

Welker[®] In-Line Diffuser

Reduces Aerodynamic Noise and Vibration

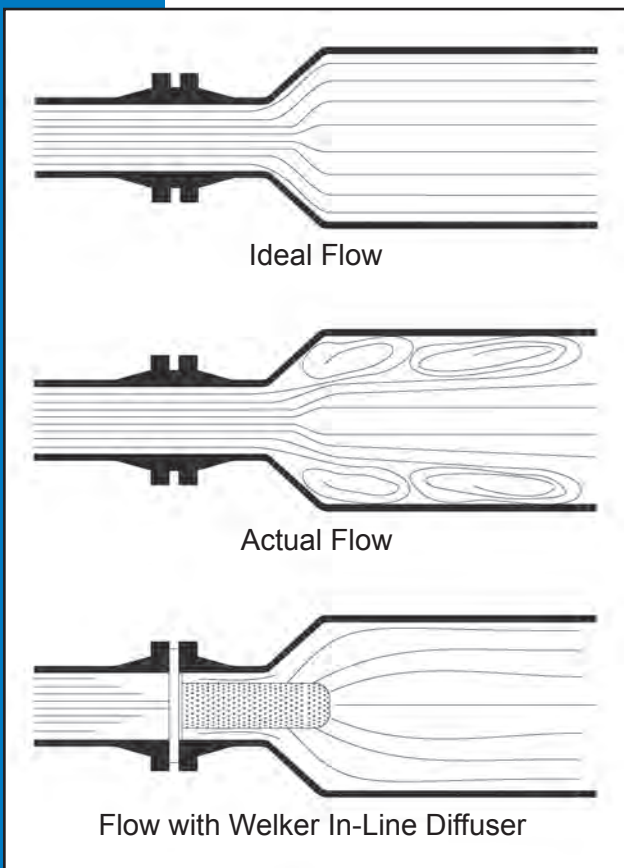
The gas exiting a control valve at high velocity into some piping configurations is a major source of noise and vibration. Vortices form in the larger sections of the piping or headers adjacent to the main flow path. The formation of these vortices is detrimental for three reasons:

1. A vortex requires energy, which will be obtained at the expense of the main flow to keep it in motion.
2. A vortex has a negative velocity aspect in that the gas molecules in the vortex spin around and collide with the incoming gas molecules head-on.
3. A vortex is not stable and in fact pulsates, inducing noise and vibration into the pipe itself. The pulsation and vibration created by these intense vortices can have a detrimental effect on operations and a drastic effect on measurement.

Welker In-Line Diffusers are designed to produce a constant velocity profile that reduces turbulence, thereby reducing noise and vibration.

Welker In-Line Diffusers are specifically designed for each application. Standard material of construction is carbon steel, other materials are available. Call Welker today for solutions to your noise and vibration problems.

In the application illustrated to the left, a Welker In-Line Diffuser is used to reduce turbulence when stepping up size downstream of a control valve. Velocity is brought under control more efficiently for enhanced pressure recovery characteristics.



Untouched flow study photograph

Welker[®] ... When Excellence Counts!

Welker® In-Line Diffuser

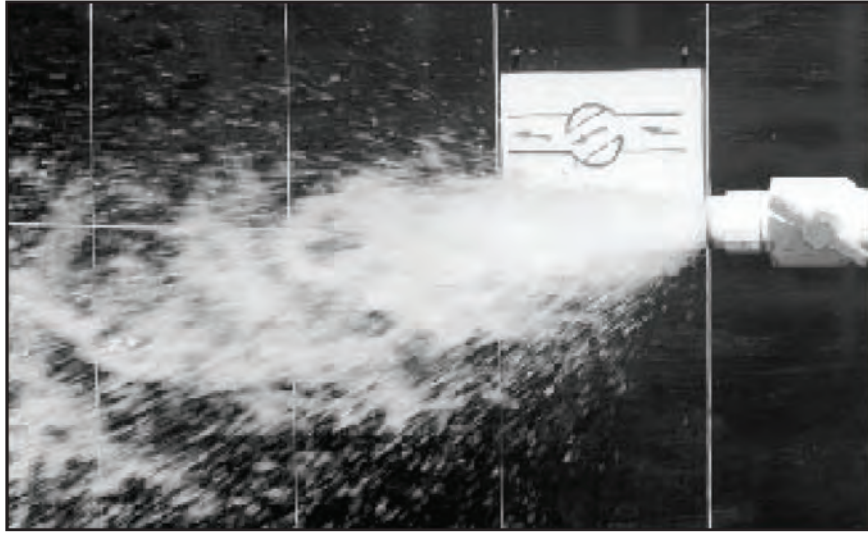


FIGURE 1

Figure 1 shows flow pattern caused by a ball valve in a partially open application.

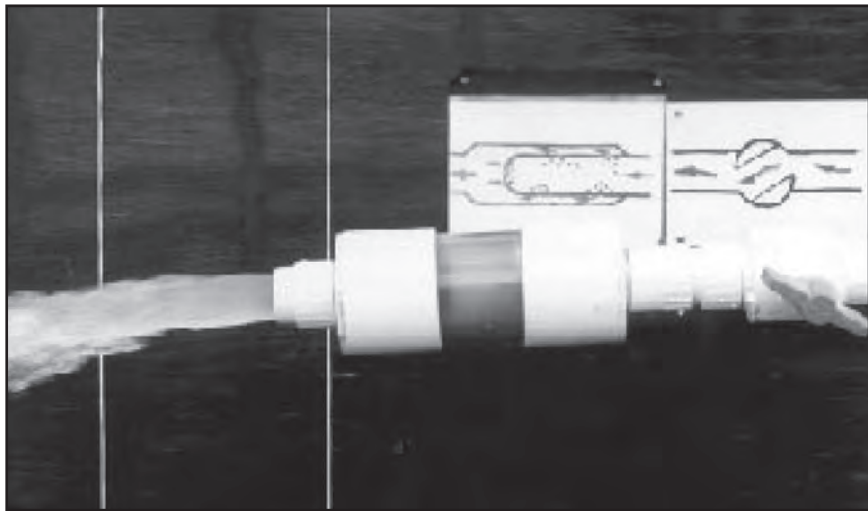


FIGURE 2

Figure 2 shows flow pattern after a Welker In-Line Diffuser has been attached downstream of the ball valve.

Specifications subject to change without notice. Drawings/Photos may be shown with optional equipment.



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