



State of Oregon
**Department of
Environmental
Quality**

Equipment and Components

Executive Order

VR-104-L
CNI Manufacturing, Inc
Stage I Enhanced Vapor Recovery System

Exhibit 1

CNI Manufacturing Stage I Vapor Recovery System Equipment List

<u>Equipment</u>	<u>Manufacturer/Model Number</u>
Containment Assembly	CNI Manufacturing XXXX-31103 (31103 denotes EVR System) 2 point System Configuration: XXXX (four digit code) indicates: CON1 – Vapor Assembly (5, 10, and 15 gallons) CON2 – Product Assembly (5, 10, and 15 gallons) Stand Alone/Direct Bury Configuration ¹ : XXXX (four digit code) indicates: 205P - Product Assembly 205V - Vapor Assembly (205 series are 5 gallons) 214P - Product Assembly 214V - Vapor Assembly (214 series are 5 gallons)
Pressure/Vacuum Vent Valve	OPW 723V FFS PV-Zero Husky 5885
Gravity Cover	CNI Mfg. GAC (used for CON1, CON2 or 214 Containments)
Snap Tight Cover	CNI Mfg. STP-200 (used for CON1, CON2 or 205 Containments)
Snap Tight Cover Ring	CNI Mfg. STP-39

¹ CNI Mfg. Stand Alone/Direct Bury Configurations 205P, 205V, 214P and 214V are not certified for use in a sump configuration.

Exhibit 1 (continued)

Drain Valve	CNI Mfg. RP12-Push
Dust Caps	CNI Mfg. 64 (product) CNI Mfg. 611-VR-3 (vapor) CompX CSP1-634LPC (product) CompX CSP3-1711LPC (vapor) CompX CSP2-634LPC (product) CompX CSP4-1711LPC (vapor) OPW 634LPC (product) OPW 1711LPC (vapor)
Dust Cap Gasket	CNI Mfg. 65 CNI Mfg. RP65 (replacement)
Product Adaptor	Emco Wheaton Retail A0030-124 Emco Wheaton Retail A0030-124S
Vapor Adaptor	Emco Wheaton Retail A0076-124 Emco Wheaton Retail A0076-124S
Jam Nut	CNI Mfg. 200JN
Tank Gauge Port Components	CNI Mfg. 613BC set (Cap 64, Adaptor 613)
Drop Tube²	CNI Mfg. DT100 (various lengths)
CNI Mfg. Drop Tube O-Ring³	CNI Mfg. DT101 (original) CNI Mfg. RP101 (replacement)
Drop Tube Overfill Prevention Valve²	EMCO Wheaton Retail A1100EVR Guardian
EMCO Wheaton Drop Tube O-Ring⁴	EMCO Wheaton Retail 569461
Fuel Lock⁵	McGard FL1 – Stick Only Fuel Lock (125007) McGard FL2 – Stick/Sampling Fuel Lock (125008)
Bladder Plug	McGard PSI104
Emergency Vent	Exhibit 5 (for below-grade vaulted tank configuration)

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.

³ O-Rings used only with the CNI Mfg. DT100 drop configuration.

⁴ O-Ring used only with the EMCO Wheaton Retail A1100EVR Guardian Overfill drop tube configuration.

⁵ If these components are installed, only those components and model numbers specified above shall be installed or used.

Exhibit 1 (continued)

