EMCO WHEATON RETAIL

ENGINEERING CUSTOMER SATISFACTION™

PHASE I EVR & BALANCE

Phase I CARB EVR Certified
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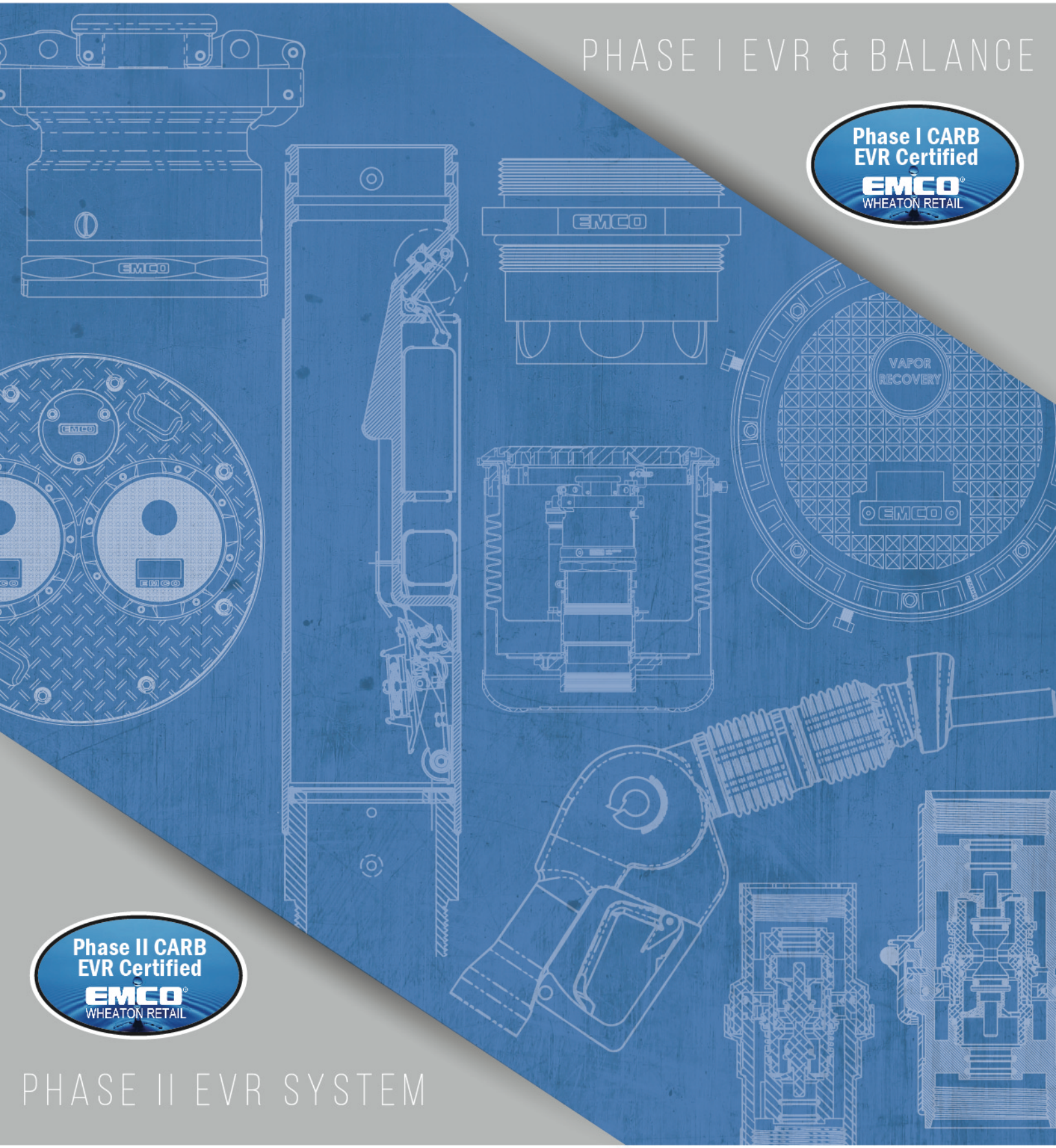

Phase II CARB EVR Certified
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PHASE II EVR SYSTEM

CONTRACTOR TRAINING MANUAL

INSTALLATION, PREVENTIVE MAINTENANCE & COMPLIANCE TESTING

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PHASE I EVR SYSTEM
CONTRACTOR TRAINING MANUAL
INSTALLATION, PREVENTIVE MAINTENANCE & COMPLIANCE TESTING

EMCO
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Multi-Port Phase I EVR System
Executive Order VR-105

Phase I CARB
EVR Certified
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Affordable • Watertight • Serviceable • Compliant

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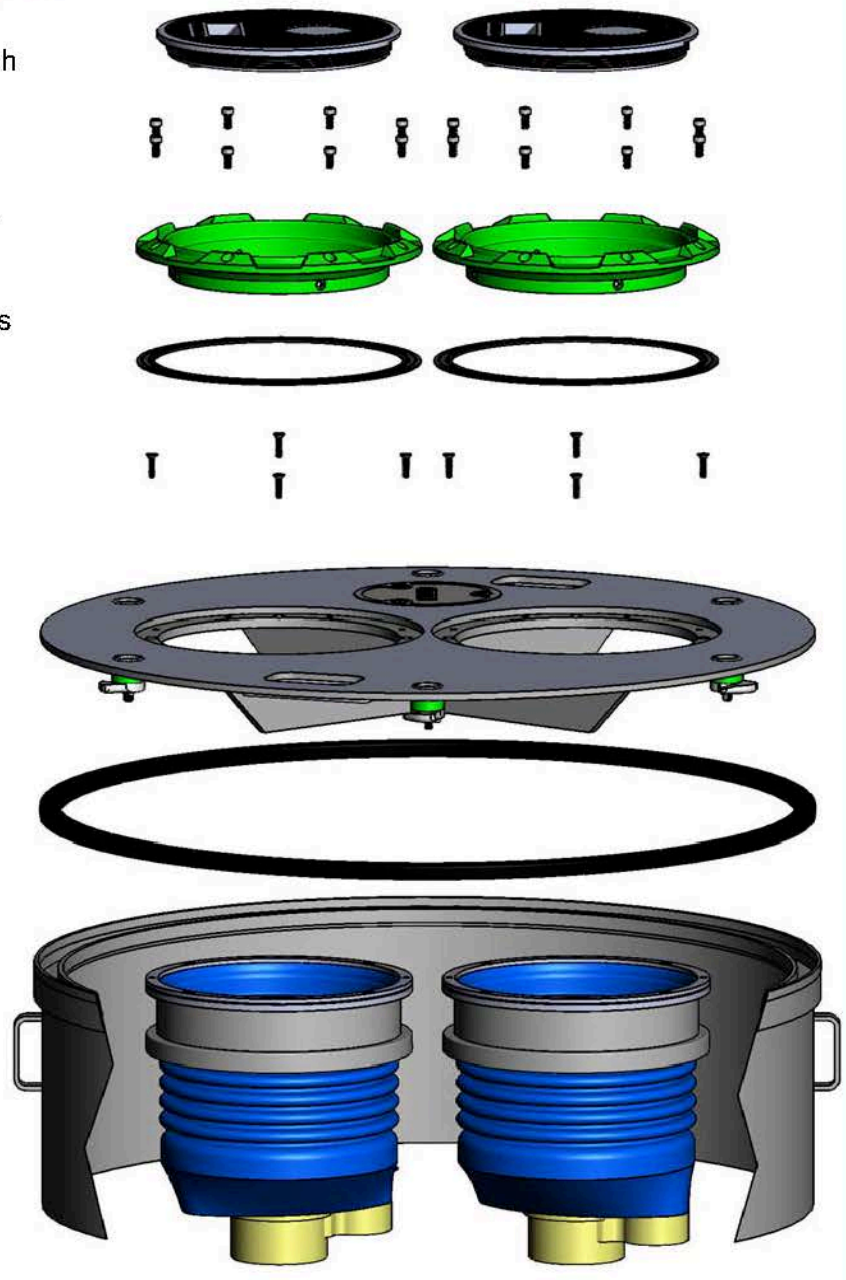
Watertight

A1004EVR Multi-Port Spill Containment

Guide Specification:

- 42-inch steel diamond plate lid with 16-inch tank bung spacing
  Optional diamond plate lid in light weight aluminum
- 6 cam-locks and dual lid handles for easy lock-down and removal
- 8-inch observation port w/ water tight seals
- All mounting bolts non-corrosive stainless steel
- Manhole rim channel w/ D-seal for water tightness integrity between lid and rim
- Manhole available w/ 12-inch or 18-inch galvanized skirt
- Nominal spill container capacity of 5 US gallons
- Cast iron spill container base w/ 4-inch NPT thread connection
  Requires no face seal adapter
- Powder coated, heavy duty, cast iron lid and ductile iron plow ring, exceeds DOT H-20 loading
  Optional lid in composite material
- Lid w/ triple wiper seal
- HDPE primary spill container bellows
- Drain valve w/ filter or plug option
- Compatible with most water shrouds and boot kits



Model No.	Description	Spill Container #1	Drain Type	Spill Container #2	Drain Type
A1004EVR-2421D1A	42" Multi-Port MH, 8" Observation Port 12" Skirt, Gasoline	SW, 5 gal	Drain Valve	SW, 5 gal	No Drain
A1004EVR-242101A	42" Multi-Port MH, 8" Observation Port 12" Skirt, Gasoline	SW, 5 gal	No Drain	SW, 5 gal	No Drain
A1004EVR-2421D0A	42" Multi-Port MH, 8" Observation Port 12" Skirt, Diesel	SW, 5 gal	Drain Valve	None	N/A
A1004EVR-242100A	42" Multi-Port MH, 8" Observation Port 12" Skirt, Diesel	SW, 5 gal	No Drain	None	N/A

Custom configurations are available upon request

Direct Bury Phase I EVR System
Executive Order VR-105

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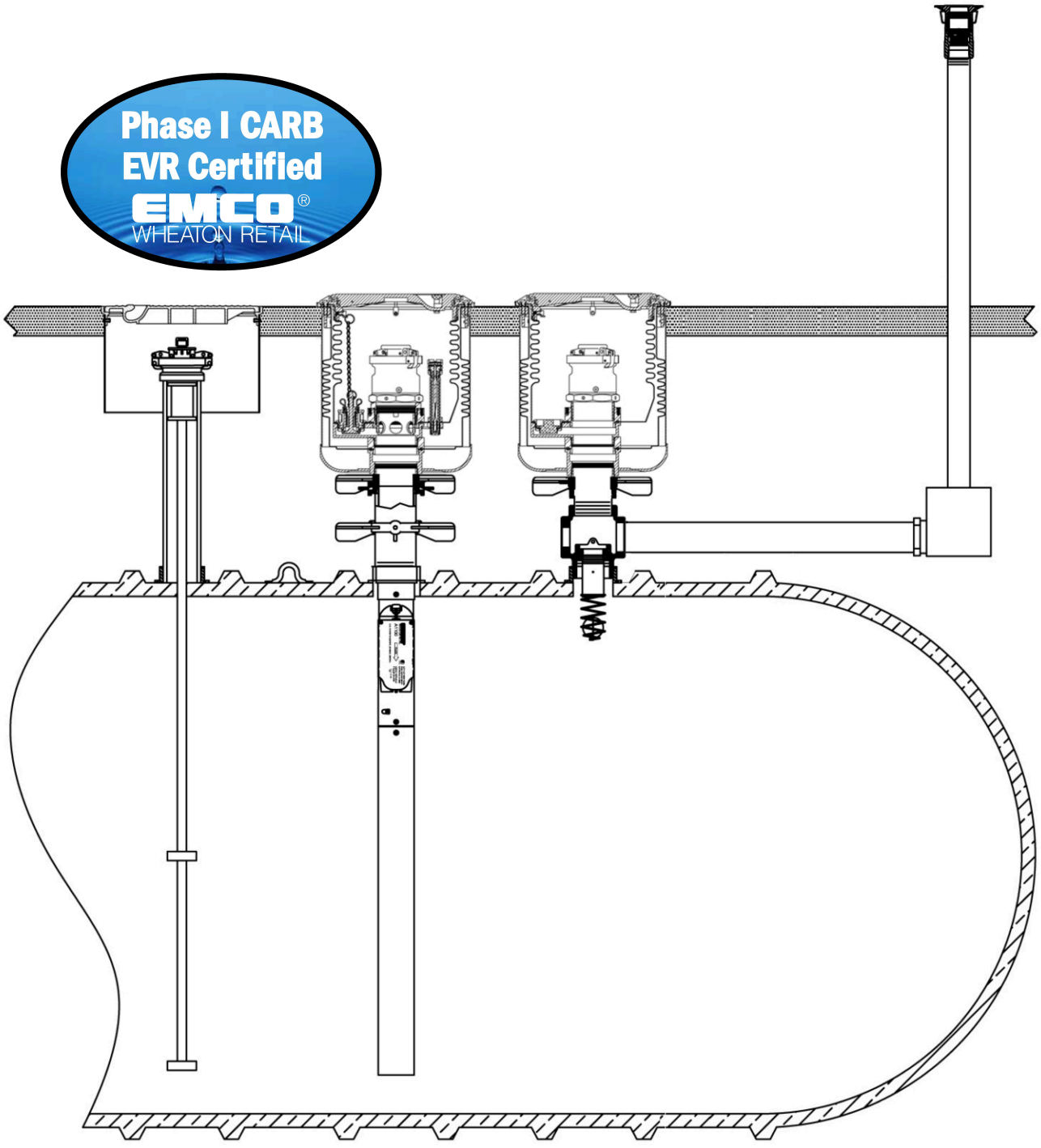


Affordable • Watertight • Serviceable • Compliant

A1004EVR Direct Bury Spill Containment

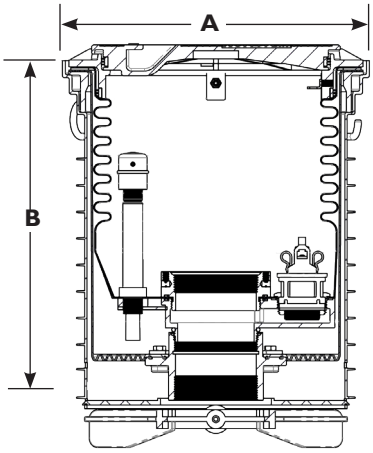
Never Break Concrete Again!

Field Replaceable

Guide Specification:

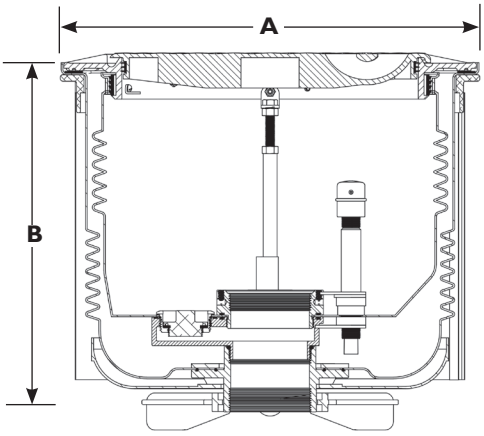
- Nominal spill container capacity of 5 or 15 US gallons
- Cast iron spill container base w/ 4-inch NPT thread connection
  Requires no face seal adapter
- Powder coated, heavy duty, cast iron lid and ductile iron plow ring, exceeds DOT H-20 loading
  Optional lid in composite material
- Lid w/ triple wiper seal
- Replaceable from grade level HDPE primary and secondary bellows
- Drain valve w/ filter or plug option
- EZ-Gage or float sensor option for interstitial monitoring of secondary containment
- HDPE or galvanized gravel guard
- HDPE gravel pan

5 Gallon



A1004EVR-316S

15 Gallon



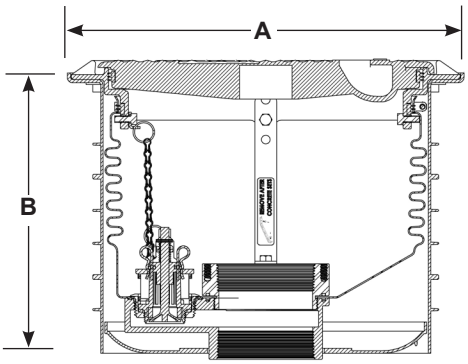
A1004EVR-216S

Model No.	Description	Width Dia. A	Installed Ht. B	Lid Dia.	Lid Wt.	Total Wt.	Drain Type
A1004EVR-316A	SW, 5 gal, 16” center	16.0”	15.0”	13.2”	15.9 lbs.	66.0 lbs.	Drain Valve
A1004EVR-317A	SW, 5 gal, 16” center	16.0”	15.0”	13.2”	15.9 lbs.	63.0 lbs.	None
A1004EVR-216A	SW, 15 gal	22.6”	18.0”	17.1”	29.5 lbs.	126.0 lbs.	None
A1004EVR-316S	DW, 5 gal, 16” center	16.0”	17.1”	13.2”	15.9 lbs.	84.0 lbs.	Drain Valve
A1004EVR-317S	DW, 5 gal, 16” center	16.0”	17.1”	13.2”	15.9 lbs.	79.9 lbs.	None
A1004EVR-216S	DW, 15 gal	22.6”	19.0”	17.1”	29.5 lbs.	151.0 lbs.	None

Field Non-Replaceable

Guide Specification:

- Nominal spill container capacity of 5 US gallons
- Cast iron spill container base w/ 4-inch NPT thread connection
  Requires no face seal adapter
- Powder coated, heavy duty, cast iron lid and ductile iron plow ring, exceeds DOT H-20 loading
  Optional lid in composite material
- Lid w/ triple wiper seal
- Non-replaceable from grade level HDPE primary bellows
- Drain valve w/ filter or plug option
- HDPE gravel guard
- HDPE gravel pan



Model No.	Description	Width Dia. A	Installed Ht. B	Lid Dia.	Lid Wt.	Total Wt.	Drain Type
A1004EVR-010	Slimline, SW, 5 gal	17.6”	13.6”	15.3”	20.0 lbs.	58.5 lbs.	Drain Valve
A1004EVR-011	Slimline, SW, 5 gal	17.6”	13.6”	15.3”	20.0 lbs.	57.9 lbs.	None

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A1004EVR-317SS

Stainless Steel Primary/HDPE Secondary Spill Containment

Evolution

The Next Generation of Spill Containment

New

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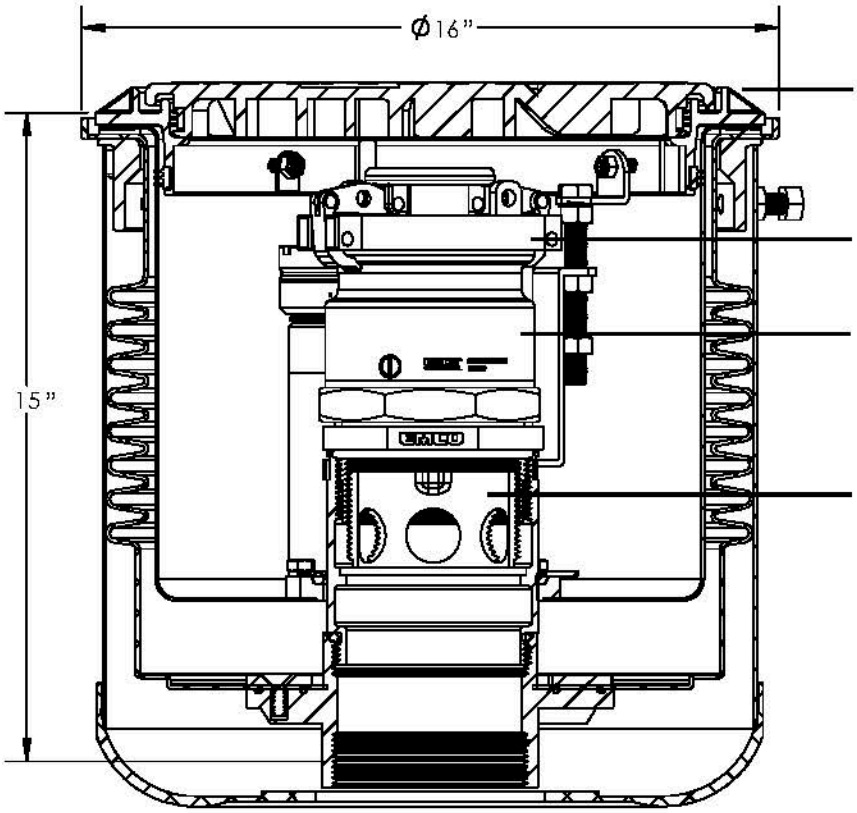
A1004EVR-317SS

Stainless Steel Primary/HDPE Secondary



Available Options:

Lid/rim
- Composite lid/stainless steel rim
- Cast iron lid and rim
- Powder coated lid and rim with color choice and product ID

Fill Adapter Cap A0097-005 or
Vapor Adapter Cap A0099-002

Swivel Fill Adapter A0030-124S or
Swivel Vapor Adapter A0076-124S

Riser Seal 494096, (for use on tank fill riser only) or
A0079-005SS pipe nipple

Phase I CARB EVR Certified
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Guide Specification:

- Nominal spill container capacity of 5 US gallons
- Cast iron or stainless steel spill container base, w/ 4-inch NPT thread connection **Requires no face seal adapter**
- Replaceable from grade level stainless steel primary, HDPE secondary
- Installs on 16-inch tank bung centers
- No Drain Valve
- EZ-Gage or float sensor option for interstitial monitoring of secondary containment

Model No.	Description
A1004EVR-317SS100	SST Pri/HDPE Sec, Cast Rim/Lid
A1004EVR-317SS140	SST Pri/HDPE Sec, Cast Rim/Lid, Fill Cap, Swivel Adapter, Riser Seal
A1004EVR-317SS150	SST Pri/HDPE Sec, Cast Rim/Lid, Vapor Cap, Swivel Adapter, SST Close Nipple
A1004EVR-317SS200	SST Pri/HDPE Sec, SST Rim/Composite Lid

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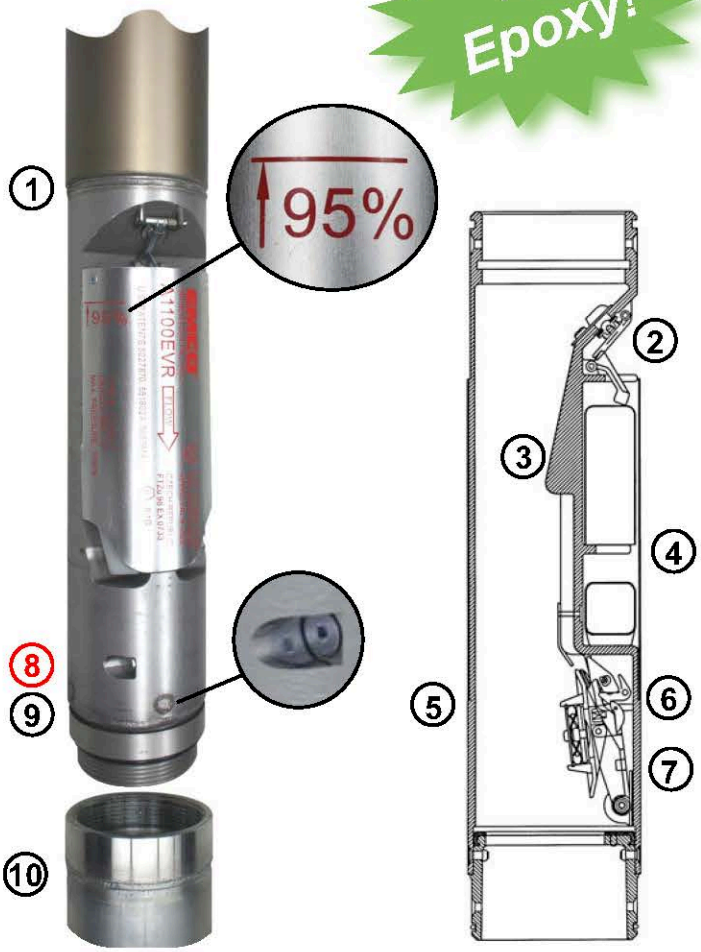
A1100EVR Overfill Prevention Valve



Guide Specification:

1. Upper drop tube to valve body factory welded
   Optional: Upper drop tube factory anodized to prevent corrosion
2. Bleed valve drains fuel delivery hose after 95% shut-off
3. Diverter fins protect flapper valve during routine "tank stick" gauging
4. Top and bottom floats contained in protective sleeve to insure damage-free installation and removal from tank fill riser
5. Die cast aluminum valve body design provides the highest delivery flow rate
6. Spring loaded reset function opens flapper valve and allows for immediate "tank stick" gauging
7. Flapper valve provides positive fuel shut-off at 95% total storage tank capacity
8. External field test port allows for manual routine testing of flapper valve
9. Valve body to male coupling factory welded
10. Female coupling to lower drop tube factory welded

- All materials and seals are compatible with up to E25 ethanol blend gasoline and B20 biodiesel blends
- 100% factory tested for operability and vapor tightness integrity
- For underground storage tanks less than 6.5' in diameter, please consult your local EMCO Factory Representative

Model No.	Anodized Model No.	Overall Length	Maximum Burial Depth	Nominal Tank Diameter	Weight
A1100EVR-055	A1100EVR-055CF	14.0 ft.	6.0 ft.	8 ft.	25.2 lbs.
A1100EVR-056	A1100EVR-056CF	16.0 ft.	7.0 ft.	10 ft.	27.2 lbs.
A1100EVR-057	A1100EVR-057CF	18.2 ft.	6.8 ft.	12 ft.	30.3 lbs.
A1100EVR-058	A1100EVR-058CF	21.7 ft.	10.0 ft.	12 ft.	31.0 lbs.

A0020EVR
Rolled Edge Collar

A0020EVRC
Heavy Duty Collar

A0020EVR Straight Drop Tube

Guide Specification:

- 4-inch diameter aluminum construction
- Available standard rolled edge or heavy duty collar
- Installs on a typical 4-inch tank fill riser

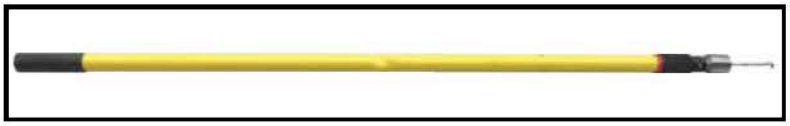
Model No.	Model No.	Overall Length
A0020EVR-004	A0020EVRC-004	12'
A0020EVR-005	A0020EVRC-005	15'
A0020EVR-007	A0020EVRC-007	17'
A0020EVR-008	A0020EVRC-008	14'

Model A1100 Overfill Prevention Valve OPV

Field Operational Test Procedure TP-A1100
For Primary Float and Flapper Valve

Service Tools Required:

• EMCO Model A0081-1101 test tool



• Scribe tool

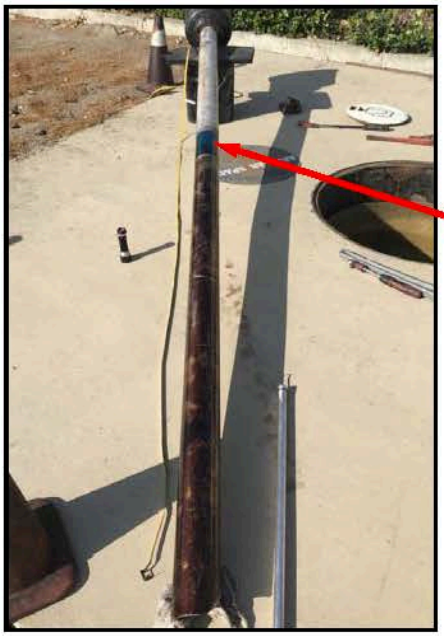
CAUTION:

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

Securing the Flapper Valve:

Step 1: Remove the spill container lid, fill cap and adapter from the tank fill riser. Note: only remove manhole cover and water shroud system if necessary.

Step 2: Remove the Model A1100 OPV from the tank fill riser.



Step 3: Place the Model A1100 OPV on its side with the primary float facing downward. ***Refer to Figures 1 and 2 for details.***

Figure 1: Correct position, primary float facing downward.

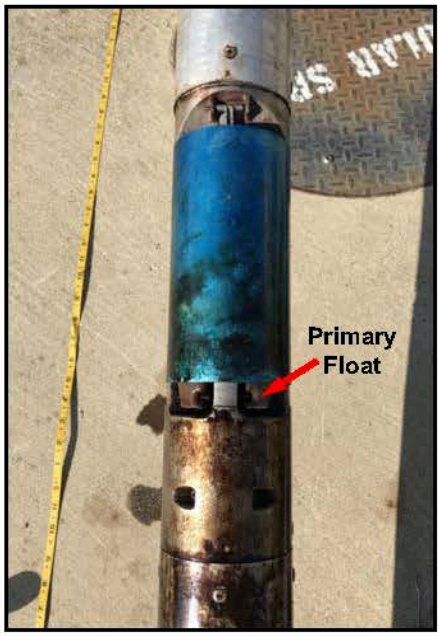
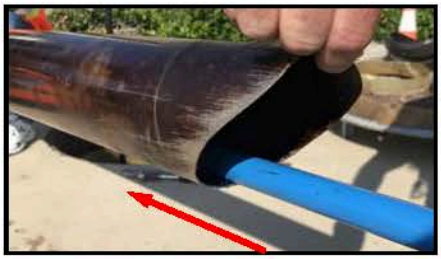


Figure 2: Improper position, primary float facing upward

Model A1100 Overfill Prevention Valve OPV



Step 4: Slowly insert the Model A0081-1101 test tool from the bottom of the lower tube until the hook end secures to the underside of the flapper valve. ***Refer to Figures 3 and 4 for details.***

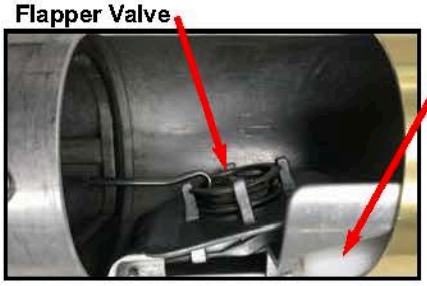
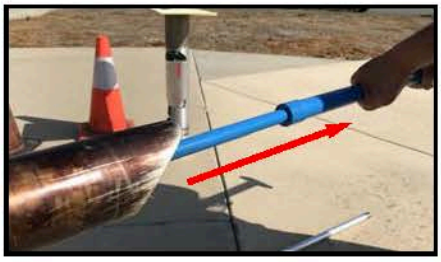


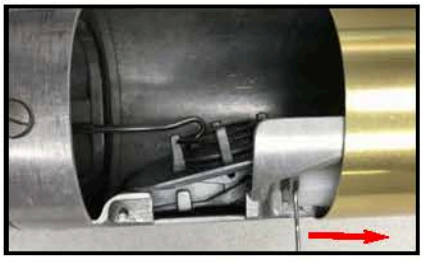
Figure 3: Hook end secured to the underside of the flapper valve.

Figure 4: Close-up

Testing the Primary Float and Flapper Valve:



Step 5: With the flapper valve latched open, and the hook end secured, gently tug on the test tool, the flapper valve must remain open.



Step 6: Using a scribe move the primary float upward to unlatch the flapper valve, and with the hook end secured, gently tug on the test tool, the flapper valve must close, the test tool will move about 3" downward. ***Refer to Figures 5, 6, 7 and 8 for details.***

Figure 5: Primary float, downward position.

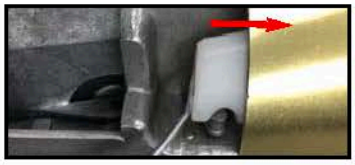


Figure 6: Primary float, upward position.

Figure 7: Primary float upward, flapper valve unlatched and closing.

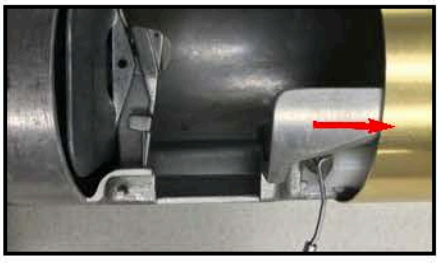
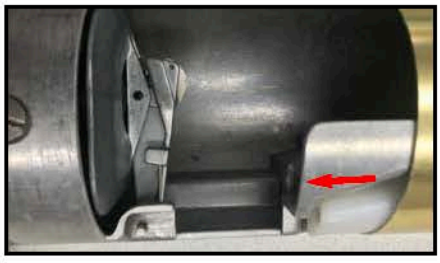


Figure 8: Primary float upward, flapper valve unlatched and closed.



Step 7: Using the scribe move the primary float downward.

Step 8: With the hook end secured, gently allow the flapper valve to move upward and spring back into an open position, tug gently on the test tool, the flapper valve must relatch and remain open.

IMPORTANT: Perform steps 6 through 8 a minimum of three times to assure the primary float, latch and flapper valve components of the Model A1100 OPV are operating properly.

Step 9: Lift the Model A1100 OPV with the collar upward and re-install on the tank fill riser. Replace the drop tube o-ring part number 569461 if damaged or missing.

Step 10: Re-install the fill adapter, cap and spill container lid on the tank fill riser.

