

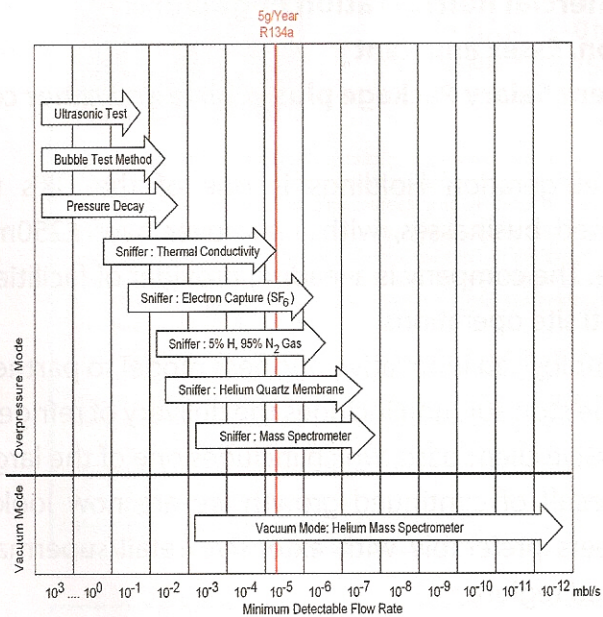


Every engineer is likely to have a preferred method for locating refrigerant leaks and from a numerical point of view it can be proven that some methods are more accurate and more reliable than others. In refrigeration a leak below 5g/Yr is considered small and acceptable but many other industries expect a much greater level of sensitivity in everyday practice.

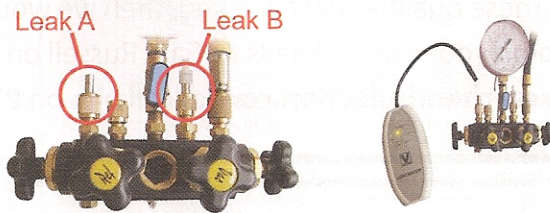
The diagram shows a range of technologies and the range of flow rates each method is capable of revealing. It may come as a surprise that the maximum sensitivity for many traditional leak detection techniques is well below the 5g/Yr benchmark demanded by current FGas legislation.

A practical way to investigate this situation would be to compare the methods directly. Using two reference leaks attached to a standard manifold a comparison can be observed. One reference leak (Leak A.) is calibrated to leak 5g/Yr of R134a at ambient temperature and bottle pressure (6 bar in this case). The plastic attachment on Leak B is smeared with a bubble solution and the leak is calibrated to the minimum value which will produce a single visible bubble in 5-10 seconds (around 1.3×10^{-2} ml/s or 1000-3000g/Yr of R134a). When a bubble solution is applied to Leak A. no visible bubbles will be formed for at least 15 minutes.

However when a sniffer probe is offered up to Leak A then a value is registered, this highlights the fact that a bubble solution will not reliably reveal a 5 g/Yr leak. If electronic sniffers are to be relied upon the calibration and accuracy must be dependable. Calibrated reference leaks can allow for closer investigation into the sensitivity and accuracy of leak detectors and provide information on equipment faults or the need for replacement components and assurance that standards are being upheld.



The diagram shows a range of widely used leak detection technologies and the level of accuracy that each one can provide.



LS Series for Sniffer Applications



LS-4 Housed Leak Element

- This Leak provides a leak rate of 5g/Yr for R134a for a quick check.
- For use directly onto a bulk supply.
- Typically for an installation or service engineer to check equipment before leak testing.
- Other gases and flow rates available as specials.
- Certification Traceable to National Standards can be provided for an additional fee.

LS-R Regulated Leak



- Capable of rates below 5g/Yr for a wide range of refrigerants.
- For use with a bulk supply.
- Interchangeable element for different gases and flow rates.
- For on site use or as a bench top tool for checking production line leak detectors.
- Unaffected by fluctuating bottle pressure and temperature.



- Certification Traceable to National Standards can be provided for an additional fee.

LS-100 All-In-One Refillable Leak

- Capable of rates below 5g/Yr for a wide range of refrigerants.
- Stand alone unit with 100cc reservoir and recharge valve.
- For use in various situations where a bulk supply may not be available or space is limited.
- Unaffected by environmental temperature changes.
- Certification Traceable to National Standards can be provided for an additional fee.



LS-X Calibration Workstation

- Capable of variable flow rates below 1g/Yr for a wide range of refrigerants
- Bench top unit with adjustable regulator, 63mm gauge and 100cc refillable reservoir.
- For use in calibration laboratories and standards rooms.
- Unaffected by environmental temperature changes.
- Complete with Certification Traceable to National Standards.

For further information about HT Products range of calibrated reference leaks please email info@htproducts.co.uk or call 01323 442 035