

**CALIFORNIA DEPARTMENT of FORESTRY
and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL**

VAPOR RECOVERY PROGRAM



VAPOR RECOVERY CERTIFICATIONS

FIRE ENGINEERING AND INVESTIGATIONS DIVISION

June 19, 2026

General

All products certified by the Vapor Recovery (VR) Program in this document have been reviewed and verified by the Office of the State Fire Marshal (OSFM) engineering staff to comply with Title 19, California Code of Regulations, Division 1, Chapter 11.5, Gasoline Vapor Control Systems.

This document is categorized into 10 main sections:

1. Hose Nozzle Valves
2. Hose and Hose Assemblies
3. Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings
4. Power-Operated Dispensing Devices
5. Power-Operated Pumps
6. Vapor Recovery System Processors
7. Vapor Recovery Systems
8. Fuel Tank Accessories
9. Control, Monitoring, and Auxiliary Equipment
10. Nonmetallic Underground Piping

Our approvals are based upon technical data and test reports submitted by manufacturers . The OSFM engineering staff review test results issued by an OSFM approved testing laboratory and other data for compliance, but do not make independent claim verification.

All products shall be constructed and installed in accordance with the OSFM VR certification, all applicable regulations, codes, standards, and ordinances.

The OSFM reserves the right to remove any products in this document for cause.

For technical inquiries regarding the OSFM VR Certifications, please contact the VR Program at:

VR@fire.ca.gov

Link to the VR Program's website for additional information:

<https://osfm.fire.ca.gov/what-we-do/fire-engineering-and-investigations/vapor-recovery-program>

Hose Nozzle Valves

CERTIFICATION No. 005-0001:0001

DATE ISSUED: November 16, 1992

MANUFACTURER: Hasstech, Inc.
6985 Flanders Drive, San Diego, CA 92121

Contact: John Gray

DESIGN: Model HP-1000 Vapor Recovery Nozzle Valve. Device is an automatic closing type Vapor Recovery Nozzle Valves intended for use with flammable liquid dispensing devices where the working pressure does not exceed 50 psi.

The nozzle valve can be manually opened only after the liquid product, under pressure from a pump, is applied to the inlet. Nozzle valves with suffix numbers 22 or 27 may then be held open either manually or by a hold open device.

The fulcrum end of the lever is attached to the base of a spring-loaded latch plunger. The upper end of the plunger holds three (3) steel balls. In normal operation, these balls are engaged with the latch ring by a spring-loaded latch pin.

During operation, the valve stem is depressed lifting the main poppet and allowing gasoline to flow through the valve. The valve is provided with a pressure diaphragm subassembly which will not allow operation of the nozzle valve unless liquid pressure is introduced into the valve inlet.

A diaphragm is mounted to the underside of the diaphragm cup washer dividing the vacuum cavity. This diaphragm is attached to the latch pin which inserts into the latch plunger.

The outlet of the valve is provided with a venturi assembly. Part of this assembly is a drilled passageway leading to a cavity above the diaphragm. A secondary passageway connects through the vacuum tube assembly which terminates near the outer end of the valve spouts and serves to vent the cavity.

APPLICATION: To be installed in conjunction with dispensers that are part of a vacuum assisted vapor recovery system or installed on dispensers retrofitted with a listed vacuum assisted vapor recovery system.

CERTIFICATION: Certified as a vapor recovery nozzle valve for use with Phase II vapor recovery systems. Only nozzle valves with suffix numbers 22 or 27 are certified. OPW Fueling Components Model 11VA1-22 hose nozzle valve (OSFM Certification No. 005:008:050) has been multiple listed by Underwriters' Laboratories Inc. as HP-1000. The HP-1000 nozzle valve is only certified for use with the Hasstech Inc. Models VCP-2 or VCP-2A Vapor Recovery Systems. (OSFM Certification No. 004:001:001)

CERTIFICATION No. 005-0001:0002

DATE ISSUED: January 10, 1994

MANUFACTURER: Hasstech, Inc.
6985 Flanders Drive, San Diego, CA 92121

Contact: John Gray

DESIGN: Model CFC-1 Coaxial Flow Control Valve. Device is used on gasoline dispensing devices to open and close phase II vapor return line in response to fuel flow. The valve is installed directly to the standard coaxial fitting on a gasoline dispenser. This valve does not contain any breakaway features. An inverted coaxial hose is then

connected to the valve. Installation instructions are provided by the manufacturer of the valve assembly.

APPLICATION: To be installed and used with inverted coaxial hose assemblies used on vapor recovery systems.

CERTIFICATION: Certified as a Coaxial Flow Control Valve for use with Phase II vapor recovery systems where full or self-service is performed and fuel blends do not exceed manufacturers' limitations.

CERTIFICATION No. 005-0007:0025

DATE ISSUED: August 14, 2009

MANUFACTURER: EMCO Wheaton Retail

2300 Industrial Park Drive, Wilson, NC 27893

Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759

Email: JERodriguezSD@aol.com

DESIGN: Model Numbers A4005 and A4005EVR Hose Nozzle Valves. Devices are automatic closing type hose nozzles with vapor return capabilities intended for use with flammable liquid dispensing devices arranged for vapor recovery. The nozzles are equipped with automatic features to shut off the flow of liquids when the vehicle's tank is full. The nozzles are also equipped with a leaded or unleaded shear section spout that breaks-a-way if subjected to excessive bending force. The nozzles are provided with a vapor return passage designed for collection of vapors by means of a tight seal with fuel tank opening and includes an automatic feature to shut off flow of liquid should the pressure inside the tank exceed 1 psi. The nozzle design also prevents liquid dispensing unless the nozzle is properly in tank filler opening. The nozzles are initially opened by manually squeezing the lever and then may be held open manually or by latching device.

APPLICATION: The A4005 and A4005EVR nozzles are designed and intended for use only with coaxial type vapor recovery hose assemblies, coaxial type related equipment and coaxial type balance vapor recovery systems.

CERTIFICATION: Certified as Hose Nozzle Valves for use with Phase II vapor recovery systems. Models A4005 and A4005EVR dispensing nozzles, with hold open device, are certified for use with coaxial type balance vapor recovery systems where full service or self-service is performed.

CERTIFICATION No. 005-0007:0026

DATE ISSUED: August 14, 2009

MANUFACTURER: EMCO Wheaton Retail

2300 Industrial Park Drive, Wilson, NC 27893

Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759

Email: JERodriguezSD@aol.com

DESIGN: Model Numbers RA4005 and RA4005EVR Hose Nozzle Valves. Devices are automatic closing type hose nozzles with vapor return capabilities intended for use with flammable liquid dispensing devices arranged for vapor recovery. These are rebuilt versions of Emco Wheaton Retail Model Numbers A4005 and A4005EVR gasoline dispensing nozzles. (OSFM Certification No. 005:007:025) All parts and materials used in remanufacturing of Model Numbers RA4005 and RA4005EVR are identical to those

used in the manufacturing of Model Numbers A4005 and A4005EVR. The nozzles are equipped with automatic features to shut off the flow of liquids when the vehicle's tank is full. The nozzles are also equipped with a leaded or unleaded shear section spout that breaks-a-way if subjected to excessive bending force. The nozzles are provided with a vapor return passage designed for collection of vapors by means of a tight seal with fuel tank opening and include an automatic feature to shut off flow of liquid should the pressure inside the tank exceeds 1 psi. The nozzle design also prevents liquid dispensing unless the nozzle is properly in tank filler opening. The nozzles are initially opened by manually squeezing the lever and then may be held open manually or by latching device.

APPLICATION: The RA4005 and RA4005EVR nozzles are designed and intended for use only with coaxial type vapor recovery hose assemblies, coaxial type related equipment and coaxial type balance vapor recovery systems.

CERTIFICATION: Certified as Hose Nozzle Valves for use with Phase II vapor recovery systems. Models RA4005 and RA4005EVR hose nozzle valves, with hold open device, are certified for use with coaxial type balance vapor recovery systems where full service or self-service is performed.

CERTIFICATION No. 005-0007:0042

DATE ISSUED: December 1, 1999

MANUFACTURER: EMCO Wheaton Retail
2300 Industrial Park Drive, Wilson, NC 27893

Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759

Email: JERodriguezSD@aol.com

DESIGN: Models A4500 and A4505 hose nozzle valves. Devices are automatic closing type; inverted vapor recovery hose nozzle valves intended for use with flammable liquid dispensing devices equipped with vacuum assist type vapor recovery systems. The devices are equipped with an automatic feature designed to shut off the flow of liquid when the tank of the vehicle is full. The devices are provided with a "no pressure-no flow" feature that does not allow the valve to be opened unless the fluid inlet is pressurized. The spout incorporates separate fluid and vapor passages and is provided with a shear groove that is intended to "break" should the valve be subjected to excessive pull loads. The devices are equipped with a spout spring and plastic vapor guard that is not intended to form a tight seal with the automobile filler neck opening. Model A4505 additionally incorporates a vapor poppet that does not open until the main poppet opens. The devices are equipped with a liquid control mechanism to reduce any vapor volume that may be released to the atmosphere or have an alternate construction that reduces the internal vapor volume and minimizes the seal area. The devices are manufactured with an alternate hold open latch, operating lever and optional latch disable feature an alternate Rynite side cap.

NOTE: Design modifications were made to the following individual components used in the construction of both the Models A4500 and A4505. The level material and the width of the lever guard were changed, along with the inner main valve and vacuum diaphragm assemblies.

APPLICATION: Models A4500 and A4505 Bootless Vacuum Assist Vapor Recovery Nozzles are intended to be used on vapor assist systems with inverted coaxial hose

assemblies. These valves have the added "no pressure - no flow" safety feature where prepay service is utilized. Maximum working pressure is rated at 50 psi.

CERTIFICATION: Certified as hose nozzle valves for use on vapor vacuum assist systems.

CERTIFICATION No. 005-0008:0059

DATE ISSUED: September 19, 2018

MANUFACTURER: OPW Fueling Components
3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Models OPW 12VG and OPW 12VW Nozzles Valves (vapor in inner hose - 34mm O.D.) Devices are new or rebuilt automatic closing type Vapor Recovery Nozzle Valves intended for use with flammable liquid dispensing devices where the working pressure does not exceed 50 psi. These nozzle valves can be manually opened only after the liquid product, under pressure from a pump, is applied to the inlet. Nozzle valves are equipped with hold-open devices. The OPW 12VW nozzle is equipped with integral vapor valve. These valves may be equipped with vapor shrouds. Rebuilt nozzles are identified by the suffix letter "R" immediately following the product numbers. The fulcrum end of the lever is attached to the base of a spring-loaded latch plunger. The upper end of the plunger holds three (3) steel balls. In normal operation, these balls are engaged with the latch ring by a spring-loaded latch pin. During operation, the valve stem is depressed lifting the main poppet and allowing gasoline to flow through the valve. The valve is provided with a pressure diaphragm subassembly which will not allow operation of the nozzle valve unless liquid pressure is introduced into the valve inlet. A diaphragm is mounted to the underside of the diaphragm cup washer dividing the vacuum cavity. This diaphragm is attached to the latch pin which inserts into the latch plunger. The outlet of the valve is provided with a venturi assembly. Part of this assembly is a drilled passageway leading to a cavity above the diaphragm. A secondary passageway connects through the vacuum tube assembly which terminates near the outer end of the valve spout and serves to vent the cavity. When the outlet of the valve spout is blocked by liquid, the venturi assembly creates a vacuum in the upper portion of the vacuum cavity. This vacuum raises the diaphragm, and in turn, the latch pin, allowing the three (3) steel balls to move to the center of the latch plunger. The latch plunger is released and travels downward also allowing the stem to move downward and shut off the flow of liquid. The shock of the movement releases the trigger and enables the plunger to return to its reset position. Nozzle spout assemblies are equipped with a shear section to permit breakaway should the valve be subjected to excessive bending load.

APPLICATION: To be installed in conjunction with dispensers that are part of a vacuum assisted vapor recovery system or installed on dispensers retrofitted with a listed vacuum assisted vapor recovery system.

CERTIFICATION: Certified as nozzle valves for use in a Vacuum Assisted Vapor Recovery System.

CERTIFICATION No. 005-0008:0066

DATE ISSUED: December 13, 2011

MANUFACTURER: OPW Fueling Components
3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Model OPW Model 14V Vapor Recovery Nozzle Valve. Device is an automatic closing Balance type Vapor Recovery Nozzle Valve intended for use with flammable liquid dispensing devices where the working pressure does not exceed 50 psi. The nozzle valve contains an interlock mechanism which requires the vapor recovery boot around the spout to be compressed against the vehicle fill pipe before the lever assembly will engage and enable fuel to flow. As the device dispenses fuel into the vehicle fill pipe, vapor is collected by the boot around the spout and flows through the vapor return passage in the nozzle body to the hose assembly. The model 14V nozzle contains an integral vapor valve in the vapor return passage that opens when the lever assembly is lifted and closes when the lever assembly is lowered. The integral vapor valve prevents emissions from escaping when the nozzle is not in use.

APPLICATION: The nozzle may be installed at the end of a hose assembly for an automotive fuel dispenser that is equipped with a pre-EVR or EVR Balance vapor recovery system.

CERTIFICATION: Certified as nozzle valve for use on pre-EVR and EVR Balance type Phase II vapor recovery systems.

CERTIFICATION No. 005-0008:0504

DATE ISSUED: October 24, 2018

MANUFACTURER: OPW Fueling Components
3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Model OPW Model 14E Enhanced Conventional Nozzle (ECO). Device is an automatic closing hose nozzle valve intended for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi. These nozzles are designed to shut off when the flow of liquid in the tank is full. The valve is provided with a lever operated latch that may be set to hold the valve open. The valve incorporates a spring interlock feature. This feature is a system of components that allow the nozzle to dispense fuel when activated. The system is activated during the refueling process when the customer inserts the hose nozzle spout into the fill tube on an automobile. As the spout enters the fill tube a series of components which include a splash guard, a spring and base, become compressed which translates to a force to a slide, collar, and interlocking pin which allows the valve to dispense fuel. If the plastic cover is not compressed, the interlock pin will not engage to allow the valve to open. The nozzles do not incorporate a vapor return and shall only be used at certified On-Board Refueling Vapor Recovery (ORVR) facilities. All ORVR facilities are subject to the requirements of CP-207, which includes the requirement to comply with low permeation standard for hose dispensing.

APPLICATION: OPW Model 14E ECO automatic closing hose nozzle valve intended for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi at ORVR facilities.

CERTIFICATION: Certified as enhanced conventional nozzles for use at certified ORVR facilities.

CERTIFICATION No. 005-0021:0005

DATE ISSUED: July 26, 2007

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Models V and *VLX (New or Rebuilt) Coaxial Vapor Recovery Dispensing Nozzles. Devices are automatic hose nozzle valves intended for use with flammable liquid dispensing devices where the working pressure does not exceed 50 psi. These nozzles are designed to be used with coaxial hose assemblies in which the center hose delivers the product to the nozzle and outer hose returns the collected vapors. An Underwriter Laboratories Inc. listed adapter designed to be used with twin hose systems is available. The product delivery portion of the nozzle utilizes a sensing port located at the end of the spout. When the level of fuel reaches this sensing port the nozzle automatically shuts off. The nozzle is also equipped with a three (3) position hold open latch to control product flow. The vapor recovery portion of the nozzles contains a vapor valve and a vapor pressure sensing diaphragm. The vapor valve prevents the loss of product vapors to the atmosphere when the nozzle is not in use. The vapor pressure sensing diaphragm shuts the nozzle off if the vapor flow path is restricted by product or kink in the vapor return section of the coaxial hose. The nozzles are equipped with a one-piece molded bellows and *revised with a more generous radii faceplate. *Improved face seal adapter which has a slot to drain liquid and other geometry changes for improved assembly. The sealing pressure is provided by a pre-loaded ten (10) pound spring that maintains the same pressure over the required one (1) inch travel distance to insure a fill pipe seal and to release the “no-seal, no-flow” interlocking device. *A new link arm and stronger spring was added to the interlock. If the nozzle is removed from the fill pipe opening while product is being dispensed, the bellows will release causing the nozzle to shut off. Revised bellows spring, retaining cable, spring seat and valve operator. The nozzles are also provided with an overpressure shutoff system which shuts off the flow of liquid when the vapor pressure at the outlet exceeds ten (10) inches of water column. Both the bellow interlock and the over pressure shut off system operate independently of vacuum operated full tank automatic shut off system. The Model VLX nozzle is equipped with a fuel extraction device to remove any liquid that may have accumulated in the vapor hose. A special plastic tube with a self-cleaning filter on the suction end is inserted into the vapor hose, then connected to the nozzle. The nozzle’s venturi action “sucks-up” the accumulated fuel in the vapor recovery hose and transfers it to the discharge portion of the nozzle.

APPLICATION: Husky Model V and Model *VLX (New or Rebuilt) automatic nozzles are designed to be used to be used on balanced type vapor recovery systems where

the working pressures do not exceed 50 psi and are equipped with coaxial vapor recovery hose assemblies.

CERTIFICATION: Certified as Coaxial Vapor Recovery Dispensing Nozzles for use with Balance Type Vapor Recovery Systems.

CERTIFICATION No. 005-0021:0500

DATE ISSUED: February 6, 2026

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Husky *Models 6025 ECO, 6025 ECO E25, 6025 CW and 6025 ECO CW E25 Hose Nozzle Valves. Models are automatic closing hose nozzle valves intended for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi. *Models 6025 ECO and 6025 CW are for use with gasoline and ethanol/gasoline blends up to and including 10% ethanol. *Models 6025 ECO E25 and 6025 CW E25 are for use with gasoline and ethanol/gasoline blends up to and including 25% ethanol.

These nozzles are designed to shut off when the flow of liquid in the tank is full. The valve is provided with a lever operated latch that may be set to hold the valve open.

The valve incorporates a spring interlock feature. This feature is a system of components that allow the nozzle to dispense fuel when activated. The system is activated during the refueling process when the customer inserts the hose nozzle spout into the fill tube on an automobile. As the spout enters the fill tube a series of components which include a splash guard, a spring and base, become compressed which translates to a force to a slide, collar, and interlock pin which allows the valve to dispense fuel. If the plastic cover is not compressed, the interlock pin will not engage to allow the valve to open.

The nozzles do not incorporate a vapor return and shall only be used at certified On-Board Refueling Vapor Recovery (ORVR) facilities. All ORVR facilities are subject to the requirements of CP-207, which includes the requirement to comply with low permeation standard for hose dispensing.

The Interlock Screw will be stainless steel; Latch Spring Clip material changed to 17-7 stainless steel; EZ Lever has material removed for clearance to a spring; Spout Bushing has a slight taper added to outside diameter; Spout Tube has slight taper added for better sealing; Diaphragm Spring material changed to 302 stainless steel; Foam Seal removed from nozzle assembly; Nozzle casting has inlet extended 0.2", stem hole enlarged, manufacturing locating feature added, and four screw holes changed from triangular to round; Packing Bushing added to the assembly for clearance; and Packing Seal made shorter. Check valve model 3N1 is Acetal Celcon M90 or 2011-T3 Aluminum. *Models 6025 ECO and 6025 CW comply with the applicable requirements in UL 2586,

2nd edition. *Models 6025 ECO E25 and 6025 CW E25 comply with the applicable requirements in UL 2586A, 2nd edition.

APPLICATION: Husky Models are intended for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi at ORVR facilities.

CERTIFICATION No. 005-0030:0008

DATE ISSUED: March 20, 1995

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Models 11VAA-41, 11VAA-51, 11VAA-53 and 11VAA-61 for New Nozzles and Models 11VAA-41R, 11VAA-51R, 11VAA-53R, and 11VAA-61R for Rebuilt Nozzles.

Devices are automatic closing type Vapor Recovery Nozzle Valves with hold open devices intended for use with flammable liquid dispensing devices where the working pressure does not exceed 50 psi.

The nozzle valve can be manually opened only after the liquid product, under pressure from a pump, is applied to the inlet. The valve may then be held open either manually or by a hold open device.

The fulcrum end of the lever is attached to the base of a spring-loaded latch plunger. The upper end of the plunger holds three (3) steel balls. In normal operation, these balls are engaged with the latch ring by a spring-loaded latch pin.

