Top 10 Compressed Air "rules Of Thumb"

1. CFM delivery per Horse Power at 100 PSIG:

For "home owner" type of air compressors---2 to 2.5 CFM per HP

For Industrial Air-cooled 2-stage air compressors----3.5 CFM per HP

For Small Vane & Screw air compressors (25 HP or less) 4 CFM per HP

For large Piston, Screw & Centrifugal air compressors--4.5 to 5 CFM per HP

NOTE: THE MORE CFM PER HP - THE LESS ENERGY USED.

2. Air Receiver Size needed for these types of inlet control:

Modulating Control----------0 to 1 gallon per CFM

On-Line/Off-Line----------3 to 4 gallons per CFM

Stop-Start/ Variable Speed-------4 to 6 gallons per CFM

NOTE: THE MORE AIR STORAGE - THE LESS ENERGY USED

3. Amperage per Horse Power:

115 Volts------- 1 phase-------- 10 amps per horse power

230 Volts------- 1 phase-------- 5 amps per horse power

208 Volts------- 3 phase-------- 3 amps per horse power

230 Volts------- 3 phase-------- 2.5 amps per horse power

460 Volts------- 3 phase-------- 1.25 amps per horse power

574 Volts------- 3 phase-------- 1 amp per horse power

NOTE: THE MORE ENERGY EFFICIENT THE MOTOR - THE LESS ENERGY IS USED.

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4. Air Piping Size by CFM and Pressure Drop:

Compressor Room Header---0.25 PSIG pressure drop per 100 feet of piping

Main Line----------0.5 PSIG pressure drop per 100 feet of piping

Loop Line----------1 PSIG pressure drop per 100 feet of piping

Branch Line----------2 PSIG pressure drop per 100 feet of piping

NOTE: THE LESS AIR PRESSURE DROP - THE LESS ENERGY USED

5. Size Compressed Air Line Filters to be twice (2x) your compressor CFM flow rate.

This will lower your pressure drop 2-3 PSIG and save an additional 1% on electrical energy costs.

Elements will last twice (2x) as long and this can save on your maintenance costs.

6. Lowering Compressor Pressure settings 2 PSIG will result in a 1% energy savings.

7. Lowering Compressor Inlet Air Temperature 10 F will result in a 2% energy savings.

8. The average energy cost to operate an air compressor is approximately $0.10 per horse power per hour.

9. Compressed Air system leaks totaling the size of a 1/4" orifice, at 100 PSIG, running 24 hours a day will waste approximately $15,000 worth of electrical energy a year.

10. Using Synthetic Compressor Lubricants can save you up to 9% of the energy cost of operating your compressor as compared to using a non-synthetic lubricant.

DEFINITIONS:

CFM= Cubic Feet per Minute - Volumetric air flow rate.

Inlet Pressure = The actual pressure at the inlet flange of the compressor.

PSIG= Pounds Per Square Inch Gauge.

AMPS=Abbreviation of the plural for Ampere, a unit of electrical current