

Leak Detector [HELIOT 900 Series]

The HELIOT900 is our helium leak detector with; high speed pumping capability, user-friendly operation and guaranteed top performance in all kinds of leak testing situations.



Features

- ▶ **High speed pumping capability:**
5L/s pumping speed for helium IN ULTRA flow mode.
- ▶ **Tablet type controller:**
Wireless remote control is standard specification.
- ▶ **Intuitive operation:**
Simple with high-definition and eye-friendly test screen.
- ▶ **Various backing pumps available:**
Oil rotary vane and dry scroll pumps in different sizes.
- ▶ **Mobile-friendly with maneuverable cart (HELIOT904_):**
Low height type is also available (HELIOT901_).
- ▶ **Ease of maintenance:**
Tool-free removal maintenance panel, easy internal access for maintenance and maintenance instructions built in.
- ▶ **Possible to detect hydrogen as well as helium gas by vacuum method.**

Applications

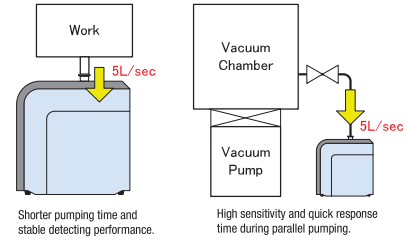
- ▶ Piping assemblies and separate parts.
- ▶ Vacuum components and systems.
- ▶ Automotive parts, air conditioning, heat exchanger parts and assemblies.
- ▶ Packaging for food, pharmaceuticals, etc.
- ▶ Flow and permeation rate measurement of helium and hydrogen.

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Features

High helium pumping speed

High helium pumping speed at 5L/s is realized by ULTRA flow mode. High helium pumping speed can make it possible to decrease back ground quickly and control stability. Increased helium introduction to the leak detector helps to detect smaller leaks even when the leak detector is used along with other pumping systems.



User friendly tablet type controller

7" tablet type capacitance touch panel controller is standard accessory and flex mount with stand. Wireless remote control function makes tablet possible to use as a handy remote control.



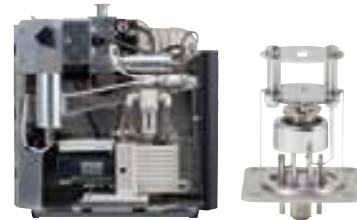
Simple and intuitive operation screen

Simplified but clearly recognizable test screen. Familiar symbols (■ and ▶) are used to start and stop testing and so it is easy to use for everybody even if it is first time use of HELIOT900 series. Clearly visible graph makes it possible to view test result.



Easy for maintenance

<Easy access for maintenance> No tool is required to take off external panels for maintenance. Internal configuration is also designed for easy maintenance. Anyone can perform maintenance without experience, follow instructions and videos on the controller.
<Cartridge type ion source> Minimum down time with quick changing of filament and alignment.

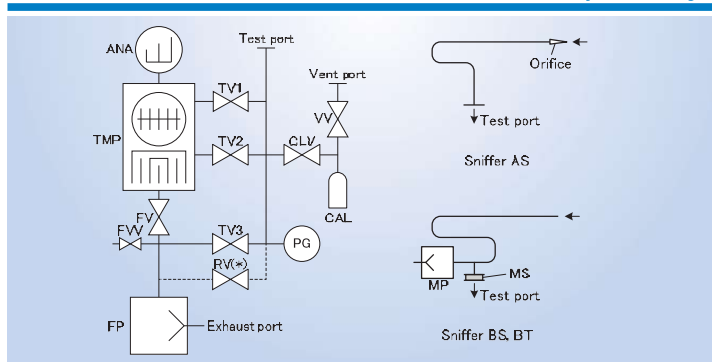


Convenient mobile cart design

This feature complies with customers input. Slim design allows easy pass through, convenient stepper to run over bumps. Large wheels, thick tread, foot-operated brake/covers, etc. (standard cart) Low height cart for the HELIOT901series is also available. The controller can be fastened on the mobile standard cart and low height cart during movement. Optional storage box is available to store the controller.



Vacuum System Diagram



ANA	Analyzer tube
TMP	Turbo molecular pump
FV	Fore line valve
FVW	Fore line vent valve
FP	Fore and roughing pump
TV1	Test valve 1 (ULTRA flow port)
TV2	Test valve 2 (FINE flow port)
TV3	Test valve 3 (GROSS flow port)
PG	Pirani vacuum gauge
CAL	Calibrated leak
CLV	Calibrated leak valve
VV	Vent valve
MP	Membrane pump for sniffing
MS	Micro separator
RV	Roughing valve(*: only 904D4)