During operation, the valve stem is depressed lifting the main poppet and allowing gasoline to flow through the valve. The valve is provided with a pressure diaphragm subassembly which will not allow operation of the nozzle valve unless liquid pressure is introduced into the valve inlet.

A diaphragm is mounted to the underside of the diaphragm cup washer dividing the vacuum cavity. This diaphragm is attached to the latch pin which inserts into the latch plunger.

The outlet of the valve is provided with a venturi assembly. Part of this assembly is a drilled passageway leading to a cavity above the diaphragm. A secondary passageway connects through the vacuum tube assembly which terminates near the outer end of the valve spout and serves to vent the cavity.

When the outlet of the valve spout is blocked by liquid, the venturi assembly creates a vacuum in the upper portion of the vacuum cavity. This vacuum raises the diaphragm, and in turn, the latch pin, allowing the three (3) steel balls to move to the center of the latch plunger. The latch plunger is released and travels downward also allowing the stem to move downward and shut off the flow of liquid. The shock of the movement releases the trigger and enables the plunger to return to its reset position.

An additional passageway is provided in the venturi assembly leading to the upper vapor path for connection of the evacuation tube and check valve assembly. During the flow of the liquid, a vacuum is generated to draw liquid through this tube from the " bend " in a typical coaxial hose assembly. The Model 11VAA-41 has the evacuation tube terminated in a swivel type connection at the inlet of the check valve assembly.

A vapor check valve is provided near the spout assembly which, under a flow condition, opens and allows the dispenser vacuum pump to draw vapor through the perforated nozzle spout/vapor path for return to the storage tank.

The nozzle spout assembly is equipped with a shear section to permit breakaway should the valve be subjected to excessive bending load.

Nozzle Models 51 and 53 are identical to Models 61 and 41 except they are equipped with sight-ports on each side of the body for viewing fuel during dispensing.

Rebuilt nozzles are identical to the new nozzles, except the suffix letter "R" immediately follows the suffix numerals.

APPLICATION: To be installed in conjunction with dispensers that are part of a vacuum assisted vapor recovery system or installed on dispensers retrofitted with a listed vacuum assisted vapor recovery system.

CERTIFICATION: Certified as vapor recovery nozzle valves for use in a Vacuum Assisted Vapor Recovery System.

NOTE: This certification is a cross listing of the OPW 11VAA Series Nozzles and is manufactured under OPW permission to CATLOW. This nozzle and listing are identical to CSFM Certification No. GVRC 005:008:049.

CERTIFICATION No. 005-0031:0012

DATE ISSUED: February 27, 1995

MANUFACTURER: Richards Industries, Inc.

129 Manufacturers Road, Rockwood, TN 37854

Contact: Larry Wohlford (615) 354-3222

DESIGN: Models 7033 and 7034 Spout Assemblies. Models replacement spout assemblies used on Emco Wheaton's Nozzle Model Numbers A4000, A4001, A4002, and A4003. The nozzles consist of a 9 5/16-inch-long aluminum spout with an inner aluminum vent tube, vent tube connector, locknut ring, spout ring, O-ring, and bellows clamp. Each spout is designed to fracture at the weak section groove when subjected to a right angle pull force of not more than 150 lbs.

APPLICATION: Intended for installation on existing Emco Wheaton fuel dispensing nozzles. The following part numbers are compatible with the following nozzles: model 7033 leaded is compatible with A4000 and A4001. Model 7034 unleaded is compatible with A4002 and A4003.

CERTIFICATION: Certified for use on Emco Wheaton Flammable liquid hose nozzle valves as described above.

CERTIFICATION No. 005-0044:0010

DATE ISSUED: July 29, 2013

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VST-EVR-NBcc Hose Nozzle Valve. Model is a vapor recovery and automatic type hose nozzle valve with a hold-open latch device for flammable fluids. The “cc” indicates the color code of the scuff guard. This valve is an automatic self-closing type hose-nozzle valve with a female coaxial type connection and vapor return capabilities. It is intended for use with flammable liquid dispensing devices arranged for vapor recovery. The nozzle is equipped with the usual automatic mechanism designed to shut off the flow of liquid when the automobile tank is full. It includes a shear section in the spout to permit breakaway should the valve be subjected to excessive bending load, a spring-loaded latch with a secondary hold-open release mechanism, which may be set to hold the valve open, and a vapor return passage designed for collection of saturated vapors by means of a “tight seal” with the automobile fill opening.*

APPLICATION: The nozzle valves shall be used only with listee’s VST-EVR compliant products. (VST’s EVR hoses and safety breakaways). The inner liquid line is rated 50 psi maximum, and the outer vapor return line is rated ½ psi maximum.

CERTIFICATION: Certified as a vapor recovery nozzle valve for use with VST Phase II EVR systems.

NOTE: *The internal interlock mechanism will allow the nozzle to be fail-safe, in the event of an internal interlocking spring failure.

CERTIFICATION No. 005-0044:0503

DATE ISSUED: June 11, 2019

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Models VST-NV-NDcc, VST-NV-NDccR, VST-DS-NDcc, VST-DS-NDccR Hose Nozzle Valves. Models are Vapor Systems Technologies ENVIRO-LOC Enhanced Conventional Nozzle (ECO) automatic closing type vapor recovery nozzles for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi.

These nozzles are designed to shut off when the flow of liquid in the tank is full. The valve is provided with a lever operated latch that may be set to hold the valve open.

The valve incorporates a spring interlock feature. This feature is a system of components that allow the nozzle to dispense fuel when activated. The system is activated during the refueling process when the customer inserts the hose nozzle spout into the fill tube on an automobile. As the spout enters the fill tube a series of components which include a splash guard, a spring and base, become compressed which translates to a force to a slide, collar, and interlocking pin which allows the valve

to dispense fuel. If the plastic cover is not compressed, the interlock pin will not engage to allow the valve to open.

The nozzles do not incorporate a vapor return and shall only be used at certified On-Board Refueling Vapor Recovery (ORVR) facilities. All ORVR facilities are subject to the requirements of CP-207, which includes the requirement to comply with low permeation standard for hose dispensing.

Models:

Service Station Type VST-NV-NDcc automatic closing type with or without latch open device.

Rebuilt Service Station Type, VST-NV-NDccR automatic closing type with or without latch open device.

Service Station Type, VST-DS-NDcc automatic closing type with or without latch open device.

Rebuilt Service Station Type, VST-DS-NDccR automatic closing type with or without latch open device.

APPLICATION: Models are intended for use with power operated flammable liquid dispensing devices where the working pressure does not exceed 50 psi at ORVR facilities.

CERTIFICATION: Certified as ECO nozzles for use at certified ORVR facilities.

CERTIFICATION No. 005-0046:0001

DATE ISSUED: March 17, 1992

MANUFACTURER: M. Carder Industries

1584 Fenpark Drive, Fenton, MI 63026

Contact: E. Leanart Poli (314) 343-8770 Fax (314) 343-8805

DESIGN: Models SEV4L and SEV4U Hose Nozzle Spout Replacement Assemblies.

Model SEV4L spout assemblies are for use with Emco Wheaton, Inc. lead gasoline vapor recovery dispensing nozzles A4000 (GVRC 005:007:022) and A4001 (GVRC 005:007:023) only.

Model SEV4U spout assemblies are for use with Emco Wheaton, Inc. unleaded gasoline vapor recovery dispensing nozzles A4002 (GVRC 005:007:022) and A4003 (GVRC005:007:023) only.

APPLICATION: For use only in products where the acceptability of the combination is determined by Underwriters' Laboratories Inc. These nozzle spouts assemblies have been approved for use with Listed Emco Wheaton Inc. Gasoline Vapor Recovery Dispensing Nozzle Models A4000, A4001, A4002, and A4003.

CERTIFICATION: Certified as spout replacement nozzles for use with gasoline vapor recovery dispensing nozzle where the acceptability of the combination has been approved by Underwriters' Laboratories.

CERTIFICATION No. 005-0051:0001

DATE ISSUED: December 15, 1994

MANUFACTURER: Saber Equipment Corp.

111 Research Drive, Stratford, CT 06497

Contact: William Gowrie (203) 337-1422 Fax (203) 337-1470

DESIGN: Model SABER/OPW TURBO NOZZLE ASSEMBLIES. Models (with required components) are electrically power operated vapor recovery nozzles used on vacuum assist systems, The nozzles come in (3) three basic configurations (1) non-display, (2) display and (3) display with a push to start button. The display model's includes a Liquid Crystal Display (LCD) on the top portion of the nozzle handle. The nozzle display shows fuel dispensed and total price. The nozzles that include the push to start feature on the display are intended as a back-up safety feature and do not replace the dispenser switch required by NFPA 30.

Each Nozzle requires the following components to properly function per the Manufacturers design; inverted or coaxial hose assemblies, power supply, AC cable, DC harness, electrical adaptor (with or without vapor valve), boot adaptor.

The acceptable configurations have been tested and approved by UL and reviewed and certified by the California State Fire Marshal as to applicability and compatibility of the various components. See application chart below.

The "X" in any column indicates minor alterations to the component or system configuration. Example, the "X" in the nozzle specification covers both the display and non-display type nozzles with either the straight or 8 1/2-degree bent spouts.

APPLICATION:

DISPENSER APPLICATIONS

Equipment Type	Wayne	Gilbarco	Tokhiem
Nozzles	NXX1XX	NXX1XX	N211X
Power Supply	P11000	P11000	P21X00
Hose (Coaxial)	HXJXXX	HXJXXX	HXJXXX
	HXKXXX	HXKXXX	HXKXXX
Hose (INV)	HXAXXX	HXAXXX	HXAXXX
	HXBXXX	HXBXXX	HXBXXX
	HXCXXX	HXCXXX	HXCXXX
Electrical Adaptor (Coaxial)	A01200	A01200	A01200
Electrical Adaptor (INV)	A02200	A02200	A02200
Vapor Valve (Coaxial) with electrical adaptor	A01100	A01100	A01100
Vapor Valve (INV) with electrical adaptor	A02100	A02100	A02100
Boot Adaptor	B0041X	B0021X	B0031X
	B0042X	B0022X	B0043X
AC Harness	Z00001	Z00002	Z00001
DC Harness	D0021X	D0021X	D0031X
	D0041X	D0021X	D0031X

Communications Adaptor	C20000	None	C20000
Communications Harness	C24002	None	C22010
	C24006	None	C22020
Dispenser Models	VISTA SERIES	AL1220(MPD)	H413BIVF1
	DL SERIES	AL2220(MPD)	H414BIVF1
	AK1230(MPD)	H422BIVF1	None
	AK2230(MPD)	H426BIVF1	None
	BO4004(ADV)	H428BIVF1	None
	BO5004(ADV)	H411BIVF1	None
	BO4104(ADV)	None	None
Retrofit Kits	S21000(VISTA)	S11000(ADV)	S31000
Retrofit Kits	S2200(DL)	S12000(MPD)	S31000

CERTIFICATION: Certified as vapor recovery nozzle valves and may only be used with UL Listed and California State Fire Marshal Certified Components that have been reviewed and approved to be used with the Saber Equipment Corp., Turbo (Electric) Nozzles.

CERTIFICATION No. 005-0057:0001

DATE ISSUED: July 21, 2000

MANUFACTURER: Synchrotek Automation, Inc.

30 Alden Road #2, Markham, ON L3R2S1 Canada

Contact: Les Poroszlay (905) 470-9568 Ext: 24 Fax (905) 470-0135

DESIGN: Model Synchrotek Fastflo 3 Vapor Recovery Nozzle. Model includes the Synchrotek Fastflo 3 nozzle body, a multi-functional spring-loaded shroud, a nozzle-in-place (NIP) switch, and a pneumatically actuated on-off valve (ball or piston).

The complete “Fastflo 3” system dispenser includes an American Controls Inc./Anguil Environmental Systems, Inc. catalytic oxidizer (OSFM Certification No. 005-0058:0001) as well as the “Synchrotek Fastflo 3” gasoline vapor recovery dispensing nozzle.

The “Fastflo 3” system is specifically designed for automobile assembly plants with high volume vehicle production. It is not intended for use by the general public at retail gasoline outlets. The nozzle is used to dispense predetermined batches (2 to 12 U.S. gallons) of gasoline and/or diesel in assembly line fuel tanks where the working pressure does not exceed 50 psig.

The nozzle is inserted into the fuel intake tube manually by the operator. Upon nozzle insertion, the operator selects the fuel type and batch quantity by depressing the proper color coded “cycle start” button. The nozzle assembly is designed to follow the vehicle along the assembly line during the fueling duration, automatically shut off, retract from the vehicle, then return to the start position.

APPLICATION: When the Fastflo 3 system dispenser is activated, gasoline vapors are drawn from the nozzle and assembly, through flexible hose and rigid piping into the catalytic oxidizer blower and discharged into the system’s heat exchanger. Gasoline vapors are burned to carbon dioxide and water vapor.

CERTIFICATION: Certified for use and installation in automobile and truck assembly plants only, where a vapor recovery system is required.

CERTIFICATION No. 005-0063:0505

DATE ISSUED: January 2, 2025

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 900 Nozzle. Model is a vapor recovery automatic closing gasoline hose nozzle valve that incorporates patented valving which allows these nozzles to distinguish between vehicles which contain ORVR components and those which do not. This sensing results in restricting the flow through the vapor recovery circuitry to limit the amount of air allowed to return to the gasoline storage tanks when refueling ORVR equipped vehicles.

The nozzle valve incorporates three (3) automatic shut off features. One stops the flow of liquid when the tank is full. The second prevents the flow of liquid if the boot (splashguard) is not depressed. The third does not allow liquid flow unless the inlet is pressurized to 5 (+ 3) psi. The nozzle valves are equipped with a spring loaded two position hold-open latching device. The spout assembly is provided with a shear section, which will break away, should a valve be subject to excessive bending.

An alternate material for the stem seal *or o-rings is UL approved V9704 molded from Fusion Inc. The push rod coating has been updated from zinc to nickel. Add 301 stainless steel push plate as an alternate material. Sealing face material change to Estane 58206 Nat 060 from Estane 58206. Sealing face (279) and boot (6395/6397) alternate material Estane 58206 Nat 085 with black colorant. Add 316L stainless steel lever pin as an alternate material.

APPLICATION: The nozzles are intended only for use with Listed flammable liquid dispensing devices that are originally provided with outlets that are compatible with Healy System, Inc. devices. Additionally, the valves are only intended for aspirator assist vapor recovery systems. An aspirator assist system is one where the vapor vacuum is produced by an aspirator unit.

CERTIFICATION: Certified as a vapor recovery nozzle valve for use with Phase II vapor recovery systems.

Hose and Hose Assemblies

CERTIFICATION No. 005-0033:0004

DATE ISSUED: March 19, 2002

MANUFACTURER: Dayco Products, Inc.

PO Box 3258, Springfield, MI 65808-3258

Contact: Jeff Berger (417) 881-7440 Fax (417) 888-1628

DESIGN: Model 7574 Petroflex 2000 Coaxial Hose Assembly. Model consists of a 5/8-inch ID inner liquid hose located within an outer 1 1/2-inch OD vapor return hose. The inner hose is designed to handle gasoline being dispensed into the motor vehicle with the outer hose used for returning displaced gasoline vapors to the storage tank(s). Special swivel connecting fittings on the inlet and outlet are for connection with a suitable vapor recovery hose nozzle valve and with gasoline dispenser discharge lines and vapor return lines.

This hose assembly is provided with an optional Venturi assembly mounted in the inner liquid line. As fluid flows through the inner hose, a vacuum occurs at the Venturi within the Venturi assembly. Three (3) synthetic rubber valves are ported to the Venturi to allow flow only from the outer hose cavity to the liquid line. Should any condensed liquid exist in the outer vapor cavity, the vacuum at the rubber valves draws the liquid into the liquid flow and is dispensed with the normal liquid flow. This prevents shutoff of nozzle valve due to vapor passage restriction caused by condensed liquid in the vapor passage.

REVISION: Hose assemblies produced after the November 16, 1993 revision date of this certification will be provided with three (3) nylon hose tubes of different lengths (with Sintered brass filters) connected to the venturi spider to prevent liquid build up in the vapor hose portion of the assembly.

Electrical continuity for hose assembly is achieved by bending a length of the static wire of the inner hose to the inside of the hose before installation of the end fitting.

NOTE: Whip hoses may have rigid couplings on each end of the assembly.

APPLICATION: Designed to assist in the efficiency of recovering gasoline vapors in displacement or balance type vapor recovery systems using certified dispensing nozzles and fittings.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0033:0005

DATE ISSUED: November 16, 1991

MANUFACTURER: Dayco Products, Inc.

PO Box 3258, Springfield, MI 65808-3258

Contact: Jeff Berger (417) 881-7440 Fax (417) 888-1628

DESIGN: Model 7282 SUPERFLEX 2000 PLUS Inverted Coaxial Hose Assembly. Model consists of a 5/16-inch ID inner vapor return hose located within an outer 1 7/32-

inch OD liquid supply hose. The inner hose is designed to handle gasoline vapors being returned from the vehicle to the storage tank, with the outer hose used for supplying liquid gasoline to the vehicle. Chrome plated brass nut swivels are provided on the inlet and outlet for connection with a suitable vapor recovery hose nozzle.

Electrical continuity for hose assembly is achieved through the reinforced braid that carries 24 wire strands.

APPLICATION: Dayco's model 7282 Superflex Plus is an inverted coaxial vapor hose assembly with the fuel transported in the outer hose and gasoline vapors in the inner hose. The hose assemblies are intended for use with dispensing devices with vacuum assisted vapor recovery capability.

CERTIFICATION: Certified as an inverted coaxial hose assembly for use with Phase II vapor recovery systems

CERTIFICATION No. 005-0033:0006

DATE ISSUED: November 28, 1994

MANUFACTURER: Dayco Products, Inc.

PO Box 3258, Springfield, MI 65808-3258

Contact: Jeff Berger (417) 881-7440 Fax (417) 888-1628

DESIGN: Model 7292 SUPERFLEX 4000 PLUS Inverted Coaxial Hose Assembly. Model consists of a 3/4-inch ID outer hose with a 5/16" ID inner tube. The outer hose is designed to handle gasoline being dispensed into the motor vehicle. The inner tube is used for returning gasoline vapors to the storage tank.

Special swivel couplings on the ends are for connection with suitable vapor recovery system accessories and with gasoline dispenser discharge and vapor return lines.

Electrical continuity for hose assembly is achieved through the reinforced braid that carries 24 wire strands.

APPLICATION: Dayco's model 7292 Superflex 4000 Plus is an inverted coaxial vapor hose assembly with the fuel transported in the outer hose and gasoline vapors in the inner tube. The hose assemblies are intended for use with dispensing devices with vacuum assisted vapor recovery capability.

CERTIFICATION: Certified as an inverted coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0033:0007

DATE ISSUED: March 1, 1998

MANUFACTURER: Dayco Products, Inc.

PO Box 3258, Springfield, MI 65808-3258

Contact: Jeff Berger (417) 881-7440 Fax (417) 888-1628

DESIGN: Model 7246 Flex-Ever Ultimate VR Inverted Coaxial Hose Assembly. The hose assembly consists of a 3/4-inch ID outer hose with a 5/16" ID inner tube. The outer hose is designed to handle gasoline being dispensed into the motor vehicle. The inner tube is used for returning gasoline vapors to the storage tank. Special swivel couplings on the ends are for connection with suitable vapor recovery system accessories and with gasoline dispenser discharge and vapor return lines. Note: The Model "7246 Flex-

Ever Ultimate VR" hose assembly has been modified to add a spring guard approximately 12 inches long placed over the inner tube to prevent the tube from kinking if the hose is bent sharply at the nozzle end. The Model 7246 Flex-Ever Ultimate VR" hose assembly may incorporate rigid couplings on both ends of the whip hose (only).

Electrical continuity for the hose assembly is achieved through the reinforced double helix wires. Each helix is exposed approximately a 1/4 inch on each end of the hose before installation of the outer hose insert provides for the metal-to-metal contact.

APPLICATION: Dayco's model 7246 Flex-Ever Ultimate VR is an inverted coaxial vapor hose assembly with the fuel transported in the outer hose and gasoline vapors in the inner tube. The hose assemblies are intended for use with dispensing devices with vacuum assisted vapor recovery capability.