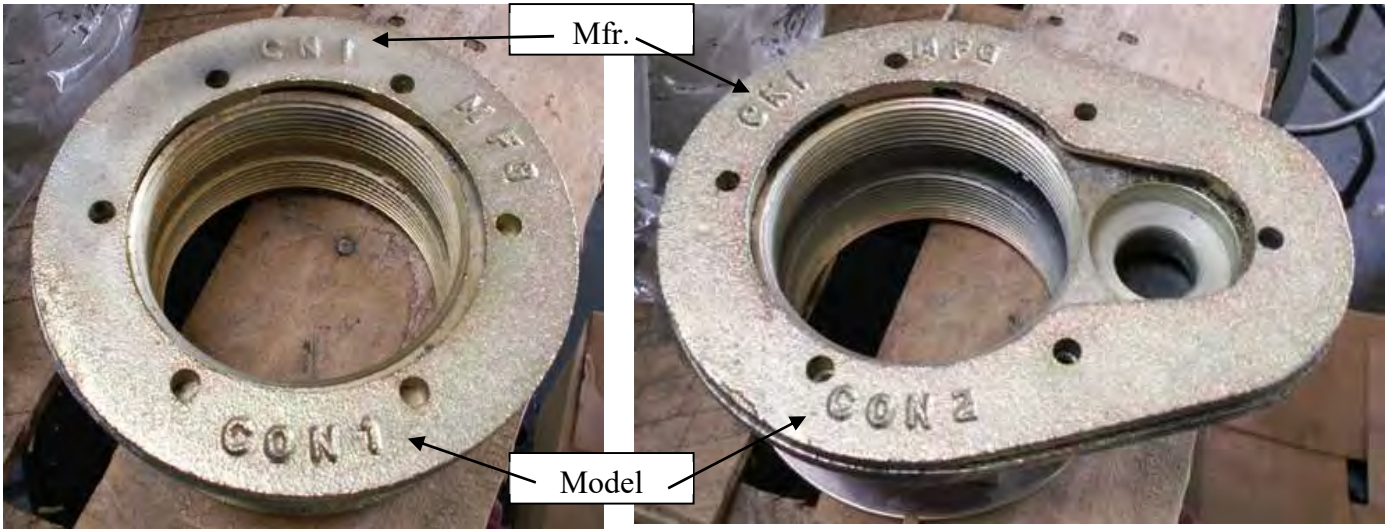
Table 1
Components Exempt from Identification Requirements

Component Name	Manufacturer	Model Number
Replacement Drain Valve	CNI Mfg.	RP12-Push
Jam Nut	CNI Mfg.	200JN
Tank Gauge Port Components (Cap and Adaptor)	CNI Mfg.	613BC Cap and Adaptor set; p/n 64 and 613
Dust Cap gaskets	CNI Mfg.	Gasket 65 original, RP65 for replacement
O-Rings and gaskets for product and vapor adaptors	EMCO Wheaton Retail	O-rings in kit 494301, gasket 409628; O-rings in kit 493995
Drop Tube O-Ring	CNI Mfg.	DT101 original, RP101 replacement
	EMCO Wheaton Retail	56941
Drop Tube ²	CNI Mfg.	DT100
Containment Assembly	CNI Mfg.	XXXX-31103*
Gravity Cover	CNI Mfg.	CNI Mfg. GAC
Snap Tight Cover	CNI Mfg.	CNI Mfg. STP-200
Snap Tight Cover Ring	CNI Mfg.	CNI Mfg. STP-39
Fuel Lock	McGard	FL1, FL2

***CON1, CON2, 205, and 214 shall be marked on each containment assembly.**

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.

Exhibit 1 (continued)
Component Identification & Location

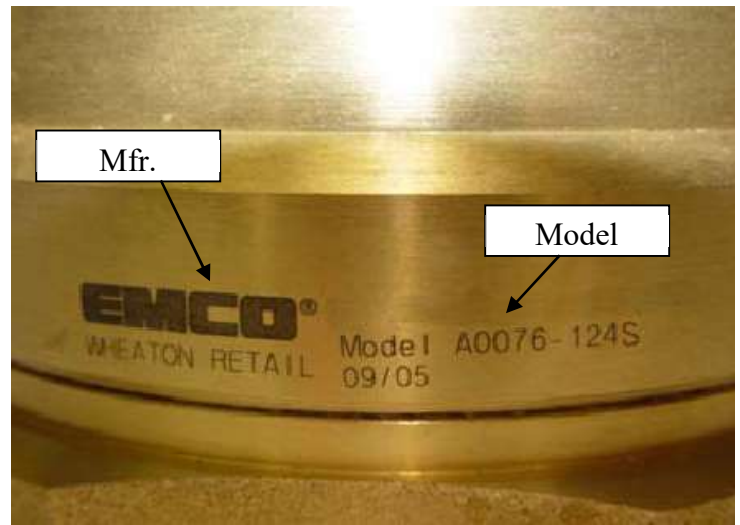
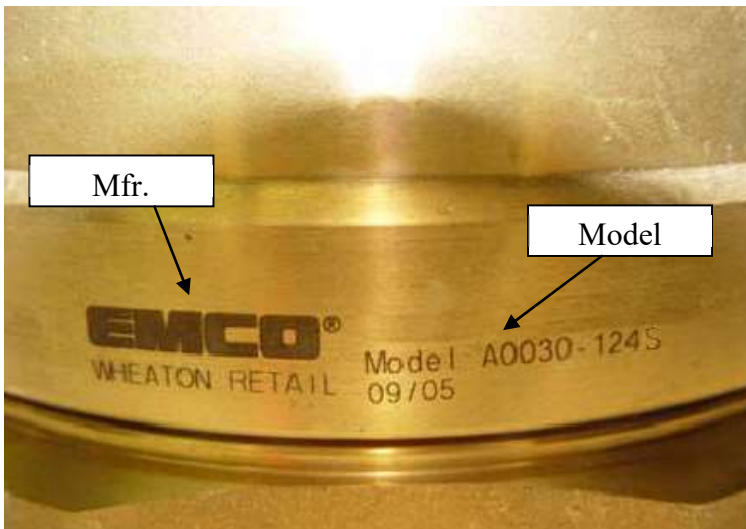


