

The background of the cover is a blue-tinted photograph of HVACR components, specifically several large, curved metal pipes or ducts, arranged in a row. The image is overlaid with a grid of small, dark squares. The overall design is modern and industrial, with green and black geometric shapes at the top and bottom edges.

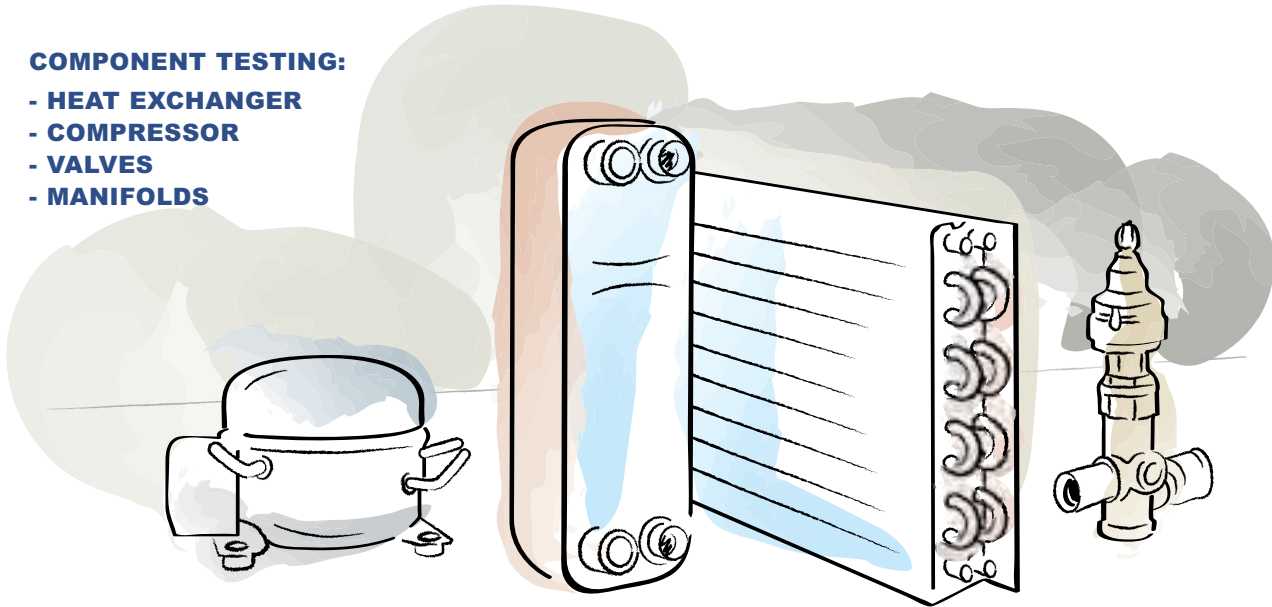
# Leak testing in the HVACR Industry












Applications for Component  
Manufacturing and Final Testing

# Reliable, accurate tools for any of your leak detection tasks

## COMPONENT TESTING:

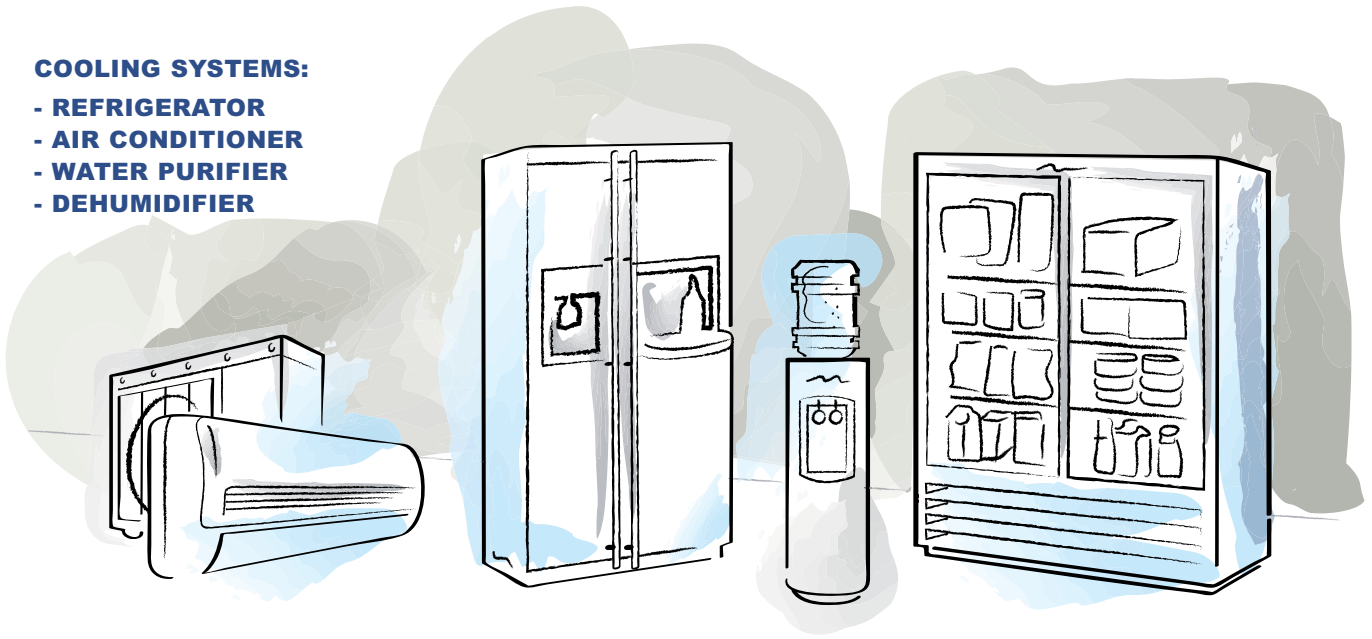
- HEAT EXCHANGER
- COMPRESSOR
- VALVES
- MANIFOLDS












					
Heat exchanger	Domestic Hot Water heat exchanger	Expansion vessel	Hoses	Pipes	Gas valves
<b>Typical leak rates in mbar · l/s</b>					
1E-2...5E-6	1E-2...1E-4	1E-4 (gas) 1E-2 (water)	1E-5 ... 5E-4	1E-5 (gas) 1E-2 (water)	1E-5
<b>Recommended INFICON products</b>					
Sensistor Sentrac Protec P3000(XL) LDS3000	Sensistor Sentrac Protec P3000(XL) T-Guard	Protec P3000(XL) Sensistor Sentrac T-Guard	T-Guard LDS3000	T-Guard LDS3000	T-Guard
					
DHW storages	Heating circuit pump	Compressor	Evaporator	Condensor	
<b>Typical leak rates in mbar · l/s</b>					
1E-2	5E-4	1E-5	1E-5	1E-5	
<b>Recommended INFICON products</b>					
Sensistor Sentrac Protec P3000(XL) Modul1000	Sensistor Sentrac T-Guard	Sensistor Sentrac LDS3000	Protec P3000(XL) LDS3000	Protec P3000(XL) LDS3000	