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TP-A1100
08/18, Rev. A

Phase I EVR Components

A0097-005
Fill Adapter Cap

A0099-002
Vapor Adapter Cap

A0097-010
ATG Probe
Adapter Cap

A0097-004LP
Low Profile
Fill Adapter Cap

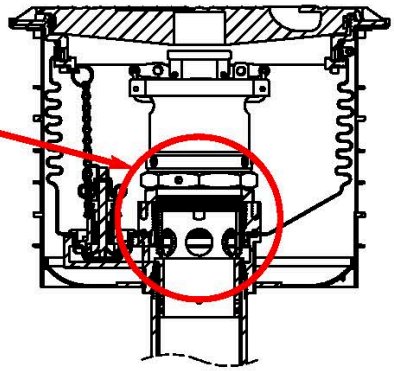
A0099-004LP
Low Profile
Vapor Adapter Cap

A0030-124S
Swivel Fill Adapter

A0076-124S
Swivel Vapor Adapter

A0030-014
ATG Probe Adapter

494096 Riser Seal



Guide Specification:

- Top-seal cam and groove design for vapor tightness integrity
- Aluminum body powder coated orange or gray for field identification
- Lockable toggle action aluminum handle with self-aligning cams
- The Model A0099-003 includes a 12-inch chain to prevent theft
- The Model A0097-010 includes cord grip for use with ATG probes
- **A0097-010A includes ATG probe cap and adapter**

Guide Specification:

- A 360 degree rotation prevents accidental loosening from 4-inch tank fill or vapor riser
- Brass construction cam and groove design for use with top-seal caps for vapor tightness integrity
- Flat gasket with 4-inch NPSM thread connection
- The Model A0076-124S available with a normally closed poppet
- The Model A0030-014 is non-swivel for use with ATG probes
- Allows for complete field serviceability should the swivel adapter fail CARB static torque TP-201.B, leak tightness integrity tests TP-201.D or TP-201.3

Guide Specification:

- Lowers the top of the drop tube collar below the spill containment drain valve path
- Two-piece stainless steel construction

A0075
Ball Float

A0079 Extractor
Cross Fitting

A0079 Extractor
Tee Fitting

A0179
Extractor Cage

A0279 Extractor
Test Plug

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P-1011
08/18

Multiport Phase I EVR System Repair and Replacement Kits

Phase I CARB EVR Certified
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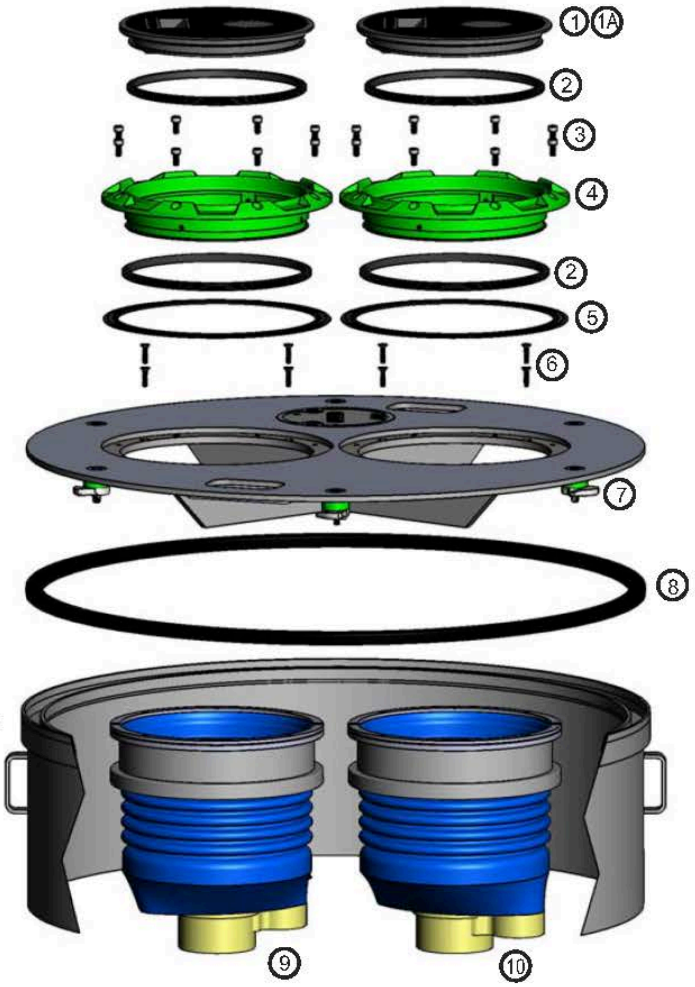
Part Number	Description
	Spill Containers
A1004EVR-316C1	(9) 5 gal spill container w/ drain (1) (4) Plow ring (1) (2) Triple wiper seal (2) (1) Lid (1) (3) Plow ring hex bolts (8) (5) Plow ring gasket (1) (6) Spill container hex bolts (4)
A1004EVR-316T1	(9) 5 gal spill container w/ drain (1) (6) Spill container hex bolts (4)
A1004EVR-317C1	(10) 5 gal spill container w/ no drain (1) (4) Plow ring (1) (2) Triple wiper seal (2) (1) Lid (1) (3) Plow ring hex bolts (8) (5) Plow ring gasket (1) (6) Spill container hex bolts (4)
A1004EVR-317T1	(10) 5 gal spill container w/ no drain (1) (6) Spill container hex bolts (4)
	Lids & Drain Valve
A1004-316CLID	(1)(2) Lid w/ triple wiper seal, cast iron (1)
A1004-316LID	(1A)(2) Lid w/ triple wiper seal, composite (1)
494118	(11) Drain valve kit w/ filter (1)
	Seal Kits
570012	(2) Triple wiper seal (1)
569989	(5) Plow ring gasket (1)
495673	Multiport watertight seals kit for gasoline applications includes: (2) Triple wiper seals (4) (5) Plow ring gaskets (2) (8) Manhole "D" seal (1)
495672	Multiport watertight seals kit for gasoline and diesel applications includes: (2) Triple wiper seals (2) (5) Plow ring gasket (1) (8) Manhole "D" seal (1)
	Other Kits
495674	(7) Multiport cam-lock kit (1)
495733	Multiport mounting hex bolts kit includes: (3) Plow ring hex bolts (8) (6) Spill containment hex bolts (4)



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A1004-316CLID
Cast Iron Lid


1A

A1004-316LID
Optional Composite Lid


11

Multiport Phase I EVR System Repair and Replacement Kits

Phase I CARB EVR Certified
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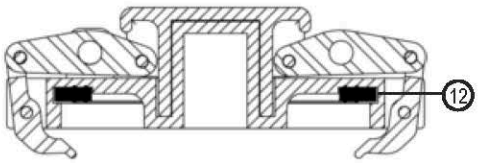
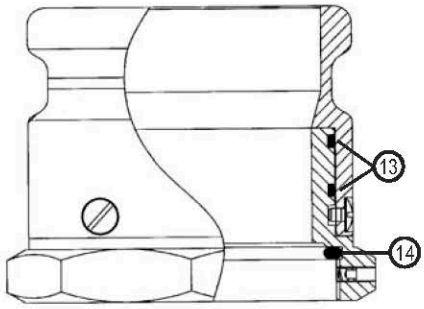
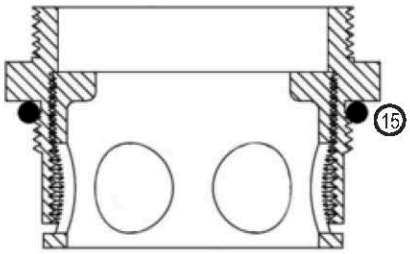
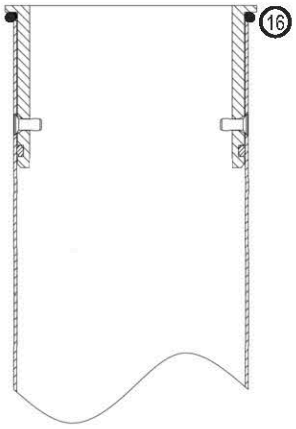
Part Number	Description
	Gasket & O-ring Kits
570739	(12) Adapter cap gasket replacement for models A0097-004LP, A0097-005, A0097-010, A0099-002, A0099-004LP *Includes (1) gasket*
494301	(13) Adapter o-ring replacement for models A0030-124S, A0076-124S *Includes (2) o-rings and (1) gasket*
569924	(14) Adapter gasket replacement for models A0030-014, A0030-124S, A0076-124S *Includes (1) gasket*
494242	(15) Riser seal o-ring *Includes (1) o-ring*
569461	(16) Drop tube collar o-ring replacement for models A0020EVR, A0020EVRC, A1100EVR *Includes (1) o-ring*









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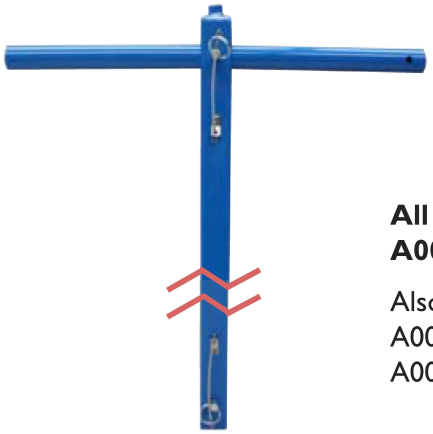
Phase I EVR System

Installation and Maintenance Tools

Phase I CARB EVR Certified
EMCO WHEATON RETAIL



All tool bits are fully interchangeable with A0081-001D Drive Shaft and A0081-001X Cross Bar

Also available:
A0081-001A Extension
A0081-001Q Quick Release Pin

A0081-001B
Adapter Wrench Bit

Installation and removal of:

- Models A0030-014, A0030-124S & A0076-124S Adapters
- Model 494096 Riser Seal

A0081-001HB
Spill Containment Wrench Bit

Installation and removal of:

- Model A1004EVR Series Spill Containers (Multiport or Direct Bury)

A0081-001LB
Riser Seal Wrench Bit

Installation and removal of:

- Model 494096 Riser Seal Center Insert
- Models A0030-024 & A0030-024A Adapters

Phase I EVR System

Installation and Maintenance Tools

Phase I CARB EVR Certified

EMCO WHEATON RETAIL

493820
Drain Valve Wrench

Installation and removal of:

- Drain Valve Part Number 494118

494240
Swivel Adapter Torque Test Wrench

Verification of static torque for:

- Models A0030-124S and A0076-124S per CARB test procedure TP-201.1B

566675
A1100EVR Collar Drill Fixture

Drilling of collar mounting holes:

- Model A1100EVR Overfill Valve

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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-105-F

Relating to Certification of Vapor Recovery Systems

EMCO Wheaton Retail Phase I Vapor Recovery System

WHEREAS, the California Air Resources Board (CARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during the filling of underground gasoline storage tanks (Phase I EVR System), in its Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities (CP-201) as last amended April 23, 2015, incorporated by reference in Title 17, California Code of Regulations, Section 94011;

WHEREAS, CARB has established, pursuant to California Health and Safety Code Sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase I EVR Systems with emission standards;

WHEREAS, EMCO Wheaton Retail (EMCO) requested and was granted certification of the EMCO Wheaton Retail Phase I Vapor Recovery System (EMCO System) pursuant to CP-201 on October 20, 2006 by Executive Order VR-105-A; and last modified on June 8, 2017, by Executive Order VR-105-E;

WHEREAS, Executive Order VR-105-E expires on August 27, 2018;

WHEREAS, CP-201 provides a process for the renewal of Phase I EVR system certification;

WHEREAS, CP-201 authorizes the Executive Order to renew the certification of the EMCO Phase I Vapor Recovery System if an evaluation determines that there are no identified deficiencies;

WHEREAS, additional time is necessary to gather and evaluate information needed to complete the certification renewal of the Husky Model 5885 pressure/vacuum (P/V) vent valve;

WHEREAS, Husky requested amendment of the Installation, Operation, and Maintenance Manual for the Husky Model 5885 P/V vent valve;

WHEREAS, CP-201 provides that the CARB Executive Officer shall issue an Executive Order if he determines that the vapor recovery system, including modifications, conforms to all of the applicable requirements set forth in CP-201;

WHEREAS, Executive Order G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities (GDF); and

WHEREAS, I, Catherine Dunwoody, Chief of the Monitoring and Laboratory Division, find that the EMCO System, as amended to include the components listed above, conforms with all the requirements set forth in CP-201, and results in a vapor recovery system which is at least 98.0 percent efficient when tested pursuant to test procedure TP-201.1, Volumetric Efficiency for Phase I Systems (July 26, 2012);

NOW THEREFORE, IT IS HEREBY ORDERED that the EMCO System is certified to be at least 98.0 percent efficient when installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the certified components. Exhibit 2 contains the performance standards and specifications, typical installation drawings, and maintenance intervals applicable to the EMCO System as installed in a GDF. Exhibit 3 contains the manufacturing performance specifications. Exhibit 4 contains the manufacturer warranties. Exhibit 5 is the below-grade vaulted tank configuration.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery component(s) to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of CP-201. Manufacturers may specify that the warranty is contingent upon the use of trained installers. The manufacturer warranty tag, included with each component, shall be provided to the service station owner/operator at the time of installation.

IT IS FURTHER ORDERED that every certified component manufactured by EMCO, Franklin Fueling Systems (FFS), OPW, and Husky Corporation (Husky) shall meet the manufacturing performance specifications as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified EMCO System shall be installed, operated, and maintained in accordance with the CARB-Approved Installation, Operation and Maintenance Manual for the EMCO Wheaton Phase I Vapor Recovery System as certified by Executive Order VR-105-F. Equipment shall be inspected quarterly and annually per the procedures identified in the CARB Approved Installation,

Operation, and Maintenance Manual. These inspections shall also apply to systems certified by Executive Orders VR-105-A to E. A copy of this Executive Order and the CARB Approved Installation, Operation, and Maintenance Manual shall be maintained at each GDF where a certified EMCO System is installed.

IT IS FURTHER ORDERED that all equipment listed in Exhibit 1, unless exempted, shall be clearly identified with a permanent identification showing the manufacturer's name and model number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation or operation of the system provided in the manufacturer's certification application or documents and certified hereby is prohibited and deemed inconsistent with this certification unless the alteration has been submitted in writing pursuant to the process for Executive Order amendments set forth in Section 18 of CP-201 and approved in writing by the CARB Executive Officer or his delegate. Any sale, offer for sale, or installation of any system or component without CARB's approval as set forth above is subject to enforcement action.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the EMCO System shall conduct, and pass, the following tests no later than 60 days after startup and at least once every (3) years after startup testing, using the following test procedures. Shorter time periods may be specified by the District.

- TP-201.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities (July 26, 2012);
- TP-201.1B, Static Torque of Rotatable Phase I Adaptors (October 8, 2003); and
- Depending on the system configuration, either TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly (October 8, 2003) or TP-201.1D, Leak Rate of Drop Tube Overfill Prevention Devices and Spill Container Drain Valves (October 8, 2003).

Districts may specify the sequencing of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with District requirements and pursuant to the policies established by that District. Districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternate test procedures, including the most recent versions of test procedures listed above, may be used if determined by the CARB Executive Officer or his delegate, in writing, to yield equivalent results. Testing the pressure/vacuum (P/V) vent valve will be at the option of the Districts. If P/V vent valve testing is required by the District, the test shall be conducted in accordance with TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003) and Exhibit 2.

IT IS FURTHER ORDERED that the EMCO System shall be compatible with gasoline in common use in California at the time of certification. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or his delegate.

IT IS FURTHER ORDERED that the certification of the EMCO Wheaton Phase I Vapor Recovery System with the exception of the Husky Model 5885 P/V vent valve is valid through May 31, 2022.

IT IS FURTHER ORDERED that to provide the Executive Officer with the necessary time to fully gather and evaluate information to make a determination regarding the renewal certification of the Husky Model 5885 P/V vent valve consistent with Section 17.3 and 17.4 of CP 201, the certification of the Husky Model 5885 P/V vent valve is extended by one year from the date this Executive Order is signed.

IT IS FURTHER ORDERED that Executive Order VR-105-E issued on June 8, 2017, is hereby superseded by this Executive Order. EMCO Wheaton Phase I Vapor Recovery Systems certified under Executive Orders VR-105-A through E may remain in use at existing installations up to four years after the expiration date of this Executive Order when the certification is not renewed.

IT IS FURTHER ORDERED that this Executive Order shall apply to new installations or major modification of the Phase I system of existing gasoline dispensing facilities.

Executed at Sacramento, California, this 1st day of June 2018.

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

Attachments:

Exhibit 1	EMCO Wheaton Phase I Vapor Recovery System Equipment List
Exhibit 2	Installation, Maintenance and Compliance Specifications
Exhibit 3	Manufacturing Performance Standards and Specifications
Exhibit 4	Manufacturer Warranties
Exhibit 5	Vaulted Aboveground Storage Tank Configuration *(Optional)*

Exhibit 1

EMCO Wheaton Phase I Vapor Recovery System Equipment List

Equipment	Manufacturer/Model Number
Pressure/Vacuum Vent Valve	FFS PV-Zero Husky 5885 OPW Model 723V
Spill Container[1]	EMCO Model A1004EVR-X Series Multi-port and Direct Burial Configurations Single and Double Wall Multi-Port X= 237, 242 or 248 Direct Burial (5 gallon) X= 003, 004, 005, 006, 010, 011, 012, 013, 210A, 210AB, 210S, 210SB 211A, 211AB, 211S, 211SB, 316A, 316S, 317A, 317AS, 317S, 317SS Direct Burial (15 gallon) X= 215A, 215AB, 215S, 215SB, 216A, 216AB, 216S, 216SB
Drain Valve[2]	EMCO Model 494118
Drop Tube[3]	EMCO Model A0020EVR-X EMCO Model A0020EVRC-X X= 004, 005, 007 or 008
Straight Drop Tube with Overfill Prevention Device	EMCO Model A1100EVR-X X= 055, 056, 057 or 058
Riser Seal	EMCO Model 494096
Product Adaptor	EMCO Model A0030-124S
Vapor Adaptor	EMCO Model A0076-124S
Dust Caps	EMCO Model A0097-005 (product)

[1] Drain Valves are an optional component for Product Spill Containers. Customers can install what is traditionally considered a Vapor Spill Container (Drain Valve Port Factory Plugged) in lieu of the Product Spill Container with a drain valve.

[2] For Product Spill Containers that contain a drain valve, only this component and model number specified above shall be installed or used.

[3] The A0020EVR has a sealing surface made by machine rolling the metal of the drop tube. The A0020EVRC has a machined collar that is installed on the drop tube.

	EMCO Model A0099-X (vapor) X = 002 (no chain) or 003 (with chain) EMCO Model A0097-004LP (product) EMCO Model A0099-004LP (vapor) CompX CSP1-634LPC (product) CompX CSP3-1711LPC (vapor) CompX CSP2-634LPC (product) CompX CSP4-1711LPC (vapor) OPW 634LPC (product) OPW 1711LPC (vapor)
Tank Gauge Port Components	EMCO Model A0097-010 (Cap) EMCO Model A0030-014 (Adaptor)
Fuel Lock[4]	McGard FL1 – Stick Only Fuel Lock (125007) (Gas) McGard FL2 – Stick/Sampling Fuel Lock (125008) (Gas)
Bladder Plug	McGard PSI104 (Gas)
Emergency Vent	Exhibit 5 (for below-grade vaulted tank configuration)

Table 1
Components Exempt from Identification Requirements

Component Name	Manufacturer	Model Number
Riser Seal	EMCO	494096
Drop Tube	EMCO	A0020EVR, A0020EVRC
Sump / Sump Lids / Spill Container Covers	Varies	Varies
Fuel Lock	McGard	FL1, FL2
Bladder Plug	McGard	PSI104

[4] If these components are installed, only those components and model numbers specified above shall be installed or used.

Multiport Phase I EVR System
Gasoline Fuel Applications
A1004EVR-242-2000R

Phase I CARB EVR Certified
EMCO WHEATON RETAIL

Part Number	Description
A1004EVR-242-1D1AR	① Multiport System w/ Diamond Plate Steel Lid
Tank Fill Riser	
A0097-005	② Fill Adapter Cap
A0030-124S	③ Swivel Fill Adapter
494096	④ Riser Seal
Tank Vapor Riser	
A0099-002	⑤ Vapor Adapter Cap
A0076-124S	⑥ Swivel Vapor Adapter
A7901-005	⑦ Pipe Nipple
Other	
A0029-004	⑧ Riser Support

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Multiport Phase I EVR System

Diesel Fuel Applications

A1004EVR-242-1000Y

Phase I CARB EVR Certified

EMCO WHEATON RETAIL

Part Number	Description
A1004EVR-242-1D0AY	① Multiport System w/ Diamond Plate Steel Lid
Tank Fill Riser	
A0097-005	② Fill Adapter Cap
A0030-124S	③ Swivel Fill Adapter
494096	④ Riser Seal
Other	
A0785-001	2" Downward Mushroom Vent (Not Shown)

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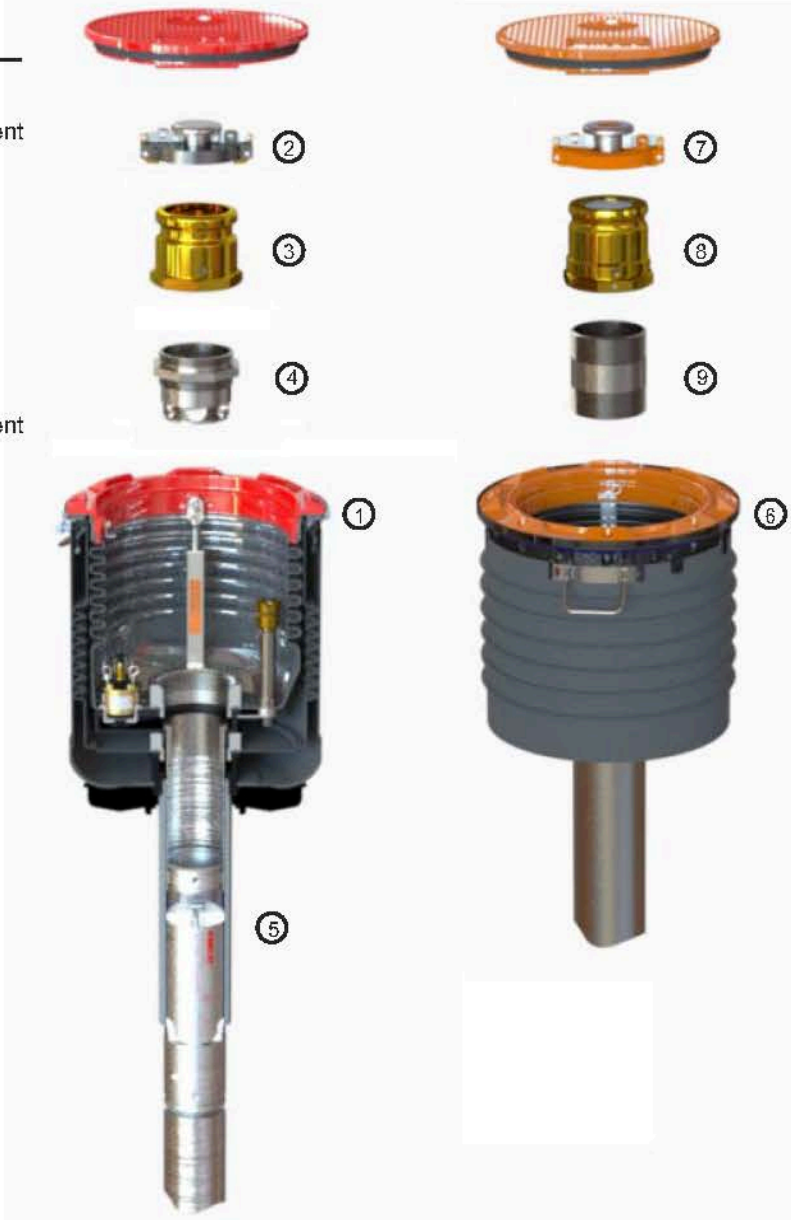
Direct Bury Phase I EVR System
Gasoline Fuel Applications
A1004EVR Series

Phase I CARB EVR Certified
EMCO WHEATON RETAIL

Part Number		Description
Tank Fill Riser		
A1004EVR-316S	①	Direct Bury Spill Containment Double Wall Replaceable HDPE w/ Drain
A0097-005	②	Fill Adapter Cap
A0030-124S	③	Swivel Fill Adapter
494096	④	Riser Seal
A1100EVR	⑤	Overfill Prevention Valve
Tank Vapor Riser		
A1004EVR-317A	⑥	Direct Bury Spill Containment Single Wall Replaceable HDPE w/ No Drain
A0099-002	⑦	Vapor Adapter Cap
A0076-124S	⑧	Swivel Vapor Adapter
A7901-005	⑨	Pipe Nipple



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Direct Bury Phase I EVR System
Diesel Applications
A1004EVR Series

Phase I CARB EVR Certified
EMCO WHEATON RETAIL

Part Number	Description
Tank Fill Riser	
A1004EVR-316S	① Direct Bury Spill Containment Double Wall Replaceable HDPE w/ Drain
A0097-005	② Fill Adapter Cap
A0030-124S	③ Swivel Fill Adapter
494096	④ Riser Seal
A1100EVR	⑤ Overfill Prevention Valve

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California Environmental Protection Agency

Air Resources Board

CARB Approved

Installation, Operation and Maintenance Manual

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

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:

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

Only technicians that are trained and certified by OPW (i.e. OPW Certified Technicians) are able to perform installation, maintenance or repairs of components manufactured by OPW or the warranty will be void. A list of OPW Certified Technicians can be viewed at http://www.opw-fc.com.

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

OPW Fueling Components
Phone: 800-422-2525
Web: www.opw-fc.com

It is the responsibility of each EMCO, FFS, and/or OPW 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, FFS, and/or OPW 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 System[1]

Component — **Interval**

Pressure/Vacuum Vent Valve: Annually
FFS Model PV-Zero

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

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.

OPW Model 723V Annually

Remove and inspect filter screens – clean or replace as necessary. Test as necessary.
Upper Screen Maintenance:
See instructions on page 138 of IOM.
Lower Screen Maintenance:
See instructions on page 139 of IOM

Spill Containment: Quarterly &
EMCO A1004EVR-X Single or Double Wall 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): Quarterly
EMCO 494118

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.**

Component **Interval**

Drain Valve Assembly (if equipped): **Quarterly**
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.

Dust Caps:

EMCO A0097-005 Product
EMCO A0097-004LP Product **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 A0099-X Vapor: **Annually**
X=002, No Chain or 003, With Chain
EMCO A0099-004LP Vapor

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.

All "non-EMCO" Dust Caps : **Annually**

1.) Visually inspect the seal in cap and replace if damaged or missing.

Product Adaptor:
EMCO A0030-124S **Annually**

Static Torque Test:

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.

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.

Vapor Adaptor:
EMCO A0076-124S **Annually**

Static Torque Test:

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.

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.

EMCO A0020EVR Flared Collar & A0020EVRC Machined Collar **Annually**
(continued from page v)

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.

Component	**Interval**
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**

Leak Tightness Integrity Test:

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.

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
OPW Model 723V, 2-inch threaded	Standard Wrench	35 to 55 ft-lbs
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	None Required	None Required
EMCO A0097-004LP Product	None Required	None Required
EMCO A0099-004LP Vapor	None Required	None Required
EMCO A0099-X Vapor (all models)	None Required	None Required
All Non-EMCO Dust Caps	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 A0020EVRC 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

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 and 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? **Note: All Phase I EVR installed equipment must be listed in Executive Order (E.O.) VR-105.**
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 (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 (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. A0097-004LP or A0097-005 Product and A0099-004LP or 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 A0097-004LP or A0097-005 and A0099-004LP or 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 (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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EMCO Wheaton Retail Installation, Operation and Maintenance Manual

Table of Contents (continued)

[2] 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.

Table of Contents (continued)

Figure A-1
Typical Product Side Installation of a Multi-port Configuration of the EMCO Wheaton Retail System

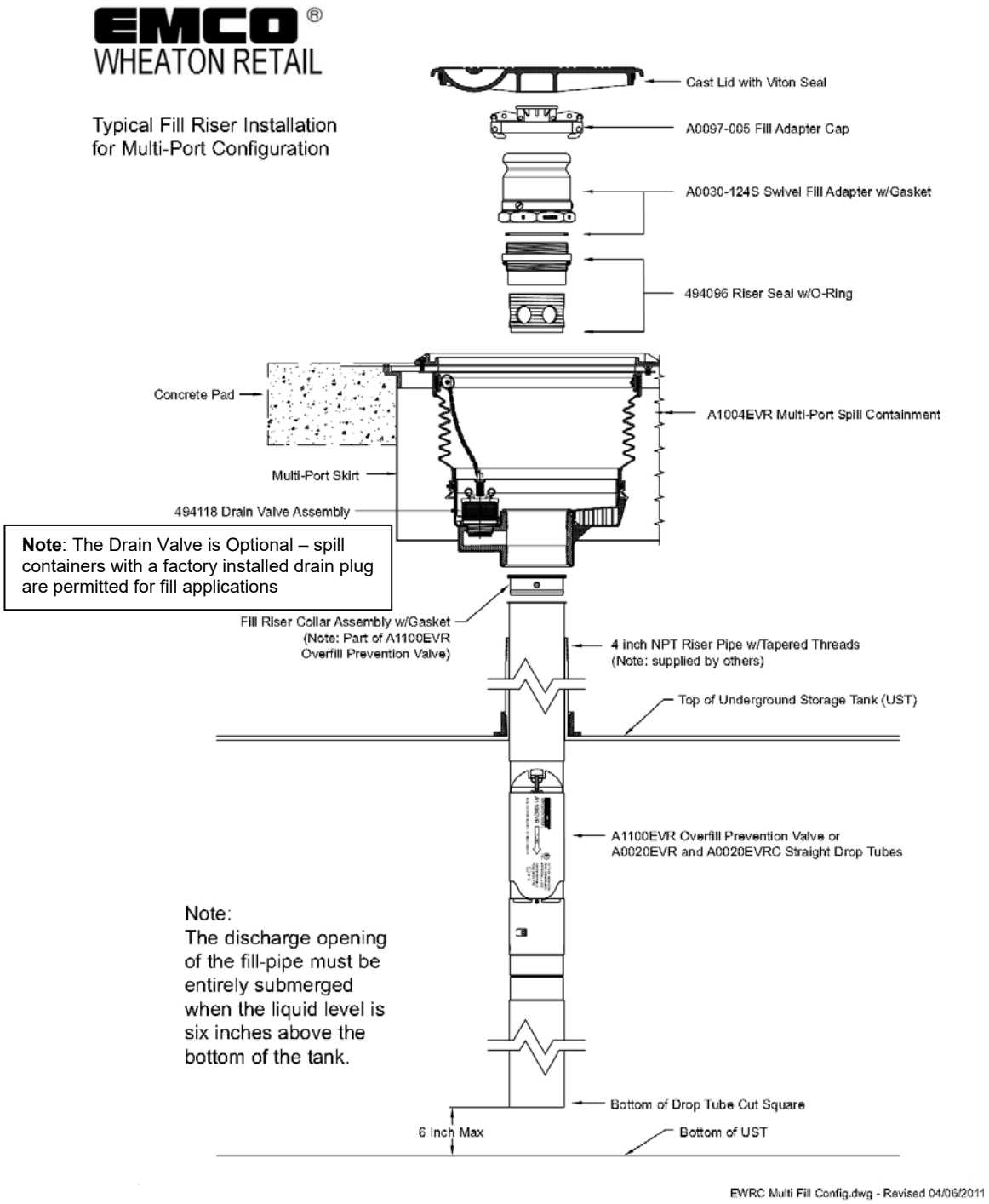


Figure A-2
Typical Vapor Side Installation of a Multi-port Configuration of the EMCO Wheaton Retail System

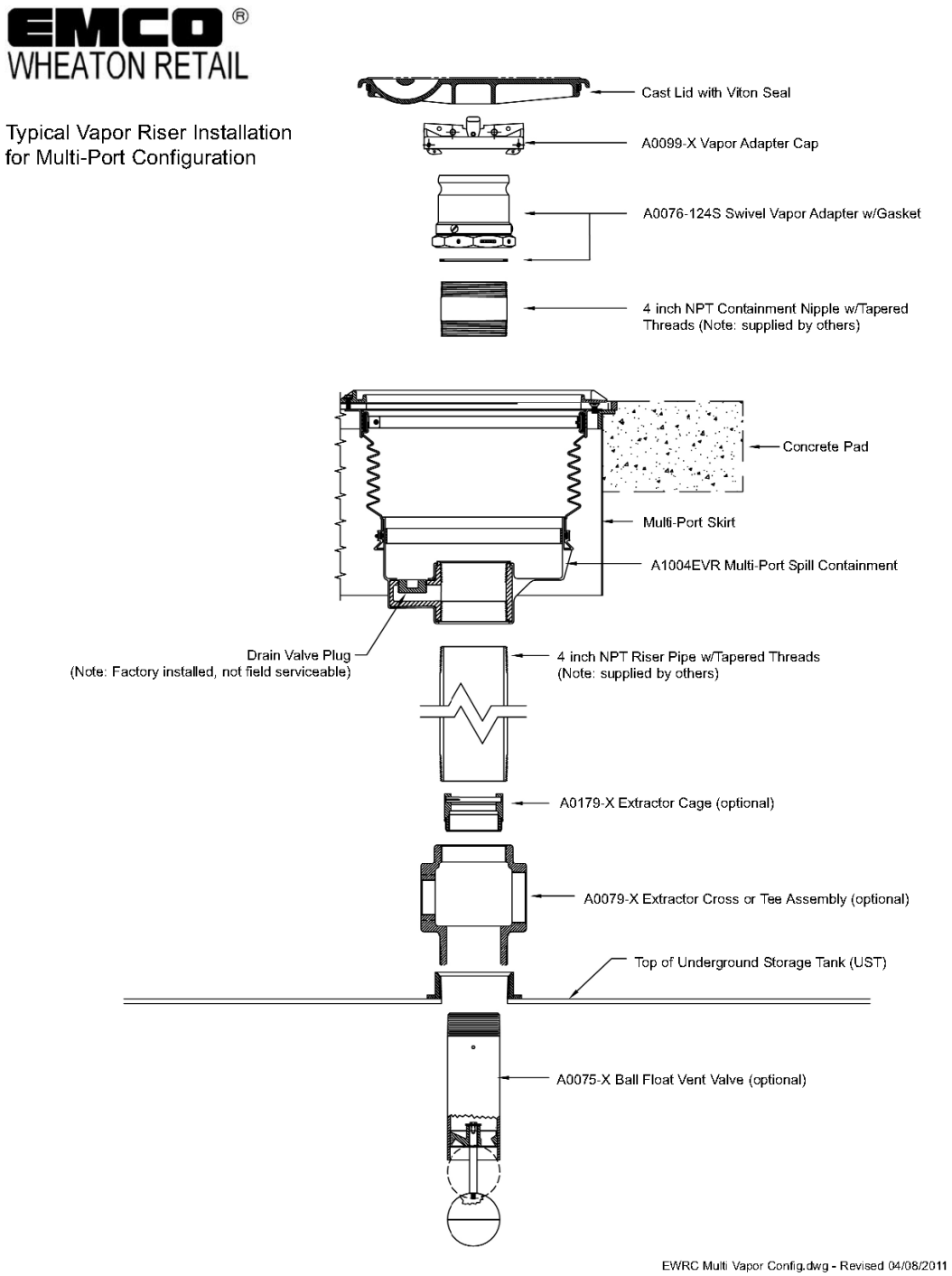


Figure A-3
Typical Product Side Installation of a Direct Burial Configuration of the EMCO Wheaton Retail System

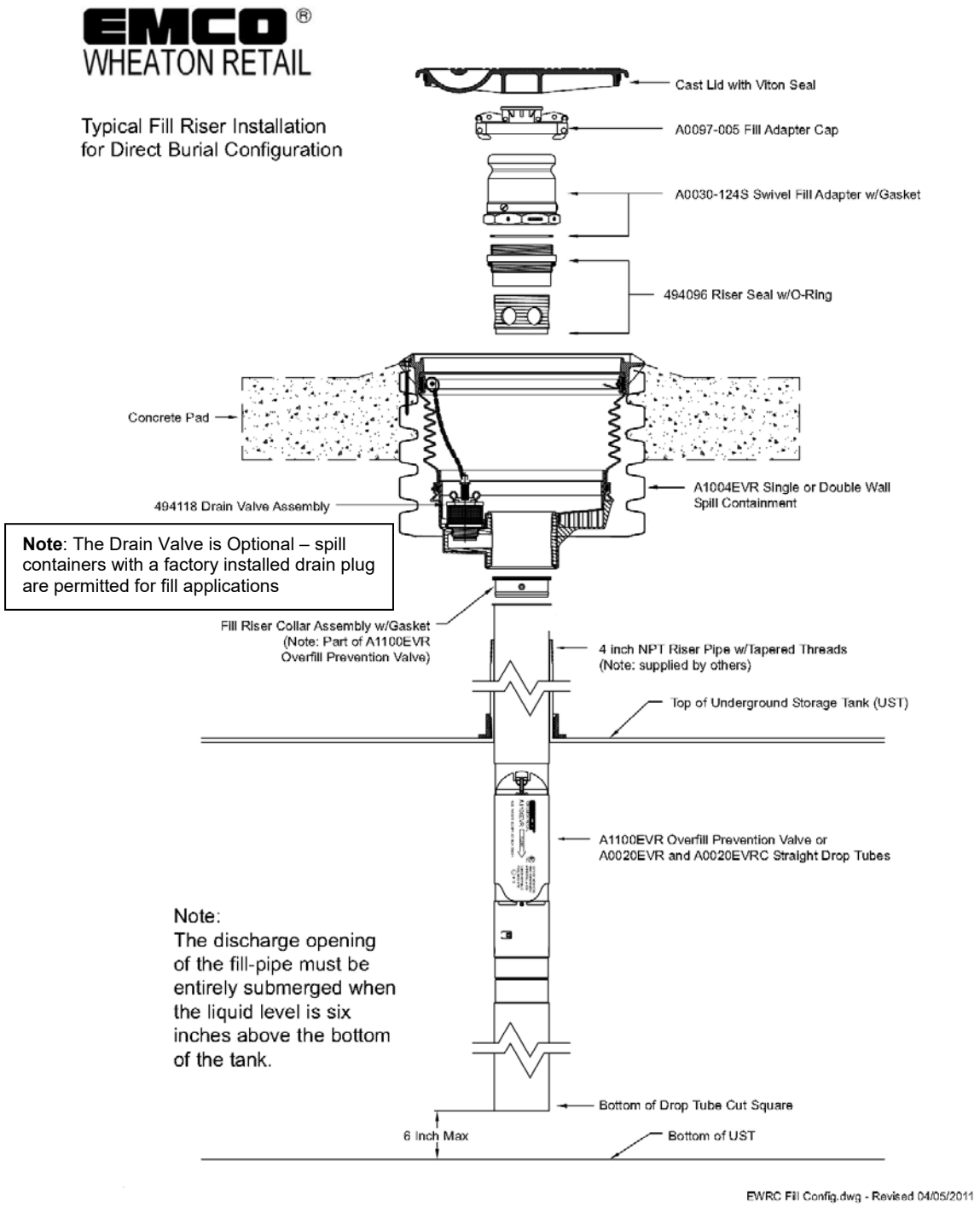


Figure A-4
Typical Vapor Side Installation of a Direct Burial Configuration of the EMCO Wheaton Retail System

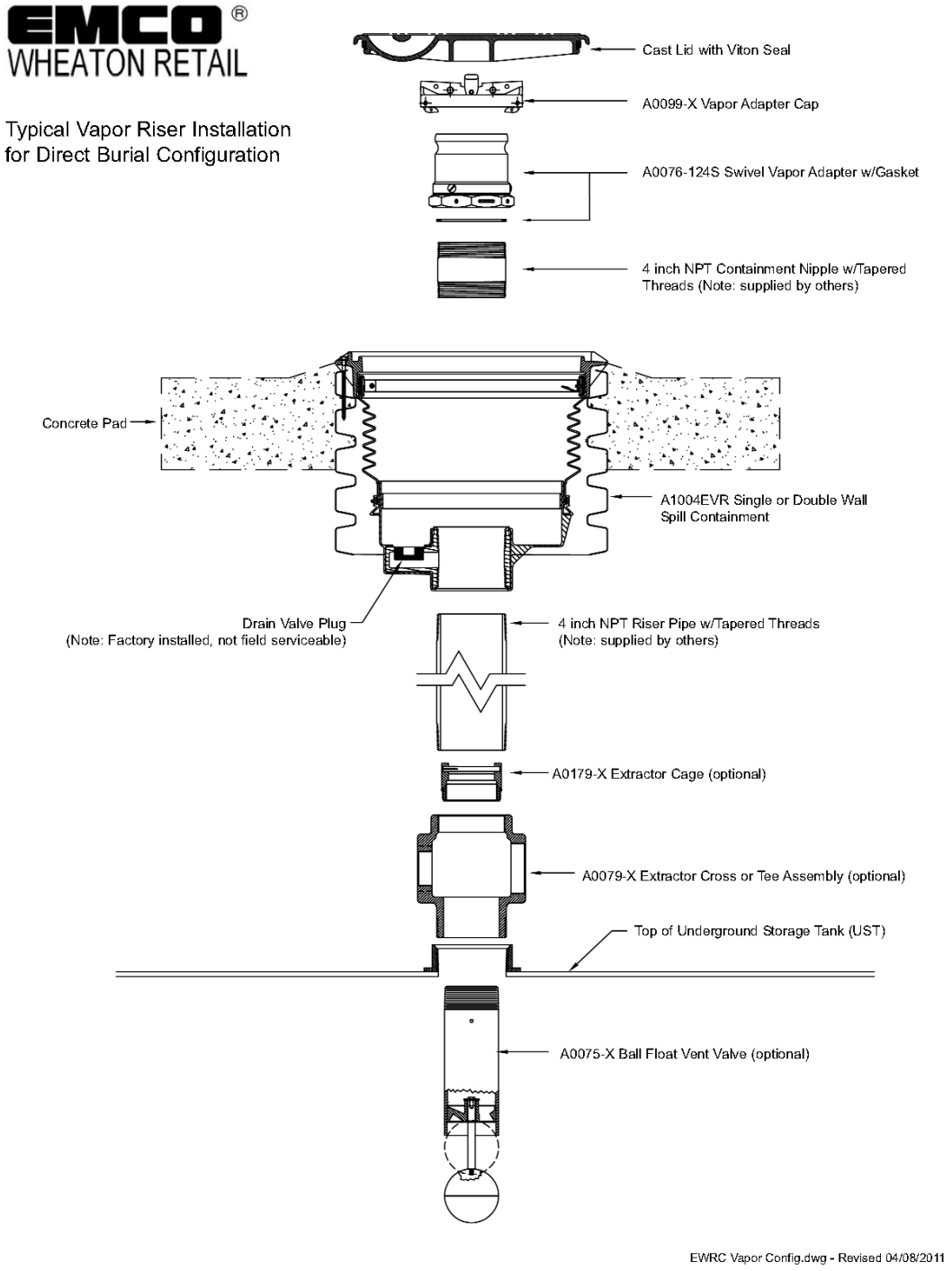
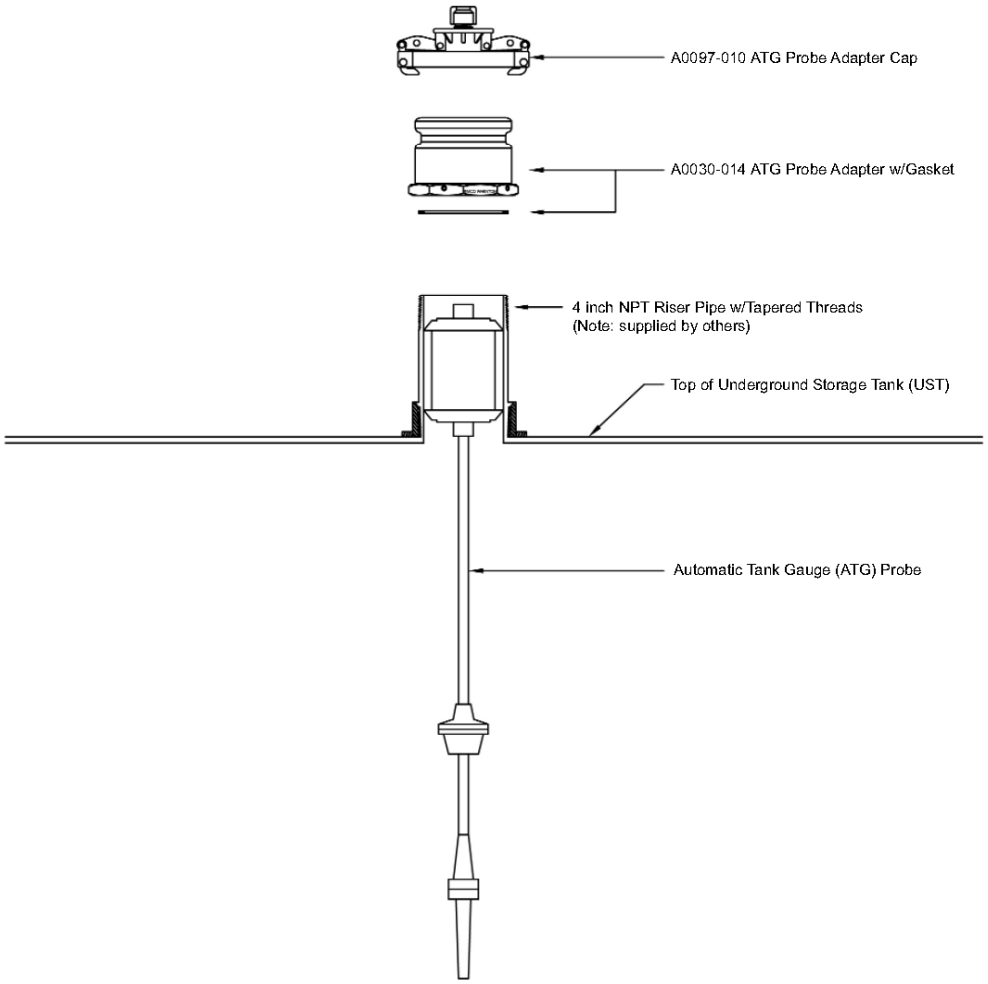


