill containment comes with a factory installed non-removal drain plug, and is CARB EVR approved for use on the tank fill or vapor risers.

2. Apply a non-hardening gasoline resistant pipe thread sealant compound to the threads of the riser pipe. Manually tighten the A1004EVR spill containment fill or vapor onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque the A1004EVR spill containment fill or vapor between 100 and 150 ft-lbs.

Figure B-1 (continued)



3. Fasten the manhole lid to the manhole rim. Manually install the factory supplied 5/16 Allen hex bolts to avoid cross threading. Tighten and torque between 9 and 11 ft-lbs.



4. Fasten the A1004EVR spill containment fill and vapor to the bottom of the manhole. Manually install the factory supplied 5/16 Allen hex bolts to avoid cross threading. Tighten and torque between 9 ft and 11 ft-lbs.



5. Fasten the A1004EVR spill containment lid rims fill and vapor to the top of the manhole lid. Manually install the factory supplied 5/16 hex bolts to avoid cross threading. Tighten and torque between 9 ft and 11 ft-lbs.



Figure B-1 (continued)

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097-005 installation instructions.

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099-002, -003 installation instructions.

Figure B-1 (continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment fill or vapor is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment bucket using soapy water and a disposable towel.
2. After each delivery, the station operator must remove any standing gasoline from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits:

<u>Description</u>	<u>Part Number</u>
• 493806	Lid and Seal
• 494118	Drain Valve Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

Figure B-1 (continued)

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

Emco Wheaton Retail Corp.

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p/n 569263
07/13, Rev. K

Figure B-2
Installation Instructions for 5 Gallon Direct Burial Containment Assemblies
-003, -005, -010, -012, -210 and -316 Configurations



A1004EVR
 Spill Containment
 Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
 Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
A1004EVR-003	Fatboy, Drain Valve, NPT
A1004EVR-005	Fatboy, Drain Valve, BSPT
A1004EVR-010	Slimline, Drain Valve, NPT
A1004EVR-012	Slimline, Drain Valve, BSPT
A1004EVR-210A	Single Wall, Drain Valve, NPT
A1004EVR-210AB	Single Wall, Drain Valve, BSPT
A1004EVR-210S	Double Wall, Drain Valve, NPT
A1004EVR-210SB	Double Wall, Drain Valve, BSPT
A1004EVR-316A	Single Wall, Drain Valve, NPT, 16" Center
A1004EVR-316S	Double Wall, Drain Valve, NPT, 16" Center

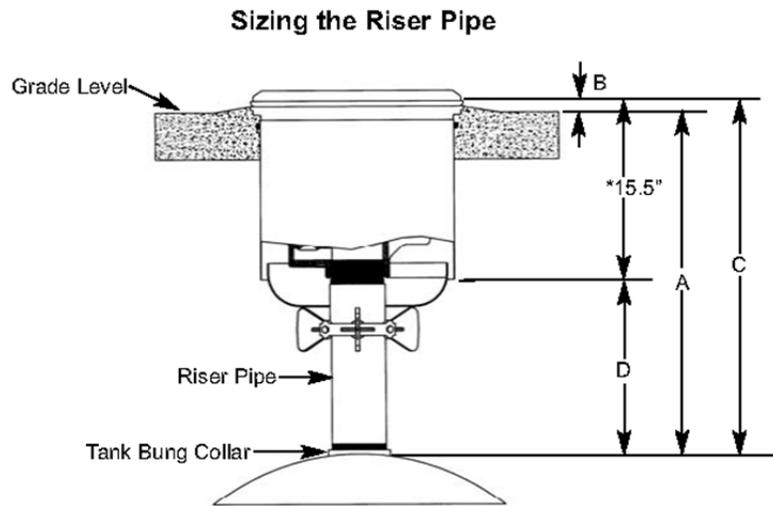
Required Service Tools:

- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- 1/2" Socket
- 1/2" Crows Foot
- 3/4" Socket
- 1/2" Hand Wrench

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-2 (continued)



1. Find measurement A, the distance between grade level to the top of the tank bung collar.
2. Find measurement C, by adding measurement A to measurement B, the crown height.

EXAMPLE: Measurement C equals Measurement A, plus Measurement B, the crown height.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

3. *The height of the A1004EVR spill containment varies between single wall and double wall configurations, refer below for proper height specifications.

<u>Model Number</u>	<u>Spill Containment</u>	<u>Height (inches)</u>
A1004EVR-003	Fatboy	15.6
A1004EVR-005	Fatboy	15.6
A1004EVR-010	Slimline	15.6
A1004EVR-012	Slimline	15.6
A1004EVR-210A	Single Wall	15.5
A1004EVR-210S	Double Wall	20.5
A1004EVR-316A	Single Wall	16.7
A1004EVR-316S	Double Wall	13.7

IMPORTANT: Do not remove the factory installed jack assembly or stabilizer bars until the concrete has set. Failure to do so will change the factory set height of the A1004EVR spill containment causing an improper installation.

Figure B-2 (continued)

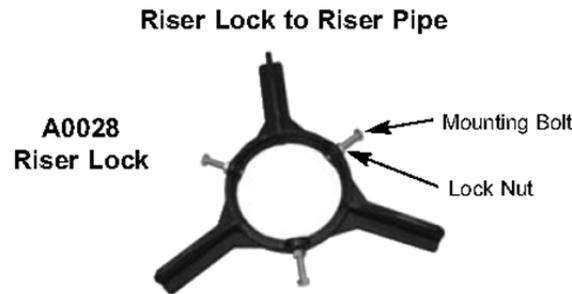
4. Find measurement D, by subtracting the height of the A1004EVR spill containment from measurement C, then add 2.0 inches for the riser pipe threads.
5. After properly sizing the 4-inch diameter riser pipe, cut threads to either NPT or BSPT standards. Use a non-hardening gasoline resistant pipe thread sealant compound before installing the 4-inch diameter riser pipe to the tank bung collar.

IMPORTANT: Do not use hacksaw to cut riser pipe.

Installation Example for the A1004EVR-210A Spill Containment

1. The tank burial is 36 inches from grade level to the top of the tank bung collar. Measurement A equals 36 inches.
2. The site installation requires a 1-inch crown height for proper water run-off. Measurement B is 1 inch. Add measurement A 36 inches, to measurement B, 1 inch, equals measurement C, 37 inches.
3. The height of the **A1004EVR-210A single wall spill containment** is 15.5 inches. Subtract the height of 15.5 inches from measurement C, 37 inches, then add 2 inches for the riser pipe threads.
4. The required length for the 4-inch diameter riser pipe is measurement D, 23.5 inches.

Figure B-2 (continued)



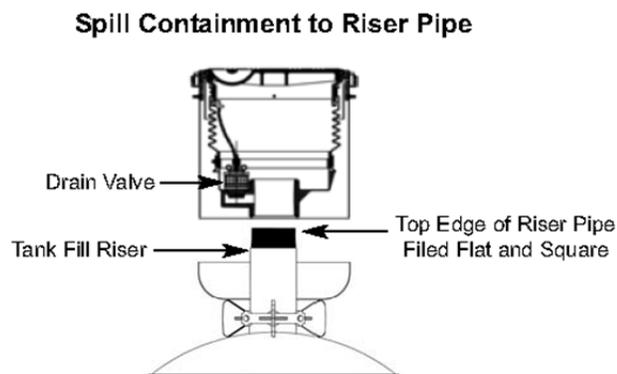
IMPORTANT: All A1004EVR-210 and -316 single wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the riser pipe from turning during removal and installation of the primary liner.

IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly recommended but optional.

1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a ½" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

IMPORTANT: When installing a second A0028 riser lock, repeat Steps 1 and 2.

3. Install the gravel pan onto the top of the riser pipe. Slide the gravel pan downward until resting on the A0028 riser lock.

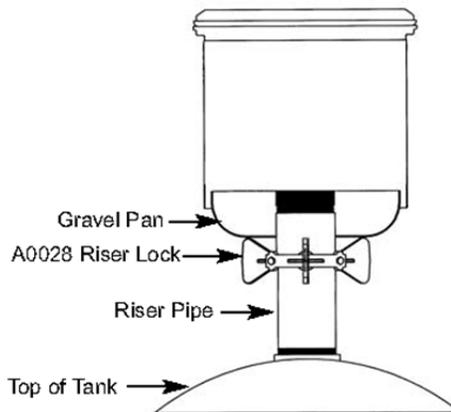


1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

Figure B-2 (continued)

2. Apply a non-hardening gasoline resistant pipe thread sealant compound to the threads of the riser pipe. Manually tighten the A1004EVR spill containment onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque the A1004EVR spill containment between 100 and 150 ft-lbs.

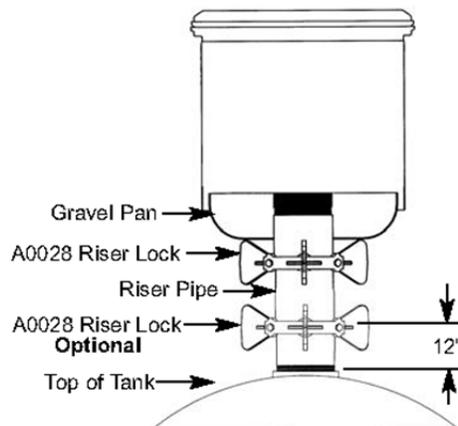
Riser Lock Installation for Single Wall Configurations



3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

IMPORTANT: When installing a second A0028 riser lock continue to Step 4.

Riser Lock Installation for Double Wall Configurations



4. Slide the second A0028 riser lock upward keeping a distance of 12 inches from top of tank. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

Figure B-2 (continued)

A1004EVR Spill Containment Backfill and Concrete Finish

1. Complete the backfill over the tank and around the gravel guard of the A1004EVR spill containment. Be sure the height of the backfill meets the depth requirements for the concrete pad.
2. Concrete must completely fill around and under the A1004EVR spill containment rim to insure proper anchoring.
3. Before the concrete sets remove all excess concrete from the top of A1004EVR spill containment rim and water run-off channels.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

Removing the Jack Assembly or Spacer Bars

1. Once the concrete has set, remove the factory installed jack assembly or spacer bars from the inside of the A1004EVR spill containment:
 - Models A1004EVR-003, 005, 010 and 012 - Remove the 3 spacer bars and dispose.
 - Models A1004EVR-210 - Use a ¾" socket and ratchet wrench to turn the adjustment bolt counter clockwise to loosen. Swing the top cross bar away from the inside edge of the rim and dispose.
 - Models A1004EVR-316 - Remove the cotter pin from the top of each jack, and slide the bracket off of the clevis. The unthreaded bolt and bottom brackets will remain in place. Dispose of the cotter pins, jacks, brackets, clevis and bolts.
2. Clean and remove all debris from the inside of the A1004EVR spill containment, drain valve and filter.
3. Paint the A1004EVR spill containment rim and lid to the desired fuel grade color code.

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The tank fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097 installation instructions.

Figure B-2 (continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and disposable towels.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 493806	Lid and Seal -010 Series
• 494118	Drain Valve Kit
• 494360EVR	-210A Primary Repair Kit
• 494350EVR	-210S Primary Repair Kit
• 494797EVR	-316A Primary Repair Kit
• 494794EVR	-316S Primary Repair Kit
• 566332	Lid and Seal -003 Series
• A1004-210LID	Lid and Seal -210 Series
• A1004-316CLID	Lid and Seal -316 Series

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

Figure B-2 (continued)

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Rev. L, 06/13

Figure B-3
Installation Instructions for 5 Gallon Direct Burial Containment Assemblies
-004, -006, -011, -013, -211 and -317 Configurations



A1004EVR
Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
A1004EVR-004	Fatboy, No Drain, NPT
A1004EVR-006	Fatboy, No Drain, BSPT
A1004EVR-011	Slimline, No Drain, NPT
A1004EVR-013	Slimline, No Drain, BSPT
A1004EVR-211A	Single Wall, No Drain, NPT
A1004EVR-211AB	Single Wall, No Drain, BSPT
A1004EVR-211S	Double Wall, No Drain, NPT
A1004EVR-211SB	Double Wall, No Drain, BSPT
A1004EVR-317A	Single Wall, No Drain, NPT, 16" Center
A1004EVR-317S	Double Wall, No Drain, NPT, 16" Center

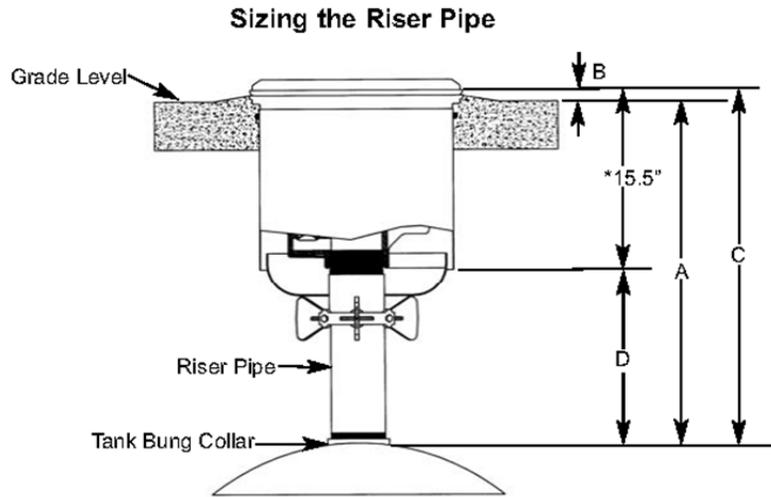
Required Service Tools:

- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-3 (continued)



1. Find measurement A, the distance between grade level to the top of the tank bung collar.
2. Find measurement C, by adding measurement A to measurement B, the crown height.

EXAMPLE: Measurement C equals Measurement A, plus Measurement B, the crown height.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

3. *The height of the A1004EVR spill containment varies between single wall and double wall configurations, refer below for proper height specifications.

<u>Model Number</u>	<u>Spill Containment</u>	<u>Height (inches)</u>
A1004EVR-004	Fatboy	15.6
A1004EVR-006	Fatboy	15.6
A1004EVR-011	Slimline	15.6
A1004EVR-013	Slimline	15.6
A1004EVR-211A	Single Wall	16.0
A1004EVR-211S	Double Wall	17.0
A1004EVR-317A	Single Wall	13.6
A1004EVR-317S	Double Wall	13.6

IMPORTANT: Do not remove the factory installed jack assembly or stabilizer bars until the concrete has set. Failure to do so will change the factory set height of the A1004EVR spill containment causing an improper installation.

Figure B-3 (continued)

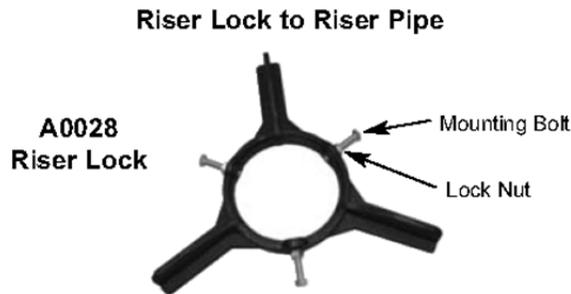
4. Find measurement D, by subtracting the height of the A1004EVR spill containment from measurement C, then add 2.0 inches for the riser pipe threads.
5. After properly sizing the 4-inch diameter riser pipe, cut threads to either NPT or BSPT standards. Use a non-hardening gasoline resistant pipe thread sealant compound before installing the 4-inch diameter riser pipe to the tank bung collar.

IMPORTANT: Do not use hacksaw to cut riser pipe.

Installation Example for the A1004EVR-211A Spill Containment

1. The tank burial is 36 inches from grade level to the top of the tank bung collar. Measurement A equals 36 inches.
2. The site installation requires a 1-inch crown height for proper water run-off. Measurement B is 1 inch. Add measurement A 36 inches, to measurement B, 1 inch, equals measurement C, 37 inches.
3. The height of the **A1004EVR-211A single wall spill containment** is 16.0 inches. Subtract the height of 16.0 inches from measurement C, 37 inches, then add 2 inches for the riser pipe threads.
4. The required length for the 4-inch diameter riser pipe is measurement D, 23.0 inches.

Figure B-3 (continued)



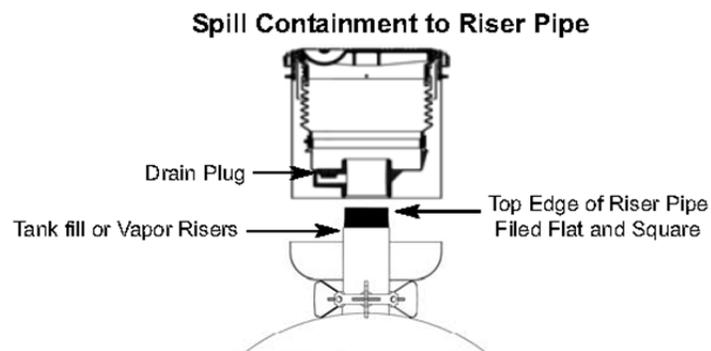
IMPORTANT: All A1004EVR-211 and -317 single wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the riser pipe from turning during removal and installation of the primary liner.

IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly recommended but optional.

1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a 1/2" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

IMPORTANT: When installing a second A0028 riser lock, repeat Steps 1 and 2.

3. Install the gravel pan onto the top of the riser pipe. Slide the gravel pan downward until resting on the A0028 riser lock.



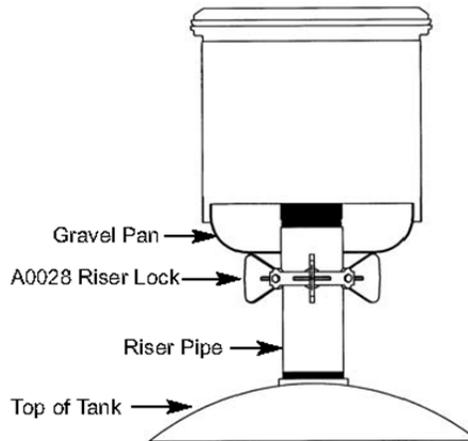
1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

IMPORTANT: The A1004EVR spill containment comes with a factory installed non-removal drain plug, and is CARB EVR approved for use on the tank fill or vapor risers.

Figure B-3 (continued)

2. Apply a non-hardening gasoline resistant pipe thread sealant compound to the threads of the riser pipe. Manually tighten the A1004EVR spill containment onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque the A1004EVR spill containment between 100 and 150 ft-lbs.

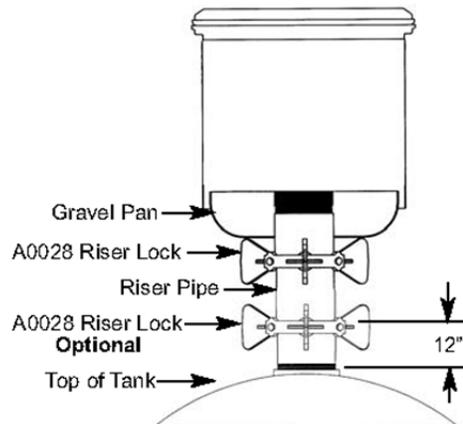
Riser Lock Installation for Single Wall Configurations



3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

IMPORTANT: When installing a second A0028 riser lock continue to Step 4.

Riser Lock Installation for Double Wall Configurations



4. Slide the second A0028 riser lock upward keeping a distance of 12 inches from top of tank. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

Figure B-3 (continued)

A1004EVR Spill Containment Backfill and Concrete Finish

1. Complete the backfill over the tank and around the gravel guard of the A1004EVR spill containment. Be sure the height of the backfill meets the depth requirements for the concrete pad.
2. Concrete must completely fill around and under the A1004EVR spill containment rim to insure proper anchoring.
3. Before the concrete sets remove all excess concrete from the top of A1004EVR spill containment rim and water run-off channels.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

Removing the Jack Assembly or Spacer Bars

1. Once the concrete has set, remove the factory installed jack assembly or spacer bars from the inside of the A1004EVR spill containment:
 - Models A1004EVR-004, 006, 011 and 013 - Remove the 3 spacer bars and dispose.
 - Models A1004EVR-211 - Use a $\frac{3}{4}$ " socket and ratchet wrench to turn the adjustment bolt counter clockwise to loosen. Swing the top cross bar away from the inside edge of the rim and dispose.
 - Models A1004EVR-317 - Remove the cotter pin from the top of each jack, and slide the bracket off of the clevis. The unthreaded bolt and bottom brackets will remain in place. Dispose of the cotter pins, jacks, brackets, clevis and bolts.
2. Clean and remove all debris from the inside of the A1004EVR spill containment.
3. Paint the A1004EVR spill containment rim and lid to the desired fuel grade color code.

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099 installation instructions.

