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VAKUUMTECHNIK GMBH

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Seiler Vakuumtechnik – your partner for leak testing.
Get in touch with us.

We advise you right from the planning stage on. We work out the specifications and the scope of the project, define a realistic timetable for the project and check out the testability and the appropriate test methods for your product. We provide for optimum integration of the test facility into your production. We employ modern planning and design processes to develop the optimum solution – for you.

Profit from our years of experience.
We stand ready to serve you every step of the way – training your staff, servicing your equipment and attending to your individual needs.

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SEILER
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worldwide...

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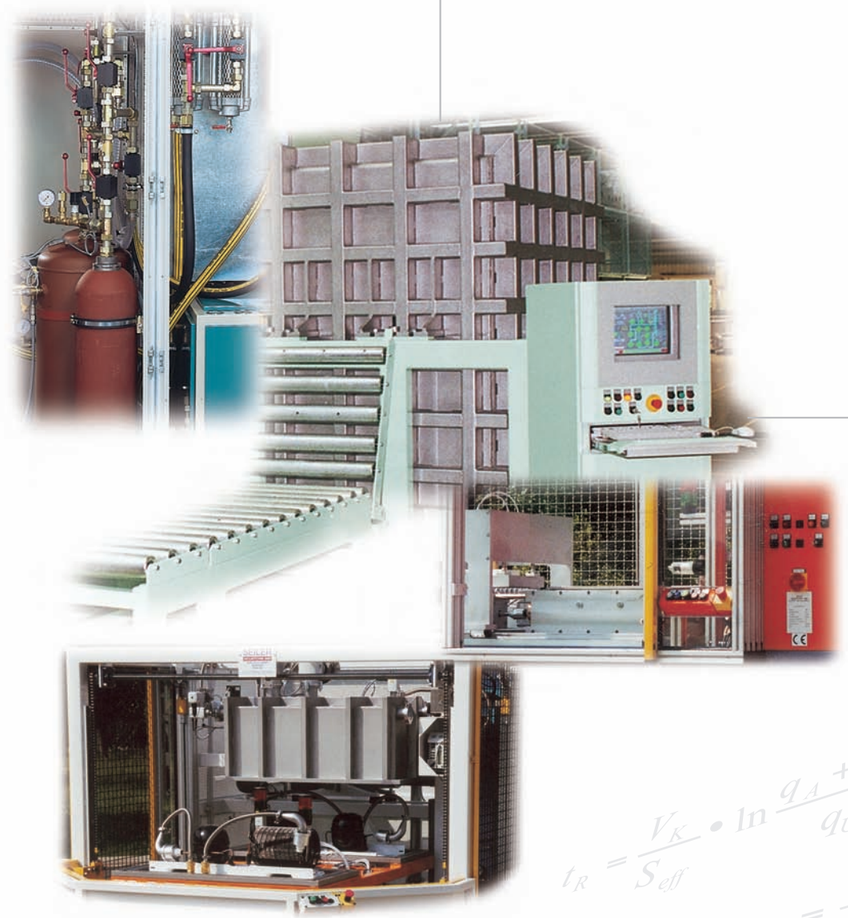

Helium leak testing equipment
Vacuum systems technology
Special-purpose equipment

SEILER
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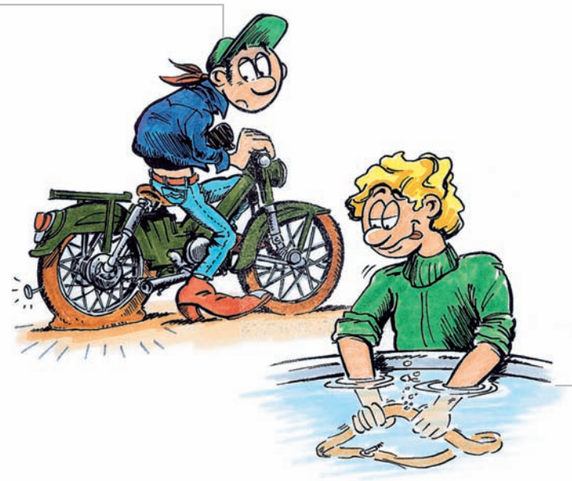
Seiler Vakuumtechnik GmbH
Your partner for leak testing

„Production, and not control, creates quality.“
Right.
But in many areas, only close inspection of the products ensures the reliability and quality that on the basis of which you and your end products are measured.