CERTIFICATION: Certified as an inverted coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0033:0008

DATE ISSUED: January 12, 1999

MANUFACTURER: Dayco Products, Inc.

PO Box 3258, Springfield, MI 65808-3258

Contact: Jeff Berger (417) 881-7440 Fax (417) 888-1628

DESIGN: Model 7253 Flex-Ever Ultimate II VR Inverted Coaxial Hose Assembly. The hose assembly consists of a 7/8-inch ID outer hose with a 5/16" ID inner tube. The outer hose is designed to handle gasoline being dispensed into the motor vehicle. The inner tube is used for returning gasoline vapors to the storage tank.

Special swivel couplings on the ends are for connection with suitable vapor recovery system accessories and with gasoline dispenser discharge and vapor return lines. Note: The Model "7253 Flex-Ever Ultimate II VR" hose assembly has been modified to add a spring guard approximately 12 inches long placed over the inner tube to prevent the tube from kinking if the hose is bent sharply at the nozzle end. The Model 7253 Flex-Ever Ultimate II VR" hose assembly may incorporate rigid couplings on both ends of the whip hoses (only).

Electrical continuity for the hose assembly is achieved through the reinforced double helix wires. Each helix is exposed approximately a 1/4 inch on each end of the hose before installation of the outer hose insert provides for the metal-to-metal contact.

APPLICATION: Dayco's model 7253 Flex-Ever Ultimate II VR is an inverted coaxial vapor hose assembly with the fuel transported in the outer hose and gasoline vapors in the inner tube. The hose assemblies are intended for use with dispensing devices with vacuum assisted vapor recovery capability.

CERTIFICATION: Certified as an inverted coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0036:0001

DATE ISSUED: January 19, 2018

MANUFACTURER: ContiTech USA Inc
2701 Omaha Ave, Norfolk, NE 68701-4421
Contact: Andy Speidel

DESIGN: Model Maxxim Premier Coaxial Hose Assembly. Model consists of a 5/8-inch hose composed of black Nitrile rubber, Compound Number CC-228, or CC338, with a synthetic rubber cover of black Nitrile/PVC Compound Number CC-109. Reinforcement steel braid applied directly over the synthetic rubber tube which electrical bonding is achieved throughout.

The 1.32-inch outer vapor return tube is a black or green polyurethane material consisting layers of Estane 58206 with the outer layer containing 2% carbon black. There is a polyester reinforcement between the layers, 18 threads longitude and 2 spiral ends. The material is layered over a spiral wound 1/16-inch steel wire, which is coated with a 0.01-inch-thick polyurethane. The spiral wound wire has a pitch of 0.440 inch.

The ContiTech Model Maxxim Premier can be supplied with an alternate inner hose spider that does not rotate for use with Husky V1 or VLX1 nozzles.

The ContiTech Model Maxxim Premier Plus hose assembly is provided with a venturi assembly attached to the inner hose. This assembly is designed to draw the liquid, resulting from splash back or condensation between the inner and outer hose, into the liquid (inner) hose through the use of a needle check valve. The venturi pick-up design includes a saddle attached to the inner hose with 2 pick-up filters staggered 2 inches in length and 180 degrees apart. Metal pinch clamps on the slurpy tube connections are optional. Options for connecting the slurpy tube to the venturi include a 3-piece soldered brass elbow, a 1-piece die cast zinc elbow, or a 1-piece brass elbow.

The ContiTech Model Maxxim Premier Ultra coaxial hose assembly has a 1.32-inch outer vapor return tube identical to the Maxxim Premier Model, except with a spiral wound wire with a pitch of 0.350 inch and 75 durometers polyurethane wire coat.

The ContiTech Model Maxxim Premier Ultra coaxial hose assembly can be provided with or without the venturi assembly described in Model Maxxim Premier Plus.

The inlet and outlet hoses are equipped with special swivel connection fittings for making connection with coaxial type vapor recovery hose nozzles and dispenser/vapor return line.

The maximum length of the curb hose, hose swivel, safe break valve, and whip hose combined shall not exceed 15 feet.

APPLICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems. May be used with certified displacement or balance type vapor recovery systems in conjunction with certified dispensing nozzles and fittings.

CERTIFICATION No. 005-0036:0002

DATE ISSUED: January 12, 1999

MANUFACTURER: ContiTech USA Inc
2701 Omaha Ave, Norfolk, NE 68701-4421
Contact: Andy Speidel

DESIGN: Model Flexsteel Vapor Assist Coaxial Hose Assembly. Model is intended for use with dispensing devices with vacuum assisted vapor recovery capability.

This hose assembly consists of two (2) hoses. The outer hose is designed to handle gasoline being dispensed into a vehicle and the inner hose is used for returning displaced gasoline vapors to the storage tank.

The hose assembly may be provided with swivel or non-swivel couplings at the dispenser connection point and just before and after the breakaway connection. A swivel connection must be provided at the dispensing nozzle connection. The couplings are for connection with approved vapor recovery accessories and with gasoline dispenser discharge and vapor return lines. NOTE: An alternate single turn retaining ring is approved to hold the swivel nut on the outer hose fitting.

The outer hose consists of a 3/4 inch or 7/8 inch Inside Diameter synthetic rubber tube with a brass plated steel wire braid applied directly over the tube. The tube and wire braid are surrounded by a minimum 3/64-inch-thick synthetic rubber cover. Maximum pressure rating of the outer hose is 50 psi.

Electrical continuity is achieved through the use of a "U" shaped metal staple which is inserted into the cross-section of the hose where the metal braid is located and to the outside of the hose before the installation of the coupling. Resistance shall be less than 0.5 megohm.

Two (2) alternate inner hoses are available.

1. Type 11 nylon, 5/16-inch ID hose with 3/64-inch wall thickness. The Nylon is manufactured by Atochem Inc. and is designated as BESNO P40.

2. Consists of a 5/16-inch ID synthetic rubber tube with brass plated steel wire braid applied directly over the tube. The tube and wire braid are surrounded by a 1/32-inch synthetic rubber cover. Note: A one-piece brass crimp-on fitting is approved as an alternative fitting for the rubber inner hose.

Maximum pressure rating for both alternate inner hoses is 5 psi.

Hose assemblies are manufactured in various lengths up to a maximum of twelve (12) feet. Lengths greater than twelve (12) feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used with approved vacuum assisted vapor recovery systems only and related components/devices approved for use with that type of system.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vacuum assisted vapor recovery systems in conjunction with approved vacuum assisted type devices.

CERTIFICATION No. 005-0037:0002

DATE ISSUED: July 1, 1992

MANUFACTURER: HBD Industries/Thermoid
One Industrial Lane, PO Box 310, Oneida, TN 37841-0310
Contact: Robert Shelton

DESIGN: Model Superlite "V" Hi-Flo Coaxial Hose Assembly. Model consists of an inner hose to handle gasoline dispensing, an outer hose to return displaced gasoline vapors to the storage tank, and a venturi assembly.

The inner hose is 5/8-inch ID constructed from a black synthetic nitrile rubber Compound Number 1563-6 with steel braid firmly adhered directly to the tube and cover. The steel braid provides the electrical bond to the couplings. Inner hose cover is constructed of the same synthetic nitrile rubber.

The outer hose is 1 1/4-inch ID constructed from corrugated molded polyester elastomer Hytrel 5556. The outer hose encloses both the inner hose and venturi pickup tube.

The venturi assembly is designed to draw liquid, resulting from splash-back and/or condensation between the inner and outer hoses, into the liquid (inner) hose at the outlet coupling.

The inlet and outlet end of the hose assembly are equipped with special swivel connection fittings for making connection with coaxial type vapor recovery hose nozzle valves and dispenser discharge/vapor return lines.

Maximum operating pressure is 50 psig.

Hose assemblies are available in lengths of 8 feet through 12 feet, 6 inches in increments of 6 inches.

APPLICATION: For use with a balanced motor fuel vapor recovery system incorporating approved vapor recovery dispensing devices and hose nozzle valves.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II Balanced Vapor Recovery Systems.

CERTIFICATION No. 005-0037:0003

DATE ISSUED: June 15, 2000

MANUFACTURER: HBD Industries/Thermoid
One Industrial Lane, PO Box 310, Oneida, TN 37841-0310
Contact: Robert Shelton

DESIGN: Model Hi-Vac Co-Ax Hose Coaxial Hose Assembly. Model is intended for use with dispensing devices with vacuum assisted vapor recovery capabilities.

The hose assembly consists of two (2) hoses. The outer hose is designed to handle gasoline being dispensed into a vehicle and the inner hose is used for returning displaced gasoline vapors to the storage tank. Special swivel couplings on the ends are for connection with suitable vapor recovery accessories and with gasoline dispenser discharge and vapor return lines.

The outer hose consists of a 7/8-inch ID synthetic rubber tube with a minimum thickness of 0.047 inches. A brass plated carbon steel wire reinforcement is applied directly over the tube. The wire braid has 24 carriers with eight 0.012-inch diameter wires. A synthetic rubber cover with a minimum thickness 0.047 inches is applied directly over the wire braid. Maximum working pressure rating of the outer hose is 50 psi.

Electrical continuity is achieved by bending a single braid of the wire enforcement beyond the end of the hose prior to the installation of the coupling over the wire/hose covering. Resistance shall be less than 200 ohms.

The inner hose consists of a 5/16-inch ID synthetic rubber tube with brass plated carbon steel wire reinforcement applied directly over the tube. A synthetic rubber cover is then applied directly over the tube/wire reinforcement. Maximum pressure rating of the inner hose is 5 psi.

NOTE REVISION OF 6/15/2000: Alternate inner-hose construction will consist of a 5/16-inch ID synthetic rubber tube with 20 ends of high tensile polyester applied in a spiral construction directly over the tube. A synthetic rubber cover is then applied directly over the tube/ polyester reinforcement. Maximum pressure rating of inner hose is 5 psi.

Hose assemblies are manufactured in various lengths up to a maximum of twelve (12) feet. Lengths greater than twelve (12) feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used only with approved vacuum assisted vapor recovery systems and related component equipment/devices approved for use with that type of system.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vacuum assisted vapor recovery systems with approved vacuum assisted type dispensing devices and hose-nozzle valves.

CERTIFICATION No. 005-0037:0004

DATE ISSUED: August 22, 1994

MANUFACTURER: HBD Industries/Thermoid
One Industrial Lane, PO Box 310, Oneida, TN 37841-0310
Contact: Robert Shelton

DESIGN: Model Hi-Vac S Hose Coaxial Hose Assembly. Model is intended for use with dispensing devices with vacuum assisted vapor recovery capabilities.

The hose assembly consists of two (2) hoses. The outer hose is designed to handle gasoline being dispensed into a vehicle and the inner hose is used for returning displaced gasoline vapors to the storage tank. Special swivel couplings on the ends are for connection with a suitable vapor recovery accessory and with gasoline dispenser discharge and vapor return lines.

The outer hose consists of a 53/64-inch ID synthetic rubber tube with a one brass plated steel wire reinforcement braid applied directly over the tube. The hose is similar to Model "Hi-Vac Co-Ax", except the outer hose has a reduced inside diameter and a steel braided reinforcement. Maximum operating pressure rating of the outer hose is 50 psi.

The inner hose consists of a 5/16-inch ID synthetic rubber tube with a brass plated steel wire braid applied directly over the tube which is surrounded by a synthetic rubber cover. Maximum pressure rating of the inner hose is 5 psi. Hose assemblies are manufactured in various lengths up to a maximum of twelve feet.

APPLICATION: To be used only with approved vacuum assisted vapor recovery systems and related component equipment/devices approved for use with that type of system.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vacuum assisted vapor recovery systems with approved vacuum assisted type dispensing devices and hose-nozzle valves.

CERTIFICATION No. 005-0044:0001

DATE ISSUED: June 1, 1992

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.
650 Pleasant Valley Drive, Springboro, OH 45066
Contact: Glenn Walker

DESIGN: Model VST Coaxial Hose Assembly. Model is intended for use in assisted or balanced motor fuel vapor recovery systems.

The inner hose is designed to handle gasoline being dispensed into the motor vehicle's tank. It consists of a synthetic rubber tube of black rubber, Specification Number NMX-896, surrounded by fabric braid reinforcement and covered with black synthetic rubber Specification Number NMX-896. The braid reinforcement adheres firmly to the tube/cover and is provided with a stranded wire for electrical bonding. Inner hose has an inside diameter of 5/8 inches.

The outer hose is designed for returning displaced gasoline vapors to the storage tank and is composed of corrugated polyester elastomer Hytrel 5656. Outer hose has an inside diameter of 1 1/4 inches.

As an alternate construction, the inner hose material (tube and cover) may be Compound 4760 manufactured by Parker Hannifin. The outer vapor return hose and end cuffs may be Compound Riteflex 655 manufactured by Hoechst Celanese Engineering Plastic Division.

A second alternate inner hose assembly consists of a solid plastic tube approximately 0.115 inches thick surrounded by a flat clear plastic, 0.042 by 0.013 inches thick, braided reinforcement. The braided reinforcement is wound tightly around the outside diameter of the tube approximately ninety-four (94) carriers per five (5) inch length with the twelfth ribbon being replaced by a seven (7) strand stainless steel wire for electrical bonding. Continuity is achieved by bending the wire into the inside diameter of the hose before the installation of the inner hose coupling and the ferrule. The outer hose consists of plastic with a minimum of 0.025-inch wall thickness.

Special swivel connecting fittings on the inlet and outlet are for connection with approved vapor recovery hose nozzle valves and gasoline dispenser's discharge/vapor return lines.

Assemblies are manufactured in various lengths up to a maximum of twelve feet. Lengths greater than twelve feet are permitted if acceptable to authority having jurisdiction.

APPLICATION: Intended for use in displacement or balanced motor fuel vapor recovery systems with dispensing devices and hose nozzle valves incorporating coaxial type vapor recovery provisions. Shall be used only with dispensing nozzles and fittings certified by the California State Fire Marshal.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0002

DATE ISSUED: February 27, 1995

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model Safety/Check Valve integrated with a coaxial vapor recovery hose assembly. The safety/check valve is built into the vapor coupling which remains open and "invisible" during normal operation but closes and seals to prevent fuel spillage through the vapor passage into the nozzle spout should there be any malfunction or breach between the vapor and fuel lines. Activation of the safety/check valve occurs only when catastrophic damage to the hose assembly occurs.

APPLICATION: The valve is installed in the hose assembly (near the nozzle connection) and is designed to operate only when the internal hose is subject to system pressure in the vapor area of the coaxial hose assembly. The valve does not affect the

efficiency of the hose assembly and provides added protection from unwarranted or undesired fuel spillage through the vapor vents in the nozzle.

CERTIFICATION: Certified as a safety/check valve integrated with a coaxial hose assembly for use with Phase II vapor recovery systems. May be installed in any Assist Vapor Recovery Hose Assembly System previously California State Fire Marshal Certified under Certification Number GVRC 005:052:001.

CERTIFICATION No. 005-0044:0003

DATE ISSUED: February 24, 1995

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VSTA-S Swivel Union Hose Assembly. Model is intended for use with dispensing devices and hose nozzle valves incorporating "coaxial type" vapor recovery systems. This assembly is specifically designed to assist in the efficiency of recovering gasoline vapors in displacement or balanced type and vacuum assisted vapor recovery systems.

The inner hose is designed to handle gasoline being dispensed into the motor vehicle's tank. It consists of a synthetic rubber tube of black rubber, Specification Number NMX-896, surrounded by fabric braid reinforcement and covered with black synthetic rubber Specification Number NMX-896. The braid reinforcement adheres firmly to the tube/cover and is provided with a standard wire for electrical bonding. Inner hose has an inside diameter of 5/8 inches.

The outer hose is designed for returning displaced gasoline vapors to the storage tank and is composed of corrugated polyester elastomer Hytrel 5656. Outer hose has an inside diameter of 1¼ inches.

As an alternate construction, the inner hose material (tube and cover) may be Compound 4760 manufactured by Parker Hannifin. The outer vapor return hose and end cuffs may be Compound Riteflex 655 manufactured by Hoechst Celanese Engineering Plastic Division.

A second alternate inner hose assembly consists of a solid plastic tube approximately 0.115 inches thick surrounded by a flat clear plastic, 0.042 by 0.013 inches thick, braided reinforcement. The braided reinforcement is wound tightly around the outside diameter of the tube approximately ninety-four (94) carriers per five (5) inch length with the twelfth (12th) ribbon being replaced by a seven (7) strand stainless steel wire for electrical bonding. Continuity is achieved by bending the wire into the inside diameter of the hose before the installation of the inner hose coupling and the ferrule. The outer hose consists of plastic with a minimum of 0.025-inch wall thickness.

APPLICATION: The model VSTA-S is similar to the model VST except that it has an additional feature consisting of a "swivel union" that works in conjunction with "evacuative" hose nozzle valves that draw liquids that may accumulate in the "bend" or low point of the vapor hose into the flow path of the nozzle.

The VSTA-S Hose Assembly is to be used in conjunction with the following nozzles only: OPW's models 211VXS:-22, -24, -27, -29 and 11VAA:-41, -53. Husky's models VLX2 and VIVST. Catlow's models NVMNL and NVML. Model VSTA-S shall be used only with dispensing nozzles and fittings certified by the California State Fire Marshal.
CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0006

DATE ISSUED: July 29, 2016

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Models VSTA-EVR-xxx, VDV-EVR-xxx, *VSTAP-EVR-xxx, and *VDVP-EVR-xxx Coaxial EVR Balance Fuel Hoses, where "xxx" is the length of the hose in inches.

These are coaxial type hose assemblies intended for use with dispensing devices with balanced vapor recovery capability. The inner hose is designed to handle gasoline being dispensed into the motor vehicle with a rated working pressure of 50 psi maximum. The outer hose is used for returning gasoline vapors to the storage tank with a rated working pressure of ½ psi maximum. Special swivel couplings on the ends are for connection with suitable vapor recovery system accessories and with gasoline dispensing discharge and vapor return lines.

APPLICATION: Intended for use with balance type vapor recovery systems with compatible dispensing devices and hose nozzle valves. Shall be used only with dispensing nozzles and fittings certified by the California State Fire Marshal.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0502

DATE ISSUED: August 16, 2016

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model V34EV Coaxial Hose Assembly. Model consists of a Parker Hannifin Corporation Model 7282-0750 3/4" diameter, low permeable, hose assembly with separately listed couplings attached at both ends. The outer hose is designed to handle gasoline dispensed to the motor vehicle. The inner hose is designed for returning gasoline vapors to the storage tanks.

APPLICATION: Hose assemblies are intended for use only with dispensing devices and vapor recovery system accessories incorporating vacuum assist type vapor recovery.

Maximum Working Pressure - 50 PSIG

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0045:0001

DATE ISSUED: May 20, 1991

MANUFACTURER: The Gates Rubber Company

990 South Broadway, PO Box 5887, Denver, CO 80217

Contact: Layne Railsback (314) 343-8770 Fax (314) 343-8805

DESIGN: Model Kleanaire Coaxial Hose Assembly. Model is intended only for use with dispensing devices and hose-nozzle valves incorporating coaxial type vapor recovery provisions.

The assembly consists of two (2) hoses, the inner hose handles gasoline being dispensed into the motor vehicle and the outer hose returns displaced gasoline vapors to the storage tank.

The 5/8-inch ID inner hose consists of a minimum 3/64-inch-thick synthetic rubber tube of black rubber compound designated 06321, with a conductive carbon fiber layer applied directly over the tube and surrounded with a polyester fiber braid. The braid is surrounded by approximately 3/64-inch-thick synthetic cover. Maximum pressure rating of inner tube is 50 psi.

Continuity is achieved through the use of a "U" shaped metal staple which is inserted into the cross-section of the hose where the carbon fiber layer is located and to the outside of the hose before the installation of the inside coupling and ferrule. Resistance is less than 0.5 megohm.

The 1/4-inch ID outer hose is corrugated black nylon designated Huls L2124. Maximum pressure rating of the outer hose is 5 psi.

Special swivel connecting fittings on the inlet and outlet are for connection with a suitable vapor recovery hose nozzle valve and gasoline dispenser discharge/vapor return lines.