Figure B-3 (continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and disposable towels.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 493806	Lid and Seal -010 Series
• 494466EVR	-211A Primary Repair Kit
• 494467EVR	-211S Primary Repair Kit
• 494798EVR	-317A Primary Repair Kit
• 494795EVR	-317S Primary Repair Kit
• 566332	Lid and Seal -003 Series
• A1004-210LID	Lid and Seal -211 Series
• A1004-316CLID	Lid and Seal -317 Series

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

Figure B-3 (continued)

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p/n 569930
Rev. L, 06/13

Figure B-4 Installation Instructions for 15 Gallon Direct Burial Containment -215 Configuration

EMCO®
WHEATON RETAIL

A1004EVR
Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
A1004EVR-215A	Single Wall, Drain Valve, NPT
A1004EVR-215AB	Single Wall, Drain Valve, BSPT
A1004EVR-215S	Double Wall, Drain Valve, NPT
A1004EVR-215SB	Double Wall, Drain Valve, BSPT

Required Service Tools:

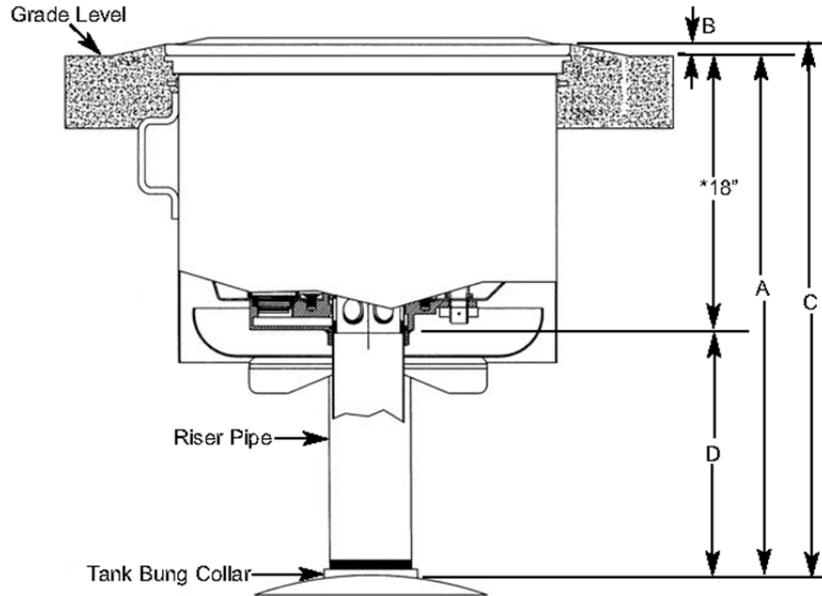
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-4 (Continued)

Sizing the Riser Pipe



1. Find measurement A, the distance between grade level to the top of the tank bung collar.
2. Find measurement C, by adding measurement A to measurement B, the crown height.

EXAMPLE: Measurement C equals Measurement A, plus Measurement B, the crown height.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

3. *The height of the A1004EVR spill containment varies between single wall and double wall configurations, refer below for proper height specifications.

Model Number	Spill Containment	Height (inches)
A1004EVR-215A	Single Wall	18.0
A1004EVR-215S	Double Wall	17.5

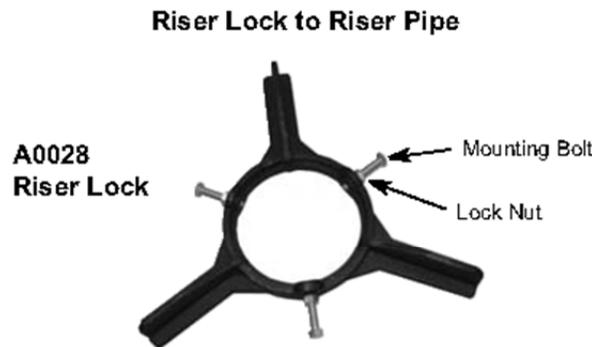
4. Find measurement D, by subtracting the height of the A1004EVR spill containment from measurement C, then add 2.0 inches for the riser pipe threads.
5. After properly sizing the 4-inch diameter riser pipe, cut threads to either NPT or BSPT standards. Use a non-hardening gasoline resistant pipe thread sealant compound before installing the 4-inch diameter riser pipe to the tank bung collar.

IMPORTANT: Do not use hacksaw to cut riser pipe.

Figure B-4 (Continued)

Installation Example for the A1004EVR-215A Spill Containment

1. The tank burial is 36 inches from grade level to the top of the tank bung collar. Measurement A equals 36 inches.
2. The site installation requires a 1-inch crown height for proper water run-off. Measurement B is 1 inch. Add measurement A 36 inches, to measurement B, 1 inch, equals measurement C, 37 inches.
3. The height of the **A1004EVR-215A single wall spill containment** is 18 inches. Subtract the height of 18 inches from measurement C, 37 inches, then add 2 inches for the riser pipe threads.
4. The required length for the 4-inch diameter riser pipe is measurement D, 21 inches.



IMPORTANT: All single wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the riser pipe from turning during removal and installation of the primary liner.

IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly recommended but optional.

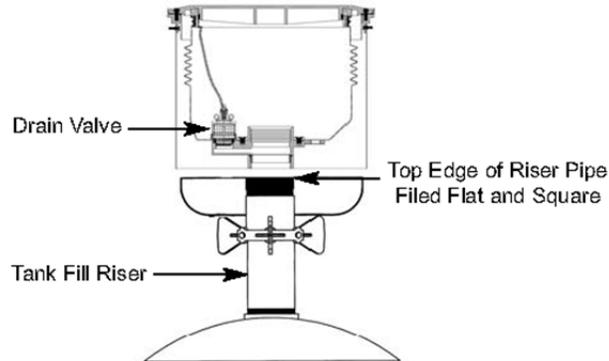
1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a 1/2" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

IMPORTANT: When installing a second A0028 riser lock, repeat Steps 1 and 2.

3. Install the gravel pan onto the top of the riser pipe. Slide the gravel pan downward until resting on the A0028 riser lock.

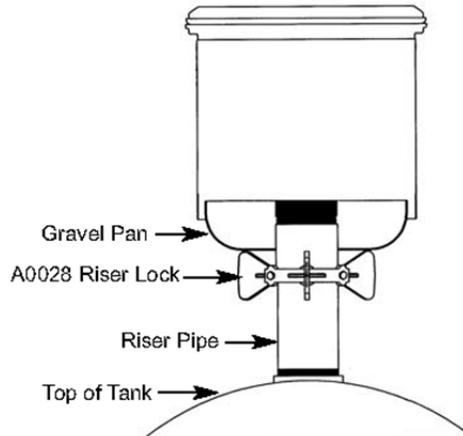
Figure B-4 (Continued)

Spill Containment to Riser Pipe



1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.
2. Apply a non-hardening gasoline resistant pipe thread sealant compound to the threads of the riser pipe. Manually tighten the A1004EVR spill containment onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A1004-001H to tighten and torque the A1004EVR spill containment between 100 and 150 ft-lbs.

Riser Lock Installation for Single Wall Configurations

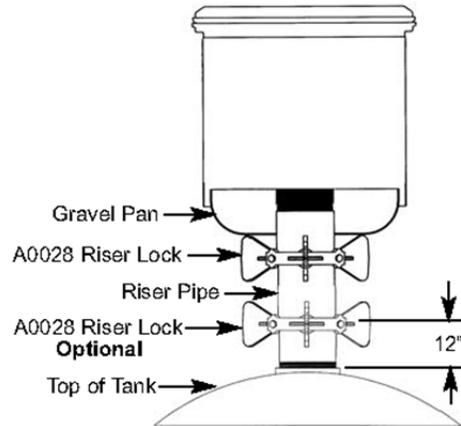


3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

IMPORTANT: When installing a second A0028 riser lock continue to Step 4.

Figure B-4 (Continued)

Riser Lock Installation for Double Wall Configurations



4. Slide the second A0028 riser lock upward keeping a distance of 12 inches from top of tank. Using a $\frac{1}{2}$ " socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a $\frac{1}{2}$ " crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

A1004EVR Spill Containment Backfill and Concrete Finish

1. Complete the backfill over the tank and around the gravel guard of the A1004EVR spill containment. Be sure the height of the backfill meets the depth requirements for the concrete pad.
2. Concrete must completely fill around and under the A1004EVR spill containment rim to insure proper anchoring.
3. Before the concrete sets remove all excess concrete from the top of A1004EVR spill containment rim and water run-off channels.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

Figure B-4 (Continued)

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The tank fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097 installation instructions.

Figure B-4 (Continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and disposable towels.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 494118	Drain Valve Kit
• 494554	Lid and Seal
• 494550EVR	-215S Primary Repair Kit
• 494602EVR	-215A Primary Repair Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
(a) in constant view of the transfer nozzle and fill pipe; and
(b) in constant attendance at the discharge control valve.

Figure B-4 (Continued)

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Rev L, 06/13

Figure B-5 Installation Instructions for 15 Gallon Direct Burial Containment -216 Configuration



A1004EVR

Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
A1004EVR-216A	Single Wall, No Drain, NPT
A1004EVR-216AB	Single Wall, No Drain, BSPT
A1004EVR-216S	Double Wall, No Drain, NPT
A1004EVR-216SB	Double Wall, No Drain, BSPT

Required Service Tools:

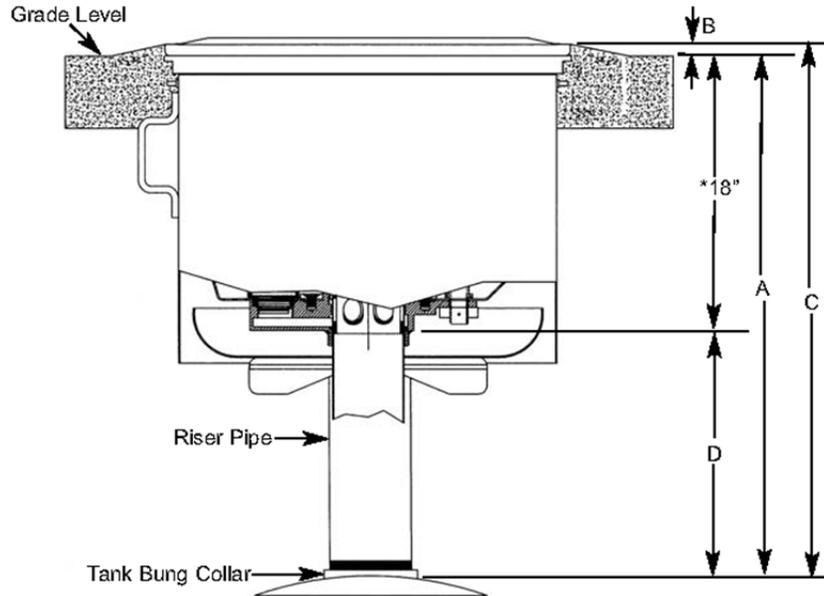
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-5 (Continued)

Sizing the Riser Pipe



1. Find measurement A, the distance between grade level to the top of the tank bung collar.
2. Find measurement C, by adding measurement A to measurement B, the crown height.

EXAMPLE: Measurement C equals Measurement A, plus Measurement B, the crown height.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

3. *The height of the A1004EVR spill containment varies between single wall and double wall configurations, refer below for proper height specifications.

<u>Model Number</u>	<u>Spill Containment</u>	<u>Height (inches)</u>
A1004EVR-216A	Single Wall	18.0
A1004EVR-216S	Double Wall	17.5

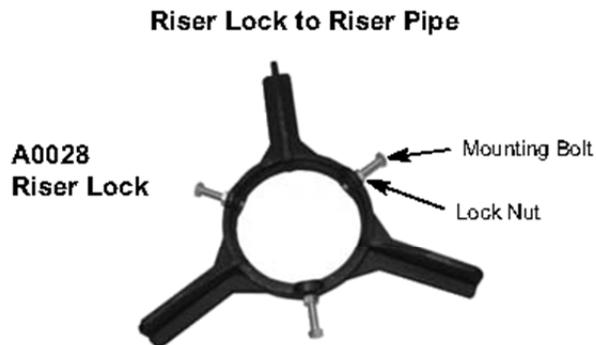
4. Find measurement D, by subtracting the height of the A1004EVR spill containment from measurement C, then add 2.0 inches for the riser pipe threads.
5. After properly sizing the 4-inch diameter riser pipe, cut threads to either NPT or BSPT standards. Use a non-hardening gasoline resistant pipe thread sealant compound before installing the 4-inch diameter riser pipe to the tank bung collar.

IMPORTANT: Do not use hacksaw to cut riser pipe.

Figure B-5 (Continued)

Installation Example for the A1004EVR-216A Spill Containment

1. The tank burial is 36 inches from grade level to the top of the tank bung collar. Measurement A equals 36 inches.
2. The site installation requires a 1-inch crown height for proper water run-off. Measurement B is 1 inch. Add measurement A 36 inches, to measurement B, 1 inch, equals measurement C, 37 inches.
3. The height of the **A1004EVR-216A single wall spill containment** is 18 inches. Subtract the height of 18 inches from measurement C, 37 inches, then add 2 inches for the riser pipe threads.
4. The required length for the 4-inch diameter riser pipe is measurement D, 21 inches.



IMPORTANT: All single wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the riser pipe from turning during removal and installation of the primary liner.

IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly recommended but optional.

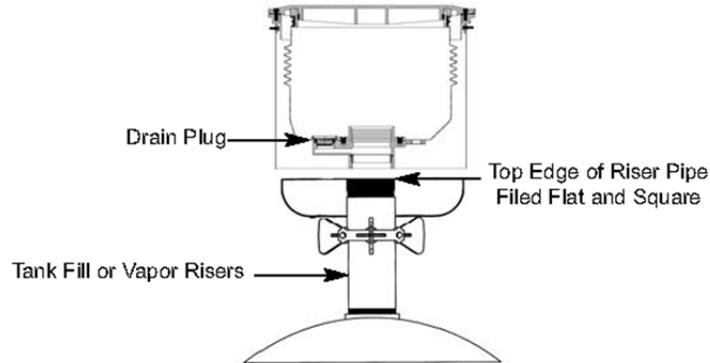
1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a 1/2" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

IMPORTANT: When installing a second A0028 riser lock, repeat Steps 1 and 2.

3. Install the gravel pan onto the top of the riser pipe. Slide the gravel pan downward until resting on the A0028 riser lock.

Figure B-5 (Continued)

Spill Containment to Riser Pipe

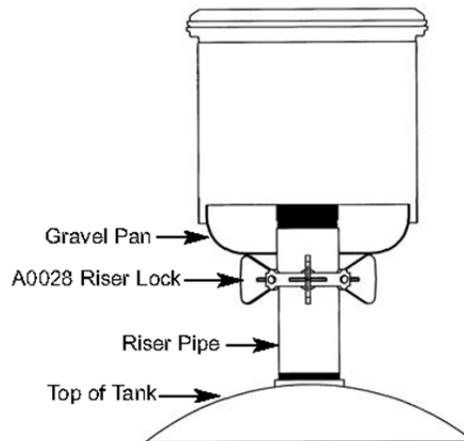


1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

IMPORTANT: The A1004EVR spill containment comes with a factory installed non-removal drain plug, and is CARB EVR approved for use on tank fill or vapor risers.

2. Apply a non-hardening gasoline resistant pipe thread sealant compound to the threads of the riser pipe. Manually tighten the A1004EVR spill containment onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque the A1004EVR spill containment between 100 and 150 ft-lbs.

Riser Lock Installation for Single Wall Configurations

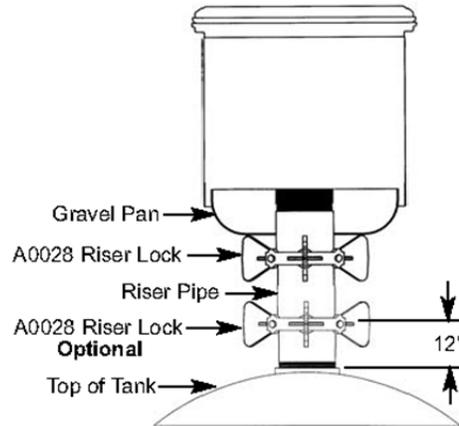


3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a 1/2" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a 1/2" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

IMPORTANT: When installing a second A0028 riser lock continue to Step 4.

Figure B-5 (Continued)

Riser Lock Installation for Double Wall Configurations



4. Slide the second A0028 riser lock upward keeping a distance of 12 inches from top of tank. Using a $\frac{1}{2}$ " socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a $\frac{1}{2}$ " crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

A1004EVR Spill Containment Backfill and Concrete Finish

1. Complete the backfill over the tank and around the gravel guard of the A1004EVR spill containment. Be sure the height of the backfill meets the depth requirements for the concrete pad.
2. Concrete must completely fill around and under the A1004EVR spill containment rim to insure proper anchoring.
3. Before the concrete sets remove all excess concrete from the top of A1004EVR spill containment rim and water run-off channels.

IMPORTANT: Crown height must be a minimum of 1 inch for proper water run-off.

Figure B-5 (Continued)

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099 installation instructions.

Figure B-5 (Continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and disposable towels.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 494554	Lid and Seal
• 494660EVR	-216S Primary Repair Kit
• 494661EVR	-216A Primary Repair Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

Figure B-5 (Continued)

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p/n 571239
Rev A, 06/13

Figure B-6
494360EVR and 494466EVR Primary Spill Container Replacement Kit

EMCO®
WHEATON RETAIL

494360EVR
494466EVR
Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
494360EVR	Primary Replacement Kit for A1004EVR-210A
494466EVR	Primary Replacement Kit for A1004EVR-211A

Service Tools Required:

- Needle Nose Pliers
- 3/8" Socket
- Socket with 1/4" Allen Wrench
- EMCO Adapter Wrench A0081-001C
- 5/32" Allen Hex Wrench
- 1/2" Drive 12" Extension
- EMCO Primary Wrench A0081-001H
- Torque Wrench w/ 40 ft-lbs. Setting
- 1/2" Drive 5" Extension
- EMCO Riser Seal Wrench 494120
- Torque Wrench w/ 200 ft-lbs. Setting
- Chain Wrench
- Non-hardening Gasoline Resistant Pipe Thread Sealant Compound
- Standard 1/2" Drive Ratchet

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-6 (Continued)

Fill Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0097-005 fill adapter cap.



Step 3: Locate the 494118 drain valve. Begin by disassembling the pull chain and linkage. Use a pair of needle nose pliers to remove both cotter pins from the top, then lift and remove the filter.



Step 4: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0030-124S swivel fill adapter



Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.



Step 6: Use the EMCO Riser Seal Wrench p/n 494120 to loosen and remove the center insert located inside the 494096 riser seal.

Figure B-6 (Continued)



Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.



Step 8: Remove the drop tube from the fill riser by pulling upward.



Step 9: Use a ratchet with a 3/8" socket or 1/4" allen wrench to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 10: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the fill riser pipe.



Step 11: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-6 (Continued)

Vapor Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0099-002, -003 vapor adapter cap.



Step 3: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0076-124S swivel vapor adapter.



Step 4: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0076-124S swivel vapor adapter.

Figure B-6 (Continued)



Step 5: Use a standard 1/2" drive ratchet and chain wrench to loosen and remove the containment nipple.



Step 6: Use a ratchet with a 3/8" socket or 1/4" allen wrench to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 7: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the vapor riser pipe.



Step 8: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-6 (Continued)

Fill & Vapor Application/Primary Liner Installation

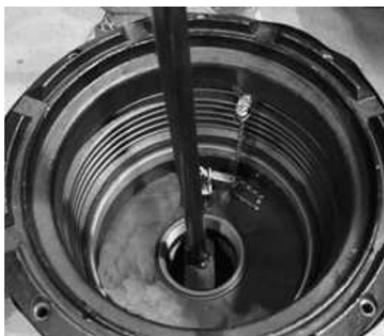


Step 1: All eight bolt holes must be clean and free of all debris before attempting to install the new primary liner.

IMPORTANT: Failure to do so may result in possible cross threading and permanent damage voiding warranty.



Step 2: Apply a non-hardening, gasoline resistant pipe thread sealant compound to the threads of the riser pipe.



Step 3: Manually tighten the new primary liner onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque between 100 and 150 ft-lbs.

IMPORTANT: As the primary liner is being torqued verify the A1004EVR spill containment bolt holes line up with the rim bolt holes.



Step 4: Manually install the eight new 3/8" stainless steel bolts. Use a ratchet and 3/8" socket to tighten and torque to 40 ft-lbs.

IMPORTANT: Tighten each bolt two complete turns at a time in a cross over pattern before applying final torque.

Re-install the drain valve filter.

Figure B-6 (Continued)

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097-005 installation instructions.

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099-002, -003 installation instructions.

Clean-up and Finish

1. Clean and remove all debris from the inside of the A1004EVR spill containment, drain valve and filter assembly.
2. Paint the new A1004EVR spill containment rim to match the color of the lid.
3. Once the paint on the rim has dried, re-install the A1004EVR spill containment Lid.

Figure B-6 (Continued)

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and a disposable towel.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
494118	Drain Valve Kit
A1004-210LID	Lid and Seal
494360EVR	-210A Primary Replacement Kit
494466EVR	-211A Primary Replacement Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

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p/n 569831
Rev. H 06/13

Figure B-7
494350EVR and 494467EVR Primary Spill Container Replacement Kit

EMCO®
WHEATON RETAIL

494350EVR
494467EVR
Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Numbers</u>	<u>Description</u>
494350EVR	Primary Replacement Kit for A1004EVR-210S
494467EVR	Primary Replacement Kit for A1004EVR-211S

Service Tools Required:

- Needle Nose Pliers
- 3/8" Socket
- Socket with 1/4" Allen Wrench
- EMCO Adapter Wrench A0081-001C
- 5/32" Allen Wrench
- 1/2" Drive 12" Extension
- EMCO Primary Wrench A0081-001H
- Torque Wrench w/ 40 ft-lbs. Setting
- 1/2" Drive 5" Extension
- EMCO Riser Seal Wrench 494120
- Torque Wrench w/ 200 ft-lbs. Setting
- Chain Wrench
- Non-hardening Gasoline Resistant Pipe Thread Sealant Compound
- Standard 1/2" Drive Ratchet

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-7 (Continued)

Fill Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0097-005 fill adapter cap and dipstick.



