

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER VR-501-A

Relating to Certification of Vapor Recovery Systems

**Balance Phase II Enhanced Vapor Recovery (EVR) System
for Protected Aboveground Storage Tanks (AST) with
Remote Dispensing**

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code Sections 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 Using Aboveground Storage Tanks (CP-206) as last amended January 9, 2013, incorporated by reference in Title 17, California Code of Regulations, Section 94016;

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, Hirt Combustion Engineers, Inc. (Hirt) requested certification of the Balance Phase II EVR System for protected ASTs not including in-station diagnostics (Balance Phase II EVR System);

WHEREAS, CP-206 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 CP-206; and

WHEREAS, I, Richard W. Corey, Executive Officer, find that the Balance Phase II EVR System conforms with all requirements set forth in CP-206, 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 dispensed 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 is certified to be at least 95 percent efficient and does not exceed 0.38 pounds of hydrocarbon per 1,000 gallons of gasoline dispensed 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 the Balance Phase II EVR System. Exhibit 2 contains the performance standards, specifications, and typical installation drawings applicable to the Balance Phase II EVR System as installed in a protected AST gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing performance specifications and warranties. Exhibit 4 provides items required in conducting the test under TP-206.3. Exhibit 5 is the liquid removal test

procedure. Exhibit 6 provides items required in conducting the test under TP-201.4. Exhibit 7 is the nozzle bag test procedure. Exhibit 8 is the Hirt VCS 100-2 VaporTek[®] Processor operability test procedure. Exhibit 9 is the Liquid Condensate Trap compliance 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, and the Division of Occupational Safety and Health of the Department of Industrial Relations are made conditions of this certification.

IT IS FURTHER ORDERED that each component manufacturer listed in Exhibit 1 shall provide a warranty for that manufacturer's vapor recovery component(s) listed in Exhibit 1 to the initial purchaser. The warranty shall automatically transfer to each subsequent purchaser within the warranty period. The warranty shall require continued compliance with all applicable performance standards and specifications and shall comply with all warranty requirements in Section 17.5 of CP-206. 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 Wheaton Retail (EMCO), Veyance Technologies, Inc. (Veyance), and Hirt shall meet the manufacturing performance specifications as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified Balance 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 weekly and annually per the procedures identified in the ARB Approved Installation, Operation, and Maintenance Manual. 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 shall be clearly identified by a permanent identification showing the manufacturer's name, model number, and serial number, unless exempted pursuant to Section 17.7.1 of CP-206.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation, or operation of the system from the uses or specifications provided in the manufacturers' certification application or documents certified by this Executive Order 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 his delegate pursuant to Section 19.2.1 of CP-206.

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 thereafter (or within a shorter time period if so specified by the District), using the following test procedures.

- TP-206.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities Using Aboveground Storage Tanks (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-206.3;
- Exhibit 5, Liquid Removal Test Procedure;
- Exhibit 6, Required Items for Conducting TP-201.4;
- Exhibit 8, Hirt VCS 100-2 VaporTek[®] Processor Operability Test Procedure; and
- Exhibit 9, Liquid Condensate Trap Compliance Test Procedure (if a Liquid Condensate Trap 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(s) referenced in the test procedure(s). Alternative test procedures, including the most recent versions of the test procedures listed above, may be used if it is determined in writing by the ARB Executive Officer or his delegate that the alternative test procedure(s) yield equivalent results to the test procedures described above.

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 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 his delegate, in writing, to yield equivalent results.

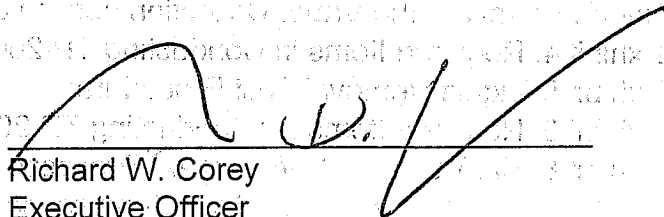
IT IS FURTHER ORDERED that, except as provided above, Districts at their discretion will specify the testing, related sequencing, and testing frequency of the nozzle vapor valves. If the District requires the nozzle vapor valve be tested, the test shall be conducted in accordance with Exhibit 7, Nozzle 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 five percent or an ethanol content greater than ten 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 this Executive Order shall apply to new installations or major modification of Phase II EVR Systems at GDFs with protected ASTs and remote dispensing.

