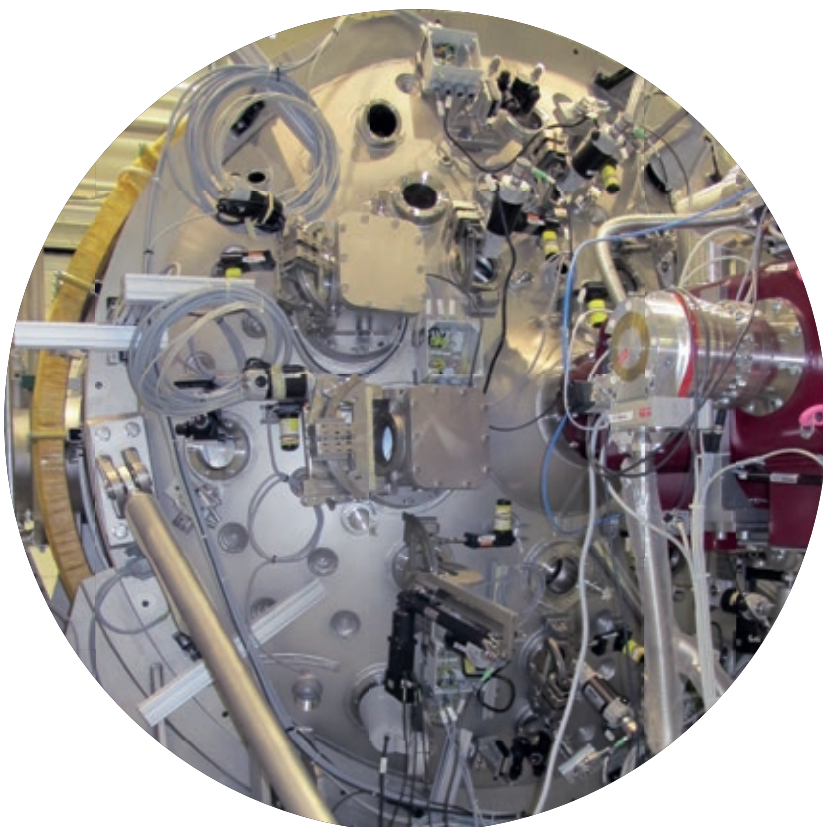




VAKUUM 
 **SERVIS**

Vacuum is nothing but everything for us.



VACUUM TECHNOLOGY, VACUUM EQUIPMENT PRODUCTION

Vakuum servis s.r.o. is authorized service center of Pfeiffer Vacuum, and also a representative of VAT Vakuumentile AG, SPECS GmbH, scia Systems and HSR AG for the Czech and Slovak Republic. The company has been operating for more than 30 years in the field of vacuum technology, vacuum deposition and helium leak detection. The company is also engaged in sales of vacuum equipment, servicing of rotary, dry, turbo and diffusion vacuum pumps, design and manufacturing of various vacuum systems, and helium leak detection systems.

Service Center

Service of Pfeiffer Vacuum and Adixen rotary, turbomolecular and oil-free vacuum pumps. Service of Balzers, Pfeiffer Vacuum, etc. Service of quadrupole analyzers, leak finders and other vacuum components Pfeiffer Vacuum, Adixen, Balzers, etc. Service of vacuum valves by VAT Vakuumentile AG, Service of cryogenic and diffusion pumps (HSR AG)

Vacuum Equipment

Design, development and production of vacuum furnaces, coating systems, industrial HLDS, customized vacuum systems. Refurbishment of Balzers BAK, LL801 and other vacuum systems.

Leak detection, analysis

Leak detection in vacuum equipment with helium leak detector. Analysis of vacuum equipment with quadrupole analyzer.

Business activities

Sales of rotary oil pumps, dry pumps, Pfeiffer Vacuum and Adixen turbomolecular pumps. Sales of cryogenic and diffusion pumps from HSR AG. Exclusive sales of VAT vacuum valves. Supply of vacuum components. Supply of spare parts for vacuum equipment. Sales of used and reconditioned vacuum components and equipment. Exclusive representation of the company VAT Vakuumentile AG for the Czech and Slovak Republics.