Figure A-5
Typical Automatic Tank Gauge Probe Riser Installation
of the EMCO Wheaton Retail System

EMCO® WHEATON RETAIL

Typical Automatic Tank Gauge
(ATG) Probe Riser Configuration



EWRC ATG Probe Config.dwg - Revised 04/07/2011

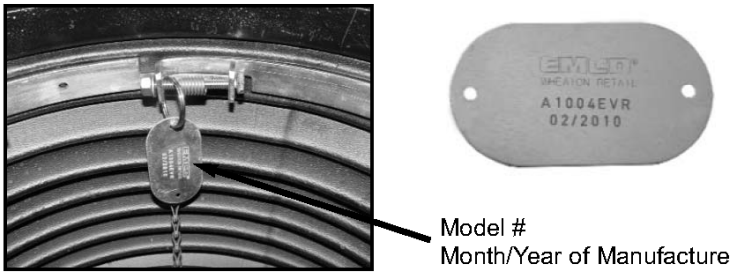
Figure B-1
Installation Instructions for Multi-port Containment Assembly

EMCO® WHEATON RETAIL

A1004EVR
SPILL CONTAINMENT
MULTI-PORT APPLICATION

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
A1004EVR-237	Multi-port 37”
A1004EVR-242	Multi-port 42”
A1004EVR-248	Multi-port 48”

Required Service Tools:

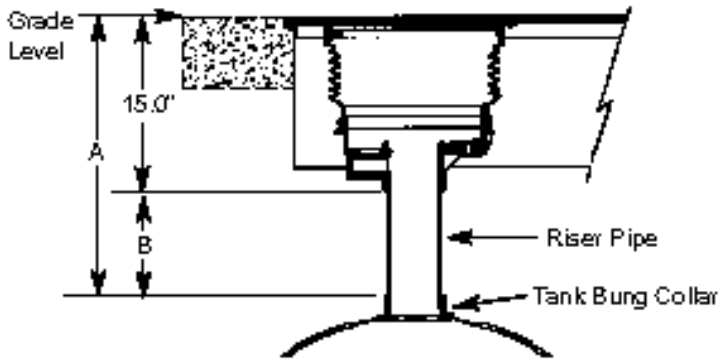
- Tape Measure
- Ratchet
- 5/16" Socket
- 5/16" Allen Hex Driver
- Torque Wrench w/ 100 to 150 ft-lbs Setting
- Pipe Thread Sealant Compound
- Spill Containment Wrench p/n 494241
- Torque Wrench w/ 9 to 11 ft-lbs Setting

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)

Sizing the Riser Pipe



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 lengh 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.

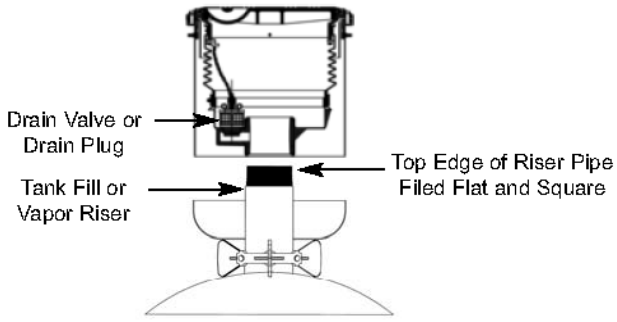
2. Concrete must completely fill around the A1004EVR spill containment manhole rim and skirting to insure proper anchoring.

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 sur face 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 instrucions.

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:

Description	Part Number
• 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.

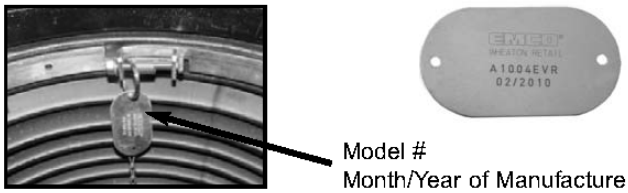
Figure B-2
Installation Instructions for 5 Gallon Direct Burial Containment Assemblies -003, -005, -010, -012, -210 and -316 Configurations

EMCO® WHEATON RETAIL

A1004EVR
Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
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:

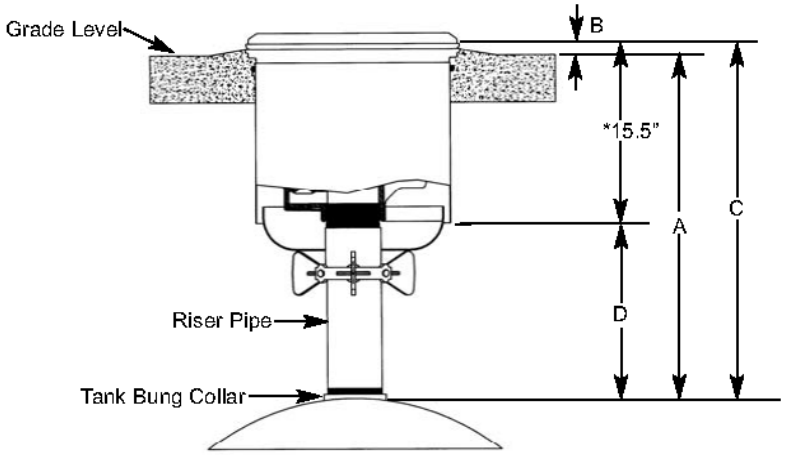
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

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-2 (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-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 ether 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.

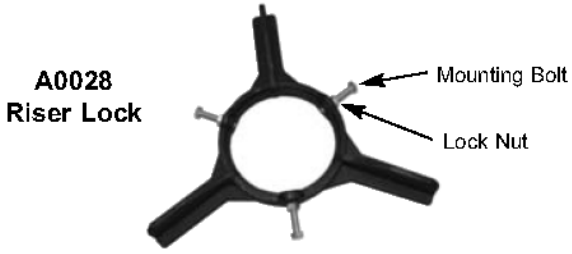
IMPORTANT: Do not use hacksaw to cut riser pipe.

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)

Riser Lock to Riser Pipe



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.

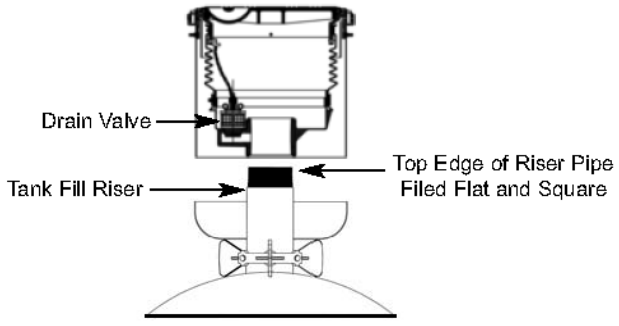
IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly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

Spill Containment to Riser Pipe

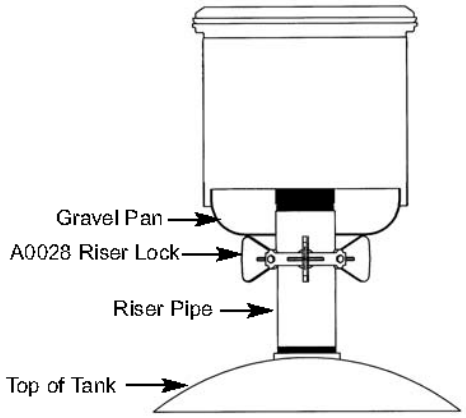


1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

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.

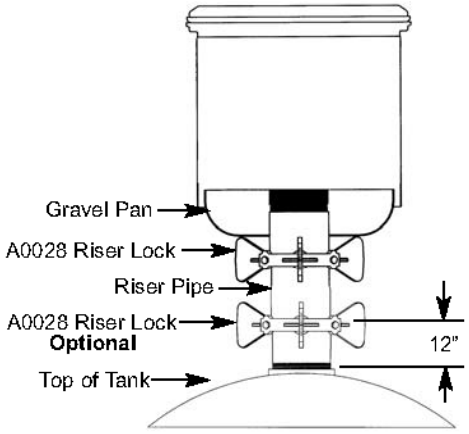
Riser Lock Installation for Single Wall Configurations



3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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 ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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

Part Number	Description
• 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)

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

EMCO® WHEATON RETAIL

A1004EVR
Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:

Model Numbers	Description
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
A1004EVR-317AS	Single Wall, No Drain, NPT
A1004EVR-317S	Double Wall, No Drain, NPT
A1004EVR-317SS	Double Wall, No Drain, NPT

Required Service Tools:

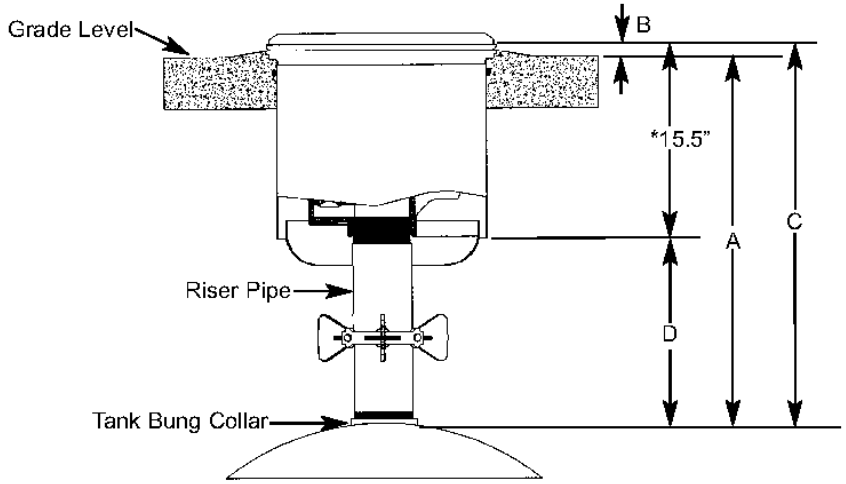
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

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)

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	Install Height (inches)
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-317AS	Single Wall	12.9
A1004EVR-317S	Double Wall	13.6
A1004EVR-317SS	Double Wall	15.3

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 install height of the A1004EVR spill containment from measurement C, then add 1.0 inch for the riser pipe threads.

5. After properly sizing the 4-inch diameter riser pipe, cut threads to ether 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.

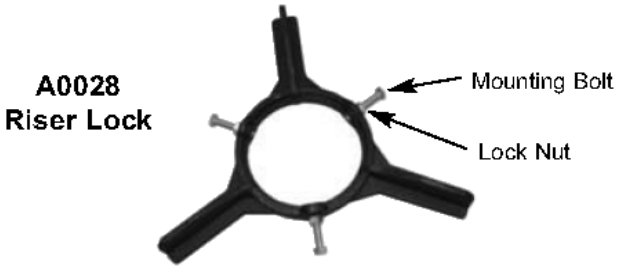
2. The site installation requires a 1-inch crown height for proper water run-off. Measurement B is 1 inch. Add measurement A 36 inches, to measurement B, 1 inch, equals measurement C, 37 inches.

3. The height of the **A1004EVR-211A single wall spill containmen**t is 16.0 inches. Subtract the height of 16.0 inches from measurement C, 37 inches, then add 1 inch 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)

Riser Lock to Riser Pipe



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.

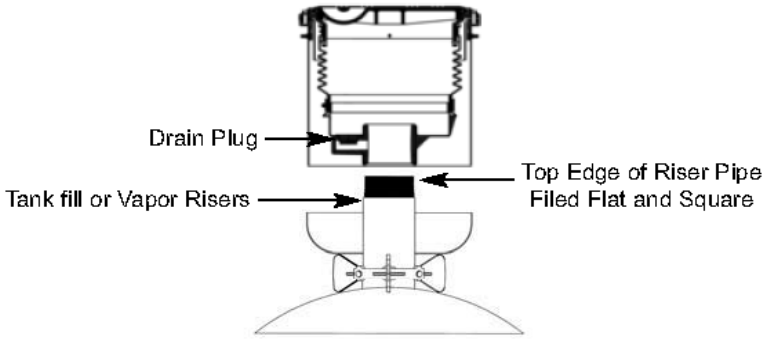
IMPORTANT: All double wall configurations come standard from the factory with one A0028 riser lock. The purpose of the A0028 riser lock is to prevent the bottom flange and riser pipe from turning during the removal and installation of the primary and secondary liners. A second A0028 riser lock is highly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

Spill Containment to Riser Pipe



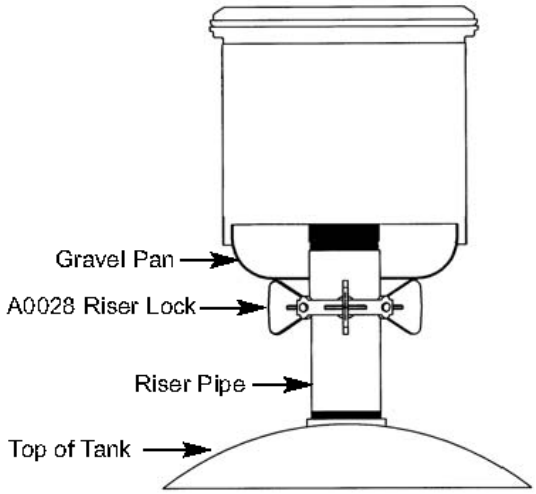
1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

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

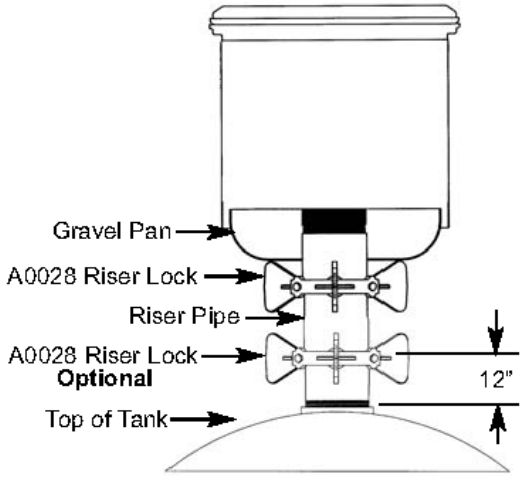
Riser Lock Installation for Single Wall Configurations



3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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 ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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 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-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.
- Models A1004EVR-317AS and -317SS – Do not come with factory installed spacer bars or jack assemblies. The spill containment height is fixed.

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

Part Number	Description
• 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
• 495394EVR	-317AS Primary Repair Kit
• 495395EVR	-317SS 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)

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

p/n 569930
Rev. M, 09/15

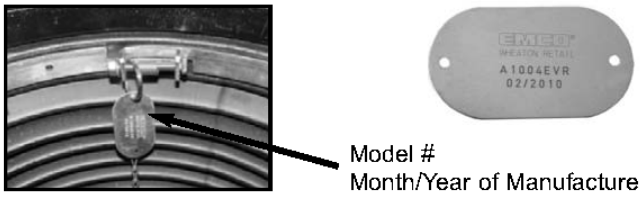
Figure B-4
Installation Instructions for 15 Gallon Direct Burial Containment -215 Configuration

EMCO® WHEATON RETAIL

A1004EVR
Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
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:

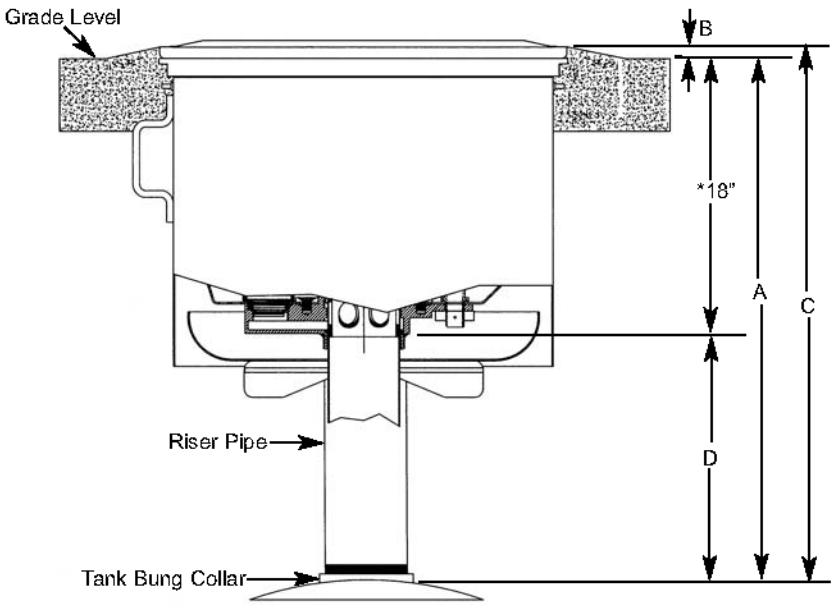
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

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 ether 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.

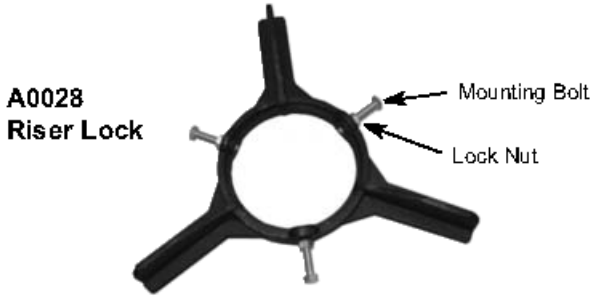
IMPORTANT: Do not use hacksaw to cut riser pipe.

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.

Riser Lock to Riser Pipe



IMPORTANT: All <u>single wall configurations</u> 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 <u>double wall configurations</u> 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.

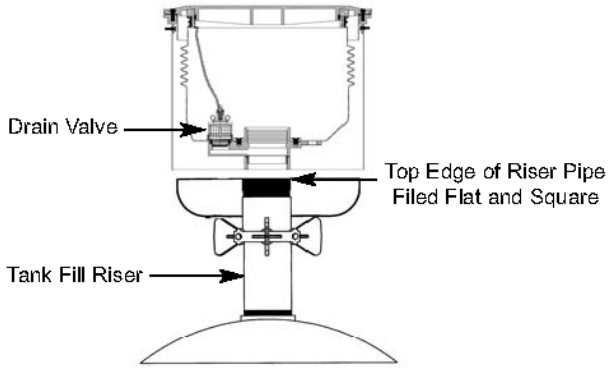
1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a ½" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

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.

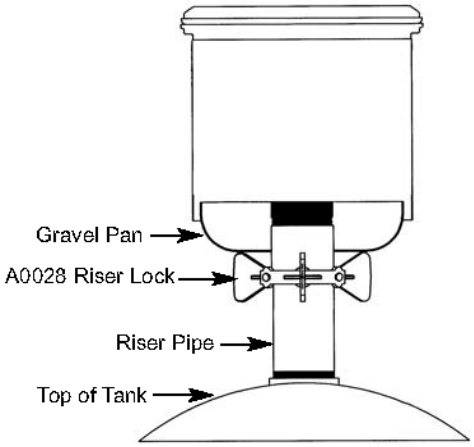
Figure B-4 (Continued)

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



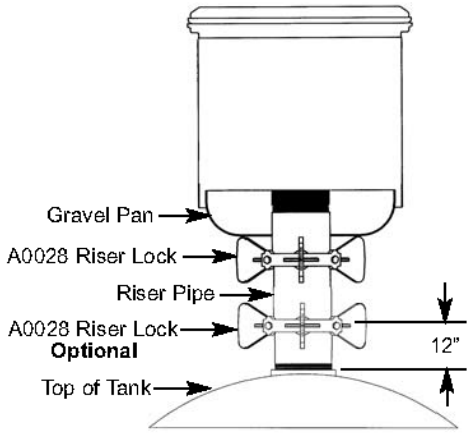
3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

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

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 ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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

Part Number	Description
• 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)

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

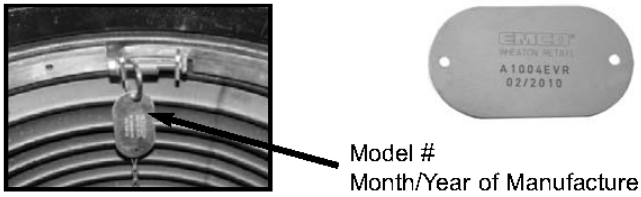
EMCO® WHEATON RETAIL

A1004EVR

Spill Containment
Direct Burial Application

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
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:

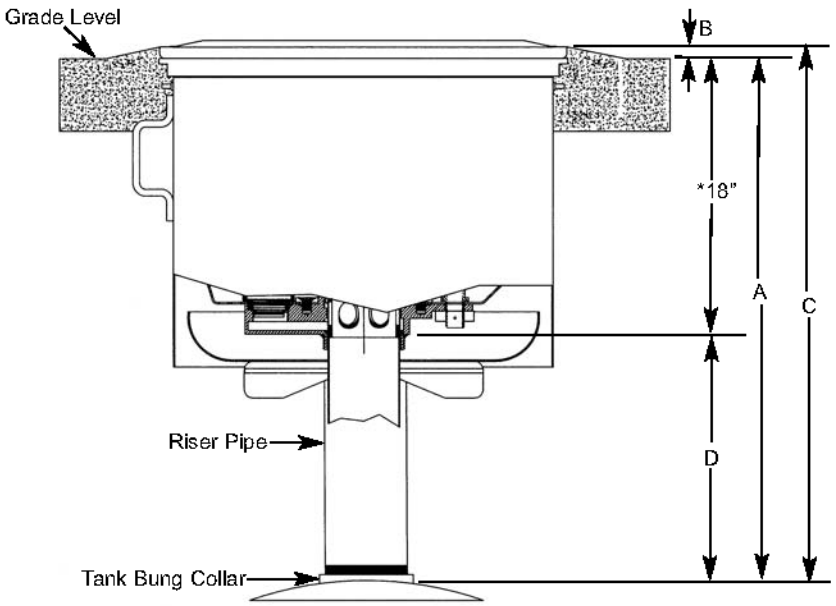
- Tape Measure
- Torque Wrench w/ 15 ft-lbs. Setting
- Pipe Thread Sealant Compound
- EMCO Spill Containment Wrench p/n A0081-001H Wrench
- Torque Wrench w/ 100 to 150 ft-lbs. Setting
- Ratchet
- ½" Socket
- ½" Crows Foot
- ¾" Socket
- ½" Hand Wrench

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.

Model Number	Spill Containment	Height (inches)
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 ether 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.

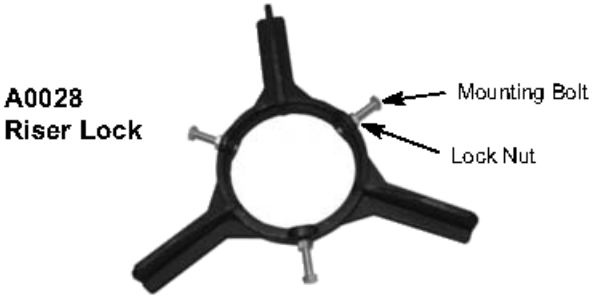
IMPORTANT: Do not use hacksaw to cut riser pipe.

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.

Riser Lock to Riser Pipe



IMPORTANT: All <u>single wall configurations</u> 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 <u>double wall configurations</u> 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.

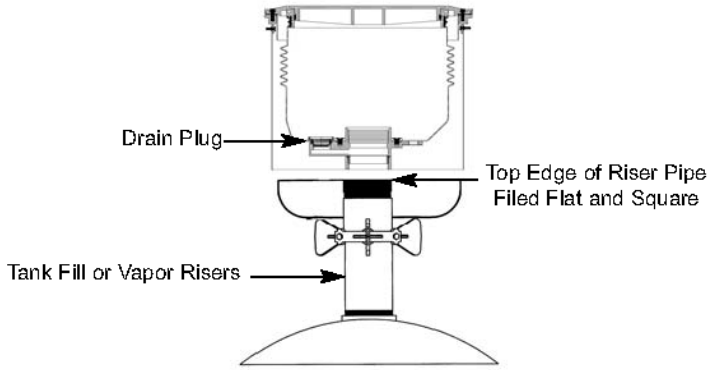
1. Before attempting to install the A0028 riser lock onto the riser pipe, loosen all mounting bolts and lock nuts using a ½" hand wrench.
2. Install the A0028 riser lock onto the top of the riser pipe. Slide the A0028 riser lock downward until resting on the backfill or top of tank.

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.

Figure B-5 (Continued)

Spill Containment to Riser Pipe

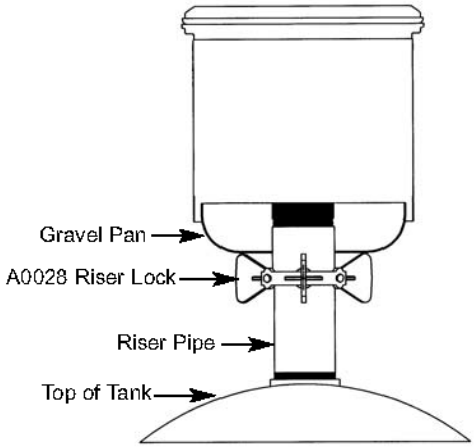


1. Before installing the A1004EVR spill containment, the top edge of the riser pipe must be filed flat and square to insure a proper sealing surface between the riser pipe and base of the 1004EVR spill containment.

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

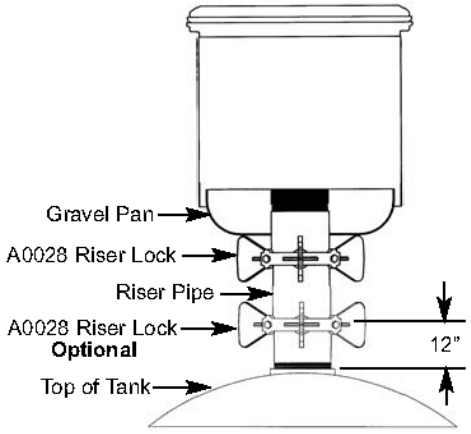


3. Slide the gravel pan and A0028 riser lock upward against the bottom of the A1004EVR spill containment. Using a ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" crows foot and torque wrench tighten and torque all lock nuts to 10 ft-lbs.

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 ½" socket and torque wrench tighten and torque all mounting bolts to 15 ft-lbs. Using a ½" 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

Part Number	Description
• 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)

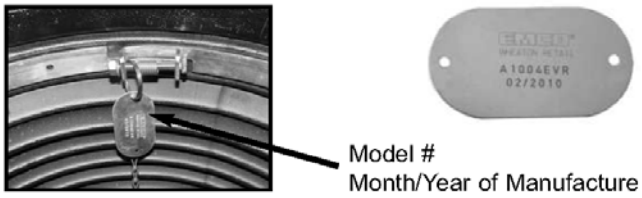
Figure B-6
494360EVR and 494466EVR Primary Spill Container Replacement Kit

EMCO® WHEATON RETAIL

494360EVR
494466EVR
Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
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

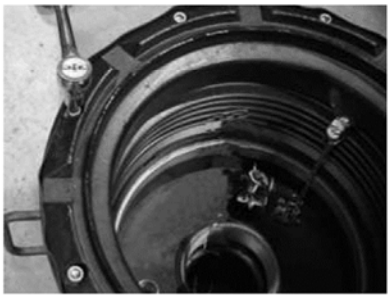
Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.

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.

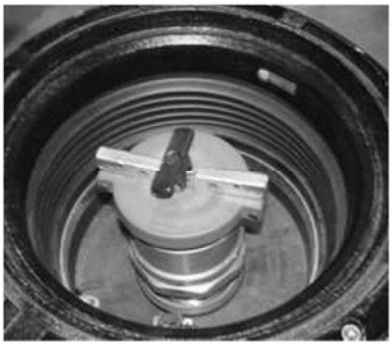
Step 10: Use the EMCO Spill Containment Wrench p/n A0081-001H to loosen and remove the primary liner from the fill riser pipe.

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.

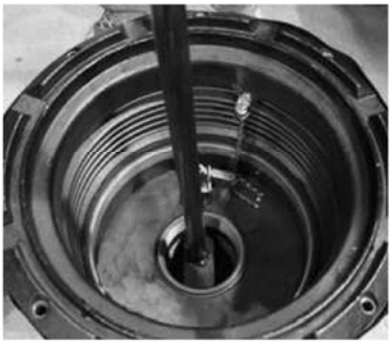
Figure B-6 (Continued)

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.

6

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

Part Number	Description
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.

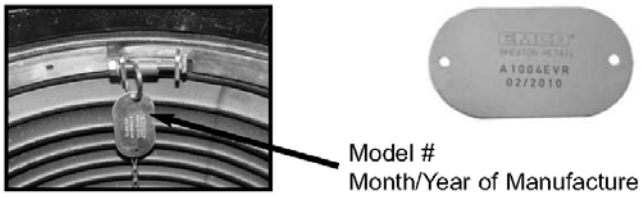
Figure B-7
494350EVR and 494467EVR Primary Spill Container Replacement Kit

EMCO® WHEATON RETAIL

494350EVR
494467EVR
Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Numbers	Description
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.

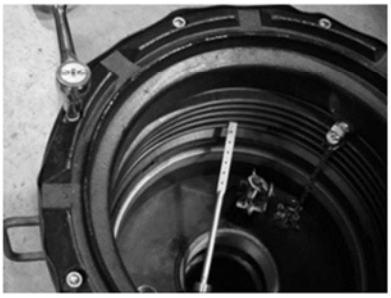
Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.

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.

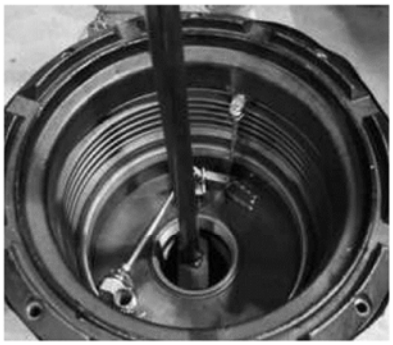
Fill & Vapor Application/Primary Liner Installation

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.

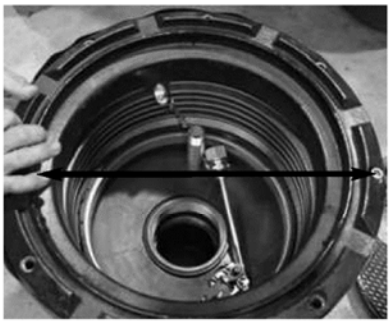
Step 2: Apply a non-hardening, gasoline resistant pipe thread sealant compound to the threads of the secondary unit.

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

Part Number	Description
• 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.

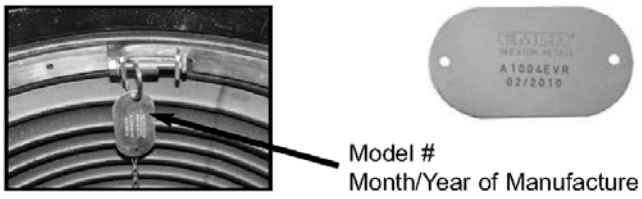
Figure B-8
494602EVR and 494661EVR Primary Spill Container Replacement Kit

EMCO® WHEATON RETAIL

494602EVR
494661EVR
Primary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Number	Description
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.

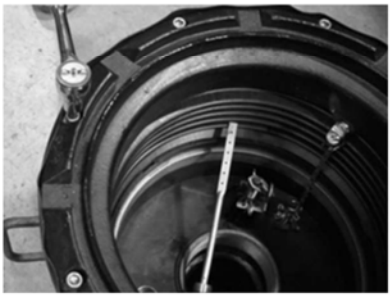
Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.

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)

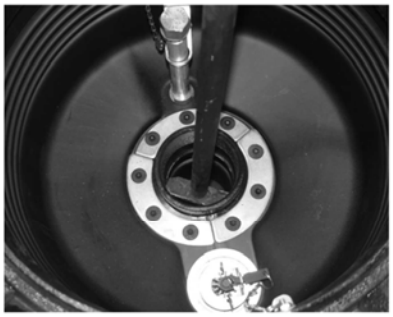
Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.

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.

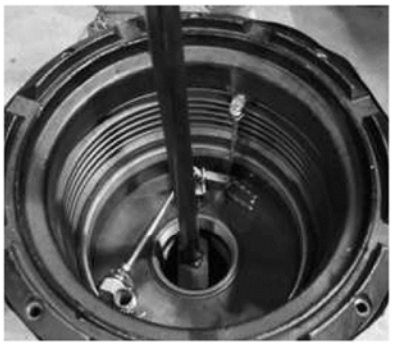
Fill & Vapor Application/Primary Liner Installation

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.

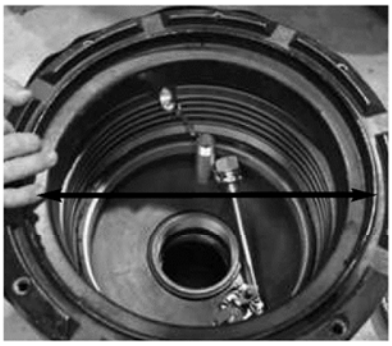
Step 2: Lubricate the sealing o-ring with a little coat of grease.

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 sontainment 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

Part Number	Description
• 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

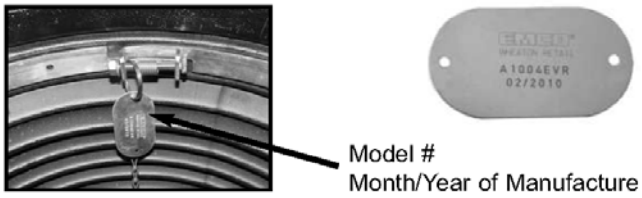
EMCO® WHEATON RETAIL

494550EVR
494660EVR

Primary & Secondary Replacement Kits

INSTALLATION INSTRUCTIONS

Permanent Identification:



Model Number	Description
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 (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.

Figure B-9 (Continued)

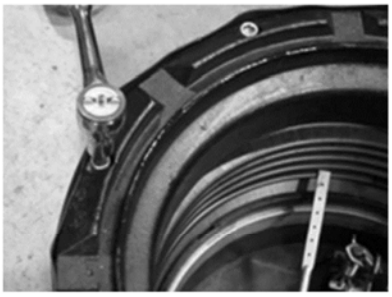
Step 5: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the A0030-124S swivel fill adapter.

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

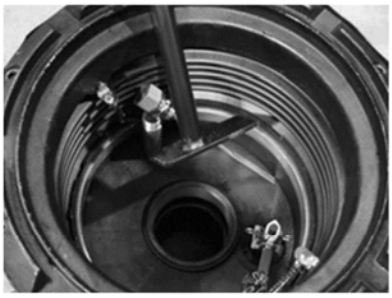
Step 7: Use the EMCO Adapter Wrench p/n A0081-001C to loosen and remove the 494096 riser seal.