Step 3: Locate the 494118 drain valve. Begin by disassembling the pull chain and linkage. Use a pair of needle nose pliers to remove both cotter pins from the top, then lift and remove the filter.



Step 4: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0030-124S swivel fill adapter.



Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.



Step 6: Use the EMCO Riser Seal Wrench p/n 494120 to loosen and remove the center insert located inside the 494096 riser seal.

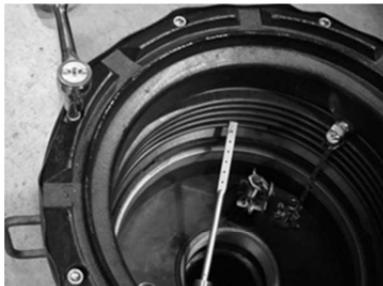
Figure B-7 (Continued)



Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.



Step 8: Remove the drop tube from the fill riser by pulling upward.



Step 9: Use a ratchet with a 3/8" socket or 1/4" allen wrench to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 10: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the fill riser pipe.



Step 11: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-7 (Continued)

Vapor Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0099-002, -003 vapor adapter cap.



Step 3: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0076-124S swivel vapor adapter.



Step 4: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0076-124S swivel vapor adapter.



Step 5: Use a standard 1/2" drive ratchet and chain wrench to loosen and remove the containment nipple.



Step 6: Use a ratchet with a 3/8" socket or 1/4" allen wrench to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.

Figure B-7 (Continued)



Step 7: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the vapor riser pipe.



Step 8: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Fill & Vapor Application/Primary Liner Installation



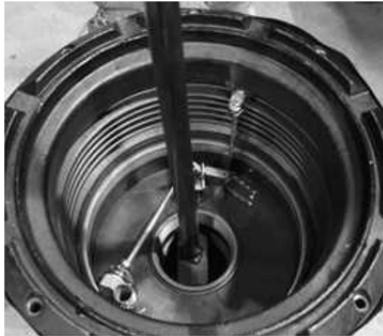
Step 1: All eight bolt holes must be clean and free of all debris before attempting to install the new primary liner.

IMPORTANT: Failure to do so may result in possible cross threading and permanent damage voiding warranty.



Step 2: Apply a non-hardening, gasoline resistant pipe thread sealant compound to the threads of the secondary unit.

Figure B-7 (Continued)



Step 3: Manually tighten the new primary liner onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque between 100 and 150 ft-lbs.

IMPORTANT: As the primary liner is being torqued verify the A1004EVR spill containment bolt holes line up with the rim bolt holes.



Step 4: Manually install the eight new 3/8" stainless steel bolts. Use a ratchet with a 3/8" socket or 1/4" allen wrench to tighten and torque to 40 ft-lbs.

IMPORTANT: Tighten each bolt two complete turns at a time in a cross over pattern before applying final torque.

Re-install the dipstick and drain valve filter.

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097-005 installation instructions.

Figure B-7 (Continued)

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099-002, -003 installation instructions.

Clean-up and Finish

1. Clean and remove all debris from the inside of the A1004EVR spill containment, drain valve and filter assembly.
2. Paint the new A1004EVR spill containment rim to match the color of the lid.
3. Once the paint on the rim has dried, re-install the A1004EVR spill containment lid.

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and a disposable towel.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 494118	Drain Valve Kit
• A1004-210LID	Lid and Seal
• 494350EVR	-210S Primary Replacement Kit
• 494467EVR	-211S Primary Replacement Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

Figure B-7 (Continued)

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

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p/n 569830
Rev. K 06/13

Figure B-8 494602EVR and 494661EVR Primary Spill Container Replacement Kit



494602EVR 494661EVR

Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Number</u>	<u>Description</u>
494602EVR	Primary Replacement Kit for A1004EVR-215A
494661EVR	Primary Replacement Kit for A1004EVR-216A

Service Tools Required:

- Needle Nose Pliers
- 9/16" Socket
- EMCO Adapter Wrench A0081-001C
- 5/32" Allen Wrench
- 1/2" Drive 12" Extension
- EMCO Primary Wrench A0081-001H
- Lubricant
- Torque Wrench w/ 40 ft-lbs. Setting
- 1/2" Drive 5" Extension
- EMCO Riser Seal Wrench 494120
- Torque Wrench w/ 200 ft-lbs. Setting
- Chain Wrench
- Non-hardening Gasoline Resistant Pipe Thread Sealant Compound
- Standard 1/2" Drive Ratchet

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-8 (Continued)

Fill Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0097-005 fill adapter cap.



Step 3: Locate the 494118 drain valve. Begin by disassembling the pull chain and linkage. Use a pair of needle nose pliers to remove both cotter pins from the top, then lift and remove the filter.



Step 4: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0030-124S swivel fill adapter.



Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.



Step 6: Use the EMCO Riser Seal Wrench p/n 494120 to loosen and remove the center insert located inside the 494096 riser seal.

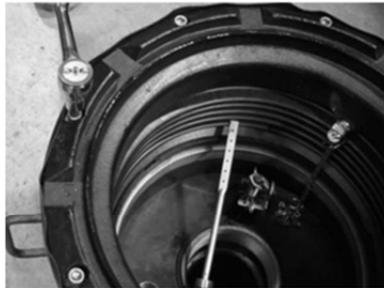
Figure B-8 (Continued)



Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.



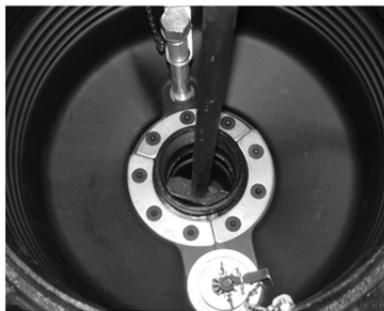
Step 8: Remove the drop tube from the fill riser by pulling upward.



Step 9: Use a ratchet with a 9/16" socket to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 10: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the fill riser pipe.



Step 11: Place long tang of the EMCO Spill Containment Wrench p/n A0081-001A into drain path of primary liner.



Step 12: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-8 (Continued)

Vapor Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0099-002, -003 vapor adapter cap.



Step 3: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0076-124S swivel vapor adapter.



Step 4: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0076-124S swivel vapor adapter.



Step 5: Use a standard 1/2" drive ratchet and chain wrench to loosen and remove the containment nipple.



Step 6: Use a ratchet with a 9/16" socket to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.

Figure B-8 (Continued)



Step 7: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the vapor riser pipe.



Step 8: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Fill & Vapor Application/Primary Liner Installation



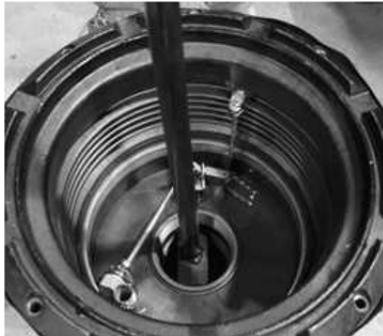
Step 1: All eight bolt holes must be clean and free of all debris before attempting to install the new primary liner.

IMPORTANT: Failure to do so may result in possible cross threading and permanent damage voiding warranty.



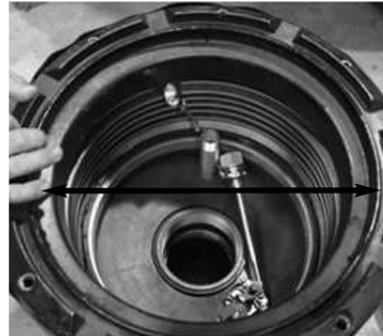
Step 2: Lubricate the sealing o-ring with a little coat of grease.

Figure B-8 (Continued)



Step 3: Manually tighten the new primary liner onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque between 100 and 150 ft-lbs.

IMPORTANT: As the primary liner is being torqued verify the A1004EVR spill containment bolt holes line up with the rim bolt holes.



Step 4: Manually install eight new 3/8" stainless steel bolts. Use a ratchet with a 9/16" socket to tighten and torque to 40 ft-lbs.

IMPORTANT: Tighten each bolt two complete turns at a time in a cross over pattern before applying final torque.

Re-install the drain valve filter.

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097-005 installation instructions.

Figure B-8 (Continued)

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099-002, -003 installation instructions.

Clean-up and Finish

1. Clean and remove all debris from the inside of the A1004EVR spill containment, drain valve and filter assembly.
2. Paint the new A1004EVR spill containment rim to match the color of the lid.
3. Once the paint on the rim has dried, re-install the A1004EVR spill containment lid.

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and a disposable towel.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 494118	Drain Valve Kit
• 494554	Lid and Seal
• 494602EVR	-215A Primary Replacement Kit
• 494661EVR	-216A Primary Replacement Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

Figure B-8 (Continued)

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

Tank Operator Responsibilities

Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.

All operators must be familiar with proper filling procedures.

The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.

The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.

When tank vehicles are being unloaded, the vehicle operators must remain

- (a) in constant view of the transfer nozzle and fill pipe; and
- (b) in constant attendance at the discharge control valve.

Figure B-9
494550EVR and 494660EVR Primary and Secondary Spill Container Replacement Kit



494550EVR
494660EVR

Primary & Secondary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model #
Month/Year of Manufacture

<u>Model Number</u>	<u>Description</u>
494550EVR	Primary & Secondary Replacement Kit for A1004EVR-215S
494660EVR	Primary & Secondary Replacement Kit for A1004EVR-216S

Service Tools Required:

- Needle Nose Pliers
- 9/16" Socket
- EMCO Adapter Wrench A0081-001C
- 5/32" Allen Wrench
- 1/2" Drive 12" Extension
- EMCO Primary Wrench A0081-001H
- Lubricant
- Torque Wrench w/ 40 ft-lbs. Setting
- Flathead Screw Driver
- 1/2" Drive 5" Extension
- 5/16" Allen Wrench
- EMCO Riser Seal Wrench 494120
- Torque Wrench w/ 200 ft-lbs. Setting
- Chain Wrench
- Non-hardening Gasoline Resistant Pipe Thread Sealant Compound
- Standard 1/2" Drive Ratchet
- Tube of Urethane Sealant

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure B-9

Fill Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0097-005 fill adapter cap.



Step 3: Locate the 494118 drain valve. Begin by disassembling the pull chain and linkage. Use a pair of needle nose pliers to remove both cotter pins from the top, then lift and remove the filter.



Step 4: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0030-124S swivel fill adapter.

Figure B-9



Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.



Step 6: Use the EMCO Riser Seal Wrench p/n 494120 to loosen and remove the center insert located inside the 494096 riser seal.



Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.

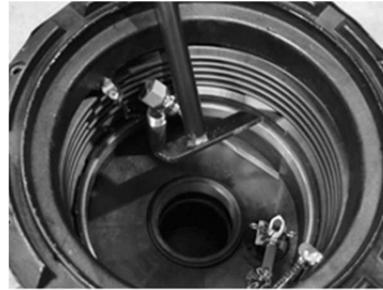


Step 8: Remove the drop tube from the fill riser by pulling upward.

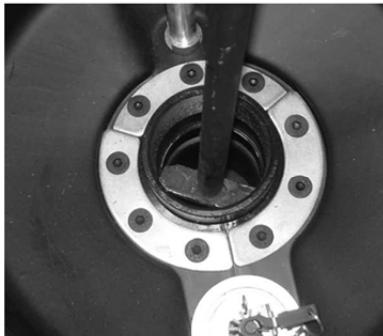
Figure B-9



Step 9: Use a ratchet with a 9/16" socket to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 10: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the fill riser pipe.



Step 11: Place long tang of the EMCO Spill Containment Wrench p/n A0081-001A into drain path of primary liner.



Step 12: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-9

Vapor Application/Primary Liner Removal



Step 1: Remove the A1004EVR spill containment lid.



Step 2: Remove the A0099-002, -003 vapor adapter cap.



Step 3: Use a 5/32" allen wrench to loosen and remove both set screws from the base of the A0076-124S swivel vapor adapter.



Step 4: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0076-124S swivel vapor adapter.

Figure B-9



Step 5: Use a standard 1/2" drive ratchet and chain wrench to loosen and remove the containment nipple.



Step 6: Use a ratchet with a 9/16" socket to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.



Step 7: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the vapor riser pipe.



Step 8: Remove the primary liner from inside the A1004EVR spill containment by pulling upwards. Once the primary liner is completely out, please discard.

Figure B-9

Secondary Liner Removal



Step 1: Use a ratchet with a 5/16" allen wrench socket to remove the bolts and washers from the bottom of the secondary liner. Use a flat-head screwdriver to pry the flange away. Set the flange aside and discard the bolts and washers. Remove secondary liner from the inside of the A1004EVR spill containment and discard.



Step 2: Remove the existing two o-rings from the adapter flange and discard. Be sure to clean both o-ring grooves before proceeding with the installation of the new secondary liner.

Secondary Liner Installation

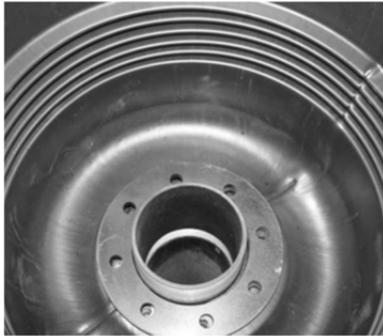


Step 1: Apply a thin bead of urethane sealant to each of the two o-ring grooves, then install the two new o-rings.



Step 2: Install the new secondary liner inside the A1004EVR spill containment.

Figure B-9



Step 3: Re-install the existing flange. Be sure to align the bolt holes



Step 4: Install the new bolts and washers to the bottom of the new secondary liner. Use a ratchet with a 5/16" allen wrench socket to tighten and torque to 40 ft-lbs.

Fill & Vapor Application/Primary Liner Installation



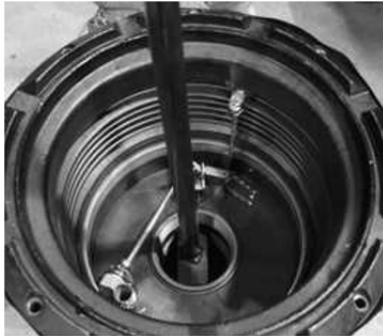
Step 1: All eight bolt holes must be clean and free of all debris before attempting to install the new primary liner.

IMPORTANT: Failure to do so may result in possible cross threading and permanent damage voiding warranty.



Step 2: Lubricate the sealing o-ring with a amount of grease.

Figure B-9

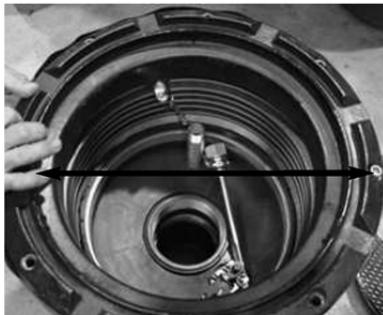


Step 3: Manually tighten the new primary liner onto the riser pipe to avoid cross threading. Use the EMCO Spill Containment Wrench p/n A0081-001H to tighten and torque between 100 and 150 ft-lbs.

IMPORTANT: As the primary liner is being torqued verify the A1004EVR spill containment bolt holes line up with the rim bolt holes.



Step 4: With flat side of gasket facing down, install the gasket between the primary rim and the secondary liner. Place a screw driver through the primary rim, gasket and secondary liner to hold gasket in place while installing.



Step 5: Manually install eight new 3/8" stainless steel bolts. Use a ratchet with a 9/16" socket to tighten and torque to 40 ft-lbs.

IMPORTANT: Tighten each bolt two complete turns at a time in a cross over pattern before applying final torque.

Re-install the dipstick and drain valve filter.

Figure B-9

Spill Containment with Overfill Prevention Valve or Straight Drop Tube, Riser Seal, Swivel Fill Adapter and Fill Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton overfill prevention valve, please refer to the A1100EVR installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton straight drop tube, please refer to the A0020EVR and A0020EVRC installation instructions.

IMPORTANT: The fill riser installation will only allow for one type of EVR drop tube configuration.

3. When installing the A1004EVR spill containment with an Emco Wheaton riser seal, please refer to the 494096 installation instructions.
4. When installing the A1004EVR spill containment with an Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.
5. When installing the A1004EVR spill containment with an Emco Wheaton fill adapter cap, please refer to the A0097-005 installation instructions.

Spill Containment with Swivel Vapor Adapter and Vapor Adapter Cap

1. When installing the A1004EVR spill containment with an Emco Wheaton swivel vapor adapter, please refer to the A0076-124S installation instructions.
2. When installing the A1004EVR spill containment with an Emco Wheaton vapor adapter cap, please refer to the A0099-002, -003 installation instructions.

Clean-up and Finish

1. Clean and remove all debris from the inside of the A1004EVR spill containment, drain valve and filter assembly.
2. Paint the new A1004EVR spill containment rim to match the color of the lid.
3. Once the paint on the rim has dried, re-install the A1004EVR spill containment lid.

Figure B-9

PREVENTIVE MAINTENANCE

1. Quarterly verify that the inside of the A1004EVR spill containment is free of all dirt, gravel, debris, etc. Should cleaning be required, wipe the inside wall and bottom of the A1004EVR spill containment using soapy water and a disposable towel.
2. After each delivery, the station operator must remove any standing fuel from the inside of the A1004EVR spill containment. If gasoline does not drain, refer to the #494118 drain valve preventive maintenance instructions.

IMPORTANT: During routine preventive maintenance all damaged components must be replaced with factory authorized service kits.

Service Repair Kits

<u>Part Number</u>	<u>Description</u>
• 494118	Drain Valve Kit
• 494554	Lid and Seal
• 494550EVR	-215S Primary & Secondary Replacement Kit
• 494660EVR	-216S Primary & Secondary Replacement Kit

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Complies with the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

IMPORTANT: Tank Operator Responsibilities

- Tank operator must ensure that all Federal, Provincial and local codes are being met during the filling of the tank.
- All operators must be familiar with proper filling procedures.
- The operator responsible for transferring product to an above ground storage tank must take all reasonable steps to prevent spillage.
- The delivery hose from the tank's fill pipe must not be disconnected before the hose has been drained completely.
- When tank vehicles are being unloaded, the vehicle operators must remain:
 - (a) in constant view of the transfer nozzle and fill pipe; and
 - (b) in constant attendance at the discharge control valve.

Emco Wheaton Retail Corp.

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p/n 569931
Rev. H 06/13

Figure C-1 494118 Drain Valve Installation Instructions

EMCO®
WHEATON RETAIL

494118
Drain Valve Kit

A1004EVR Spill Containment Drain Valve Replacement

INSTALLATION INSTRUCTIONS

Packing List:

- (1) Drain Valve w/ Flat Gasket
- (1) Filter
- (2) Cotter Pins
- (1) Linkage and Pull Chain



Permanent Identification:



Model #
Month/Year of Manufacture

Service Tools Required:

- EMCO Drain Wrench p/n 493820
- Socket Extension
- Torque Wrench w/ 13 to 15 ft-lbs. Setting
- Needle Nose Pliers
- 15/16" Socket
- Ratchet Wrench

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.
2. Remove standing fuel or water from the A1004EVR spill containment before attempting to service the drain valve. Be sure to comply with all local regulatory requirements.

Figure C-1 (continued)

Pre-Inspection:

1. Remove all kitted parts from the shipping container and inspect for damage. Verify no parts are missing from the packing list before proceeding with the installation.

Installation:

Removing the Existing Drain Valve



2. Begin by removing the lid from the A1004EVR spill containment and fill adapter cap. Use a pair of needle nose pliers to remove both cotter pins and disassemble the linkage from the top of the drain valve. Remove the drain valve pull chain from the top of the A1004EVR spill containment rim and discard.



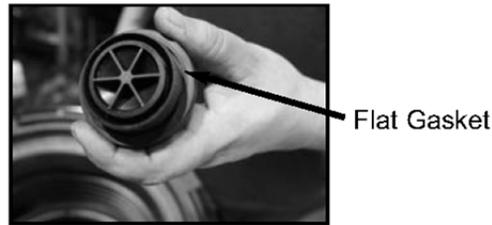
3. Remove the filter from the top of the drain valve. Use the EMCO Drain Wrench p/n 493820 to unscrew the drain valve from the base of the A1004EVR spill containment.

Installing the New Drain Valve



4. Before attempting to install the new drain valve, thoroughly clean and remove all debris from around the drain path opening and sealing threads.

Figure C-1 (continued)



5. Remove both cotter pins, linkage, and filter from the new drain valve. Verify the flat gasket is properly secured to the bottom.
6. Screw the new drain valve by hand to avoid cross threading. Use the EMCO Drain Wrench p/n 493820 to tighten and torque between 13 to 15 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the drain valve.

7. Re-install the filter, linkage and cotter pins. Verify the new drain valve opens and closes when pulling and releasing the chain. Re-install the fill adapter cap and the A1004EVR spill containment lid.