**COOLING SYSTEMS:**

- REFRIGERATOR
- AIR CONDITIONER
- WATER PURIFIER
- DEHUMIDIFIER



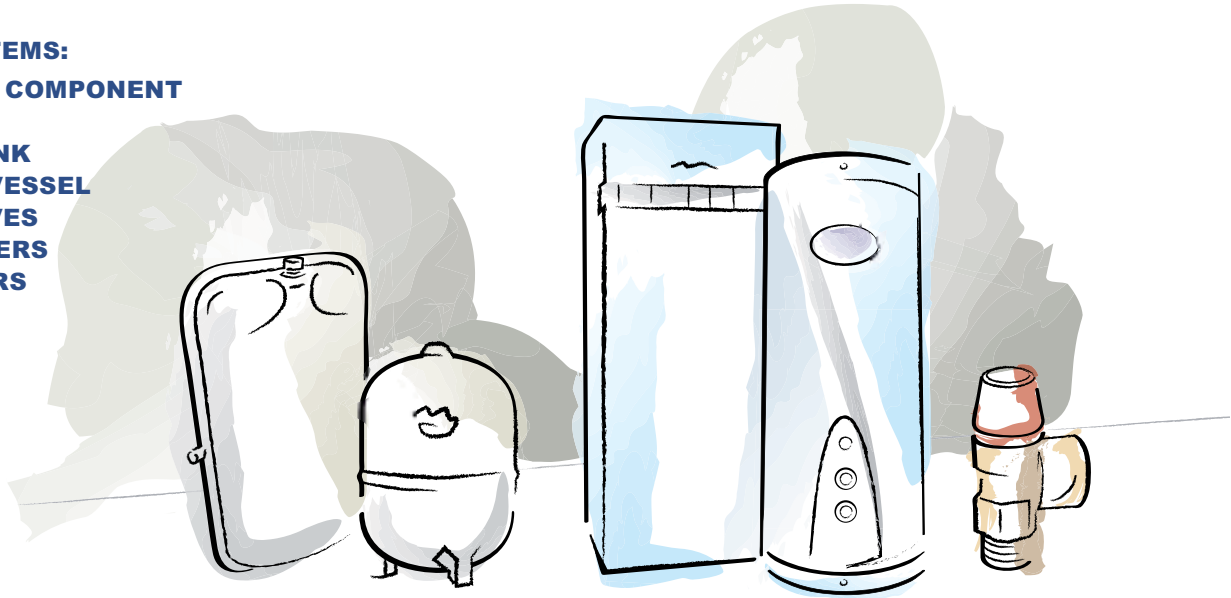
<b>Sub-Assembly</b>						
	<b>Welded/ brazed parts</b>	<b>Joints</b>	<b>Pinch-off</b>	<b>Valves</b>	<b>Fittings</b>	<b>Seals</b>
	<b>Typical leak rates in mbar · l/s</b>					
	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)
	<b>Recommended INFICON products</b>					
Protoc P3000(XL) Sensistor Sentrac	Protoc P3000(XL) Sensistor Sentrac	Protoc P3000(XL) Sensistor Sentrac	Protoc P3000(XL) Sensistor Sentrac	Protoc P3000(XL) Sensistor Sentrac	Protoc P3000(XL) Sensistor Sentrac	







<b>Assembly</b>			
	<b>Refrigerator</b>	<b>Air conditioner</b>	<b>Mobile Air Condition</b>
	<b>Typical leak rates in mbar · l/s</b>		
	1E-5 0.05 oz/yr bis 0.1 oz/yr 0,5 g/a - 2 g/a	1E-5 0.1 oz/yr bis 0.5 oz/yr 2,0 g/a - 5,0 g/a	1E-5 0.1 oz/yr 2,0 g/a
	<b>Recommended INFICON products</b>		
<b>Ecotec E3000 HLD6000</b>	<b>Ecotec E3000 HLD6000</b>	<b>Ecotec E3000 HLD6000</b>	





# leak detection expertise from a single source!

## HEATING SYSTEMS:

- GAS CIRCUIT COMPONENT
- HEAT PUMPS
- STORAGE TANK
- EXPANSION VESSEL
- SAFETY VALVES
- WATER HEATERS
- POOL HEATERS

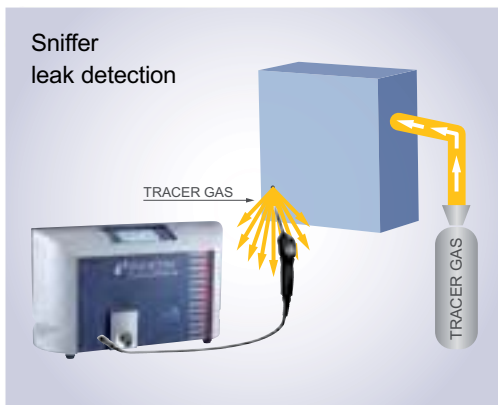
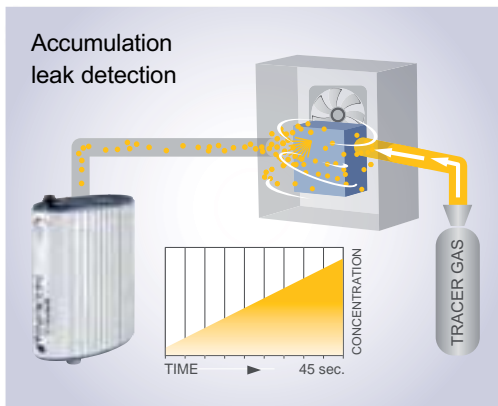
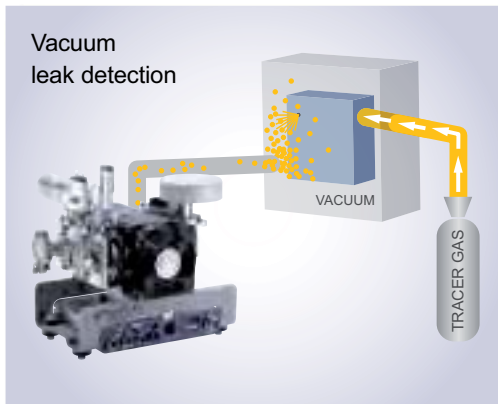