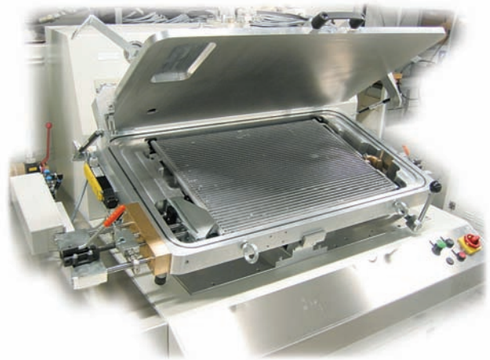
We help you maintain a consistently high production standard, avoid complaints and at the same time cut costs. Our equipment enable you to up product reliability.

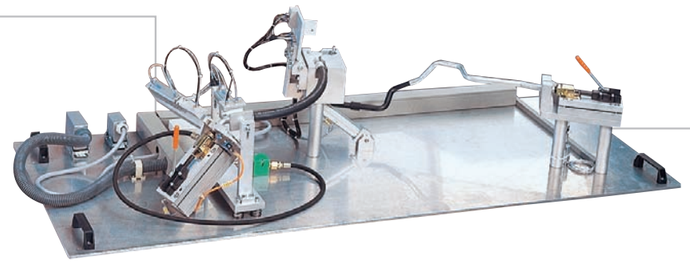
Look what we can do for you!
Alongside conventional testing methods like bubble
test and differential pressure technology, we are also specialized in leak location by means of carrier gas, where our particular focus is on **helium leak detection**.

We design and construct our leak testing equipment precisely to meet your individual needs. Take advantage of our years of experience and our openness to innovation – to satisfy your quality demands.



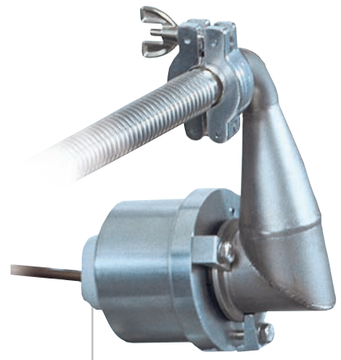
If a system springs a leak, you've got problems.
Locate the leak – and the problems are done with.



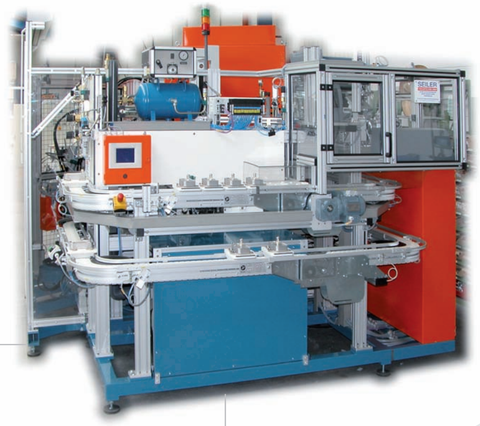


Fixture of test specimen and tool design

- Test-piece-specific tool mounting
- Automatic and manual clamping
- Twin sealing technology
- Stainless steel chamber adapted to customer's requirements
- Pneumatic clamping tools for individualized adaptation to the test piece
- Superb sealing technology all from one source



Automotive engineering

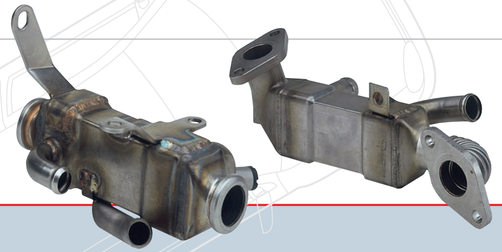


For the

Automotive industry

The cooled exhaust gas recirculation system complies with EURO III and IV. SEILER leak testing equipment is employed to ensure the quality of the heart of this unit – the exhaust gas heat transfer unit.

