

Case Study: Air Compressors

SENERGY Consultants (P) Ltd

Background:

While conducting energy audit for the tyre industry; the energy loss through leakages in the compressed air piping was observed to be abnormally high.

Operating Scenario:

The leakage was carried out during the weekly off day in the following manner

- All the usages of compressed air were discontinued; which was checked by physically stopping the air compressors
- It was ensured that all the valves till actual usage points were kept fully open
- The compressor was switched on and the pressure was raised to the normal operating level
- The compressor was switched off and the pressure drop as well as time required for the same was noted down in a specified manner
- The compressor power as well as the actual output (free air delivery) was also separately measured

The leakages were observed to be contributing almost 50% of the total usage.

The ultrasonic leak detector was used to check the entire pipe line and various fittings for leakages. All the leakages were identified and priority list was prepared for corrective action.

Energy Conservation Measures:

The above concerns and issues were addressed by taking the following measures.

- The typical fittings prone for leakages were replaced with better quality material
- Training programs as well as brain storming sessions were conducted to evolve best operating practices and ensure dissipation of knowledge
- Minimizing the number of fittings
- Preparing and following the predictive / preventive maintenance schedule

Outcome:

- The energy consumption of the air compressors reduced by around 40%; leading to 1.5% saving in the overall energy costs.

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