CNI Mfg. CON1 and CON2 Containment Assemblies



CNI Mfg. Model 205 and 214 Containment Assemblies

Exhibit 1 (continued)
Component Identification & Location

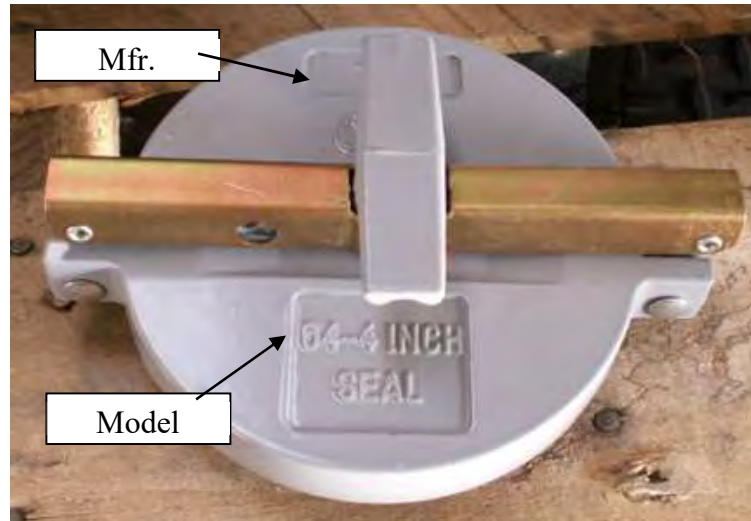


EMCO Wheaton Retail
Model A0030-124S Product Adaptor and Model A0076-124S Vapor Adaptor
(Models A0030-124 and A0076-124 identified in the same location)

