



Change the pressure to change the future.

圧力を変え、未来を変える

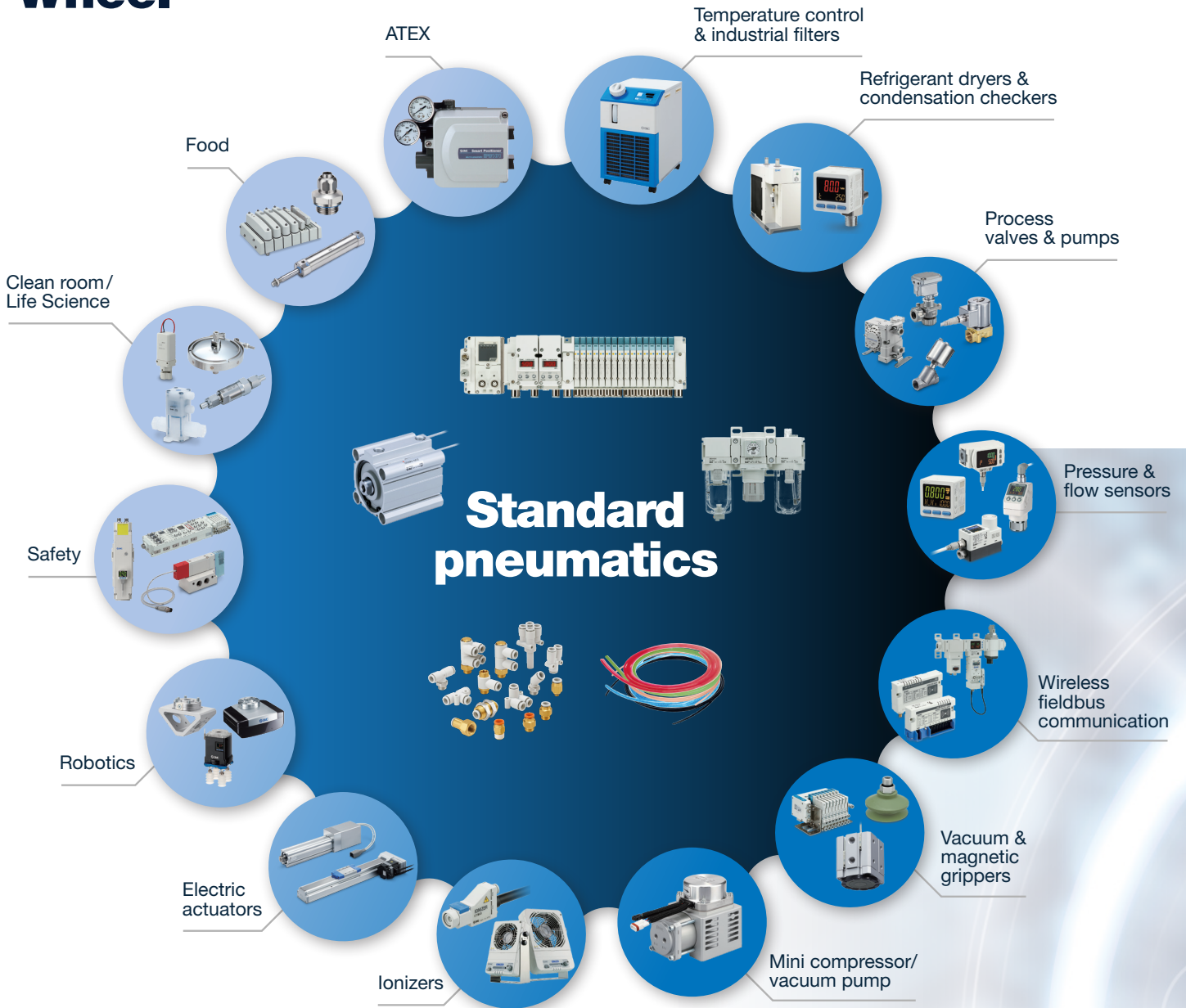


AUTOMATION SOLUTIONS

Energy efficiency with SMC

Expertise
Passion
Automation

Automation Wheel



Energy efficiency by SMC

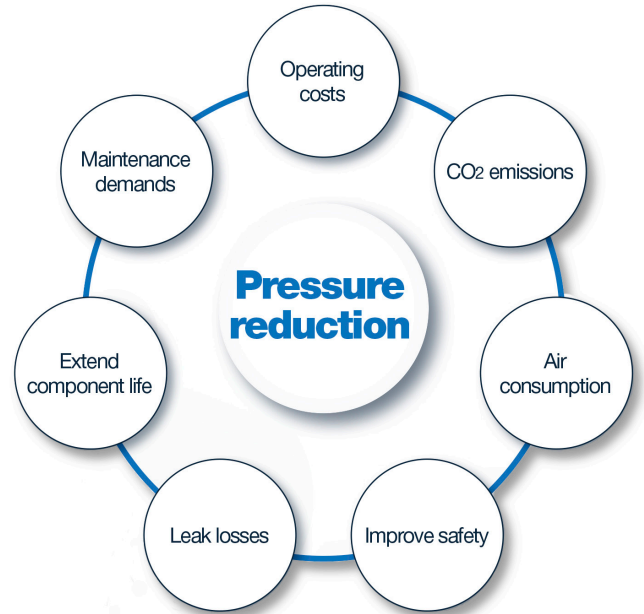
SMC's automation solutions are engineered to help you cut energy consumption without compromising performance. By operating at 4 bar, you reduce air usage and lower CO2 emissions, supporting both cost savings and