IT IS FURTHER ORDERED that the certification of the Balance Phase II EVR System for Protected ASTs is valid for a period of four years from the date when this Executive Order is signed.

Executed at Sacramento, California, this 13th day of March 2015.


Richard W. Corey
Executive Officer

Attachments

General Requirements

Exhibit 1 Equipment List

- Hanging Hardware
- Hirt Thermal Oxidizer Processor Equipment List
- Liquid Condensate Trap Equipment List (if a Liquid Condensate Trap is Installed)

Exhibit 2 System Specifications

- Hanging Hardware
- Processor
- Pressure/Vacuum Vent Valves for Storage Tank Vents
- Warranty
- Vapor Recovery Piping Configurations
- Dispensers
- Liquid Condensate Traps
- Standing Loss Control
- Phase I System
- Maintenance Records
- Vapor Recovery Equipment Defects

Exhibit 3 Manufacturing Performance Specifications and Warranties

- EMCO Wheaton Retail Manufacturing Performance Specifications and Warranty
- Veyance Manufacturing Performance Specifications and Warranty
- Hirt Manufacturing Performance Specifications and Warranty

General Compliance Procedures

Exhibit 4 Required Items in Conducting TP-206.3

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 Hirt VCS 100-2 VaporTek[®] Processor with Indicator Panel Operability Test Procedure

LCT Specific Compliance Procedure

- Exhibit 9 Liquid Condensate Trap Compliance Test Procedure

**EXHIBIT 1
Equipment List**

Hanging Hardware

Component	Manufacturer / Model
Nozzle	EMCO Models A4005EVR, RA4005EVR (Rebuilt) (Figure 1A-1)
Coaxial Curb Hose	Veyance Technologies or Goodyear Model Maxim Premier Plus (“NV” stamped on nozzle end) (Figure 1A-2)
Coaxial Whip Hose	Veyance Technologies or Goodyear Model Maxim Premier Plus (Figure 1A-2)
Breakaway Coupling	EMCO Model A4119EVR (Figure 1A-2)

**Hirt - Thermal Oxidizer
Processor Equipment List**

Component	Manufacturer / Model
Hirt Thermal Oxidizer With Indicator Panel	Hirt Model VCS 100-2 VaporTek® Processor (Figure 1A-3) Leg Attachments: 5” – M39 48”- M40
Hirt 1/4" Check Valve (optional component)	Hirt P65

**Liquid Condensate Trap
Equipment List
(If a Liquid Condensate Trap is Installed)**

Component	Manufacturer / Model
Riser Adapter	INCON model TSP-K2A (Figure 1A-4)
In-Line Filter	140 micron, Swagelok B-4F2-140 or SS-4F2-140, or equivalent (Figure 1A-4)
Screen	Aluminum Insect screen (18X14 mesh), or Stainless Steel Insect screen (18X18 mesh). (Figure 1A-4)
Stainless Steel Hose Clamp	Sized to secure screen to suction tube. (Figure 1A-4)
Liquid Sensor¹	Must have an audible and visual alarm (Figure 1A-4)
Liquid Condensate Trap	Any capacity, manufacturer, make and model (Figure 1A-4)

¹ Must meet applicable State Water Resources Control Board (SWRCB) requirements (e.g. LG-113)

