



State of Oregon
**Department of
Environmental
Quality**

Equipment and Components

Executive Order

VR-102-V
OPW
Stage I Enhanced Vapor
Recovery System

Exhibit 1

OPW Stage I EVR System Equipment List

Equipment

Manufacturer/Model Number

(GAS/E85) = Identifies that these components are approved for standard gasoline & E85 fuel blends

Spill Containers¹

Direct Bury Spill Container OPW 1-Series (GAS/E85)
(Figure 1-1)

1-2100 Series

1WW-21XXY-ZEVR -G

1-2200 Series

1WW-22XQZ-G

1-3100 Series

1WW-3VVUTZ-G

1-Series legend

WW A or Blank (Aluminum Cover)

C (cast Iron or Ductile)

SC (Sealable Cover, Cast Aluminum)

PC (Plow Ring Rain Tight Cast Iron Ductile, 1-2000
only)

PSC (Plow Ring Sealable Cover, Cast Aluminum, 1-
2200 only)

XX 00 (5 Gal)

X 0 (5 Gal)

Y C (Cast Iron Base)

Blank (composite base)

Z D (drain valve)

P (plug)

VV 1 (5 gallon)

15 (15 gallon)

7 (5 gallon, steel cover)

U 0 (no gauge)

1 (float gauge)

2 (sensor)

3 (float and sensor)

4 (alternate sensor)

T 1 (single wall, cast iron 2100 style base)

2 (double wall)

3 (single wall, cast iron 3100 style base)

Q 0 (flange adaptor, cast iron base)

4 (no flange, 4" thread cast iron base)

G Color (varies)

¹ Drain valves are an optional component for OPW 1-Series product spill containers. If a drain valve is not installed in the OPW 1-Series product spill container, then either an OPW factory installed drain plug or OPW field drain plug kit 1DP-2100 must be installed.

Exhibit 1 (continued)

OPW Stage I EVR System Equipment List

<u>Equipment</u>	<u>Manufacturer/Model Number</u>
Spill Containers	Multiport Spill Container OPW 1-Series (GAS/E85) (Figure 1-2) 1-2100SH Series 1-2100Y-ZSH P700 Series P7MM-HHKK P500 Series P5MM-ZHHBJJJ P5MM-NN-HHKK 1-Series legend MM 11 (Composite Base) 11C (Cast Iron Base) 61 (Cast Iron Base) 61C (Cast Iron Base) NN Blank (5 gallon) 15 (15 gallon) HH EVR (Enhanced Vapor Recovery) FL (Fibrelite) KK DV (drain valve) PL (plug) Y C (Cast Iron Base) Blank (composite base) Z D (drain valve) P (plug) JJJ -14 (14" center spacing) BUCKET (16" or larger center spacing)
Replacement Drain Valve Kit	OPW 1DK-2100 (GAS/E85)
Replacement Drain Plug Kit	OPW 1DP-2100 (can be used with any OPW 1-Series Spill Containers) (Figure 1-3 and Figure 1-4)
Dust Caps	OPW 634LPC (product) (GAS/E85) (Figure 1-5) OPW 1711LPC (vapor) (GAS/E85) (Figure 1-6)

Exhibit 1 (continued)

OPW Stage I EVR System Equipment List

<u>Equipment</u>	<u>Manufacturer/Model Number</u>
Dust Caps (continued)	OPW 634TT-EVR (product) (GAS/E85) (Figure 1-7)
	OPW 1711T-EVR (vapor) (GAS/E85) (Figure 1-8)
	CompX CSP1-634LPC (Figure 1-9)
	CompX CSP3-1711LPC (vapor) (Figure 1-10)
	CompX CSP2-634LPC (product) (Figure 1-11)
	CompX CSP4-1711LPC (vapor) (Figure 1-12)
Product Adaptor	OPW 61SALP (Figure 1-13)
	OPW 61SALP-MA (GAS/E85) (Figure 1-15)
Vapor Adaptor	OPW 61VSA (Figure 1-14)
	OPW 61VSA-MA (GAS/E85) (Figure 1-16)
Pressure/Vacuum Vent Valve	FFS PV-Zero (Gas/E85) (Figure 1-17)
	OPW 723V (Gas/E85) (Figure 1-18)
	Husky 5885 (Gas/E85) (Figure 1-19)
Jack Screw Kit	OPW 61JSK-4410 (Only used with Composite Base Spill Container) (Figure 1-20)
	OPW 61JSK-44CB (Only used with Cast Iron Base Spill Container) (Figure 1-20)
	OPW 61JSK-4RMT (Only Used on Remote-Fill Configuration) (Figure 1-20)
	OPW 71JSK-44MA (GAS/E85) (Figure 1-21)
	OPW 71JSK-4RMT (GAS/E85) (Figure 1-21)
Face Seal Adaptor	OPW FSA-400
	OPW FSA-400-S (GAS/E85) (Figure 1-22)
Drop Tube	OPW 61T (various lengths)
	OPW 61T-SS (various lengths) (GAS/E85)

Exhibit 1 (continued)

OPW Stage I EVR System Equipment List

<u>Equipment</u>	<u>Manufacturer/Model Number</u>
Drop Tube Overfill Prevention Device ²	OPW 61SO (Figure 1-23) OPW 61SOM-412C-EVR (GAS/E85) OPW 71SO (Figure 1-24) OPW 71SO Testable (Figure 1-25) OPW 71SOM-412C (GAS/E85) (Figure 1-26) FFS Defender OPV series 70859X9YZ (Gas/E85 compatible) FFS Defender OPV series 70869X9YZ (Gas/E85 compatible) (Figure 1-27) Defender Series OPV legend: X = upper drop tube length: 1 = 5 feet 2 = 10 feet Y = Tube compatibility: 0 = Gas 2 = Gas/E85 Z = lower drop tube length: 1 = 8 feet 2 = 10 feet
Multiport	OPW (Configuration Only)
Remote Fill	OPW (Configuration Only)
Remote Additive Fill	OPW (Configuration Only)
Tank Bottom Protector²	OPW/Pomeco 6111-1400
Tank Gauge Port Components²	OPW 62M (Cap and Adaptor) (Figure 1-28) OPW 62M-MA (GAS/E85) (Figure 1-29) Morrison Brothers 305XPA1100AKEVR (GAS/E85) (cap & adaptor kit) Morrison Brothers 305-0200AAEVR (GAS/E85) (replacement adaptor) Morrison Brothers 305XP-110ACEVR (GAS/E85) (replacement cap)

² If these components are installed or required by regulations of other agencies, only those components and model numbers specified above shall be installed or used.