Assemblies are manufactured in various lengths up to a maximum of twelve (12) feet. Lengths greater than twelve (12) feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used in vapor recovery systems in conjunction with approved vapor recovery systems/components.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0054:0001

DATE ISSUED: October 12, 1995

MANUFACTURER: (CNS) California Nozzle Specialists Company

1234 W. 135th Street, Gardena, CA 90247

Contact: Tomas Gonzalez (310) 327-2033 Fax (310) 327-3516

DESIGN: Model Flowmaster Coaxial Hose Assembly. Model is intended for use with dispensing devices and hose nozzle valves incorporating coaxial type vapor recovery provisions.

The hose assembly consists of two (2) hoses, the inner hose designed to handle gasoline being dispensed into a vehicle and the outer hose returns displaced gasoline vapors to the storage tank. Special swivel connecting fittings on the inlet and outlet of the hose assembly are for connection with a suitable vapor recovery nozzle valves and gasoline dispenser discharge lines.

The inner hose consists of a 5/8-inch ID synthetic rubber tube of black rubber compound with a conductive carbon fiber layer applied directly over the tube. They are then surrounded by a polyester braided fabric reinforcement and covered with the same black synthetic rubber as the tube. Maximum pressure rating of the inner hose is 50 psi.

Electrical continuity is achieved through the use of a " U " shaped metal staple which is inserted into the cross-section of the hose where the carbon fiber layer is located and to the outside of the hose before the installation of the inside coupling and ferrule. Resistance is less than 0.5 megohm.

The 1 1/4-inch ID outer hose is of corrugated black nylon designated Riteflex 655 . Maximum pressure rating of the outer hose is 5 psi.

Hose assemblies are manufactured in various lengths up to a maximum of 12 feet. Lengths greater than 12 feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used only with approved dispensing devices and nozzle valves incorporating coaxial type vapor recovery provisions.

CERTIFICATION: Certified as a coaxial hose assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0003

DATE ISSUED: October 10, 2008

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 75 series (previous P/N CXU) Coaxial Hose Assembly. Model is an assembly which consists of a length of listed gasoline hose with couplings at each end and a hose clip to further ensure integrity of the vapor connection after a drive off event.

It provides the coaxial hose connection between a gasoline dispenser and a vapor recovery nozzle.

Listed gasoline hose is manufactured by any of the following: Goodyear Tire and Rubber Company, designated as Flexsteel; Dayco Products Corp., designated as 7124; HPD Ind., (Thermoid), designated as Pumpflex II.

Either end of the hose length is provided with a swivel or fixed assembly fitting. The vapor tubing part number CXU5, is an inner hose consisting of a 0.44-inch diameter or 7/16-inch nominal diameter, Nylon vapor tube provided to transport gasoline vapors drawn from the fuel tank. Gasoline hose length may vary. Maximum rated pressure is 50 psig.

APPLICATION: For use with products where the acceptability of the combination is determined by Underwriters Laboratories, Inc. This vapor recovery hose assembly is intended for use only as part of a listed Healy Systems Phase II Vapor Recovery Executive Order. The installation is covered by the CARB approved Installation Operation Maintenance Manual (IOM) within a Healy Systems Executive Order.

CERTIFICATION: Certified for use as a retrofit coaxial hose assembly for use only in products where the acceptability of the combination is determined by Underwriters Laboratories.

CERTIFICATION No. 005-0063:0503

DATE ISSUED: April 20, 2022

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 75 Series Low Perm Coaxial Hose Assembly. Model is an assembly which consists of a listed gasoline hose with couplings at each end. It provides the coaxial hose connection between a gasoline dispenser and a vapor recovery nozzle.

Listed gasoline hose is manufactured by: Veyance Technologies Inc., Designation Healy HW; and Shenyang Xinfeiyu Rubber Products Co Ltd., Designation XFY.

Either end of the hose length is provided with a swivel or fixed assembly fitting. The vapor tubing part number CXU-5, is an inner hose consisting of a 0.44-inch diameter or 7/16-inch nominal diameter, nylon vapor tube provided to transport gasoline vapors drawn from fueling to storage tank. *The inner vapor tube is manufactured from nylon 12, or nylon 11 as an alternate material.

Gasoline hose length may vary. Maximum rated pressure is 50 psig.

APPLICATION: For use with products where the acceptability of the combination is determined by Underwriters Laboratories, Inc.

CERTIFICATION: Certified for use as a coaxial hose assembly for use only in products where the acceptability of the combination is determined by Underwriters Laboratories.

CERTIFICATION No. 005-2001:0500

DATE ISSUED: November 25, 2013

MANUFACTURER: Veyance Technologies Inc

2701 West Omaha Ave, Norfolk, NE 68701

Contact: Andy Speidel (402) 644-2637 Fax (402) 644-2607

Email: andy_speidel@veyance.com

DESIGN: Model Goodyear Futura HVR Low Perm Coaxial Hose Assembly. Model is intended for use with dispensing devices with vacuum assisted vapor recovery capability.

This hose assembly consists of two (2) hoses. The outer hose is designed to handle gasoline being dispensed into a vehicle and the inner hose is used for returning displaced gasoline vapors to the storage tank.

The hose assembly may be provided with swivel or non-swivel couplings. The couplings are for connection with approved vapor recovery accessories and with gasoline dispenser discharge and vapor return lines.

The outer hose consists of a 3/4 inch Inside Diameter multi-layer tube with thermoplastic barrier layer. A brass plated steel wire braid is applied directly over the multi-layer tube. The tube and wire braid is surrounded by a minimum 3/64" inch thick synthetic rubber cover. Maximum pressure rating of the outer hose is 50 psi.

Internal hose descriptions: Type 11 nylon, 5/16-inch ID hose with 3/64-inch wall thickness. The Nylon is manufactured by ArKema Inc. Veyance Technologies Inc. material code RT: 660 and is designated as BESNO P40.

Maximum pressure rating for the inner hose is 0.5 psi.

Hose assemblies are manufactured in various lengths up to a maximum of eighteen (18) feet. Lengths greater than eighteen (18) feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used with approved vacuum assisted vapor recovery systems only and related components/devices approved for use with that type of system.

CERTIFICATION: Certified as a coaxial hose assembly for use in Phase II vacuum assisted vapor recovery systems in conjunction with approved vacuum assisted type devices.

NOTE: Formally Goodyear Tire and Rubber Company Certification Number GVRC 005:036:002

CERTIFICATION No. 005-2001:0501

DATE ISSUED: December 9, 2013

MANUFACTURER: Veyance Technologies Inc

2701 West Omaha Ave, Norfolk, NE 68701

Contact: Andy Speidel (402) 644-2637 Fax (402) 644-2607

Email: andy_speidel@veyance.com

DESIGN: Model Goodyear Futura Low Perm Conventional Hose Assembly. Model is intended for use with conventional dispensing devices.

This hose assembly consists of a hose designed to handle gasoline being dispensed into a vehicle.

The hose assembly may be provided with swivel or non-swivel couplings. The couplings are for connection with approved accessories and with gasoline dispensers.

The hose consists of a $\frac{3}{4}$ inch Inside Diameter multi-layer tube with thermoplastic barrier layer. A brass plated steel wire braid is applied directly over the multi-layer tube. The tube and wire braid is surrounded by a minimum $\frac{3}{64}$ " inch thick synthetic rubber cover. Maximum pressure rating of the outer hose is 50 psi.

Hose assemblies are manufactured in various lengths up to a maximum of eighteen (18) feet. Lengths greater than eighteen (18) feet are permitted if acceptable to authorities having jurisdiction.

APPLICATION: To be used with approved conventional gasoline dispensing systems only and related components/devices approved for use with that type of system.

Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings

CERTIFICATION No. 005-0007:0012

DATE ISSUED: August 14, 2009

MANUFACTURER: EMCO Wheaton Retail
2300 Industrial Park Drive, Wilson, NC 27893
Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759
Email: JERodriguezSD@aol.com

DESIGN: Model A4110 and A4110EVR Coaxial (45 degree) Swivel Elbows or Hose Swivels. Models are installed between a gasoline dispensing nozzle and a coaxial vapor recovery hose assembly. The swivels are designed to fully rotate about the nozzle axis.

The inlet and outlet connections consist of a 1-7/8 inch 12 female and male threads (vapor line) and a concentric 11/16 inch bore (liquid line) with two integral o-rings.

Each assembly is tested by the manufacturer for electrical continuity with resistance less than 0.5 megohms.

APPLICATION: The A4110 and A4110EVR Coaxial (45 degree) Swivel Elbows or Hose Swivels are designed and intended for installation between a gasoline dispensing nozzle and a coaxial vapor recovery hose assembly, adding flexibility to the coaxial vapor recovery hose assembly during vehicle refueling.

For use with standard type motor fuels and 15 percent ASTM Fuel-C/85 percent Methanol (C85).

CERTIFICATION: Certified for use as swivel connectors for use with coaxial type balance vapor recovery systems.

CERTIFICATION No. 005-0007:0013

DATE ISSUED: December 26, 1991

MANUFACTURER: EMCO Wheaton Retail
2300 Industrial Park Drive, Wilson, NC 27893
Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759
Email: JERodriguezSD@aol.com

DESIGN: Model A4113 Coaxial 90-degree Swivel Elbow. Model is attached between a coaxial vapor recovery hose assembly and the dispenser coaxial outlet fitting. It is designed to fully swivel about the hose assembly axis.

APPLICATION: To be installed on product dispenser's coaxial outlet fitting to add flexibility to a coaxial vapor recovery hose assembly.

For use with standard motor fuels and 15 percent ASTM Fuel-C/85 percent Methanol (C85).

CERTIFICATION: Certified as a swivel connector for use with Phase II vapor recovery coaxial hose assemblies.

CERTIFICATION No. 005-0007:0031

DATE ISSUED: November 5, 2019

MANUFACTURER: EMCO Wheaton Retail
2300 Industrial Park Drive, Wilson, NC 27893

Contact: Jose Rodriguez (800) 234-4394 Fax (252) 243-4759

Email: JERodriguezSD@aol.com

DESIGN: Model A4119, A4119EVR and A4119EVR-020RC Coaxial Safebreak Couplings. Models are intended for use with gasoline dispensing devices having vapor recovery capabilities. The couplings are used between two (2) hose assemblies to safeguard against excessive pull force on the hose assembly and dispenser.

The coupling consists of internal male and female connectors with integral check valves in each component. These parts are assembled within a female and male outer body which are slipped together and held in place with aluminum shear pins. When the coupling and connecting hose assemblies are subjected to a maximum pull force of 350 pounds, the shear pins fracture and cause the separation of the coupling halves. Check valves prevent the escape of liquid from the hose line and vapor from the dispenser side of the hose connection.

The inlet and outlet connections consist of a 1-7/8-inch 12 female thread (vapor line) and a concentric 11/16 inch bore (liquid line) with two integral O-rings.

Each assembly is tested by the manufacturer for electrical continuity with resistance less than 0.5 megohms.

The Model A4119EVR-020RC Coaxial Safebreak Coupling allows for reconnecting of male and female connectors after a customer related drive-off occurrence per manufacturer's instructions and reconnecting procedures.

APPLICATION: The Model A4119, A4119EVR and A4119EVR-020RC Coaxial Safebreak Couplings are designed and intended for installation between two (2) coaxial type hose assemblies where the working pressure does not exceed 75 psi.

CERTIFICATION: Certified as coaxial couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0008:0060

DATE ISSUED: June 10, 2010

MANUFACTURER: OPW Fueling Components
3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Model OPW 66-VI Emergency Breakaway Coupling. Model is intended for use with product dispensing devices having vapor recovery capabilities with working pressures not exceeding 50 psi. The coupling incorporates a Non- Reconnectable breakaway section which will separate when a maximum force of 300 pounds is applied,

safeguarding the hose assembly and/or product dispenser from damage resulting from excessive force.

The assembly consists of an internal male and female body with integral liquid and vapor check valves in each component. These parts are slipped together within an outer sleeve assembly and held in place by shear pins. When the coupling assembly and the connecting hose assemblies are subjected to a pull force, the shear pins will fracture allowing the coupling halves to separate relieving the pull force. The check valves prevent the escape of flammable liquids and vapors when the two body components separate. The coupling halves cannot be reconnected after separation. The inlet and outlet connections consist of internal M34 X 1.5 straight threads.

APPLICATION: These devices may be installed on low hose and high hose type dispensers in new and existing fuel dispensing units and are vapor recovery system compatible.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems where the gasoline dispensing unit incorporates vapor recovery with an operating pressure not to exceed 50 psig.

CERTIFICATION No. 005-0008:0061

DATE ISSUED: December 13, 2011

MANUFACTURER: OPW Fueling Components
3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Model 66CLP-5100 Emergency Breakaway Coupling. Model is intended for use with product dispensing devices having vapor recovery capabilities with working pressures not exceeding 50 psi. The coupling incorporates a reconnectable breakaway section, which will separate when a maximum force of 300 pounds is applied, safeguarding the hose assembly and/or product dispenser from damage resulting from excessive force. When the breakaway separates, the check valves close and capture the fuel / vapor in each half of the hose assembly. The breakaway is designed to be reusable and can be reconnected by qualified personnel.

The assembly consists of an internal male and female body with integral liquid and vapor check valve. These parts are slipped together within an outer sleeve assembly and held in place by an internal locking assembly under spring loading. When the coupling assembly and the connecting hose assemblies are subjected to a pull force, the coupling halves will separate relieving the pull force. The check valves prevent the escape of flammable liquids when the two body components separate.

APPLICATION: This device may be installed in the hose assembly of an automotive fuel dispenser that is equipped with a pre-EVR or EVR Balance vapor recovery system.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems where the gasoline dispensing unit incorporates vapor recovery with an operating pressure not to exceed 50 psig.

CERTIFICATION No. 005-0021:0501

DATE ISSUED: September 28, 2021

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Models 8832 and 14592 Emergency Breakaway Couplings. Models are intended for installation between the hose sections in high hose dispensers only, to safeguard against abnormally excessive pull force on the hose assembly and dispenser where the liquid pressure does not exceed 50 psig. These couplings consist of integral check valves in breakaway portions of the device to prevent the escape of liquids from the hose lines when the magnets detach and are designed to be reassembled after separation. The maximum rated separation force is 225 lbs. The model 8832 incorporates female M34-1.5 co-axial inlet and outlets, and model 14592 incorporates female 1-1/4 UNEF inlet and outlets.

APPLICATION: The coupling is intended for installation between the whip hose connected to the outlet of only high hose type power-operated dispensing devices, and hose assembly.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0021:0502

DATE ISSUED: September 28, 2021

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Models 4034, 5134, 6560, and 15377 Coaxial Vapor Recovery Emergency Breakaway Couplings. These non-swiveling couplings are used between two hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser where the working pressure does not exceed 50 psi. The assembly consists of a male spud and the female body, each with an integral fluid check valve assembly. The body contains an internal spring-loaded assembly which secures the male spud. When the body and spud are subjected to a maximum rated separation force of 200 or 250 lbs., which exceeds the spring force holding the device together, the male spud is released, and the check valves prevent the escape of liquid from the hose lines. Models 4034 and 6560 are designed to be reassembled after separation, and Models 5134 and 15377 are non-reconnectable breakaways when using the spacer. The 4034 and 5134 couplings incorporate M34, and 6560 and 15377 couplings incorporate 1-1/4 UNEF coaxial female inlet and outlet connections.

APPLICATION: The couplings are intended for use on gasoline dispensing devices equipped for vapor recovery. The unit must be installed between two hose assemblies.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems

CERTIFICATION No. 005-0021:0503

DATE ISSUED: September 28, 2021

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Model VR Swivel Connectors. The connectors incorporate M34 x 1.5 or 1-1/4 x 18 UNEF inverted coaxial inlet and outlet connections for making connection between the hose nozzle valve and the hose assembly, or dispenser outlet and hose assembly of power operated dispensing devices. These connectors are equipped for inverted coaxial vapor recovery applications and are intended for the transfer of gasoline fuel at liquid pressures not in excess of 50 psi. The use of these swivel connectors permits rotation of the valve or hose, so that it can be manipulated without subjecting the hose to twisting or torsional stress.

APPLICATION: The connectors are intended for making connection between the hose nozzle valve and the hose assembly, or dispenser outlet and hose assembly of power operated dispensing devices.

CERTIFICATION: Certified as swivel connectors for use with Phase II vapor recovery systems

CERTIFICATION No. 005-0021:0504

DATE ISSUED: December 30, 2025

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Models 3360VR and 5900 Coax Safe-T-Break Vapor Recovery Emergency Breakaway Couplings. These non-swiveling couplings consist of an inner fluid carrying assembly and outer vapor carrying assembly. They are used between two hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser. The maximum rated separation force is 350 lbs. Both models consist of an outer female thread 1-7/8"-12 SAE straight thread and an inner 0.688/0.672-inch OD female liquid line inlet. Model 3360VR can be reassembled (snapped together) after separation, but model 5900 cannot reassemble. Model 5900 is not to be reconnected or reused after separation. Model 5900 is identical in construction to the model 3360VR except for an additional part that prevents the device from being reconnected after separation. Models comply with the applicable requirements in UL 567, 11th edition. Models are for use with gasoline and ethanol/gasoline blends up to and including 10% ethanol.

APPLICATION: Models are intended for use on gasoline dispensing devices having vapor recovery capability where the working pressure does not exceed 50 psi. The models must be installed between two hose assemblies.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0005

DATE ISSUED: October 28, 2010

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Models AV200 and AV200-1 Coaxial Emergency Breakaway Non-Swiveling Coupling assemblies. Models consist of an outer fluid carrying assembly and an inner vapor carrying assembly. The outer fluid carrying assembly consists of a male and female spud with integral check valves in each component. The assembly is held together within a sleeve by a single aluminum shear pin (AV200-1), or two shear pins (AV200). The inner assembly, check valves and vapor path are held together within the outer liquid carrying assembly by retaining rings. The coupling halves are designed to separate when subjected to a pull force not exceeding 250 pounds (AV200-1) or 300 pounds (AV200), thus relieving the pull force on the hose assemblies and dispenser. The inlet and outlet connections both consist of female straight threads, 34mm x 1.5.

The coupling may be equipped with an optional foam rubber insulating tube, approximately 3-3/4 in length and 1-5/8 in. ID.

APPLICATION: Models AV200 and AV200-1 Coaxial Emergency Breakaway Couplings for use with gasoline dispensing devices having vapor recovery capabilities and working pressure not exceeding 50 psi. The device is used between a vapor recovery coaxial hose assembly to safeguard against abnormally excessive pull force on the hose assembly and dispenser.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems

CERTIFICATION No. 005-0030:0006

DATE ISSUED: April 8, 1994

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model AV2001 Coaxial Emergency Breakaway Non-Swiveling Coupling assembly. Model consists of an outer fluid carrying assembly and an inner vapor carrying assembly. The outer fluid carrying assembly consists of a male and female spud with integral check valves in each component. The assembly is held together within a sleeve by an adjustable finger system. The inner assembly, check valves and vapor path are held together within the outer liquid carrying assembly by retaining rings.

APPLICATION: Models AV2001 Coaxial Emergency Breakaway Couplings is installed between an overhead dispenser and the transfer hose of power-operated dispensing devices. For use with gasoline dispensing devices having vapor recovery capabilities and working pressure not exceeding 50 psi and a maximum separation force of 300 lbs. The device is used between a vapor recovery coaxial hose assembly to safeguard against abnormally excessive pull force on the hose assembly and dispenser.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems

CERTIFICATION No. 005-0030:0007

DATE ISSUED: April 8, 1994

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model 200BI Conversion Fitting Adaptor. Model is intended for use at the outlet of a multi-product gasoline dispensing device to convert the dispenser outlet connection from a standard coaxial type connection to inverted M34 coaxial connection.

APPLICATION: Adaptor is to be installed in accordance with the manufacturer's installation instructions.

CERTIFICATION: Certified as a conversion fitting adaptor with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0009

DATE ISSUED: March 3, 1995

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model 200PV Coaxial Splitter Fitting. Model is an assembly intended to be mounted near a dispensing device liquid outlet. The splitter valve is for use in positive displacement or vacuum assisted motor fuel vapor recovery system installations. It provides a means of coupling certified vapor recovery product hose assemblies to the vapor and fuel lines of a dispensing device.