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

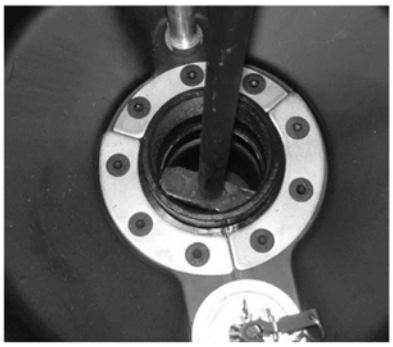
Figure B-9 (Continued)



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 (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-9 (Continued)

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

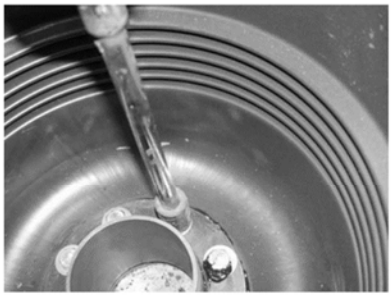
Step 6: Use a ratchet with a 9/16" socket to remove and discard all eight 3/8" stainless steel bolts located along the top of the rim of the A1004EVR spill containment.

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 (Continued)

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 (Continued)

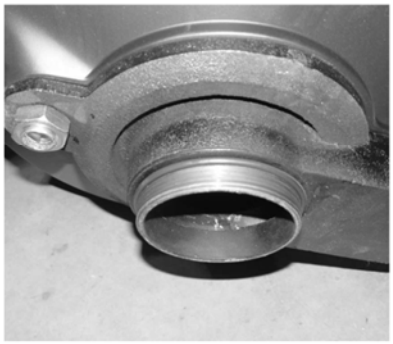
Step 3: Re-install the existing flange. Be sure to align the bolt holes

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

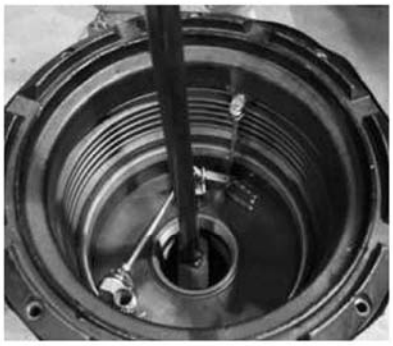
Step 1: All eight bolt holes must be clean and free of all debris before attempting to install the new primary liner.

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 (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: 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 (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-9 (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

Part Number	Description
• 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.

Figure B-9 (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.

Figure B-10
495394EVR Primary Replacement Kit

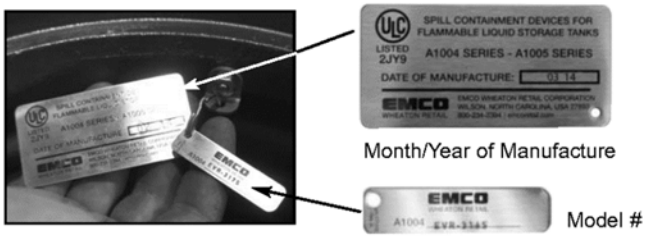
EMCO® WHEATON RETAIL

495394EVR
Primary Replacement Kit

Packing List:

(1) Stainless Steel Primary Insert
(1) Triple Wiper Seal
(4) 3/8" Studs
(2) Split Flanges
(1) Grounding Clip
(8) 3/8" Bolts
(1) O-ring
(8) 9/16" Flange Bolts
(1) Grounding Clip Washer

Permanent Identification:



Month/Year of Manufacture

Model #

Model Numbers	Description
495394EVR	Primary Replacement Kit for A1004EVR-317AS

INSTALLATION INSTRUCTIONS

Service Tools Required:

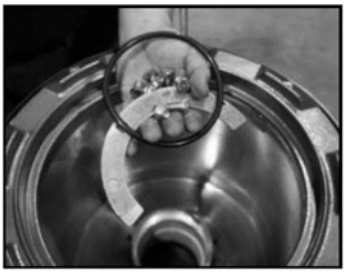
- 9/16" Socket
- 3/8" Socket
- Model 494120 Riser Seal Wrench
- 12" Extension and Ratchet
- Heavy Grease
- Torque Wrench w/ 15 to 20 ft-lbs. Settings
- Model A0081-001 Adapter Wrench
- Flat Head Screwdriver

CAUTION:

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.

Step 1: Remove the spill containment lid, cap, adapter, riser seal and drop tube. Do not discard.

Step 2: Remove and discard every other bolt (total of four) from the spill containment plow ring. Install the four studs (provided with the kit) in the open bolts holes for alignment. Remove and discard the remaining four bolts.



Step 3: Remove the flange bolts, grounding clip, washer, split flange and o-ring from inside the primary insert and discard.

Figure B-10 (Continued)

EMCO® WHEATON RETAIL

495394EVR
Primary Replacement Kit

Step 4: Remove the spill containment plow ring and the primary insert by slowly pulling upward.

Step 5: Use a flat head screwdriver to gently pry and separate the spill containment plow ring alway from the primary insert.

Step 6: Use a flat head screwdriver to remove the triple wiper seal from the bottom side of the spill containment plow ring. Install the new triple wiper seal and lubricate the outer wipers using heavy grease.

Step 7: Install the new primary insert into the existing spill containment. Use the studs to assist with alignment

Step 8: Loosely install four of the eight 3/8" bolts into the open holes on the spill containment plow ring.

Step 9: Remove the four studs and discard. Install the four remaining 3/8" bolts. In a star pattern tighten and torque all eight 3/8" bolts to 20 ft-lbs.

Step 10: Install the new o-ring over the female coupling. Push downward until the o-ring is properly seated in the o-ring groove of the flange assembly.

Step 11: Install the split flanges using seven of the eight 9/16" flange bolts.

Step 12: Use the eighth 9/16" flange bolt and washer to install the new grounding clip. Be sure the grounding clip touches the female coupling.

Figure B-10 (Continued)

EMCO® WHEATON RETAIL

495394EVR
Primary Replacement Kit

Step 13: In a star pattern tighten and torque all eight 9/16" flange bolts to 15 ft-lbs.

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.
6. When installing the A1004EVR spill containment with an Emco Wheaton low profile fill adapter cap, please refer to the A0097-004LP 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.
3. When installing the A1004EVR spill containment with an Emco Wheaton low profile vapor adapter cap, please refer to the A0099-004LP 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-10 (Continued)

EMCO® WHEATON RETAIL

495394EVR
Primary Replacement Kit

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

Part Number	Description
• A1004-316LID	Lid and Seal, Composite
• A1004-316CLID	Lid and Seal, Cast Iron
• 495395EVR	-317SS Primary Replacement Kit

PERFORMANCE SPECIFICATIONS

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

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.

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-11
495395EVR Primary Replacement Kit

EMCO® WHEATON RETAIL

495395EVR
Primary Replacement Kit

Packing List:

(1) Stainless Steel Primary Insert
(1) Triple Wiper Seal
(4) 3/8" Studs
(2) Split Flanges
(1) Grounding Clip
(8) 3/8" Bolts
(1) O-ring
(8) 9/16" Flange Bolts
(1) Grounding Clip Washer
(1) Plow Ring Gasket

Permanent Identification:

Month/Year of Manufacture

Model #

Model Numbers	Description
495395EVR	Primary Replacement Kit for A1004EVR-317SS

INSTALLATION INSTRUCTIONS

Service Tools Required:

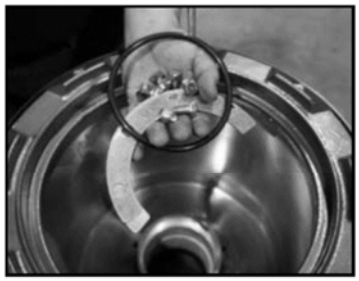
- 9/16" Socket
- 3/8" Socket
- Model 494120 Riser Seal Wrench
- 12" Extension and Ratchet
- Heavy Grease
- Torque Wrench w/ 15 to 20 ft-lbs. Settings
- Model A0081-001 Adapter Wrench
- Flat Head Screwdriver

CAUTION:

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.

Step 1: Remove the spill containment lid, EZ-Gage, cap, adapter, riser seal and drop tube. Save, do not discard.

Step 2: Remove and discard every other bolt (total of four) from the spill containment plow ring. Install the four studs (provided with the kit) in the open bolts holes for alignment. Remove and discard the remaining four bolts.



Step 3: Remove the flange bolts, grounding clip, washer, split flange and o-ring from inside the primary insert and discard.

Figure B-11 (Continued)

EMCO® WHEATON RETAIL

495395EVR
Primary Replacement Kit

Step 4: Remove the spill containment plow ring and the primary insert by slowly pulling upward.

Step 5: Use a flat head screwdriver to gently pry and separate the spill containment plow ring alway from the primary insert.

Step 6: Use a flat head screwdriver to remove the triple wiper seal from the bottom side of the spill containment plow ring. Install the new triple wiper seal and lubricate the outer wipers using heavy grease.

Step 7: Remove and discard the existing plow ring gasket. Install the new plow ring gasket, use the studs for alignment.

Step 8: Install the new primary insert into the existing spill containment. Use the studs to assist with alignment.

Step 9: Loosely install four of the eight 3/8" bolts into the open holes on the spill containment plow ring.

Step 10: Remove the four studs and discard. Install the four remaining 3/8" bolts. In a star pattern tighten and torque all eight 3/8" bolts to 20 ft-lbs.

Step 11: Install the new o-ring over the female coupling. Push downward until the o-ring is properly seated in the o-ring groove of the flange assembly.

Step 12: Install the split flanges using seven of the eight 9/16" flange bolts.

Figure B-11 (Continued)

EMCO® WHEATON RETAIL

495395EVR
Primary Replacement Kit

Step 13: Use the eighth 9/16" flange bolt and washer to install the new grounding clip. Be sure the grounding clip touches the female coupling.

Step 14: In a star pattern tighten and torque all eight 9/16" flange bolts to 15 ft-lbs., and re-install EZ-Gage.

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.
6. When installing the A1004EVR spill containment with an Emco Wheaton low profile fill adapter cap, please refer to the A0097-004LP 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.
3. When installing the A1004EVR spill containment with an Emco Wheaton low profile vapor adapter cap, please refer to the A0099-004LP 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-11 (Continued)

EMCO® WHEATON RETAIL

495395EVR
Primary Replacement Kit

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

Part Number	Description
• A1004-316LID	Lid and Seal, Composite
• A1004-316CLID	Lid and Seal, Cast Iron
• 495395EVR	-317SS Primary Replacement Kit

PERFORMANCE SPECIFICATIONS

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

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.

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 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 fo 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

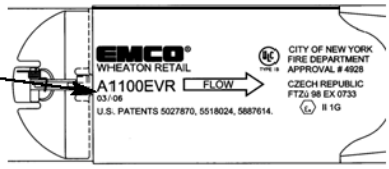
INSTALLATION INSTRUCTIONS

Packing List:

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

Permanent Identification:

Model #
Month/Year of Manufacture



Valve Sleeve

Service Tool Required:

- 13/64" Drill Bit
- Rivet Gun
- Power Drill
- Tape Measure
- Hacksaw w/ fine tooth
- Hand file w/ fine blade
- Marker
- Hammer
- Pipe Thread Sealant Compound
- 150 Grit Size Emery Cloth
- De-burring Tool w/ #10 Blade
- 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.**

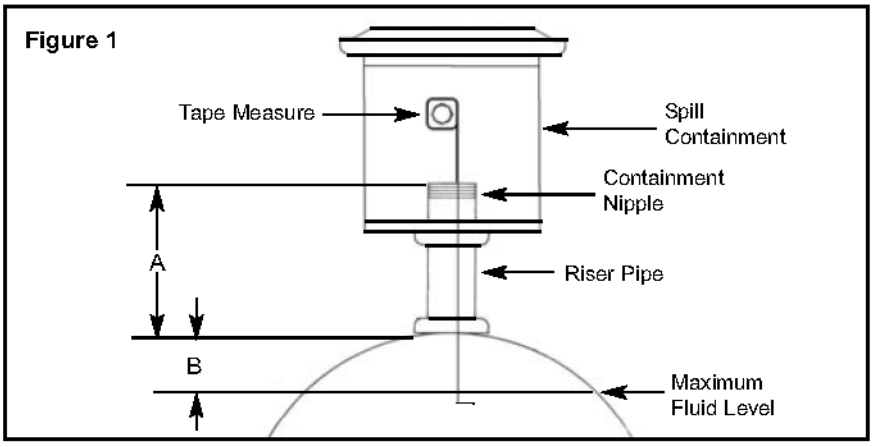
Figure D-1 (continued)

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.

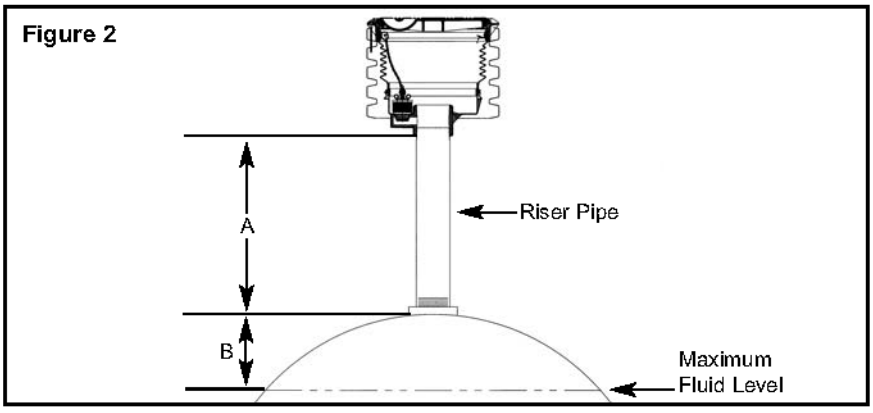
   When installing the A1100EVR overfill prevention valve below the spill containment drain valve, measurement A is the distance between the inside top of the tank to the top edge of the riser pipe as shown in Figure 2.

Figure 1



A1100EVR Overfill Prevention Valve Installed Above Drain Valve

Figure 2



A1100EVR Overfill Prevention Valve Installed Below Drain Valve

Figure D-1 (continued)

2. 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.

3. 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"

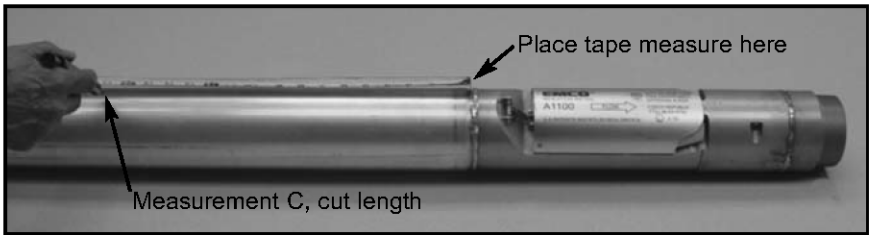
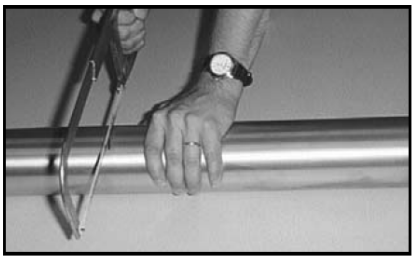
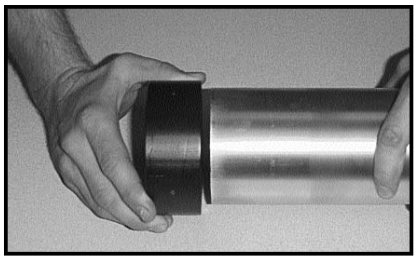


Figure D-1 (continued)

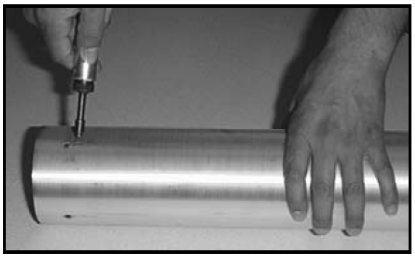


4. Carefully cut the top drop tube to the required length. Use a hacksaw equipped with a fine tooth blade to ensure a straight 90-degree cut.

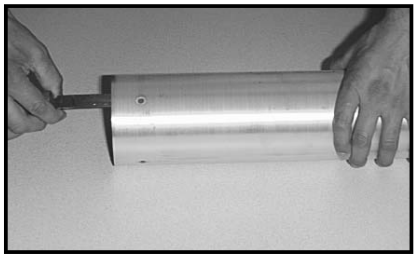
IMPORTANT: Do not use a power saw, pipe or tubing cutter as this may result in damage to the top drop tube, voiding warranty.



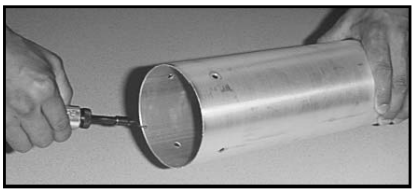
5. Slide the EMCO Drill Fixture p/n 566675 onto the end of the top drop tube until the edge bottoms out against the inside ridge.

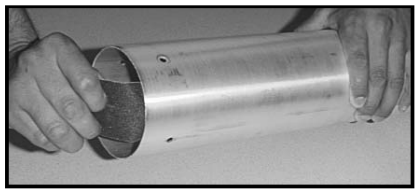


6. Drill four 13/64 diameter holes through the top drop tube. Remove the drill fixture from the top drop tube. Using a de-burring tool equipped with a #10 blade, remove any sharp burrs around the inside area of the mounting holes.



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.



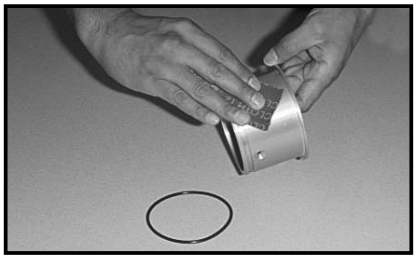


8. Using a de-burring tool equipped with a #10 blade, remove the sharp cutting ring from the inside edge of the top drop tube. Lightly sand the inside area of the top drop tube and mounting holes using 150-grit size emery cloth. Clean and remove any sanding debris.

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.

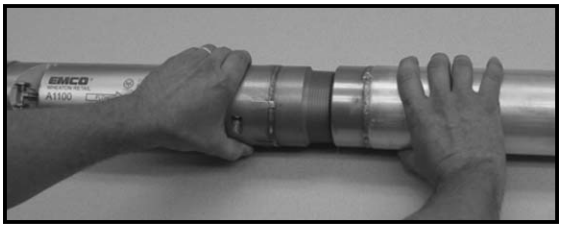
14. Once finished with steps 11 through 13, clean and remove all excess sealant around the top of the A1100EVR collar and rivets.

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

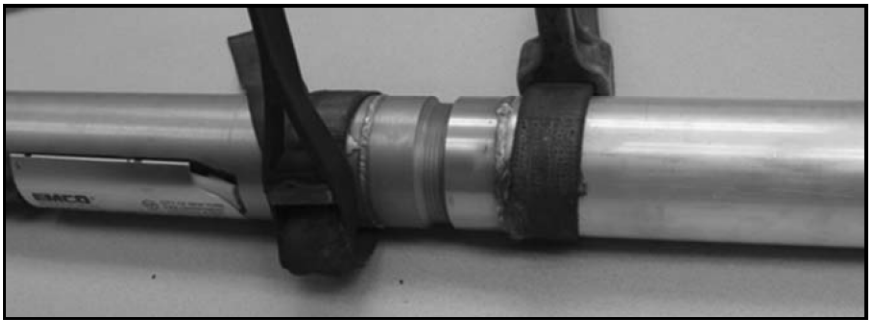
Figure D-1 (continued)

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.



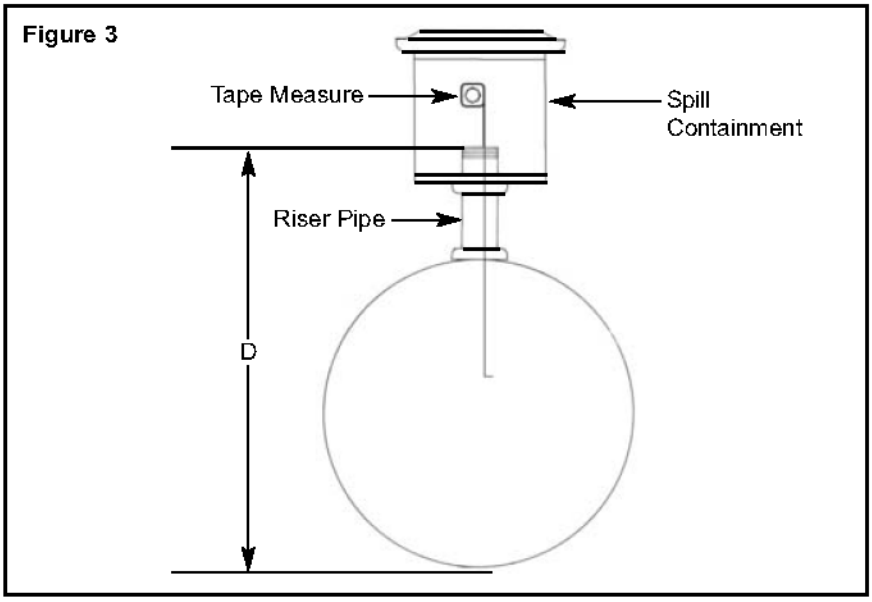
17. Use two fabric strap wrenches to permanently tighten.

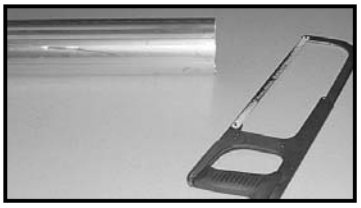
IMPORTANT: Once the Seals-All sealant has cured for a minimum of 24 hours and before installing the A1100EVR overfill prevention valve into the underground storage tank, a leak tightness integrity test must be performed.

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 presssure 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.

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

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

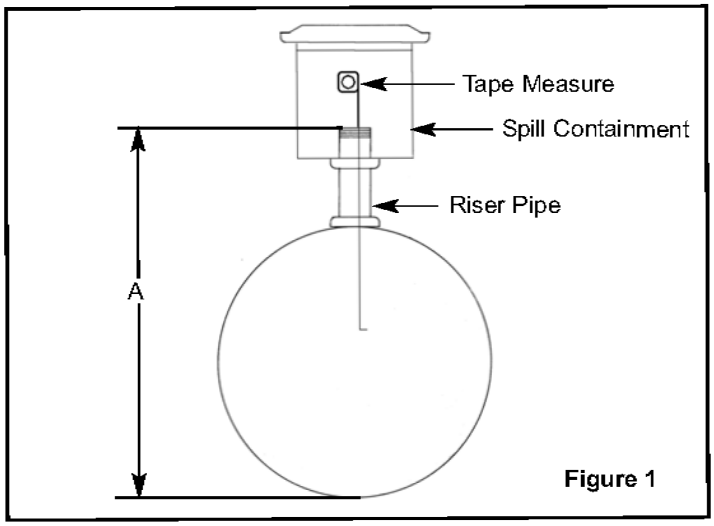


Figure 1

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.

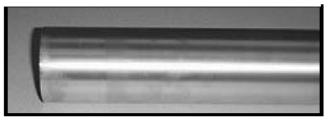


Figure D-2 (Continued)

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.

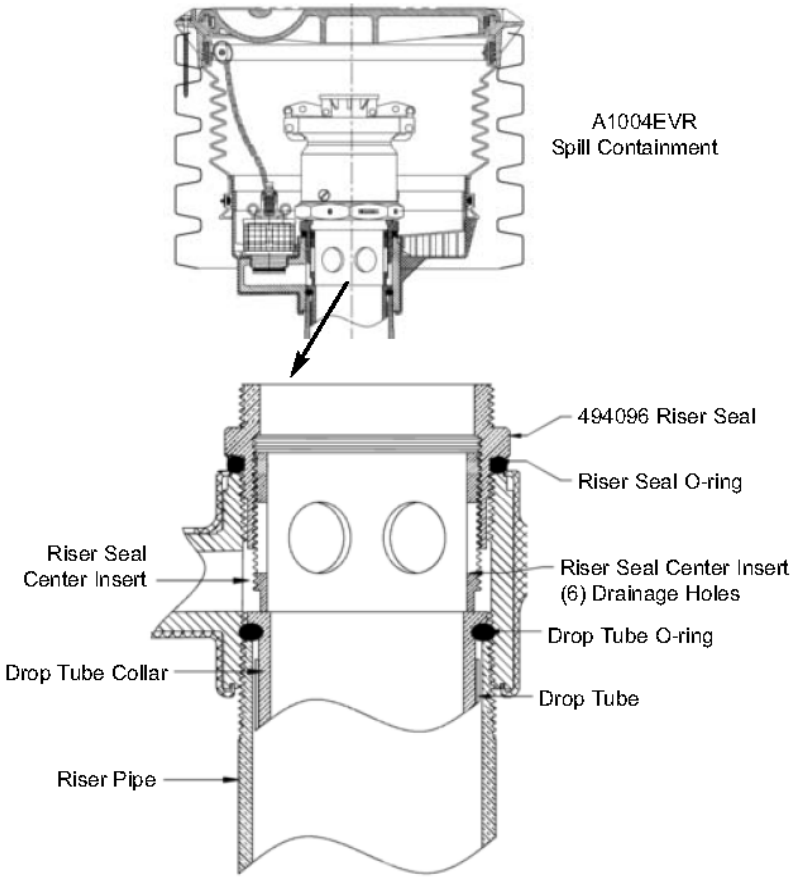
Emco Wheaton Retail Corp.
2300 Industrial Park Dr. • Wilson, NC 27893
252-243-0150 • 252-243-4759 (fax)

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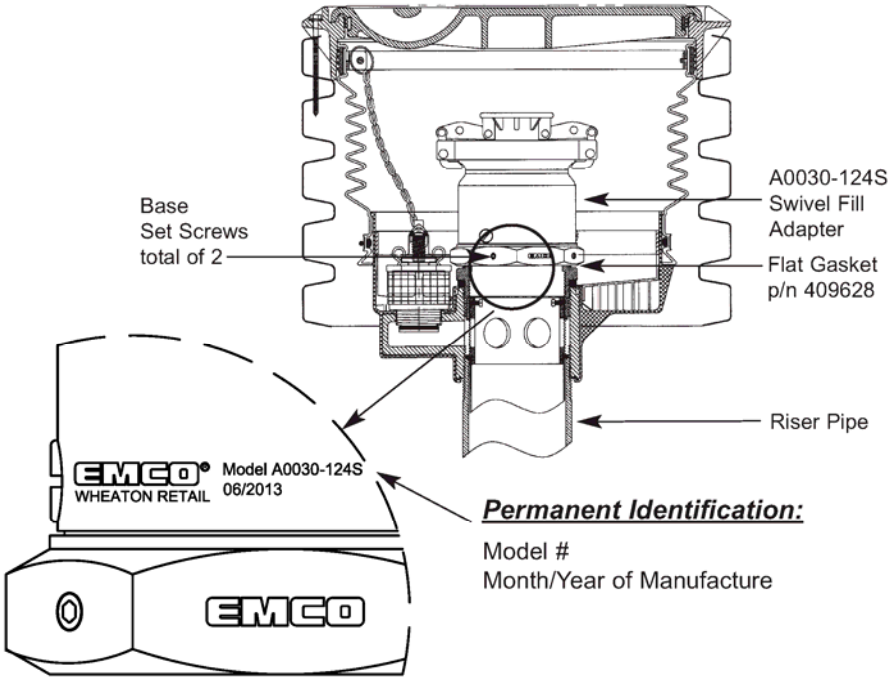
Figure F-1
A0030-124S Product Adaptor Installation Instructions

EMCO® WHEATON RETAIL

A0030-124S
Swivel Fill Adapter

INSTALLATION INSTRUCTIONS



Permanent Identification:

Model #
Month/Year of Manufacture

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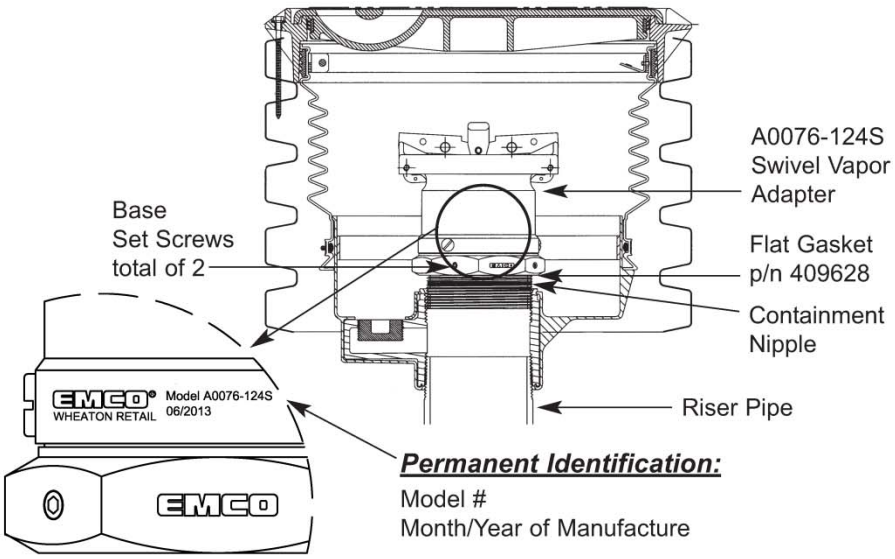
Figure F-2
A0076-124S Vapor Adaptor Installation Instructions

EMCO® WHEATON RETAIL

A0076-124S
Swivel Vapor Adapter

INSTALLATION INSTRUCTIONS



Permanent Identification:
Model #
Month/Year of Manufacture

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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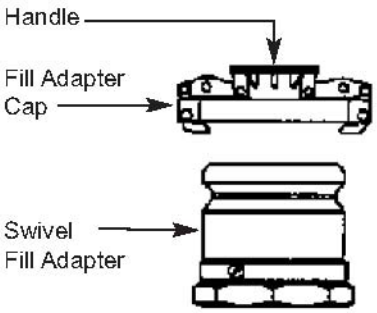
p/n 568397
Rev. K, 06/13

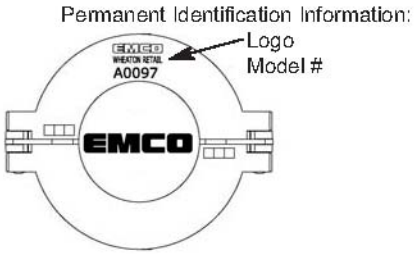
Figure G-1
A0097-005 Product Dust Cap Installation Instructions

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.

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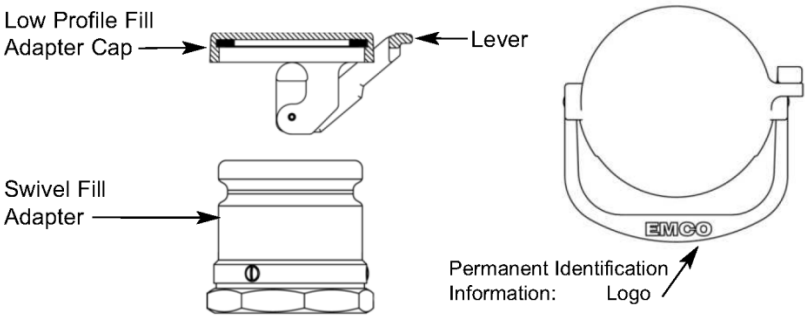
Rev. J, 06/13

Figure G-2
A0097-004LP Product Dust Cap Installation Instructions

EMCO® WHEATON RETAIL

A0097-004LP
Low Profile Fill Adapter Cap

INSTALLATION INSTRUCTIONS



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

PREVENTIVE MAINTENANCE

1. Annually verify that the gasket seal is properly secured and free of tears. If the low profile 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.

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p/n 571869
Rev. A, 08/15

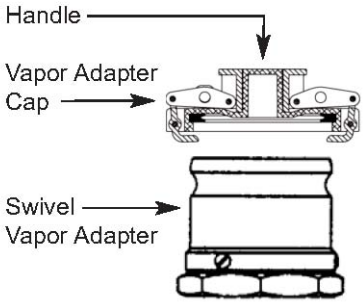
Figure G-3
A0099-002, -003 Vapor Dust Cap Installation Instructions

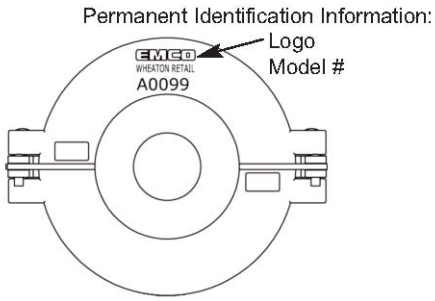
EMCO® WHEATON RETAIL

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 <u>installation instructions, product warranty registration card</u> and the <u>warranty tag</u> with the station owner and/or operator.

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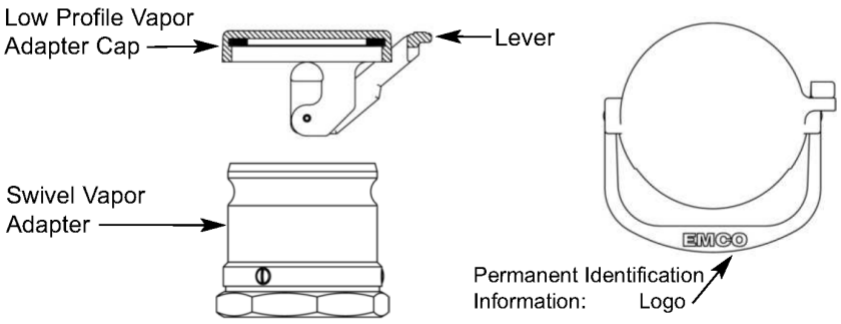
p/n 568392
Rev. J, 06/13

Figure G-4
A0099-004LP Vapor Dust Cap Installation Instructions

EMCO® WHEATON RETAIL

A0099-004LP
Low Profile Vapor Adapter Cap

INSTALLATION INSTRUCTIONS



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

PREVENTIVE MAINTENANCE

1. Annually verify that the gasket seal is properly secured and free of tears. If the low profile 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.

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

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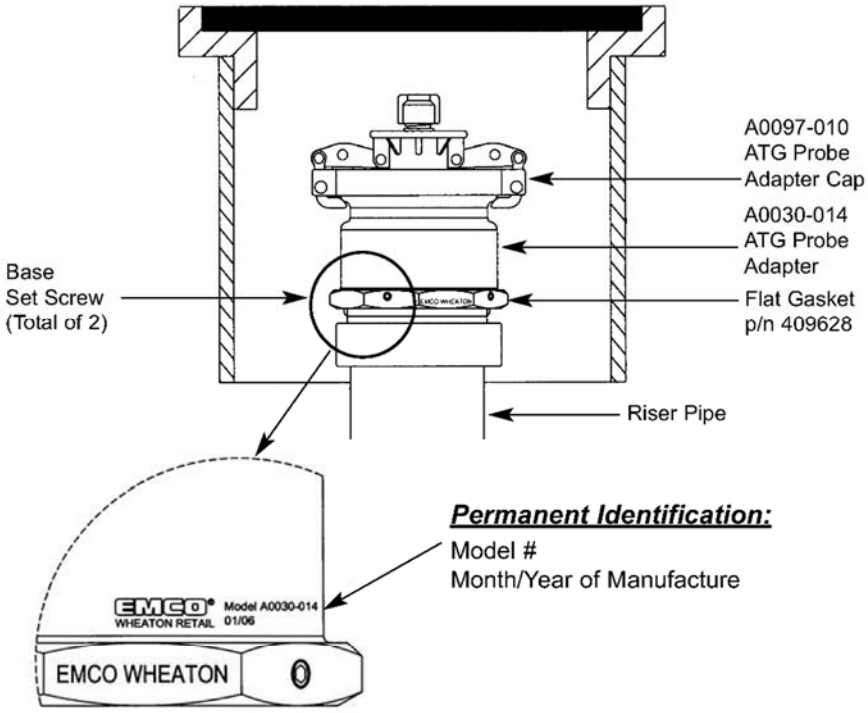
p/n 571870
Rev. A, 08/15

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.

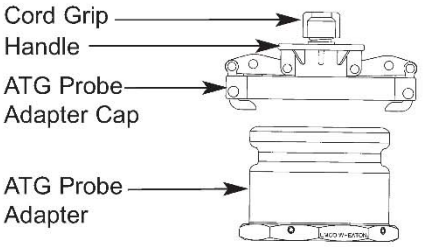
IMPORTANT: Leave these installation instructions, product warranty registration card and the warranty tag with the station owner and/or operator.

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

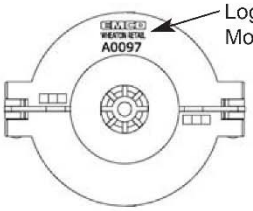
EMCO® WHEATON RETAIL

A0097-010
ATG Probe Adapter Cap

INSTALLATION INSTRUCTIONS



Permanent Identification Information:



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 <u>installation instructions, product warranty registration card</u> and the <u>warranty tag</u> 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 WHEATON RETAI

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.

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:

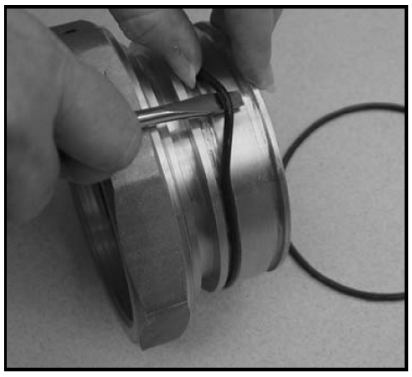
1. Always barricade to keep pedestrians and vehicles from accessing the storage tank area during preventive maintenance and/ or compliance testing of the EMCO phase I EVR system.

A0030-124S Swivel Fill Adapter

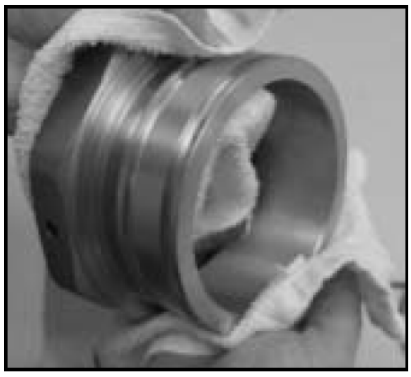
1. Using a flathead screwdriver, remove all three stainless steel screws for the base of the swivel adapter.

