

# HV8000 Mechanical booster pump

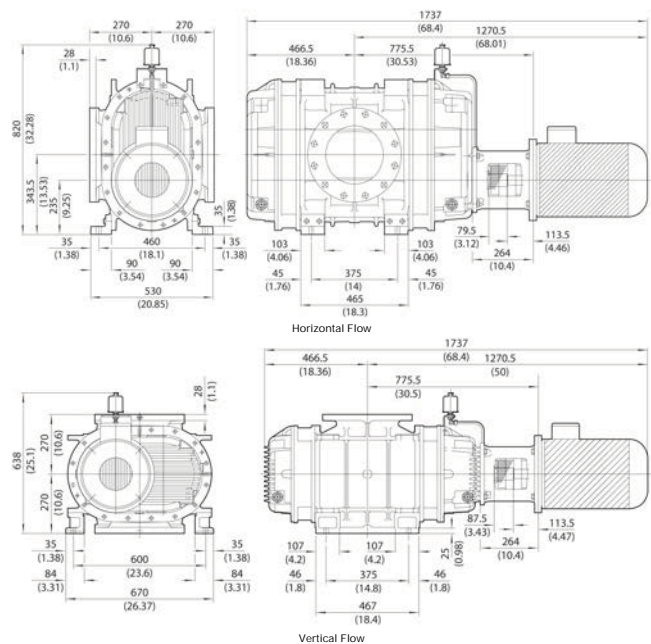
The Edwards HV8000 high vacuum mechanical booster has been developed to provide high reliability operation in aggressive environments. With a nominal pumping speed of  $7200 \text{ m}^3\text{h}^{-1}$  ( $4241 \text{ ft}^3 \text{ min}^{-1}$ ) at 50Hz, it is ideal for large industrial and chemical applications including, steel degassing, metallurgy, coating, electron beam welding and the process engineering industries.



## Features & Benefits

- Derived from the successful range of HV pressure blowers, the HV8000 is designed for arduous duty cycles and high power applications.
- Ideal for larger scale, harsh industrial and chemical applications, the HV8000 is available in Industrial, ATEX or Explosion Proof configurations.
- The HV8000 may be ordered as either bare shaft or with motor fitted. Variable frequency drives may be specified for greater versatility.
- The HV8000 is available in vertical or horizontal gas flow configuration.
- For long service life, the external shaft seal is water-cooled.

## Dimensions



## Technical Data

Displacement (swept volume) (50Hz)	7200 m <sup>3</sup> h <sup>-1</sup> / 4241 ft <sup>3</sup> min <sup>-1</sup>
Displacement (swept volume) (60Hz)	8640 m <sup>3</sup> h <sup>-1</sup> / 5089 ft <sup>3</sup> min <sup>-1</sup>
Max rotation speed (50Hz)	3000 rpm
Max rotation speed (60Hz)	3600 rpm
Max pressure differential (50Hz)	190 mbar / 143 Torr
Max pressure differential (60Hz)	120 mbar / 90 Torr
Ultimate (depends on backing set) (50Hz)	1.5 x 10 <sup>-4</sup> mbar / 1 x 10 <sup>-4</sup> Torr
Ultimate (depends on backing set) (60Hz)	2 x 10 <sup>-4</sup> mbar / 1.5 x 10 <sup>-4</sup> Torr
Electrical supply voltage (50Hz)	380-415V, 3-ph
Electrical supply voltage (60Hz)	440-460V, 3-ph
Standard motor power (50Hz)	15 kW / 20 hp
Standard motor power (60Hz)	18.5 kW / 25 hp
Standard backing set speed requirements	2600 m <sup>3</sup> h <sup>-1</sup> / 1530 ft <sup>3</sup> min <sup>-1</sup>
Recommended oil	Mobile SHC 629
Max oil capacity (vertical gas flow config)	8.3 litre / 2.18 US gal
Inlet/outlet connection	10" class 150 ASME B16.5
Inlet/outlet cooling water connection	Rp 1/2 ISO 7-1 (1/2 BSP)
End cover purge gas inlet	Rp 3/8 ISO 7-1 (3/8 BSP)
Max cooling water supply pressure	4 bar / 58 psi
Max cooling water supply temp	35°C / 95°F
Cooling water flow rate	15 l min <sup>-1</sup> / 3.96 US gal min <sup>-1</sup>
Noise level	82 dB(A)
Weight (without motor)	580 kg / 1279 lb
Weight (with standard motor)	720 kg / 1587 lb

## Ordering Information

Product Description	Order No.
HV8000IND VF 380-415V, 3-ph, 50Hz, 18.5kW	A31101935
HV8000IND VF 440-460V, 3-ph, 60Hz, 25hp	A31101936
HV8000IND VF bareshaft	A31101985
HV8000IND HF 380-415V, 3-ph, 50Hz, 18.5kW	A31102935
HV8000IND HF 440-460V, 3-ph, 60Hz, 25hp	A31102936
HV8000IND HF bareshaft	A31102985
Accessories & Spares	Order No.
HV8000 VF motor mounting kit IEC	A31101002
HV8000 VF motor mounting kit NEMA	A31101006
HV8000 HF motor mounting kit IEC	A31102002
HV8000 HF motor mounting kit NEMA	A31102006
Gear Box Oil 4 Ltr Mobil SHC 629	H11023011
HV8000 Set of O-Rings spare	A31101801
HV8000 Mech seal kit spare	A31101802
HV8000 mech seal + sleeve kit spare	A31101803
HV8000 gear set spare	A31101804
HV8000 bearings kit spare	A31101805
HV8000 rotors kit spare	A31101806
HV8000 oil reservoir spare	A31101807
HV8000 sight glass spare	A31101808

# HV30000 Mechanical Booster Pump

The HV pump systems combine Edwards expertise in manufacture and assembly of complete industrial vacuum systems with Dresser's world-renowned Roots pump technology. These pumps are backed by Edwards Dry Pumps or Mechanical Booster pumps.

