# **EH Mechanical Booster Pumps**



The EH mechanical booster pumps feature the unique hydrokinetic drive, providing an efficient power transmission with benefits in economy, performance and compactness. The hydrokinetic drive provides the following features:

- Pump down times cut by 50%, when compared with direct drive pumps
- · No bypass lines or pressure switches required
- · Universal voltage motors
- · Reduced capital and operating costs
- · Air cooled motors with water cooled options
- · Quiet, minimum vibration

The EH mechanical booster pumps, based on the simple Roots principle, remain the favorite pumps for applications where high pumping speeds over 3000 m<sup>3</sup>h<sup>-1</sup> / 1776 ft<sup>3</sup>min<sup>-1</sup> are required in the pressure region of 0.01 to 50 mbar / 0.0075 to 37.5 Torr. These pumps must always be backed by another pump which can deliver against a high pressure differential to atmospheric pressure.

Operating at relatively low pressures, the mechanical booster pump is not exposed to the same concentrations of corrosive process media as is the backing pump, which makes it highly reliable.

#### High Performance Pumping Mechanism

The EH has a high quality, oil-free pumping mechanism. This offers:

- · Quiet, vibration free operation
- · Rugged and corrosion resistant
- Advanced shaft-seal technology no oil contamination of process chamber

The corrosion resistant pumping mechanism is manufactured from high grade cast iron. The proven shaft-seal arrangement ensures that no oil enters the pumping stator, and the absence of internal and external by-pass lines and valves which may corrode or stick minimizes maintenance requirements.

The design of the shaft seals is optimised to ensure that no lubricants can migrate into the pumping mechanism. This maintains booster pump performance in applications which demand the highest standard of cleanliness. In addition, this prevents the build-up of trapped particles on the rotor lobes and end-faces which have very close tolerances.

The dynamically balanced rotors and precision ground gears contribute to the smooth, quiet operation of the pumps, as demanded by manufacturers of advanced technology equipment.

### **Broad Application Coverage**

EH mechanical boosters are available to cover a broad range of industrial and chemical process applications.

#### Industrial

Industrial EH boosters are safe to handle non-flammable gases and vapours within the normal operating parameters of the booster.

#### ATEX

ATEX classified EH boosters are annotated with the suffix "T3" or "T160".

- EH boosters may be supplied with ATEX classification either as part of a pump system or stand-alone, on application. Please consult Edwards.
- ATEX compliance is typically specified for use in Europe, but may also be required in other areas.

ATEX compliant EH boosters are suitable for operation in ATEX systems rated as follows:

All of the EH1200C, EH1200 T160, EH2600C, EH2600 T3, EH2600 T160, EH4200C, EH4200 T3 and EH4200 T160 chemical EH pumps are fitted with flameproof motors:

- Pumps suitable for 50 Hz operation are fitted with a flameproof motor approved to EEx d. Gas Group IIA, IIB, Temperature Class T4.
- Pumps suitable for 60 Hz operation are fitted with a flameproof motor approved to CSA, Division 1 area, Gas Class I Group C & D, and Dust Class II Group F & G, Temperature Class T3C.

#### Internal and External Classifications

⟨Ex⟩ II 2G c IIB T3

or

⟨ II 2G c IIB T160

The notations used in these ratings are as follows:

Symbol	Meaning
<b>€</b> >	Specifies that the chemical EH pump can be used in a potentially explosive atmosphere
II	Equipment group II
2 G	Equipment category 2 (gas)
С	Constructional safety
IIB	Suitable to pump gas group IIB
T3 / T160	Gas auto-ignition temperature

#### Equipment Category

For equipment category 1 (gas) consult Edwards.

#### Gas Auto-Ignition Temperature

The temperature classifications applied to the chemical EH pumps relate to the auto-ignition temperature of flammable materials that can be pumped:

- The EH1200C, EH2600C, EH4200C and chemical EH pumps that have a T3 classification are suitable for pumping flammable materials that have an auto-ignition temperature greater than 200 °C.
- Chemical EH pumps that have a T160 classification are suitable for pumping flammable materials that have an auto-ignition temperature greater than 160 °C.

#### **Explosion Proof**

Explosion proof boosters are annotated with the suffix "C".