PREVENTIVE MAINTENANCE

1. Quarterly test the operation of the drain valve by pulling up on the chain located inside the A1004EVR spill containment.
2. If gasoline does not drain when actuating the drain valve perform steps (a) through (d). Refer below.
 - a) Remove the filter from the drain valve. Use a pair of needle nose pliers to remove both cotter pins and disassemble the linkage from the top of the drain valve. Soak the filter in soapy water and use high pressure air to clean and remove all debris. Replace the filter p/n 569131 only if the screen is damaged.
 - b) Use the EMCO Drain Wrench p/n 493820 to unscrew the drain valve from the base of the A1004EVR spill containment. Soak the drain valve in soapy water and use high pressure air to clean and remove all debris. Replace the flat gasket p/n 567108 before re-installing.
 - c) Re-install the drain valve by referring to installation steps 4 through 6. Verify the leak tightness integrity of the drain valve by performing ARB test procedure TP-201.1D.
 - d) If the drain valve fails to pass ARB test procedure TP-201.1D, replace with new by referring to installation steps 4 through 6.

Figure D-1 A1100EVR Overfill Prevention Device Installation Instructions

EMCO[®] WHEATON RETAIL A1100EVR GUARDIAN OVERFILL PREVENTION VALVE WITH THREADED BOTTOM

INSTALLATION INSTRUCTIONS

Packing List:

- | | |
|---------------------------------------|-----------------------------------|
| (1) Drop Tube O-ring #569461 | (1) Counter Sink Indenter #564416 |
| (4) Collar #566679 w/ O-ring #480049 | (4) Rivets #569461 |
| (1) Tube of Seals-All Sealant #566726 | |

Permanent Identification:

Model #
Month/Year of Manufacture



Valve Sleeve

Service Tool Required:

- | | | |
|---------------------------------|---------------------------|--------------------------------|
| • 13/64" Drill Bit | • Hacksaw w/ fine tooth | • Pipe Thread Sealant Compound |
| • Rivet Gun | • Hand file w/ fine blade | • 150 Grit Size Emery Cloth |
| • Power Drill | • Marker | • De-burring Tool w/ #10 Blade |
| • Tape Measure | • Hammer | • Fabric Strap Wrench (2) |
| • EMCO Drill Fixture p/n 566675 | | |

CAUTION:

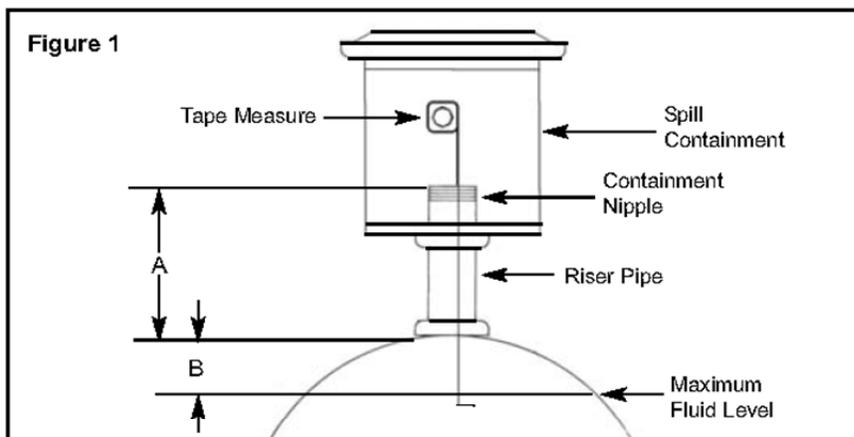
1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.
2. If the underground storage tank is equipped with a ball float vent valve, make sure it does not extend below the positive shut-off point of the A1100EVR overfill prevention valve. If so, the ball float valve must be removed to allow proper operation of the A1100EVR overfill prevention valve.
3. Never disconnect the delivery elbow from the fill adapter when the A1100EVR overfill prevention valve has reached the positive shut-off point of 95% total capacity. Note the tank delivery hose is full and must not be disconnected until enough fuel has been evacuated from the underground storage tank. This will allow the tank delivery hose to drain, and to safely disconnect from the fill adapter. Premature disconnection will result in a hazardous spill and/or a potential for personal injury and property damage.
4. Once the A1100EVR overfill prevention valve is completely assembled, **the Seals-All Sealant must cure for a minimum of 24 hours before installing into the underground storage tank.**

Figure D-1 (continued)

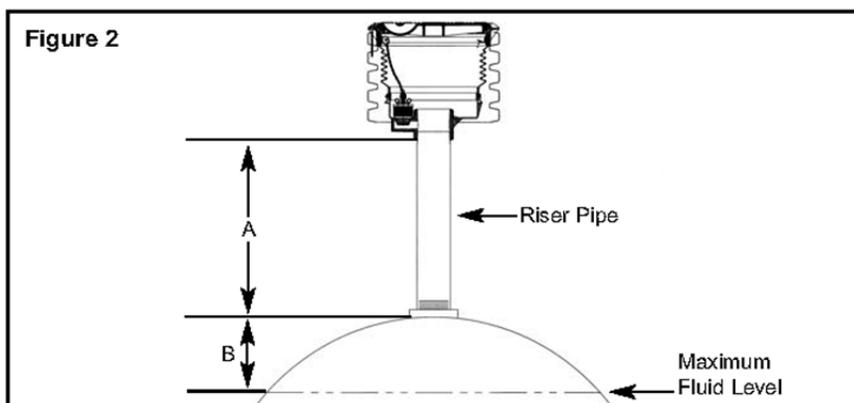
A1100EVR Overfill Prevention Valve Top Drop Tube Cut Length

1. Find measurement A, the distance from the inside top of the tank to the top edge of the riser pipe as shown in Figure 1.

When installing the A1100EVR overfill prevention valve below the spill containment drain valve, measurement A is the distance between the inside top of the tank to the top edge of the riser pipe as shown in Figure 2.



A1100EVR Overfill Prevention Valve Installed Above Drain Valve



A1100EVR Overfill Prevention Valve Installed Below Drain Valve

Figure D-1 (continued)

- Find measurement B from the chart below, the distance from the maximum fluid level allowed to the inside top of the tank. The calculations are based on cylindrical tanks with flat ends. For exact dimensions, consult the manufacturer's tank charts. Local requirements may limit fill capacity to 95%.

Tank Diameter		95% Shut-off B Dimension	
Feet	Meters	Inches	mm
6.5'	1.98	7.5"	190
7.0'	2.13	8.0"	203
7.6'	2.29	9.0"	229
8.0'	2.44	9.5"	241
8.2'	2.50	9.5"	241
8.5'	2.59	10.0"	254
9.0'	2.74	10.5"	267
9.5'	2.90	11.0"	279
10.0'	3.05	11.5"	292
12.0'	3.66	14.0"	336

IMPORTANT: The A1100EVR overfill prevention valve is not recommended for tanks under 6.5 inches or 1.98 meters in diameter.

- Find measurement C, add measurements A and B minus 7.5 inches. Measure and cut the top drop tube to the required length.

Example: Top drop tube cut length, $C = A + B - 7.5"$

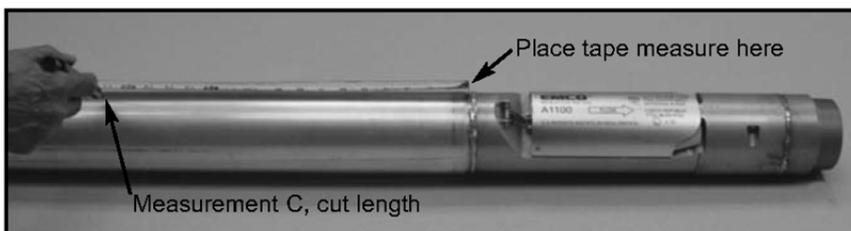
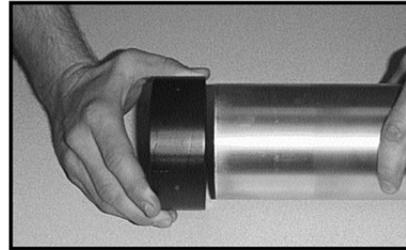


Figure D-1 (continued)

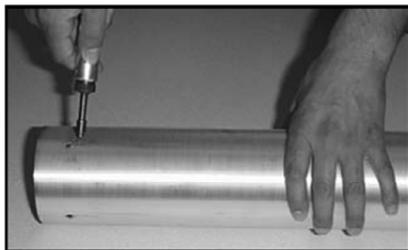


4. Carefully cut the top drop tube to the required length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

IMPORTANT: Do not use a power saw, pipe or tubing cutter as this may result in damage to the top drop tube, voiding warranty.



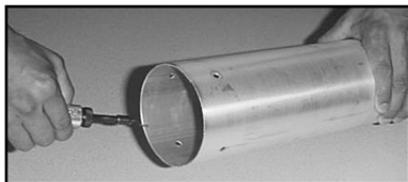
5. Slide the EMCO Drill Fixture p/n 566675 onto the end of the top drop tube until the edge bottoms out against the inside ridge.



6. Drill four 13/64 diameter holes through the top drop tube. Remove the drill fixture from the top drop tube. Using a de-burring tool equipped with a #10 blade, remove any sharp burrs around the inside area of the mounting holes.



7. Using a fine blade hand file, remove all burrs from the inside and outside edge of the top drop tube. File the edge of the top drop tube square. File the inside surface of the holes. Remove all rough edges.

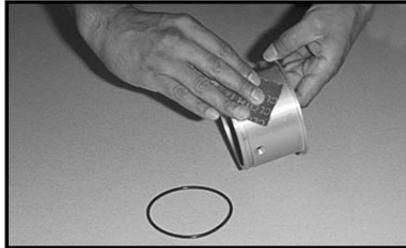


8. Using a de-burring tool equipped with a #10 blade, remove the sharp cutting ring from the inside edge of the top drop tube. Lightly sand the inside area of the top drop tube and mounting holes using 150-grit size emery cloth. Clean and remove any sanding debris.

IMPORTANT: Failure to perform this procedure will damage the o-ring seal during the installation of the A1100EVR collar, voiding warranty.

Figure D-1 (continued)

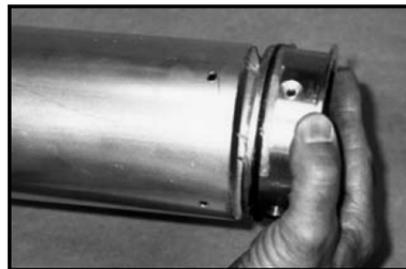
A1100EVR Collar to Top Drop Tube



9. Remove the o-ring from the A1100EVR collar. Lightly sand the outside area using 150-grit size emery cloth. Clean and remove any sanding debris and re-install o-ring.



10. Apply a 1/2 inch bead of Seals-All sealant around the o-ring and outside area of the A1100EVR collar. Verify the o-ring is properly secured inside the machined groove.



11. Slide the A1100EVR collar inside the top end of the drop tube and align the four holes.



12. Using the indenter tool and a hammer, apply a sharp blow to counter sink each individual hole before attempting to install the mounting rivets.



13. Using only the factory supplied rivets, apply a good amount of the Seals-All Sealant around the base of each rivet before installing into each of the four holes. Using the rivet gun, permanently fasten the A1100EVR collar to the top of the drop tube.

14. Once finished with steps 11 through 13, clean and remove all excess sealant around the top of the A1100EVR collar and rivets.

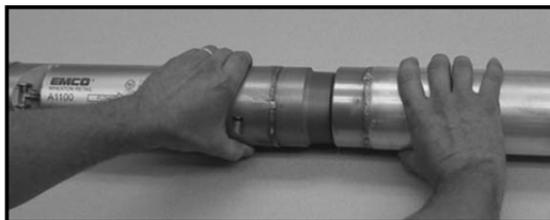
IMPORTANT: The Seal-All sealant must cure for a minimum of 24 hours before installing into the underground storage tank.

Figure D-1 (continued)

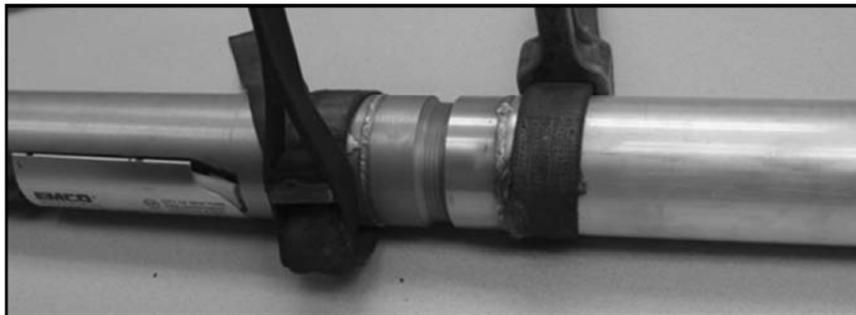
A1100EVR Overfill Prevention Valve to Lower Drop Tube



15. Apply pipe thread sealant compound to the male threads of the A1100EVR base.



16. Manually tighten both top and bottom drop tubes to avoid cross threading.



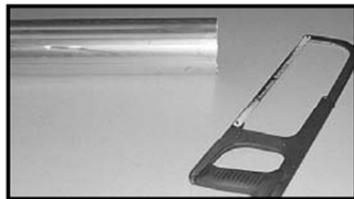
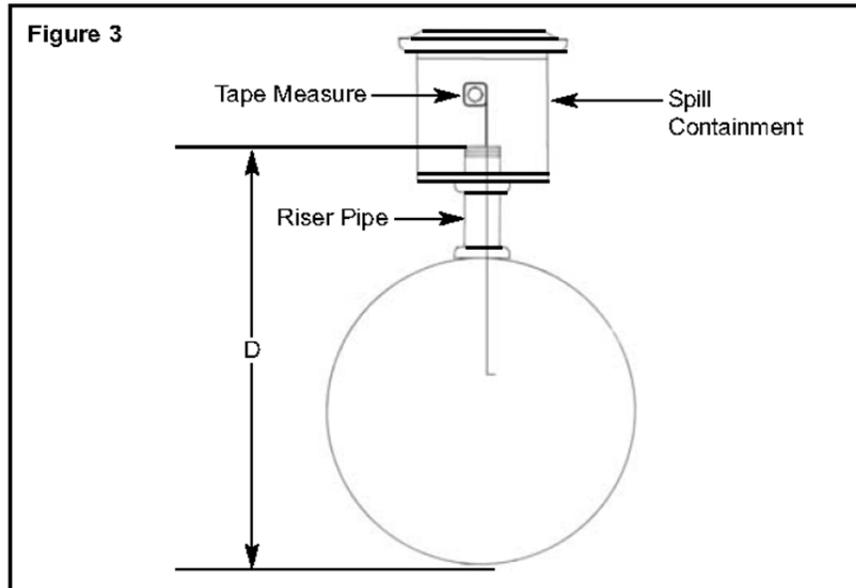
17. Use two fabric strap wrenches to permanently tighten.

IMPORTANT: Once the Seals-All sealant has cured for a minimum of 24 hours and before installing the A1100EVR overfill prevention valve into the underground storage tank, a leak tightness integrity test must be performed.

18. Test the A1100EVR overfill prevention valve by sealing both ends with inflatable plumber's plugs. Apply a maximum pressure of 2 inches of water column. Should the leak rate exceed the allowable limit of 0.17 CFH, locate the leak point by spraying soap solution along the outside of the A1100EVR overfill prevention valve.

IMPORTANT: Do not exceed the maximum pressure of 2 inches of water column. This will damage the A1100 overfill prevention valve and result in voiding the warranty.

Figure D-1 (continued)



19. Find measurement D, the distance between the top of the riser pipe and the bottom of the tank minus 6 inches as shown in Figure 3.

20. Carefully cut the drop tube to the required length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

IMPORTANT: Do not use a power saw, pipe or tubing cutter as this may result in damage to the bottom of the lower drop tube, voiding warranty.

IMPORTANT: Do not apply a 45 degree miter cut to the bottom of the lower drop tube.

A1100EVR Overfill Prevention Valve to Tank Fill Riser

21. Remove all metal chips or debris left from cutting or drilling. Shake the A1100EVR overfill prevention valve in a vertical position. Locate the A1100EVR overfill prevention valve over the tank fill riser opening with the A1100EVR collar pointing upward. Carefully lower the A1100EVR overfill prevention valve into the tank until the A1100EVR collar is resting on the riser pipe. Verify that the A1100EVR drop tube o-ring is installed and properly secured

Figure D-1 (continued)

PREVENTIVE MAINTENANCE

1. Annually, conduct a visual inspection of the flapper valve located inside the A1100EVR overfill prevention valve. Begin by removing the spill containment lid and fill adapter cap. Looking down over the tank fill riser opening, verify that the flapper valve is open and free of any foreign objects that can block or restrict the flow of gasoline into the underground storage tank during a fuel delivery.
2. Annually, verify leak tightness integrity of the A1100EVR overfill prevention valve by performing ARB test procedure TP-201.1D.
3. If the A1100EVR overfill prevention valve fails to pass the leak tightness integrity test, replace the drop tube o-ring with the EMCO o-ring kit p/n 569461.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1D - Meets or exceeds the allowable maximum leakrate of 0.17 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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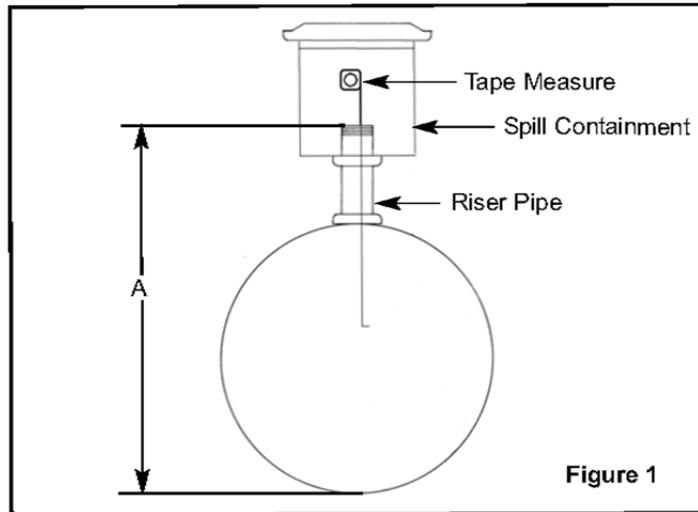
p/n 568415
Rev. S, 06/13

Figure D-2
A0020EVR or A0020EVRC Straight Drop Tube Installation Instructions

EMCO®
WHEATON RETAIL

A0020EVR & A0020EVRC
Straight Drop Tube

INSTALLATION INSTRUCTIONS



Service Tools Required:

- Tape Measure
- De-burring Tool w/ #10 Blade
- Hand File
- Hacksaw (fine tooth blade)

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

1. Find measurement A, the distance between the top of the riser pipe and the bottom of the tank minus 6 inches as shown in Figure 1.
2. Carefully cut the A0020EVR or A0020EVRC straight drop tube to the required length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

IMPORTANT: Do not use a power saw or pipe cutter as this may result in damage to the A0020EVR or A0020EVRC straight drop tube, voiding the warranty.

IMPORTANT: Do not apply a 45-degree miter cut to the bottom of the A0020EVR or A0020EVRC straight drop tube.

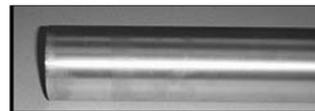


Figure D-2 (Continued)

3. Remove all cutting burrs using a de-burring tool with a #10 blade. File the bottom edge of the A0020EVR or A0020EVRC straight drop tube flat.

A0020EVR or A0020EVRC Straight Drop Tube to Riser Pipe

4. Before installing the A0020EVR or A0020EVRC straight drop tube into the riser pipe, verify the drop tube o-ring is installed and secured in place.
5. Locate the bottom of the A0020EVR or A0020EVRC straight drop tube over the opening of the A1004EVR spill containment. Carefully lower the A0020EVR or A0020EVRC straight drop tube into the riser pipe until the collar rests on the top edge.
6. Before installing the A0020EVR or A0020EVRC straight drop tube below the A1004EVR spill containment drain valve, please refer to the 494096 riser seal installation instructions.