Fuel Lock²	Veeder-Root 312020-952 (cap & adaptor) McGard FL1 – Stick Only Fuel Lock (125007) (GAS) (Figure 1-30) McGard FL2 – Stick/Sampling Fuel Lock (125008) (GAS) (Figure 1-30)
Bladder Plug	McGard PSI104
Emergency Vent	Exhibit 5 (for below-grade vaulted tank configuration)

Exhibit 1 (continued)

**Table 1-1
Components Exempt from Identification Requirements**

Component Name	Manufacturer	Model Number
Product Adaptor	OPW	61SALP-MA (GAS/E85)
Vapor Adaptor	OPW	61VSA-MA (GAS/E85)
Replacement Drain Valve	OPW	1DK-2100
Replacement Drain Plug Kit	OPW	1DP-2100
Jack Screw Kit	OPW	61JSK-4410* 61JSK-44CB* 61JSK-4RMT* OPW 71JSK-44MA (GAS/E85) OPW 71JSK-4RMT (GAS/E85)
Tank Gauge Port Component (Cap and Adaptor)	Morrison Brothers	305XPA1100AKEVR (cap & adaptor kit) 305-0200AAEVR (replacement adaptor) 305XP-110ACEVR (replacement cap)
	Veeder-Root	Veeder-Root 312020-952 (cap & adaptor)
	OPW	62M-MA (GAS/E85)
Drop Tube	OPW	61-T 61T-SS (various lengths) (GAS/E85)
Tank Bottom Protector	OPW/Pomeco	6111-1400
Sump / Sump Lids / Spill Container Covers	Varies	Varies
Fuel Lock	McGard	FL1, FL2

* OPW 61JSK MFG date shall be stamped on each jack screw.

Figure 1-1
Direct Bury Spill Container OPW 1-Series (GAS/E85)

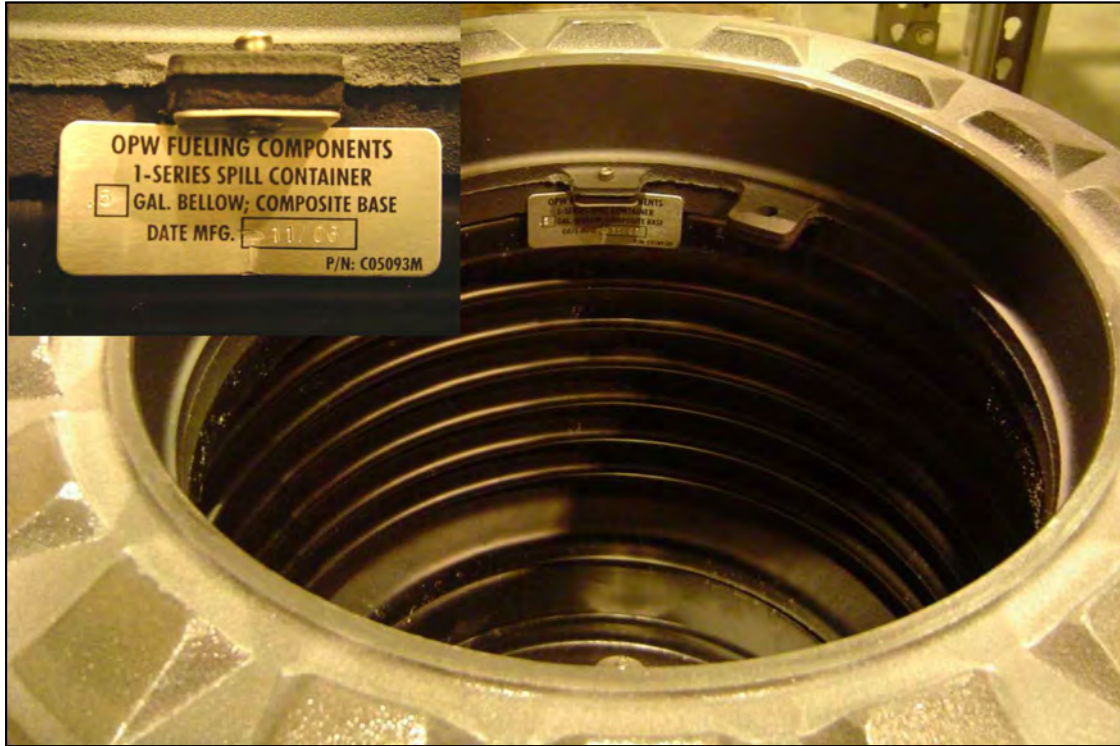


Figure 1-2
Multiport Spill Container OPW 1-Series (GAS/E85)