- EH boosters may be ordered with explosion proof motors either individually, or as part of an explosion proof system.
- Explosion proof is generally applicable in N. America and the rest of the world (excluding Europe).

Explosion-proof boosters will be supplied fitted with an explosion-proof motor (suitable for 60 Hz operation) approved to CSA, Division 1 area, Gas Class I Group C & D and Dust Class II Group F & G, Temperature Class T3C.

#### EH Pumps with Hydrokinetic Drive

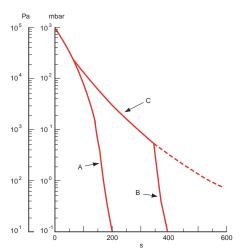
EH booster pumps have a unique and patented hydrokinetic fluid drive, which couples the motor to the pumping mechanism. The hydrokinetic drive offers the following advantages:

- Pump down times cut by up to 50%
- · Reduced capital and operating costs
- · No pressure sensors, by-pass lines or valves
- Can operate continuously at all pressures when used with a backing pump

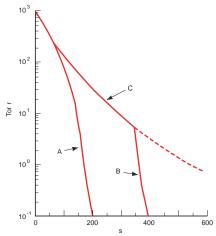
EH booster pumps have universal voltage, air-cooled motors and are available with effective pumping speeds of up to 4140  $\rm m^3h^{-1}$  / 2440  $\rm ft^3min^{-1}$ . The pump bodies of the EH1200, EH2600 and EH4200 pumps are water-cooled.

Two versions of each EH booster pump are available, with different oils used for the lubrication of the seals and gears. The standard version uses mineral oils, such as Ultragrade 20. The alternative version has PFPE (perfluoropolyether) oils and is suitable for applications where oxygen or other reactive and corrosive gases are processed.

Pump-Down Times cut by up to 50% The hydrokinetic drive allows the booster pump to be started at the same time as the backing pump (at atmospheric pressure) as it prevents motor overload. The EH booster pump therefore assists the pumping process from the start of pump-down. In comparison pumping systems with conventional, direct drive mechanical booster pumps (where the booster pump is switched on when the chamber pressure has been reduced to, typically, less than 10 mbar / 7.5 Torr), the total evacuation time can be reduced by as much as 50%. The graph below shows data for a 2.8 m³ / 100 ft³ chamber, with a 2600 m³h⁻¹ / 2600 ft³min⁻¹ mechanical booster pump and a 255 m³h⁻¹ / 150 ft³min⁻¹ backing pump.



- A With backing pump and EH mechanical booster pump switched on together
- B With mechanical booster pump switched on at 5 mbar
- C With backing pump only (pumping through booster pump)



- A With backing pump and EH mechanical booster pump switched on together
   B With mechanical booster pump switched on at 5 mbar
- C With backing pump only (pumping through booster pump)
- with backing pump only (pumping through booster pump)

Automatic Overload Protection The hydrokinetic drive automatically varies the rotational speed of the pump. This protects the motor from overload, prevents over-heating, and allows the pump to operate with high pressure differentials. Consequently, EH booster pumps are not damaged by sudden increases of inlet pressure and even by the entry of solid debris into the pump.

Important Cost Savings When you use EH mechanical booster pumps, you save money on installation and operation. Your capital costs are reduced as you do not need valves, by-pass lines and pressure switches, and you can use a smaller backing pump than with conventional drive booster pumps. Operation costs are reduced because EH booster pumps have smaller motors than direct drive pumps and, when operating at full speed, they use only a fraction of the rated power.

The EH mechanical booster pump, based on the simple Roots principle, remains the favourite pump for applications where high pumping speeds are required for pressures in the region of 0.01 to 10 mbar. This pump must always be backed by another pump, which can deliver against a high-pressure differential to atmospheric pressure.

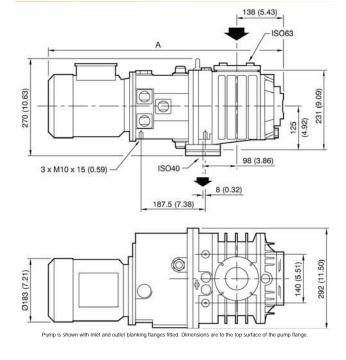
Operating at relatively low pressures, the mechanical booster pump is not exposed to the same concentrations of corrosive process media as is the backing pump, which makes it highly reliable.