VAKUUM SERVIS

Vakuum servis s.r.o.

- Design and construction of vacuum pumping stations, vacuum furnaces, helium leak detection systems, vacuum coating systems
- Refurbishment and upgrade of vacuum production systems
- Assembly of vacuum systems as key-turn customized solutions according to individual needs
- Authorised Pfeiffer Vacuum service center



Plasma cleaning device with RGA Analysis



Vacuum drying system

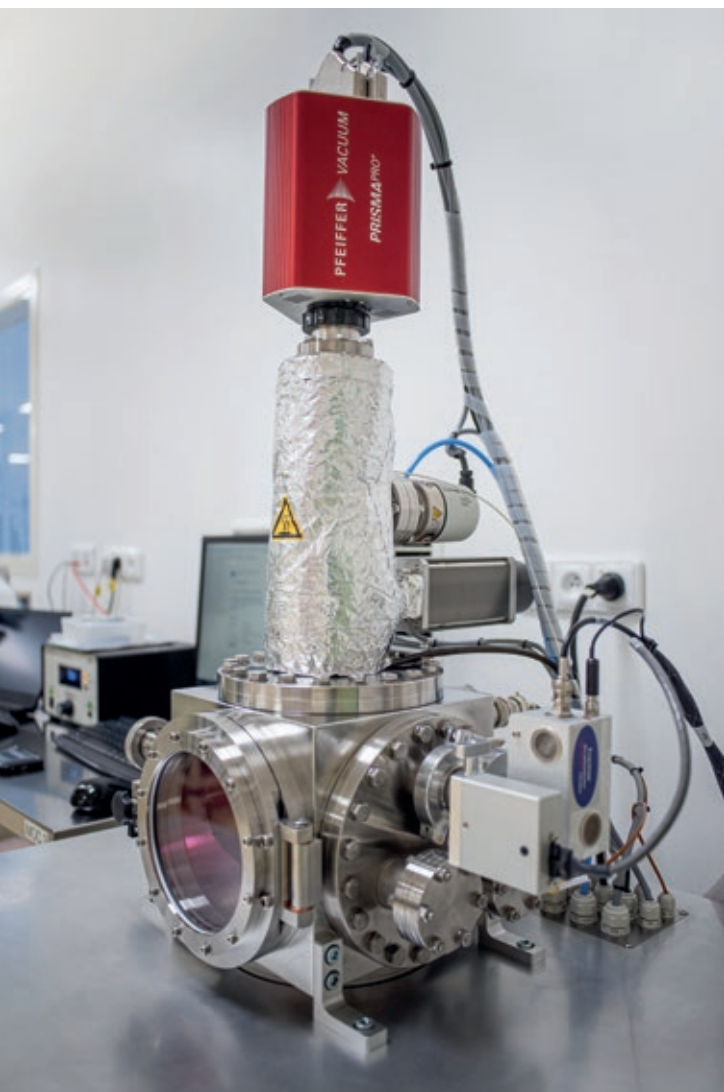


Vacuum system for E-beam high heat thermal loading

RGA 160 testing system

Main characteristics

- Multipurpose testing device for RGA analysis of UHV components.
- Quantitative outgassing analysis for hydrocarbons, water vapour and other specific chemicals, based on customer needs.
- Measurement method based on ASML standard GSA 07 2221
- Dedicated control software with fully automated measurement cycle with final acceptance protocol in pdf form.
- Possibility of final plasma cleaning and vacuum bakeout of vacuum components before measurement.





