CAAA
COMPRESSED AIR ASSOCIATION OF AUSTRALASIA
The smarter energy source

JUST CAUSE YOU CAN'T SEE IT, DOESN'T MEAN IT ISN'T IMPORTANT

Compressed Air is one of the most common sources of energy across almost every industry.

Compressed air leaks can be costing thousands of dollars and are a potentially easy source of minimising energy use and saving money.

Leaks in your compressed air system may be increasing your compressed air energy bills by more than 30%. Since compressed air is usually one of the largest energy expenses for a manufacturer using air-powered equipment, that represents a significant opportunity for energy savings.

Compressed air leaks are widespread in all applications. Not only are they common, but they are time-consuming to find and fix. In the average manufacturing operation, 20-30% of the total energy consumption is compressed air. On average, 35% of that expense is due to compressed air leakage.

For the average manufacturer, 20-30% of total energy consumption is compressed air; 35% of that energy is wasted due to air leaks and other inefficiencies.
For example, the below chart highlights the amount of air lost through small orifices (in CFM). Taking the example of a ¼" dia. Orifice (leak) at 100PSI we can see that we lose around 104 CFM of air. This equates to around 18.5 kW of input power.

Based on a 40 hour week and 50 weeks per year, this equates to around 37 MW/h per annum of impacts in both costs and potentially carbon output.

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ESTIMATING THE VOLUME OF COMPRESSED AIR PER LEAK						
	1/64"	1/32"	1/16"	1/8"	1/4"	3/8"
70 psi	.300	1.20	4.79	19.2	76.7	173
80 psi	.335	1.34	5.36	21.4	85.7	193
90 psi	.370	1.48	5.92	23.8	94.8	213
100 psi	.406	1.62	6.49	26.0	104	234
125 psi	.494	1.98	7.90	31.6	126	284

HOW TO CALCULATE THE COST OF AIR LEAKS

To calculate the cost of leaks in your systems, begin by multiplying the compressor kW by your energy cost and multiply that by the kW used to come up with your hourly energy cost.

Now take the hourly energy cost and multiply that by your leak rate (if unknown use the average leak rate of .35). This will calculate how much leaks are costing you per hour.

Finally use your average operating hours and multiply that by the per hour cost and we have what your air leaks are costing you per year.

For example, a 75kW compressor will cost around $18.75 per hour based on a power cost of 0.25c per kW/h. Assuming a leakage rate of 35%, the cost translates to $6.56 per hour. Over a 40 hour week and 50 weeks a year operation the cost equates to $ 13,125 per year.

For the same installation we are also looking at an additional carbon footprint of 52500 kW/h per year. The carbon outputs for this value will be dictated by the carbon outputs of the electricity supply used.