Swivel Fill Adapter to Riser Seal

7. Before installing the Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.

PREVENTIVE MAINTENANCE

1. Annually, verify leak tightness integrity of the A0020EVR or A0020EVRC straight drop tube by performing ARB test procedure TP-201.1D.
2. If the A0020EVR or A0020EVRC straight drop tube fails to pass the leak tightness integrity test, replace the drop tube o-ring with EMCO o-ring kit p/n 569461.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1C - Meets or exceeds the allowable maximum leakrate of 0.00 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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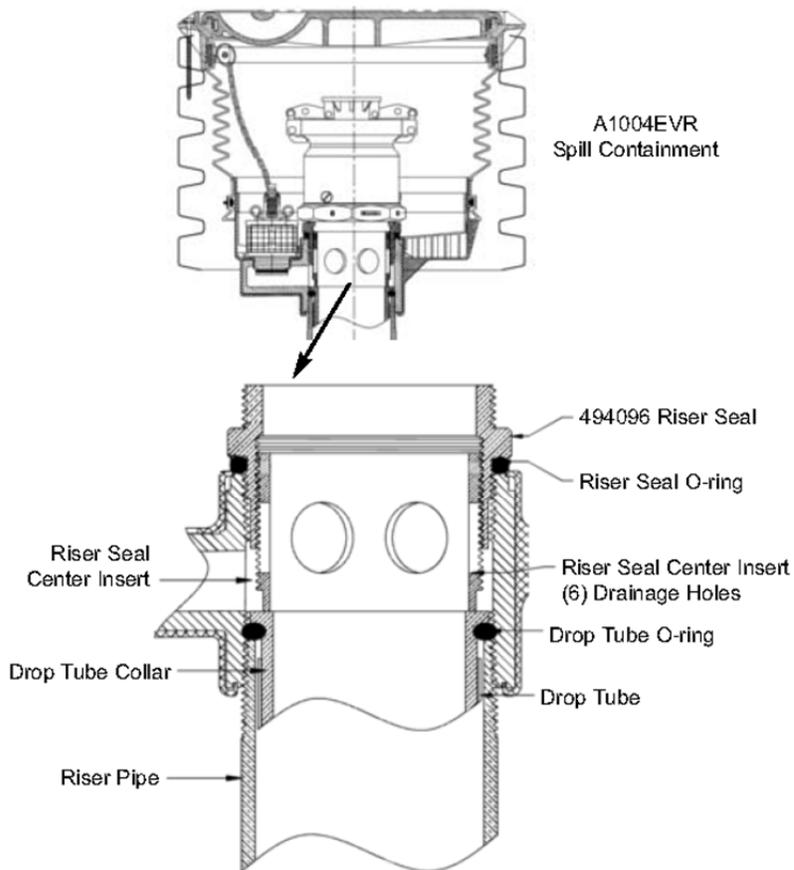
p/n 568399
Rev. J, 06/13

Figure E-1
494096 Riser Seal Installation Instructions

EMCO®
WHEATON RETAIL

494096
Riser Seal

INSTALLATION INSTRUCTIONS



Service Tools Required:

- Ratchet Wrench
- 5/32 " Allen Wrench
- 15/16" Socket
- EMCO Adapter Wrench p/n A0081-001C
- Torque Wrench w/ 35 to 80 ft-lbs Setting
- EMCO Riser Seal Wrench p/n 494120

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure E-1 (continued)

ARB EVR Approved Drop Tube Configurations		
	Model Number	Description
A.	A1100EVR	Drop Tube with Overfill Prevention Valve
B.	A0020EVR	Straight Drop Tube
C.	A0020EVRC	Straight Drop Tube with Collar

The 494096 riser seal is used when installing the top of the drop tube below the drain path of the spill containment drain valve. This allows standing gasoline and/or water to drain directly into the tank fill riser.

1. Before installing any of the three CARB EVR approved drop tube configurations A, B or C, verify that the drop tube o-ring is installed and properly secured.
2. Locate the bottom of the drop tube over the opening of the A1004EVR spill containment. Lower the drop tube into the tank fill riser below the drain path until the drop tube is resting on the top edge of the riser pipe.
3. Before installing the 494096 riser seal, verify that the riser seal o-ring is installed and properly secured. Manually tighten the 494096 riser seal onto the top threads of the A1004EVR spill containment to avoid cross threading. Use the EMCO Adapter Wrench A0081-001C to tighten and torque the 494096 riser seal to 80 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the 494096 riser seal.

4. Use the EMCO Riser Seal Wrench p/n 494120 to tighten and torque the riser seal center insert located inside the 494120 riser seal between 35 to 45 ft-lbs.
5. When installing the Emco Wheaton swivel fill adapter, please refer to the A0030-124S installation instructions.

PREVENTIVE MAINTENANCE

1. Annually verify leak tightness integrity of the 494096 riser seal by performing ARB test procedure TP-201.1D.
2. If the 494096 riser seal fails to pass the leak tightness integrity test, replace the riser seal o-ring with EMCO o-ring kit p/n 494252.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. CP-201 - Complies with the allowable maximum performance standards and all applicable ARB test procedures.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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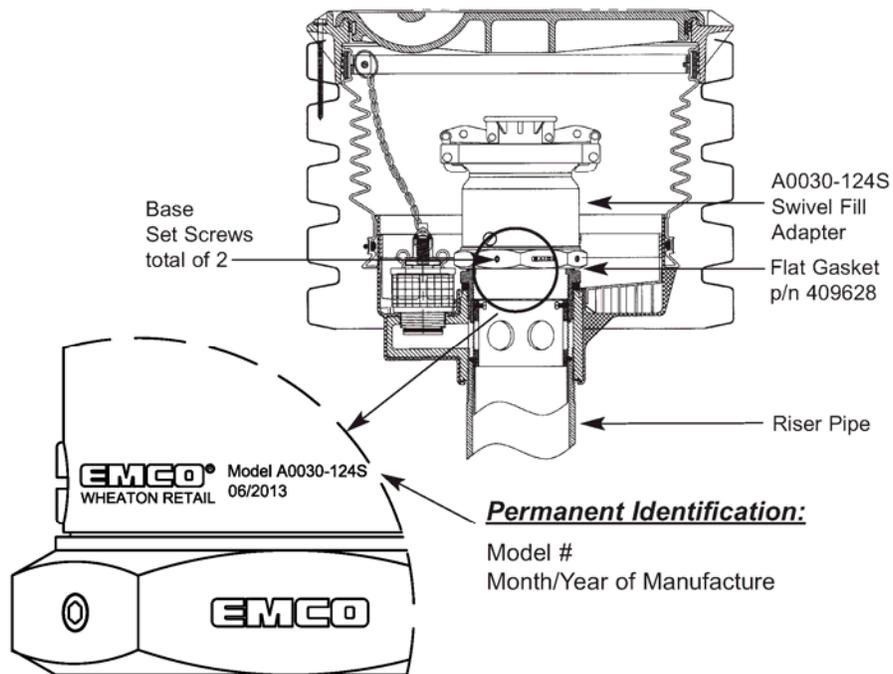
p/n 568398
Rev. H, 06/13

Figure F-1
A0030-124S Product Adaptor Installation Instructions

EMCO®
WHEATON RETAIL

A0030-124S
Swivel Fill Adapter

INSTALLATION INSTRUCTIONS



Service Tools Required:

- Ratchet Wrench
- 15/16" Socket
- 5/32 " Allen Wrench
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- EMCO Adapter Wrench p/n A0081-001C
- EMCO Swivel Adapter Torque Wrench p/n 494240

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure F-1 (continued)

1. Using a 5/32" allen wrench, remove both set screws from the base of the A0030-124S swivel fill adapter.
2. Before installing the A0030-124S swivel fill adapter verify the flat gasket is secured in place. Manually tighten the A0030-124S swivel fill adapter onto the 494096 riser seal to avoid cross threading. Using the EMCO Adapter Wrench p/n A0081-001C, tighten and torque between 60 to 75 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the A0030-124S swivel fill adapter onto the 494096 riser seal.

3. Re-install both set screws to the base of the A0030-124S swivel fill adapter and tighten.

PREVENTIVE MAINTENANCE

Static Torque Test:

1. Using the EMCO Swivel Adapter Torque Wrench p/n 494240, annually verify the static torque of the A0030-124S swivel fill adapter by performing ARB test procedure TP-201.1B.
2. If the A0030-124S swivel fill adapter fails to pass the static torque test, replace both o-rings with EMCO o-ring kit p/n 494301.

Leak Tightness Integrity Test:

1. Annually verify leak tightness integrity of the A0030-124S swivel fill adapter by performing ARB test procedure TP-201.1D.
2. If the A0030-124S swivel fill adapter fails to pass the leak tightness integrity test, replace both o-rings with EMCO o-ring kit p/n 494301 or flat gasket kit p/n 409628.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1B - Complies with the allowable maximum: 108 in-lbs. average static torque and 360 degrees rotation.
2. Meets ARB Cam and Groove Specifications.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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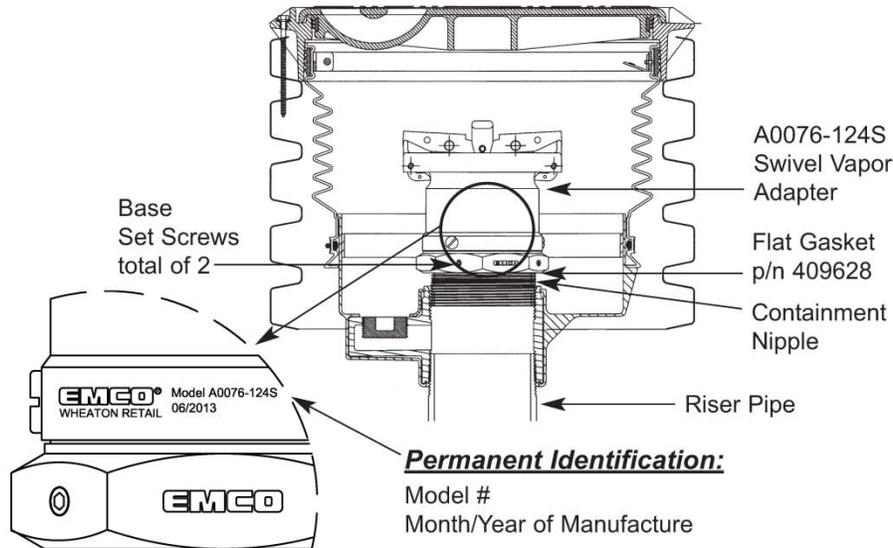
p/n 568396
Rev. K, 06/13

Figure F-2
A0076-124S Vapor Adaptor Installation Instructions

EMCO[®]
WHEATON RETAIL

A0076-124S
Swivel Vapor Adapter

INSTALLATION INSTRUCTIONS



Service Tools Required:

- Ratchet Wrench
- 15/16" Socket
- 5/32 " Allen Wrench
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- EMCO Adapter Wrench p/n A0081-001C
- EMCO Swivel Adapter Torque Wrench p/n 494240

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Containment Nipple Pre-Installation Requirements

1. The containment nipple must be properly sized to the required height to avoid clearance limitations between the top of the vapor adapter cap and the bottom of the A1004EVR spill containment lid.
2. The top edge of the containment nipple must be filed flat and square to insure a proper sealing surface between the containment nipple and the base of the A0076-124S swivel vapor adapter.
3. Apply a non-hardening gasoline resistant pipe thread sealant compound to the bottom threads of the containment nipple. Manually tighten the containment nipple onto the A1004EVR spill containment to avoid cross threading.

Figure F-2 (continued)

1. Using a 5/32" allen wrench, remove both set screws from the base of the A0076-124S swivel vapor adapter.
2. Before installing the A0076-124S swivel vapor adapter verify the flat gasket is secured in place. Manually tighten the A0076-124S swivel vapor adapter onto the containment nipple to avoid cross threading. Using the EMCO Adapter Wrench p/n A0081-001C, tighten and torque between 60 to 75 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the A0076-124S swivel vapor adapter onto the containment nipple.

3. Re-install both set screws to the base of the A0076-124S swivel vapor adapter and tighten.

PREVENTIVE MAINTENANCE

Static Torque Test:

1. Using the EMCO Swivel Adapter Torque Wrench p/n 494240, annually verify the static torque of the A0076-124S swivel vapor adapter by performing ARB test procedure TP-201.1B.
2. If the A0076-124S swivel vapor adapter fails to pass the static torque test, replace both o-rings with EMCO o-ring kit p/n 494301.

Leak Tightness Integrity Test:

1. Annually verify leak tightness integrity of the A0076-124S swivel vapor adapter by performing ARB test procedure TP-201.1D.
2. If the A0076-124S swivel vapor adapter fails to pass the leak tightness integrity test, replace both o-rings with EMCO o-ring kit p/n 494301 or flat gasket kit p/n 409628.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.1B - Complies with the allowable maximum: 108 in-lbs. average static torque and 360 degrees rotation.
2. Meets ARB Cam and Groove Specifications CID A-A-59326.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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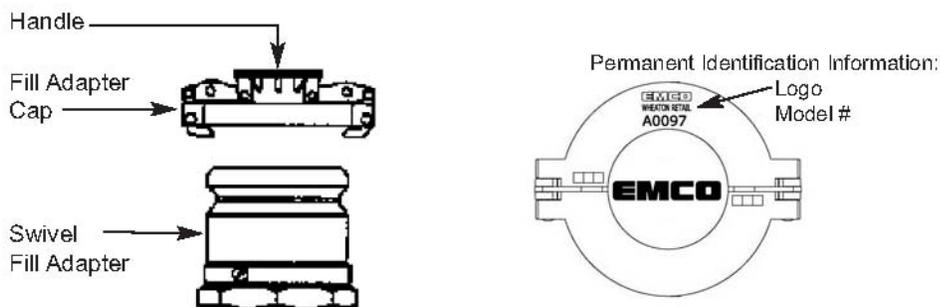
p/n 568397
Rev. K, 06/13

Figure G-1 A0097-005 Product Dust Cap Installation Instructions

EMCO[®]
WHEATON RETAIL

A0097-005
Fill Adapter Cap

INSTALLATION INSTRUCTIONS



1. Locate the fill adapter cap over the swivel fill adapter and lock into place by pressing down on the handle.

PREVENTIVE MAINTENANCE

1. Annually verify that the gasket seal is properly secured and free of tears. If the fill adapter cap fails to comply, replace with new.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. Meets ARB Cam and Groove Specifications.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

Emco Wheaton Retail Corp.
2300 Industrial Park Dr. • Wilson, NC 27893
252-243-0150 • 252-243-4759 (fax)

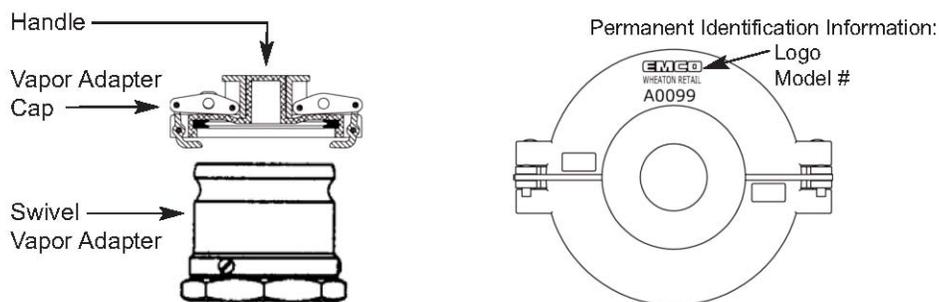
p/n 568391
Rev. J, 06/13

Figure G-2
A0099-002, -003 Vapor Dust Cap Installation Instructions



A0099-002,-003
Vapor Adapter Cap

INSTALLATION INSTRUCTIONS



1. Locate the vapor adapter cap over the swivel vapor adapter and lock into place by pressing down on the handle.

PREVENTIVE MAINTENANCE

1. Annually verify that the gasket seal is properly secured and free of tears. If the vapor adapter cap fails to comply, replace with new.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. Meets ARB Cam and Groove Specifications CID A-A-59326.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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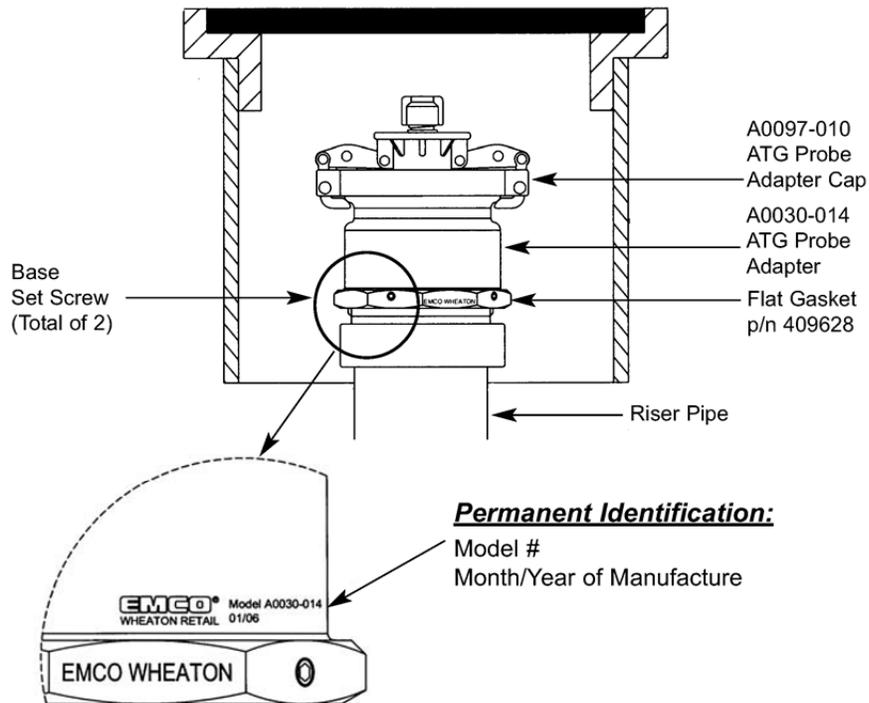
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Rev. J, 06/13

Figure H-1
A0030-014 Tank Gauge Port Adaptor Installation Instructions

EMCO®
WHEATON RETAIL

A0030-014
ATG Probe Adapter

INSTALLATION INSTRUCTIONS



Service Tools Required:

- Ratchet Wrench
- 15/16" Socket
- 5/32 " Allen Wrench
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- EMCO Adapter Wrench p/n A0081-001C

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure H-1 (continued)

1. Using a 5/32" allen wrench, remove both set screws from the base of the A0030-014 ATG probe adapter.
2. The top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and the base of the A0030-014 ATG probe adapter.
3. Before installing the A0030-014 ATG probe adapter verify the flat gasket is secured in place. Manually tighten the A0030-014 ATG probe adapter onto the riser pipe to avoid cross threading. Using the EMCO Adapter Wrench p/n A0081-001C, tighten and torque between 60 to 75 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the A0030-014 ATG probe adapter onto the riser pipe.

4. Re-install both set screws to the base of the A0030-014 ATG probe adapter and tighten.

PREVENTIVE MAINTENANCE

Leak Tightness Integrity Test:

1. Annually verify leak tightness integrity of the A0030-014 ATG probe adapter by performing ARB test procedure TP-201.3.
2. If the A0030-014 ATG probe adapter fails to pass the leak tightness integrity test, replace the EMCO flat gasket kit p/n 409628.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. Meets ARB Cam and Groove Specifications.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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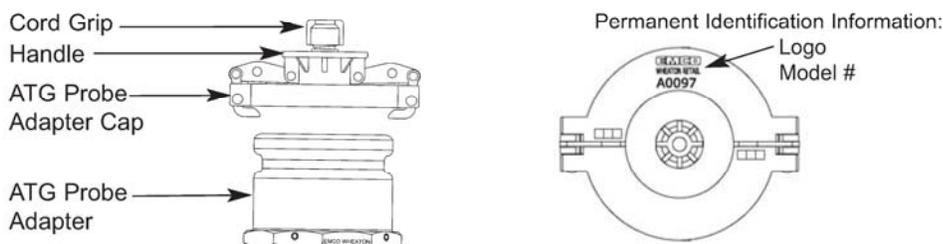
p/n 568599
Rev. F, 06/13

Figure H-2 A0097-010 Tank Gauge Port Cap Installation Instructions

EMCO®
WHEATON RETAIL

A0097-010
ATG Probe Adapter Cap

INSTALLATION INSTRUCTIONS



1. Two sizes of cord grip fittings are supplied. One size is .125"-.375" and the other size is .190"-.250". Choose the appropriate cord grip and screw into the top of the ATG probe adapter cap.
2. Feed the signal cable of the ATG probe through the bottom of the ATG probe adapter cap. Secure the signal cable by tightening the cord grip.
3. Locate the ATG probe adapter cap over the ATG probe adapter and lock into place by pressing down on the handle.

PREVENTIVE MAINTENANCE

1. Annually verify that the gasket seal is properly secured and free of tears. If the ATG probe adapter cap fails to comply, replace with new.

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. Meets ARB Cam and Groove Specifications.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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p/n 568598
Rev. J 06/13

Figure I-1
A0079 Extractor Assembly Installation Instructions

EMCO (C)
WHEATON RETAIL

A0079
Extractor Assembly

INSTALLATION INSTRUCTIONS

Permanent Identification:



Service Tools Required:

- Standard Chain Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

Figure I-1 (continued)

1. Using a non-hardening, gasoline resistant pipe thread seal compound fasten the A0079 extractor assembly to the tank bung collar or riser pipe.
2. Manually fasten the A0079 extractor assembly to the tank bung collar or riser pipe to avoid cross threading.
3. Use a standard chain wrench to tighten and torque the A0079 extractor assembly between 100 and 150 ft-lbs.

PREVENTIVE MAINTENANCE

1. None required

PERFORMANCE SPECIFICATIONS

This component was factory tested to, and met, the following specifications.