APPLICATION: Intended for installation on gasoline dispensing devices with dual hose vapor recovery systems. For use with standard motor fuels and 15 percent ASTM Fuel-C/85 percent Methanol (C85).

CERTIFICATION: Certified as a coaxial splitter fitting for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0011

DATE ISSUED: March 21, 1995

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model C-200CV Vapor Recovery Emergency Breakaway Coupling. Model consists of an outer vapor carrying assembly and an inner fluid carrying assembly. The assembly consists of a rigid two (2) piece non-swiveling assembly with vapor and fluid check valves in the section attached to the hose from the dispenser. The section closest to the nozzle contains a fluid check valve only. The vapor check valve is maintained open by four (4) stainless steel actuator pins which are rigidly mounted in

the housing assembly. The fluid check valves are maintained open when coupled by opposing force on the male spindle and female spindle.

The coupling assembly is held together by two (2) aluminum shear pins. The coupling halves are designed to separate when subjected to a pull force not exceeding 350 pounds thus relieving the pull force on the hose assemblies and dispenser. The coupling assembly is only reconnectable in the field by qualified maintenance and repair personnel.

APPLICATION: The Model C-200CV Vapor Recovery Emergency Breakaway Coupling is for use with gasoline dispensing devices having standard coaxial vapor recovery capabilities and working pressure not exceeding 50 psi. The device is used between a vapor recovery coaxial hose assembly to safeguard against abnormally excessive pull force on the hose assembly and dispenser.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0018

DATE ISSUED: January 5, 1999

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model IC3 Inverted Coaxial Hose Swivel Assembly. The assembly consists of an outer fluid carrying assembly and an inner vapor carrying assembly. The outer diameter of the fluid carrying assembly is defined by two-aluminum 45-degree Elbows. The elbows are joined by means of a nylon ring that acts as both a bearing and retaining ring. The rotating surfaces are sealed by means of an O-ring. The inlet elbow is machined to receive the Inverted hose thread and inner hose stub. The outlet end is fitted with a rotating steel nut having the inverted hose thread and the inner hose stub machined into the aluminum elbow. The elbow and nut are joined by a nylon ring and sealed by an O-ring. The inner vapor assembly is defined by the aluminum elbow castings and a brass tube sealed by O-ring which is similar to the co-axial hose. Electrical continuity is achieved by means of a spring loaded "brush" pin.

APPLICATION: The Model IC3 Inverted Hose swivel assembly is for use with gasoline dispensing devices having vapor recovery capabilities and working pressure not exceeding 50 psi. The device is used between a vapor recovery coaxial hose and nozzle assembly or the dispenser and the hose. The purpose of the swivel is to reduce the amount of stress on the hose by permitting rotation of the hose or hose nozzle valve so that it can be manipulated without placing torsional stress on the hose-nozzle assembly.

CERTIFICATION: Certified as an inverted coaxial hose swivel assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0019

DATE ISSUED: October 4, 2007

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model CTMVA Inverted Coaxial Emergency Breakaway Non-Swivel Coupling Assembly. The assembly consists of an outer fluid carrying assembly and an inner vapor carrying assembly, each with an integral check valve. A male and female spud defines the outer diameter, of the fluid carrying assembly, while male and female poppers define the inner diameter. The male and female spuds are coupled by a magnetic latching assembly. When the coupling and connected hose assemblies are subjected to a predetermined pull force (not exceeding 350 pounds) the male plug separates from the female body and relieves the force on the hose assemblies and dispenser. The check valves prevent the escape of liquid and vapor from the hose line.

The integral vapor check valves work in conjunction with the fluid poppet valves to provide a tight seal, which prevents the accidental release of fluid or vapor in the event of a coupling separation.

APPLICATION: The Model CTMVA Inverted Coaxial Emergency Breakaway Non-Swivel Coupling Assembly is for use with gasoline dispensing devices having vapor recovery capabilities and working pressure not exceeding 50 psi. The device is used between a vapor recovery coaxial hose-nozzle assembly and the dispenser to safeguard against abnormally excessive pull force on the hose assembly and dispenser. It is designed to also prevent the unauthorized release of fuel and vapor.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0030:0020

DATE ISSUED: March 13, 2017

MANUFACTURER: Catlow Inc.

2750 US Route 40, Tipp City, OH 45371

Contact: Brandon Kirby (860) 651-2882

Email: brandon.kirby@gilbarco.com

DESIGN: Model CTMVA (CTMCA) coaxial Vapor recovery emergency breakaway coupling. This coupling consists of an integral male plug and female body with integral check valves in each component with an optional protective cover. The body contains an internal spring for the check valves and a magnet for the breakaway which secures the male spud when the coupling is completely assembled. When the coupling is subjected to a pull force exceeding the magnetic force which holds the device together, the male spud "separates" from the body. The check valves prevent the escape of liquid from the hose assembly and hose nozzle valve. It also incorporates a vapor check valve in the inlet end that prevents the escape of vapor from the hose assembly.

APPLICATION: Models CTMVA (CTMCA) Vapor Recovery Emergency Breakaway Coupling are for use with flammable liquid dispensing devices having standard coaxial vapor recovery capabilities and working pressure not exceeding 50 psi. The device is

used between a vapor recovery coaxial hose assembly to safeguard against abnormally excessive pull force on the hose assembly and dispenser. The CTMVA (CTMCA) can be used with the CATLOW M3418 Vac-Assist adapter to convert 1 1/4 -18 straight threads to M-34 Metric Threads.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0031:0007

DATE ISSUED: October 28, 2010

MANUFACTURER: Richards Industries, Inc.

129 Manufacturers Road, Rockwood, TN 37854

Contact: Larry Wohlford (615) 354-3222

DESIGN: Models VA-50, VA-51, and VA-51H, Safe-T-Gard Coaxial Emergency Breakaway Couplings. Models are coaxial non-swiveling aluminum emergency breakaway couplings consisting of a male spud and a double female body assembled within a sleeve. Each spud and body contain an integral fluid check valve. Additionally, the male spud on the Model VA-50 contains a vapor check valve assembly. Separation occurs when the coupling assembly is subjected to a pull force not exceeding 275 pounds. Once separation occurs pre-loaded steel balls are forced against a stainless-steel spring thus releasing the male spud. The internal check valves prevent the escape of liquid from the hose lines and vapor from the dispenser end of the hose.

APPLICATION: Models VA-50, VA-51, and VA-51H, Safe-T-Gard Coaxial Emergency Breakaway Couplings are for use with gasoline dispensing devices having vapor recovery capabilities and working pressures not exceeding 50 psi. The device is used between two gasoline hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser. The VA-51H is for use with the Healy System only.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0031:0010

DATE ISSUED: May 20, 1994

MANUFACTURER: Richards Industries, Inc.

129 Manufacturers Road, Rockwood, TN 37854

Contact: Larry Wohlford (615) 354-3222

DESIGN: Model CX-41 Coaxial Reconnectable Breakaway Coupling. Model is a non-swiveling coupling for use on gasoline dispensing devices having vapor recovery capability where the working pressure does not exceed 50 psi.

Each assembly consists of a male spud and a female body assembled within a sleeve. The spud and the body each contain integral fluid valve assembly. Additionally, the body contains a vapor check valve assembly. The body contains an internal spring which secures the male spud when the coupling is completely assembled. When the body and spud are subjected to 290 lb. pull force, the force exceeds the spring force holding the device together, thus releasing the male spud. The check valves prevent the escape of liquids and vapor from the dispenser end of the hose.

APPLICATION: Intended for installation between two coaxial hose assemblies, to safeguard against excessive pull force on the hose and dispenser. The couplings are only for use near the outlet of a "high hose" dispenser as the inlet end is not designed to be subject to impact with the driveway in the event of a separation. Couplings are easily reconnected after separation.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0031:0011

DATE ISSUED: May 20, 1994

MANUFACTURER: Richards Industries, Inc.

129 Manufacturers Road, Rockwood, TN 37854

Contact: Larry Wohlford (615) 354-3222

DESIGN: Model CX-42 Coaxial Reconnectable Breakaway Coupling. Model is a non-swiveling coupling for use on gasoline dispensing devices having vapor recovery capability where the working pressure does not exceed 50 psi.

Each assembly consists of a male spud and a female body assembled within a sleeve. The spud and the body each contain integral fluid check valve assemblies. The body contains an internal spring which secures the male spud when the coupling is completely assembled. When the body and spud are subjected to 290 lb. pull force, the force exceeds the spring force holding the device together, thus releasing the male spud. The check valves prevent the escape of liquids from the dispenser end of the hose.

APPLICATION: Intended for installation between two coaxial hose assemblies, to safeguard against excessive pull force on the hose and dispenser. The couplings are only for use near the outlet of a "high hose" dispenser as the inlet end is not designed to be subject to impact with the driveway in the event of a separation. Couplings are easily reconnected after separation.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems.

NOTE: This type breakaway (without vapor valve) may only be used when a vapor valve or flame arrestor is provided between the hose and dispenser shear valve.

CERTIFICATION No. 005-0031:0014

DATE ISSUED: July 21, 1995

MANUFACTURER: Richards Industries, Inc.

129 Manufacturers Road, Rockwood, TN 37854

Contact: Larry Wohlford (615) 354-3222

DESIGN: Models VA-50B and VA-51B SAFE-T-GUARD coaxial non-swiveling aluminum emergency breakaway couplings. Models consist of a male spud and a double female body assembled within a sleeve.

Each spud and body contain an integral fluid check valve. Additionally, the male spud on the Model VA-50B contains a vapor check valve assembly. Separation occurs when the coupling assembly is subjected to a pull force not exceeding 350 pounds. The body

on the models contain an internal spring which secures the male spud when the coupling is completely assembled. When the pull force exceeds the spring force holding the device together, thus releasing the male spud. The check valves prevent the escape of liquid from the hose lines and vapor from the dispenser end of the hose on the VA-50B.

APPLICATION: Models VA-50B and VA-51B, Safe-T-Guard Coaxial Emergency Breakaway Couplings are for use with gasoline dispensing devices having vapor recovery capabilities and working pressures not exceeding 50 psi. The device is used between two gasoline hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0034:0003

DATE ISSUED: April 22, 1994

MANUFACTURER: EBW Inc.

2814 McCracken Ave, Muskegon, MI 49441

Contact: Jim Biesecker (800) 475-5151 Fax (616) 759-2207

DESIGN: Model 303 Coaxial Connector Fitting Assembly. Model is designed to retrofit existing stage I dispensers to stage II vapor recovery dispensers. This fitting is an assembly intended for use in positive displacement or vacuum assisted motor fuel vapor recovery installations. It provides a means of coupling certified vapor recovery product hose assemblies to the vapor and fuel lines of a dispensing device.

APPLICATION: Intended for installation on gasoline dispensing device with coaxial hose vapor recovery systems.

For use with standard type motor fuels and 15 percent ASTM Fuel, C/85 percent Methanol.

CERTIFICATION: Certified as a coaxial connector fitting assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0034:0005

DATE ISSUED: May 1, 1996

MANUFACTURER: EBW Inc.

2814 McCracken Ave, Muskegon, MI 49441

Contact: Jim Biesecker (800) 475-5151 Fax (616) 759-2207

DESIGN: Model Number 362-204 Vapor Line Shear Valve. Model is intended for use with gasoline dispensing devices having vapor recovery capabilities. The shear valve consists of three main components: (1) UPPER THREADED ADAPTER which fractures below 650-foot pounds of bending moment, cast iron, (2) LOWER THREADED BODY, cast iron, (3) POPPET VALVE, aluminum with fluorocarbon seal.

APPLICATION: This device is intended to be installed in the vapor return line of a gasoline dispenser. Upon impact the upper adaptor will fracture allowing the valve to close and shut off the vapor flow.

CERTIFICATION: Certified as a shear valve for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0004

DATE ISSUED: June 12, 1995

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC., 650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Models VST-CP-BK and VST-DS-BK emergency breakaway couplings. Models VST-H-BK and VST-IS-BK coaxial vapor recovery emergency breakaway couplings for flammable liquids.

These connectors are intended for making connection between the hose assembly and outlet of a "high hose" type power-operated dispensing device to safeguard against abnormally excessive pull force on the hose assembly and dispenser. They are intended for the transfer of gasoline at liquid pressures not exceeding 50 psig. The couplings incorporate a whip hose with a "swivel" that permits rotation of the hose or hose nozzle valve so that it can be manipulated without placing torsional stress on the hose assembly. These couplings are designed to be reassembled after separation.

VST-IS-BK - 34M End Style to be used with the following systems: Dresser Waynevac System, Gilbarco Vaporvac System, Hasstech System, OPW Vapor EZ System, Schlumberger LTD System, Tokheim Maxvac System, and Catlow Vapor Mate System.

VST-H-BK - 11/4"-18 UNEF Straight Thread to be used with Healy 400 & 600 Series Systems.

VST-CP-BK - 3/4" NPT End Style to be used with standard 3/4" gasoline hose.

VST-DK-BK - 1" NPT End Style to be used with standard 1" gasoline hose.

APPLICATION: These couplings consist of a whip hose that with an aluminum breakaway release that snaps into an outer collar that is attached to the hose end. Integral check valves are provided in each component. When the coupling is subject to a pull force exceeding the force which holds the device together, the whip hose end "separates" from the hose end. The check valves prevent the escape of liquid from the hose assembly and hose nozzle valve. The Models VST-H-BK and VST-IS-BK also incorporate a vapor check valve in the inlet end that prevents the escape of vapor from the hose assembly.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0007

DATE ISSUED: June 24, 2013

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC., 650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Models VSTA-EVR-SBK, VSTA-EVR-SBK-A and VSTA-EVR-SBK-R vapor recovery emergency breakaway coupling. This assembly consists of a male plug and female body components with integral check valves in each component. When the fitting and connecting hose assembly are subject to a predetermined pull force, the male

plug separates from the female body, removing the force on the hose assemblies and the dispenser. The check valves prevent the escape of liquid from the hose.

APPLICATION: Model VSTA-EVR-SBK, VSTA-EVR-SBK-A and VSTA-EVR-SBK-R couplings are for use on a gasoline dispensing device where the working pressure does not exceed 50 psi. They are intended to be installed between the whip hose and the hose assembly to safeguard against abnormally excess pull force (greater than 350 lbs.) on the hose assemblies and dispenser. VSTA-EVER-SBK and VSTA-EVR-SBK-R couplings are not re-connectable and are intended to be discarded after separation. VSTA-EVR-SBK-A is field re-connectable and may be reattached after separation per manufacturer's instructions.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase I and Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0013

DATE ISSUED: December 26, 2013

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC., 650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VST-HEVR-SBK and VST-ISVR-SBK vapor recovery emergency breakaway coupling. This assembly consists of a male plug and female body components with integral check valves in each component. When the fitting and connecting hose assemblies are subject to a predetermined pull force, the male plug separates from the female body, removing the force on the hose assemblies and the dispenser. The check valves prevent the escape of liquid from the hose.

APPLICATION: Model VST-HEVR-SBK and VST-ISVR-SBK couplings are for use on a gasoline dispensing device where the working pressure does not exceed 50 psi. They are intended to be installed between the whip hose and the hose assembly to safeguard against abnormally excess pull force (greater than 350 lbs.) on the hose assemblies and dispenser. These couplings are designed to be reassembled after separation.

CERTIFICATION: Certified as emergency breakaway couplings for use with Phase I and Phase II vapor recovery systems.

CERTIFICATION No. 005-0046:0002

DATE ISSUED: March 12, 1993

MANUFACTURER: M. Carder Industries, 1584 Fenpark Drive, Fenton, MI 63026

Contact: E. Leanart Poli (314) 343-8770 Fax (314) 343-8805

DESIGN: Model ABV 34 Coaxial Emergency Breakaway Coupling assembly. Model consists of two aluminum body components with integral check valves in each component. The two parts are assembled and held in place with two brass break rings to create the finished coupling. Rotation of the two components (halves) is prevented by a steel guide pin. When the coupling assembly is subjected to a pull force not exceeding 250 pounds, the brass break rings fracture allowing separation of the two (2) coupling halves, thus relieving the pull force on the hose assemblies and dispenser. check valves in each halve prevent the escape of liquid from the hose lines.

The inlet and outlet connections consist of a 1 7/8-inch 12 straight thread (vapor line) and a concentric 11/16 inch bore (liquid line) with two (2) integral O-rings.

APPLICATION: Model ABV 34 Coaxial Emergency Breakaway Coupling is for use with gasoline dispensing devices having vapor recovery capabilities and working pressure not exceeding 50 psi. The device is used between two (2) hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser.

CERTIFICATION: Certified as an emergency breakaway coupling Phase II vapor recovery systems.

CERTIFICATION No. 005-0049:0001

DATE ISSUED: July 15, 1993

MANUFACTURER: S. Bravo Systems, Inc.
14056 Artesia Blvd., Cerritos, CA 90701

Contact: Sergio Bravo (714) 739-9686 Fax (714) 739-9685

DESIGN: Model B-1 Vapor Recovery Shear Valve. Model consists of a steel body, a replaceable Celcon shear section, a synthetic rubber poppet and spring with test port. The valve is constructed with an internal 1.5-12 NPT thread for connection the valve to the vapor line and an external 1.5-12 NPT and internal 1-12 NPT thread for connecting the valve to the dispenser. When the valve is subject to minimum force of 120 psi to a maximum force of 300 psi the valve will shear allowing the valve poppet to engage and block the vapor flow.

APPLICATION: The Model B-1 valve is certified for use only on the vapor lines of gasoline dispensing devices with a maximum vapor pressure of 0.5 psig. The valve is installed between a gasoline dispenser and the system's vapor return line.

CERTIFICATION: Certified as a shear valve for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0056:0001

DATE ISSUED: August 1, 1999

MANUFACTURER: Environ Products, Inc.
620 Pennsylvania Drive, Exton, PA 19341

Contact: Christopher Ursillo (610) 321-0200 Fax (610) 321-0406

DESIGN: Models SVS-1015F, SVS-1015FM, SVS-1015M, SVS-1015MM, SVS1015U, SVS-1015UM, SVD-2015F, SVD-2015FM, SVD-2015M and SVD-2015MM emergency shutoff Shear Valves (SV) (1 - 1/2 in.). Models are intended for use with power operated dispensing devices handling gasoline where working pressure does not exceed 50 psig. They are designed to safeguard against the discharge of fuel under fire exposure, or if the fuel supply line is severed. The valves include a spring-loaded valve normally held open by a 165 degree (f) fusible link, and a shear section located near the outlet. In the event that a fire of sufficient intensity occurs near the fusible link, the solder of the link will melt causing a valve POPPET to close and prevent the further discharge of fuel. A major impact or pulling over of the dispensing device causes the shear section to separate and the valve POPPET to close.

The Environ Model SVS and SVD emergency shutoff shear valve (1 - 1/2 in.), consists of a cast iron body which is zinc plated with a 1 - 1/2-inch NPT male, female or union

outlet and a 1 - 1/2-inch female inlet connection. The inlet connection may also have 2-inch external threads for applications with double wall containment piping. The assembly consists of a spring-loaded valve held open by a fusible link and a shear section located near the outlet. Note: Models with the suffix "MM", "FM" AND "UM" do not have 2-inch external threads.

APPLICATION: Environ Model SVS and SVD emergency shutoff shear valves (1 - 1/2 in.), are certified for use only on the fuel lines of gasoline dispensing devices where the working pressure does not exceed 50 psig.

CERTIFICATION: Certified as emergency shutoff shear valves for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0056:0003

DATE ISSUED: December 4, 1998

MANUFACTURER: Environ Products, Inc.
620 Pennsylvania Drive, Exton, PA 19341

Contact: Christopher Ursillo (610) 321-0200 Fax (610) 321-0406

DESIGN: Model VSV-1015F Vapor Line Shear Valve. Model is intended for use with gasoline dispensing devices having vapor recovery capabilities. The shear valve consists of two main components: (1) BODY, cast iron, which fractures below 650-foot pounds of bending moment, (2) POPPET VALVE, stainless steel and nylon with fluorocarbon seal.

APPLICATION: This device is intended to be installed in the vapor return line of a gasoline dispenser. Upon impact, the upper portion of the valve body will fracture allowing the valve to close and shut off the vapor flow.