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

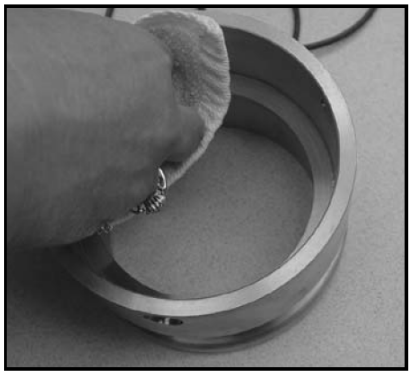
Figure J-1 (Continued)



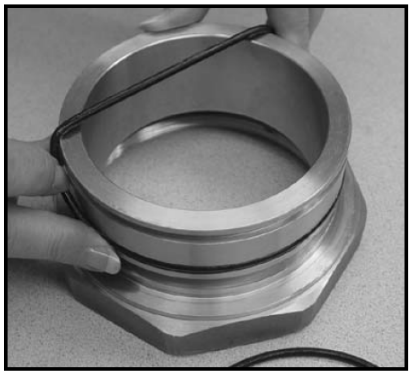
3. Remove both of the existing o-rings from the base of the swivel adapter.



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.



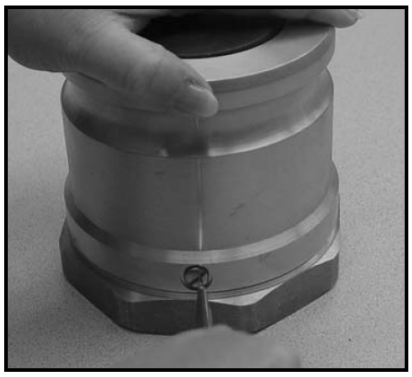
6. Carefully reinstall a new set of o-rings onto the base and lubricate with petroleum jelly or gun grease.

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

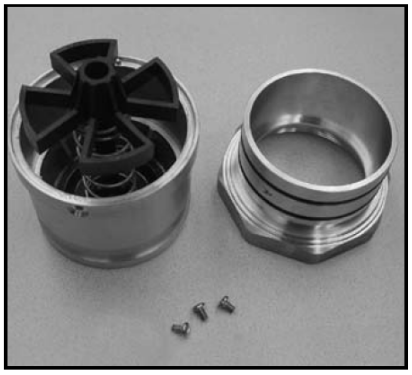
8. Re-install all three stainless steel screws to the base of the swivel adapter.

Figure J-1 (Continued)

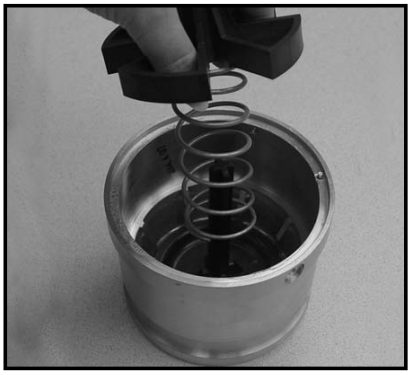
A0076-124S Swivel Vapor Adapter



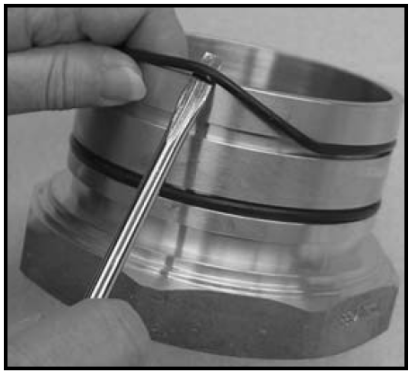
1. Using a flathead screwdriver, remove all three stainless steel screws for the base of the swivel adapter.



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.

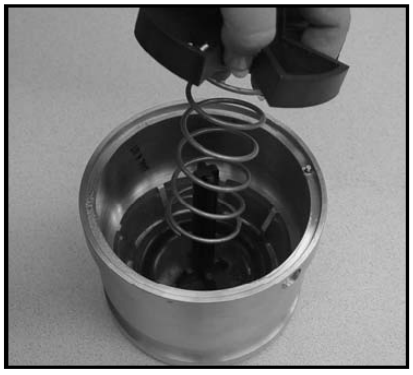


4. Remove both of the existing o-rings from the base of the swivel adapter.

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 <u>installation instructions, product warranty registration card</u> and the <u>warranty tag</u> with the station owner and/or operator.

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252-243-0150 • 252-243-4759 (fax)

p/n 568903
Rev. C 06/13

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:

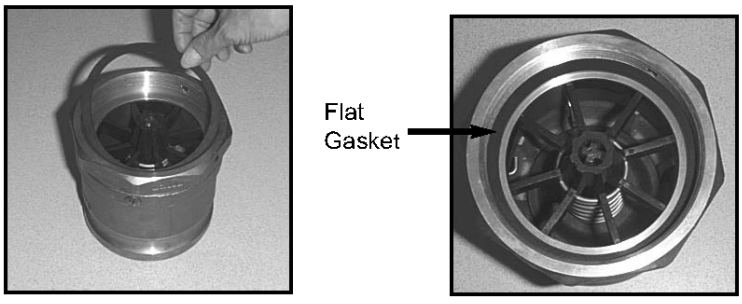
- Ratchet Wrench
- 15/16" Socket
- 5/32 " Allen Wrench
- Torque Wrench w/ 60 to 75 ft-lbs Setting
- EMCO Adapter Wrench p/n A0081-001C

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.

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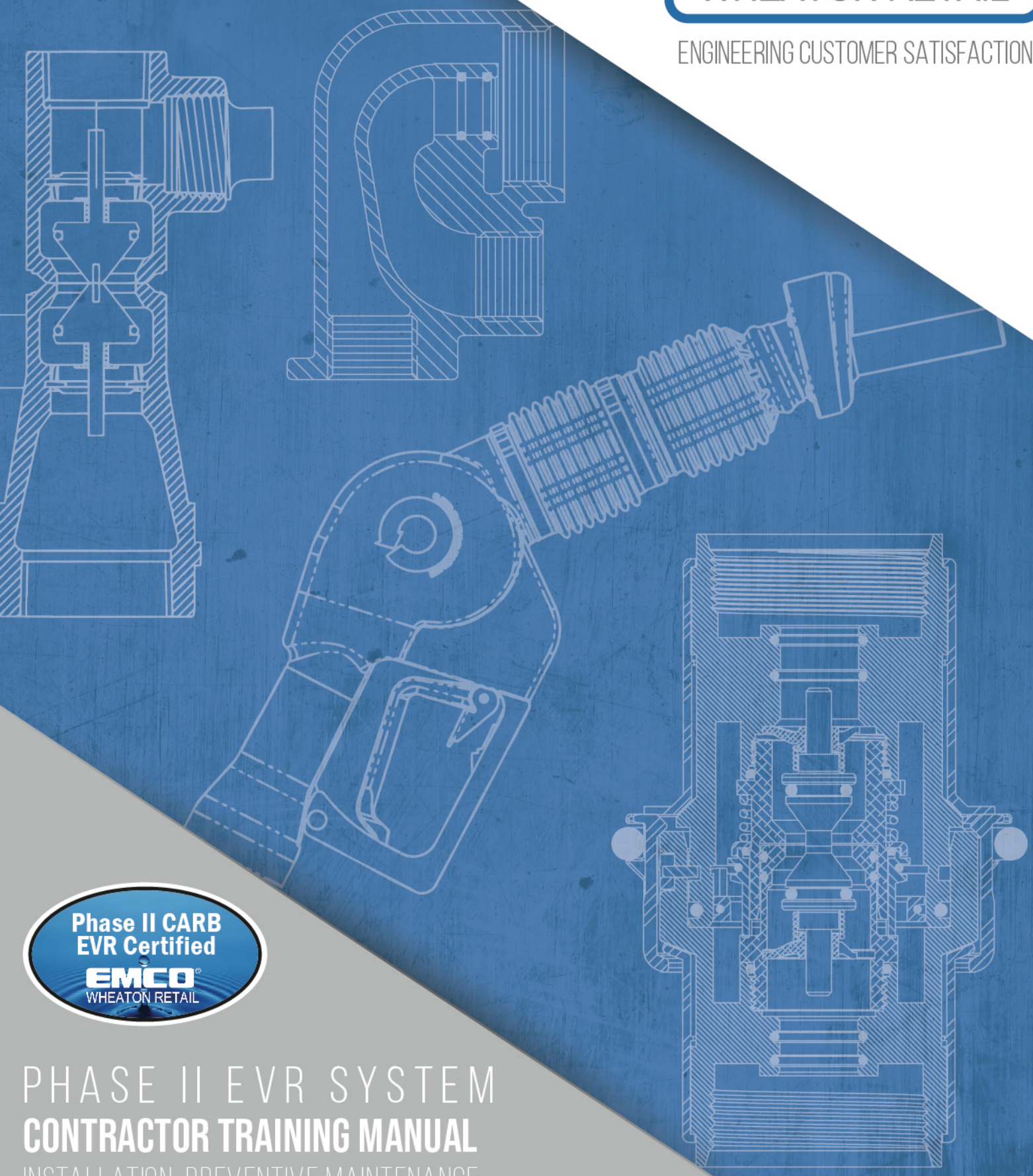
ENGINEERING CUSTOMER SATISFACTION™



Phase II CARB
EVR Certified
EMCO
WHEATON RETAIL

PHASE II EVR SYSTEM
CONTRACTOR TRAINING MANUAL
INSTALLATION, PREVENTIVE MAINTENANCE & COMPLIANCE TESTING

EMCO® WHEATON RETAIL

Balance Phase II EVR Components

For Use w/ Executive Orders VR-203, VR-204, VR-207, VR-208, VR-501

Phase II CARB EVR Certified
EMCO® WHEATON RETAIL

99.5% Vapor Collection Efficient

UL LISTED 610L

Classified by UL to UL 2586, Valves for Flammable Fluids

CARB Approved Mix & Match with VST

CARB Approved for UST & AST Installations

The True Low Cost Solution to Phase II CARB EVR Compliance!

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A4005EVR
BALANCE VAPOR RECOVERY NOZZLE

Model Numbers	Description
A4005EVR-XXX	Balance Vapor Recovery Nozzle, New
RA4005EVR-XXX	Balance Vapor Recovery Nozzle, Rebuilt

A4005EVR = Model Number
XXX = Scuff Color
R = Rebuilt

The Model A4005EVR Nozzle and A4119EVR Safebreak Valve are CARB EVR Certified for use with the various pressure management and ISD systems.

Pressure Management System Options

Healy Clean Air Separator (CAS)

Hirt VCS 100 Oxidizer

Veeder-Root Canister

In-Station Diagnostic ISD System Options

Franklin Fueling Systems INCON

Veeder-Root TLS-350

Performance Standards & Specifications

This component is factory tested to, and meets the following specifications:

1. Meets SAE Spout Dimension Standards J285, Rev SEP92.
2. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
3. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.
4. Meets ARB Spout Dimension Standards as per Section 4.7.3 of CP-201.
5. Meets ARB Nozzle and Dispenser Compatibility Standards as per Section 4.9 of CP-201.
6. Meets ARB Balance Nozzle Criteria Standards as per Section 5.1 of CP-201.
7. TP-201.2B – Complies with the maximum allowable leak rate of 0.07 CFH @ 2.00 inches of water column pressure.
8. TP-201.2C – Complies with the maximum allowable spillage factor of 0.24 pounds/ 1,000 gallons.
9. TP-201.2D – Complies with the maximum allowable average of 3 post fuel drips.
10. TP-201.2E – Complies with the maximum allowable average of 100mL liquid retention and 1mL liquid spit-back.
11. TP-201.2J – Complies with the maximum allowable component pressure drop of 0.08 inches of water column @ 60 CFH.

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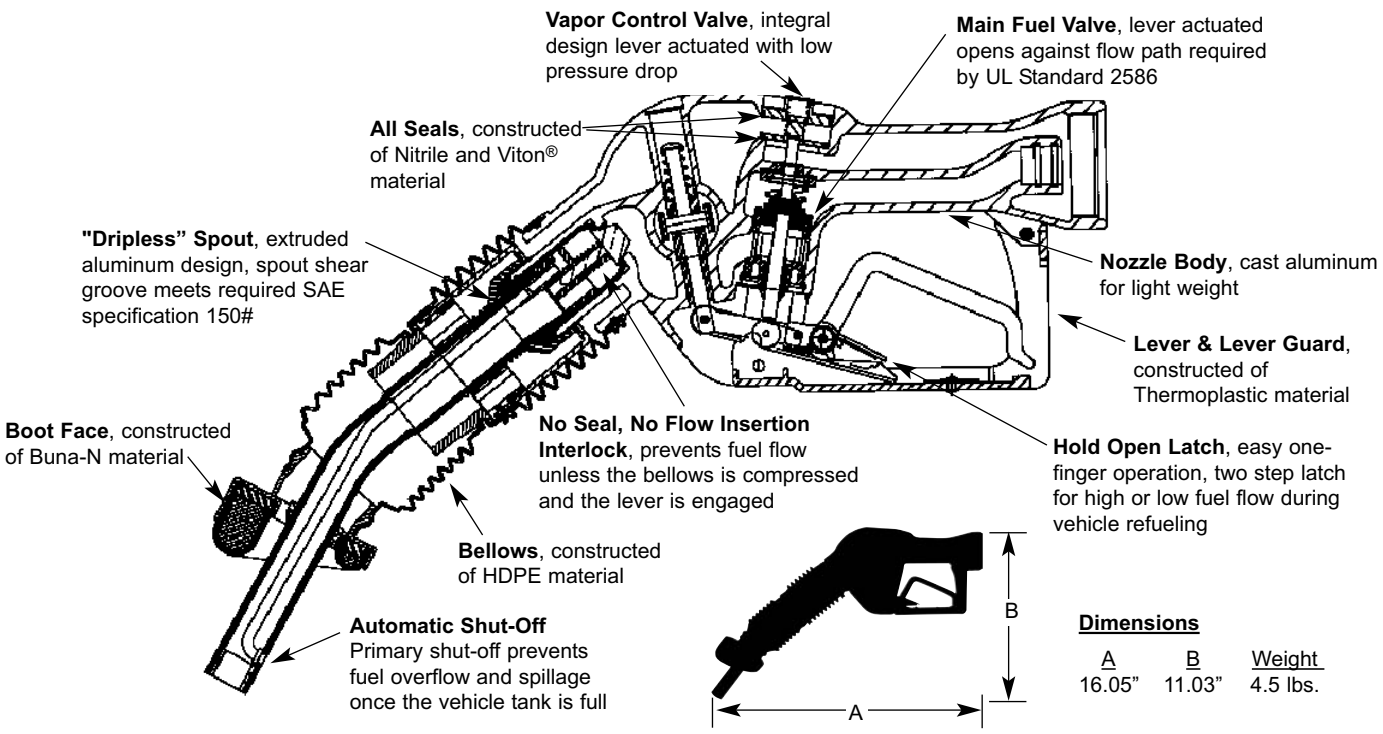
A4005EVR

BALANCE VAPOR RECOVERY NOZZLE



Dimensions

A	B	Weight
16.05"	11.03"	4.5 lbs.

Guide Specification: The Model A4005EVR Nozzle is designed for use with Balance Phase II Vapor Recovery Systems. Complies with the California Air Resources Board CARB Enhanced Vapor Recovery Program EVR Certification Procedures CP-201.

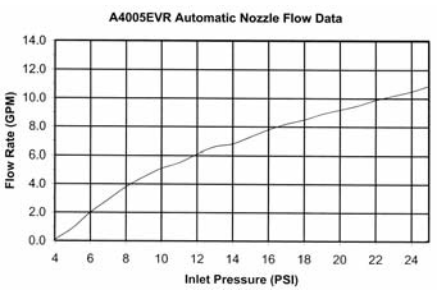
During vehicle refueling, the *nozzle* is securely latched to the vehicle fill pipe by means of a permanent band located on the spout. The position of the band permits the *nozzle* to remain in place on ether a vertical or horizontal place. The flexible bellows and soft boot face together provide the proper vapor seal connection between the spout and vehicle fill pipe as fuel passes into the vehicle tank.

The *No Seal, No Flow insertion interlock mechanism* assures adequate compression of the bellows and boot face against the vehicle fill pipe, creating a tight vapor seal for proper balance phase II vapor recovery.

The integral *vapor control valve* is located within the nozzle body. It opens to allow the return of vapor when the nozzle is securely latched to the vehicle fill pipe, with the bellows compressed and the lever engaged.

The *automatic shut-off* is a required safety device of the nozzle that stops and prevents the overflow and spillage of fuel once the vehicle tank is full.

Flow Rate Performance Chart



Certification & Listings

Agency	Approval Number
CARB EVR	Executive Orders VR-203, VR-204, VR-207, VR-208, VR-501
CARB Pre-EVR Mix & Match	Approval Letter #09-10/ Advisory #408 9/19/2010
California State Fire Marshal	GVRC 005:007:025
California Division of Measurement Standards	3211(d)-09
UL Listing	MH1460, Volume 11, Section 5, 08NK20256 Classified by UL to UL 2586, Valves for Flammable Fluids

EMCO® WHEATON RETAIL

A4119EVR

Coaxial SafeBreak® Valve

Dimensions

A	B
3.0”	5.6”

Weight
1.3 lbs.

Body, cast aluminum for light weight vapor paths

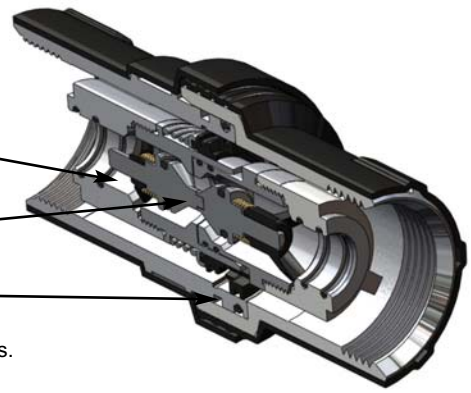
All Seals, constructed of Viton® and Buna-N material

Vapor Path, designed with low pressure drop

Dual Poppet Design, seals off the fuel and vapor path

Shear Pins, constructed of aluminum to fracture at a maximum pull force of 350 lbs.

Scuff Guard, constructed of vinyl material



Viton® is a registered trademark of DuPont Dow Elastomers.

Guide Specification: The Model A4119EVR Coaxial SafeBreak Valve is a shear pin style non-reconnectable component designed for use with Balance Phase II Vapor Recovery Systems. Complies with the California Air Resources Board CARB Enhanced Vapor Recovery Program EVR Certification Procedures CP-201. A dual poppet design seals off both the fuel and vapor paths upon separation due to customer related “drive-off” occurrences, eliminating fuel spillage, vapor emissions and minimizing damage to the dispenser unit.

Model Numbers	Description
A4119EVR-020	Coaxial SafeBreak Valve

Performance Standards & Specifications

These components are factory tested to, and meet the following specifications:

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. TP-201.2B – Complies with the maximum allowable leak rate of 0.00 CFH @ 2.00 inches of water column pressure.
3. TP-201.2J – Complies with the maximum allowable component pressure drop of 0.04 inches of water column @ 60 CFH.

Certification & Listings

Agency	Approval Number
CARB EVR	Executive Orders VR-203, VR-204, VR-207, VR-208, VR-501
CARB Pre-EVR	Approval Letter #95-3
CARB Pre-EVR Mix & Match	Approval Letter #09-10/ Advisory #408 9/19/2010
California State Fire Marshal	GVRC 005:007:031
California Division of Measurement Standards	3211(d)-09
UL Listing	MH17833, Volume 1, 08NK20256

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N-1005
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Phase II EVR System

Repair and Replacement Kits

Phase II CARB EVR Certified
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492775EVR ***Bellows & Boot Face Kit***

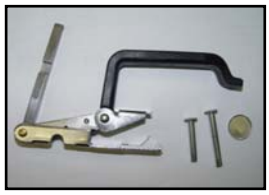
(1) Bellows & Boot Face
(1) Bellows O-ring
(2) Bellows Band Clamps

492776EVR ***Boot Face Kit***

(1) Boot Face
(4) Mounting Screws

492834EVR ***Spout Kit***

(1) Spout
(1) Bellows O-ring
(2) Bellows Band Clamps
(1) Interlock Guide
(1) Interlock Push Rod



494150EVR ***Latch Kit***

(1) Latch Assembly
(2) Mounting Rivets
(1) Dust Plug

494748EVR ***Fuel Path O-ring Kit***

(2) Fuel Path O-rings

494749EVR ***Vapor Path O-ring Kit***

(1) Vapor Path O-ring

494750EVR ***Bellows Band Clamp Kit***

(6) Bellows Band Clamps

A0557EVR-002 ***Scuff Guard Kit Black***

(1) Scuff Guard

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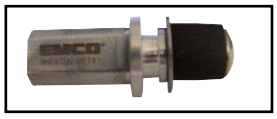
Phase II EVR System

Installation and Maintenance Tools

Phase II CARB EVR Certified
EMCO® WHEATON RETAIL

494655EVR Balance Phase II EVR Service Kit

Includes all balance phase II installation and maintenance tools and sturdy, canvas tool bag.



494635EVR Spout Plug

Used for conducting CARB test procedure TP-201.6 or TP-201.6C Liquid Removal Test.

494652EVR Bellows Band Clamp Crimp Tool

Used for installing and crimping the A4005EVR nozzle bellows band clamps.

494653EVR Lever Guard Rivet Installation Tool

Used for installing the A4005EVR nozzle lever guard rivets.

494654EVR Lever Guard Rivet Removal Tool

Used for removing the A4005EVR nozzle lever guard rivets

494712EVR Bellows Retainer Plate Tool

Used for securing the A4005EVR nozzle bellows during installation of the bellows band clamps.

494761EVR Balance Nozzle Adapter

Used for testing and verifying the accuracy of the ISD vapor flow meter.

494771EVR Surrogate Spout Assembly

Used for conducting a leak tightness integrity test on the ISD vapor flow meter test assembly.

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CARB EVR Certifications for the
EMCO Balance Phase II EVR System

1st Certification, September 23, 2009 EMCO Executive Orders: VR-207-A & VR-208-A

System Configuration:

- EMCO Model A4005EVR Balance Nozzle, A4119EVR Breakaway & A4110EVR Hose Swivel
- Goodyear hoses
- Hirt VCS-100 processor
- Franklin Fueling INCON ISD system

2nd Certification, November 12, 2010 VST Executive Orders: VR-203-I & VR-204-I (Amendment)

System Configuration:

- EMCO Model A4005EVR Balance Nozzle & A4119EVR Breakaway
  (mix & match with VST hanging hardware components)
- Goodyear hoses
- Veeder-Root Canister
- Veeder-Root ISD system

3rd Certification, February 8, 2013 VST Executive Orders: VR-203-N & VR-204-N (Amendment)

System Configuration:

- EMCO Model A4005EVR Balance Nozzle & A4119EVR Breakaway
  (mix & match with VST hanging hardware components)
- Goodyear hoses
- Healy Clean Air Separator CAS
- Veeder-Root ISD system

4th Certification, March 13, 2015 EMCO Executive Orders: VR-501-A (Aboveground Storage Tanks)

System Configuration:

- EMCO Model A4005EVR Balance Nozzle & A4119EVR Breakaway
- Goodyear hoses
- Hirt VCS-100 processor
- Franklin Fueling Liquid Condensate Trap LCT
- No ISD system

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-204-V

Relating to Certification of Vapor Recovery Systems

Balance Phase II Enhanced Vapor Recovery (EVR) System Including In-Station Diagnostics (ISD) Systems

WHEREAS, the California Air Resources Board (CARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II EVR system) in its Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities (CP-201) as last amended April 23, 2015, incorporated by reference in Title 17, California Code of Regulations, Section 94011;

WHEREAS, CARB has established, pursuant to California Health and Safety Code Sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase II EVR systems with emission standards;

WHEREAS, EMCO Wheaton Retail (EMCO) requested an amendment of the Balance Phase II EVR System Executive Order VR-204 to add the INCON ISD software version 1.3.1 with the Hirt VCS 100 processor configuration;

WHEREAS, Vapor Systems Technologies, Inc. (VST) requested an amendment of the Balance Phase II EVR System Executive Order VR-204 to add an optional scuff guard, part number VST-BBSG-100, for use on VST's breakaway coupling to help mitigate damage to dispensers during fueling events;

WHEREAS, CP-201 provides that the CARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in CP-201;

WHEREAS, Executive Order G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities; and

WHEREAS, I, Michael T. Benjamin, Chief of the Monitoring and Laboratory Division, find that the Balance Phase II EVR System including ISD, as amended to include the components listed above, conforms with all requirements set forth in CP-201, including compatibility when fueling vehicles equipped with onboard refueling vapor recovery systems, and results in a vapor recovery system which is at least 95 percent efficient and shall not exceed 0.38 pounds of hydrocarbons per 1,000 gallons of gasoline

transferred when tested pursuant to TP-201.2, Efficiency and Emission Factor for Phase II Systems (July 26, 2012).

NOW, THEREFORE, IT IS HEREBY ORDERED that the Balance Phase II EVR System including ISD is certified to be at least 95 percent efficient and do not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline transferred in attended and/or self-service mode when used with a CARB-certified Phase I vapor recovery system and installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the equipment certified for use with Balance Phase II EVR System including ISD. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to Balance Phase II EVR System Including ISD as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting TP-201.3. Exhibit 5 is the liquid removal test procedure. Exhibit 6 provides items required in conducting TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is VST ECS hydrocarbon sensor verification test procedure. Exhibit 9 is the test procedure for determining VST ECS vapor processor activation pressure. Exhibit 10 is the Veeder-Root vapor pressure sensor verification test procedure. Exhibit 11 is the Veeder-Root vapor polisher operability test procedure. Exhibit 12 is the Veeder-Root vapor polisher hydrocarbon emissions verification test procedure. Exhibit 13 is the Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure. Exhibit 14 is the Franklin Fueling Systems (FFS) Clean Air Separator static pressure performance test procedure. Exhibit 15 is the VST Green Machine Compliance Test Procedure. Exhibit 16 is the Liquid Condensate Trap compliance test procedure. Exhibit 17 is the Veeder-Root ISD vapor flow meter operability test procedure. Exhibit 18 is accessing PMC and ISD parameters at gasoline dispensing facilities (GDFs) with Veeder-Root's "Maintenance Tracker" security feature installed & enabled. Exhibit 19 is the INCON ISD vapor flow meter operability test procedure. Exhibit 20 is the INCON vapor pressure sensor verification test procedure.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery components to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of CP-201. Manufacturers may specify that the warranty is contingent upon the use of trained installers. The manufacturer warranty tag, included with each component, shall be provided to the service station owner/operator at the time of installation.

IT IS FURTHER ORDERED that every certified component manufactured by VST, EMCO, OPW, ContiTech USA, Veeder-Root, Hirt, and FFS including INCON shall meet the manufacturing performance specifications as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified Balance Phase II EVR System including ISD shall be installed, operated, and maintained in accordance with the CARB Approved Installation, Operation, and Maintenance Manual. Equipment shall be inspected weekly, quarterly, and annually per the procedures identified in the CARB Approved Installation, Operation, and Maintenance Manual. These inspections shall also apply to systems certified by Executive Orders VR-204-A to U. A copy of the Executive Order and the CARB Approved Installation, Operation and Maintenance Manual shall be maintained at each GDF where a certified Balance Phase II EVR System including ISD is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system provided in the manufacturers' certification application or documents and certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been submitted in writing pursuant to the process for Executive Order amendments set forth in Section 18 of CP-201and approved in writing by the Executive Officer or his delegate. Any sale, offer for sale, or installation of any system or component without CARB's approval as set forth above is subject to enforcement action.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System including ISD shall conduct and pass the following tests no later than 60 days after startup and at least once in each 12 month period, using the following test procedures. Shorter time periods may be specified by the District.

- TP-201.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities (July 26, 2012);
- TP-201.4, Dynamic Back Pressure (July 3, 2002) in accordance with the condition listed in item 1 of the Vapor Collection section of Exhibit 2;
- Exhibit 4, Required Items in Conducting TP-201.3;
- Exhibit 5, Liquid Removal Test Procedure*;*
- Exhibit 6, Required Items in Conducting TP-201.4;
- Exhibit 8, VST ECS Hydrocarbon Sensor Verification Test Procedure *(if a VST ECS membrane processor is installed)*;
- Exhibit 9, Determination of VST ECS Processor Activation Pressure *(if a VST ECS membrane processor is installed)*;
- Exhibit 10, Veeder-Root Vapor Pressure Sensor Verification Test Procedure*;*

- Exhibit 11, Veeder-Root Vapor Polisher Operability Test Procedure *(if a Veeder-Root Vapor Polisher is installed)*;
- Exhibit 12, Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure *(if a Veeder-Root Vapor Polisher is installed)*;
- Exhibit 13, Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure *(if a Hirt VCS 100 processor is installed);*
- Exhibit 14, Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure *(if a Clean Air Separator is installed);*
- Exhibit 15, VST Green Machine Compliance Test Procedure *(if a Green Machine is installed);*
- Exhibit 16, Liquid Condensate Trap Compliance Test Procedure *(if a Liquid Condensate Trap is installed);*
- Exhibit 17, Veeder-Root ISD Vapor Flow Meter Operability Test Procedure *(if Veeder-Root ISD is installed)*;
- Exhibit 18, Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled *(if Maintenance Tracker is installed);*
- Exhibit 19, INCON; ISD Vapor Flow Meter Operability Test Procedure *(if INCON ISD is installed); and*
- Exhibit 20, INCON; Vapor Pressure Sensor Verification Test Procedure *(if INCON ISD is installed)*.

Districts may specify the sequence of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with District requirements and pursuant to policies established by that District. Districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by CARB Executive Officer or his delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System including ISD shall conduct, and pass, the following test no later than 60 days after startup using Exhibit 7, Nozzle Bag Test Procedure. Notification of testing, and submittal of test results, shall be done in accordance with District requirements and pursuant to the policies established by that District. Districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by the CARB Executive Officer or his delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that, except as provided above, Districts at their discretion will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If nozzle vapor valve tests are required by the District, the test shall be conducted in accordance with Exhibit 7, Nozzle Bag Test Procedure.

IT IS FURTHER ORDERED that the Balance Phase II EVR System including ISD shall be compatible with gasoline in common use in California at the time of certification. The Balance Phase II EVR System including ISD is not compatible with gasoline that has a methanol content greater than 5 percent or an ethanol content greater than 10 percent. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or his delegate.

IT IS FURTHER ORDERED that the certification of Balance Phase II EVR Systems including ISD is valid through April 1, 2018.

IT IS FURTHER ORDERED that Executive Order VR-204-U issued on March 30, 2017, is hereby superseded by this Executive Order. Balance Phase II EVR Systems including ISD certified under Executive Order VR-204-A through U may remain in use at existing installations up to four years after the expiration date of this Executive Order when the certification is not renewed.

IT IS FURTHER ORDERED that this Executive Order shall apply to new installations or major modification of Phase II Systems with a throughput of more than 600,000 gallons per year. The installation of the ISD System is not authorized on a GDF with a throughput of less than or equal to 600,000 gallons per year.

Executed at Sacramento, California, this 3rd day of July 2017.

Michael T. Benjamin, Chief
Monitoring and Laboratory Division

Attachments:

General Requirements

Exhibit 1 Equipment List

- Hanging Hardware
- Processors
- Liquid Condensate Trap
- ISD
  - Optional Wireless Components
  - Optional Maintenance Tracker Kit

Exhibit 2 System Specifications

- Hanging Hardware
- Processors
- Pressure/Vacuum Vent Valves for Storage Tank Vents

- Warranty
- Vapor Recovery Piping Configurations
- Dispensers
- Liquid Condensate Traps
- In-Station Diagnostics (ISD)
- Phase I Systems
- Maintenance Records
- Vapor Recovery Equipment Defects
- Veeder-Root ISD System Specifications
- INCON ISD System Specifications

Exhibit 3 Manufacturing Performance Specifications and Warranties

- Vapor Systems Technologies
- EMCO Wheaton Retail
- Veeder-Root
- Veyance Technologies
- Hirt
- Franklin Fueling Systems Including INCON ISD System
- OPW

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-201.3
Exhibit 5 Liquid Removal Test Procedure
Exhibit 6 Required Items for Conducting TP-201.4
Exhibit 7 Nozzle Bag Test Procedure

Processor Specific Compliance Procedures

Exhibit 8 VST ECS Hydrocarbon Sensor Verification Test Procedure
Exhibit 9 VST ECS Determination of Processor Activation Pressure
Exhibit 10 Veeder-Root Vapor Pressure Sensor Verification Test Procedure
Exhibit 11 Veeder-Root Vapor Polisher Operability Test Procedure
Exhibit 12 Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure
Exhibit 13 Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure
Exhibit 14 Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure
Exhibit 15 VST Green Machine Compliance Test Procedure

LCT Specific Compliance Procedure

Exhibit 16 Liquid Condensate Trap Compliance Test procedure

ISD Specific Compliance Procedures

Exhibit 10 Veeder-Root Vapor Pressure Sensor Verification Test Procedure
Exhibit 17 Veeder-Root ISD Vapor Flow Meter Operability Test Procedure

Exhibit 18	Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled
Exhibit 19	INCON ISD System Vapor Flow Meter Operability Test Procedure
Exhibit 20	INCON ISD System Vapor Pressure Sensor Verification Test Procedure

EXHIBIT 1[1]

Equipment List
Hanging Hardware

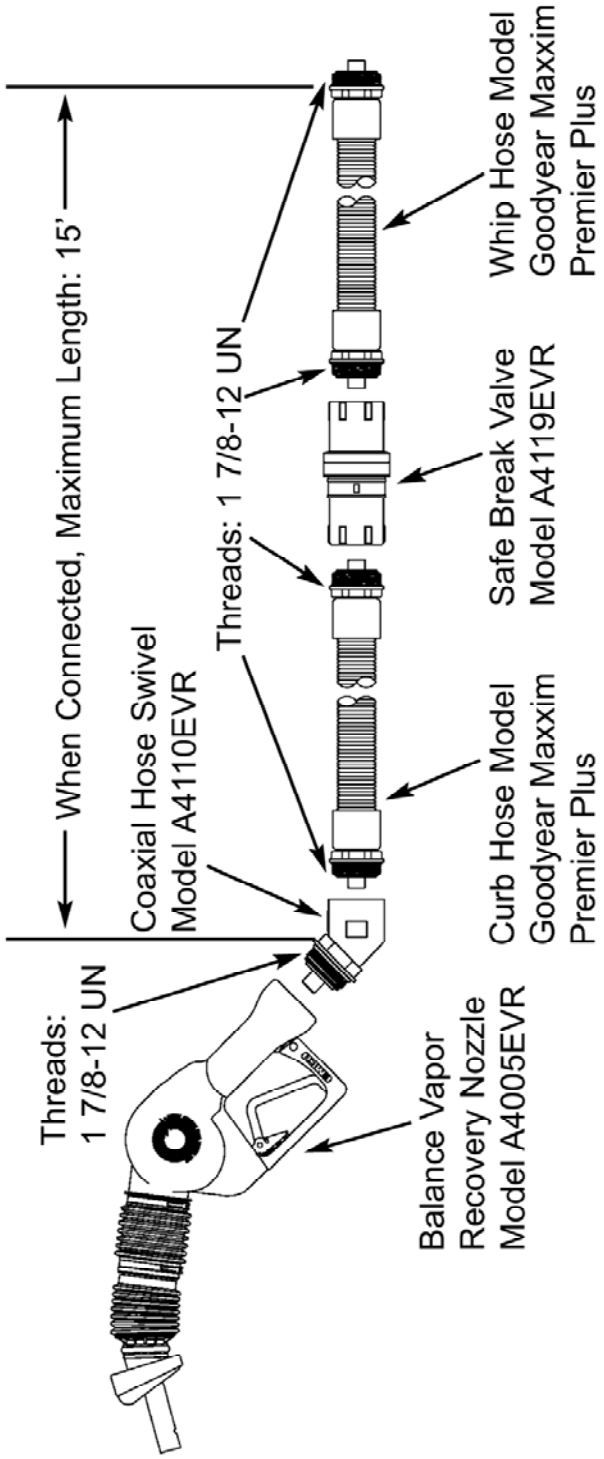
Component	*Manufacturer / Model*
Nozzle	VST Model VST-EVR-NB, VST-EVR-NB (Rebuilt) Or VST Model VST-EVR-NB (G2), VST-EVR-NB (G2 Rebuilt) Or EMCO Models A4005EVR, RA4005EVR (Rebuilt) (Figure 1A-1)
Coaxial Curb Hose	VST Model VDV-EVR Series Or VDVP-EVR Series Or Veyance Model Maxxim Premier Plus *("NV" stamped on nozzle end)* (Figure 1A-2)
Coaxial Whip Hose	VST Model VSTA-EVR Series Or VSTAP-EVR Series Or Veyance Model Maxxim Premier Plus (Figure 1A-2)
Breakaway Coupling	VST Model VSTA-EVR-SBK, VSTA-EVR-SBK (Reattachable)[2] Or EMCO Model A4119EVR Or OPW Model 66CLP (Figure 1A-2)

Allowable Hanging Hardware Combinations Including ISD Systems

	Nozzle		Hose		Breakaway			ISD	
Processor	VST	EMCO	VST	Veyance	VST	EMCO	OPW	Veeder-Root	INCON
VST Membrane	●		●	●	●	●	●	●	
Veeder Root Vapor Polisher	●	●	●	●	●	●	●	●	
FFS Clean Air Separator	●	●[3]	●	●	●	●	●	●	●[3]
Hirt VCS 100	●[4]	●	●	●	●	●	●	●	●[4]
VST Green Machine	●		●	●	●	●	●	●	

[1] The local air district may require a permit application when changing between alternate components.
[2] The lower half of the VST reattachable breakaway, identified with a VST logo, cannot be used on the VST non-reattachable or rebuilt breakaways.
[3] EMCO Nozzle for use with FFS Clean Air Separator is not allowed with INCON ISD System.
[4] VST Nozzle for use with Hirt VCS-100 is not allowed with INCON ISD System.

