

Overview – EMCO Balance EVR System

EMCO Model A4005EVR Dripless Nozzle - During vehicle refueling, the *nozzle* is securely latched to the vehicle fill pipe by means of a permanent band located on the spout. The position of the band permits the *nozzle* to remain in place on either a vertical or horizontal plane. The flexible bellows and soft boot face together provide the proper vapor seal connection between the spout and vehicle fill pipe as fuel passes into the vehicle tank.

The *No Seal, No Flow insertion interlock mechanism* assures adequate compression of the bellows and boot face against the vehicle fill pipe, creating a tight vapor seal for proper balance phase II vapor recovery. The *No seal, No Flow insertion interlock mechanism* prevents fuel flow through the fuel delivery system (fuel storage tank, turbine, fuel piping, dispenser and hanging hardware) unless the nozzle is properly inserted and securely latched to the vehicle fill pipe.

The integral *vapor control valve* is located within the nozzle body. The *vapor control valve* opens to allow the return of vapor through the balance phase II vapor recovery system (vapor path of the hanging hardware, dispenser, vapor piping and fuel storage tank) when the nozzle is securely latched to the vehicle fill pipe, with the bellows compressed and the nozzle lever engaged.

The *automatic shut-off* is a required safety device of the nozzle that stops and prevents the overflow and spillage of fuel once the vehicle tank is full. **Note:** "topping off" the vehicle tank is not recommended.

EMCO Model A4110EVR Coaxial Hose Swivel – The *coaxial hose swivel* installs between the dripless nozzle and the coaxial curb hose providing a full range of movement, minimizing kinking and twisting of the coaxial curb hose during vehicle refueling.

EMCO Model A4119EVR Coaxial Safe Break Valve – The *coaxial safe break valve* is a shear pin non-reconnectable component. The *coaxial safe break valve* is equipped with a dual poppet design that seals off both the fuel and vapor paths upon separation or customer drive-off, eliminating fuel spillage, vapor emissions and minimizing damage to the dispenser unit.

Goodyear Model Maxim Premier Plus Whip & Curb Hoses – The *coaxial curb hose* is a two hose design which passes fuel through the center hose and returns vapors through the outer hose. A liquid removal device (venturi) is incorporated and protected within the confines of the inner hose. As fuel gathers at the bottom of the loop typically from customer "top-offs", the liquid removal device extracts and returns the fuel to the inner fuel hose eliminating hose blockage.

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INCON ISD System – The *ISD system* consists of a *vapor recovery monitor VRM*, a *vapor flow meter VFM* and a *vapor pressure sensor VPS*. The *VRM* uses data from both the *VFM* (located inside each dispenser unit) and the *VPS* (one per station) to perform assessments on the station's balance phase II vapor recovery system. The *VRM* provides warning and failure indicators along with a user panel interface to access all daily, weekly and monthly ISD reports.

The *ISD system* offers another option that eliminates additional conduit runs. The *data transfer unit DTU* uses technology that transmits data from the *VFM* and *VPS* back to the *VRM* across existing dispenser power wires.

Hirt VCS-100 Vapor Processor with Indicator Panel – Under conditions where the Gasoline Dispensing Facility GDF is operational and the balance system hardware is functioning normally, the inherent On Board Vapor Recovery ORVR compatibility of the balance phase II vapor recovery system will create a predominately negative pressure in the ullage space of the gasoline storage tanks. Under these conditions the *vapor processor* will typically not need to operate.

During periods of less activity, the GDF being shut down overnight, winter fuels being present or other conditions that will create the pressurization of the ullage space, the *vapor processor* will operate intermittently as required above the particular set-point to manage the positive pressure in the ullage space to an accepted level. A vacuum sensor located within the *vapor processor* determines the set-point and is factory calibrated at a nominal -0.40 inches of water.

The *vapor processor* employs a specialized turbine which collects only the excess vapor from the ullage space. A unique combustor converts the excess vapor into harmless carbon dioxide CO₂ and water vapor H₂O.

The *vapor processor* is equipped with an *indicator panel* that provides power, processing and overpressure indicators that help the station operator, district inspectors and service technicians determine the operating status of the *vapor processor* and the GDF.

