



**IMPORTANT
INFORMATION!**

Based on
£0.1249/kWh

Energy costs are increasing
and savings will now be
significantly higher. Please
refer to your electricity
unit charge.

 **TASKFORCE**

Generating compressed air accounts for 10% of total energy costs in industry, so ensuring wastage is kept to an absolute minimum should be a key concern for businesses.

For this reason, whether you're investing in a new compressed air system or upgrading an existing one, it's important to make sure to specify all elements correctly.

This will help reduce costs, improve operational efficiencies, and reduce the risk of downtime throughout the system's lifetime.

Read on to discover more on some of the other aspects that deserve special consideration during the specification process.

The 10% Taskforce!

Join our campaign to cut compressed air energy wastage and take the equivalent of **317 thousand cars off the road**, saving UK business over **£147.5 million**.

Visit the **BCAS 10% Taskforce website** below and share your energy saving tips. Working together, we can cut our carbon footprint from compressed air for a brighter future!

 **bcas**
BRITISH COMPRESSED AIR SOCIETY

Specifying a compressed air system

1 Sizing correctly



It's critical to make sure a compressor and dryer is sized correctly for the job it's required to perform.

Over-specifying is unnecessary and can be costly, when it comes to both the initial outlay and any on-going maintenance. Instead, the equipment should be appropriately sized for the demands placed upon it.

- Calculate the maximum and minimum air pressures required, as well as the compressed air flow needed by installing a data logging device
- Ensure the air receiver is sized and located correctly, as this has a direct impact on reliability and energy efficiency
- The air receiver should be sized (in litres) to be at least 6-10 times the compressor free air output (in litres/s). An undersized receiver can cause the compressor to cycle frequently in response to small changes in pressure
- To save the energy and cost incurred by cleaning and drying compressed air, treat all the compressed air to the minimum acceptable level, and then improve the quality at the points of use to the required level

2 Consider variable speed technology



Compressors are at their most efficient when operating at full load. Even when off-load, the power consumed can be 20-70% of the on-load power.

- Variable speed control can save a large amount of energy, but only if the air demand fluctuates
- A compressor that runs at full load will consume more energy if a variable speed drive is fitted
- If retrofitting to existing machines, be sure to consult the manufacturer first

3 Optimising pipework



Because not all parts of a network operate the same hours or to the same pressure, you can save energy by 'zoning' the compressed air system.

This way, only the pressure that is required for each zone is supplied.

- Remove or isolate redundant piping so that it doesn't leak out of hours
- To minimise pressure drop and allow for possible expansion, select large radius bends instead of elbows
- Support piping to minimise movement and sagging, which will reduce leaks and the build-up of fluids
- For larger systems with numerous take-off points, a ring main distribution system is recommended
- When selecting pipe material, consider alternatives to traditional galvanised steel, which will eventually corrode and has a much rougher internal surface

Specification tips

- Compressors should be located in a dry, clean, cool and well-ventilated area. It takes more energy to compress warm air, so a compressor room should be kept as near to ambient temperature as possible
- Site the air inlet to the compressor house on a north-facing wall if possible, or at least in a shaded area, with a grill to prevent debris entering
- Be sure to fit drain traps and valves to components where water will condense, such as aftercoolers, air receivers, dryers and filters. Inefficient condensate drains are a major cause of leaks and wasted energy; electronic level sensing drains offer a particularly energy efficient solution
- Selection of air treatment equipment is vital to achieving the required air quality standard and avoiding unnecessary pressure drops

More info

For more compressed air energy savings tips and advice, visit

www.taskforce10.bcas.org.uk