Cryo chamber

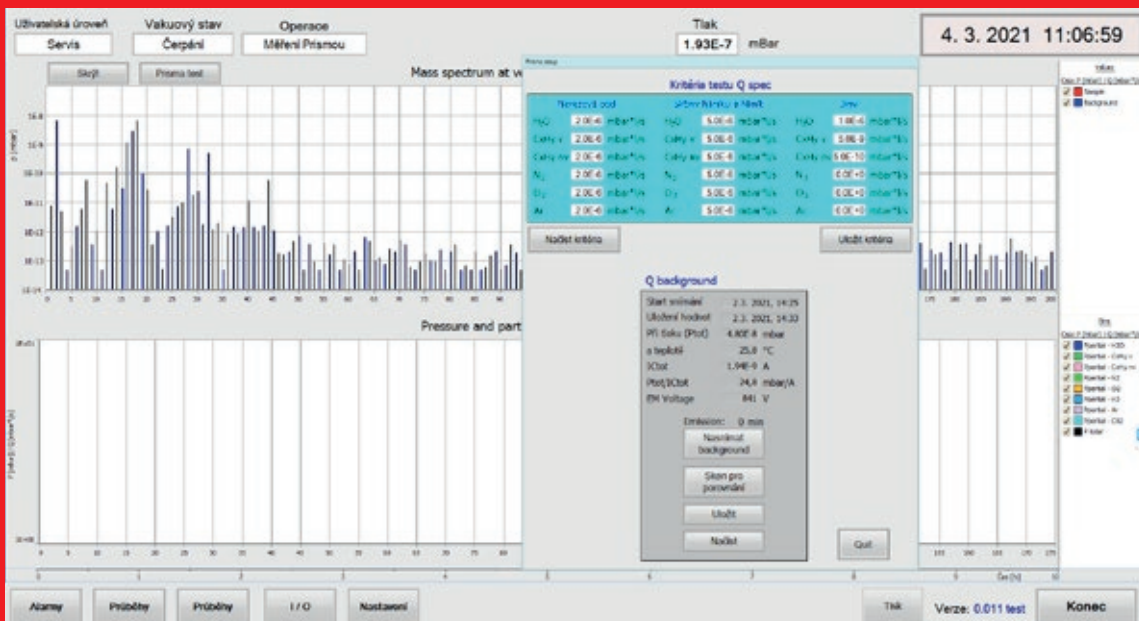
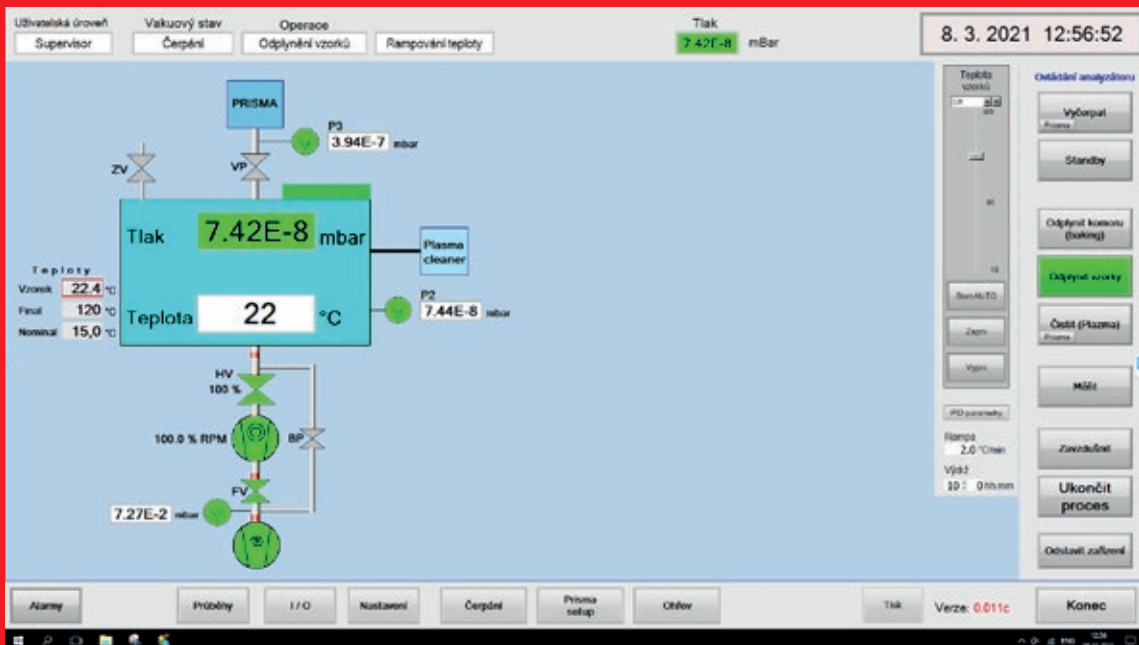
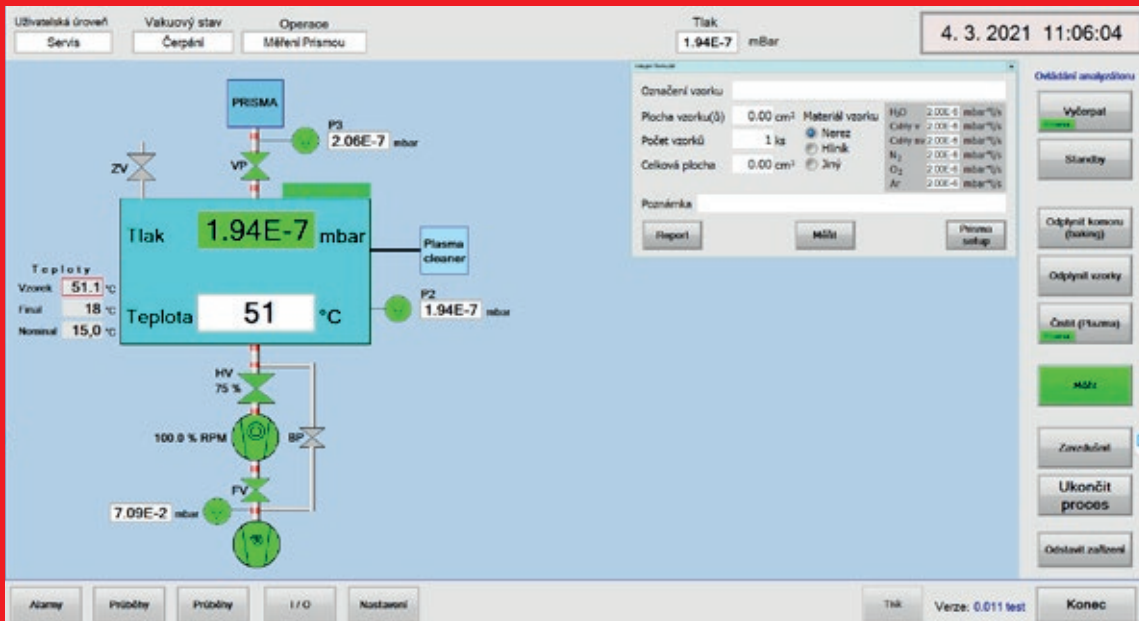
Technical details – standard version