Figure 1A-1
EMCO Model A4005EVR Nozzle

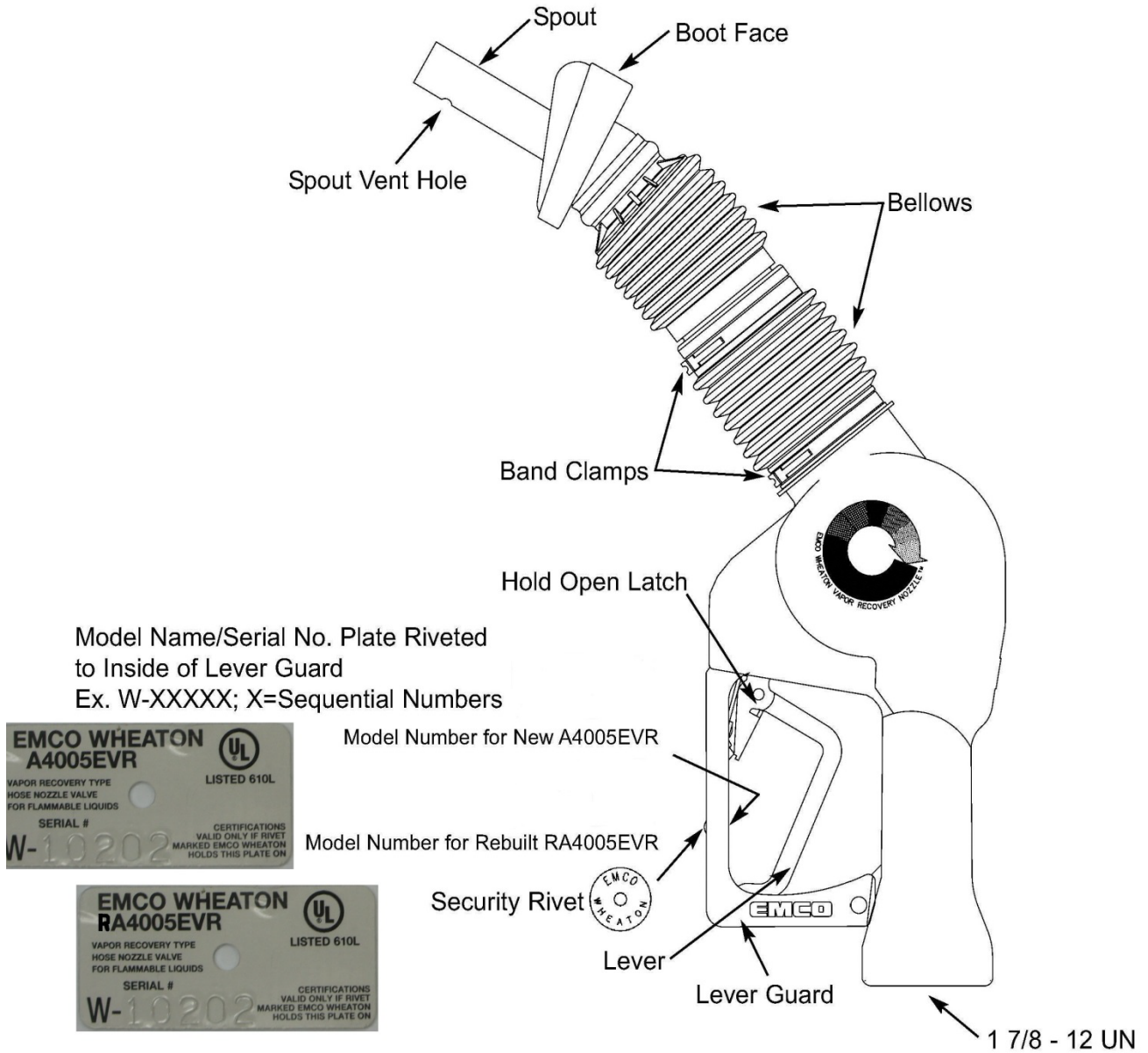


Figure 1A-2
EMCO Hanging Hardware
(Nozzle and Safe Break Valve)

