

Airflow Saver (AFS)

Energy- and cost-optimized compressed air applications based on the revolutionary SmartValve Technology, developed by **KTW Technology GmbH**

About KTW Technology GmbH

We are a young technology company, whose ambition it is to significantly increase the sustainability and efficiency of today's production systems and processes with the help of innovative technologies from the aerospace industry.

Thereby our integrated system solutions address the most crucial issues of our customers at hand.

Baseline Situation

Nowadays compressed air is commonly used in many industries as a simple and flexibly applicable source of energy. Flexibility – which is paid for dearly – is achieved by the means of this very expensive energy source often times still used carefree and little cost-conscious by their consumers. Optimizational approaches are primarily attained by the technology of manufacturers and suppliers (i. e. compressors, reduction of system leakages, increased benefits through new compressed air nozzles and air-knives).

KTW's Approach

The optimization of compressed air systems **must** be looked at from a wholistic perspective. Especially looking from a consumer's perspective there is a great potential of further improvements on cost reduction through the **smart** utilization of compressed air.

Every reclaimed cubic meter of compressed air reduces the correspondingly required costs for energy generation and leakage losses by 100 percent. Operating costs and investments in compressed air technology can be significantly reduced, the system can be greatly simplified by down-scaling.

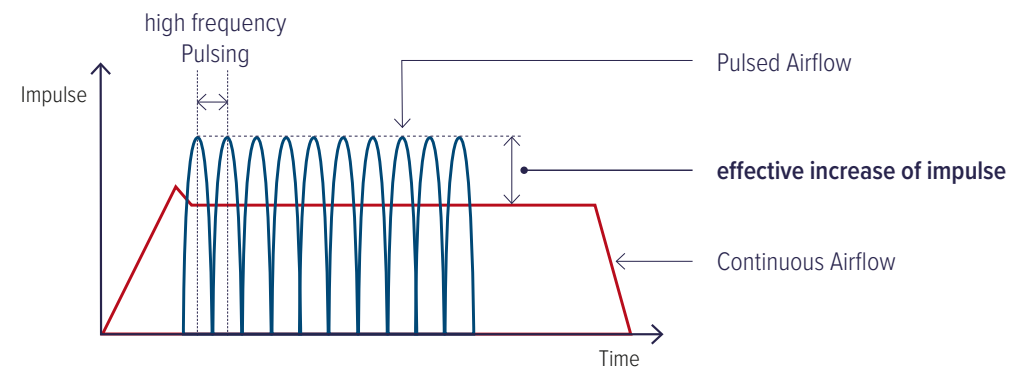
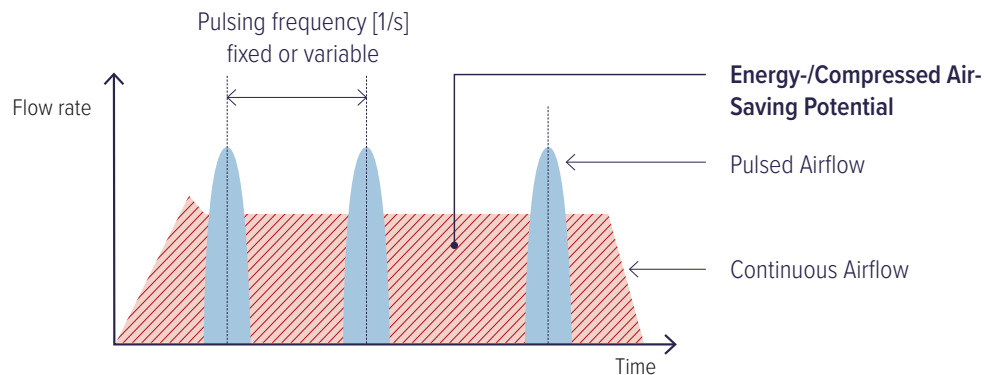
The KTW Airflow Saver reduces the amount of compressed air required within a variety of industrial applications by 60-70%, in some cases even 90%, and it increases their effect by over 15% compared to a continuous air flow.

