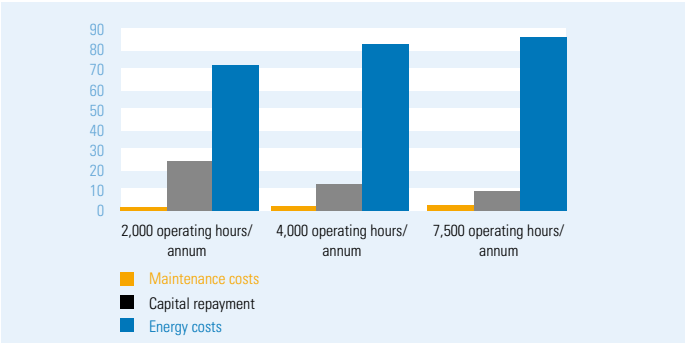
INTELLIGENT SYSTEMS YOU CAN RELY ON

Speed-controlled screw compressors

Cost-effective and sustainable: Kind to your wallet and the environment.

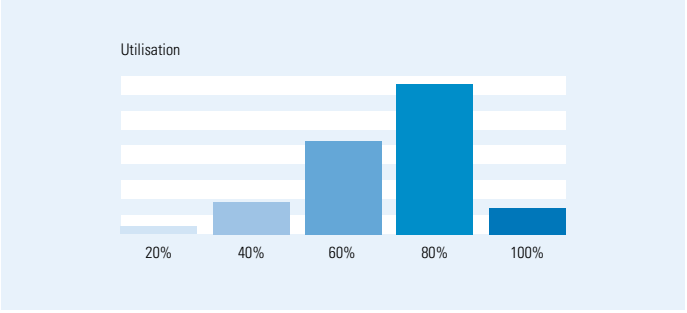
According to a study, approx. 80 billion kWh of electricity is used in compressed air systems in the EU each year, more than 10% of the electricity required in industry. So the cost-effectiveness of a compressed air system isn't about how much it costs to buy, but how much it costs to run on a day-to-day basis. And this is where speed-controlled screw compressors from ALMiG really come into their own:

- Precise adaptation of delivery volumes
- Fewer idle times
- Less load shedding
- Constant line pressure
- Direct drive
- Fewer leakages



Capacity utilisation of the compressor: Flexible tolerance for greater cost-effectiveness.

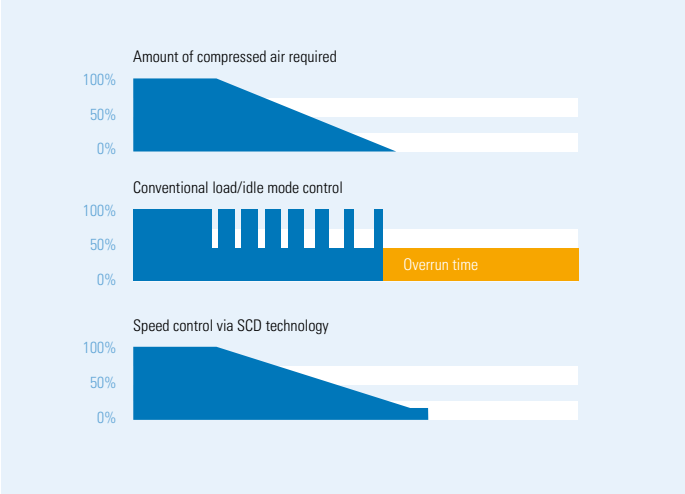
From experience, we know that most compressors are only used at between 50 and 70% of capacity. The maximum delivery volume is in most cases only used during peak times.



Speed control: The key component of your compressed air system.

By varying the system's motor speed, you automatically and sensitively adapt its delivery volume to its variable air consumption.

- If you require more compressed air, you simply need to increase the motor speed and therefore the compressor speed. The delivery volume increases.
- If you require less compressed air, you simply need to decrease the motor speed and therefore the compressor speed. The delivery volume decreases.



Precise adaptation of delivery volumes: No more annoying switching times.

If you're exploiting your system at 100% capacity, all compressors work at full load. If, however, you require less compressed air, the conventional compressor changes to loaded/idle mode, causing the drive motor to switch. In this situation, you have to take into account the pre-set over-run time. This has a negative impact on your energy bill.

