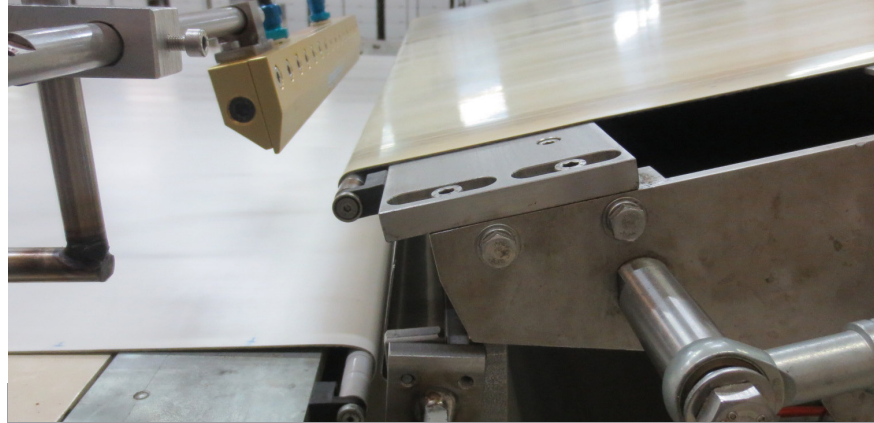




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8 ways to optimise compressed air usage

The common criticism of compressed air is that it is an extremely expensive energy source. However, quite apart from the fact that today's compressed air products can make production plants more efficient, leading to overall cost savings, there are a host of ways that companies can optimise their compressed air systems, reducing wastage and thus cost. Following even some of the 8 steps below can help you start make savings now.

1. Make regular checks for leaks

You can't see an air leak but, particularly with older pipe systems, they are probably there and are likely to be causing considerable wastage! Regular checks are essential. Ultrasonic leak detectors can be used to listen for the high-pitched noise of air leaks which is beyond the range of human hearing. This high frequency sound is then converted into an audible frequency which can be heard through the ear phones by the operator. Unlike digital detectors the sounds heard through the headphones are a direct analogue of the original sounds i.e. they are simply shifted to the audible frequency. This means that false positive noises can be rejected by the operator. Genuine leaks have an unmistakable hissing noise which, whilst normally at too high a frequency, can easily be distinguished from other non-leak generated noises which might be picked up on a digital display.



2. Turn off the compressed air supply when not in use

It sounds obvious but turning off the compressed air supply when it's not needed – at weekends or when shifts allow – can lead to significant savings. Also, a key benefit of compressed air is that it can be used 'on demand' so for parts of processes such as drying, air blow off and cooling where you may be using it intermittently, devices such as solenoid valves or sensors can be used to cycle the compressor on and off.

3. Make sure that compressed air is being run at the right pressure



Leaks or other problems with piping can cause pressure drops which often lead plant operators to turn up the supply pressure to compensate, thus increasing energy consumption unnecessarily. Better, as discussed above, to make sure that the system is checked regularly for leaks. In addition, using pressure regulators with gauges at various locations can set the optimal pressure level needed for individual applications, reducing usage and indicating when there is a pressure drop.

4. Adjust condensate drains regularly

Condensate drains on timers are commonly used and they are not considered a source of compressed air wastage. However, if there are many of them, even what little they waste can add up. They can also get stuck on open so should be checked regularly. It may also be a good idea to replace timer drains with zero-loss drains which have become much more economical in recent years.

5. Make sure you have the right pipework

Pipework should optimise the flow of compressed air at the right rate and pressure to the application using it. Pipes need to be at the optimum size for the usage. If they are the incorrect size or length they will cause pressure drops. An increase in the size of a pipe from two to three inches can reduce pressure drop by up to 50 percent. Similarly, shortening the distance air has to travel can further reduce pressure drops by some 20-40 per cent.

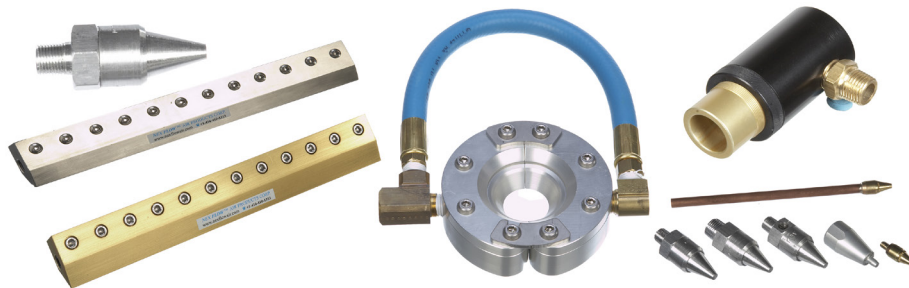


6. Prevent filters becoming clogged

Pressure drops can be caused by blocked filters as, over time, replaceable cartridges build up particulate. A regular cartridge replacement or filter cleaning schedule should be put in place, including air-line and point-of-use filters.

7. Use the heat generated by compressed air

A lot of heat is given off when compressing air and this heat can be used elsewhere in the plant – producing hot water, heating the work space – with the deployment of heat exchanger technology.



8. Use energy efficient products

Most compressed air products, some 70 per cent, are used for blow off and cooling. Often, they are used when blowers may be more cost effective but cannot provide the necessary force or velocity needed for an application. With cooling, they may be used because of space constraints, not because they are the most efficient choice. It is these sorts of scenarios that give compressed air products their reputation for being so costly to use. However, using engineered parts such as air nozzles, air amplifiers and air knives can reduce compressed air costs at point of use anywhere from 10% to 90% while maintaining production rate output and quality.

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