#### Features & Benefits

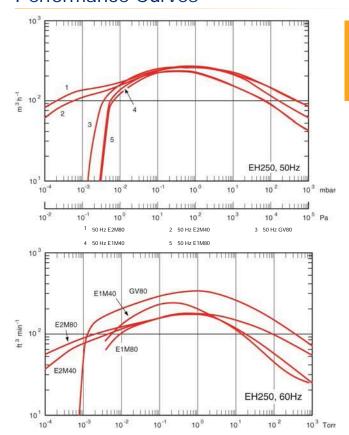
- Suitable for applications where high pumping speeds over 3000 m h -1/1776 ft min are required in the pressure region of 0.01 to 50 mbar/0.0075 to 37.5 Torr.
- Operating at relatively low pressures makes it highly reliable.
- The EH pumps have a high quality, oil-free pumping mechanism.
   This offers:
- Quiet, vibration free operation.
- · Rugged and corrosion resistant.

#### **Dimensions**



## **Applications**

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel de-gassing
- Thin film coating



Shaft seal reservoir

Weight

## **Technical Data**

rechnical Data	
Displacement (swept volume)	
50Hz	$310 \text{ m}^3 \text{ h}^{-1} / 185 \text{ ft}^3 \text{ min}^{-1}$
60Hz	$375 \mathrm{m}^3 \mathrm{h}^{-1} / 220 \mathrm{ft}^3 \mathrm{min}^{-1}$
Effective pumping speed with backing pump	
E2M40	240 m $^{3}$ h $^{-1}$ / 141 ft $^{3}$ min $^{-1}$
E2M80	$274 \text{ m}^3 \text{ h}^{-1} / 161 \text{ ft}^3 \text{ min}^{-1}$
Pressure differential across pump	
50Hz	0-180 mbar / 0-140 Torr
60Hz	0-150 mbar / 0-115 Torr
Inlet connection	ISO63
Outlet connection	ISO40
Rotational speed ‡	
50Hz	0-2900 rpm
60Hz	0-3500 rpm
Operating continuous inlet pressure	0-1000 mbar / 0-760 Torr
Maximum outlet pressure	1000 mbar / 760 Torr
Maximum outlet pressure Recommended backing pumps	1000 mbar / 760 Torr GV80, E2M40, E2M80
•	
Recommended backing pumps	
Recommended backing pumps Electrical supply voltage, 3-ph	GV80, E2M40, E2M80
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz	GV80, E2M40, E2M80 220 – 240V / 380 – 415V
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz	GV80, E2M40, E2M80 220 – 240V / 380 – 415V
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V 2.2 kW / 3 hp
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V 2.2 kW / 3 hp 1.5 kW / 2 hp
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V 2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V 2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range	GV80, E2M40, E2M80 220 - 240V / 380 - 415V 208-230V / 460V 2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range Operating	GV80, E2M40, E2M80  220 - 240V / 380 - 415V 208-230V / 460V  2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp  5 to 40°C / 40 to 104°F
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range Operating Storage	GV80, E2M40, E2M80  220 - 240V / 380 - 415V 208-230V / 460V  2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp  5 to 40°C / 40 to 104°F -10 to 80°C / 14 to 176°F
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range Operating Storage Maximum operating humidity	GV80, E2M40, E2M80  220 - 240V / 380 - 415V 208-230V / 460V  2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp  5 to 40°C / 40 to 104°F -10 to 80°C / 14 to 176°F 90% RH
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range Operating Storage Maximum operating humidity Cooling method	GV80, E2M40, E2M80  220 - 240V / 380 - 415V 208-230V / 460V  2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp  5 to 40°C / 40 to 104°F -10 to 80°C / 14 to 176°F 90% RH Air cooled
Recommended backing pumps Electrical supply voltage, 3-ph 50Hz 60Hz Motor power Hydrocarbon PFPE ATEX Explosion proof Ambient temperature range Operating Storage Maximum operating humidity Cooling method Recommended oil	GV80, E2M40, E2M80  220 - 240V / 380 - 415V 208-230V / 460V  2.2 kW / 3 hp 1.5 kW / 2 hp 2.2 kW 3 hp  5 to 40°C / 40 to 104°F -10 to 80°C / 14 to 176°F 90% RH Air cooled

