

# CapaciTorr® HV 1600



## HIGHLIGHTS

### General Features

- > Extremely compact and low weight
- > High pumping speed for all active gases
- > High sorption capacity and lifetime
- > Constant pumping speed in HV and UHV
- > Oil free and vibration free
- > Operation in presence of high magnetic fields
- > Reversible pumping of hydrogen and its isotopes
- > Fast pumpdown after air venting and without baking
- > Capable of coping with large air leaks
- > Suitable for viton-sealed systems

### Applications

- > Improving ultimate vacuum in combination with ion, diffusion, cryogenic or turbomolecular pumps
- > Particle accelerators, synchrotron radiation sources and related equipment
- > Scanning/Transmission electron microscopes
- > Portable vacuum instrumentation
- > Surface analysis systems
- > Process pumps for vacuum devices and deposition chambers
- > Thin films deposition systems
- > Pumping, storing and releasing hydrogen isotopes
- > Impurities removal in rare gas filled devices

The CapaciTorr® HV 1600 pump is based on high performance SAES® ZAO® sintered porous getter disks. The pump provides high pumping performance in the high vacuum (HV) regime (i.e.  $10^{-7}$  -  $10^{-9}$  Torr range) for all the getterable gases like  $H_2$ ,  $N_2$ ,  $H_2O$ ,  $CO/CO_2$  and  $O_2$ .

In order to exploit its high capacity, the getter cartridge must be operated permanently warm, at moderate temperature ( $\approx 200$  °C).

Thanks to the extremely high gas sorption capacity, the pump can cope with large air leakages or sudden gas burst typical of high vacuum systems.

The use of the pump in UHV range is also possible, by operating the getter cartridge at room temperature.

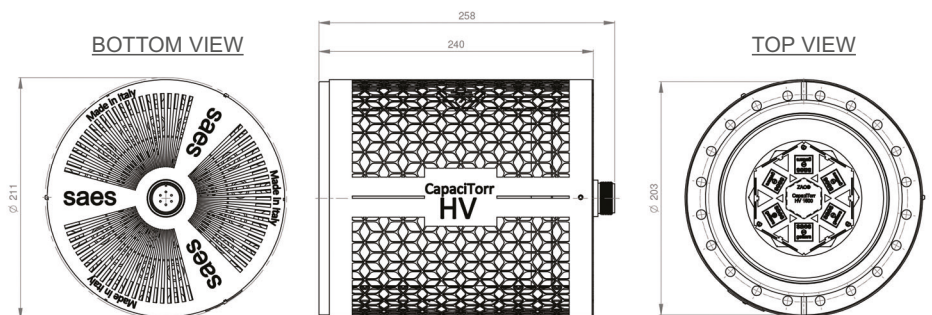
The CapaciTorr HV 1600 consists of:

- > a built-in heater that directly connects to the flange power feedthrough;
- > an external housing with CF150 connecting flange;
- > a NEG cartridge incorporating the ZAO sintered disks.

The NEG cartridge is very durable and designed for prolonged operation.

Once exhausted, it can be easily replaced.

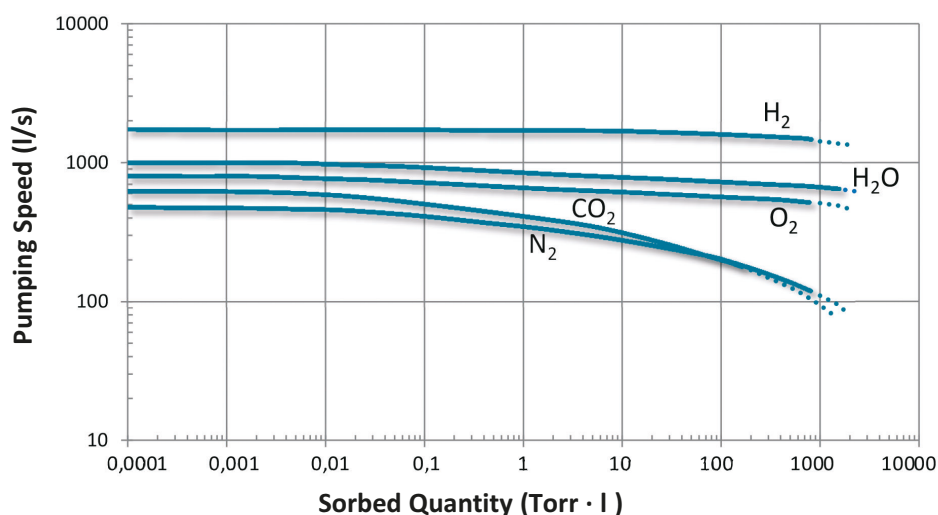
A bakeable connector provides easy and fast connection to the pump power supply to activate and power the NEG cartridge.



Dimensions in mm

# CapaciTorr® HV 1600

## CapaciTorr® HV 1600 - sorption test (according to ASTM F798-97)



Typical Pump Characteristics		CapaciTorr HV 1600
Alloy Type		ZAO
Alloy Composition		Zr V Ti Al
Getter Mass (g)		690
Getter Surface (cm <sup>2</sup> )		2190
Activation Power (W)		368
Working Power (W)		36
Pumping Speed (l/s) @ 200 °C	H <sub>2</sub>	1700
	H <sub>2</sub> O	1000
	O <sub>2</sub>	800
	N <sub>2</sub>	470
	CO <sub>2</sub> *	620
Sorption Capacity (Torr·l)	H <sub>2</sub>	13800
	H <sub>2</sub> O Single cycle at 200 °C	1600
	O <sub>2</sub> Single cycle at 200 °C	800
	N <sub>2</sub> Single cycle at 200 °C	800
	CO <sub>2</sub> * Single cycle at 200 °C	160
Number of sorption cycles		>20 cycles

**Note:** Pumping speed data refer to the initial values measured at pump inlet.

The "Single cycle" capacity is intended as the recommended absorbed quantity per run 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 H<sub>2</sub>O are estimated.

(\*) The values for CO can be assumed very similar to those reported for CO<sub>2</sub>.

## Ordering Information

Product	Product description	Code
CapaciTorr HV 1600 pump	CAPACITORR HV 1600	5H0157
HV 1600 replacement cartridge	C 1600 HV	4H0496
Power supply	NEG POWER C1 <sup>#</sup>	3B0501
Output Cable	NEG cable 6P10A 3MT <sup>**§</sup>	3B0602

(#) Other NEG POWER models which can simultaneously activate up to four pumps are available

(\*\*) Other length cables are available on request

(§) Bakeable cables up to 250 °C, and radiation resistant (1000 Mrad)

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