sustainability goals. Compact and lightweight products will make you more productive while contributing to a better environment. Quality and long life brings peace of mind as well as cost reductions, and for a quick start to energy efficiency we recommend our wide range of air- and power saving products!



Discover the benefits of a lower pressure

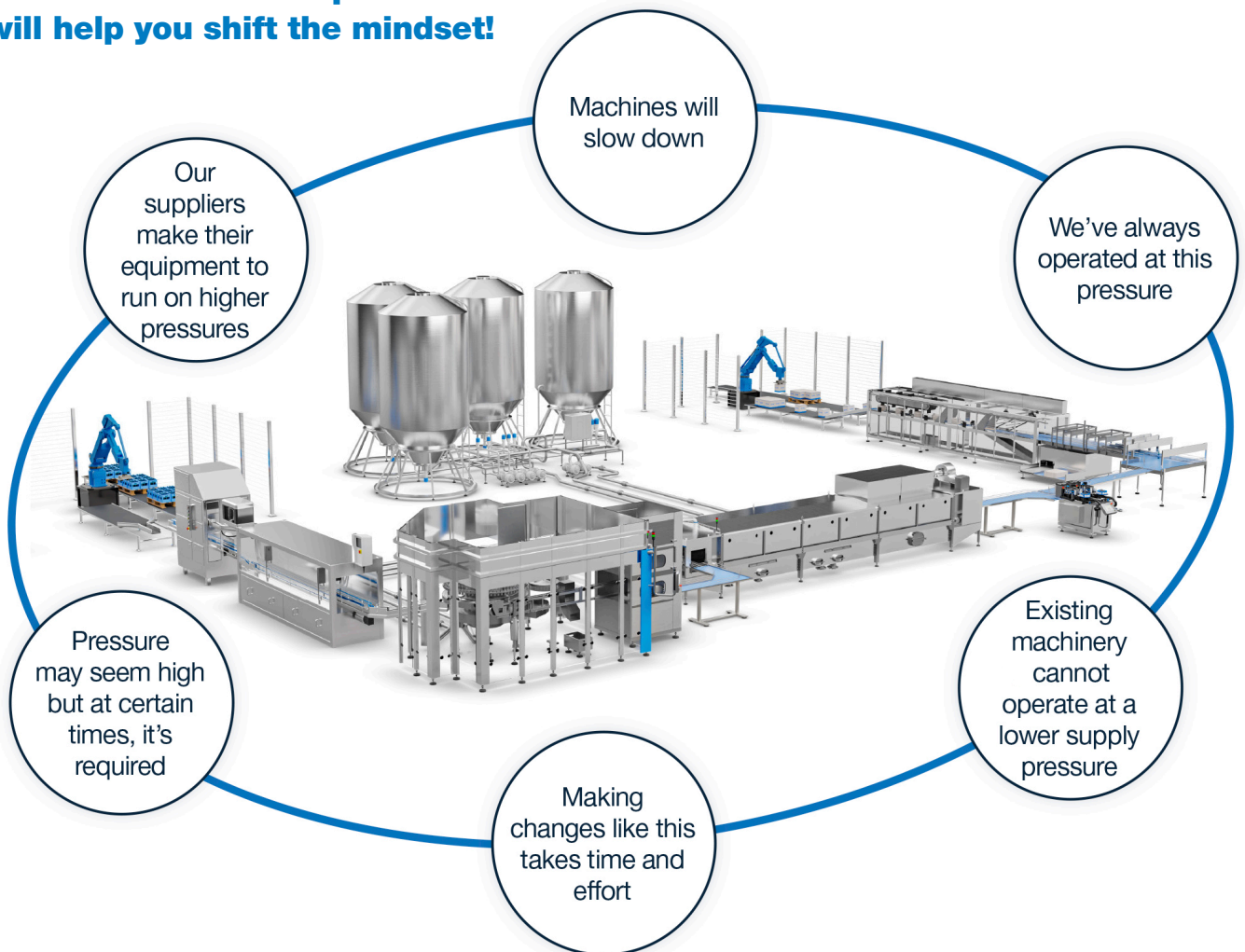
For every 1 bar reduction in delivery pressure, in average 6 to 8 % less specific power is consumed