0.125 litre / 0.25 qt

61 kg / 134 lb

Product escription	rder o.	
EH250IND 200V, 3-ph, 60Hz, 3hp	NRC221000	
EH250IND 200V, 3-ph, 50Hz, 2.2kW	NRC222000	
EH250IND 220-240/380-415V, 3-ph, 50Hz, 2.2kW	A30151945	
EH250IND 208 – 230V or 460V, 3-ph, 60Hz, 3 hp	A30152946	
PFPE EH250FX 220-240/380-415V, 3-ph, 50Hz, 1.5kW	A30153935	
PFPE EH250FX 208-230/460V, 3-ph, 60Hz, 2 hp	A30154936	
EH250C 460V, 3-ph 60Hz, 3 hp	NRA997000	
EH250T160 220-240/380-415V, 3-ph 50Hz, 2.2kW	NRA996000	
ccessories Spares	rder o.	
Spares Kit Con C&O EH/QMB250/500A	A30151815	
Spares Kit Module EH/QMB250/500A	A30151820	
Spares Kit Shim EH/QMB250/500A	A30151825	
Inlet Mesh Assy 3.3 mm ISO63	A60041029	
ISO63 Screen Centring S/S Viton	C10521085	

The EH mechanical booster pump, based on the simple Roots principle, remains the favourite pump for applications where high pumping speeds are required for pressures in the region of 0.01 to 10 mbar. This pump must always be backed by another pump, which can deliver against a high-pressure differential to atmospheric pressure.

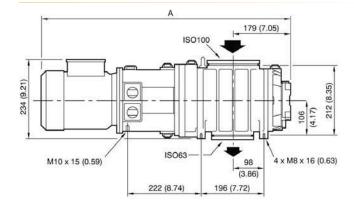
Operating at relatively low pressures, the mechanical booster pump is not exposed to the same concentrations of corrosive process media as is the backing pump, which makes it highly reliable.

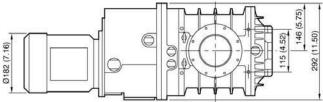


#### Features & Benefits

- Suitable for applications where high pumping speeds over 3000 m h -1/1776 ft min are required in the pressure region of 0.01 to 50 mbar/0.0075 to 37.5 Torr.
- Operating at relatively low pressures makes it highly reliable.
- The EH pumps have a high quality, oil-free pumping mechanism.
   This offers:
- Quiet, vibration free operation.
- Rugged and corrosion resistant.

#### **Dimensions**

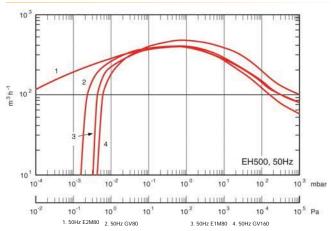


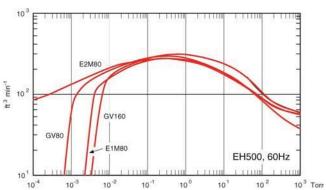


 ${\bf Pump~is~shown~with~inlet~and~outlet~blanking~flanges~fitted.~Dimensions~are~to~the~top~surface~of~the~pump~flange.}$ 

## **Applications**

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel de-gassing
- Thin film coating