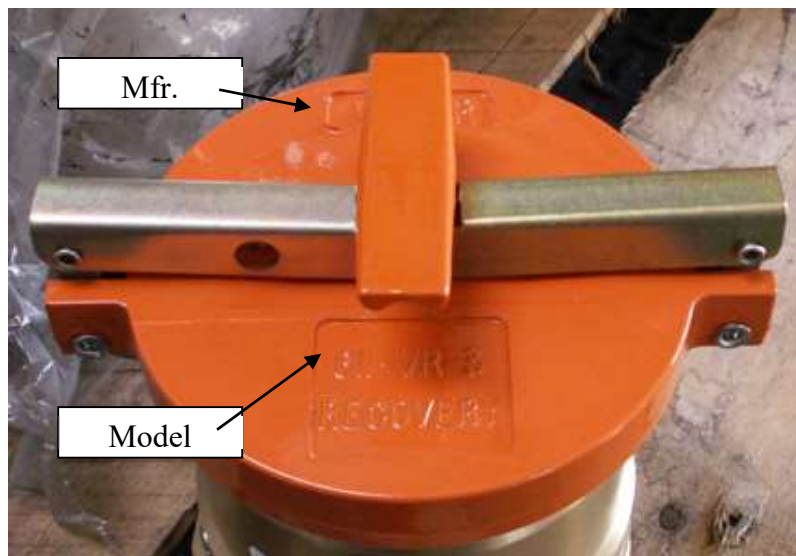


EMCO Wheaton Retail
Model A1100EVR Overfill Prevention Valve

Exhibit 1 (continued)
Component Identification & Location



CNI Mfg. Model 64 Dust Cap



CNI Mfg. Model 611-VR-3 Dust Cap

**Exhibit 1 (continued)
Component Identification & Location**



OPW 634LPC Product Dust



OPW 1711LPC Vapor Dust

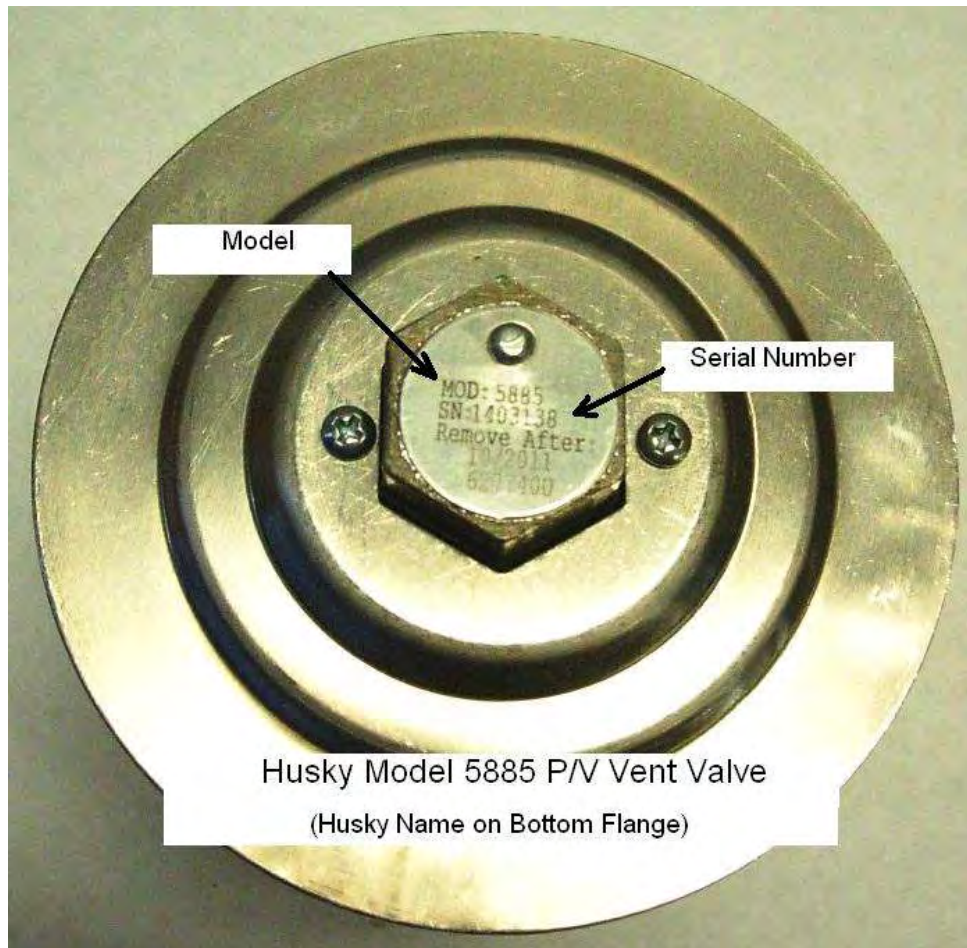
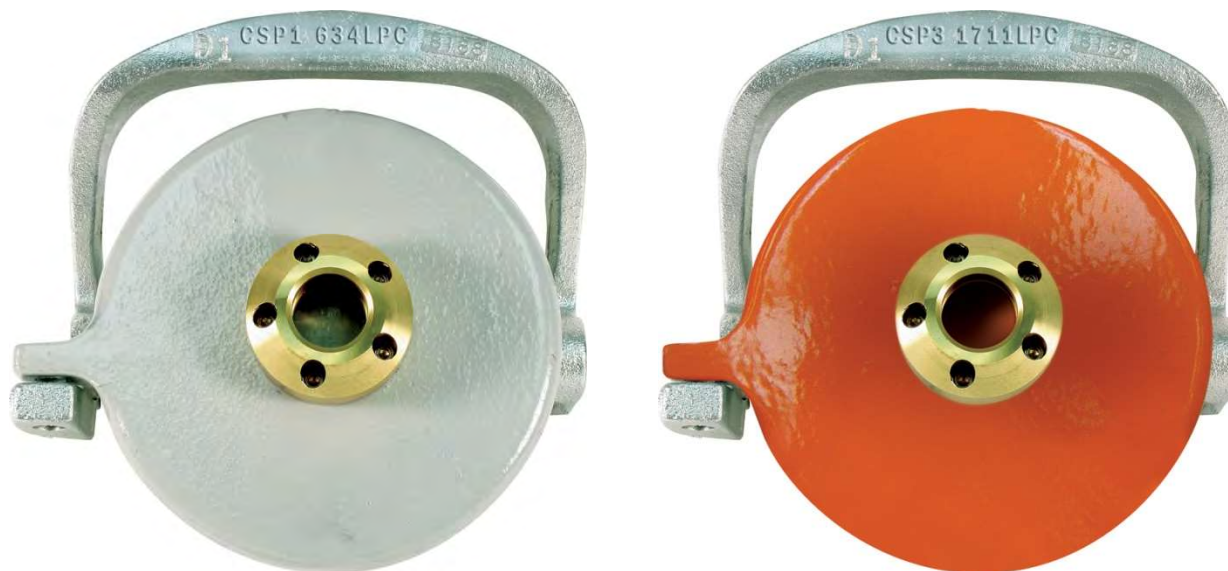