- Oil-free vacuum pumping system with turbomolecular pump and primary scroll pump
- UHV DN160 CF cubical chamber with internal volume of 7 litres
- All-metal vacuum valves
- Quadrupole mass spectrometer Pfeiffer Prisma Pro, mass range 0-200 amu, Faraday +C-SEM detector, open type ion source with Y2O3 iridium filaments
- Calibration gas mixture included
- Integrated heating for automated system bakeout, (temperature can be adjusted up to 130 °C)
- Ultimate pressure up to $< 5e-9$ mbar (for empty chamber, after 24 hrs bakeout)
- Minimal detectable leakrate $< 5e-7$ mbar.l.s-1 for H₂O; $< 5e-10$ mbar.l.s-1 for C_xH_y
- Footprint 850×750 mm

Customization possibilities:

- Enlargement of a specimen chamber up to 40 liters
- Dedicated pumping system for quadrupole analyzer – better stability of measurement performance
- Plasma cleaning unit – helps to keep the system in pristine condition free from hydrocarbons





RGA200

29. 4. 2022
0:19:30



Batch information

Marked as: Test vak

Note: pred testem peaky pritomme, perioda cca 50min

Quantity: 1 pcs

Surface 1 pc: 0 cm²

Total Surface: 0.00 cm²

Device information

QMG 250 PRISMA PRO

Serial number of Electronics: 44529302

Serial number of Sensor: 44529276

Pump speed: 95 l/s

RESULT SUMMARY

Sample(s) analyze

Start Pump: 27.4. 2022, 9:28

ICtot: 1.52E-8 A

Start RGA time: 28.4. 2022, 14:23

Ptot: 4.46E-8 mbar

Qualification time: 29.4. 2022, 0:19 (9:55)