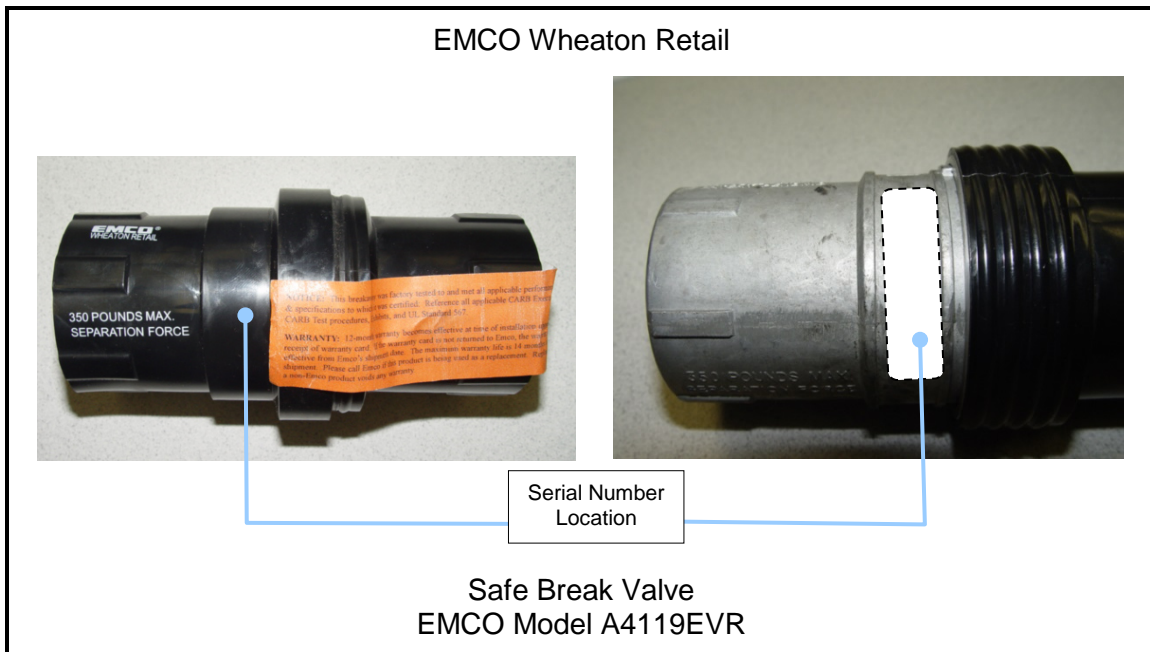