Exhibit 1 (continued)
Component Identification and Location



CompX CSP1-634LPC Product Dust Cap CompX CSP3-1711LPC Vapor Dust Cap



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

Exhibit 1 (continued)
Component Identification and Location



CompX CSP2-634LPC Product Dust Cap

CompX CSP4-1711LPC Vapor Dust Cap



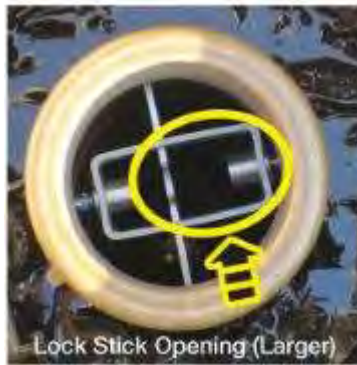
CompX Tank Commander Lid
Locks onto CSP2-634LPC and CSP4-1711LPC Dust Caps

Exhibit 1 (continued)
Component Identification and Location



FFS PV-Zero P/V Vent Valve
(Model and Serial Number on White Tag)

Exhibit 1 (continued)
Component Identification and Location



McGard Fuel Lock Installation Position⁶



McGard Fuel Lock (FL1 on Left, FL2 on Right)

⁶ Optional component, but if installed this picture shows the correct installation location in the pipe just below the Product Rotatable Adaptor in the drop tube.

Exhibit 1 (continued)
Component Identification and Location



OPW Model 723V Pressure/Vacuum Vent Valve

Exhibit 2

Installation, Maintenance and Compliance Specifications

This exhibit contains the installation, maintenance and compliance standards and specifications applicable to a CNI Manufacturing Stage I Vapor Recovery System (CNI Manufacturing System) installed in a gasoline dispensing facility (GDF).

General Specifications

1. Typical installations of the CNI Manufacturing System are shown in Figures 2A, 2B, 2C 2D, 2E, 2F, and 2G of the full CARB Executive Order.
2. The CNI Manufacturing System shall be installed, operated and maintained in accordance with this attachment, applicable Oregon Administrative Rules, and manufacturer's specifications.
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. Unless otherwise specified, the CNI Manufacturing Stage I Vapor Recovery System shall comply with the applicable performance standards and performance specifications in CP-201.
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 2.0 inches H₂O positive pressure and 0.21 CFH at 4.0 inches 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 section of this attachment outlines the equipment needed to test the valve in its installed position.
4. At least one pressure/vacuum (P/V) vent valve shall be installed on each tank vent. If two or more P/V vent valves are used, they shall be installed in parallel, so that each can serve as a backup to the other if one should fail to open properly. 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 vent 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 inches H₂O
Negative pressure setting: 6.0 to 10.0 inches H₂O
Positive Leak rate: 0.05 CFH at 2.0 inches H₂O
Negative Leak rate: 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).