## **Technical Data**

Technical Data	
Displacement (swept volume)	
50Hz	505 m <sup>3</sup> h <sup>-1</sup> / 300 ft <sup>3</sup> min <sup>-1</sup>
60Hz	605 m <sup>3</sup> h <sup>-1</sup> / 335 ft <sup>3</sup> min <sup>-1</sup>
Effective pumping speed with	7 000 11 11111
backing pump	
E2M40	350 m <sup>3</sup> h <sup>-1</sup> / 206 ft <sup>3</sup> min <sup>-1</sup>
E2M80	400 m <sup>3</sup> h <sup>-1</sup> / 236 ft <sup>3</sup> min <sup>-1</sup>
E2M175	$440 \text{ m}^3 \text{ h}^{-1} / 259 \text{ ft}^3 \text{ min}^{-1}$
E2M275	$460 \text{ m}^3 \text{ h}^{-1} / 271 \text{ ft}^3 \text{ min}^{-1}$
Pressure differential across pump	
50Hz	0-110 mbar / 0-83 Torr
60Hz	0-90 mbar / 0-68 Torr
Inlet connection	ISO100
Outlet connection	ISO63
Rotational speed	
50Hz	0-2900 rpm
60Hz	0-3500 rpm
Operating continuous inlet pressure	0-1000 mbar / 0-760 Torr
Maximum outlet pressure	1000 mbar / 760 Torr
Recommended backing pumps	GV80, E2M80
Electrical supply	
50Hz	220-240V / 380-415V
60Hz	208-230V / 460V
Motor power	
Hydrocarbon	2.2kW / 3hp
PFPE	1.5 kW / 2hp
ATEX	2.2kW
Explosion proof	3hp
Ambient temperature range	
Operating	5 to 40°C / 40 to 104°F
Storage	-10 to 80°C / 14 to 176°F
Maximum operating humidity	90% RH
Cooling method	Air cooled
Recommended oil	
Standard version	Ultragrade 20
PFPE version	Fomblin VAC 16/6
Oil capacity	
Coupling cover	1.5 litre / 1.6 qt
Shaft seal reservoir	0.125 litre / 0.25 qt
Weight	74 kg / 163 lb

#### . Depends on pressure

Product escription	rder o.	
EH500IND 208-230/460V, 3-ph, 60Hz, 3 hp	A30272946	
EH500IND 200V, 3-ph 60Hz, 3 hp	NRC219000	
EH500IND 200V, 3-ph, 50Hz, 2.2kW	NRC220000	
EH500IND 220-240/380-415V, 3-ph, 50Hz, 2.2kW	A30271945	
EH500AFX 220-240/380-415V, 3-ph 50Hz, 1.5 kW	A30273935	
EH500AFX 208-230/460V, 3-ph, 60Hz, 2 hp	A30274936	
EH500C 460V, 3-ph, 60Hz, 3 hp	NRA999000	
EH500T3 220-240/380-415V, 3-ph, 50Hz, 2.2kW	NRA998000	
ccessories Spares	rder o.	
Spares Kit Con C&O EH/QMB250/500A	A30151815	
Spares Kit Module EH/QMB250/500A	A30151820	
Spares Kit Shim EH/QMB250/500A	A30151825	
ISO100 Screen Centring S/S Viton	C10523085	
Inlet Mesh Assembly EH250/EH500A	A60041569	

The EH mechanical booster pump, based on the simple Roots principle, remains the favourite pump for applications where high pumping speeds are required for pressures in the region of 0.01 to 10 mbar. This pump must always be backed by another pump, which can deliver against a high-pressure differential to atmospheric pressure.

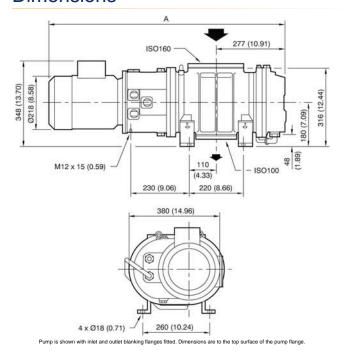
Operating at relatively low pressures, the mechanical booster pump is not exposed to the same concentrations of corrosive process media as is the backing pump, which makes it highly reliable.



#### Features & Benefits

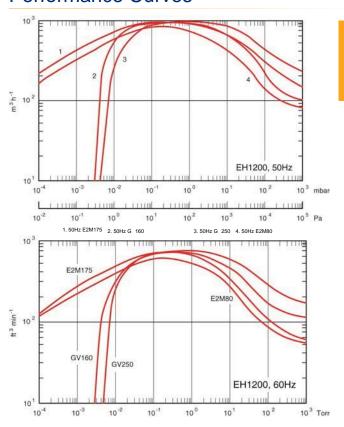
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- Quiet, vibration free operation.
- Rugged and corrosion resistant.