<b>Sub-Assembly</b>						
	Welded/ brazed parts	Joints	Pinch-off	Valves	Fittings	Seals
	<b>Typical leak rates in mbar · l/s</b>					
	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)	1E-5 (gas) 1E-3 (water)
	<b>Recommended INFICON products</b>					
Protac P3000(XL) Sensistor Sentrac	Protac P3000(XL) Sensistor Sentrac	Protac P3000(XL) Sensistor Sentrac	Protac P3000(XL) Sensistor Sentrac	Protac P3000(XL) Sensistor Sentrac	Protac P3000(XL) Sensistor Sentrac	

<b>Assembly</b>				
	Storage	Expansion Vessel	Hydraulic decoupler	Heat pump
	<b>Typical leak rates in mbar · l/s</b>			
	1E-3	1E-4 (gas) 1E-3 (water)	1E-3	1E-5 (gas) 1E-3 (liquid)
	<b>Recommended INFICON products</b>			
Sensistor Sentrac Protac P3000(XL)	Sensistor Sentrac Protac P3000(XL)	Sensistor Sentrac Protac P3000(XL)	Ecotec E3000 HLD6000	

## LEAK TESTING METHODS

INFICON offers a wide variety of leak detection options for the various leak testing methods available in the manufacturing of Heating Ventilation Air Conditioning and Refrigeration (HVACR) systems, component and sub-assemblies.



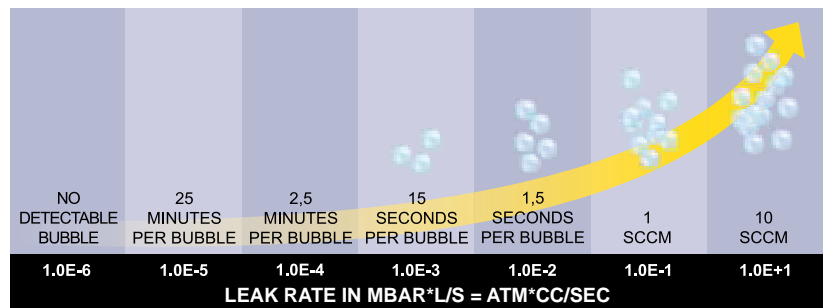
## INFICON IS THE IDEAL SUPPLIER FOR YOUR LEAK DETECTION NEEDS

- █ Leak testing with more than 100 times more sensitivity compared to water bath or pressure decay testing
- █ Leak location up to ten times faster
- █ Dependable, accurate measurements
- █ High repeatability and reproducibility
- █ Extremely reliable leak detectors offering low cost of ownership
- █ Leak detectors for helium, hydrogen and final medium e.g. refrigerants, natural gas, fuel, etc.
- █ Leak detection as well as easy leak location
- █ Easy to operate

## TYPICAL APPLICATIONS

- █ Quality Assurance of components, sub-assemblies in component production and final assembly, as well as for rework loops
- █ Leak testing in service centers and onsite service/maintenance

## COMPARISON OF BUBBLE TESTING TO DETECTABLE LEAK RATES



## ABOUT INFICON

INFICON is a global provider of innovative instrumentation, critical sensor technologies and advanced process control software used for leak detection in air conditioning, refrigeration, and heating manufacturing.