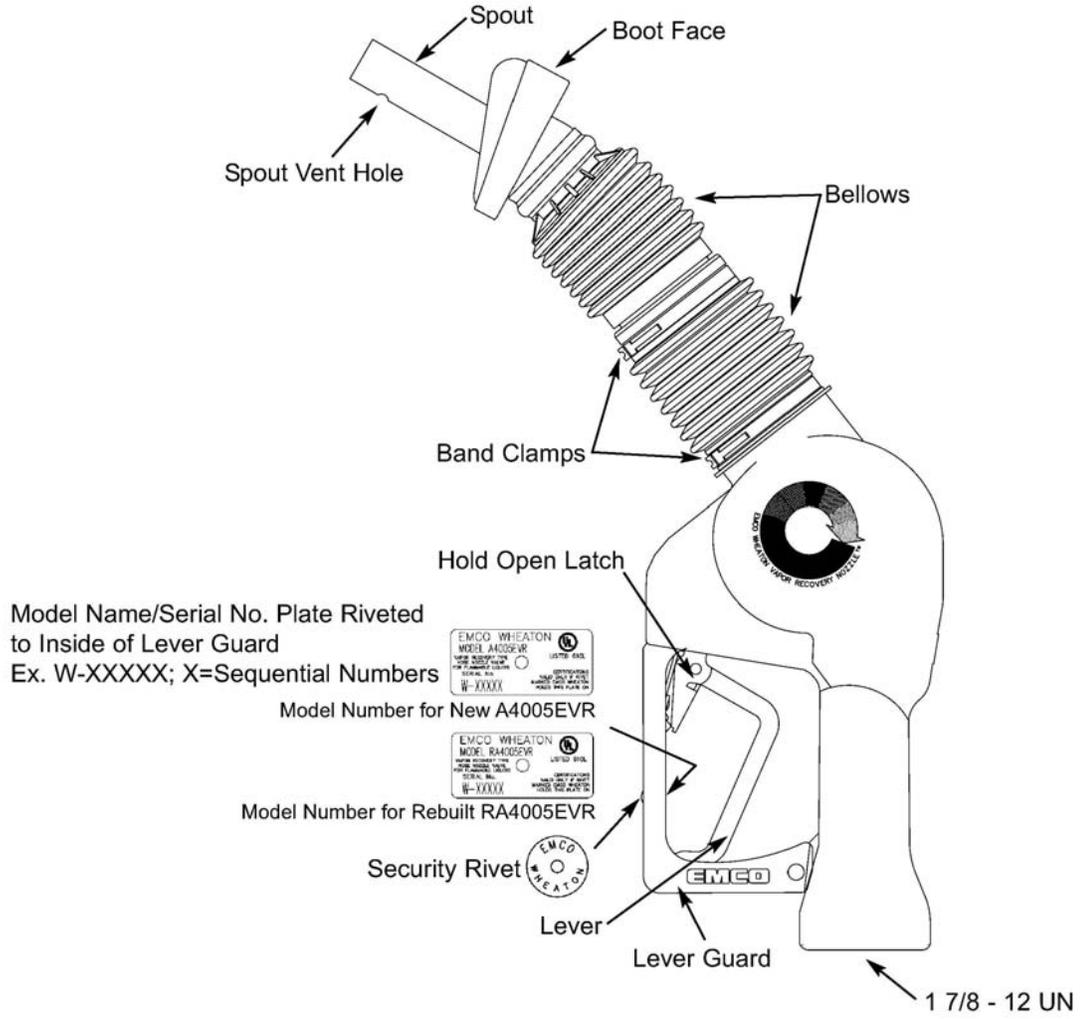


Figure 1: Model EMCO Wheaton Retail A4005EVR

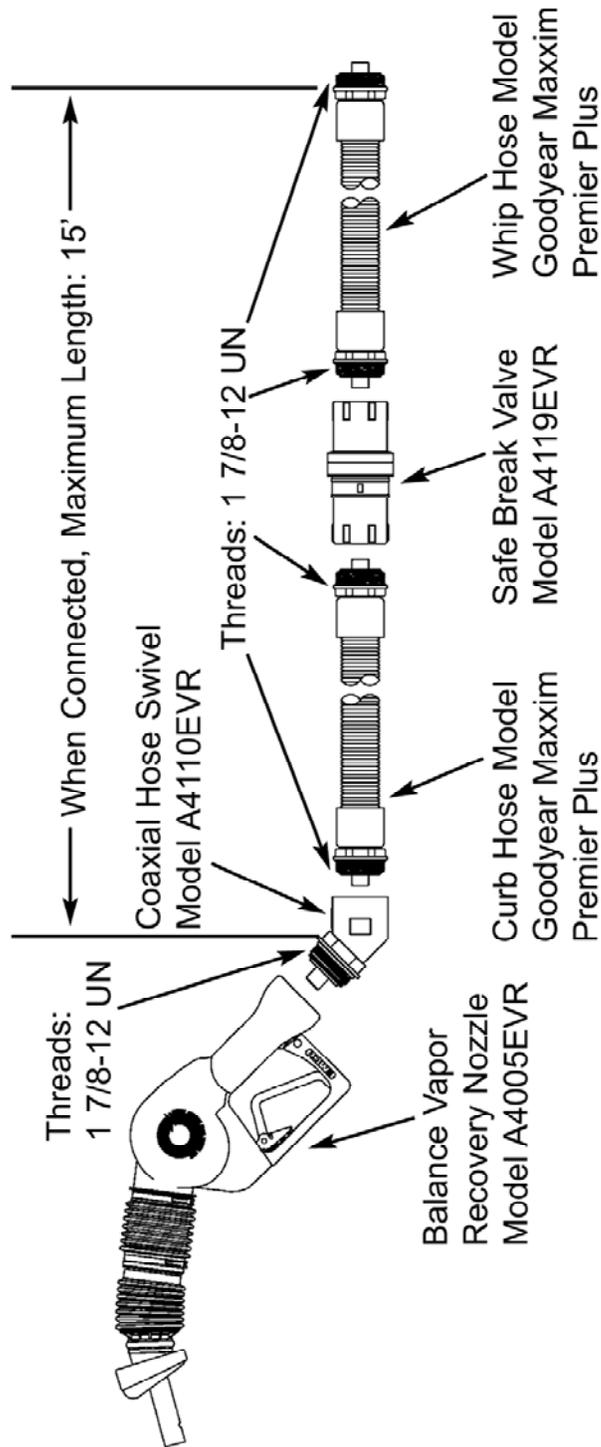
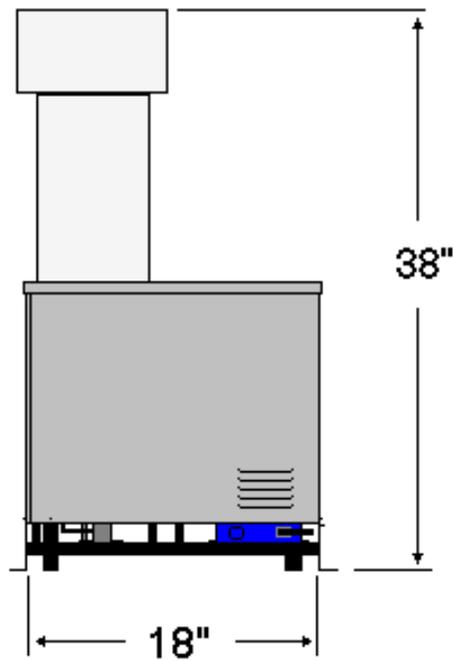
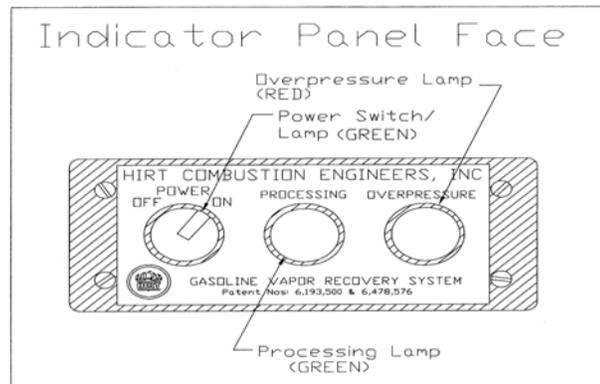


Figure 2 Model EMCO Wheaton Retail & Goodyear Hanging Hardware
(Nozzle, Coaxial Hose Swivel, Coaxial Fuel Hose, Coaxial Safe Break Valve)



Weight: 80lbs.
Electrical: 120VAC, 3Ampere Intermittent
Vapor Inlet Connection: 3/4 NPT

Figure 3: Model Hirt Combustion Engineers, Inc. VCS-100 Vapor Processor with Indicator Panel