1. TP-201.3 - Complies with leakrate of 0.00 CFH @ 2.00 inches of water.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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p/n 569264
Rev. E, 06/13

Figure J-1
494301 Adaptor O-Ring Kit Installation Instructions

EMCO®
WHEATON RETAIL

494301
O-RING KIT

*Replacement O-ring Kit for A0030-124S Swivel Fill Adapter
and A0076-12S Swivel Vapor Adapter*

INSTALLATION INSTRUCTIONS

Service Tools Required:

- Flathead Screwdriver
- Ratchet Wrench
- 15/16" Socket
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- Torque Wrench w/ 20 in-lbs Setting
- Petroleum Jelly or Gun Grease
- EMCO Adapter Wrench p/n A0081-001C

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

A0030-124S Swivel Fill Adapter

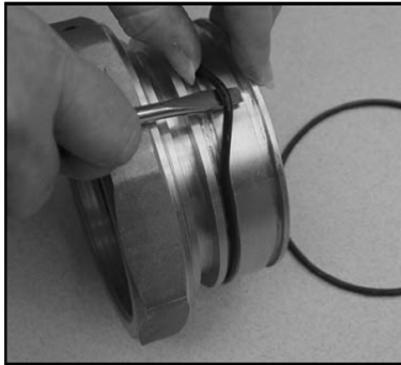


1. Using a flathead screwdriver, remove all three stainless steel screws for the base of the swivel adapter.



2. Separate the fill top from the base of the swivel adapter by slowly rotating and pulling upward.

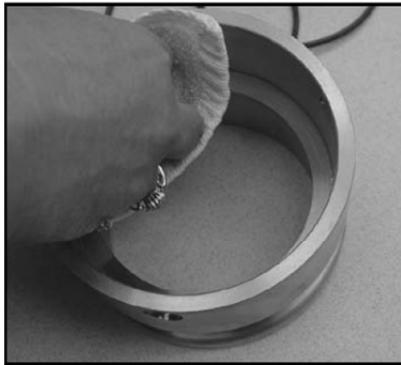
Figure J-1 (Continued)



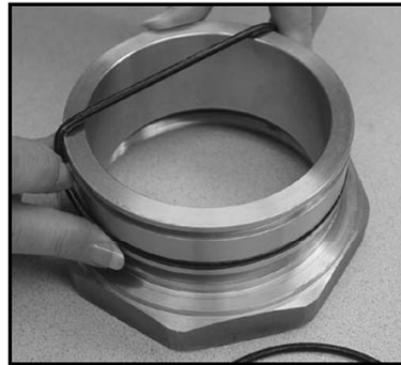
3. Remove both of the existing o-rings from the base of the swivel adapter.



4. Clean and remove all existing grease, dirt, debris, etc. from the outside of the base.



5. Clean and remove all existing grease, dirt, debris, etc. from the inside of the fill top.



6. Carefully reinstall a new set of o-rings onto the base and lubricate with petroleum jelly or gun grease.



7. Reassemble the swivel adapter by placing the fill top over the base. Rotate and push downward slowly until both pieces bottom out.



8. Re-install all three stainless steel screws to the base of the swivel adapter.

Figure J-1 (Continued)

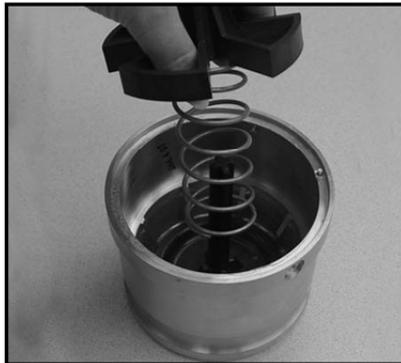
A0076-124S Swivel Vapor Adapter



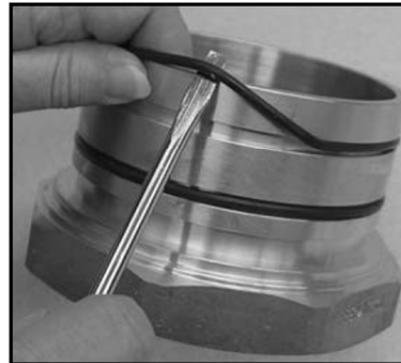
1. Using a flathead screwdriver, remove all three stainless steel screws for the base of the swivel adapter.



2. Separate the vapor top from the base of the swivel adapter by slowly rotating and pulling upward.



3. Remove the poppet guide and poppet spring from within the vapor top of the swivel adapter.



4. Remove both of the existing O-rings from the base of the swivel adapter.

Figure J-1 (Continued)



5. Clean and remove all existing grease, dirt, debris, etc. from the inside of the fill top and the outside of the base.



6. Carefully re-install a new set of o-rings onto the base and lubricate with petroleum jelly or gun grease.



7. Re-install the poppet guide and poppet spring onto the stem of the vapor poppet which is located inside the vapor top of the swivel adapter.



8. Reassemble by placing the vapor base over the vapor top. Re-install all three stainless steel screws to the base of the swivel adapter.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

Figure J-2
409628 Adaptor Gasket Kit Installation Instructions

EMCO®
WHEATON RETAIL

409628
Flat Gasket Kit

INSTALLATION INSTRUCTIONS

***Replacement Flat Gasket for A0030-124S Swivel Fill Adapter,
A0076-12S Swivel Vapor Adapter, and A0030-014 ATG Probe***

Service Tools Required:

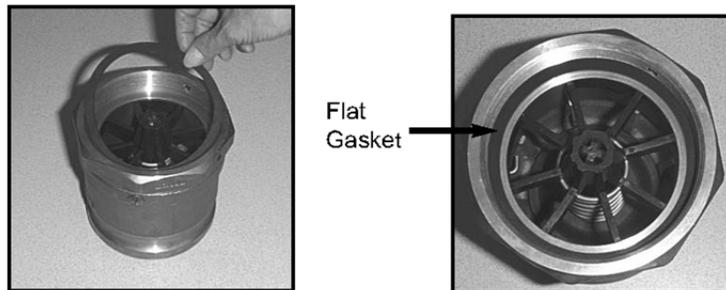
- Ratchet Wrench
- 15/16" Socket
- 5/32 " Allen Wrench
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- EMCO Adapter Wrench p/n A0081-001C

CAUTION:

1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

1. Begin by removing the lid from the A1004EVR spill containment and vapor adapter cap. Using a 5/32" allen wrench, remove both set screws from the base of the A0076-124S swivel vapor adapter.

2. Use the EMCO Adapter Wrench p/n A0081-001C to unscrew the A0076-124S swivel vapor adapter from the top of the containment nipple.



3. Remove the existing flat gasket and replace with new.

Figure J-2 (Continued)

4. Before installing the A0076-124S swivel vapor adapter verify the flat gasket is secured in place. Manually tighten the A0076-124S swivel vapor adapter onto the containment nipple to avoid cross threading. Using the EMCO Adapter Wrench p/n A0081-001C, tighten and torque between 60 to 75 ft-lbs.

IMPORTANT: Do not use pipe thread sealant compound when installing the A0076-124S swivel vapor adapter onto the containment nipple

5. Re-install both set screws to the base of the A0076-124S swivel vapor adapter and tighten.

IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

Figure K-1 EMCO Wheaton Retail Installation and Maintenance Tools

EMCO®
WHEATON RETAIL

EVR Phase I System Installation and Maintenance Tools



A0081-001C Adapter Wrench

Designed to install and remove Emco Wheaton Fill and Vapor Swivel Adapters. Octagonal bottom ensures tight positive seating of the fitting. 15/16" hex permits socket/torque wrench tightening.



494120 Riser Seal Wrench

Used to install and remove the center insert of the Emco Wheaton Riser Seal.



493820 Drain Wrench

Used to install and remove Emco Wheaton A1004 Spill Containment Drain Valve.



494241 Spill Containment Wrench

Used to install and remove Emco Wheaton A1004 Spill Containment.



494240 Swivel Adapter Torque Wrench

Used to verify the static torque of the swivel adapter in accordance to CARB test procedure TP.201.1B.



566675 Drill Fixture

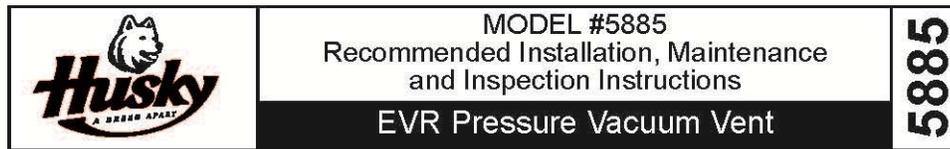
Used to accurately drill the rivet holes on the top drop tube for the A1100 collar assembly.

Emco Wheaton Retail Corporation

04/04

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Figure L-1 Husky Model 5885 Pressure/Vacuum Vent Valve Installation Instructions



IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS IN A READILY ACCESSIBLE LOCATION.

WARNING Designed for use at motor fuel dispensing facilities only.

INSTALLATION INSTRUCTIONS

NOTE: Always adhere to installation / usage instructions and warnings. Improper use may result in injury, damage or hazardous spill.

1. Remove the vent from the carton and visually inspect for any shipping damage.
2. Apply fuel resistant pipe sealant to the threads on the 2" / 50.8 mm vent stack.
3. Screw the Pressure Vacuum (P/V) vent onto the vent stack and tighten firmly, approximately 20 - 50 lbf•ft / 27.1 - 67.8 N•m, but do not overtighten.

CAUTION: DO NOT ALTER OR COVER THE P/V VENT

TESTING / MAINTENANCE / INSPECTION

Testing Criteria Per TP201.1E and Exhibit 3 of applicable Phase 1 E.O.

Leak rate: Pressure = .05 CFH @ 2" wc, Vacuum = .21 CFH @ -4" wc.
Cracking Pressure = 2 1/2" to 6" wc, Vacuum = -6" to -10" wc.



Annually inspect the P/V vent valve for foreign objects:

1. Remove the screws that hold on the top cover. Do not remove the screens.
2. Remove any debris from inside the lower cover.
3. Check the drain holes in the lower cover.
4. Reinstall the top cover.
5. Tighten the screws firmly.

- All drive aways, maintenance and inspection activities must be logged using the serial number of the individual product.
- Apply city, state, or federal testing regulations as appropriate.

ANY TEST / INSPECTION FAILURE REQUIRES IMMEDIATE EQUIPMENT REPLACEMENT OR REMOVAL FROM SERVICE.

MADE IN THE USA

Figure L-1 (Continued)

⚠ ALWAYS ADHERE TO INSTALLATION / USAGE INSTRUCTIONS AND WARNINGS. ⚠
 Improper use may result in injury, damage, or hazardous spill.

⚠ GENERAL WARNINGS / INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS:

<ul style="list-style-type: none"> • Use of equipment is at individuals' own risk. • Always abide and adhere to city, state, and federal regulations regarding use and installation of dispensing equipment. • Always follow the dispenser manufacturer's instructions. • Always turn off all power to dispenser during maintenance and inspection activities. • Always close the shear valves during maintenance and inspection activities. • Always relieve pressure from system prior to performing maintenance activities. • Always check continuity after installation using a megohmmeter (Refer to PEI RP 400 for details). • Always replace or remove from service damaged or leaking dispensing equipment immediately. • Always report leaks / spills / accidents to appropriate authorities. • Always wear appropriate safety equipment during maintenance activities. • Always have appropriate fire extinguishing equipment within 5 ft / 1.5 m of dispensers. • Always use pipe sealant approved for gasoline service. 	<ul style="list-style-type: none"> • Always place containers on the ground before filling. • Always discharge static electricity before using or servicing equipment by touching a metal part of the dispenser before and after fueling vehicle. • Never smoke within 20 ft / 6.1 m of dispensers. • Never keep in service past recommended life. • Never leave the nozzle unattended while dispensing fuel. • Never use sparking or flaming devices within 20 ft / 6.1 m of dispensers. • Never use power tools near dispensers or to aid in the installation process. • Never use cell phone within 20 ft / 6.1 m of dispensers. • Never reenter car when fueling vehicle. • Never allow gasoline to touch eyes or skin. • Never use at flow rates in excess of regulatory guidelines. • Never use at flow rates less than 5 gpm / 18.9 Lpm. • Never dispense flammable material into unapproved containers. • Never dispense fuel without a valid driver's license.
---	--

CAUTION: DO NOT ALTER OR COVER THE P/V VENT.

DO NOT OVERTIGHTEN.

IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS IN A READILY ACCESSIBLE LOCATION.

WARRANTY

VAPOR PRODUCTS – Husky Corporation will, at its option, repair, replace, or credit the purchase price of any Husky manufactured product which proves upon examination by Husky, to be defective in material and/or workmanship for a period of one (1) year of installation or fifteen (15) months from the manufacture date of shipment by Husky, whichever occurs first. The warranty period on repaired or replacement vapor recovery products is only for the remainder of the warranty period of the defective product.

EVR PRODUCTS – With respect to EVR products installed in California, for a period of one (1) year from the date of installation, Husky warrants that the product will be free from defects in materials and workmanship (if the installation date is in question or indeterminable, Husky will warrant the product for 12 months from sale by Husky). Husky confirms that the warranty is transferable to a subsequent purchaser within the warranty period. However, the warranty does not follow the product from its initial installation location to succeeding locations. Husky confirms these products are warranted to meet the performance standards and specifications to which it was certified by CARB for the duration of the warranty. EVR products must be installed per CARB Executive Order and must follow the Husky Installation Instructions or the warranty is void. The warranty tag included with the EVR product must be provided to the end user at installation. A completed warranty tag and installation documentation is required to be returned with the product to be eligible for warranty consideration.

CONVENTIONAL PRODUCTS – Husky Corporation will, at its option, repair, replace, or credit the purchase price of any Husky manufactured product which proves upon examination by Husky, to be defective in material and/or workmanship for a period of one (1) year from the manufacture date of shipment by Husky.

Buyer must return the products to Husky, transportation charges prepaid. This Warranty excludes the replaceable bellows, bellows spring assembly, spout assembly and scuff guard, unless (i) damage is obvious when the product is removed from shipping carton and (ii) the defective product is returned to Husky prior to use. This warranty does not apply to equipment or parts which have been installed improperly, damaged by misuse, improper operation or maintenance, or which are altered or repaired in any way.

The warranty provisions contained herein apply only to original purchasers who use the equipment for commercial or industrial purposes. There are no other warranties of merchantability, fitness for a particular purpose, or otherwise, and any other such warranties are hereby specifically disclaimed.

Husky assumes no liability for labor charges or other costs incurred by Buyer incidental to the service, adjustment, repair, return, removal or replacement of products. Husky assumes no liability for any incidental, consequential, or other damages under any warranty, express or implied, and all such liability is hereby expressly excluded.

Husky reserves the right to change or improve the design of any Husky fuel dispensing equipment without assuming any obligations to modify any fuel dispensing equipment previously manufactured.

Figure L-1 (Continued)

3" to 2" ADAPTOR INSTALLATION INSTRUCTIONS

Part #5041

1. Visually inspect the o-ring and threads for chips, dirt & debris.
2. Apply fuel resistant pipe sealant to the 3 in / 76.2 mm NPTF threads of the vent pipe.
3. Screw the P/V vent adaptor onto the vent stack and tighten firmly, approximately 20 - 50 lbf•ft / 27.1 - 67.8 N•m, but do not overtighten.
4. Install the P/V vent according to manufacturer's installation instructions.

TEST ADAPTOR INSTALLATION INSTRUCTIONS

Part #5426

NOTE: This adaptor is designed to fit on the inlet of the P/V Vent to allow for field and lab tests.

1. Screw P/V Vent adaptor into the P/V Vent valve until hand tight. Make sure the seal is compressed.
2. Place the P/V Vent valve and adaptor on a flat surface.
3. Attach a 3/16" / 4.7 mm hose (Tygon fuel tubing) from test apparatus to hose barb on the side of the adaptor.
4. After testing, remove hose from barb and remove adaptor from vent.

TROUBLESHOOTING GUIDE

- | | |
|--------------------------------|--|
| Pressure Decay Test Failure... | <ol style="list-style-type: none"> 1. Test vent to CARB TP201.1E. 2. Replace vent. |
|--------------------------------|--|

For stations with ISD monitoring

- | | |
|---------------|--|
| Vapor leak... | <ol style="list-style-type: none"> 1. Verify other equipment is not the cause. 2. Test vent to CARB TP201.1E 3. Replace vent. |
|---------------|--|

- | | |
|---|---|
| Exceeds allowable system cracking pressure... | <ol style="list-style-type: none"> 1. Replace vent |
|---|---|

GENERAL TECHNICAL DATA

Fuel Type	Test and warranty for gasoline and diesel fuel
Body	Sand cast aluminum
Screens	Stainless Steel 40 mesh
Seal	Nitrile Foam
Covers	Aluminum
Weight	1.2 lbs / 0.5 kg
Threads	2 in / 50.8 mm NPTF
Case Quantity	20

Listings



CARB EVR Executive Order Numbers: VR-101, VR-102, VR-103, VR-104, VR-105, VR-401-B, VR-402-A, VR-301, VR-302

Figure L-2
FFS PV-Zero Pressure/Vacuum Vent Valve Installation Instructions



PV-ZERO™
Liquid-Filled Pressure/Vacuum Vent Valve
FFS P/N 407215901

**Installation, Testing
and Maintenance Manual**

Figure L-2 (Continued)

Warning  This symbol identifies a warning. A warning sign will appear in the text of this document when a potentially hazardous situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of severe bodily harm or even death.

Caution  This is a caution symbol. A caution sign will appear in the text of this document when a potentially hazardous environmental situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous environmental situation may involve the leakage of fuel from equipment that could severely harm the environment.

Danger  This symbol identifies an electrical danger. An electrical danger sign will appear in the text of this document when a potentially hazardous situation involving large amounts of electricity may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of electrocution, severe bodily harm, or even death.

Warning  **Follow all federal, state and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage and/or environmental contamination.**

Warning  **Always secure the work area from moving vehicles. To help eliminate unsafe conditions, secure the area by using a service truck to block access to the work environment, or by using any other reasonable means available to ensure the safety of service personnel.**

Warning  **The PV-ZERO is used with tanks containing gasoline or other flammable substances, you may create an explosion hazard if you do not follow the requirements in this manual carefully.**

Figure L-2 (Continued)

Description of the FFS PV-ZERO Liquid Filled P/V Vent Valve

The PV-ZERO operates using a similar concept to a common P-Trap used in plumbing drain applications to create a liquid air seal. The liquid seals the UST ullage vapors from the atmosphere while still maintaining the proper differential pressure set-points. After the differential pressure has been exceeded, air or vapor bubbles through the liquid media until the pressure returns to the operational pressure settings. Figures 1-3 illustrate the operation of the PV-ZERO.

The PV-ZERO has no moving parts and the only maintenance required is periodic inspection of the liquid.

Because the PV-ZERO does not use seals or gaskets to seal off the UST ullage from atmosphere, the unit will not allow vapor or air to pass through at pressure less than the cracking set-point. As long as the valve is filled with 1.6 liters (54 ozs) of PV-ZERO fluid, the stainless steel valve housing is not damaged, and the pipe fittings are correctly installed, the unit should be leak free.

The liquid used for the PV-ZERO unit is silicone-based and has a very low vapor pressure and low toxicity.

The PV-ZERO can be mounted either at the top of the vent rack or in-line (mid-mount at working level). To avoid the risk of climbing a ladder and to maximize the simplicity of inspection and service, the preferred installation of the PV-ZERO is to be mounted in-line. It can be mounted on a single riser pipe or many riser pipes manifolded to a single line. The PV-ZERO is designed to mount on 3" riser piping, but can also be installed on 2" riser piping.

See drawings on pages 9-11 for mounting options.

*** Refer to CARB EVR documents regarding equipment rules for manifold systems.***

A support frame should be used for mounting all vent riser piping and must be used to stabilize the piping above the PV-ZERO if it is to be mounted in-line.

If the PV-ZERO is to be top mounted, the support frame must stabilize the piping below the unit (and the unit itself). Check local agencies for support frame requirements and consult a licensed structural engineer if in doubt of the structural integrity of the vent rack support system.

Note: Do not mount the PV-ZERO unit on a free standing vent piping system without a support frame!

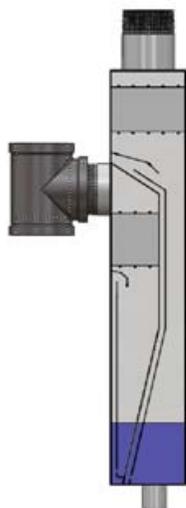


Figure 1: No Differential

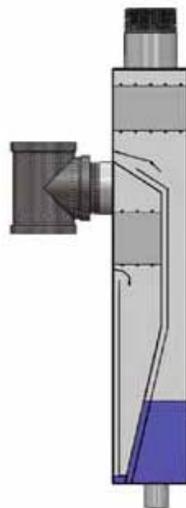


Figure 2: Positive Cracking

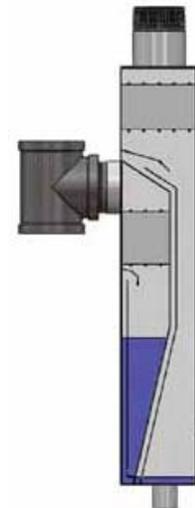


Figure 3: Negative Cracking

Figure L-2 (Continued)

Installation

Note: Use a thread sealant that is approved for gasoline and gasoline-ethanol blends such as Gasoila Soft Set or Jomar Heavy Weight for all threaded pipe fittings and plugs. The 3" side tee and 1" bottom drain plug are factory installed. Tighten all fittings per recognized industry installation standards.

