TOTAL CONTROL SYSTEMS™

The Standard of Measurement

740 Series

Standard Air eliminator - Strainer assembly

The air eliminator is an automatic mechanical device designed to sense and remove free volumes of air or vapor from a liquid dispensing system in order to achieve accurate measurement results. The mechanical air and vapor eliminator is normally bolted in the up-right position to the top of a strainer. The entire assembly is mounted to the inlet side of the meter. Since the air or vapor released from device will contain a small amount of liquid, the air eliminator is normally plumbed back to a storage tank or into a special "catch" tank vented to atmospheric pressure. Depending on the application, an air check or differential valve can also be used in conjunction with an air eliminator to provide an extra level of measurement accuracy.

Size: 2" , 3" and 4"

Type: LP, SP, IP, AF & SS

Pressure: 150 PSI (10.5Bar) & 350PSI (24 bar for LPG

Temperature: -40F to 160F (-40C to 71C)

Seals: FKM, PTFE or SIMRIZ

Body material: aluminum, ductile iron and stainless steel (2" only)

Strainer basket: 20, 40 and 80 mesh for most light hydro carbons applications and 0.050 perforation for stainless steel and most industrial application

Thread on air eliminator head ports: NPT or BSPT

TOTAL CONTROL SYSTEMS™

The Standard of Measurement

740 & 745 Series

Air eliminator-strainer assembly

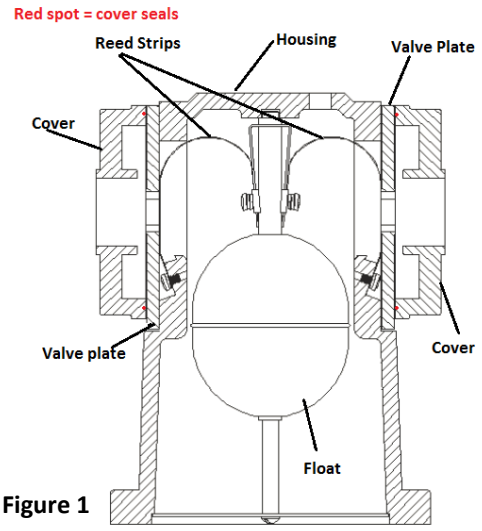

Figure 1

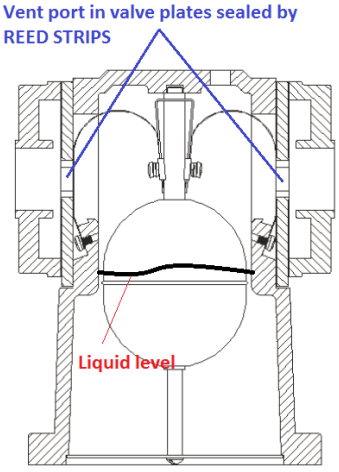

Figure 2

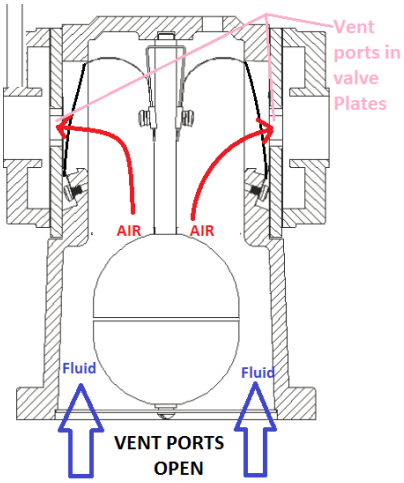

Figure 3

Working principle

Product enters the strainer located underneath the air eliminator. The stainless steel filtering screen found inside the strainer housing collects sediments that are contained within the liquid, preventing their entry into the metering chamber. The strainer and air eliminator housings are designed to allow the fluid to settle and allow the air or vapor to collect above the fluid in the air eliminator housing.

The TCS air eliminator mechanism (figure 1) consists of a reed curtain valve formed by two stainless steel reed strips operating in conjunction with a valve plate. One end of each reed strip is fastened to the float. The other end is secured to the housing.

Under normal operating conditions in the absence of air or vapor, the reed curtain valve is normally closed (figure 2) due to the liquid pressure pushing the float upwards. Once air or vapor enters the air eliminator housing, it displaces the liquid in the chamber, allowing the float to drop. As this occurs, the reed strips are pulled away from the valve plate, opening the vent ports (figure 3).

Once the air or vapor exits the air eliminator, the liquid level forces the float up, resealing the vent ports.

The efficient design of the float actuated valve system allows the air eliminator mechanism to work with minimum system pressures without stress or fatigue. The TCS air eliminator is capable of removing up to 150 cubic feet (4.2 m^3) per minute.

The Model 760 air check valve, Model 782 vapor check valve and 700CV wafer valve used in conjunction with the TCS air eliminator provide enhanced air elimination performance, especially where product depletion tests are required.