CERTIFICATION: Certified as a shear valve for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0002

DATE ISSUED: October 26, 2007

MANUFACTURER: Franklin Fueling Systems
3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 362-206 Vapor Line Shear Valve. These valves are provided with a weak section designed to fracture in the event that the dispenser is subjected to a sufficient external impact or other bending force.

The Model 362 valve is provided with internal check valves that will close and prevent the loss of vapor when the valve breaks.

APPLICATION: Model 362-206 valves are intended for use with power operated gasoline dispensing devices having vapor recovery capabilities and are intended to be installed in the vapor return lines.

CERTIFICATION: Certified as a shear valve for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0506

DATE ISSUED: October 12, 2020

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 807 Emergency Breakaway Swivel. Model is designed to be installed on a Healy System compatible vapor recovery hose assembly, between the hose end and nozzle body . It acts as a swivel to ease hose to nozzle maneuverability while refueling a motor vehicle. It also is an emergency breakaway to safely separate the nozzle from the hose assembly should the customer forget to re-holster the nozzle in the dispenser at the completion of a fueling and drive away. The breakaway feature is designed to separate at a maximum of 350 pounds and contains valves that automatically close off the fuel and vapor portions of the hose at separation. The shear pin is field replaceable, and a spare pin is self-contained on each unit. The unique swivel action allows the hose to align itself in the direction of the hose, thus assuring a reliable separation. The unit is available with various thread configurations to adapt to different 'inverted style' vapor recovery hoses. The design includes a device to assure electrical continuity between the hose and nozzle valve at all times.

APPLICATION: The unit is compatible with vapor recovery hoses having suitable thread configurations and may be used on new or retrofit to existing hoses. The unit must be installed between the end of a dispensing hose and the input end of the mating nozzle valve.

CERTIFICATION: Certified as an emergency breakaway swivel for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0507

DATE ISSUED: June 24, 2021

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 8701-VV Emergency Breakaway Coupling. Model is designed to be used between two "Healy Systems" vapor recovery hose assemblies to safeguard against abnormally excessive pull force on the hose assembly and dispenser where the working pressure does not exceed 50 psi. When subjected to an axial pull force at a maximum of 350 lbs., the shear pin fractures cause separation of the two coupling halves. The check valves prevent the escape of fuel and vapor after separation. A spare shear pin is self-contained on each unit. To prevent rotation of the outer body halves, a steel dowel pin engages a hole in the outer body when the coupling is assembled.

APPLICATION: The coupling is intended for connection only to straight thread "Healy Systems" assemblies. The unit must be installed between the end of the dispenser hose and the product-to nozzle-end hose.

CERTIFICATION: Certified as an emergency breakaway coupling for use with Phase II vapor recovery systems.

Power-Operated Dispensing Devices

CERTIFICATION No. 005-0050:0001

DATE ISSUED: February 10, 1994

MANUFACTURER: Schlumberger Technologies

1300 Bicentennial, Bonham, TX 75418

Contact: Wayne Tarpley (903) 583-3134 Fax (903) 583-3139

DESIGN: Model Schlumberger 4000 Series Dispensers Utilizing Gilbarco's VaporVac Vapor Assist System (Suffix VG). This system is factory installed into the Schlumberger Dispensers. The "System" contains a Factory Installed Gilbarco Vapor Vacuum pump/motor assembly, control electronics and associated vapor piping required for a vapor assist recovery system. The Schlumberger dispensers and the Gilbarco VaporVac systems have been tested and approved by Underwriters Laboratories for compatibility. The Gilbarco VaporVac System has been previously certified by the California State Fire Marshal's Office under Certification Number 001:026:014.

APPLICATION: Application of the Gilbarco Vapor VacVapor assist system for the purposes of this Certification are to be used in the Schlumberger 4000 Series Dispensers in accordance with this certification and U.L. approval only.

CERTIFICATION: Certified as power-operated dispensers for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0050:0002

DATE ISSUED: December 2, 1994

MANUFACTURER: Schlumberger Technologies

1300 Bicentennial, Bonham, TX 75418

Contact: Wayne Tarpley (903) 583-3134 Fax (903) 583-3139

DESIGN: Model Schlumberger "SAVR" 4000 Series Retrofit Vapor Recovery Kits. Model is to be field installed into the Schlumberger 4000 Series Dispensers. The "Retrofit Kit" contains a Factory plumbed "Canopy Unit" which houses the electrical power supply, controller boards, vacuum pump(s), vapor manifolds, vapor tubing, vapor vacuum valves, side, bottom and top covers. The "Canopy" unit is also classified as a Class 1, Division 2, electrical hazard area and should not be altered except as permitted by the Manufacturer and the State Fire Marshal. The kit also contains related piping, hoses, nozzles, breakaways, conduit, check valves and other related hardware as indicated in the Manufacturers Installation Part Lists. The Schlumberger dispensers utilize the Gilbarco VaporVac System components and have been tested and approved by Underwriters Laboratories for compatibility with the Schlumberger Dispensers. The Schlumberger Factory Installed 4000 Series Vapor Recovery System (identical to the Retrofit Kit) has been previously Certified by the California State Fire Marshal under Certification Number GVRC 005:050:001.

APPLICATION: Application of the Schlumberger "SAVR" Retrofit Vapor Recovery Kit System is to be installed in the Schlumberger 4000 Series Dispensers in accordance with this Certification, U.L. Listing and the Manufacturers Installation Instructions.

Kit part numbers for the Schlumberger Assisted Vapor Recovery "SAVR" Retrofit System for use on Schlumberger 4000 Series Dispensers are as follows:

4PD - Four Product Retrofits (3 Gasoline, 1 Diesel):
8400204-XX for 4440 (Double Sided) Retrofit Assembly
8400207-XX for 4400 (Single Sided) Retrofit Assembly

4PD - Four Product Retrofits (4 Grades of Gasoline):
8400214-XX for 4440 (Double Sided) Retrofit Assembly
8400215-XX for 4400 (Single Sided) Retrofit Assembly

4PD - Four Product Retrofits (Two Hoses Per Side):
8400212-XX for 4442 (Double Sided) Retrofit Assembly
8400207-XX for 4402 (Single Sided) Retrofit Assembly (3 Grades into One Hose & One Diesel Hose)

3PD - Three Product Retrofits (3 Products-One Hose):
8400203-XX for 4330 (Double Sided) Retrofit Assembly
8400208-XX for 4300 (Single Sided) Retrofit Assembly

3PD - Three Product Retrofits (3 Products-One Hose):
8400205-XX for 4331 (Double Sided) Retrofit Assembly
8400211-XX for 4301 (Single Sided) Retrofit Assembly

2PD - Two Product Retrofits (2 Products-2 Hoses)
8400202-XX for 4220 (Double Sided) Retrofit Assembly
8400209-XX for 4200 (Single Sided) Retrofit Assembly

1PD - One Product Retrofits (1 Product-1 Hose):
8400206-XX for 4110 (Double Sided) Retrofit Assembly
8400210-XX for 4100 (Single Sided) Retrofit Assembly

CERTIFICATION: Certified as retrofit vapor recovery kits only for use on the Schlumberger 4000 Series Dispensers in Phase II vapor recovery systems.

Power-Operated Pumps

CERTIFICATION No. 005-0027:0009

DATE ISSUED: August 30, 1999

MANUFACTURER: Healy Systems-Franklin Fuel System

3760 Marsh Road, Madison, WI 53718

Contact: Sandy Adams

DESIGN: Model 9000 Mini-Jet Pump. Model is a vapor recovery component used to produce a vacuum in a "Healy Systems" vacuum assist vapor recovery gasoline dispensing system.

APPLICATION: Intended for use with approved Healy Systems, Inc. Jet Pump Assist Vapor Recovery Systems. The Model 9000 Mini-Jet Pump is an approved alternate for Model 8500 Multi-Jet Pump.

CERTIFICATION: Certified as a vapor recovery pump for use with Healy Systems, Inc. Jet Pump Assist Phase II Vapor Recovery Systems.

CERTIFICATION No. 005-0028:0004

DATE ISSUED: December 1, 1995

MANUFACTURER: Tokheim Corporation

1600 Wabasx Ave, Fort Wayne, IN 46801

Contact: John VanDaele

DESIGN: Model NFB 459002060 Power Operated Vacuum Pump. Model is manufactured by Nuovo Pignone of Italy for the Tokheim Corporation. The Model NFB 459002060 is power operated vacuum pump with electronics that provide a width modulated signal to the pump which varies the RPM of the motor in relation to the fuel delivery rate. These units are intended to be installed in a UL listed flammable liquid dispensing device with vapor recovery capability. The electronic controller/power supply units are designed to be installed in unclassified areas of the dispensers. The vapor pump motors are tested and listed for use in hazardous area and may be installed in Class I, Division I, Hazardous locations. The appropriate seal-offs must be provided for the leads that supply or receive power from components in hazardous locations.

APPLICATION: The function of the Tokheim Corporation Model NFB 459002060 is to assist in the removal of gasoline vapor from the vehicle being fueled to an underground storage tank or vapor processing mechanism. The vapor pump is certified for installation in Class I, Division I Hazardous locations of the dispenser. These units are certified to assist in the moving of gasoline vapors in a coaxial type vapor recovery system from the vehicle back to the tank or vapor processor.

CERTIFICATION: Certified as a vapor recovery pump for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0053:0001

DATE ISSUED: July 12, 1995

MANUFACTURER: Franklin Electric Company, Inc.

400 East Street, Bluffton, IN 46714

Contact: Jason Awad (219) 824-8000 Ext: 5626 Fax (219) 824-2909

DESIGN: Model INTELLIVAC 9340000XXX Vapor Recovery Pump Units, where XXX varies from 001 to 999. The X's are used by Franklin Electric to track different pump colors, port orientation and design voltages of 115 volts or 230 volts. This system is an Integrated Vapor Recovery Pump Units consisting of three (3) separate component parts that are integrated into one unit. The three component parts are (1) electronic (computerized) control unit, (2) AC 115- or 230-volt electric motor, (3) non-sparking radial vane vapor pump. When assembled, the entire unit is approved for use in hazardous locations; Class 1, Division 1. The electric motor portion complies with construction requirements of the Standard For Electric Motors For Use In Hazardous Location, UL 674, Third Edition.

APPLICATION: The INTELLIVAC Unit is designed and intended to be used in conjunction with standard fuel dispensing systems where assist vapor recovery is desired. The units can be used on existing vapor assist systems or can be used to convert existing vapor balanced systems to vapor assist systems.

CERTIFICATION: Certified as a vapor recovery pump for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0055:0001

DATE ISSUED: April 9, 1998

MANUFACTURER: Thomas Industries, Inc.

4601 Central Ave., Monroe, LA 71203

Contact: Richard Tucker (219) 470-4610 Fax (219) 470-4720

DESIGN: Model VR-0020/991139 and VR-0020/991202 power operated vacuum pump. Model is intended to be installed in a UL listed flammable liquid dispensing device with vapor recovery capability and containing a suitable controller. This unit is designed to be powered by two separate sources; one source powers the electronic controller unit; the second power source drives the vapor pump motor. The size and rating of the unit are as follows: (1) connection size=1/2-inch NPT; (2) maximum pressure=10 psig; (3) maximum RPM=1320 (limited by controller); (4) ambient temperature=25 deg. C to 40 deg. C; (5) electrical rating=36 volts DC, 2.8 Amps.

APPLICATION: The function of the Thomas Industries Inc. Model VR-0020/991139 and VR-0020/991202 is to assist in the removal of gasoline vapor from the vehicle being fueled to an underground storage tank or vapor processing mechanism. Model is for installation in hazardous Class I, Division I, locations.

CERTIFICATION: Certified as a vapor recovery pump for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0030

DATE ISSUED: March 15, 2023

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: The Healy Systems Model VP1000 Vapor Recovery Pump. Model is a 1/8 hp, two speed, vane pump designed for hazardous vapor recovery at gasoline dispensing facility. This system is an integrated Vapor Recovery Pump consisting of three (3) separate component parts combined into one unit. The three component parts are (1) electronic (Computerized) control unit, (2) a 115 VAC or 230 VAC electric motor, (3) non-sparking radial vane vapor pump, with enhanced carbon rotor. When assembled, the entire unit is approved for use in hazardous locations: Class 1, Division 1. The electric motor portion complies with construction requirements of the Standard for Electric Motors for use in Hazardous Locations, UL 674, Third Edition. *Add black Epic S7136 epoxy as an alternate to the current dark red Hysol EE4154 for use in the wiring harness.

APPLICATION: The Healy Systems Model VP1000 Vapor Recovery Pump is designed and intended to be used in conjunction with standard fueling dispensing systems where assist vapor recovery is desired. The units can be used on existing systems or can be used to convert vapor balanced systems or other assist equipped systems to Healy Vapor Recovery Systems.

CERTIFICATION: Certified as a vapor recovery pump for use with Phase II vapor recovery systems.

Vapor Recovery System Processors

CERTIFICATION No. 004-0015:0002

DATE ISSUED: August 27, 2009

MANUFACTURER: Hirt Combustion Engineers, Inc.

3659 San Gabriel River Parkway, Pico Rivera, CA 90660

Contact: Thomas Smith

DESIGN: Model VCS 400-7. Model is a vacuum assist system with processing that utilizes bootless nozzles. The purpose of the system is to prevent the release of gasoline vapors into the atmosphere. The system processes only excess vapors allowing the majority of vapors to recondense in the underground tanks.

The system consists of vapor recovery nozzles, vapor recovery hoses, vapor return piping, vent piping, a processing unit, and a control panel.

The processing unit contains no consumable filter, no chemical catalyst, and requires no lubrication. The pressure in the vapor collecting subsystem is continually monitored and automatically maintained slightly negatively by a vapor pump. The system has a complete compliment of flame safety and fail-safe interlocks.

The processor is a packaged unit and includes those parts listed on approved parts list identified as 1180-19A-0 for VCS 400-7. The Motor Driven Turbine Pump (i.e. blower) is covered by the approved parts list identified as 1180-19A-2 for VCS 400-7. The vacuum control switches in the VCS 400-7 processor have a broader vacuum range to accommodate the bootless nozzles.

The control panel for the VCS 400-7 system has an on/off switch; an electrical circuit monitoring light; a vacuum status light; and alarm circuit with a status light, audible alarm, and solid-state recording device. Additional components are:

1. Pressure/Vacuum relief valve
Hazlett OSFM certification number 005:006:1
2. Hose and Retractor - any State Fire Marshal certified overhead hose retractor assembly with up to 12 ft. long coaxial hose.
3. Flow Limiting Valve - if flow rate limiting is required to limit flow to 10 GPM, use Fire Marshal certified device.
4. Nozzles - a variety of bootless nozzles approved by CARB and DMS for the VCS 400-7 system.
5. Vapor Return Hose - several different brands of standard coaxial hoses with liquid removal device approved by CARB and DMS.

APPLICATION: Intended for use and installation on underground gasoline storage tank applications where gasoline vapor systems are required.

CERTIFICATION: Certified as a vacuum assist system with processing for Phase II vapor recovery systems.

CERTIFICATION No. 004-0015:0003

DATE ISSUED: August 27, 2009

MANUFACTURER: Hirt Combustion Engineers, Inc.

3659 San Gabriel River Parkway, Pico Rivera, CA 90660

Contact: Thomas Smith

DESIGN: Model VCS 400-7. Model is a vacuum assist system with processing that utilizes bootless nozzles. The purpose of the system is to prevent the release of gasoline vapors into the atmosphere. The system processes only excess vapors allowing the majority of vapors to recondense in the above ground tanks.

The system consists of vapor recovery nozzles, vapor recovery hoses, vapor return piping, vent piping, a processing unit, and a control panel.

The processing unit contains no consumable filter, no chemical catalyst, and requires no lubrication. The pressure in the vapor collecting subsystem is continually monitored and automatically maintained slightly negative by a vapor pump. The system has a complete compliment of flame safety and fail-safe interlocks.

The processor is a packaged unit and includes those parts listed on approved parts list identified as 1180-19A-0 for VCS 400-7. The Motor Driven Turbine Pump (i.e. blower) is covered by the approved parts list identified as 1180-19A-2 for VCS 400-7. The vacuum control switches in the VCS 400-7 processor have a broader vacuum range to accommodate the bootless nozzles.

The control panel for the VCS 400-7 system has an on/off switch; an electrical circuit monitoring light; a vacuum status light; and alarm circuit with a status light, audible alarm, and solid-state recording device. Additional components are:

1. Pressure/Vacuum relief valve
Hazlett GVRC 005:006:1
2. Hose Retractor - any State Fire Marshal certified
Overhead hose retractor assembly with up to 12 ft. long coaxial hose.
3. Flow Limiting Valve - if flow rate limiting is required to
Limit flow to 10 GPM; use Fire Marshal certified device.
4. Nozzles - a variety of bootless nozzles approved by CARB
and DMS for the VCS 400-7 system.
5. Vapor Return Hose - several different brands of standard

Coaxial hoses with liquid removal device approved by CARB and DMS.

APPLICATION: Intended for use and installation on above ground gasoline storage tank applications where gasoline vapor systems are required.

CERTIFICATION: Certified as a vacuum assist system with processing for Phase II vapor recovery systems.

CERTIFICATION No. 005-0015:0004

DATE ISSUED: January 12, 2009

MANUFACTURER: Hirt Combustion Engineers, Inc.

3659 San Gabriel River Parkway, Pico Rivera, CA 90660

Contact: Thomas Smith

DESIGN: Model VCS 100 Vapor Processor. Model is designed for use with a Balance Type Stage II Vapor Recovery System. The purpose of the processor is to prevent storage tank pressurization, which in the presence of a vapor space leak, would allow the release of gasoline vapors into the atmosphere. The processor only takes care of the excess vapors, allowing the majority of vapors to re-condense in the station's storage tanks.

The balance with process system consists of booted vapor recovery nozzles, coaxial vapor recovery hoses, safety breaks (i.e., breakaways), vapor return piping, vent piping, a Hirt VCS 100 processor, and a Hirt Indicator Panel.

The processor contains no consumable filter, no chemical catalyst, and requires no lubrication. The pressure in the vapor collecting subsystem is continually monitored and automatically maintained slightly negative (sub-atmospheric) by a vapor pump. The system has a complete compliment of flame safety and fail-safe interlocks.

The VCS 100 processor is a packaged unit and includes those parts listed on the material list.

The Indicator Panel for the VCS 100 processor has an on/off switch, a power lamp, a "processing" lamp to indicate when the processor is in operation, and an "overpressure" lamp to indicate when the processor has malfunctioned.

Additional components are:

1. Pressure/Vacuum relief valve
2. Flow Limiting Valve - if flow rate limiting is required to limit flow of gasoline dispensed to 10 GPM.
3. In Station Diagnostics - to keep a record of the operation of the vapor recovery system
4. Hose Swivels

APPLICATION: Model VCS 100 Processor is intended to be used as part of an approved Balance Type Stage II Vapor Recovery System.

CERTIFICATION: Certified as a vapor processor for use with Phase II Balanced Type Vapor Recovery Systems.

CERTIFICATION No. 005-0015:0006

DATE ISSUED: September 26, 2014

MANUFACTURER: Hirt Combustion Engineers, Inc.
3659 San Gabriel River Parkway, Pico Rivera, CA 90660
Contact: Thomas Smith

DESIGN: Model VCS 100 Vapor Processor when used with underground storage tanks and Model VCS 100-2 Vaportek® when used with aboveground storage tanks. Models are designed for use with a Balance Type Stage II Vapor Recovery System. The purpose of the processor is to prevent storage tank pressurization, which in the presence of a vapor leak, would allow the release of gasoline vapors into the atmosphere. The processor only takes care of the excess vapors, allowing the majority of vapors to re-condense in the station's storage tanks.

The balance with process system consists of booted vapor recovery nozzles, coaxial vapor recovery hoses, safety breaks (i.e., breakaways), vapor return piping, vent piping, a Hirt Indicator Panel, a Hirt VCS 100 or VCS 100-2 Vaportek® processor, and, in the case with aboveground storage tanks, a Liquid Condensate Trap.