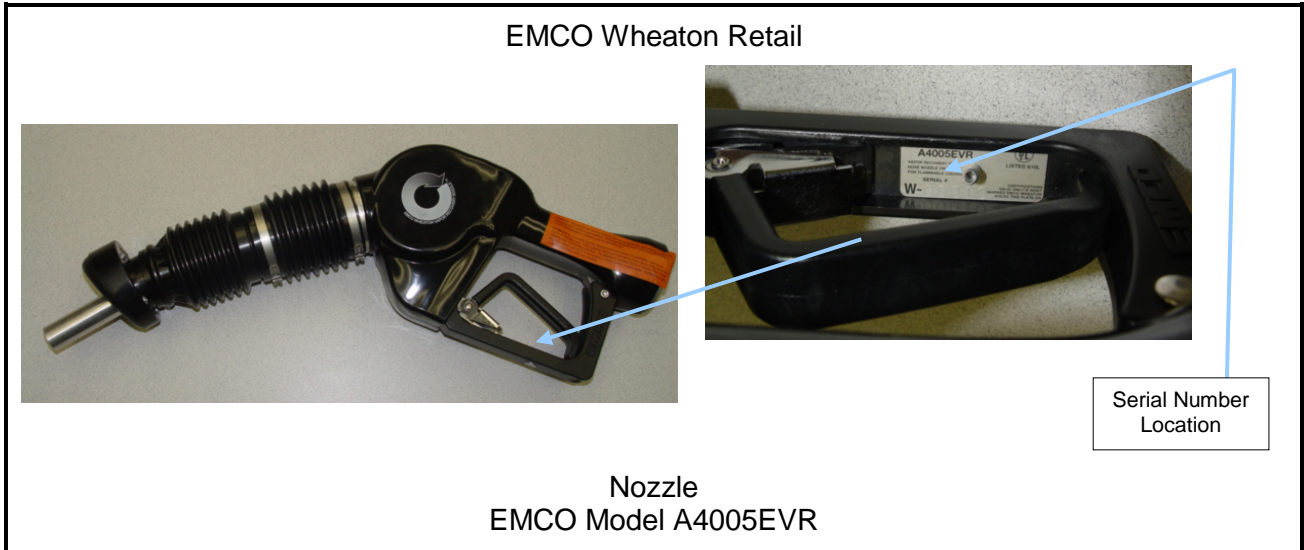
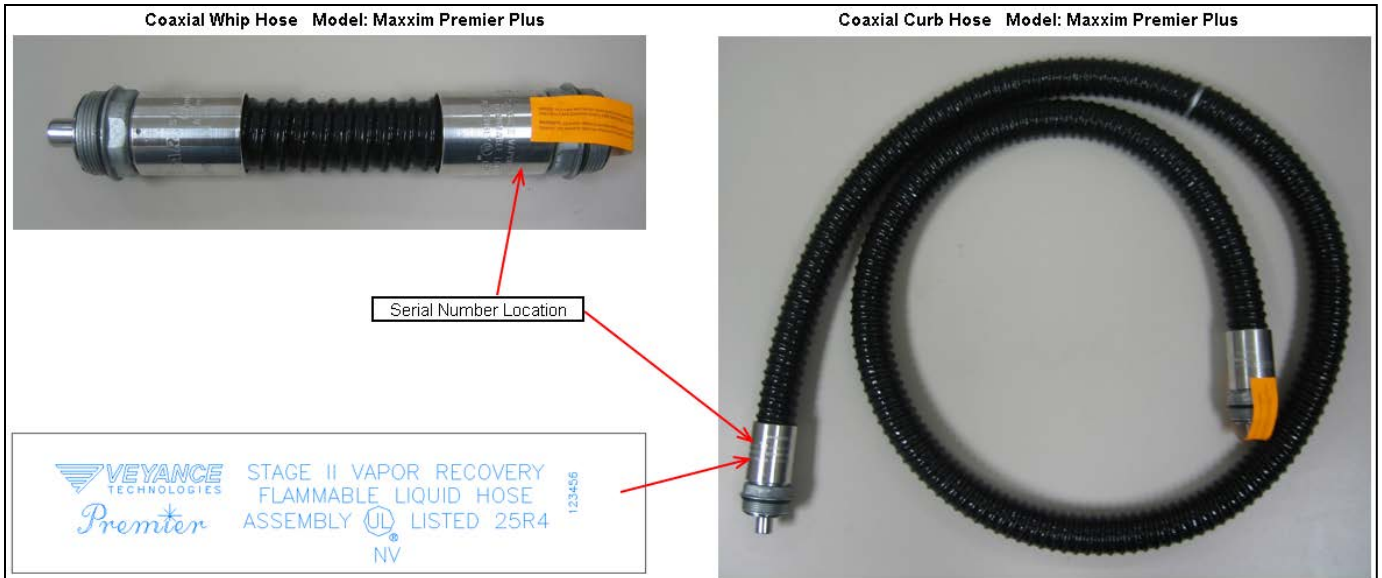
