

Enhanced Type V™ Separation Vessels

Features

- *Handles low to intermediate gas to liquid ratios*
- *More resistant to motion with smaller dimensions*
- *Solids are easily removed from bottom*
- *More reliable when gas flow surges occur*
- *Reduce foot print, platform and ancillary equipment*
- *Protect downstream corrosion and erosion*
- *Extend capacity of existing vessels while improving efficiency*

Compact Reliable Separation

Enhanced Type V Separator vessels are vertical vessels generally ideal for two-phase applications, where liquid level control is not critical and gas flow surges may occur. Also in Enhanced Type V separators there is less of a tendency for re-vaporization of liquid into gas phase due to greater vertical distance between liquid level and gas outlet. Experienced process engineers use proprietary software to simulate and optimize all six sections of a vertical vessel with multiple phases (see Figure 1). Properly designed vessels are lower in cost, easier to ship/assemble and may require less piping for field connections. EIT engineers know that size and weight of separation equipment are key factors of the commercial value of a new development project. Our compact separation vessels provide state-of-the-art separation technologies and internals for on shore and off shore separation. The design minimizes space and weight while optimizing separation efficiencies. For existing installations, the equipment can provide separation solutions that lead to increased production and improved efficiencies.

EIT programs can interface with Aspen HYSYS®, UniSim®, ScimSci for accurate predictions on full life cycle performance and effect on downstream equipment.

Where are they used?

These vertical separators are commonly used in oil and gas refinery/production, petrochemical and chemical plants, compressor systems for air or gases, as well as throughout gas pipeline transmission. Their performance and operating range is determined by the process data, characteristics of the fluids being separated, the size of the vessel, and the state-of-art internals selected and installed. Experience shows optimization of these vessels can increase production while protecting against downstream corrosion and erosion when all liquids are removed in the gas stream. There are clear benefits to selecting Enhanced Type V Separator vessels. They handle light to moderate entrained liquid streams

such as upstream of dehydrators or compressors and gas furnaces ensuring entrained mist is removed from the gas stream prior to reaching the dehydrator, compressor, or furnace. In this two phase gas/liquids vertical vessel, the gas stream enters through an inlet device, which causes an initial bulk separation of the liquid from the gas stream and uniform flow upward. As the stream moves upward through the vessel to the demisting section, it slows and the heavier liquids drop to the bottom as the gas rises. High efficiency mist eliminators capture all of the smaller liquid particles that remain entrained in the gas. The gas exits the top of the vessel clean and in specification. There are numerous sizes, configurations, and pressure ratings (see V1-V5 on back). Rugged in their design, they perform efficiently and reliably with little to no maintenance required.

Debottlenecking and Retrofitting

Increasing production capacity and more stringent purity specifications at existing facilities are a big challenge. EIT provides the capabilities to troubleshooting and debottlenecking separation vessels to maximize the throughput, efficiency and reduce maintenance of existing process equipment. Our solutions in separation and retrofitting processing facilities can enable higher production rates and increased purity without welding to vessel walls.

Customers have overcome production loss due to lack of efficiency of existing equipment, enhanced liquid recovery, handled changing gas/liquid ratio as demand increases or new regulations are mandated.

EIT identifies the needs and options for production improvement and undertake troubleshooting through data analyses and CFD studies. The resulting design and report contains recommendations and a proposal for the technology needed along with upgrading internals with state-of-art equipment specially design to meet desired performance including costs and expected installation time.

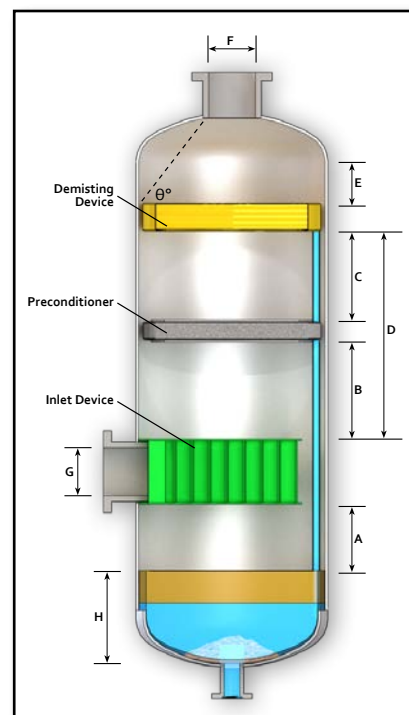
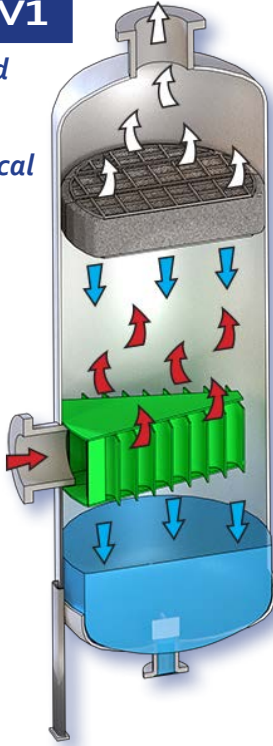


Figure 1
EIT designs all six sections of two, three, and four phase vertical vessels.