Figure 1-3
1DP-2100 Drain Plug Kit



Figure 1-4
1DP-2100 Field Installed Drain Plug



Figure 1-5
OPW 634LPC Product Dust Cap



Figure 1-6
OPW 1711LPC Vapor Dust Cap



Figure 1-7
OPW 634-TT-EVR Product Dust Cap

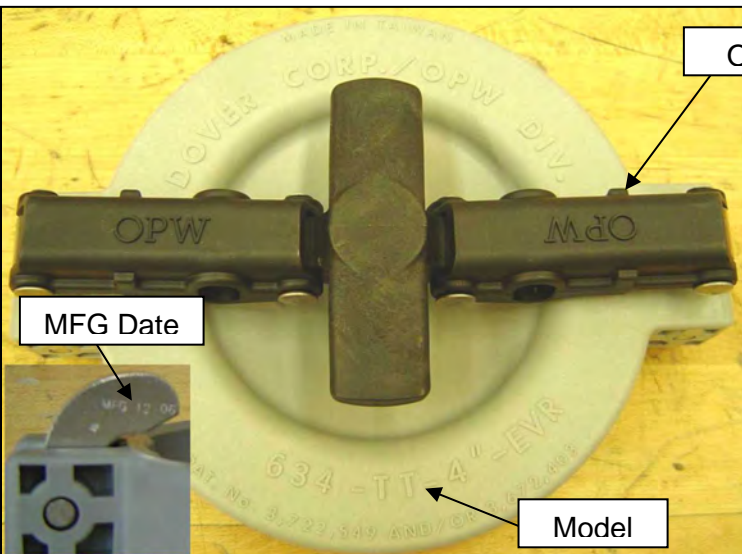


Figure 1-8
OPW 1711-T-EVR Vapor Dust Cap

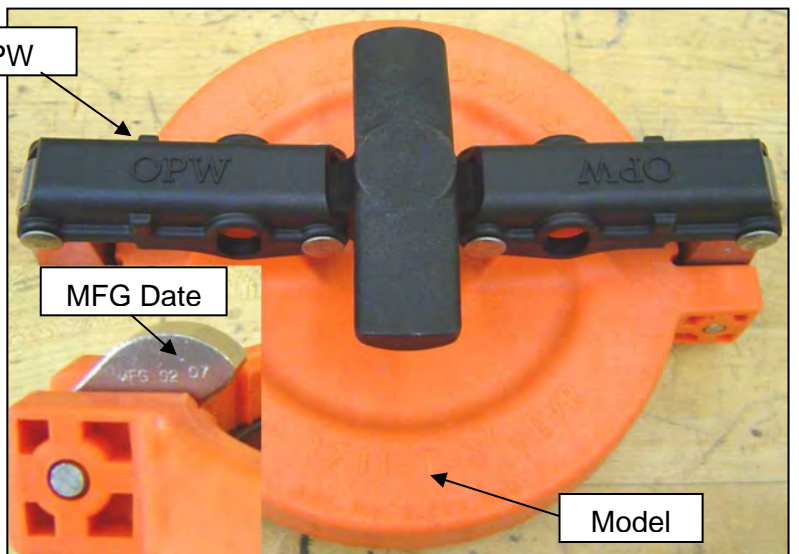


Figure 1-9
CompX CSP1-634LPC Product Dust Cap



Figure 1-10
CompX CSP3-1711LPC Vapor Dust Cap



CompX Tank Commander Lid
Locks onto CSP1-634LPC and CSP3-1711LPC Dust Caps



Figure 1-11
CompX CSP2-634LPC Product Dust Cap



Figure 1-12
CompX CSP4-1711LPC Vapor Dust Cap



CompX Tank Commander Lid
Locks onto CSP2-634LPC and CSP4-1711LPC Dust Caps



Figure 1-13
OPW 61SALP Product Adaptor



Figure 1-14
OPW 61VSA Vapor Adaptor



Figure 1-15
OPW 61SALP-MA Product Adaptor (GAS/E85)



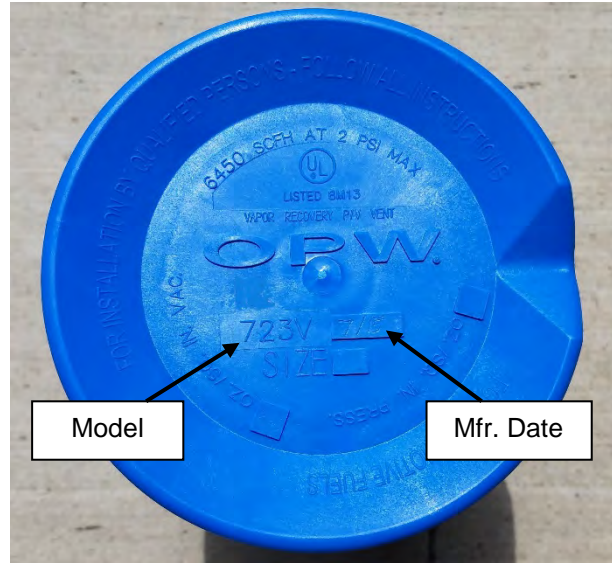
Figure 1-16
OPW 61VSA-MA Vapor Adaptor (GAS/E85)



Figure 1-17
FFS PV-Zero P/V Vent Valve (Gas/E85)
(Model and Serial Number on White Tag)



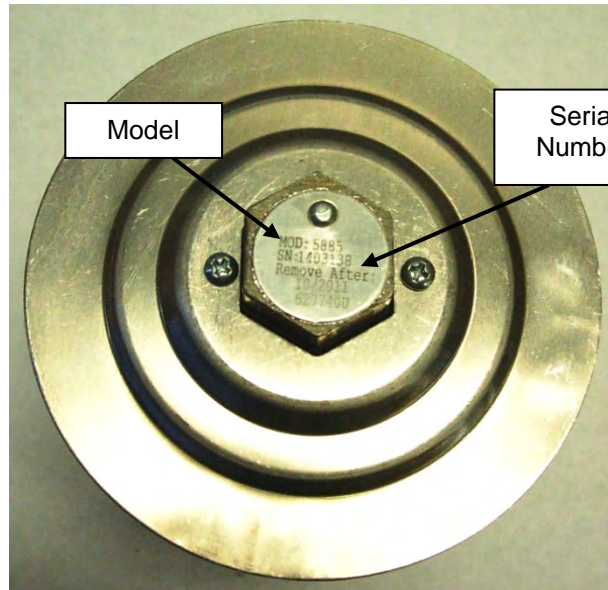
Figure 1-18
OPW 723V P/V Vent Valve (Gas/E85)