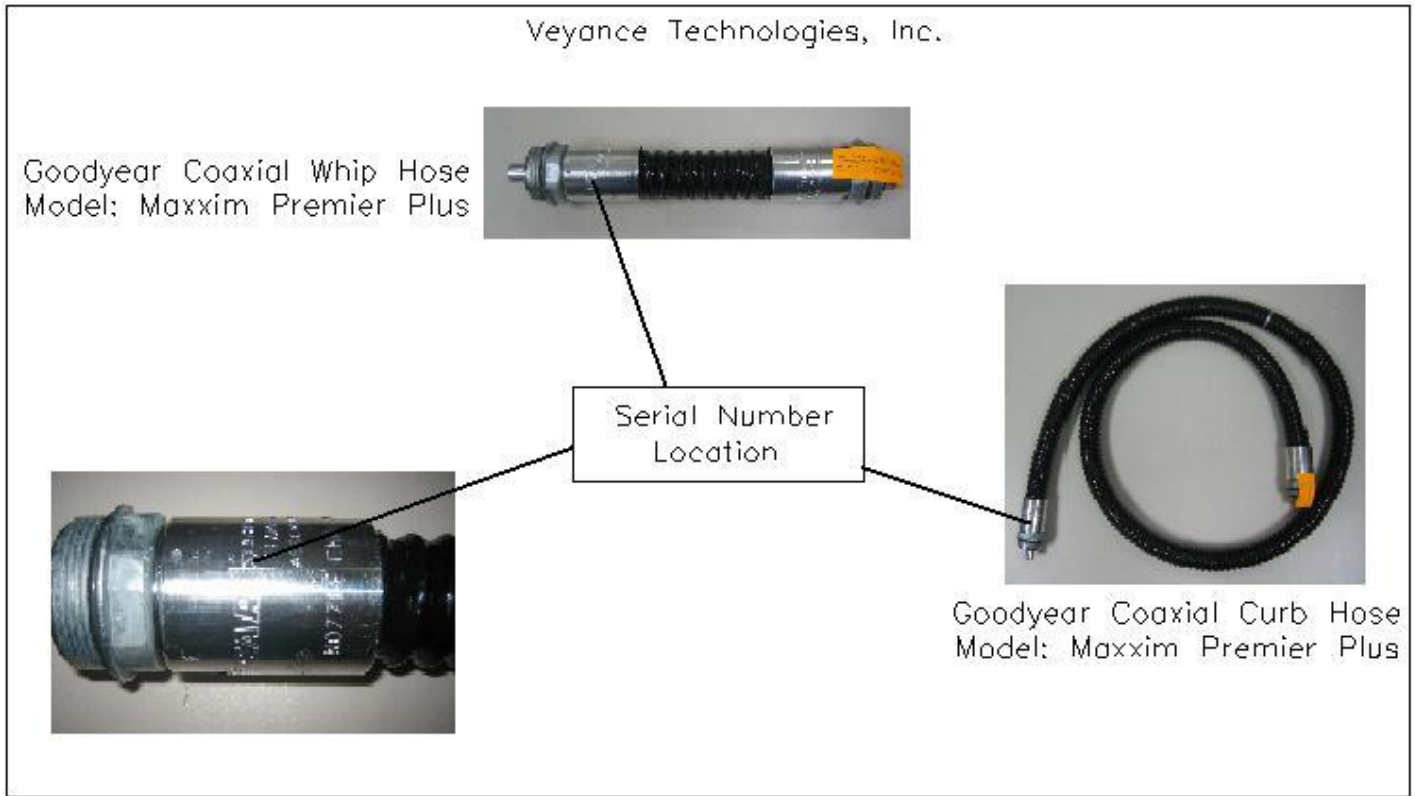