Specifications

Model	901W1	901D2	904W2	904D3R	904D4R
Type	Base type			Mobiletype	
Detectable gas	*He, *H ₂				
Minimum detectable leak rate(*He)	<5E-13 Pa·m ³ /sec <5E-12 mbar·L/sec <3.75E-12 Torr·L/sec				
Leak rate display range	*He	ULTRA	0.01E-12 ~ E-6 Pa·m ³ /sec 0.01E-11 ~ E-5 mbar·L/sec 0.01E-11 ~ E-5 Torr·L/sec		
		FINE	0.01E-10 ~ E-5 Pa·m ³ /sec 0.01E- 9 ~ E-4 mbar·L/sec 0.01E- 9 ~ E-4 Torr·L/sec		
		GROSS	0.01E- 8 ~ E-3 Pa·m ³ /sec 0.01E- 7 ~ E-2 mbar·L/sec 0.01E- 7 ~ E-2 Torr·L/sec		
	*H ₂	FINE	0.01E- 8 ~ E-5 Pa·m ³ /sec 0.01E- 7 ~ E-4 mbar·L/sec 0.01E- 7 ~ E-4 Torr·L/sec		
		ULTRA	5 L/sec		
Inletpumping speed for *He	ULTRA <2 Pa <0.02 mbar <0.015 Torr				
Max. connecting pressure	ULTRA	<2 Pa	<0.02 mbar	<0.015 Torr	
	FINE	<100 Pa	<1 mbar	<0.75 Torr	
	GROSS	<1200 Pa	<12 mbar	<9 Torr	
Main pump Pumping speed	Turbo molecular pump 31 L/sec				
Fore pump Pumping speed (50Hz/60Hz)	Oil rotary pump 30/36 L/min 1.8/2.2 m ³ /h 1.1/1.3 cfm		Dry scroll pump 90/108 L/min 5.4/6.5 m ³ /h 3.2/3.8 cfm		Oil rotary pump 135/162 L/min 8.1/9.7 m ³ /h 4.8/5.7 cfm
Weight (including floor cart)	Approx. 38 kg (Approx.46 kg)		Approx. 37 kg (Approx. 50 kg)		Approx. 77 kg
Power consumption	600 VA		500 VA		1100 VA
Input power supply	100-120 V or 200-240 V				
Inlet port flange	NW25 (ISO)				
Startup time	< 2 min				
External interface	RS232C, RS485, analog DC, digital VO.				
Language	English, Japanese, Korean, Simple Chinese, Traditional Chinese, German, Spanish				
Controller unit	7 inch tablet type (wireless standard IEEE 802.11 b/g/n) (*1)				
Operation range	Wired	Cable length: 2m (standard), 5m (optional)			
	Wireless	40 m (*2)			
	Battery lasting time	3-8 hrs (*3)			
Applicable standard	CE, IP30		CE		
Operating temperature range	10-40 °C (non condensing)				

*1) Applicable radio law. Tablet: Telec, CE, FCC. Main unit: Telec, CE, FCC, IC, C-TICK. 2) Non-wireless Option: If cable is connected wireless is inactive. If cable is disconnected wireless is active.
 *2) May change depending on operating environment. *3) May change depending on communication condition, brightness, volume, etc.

Sniffer Method

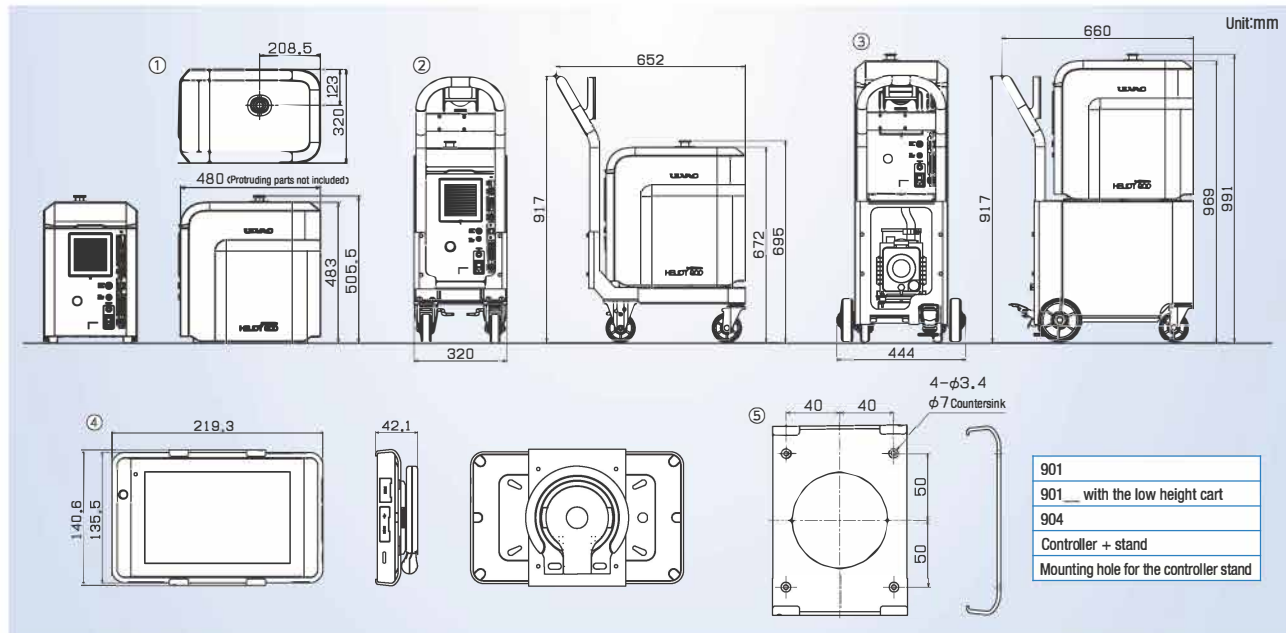
Model	AS9	BS9	BT9
Detectable gas	*He		
Minimum leakrate displayrange	0.01E- 8 ~ E-5 Pa·m ³ /sec 0.01E-7 ~ E-4 mbar·L/sec 0.01E-7 ~ E-4 Torr·L/sec 0.01E-7 ~ E-3 Pa·m ³ /sec 0.01E-6 ~ E-2 mbar·L/sec 0.01E-6 ~ E-2 Torr·L/sec		
Flowrate	< 0.03 slm		Approx. 3 slm
Sniffing inlet port	Handyprobe		φ6mm tube fitting
Tube	1-10 m (*1)		