Model

Mfr. Date

Figure 1-19
Husky 5885 P/V Vent Valve (Gas/E85)
(Husky Name on Bottom Flange)



Model

Serial Number

Figure 1-20
OPW 61JSK Jack Screw

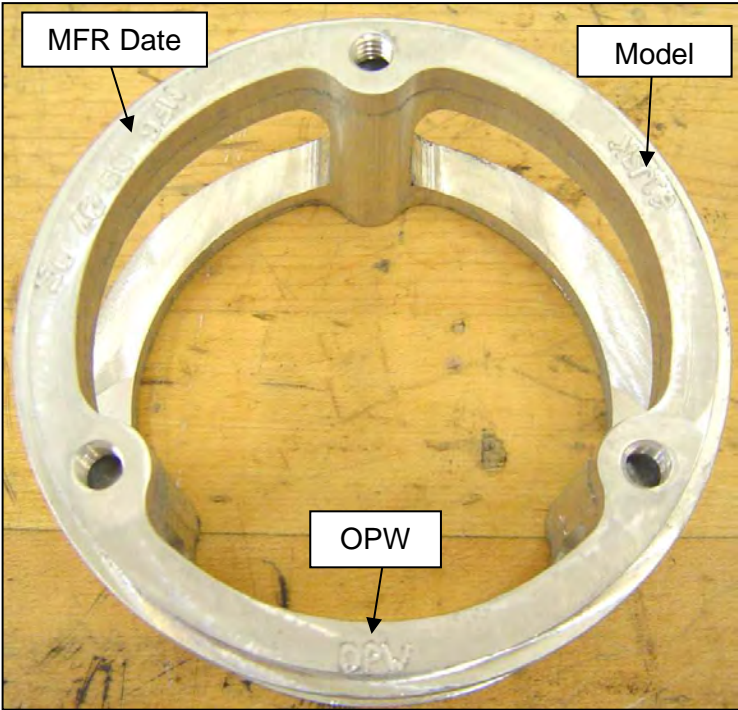


Figure 1-21
71JSK-44MA Jack Screw Kit (GAS/E85)
71JSK-4RMT Jack Screw Kit (GAS/E85)



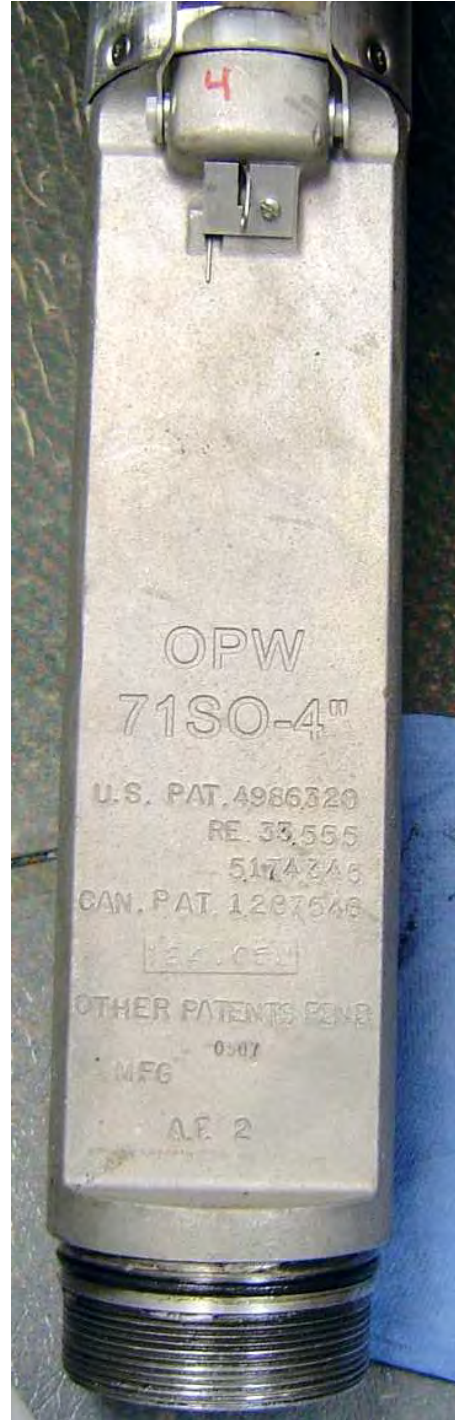
Figure 1-22
OPW FSA-400-S Face Seal Adaptor (GAS/E85)



Figure 1-23
OPW 61SO Overfill Prevention Devices



Figure 1-24
OPW 71SO Overfill Prevention Devices



**Figure 1-25
71SO Testable Drop Tube**



**Top View of 71SO Testable
Drop Tube**



Figure 1-26
OPW 71SOM-412C Overfill Prevention Device



Figure 1-27
Defender OPV series 70859X9YZ (Gas/E85 compatible)



Defender OPV series
70859X9YZ (Gas/E85)



Model number

Serial number

**Defender OPV series
70869X9YZ (Gas/E85)
KIWA Label**

Figure 1-28
OPW 62M Cap and Adaptor
(Only Cap is identified)



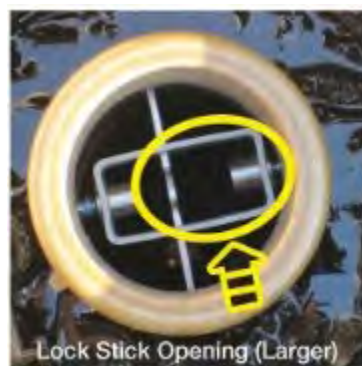
Figure 1-29
OPW 62M-MA Tank Gauge Port Component (GAS/E85)



Figure 1-30
McGard Fuel Lock (FL1 on Left, FL2 on Right)



McGard Fuel Lock Installation Position³



³Optional component, but if installed this picture shows the correct installation location in the pipe just below the Product Rotatable Adaptor in the drop tube.