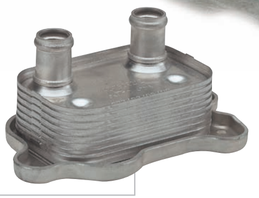
- Type-specific tool
- Automatic interchangeable tools
- Compact construction
- S7/300 controls with OP 7

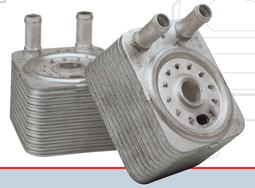


Cycle time	12 sec.
Leak rate	0.1 cm^3/min.
	$1.6 \cdot 10^{-3}$ mbarl/s
Test pressure	4.5 bar abs. → 0 bar
Helium concentration	100 % He

Helium leak testing system for

Oil-/water heat exchangers

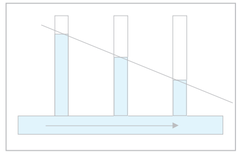




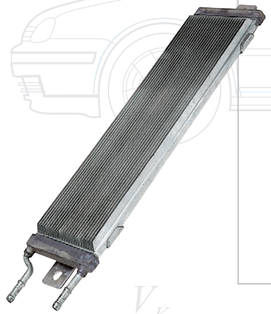
- Automatic feed/withdrawal of parts plus coupling in the test stations
- „No-go“ part lockout
- Milling and brushing of front sides, including vacuuming
- Burst pressure test
- Flow-rate measurement
- Helium leak test
- Automatic pin stamp marking
- Process visualization WinCC

Cycle time	12.5 sec.
Leak rate	$5.0 \cdot 10^{-5}$ mbarl/s
Test pressure	3.0 bar abs. → 0 bar
Helium concentration	100 % He

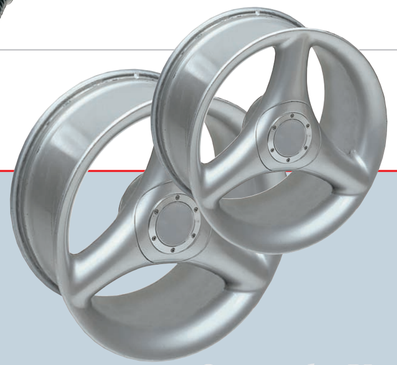
$$t_R = \frac{V_K}{S_{eff}} \bullet \ln \frac{q_A + q_U}{q_U}$$



- Aluminum wheels
- Distributor injection pumps
- Brake boosters
- Power steering lines
- Steering assists
- Front covers
- Clean gas tank plus igniters
- Gearboxes
- Level switches
- Shock absorbers
- Radiators



$$\tau_{63\%} = \frac{V_K}{S_{eff}}$$



$$F_R = F = R^2 \bullet \pi \bullet \Delta P = \frac{8 \bullet \eta \bullet l \bullet V}{R^2 \bullet t}$$

Helium recovery

- 1 – 200 m^3/h
- 0 – 50 bar output pressure (higher pressure on demand)
- Modular construction
- Recovery rate >95 %
- Separate control
- Interface to leak testing system
- Integrated filter system
- Sound deadened
- Low and high pressure unit

When does it pay to have a helium recovery system?

Initial situation

Cycle time	18 sec./2-shifts
Test volume	V_P = 2 litres
Test pressure	P_P = 1 bar/100 % helium

Calculation of helium consumption

Gas quantity	$Q = V_P \cdot P_P$ Q = 2 litres · 1 bar
Helium costs per bar x litre	P = 0.02 €
Helium costs per test piece	$C_1 = Q \cdot P$ C_1 = 0.04 €
Helium costs per year	C/y = C_1 · 200 (pc/h) · 16 (h) · 220 (d) C/y = 28,160.00 €
Cost of the helium recovery system needed in this case	20,000 – 30,000 €

HELIUM

For the sake of the environment

Locating the leak is a MUST.