1. Thread the bottom of the 3" side tee onto the vent riser piping. The PV-ZERO may be mounted mid-line or top mounted on a single riser or a manifolded system (see drawings, pages 9 & 10). For 2" riser piping systems, use a 3x2" NPT reducing coupling with a 3" pipe nipple at least 6" long (see drawing, page 11).
2. Make sure the PV-ZERO unit is plumb within $\pm 3^\circ$ and not set at an angle. Failure to set in the vertical position may cause improper operation.
3. For mid-line mounting installations, install and secure the rest of the 3" discharge piping on the vent rack (refer to NFPA 30 for specific fuel system vent piping requirements). **Be sure to use a pipe wrench to counteract the tightening force to the valve!**
4. Fill the PV-ZERO unit through the side port with 1.6 liters (54 oz.) of PV-ZERO fluid (FFS p/n 407220001) provided with the unit. It may also be filled through the discharge outlet fitting (top). **Do not pour into the 3" side tee fitting!**

Note: To fill the fluid in the PV-ZERO, the UST (Underground Storage Tank) must be open to the atmosphere OR the inflatable test plug needs to be installed to reach the correct level. If the tank is under pressure or vacuum, the correct fill level cannot be obtained.

5. Install the side plug.
6. Perform the **Field Testing Procedure**.
7. Install the 3" pipe plug on top of the tee.
8. Attach the 3" upward-venting rain cap provided. Attach to the top of the vent pipe (mid-mount installation) or directly to the top of the PV-ZERO (top mount) **Keep the rain cap installed to minimize water intrusion, and to ensure proper operation.**

The PV-ZERO may be painted, however, do not paint over or cover the nameplate placards decals.

Field Testing

Note: Compliance testing of the PV-ZERO, if required by the local air quality district, shall be conducted in accordance with California Air Resources Board (CARB) test procedure TP-201.1E and Exhibit 2 of the Executive Order. This test shall be conducted using the PV-ZERO test cap assembly (FFS p/n 407225901) with the valve in its installed condition. The PV-ZERO can be tested without removing the unit from the vent rack.

There are (3) ports on the PV-ZERO test cap assembly (see page 8):

- 1 – Schrader valve connection for the inflatable plug
 - 1 – 1/4" hose barb (for pressure/vacuum supply)
 - 1 – 1/8" hose barb (for manometer)
1. Remove 3" pipe plug from top of tee (if necessary).
 2. Install the test cap assembly through the top of the 3" tee, allowing the inflatable plug to extend into the vent riser pipe - tighten fully.
 3. Inflate the inflatable plug to 35 PSI.
 4. Test per CARB TP-201.1E
 5. Deflate the inflatable plug.
 6. Remove test cap assembly from 3" tee.

Figure L-2 (Continued)

Recommended Maintenance Intervals

- **Every year:** Visually inspect the housing, pipe, fittings, and rain cap for obvious signs of damage, missing parts, or fluid leaks.
- **Every year:** Visually inspect the rain cap, from ground level, for signs of bird nests or insect activity.
- **Every year:** Drain and inspect the fill fluid per the **Fluid Inspection Procedure**.

Fluid Handling

The PV-ZERO is filled with a silicone based fluid, p/n 407220001 (contact FFS for MSDS sheet). The PV-ZERO fill fluid is resistant to UV exposure, does not support bioactivity and is resistant to oxidation.

Since the PV-ZERO is exposed to tank ullage vapors, used PV-ZERO fill fluid may contain trace amounts of ethanol and gasoline. The maintenance technician servicing the PV-ZERO should wear appropriate eye protection and nitrile gloves when inspecting or servicing the fill fluid. Check with local and state regulations regarding handling, transportation, recycling and disposal of silicone based fluids.

Fluid Inspection Procedure

1. Remove the 3" NPT plug from the top of the side tee.
2. Remove the 3/8" NPT side plug.
3. Remove the 1" NPT bottom plug and drain the fluid into a clean, transparent container.
4. Visually inspect the fill fluid for debris or water contamination. Since the specific gravity of the fluid is slightly less than water, any water in the fluid will settle to the bottom. The fluid can be reused indefinitely as long as it is free of sediment and water.

Note: Clean fluid can be refilled into the valve and topped off with new fluid, or it can be completely replaced with new fluid.

5. Reinstall the 1" NPT bottom plug.
6. Refill the PV-ZERO valve with fluid through the side-port until it spills out of the port. This is the correct fill level of 1.6 liters (54 oz.).
7. Reinstall the 3/8" NPT side plug.
8. Perform the **Field Testing Procedure**
9. Reinstall the 3" NPT plug in the top of the side tee.

Only use the approved PV-ZERO fluid (P/N 407220001). Substitution of other fluids voids the warranty and can cause vapor leaks!

PV-ZERO Specifications

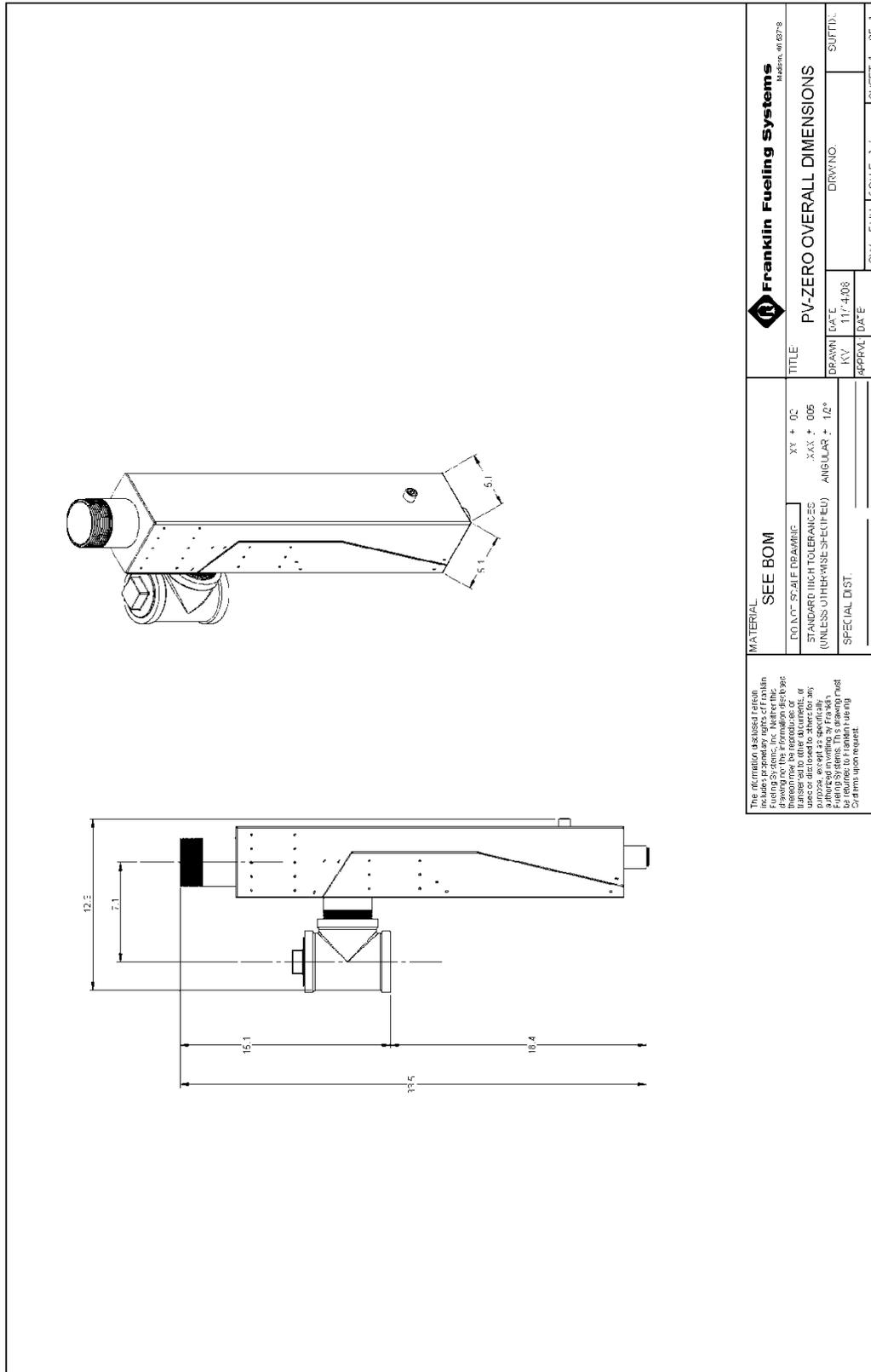
Height:	33.5"
Width:	5.0"
Length:	12.3"
Dry weight:	20#
Inlet piping connection	3" NPT
Discharge piping connection	3" NPT
Fill port	3/8" NPT
Drain port	1" NPT
Construction material	304 stainless steel
Fuel Compatibility	Gas & E85
Pressure leak rate	<< 0.05CFH at +2.0 W.C.
Vacuum leak rate	<< 0.21 CFH at -4.0 W.C.
Pressure drop at 60 cfm flow rate with tank positive pressure	14" W.C.
Pressure drop at 90 cfm flow rate with tank positive pressure	28" W.C.
Minimum operating temperature	-40° F (-40° C)
Maximum operating temperature	130° F (54° C)
Maximum test pressure	5 PSI
Maximum mounting angle deviation from vertical	3°

Drawing List:

Page	Drawing Description
6	PV-ZERO Operating Assembly
7	PV-ZERO Overall Dimensions
8	Test Cap Description
9	3" Manifolder Mid Mount
10	3" Mounting Assembly
11	2" Mounting Assembly

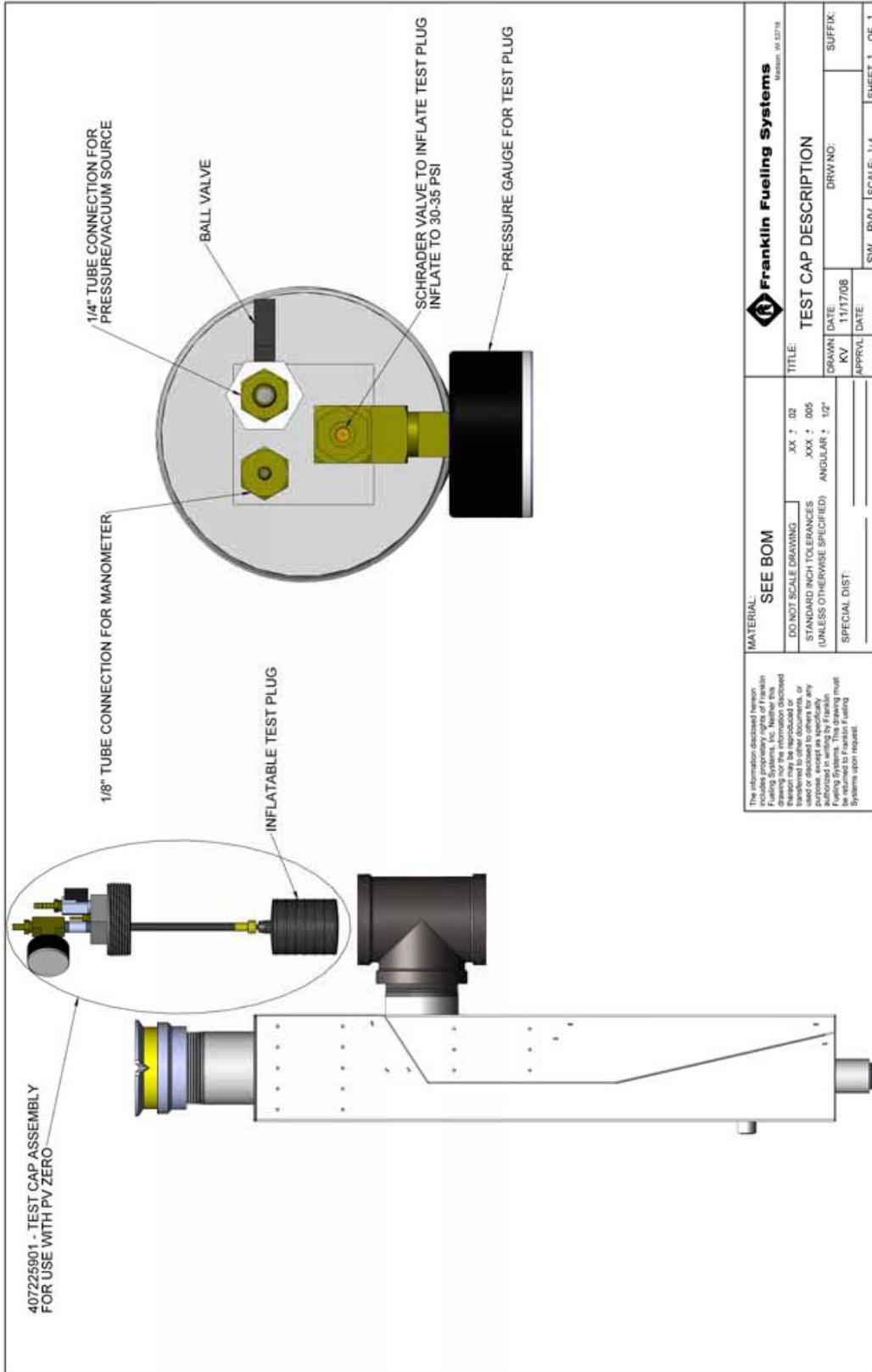
The drawings are on the following pages.

Figure L-2 (Continued)



TITLE: PV-ZERO OVERALL DIMENSIONS	
DRAWN BY:	DATE:
APPROVAL DATE:	DRAWING NO.:
SPECIAL DIST.:	SUFTID.:
SW/ FW/ SCALE: 1/8"	SHEET 1 OF 1
MATERIAL: SEE BOM	
DIMENSIONS:	TOLERANCES:
STANDARD HIGH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	ANGULAR:
.XX ± .02	.XX ± .005
.XX ± .005	ANGULAR ± 1.0°

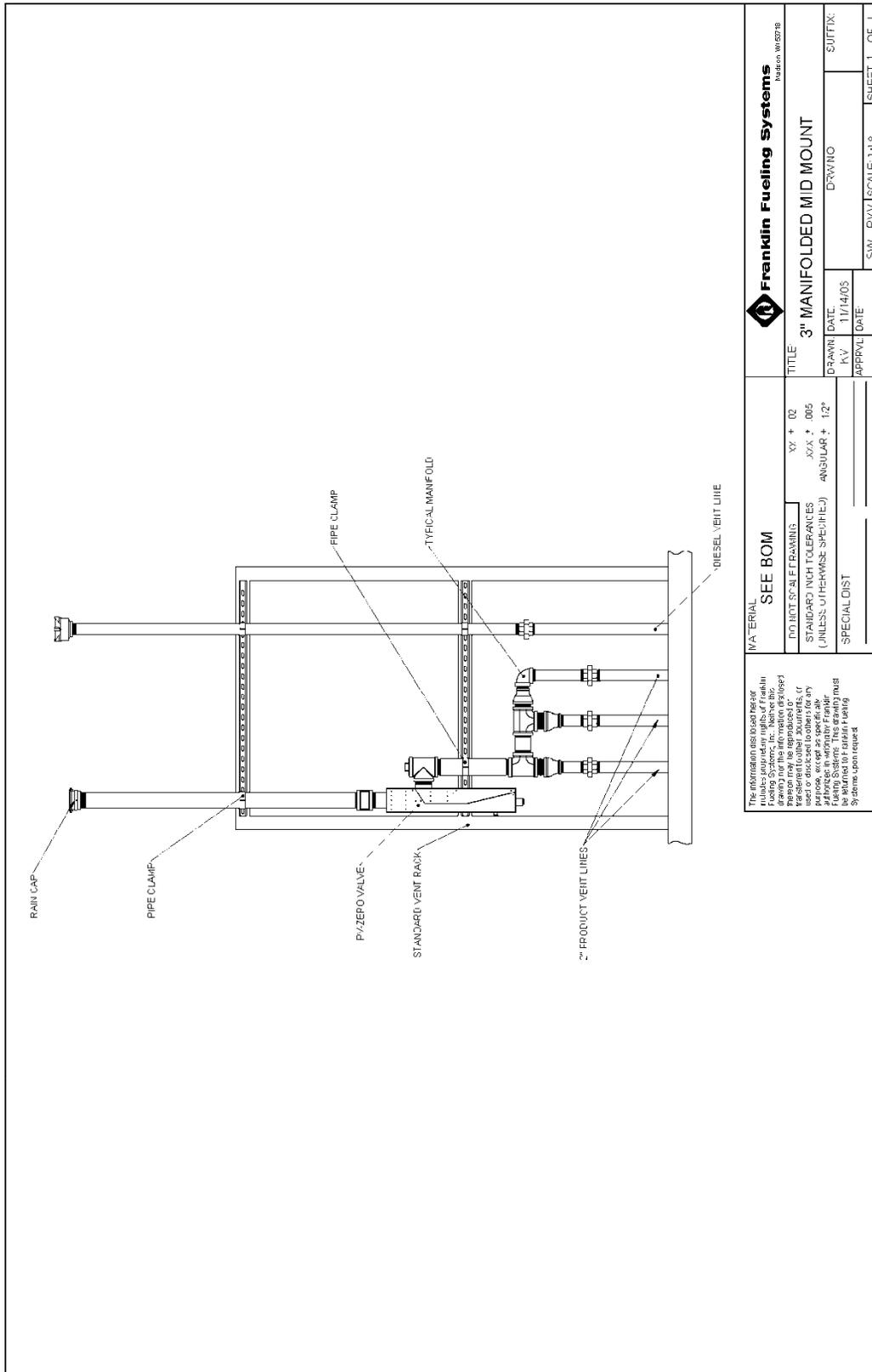
Figure L-2 (Continued)



MATERIAL: SEE BOM		TITLE: TEST CAP DESCRIPTION	
DO NOT SCALE DRAWING .XX : 02 STANDARD INCH TOLERANCES .XXX : .005 (UNLESS OTHERWISE SPECIFIED) ANGULAR : 1/2°		DRAWN DATE: 11/17/08 DRW NO:	
SPECIAL DIST:		SUFFIX:	
APPROVAL DATE:		SW PVV SCALE: 1:4	
SHEET 1 OF 1		SHEET 1 OF 1	

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Figure L-2 (Continued)



MATERIAL SEE BOM DO NOT SCALE DRAWING STANDARD TOLERANCES (UNLESS OTHERWISE SPECIFIED) SPECIALIST	XX + 02 XX + 005 ANGULAR + 1/2°	Franklin Fueling Systems Madison, WI 53718
	TITLE 3" MANIFOLDED MID MOUNT	DRAWN DATE K.V. 11/14/05
	APPROVAL DATE _____	SCALE 1:1.8 SHEET 1 OF 1
	SPECIALIST _____	SUFFIX _____

Figure L-2 (Continued)