#### **Dimensions**



## **Applications**

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel de-gassing
- Thin film coating



#### Page

### **Technical Data**

Displacement (swept volume)	
50Hz	11 5 m h - 715 ft min - 1
60Hz	1435 m <sup>3</sup> h <sup>-1</sup> / 845 ft min <sup>-1</sup>
Effective pumping speed with backing pump	
E2M80	840 m $^{3}$ h $^{-1}$ / 4 5 ft min $^{-1}$
E2M175	$30 \text{ m}^3 \text{ h}^{-1} / 548 \text{ ft}^3 \text{ min}^{-1}$
E2M275	1020 m <sup>3</sup> h <sup>-1</sup> / 601 ft <sup>3</sup> min <sup>-1</sup>
Pressure differential across pump	
50Hz	0- 0 mbar / 0-68 Torr
60Hz	0-75 mbar / 0-56 Torr
Inlet connection	ISO160
Outlet connection	ISO100
Rotational speed	
50Hz	0-2 00 rpm
60Hz	0-3500 rpm
Operating continuous inlet pressure	0-1000 mbar / 0-760 Torr

Electrical supply

Maximum outlet pressure

Recommended backing pumps

50Hz 220-240 / 380-415 60Hz 208-230 / 460

Motor power

3kW / 4hp Hydrocarbon **PFPE** 3kW / 4hp 3kW **ATEX** Explosion proof 4hp

Ambient temperature range

5 to 40°C / 40 to 104°F Operating Storage -10 to 80°C / 14 to 176°F

0% RH Maximum operating humidity

Recommended cooling water 120lh<sup>-1</sup> / 0.53 gal min<sup>-1</sup> flow (inlet temperature 20°C)

Recommended cooling water

supply pressure

2-6 bar

Cooling water connections

3/8 inch BSP male

1000 mbar / 760 Torr G 160, G 250, E2M80,

E2M175

Recommended oil

Ultragrade 20

Standard version

Fomblin Y AC 16/6

PFPE version Oil capacity

Gear case 1.25 litre / 1.3 qt 1.5 litre / 1.6 qt Coupling cover Shaft seal reservoir 0.125 litre / 0.25 qt Weight 74 kg / 163 lb

Under many circumstances, pumps may operate without cooling water. Apply to Edwards for more information.

. Depends on pressure

Draduct escription	rder o.
Product escription	
EH1200IND 220-240/380-415 , 3-ph, 50Hz, 3kW	A305 0 35
EH1200IND 208-230/460 , 3-ph, 60Hz, 4 hp	A305 1 36
EH1200IND 200 , 3-ph, 60Hz, 4 hp	NRC217000
EH1200IND 200 , 3-ph, 50Hz, 3 kW	NRC218000
EH1200FX 220-240/380-415 , 3-ph, 50Hz, 3 kW	A305 2 35
EH1200FX 208-230/460 , 3-ph, 60Hz, 4 hp	A305 3 36
EH1200C 230/460 , 3-ph, 60Hz, 4 hp	A30556 82
EH1200T160 380-415 , 3-ph, 50Hz, 3kW	A30557 00
ccessories Spares	rder o.
Spares it Con C&O EH/QMB1200	A30551815
Spares it Module EH/QMB1200	A30551820
Shim kit	A30551825
ISO160 Screen Centring S/S iton	C10524085
Inlet Mesh Assembly EH2600/EH4200	A60041570

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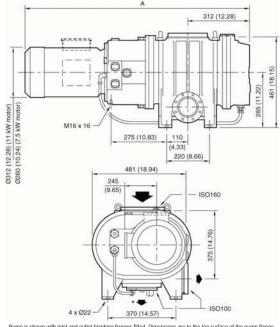
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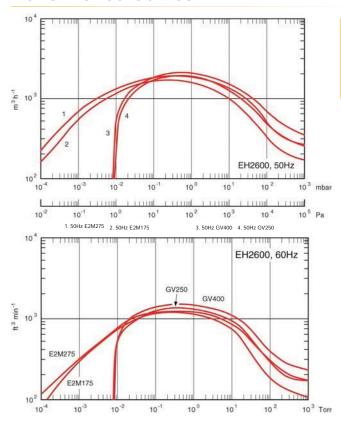


Pump is shown with inlet and outlet blanking flanges fitted. Dimensions are to the top surface of the pump flange.

