

For more Severe Service solutions see us at www.fishersevereservice.com.



WhisperFlo® Trim offers unparalleled attenuation of aerodynamic noise in high-pressure drop applications that demand ultimate noise attenuation.

Features:

- **Optimum Performance** - Offers excellent noise reduction and high flow capacity. WhisperFlo provides significantly greater capacity than other noise trim designs in a size for size comparison.
- **Noise Control** - Patented WhisperFlo technology has been used in numerous applications to provide up to 40 dBA of noise attenuation which surpasses conventional noise abatement trim by 5 to 10 dBA.
- **Flow Efficiency** - WhisperFlo cages have relatively small outside diameters allowing use in standard valve bodies.
- **Easy Maintenance** - Quick-change trim allows fast and easy inspection or replacement without taking the valve body out of the pipeline.

- **Longer Trim Life** - Standard hardened material provides exceptional wear resistance.
- **Available in wide range of standard, high-alloy, and sour service materials**
- **Characterization** - Special characterized cages are available to provide customer specified rangeability for specific system requirements.

Operational Overview:

WhisperFlo combines six techniques to reduce valve aerodynamic noise.

- **Unique Passage Shape** - This reduces the acoustical conversion efficiency of each stage. Shock-associated noise is minimized by reducing the turbulence coming into the staged restrictions. Turbulent shear layers are directed away from solid boundaries to reduce dipole noise.
- **Multistage Pressure Reduction** - High and low recovery pressure stages split the total drop ratio reducing stream power leading to less available energy to be converted to noise.
- **Frequency Spectrum Shift** - The trim shifts acoustic energy to higher frequencies that are not readily absorbed by downstream piping. At high frequencies, the piping radiates much less sound in the audible range, which also helps to reduce strain energy and combat piping fatigue.
- **Exit Jet Independence** - WhisperFlo trim controls the second stage pressure ratio to avoid jet coalescence. Adequate spacing is placed between jets, which are oriented essentially parallel to one another to avoid interaction.
- **Flow Management** - The WhisperFlo design utilizes an expanding area principle to compensate for volumetric expansion of depressurizing gas.
- **Complimentary Body Design** - Fisher valve bodies are designed and applied so as to minimize regeneration of noise. Body cavities are adequate to avoid jet impingement on body walls and excessive cross flow into the turbulent jets emanating from the cage.

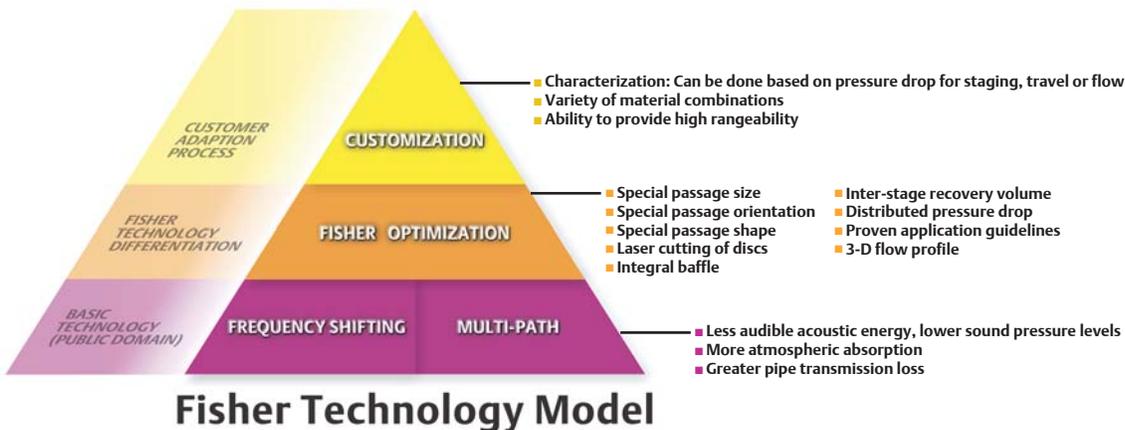
Emerson Process Management
Marshalltown, Iowa 50158 USA
www.fishersevereservice.com



Typical Applications:

Hydrocarbon: Compressor Anti-Surge, Depressurizing Service, Vent to Flare, Flare Header, Reactor Backpressure

Power: Turbine Bypass, LP Steam to Condenser, Steam Vent



Optimization Details:

- **Special passage size** - Our passage sizes have been designed to attain the utmost benefits of frequency shifting
- **Special passage orientation** - Prevents jet recombination and lowering of over frequency impacting the benefits of frequency shifting
- **Special passage shape** - Provides additional capacity noise reduction
- **Laser cutting of discs** - Provides manufacturing flexibility

- **Integral baffle** - Breaks up jets in high pressure drop applications to provide additional noise attenuation
- **Inter-stage recovery volume** - Provides fluid pressure and velocity recovery.
- **Distributed pressure drop** - True independent staging of the pressure drop
- **Proven application guidelines**
- **3-D flow profile** - Yields a compact design that maximizes available Cv.

© 2004 Fisher Controls International LLC

Fisher and Emerson Process Management are marks owned of one of the companies in the Emerson Process Management business division of Emerson Electric Co. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy they are not to be construed as warranties or guarantees, expressed or implied, regarding the products described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice. Fisher does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Fisher product remains solely with the purchaser or end-user.