Ptot / ICtot: 2,9 mbar/A

Report: Test vak peaku_prazd-2022_04_28-14:23

EM Voltage: 1320 V

Temperature: 25,5 °C

Background information

Start Pump: 2.3. 2022, 6:45

ICtot: 1.99E-8 A

Start RGA time: 2.3. 2022, 7:00

Ptot: 3.44E-8 mbar

Qualification time: 2.3. 2022, 16:58 (9:57)

Ptot / ICtot: 1,7 mbar/A

EM Voltage: 1320 V

Temperature: 25,6 °C

RGA200

29. 4. 2022
0:19:30



Outgas Values

	Qmeasured [mbar ³ /s]	Qbackground [mbar ³ /s]	Qbatch [mbar ³ /s]	Qspec [mbar ³ /s]	Acceptance factor *)	Qbatch/A [mbar ³ /(s*cm ²)]	t spec [h:mm]	t LDL [h:mm]
H ₂ O	1.85E-6	1.18E-6	1.18E-6	2.00E-6	0.59	Inf	31:28	29:09
CxHy v	7.32E-10	2.31E-9	2.31E-9	2.00E-6	< 0.01	Inf	29:09	29:09
CxHy nv	3.28E-10	2.32E-10	2.32E-10	0.00E+0	****.***	Inf	-	29:09
N ₂	1.72E-7	2.35E-7	2.35E-7	2.00E-6	0.12	Inf	29:09	29:09
O ₂	9.35E-8	1.45E-7	1.45E-7	0.00E+0	****.***	Inf	-	29:09
Ar	1.08E-8	1.09E-8	1.09E-8	0.00E+0	****.***	Inf	-	29:09

A factor 2 out of specification is accepted to avoid 'false Negative' conclusions

ICtot Sum of Ion Current in the RGA

Ptot Total Pressure within the Chamber

EM Electron Multiplier

Q Outgas rate

t spec The time between the start of the pump down and the third outgas value in a row lower then the specification value

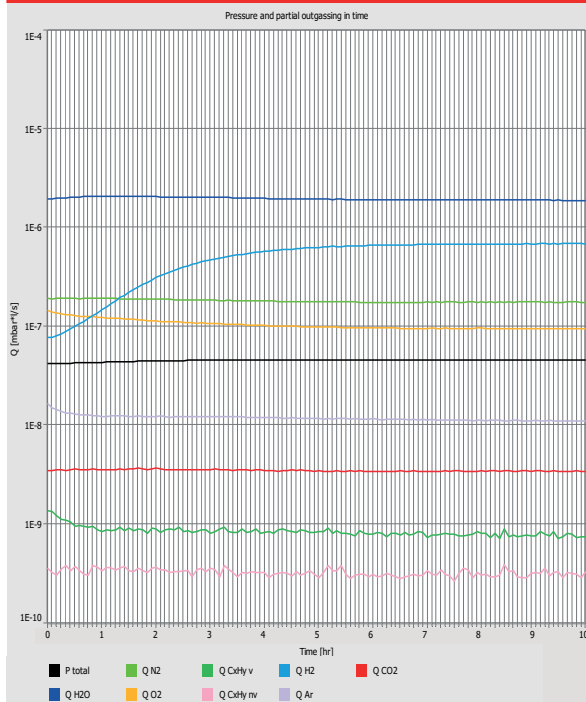
t LDL The time between the start of the pump down and the third outgas value in a row lower then the LDL value