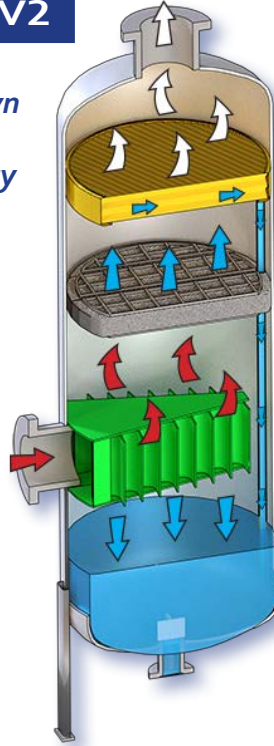
Type V1

- Standard design
- Most economical



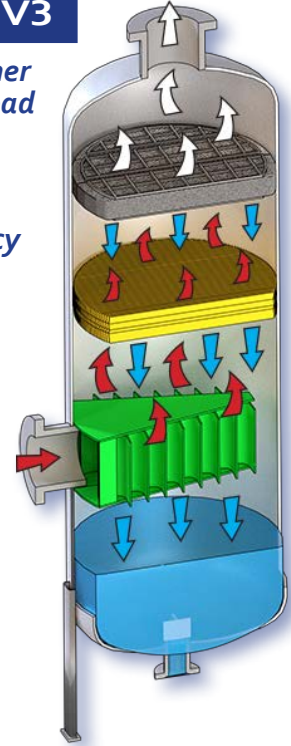
Type V2

- Wider turndown
- Good efficiency



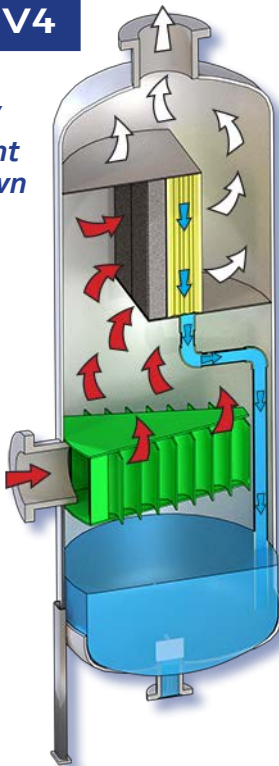
Type V3

- For higher liquid load and/or solids
- Good efficiency



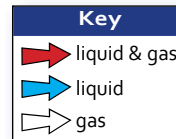
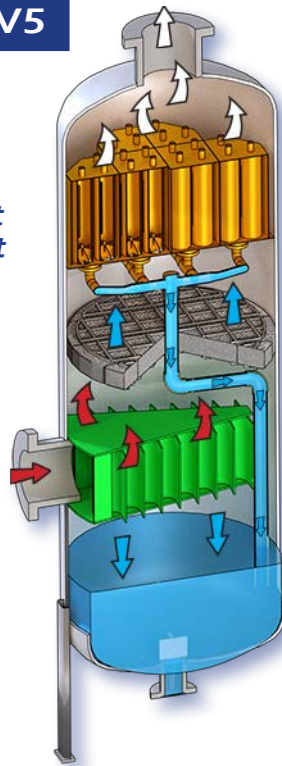
Type V4

- High velocity
- Excellent turndown



Type V5

- Highest velocity at high pressure
- Smallest footprint



New Construction

New projects or evaluation of an existing separator starts with client's process data and clear required performance specifications. EIT provides process package and vessel design complete with state-of-art separation internals selected to guarantee stated performances at given operating conditions.

Included in the scope of supply:

- Process and mechanical calculations
- Vessel layout
- Material and quality certifications
- Installation procedures
- Process guarantee

With our local partners, EIT offers supply of new Enhanced Type V Separation pressure vessels to ASME Code, CE marking, Chinese Pressure Vessel Code, or Korean Pressure Vessel Code in carbon steel or alloy up to 14 feet in diameter, 150 feet long and up to 2-1/2" wall thickness.