Alternative outlet position

## **Applications**

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel de-gassing
- Thin film coating



#### Page

### **Technical Data**

2590 m <sup>3</sup> h <sup>-1</sup> / 1525 ft <sup>3</sup> min <sup>-1</sup>
3110 m <sup>3</sup> h <sup>-1</sup> / 1830 ft <sup>3</sup> min <sup>-1</sup>
1750 m <sup>3</sup> h <sup>-1</sup> / 1031 ft <sup>3</sup> min <sup>-1</sup>
1900 m <sup>3</sup> h <sup>-1</sup> / 1119 ft <sup>3</sup> min <sup>-1</sup>
0-80 mbar / 0-60 Torr
0-67 mbar / 0-50 Torr
ISO160
ISO100
0-2900 rpm
0-3500 rpm
0-1000 mbar / 0-760 Torr
1000 mbar / 760 Torr

Electrical supply

Recommended backing pumps

220-240V / 380-415V 50Hz 60Hz 208-230V / 460V

Motor power

Hydrocarbon 11kW / 15hp **PFPE** 7.5kW / 10hp **ATEX** 11kW

Explosion proof 15hp

Ambient temperature range

5 to 40°C / 40 to 104°F Operating -10 to 80°C / 14 to 176°F Storage

90% RH Maximum operating humidity

Recommended cooling water 250lh<sup>-1</sup> / 1.1 gal min<sup>-1</sup> flow (inlet temperature 20°C)

Recommended cooling water

supply pressure

2-6 bar

Cooling water connections

3/8 inch BSP male

GV250, GV400, E2M175,

E2M275

Recommended oil

Standard version Ultragrade 20

PFPE version Fomblin VAC 16/6

Oil capacity

Gear case 3.5 litre / 3.3 qt Coupling cover 6.5 litre / 7 qt Shaft seal reservoir 1.5 litre / 1.4 qt Weight 308 kg / 679 lb

Under many circumstances, pumps may operate without cooling water. Apply to Edwards for more information.
. Depends on pressure

Product escription	rder o.
EH2600IND 380-415V, 3-ph, 50Hz, 11 kW	A30775946
EH2600IND 230/460V, 3-ph, 60Hz, 15 hp	A30776982
EH2600IND 200V, 3-ph, 60Hz, 15 hp	NRB989000
EH2600IND 200V, 3-ph, 50Hz, 11 kW	NRC216000
EH2600FX 220-240/380-415V, 3-ph, 50Hz, 7.5kW	A30753935
EH2600FX 208-230/460V, 3-ph, 60Hz, 10 hp	A30754936
EH2600C 230/460V, 3-ph, 60Hz, 15 hp	A30756982
EH2600T3 380-415V, 3-ph, 50Hz, 11 kW	A30741935
EH2600T160 380-415V, 3-ph, 50Hz, 11 kW	A30779900
ccessories Spares	rder o.
Spares Kit Con C&O EH/QMB26/4200	A30751815
Spares Kit Module EH/QMB26/4200	A30751820
Spares Kit Shim EH/QMB12/26/4200	A30751825
ISO160 Screen Centring S/S Viton	C10524085
Inlet Mesh Assembly EH2600/EH4200	A60041570

The EH mechanical booster pump, based on the simple Roots principle, remains the favourite pump for applications where high pumping speeds are required for pressures in the region of 0.01 to 10 mbar. This pump must always be backed by another pump, which can deliver against a high-pressure differential to atmospheric pressure.

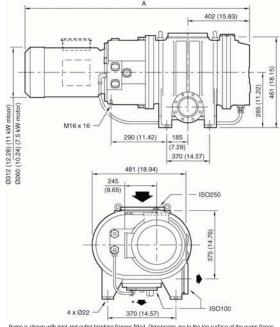
Operating at relatively low pressures, the mechanical booster pump is not exposed to the same concentrations of corrosive process media as is the backing pump, which makes it highly reliable.



#### Features & Benefits

- Suitable for applications where high pumping speeds over 3000 m h -1/1776 ft min are required in the pressure region of 0.01 to 50 mbar/0.0075 to 37.5 Torr.
- Operating at relatively low pressures makes it highly reliable.
- The EH pumps have a high quality, oil-free pumping mechanism.
   This offers:
- Quiet, vibration free operation.
- Rugged and corrosion resistant.

### **Dimensions**

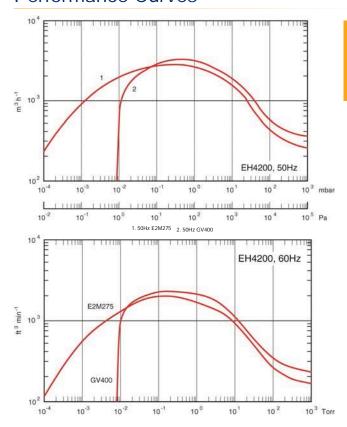


Pump is shown with inlet and outlet blanking flanges fitted. Dimensions are to the top surface of the pump flange.