INFICON employs approximately 950 people worldwide.

INFICON technologies set quality-control standards for leak detection at HVACR manufacturing facilities around the globe. Innovative INFICON helium, hydrogen and refrigerant gas leak detectors are used for checking a variety of components and subassemblies. Manufacturers of HVACR products and their suppliers utilize INFICON products to ensure quality throughout their manufacturing and assembly operations.

# A wide range of leak detection products for your HVACR applications



## PROTEC® P3000(XL) HELIUM LEAK DETECTOR

Protec P3000(XL) is specifically designed for full-time sniffing applications in industrial production environments. Its patented Wise Technology® sensor offers highest uptime and low cost of ownership. Protec P3000XL is designed to prevent operator errors and allows the operator to detect leaks in even difficult to reach locations. It is ideal for detecting gaseous leaks.



## SENSISTOR™ ISH2000 HYDROGEN LEAK DETECTOR

Sensistor ISH2000 is a leak detector for automatic and accumulation systems. The use of a low cost forming gas (5% hydrogen in 95% nitrogen) makes it a low cost solution for many applications. The Sensistor ISH2000 is ideal for finding very small leaks that would allow leaking of liquids such as water, liquid fuel or oils.



## SENSISTOR SENTRAC™ LEAK DETECTOR

Sensistor Sentrac is a dedicated leak sniffer offering leak locating in a variety of situations, both on the production and repair lines. High selectivity, wide dynamic range and short recovery time make this detector highly adaptable. The Sensistor Sentrac - which uses 5% hydrogen in 95% nitrogen as tracer gas - excels in finding fluid leaks and is sensitive enough for finding gas leaks.



## TGF11 TRACER GAS FILLER

The TGF11 is an accessory to INFICON hydrogen and helium leak detectors, such as Sensistor Sentrac Hydrogen Leak Detector. It is a stand-alone instrument which allows for easy and reliable tracer gas filling and evacuating. The TGF11 Tracer Gas Filler ensures that the entire test object is filled with tracer gas at the right time and at the right pressure. It also evacuates the tracer gas after the test avoiding contamination of the work area.



## ECOTEC® E3000 MULTI-GAS LEAK DETECTOR

Ecotec E3000 allows the operator to detect leaks by sniffing for the escape of a final medium like fuel or refrigerant. The unit can detect up to four gases simultaneously. Ecotec E3000 is designed to minimize operator error and to maximize reliability of testing.



## HLD6000 REFRIGERANT LEAK DETECTOR

HLD6000 is a sniffer leak detector for testing air conditioning assemblies. It is available for most CFCs, HCFCs, HFCs, HFOs, HCs and CO<sub>2</sub>. Its dual inlet technology guarantees high reliability and repeatability of results, even in environments with an increased concentration of refrigerant.



## LDS3000 HELIUM AND HYDROGEN LEAK DETECTOR

LDS3000 is a modular leak detector used in integrated leak detection chamber systems. Its compact design and variety of interfaces and protocols allows for easy integration into automated testing systems. An optional touch screen display enables easy operation.



## MODUL1000 HELIUM LEAK DETECTOR

Modul1000 is a plug and play leak detector for universal integration into industrial leak testing systems (vacuum and sniffer mode). With flexible vacuum architecture, the Modul1000 provides the adaptability to accommodate changes in production specifications.



## T-GUARD™ LEAK DETECTION SENSOR

T-Guard is a leak detection sensor for use in integral leak testing of components. Through the use of the patented Wise Technology sensor T-Guard can be used in leak testing chamber systems without the need for vacuum. It offers the sensitivity of helium leak testing at the price of pressure decay systems, and is ideal for testing warm, wet or dirty parts.



## SERVICE LEAK DETECTORS

D-TEK® Select, Compass®, Gas-Mate® and TEK-Mate® are refrigerant leak detectors for field service on air conditioning and refrigeration system. The Whisper ultrasonic leak detector is a versatile tool useful in detecting leaks of any gas under pressure or vacuum, diagnosing solenoid operations and detecting leaking seals. Service leak detectors are battery operated tools, designed to maximize productivity on the job site.



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Due to our continuing program of product improvements, specifications are subject to change without notice.

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