Figure 1A-2 (continued)
Veyance Technologies or Goodyear Hanging Hardware
(Curb and Whip Hoses)



NOTE:
6 digit serial number shown for demonstration only – actual serial number will be different

Figure 1A-3
Hirt VCS 100-2 VaporTek® Thermal Oxidizer and Indicator Panel

VCS 100-2 VaporTek® Identification Plate

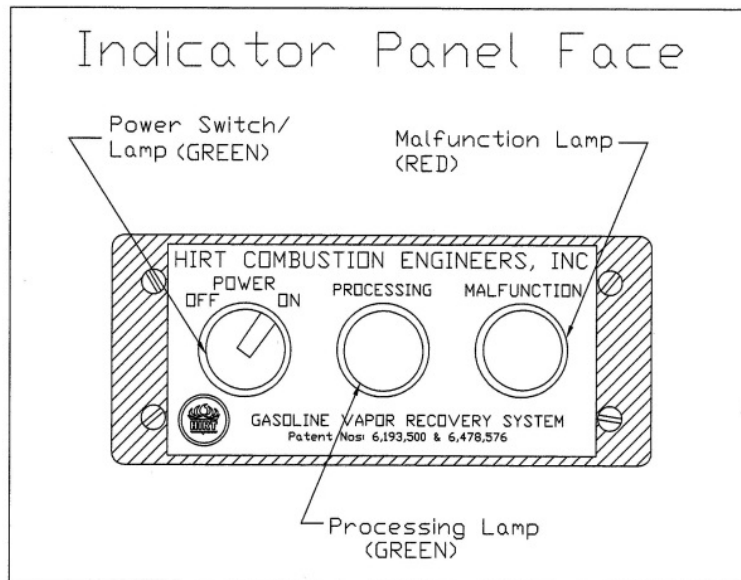
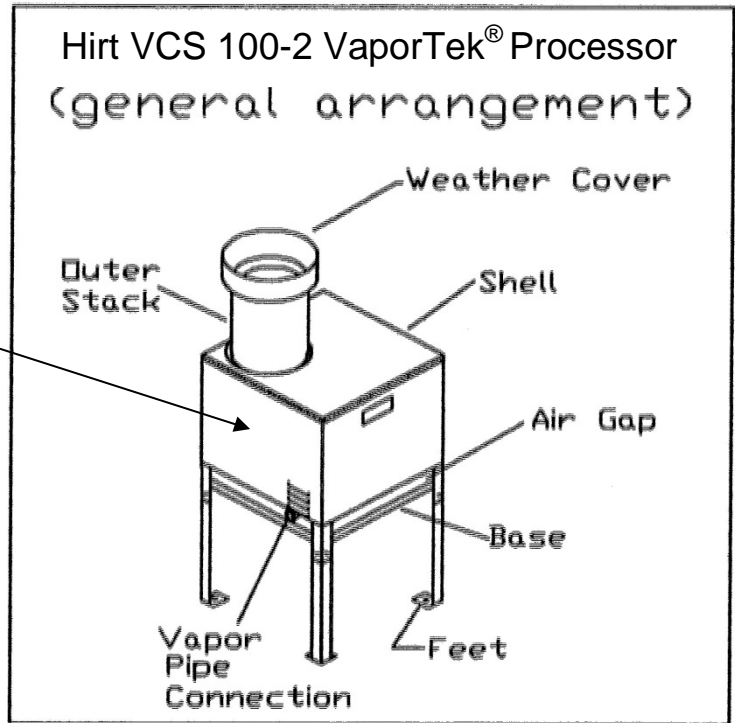
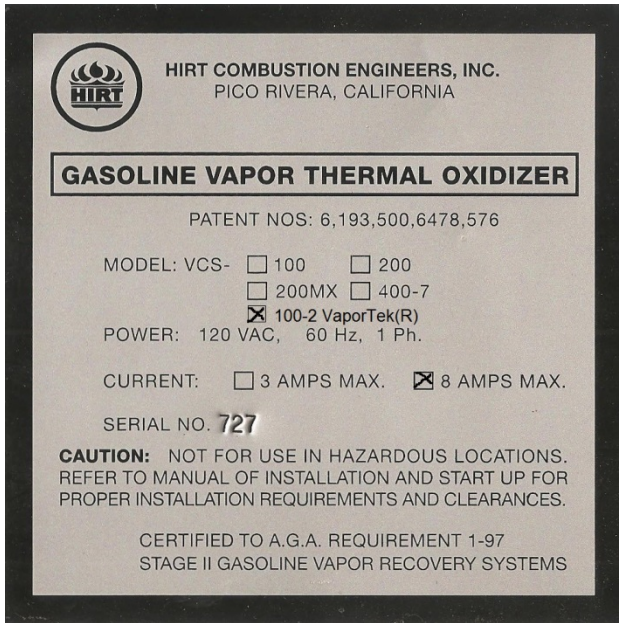


Figure 1A-3 (continued)
Typical Hirt VCS 100-2 VaporTek® Thermal Oxidizer Processor