Professional leak location ensures that your products maintain a high level of reliability. Statistical process monitoring, DIN EN ISO 9000 ff, process optimization, specification limits and last but not least the environment establish the basis for optimal production results. All too often the environmental aspect is overlooked when dealing with this complex topic. That's why we opt increasingly for helium as test gas in leak detection.

There are good reasons for choosing helium:

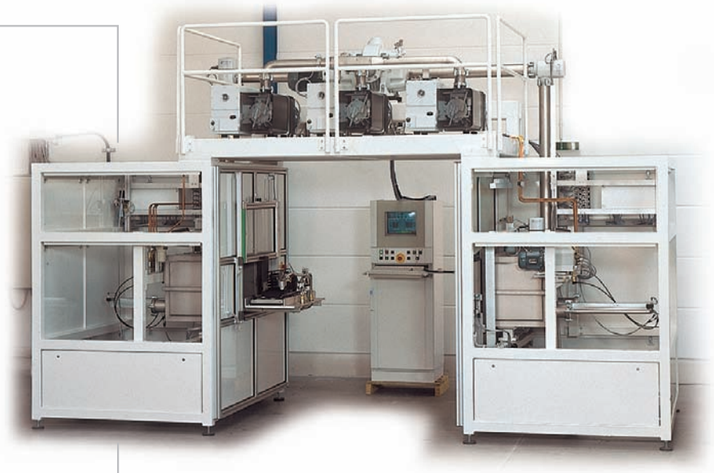
- Smallest gas atom after hydrogen
- Nontoxic, noncombustible and nonexplosive
- Environmentally friendly – only 5 ppm present in air
- Inert – does not react with other substances
- Highly mass-spectrometrically separable from other gases
- Cost-efficient and reliable

Let our knowledge fuel your success!

HELIUM

For the sake of the environment

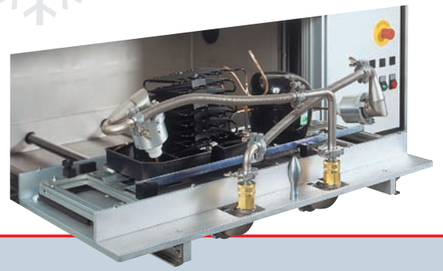
RAC technology



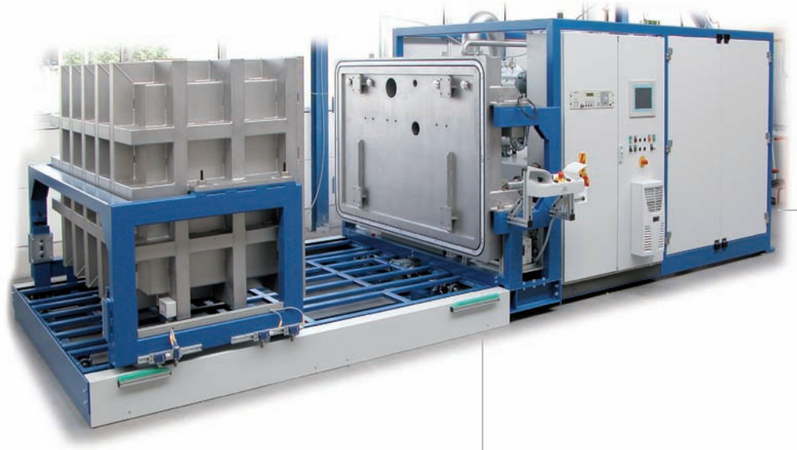
Integral helium portal
leak testing equipment for

Compressor evaporator devices

- Chamber fit onto outwardly mobile adapter table
- Massive leak detection
- Gross leak detection by means of pressure loss measurements
- Helium gross leak detection
- Helium fine leak detection
- Cycle time can be adapted to customer's specific needs by selection of right pump system
- Helium recovery with >95 % recovery rate



Cycle time	28 sec.
Leak rate	5 g/a R134a
	$2.6 \cdot 10^{-5}$ mbarl/s
Test pressure	3.0 bar abs. → 0 bar
Helium concentration	100 % He
Signal stability	1.5 % of 100 readings



