

Successful Implementation – Energy Conservation Measure

Measure:
Reduce the Pressure Drop in the Compressed Air Line.
Equipment
Compressed Air System
Industry / Sector
Textile / Yarn Processing
Year of Implementation
February, 2001
Cost Benefit Analysis
<input type="checkbox"/> Type of Measure : Short Term
<input type="checkbox"/> Annual energy Savings : 54,264 KWH
<input type="checkbox"/> Actual cost savings : Rs. 2,65,893.00
<input type="checkbox"/> Actual investment : NIL, Since They had Spare suitable drier and Air filter
<input type="checkbox"/> Payback : Immediate
Implementation Highlights
<ul style="list-style-type: none"> ▪

Summary

There was a pressure drop of a 1.2 Kgs / CM² in the Compressor Air Line Immediately out side the Compressor room. Reasons were choked air filter and smaller size of air drier. After correcting the same the compressor's operating pressure was reduce resulting in saving of energy.

Background

In a Textile Factory Compressed Air is used in many process applications. The Compressors in the central compressor room where operated between 7.6 to 6.4 Kg/cm² Although the shop pressure requirement was only 5.5 Kg/cm² Because of the smaller size of air drier capacity (500 CFM). And the system requirement was 1000 CFM, and the choked filter there was a pressure drop of 1.2 Kg/cm² which causing unnecessary energy loss.

Principle

In a Compressed air system the pressure drop should not be more than 0.5 kgs at the farthest point. Normally the pressure Drop will take place across the Driers, Filters, Inter and after Coolers and other accessories.

Maximum care should be taken to check the pressure readings in different points in the compressed air line system and take the necessary corrective actions then unnecessarily increasing the system pressure in the compressor room. Higher pressures resulting loss of energy.

Details of techno-economics:

Particulars	Actual energy savings
Contract Demand	No effect
Earlier MD	800 KB
MD after installation of controller	800 KB
Demand savings per month @ Rs. 150/ kVA	Nil
Annual Cost savings, Rs. lakh	Rs. 2,65,893.00
Cost of implementation, Rs. lakh	Nil
Simple payback period, Year	Immediate

Implementation issues

Implemented with in a week of the suggestion.

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