Use CNI Manufacturing Torque Test Tool Part Number EVRSYS100, as an equivalent Torque Test Tool per section 5.2 of TP-201.1B, rather than Phil-Tite

Torque Test Tool Part Number 6004. The Phil-Tite tool is not compatible with CNI Manufacturing dust caps.

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.

Spill Container Drain Valve

The spill container drain valve 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 2.0 inches H₂O. Depending on the presence of the drop tube overflow prevention device, compliance with this requirement shall be demonstrated in accordance with either TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly or TP-201.1D (October 8, 2003), Leak Rate of Drop Tube Overflow Prevention Devices and Spill Container Drain Valves (October 8, 2003).

Stage I Drop-Tubes with Overflow Prevention Devices

1. The Drop Tube Overflow Prevention Device (overflow device) is designed to restrict the flow of gasoline delivered to the underground storage when liquid levels exceed a specified capacity. The drop tube overflow device is not a required component of the vapor recovery system, but maybe installed as an optional component of the system. Other requirements may apply.
2. The leak rate of Stage I drop-tube overflow prevention devices shall not exceed 0.17 CFH at 2.0 inches H₂O). The leak rate shall be determined in accordance with TP-201.1D, Leak Rate of Drop Tube Overflow Prevention Devices and Spill Container Drain Valves (October 8, 2003).
3. The discharge opening of the fill-pipe must be entirely submerged when the liquid level is six inches above the bottom of the tank.

Stage I Drop-Tubes without Overfill Prevention Devices

1. Drop tubes that do not have an overfill prevention device shall not leak and shall be tested in accordance with TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly (October 8, 2003).
2. The discharge opening of the fill-pipe must be entirely submerged when the liquid level is six inches above the bottom of the tank.

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 twenty (20) inches. One example of an offset is shown in Figure 2I.
2. The vapor recovery riser shall be offset using commercially available, four (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, 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/owner shall keep records of maintenance performed at the facility. Such records 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 name of individual conducting maintenance or test. An example of a GDF Maintenance Record is shown in Figure 2J.

**Table 2-1
Gasoline Dispensing Facility Compliance Standards and Specifications**

Component/System	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Overfill Prevention Device	TP-201.1D	Leak rate \leq 0.17 CFH at 2.0 inches H ₂ O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	\leq 0.17 CFH at 2.0 inches H ₂ O
P/V Vent Valve	TP-201.1E	Positive pressure setting: 2.5 to 6.0 inches H ₂ O Negative pressure setting: 6.0 to 100 inches H ₂ O Positive Leak rate: 0.05 CFH at 2.0 inches H ₂ O Negative Leak rate: 0.21 CFH at -4.0 inches H ₂ O
Gasoline Dispensing Facility	TP-201.3	As specified in TP-201.3 and/or CP-201
All connections and fittings certified without an allowable leak rate	Leak Detection Solution or bagging	No Leaks

**Table 2-2
Maintenance Intervals for System Components²**

Manufacturer	Component	Maintenance Interval
OPW	Pressure/Vacuum Vent Valve	Annual
Husky	Pressure/Vacuum Vent Valve	Annual
FFS	Pressure/Vacuum Vent Valve	Annual
CNI Manufacturing	Tank Gauge Port Components	Annual Inspection
CNI Manufacturing	Dust Caps	Annual Inspection
CompX	Dust Caps	Annual Inspection
OPW	Dust Caps	Annual Inspection
CNI Manufacturing	Drop Tube	24 month Test
EMCO Wheaton Retail	Drop Tube Overfill Prevention Valve	24 month Tests
EMCO Wheaton Retail	Rotatable Phase I Product and Vapor Adaptors	24 month Tests
CNI Manufacturing	Spill Container Drain Valve	18 Months
CNI Manufacturing	Spill Containment	Annual Inspection

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

