

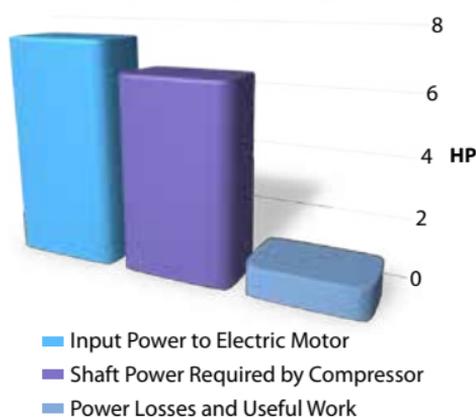
Compressed Air System *Cheat Sheet*

Top 5 Energy Efficiency Measures

1. Eliminate Inappropriate Uses of Compressed Air
2. Stabilize System Pressure
3. Alternative Strategies for Low Pressure End Uses
4. Minimize Compressed Air Leaks
5. Provide Right Air Quality for Your Compressed Air System

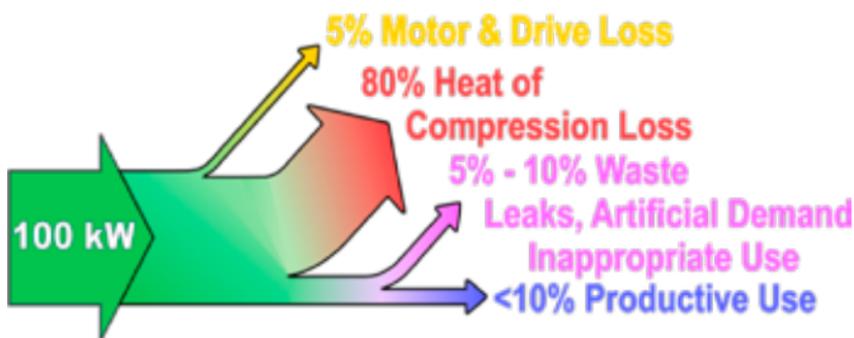
1 hp air motor = 7-8 hp of electrical power

- 30 scfm @ 90 psig is required by the air motor
- 7-8 hp electrical power required for this
- Annual energy cost \$1,164 (air motor) vs. \$194 (electric motor)



* 4,000 hrs/yr; \$0.05/kWh

Compressed Air System's Inefficiency



Rules of Thumb

- Lowering compressor pressure settings by 2 PSIG will result in ~1% savings
- Lowering compressor inlet air temperature by 10°F will result in ~2% savings.

Resources for Industry

- Improving Compressed Air System Performance: A Sourcebook for Industry
- AirMaster+

betterbuildingsolutioncenter.energy.gov

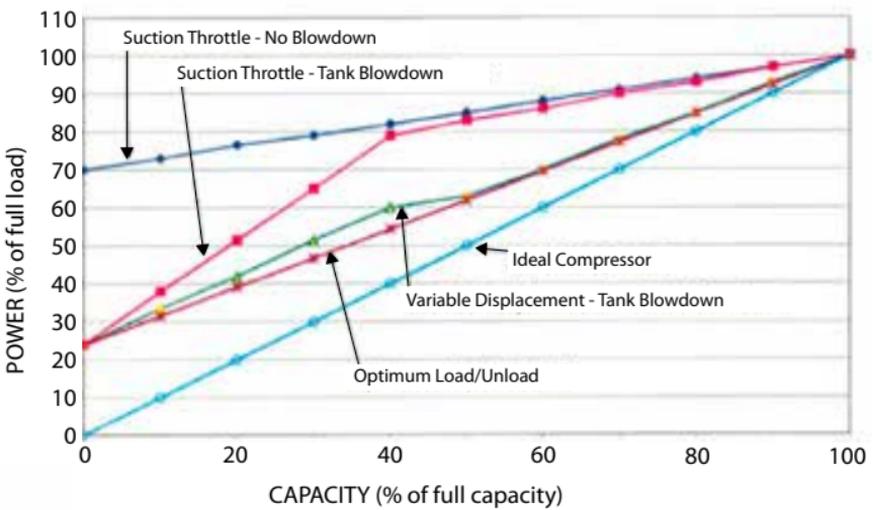
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Annual Air Leaks Costs

*Based on \$0.075/kWh

| Pressure (Psig) | Equivalent Orifice Diameter (in.) | | | | | |
|-----------------|-----------------------------------|-------|-------|---------|----------|----------|
| | 1/64 | 1/32 | 1/16 | 1/8 | 1/4 | 3/8 |
| 70 | \$34 | \$137 | \$551 | \$2,202 | \$8,799 | \$19,844 |
| 80 | \$38 | \$149 | \$620 | \$2,455 | \$9,827 | \$22,138 |
| 90 | \$43 | \$173 | \$676 | \$2,732 | \$10,880 | \$24,433 |
| 100 | \$47 | \$183 | \$746 | \$2,983 | \$11,932 | \$26,845 |
| 125 | \$57 | \$229 | \$906 | \$3,625 | \$14,451 | \$32,581 |

Control Strategies



Potential Inappropriate Uses

| Potential Inappropriate Uses | Alternatives |
|-----------------------------------|--|
| Clean up, Drying, Process Cooling | Low pressure blowers, electric fans brooms |
| Sparging | Blowers and mixers |
| Aspirating, Atomizing | Low pressure blower |
| Vacuum Generator | Dedicated Vacuum pump |
| Air operated diagram pumps/motor | Electric pump with proper regulator |
| Air motor | Electric motor |
| Idle equipment | Air stop valve at the inlet |
| Abandoned equipment | Disconnect air supply |