Figure 1A-2
Emco Hanging Hardware
(Nozzle, Hose Swivel, Coaxial Curb Hose, Safe Break, and Coaxial Whip Hose)



California Environmental Protection Agency

Air Resources Board

ARB Approved

Installation, Operation and Maintenance Manual

For

Executive Order

VR-204-V
Balance Phase II EVR Systems Including
In-Station Diagnostics (ISD) Systems

NOTICE:

The **ARB Approved Installation, Operation and Maintenance Manual (IOM) for VR-204** describes the tools, methods, and skill levels required to install the **Balance Phase II EVR Systems Including ISD Systems.**

Unless specified in this IOM, only skilled technicians that are trained, certified, and licensed by VST, Inc. (i.e. VST Authorized Service Contractors) are able to perform installation, maintenance, or repairs of components manufactured by VST Inc. or the warranty will be void. Unless specified otherwise, only skilled technicians that are trained, certified, and licensed by the Veeder-Root Company are able to perform installation, maintenance, or repairs of components manufactured by the Veeder-Root Company or the warranty will be void. Unless specified otherwise, only skilled technicians that are trained, certified and licensed by Franklin Fueling Systems (i.e. Healy or INCON ISD Certified Technicians) are able to perform installation, maintenance or repairs of components manufactured by Franklin Fueling Systems or warranty will be void. Unless specified otherwise, only skilled technicians that are trained, certified and licensed by EMCO Wheaton Retail (i.e. EMCO Certified Technicians) are able to perform installation, maintenance or repairs of components manufactured by EMCO or ContiTech USA Inc**.** or warranty will be void. Unless specified otherwise, only skilled technicians that are trained, certified and licensed by Hirt Combustion Engineers (i.e. Hirt Certified Technicians) are able to perform installation, maintenance or repairs of components manufactured by Hirt or warranty will be void.

NOTE: GDF Owner / Operator can remove and install hanging hardware (nozzle, curb hose, breakaway, flow limiter and whip hose). Additional certifications may be required in accordance with local district requirements.

It is the responsibility of each VST Authorized Service Contractor (ASC), Veeder-Root technician, Healy Certified Technician, INCON ISD Certified Technician, EMCO Certified Technician, and Hirt 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 VST ASC, Veeder-Root technician, Healy Certified Technician, INCON ISD Certified Technician, EMCO Certified Technician, and Hirt Certified Technician to be aware of all the manuals, necessary safety precautions, and site safety requirements to assure a safe and trouble-free installation.

To participate in a VST training class, a candidate will need to complete an enrollment form, which can be downloaded from the VST website at www.vsthose.com or requested by phone at 937-704-9333. Once the enrollment form is approved by VST, the candidate can enroll in a VST training class.

To confirm a VST Authorized Service Contractor status, a person can go to the VST website at www.vsthose.com. This list is updated periodically.

Vapor Systems Technologies, Inc.
650 Pleasant Valley Drive
Springboro, Ohio 45066
PH: 937-704-9333
FX: 937-704-9443
www.vsthose.com

To confirm Veeder-Root TLS or ISD training, a person should send an email to technicaltraining@gilbarco.com with the name (and company) of the ASC to obtain verification of the ASC TLS/ISD training status or call 800-997-7725 and press “*” to get to the Veeder-Root menu and “*” again to speak to a representative.

To confirm a Healy or INCON ISD Certified Technician training status, a person can access a searchable database at the following web site: http://techlab.franklinfueling.com/mod/resource/view.php?id=64

To confirm the status of an EMCO Certified Technician, please visit the EMCO Wheaton Retail's website at www.emcoretail.com or contact:

Jose E. Rodriguez
Manager of Technical Services & Support
EMCO Wheaton Retail
Phone: 619-421-1743
Email: JERodriguezSD@aol.com

EMCO Wheaton Retail
2300 Industrial Park Drive
Wilson, North Carolina 27893
Phone: 252-243-4394
Fax: 252-243-4759
Email: ewrc@emcoretail.com

To confirm Hirt training, a person should contact Hirt below with the name (and company) of the technician.

Contact Information:
Customer Service Department
Hirt Combustion Engineers, Inc.
Phone: (562) 692-6970
Email: HirtVCS@aol.com

Table of Contents

Weekly Inspections –Hanging Hardware

HANGING HARDWARE SYSTEM					
Component	**Procedure**	**Fail Criteria**	**Corrective Action**	**Reference Manuals**	**Authorized Personnel**
Nozzle Hose Breakaway	Inspect each hose, breakaway, and nozzle for loose connections or leaks	Presence of a leak	Tighten connections or replace with new product	IOM-6	**Nozzle, hose, or breakaway replacement**: GDF owner/operator or VST ASC Levels A, B, C, or D or EMCO Level A **Component repair:** VST ASC Levels A, B, or C or EMCO Level A
		Presence of residue from a leak	Tighten connections or replace with new product	IOM-8	
		Visible o-ring between any component connection	Tighten connections or replace with new product	IOM-9	
CO-AXIAL HOSES					
Component	**Procedure**	**Fail Criteria**	**Corrective Action**	**Reference Manuals**	**Authorized Personnel**
Coaxial Hose	Inspect hoses for wear, severe kinks, cracks, splitting, and functional swivels	Kinks, cracks, splitting, non-functional swivels, or any visible openings	Replace with new hose	IOM-8	**Hose replacement:** GDF owner/operator or VST ASC Levels A, B, C, or D or EMCO Level A
BREAKAWAY					
Component	**Procedure**	**Fail Criteria**	**Corrective Action**	**Reference Manuals**	**Authorized Personnel**
Breakaway	Inspect breakaway for leaks around the scuff	Presence of a leak around the scuff	Replace with new breakaway	IOM-9	**Replace breakaway:** GDF Owner/Operator or VST ASC Levels A, B, C, or D or or EMCO Level A

EMCO NOZZLE					
Nozzle Component	**Procedure**	**Fail Criteria**	**Corrective Action**	**Reference Manuals**	**Authorized Personnel**
Lever, Hold Open Latch, Lever Guard	Inspect for defects, cuts or damage to the: Lever Hold Open Latch Lever Guard Spout	Damaged or missing	Replace with new EMCO latch kit or nozzle	IOM – 6	**Latch Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A
Spout		Sheared or bent	Replace with new EMCO Spout Kit or nozzle	IOM – 6 IOM - 7	**Spout Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/ Operator or EMCO Certified Technician Level A
Spout Vent Hole	Inspect for defects, cuts or damage to the: Spout Vent Hole Boot Face Bellows	Vent hole blocked	Clear blockage	IOM – 6	**Blockage Repair:** GDF Owner/Operator or EMCO Certified Technician Level A
Boot Face		> than 0.4 sq. inches of boot face material is missing (e.g. A triangular or similar shape in which greater than 7/16 inches of the boot face circumference is missing [accumulated])	Replace with new EMCO boot face kit or nozzle	IOM – 6 IOM - 7	**Boot Face Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A
Bellows		A cut across 7 consecutive bellows convolutions	Replace with new EMCO bellows kit or nozzle	IOM – 6 IOM - 7	**Bellows Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A

EMCO NOZZLE					
Insertion Interlock Rod	Inspect for defects, cuts or damage to the: Insertion Interlock Rod Band Clamps Serial Plate Security Rivet	Insertion interlock rod sticks during engagement or disengagement	Replace with new EMCO Spout Kit or nozzle	IOM – 6 IOM - 7	**Spout Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A
Band Clamps		Damaged or missing	Replace with new EMCO band clamp kit or nozzle	IOM – 6 IOM - 7	**Band Clamp Kit Repair:** EMCO Certified Technician Level A **Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A
Serial Plate, Security Rivet		Damaged or missing	Replace with new EMCO nozzle	IOM – 6	**Nozzle Replacement:** GDF Owner/Operator or EMCO Certified Technician Level A

Weekly Inspection and Testing Checklist

Checklist results may be used to assist with filling out GDF maintenance log.		Date:		Page: ______of_____
Dispenser Number	Unihose or Fuel Grade (circle one)	Nozzle Inspection (circle one)	Hose Inspection (circle one)	Breakaway (circle one)
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail
	Unihose 87 89 91 other __________	Pass Fail	Pass Fail	Pass Fail

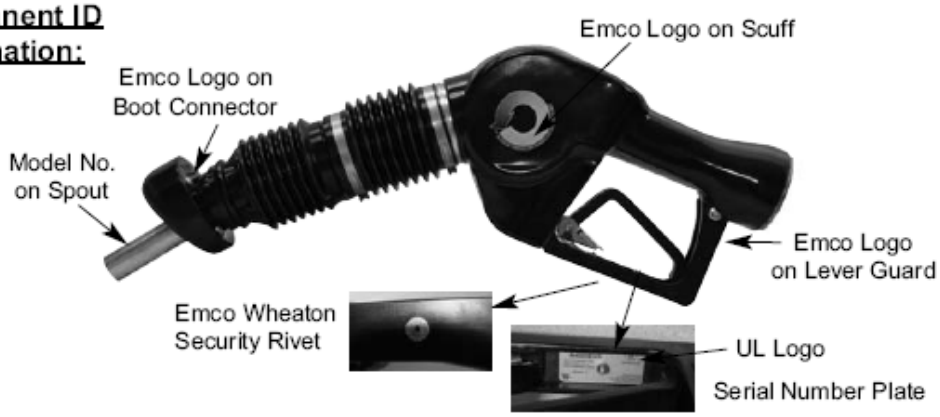
EMCO®
WHEATON RETAIL

A4005EVR

Balance Vapor Recovery Nozzle
RA4005EVR = Rebuilt
XXX = Scuff Guard Color

For use with the Vapor Systems Technologies VST Coaxial Curb and Whip Hoses

Permanent ID Information:



INSTALLATION INSTRUCTIONS

Service Tools Required:

- 1 7/8" Crows Foot
- Torque Wrench w/ 50 ft-lbs Setting
- Pipe Wrench w/ Flat Jaws
- Gasoline Approved Container
- Petroleum Jelly or Other Suitable Lubricant

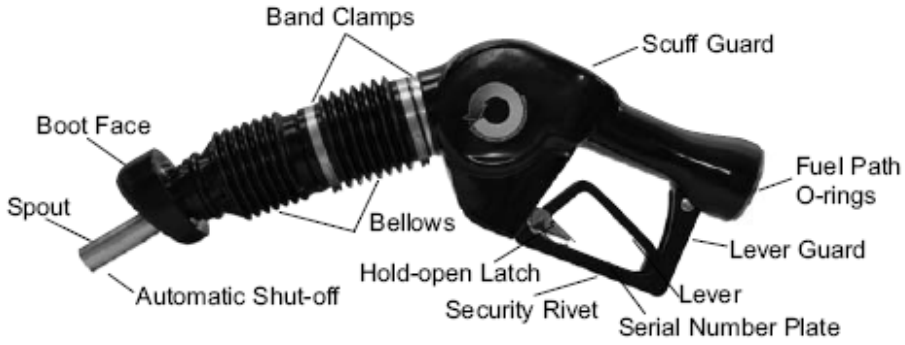
CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

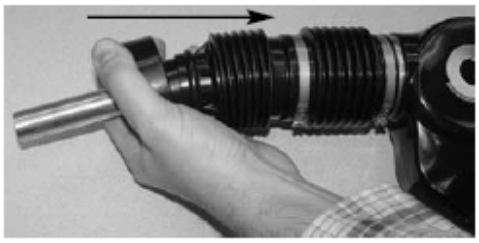
1

Pre-Inspection:



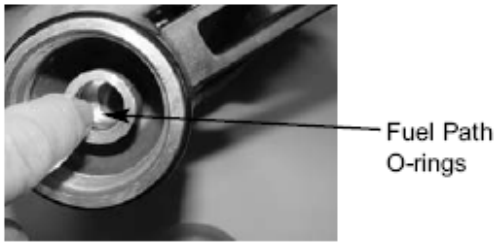
1. Carefully unpack and remove the A4005EVR nozzle from the shipping container. Evaluate the following components for damage: scuff guard, lever guard, lever, hold open latch, serial number plate, security rivet, bellows, band clamps, boot face and spout.
2. Verify the automatic shutoff located at the end of the spout. The vent hole must be free and clear of all debris.
3. Verify the fuel path o-rings located at the hose end of the A4005EVR nozzle. Both o-rings must be properly secured inside the factory machined grooves.

Pre-Functional Test:



4. Functional test the insertion interlock of the A4005EVR nozzle by compressing the bellows and then squeezing the lever. The A4005EVR nozzle will not function unless the insertion interlock is properly engaged.

Pre-Installation:



5. Lightly lubricate both fuel path o-rings using petroleum jelly or other suitable lubricant.

2

6. Before attempting to install the A4005EVR nozzle onto the curb hose, verify the vapor path o-ring is properly secured onto the connector, and in good working condition. Lightly lubricate the o-ring using petroleum jelly or other suitable lubricant.

IMPORTANT: Do not use pipe thread sealant compound or Teflon tape when installing the A4005EVR nozzle. Failure to comply will void warranty.

Installation:

IMPORTANT: If this is a new facility installation, the fueling point must be flushed into a gasoline approved container before installing the A4005EVR nozzle. Failure to perform this procedure could result in foreign material becoming lodged inside the nozzle's fuel path causing it not to shut off or a reduction in fuel flow.

7. Attach the A4005EVR nozzle onto the curb hose connector. Tighten by hand to avoid cross threading. Take caution to avoid pinching the vapor path o-ring.

8. Using a 1 7/8" crows foot and torque wrench tighten the curb hose connector to 50 ft-lbs of torque.

3

Post Functional Tests:

9. Carefully purge the trapped air from the fueling point. Begin dispensing by compressing the bellows and then squeezing the lever. Dispense one gallon of fuel into a gasoline approved container.

10. Functional test the automatic shutoff of the A4005EVR nozzle. Begin dispensing by compressing the bellows and then squeezing the lever. Place the hold-open latch in "high" clip position to secure the lever. Dispense one gallon of fuel into a gasoline approved container. At the same time, lower the spout tip into the standing fuel until the vent hole is completely submersed. The main valve of the A4005EVR nozzle will automatically close causing fuel flow to stop.

IMPORTANT: Perform step 10 a minimum of three times to assure the insertion interlock, hold open latch and the automatic shutoff of the A4005EVR nozzle are operating properly.

According to UL requirement 842, the fuel flow rate must be greater than 3 gallons per minute for the automatic shutoff to operate properly. A common cause of low flow rates are dirty or clogged dispenser filters.

Post Inspection:

11. Before placing the A4005EVR nozzle onto the dispenser cradle, inspect all hanging hardware connections for potential fuel leaks. Make proper adjustments if necessary.

PREVENTIVE MAINTENANCE

1. Weekly inspect the A4005EVR nozzle, evaluate the following components for damage: scuff guard, lever guard, lever, hold open latch, serial number plate, security rivet, bellows, band clamps, boot face and spout. Damage components must be replaced with factory authorized service kits.

Part Number	Description
492775EVR	Bellows & Boot Face Kit
492776EVR	Boot Face Kit
492834EVR	Spout Kit
494150EVR	Latch Kit
494748EVR	Fuel Path O-ring Kit
494750EVR	Bellows Band Clamps Kit
A0557EVR-XXX	Scuff Guard Kit

4

IMPORTANT: Do not remove the serial number plate and security rivet from the A4005EVR nozzle. Failure to comply will void warranty.

2. Weekly inspect the automatic shutoff located at the end of the spout. The vent hole must be free and clear of all debris.
3. Weekly inspect all hanging hardware connections for potential fuel leaks.

IMPORTANT: Should a drive-off or incidence of customer abuse occur, follow the initial inspection and function instructions found in the installation section.

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.
3. Meets ARB Spout Dimension Standards as per Section 4.7.3 of CP-201.
4. Meets ARB Nozzle and Dispenser Compatibility Standards as per Section 4.9 of CP-201.
5. Meets ARB Balance Nozzle Criteria Standards as per Section 5.1 of CP-201.
6. TP-201.2B – Complies with the maximum allowable leak rate of 0.07 CFH @ 2.00 inches of water column pressure.
7. TP-201.2C – Complies with the maximum allowable spillage factor of 0.24 pounds/ 1,000 gallons.
8. TP-201.2D – Complies with the maximum allowable average of 3 post fuel drips.
9. TP-201.2E – Complies with the maximum allowable average of 100mL liquid retention and 1mL liquid spit-back.
10. TP-201.2J – Complies with the maximum allowable component pressure drop of 0.08 inches of water column @ 60 CFH.

IMPORTANT: Leave these installation instructions with the station owner and/or operator.

EMCO® WHEATON RETAIL

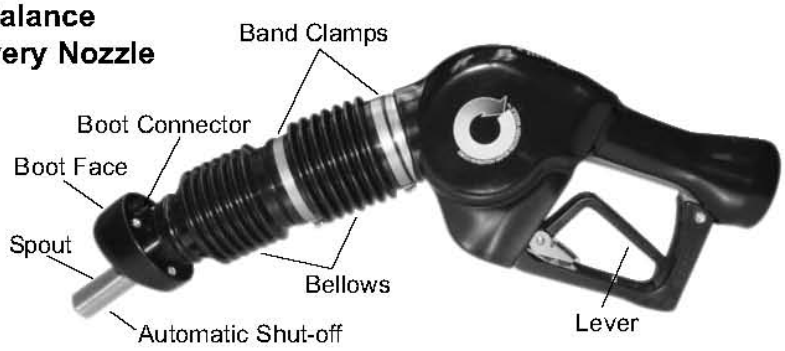
492775EVR

Bellows & Boot Face Kit

Packing List:

(1) Bellows & Boot Face
(1) Bellows O-ring
(2) Bellows Band Clamps

A4005EVR Balance Vapor Recovery Nozzle



INSTALLATION INSTRUCTIONS

Service Tools Required:

- Flat Head Screw Driver w/ Fine Tip
- Scribe Tool w/ 90 degree tip
- Bench Vise w/ 5" Jaw Width
- Gasoline Approved Container
- Bellows Retainer Plate Tool p/n 494712EVR
- Bellows Band Clamp Crimp Tool p/n 494652EVR

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the bellows and boot face.

3. It is unnecessary to remove the A4005EVR nozzle from the fueling point during the removal and installation of the bellows and boot face. Use the bench vise to properly secure the A4005EVR nozzle during service.

Installation:

Removing the Existing Bellows & Boot Face

4. Locate the top bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

2

5. Locate the bottom bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

6. Remove the bellows and boot face from the A4005EVR nozzle. Grab the bellows and pull away from the nozzle body.

7. Use the scribe tool to remove the bellows o-ring.

IMPORTANT: Properly discard all removed components.

Installing the New Bellows & Boot Face

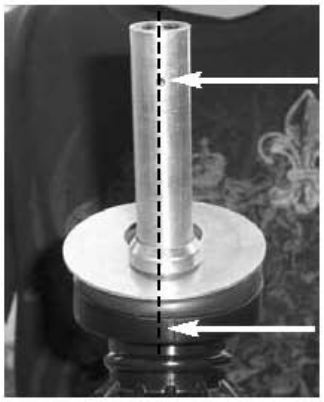
8. Before attempting to install the new bellows and boot face verify that the top of the interlock push rod is properly aligned with the bottom edge of the interlock guide.

3

9. Install the new bellows o-ring. Verify that the o-ring seats properly into the machined groove.

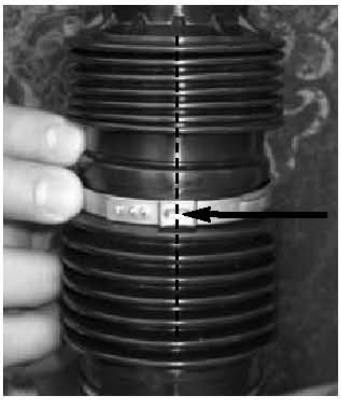
10. Slide the new bellows over the spout until the end reaches the nozzle body. Push down over the bellows o-ring until properly seated.

11. Use the bellows retainer plate tool p/n 494712EVR to secure and lock the bellows and boot face in place.



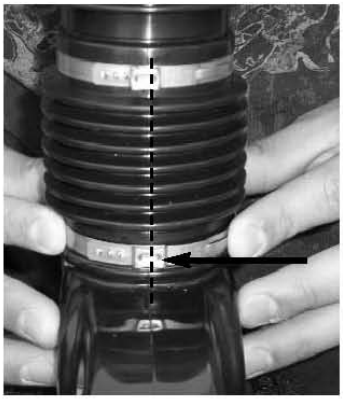
12. Slowly rotate the bellows until the parting line of the boot connector is aligned with the spout and automatic shut-off.

4



13. Install the new top bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

14. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place.



15. Install the new bottom bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

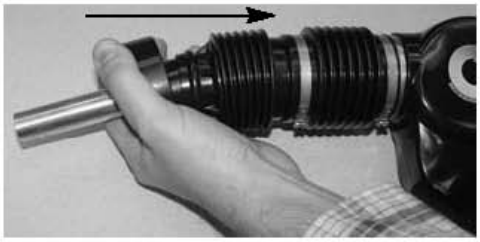
5

16. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place.

17. Remove the bellows retainer plate tool p/n 494712EVR from bellows and spout.

18. Remove the A4005EVR nozzle from the bench vise.

Post-Functional Test:



19. Functional test the insertion interlock of the A4005EVR nozzle by compressing the bellows and then squeezing the lever. The A4005EVR nozzle will not function unless the insertion interlock is properly engaged.

Post-Installation:

20. Place the A4005EVR nozzle back onto the dispenser cradle.

6

PREVENTIVE MAINTENANCE

1. Weekly inspect the bellows & boot face for tears, cuts and slits. Replace with factory authorized service kits.

Part Number	Description
492775EVR	Bellows & Boot Face Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.

IMPORTANT: Leave these installation instructions with the station owner and/ or operator.

7

EMCO®
WHEATON RETAIL

492776EVR
Boot Face Kit

Packing List:

(1) Boot Face
(4) Mounting Screws

A4005EVR
Balance Vapor Recovery Nozzle

INSTALLATION INSTRUCTIONS

Service Tools Required:

- Philips Head Screw Driver w/ Fine Tip
- Bench Vise w/ 5" Jaw Width
- Gasoline Approved Container

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

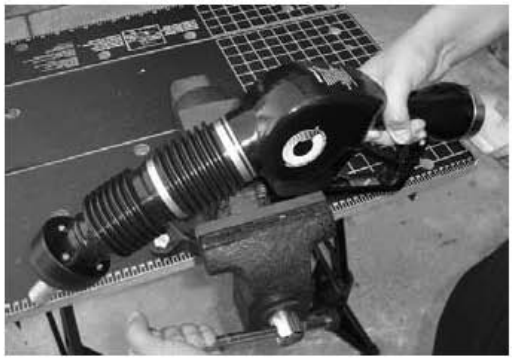
IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the boot face.



3. It is unnecessary to remove the A4005EVR nozzle from the fueling point during the removal and installation of the boot face. Use the bench vise to properly secure the A4005EVR nozzle during service.

Installation:

Removing the Existing Boot Face

4. Use the philips screw driver to remove the four mounting screws located on the back of the boot connector.

5. Remove the existing boot face by pulling out of the boot connector.

IMPORTANT: Properly discard all removed components.

2

Installing the New Boot Face

6. Install the new boot face into the boot connector by pressing evenly. Align the four mounting holes of the boot face with those of the boot connector.

7. Use the philips screw driver to install and tighten the four new mounting screws.
8. Remove the A4005EVR nozzle from the bench vise.

Post-Installation:

9. Place the A4005EVR nozzle back onto the dispenser cradle.

PREVENTIVE MAINTENANCE

1. Weekly inspect the boot face for tears, cuts and slits. Replace with factory authorized service kits.

Part Number	Description
492776EVR	Boot Face Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.

3

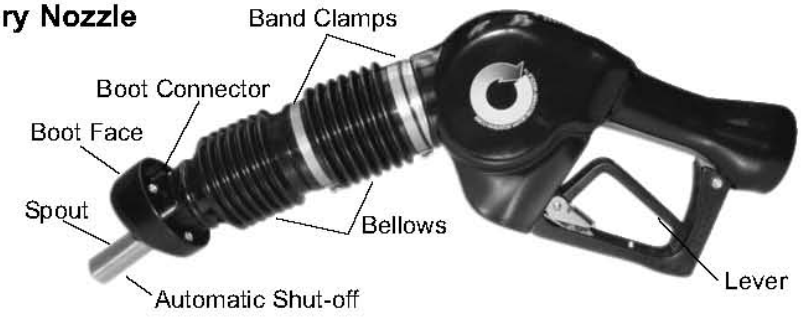
EMCO® WHEATON RETAIL

492834EVR
Spout Kit

Packing List:

(1) Spout
(1) Bellows O-ring
(2) Bellows Band Clamps
(1) Interlock Guide
(1) Interlock Push Rod

A4005EVR Balance Vapor Recovery Nozzle



INSTALLATION INSTRUCTIONS

Service Tools Required:

- Flat Head Screw Driver w/ Fine Tip
- 15" Crescent Wrench
- Torque Wrench w/ 45-55 ft-lbs. Setting
- Bench Vise w/ 5" Jaw Width
- Scribe Tool w/ 90 Degree Tip
- Needle Nose Pliers
- 40mm Crows Foot
- Snap Ring Pliers w/ Fine Tip
- Bellows Retainer Plate Tool p/n 494712EVR
- Bellows Band Clamp Crimp Tool p/n 494652EVR
- Gasoline Approved Container

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the spout.

3. It is unnecessary to remove the A4005EVR nozzle from the fueling point during the removal and installation of the spout. Use the bench vise to properly secure the A4005EVR nozzle during service.

Installation:

Removing the Existing Bellows & Boot Face

4. Locate the top bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

2

5. Locate the bottom bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

6. Remove the bellows and boot face from the A4005EVR nozzle. Grab the bellows and pull away from the nozzle body.

7. Use the scribe tool to remove the bellows o-ring.

IMPORTANT: Properly discard bellows band clamps and bellows o-ring.

Removing the Existing Spout

8. Locate the snap ring on the spout. Use the snap ring and needle nose pliers to remove the snap ring from the machined groove. Slide the snap ring upward.

3



9. Disassemble the interlock guide. Remove the top piece by pulling upward and sliding over the spout. Remove the bottom piece by sliding over the spout.


10. Use the 15" crescent wrench to loosen the spout nut. Unfasten the spout nut by hand to avoid cross threading.

11. Remove the spout by slowly pulling upward.

12. Use the needle nose pliers to remove the interlock push rod.

IMPORTANT: Properly discard all removed components.

4

Installing the New Spout

13. Use the needle nose pliers to install the new interlock push rod.

14. Install the new spout by inserting the vent tube connector into the nozzle vent port. Slowly push downward on the spout and align the dimple on the spout with the notch on the nozzle body.

15. Fasten the new spout nut by hand onto the nozzle threads to avoid cross threading. Use the 40mm crows foot and torque wrench to tighten the spout nut between 45 to 55 ft-lbs of torque.

16. Install the new interlock guide by sliding the top and bottom pieces over the spout. Press the top piece into the bottom piece.

5

17. Use the snap ring and needle nose pliers to install the new snap ring into the machined groove located on the spout. Slide the snap ring downward until seated properly.

Installing the Existing Bellows & Boot Face

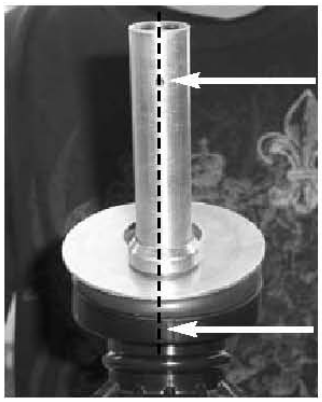
18. Before attempting to install the existing bellows & boot face verify that the top of the interlock push rod is properly aligned with the bottom edge of the interlock guide.

19. Install the new bellows o-ring. Verify that the o-ring seats properly into the machined groove.

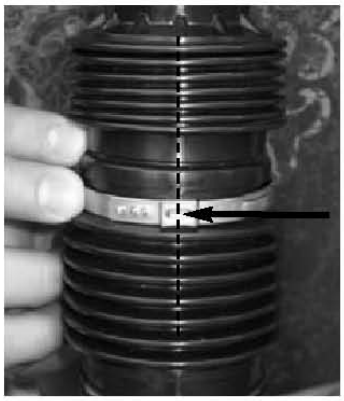
20. Slide the bellows over the spout until the end reaches the nozzle body. Push down over the bellows o-ring until properly seated.

6

21. Use the bellows retainer plate tool p/n 494712EVR to secure and lock the bellows and boot face in place.

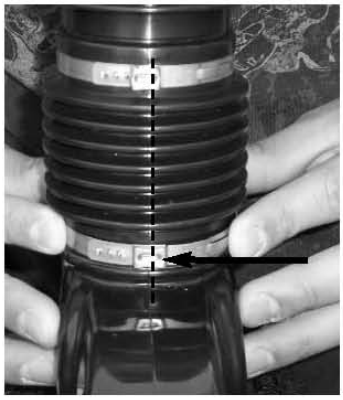


22. Slowly rotate the bellows until the parting line of the boot connector is aligned with the spout and automatic shut-off.



23. Install the new top bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

24. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place. 7



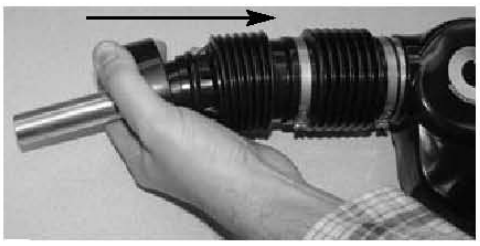
25. Install the new bottom bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

26. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place.

27. Remove the bellows retainer plate tool p/n 494712EVR from bellows and spout.

28. Remove the A4005EVR nozzle from the bench vise.

Post-Functional Test:



8

29. Functional test the insertion interlock of the A4005EVR nozzle by compressing the bellows and then squeezing the lever. The A4005EVR nozzle will not function unless the insertion interlock is properly engaged.

30. Functional test the automatic shutoff of the A4005EVR nozzle. Begin dispensing by compressing the bellows and then squeezing the lever. Place the hold-open latch in "high" clip position to secure the lever. Dispense one gallon of fuel into a gasoline approved container. At the same time, lower the spout tip into the standing fuel until the automatic shut is completely submersed. The main valve of the A4005EVR nozzle will automatically close causing fuel flow to stop.

IMPORTANT: Perform step 30 a minimum of three times to assure the insertion interlock , hold open latch and the automatic shutoff of the A4005EVR nozzle are operating properly.

According to UL requirement 842, the fuel flow rate must be greater than 3 gallons per minute for the automatic shutoff to operate properly. A common cause of low flow rates are dirty or clogged dispenser filters.

Post-Installation:

31. Place the A4005EVR nozzle back onto the dispenser cradle.

PREVENTIVE MAINTENANCE

1. Weekly inspect the spout for sheared, bent or blocked vent hole. Replace with factory authorized service kits.

Part Number	Description
492834EVR	Spout Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.
3. Meets ARB Spout Dimension Standards as per Section 4.7.3 of CP-201.

EMCO®
WHEATON RETAIL

494748EVR
Fuel Path O-ring Kit

For use with Vapor Systems Technologies VST California Air Resources Board Executive Orders VR-203 and VR-204

Packing List:
(2) Fuel Path O-rings

A4005EVR Balance Vapor Recovery Nozzle

A4119EVR Coaxial Safe Break Valve

INSTALLATION INSTRUCTIONS

Service Tools Required:

- Pipe Wrench w/ Flat Jaws
- Bench Vise w/ 5" Jaw Width
- Petroleum Jelly or Other Suitable Lubricant
- Scribe Tool w/ 90 Degree Tip
- Gasoline Approved Container

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle and A4119EVR safe break valve, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle and A4119EVR safe break valve, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

1

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the fuel path o-rings.

3. It is necessary to remove the A4005EVR nozzle and A4119EVR safe break valve from the curb hose during the removal and installation of the fuel path o-rings. Use the pipe wrench with flat jaws to loosen the curb hose connector. Unfasten the curb hose connector by hand from the A4005EVR nozzle to avoid cross threading.

IMPORTANT: Drain the fuel from the hanging hardware into a gasoline approved container when removing the A4005EVR nozzle from the curb hose.

A4005EVR Nozzle

A4119EVR Safe Break Valve

4. Use the bench vise to properly secure the A4005EVR nozzle or A4119EVR safe break valve during service.

2

Installation:

Removing the Existing Fuel Path O-rings

A4005EVR Nozzle

A4119EVR Safe Break Valve

5. Use the scribe tool to remove the existing fuel path o-rings.
6. Clean and remove all existing grease, fuel residue, debris, etc. from within the machined grooves.

IMPORTANT: Properly discard all removed components.

Installing the New Fuel Path O-rings

A4005EVR Nozzle

A4119EVR Safe Break Valve

7. Use the scribe tool to install the new fuel path o-rings. Verify that both o-rings seat properly into the machined grooves.

A4005EVR Nozzle

A4119EVR Safe Break Valve

8. Lightly lubricate the fuel path o-rings using petroleum jelly or other suitable lubricant.

3

Post-Installation:

9. Before attempting to reinstall the A4005EVR nozzle or A4119EVR safe break valve, please refer to the following installation instructions below.

    - A4005EVR Balance Vapor Recovery Nozzle p/n 570435
    - A4119EVR Coaxial Safe Break Valve p/n 569043

PREVENTIVE MAINTENANCE

1. Weekly inspect the A4005EVR nozzle and A4119EVR safe break valve connections for leaks or fuel residue. Replace with factory authorized service kits.

Part Number	Description
494748EVR	Fuel Path O-ring Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.

IMPORTANT: Leave these installation instructions with the station owner and/ or operator.

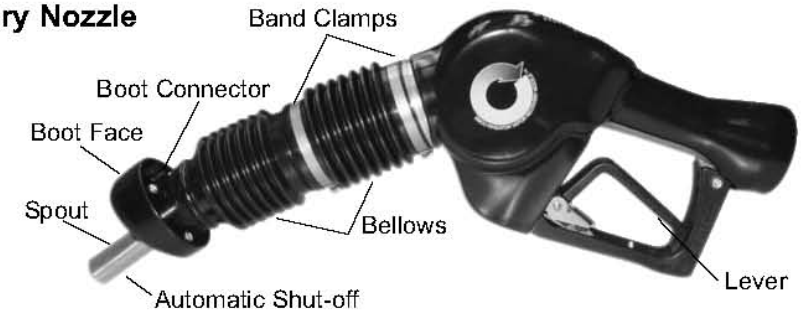
EMCO®
WHEATON RETAIL

494750EVR
Bellows Band Clamp Kit

Packing List:

(6) Bellows Band Clamps

A4005EVR Balance Vapor Recovery Nozzle



INSTALLATION INSTRUCTIONS

Service Tools Required:

- Flat Head Screw Driver w/ Fine Tip
- Bench Vise w/ 5" Jaw Width
- Bellows Retainer Plate Tool p/n 494712EVR
- Bellows Band Clamp Crimp Tool p/n 494652EVR
- Gasoline Approved Container

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the bellows band clamps.

3. It is unnecessary to remove the A4005EVR nozzle from the fueling point during the removal and installation of the bellows band clamps. Use the bench vise to properly secure the A4005EVR nozzle during service.

Installation:

Removing the Existing Bellows Band Clamps

4. Locate the top bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

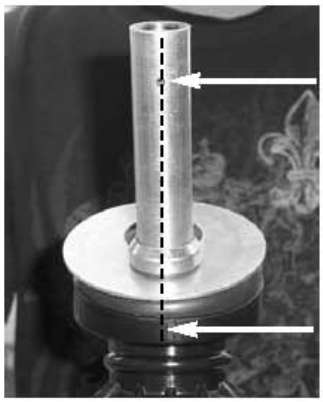
2

5. Locate the bottom bellows band clamp. Use the flat head screw driver to dislodge the locking mechanism and remove the band clamp from the bellows.

IMPORTANT: Properly discard all removed components.

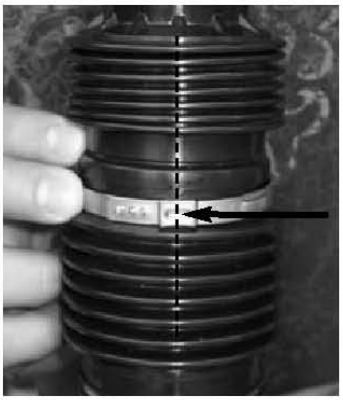
Installing the New Bellows Band Clamps

6. Use the bellows retainer plate tool p/n 494712EVR to secure and lock the bellows and boot face in place.



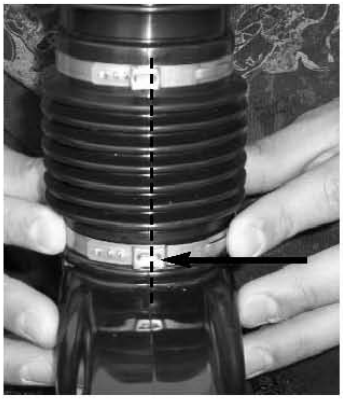
7. Slowly rotate the bellows until the parting line of the boot connector is aligned with the spout and automatic shut-off.

3



8. Install the new top bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

9. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place.



10. Install the new bottom bellows band clamp into the groove of the bellows. Lock and align the crimp portion with the parting line of the bellows.

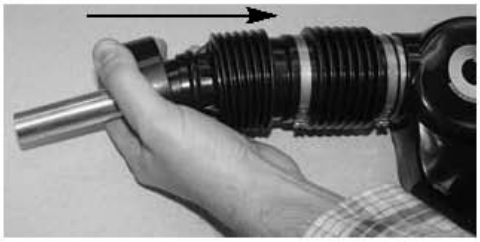
4

11. Use the bellows band clamp crimp tool p/n 494652EVR to crimp and secure into place.

12. Remove the bellows retainer plate tool p/n 494712EVR from bellows and spout.

13. Remove the A4005EVR nozzle from the bench vise.

Post-Functional Test:



14. Functional test the insertion interlock of the A4005EVR nozzle by compressing the bellows and then squeezing the lever. The A4005EVR nozzle will not function unless the insertion interlock is properly engaged.

Post-Installation:

15. Place the A4005EVR nozzle back onto the dispenser cradle.

5

PREVENTIVE MAINTENANCE

1. Weekly inspect the bellows band clamps for damage or if missing. Replace with factory authorized service kits.

Part Number	Description
494750EVR	Bellows Band Clamp Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. Meets ARB Capable of Refueling Any Vehicle Standards as per Section 4.7.1 of CP-201.