The processor contains no consumable filter, no chemical catalyst, and requires no lubrication. The pressure in the vapor collecting subsystem is continually monitored and automatically maintained slightly negative (sub-atmospheric) by a vapor pump. The system has a complete compliment of flame safety and failsafe interlocks.

The VCS 100 or VCS 100-2 Vaportek® processor is a packaged unit and includes all those parts listed on the material list.

The Indicator Panel for the either the VCS 100 or VCS 100-2 Vaportek® processor has an on/off switch, a power lamp, a "processing" lamp to indicate when the processor is in operation, and either a "overpressure" or "malfunction" lamp to indicate when the processor has malfunctioned.

Additional components are:

1. Pressure/Vacuum relief valve
2. Flow Limiting Valve - if flow rate limiting is required to limit flow of gasoline dispensed to 10 GPM
3. In Station Diagnostics - to keep a record of the operation of the vapor recovery system
4. Hose swivels
5. Liquid Condensate Trap - if vapor return piping cannot slope downward from the dispenser(s) to the gasoline storage tanks

APPLICATION: Model VCS 100 or VCS 100-2 Vaportek® Processor is intended to be used as part of an approved Balance Type Stage II Vapor Recovery System.

CERTIFICATION: Certified as vapor processors for use with Phase II Balanced Type Vapor Recovery Systems.

CERTIFICATION No. 005-0027:0029

DATE ISSUED: August 30, 2007

MANUFACTURER: Healy Systems-Franklin Fuel System

3760 Marsh Road, Madison, WI 53718

Contact: Sandy Adams

DESIGN: Model 9942 Clean Air Separator tank. Model is designed for use at a gasoline dispensing facility. It is used in conjunction with the product storage tank vent system and will contain up to approximately 400 gallons (53ft³) of excess gasoline vapors, thus preventing their release to the atmosphere. At a later time, when the tank system is under a negative pressure condition, the stored vapors are returned to the product storage area. The system contains no moving or electrical parts and is installed in close proximity to the product storage tank vent system in accordance with NFPA 30A.

APPLICATION: While designed to work with a Healy Systems, Inc. assist vapor recovery system with limited air volume return while fueling ORVR equipped vehicles, the Model 9942 can work with any vapor recovery system that may have periodic episodes of excess vapors.

CERTIFICATION: Certified as a clean air separator tank for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0044:0009

DATE ISSUED: August 13, 2008

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Models VST-ECS-CS3-310 and *VST-ECS-CS3-110 Emissions Control Systems Membrane Processor Units.

These vapor processor units are designed for use with an existing vapor recovery system at a gasoline refueling facility. The processor system is intended to reduce hydrocarbon emissions by controlling the underground storage tank (UST) pressure. When the UST pressure reaches +0.2 in. of H₂O column pressure, monitored by a Listed external controller, the system turns on and the blower draws the vapor/air mixture from the UST. This vapor is forced through a selectively permeable membrane by a combination of blower pressure on one side of the membrane and vacuum from a vacuum pump on the opposite side. The membrane removes oxygen from the vapor stream and returns the concentrated VOC vapor to the UST. The oxygen stream is vented to atmosphere. The processor system shuts down when the UST pressure drops to -0.2 in. of H₂O column vacuum. * The VST-ECS-CS3-310 has a 3-phase electrical connection, the VST-ECS-CS3-110 has a single-phase electrical connection.

APPLICATION: For Phase II Systems.

CERTIFICATION: Certified as vapor processor units for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0058:0001

DATE ISSUED: July 21, 2000

MANUFACTURER: American Controls, Inc.

20764 Whitlock, Farmington Hills, MI 48336

Contact: Hans Czeranna (248) 476-7782 Ext: 15 Fax (248) 476-3133

DESIGN: Model 2.5 catalytic oxidizer. Model is a vapor processor that consists of an ACI/Anguill Model 2.5 catalytic oxidizer (OSFM Certification No. 005.058.001).

The “ACI/Anguill Model 2.5 catalytic oxidizer” is specifically designed for automobile assembly plants with high volume vehicle production. It is not intended for use by the general public at retail gasoline outlets. The ACI/Anguill Model 2.5 catalytic oxidizer is used to destroy gasoline vapor recovered during dispensing operations from the “Synchrotek Fastflo 3” (OSFM Certification No. 005.057.001) gasoline vapor recovery nozzle.

APPLICATION: The “Synchrotek Fastflo 3” system dispenser consists of: ACI/Anguill Model 2.5 catalytic oxidizer and the “Synchrotek Fastflo 3” (GVRC 005.057.001) gasoline vapor recovery nozzle. When the “Synchrotek Fastflo 3” system dispenser is activated, gasoline vapors are drawn from the nozzle and assembly, through flexible hose and rigid piping into the ACI/Anguill catalytic oxidizer blower and discharged into the system’s heat exchanger. Gasoline vapors are burned to carbon dioxide and water vapor.

CERTIFICATION: Certified as a vapor processor for use only with the listed dispenser above for Phase II vapor recovery in automobile and truck assembly plants only.

CERTIFICATION No. 004-0059:0001

DATE ISSUED: June 5, 2006

MANUFACTURER: Arid Technologies, Inc., 323 South Hale Street, 2nd Floor, Wheaton, IL 60187 Contact: Steve Matus (630) 681-8500

Email: smatus@aridtech.com

DESIGN: Model Permeator AT-150 Membrane Processor. Model is installed on the underground storage tank vent.

Air and hydrocarbon vapors fill space left in a storage tank when liquid gasoline is transferred to an automobile.

The pressure in the storage tank headspace increases as liquid gasoline in the storage tank evaporates to increase the hydrocarbon concentration in the headspace. A pressure switch connected to the ullage actuates the Permeator system.

The air/hydrocarbon mixture expelled from the storage tank vent line is directed to a membrane module where a vacuum pump creates a differential pressure that causes the hydrocarbon molecules to preferentially permeate, or pass through, the membrane.

The hydrocarbon-rich permeate stream is returned to the storage tank while the air-rich non-permeate stream is vented to the atmosphere. (Note: The purity of the exiting air stream that has been depleted of hydrocarbons is determined by feed flow rate, membrane area and the pressure ratio between the feed and permeate streams.)

As tank pressure decreases to a pre-set level, the pressure switch automatically deactivates the Permeator system.

The above sequence is repeated when the storage tank pressure exceeds a pre-set maximum level.

APPLICATION: For Phase I and II Systems the Permeator allows for improved refueling vapor recovery efficiency at the nozzle without sacrificing evaporative emissions from the storage tanks.

CERTIFICATION: Certified as a membrane processor for use with Phase I or Phase Vapor Recovery Systems.

CERTIFICATION No. 005-0063:0029

DATE ISSUED: October 27, 2010

MANUFACTURER: Franklin Fueling Systems, 3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Healy Systems Models *9961 and *9961H Clean Air Separator tank is designed for use at a gasoline dispensing facility. It is used in conjunction with the product storage tank system and will contain up to approximately 400 gallons (53ft³) of excess gasoline vapors, thus preventing their release to the atmosphere. At a later time, when the tank system is under a negative pressure condition, the stored vapors are returned to the product storage area. The system contains no moving or electrical parts and is installed in close proximity to the product storage tank vent system in accordance with NFPA 30A, Chapter 10.

APPLICATION: While designed to work with a Healy Systems assist vapor recovery system with limited air volume return fueling ORVR equipped vehicles, The Models *9961 and *9961H can work with any vapor recovery system that may have periodic episodes of excess vapors.

CERTIFICATION: Certified as clean air separator tanks for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0071:0001

DATE ISSUED: November 18, 2009

MANUFACTURER: Veeder Root, 125 Powder Forest Drive, Simsbury, CT 06070

Contact: John Fecteau (860) 651-2882 Fax (860) 651-2719 Email:

jfecteau@veeder.com

DESIGN: Model 861290 followed by -002 or -003 Carbon Canister Vapor Polisher. This device is a carbon filter for use with flammable liquid storage tanks and is intended to be connected in parallel with the existing pressure vacuum vent connected to the tank. This device consists of a canister filled with activated charcoal without a catalyst. Upon positive pressure, vapors from the tank pass through the charcoal and are collected via adsorption. During negative pressure conditions within the tank, the hydrocarbons are returned to the tank from the activated charcoal via desorption.

The outlet of the canister is provided with an electrically operated valve powered from an intrinsically safe source. The Vapor Polisher opens or closes the valve to minimize vapor pressure in the tank.

APPLICATION: Model 861290 Carbon Canister Vapor Polisher is intended to be only a secondary pressure management device. Model 861290-002 is intended for installation on a 2-inch vent pipe and Model 861290-003 is intended for installation on a 3-inch vent pipe.

CERTIFICATION: Certified as a carbon canister vapor polisher for use with Phase I and Phase II vapor recovery systems.

Vapor Recovery Systems

CERTIFICATION No. 0001-0026:0016

DATE ISSUED: April 8, 2003

MANUFACTURER: Gilbarco Inc.

7300 W. Friendly Ave., Greensboro, NC 27410

DESIGN: Balance type phase II vapor recovery system for its pumps and dispensers. The Balance system is available as a factory installed option and a field retrofit kit on the below listed Gilbarco ENCORE series NXX motor fuel dispensers. The Gilbarco Balance system consists of the hose fittings, internal vapor piping, nozzle boots and nozzle hooks. When the dispenser with the Balance system option is installed in the field, UL listed, State Fire Marshal certified and CARB approved vapor recovery hoses, nozzles and breakaways are connected to the hose outlet fitting.

Dispenser Models

NAO, NCO are Encore 1 Grade Multi-hose

NA1, NC1 are Encore 2 Grade Multi-hose

NA2, NC2 are Encore 3 Grade Multi-hose

NA3, NC3 are Encore 4 Grade Multi-hose

NG4, NG5 are Encore 2 Grade Single-hose

NGO, NG2 are Encore 3 Grade Single-hose

NG1, NG3 are Encore 4 Grade Single-hose plus one

NJ0, NJ1 are Encore Multi-hose Blender

NJ2, NJ3 are Encore Multi-hose Blender plus one

NL0,NL1,NL2,NL3,NL4,NL5,NL6,NL7 are Encore X+1 Blender

NN0, NN1, NN2, NN3, NN4, NN5, NN6, NN7 are Encore X+0 Blender

APPLICATION: The Balance system is available as a factory installed option and a field retrofit kit only with the above listed Gilbarco ENCORE series NXX dispensers.

CERTIFICATION: Certified as balance type Phase II vapor recovery system for use with above listed Gilbarco ENCORE series NXX dispensers.

CERTIFICATION No. 005-0028:0001

DATE ISSUED: May 19, 1994

MANUFACTURER: Tokheim Corporation

1600 Wabasx Ave, Fort Wayne, IN 46801

Contact: John VanDaele

DESIGN: Model MaxVac System. System is factory installed into TOKHEIM PREMIER Series Model dispensers as listed below. The following components are compatible with the MaxVac System and are UL Listed; Inverted Coaxial Hose Assemblies: Dayco 7282 Superflex 2000, Goodyear Flexsteel, and Thermoid H-Vac. Bellow less Inverted Nozzles: Husky V34, and OPW 11VAI; Inverted Safety Breakaways: Catlow AV200, AV200-1, OPW 66CI, Husky 4034, and Richards Industries VA-50 and VA-51; Pressure/Vacuum Valves.

Component	Manufacturer	OSFM Certification Number
Inverted Coaxial Hose	Dayco 7282 Superflex 2000	005:033:005
	Goodyear Flexsteel	005:036:002
	HBI Thermoid Hi-Vac	005:037:003
Nozzle	Husky V34 with Tokheim	005:021:008
	Vapor Guard "ECD"	005:008:050
	OPW 11VAI with Tokheim	none
Breakaways	Catlow Av200, AV200-1	005:030:005
	Husky 4034	005:021:009
	OPW 66CI	005:030:005
	Richards Industries VA-50, VA-51	005:031:007
Pressure/Vacuum	Any UL Listed P/V Valve	none

The "MaxVac System" contains Factory installed TOKHEIM supplied vacuum pump/motor assembly, control electronics and associated vapor piping required for a vapor assist recovery system.

Model Number: PREMIER: H 3 or 4nn/suffix. "H" is in the main body and is High Hose Dispenser. 3 or 4 in prefix indicates dispenser width. The "nn" is (# of sides & # of hoses per dispenser) 11, 12, 13, 14, 22, 26, 28. The "MV" in suffix is Factory installed.

APPLICATION: May be used only in TOKHEIM PREMIER Series Model dispensers as listed above.

CERTIFICATION: Certified as Phase II vapor recovery system for use only with Listed TOKHEIM PREMIER Series Model dispensers as listed above.

NOTE: This Certification includes all components outlined in the design section installed in TOKHEIM PREMIER Series Model dispensers as listed above to provide vapor assist recovery system.

CERTIFICATION No. 005-0028:0002

DATE ISSUED: December 14, 1995

MANUFACTURER: Tokheim Corporation
1600 Wabasx Ave, Fort Wayne, IN 46801

Contact: John VanDaele

DESIGN: The "MaxVac System Retrofit Kit" is field installed into TOKHEIM PREMIER Series Model dispensers as listed below. The following components are compatible with the MaxVac System and are UL Listed; Inverted Coaxial Hose Assemblies: Dayco 7282 Superflex 2000, Goodyear Flexsteel, and Thermoid H-Vac. Bellow less Inverted Nozzles: Husky V34, and OPW 11VAI; Inverted Safety Breakaways: Catlow AV200, AV200-1, OPW 66CI, Husky 4034, and Richards Industries VA-50 and VA-51; Pressure/Vacuum Valves.

Component	Manufacturer	OSFM Certification Number
Inverted Coaxial Hose	Dayco 7282 Superflex 2000	005:033:005
	Goodyear Flexsteel	005:036:002
	HBI Thermoid Hi-Vac	005:037:003
Nozzle	Husky V34 with Tokheim Vapor Guard "ECD"	005:021:008
	OPW 11VAI with Tokheim Vapor Guard "ECD"	005:008:050
Breakaways	Catlow Av200, AV200-1	005:030:005
	Husky 4034	005:021:009
	OPW 66CI	005:030:005
	Richards Industries VA-50, VA-51	005:031:007
Pressure/Vacuum Valve	Any UL Listed P/V Valve	
Vapor Recovery Pump	Nuovo Pignone for Thomas Industries Model No. VR-0020/991139	005:055:001
	Tokheim Corp. Model NFB 459002060	005:028:003

The "MaxVac System Retrofit Kits" contain TOKHEIM supplied vacuum pump/motor assembly, control electronics and associated vapor piping required for a vapor assist recovery system.

Model No. Description

PREMIER Series: "H" in the main body = High Hose Dispenser
 No "H" in main body=Low Hose Dispenser
 3nn or H3nn/suffix 3, 4, 6, or 7 in prefix indicates dispenser width
 4nn or H4nn/suffix [3(30deg), 4(45deg), 6(60deg), 7(45deg)]
 6nn or H6nn/suffix "nn"=(#of sides & # of hoses per dispenser)
 7nn or H7nn/suffix
 [11, 12, 13, 14, 22, 24, 26, 28]
 "B" or "C" in suffix=Premier Series
 "R" in suffix=Remote Dispensers
 "B3", "B4", "B5" in suffix=3, 4, or 5 Product Blender
 "EB" in suffix=Electronic Blender
 "SL" in suffix=Field Installed MaxVac Kit
 "MVK" in suffix=Field Installed MaxVac Kit

TCS Series: "H" in main body=High Hose Dispenser
 No "H" in main body=Low Hose Dispenser
 3nn or H3nn/suffix 3,4,or 6 in prefix indicates dispenser width
 4nn or H4nn/suffix [3(30deg), 4(45deg), 6(60)]
 6nn or H6nn/suffix

"nn"=(#of sides & # of hoses per dispenser)
[11,12,13,14,22,24,26,28]
"A" or blank in suffix=TCS Series
"R" in suffix=Remote Dispenser
"B3" or "B5" in suffix=3 or 5 Product Blender
"EB" in suffix=Electronic Blender
"MVK" in suffix=Field Installed MaxVac Kit

262 Series: 162 or 262 in main body=262 Series
162/suffix "A","B" or blank in suffix=Version of 262 Series
262/suffix "FL" in suffix=Front Load Hose
"SL" in suffix=Side Load Hose
"1", "2" in suffix=One or Two Products
"TW" in suffix=Two Hoses
"MVK" in suffix=Field Installed MaxVac Kit

APPLICATION: May be used only in TOKHEIM PREMIER Series Model dispensers as listed above.

CERTIFICATION: Certified as Phase II vapor recovery system only for use with Listed TOKHEIM PREMIER Series Model dispensers as listed above.

NOTE: This Certification includes all components outlined in the design section installed in TOKHEIM PREMIER Series Model dispensers as listed above to provide vapor assist recovery system.

CERTIFICATION No. 005-0039:0001

DATE ISSUED: November 1, 1989

MANUFACTURER: Amoco Oil Company

PO Box 3011, Naperville, IL 60566

Contact: Dennis Strock

DESIGN: Model Amoco V 1 Vapor Recovery System. Model is a vapor recovery retrofit kit that converts conventional gasoline dispensing devices to such devices incorporating provisions for Stage II Vapor Recovery. The kit is composed of a hose nozzle valve, a vapor pump, and a fabricated coaxial fluid handling hose.

APPLICATION: Intended for installation at service stations or other gasoline refueling facilities, except for marine and gasoline/alcohol blended fueling applications, where vapor recovery systems may be required.

CERTIFICATION: Certified as Phase II vacuum assist vapor recovery system.

Fuel Tank Accessories

CERTIFICATION No. 005-0008:0064

DATE ISSUED: November 15, 2011

MANUFACTURER: OPW Fueling Components

3250 Highway 70 Business West, Smithfield, NC 27577

Contact: Charles Liebal

Email: cliebal@opwfcs.com

DESIGN: Models OPW 623V Series Pressure/Vacuum Relief Valves. Models are designed to be installed on two (2) inch or three (3) inch vent pipe(s) of flammable liquid storage tanks.

The main body of the valves is made of molded plastic (Duratuff) and incorporates a molded plastic cap assembly. The cap assembly includes a fine mesh screen to prevent entry of foreign objects from the atmosphere.

The Vent base is made of molded plastic (Duratuff) and incorporates a fine mesh screen to prevent entry of foreign material from the storage tank. The mounting adapter is made of aluminum, and the valves are affixed to the vent pipes of the storage tank by threading the internal thread in the mounting adapter onto the vent pipe.

Pressure release is controlled by dead weight aluminum cup, and the vacuum release is controlled by use of a spring and poppet assembly. The pressure relief setting is three (3) inches water column (WCG), and the vacuum setting is eight (8) inches water column.

Model	Pressure (WCG)	Vacuum (WCG)	Base Adapter
623V-2203	3"WCG	8"WCG	2-inch int. NPT
623V-3203	3"WCG	8"WCG	3-inch int. NPT

APPLICATION: To be installed on underground and aboveground gasoline storage tank vent pipe(s) when pressure/vacuum valves are required.

CERTIFICATION: Certified as pressure/vacuum relief valves for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0021:0017

DATE ISSUED: August 22, 2018

MANUFACTURER: Husky Corporation

2325 Husky Way, Pacific, MO 63069

Contact: Tim Schroeder

Email: tschroeder@husky.com

DESIGN: Husky Model 5885 pressure/vacuum vent valve. This model is designed to attach directly to a 2-inch NPT threaded vent stack or to a 3-inch threaded vent stack with a coupling.

APPLICATION: Husky Model 5885 is intended to regulate the Aboveground or Underground Storage Tank system pressure to CP-201 limits. It is also certified to meet

UL 2583 requirements for use with Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85% (E0-E85).

CERTIFICATION: Certified as pressure/vacuum vent valve for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0034:0004

DATE ISSUED: March 28, 1995

MANUFACTURER: EBW Inc.

2814 McCracken Ave, Muskegon, MI 49441

Contact: Jim Biesecker (800) 475-5151 Fax (616) 759-2207

DESIGN: EBW Models 708-450 and 708-451 Autolimiter II, Automatic Shut-off Valve for underground storage tanks. The shut-off valve consists of three main assembly component parts; (1) the valve body assembly, which consists of anodized cast aluminum, (2) an upper tube, consisting of anodized cast aluminum and (3) lower tube, also constructed of anodized cast aluminum. Integral to the body assembly are two aluminum and Acetal flappers, and two polyethylene floats.