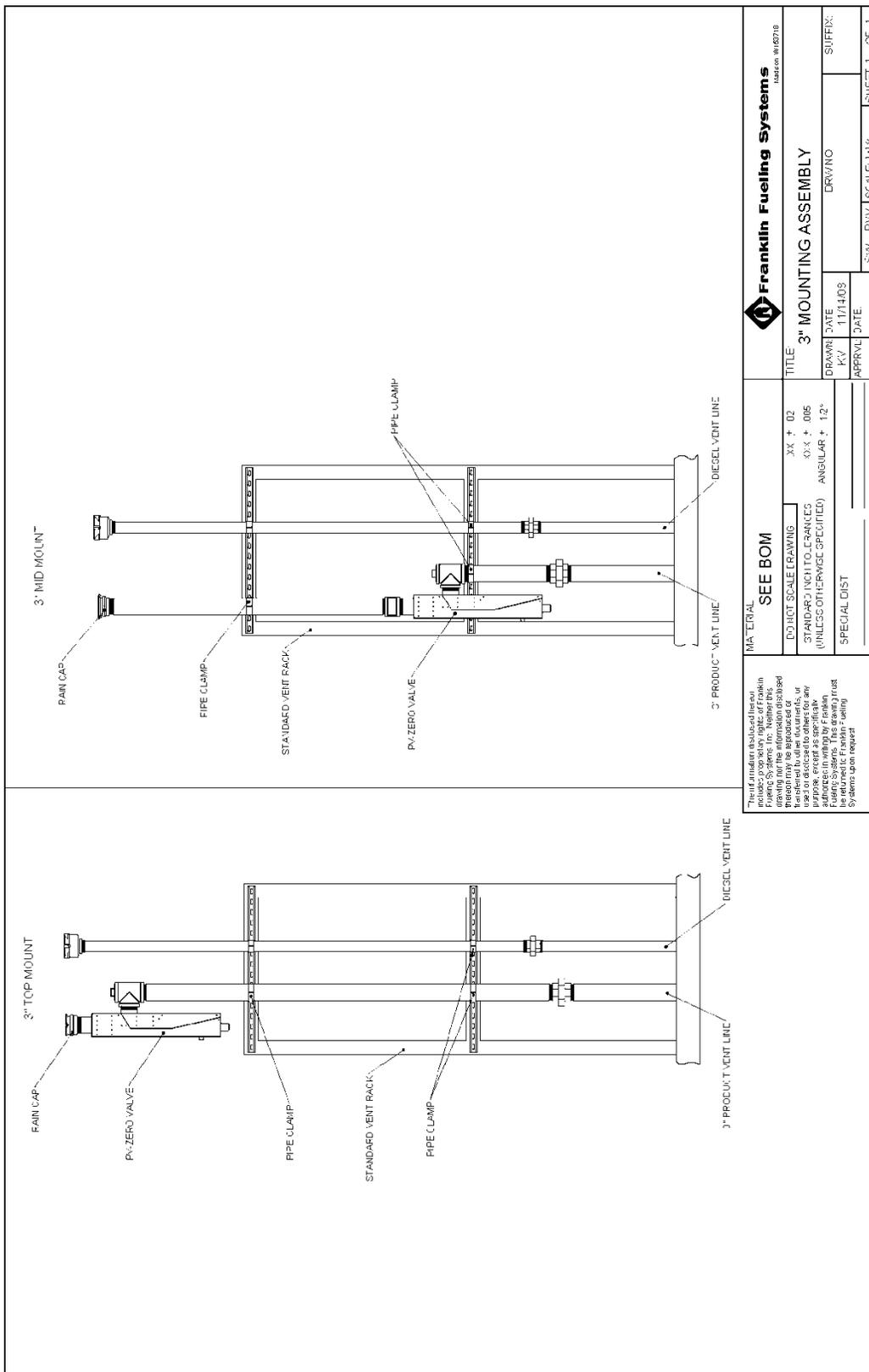
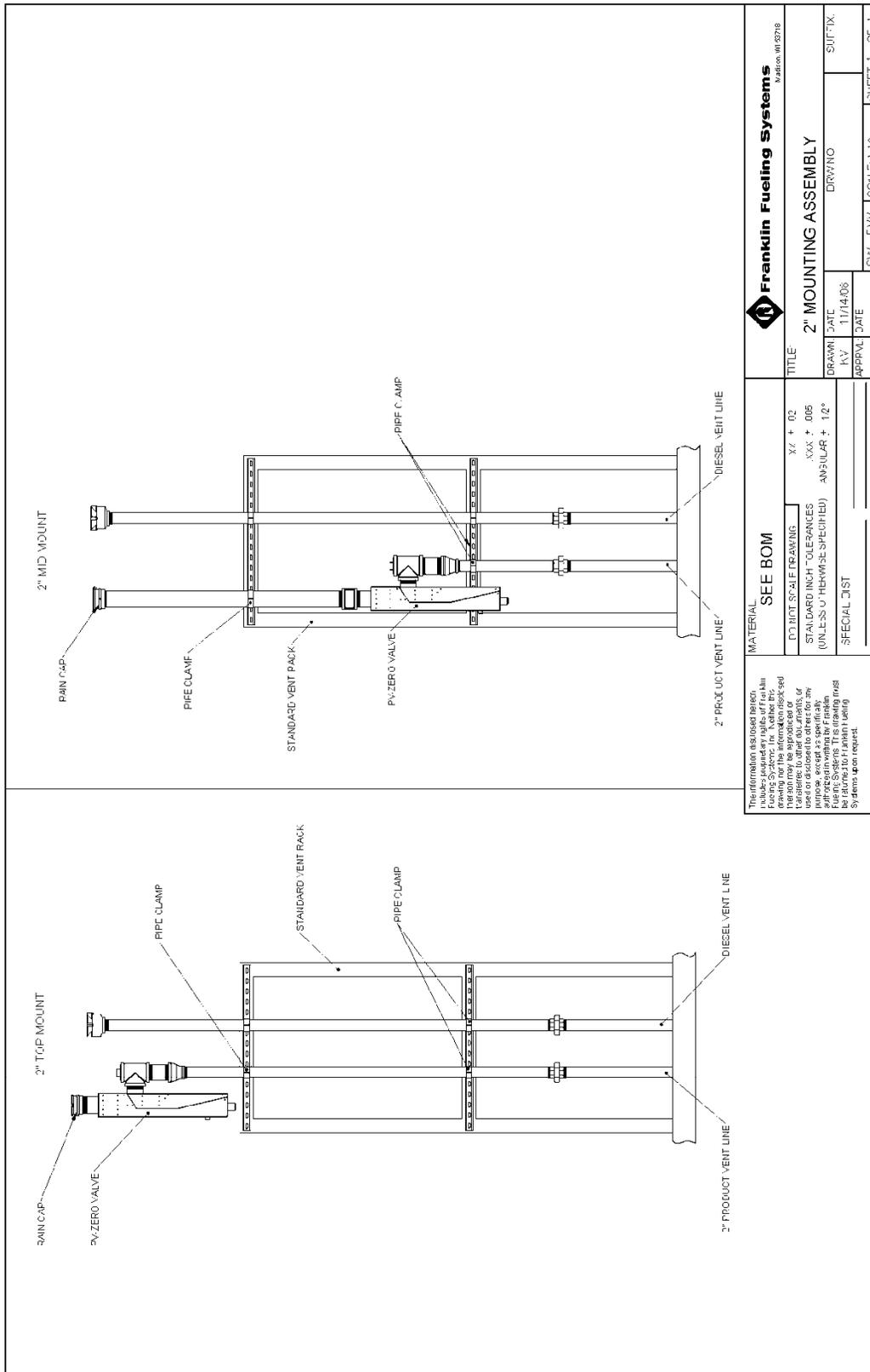


Figure L-2 (Continued)



Franklin Fueling Systems Waukegan, WI 52716	
TITLE: 2" MOUNTING ASSEMBLY	
DRAWN: DRW/NO	SUFFIX:
DATE: 11/14/05	APPROVAL DATE:
SCALE: 1:18	SHEET 1 OF 1
MATERIAL: SEE BOM	
DD UNIT SCALE PERMITS: X/2 ± .02	STANDARD INCH TOLERANCES (UNLESS OTHERWISE SPECIFIED): ANGULAR ± 1.2°
SPECIAL LIST:	

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Figure M-1

OPW 634LPC (product) and 1711LPC (vapor) Dust Caps



Installation and Maintenance Instructions OPW 634LPC and 1711LPC Dust Caps

IMPORTANT: Please read these warnings and assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: Check to make sure the product is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.

Notice: OPW products must be used in compliance with applicable federal, state, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

OPW Standard Product Warranty Tag: Notice: FlexWorks by OPW, Inc., VAPORSAVER™ and all other OPW products must be used in compliance with all applicable federal, state, provincial and local laws, rules and regulations. Product selection is the sole responsibility of the customer and/or its agents and must be based on physical specifications and limitations, compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials and specifications are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

OPW warrants solely to its customer (the initial purchaser and any subsequent purchasers within the warranty period) that the following products sold by OPW will be free from defects in materials and workmanship under normal use and conditions for the periods indicated:

PRODUCT	WARRANTY PERIOD
FlexWorks Primary Pipe	10 years from date of manufacture
All Products and replacement parts installed in the State of California Certified to California CP-201 and/or CP-206 Standards*	1 year from date of installation (proof of purchase from certified contractors/technicians required) OPW warrants ongoing compliance with the standards and specifications for the duration of the warranty period required by the State of California; this limited warranty is under the condition the equipment was installed and maintained by trained and certified contractors/technicians unless noted in Installation Manual.
All other Products and replacement parts	1 year from date of manufacture**
*Products certified to California CP-201 and/or CP-206 Standards have been factory tested and met all applicable performance standards and specifications and will have an OPW registration card enclosed/attached to the product.	

OPW's exclusive obligation under this limited warranty is, at its option, to repair, replace or issue credit (in an amount not to exceed the list price for the product) for future orders for any product that may prove defective within the applicable warranty period. (Parts repaired or replaced under warranty are subject to prorated warranty coverage for remainder of the original warranty period). Complete and proper warranty claim documentation and proof of purchase required. All warranty claims must be made in writing and delivered during the applicable warranty period to OPW at OPW 9393 Princeton-Glendale Road Hamilton, Ohio, USA 45011, Attention: Customer Service Manager. No products may be returned to OPW without its prior written authority.

This limited warranty shall not apply to any FlexWorks or VAPORSAVER™ product unless it is installed by an OPW attested installer and all required site and warranty registration forms are completed and received by OPW within 60 days of installation. This limited warranty also shall not apply to any FlexWorks, VAPORSAVER™ or other OPW product: unless all piping connections are installed with a nationally-recognized or state-approved leak detection device in each tank and dispenser sump (which are not for storage and from which all discharge hydrocarbons must be removed, and the systems completely cleaned, within 24 hours); unless testable sumps

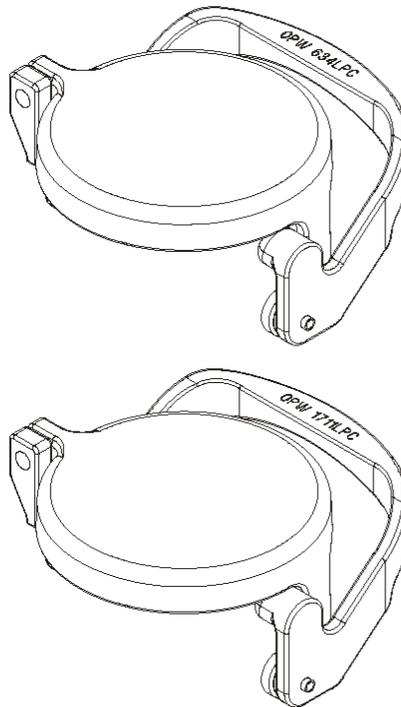
Figure M-1 (Con't)

utilize FlexWorks pipe and access fittings; unless a sump inspection log or an EPA recommended/required checklist is maintained and the results are furnished to OPW upon request; and unless OPW is notified within 24 hours of any known or suspected product failure and is provided with unrestricted access to the product and the site. This limited warranty also shall not apply to any product which has been altered in any way, which has been repaired by anyone other than a service representative authorized by OPW, or when failure or defect is due to: improper installation or maintenance (including, without limitation, failure to follow FlexWorks Quick Reference Manual Installation Guide and all product warning labels); abuse or misuse; violation of health or safety requirements; use of another manufacturer's, or otherwise unauthorized, substances or components; soil or other surface or subsurface conditions; or fire, flood, storm, lightning, earthquake, accident or any other conditions, events or circumstances beyond OPW's control.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED.

OPW shall have no other liability whatsoever, whether based on breach of contract, negligence, gross negligence, strict liability or any other claim, including, without limitation, for special, incidental, consequential or exemplary damages or for the cost of labor, freight, excavation, clean-up, downtime, removal, reinstallation, loss of profit, or any other cost or charges. No person or entity is authorized to assume on behalf of OPW any liability beyond this limited warranty. This limited warranty is not assignable.

**** Date of manufacture on this product is located on the underside of the cap.**



PRODUCT IDENTIFICATION:

Manufacture: "OPW"
Model: "6344LPC" or "1711LPC"
Date Manufactured (located on underside): "MFG MMY"; MM=Month, YY=Year

OPERATION AND MAINTENANCE:

- 1. Annually inspect seal for nicks, tears or deformations. If required, replace with OPW P/N H15005M.



3250 US 70 Business West
Smithfield, NC 27577
Customer Service: 1-(800) 422-2525
Technical Service and Questions:
1-(877) OPW-TECH
www.opwglobal.com

Part Number:	200651
Issue Date:	04/29/2013
	REV B

Figure N-1

CompX Security Products (CSP) CSP1-634LPC, CSP2-634LPC, CSP3-1711LPC and CSP4-1711LPC Tank Commander Dust Caps

TANK Commander – Warranty

Seller warrants to the initial and subsequent purchasers, for a period of one year from date of installation, that the Products sold hereunder will, at the time of delivery: (a) comply with the ARB CP-201 standards and specifications for the duration of the warranty period for such Products in effect at the time of shipment or such other specifications as are expressly agreed upon by Seller and Buyer in writing; (b) be adequately contained, packaged, and labeled; and (c) conform to any promises and affirmations of fact made on the container and label. In the event that any such Products fail to conform to the foregoing warranty, Seller will, at its option, repair or replace such nonconforming Products, or credit Buyer for an amount not to exceed the original sales price of such Products. Shipping costs incurred in returning such nonconforming Products to Seller shall be borne by Seller, but Seller shall in no event be liable for any inspection, handling, or packaging costs incurred by Buyer in connection with such Products. Buyer's negligence, misuse, improper installation, or unauthorized repair or alteration, shall void this warranty.

The TANK Commander Warranty tag is located on the inside cover of the product.

Tank Commander features:

Tank Commander fits all certified Phase 1 Vapor Recovery Systems: Phil-Tite, OPW, EBW, CNI and EMCO Wheaton

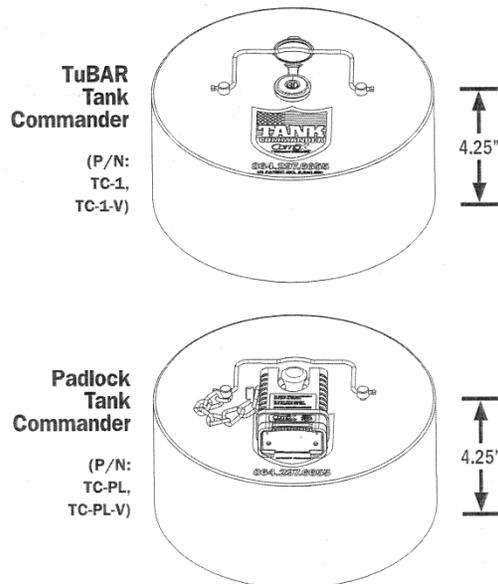
- ♦ Stainless steel construction
- ♦ Vapor recovery seal remains intact
- ♦ Low profile fill cap included
- ♦ Fits common bronze adapters
- ♦ 24/7 protection for diesel and gas

TuBAR Tank Commander

- ♦ TuBAR® lock for maximum key control
 - No key blanks available except from factory
 - Key series registered to your store(s)
- ♦ Keyed alike available – use the same key for both Tank Commander and dispenser

Padlock Tank Commander

- ♦ Available with heavy duty four number changeable combination padlock
- ♦ Or use existing padlock



ISO 9001 certified.

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Figure N-1 (Con't)

TANK Commander – Instructions

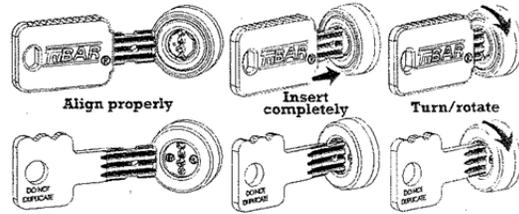
Product Instructions

Remove existing dust cap OPW 634LPC, OPW 634TT-EVR, Morrison Brothers 305C-0100ACEVR, EBW 777-201-01, EBW 777-201-02, CNI Mfg. 64, OR EMCO Wheaton Retail A0097-005 and replace with appropriate TANK Commander dust cap; CSP1-634LPC, CSP2- 634LPC, CSP3- 1711LPC or CSP4-1711LPC. Make sure the handle lever is fully locked and the dust cap seal is engaged.

Annually inspect dust cap seal for nicks, tears or deformations and replace if necessary. Installation of TANK Commander should not violate any (height) limitations exhibited in California Air Resources Board Executive Orders VR101-VR105. If the original Vapor Recovery System installation will not allow correct installation of TANK Commander then modification to the vapor recovery system is required (i.e. fill pipe height reduction) to maintain installation requirements.

TuBAR TANK Commander (P/N: TC-1, TC-1-V)

Insert key into the keyway of the lock on top of the stainless steel TANK Commander and rotate clockwise to retract locking bolt. Install stainless steel TANK Commander over the CSP1-634LPC product dust cap or CSP3-1711LPC vapor dust cap ensuring the lock body mounted in the sleeve fully engages the brass boss on top of the dust cap. Return the key to the 12 o'clock position and remove. The TANK Commander is now secured to the dust cap and should rotate freely.

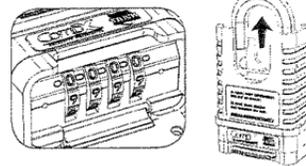


Padlock TANK Commander (P/N: TC-PL, TC-PL-V)

Install stainless steel TANK Commander over dust cap spindle on CSP2-634LPC or CSP4-1711LPC; install padlock shackle through the spindle hole. Secure TANK Commander by locking the padlock; product should rotate freely.

The factory combination is 0-0-0-0. Be sure to record new combination. Warranty does not cover lost, stolen or incorrectly set combinations.

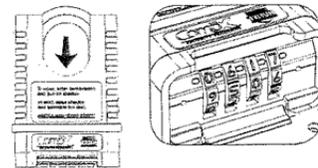
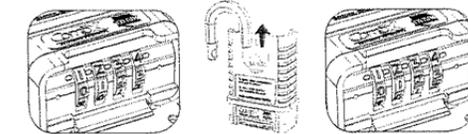
To Open: Spin the dials so the proper numbers align on top with the black hash marks. Pull the shackle up to unlock.



To Change the Combination: Open the lock using the proper combination and pull the shackle up to unlock. Turn the shackle 90° then press down completely. Now rotate another 90° to the left.



Set the dials to the new combination. Pull shackle up and check that the new combination remains set properly on the intended numbers.



To Close: Push the shackle down to close. Scramble dials to lock the shackle. The dials will only spin when the shackle is in the locked position.

See previous instructions (on left) to close and lock.



Standard Product Warranty on back.

ISO 9001 certified.

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Figure O-1
McGard Fuel Lock – Models FL1 and FL2

Fuel Lock Installation Guide

Note: A removal and installation of components must be performed by technicians certified by the appropriate manufacturer of the Phase I system.

For a video of these instructions go to:
<http://mcgard.com/index.php/municipal-security-videos>

1 Remove spill container cover.



2 Remove seal cap.



3 Remove adapter.



4 Attach lock onto hanger.



5 Place key tool in lock and tether to wrist.

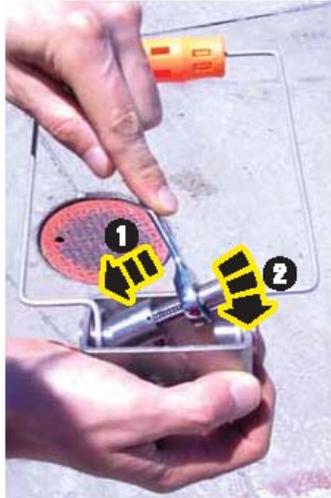


Figure O-1 (Con't)

- 6** Holding hanger, place the lock in pipe/fitting. If installing a lock with dual cross-webs or applications without a drop tube and/or overflow valve, proceed to step 7. If overflow valve is present, rotate to align the stick opening (larger of the two openings) in the center of the lock with the opening in the overflow prevention valve (viewed down inside the pipe).



- 7** Tighten one mounting screw until tip is in contact with ID of pipe/fitting, while roughly centering the lock in the pipe/fitting. Leaving lock and hanger in place, remove and reinstall key tool to tighten second mounting screw until snug enough to hold lock in place. Do not over-tighten.



- 8** Remove key tool and hanger and tightly reinstall adapter.



- 9** Re-install key tool into lock, through adapter and tighten screws firmly. Remove key tool.



- 10** Install seal cap.



- 11** Install spill container cover.

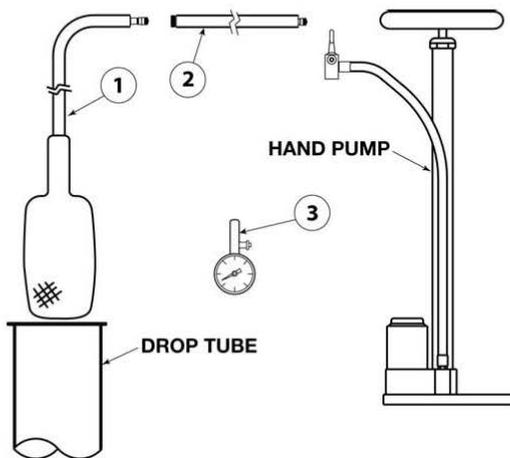


Figure O-2

**Isolation Instructions for Drop Tubes
 Utilizing a McGard Fuel Lock**

Spill containment drain valves and 4" ID drop tubes must be isolated when performing CA EVR leak test procedures identified in TP-201.1D. In applications using the McGard Fuel Lock, a nitrile test bladder (balloon) encased in a protective fabric bag is used to plug the tube, as follows:

1. The bladder (Item #1) is inserted (fully deflated) through the lock and into the drop tube and positioned at desired point of isolation. **To achieve a bubble tight seal, the fabric protection bag must be soaked (wetted) with oil prior to use. This can be any available motor oil such as 30W or 10W-30.** A 3' extension hose (Item #2) may be used if deeper test point is required.
2. After installation, the bladder is inflated to 15 psi utilizing a basic hand pump or low pressure compressed air (**DO NOT OVER-INFLATE**) and a pressure gage (Item #3). All connections are standard tire valve stems (Schrader Valves).
3. After inflation, disconnect pump and/or gage so test bladder hose can be curled and placed into the drop tube.
4. Install test cap on product adapter and perform leak test procedure.
5. After testing is completed, connect pressure gage (with bleeder valve, Item #3) or remove needle from Schrader valve and manual bleeder valve to fully deflate test bladder. Remove the test bladder from the drop tube and store in a clean (dirt free) plastic bag.



Item	Part Name	Manufacturer	Manufacturer Part No.	Qty
1	Bladder Plug	COB Industries	PSI104	1
2	3 ft. Extension Hose	Cherne Industries	274038	1
3	Pressure Gage w/Bleed Valve	Westward Tools	2HKY6	1