Helium leak testing equipment for

Medium voltage switches

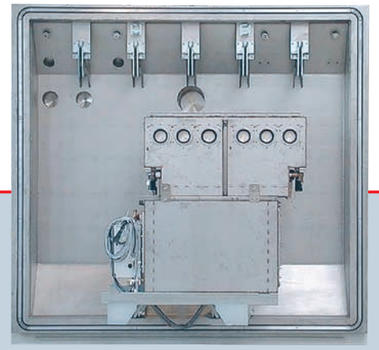
- Automatic SF6 charging
- Helium recovery
- Vacuum chamber from 1.4301
- Process visualization WinCC
- Data archiving of readings
- Logger
- Gross weight: 10 t
- Dimensions: L = 10 m
  D = 6 m
  H = 4 m

SF6 leak testing system for

SF6 compressed air feed pipes

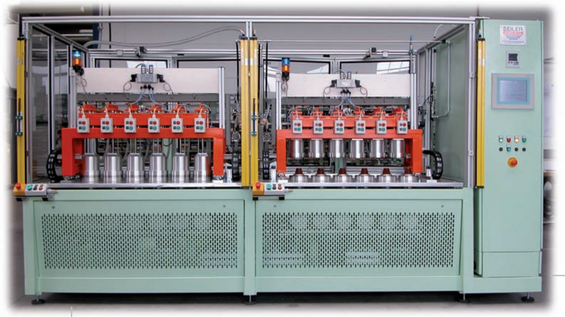
- Mobile system
- Automatic sequence
- Integral vacuum leak test in accordance with the carrier gas principle
- Vacuum bell accommodates every position on test piece

Cycle time	45 sec.
Leak rate	$1.0 \cdot 10^{-6}$ mbarl/s
Test pressure	1.5 bar abs. → 0.4 bar
SF6 concentration	100 % SF6



Chamber size	7.5 m^3
Pumping speed	5000 m^3/h
Cycle time	10 min.
Leak rate	$1.0 \cdot 10^{-6}$ mbarl/s
Test pressure	1.5 bar abs. → 0 bar
Helium concentration	100 % He

Electrical industry

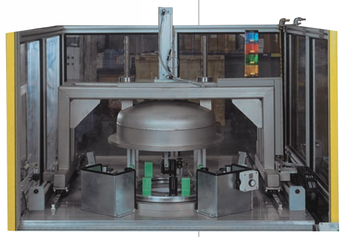


Helium leak testing equipment for

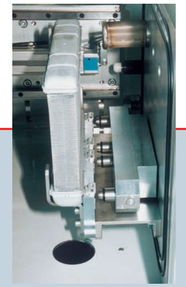
Cast resin components

Double chamber system

- Two-sided testing
- Helium concentration optionally 50 – 100 %
- Type-specific tool pickup
- Manual fitting
- Automatic testing sequence
- Optical „Go/No-go“ indicator



Cycle time	45 sec.
Leak rate	$1.0 \cdot 10^{-6}$ mbarl/s
Test pressure	1.5 bar abs. → 0 bar
Helium concentration	50 - 100 % He



Integral helium leak testing equipment for

Heat exchangers

Double chamber system

- Process visualization WinCC
- High serviceability
- Automatic test specimen adaptation
- Quick tool change
- Type-specific test labels with barcode
- Automatic marking of "Go" parts
- Gas supplied to evaporator via coaxial pipes

Cycle time	22 sec.
Leak rate	5 g/a R134a
	$2.6 \cdot 10^{-5}$ mbarl/s
Test pressure	15 bar abs. → 0 bar
Helium concentration	20 % He

Test specimen from

Refrigeration/air conditioning technology

- Refrigerant hoses
  - integral testing in a double chamber unit
  - localized testing automatic sniffer system for leak detection
- Complete air conditioning systems for passenger cars and commercial vehicles
- Blowers and filter systems
- Condensers and evaporators
- Hermetically sealed compressors
- Charge-air coolers