LDL Low Detection Limit is two times of background level

Example of protocol

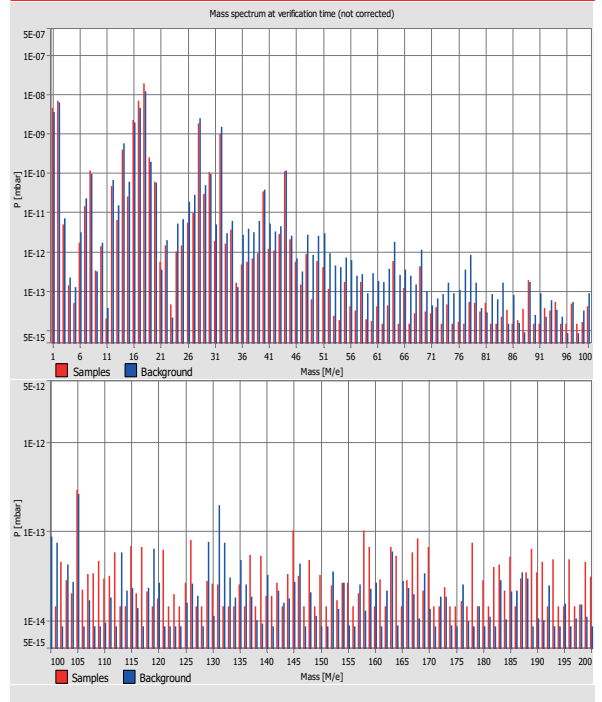
RGA200

29. 4. 2022
0:19:30



RGA200

29. 4. 2022
0:19:30



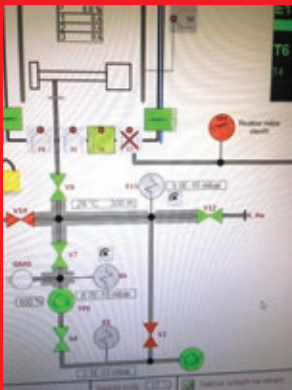
Industrial UHV degassing furnace VSF450

Professional heat treatment of materials for semiconductor industry

- High quality UHV degassing system developed for Pfeiffer Vacuum Austria
- Ultra purity of your materials after degassing
- Suitable for heat treatment of different materials in UHV up to 1300°C (degassing, vacuum soldering, annealing, etc.)
- Ultimate vacuum in heated chamber dia 450 × 600 mm better than $8 \cdot 10^{-8}$ mbar
- Pfeiffer Vacuum Oil-free pumping system with Scroll and Turbomolecular pump
- Molybdenum heating system designed by Plansee
- Achieved temperature setpoint precision 2°C
- Configurable up to 3 heating zones
- Siemens Simatic control system with touch screen
- Fully configurable system (dimensions, parameters, etc.)



UHV degassing furnace VSF450



Achieved vacuum



Temperature gradient



Model of system



UHV furnace model HVF 4560

Vakuum Servis VSS Classic series

- Universal Customized High Vacuum Evaporation and Sputtering System with flexible technology for Production Research and Development
- Continuous development of proven Pfeiffer Vacuum Classic system series



VSS Classic 580

- Multi-purpose coating system for general vacuum experiments in the development field, and small-series production
- Heatable Stainless steel chambers with volumes from 35 to 1300 l, inner diameter 250 to 600 mm (other on request), bell jar also possible
- Evaporation and Sputtering from both sides (tilting of sample)
- Various pumping stations available (Turbo-, cryo- or oil diffusion pumps)
- Final pressures $< 5 \cdot 10^{-7}$ mbar Integral leak rate $< 1 \cdot 10^{-5}$ mbar l/s

Available Sources:

- Resistance evaporators (2 – 6 kVA)
- Electron beam evaporators (3 – 15 kW) with single- or multi-pocket crucible
- Ion beam sources (IAD)
- RF and DC sputter cathodes (0.3 – 10 kW) 2" or 4"