Alternative outlet position

## **Applications**

- Semiconductor processing
- Vacuum distillation
- Vacuum packaging
- Steel de-gassing
- Thin film coating



### **Technical Data**

Displacement (swept volume)	
50Hz	4140 m <sup>3</sup> h <sup>-1</sup> / 2440 ft <sup>3</sup> min <sup>-1</sup>
60Hz	4985 m <sup>3</sup> h <sup>-1</sup> / 2935 ft <sup>3</sup> min <sup>-1</sup>
Effective pumping speed with backing pump	
E2M275	3100 m <sup>3</sup> h <sup>-1</sup> / 1825 ft <sup>3</sup> min <sup>-1</sup>
Pressure differential across pump	
50Hz	0-60 mbar / 0-45 Torr
60Hz	0-50 mbar / 0-38 Torr
Inlet connection	ISO250
Outlet connection	ISO100
Rotational speed	
50Hz	0-2900 rpm
60Hz	0-3500 rpm
Operating continuous inlet pressure	0-1000 mbar / 0-760 Torr
Maximum outlet pressure	1000 mbar / 760 Torr

60Hz

50Hz

Electrical supply

Motor power Hydrocarbon 11kW / 15hp **PFPE** 11kW / 15hp ATEX 11kW Explosion proof 15hp

Ambient temperature range

Recommended backing pumps

Operating 5 to 40°C / 40 to 104°F Storage -10 to 80°C / 14 to 176°F 90% RH

Maximum operating humidity

Recommended cooling water flow (inlet temperature 20°C)

250lh<sup>-1</sup> / 1.1 gal min<sup>-1</sup>

GV400, E2M275

208-230V / 460V

220-240V / 380-415V

Recommended cooling water

supply pressure

2-6 bar

Cooling water connections

3/8 inch BSP male

Recommended oil

Standard version Ultragrade 20

PFPE version Fomblin VAC 16/6

Oil capacity

3.5 litre / 3.3 qt Gear case Coupling cover 6.5 litre / 7 qt Shaft seal reservoir 1.5 litre / 1.4 qt Weight 400 kg / 882 lb

Under many circumstances, pumps may operate without cooling water. Apply to Edwards for more information.

. Depends on pressure

Product escription	rder o.	
EH4200IND 380-415V, 3-ph, 50Hz, 11kW	A30975946	
EH4200IND 200V, 3-ph, 60Hz, 15 hp	NRB988000	
EH4200IND 200V, 3-ph, 50Hz, 11 kW	NRC215000	
EH4200IND 208-230/460V, 3-ph, 60Hz, 15 hp	A30976982	
EH4200C 230/460V, 3-ph, 60Hz, 15 hp	A30956982	
EH4200T3 380-415V, 3-ph, 50Hz, 11 kW	A30941935	
EH4200T160 380-415V, 3-ph, 50Hz, 11 kW	A30979900	
ccessories Spares	rder o.	
Spares Kit Con C&O EH/QMB26/4200	A30751815	
Spares Kit Module EH/QMB26/4200	A30751820	
Spares Kit Shim EH/QMB12/26/4200	A30751825	
Inlet Mesh Assembly EH2600	A60041571	

# echanical ooster Pump ccessories

#### 500 il evel onitor

Fit the O M500 in place of the oil sight-glass on the EH250 and EH500 oil seal reservoirs, and on the EH1200, EH2600 and EH4200 oil seal reservoirs and gear boxes. The O M500 provides a switched output for remote activation or warning devices. Technical data: 24 V a.c. or d.c., maximum current 0.5 A.

#### **Ordering Information**

Product escription	rder	0.
O M500 oil level monitor	A50434	000
Not suitable for ATEX boosters		

### nlet Seal with esh Screen

Designed to prevent ob ects falling into the inlet of our booster pumps, the mesh aperture is  $3.3\ \text{mm}.$ 

Product escription	rder	Ο.
Inlet seal with mesh screen		
ISO63	C10521	085
ISO100	C10523	085
ISO160	C10524	085