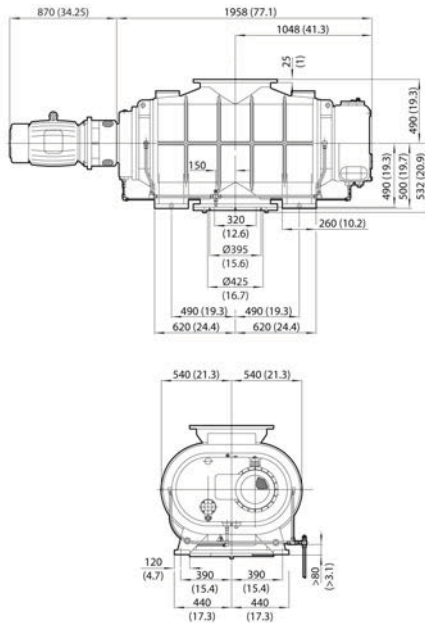
This range of high capacity mechanical booster pumps is designed to operate reliably for long periods with no need for maintenance. The HV pumps can be fitted with an inverter to allow them to be started at atmospheric pressure, at the same time as the dry pumps.



## Features & Benefits

- Water cooled shaft seals and after cooler
- Fitted with thermal snap-switch, to protect the pump from over temperature
- Nitrogen purge inlet fitted as standard
- Vertical flow, direct drive (horizontal optional)
- Control with inverter, or interlock with a pressure switch input

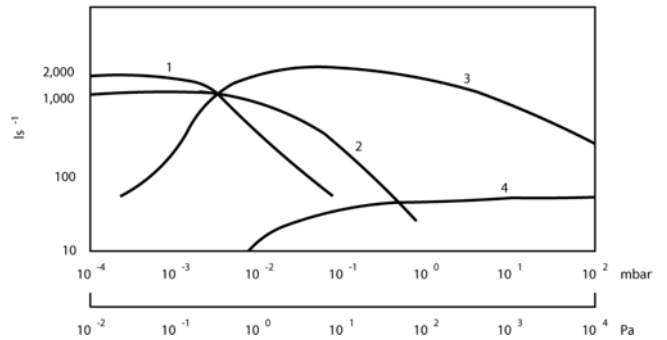
## Dimensions



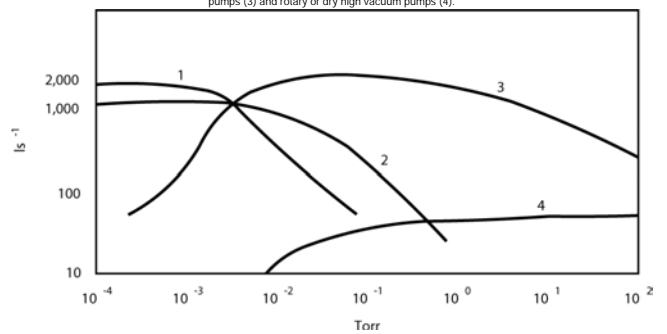
## Applications

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel degassing
- Thin film coating

## Performance Curves



In their most efficient range, booster pumps (1) fill the gap between the pumping speeds of vapor diffusion pumps (2), vapor booster pumps (3) and rotary or dry high vacuum pumps (4).



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## Technical Data

Displacement	
50 Hz Supply	30000 m <sup>3</sup> h <sup>-1</sup> 17700 ft <sup>3</sup> min <sup>-1</sup>
60 Hz Supply	36000 m <sup>3</sup> h <sup>-1</sup> 21204 ft <sup>3</sup> min <sup>-1</sup>
Maximum pressure differential	
50 Hz Supply	29 mbar 22 Torr
60 Hz Supply	24 mbar 18 Torr
Recommended backing pumps	2 x GV400 / DP400 and 2 x EH4200
Electrical supply	400 V 50 Hz 3-ph or 460 V 60 Hz 3-ph
Motor power 50 Hz	30 kW / 40 hp
Motor power 60 Hz	
Cooling-water supply	
Maximum pressure	10 bar / 145 psi
Inlet temperature	20 °C
Recommended oil	Ultragrade 20
Oil capacity	33 l / 34.9 qt
Ambient operating temperature	5° - 40 °C
Maximum operating humidity	100% RH
Weight (without motor)	3100 kg / 6820 lb

On request

## Ordering Information

Product Description	Order No.
HV30000 High Capacity Mechanical Booster Pump	HV30000 Mechanical Booster Pump