*1) Specified length per 1m.

Unit, power supply and standard of power cable

90~①②③		F1A	F2B	F2C	F2D	J1A	J2B
①Unit of measure	F: Non-SI unit J: Japanese domestic (SIunit)	✓	✓	✓	✓	✓	✓
②Power supply	1: 100-120V 2: 200-240V	✓	✓	✓	✓	✓	✓
③Power cable standard	A: PSE B: PSEwithout outlet C: CCC D: IEC	✓	✓	✓	✓	✓	✓

Dimensions



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Option

▶ Sniffer unit



▶ Sniffer unit (Hose length specified between 1m and 10m)

①	AS unit
②	BS unit
③	BT unit

▶ Cart, Case



▶ Cart, Case

④	Low height cart for the 901 series.
⑤	Controller storage box. *Low height cart is necessary to fix this box in case of the 901 series.
⑥	Carrying case for the 901 series. *The 901 series with Low height cart is not stored in this case.

▶ Oil mist trap



▶ Oil mist trap

⑦	Oil mist trap for the 904W2
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▶ Controller optional accessories

▶ Controller optional accessories



⑧・⑨	Controller cable set 5m
⑩	Charger for the controller (Input: 100-240V)
⑪	Touch pen for the controller
⑫	Alarm security wire set including mounting bracket to the HELIOT, excluding lock.
⑬	Dial combination lock including master key

▶ Printer

⑭	Thermal printer
	Thermal printer paper: plain paper/clean room paper

▶ Calibrated leak

⑮	Calibrated leak membrane type:E-7,E-8,E-9,E-10[Pa·m ³ /sec]
⑯	Calibrated leak channel type:E-4,E-5,E-6[Pa·m ³ /sec]

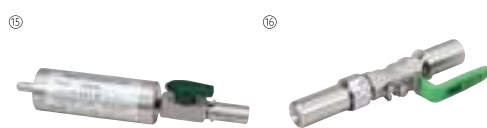
▶ Parts

⑰	Manual angle type valve: NW25-NW25
⑱	Helium spray gun
⑲	Helium regulator (applicable only for Japanese domestic helium cylinder)
⑳	Test chamber: ϕ 96mm x H30mm inside dimension
㉑	Bombing tank: ϕ 95.5mm x H160mm inside dimension. Pressure range < 0.5MPaG
	Piping (Intermediate, Tees, Cross), flexible hose, clamp, O-ring, blank flange, etc.

▶ Printer



▶ Calibrated leak



▶ Interface

	I/O connector set: Rec. Out, EXT. I/O.
㉒	Signal conversion unit for the HELIOT300 series.
㉓	Power supply conversion cable: For the HELIOT700/710 series and HELIOT300 series.

▶ Parts



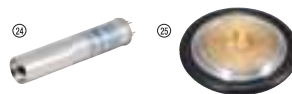
▶ Consumable parts

	Ion source
㉔	Pirani vacuum gauge head
㉕	Micro separator
	Cooling fan filter for panel.
	Cooling fan filter for electrical system.
	Vent line filter.
	Oil mist trap element for the integrated oil mist trap for the HELIOT901W1.
	Oil for oil rotary vacuum pump.

▶ Interface



▶ Consumable parts



▶ Document

	Instruction manual: CD-R, book (plain paper/clean room paper)
	Certificate of calibrated leak, HELIOT
	Inspection certificate of calibrated leak, HELIOT

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