The advice from compressor suppliers is to keep the working pressure as low as possible. If you want to accept the challenge of reducing site operating pressure, SMC is here to help and will work together with you and your suppliers to ensure that new or upgraded machinery can operate at lower pressures



“Change the pressure to change the future”

Common miss-conceptions – we will help you shift the mindset!



SMC can help you to rewrite the rulebook for a more efficient plant

A reduction in pressure often also means changing established rules and a shift in mindset. We understand this cannot happen overnight. At SMC, we're prepared to help you at every stage.

3 main steps

1

Air visualization

we visualize the pressure and flow rates of existing equipment to identify areas that can be reviewed.

2

Line pressure optimization

we verify air pressure that can maintain production efficiency locations where output must be maintained.

3

Air pressure optimization for the factory

last, the air pressure for compressors supplying air to the factory is optimized.

End user, machine designer and SMC

Agree targets

Allow for monitoring and connectivity.

Select products

Consideration of power source including pneumatic, vacuum and motor driven.

Integrate

Ensure products run seamlessly in any existing machinery.

Evaluate

Assess efficiency and productivity has been optimised.

Futureproof designs

Allow for monitoring and connectivity.

Pressure, flow and running cost reductions

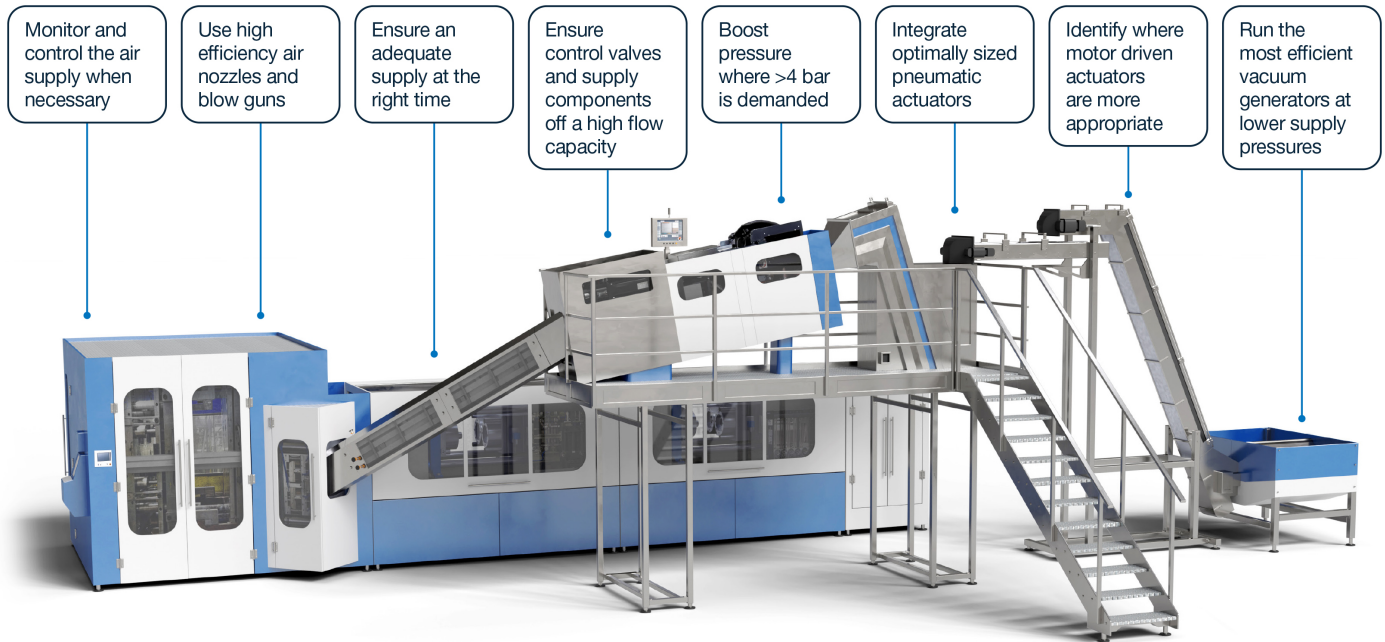


You want an easy way to save air? Make sure you cut your tubes straight to reduce leakage. Use our tubecutters

Solutions to make the difference

Futureproof the design

Running efficiently at a low support pressure is something that should be factored from the moment the machinery is designed.



Here are a few examples:

Angle Seat Valve



JSB*

Space saving angle seat valves developed for operating with a supply of 3 bar.



Compact Cylinder, High Force Type



CQE*

“Same size” CQE series actuators with greater output force, meaning the operating pressure can be reduced.



Efficient Nozzle



KNH*

High efficiency air nozzle that allows for pressure reduction without impacting blow performance.



Multi Stage Ejector



ZL*

High suction flow, up to 600 l/min (ANR) with 3 stage diffuser construction. ZL is optimized for a supply pressure as low as 3.5 bar and available with energy saving function.