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Exhibit 2

Installation, Maintenance, and Compliance Standards and Specifications

This exhibit contains the installation, maintenance and compliance standards, and specifications applicable to an OPW system installed in a gasoline dispensing facility (GDF).

General Specifications

1. Typical installations of the OPW system are shown in Figures 2-1 and 2-2 of the full CARB Executive Order. Typical installation of the OPW remote fill system is shown in Figures 2-4 and 2-5, and typical installation of the OPW remote additive fill system is shown in Figure 2-6 of the full CARB Executive Order.
2. The OPW system shall be installed, operated, and maintained in accordance with this attachment, applicable Oregon Administrative Rules, and manufacturer's specifications. Table 2-1 lists the maintenance intervals of OPW system components.
3. Any repair or replacement of system components shall be done in accordance with this attachment, applicable Oregon Administrative Rules, and manufacturer's specifications.
4. The OPW system shall comply with the applicable performance standards and performance specifications in Table 2-2.
5. Installation, maintenance, and repair of system components, including removal and installation of such components in the course of any required tests, shall be performed in accordance with this attachment, applicable Oregon Administrative Rules, and manufacturer's specifications.

Pressure/Vacuum Vent Valves For Storage Tank Vent Pipes -

1. No more than three certified pressure/vacuum vent valves (P/V valves) listed in Exhibit 1 shall be installed on any GDF underground storage tank system.
2. Compliance determination of the following P/V valve performance specifications shall be one of the following:
 - a. The leak rate of each P/V valve shall not exceed 0.05 cubic feet per hour (CFH) at 2.00 inches of H₂O positive pressure and 0.21 CFH at 4.00 inches of H₂O negative pressure as determined by TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003).
 - b. The positive pressure setting is 2.5 to 6.0 inches of H₂O and the negative pressure setting is 6.0 to 10.0 inches of H₂O as determined by TP-201.1E Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003).

3. Compliance determination of the P/V valve performance specifications in items 2a and 2b for the FFS PV-Zero P/V vent valve shall be conducted with the valve remaining in its installed position on the vent line(s). The PV-Zero portion of this attachment outlines the equipment needed to test the valve in its installed position.
4. A manifold may be installed on the vent pipes to reduce the number of potential leak sources and P/V valves installed. Vent pipe manifolds shall be constructed of steel pipe or an equivalent material that has been listed for use with gasoline. If a material other than steel is used, the GDF operator shall make available, information demonstrating that the material is compatible for use with gasoline. A tee may be located in a different position, or fewer pipes may be connected, or more than one P/V valve may be installed on the manifold.
5. Each P/V valve shall have permanently affixed to it a yellow, gold, or white colored label with black lettering stating the following specifications:

Positive pressure setting: 2.5 to 6.0 inches H₂O
Negative pressure setting: 6.0 to 10.0 inches H₂O
Positive Leakrate: 0.05 CFH at 2.0 inches H₂O
Negative Leakrate: 0.21 CFH at -4.0 inches H₂O

Rotatable Product and Vapor Recovery Adaptors

1. Rotatable product and vapor recovery adaptors shall be capable of at least 360-degree rotation and have an average static torque not to exceed 108 pound-inch (9 pound-foot). Compliance with this requirement shall be demonstrated in accordance with TP-201.1B, Static Torque of Rotatable Stage I Adaptors (October 8, 2003).
2. The vapor adaptor poppet shall not leak when closed. Compliance with this requirement shall be verified by the use of commercial liquid leak detection solution or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

Vapor Recovery and Product Adaptor Dust Caps

Dust caps with intact gaskets shall be installed on all Stage I tank adaptors.

Product Spill Container Drain Valve

The spill container drain valve, if installed shall be configured to drain liquid directly into the drop tube and shall be isolated from the underground storage tank ullage space. The leak rate of the drain valve shall not exceed 0.17 CFH at 2.00 inches H₂O. Depending on the presence of the drop tube overfill prevention device, compliance with this requirement shall be demonstrated in accordance with 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).

Product Spill Container Drain Plug (Optional)

The product spill container drain plug, either an OPW factory or field installed OPW 1DP-2100 drain plug, shall not leak. The absence of vapor leaks shall be verified with the use of commercial liquid leak detection solution (LDS) when the vapor space of the fill pipe is subjected to a positive gauge pressure.

Drop Tube Overfill Prevention Device

1. The Drop Tube Overfill Prevention Device (overfill device) is designed to restrict the flow of gasoline delivered to the underground storage tank when liquid levels exceed a specified capacity. The overfill device is not a required component of the vapor recovery system, but may be installed as an optional component. Other regulatory requirements may apply.
2. The leak rate of the overfill device shall not exceed 0.17 CFH at 2.00 inches H₂O when tested in accordance with TP-201.1D, Leak Rate of Drop Tube Overfill Prevention Devices and Spill Container Drain Valves (October 8, 2003).
3. For the 71SO Testable overfill prevention device, the threaded test plug shall not leak. The absence of vapor leaks shall be verified with the use of commercial liquid leak detection solution (LDS) when the vapor space of the underground storage tank is subjected to a positive gauge pressure.
4. The discharge opening of the fill pipe must be entirely submerged when the liquid level is six inches above the bottom of the tank as shown in Figure 2-1.

