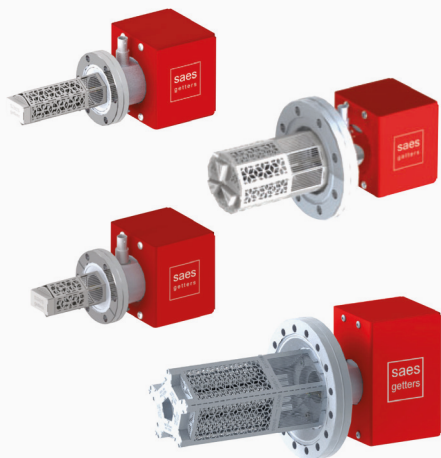


NEXTorr® HV pumps



HIGHLIGHTS

General Features

- > Extremely compact and low weight
- > High and constant pumping speed for all active gases
- > Pumping speed for noble gases and methane
- > High sorption capacity in high vacuum
- > Fast pump-down after air venting and without baking
- > Suitable for viton-sealed and harsh systems
- > Minimal power requirement during operation
- > Reduced magnetic interference
- > Able to indicate system pressure

Applications

- > Improvement of the ultimate vacuum in HV and UHV systems
- > Particle accelerators, synchrotron radiation sources
- > Scanning/Transmission electron microscopes
- > Portable vacuum instrumentation and suitcases
- > Surface analysis systems
- > Process pumps for vacuum devices and deposition chambers
- > Thin films deposition systems
- > Pumping, storing and releasing hydrogen isotopes

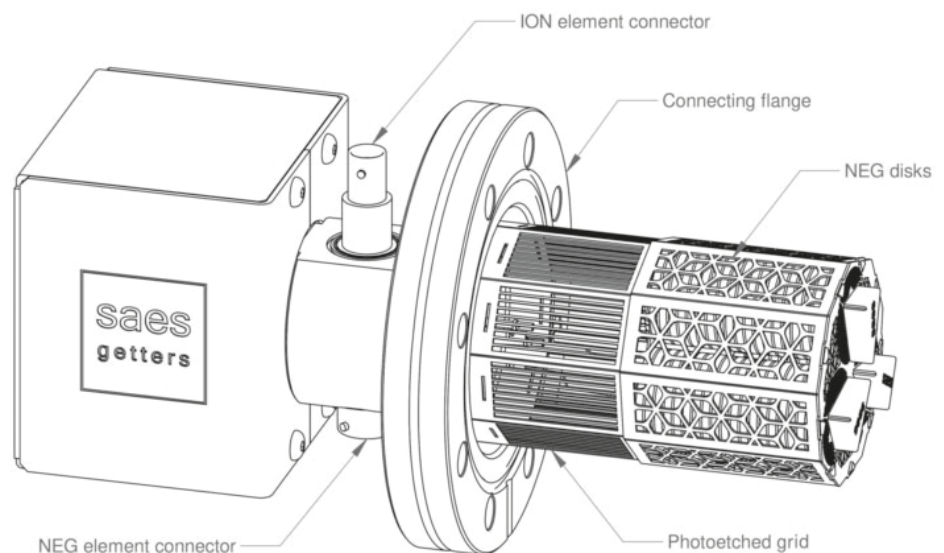
The NEXTorr® HV pumps are compact High Vacuum (HV) pumps that efficiently combine a sputter ion pump (SIP) and a Non Evaporable Getter (NEG) pump into a vacuum solution featuring high pumping speeds and large sorption capacities, yet retaining a low weight and a minimal footprint.

The NEXTorr HV pumps implement the novel ZAO® (Zr-V-Ti-Al) NEG alloy in its High Vacuum version, featuring large capacity for all the active gases.

These pumps are specifically designed and engineered to operate in the high vacuum regime (i.e. 10^{-7} – 10^{-9} Torr), and find application in all those equipment elastomer-sealed, susceptible to air permeation, and not baked out, where water sensibly contributes to the residual gas background.

In order to exploit these benefits, the NEG element of the NEXTorr HV pumps operates permanently warm at around 200 °C with a minimal power consumption.

All NEXTorr HV pumps are equipped with a noble diode ion pump optimized to work in best synergy with the NEG element. The noble diode ion pump can efficiently work in presence of non-negligible Argon throughputs typical of elastomer-sealed HV systems.



NEXTorr® HV pumps

General features and performance

NEG SECTION					
Product description	Alloy Type	Mass (g)	Activation Power (W)	Working Power (W)	NEG length (mm)
NEXTorr HV 100	ZAO	45.5	45	5.4	64.5
NEXTorr HV 200	ZAO	84	59	7	91
NEXTorr HV 300	ZAO	200	136	12	97
NEXTorr HV 1200	ZAO	680	265	31	162

NOTES

The NEXTorr HV 300 and HV 1200 are equipped with a thermocouple.

The activation power refers to the NEG cartridge completely immersed in the vacuum chamber ("nude" configuration).

The "NEG length" reported in the last column is the length of the NEG cartridge from the base flange.

NEG SECTION										
	Pumping Speed (l/s)					Sorption Capacity (Torr l)				
	H ₂	H ₂ O	O ₂	CO ₂	N ₂	H ₂	H ₂ O	O ₂	CO ₂	N ₂
NEXTorr HV 100	80	70	55	40	25	910	86	43	10	43
NEXTorr HV 200	155	130	110	90	50	1680	150	75	18	75
NEXTorr HV 300	300	280	260	190	130	4000	380	190	45	190
NEXTorr HV 1200	1150	1000	900	520	340	13600	1320	600	160	660

NOTES

The values for H₂O are estimated.

Pumping speed data refer to the initial values, and with the NEG element completely immersed in the vacuum chamber ("nude" configuration).

The capacity values (except for H₂) are intended as the recommended absorbed quantity per run at around 200°C, allowing to perform more than 20 sorption cycles. In case of operation under lower gas loads or at RT, the pump can be reactivated 100 times or more.

The values for CO can be assumed very similar to those reported for CO₂.

ION SECTION						
NEXTorr models	Type	Voltage	Flange	Pumping Speed (l/s)		Sorption Capacity (Torr l)
				CH ₄	Ar	CH ₄
NEXTorr HV 100	Noble Diode	DC +5 kV	CF35	15	7 (0.7)	50,000 hours at 10 ⁻⁶ Torr
NEXTorr HV 200	Noble Diode	DC +5 kV	CF35	15	7 (0.7)	
NEXTorr HV 300	Noble Diode	DC +5 kV	CF63	15	7 (0.7)	
NEXTorr HV 1200	Noble Diode	DC +5 kV	CF100	15	0 (2.5)	

NOTE

Ar pumping speed measured at 3x10⁻⁶ Torr. Unsaturated ion pump (saturated ion pump).

The SAES manufacturing companies are ISO9001 certified, the Asian and Italian companies are also ISO14001 certified.

Full information about our certifications for each company of the Group are available on our website at:

www.saesgroup.com

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The NEXTorr® product line incorporates and exploits the patented concept of a combined pumping system comprising a getter pump and an ion pump, and have global Intellectual Property Rights coverage with patents already granted in the US (8,287,247), Europe (2,409,034), Japan (5,372,239), China (102356236).

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