Digital flow switch, modular type



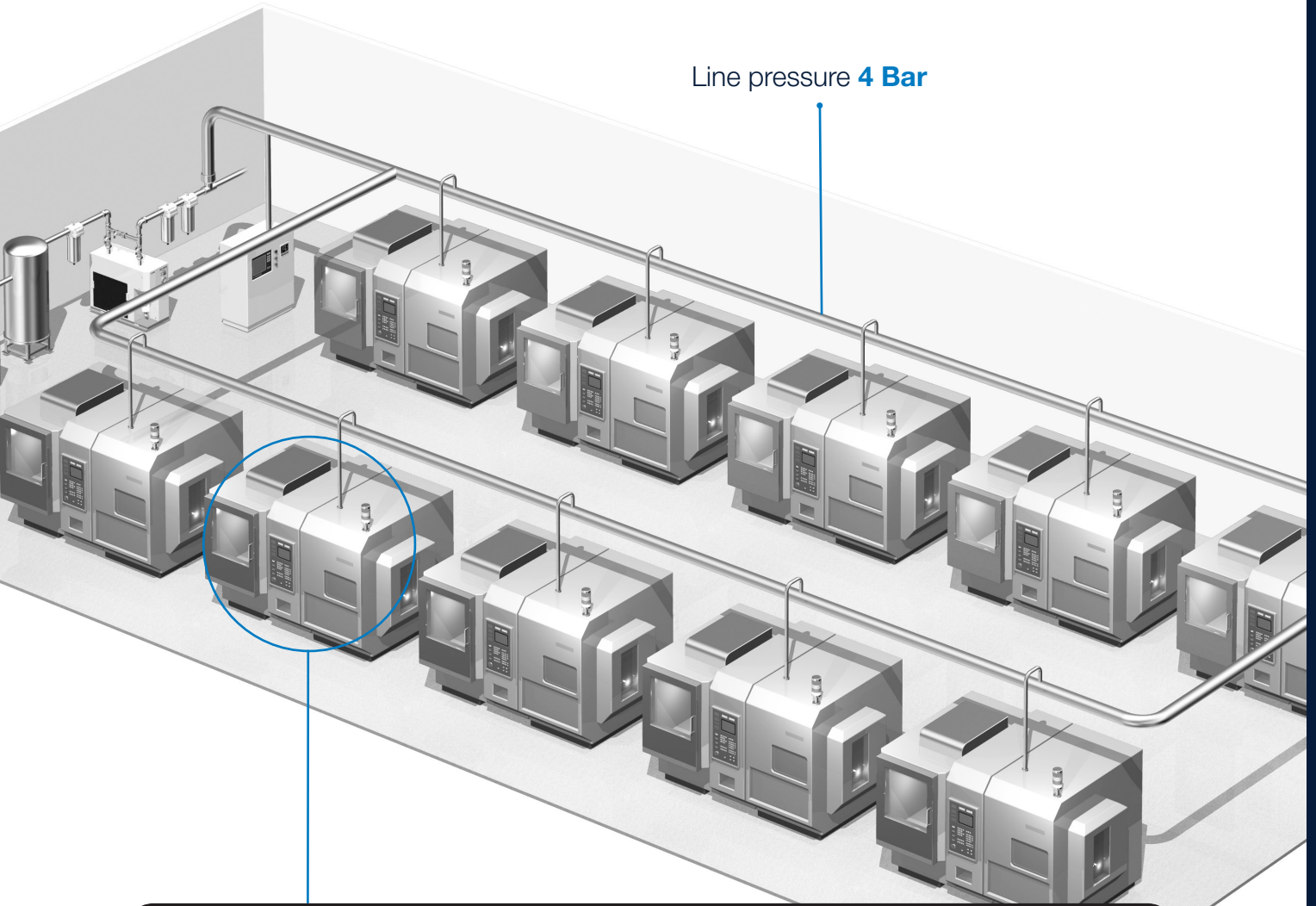
PF3A*

IO-link compatible flow switch, can be ordered with built in temperature and pressure sensor.



4 bar factory

Right pressure, right place

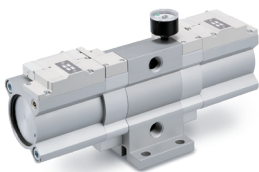


Line pressure **4 Bar**

Power supply not enough

Local pressure increase

6 Bar



Pressure booster regulator



Provides the required pressure level in a part of the application without having to increase the main line pressure or using a larger diameter actuator to ensure the required force.

Miniaturization supports environment and productivity

Smaller machines with same performance

Material reduction means resource savings, more efficient transports and less mass to move around in a moving application. For example less weight on the robot arm enables higher transfer speed, shorter cycle time and thereby an increased productivity. Compact components bring the opportunity to decrease the size of your machine and be more competitive. Miniaturization is part of the SMC DNA and the advantages are numerous!

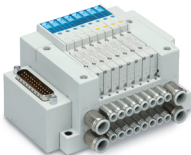


Compact Cylinder



JCQ*

Compact and lightweight cylinder, double acting, single rod with cushion. Weight as low as 25 g in $\phi 12$, stroke 5 mm.

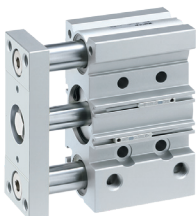


Compact 5-Port Solenoid Valve



JSY*

Extremely compact and lightweight valve, adaptable for application specific needs with flexibility in piping and electrical connection.



Compact Guide Cylinder



MGP-K*

A cylinder that combines high torque and load capacity with a space-saving design, making it ideal for tight installations. It's high capacity and low weight make it a great fit for robotic automation and a wide range of industrial applications.

The green choice with a lot of advantages

Increased reliability and reduced maintenance

A long service life gain cost savings in both maintenance and procurement and it's a reliable solution since you know the component will run throughout the lifetime of the machine. All SMC components equal high quality and long life, this is part of our philosophy. In addition we offer products with extra long life, such as the metal seal lasting 200 million cycles and long life cylinders based on a special design technology. All because we believe that high quality is the most sustainable and economic solution.



Longer life Compact Guide Cylinder



MGP-XB24

This compact guide cylinder will give a precise movement as well as save space in the application. The longer life version provides at least 4 times better durability than standard model.

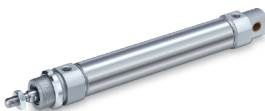


Longer life Compact Cylinder



CQS-XB24

A compact cylinder ideal for machine designs with small space requirements. The longer life version provides at least 4 times better durability than standard model.



Longer life Round Cylinder



C85-XB24

Standard round cylinder conforming to ISO 6432, available in a variety of versions. The longer life version provides at least 4 times better durability than the standard model.



