

How to find and repair compressed air leaks

Why save compressed air?

It is estimated that UK industry wastes an average of £100m each year on leaks from compressed air systems. Many sites have leakages of up to 50%!

Pssst! Did you know?

Compressed air leaking through a single 3mm hole could cost you £600 per year!

If you want to stop wasting money and energy, check your system regularly for leaks with the help of this guide.



What to do once you've found your leak

- Tag all the leaks on the pipes or equipment using a chalk or tape, and mark them down on a plan of the system.
- Keep each plan for future use and refer to previous plans when you next inspect the system.
- Grade the leaks on a scale of one to five, from slight to very bad. This allows you to tackle the worst leaks first.

How to fix it

- *Compressed air can be dangerous and therefore we recommend that you consult an expert if you are in any doubt about how to proceed. Always ensure that the system is completely de-pressurised before attempting any repair.*
- *In low-pressure systems it may be possible to 'patch' small leaks with a commercially available sealant or patch, but this should be a temporary measure only.*
- *Tighten suspect joints, valves and flanges and retest them. If there is little improvement it could be that an internal seal or washer has perished. Try replacing this first before replacing the offending component.*
- *Multiple leaks along a length of pipe could mean that it's corroding or deteriorating, so you should consider replacing it.*
- *Once a leak has been repaired, check it again using the same method as before to ensure that the repair has been effective.*

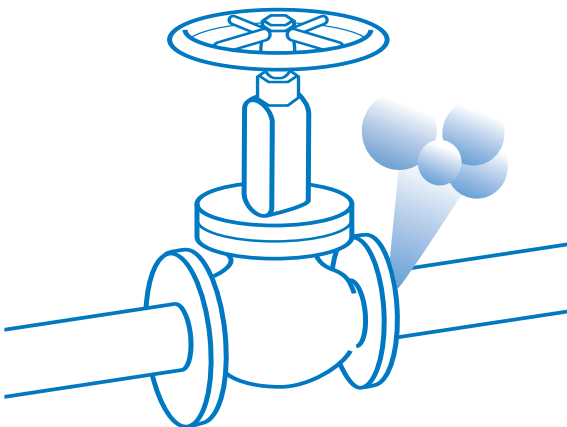
Three ways to find c

1. Listen

- Run the compressor, but do not use any air tools or equipment.
- A leak may be really quiet, so make sure there's as little background noise as possible. It's preferable to check outside working hours.
- Walk slowly around the system listening for hissing or rasping sounds – these are usually sure signs that there is a leak. Make sure you include all joints, flanges and valves in your inspection.

Remember

Listening will help you spot the majority of leaks, but some larger ones make no noise and only occur at certain pressures. In addition you may not be able to get close enough to parts of the pipe work to hear the leaking sounds. So treat listening as a rough guide only.



Watch out for escaping air
Especially around areas like flanges.

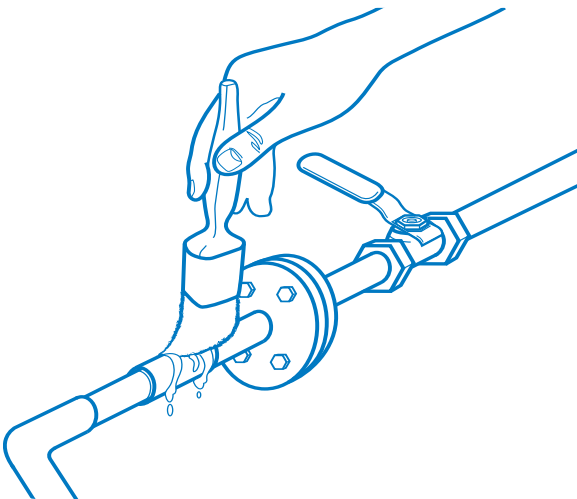
compressed air leaks

2. Look

- Mix up a simple solution of water and washing-up liquid (or any other soap) in a large bowl or bucket.
- Run the compressor but do not use any air tools or equipment.
- Walk slowly around the system and apply the soapy solution to the pipe work using a soft paintbrush, a sponge or a spray. Make sure you coat all joints, flanges and valves.
- If there is a leak, you should be able to see the soap liquid bubbling up.

Remember

This method will identify some larger leaks that have been missed by listening alone. However, it may not expose leaks that occur at different pressures and still relies on good access to all pipe work.



Beware bubbles

Apply soapy water to the pipe and if there are bubbles it's a sure sign of a compressed air leak.

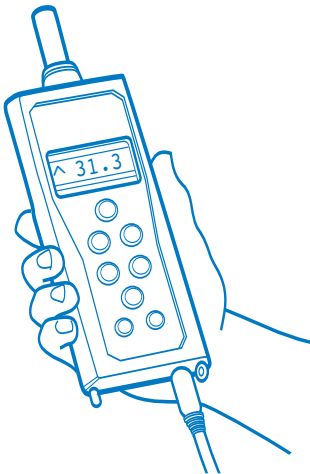
1, 2, 3...

3. Detect

- Using ultrasonic leak detection equipment is the best way to locate all leaks. This can be hired or purchased from your compressed air system supplier or from a specialist company.
- You can either hire a system and follow the instructions or, if you're using sophisticated equipment, employ the services of a leak detection specialist (who can usually be hired together with the kit).
- Ultrasonic equipment has the added advantage that it can be used during production hours and can reach parts of the system that are difficult to access.

Remember

If you use a lot of compressed air then you may wish to consider purchasing detection equipment. The cost (around £400 for a basic model) is well worth it when compared to the long term savings.



Ultrasonic leak detection

Is the best way to identify all leaks, especially in areas that are harder to reach.

Selecting a supplier?

The British Compressed Air Society can offer you help in finding a company which offers inspection and maintenance services. It represents equipment manufacturers and distributors and runs a Chartered Distributor Scheme.

Contact them on 0207 935 2464
or visit www.britishcompressedair.co.uk

**Need more help or information?
Call the Carbon Trust Energy Helpline on:
0800 58 57 94
www.thecarbontrust.co.uk/energy**

The Carbon Trust provides independent practical advice to businesses on saving energy and saving money, which will help reduce the effects of climate change.

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