



Expertise – Passion – Automation



Accept the challenge

4-bar factory

Energy efficiency is on everyone's lips these days. Besides, we can soon expect regulations to be stricter and public pressure to make industry more energy-efficient will grow.

Since every company is always looking to save something, be it money, air, CO₂ or even the planet, SMC's commitment to you is to achieve your objectives by reducing costs: lowering your line pressure.

Although it is usual for machinery manufacturers to design pneumatic machines and equipment to operate at a pressure of 7 bar, we know from experience that users can reduce their energy costs by up to 29 % by reducing this pressure to 4 bar.

This change is already taking place in some large manufacturing plants, but it is not yet widespread – so why wait to make the transition now?

- It could make you a **pioneer in your industry** and keep you in a **more competitive position**
- It would help your company significantly boost its **corporate social responsibility**
- It enhances **energy efficiency, cost savings** and **environmental credentials**.

“The implementation of two of our main commitments: our commitment to you and your efficiency and our commitment to sustainability.”

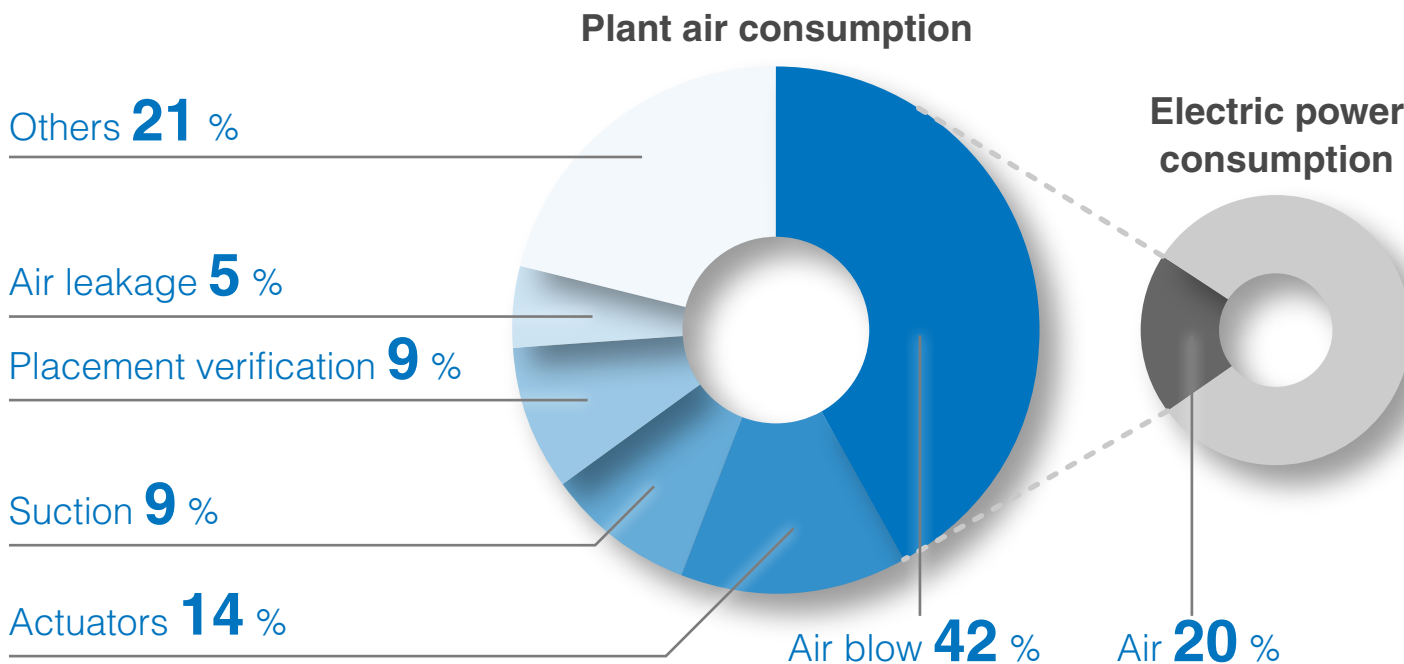
4 bar

Lowering your line pressure is easier than you think.

With a gesture as simple as asking your compressor to work at lower pressure, you are directly saving electricity. In addition, you significantly reduce leaks as less air will escape through them. Lowering the pressure also means lower air consumption.

In short, **MAKING THE TRANSITION TO 4 BAR BRINGS SAVINGS ALL ROUND.**

Less pressure → Less electricity & air consumption → Less leaks



“The most efficient energy is the one not consumed.”

*“Air is free.
Compressed air is not.
Use it wisely.”*

4-bar factory

Interested in the benefits of running a 4-bar factory? SMC has a dedicated team of energy efficiency experts to enable your success.