Face Seal Adaptor²

The Face Seal Adaptor shall provide a machined surface on which a gasket can seal and ensures that the seal is not compromised by an improperly cut or improperly finished riser. A Face Seal Adaptor shall be installed on the following required connections. As an option, the adaptor may be installed on other connections.

- a. Product Spill Container (required)
- b. Tank Gauging Components (required)
- c. Vapor Recovery Spill Container (optional)
- d. Rotatable Adaptors (optional)

Double Fill Configuration

OPW Double Fill Configuration shall be allowed for installation provided that no more than two fill and two vapor return points are installed on any single underground storage tank and that no offset of the vapor recovery riser pipe is installed. An example of an OPW Dual Fill configuration is shown in Figure 2-3 of the full CARB Executive Order.

² Face Seal Adaptor is not required with double wall 1-3100 and 1-2200 series spill containers.

Remote Fill Configuration

1. No liquid condensate traps are allowed with this configuration.
2. For new installations and existing installations undergoing major modifications, the Stage I vapor return piping from the remote vapor access point to the tank shall have a minimum slope of one-eighth (1/8) inch per foot of pipe run. A slope of one-quarter (1/4) inch or more per foot of pipe run is recommended wherever feasible. For existing installations, the Stage I vapor return piping from the remote vapor access point to the tank shall be installed so that any liquid in the line will drain toward the storage tank.
3. For new installations and existing installations undergoing major modifications, the Stage I vapor return piping from the remote vapor access point to the tank shall have a minimum nominal internal diameter of four inches (4" ID). For existing installations, the Stage I vapor return piping from the remote vapor access point to the tank shall have a minimum nominal internal diameter of three inches (3" ID).
4. The submerged fill pipe riser shall be fitted with a 4" pipe cap or if the submerged fill pipe riser is used as a port to manually gauge the fuel level in the UST (sticking port), a 62M cap and adaptor, as specified in Exhibit 1, shall be installed.

Remote Additive Fill Configuration

Any gasoline additive can be used only if prior to use, OPW provides a written response that the additive is compatible with the OPW Stage I system. OPW can be contacted at:

www.opwglobal.com/TechSupport/TechnicalServiceAssistance.aspx

Vapor Recovery Riser Offset

1. The vapor recovery tank riser may be offset from the tank connection to the vapor recovery Spill Container provided that the maximum horizontal distance (offset distance) does not exceed 20 inches.
2. The vapor recovery riser shall be offset up to 20 inches horizontal distance with use of commercially available, 4 inch diameter steel pipe fittings.

Tank Gauge Port Components

The tank gauge adaptor and cap are paired. Therefore, an adaptor manufactured by one company shall be used only with a cap manufactured by the same company.

Warranty

Each manufacturer listed in Exhibit 1 shall include a warranty tag with the certified component(s). The manufacturer warranty tag, included with each component, shall be provided to the service station owner/operator at the time of installation.

Connections and Fittings

All connections and fittings not specifically certified with an allowable leak rate shall not leak. The absence of vapor leaks shall be verified with the use of commercial liquid leak detection solution (LDS) or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists).

Maintenance Records

Each GDF operator or owner shall keep records of maintenance performed at the facility. Such record shall be maintained on site or otherwise readily available for review during the course of an on-site inspection. Additional information may be required in accordance with permit or OAR requirements. The records shall include the maintenance or test date, repair date to correct test failure, maintenance or test performed, affiliation, telephone number, and the name of the individual conducting maintenance or test. An example of a Stage I Maintenance Record is shown in Figure 2-3.

**Table 2-1
Maintenance Intervals for System Components³
(Reference Exhibit 1 for list of certified components)**

Manufacturer	Component	Maintenance Interval
OPW	Pressure/Vacuum Vent Valve	Annual
Husky	Pressure/Vacuum Vent Valve	Annual
FFS	Pressure/Vacuum Vent Valve	Annual
All Manufacturers	Tank Gauge Components	Annual
OPW	Dust Caps (all models)	Annual
CompX	Dust Caps (all models)	Annual
OPW	61-T Straight Drop Tube	Annual
OPW	Rotatable Phase I Adaptors	Annual
All Manufacturers	Drop Tube Overfill Prevention Valve	Annual
OPW	Spill Containers (all models)	Annual

**Table 2-2
Gasoline Dispensing Facility Compliance Standards and Specifications**

Component / System	Test Method	Standard or Specification
Rotatable Stage I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Overfill Prevention Device	TP-201.1D	≤0.17 CFH at 2.00 in H ₂ O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	≤0.17 CFH at 2.00 in H ₂ O
P/V Valve	TP-201.1E	Positive pressure setting: 2.5 to 6.0 in H ₂ O Negative pressure setting: 6.0 to 10.0 in H ₂ O Positive Leakrate: 0.05 CFH at 2.0 in H ₂ O Negative Leakrate: 0.21 CFH at -4.0 in H ₂ O
Gasoline Dispensing Facility	TP-201.3	As specified in TP-201.3 and/or CP-201
Connections and fittings certified without an allowable leak rate	Leak Detection Solution or Bagging	No leaks

³ Maintenance must be conducted within the interval specified from the date of installation and at least within the specified interval thereafter.

Technician Name
Technician Phone Number

Table 1
Time to Pressurize GDF Equipped with Remote Fill Pipe Configuration by Length

<u>Horizontal Length of Remote Fill Pipe (feet)</u>	<u>Time to Pressurize (minutes)</u>
<u>≤50</u>	<u>5</u>
<u>>50, ≤100</u>	<u>10</u>
<u>>100, ≤150</u>	<u>15</u>
<u>>150, <200</u>	<u>20</u>
<u><200, <250</u>	<u>25</u>



State of Oregon
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Installation, Operation and Maintenance Manual

For Executive Order

VR-102-V

OPW

Stage I Enhanced Vapor Recovery System

NOTICE:

This **Installation, Operation and Maintenance Manual for the OPW Stage I EVR System** describes the tools and methods required to install the OPW Stage I EVR System. While DEQ does not require specific certification or training to install, maintain, or repair Stage I EVR systems, owners or operators may elect to contract with certified technicians.