Chamber inside



Sources view



Classic 570L

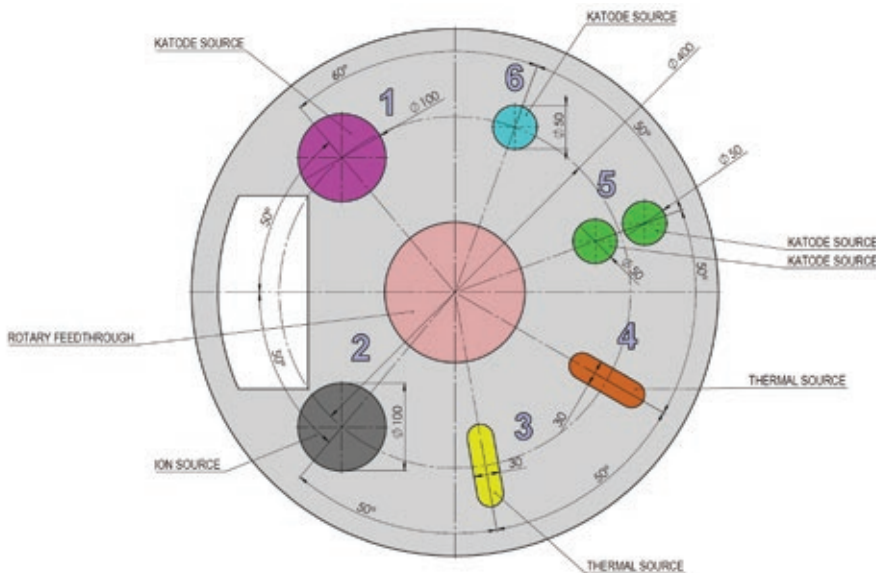
Evaporation:

Anti-reflective process, Scratch resistant process, Laser mirrors, Contact metalization, Deposition of alloys [Co-evaporation]

Sputtering:

Suitable for layers: Metal layers (Au, Cu, Al, Cr,...), Dielectric layers (SiO₂, Al₂O₃,...) Transparent, conductive layers (ITO) Magnetic layers Deposition of alloys (co-sputtering)

Various pumping stations available (Turbo-, cryo- or oil diffusion pumps) Vacuum chambers coolable and heatable Final pressures < 5 · 10⁻⁷ mbar Integral leak rate < 1 · 10⁻⁵ mbar l/s



Example of sources configuration

Control system:

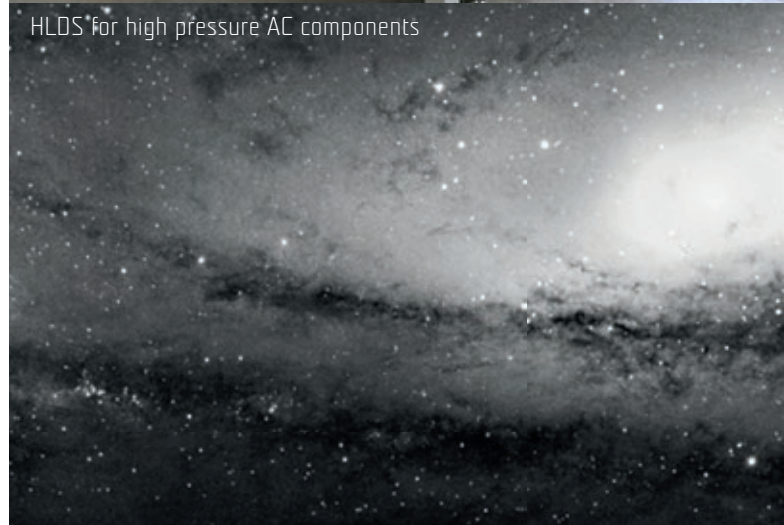
- PLC and industrial PC with visualisation under Windows, Remote acces, Connection to MES
- Fully automatic process control with imple management of recipes
- Detailed data logging (alarm and process archive + trending)