Operating principle

The KTW Airflow Saver transforms a constant into a pulsating flow of compressed air. The following options are available:

- regular pulsing with a given frequency
- pulses with a frequency variable over time
- event-controlled pulsing, e. g. in response to a sensor signal (with minimum response time $\leq 1\text{ms}$)

The required amount of compressed air is significantly reduced by the pulsation method.



Every constant compressed air stream starts off with a slightly increased impulse, that quickly decreases to its the normal rate. The KTW Airflow Saver exploits this increased impulse.

By quickly repeating and stringing together several compressed air blasts (high-frequency pulsation), the AFS creates an effective increase of impulse.

Innovative nozzle technologies or air-knives lead the pulsating compressed air streams directly to the desired target location. By fine-tuning of all system components and parameters, the KTW Airflow Saver realizes the maximum impact possible out of the available energy and therefore impressively increases energy efficiency in production.

Our Approach of „Distributed“ Systems

In our eyes, a system is always more than the sum of its individual parts.

The KTW Airflow Saver consists of its main components, the control system, the valve, the nozzle, optional sensor technology, as well as the connection and assembly elements. Due to the constructive and functional fine tuning of all components and the pressure/pulse strategy with one another the maximum effect is unfolded and the maximum benefits are generated.

The modular system design allows the spatial independent arrangement of the individual components and thus the variable adaptation and integration in almost any assembly situation.

Suitable For a Variety of Applications:

- Blasting/Blowing off
- Drying
- Degreasing
- Cleaning and/or
- Dedusting

of almost any surfaces and materials.
Also suitable for:

- material handling
- Level control
- Fumigation and/or
- Vacuum generation

Industries with High Consumption of Compressed Air, among others:

- Metalworking, automated CNC manufacturing
- Packaging machines, Mechanical/plant engineering
- Electronics production/packaging
- Food packaging and beverage bottling
- Chemical Industry
- Plastic production/processing
- Pressure die-casting, injection molding
- Surface refinement, painting
- Paper, wood and furniture industry

Product Features

- Adaptable to almost all operating conditions
- High throughput with minimal reaction times (< 1ms)
- Wide range of applications due to four performance classes (flow rate)
- Pressure differences between 1 and 10 bar (higher pressure ranges available upon request)
- Pulse frequencies from 1-3000 Hz., dynamically variable (pulse width modulation)
- Long service life (friction and wear minimized)
- Low maintenance design (hardly moving parts, no lubrication)

Take Advantage of the Benefits of the KTW Airflow Saver

- Lower your costs of energy by reducing the flow of compressed air
- Increase the impact by operating with intensified compressed air pulses
- Accelerate the process by minimizing response and switching times
- Reduce CO2 emissions required to generate compressed air
- Increase the sustainability of your production
- Achieve national and international goals for sustainable development and climate protection
- Make a significant contribution to the operation of your energy management system

Note:
Investments in energy efficient technologies maybe eligible for public funding (e. g. BAFA)



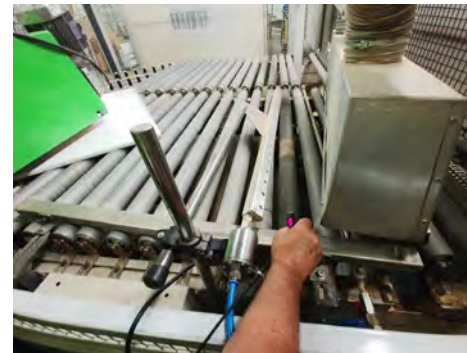
Blasting/Drying of drink packs in front of printing station.

Reduction in compressed air consumption: -72%



Blasting/Drying of machined parts after automated CNC machining.

Reduction in compressed air consumption: -80%



Blasting/Dedusting of wooden panels before edge-banding.

Reduction in compressed air consumption: -91%



Blasting/Drying of bottles in front of optical inspection.

Reduction in compressed air consumption: -60%



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