Note: CARB requires that only technicians trained and certified by OPW 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: 1-800-422-2525
Web: www.opw-fc.com

It is the responsibility of each service provider or 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 service provider or technician to be aware of all necessary safety precautions and site safety requirements to assure a safe and trouble free installation.

Note: CARB requires that only technicians that are trained and certified by FFS (i.e. FFS Certified Technicians) are able to perform installation, maintenance or repairs of components 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:

Enhanced Vapor Recovery Systems
Franklin Fueling Systems
Phone: 800-225-9787
Email: techserve@franklinfueling.com

It is the responsibility of each service provider or 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 service provider or technician to be aware of all necessary safety precautions and site safety requirements to assure a safe and trouble free installation.

In addition to the requirements included in this attachment, the owner or operator of a GDF may wish to obtain a warranty tag for each stage I EVR component installed. Warranty tags are described in more detail in the CARB Executive Orders and may be included with each component for the owner or operator at the time of installation.

Summary of Guidelines for Maintenance Activities Required of the OPW Stage I EVR System ¹

Component	Interval ²	Maintenance To Be Performed
Pressure/Vacuum Vent Valve		
Husky 5885	Annual	<ol style="list-style-type: none"> 1. Remove screws that hold 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. Do not remove the two (2) screens. 5. Reinstall the top cover and retaining screws. 6. Tighten the screws firmly.
FFS PV-Zero	Annual	<ol style="list-style-type: none"> 1. Visually inspect 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 nests or insect activity. 3. Every year, drain and inspect the fill fluid per the Fluid Inspection Procedure.
OPW 723V	Annual	<ol style="list-style-type: none"> 1. Remove and inspect filter screens. 2. Clean or replace as necessary. 3. Test as necessary.
Spill Containers and Drain Valves OPW "All Models"	Annual	Annually, clean the interior of the container and drain valve. Annually, remove accumulated dirt and grit. If the drain valve becomes clogged, remove the valve, soak in water, and use high-pressure air to clean. If valve is removed, reinstall to its proper position and perform Procedure TP-201.1C or TP-201.1D as applicable.
Dust Caps OPW "All Models"	Annual	Visually inspect the seal in cap and replace if damaged or missing.
CompX "All Models"	Annual	Inspect dust cap seal for nicks, tears or deformations and replace if necessary.
Product Adaptor OPW 61SALP	Annual inspect; test every 24 months	Visually inspect the adaptor for large dents, cracks, or deformations. Verify the static torque of the swivel adaptor by performing test procedure TP-201.1B.

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

² Maintenance must be conducted within the interval specified from the date of installation and at least within the specified interval thereafter.

Summary of Guidelines for Maintenance Activities Required of the OPW Stage I EVR System ²

Component	Interval ²	Maintenance To Be Performed
Vapor Adaptor OPW 61VSA	Annual inspect; test every 24 months	Visually inspect the adaptor for large dents, cracks, or deformations. Check the vapor poppet for damage and ensure that the poppet seats evenly with the adaptor. Clean out any foreign objects from the vapor poppet's seal and seal surface if necessary. Test the poppet seal by applying a soap solution to the poppet while the underground storage tank is under a positive gauge pressure of at least 2.00 inches W.C and inspect for the presence of bubbles. If the facility continuously operates under vacuum, a bag test may be used by sealing a clear plastic bag to the adaptor's sides. If no bubbles appear at the poppet under positive pressure or the bag test shows no signs of the bag collapsing, no further maintenance is required. If bubbles appeared around the poppet seal or the bag collapsed, replace the poppet components and re-test. Verify the static torque of the swivel adaptor by performing procedure TP-201.1B.
Jack Screw Kit OPW 61JSK OPW 71JSK	Annual	Visually inspect the Jack Screw for proper alignment and installation.
Face Seal Adaptor OPW FSA-400 OPW FSA-400-S	None	No maintenance is required for this product.
Drop Tubes OPW 61T	Annual inspect; test every 24 months	Visually inspect Drop Tube to see if it is installed and ensure that the bottom of tube is within 6 inches of the bottom of tank. Test the drop tube seal with procedure TP-201.1C or TP-201.1D as applicable. If the drop tube seal passes testing, no further maintenance is required. If the drop tube seal fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the drop tube seal with procedure TP-201.1C or TP-201.1D as applicable.

² These maintenance requirements shall not circumvent use of the manufacturer's installation and maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions for the OPW Stage I System to ensure that all maintenance and torque requirements are met.

² Maintenance must be conducted within the interval specified from the date of installation and at least within the specified interval thereafter.

Summary of Guidelines for Maintenance Activities Required of the OPW Stage I EVR System ³

Component	Interval ²	Maintenance To Be Performed
Drop Tube Overfill Prevention Device OPW 61SO OPW 71SO/71SO Testable	Annual inspect; test every 24 months Annual inspect; test every 24 months	Annually, inspect the flapper in the 61SO to see that it is open by looking down the drop tube opening. Test the 61SO drop tube seals with procedure TP-201.1D. If the drop tube passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 61SO drop tube with procedure TP-201.1D. If this does not correct the leak, the 61SO needs to be replaced. Annually, inspect the flapper in the 71SO/71SO Testable to see that it is open by looking down the drop tube opening. Test the 71SO/71SO Testable drop tube seals with procedure TP-201.1D. If the drop tube seal passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 71SO drop tube with procedure TP-201.1D. The lower tube o-ring seal OPW P/N: H14840M can also be replaced. If this does not correct the leak the 71SO/71SO Testable needs to be replaced.
Tank Bottom Protector OPW/POMECO 6111-1400	None	No maintenance is required for this product.
Tank Gauge Port Components OPW 62M Morrison Brothers 305 Veeder-Root 312020-952	Annual	Visually inspect cap to see that it is not missing any seals and is properly installed.