[Ask our experts](#)

Ideally, this pressure reduction should be considered as from the design of the machinery.

If the installation is already in operation and you want to move towards more efficient processes, an important aspect to consider is that before reducing the pressure, you have to make sure that the machine will deliver the desired results, without affecting its performance and quality.

The best way to do so is to gradually lower the starting pressure and check the machine performance. It will really surprise you when you see that, **with less pressure, you are getting the same results while still saving money.**

Meet the 3 key steps for making the leap to 4 bars:

1 Smart sizing ⊕

It is vital that your machine components are correctly dimensioned, from the main cylinder to the smallest fitting. For this purpose, SMC has the **Model selection software** at your disposal that will undoubtedly ease your analysis.

2 Pressure & flow optimisation ⊕

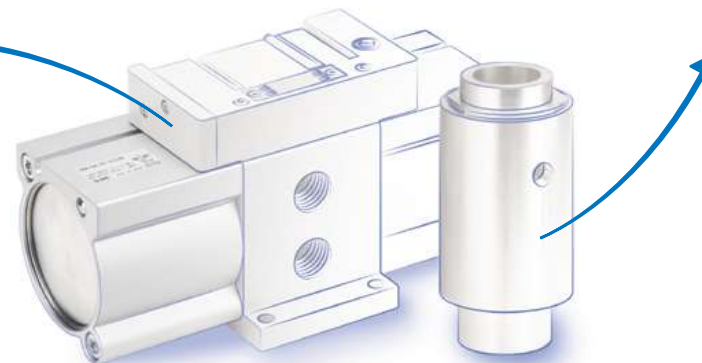
SMC's **Energy efficiency software** is a useful tool to make you aware of the energy consumption of your pneumatic equipment, and to encourage you to optimise your air consumption so that you can start reducing your costs while lowering your CO₂ emissions at the same time.

3 Intensive energy use applications analysis

It must be analysed whether there are any compressed air consuming applications in your installation and, if so, optimise them. Some of these applications could be air blow analysis (cooling, drying, product moving), vacuum generation, pneumatic vibrators, diaphragm pumps and material transfer.

Efficient pressure booster – VBA-X3239

Provides the required pressure level in a part of the application without having to increase the main line pressure, which avoids using a larger diameter actuator to ensure the required force and having problems due to lack of space.



Air amplifier – ZH-X185

Saves up to 70 % in air consumption through the ability to reduce input pressure without any compromise in results, which allows lowering the inlet pressure to 4 bar and still obtaining the same outlet pressure as in those applications that usually require 7 bar.



Reach peak sustainability

To harness the performance of your 4-bar factory, it is also beneficial to monitor and control the compressed air and energy consumption of the line.

SMC introduces the next generation of air treatment systems. With this combination of regulator, wireless hub, and residual pressure relief valve, you can monitor the flow, pressure and temperature of your system and program shut-off times and standby periods to save energy during low-activity times.

Air management system – AMS20/30/40/60 Series ⊕

Level up your compressed air management

- **Save energy and improve sustainability** – Programmable automatic pressure reduction and shut-off times
- **Enhance your maintenance capabilities** – Measurement and follow-up of flow, pressure and temperature
- **Digitalise your compressed air installation** – Virtual control of parameters with fieldbus or OPC UA data collection
- **Reduce labour and wiring time** – Wireless connection up to 100-metre range and 10 remote units.

Discover more on Energy Efficiency



By ROY SCHEP, MANAGER ENERGY EFFICIENCY,
SMC NETHERLANDS

SMC can help OEMs develop energy-efficient machines

OEMs traditionally design their pneumatic machinery and equipment for an operating pressure of 7 bar. However, by reducing this to 4 bar, I know from experience that end users can cut their energy costs by up to 29 % ...



By MAREK STROJIL, CUSTOMISED SERVICES,
SMC CZECH REPUBLIC

Energy efficiency: amplifying the benefits of working at 4 bar

Although most pneumatic machinery and equipment operates at 7 bar, I know from experience that taking steps to reduce the system's operating pressure to 4 bar can enhance energy efficiency, cost savings and environmental credentials. After all, every company is ...



By SÉAMUS DUNNE, ACTUATOR SECTION TECHNICAL
MANAGER, SMC EUROPEAN TECHNICAL CENTRE

Pneumatic cylinders: drive energy efficiency by switching to 4 bar operating pressure

Climate change, sustainability and energy efficiency have never been so high on the political agenda. The UN's recent Climate Change Conference (COP26) in Glasgow, UK brought the world's political leaders, Non-Governmental Organisations (NGOs), businesses and ...





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4BAR-A-UK