

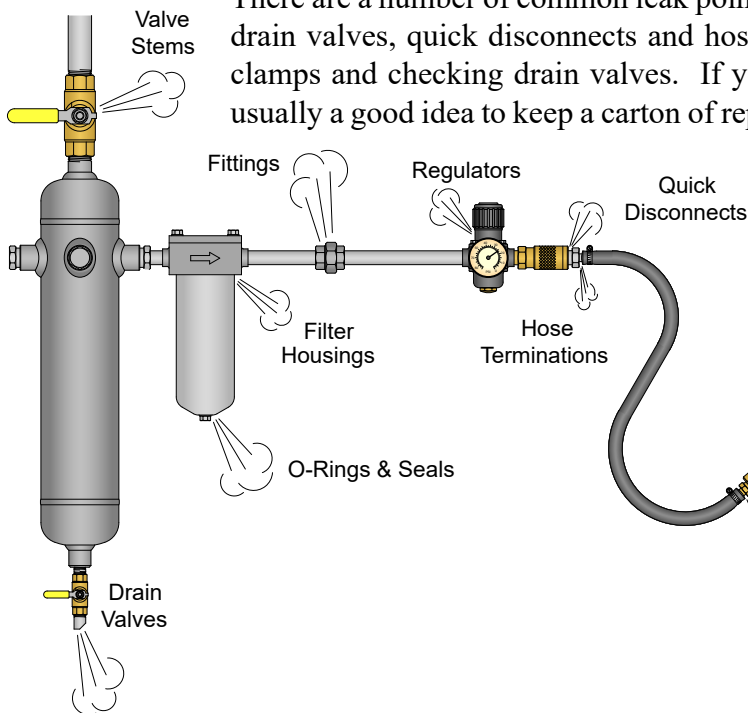
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The High Cost of Leaks Within the Compressed Air System

by Brian S. Elliott

Most maintenance personnel and plant engineers don't give compressed air leaks a second thought. After all, they're not doing any damage, right? Wrong! It is estimated that approximately 35% of all compressed air that is generated in North America is lost to leaks. To those of us who work in the compressed air field, this is a maddening statistic. It's even more incredible when you consider that water leaks amount to less than 0.1% of all water delivered. So, just what is the cause for an imbalance of this magnitude between these two utilities? Many professionals attribute this to the fact that compressed air doesn't make a mess when it leaks. Water, on the other hand, makes a huge mess when it starts to spritz out onto the shop floor. A situation like that demands an immediate response from the maintenance crew. In addition to the above, it has also been suggested that humans are genetically predisposed to place a high value on water. At the mere sight of a leaking faucet, some people will shift into overdrive in their pursuit to have the leak repaired. On the other hand, these same people will walk past a hissing compressed air leak a thousand times and never give it a second thought. The funny thing about this is that the compressed air leak represents a much higher cost than an equivalent water leak. As an example, let's say a small company is operating a 30 horsepower compressor. A walk through the shop identifies 22 small compressed air leaks. If you consider that any leak you can hear requires at least 1/2 horsepower of air, then the company is leaking 11 horsepower of compressed air on a continuous basis. Further, one horsepower of compressed air equals about 1wH of electrical power. That means 88 KwH per-eight hour day, 440 KwH per five-day week and 22,880 KwH per year. If you're paying \$.07 per KwH, then those little leaks are costing you \$1,601.60 per year!



There are a number of common leak points on any compression system. At the top of the list are drain valves, quick disconnects and hose terminations. Spend a few minutes tightening hose clamps and checking drain valves. If you have a quick disconnect that leaks, replace it. It's usually a good idea to keep a carton of replacement quick disconnects in the maintenance office.

Additionally, if you have a leaking valve stem, tighten up the packing nut. It only takes a few seconds and can save hundreds of dollars.

The illustration shows a few of the more common leak points that one might encounter in the typical compressed air system.

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