

Pneumatic Power Tool Case Study

When using pneumatic power tools, overpressure is an ever-present concern that can result in financial, performance and, in some cases, health and safety issues. In today's environment where each cost is micromanaged, compressed air usage is a serious consideration.

Factories, assembly lines and repair shops require pneumatic tools to perform their various tasks as fast and efficiently as possible.



The Problem

The Financial Factor

Compressed air is expensive to generate as there is a lot of energy (electrical and mechanical) involved in producing it. If compressed air usage is not managed correctly, you can literally blow away your money. Higher compressed air pressures require far more energy to produce. On average, the air compressor requires 1% more energy for every 0.15 Bar increase in compressed air pressure.

Each pneumatic tool is designed to perform best at a given pressure. Operating the tool at a higher pressure not only reduces the performance but also shortens the possible lifecycle of the tool.

The cost of air

Time in operation (air tools) in hours/year

- 220 workdays x 8 hours x 10% rate of use = 176 hours/year

Costs for compressed air per 1 Nm³/h

- 1 Nm³/h = 1,25 cent

Air consumption of air tools at an inlet pressure of approx. 8 – 10 bar

- Air consumption of 58.4 Nm³/h x 176 h/year x 1.25 cents per Nm³/h = €128,48 per year

Compressed air consumption of air tools with 6 bar line regulator

- Air consumption of 46.7 Nm³ x 176 hours/year x 1.25 cents per Nm³/h = €102,74 per year

The cost of reduced lifecycle:

Aside from blowing away money by wasting compressed air, the costs associated with overpressure on the tool far exceed the costs of the compressed air itself. Blown seals, anvil breakage, bearing failure or vane motor breakdowns can all be attributed to overpressure, resulting in costly, premature repairs as well as lost production time due to the tool being out for repair.

The Performance Factor

Operating the pneumatic tool at the correct pressure ensures that the task is completed in the most efficient manner. More pressure does not mean better performance and each tool is designed to perform best at a given pressure.

The Health and Safety Factor

Aside from the financial aspects, overpressure brings other hazards to your employees and their working environment.

The higher the operating pressure:

- The higher the noise level
- The higher the tool's vibration
- The greater the risk of a catastrophic malfunction, resulting in injury to the operator and other personnel working in close proximity.



The Solution

ToolReg®

Inline Preset Pressure Regulator with Automatic Secondary Pressure Relief



Conclusion

Why the ToolReg® is the Solution for you

The ToolReg® is an economical investment for energy efficiency. It optimizes performance and lengthens the lifespan of the tool, as well as preventing loss of production time due to the damaged tool being out for repairs.

Factory set to prevent pressure changes, the ToolReg® is fully tamper-proof and ensures that only the required pressure is used for each individual pneumatic tool. The automatic secondary pressure relief releases all the residual pressure in the pneumatic tool to prevent unexpected activation (common in nail guns and staplers).

Other Inline solutions

[SaveAir®](#), [CartReg®](#)