IMPORTANT: Leave these installation instructions with the station owner and/ or operator.

EMCO® WHEATON RETAIL

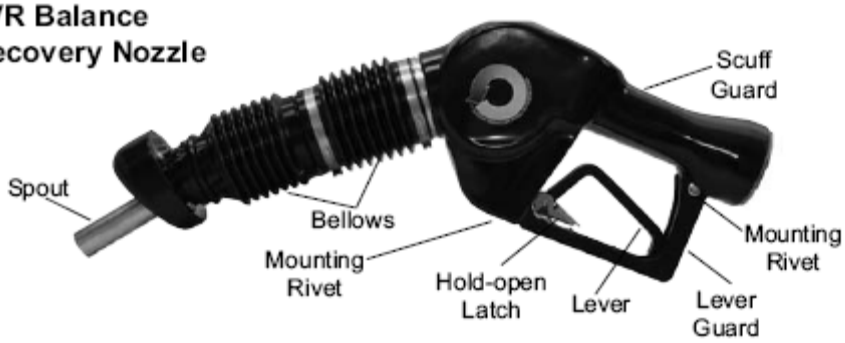
494150EVR
Latch Kit

For use with Vapor Systems Technologies VST California Air Resources Board Executive Orders VR-203 and VR-204

Packing List:

(1) Latch Assembly
(2) Mounting Rivets
(1) Dust Plug

A4005EVR Balance Vapor Recovery Nozzle



INSTALLATION INSTRUCTIONS

Service Tools Required:

- Pipe Wrench w/ Flat Jaws
- Flat Head Screw Driver w/ Wide Tip
- 1/8" Diameter Punch
- Bench Vise w/ 5" Jaw Width
- Awl w/ ¼"Tip
- Hammer
- 5/8" Diameter Punch
- Gasoline Approved Container
- Lever Guard Rivet Installation Tool p/n 494653EVR
- Needle Nose Pliers

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

1

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the latch.

3. It is necessary to remove the A4005EVR nozzle from the curb hose during the removal and installation of the latch. Use the pipe wrench with flat jaws to loosen the curb hose connector. Unfasten the curb hose connector by hand from the A4005EVR nozzle to avoid cross threading.

IMPORTANT: Drain the fuel from the hanging hardware into a gasoline approved container when removing the A4005EVR nozzle from the curb hose.

Installation:

Removing the Existing Latch

4. Pull the rear end of the scuff guard over the nozzle body unit the dust plug is visible. Use the bench vise to properly secure the A4005EVR nozzle during service.

2


5. Use the awl and hammer to lightly tap and remove the dust plug.


6. Use the flat head screw driver to loosen the brass screw. Use the needle nose pliers to remove the brass screw and spring from the nozzle body.


7. Remove the A4005EVR nozzle from the bench vise and place on a flat surface. Use the 1/8" diameter punch and hammer to lightly tap and remove both mounting rivets located on the lever guard.

8. Remove the lever guard from the nozzle body.

3

9. Remove the existing latch by slowly pulling upward until the square stem clears the nozzle body.

IMPORTANT: Properly discard the dust plug and mounting rivets and latch.

Installing the New Latch

10. Locate the notch on the square stem and align to the right of the nozzle body. Install the new latch by pressing downward on the square stem.

11. Remove the A4005EVR nozzle from the bench vise and turn top side up. Install the existing spring around the square stem. Fasten the existing brass screw by hand onto the top of the square stem to avoid cross threading. Use the flat head screw driver to tighten.

4

12. Install the new dust plug. Use the 5/8 punch and hammer to light tap into place.

13. Remove the A4005EVR nozzle from the bench vise and place on flat surface. Install the existing lever guard onto the nozzle body using the new mounting rivets. Use the lever guard rivet installation tool p/n 494653EVR and hammer to properly flare the ends of the mounting rivets.

14. Install the existing scuff guard by pulling over the nozzle body.

Post-Installation:

15. Before attempting to reinstall the A4005EVR nozzle, please refer to the A4005EVR Balance Vapor Recovery Nozzle Installation Instructions p/n 570435.

5

PREVENTIVE MAINTENANCE

1. Weekly inspect the latch for damage or if missing. Replace with factory authorized service kits.

Part Number	Description
494150EVR	Latch Kit

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.

IMPORTANT: Leave these installation instructions with the station owner and/ or operator.

6

EMCO®
WHEATON RETAIL

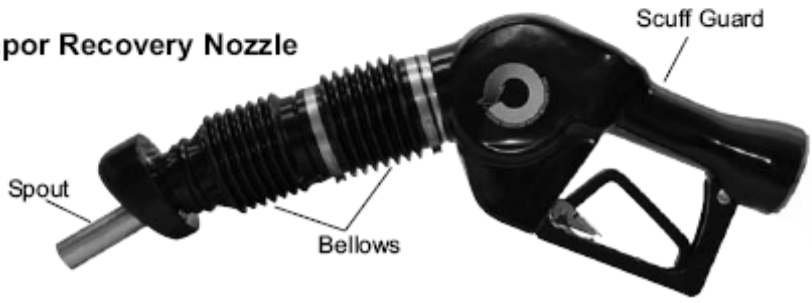
A0557EVR
Scuff Guard Kit

For use with Vapor Systems Technologies VST California Air Resources Board Executive Orders VR-203 and VR-204

Packing List:

(1) Scuff Guard

A4005EVR
Balance Vapor Recovery Nozzle



INSTALLATION INSTRUCTIONS

Service Tools Required:

- Pipe Wrench w/ Flat Jaws
- Gasoline Approved Container
- Utility Knife

CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4005EVR nozzle, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4005EVR nozzle, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/or death.

1

Pre-Inspection:

1. Carefully unpack and remove all kitted parts from the shipping container and evaluate for any kind of damage. Verify that no parts are missing from the packing list before proceeding with the installation.

Pre-Installation:

2. Empty all standing fuel within the spout and bellows into a gasoline approved container before attempting to service the scuff guard.

3. It is necessary to remove the A4005EVR nozzle from the curb hose during the removal and installation of the scuff guard. Use the pipe wrench with flat jaws to loosen the curb hose connector. Unfasten the curb hose connector by hand from the A4005EVR nozzle to avoid cross threading.

IMPORTANT: Drain the fuel from the hanging hardware into a gasoline approved container when removing the A4005EVR nozzle from the curb hose.

Installation:

Removing the Existing Scuff Guard

4. Place the A4005EVR nozzle on a flat surface. Use the utility knife to make the first cut along the front side of the scuff guard.

2

5. Use the utility knife to make the second cut along the rear side of the scuff guard.

6. Remove the scuff guard from the nozzle body.

IMPORTANT: Properly discard all removed components.

Installing the New Scuff Guard

7. Before attempting to install the new scuff guard. Soften the scuff guard by soaking in hot water and soap.

8. Install the new scuff guard by sliding over the spout and bellows. Pull the scuff guard completely over the nozzle body.

Post-Installation:

9. Before attempting to reinstall the A4005EVR nozzle, please refer to the A4005EVR Balance Vapor Recovery Nozzle Installation Instructions p/n 570435.

PREVENTIVE MAINTENANCE

1. Weekly inspect the scuff guard for the Emco Wheaton Retail manufacturer's logo. Replace with factory authorized service kits.

Part Number	Description
A0557EVR	Scuff Guard Kit

3

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.

IMPORTANT: Leave these installation instructions 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)
619-421-1743 (Technical Services, California)

p/n 570542
Rev. C, 10/10

EMCO®
WHEATON RETAIL

A4119EVR
Coaxial Safe Break Valve

Permanent ID Information:

INSTALLATION INSTRUCTIONS

Service Tools Required:

- 1 7/8" Crows Foot
- Torque Wrench w/ 50ft-lbs Setting
- Gasoline Approved Container
- Pipe Wrench w/ Flat Jaws
- Petroleum Jelly or Other Suitable Lubricant

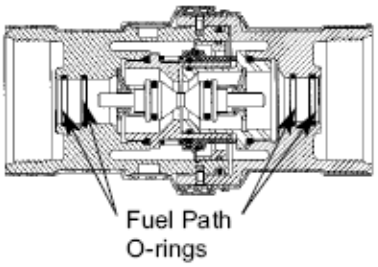
CAUTION:

1. Always barricade work area to keep pedestrians and vehicles from accessing the dispenser.
2. Always use a gasoline approved container or test can when performing any type of preventive maintenance.
3. Before attempting to install, remove or service the A4119EVR safe break valve, turn off and tag out power to the corresponding dispenser.
4. Before attempting to install, remove or service the A4119EVR safe break valve, close the emergency impact valves located inside the base of the dispenser. Relieve the line pressure and standing fuel through the nozzle spout into a gasoline approved container by compressing the bellows and squeezing the lever.
5. If a hose retractor is used, the A4119EVR safe break valve must be attached on the nozzle side of the retractor clamp.

IMPORTANT: Failure to perform cautions 3 and 4 may result in a hazardous gasoline spill, damage to equipment, personal injury and/ or death.

1

Pre-Inspection:



1. Carefully unpack and remove the A4119EVR safe break valve from the shipping container and evaluate for any kind of damage.
2. Verify the fuel path o-rings located on both ends of the A4119EVR safe break valve. All o-rings must be properly secured inside the factory machined grooves.

Pre-Installation:

3. Lightly lubricate the fuel path o-rings using petroleum jelly or other suitable lubricant.

4. Before attempting to install the A4119EVR safe break valve onto the whip hose, verify the word “NOZZLE”, which is printed on the scuff guard of the safe break valve, is on the opposite end. Verify the vapor path o-ring is properly secured onto the connector, and in good working condition. Lightly lubricate the o-ring using petroleum jelly or other suitable lubricant.

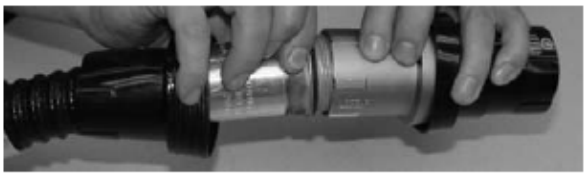
2

5. Before attempting to install the A4119EVR safe break valve onto the curb hose, verify the vapor path o-ring is properly secured onto the connector, and in good working condition. Lightly lubricate the o-ring using petroleum jelly or other suitable lubricant.

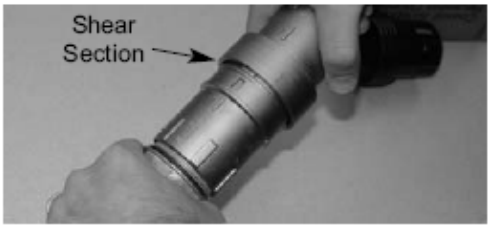
IMPORTANT: Do not use pipe thread sealant compound or Teflon tape when installing the A4119EVR safe break valve. Failure to comply will void warranty.

Installation:

IMPORTANT: If this is a new facility installation, the fueling point must be flushed into a gasoline approved container before installing the A4119EVR safe break valve. Failure to perform this procedure could result in foreign material becoming lodged inside the safe break valve's fuel path causing a reduction in fuel flow.



6. Remove the scuff guard by sliding on to the whip hose. Attach the A4119EVR safe break valve onto the whip hose connector. Tighten by hand to avoid cross threading. Take caution to avoid pinching the vapor path o-ring.



IMPORTANT: Never tighten across the shear section of the A4119EVR safe break valve. Failure to comply will result in damage to the safe break valve and void warranty.

7. Using a 1 7/8" crows foot and torque wrench, tighten the whip hose connector to 50 ft-lbs of torque.

8. Remove the scuff guard by sliding on to the curb hose. Attach the A4119EVR safe break valve onto the curb hose connector. Tighten by hand to avoid cross threading. Take caution to avoid pinching the vapor path o-ring.

9. Using a 1 7/8" crows foot and torque wrench, tighten the curb hose connector to 50 ft-lbs of torque.

Post Functional Tests:

10. Carefully purge the trapped air from the fueling point. Begin dispensing by compressing the bellows and then squeezing the lever. Dispense one gallon of fuel into a gasoline approved container.

11. Functional test the automatic shutoff of the A4005EVR nozzle. Begin dispensing by compressing the bellows and then squeezing the lever. Place the hold open latch in "high" clip position to secure the lever. Dispense one gallon of fuel into a gasoline approved container. At the same time, lower the spout tip into the standing fuel until the vent hole is completely submersed. The main valve of the A4005EVR nozzle will automatically close causing fuel flow to stop.

4

IMPORTANT: Perform step 11 a minimum of three times to assure the insertion interlock, hold open latch and the automatic shutoff of the A4005EVR nozzle are operating properly.

According to UL requirement 842, the fuel flow rate must be greater than 3 gallons per minute for the automatic shutoff to operate properly. A common problem cause of low flow rates are dirty or clogged dispenser filters.

Post Inspection:

12. Before placing the A4005EVR nozzle onto the dispenser cradle, inspect all hanging hardware connections for potential fuel leaks. Make proper adjustments if necessary.

PREVENTIVE MAINTENANCE

1. Weekly inspect the A4119EVR safe break valve, evaluate for any kind of damage. Damaged components must be replaced with factory authorized service kits.

Part Number	Description
494748EVR	Fuel Path O-ring Kit

2. Weekly inspect all hanging hardware connections for potential fuel leaks.

IMPORTANT: Should a drive-off or incidence of customer abuse occur, follow the initial inspection and function instructions found in the installation section.

PERFORMANCE STANDARDS & SPECIFICATIONS

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

1. Meets ARB Material Compatibility with Fuel Blends as per Section 3.8 of CP-201.
2. TP-201.2J – Complies with the maximum allowable component pressure drop of 0.04 inches of water column @ 60 CFH.

IMPORTANT: Leave these installation instructions with the station owner and/or operator.

EMCO® WHEATON RETAIL

February 12, 2013

003 Technical Service Bulletin

New Amendment to Executive Orders VR-203-N & VR-204-N

EMCO Balance Models A4005EVR Nozzle and A4119EVR Safebreak Valve Receive CARB EVR Approval for Use with the Healy Clean Air Separator CAS!

Attention Service Technicians,

On February 8, 2013, the California Air Resources Board CARB approved the EMCO phase II EVR components listed below as alternate or replacement parts for the Vapor Systems Technologies VST Executive Orders VR-203-N and VR-204-N. Refer to attached *Executive Orders* (legal language and signature only) for more details.

The conditional approval allows for the installation of the EMCO phase II EVR components with the **Franklin Fueling Systems, Healy Clean Air Separator CAS Models 9961 and 9961H.** This applies to existing and new gasoline dispensing facilities GDFs operating in California.

Component Description	**Model Number**
Balance Vapor Recovery Nozzle	A4005EVR
Balance Vapor Recovery Nozzle (Rebuilt)	RA4005EVR
Coaxial Safebreak Valve	A4119EVR

Converting a GDF from Healy to EMCO:

When converting or retro-fitting an existing GDF to EMCO balance phase II EVR, all existing Healy phase II EVR equipment must be removed and taken out of service such as; vacuum pumps, controller boards and hanging hardware components. The dispenser vapor recovery piping must be converted to balance phase II EVR and compliant with CARB TP-201.4 Dynamic Back Pressure. If the GDF is operating with a Veeder-Root ISD system, the existing flow meter must be replaced with a new Veeder-Root balance type flow meter.

Healy Nozzle & Breakaway Core Credit Program:

EMCO will be offering credit for the Healy EVR nozzle and breakaway cores on the purchase of a new EMCO A4005EVR nozzle or A4119EVR safebreak valve. This provides the GDF owner with a total core credit of $102.00 dollars per fueling point.

Description	Core Credit Amount
Healy EVR Nozzle/ Model 900	$82.00
Healy EVR Breakaway/ Models 8701VV or 807	$20.00
Total	$102.00

Balance Hanging Hardware (Mix & Match):

With regards to the installation of the EMCO phase II EVR components with those of VST, there are no approval limitations or conditions when **mixing and matching** the nozzle, breakaway, curb and whip hoses. All hanging hardware combinations are acceptable and CARB EVR approved. Refer to attached *Figure 1* for more details.

Balance Hanging Hardware with Retractors:

When considering to use hanging hardware combinations beyond 8 ½ feet a high hose retractor will be required. Both the **"Curley Q"** and **"Lazy J"** configurations are CARB EVR approved for a maximum length of 15 feet, this measurement is taken from the back of the whip hose 1 7/8" nut to the base of the nozzle.

Annual Compliance Testing:

With regards to EVR equipment annual compliance, all testing must be performed in accordance with the exhibits listed in VST Executive Orders VR-203-N and VR-204-N, please refer below.

1. All **liquid removal testing** performed on Goodyear or VST curb hoses equipped with an EMCO A4005EVR nozzle must be conducted in accordance with **Exhibit 5**. The EMCO Nozzle Spout Plug P/N 494635EVR is a required test tool that seals the fuel path of the nozzle spout during liquid removal testing per CARB TP-201.6 or 6C.

2. All **ISD vapor flow meter operability testing** performed on fueling points equipped with an EMCO A4005EVR nozzle must be conducted in accordance with **Exhibit 17**. The EMCO Nozzle Adapter P/N 494635EVR and the Surrogate Spout P/N 494771EVR are required test tools. Refer to attached *EMCO Service Tools Cut Sheet* for details.

EMCO Contractor Certification Program:

As part of our CARB EVR approval we are required to provide certification training to anyone performing installation and/ or preventive maintenance on EMCO phase II EVR components. The training course is approximately 3 ½ hours long and is free of charge. I encourage everyone to make arrangements to sign-up for new or re-certification training.

Frequently Asked Questions:

I have provided a list of "Frequently Asked Questions" that should eliminate areas of concern during the installation and routine preventive maintenance of the EMCO phase II EVR components.

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Frequently Asked Questions

1. **Q: Will a new operating permit be required when converting or retro-fitting an existing GDF from Healy to EMCO balance phase II EVR?**

   A: Yes, in most cases a new operating permit will be required by the local Air Pollution Control District.

2. **Q: Will the existing Veeder-Root ISD software operate with the Healy CAS and EMCO phase II EVR components?**

   A: Yes, only if the current software version is v1.02 or higher.

3. **Q: Will a new operating permit be required when installing an EMCO phase II EVR component at an existing GDF equipped with the Healy CAS and VST EVR hanging hardware?**

   A: No, the new CARB Rev. N approval allows for installation and removal between EMCO and VST phase II EVR components without requiring a new operating permit.

4. **Q: An existing GDF is equipped with 100 percent VST EVR hanging hardware and the nozzle on fueling position 5 requires replacement. Can a service provider replace the VST nozzle with an EMCO A4005EVR nozzle without having to replace the rest?**

   A: Yes, the new CARB approval allows for the installation of a single EMCO A4005EVR nozzle or A4119EVR safebreak valve without replacing the remaining VST nozzles or breakaways.

5. **Q: Will the EMCO A4005EVR nozzle be required to comply with CARB Advisory #418 "VST Nozzle Daily Check" dated May 28th, 2010?**

   A: No, the advisory only applies to VST nozzles operating in California such as: Models VST-EVR-NBcc, VST-EVR-NBccR, VST-EVR-NBcc-1 and VST-EVR-NBccR-1.

6. **Q: Is the EMCO A4110EVR hose swivel part of the new CARB approval for use with VST Executive Orders VR-203-N and VR-204-N?**

   A: No, the EMCO A4110EVR hose swivel is only CARB approved for use with EMCO Executive Orders VR-207 and VR-208.

7. **Q: Is the Goodyear EVR hose CARB approved for use with EMCO and VST phase II EVR components?**

   A: Yes, the Goodyear EVR curb and whip hoses were CARB approved back in December of 2009 and are listed in Exhibit 1 of VST Executive Orders VR-203-N and VR-204-N.

As before, I thank you for your attention to this matter. Should you have additional questions or concerns, please do not hesitate to contact me. I thank you for your continued support.

Best regards,

Jose E. Rodriguez
Director of Technical Service & Support
CARB Liaison

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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-203-N

Balance Phase II Enhanced Vapor Recovery (EVR) Systems
Not Including In-Station Diagnostics (ISD)

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II EVR vapor recovery systems) in CP-201, ***Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended May 25, 2006, incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards;

WHEREAS, Vapor Systems Technologies (VST), Inc. requested amendment of the VST Phase II EVR System Executive Order VR-203 to include the Green Machine Vapor Processor as an alternate processor;

WHEREAS, Veeder-Root Company (Veeder-Root) requested amendment of the VST Phase II EVR System Executive Order VR-203 to include an optional TLS Console security feature known as “Maintenance Tracker” and a low powered wireless vapor pressure sensor as an alternative component;

WHEREAS, OPW requested amendment of the VST Phase II EVR System Executive Order VR-203 to include a reconnectable balance OPW breakaway as an alternate component;

WHEREAS, EMCO Wheaton Retail requested amendment of the VST Phase II EVR System Executive Order VR-203 to include EMCO Wheaton Retail hanging hardware (nozzle and safe break valve) for use with the Franklin Fueling Systems Clean Air Separator;

WHEREAS, ARB staff has changed the title of this Executive Order from “Vapor Systems Technologies (VST), Inc. Phase II Enhanced Vapor Recovery (EVR) Not Including In-Station Diagnostics (ISD)” to “Balance Phase II Enhanced Vapor Recovery (EVR) Systems Not Including In-Station Diagnostics (ISD);”

WHEREAS, the Certification Procedure provides that ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities; and

WHEREAS, I, Cynthia L. Castronovo, Acting Chief of the Monitoring and Laboratory Division, find that the Balance Phase II EVR System, as modified herein, conforms with all requirements set forth in the Certification Procedure, including compatibility when fueling vehicles equipped with onboard refueling vapor recovery systems, and results in a vapor recovery system which is at least 95 percent efficient and shall not exceed 0.38 pounds of hydrocarbons per 1,000 gallons of gasoline transferred when tested pursuant to TP-201.2, ***Efficiency and Emission Factor for Phase II Systems*** (October 8, 2003).

NOW, THEREFORE, IT IS HEREBY ORDERED that the Balance Phase II EVR Systems including Veeder-Root PMC software version 1.04 are certified to be at least 95 percent efficient and does not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline transferred in attended and/or self-service mode when used with an ARB-certified Phase I vapor recovery system and installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the equipment certified for use with Balance Phase II EVR Systems. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to the Balance Phase II EVR Systems as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting TP-201.3. Exhibit 5 is the liquid removal test procedure. Exhibit 6 provides items required in conducting TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is the VST ECS hydrocarbon sensor verification test procedure. Exhibit 9 is the test procedure for determining VST ECS vapor processor activation pressure. Exhibit 10 is the Veeder Root vapor pressure sensor verification test procedure. Exhibit 11 is the Veeder-Root vapor polisher operability test procedure. Exhibit 12 is the Veeder-Root vapor polisher hydrocarbon emissions verification test procedure. Exhibit 13 is the Hirt VCS 100 processor operability test procedure. Exhibit 14 is the Franklin Fueling Systems Clean Air Separator static pressure performance test procedure. Exhibit 15 is the VST Green Machine Compliance Test Procedure. Exhibit 16 is the Liquid Condensate Trap compliance test procedure. Exhibit 17 is reserved for a future procedure and intentionally left blank. Exhibit 18 is Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery component(s) to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of the Certification Procedure. Manufacturers may specify that the warranty is contingent upon the use of trained installers. The manufacturer warranty tag, included with each component, shall be provided to the service station owner/operator at the time of installation.

IT IS FURTHER ORDERED that every certified component manufactured by VST, EMCO, Goodyear, Veeder-Root, Hirt, OPW, and Franklin Fueling Systems shall meet the manufacturing performance specifications as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified Balance Phase II EVR Systems shall be installed, operated, and maintained in accordance with the ***ARB Approved Installation, Operation, and Maintenance Manual***. Equipment shall be inspected weekly, quarterly, and annually per the procedures identified in the ***ARB Approved Installation, Operation, and Maintenance Manual***. These inspections shall also apply to systems certified by Executive Orders VR-203-A to M, Executive Order VR-205-A to B, and Executive Order VR-209-A. A copy of the Executive Order and the ***ARB Approved Installation, Operation and Maintenance Manual*** shall be maintained at each GDF where a certified Balance Phase II EVR System is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system provided in the manufacturers' certification application or documents and certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System shall conduct and pass the following tests no later than 60 days after startup and at least once in each twelve month period, using the following test procedures:

- TP-201.3, ***Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities*** (March 17, 1999);
- TP-201.4, ***Dynamic Back Pressure*** (July 3, 2002) in accordance with the condition listed in item 1 of the Vapor Collection section of Exhibit 2;
- Exhibit 4, ***Required Items in Conducting TP-201.3***;
- Exhibit 5, ***Liquid Removal Test Procedure***;
- Exhibit 6, ***Required Items for Conducting TP-201.4.***
- Exhibit 8, ***VST ECS Hydrocarbon Sensor Verification Test Procedure*** (if a VST ECS membrane processor is installed);
- Exhibit 9, ***Determination of VST ECS Processor Activation Pressure*** (if a VST ECS membrane processor is installed);
- Exhibit 10, ***Veeder-Root Vapor Pressure Sensor Verification Test Procedure*** (if a VST ECS membrane processor or Veeder-Root Vapor Polisher is installed);
- Exhibit 11, ***Veeder-Root Vapor Polisher Operability Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);
- Exhibit 12, ***Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);

- Exhibit 13, ***Hirt VCS 100 Processor Operability Test Procedure*;** (if a Hirt VCS 100 is installed);
- Exhibit 14, ***Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure*** (if a Clean Air Separator is installed);
- Exhibit 15, ***VST Green Machine Compliance Test Procedure*** (if a Green Machine is installed);
- Exhibit 16, ***Liquid Condensate Trap Compliance Test Procedure*** (if a Liquid Condensate Trap is installed);
- *Exhibit 17, Reserved for future procedure and intentionally left blank; and*
- Exhibit 18, ***Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled*** (if Maintenance Tracker is installed).

Local districts at their option may specify the testing frequency and related sequencing of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to policies established by that district. Local districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by the ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System shall conduct, and pass, the following test no later than 60 days after startup using the following test procedure: Exhibit 7, ***Nozzle Bag Test Procedure***. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that, except as provided above, local districts at their option will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If the district requires the nozzle vapor valve be tested, the test shall be conducted in accordance with Exhibit 7, ***Nozzle Bag Test Procedure***.

IT IS FURTHER ORDERED that the Balance Phase II EVR System shall be compatible with gasoline in common use in California at the time of certification. The Balance Phase II EVR System is not compatible with gasoline that has a methanol content greater than 5 percent or an ethanol content greater than 10 percent. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of the VST Phase II EVR System is valid through April 1, 2014.

IT IS FURTHER ORDERED that Executive Order VR-203-M issued on March 20, 2012, is hereby superseded by this Executive Order. VST Phase II EVR Systems certified under

Executive Order VR-203-A through M may remain in use at existing installations up to four years after the expiration date of this Executive Order.

IT IS FURTHER ORDERED that this Executive Order shall apply to new installations or major modification of Phase II Systems with a throughput of less than or equal to 600,000 gallons per year. Use of this Executive Order for new installations or major modifications at a GDF with a throughput of more than 600,000 gallons per year is not authorized.

Executed at Sacramento, California, this 8TH day of February 2013.

Cynthia L. Castronovo
Acting Chief, Monitoring and Laboratory Division

Attachments: Next Page

General Requirements

Exhibit 1 Equipment List
- Hanging Hardware
- Processors
- Liquid Condensate Traps
- Optional Wireless Components
- Optional Maintenance Tracker Kit

Exhibit 2 System Specifications
- Hanging Hardware
- Processors
- Pressure/Vacuum Vent Valves for Storage Tank Vents
- Warranty
- Vapor Recovery Piping Configurations
- Dispensers
- Liquid Condensate Traps
- Phase I Systems
- Maintenance Records
- Vapor Recovery Equipment Defects
- Veeder-Root PMC System Specifications
- Wireless Components
- Maintenance Tracker Kit

Exhibit 3 Manufacturing Performance Specifications and Warranties
- Vapor Systems Technologies
- EMCO Wheaton Retail
- Veeder-Root
- Goodyear
- Hirt
- Franklin Fueling Systems
- OPW

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-201.3
Exhibit 5 Liquid Removal Test Procedure
Exhibit 6 Required Items for Conducting TP-201.4
Exhibit 7 Nozzle Bag Test Procedure

Processor Specific Compliance Procedures

Exhibit 8 VST ECS Hydrocarbon Sensor Verification Test Procedure
Exhibit 9 VST ECS Determination of Processor Activation Pressure
Exhibit 10 Veeder-Root Vapor Pressure Sensor Verification Test Procedure
Exhibit 11 Veeder-Root Vapor Polisher Operability Test Procedure
Exhibit 12 Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure

Exhibit 13 Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure
Exhibit 14 Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure
Exhibit 15 VST Green Machine Compliance Test Procedure

LCT Specific Compliance Procedure
Exhibit 16 Liquid Condensate Trap Compliance Test Procedure

Other Compliance Procedures
Exhibit 17 Reserved for a future procedure and intentionally left blank
Exhibit 18 Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled.

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-204-N

Balance Phase II Enhanced Vapor Recovery (EVR) Systems
Including In-Station Diagnostics (ISD) Systems

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II EVR vapor recovery systems) in CP-201, ***Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended May 25, 2006, incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards;

WHEREAS, Vapor Systems Technologies (VST), Inc. requested amendment of the VST Phase II Enhanced Vapor Recovery (EVR) System Executive Order VR-204 to include the INCON ISD System as an alternate ISD System for use with the Franklin Fueling Systems (FFS) Clean Air Separator and VST nozzles;

WHEREAS, the INCON ISD System software version 1.3.0 does not support multi-hose (six pack) dispenser configurations and is therefore limited for use with unihose dispensers;

WHEREAS, Veeder-Root Company (Veeder-Root) requested amendment of the VST Phase II EVR System Executive Order VR-204 to include an optional security feature known as “Maintenance Tracker” and a low powered wireless vapor pressure sensor as an alternate component;

WHEREAS, VST requested amendment of the VST Phase II EVR System Executive Order VR-204 including In-Station Diagnostics (ISD) system, to include the Green Machine Vapor Processor as an alternate processor;

WHEREAS, OPW requested amendment of the VST Phase II EVR System Executive Order VR-204 to include a re-connectable balance OPW breakaway as an alternate component;

WHEREAS, EMCO Wheaton Retail requested amendment of the VST Phase II EVR System Executive Order VR-204 to include EMCO Wheaton Retail hanging hardware (nozzle and safe break valve) for use with the Franklin Fueling Clean Air Separator and Veeder-Root ISD System;

WHEREAS, ARB staff has changed the title of this Executive Order from “Vapor Systems Technologies (VST), Inc. Phase II Enhanced Vapor Recovery (EVR) Including Veeder-Root

In-Station Diagnostics (ISD)" to "Balance Phase II Enhanced Vapor Recovery (EVR) Systems Including In-Station Diagnostics (ISD) Systems;"

WHEREAS, the Certification Procedure provides that the ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities; and

WHEREAS, I, Cynthia L. Castronovo, Acting Chief of the Monitoring and Laboratory Division, find that the Balance Phase II EVR Systems, as modified herein, conforms with all requirements set forth in the Certification Procedure, including compatibility when fueling vehicles equipped with onboard refueling vapor recovery systems, and results in a vapor recovery system which is at least 95 percent efficient and shall not exceed 0.38 pounds of hydrocarbons per 1,000 gallons of gasoline transferred when tested pursuant to TP-201.2, ***Efficiency and Emission Factor for Phase II Systems*** (October 8, 2003).

NOW, THEREFORE, IT IS HEREBY ORDERED that the Balance Phase II EVR Systems Including ISD Systems are certified to be at least 95 percent efficient and do not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline transferred in attended and/or self-service mode when used with an ARB-certified Phase I vapor recovery system and installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the equipment certified for use with Balance Phase II EVR Systems including ISD Systems. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to Balance Phase II EVR Systems Including ISD Systems as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting TP-201.3. Exhibit 5 is the liquid removal test procedure. Exhibit 6 provides items required in conducting TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is VST ECS hydrocarbon sensor verification test procedure. Exhibit 9 is the test procedure for determining VST ECS vapor processor activation pressure. Exhibit 10 is the Veeder-Root vapor pressure sensor verification test procedure. Exhibit 11 is the Veeder-Root vapor polisher operability test procedure. Exhibit 12 is the Veeder-Root vapor polisher hydrocarbon emissions verification test procedure. Exhibit 13 is the Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure. Exhibit 14 is the Franklin Fueling Systems Clean Air Separator static pressure performance test procedure. Exhibit 15 is the VST Green Machine Compliance Test Procedure. Exhibit 16 is the Liquid Condensate Trap compliance test procedure. Exhibit 17 is the Veeder-Root ISD vapor flow meter operability test procedure. Exhibit 18 is accessing PMC and ISD parameters at gasoline dispensing facilities (GDFs) with Veeder-Root's "Maintenance Tracker" security feature installed & enabled. Exhibit 19 is the INCON ISD vapor flow meter operability test procedure. Exhibit 20 is the INCON vapor pressure sensor verification test procedure.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire

Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery components to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of the Certification Procedure. Manufacturers may specify that the warranty is contingent upon the use of trained installers. The manufacturer warranty tag, included with each component, shall be provided to the service station owner/operator at the time of installation.

IT IS FURTHER ORDERED that every certified component manufactured by VST, EMCO, OPW, Goodyear, Veeder-Root, Hirt, and Franklin Fueling Systems including INCON shall meet the manufacturing performance specifications as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified Balance Phase II EVR Systems Including ISD Systems shall be installed, operated, and maintained in accordance with the ***ARB Approved Installation, Operation, and Maintenance Manual***. Equipment shall be inspected weekly, quarterly, and annually per the procedures identified in the ***ARB Approved Installation, Operation, and Maintenance Manual***. These inspections shall also apply to systems certified by Executive Orders VR-204-A to M. A copy of the Executive Order and the ***ARB Approved Installation, Operation and Maintenance Manual*** shall be maintained at each GDF where a certified Balance Phase II EVR System Including ISD System is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system provided in the manufacturers' certification application or documents and certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System Including ISD System shall conduct and pass the following tests no later than 60 days after startup and at least once in each twelve month period, using the following test procedures:

- TP-201.3, ***Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities*** (March 17, 1999);
- TP-201.4, ***Dynamic Back Pressure*** (July 3, 2002) in accordance with the condition listed in item 1 of the Vapor Collection section of Exhibit 2;
- Exhibit 4, ***Required Items in Conducting TP-201.3***;
- Exhibit 5, ***Liquid Removal Test Procedure****;*

- Exhibit 6, ***Required Items in Conducting TP-201.4***;
- Exhibit 8, ***VST ECS Hydrocarbon Sensor Verification Test Procedure*** *(if a VST ECS membrane processor is installed)*;
- Exhibit 9, ***Determination of VST ECS Processor Activation Pressure*** *(if a VST ECS membrane processor is installed)*;
- Exhibit 10, ***Veeder-Root Vapor Pressure Sensor Verification Test Procedure****;*
- Exhibit 11, ***Veeder-Root Vapor Polisher Operability Test Procedure*** *(if a Veeder-Root Vapor Polisher is installed)*;
- Exhibit 12, ***Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure*** *(if a Veeder-Root Vapor Polisher is installed)*;
- Exhibit 13, ***Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure*** *(if a Hirt VCS 100 processor is installed);*
- Exhibit 14, ***Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure*** *(if a Clean Air Separator is installed);*
- Exhibit 15, ***VST Green Machine Compliance Test Procedure*** *(if a Green Machine is installed);*
- Exhibit 16, ***Liquid Condensate Trap Compliance Test Procedure*** *(if a Liquid Condensate Trap is installed);*
- Exhibit 17, ***Veeder-Root ISD Vapor Flow Meter Operability Test Procedure*** *(if Veeder-Root ISD is installed)*;
- Exhibit 18, ***Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled*** *(if Maintenance Tracker is installed);*
- Exhibit 19, ***INCON; ISD Vapor Flow Meter Operability Test Procedure*** *(if INCON ISD is installed); and*
- Exhibit 20, ***INCON; Vapor Pressure Sensor Verification Test Procedure*** *(if INCON ISD is installed)*.

Local districts at their option may specify the testing frequency and related sequencing of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to policies established by that district. Local districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the Balance Phase II EVR System Including ISD System shall conduct, and pass, the following tests no later than 60 days after startup using the following test procedure: Exhibit 7, ***Nozzle Bag Test Procedure***. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by the ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that, except as provided above, local districts at their option will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If

the district requires the nozzle vapor valve be tested, the test shall be conducted in accordance with Exhibit 7, ***Nozzle Bag Test Procedure***.

IT IS FURTHER ORDERED that the Balance Phase II EVR Systems Including ISD Systems shall be compatible with gasoline in common use in California at the time of certification. The Balance Phase II EVR System Including ISD System is not compatible with gasoline that has a methanol content greater than 5 percent or an ethanol content greater than 10 percent. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of Balance Phase II EVR Systems Including ISD is valid through April 1, 2014.

IT IS FURTHER ORDERED that Executive Order VR-204-M issued on March 30, 2012, is hereby superseded by this Executive Order. VST Phase II EVR Systems Including Veeder-Root ISD certified under Executive Order VR-204-A through M may remain in use at existing installations up to four years after the expiration date of this Executive Order. This Executive Order shall apply to new installations or major modification of Phase II Systems with a throughput of more than 600,000 gallons per year. The installation of the ISD System is not authorized on a GDF with a throughput of less than or equal to 600,000 gallons per year.

Executed at Sacramento, California, this 8TH day of February 2013.

