

Air Compressor

Air compressors are one of the most inefficient pieces of equipment in the automotive industry. They are also one of the biggest contributors to electricity bills, and approximately 90% of the energy input becomes waste heat.



Ways to manage the air compressor and improve energy efficiency

Ensure regular maintenance and check for leaks

Routine maintenance checks are important for detecting any leaks that are contributing to your electricity bills unnecessarily. On average, leaks account for 5 to 20% of compressed air generated.

Leaks are often found in pipes, connectors and joints and could be identified quickly to ensure energy isn't wasted. A simple and cheap way to detect for leaks is to apply soapy water to suspected leak areas and watch for bubbles.

A 0.8mm hole can cost over \$100 per year in electricity bills if left operating unrepaired.

Assess your business needs before purchasing an air compressor

Air compressors come in different shapes and sizes to suit different business needs. Air compressors should run at the lowest pressure and as closely to a full load as possible.

If you ever need to replace your air compressor, it

is important to consider what you are intending to use it for. Purchasing an air compressor bigger than required will cost you more money to run in the long run. In some instances it may be beneficial to have several smaller compressors and turning some off during low peak usage demands.

Turn the air compressor off when not required

To avoid having the air compressor running on at night or on the weekend, install a 365 day time clock to control the compressor from running unnecessarily.

*Install variable speed drives (VSD)**

The VSD technology allows air compressors to match the demand for air and effectively uses less energy than fixed speed compressors. In some instances, up to 50 per cent of savings can be achieved.

*Refer to your manufacturers recommendations for more information on the installation of a time clock.

Variable speed drives can also increase the running efficiency of screw air compressors by controlling the system output.

Reduce the system pressure to a minimum

Compressors should run at the lowest pressure as possible whilst still maintaining the desired performance. Setting the pressure too high can damage the equipment, whilst having the pressure too low can affect the performance of the equipment. To maintain a reasonable pressure setting make sure it is in line with the equipment that requires the highest pressure.

Acknowledgement Statement

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Recover the waste heat

With 90 per cent of the energy used by an air compressor becoming waste heat, recovering the waste heat can provide significant energy saving opportunities.

A heat recovery system can recover up to 80 per cent of the waste heat to heat water or even air during the winter season. This will help achieve further savings on your electricity bills during winter.

Below are examples of savings automotive businesses achieved after making some energy efficient choices with their air compressor.

Energy Saving Opportunity	Savings (kWh)	Savings (\$)	Pay back period
Reduce air compressor pressure from 7.5 bar to 7.0 bar	1, 470	\$191*	Quick
Reduce air compressor pressure from 6.9 bar to 6.5 bar	160	\$35*	Quick
Repair 2 leaks in the workshop	1, 400	\$200*	Quick
Recover the waste heat to heat water	15, 700	\$750*	5.7 years

**Calculated savings (\$) may vary depending on the business' electricity rates*

FOR MORE INFORMATION

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