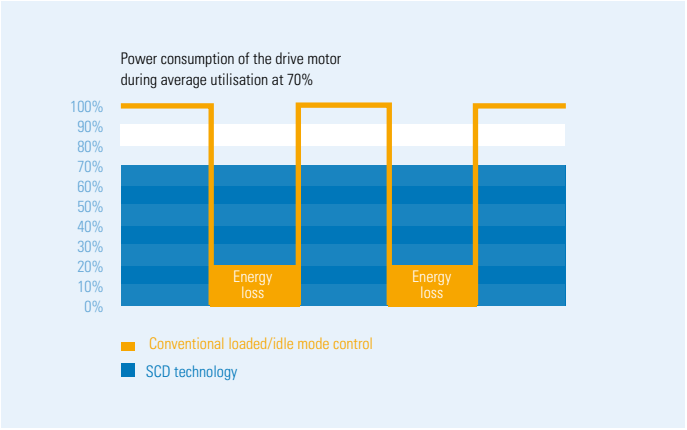
The VARIABLE and V-Drive series vary their power by gently and continually changing speeds, not by abruptly switching on and off.

Delivery volumes are continually adapted to your present requirements, so the process is kind to both your components and your wallet:

- No expensive idle mode, which consumes at least 25 – 30% of the energy consumed at full load.
- No more switching times which place a heavy mechanical load on the components.

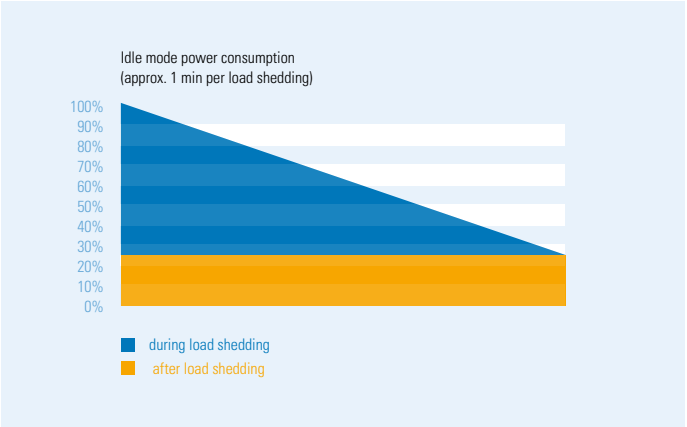
Productivity without idle mode: the ALMiG efficiency programme

In idle mode, a compressor consumes around 25 to 30% of the energy consumed at full load. Variable compressors adjust the speed of the compression element automatically and exactly to the value needed for the volume flow required. SCD (Speed Control Direct drive) technology also ensures that only the power that corresponds to the speed is used. So compressors can considerably cut energy costs even when loaded at 70% of capacity.



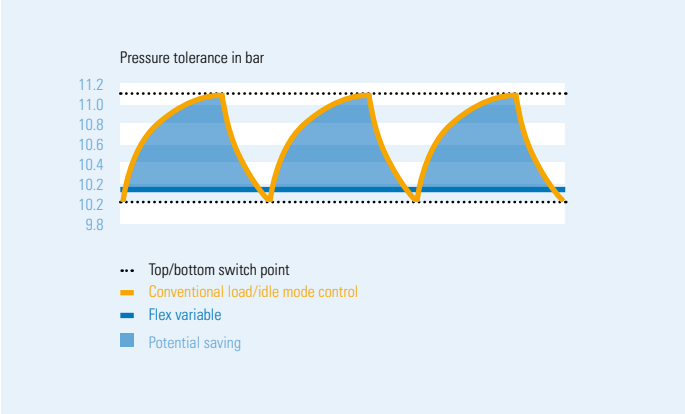
Less load shedding in fluctuating networks

Fluctuating networks cause the compressor to constantly change from loaded to idle mode (and back again). Each time the compressor changes mode, it sheds its load for around one minute.



A constant line pressure allows you to save a huge amount of energy

Speed-controlled compressors run at a constant operating pressure (p ~ 0.1 bar). Because high pressure always involves consuming greater amounts of energy, speed-controlled compressors allow you to make huge energy savings (1 bar higher pressure = 6 – 8% greater energy consumption).



ALMiG direct drive: The frictional connection

The compressor block is directly driven by the drive motor – and without any transmission loss.

This brings major benefits with it:

- Maximum power transfer
- Constant high efficiency of up to 99.9% over its entire working life
- Less noise and less maintenance effort than with V-belt and gear drives
- Excellent reliability.

Direct drive vs V-belt drive savings:

- V-belt drive (up to 96 – 97%)
- Direct drive (up to 99.9%) 4,000 h/year, 60 kW motor, 2.4 kW x 4,000 = 9,600 kWh

Fewer leakages thanks to reduced pressure: Speed control provides the answer

Almost all compressed air lines have leakages. The amount they leak depends on the pressure in the piping, among other things. The average leakage rate of a compressed air station is around 20 – 30%. By decreasing the pressure by just 1 bar (e.g. by controlling the speed), these leakages drop by approx. 10%.

In addition, speed-controlled compressors with direct drive are very energy-efficient (no current peaks) and are also much quieter than comparable models with a V-belt drive.