APPLICATION: This device is designed to be installed in a 4" riser pipe of an underground storage tank and is intended to reduce the flow of incoming fuel by 90% at its first stage and completely shut down fuel flow at 95% of tank capacity. Models are installed in 4" riser pipes of underground storage tanks only.

CERTIFICATION: Certified as shut-off valves.

CERTIFICATION No. 005-0041:0001

DATE ISSUED: February 21, 1995

MANUFACTURER: Morrison Bros. Co.

570 East 7th Street, Dubuque, IA 52001

Contact: Matthew Brossett (563) 583-5701 Fax (563) 583-5028

Email: mbrossett@morbros.com

DESIGN: (1) Morrison Bros. Company Figure #749 pressure-vacuum vent (8 ounce per square inch pressure setting, 5 ounce per square inch vacuum) assembly #749--0500 AV drawing #B-6521-0.

(2) Morrison Bros. Company Figure #749 pressure-vacuum vent (3" of water pressure setting, 8" of water vacuum) assembly #749--0600 AV drawing B-6304-0.

The main body of the valves are made of machined clear coat anodized aluminum and incorporates a cap assembly. The cap assembly includes a fine mesh screen to prevent entry of foreign objects and an aluminum vapor deflector.

Pressure relief setting is at (8) ounces per square inch, and (5) ounces per square inch vacuum for No. 1, and 3" of water pressure setting, 8" of water vacuum per No. 2. Pressure and vacuum release are controlled by two (2) springs on the 8 ounce per square inch valve and one spring with a counterweight on the 3" of water valve.

Model No. 1 and 2 employ a two (2) inch 11.5 NPSM internal thread to secure the valve to the storage tank's vertical vent pipe. Sealing between the valve body and vent pipe is provided by a Buna-N Seal.

APPLICATION: To be installed on underground or aboveground gasoline storage tank vent pipe(s) when pressure/vacuum valves are required.

CERTIFICATION: Certified as pressure/vacuum vent valves for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0041:0002

DATE ISSUED: December 21, 1995

MANUFACTURER: Morrison Bros. Co.

570 East 7th Street, Dubuque, IA 52001

Contact: Matthew Brossett (563) 583-5701 Fax (563) 583-5028

Email: mbrossett@morbros.com

DESIGN: Models Extractor Fitting Series 560 and 317. Models are designed to prevent overfill of the underground tank and at the same time prevent the release of vapors to the atmosphere. This vapor/overflow valve is made of stainless-steel outer wire cage with a stainless-steel ball. NOTE: The manufacturer is adding a 563 model to their 560 series of extractors fittings. The 563 model is identical to the 560, 561, and 562 except for the size.

These Extractors are manufactured in the following fitting sizes:

560 Series Extractor Fittings:

#560, 4" X 4" X 2" X 2"

#561, 4" X 4" X 2"

#562, 4" X 4" X 3" X 2"

#563, 4" X 4" X 3"

317 Series Float Vent Valves:

#317, 2" X 6"

#317, 2" X 12"

#317, 2" X 15"

#317, 2" X 17"

#317, 2" X 19"

APPLICATION: The Morrison Brothers Extractor fittings are intended to be installed on underground tank fill openings with a connection to the vapor exhaust line. These Extractors are designed to prevent the release of vapors during the tank fueling process.

CERTIFICATION: Certified as overflow prevention valves for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0044:0504

DATE ISSUED: April 8, 2024

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VST-EVRPV pressure/vacuum vent valve. The valve mounts on the vent pipe to protect the structural integrity of the underground storage tank from the positive and negative pressure conditions caused by fuel drops and vehicle dispensing. The valve is designed to prevent unwanted vapor emissions from escaping into the atmosphere.

APPLICATION: Intended to be installed midway on the vent pipe or at the top of the vent pipe on underground storage tanks.

CERTIFICATION: Certified as a pressure/vacuum vent valve for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0048:0001

DATE ISSUED: December 17, 1992

MANUFACTURER: Universal Valve Company, Inc.

478 Scheller Street, Elizabeth, NY 07206

Contact: Sam Ponjican (908) 351-0606 Fax (908) 351-0369

DESIGN: Model 46 Pressure/Vacuum Relief Valve. Model is designed to be installed on unthreaded two (2) inch flammable liquid storage tank vent lines.

The major components, cap, body, and sleeve of this pressure/vacuum relief valve are made of cast aluminum.

The cap assembly includes a # 40 fine mesh brass screen to prevent entry of foreign objects.

Sealing between the pressure/vacuum relief valve and vent pipe is provided by a seal gasket. The valve is secured to a vent line with three (3) 1/4 inch - 20 slotted-head mounting screws.

Pressure and vacuum release are controlled by two (2) cadmium plated music wire conical springs which are affixed to a poppet. When pressure/vacuum becomes excessive, the poppet " opens " relieving the unwanted pressure/vacuum. The conical springs return the poppet to the " closed " position after excessive pressure/vacuum is relieved.

Pressure relief setting is at two (2) inches water column, plus or minus one (1) inches water column. Vacuum setting does not exceed one-half (1/2) ounce per square inch or eight (8) inches water column of vacuum.

APPLICATION: To be installed on underground or aboveground gasoline storage tank vent pipe(s) when pressure/vacuum valves are required.

CERTIFICATION: Certified as pressure/vacuum relief valve for use with Phase I vapor recovery systems.

CERTIFICATION No. 005-0063:0033

DATE ISSUED: April 2, 2009

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model PV-ZERO pressure vacuum vent. Model is intended for installation on vent pipes of flammable liquid storage tanks for use with flammable and combustible liquids and/or alcohols and gasoline/alcohol blends that are designed for vapor recovery capabilities. Operation is controlled by a fluid column that flows back and forth in channels in the device depending on the pressure state of the storage tank. When the fluid level reaches specific areas inside the device based on the pressure/vacuum in the tank exceeding the designed setting, air or vapor is allowed to flow through the device to limit the pressure or vacuum in the tank.

The vent has a rated opening pressure of +2.5-inch WC min., +6.0-inch WC max. and opening vacuum of -6.0-inch WC min., -10.0-inch WC max.. The vents are provided with a 3-inch NPT female connection thread.

APPLICATION: Model PV-ZERO is intended for installation on vent pipes of flammable liquid storage tanks for use with flammable and combustible liquids and/or alcohols and gasoline/alcohol blends that are designed for vapor recovery capabilities.

CERTIFICATION: Certified as a pressure vacuum vent for Phase I vapor recovery systems.

CERTIFICATION No. 005-0063:0504

DATE ISSUED: December 2, 2016

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Defender Overfill Prevention Valve model 708-590 Series. Model is installed in a spill container through a 4" (102 mm) schedule 40 tank riser. The valve is designed with a primary shutoff that will activate between 85% and 92% of tank volume, depending upon tank size. After the primary shut-off is actuated the flow through the valve is limited to less than 8 gpm. A secondary, positive shutoff will occur at 95% tank volume if filling continues. After primary shutoff occurs.

APPLICATION: Defender Overfill Prevention Valve model 708-590 Series is intended for installation where the acceptability of the fuel is determined by Underwriters Laboratories, Inc.

CERTIFICATION: Certified as an overfill prevention valve for Phase I vapor recovery systems.

CERTIFICATION No. 005-0063:0508

DATE ISSUED: June 22, 2023

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model 804 Pressure Vacuum Vent. Product is intended for use with storage tanks or fueling systems containing automotive fuels. The vent contains an internal rolling diaphragm for both low leak and high-pressure conditions. *Configuration options include standard end-of-line installation with the P/V vent and vent stack adapter, or in-line at grade with the in-line vault and rain cap at the top of the vent line (Defender Series® In-Line Vault, Model DPVV).

Refer to listee's data sheet for additional detailed product description and operational considerations.

APPLICATION: The product is intended for use with storage tanks or fueling systems containing automotive fuels under the expected use conditions and exposures that have similar chemical, physical and material compatibility properties formulated in accordance with 40 CFR Part 80 "Regulation of Fuels and Fuel Additives" and meet the following ASTM Fuel Specifications and blend limitations (ASTM D975, ASTM D7467, ASTM D4814, ASTM D5798, and Mid-Range Ethanol Blends).

CERTIFICATION: Certified as a pressure vacuum vent for use with Phase I vapor recovery systems. Model complies with the applicable requirements in UL 2583, Issue No. 4 dated July 12, 2019.

CERTIFICATION No. 005-0070:0001

DATE ISSUED: January 7, 2008

MANUFACTURER: Beaudreau Electric, Inc.

183 Providence-New London Turnpike, North Stonington, CT 06359

Contact: Tom Wyper (860) 961-8502

Email: twyper@beaudreauelectric.com

DESIGN: Model P/V Zero pressure/vacuum vent valve. These devices are intended for installation on vent pipes of flammable liquid storage tanks that are designed for vapor recovery capabilities. Operation is controlled by a propylene glycol fluid column that flows back and forth in channels in the device depending on the pressure state of the storage tank. When the fluid level reaches specific areas inside the device based on the pressure/vacuum in the tank exceeding the designed settings, air or vapor is allowed to flow through the device to limit the pressure or vacuum in the tank.

The vent has a rated opening pressure of 4.5 in. WC (+2.5 in. WC min., +6.0 in. WC max.) and opening vacuum of -8.7 in. WC (-6.0 in. WC min., -10.0 in. WC max.). The vents are provided with a 2 in. or 3 in. NPT female connection thread.

APPLICATION: Beaudreau Electric Model P/V Zero is intended to regulate the Underground Storage Tank system pressure to CP-201 limits. It is also certified to meet UL 842 requirements.

CERTIFICATION: Certified as a pressure vacuum vent valve for use with Phase I vapor recovery systems.

Control, Monitoring, and Auxiliary Equipment

CERTIFICATION No. 005-0001:0003

DATE ISSUED: October 3, 1994

MANUFACTURER: Hasstech, Inc.

6985 Flanders Drive, San Diego, CA 92121

Contact: John Gray

DESIGN: Model ECS-Electronic Control and Status Panel is designed to replace the Hasstech Control Panel Models VCP-2 and VCP-2A. The Hasstech vapor recovery system incorporating VCP-2 and VCP-2A has previously been approved under the CSFM Certification Number GVRS 004:001:001. All components remain the same, the only change is to the control panel.

Model ECS operates in conjunction with a flame control circuit located in the flame processor to provide flame control logic, data acquisition, system processor and collection unit controls and user interface allowing access to stored data.

System Operation-The flame control unit first verifies that no "illegal" flame is present at the burner/processor unit. The control circuit in the ECS Panel then opens the "main solenoid valve" MSV, and starts the spark ignitor, this action ignites the excess fuel vapors and thus eliminates fugitive emissions.

APPLICATION: When the dispenser is activated, the collection pump is started.

Vacuum at the dispensing nozzle is applied only when gasoline starts to flow. Collected vapor is discharged to both the processing unit and the storage tank. Gasoline vapor is discharged through the processing unit where they are burned to carbon Dioxide and water. The gasoline storage tank is capped with pressure/vacuum relief valve. The collection pump is also started when the storage tank pressure is above 1/10 inch of water column, discharging gasoline vapors through the processor.

CERTIFICATION: Certified as a control panel to replace existing VCP-2 and VCP-2A Control Panels on Hasstech vapor processing systems only.

CERTIFICATION No. 005-0044:0011

DATE ISSUED: May 14, 2012

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VST-BFM-100 VST Balance Retrofit Flow Meter Assembly. Model converts the Veeder-Root Assist Flow Meter P/N 331847-002 to a Vapor Systems Technologies Balance Flow Meter model VST-BFM-100. The VST-BFM-100 is designed to be used in conjunction with the TLS-350 console to the Flow Meter junction box is in place and meets the requirements set in the TLS-3XX Series Site.

APPLICATION: For use with Phase II Vapor Recovery Systems.

CERTIFICATION: Certified as a balance retrofit flow meter assembly for use in Phase II Balance Vapor Recovery systems.

CERTIFICATION No. 005-0044:0012

DATE ISSUED: June 24, 2013

MANUFACTURER: VAPOR SYSTEMS TECHNOLOGIES, INC.

650 Pleasant Valley Drive, Springboro, OH 45066

Contact: Glenn Walker

DESIGN: Model VST-BFM-100 VST Balance Retrofit Flow Meter Assembly. Model converts the Veeder-Root Assist Flow Meter P/N 331847-002 to a Vapor Systems Technologies Balance Flow Meter model VST-BFM-100. The VST-BFM-100 is designed to be used in conjunction with the TLS-350 console to the Flow Meter junction box is in place and meets the requirements set in the TLS-3XX Series Site.

APPLICATION: For use with Phase II Vapor Recovery Systems.

CERTIFICATION: Certified as a retrofit flow meter assembly for use in Phase II Balance Vapor Recovery system.

CERTIFICATION No. 005-0063:0001

DATE ISSUED: December 5, 2007

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: In-Station Diagnostics System for Vapor Recovery Monitoring. The system consists of the TS-EMS, TS-550 or TS-5000 consoles, TS-VFM Vapor Flow Meters with TSP-ENCD Encoder, TS-VPS Vapor Pressure Sensor and TSP-LL2 Liquid Level Probes.

The TS-EMS, TS-550 and TS-5000 consoles monitor the vapor recovery system, archives reports required to meet regulations and provide positive shutdown of the dispensers and STPs if the system performance drops below required levels.

One TS-VFM Vapor Flow Meter with TSP-ENCD Encoder is installed in the vapor return line of each dispenser. It accurately measures the amount of gasoline vapor returning from the vehicle and for identifying specific dispenser vapor recovery efficiencies.

One TS-VPS Vapor Pressure Sensor is installed in the vapor return line of one dispenser. It continuously measures tank pressure to ensure proper containment of gasoline vapors.

The TSP-LL2 is a magnetostrictive probe intended to be installed in each of the fuel tanks.

APPLICATION: For Phase II Systems the Tank Sentinel monitors the performance of the vapor recovery system.

CERTIFICATION: Certified as a vapor recovery monitoring system for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-0063:0032

DATE ISSUED: August 8, 2008

MANUFACTURER: Franklin Fueling Systems

3760 Marsh Rd, Madison, WI 53718

Contact: Jon Vigen (608) 838-5668 Fax (608) 838-6433

Email: Jonathan.Vigen@fele.com

DESIGN: Model TS-DRK retrofit assemblies for upgrading only the Listed dispensing devices covered in the installation manual, to include a Model TS-DTU/P data transfer unit, to relay signals from vapor recovery components to the station. Dispensers which may be retrofitted are as indicated in the introductory section of the installation manual.

The Model TS-DTU/P data transfer unit is for use in Hazardous Locations, Class I, Division 2, Group D provides intrinsically safe circuits for use in Class I, Division 1, Group D when installed per the installation manual. These devices are intended to be mounted in the indoor unclassified or Class I, Group D, Division 2 area of the service station and supplies the intrinsically safe device located in a Class I, Group D, Division area.

APPLICATION: The TS-DRK monitors the performance of the Phase II vapor recovery system.

CERTIFICATION: Certified as a retrofit assembly for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-2000:0500

DATE ISSUED: August 29, 2017

MANUFACTURER: Orpak USA, Inc

100 First Street, Suite 200, Hackensack, NJ 07601

Contact: Arie Saveliev (201) 441-9820 Fax (201) 441-9830

Email: aries@orapkusa.com

DESIGN: Model Nano Nozzle Reader Back (nNR-B) communication interface device. Model mounts directly to nozzle and is activated when the nozzle is removed from the cradle. Activation involves a search for the vehicle identification in order to prevent unnecessary activation of the unit.

APPLICATION: Part Number 800960209/800960259 for use with currently certified nozzles only.

CERTIFICATION: Certified as a communication interface device for use with Phase II vapor recovery systems.

CERTIFICATION No. 005-2004:0001

DATE ISSUED: June 1, 2026

MANUFACTURER: AIROTRONICS, DIV OF STK ELECTRONICS INC,

2747 US Route 20, Cazenovia, NY 13035

Contact: Tom Sukkrasae (315) 655-8476 Fax (315) 655-2862

Email: tsukkrasae@pelcocaz.com

DESIGN: Models MC1001441H2T, MC2001441H2T, and MC1001441H2TS1 Voltage Monitors. Model numbers are with or without suffix "S". Models are intended to be used within a flammable liquid dispenser to control a vapor recovery pump. Models with suffix

"S" have a connector assembly instead of a switch. Models can be installed with maximum ambient temperature of 140°F (60°C). Models MC2001441H2T and MC1001441H2T are identical in construction except for electrical ratings and model designation. Models MC1001441H2T and MC1001441H2TS1 are rated for 120 VAC and 0.055 A. Model MC2001441H2T is rated for 230 VAC and 0.025 A. Refer to the manufacturer's data sheets for additional detailed product description and operational considerations. Models comply with the applicable requirements in UL 1238, 7th edition.

APPLICATION: Models are to be part of a UL listed power-operated flammable liquid dispensing device or UL listed retrofit assembly for a dispenser.

CERTIFICATION: Certified as a voltage monitoring device for use with Phase II vapor recovery systems.

Nonmetallic Underground Piping

CERTIFICATION No. 005-0061:0001

DATE ISSUED: May 26, 2010

MANUFACTURER: Nupi Americas, Inc.

1511 Superior Way, Houston, TX 77039

Contact: Maurizio Matta (281) 590-4471

DESIGN: Model Smartflex Underground Piping for Flammable Liquids - Nonmetallic Primary Carrier (PC) Pipe and Fittings for motor vehicle (MV) fuels, concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters of 50, 63, 75, 90 and 100mm. Nonmetallic Secondary Containment (SC) Pipe and Fittings for motor vehicle (MV) fuels, concentrated fuels (CF), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters of 63, 75, 110 and 125mm. Nonmetallic Integral Primary/Secondary Pipe System (PS) motor vehicle (MV) fuels, concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters of 50/63, 63/75 and 90/125mm. Nonmetallic Normal Vent (NV) motor vehicle fuels (MV), concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters 50, 63, 75, 90 and 110mm. Nonmetallic Vapor Recovery (VR) motor vehicle fuels (MV), concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters 50, 63, 75, 90 and 110mm.

APPLICATION: For Stage I and II Systems.

CERTIFICATION: Certified as nonmetallic underground piping for use with Phase I or II vapor recovery systems.

CERTIFICATION No. 005-0061:0002

DATE ISSUED: May 26, 2010

MANUFACTURER: Nupi Americas, Inc.

1511 Superior Way, Houston, TX 77039

Contact: Maurizio Matta (281) 590-4471

DESIGN: Model Smartflex Nonmetallic double wall riser pipe and a double wall to 1.5-inch NPT fitting for motor vehicle (MV) fuels, concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M). This fitting is used to connect the piping directly from the UDC penetration to the product and vapor shear valve. These risers may take place of the single wall steel braided flex lines.

APPLICATION: For Phase I or II Systems.

CERTIFICATION: Certified as nonmetallic underground piping for use with Phase I or II vapor recovery systems.

CERTIFICATION No. 005-0062:0001

DATE ISSUED: July 18, 2007

MANUFACTURER: Petro Technik Limited

Olympus Close, Whitehouse Industrial Estate, Ipswich, Suffolk, 1P1 5LN United Kingdom

Contact: David Lyzinski

DESIGN: Model UPP Underground Piping and Fittings for Flammable Liquids - Nonmetallic Integral Primary/Secondary Pipe System (PS) motor vehicle (MV) fuels,

concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters of 50/63, 63/75, 90/110 and 110/125mm. Nonmetallic Normal Vent (NV) motor vehicle fuels (MV), concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters 50, 63, 90, 110, 50/63, 63/75, 90/110 and 110/125mm. Nonmetallic Vapor Recovery (VR) motor vehicle fuels (MV), concentrated fuels (CT), high blend fuels (HB) and aviation and marine fuels (A&M), nominal diameters 50, 63, 90, 110, 50/63, 63/75, 90/110 and 110/125mm.

APPLICATION: For Phase I or II Systems.

CERTIFICATION: Certified as nonmetallic underground piping for use with Phase I or II vapor recovery systems.