Metal Seal



SMC valve series

Most of SMC's valves are available with rubber seals or metal seals. The metal seal slides on an air bearing, which makes it almost indestructible as it changes position completely without friction. The metal seal will last at least 200 million cycles, outlive the machine and serve as a very production-safe alternative.

Tangible savings at the point of use

Every liter and watt counts

With new technology we can maintain and improve performance while consuming less power and air. The air saving of a high efficiency blow gun or impact blow valve is noticeable at point of use. SMC's Air Management System will help you gain air savings on the machine level. In addition, SMC is constantly working to reduce the power consumption in all electrical components. And a few watts saved in a single valve quickly becomes millions of kW saved in a global perspective!

“A few watts saving in a single valve has a huge impact on a global level”

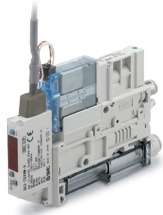


Air Management System



AMS20-60

Level up your compressed air management with AMS20-60. You will save energy, enhance your maintenance capabilities and digitalize your machine installation. Wireless connection up to 100 m will support a flexible machine layout.



Advanced Vacuum Unit



ZK2

Ejector/pump/manifold system with low noise, high efficiency options and energy saving digital vacuum switch. The efficient 2-stage ejector reduces air consumption significantly.



Vacuum flow



ZHV

Maximizes the energy efficiency by multiplying the air supply, for blowing and suction by 4 and 3 respectively, ensuring performance in high-flow applications.



Impact Blowgun



IBG1

Instant blow and long-term saving with SMC's blow guns. You will save operation time, reduce energy consumption and get effective cleaning of chips, water and dirt.



Impact Blowgun Valve



IBV

This valve will save energy and operation time with high initial impact force and reduced air blow operation time. It is compact and fits anywhere and you can adapt the blowing force to your application.

Software to assist

Easy selection and calculation of savings

We offer a variety of engineering tools to support your factory automation and energy efficiency initiative:

- **Configurators** - Meet requirements customizing our products
- **Sizing & Selection** - Select the right product dimension
- **Design** - Draw pneumatic and electrical circuit diagrams
- **Set up & monitor** - Sets all operations and monitors the operating status
- **Calculate** - Calculate air consumption, pressure drop, moment of inertia and more

All our tools:



[Home](#) > [Factory Energy Saving Assessment Tool](#)

Factory assessment tool

Basic factory parameters

| | | | |
|--|---------------------------------------|--|------------------------------------|
| Type of industry: | <input type="text" value="Electror"/> | Age of the factory: | <input type="text"/> |
| Power of all compressors (kW): | <input type="text"/> | Total compressed air flow (Nm ³ /h): | <input type="text"/> |
| Compressed air pressure (bar): | <input type="text"/> | Total cost of energy (€/kWh): | <input type="text" value="0.056"/> |
| Hours per year operation: | <input type="text"/> | Flow and pressure monitoring is it used and recorded?: | <input type="text" value="Yes"/> |
| Frequency of leak detection work in whole factory per year (x/year): | <input type="text"/> | Are there audible leaks of compressed air?: | <input type="text" value="Yes"/> |
| | | Is the compressed air supply shut off to the machines or production lines when they are not used?: | <input type="text" value="Yes"/> |



[Home](#) > [Machine Assessment Tool](#)

Machine Assessment Tool

General Machine Information

| | |
|---|-----------------------------------|
| Average air consumption (NI/min): | <input type="text"/> |
| Operating working pressure (bar): | <input type="text" value="1"/> |
| Hours operations (hours/year): | <input type="text"/> |
| Electricity rate (€/kWh): | <input type="text" value="0.09"/> |
| Compressed air cost (€/Nm ³): | <input type="text" value="0.02"/> |

Saving Areas

| | | |
|------------------|----------------------|--|
| Air feeding: | <input type="text"/> | |
| Solenoid valves: | <input type="text"/> | |
| Actuators: | <input type="text"/> | |
| Air blow guns: | <input type="text"/> | |
| Air blows: | <input type="text"/> | |
| Vacuum: | <input type="text"/> | |

| | | |
|--|----------------------|---|
| Estimated Total Yearly Savings: | <input type="text"/> | € |
| Estimated Total Yearly Pure Electricity Savings: | <input type="text"/> | € |

[Calculate](#)

Energy efficiency tools:





SMC.EU

| | | |
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**Expertise
Passion
Automation**