

Mitigating Fugitive Emissions in High Pressure, High Cycle Applications

Fugitive emissions are unanticipated process fluid leaks from pressurized installations that rely on a seal to separate the process fluid from the environment. They are a credible threat that can result in exorbitantly high costs if an operator fails to meet fugitive emission requirements. Not only is there cost resulting from repair of the leaking equipment, but also lost profit due to downtime and even legal repercussions for environmental damage.

Operators in refineries or chemical/petrochemical plants must keep environmental regulations for fugitive emissions in mind, especially in applications with high pressures and high valve operational cycles. The ability of a valve to comply with fugitive emission limits is of utmost importance to operators since it plays a major role in minimizing emissions and avoiding potential hazardous risks. Selection of valves that will meet fugitive emission limits is critical, as it not only reduces environmental damage but also minimizes financial losses to the operator.



Flowserve Y-Globe, Univalves and Flite Flow valves provide durable functionality and solid stability with a precision engineered design that neutralizes fugitive emissions and increases process uptime and yield, particularly in high pressure applications. The robust Y-Globe designs are recognized for their ability to meet demanding fugitive emission requirements and their long-lasting, tight shutoff.

The valve designs have undergone stringent fugitive emissions tests and have successfully completed qualifications at full valve pressure classes. While similar designs available in the market have only been tested to lower pressure ratings of Class 600 and below, the Univalves design is qualified at higher pressure classes 1690 and 2680 and the Flite-Flow design at pressure classes 1500 and 2500, offering greater reliability and superior performance in limiting fugitive emissions.

Fugitive Emissions Compliant Design

Compliance for high pressure valve applications (ISO 15848-1)
 Qualification to increased number of operational cycles:

- Univalves – CO2 Endurance Class (1500 mechanical cycles)
- Flite-Flow – CO3 Endurance Class (2500 mechanical cycles)

Compliance to API Standards (API 622 & API 624)
 Chevron-Texaco Fugitive Emissions, EPA Method 21



Key benefits

- Robust, fugitive emissions complying design qualified at high pressure classes 2500 and 2680 offering greater reliability compared to limited performance designs available in the market that are qualified at lower pressure classes 600 and below
- Fugitive Emissions Compliance Certifications in accordance with latest industry standards
- Leak tightness assured over a prolonged period via high performance stem packing design
- Reduced maintenance costs via increased intervals and valve cycles between packing replacement
- Increased operational efficiency from minimized leakage due to the enhanced sealing capability of the body guided disc design

Available Product Configurations

Globe stop valve and globe stop-check valve configurations of the Univalves and Flite-Flow valves are available with Fugitive Emissions certifications



Product range

Univalves (Non-Rotating Stems)

Sizes (NPS)	Pressure Classes	FE Qualification Standard
½, ¾, 1, 1¼, 1½, 2, 2½, 3, 4	1690 & 2680	ISO 15848-1, CO2 Endurance Class
	2680 & 4500	API 624
	1690	Chevron-Texaco Fugitive Emissions, EPA Method 21

Flite-Flow

Sizes (NPS)	Pressure Classes	FE Qualification Standard
6, 8, 10, 12, 14, 16, 18, 20, 22	1500 & 2500	ISO 15848-1, CO3 Endurance Class
6, 8, 10, 12	1500 & 2500	API 624

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