Cynthia L. Castronovo

Cynthia L. Castronovo
Acting Chief, Monitoring and Laboratory Division

Attachments: Next Page

General Requirements

Exhibit 1 Equipment List
- Hanging Hardware
- Processors
- Liquid Condensate Trap
- ISD
  - Optional Wireless Components
  - Optional Maintenance Tracker Kit

Exhibit 2 System Specifications
- Hanging Hardware
- Processors
- Pressure/Vacuum Vent Valves for Storage Tank Vents
- Warranty
- Vapor Recovery Piping Configurations
- Dispensers
- Liquid Condensate Traps
- In-Station Diagnostics (ISD)
- Phase I Systems
- Maintenance Records
- Vapor Recovery Equipment Defects
- Veeder-Root ISD System Specifications
- INCON ISD System Specifications

Exhibit 3 Manufacturing Performance Specifications and Warranties
- Vapor Systems Technologies
- EMCO Wheaton Retail
- Veeder-Root
- Goodyear
- Hirt
- Franklin Fueling Systems Including INCON ISD System
- OPW

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-201.3
Exhibit 5 Liquid Removal Test Procedure
Exhibit 6 Required Items for Conducting TP-201.4
Exhibit 7 Nozzle Bag Test Procedure

Processor Specific Compliance Procedures

Exhibit 8 VST ECS Hydrocarbon Sensor Verification Test Procedure
Exhibit 9 VST ECS Determination of Processor Activation Pressure
Exhibit 10 Veeder-Root Vapor Pressure Sensor Verification Test Procedure
Exhibit 11 Veeder-Root Vapor Polisher Operability Test Procedure
Exhibit 12 Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure
Exhibit 13 Hirt VCS 100 Processor with Indicator Panel Operability Test Procedure
Exhibit 14 Franklin Fueling Systems Healy Clean Air Separator Static Pressure Performance Test Procedure

Exhibit 15 VST Green Machine Compliance Test Procedure

LCT Specific Compliance Procedure

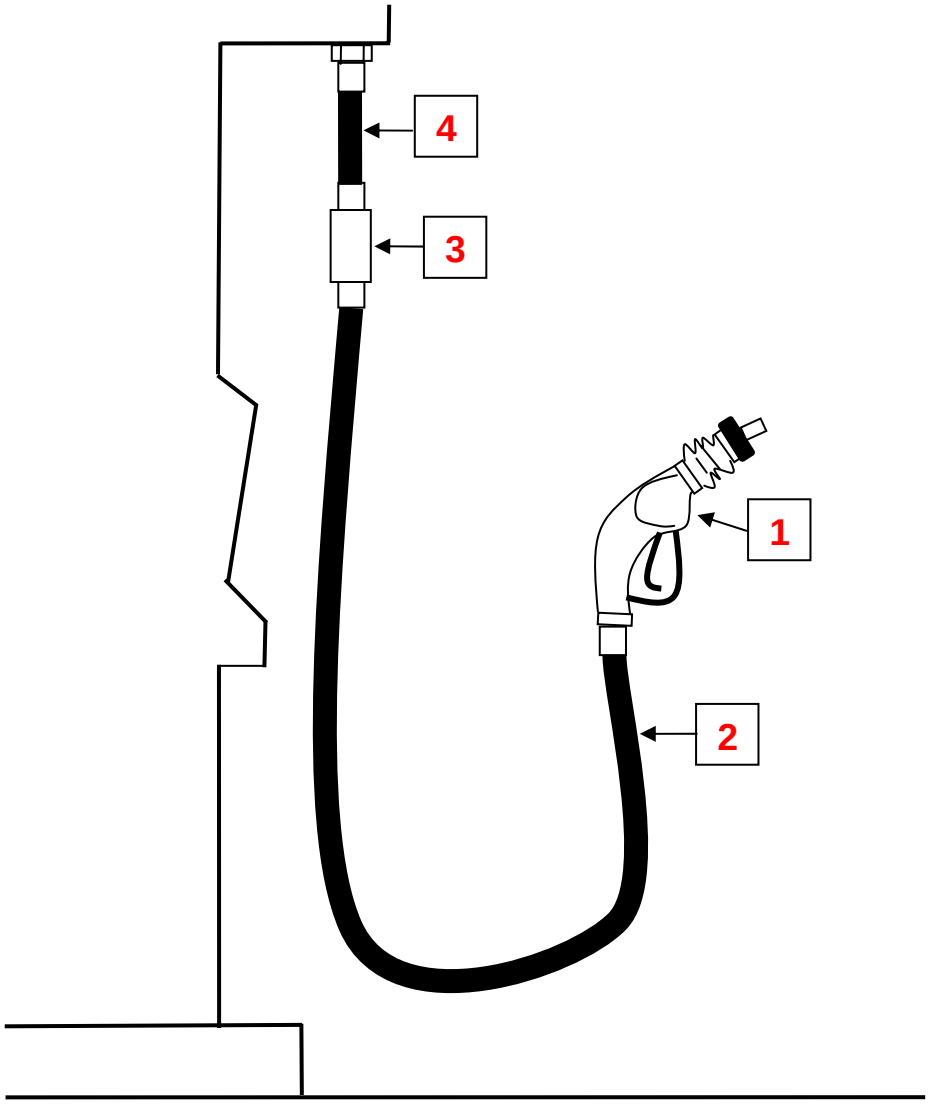
Exhibit 16 Liquid Condensate Trap Compliance Test procedure

ISD Specific Compliance Procedures

Exhibit 10 Veeder-Root Vapor Pressure Sensor Verification Test Procedure
Exhibit 17 Veeder-Root ISD Vapor Flow Meter Operability Test Procedure
Exhibit 18 Accessing PMC and ISD Parameters at Gasoline Dispensing Facilities (GDFs) with Veeder-Root's "Maintenance Tracker" Security Feature Installed & Enabled
Exhibit 19 INCON ISD System Vapor Flow Meter Operability Test Procedure
Exhibit 20 INCON ISD System Vapor Pressure Sensor Verification Test Procedure

Figure 1

CARB Approved EVR Hanging Hardware Mix and Match Combinations for
VST Executive Orders VR-203-N and VR-204-N



	1 Nozzle	2 Curb Hose	3 Safe Break Valve	4 Whip Hose
A	VST	VST or Goodyear	VST	VST or Goodyear
B	EMCO	VST or Goodyear	VST	VST or Goodyear
C	VST	VST or Goodyear	EMCO	VST or Goodyear
D	EMCO	VST or Goodyear	EMCO	VST or Goodyear

Note: Each letter identifies acceptable EVR hanging hardware combination.

EMCO® WHEATON RETAIL

November 22, 2010

002 Technical Service Bulletin

New Amendment to Executive Orders VR-203-I & VR-204-I

EMCO Models A4005EVR Nozzle and A4119EVR Safe Break Valve Receive CARB EVR Approval for Mixing And Matching with VST EVR Hanging Hardware!

Attention Service Technicians,

On November 12, 2010, the California Air Resources Board CARB approved the EMCO phase II EVR components listed below as alternate or replacement parts for the Vapor Systems Technologies VST Executive Orders VR-203-I and VR-204-I. Refer to attached *Executive Orders* (legal language and signature only) for more details.

The conditional approval allows for the installation of the EMCO phase II EVR components with the **Veeder-Root Vapor Polisher Canister** and the **Hirt VCS-100 Thermal Oxidizer**. This applies to existing and new gasoline dispensing facilities GDFs operating in California.

Component Description	Model Number
Balance Vapor Recovery Nozzle	A4005EVR
Balance Vapor Recovery Nozzle (Rebuilt)	RA4005EVR
Coaxial Safe Break Valve	A4119EVR

With regard to the installation of the EMCO phase II EVR components with those of VST, there are no approval limitations or conditions when **mixing and matching** the nozzle, safe break valve, curb and whip hoses. All possible hanging hardware combinations are acceptable and EVR approved. Refer to attached *Figure 1* for more details.

With regard to EVR equipment annual compliance, all testing must be performed in accordance with the exhibits listed in VST Executive Orders VR-203-I and VR-204-I, please refer below.

1. All **liquid removal testing** performed on Goodyear or VST curb hoses equipped with an EMCO A4005EVR nozzle must be conducted in accordance with **Exhibit 5**. The EMCO Nozzle Spout Plug P/N 494635EVR is a required test tool that seals the fuel path of the nozzle spout during liquid removal testing per CARB TP-201.6 or 6C.

2. All **ISD vapor flow meter operability testing** performed on fueling positions equipped with an EMCO A4005EVR nozzle must be conducted in accordance with **Exhibit 17**. The EMCO Nozzle Adapter P/N 494635EVR and the Surrogate Spout P/N 494771EVR are required test tools. Refer to attached *EMCO Service Tools Cut Sheet* for details.

Below, you will find a list of "Frequently Asked Questions" that should help eliminate certain areas of concern during the installation and routine preventive maintenance of the EMCO phase II EVR components.

Frequently Asked Questions

1. **Q: Will a new operating permit be required when installing an EMCO phase II EVR component at an existing GDF equipped with VST EVR hanging hardware?**

   A: No, the new CARB approval allows for installation and removal between EMCO and VST phase II EVR components without requiring a new operating permit.

2. **Q: An existing GDF is equipped with 100 percent VST EVR hanging hardware and the nozzle on fueling position 5 requires replacement. Can a service provider replace the VST nozzle with an EMCO A4005EVR nozzle without having to replace the rest?**

   A: Yes, the new CARB approval allows for the installation of a single EMCO A4005EVR nozzle or A4119EVR safe break valve without replacing the remaining VST nozzles or safe break valves.

3. **Q: Will the EMCO A4005EVR nozzle be required to comply with CARB Advisory #418 "VST Nozzle Daily Check" dated May 28th, 2010?**

   A: No, the advisory only applies to all VST nozzles operating in California such as: Models VST-EVR-NBcc, VST-EVR-NBccR, VST-EVR-NBcc-1 and VST-EVR-NBccR-1.

4. **Q: Is the EMCO A4110EVR hose swivel part of the new CARB approval for use with VST Executive Orders VR-203-I and VR-204-I?**

   A: No, the EMCO A4110EVR hose swivel is only CARB approved for use with EMCO Executive Orders VR-207 and VR-208.

5. **Q: Is the Goodyear EVR hose CARB approved for use with EMCO and VST phase II EVR components?**

   A: Yes, the Goodyear EVR hose both curb and whip were CARB approved back in December of 2009 and are listed in Exhibit 1 of VST Executive Orders VR-203-I and VR-204-I.

As before, I thank you for your attention to this matter. Should you have additional questions, please do not hesitate to contact me.

Best regards,

Jose E. Rodriguez
Director of Technical Service & Support/
CARB Liaison

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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-203-I

Vapor Systems Technologies, Inc.
Phase II Enhanced Vapor Recovery (EVR) System
Not Including In-Station Diagnostics (ISD)

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II EVR vapor recovery systems) in its CP-201, ***Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended May 25, 2006, incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards;

WHEREAS, Vapor Systems Technologies, Inc. (VST) requested certification of the VST Phase II EVR System not Including ISD (VST Phase II EVR System) pursuant to the Certification Procedure by Executive Order VR-203-A issued on November 5, 2007, and last modified on July 13, 2010, by Executive Order VR-203-H;

WHEREAS, EMCO Wheaton Retail (EMCO) requested certification of the EMCO EVR nozzle and EMCO EVR safe break valve as alternate components for use with the Veeder-Root Vapor Polisher and Hirt Thermal Oxidizer;

WHEREAS, the Certification Procedure provides that ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities; and

WHEREAS, I, Alberto Ayala, Chief of the Monitoring and Laboratory Division, find that the VST Phase II EVR System, including Veeder-Root PMC software version 1.03 conforms with all requirements set forth in the Certification Procedure, including compatibility when fueling vehicles equipped with onboard refueling vapor recovery systems, and results in a vapor recovery system which is at least 95 percent efficient and shall not exceed 0.38 pounds of hydrocarbons per 1,000 gallons of gasoline transferred when tested pursuant to TP-201.2, ***Efficiency and Emission Factor for Phase II Systems*** (October 8, 2003).

NOW, THEREFORE, IT IS HEREBY ORDERED that VST Phase II EVR System including Veeder-Root PMC software version 1.03 is certified to be at least 95 percent efficient and does not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline transferred in attended and/or self-service mode when used with an ARB-certified Phase I vapor recovery system and installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the equipment certified for use with VST Phase II EVR System. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to VST Phase II EVR System as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting TP-201.3. Exhibit 5 is the liquid removal test procedure. Exhibit 6 provides items required in conducting TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is the VST ECS hydrocarbon sensor verification test procedure. Exhibit 9 is the test procedure for determining VST ECS vapor processor activation pressure. Exhibit 10 is the VST ECS / Veeder-Root Vapor Polisher vapor pressure sensor verification test procedure. Exhibit 11 is the Veeder-Root vapor polisher operability test procedure. Exhibit 12 is the Veeder-Root vapor polisher hydrocarbon emissions verification test procedure. Exhibit 13 is the Hirt VCS 100 processor operability test procedure. Exhibit 14 is the Franklin Fueling Systems Clean Air Separator static pressure performance test procedure.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery component(s) to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of the Certification Procedure. Manufacturers may specify that the warranty is contingent upon the use of trained installers.

IT IS FURTHER ORDERED that every certified component manufactured by VST, EMCO, Goodyear, Veeder-Root, Hirt, and Franklin Fueling Systems shall be performance tested by the manufacturer as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified VST Phase II EVR System shall be installed, operated, and maintained in accordance with the ***ARB Approved Installation, Operation, and Maintenance Manual***. Equipment shall be inspected daily, weekly, quarterly, and annually per the procedures identified in the ***ARB Approved Installation, Operation, and Maintenance Manual***. These inspections shall also apply to systems certified by Executive Orders VR-203-A to H, Executive Order VR-205-A to B, and Executive Order VR-209-A. A copy of this Executive Order and the ***ARB Approved Installation, Operation and***

Maintenance Manual shall be maintained at each GDF where a certified VST Phase II EVR System is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the VST Phase II EVR System shall conduct and pass the following tests no later than 60 days after startup and at least once in each twelve month period, using the following test procedures:

- TP-201.3, ***Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities*** (March 17, 1999);
- TP-201.4, ***Dynamic Back Pressure*** (July 3, 2002) in accordance with the condition listed in item 1 of the Vapor Collection section of Exhibit 2;
- Exhibit 4, ***Required Items in Conducting TP-201.3***;
- Exhibit 5, ***Liquid Removal Test Procedure***;
- Exhibit 6, ***Required Items for Conducting TP-201.4.***
- Exhibit 8, ***VST ECS Hydrocarbon Sensor Verification Test Procedure*** (if a VST ECS membrane processor is installed);
- Exhibit 9, ***Determination of VST ECS Processor Activation Pressure*** (if a VST ECS membrane processor is installed);
- Exhibit 10, ***VST ECS / Veeder-Root Vapor Polisher Vapor Pressure Sensor Verification Test Procedure*** (if a VST ECS membrane processor or Veeder-Root Vapor Polisher is installed);
- Exhibit 11, ***Veeder-Root Vapor Polisher Operability Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);
- Exhibit 12, ***Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);
- Exhibit 13, ***Hirt VCS 100 Processor Operability Test Procedure*****;** (if a Hirt VCS 100 is installed); and,
- Exhibit 14, ***Franklin Fueling Systems Clean Air Separator Static Pressure Performance Test Procedure*** *(if a Clean Air Separator is installed).*

Local districts at their option may specify the testing frequency and related sequencing of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to policies established by that district. Local districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test

procedures listed above, may be used if determined by the ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the VST Phase II EVR System shall conduct, and pass, the following test no later than 60 days after startup using the following test procedure: Exhibit 7, ***Nozzle Bag Test Procedure***. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that, except as provided above, local districts at their option will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If the district requires the nozzle vapor valve be tested, the test shall be conducted in accordance with Exhibit 7, ***Nozzle Bag Test Procedure***.

IT IS FURTHER ORDERED that the VST Phase II EVR System shall be compatible with gasoline in common use in California at the time of certification. The VST Phase II EVR System is not compatible with gasoline that has a methanol content greater than 5 percent or an ethanol content greater than 10 percent. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of the VST Phase II EVR System is valid through April 1, 2012.

IT IS FURTHER ORDERED that Executive Order VR-203-H issued on July 13, 2010, is hereby superseded by this Executive Order. VST Phase II EVR Systems certified under Executive Order VR-203-A through H may remain in use at existing installations up to four years after the expiration date of this Executive Order.

IT IS FURTHER ORDERED that Executive Order VR-205-B issued on July 2, 2009, is hereby superseded by this Executive Order. VST Phase II EVR Systems certified under Executive Order VR-205-A through B may remain in use at existing installations up to four years after the expiration date of the Executive Order.

IT IS FURTHER ORDERED that Executive Order VR-209-A issued on November 4, 2009, is hereby superseded by this Executive Order. VST Phase II EVR Systems certified under Executive Order VR-209-A may remain in use at existing installations up to four years after the expiration date of the Executive Order.

IT IS FURTHER ORDERED that this Executive Order shall apply to new installations or major modification of Phase II Systems with a throughput of less than or equal to 600,000 gallons per year. Use of this Executive Order for new installations or major modifications at a GDF with a throughput of more than 600,000 gallons per year is not authorized.

Executed at Sacramento, California, this 12th day of November 2010.

Alberto Ayala, Ph.D., M.S.E.
Chief, Monitoring and Laboratory Division

Attachments: Next Page

General Requirements

Exhibit 1 Equipment List
- Hanging Hardware
- Processors

Exhibit 2 System Specifications
- Hanging Hardware
- Processors
- Pressure/Vacuum Vent Valves for Storage Tank Vents
- Vapor Recovery Piping Configurations
- Dispensers
- Phase I Systems
- Maintenance Records
- Vapor Recovery Equipment Defects

Exhibit 3 Manufacturing Performance Specifications and Warranties
- Vapor Systems Technologies
- Veeder-Root
- Goodyear
- Hirt
- Franklin Fueling Systems
- EMCO Wheaton Retail

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-201.3
Exhibit 5 Liquid Removal Test Procedure
Exhibit 6 Required Items for Conducting TP-201.4
Exhibit 7 Nozzle Bag Test Procedure

Processor Specific Compliance Procedures

Exhibit 8 **VST ECS**; Hydrocarbon Sensor Verification Test Procedure
Exhibit 9 **VST ECS**; Determination of Processor Activation Pressure
Exhibit 10 **VST ECS / Veeder-Root Vapor Polisher**; Vapor Pressure Sensor Verification Test Procedure
Exhibit 11 **Veeder-Root Vapor Polisher**; Operability Test Procedure
Exhibit 12 **Veeder-Root Vapor Polisher**; Hydrocarbon Emissions Verification Test Procedure
Exhibit 13 **Hirt VCS 100 Processor;** Operability Test Procedure
Exhibit 14 **Franklin Fueling Systems CAS**; Static Pressure Performance Test Procedure

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-204-I

Vapor Systems Technologies, Inc.
Phase II Enhanced Vapor Recovery (EVR) System
Including Veeder-Root In-Station Diagnostics (ISD) System

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 25290.1.2, 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II EVR vapor recovery systems) in its CP-201, ***Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended May 25, 2006, incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601, 39607, and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards;

WHEREAS, Vapor Systems Technologies, Inc. (VST) requested certification of the VST Phase II EVR System Including Veeder-Root ISD (VST Phase II EVR System Including ISD) pursuant to the Certification Procedure by Executive Order VR-204-A issued on April 1, 2008, and last modified on July 13, 2010, by Executive Order VR-204-H;

WHEREAS, EMCO Wheaton Retail (EMCO) requested certification of the EMCO EVR nozzle and EMCO EVR safe break valve as alternate components for use with the Veeder-Root Vapor Polisher;

WHEREAS, the Certification Procedure provides that the ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities; and

WHEREAS, I, Alberto Ayala, Chief of the Monitoring and Laboratory Division, find that the VST Phase II EVR System Including Veeder-Root ISD software version 1.03 conforms with all requirements set forth in the Certification Procedure, including compatibility when fueling vehicles equipped with onboard refueling vapor recovery systems, and results in a vapor recovery system which is at least 95 percent efficient and shall not exceed 0.38 pounds of hydrocarbons per 1,000 gallons of gasoline transferred when tested pursuant to TP-201.2, ***Efficiency and Emission Factor for Phase II Systems*** (October 8, 2003).

NOW, THEREFORE, IT IS HEREBY ORDERED that VST Phase II EVR System Including Veeder-Root ISD software version 1.03 is certified to be at least 95 percent efficient and

does not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline transferred in attended and/or self-service mode when used with an ARB-certified Phase I vapor recovery system and installed, operated, and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the equipment certified for use with VST Phase II EVR System including Veeder-Root ISD. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to VST Phase II EVR System Including Veeder-Root ISD as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting TP-201.3. Exhibit 5 is the liquid removal test procedure. Exhibit 6 provides items required in conducting TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is VST ECS hydrocarbon sensor verification test procedure. Exhibit 9 is the test procedure for determining VST ECS vapor processor activation pressure. Exhibit 10 is the VST ECS / Veeder-Root Vapor Polisher vapor pressure sensor verification test procedure. Exhibit 11 is the Veeder-Root vapor polisher operability test procedure. Exhibit 12 is the Veeder-Root vapor polisher hydrocarbon emissions verification test procedure. Exhibits 13 through 16 are reserved for future procedures and are intentionally left blank. Exhibit 17 is the Veeder-Root ISD vapor flow meter operability test procedure.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for the vapor recovery components to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The warranty shall include the ongoing compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 16.5 of the Certification Procedure. Manufacturers may specify that the warranty is contingent upon the use of trained installers.

IT IS FURTHER ORDERED that every certified component manufactured by VST, EMCO, Goodyear, and Veeder-Root shall be performance tested by the manufacturer as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified VST Phase II EVR System Including Veeder-Root ISD shall be installed, operated, and maintained in accordance with the ***ARB Approved Installation, Operation, and Maintenance Manual***. Equipment shall be inspected daily, weekly, and annually per the procedures identified in the ***ARB Approved Installation, Operation, and Maintenance Manual***. These inspections shall also apply to systems certified by Executive Orders VR-204-A to H. A copy of this Executive Order and the ***ARB Approved Installation, Operation and Maintenance Manual*** shall be maintained at each GDF where a certified VST Phase II EVR System Including Veeder-Root ISD is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the VST Phase II EVR System Including Veeder-Root ISD shall conduct and pass the following tests no later than 60 days after startup and at least once in each twelve month period, using the following test procedures:

- TP-201.3, ***Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities*** (March 17, 1999);
- TP-201.4, ***Dynamic Back Pressure*** (July 3, 2002) in accordance with the condition listed in item 1 of the Vapor Collection section of Exhibit 2;
- Exhibit 4, ***Required Items in Conducting TP-201.3***;
- Exhibit 5, ***Liquid Removal Test Procedure****;*
- Exhibit 6. ***Required Items in Conducting TP-201.4.***
- Exhibit 8, **VST ECS *Hydrocarbon Sensor Verification Test Procedure*** *(if a VST ECS membrane processor is installed)*;
- Exhibit 9, ***Determination of VST ECS Processor Activation Pressure*** *(if a VST ECS membrane processor is installed)****;***
- Exhibit 10, ***VST ECS / Veeder-Root Vapor Polisher Vapor Pressure Sensor Verification Test Procedure*** (if a VST ECS membrane processor or Veeder-Root Vapor Polisher is installed)*;*
- Exhibit 11, ***Veeder-Root Vapor Polisher Operability Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);
- Exhibit 12, ***Veeder-Root Vapor Polisher Hydrocarbon Emissions Verification Test Procedure*** (if a Veeder-Root Vapor Polisher is installed);
- Exhibits 13 through 16, Reserved for future procedures and are intentionally left blank; and
- Exhibit 17***, Veeder-Root ISD Vapor Flow Meter Operability Test Procedure***

Local districts at their option may specify the testing frequency and related sequencing of the above tests. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to policies established by that district. Local districts may require the use of alternate test form(s), provided they include the same minimum parameters identified in the datasheet referenced in the test procedure(s). Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification. The owner or operator of the VST Phase II EVR System Including Veeder-Root ISD shall conduct, and pass, the following tests no later than 60 days after startup

using the following test procedure: Exhibit 7, ***Nozzle Bag Test Procedure***. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Alternative test procedures, including most recent versions of the test procedures listed above, may be used if determined by the ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that, except as provided above, local districts at their option will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If the district requires the nozzle vapor valve be tested, the test shall be conducted in accordance with Exhibit 7, ***Nozzle Bag Test Procedure***.

IT IS FURTHER ORDERED that VST Phase II EVR System Including Veeder-Root ISD shall be compatible with gasoline in common use in California at the time of certification. VST Phase II EVR System Including Veeder-Root ISD is not compatible with gasoline that has a methanol content greater than 5 percent or an ethanol content greater than 10 percent. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of VST Phase II EVR System Including Veeder-Root ISD is valid through April 1, 2012.

IT IS FURTHER ORDERED that Executive Order VR-204-H issued on July 13, 2010, is hereby superseded by this Executive Order. VST Phase II EVR System Including Veeder-Root ISD certified under Executive Order VR-204-A through H may remain in use at existing installations up to four years after the expiration date of this Executive Order. This Executive Order shall apply to new installations or major modification of Phase II Systems with a throughput of more than 600,000 gallons per year. The installation of the Veeder-Root ISD System is not authorized on a GDF with a throughput of less than or equal to 600,000 gallons per year.

Executed at Sacramento, California, this 12th day of November 2010.

Alberto Ayala, Ph.D., M.S.E.
Chief, Monitoring and Laboratory Division

Attachments next page:

General Requirements

Exhibit 1 Equipment List
- Hanging Hardware
- Processors
- ISD

Exhibit 2 System Specifications
- Hanging Hardware
- Processors
- Pressure/Vacuum Vent Valves for Storage Tank Vents
- Vapor Recovery Piping Configurations
- Dispensers
- In-Station Diagnostics (ISD)
- Phase I Systems
- Maintenance Records
- Vapor Recovery Equipment Defects
- Veeder-Root ISD System Specification

Exhibit 3 Manufacturing Performance Specifications and Warranties
- Vapor Systems Technologies
- Veeder-Root
- Goodyear
- EMCO Wheaton Retail

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-201.3
Exhibit 5 Liquid Removal Test Procedure
Exhibit 6 Required Items for Conducting TP-201.4
Exhibit 7 Nozzle Bag Test Procedure

Processor Specific Compliance Procedures

Exhibit 8 **VST ECS**; Hydrocarbon Sensor Verification Test Procedure
Exhibit 9 **VST ECS**; Determination of Processor Activation Pressure
Exhibit 10 **VST ECS / Veeder-Root Vapor Polisher**; Vapor Pressure Sensor Verification Test Procedure
Exhibit 11 **Veeder-Root Vapor Polisher**; Operability Test Procedure
Exhibit 12 **Veeder-Root Vapor Polisher**; Hydrocarbon Emissions Verification Test Procedure
Exhibit 13 This Section left intentionally blank
Exhibit 14 This Section left intentionally blank
Exhibit 15 This Section left intentionally blank
Exhibit 16 This Section left intentionally blank

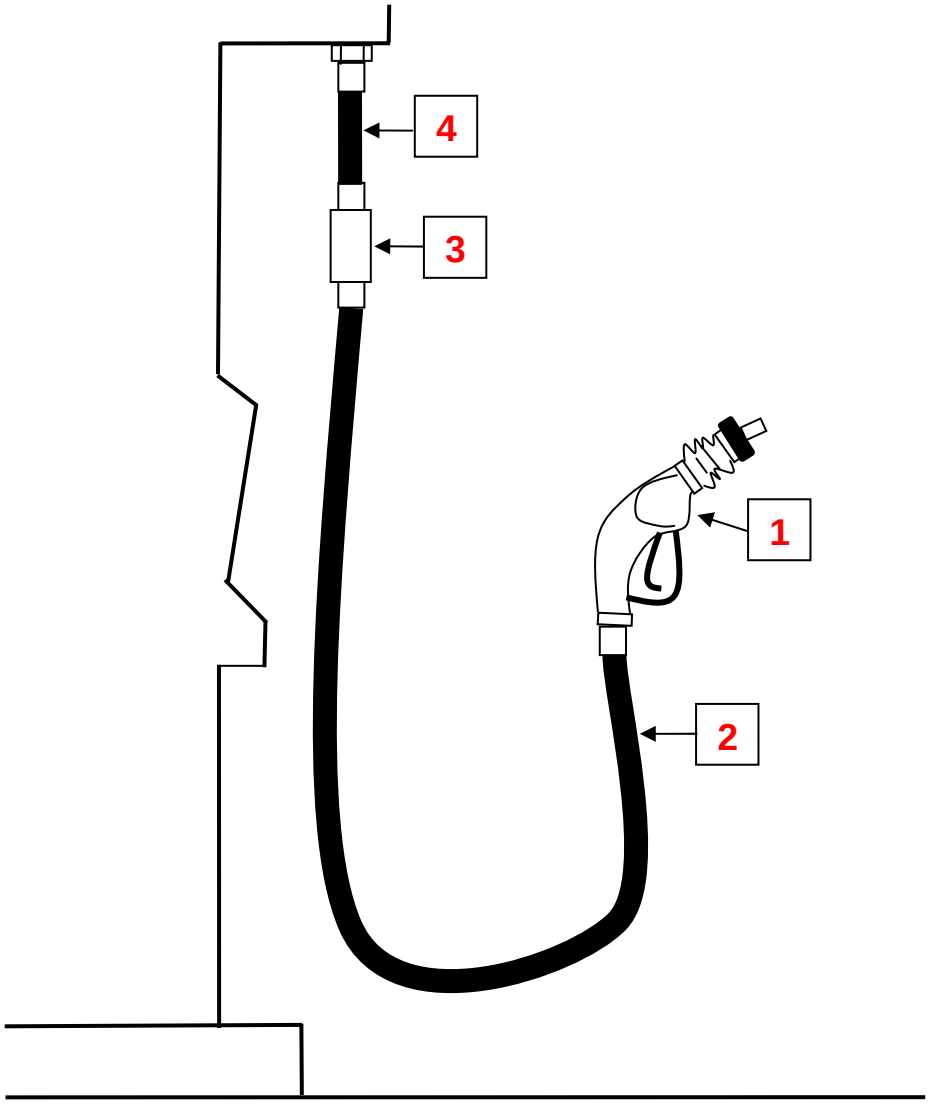
ISD Specific Compliance Procedures

Exhibit 17 **Veeder-Root;** ISD Vapor Flow Meter Operability Test Procedure

EMCO® WHEATON RETAIL

Figure 1

CARB Approved EVR Hanging Hardware Mix and Match Combinations for
VST Executive Orders VR-203-I and VR-204-I



	1 Nozzle	2 Curb Hose	3 Safe Break Valve	4 Whip Hose
A	VST	VST or Goodyear	VST	VST or Goodyear
B	EMCO	VST or Goodyear	VST	VST or Goodyear
C	VST	VST or Goodyear	EMCO	VST or Goodyear
E	EMCO	VST or Goodyear	EMCO	VST or Goodyear

Note: Each letter identifies acceptable EVR hanging hardware combination.

EMCO® WHEATON RETAIL

December 4, 2009

001 Technical Service Bulletin

New CARB EVR Approval Letter #09-10

EMCO Wheaton Receives CARB Approval For Balance Phase II EVR Components As Compatible Replacement Parts For Executive Order G-70-52-AM!

Attention Service Technicians,

On November 19, 2009, the California Air Resources Board CARB determined that the EMCO Wheaton Balance Phase II EVR components listed below are backward compatible replacements for Executive Order G-70-52-AM. All gasoline dispensing facilities GDFs operating in California with a CARB approved pre-EVR balance system will be required to only use EVR approved components for replacement parts during routine preventive maintenance, this also includes GDFs with aboveground storage tanks ASTs.

Component Description	Model Number
Balance Vapor Recovery Nozzle	A4005EVR
Balance Vapor Recovery Nozzle (Rebuilt)	RA4005EVR
Coaxial Safe Break Valve	A4119EVR
Coaxial Hose Swivel	A4110EVR

IMPORTANT: All liquid removal testing conducted on hanging hardware equipped with an EMCO Wheaton Balance Phase II EVR Nozzle must be performed in accordance with Exhibit 5 of CARB Executive Orders VR-207-A and VR-208-A. The EMCO Wheaton Spout Plug P/N 494635EVR is a required test tool that seals the fuel path of the nozzle spout during liquid removal testing per CARB TP-201.6C.

As before, I thank you for your attention to this matter. Should you have additional questions, please do not hesitate to contact me.

Best regards,

Jose E. Rodriguez
Director of Technical Service & Support/
CARB Liaison

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Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

November 19, 2009 #09-10

Mr. Jose E. Rodriguez
Manager of Technical Services
EMCO Wheaton Retail
1004 West Covina Parkway #413
West Covina, California 95814

Dear Mr. Rodriguez:

The California Air Resources Board (ARB) staff has determined that the EMCO Wheaton Phase II enhanced vapor recovery (EVR) components listed below are compatible replacement parts for pre-EVR balance systems. The EMCO EVR nozzle, safe break valve, and hose swivel met EVR performance standards[1] when tested with the Goodyear Maxxim Premier Plus hoses for Executive Order (EO) VR-207 and 208. The Goodyear hose assembly was approved and determined to be compatible with pre-EVR balance systems in Approval Letter #07-03. Since the EMCO components met EVR standards when installed with the Goodyear hoses, the EMCO nozzle, safe break valve, and hose swivel have been demonstrated to be compatible with pre-EVR balance components. The EMCO components are approved replacement components for EO G-70-52-AM.

EMCO Wheaton EVR Phase II Components

Component	Model number
Coaxial Nozzles	A4005EVR, RA4005EVR
Coaxial Safe Break Valve	A4119EVR
Coaxial Hose Swivel	A4110EVR

If the liquid removal test ARB TP-201.6C is conducted on a hanging hardware assembly with an EMCO EVR balance nozzle, the procedure in Executive Orders VR-207 or 208, Exhibit 5, should be conducted. The tester should include the following steps when draining gasoline from the hose:

- EMCO spout plug, P/N 494635EVR, must be used to plug the spout;

[1] Operational standards are listed in ARB Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities (CP-201, May 25, 2006) and ARB Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities Using Aboveground Storage Tanks (CP-206, May 2, 2008).

- Do not activate the dispenser; and
- Engage the nozzle lever (The EMCO EVR nozzle has a lever-actuated vapor valve).

If you have questions or need further information, please contact either Frances Cameron at (916) 445-9314 or via email at fcameron@arb.ca.gov , or Pat Bennett at (916) 322-8959 or via email at pbennett@arb.ca.gov.

Sincerely,

Manjit Ahuja for TAC

Manjit Ahuja, Acting Chief
Monitoring and Laboratory Division

cc: John Marvin
Bay Area Air Quality Management District

Kevin Tokunaga
Glenn County Air Pollution Control District

Gary Ma
Yolo-Solano Air Quality Management District

California Environmental Protection Agency

Air Resources Board
Vapor Recovery Advisory

Gasoline Dispensing Facility
Required Replacement Parts for Pre-EVR Phase II Balance Systems

Number 408 **November 19, 2009**

ENHANCED VAPOR RECOVERY (EVR)-CERTIFIED REPLACEMENT PARTS FOR PRE-EVR BALANCE VAPOR RECOVERY SYSTEMS

The nozzles, breakaways, hoses and swivel listed in Table 1 below are required replacement components for pre-EVR balance systems. These balance system components have been certified to meet the Air Resources Board's (ARB) performance requirements for EVR systems[1] and have been determined to be compatible with pre-EVR balance components listed in Executive Order (EO) G-70-52-AM.

A gasoline dispensing facility (GDF) operator is required to install as replacement parts any hanging hardware components that are certified to EVR standards and are determined to be compatible with pre-EVR balance systems. ARB staff determined the compatibility of replacement components in approval letters to the following manufacturers: Approval Letter #07-09 covers Vapor SystemTechnologies components, Approval Letter #07-03 covers Goodyear hoses, and Approval Letter #09-10 covers EMCO-Wheaton components.

Table 1: Required Replacement Parts for Pre-EVR Phase II Balance Systems

Component/ Manufacturer	Model Number
Nozzles (coaxial only)	
VST, Inc.	VST-EVR-NB, VST-EVR-NB-R
EMCO-Wheaton	A4005EVR, RA4005EVR
Breakaway Coupling (coaxial only)	
VST, Inc.	VSTA-EVR-SBK
EMCO-Wheaton	A4119EVR
Coaxial Curb/Whip Hose Assembly (liquid removal only)[2]	
VST, Inc.	VDV-EVR /VSTA-EVR
Goodyear Engineered Products	Maxxim Premier Plus
Hose Swivel	
EMCO Wheaton	A4110EVR

1 Operational standards are listed in ARB Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities (CP-201, May 25, 2006) and ARB Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities Using Aboveground Storage Tanks (CP-206, May 2, 2008).

2 A liquid removal replacement hose is required only if the component being replaced is a liquid removal hose.

The components listed in Table 1 shall be installed and maintained in accordance with the manufacturer's installation and maintenance instructions. Please note that important instructions for the installation and testing of approved EVR replacement components are contained in the ARB approval letters listed above for each manufacturer.

In addition to installing only EVR-certified replacement components, anyone who owns or operates an existing gasoline dispensing facility must replace the pre-EVR balance system with an EVR Phase II system according to the following schedule:

1. If the facility has aboveground storage tanks, the compliance deadline for EVR Phase II is January 1, 2015.

2. If the facility has underground storage tanks (UST) and is operated both as a bulk plant which loads gasoline into cargo trucks and also as a GDF, the compliance deadline for EVR Phase II is April 1, 2011.

3. If the facility has USTs with liquid condensate traps, the compliance deadline for EVR Phase II is April 1, 2010.

4. If the facility is located in one of the following counties or portions of counties the compliance deadline for EVR Phase II is July 27, 2011: San Luis Obispo, Siskiyou, or Northern Sonoma County Air Pollution Control District portion of Sonoma.

5. If the facility is located in one of the following counties and has an annual throughput of 240,000 gallons of gasoline or less, the compliance deadline for EVR Phase II is April 1, 2011: Alpine, Lassen, Modoc, Plumas, or Sierra.

An owner or operator of an existing facility which is located in one of the following counties is not required to install EVR Phase II: Del Norte, Humboldt, Lake, Mendocino, or Trinity.

This advisory supersedes Approval Letter #09-02. If you have questions or need further information regarding this advisory, please contact Frances Cameron at (916) 445-9314 or via email at fcameron@arb.ca.gov, or Pat Bennett at (916) 322-8959 or via email at pbennett@arb.ca.gov.