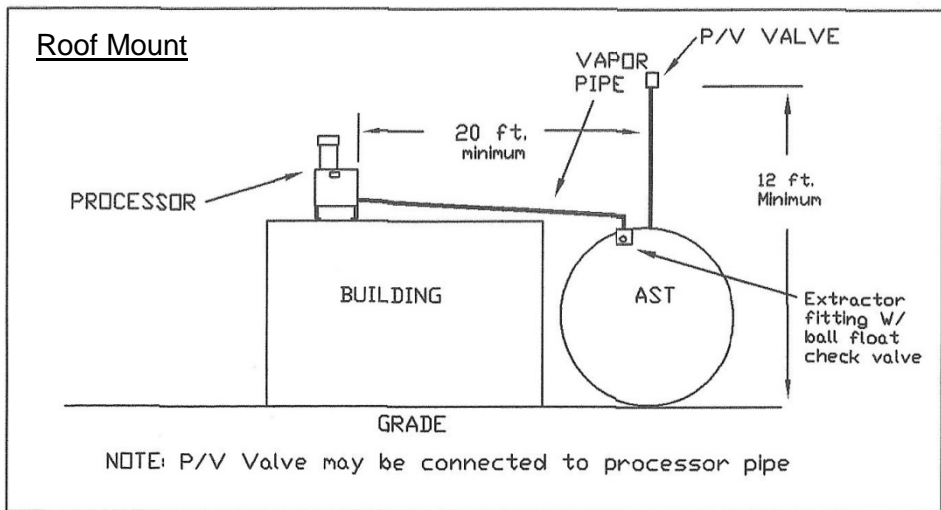
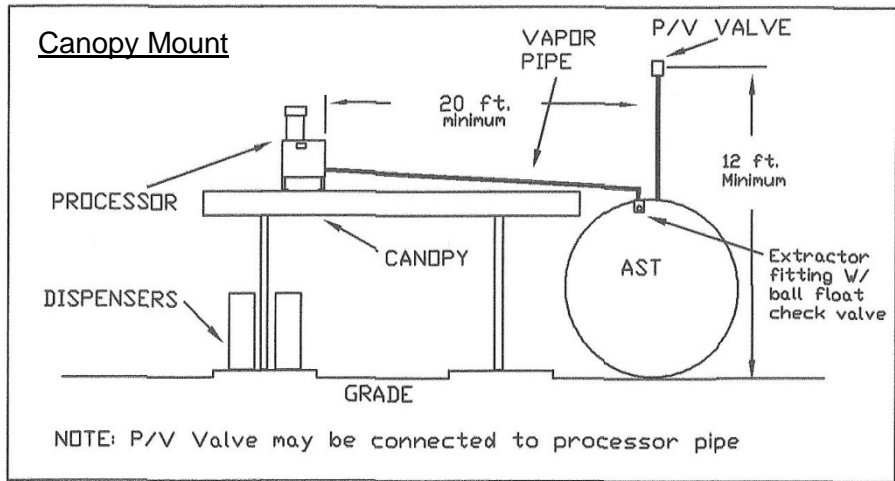
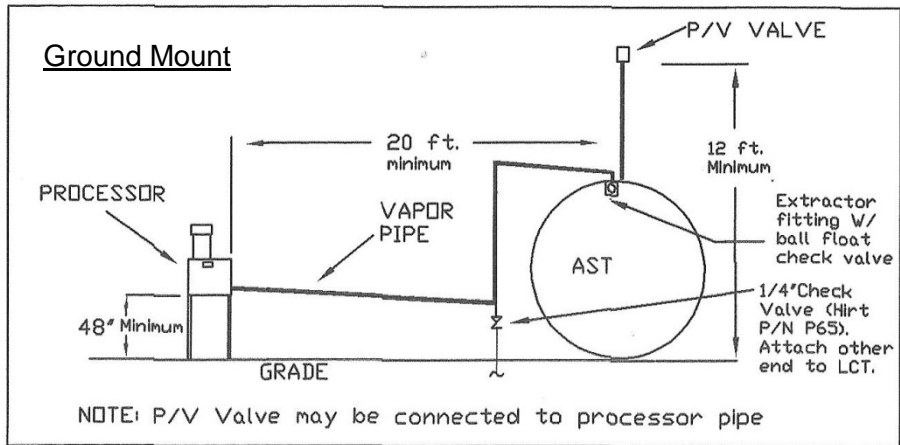


Figure 1A-4
Example Layout of a Liquid Condensate Trap Installed in an AST System