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

² Maintenance must be conducted within the interval specified from the date of installation and at least within the specified interval thereafter.

**OPW
EVR Stage I Equipment
Installation Check List**

Site Identification Information

Site Address:

Installing Company: _____

Certified Technician Number: _____

Technician's Name (**Print Clearly**): _____

Technician's Signature: _____

Date of Installation: _____

OPW EVR Stage I Equipment Installation Check List

Components Installed

OPW 1-Series EVR Fill Spill Containment Bucket	Yes ___	No ___
OPW 1-Series EVR Vapor Spill Containment Bucket	Yes ___	No ___
OPW FSA-400, or FSA-400-S Threaded Riser Adaptor (Face Seal Adaptor)		
On Fill Riser (Required)	Yes ___	No ___
On Tank Probe Riser (Required)	Yes ___	No ___
On Vapor Riser (Optional)	Yes ___	No ___
OPW 61SO Series Overfill Prevention Valve	Yes ___	No ___
OPW 71SO/71SO Testable Series Overfill Prevention Valve	Yes ___	No ___
OPW 61T Series Straight Drop Tube	Yes ___	No ___
OPW 61JSK Jack Screw Assembly		
61JSK-4410 (Use with composite base spill bucket)	Yes ___	No ___
61JSK-44CB (Use with cast iron base spill bucket)	Yes ___	No ___
61JSK-4RMT (Only used on Remote-Fill Applications)	Yes ___	No ___
71JSK-44MA (For use with E85 fueling facilities)	Yes ___	No ___
71JSK-4RMT (For use with E85 fueling facilities)	Yes ___	No ___
OPW 61VSA Vapor Swivel Adaptor	Yes ___	No ___
OPW 61SALP Fill Swivel Adaptor	Yes ___	No ___
OPW 634TT Top Seal EVR Fill Cap	Yes ___	No ___
OPW 1711T Top Seal EVR Vapor Cap	Yes ___	No ___
OPW 634LPC Low Profile Top Seal EVR Fill Cap	Yes ___	No ___
OPW 1711LPC Low Profile Top Seal EVR Vapor Cap	Yes ___	No ___
CompX CSP1-634LPC TuBAR Tank Commander Fill Cap	Yes ___	No ___
CompX CSP3-1711LPC TuBAR Tank Commander Vapor Cap	Yes ___	No ___
CompX CSP2-634LPC Padlock Tank Commander Fill Cap	Yes ___	No ___
CompX CSP4-1711LPC Padlock Tank Commander Vapor Cap	Yes ___	No ___
OPW 233 Extractor	Yes ___	No ___
OPW 53VML Ball Float Vent Valve	Yes ___	No ___
OPW 30MV Ball Float Vent Valve	Yes ___	No ___
OPW 62M Monitoring Probe Caps	Yes ___	No ___

Installation Acknowledgment

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on fill riser and tightened to _____ ft. lb.

Thread sealant compound used _____

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on tank probe riser and tightened to _____ ft. lb.

Thread sealant compound used _____

Optional

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on vapor riser and tightened to _____ ft. lb.

Thread sealant compound used _____

Installed OPW 2100 Series _____, 3100 Series _____, or 500 Series _____ Fill spill containment bucket onto FSA-400 attached to fill riser and tightened to _____ ft. lb.

Thread sealant compound used _____

Installed OPW 2100 Series _____, 3100 Series _____, or 500 Series _____ vapor spill containment bucket onto vapor riser and tightened to _____ ft. lb.
Thread sealant compound used _____

Assembled OPW 61SO Series overfill prevention valve
Used OPW supplied epoxy Yes ___ No ___
Applied epoxy: To upper 1" inside of top tube, under cinch head bolts and lock washers, on threads of valve body at lower tube connection. Yes ___ No ___
Allowed epoxy to cure for 24 hours before exposure to fuel or vapor Yes ___ No ___

Installed OPW 61SO Series overfill prevention valve into fill spill containment bucket. Yes ___ No ___

Assembled OPW 71SO/71SO Testable Series overfill prevention valve Yes ___ No ___

Installed OPW 71SO/71SO Testable Series overfill prevention valve into fill spill containment bucket Yes ___ No ___

Alternative to 61SO

Installed OPW 61T Straight Drop Tube into fill spill containment bucket. Yes ___ No ___

Installed OPW 61JSK Jack Screw assembly on top of 61SO Series overfill prevention valve or on top of 61T Series Straight Drop Tube. Yes ___ No ___
Lock-Tite applied to screws Yes ___ No ___
Screws tightened to _____ ft. lb.

Installed faced off 4" NPT pipe nipple in fill spill containment bucket and tightened nipple to _____ ft. lb.
Thread sealant compound used _____
Tool used to install nipple _____

Installed faced off 4" NPT pipe nipple in vapor spill containment bucket and tightened nipple to _____ ft. lb.
Thread sealant compound used _____
Tool used to install nipple _____

Installed OPW 61 SALP Fill Swivel Adaptor onto faced off 4" NPT pipe nipple in fill spill containment bucket and tightened fill adaptor to _____ ft. lb.
Thread sealant compound used _____
Tool used to install nipple _____

Installed OPW 61 VSA Vapor Swivel Adaptor onto faced off 4" NPT pipe nipple in vapor spill containment bucket and tightened vapor adaptor to _____ ft. lb.
Thread sealant compound used _____
Tool used to install nipple _____

OPW 61 SA-Tool used to install OPW components Yes ___ No ___