Helium Leak Detection Systems by Vakuum Servis

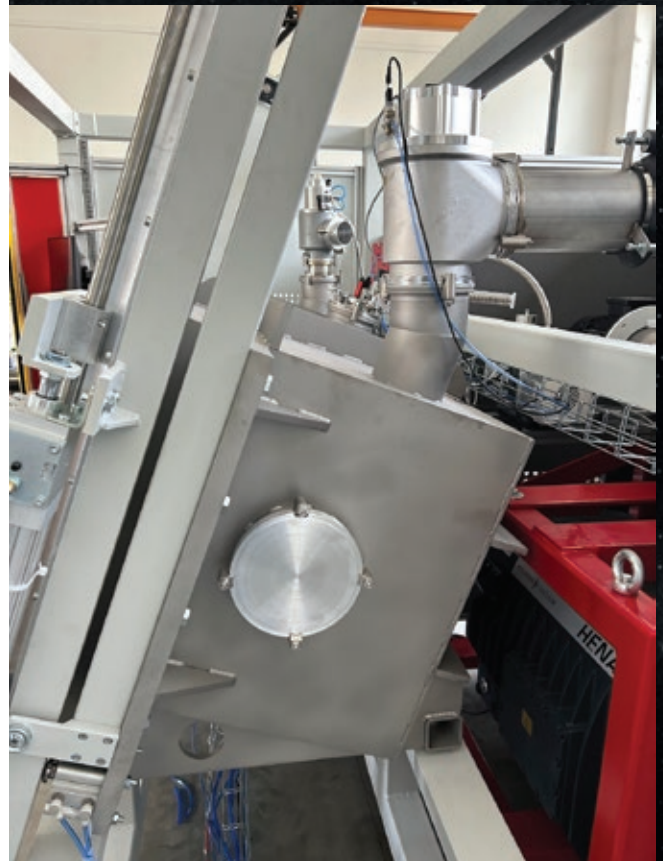
- State-of-the-art HLDS for automotive and HVAC customers.
- 30 years of experience with HLDS
- High sensitivity in detecting of smallest leaks
- Equipped with Pfeiffer Vacuum Leak detectors ASM 340, ASI35, ASM 306 etc.
- Fully or semi automated solution, production line integration, high cycle time
- Integral vacuum test, Bombing test, Sniffing test



HLDS for high pressure AC components



Visualisation and chamber inside



Side view



Parallel HLDS configuration for Valve leak testing



Backside view



Integration into Robotic line

Typical applications:

airbag detonators testing, air conditioning and fuel system components, valves, etc.

- Selected customers: Hanon, Kayaku Safety system, Bosch, Honeywell, Danfoss, TI Automotive, Carrier, Kendrion, Stant

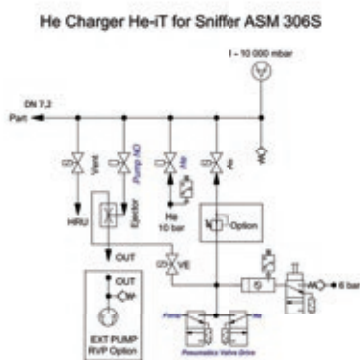


SNIFFING SET - ASM 306S & He CHARGER He-iT

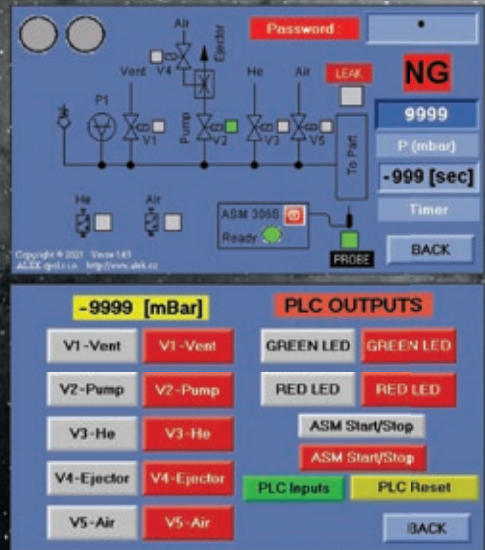
He-It Helium charger

Helium charger for Pfeiffer Vacuum ASM 306S helium leak detector...

He CHARGER He-iT - Smart and Easy Solution for He Sniffing Automatic Helium charging and discharging of the part / ASM monitoring.



START / STOP Button & 4,3" HMI Touch Panel



Examples of HMI panel software menu

Parameters:

- ASM Monitoring: State / Leak / Warning / Error
- Sniffer Probe Monitoring
- Gross-Leak Test
- Adjustable Testing time/Leak delay

He-it Video





partners



Our distributor in Asia is WESi Technology
www.wesitechnology.com

VAKUUM SERVIS

is the service center of Pfeiffer Vacuum, and is also the sales representative of VAT Vacuumventile, SPECS GmbH, HSR AG and scia Systems for the Czech and Slovak Republic.



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