



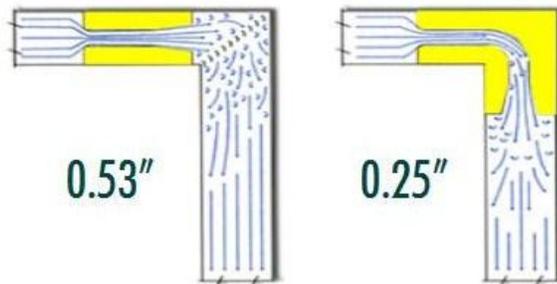
# Air Equipment LLC Engineering Update

Monthly  
eNewsletter

July 2016

**Pop Quiz: What causes the Pressure Drop of a duct silencer to be three or four times HIGHER than the catalog data?**

**Answer: The dreaded System Effect**



The problem:

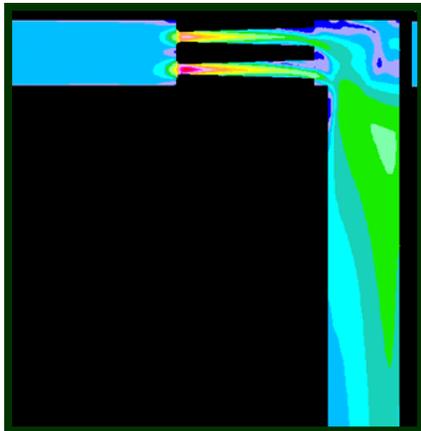
A straight silencer with catalog PD = 0.15" w.g. But if there is little or no straight duct upstream & downstream of the silencer, System Effect will occur.

In this example,  
**Total PD = 0.53" w.g.**

The solution:

An elbow silencer with catalog PD = 0.25" w.g. Inlet & outlet conditions are acceptable. Attenuation is better. No need for fabricated fitting with turning vanes.

In this example,  
**Total PD = 0.25" w.g.**



**CFD image of straight silencer too close to sheet metal elbow. Lots of turbulence, which means lots of extra pressure drop.**



**The solution: An elbow silencer**

**Why continue to squeeze straight silencers into tight ductwork?  
Why force the fans & blowers to run at higher RPMs to deliver the correct airflows (which generates even more noise and uses much more energy)?**



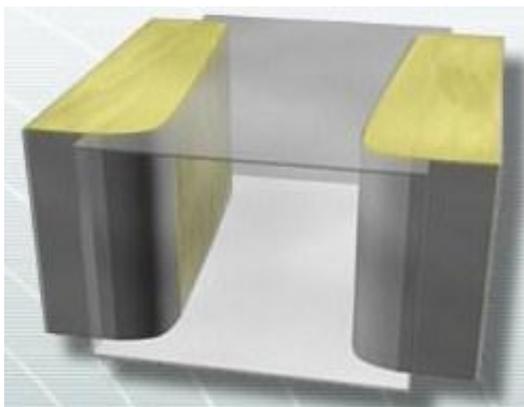
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Duct silencer catalog data is obtained in a test lab, with 100 feet of straight ductwork.



How often do your jobs have 100-foot runs of straight duct?  
I thought so. Don't get burned again by System Effect.  
Contact your local Vibro-Acoustics rep (me!) to determine if  
elbow silencers are the right choice for your project.



And while you're at it, ask about Extended Casing silencers. The sound baffles extend beyond the horizontal duct dimension, so the pressure drop is reduced, for example, from 0.25" to 0.05" w.g., while still maintaining the same sound performance.

**A real energy-saving option!**

For more information about Vibro-Acoustics elbow silencers, call the Air Equipment office at 860-290-6969 or send an email to Bill Dunn at: [bdunn@airequipmentllc.com](mailto:bdunn@airequipmentllc.com)

