

MEDIUM AND LARGE WET PUMPS

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE

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Medium and Large Wet Pumps and System

- ES Single Stage Oil Sealed Rotary Vane Pumps
- E2M Two Stage Oil Sealed Rotary Vane Pumps
- Stokes Microvac Oil Sealed Rotary Piston Pumps

Edwards believes in delivering results that bring value to our customers by using our breath of industry experience to identify and apply solutions to your problems. Using the most up-to-date and innovative modelling techniques, and selecting the right pumps from a wide range of dry and wet products, we can optimise the pumping configuration to provide a system design giving the maximum performance in the most reliable and cost effective way.

Edwards is providing a wide range of wet pumps to suit the requirements of customers carefully looking to a good ratio between process results and investment cost.

Product ranges

The **ES Single Stage Oil Sealed Rotary Vane Pump** range provides a good ultimate vacuum performance in sizes from 65 to 630 m³h⁻¹. ES represents a step ahead in single stage oil technology with class leading ultimate vacuum level and extended operating pressure range.



The **E2M Two Stage Oil Sealed Rotary Vane Pump** is the tried and tested solution for applications when better ultimate vacuum down to 10⁻³ mbar is needed. Available in sizes from 40 to 275 m³h⁻¹ features a robust design for reliable and stable high vacuum performance



The **Stokes Microvac Oil Sealed Rotary Piston Pump Range**, available in sizes from 255 to 1240 m³h⁻¹, features a rugged design for robust and reliable operation even in the harshest processes. With over 80 years of time tested proven performance Stokes Microvac low rotational speed and simple mechanism has demonstrated longest pump life cycle, high reliability and ease of rebuild.



EM Oil Sealed Rotary Pumps

Edwards rugged two stage mechanical oil sealed pumps are available in sizes from 40 to 275 m³h⁻¹ / 30-206 ft³min⁻¹. They feature:

- Advanced oil lubrication circuit
- High reliability
- Accessories to match your application needs

Application and Accessory Information EM Rotary Pumps

The use of Edwards rotary pumps with our comprehensive range of accessories will result in enhanced performance and reliability. The information below will help you to select the correct accessories for your application. However, we recommend that you treat this as a guide only, because the final selection of components can be influenced by the operation of your vacuum system and the process by-products. If in doubt, please contact Edwards or your local supplier for further advice from an Edwards application specialist. When you select accessories for your system, the major aim is to prolong the life and the safe operation of the pumps and to ensure that the system continues to perform at its ultimate specification. To do this, you need to ensure that the system is able to accommodate the process media and any process by-products, including vapours, liquids or particulates, which may damage the pumps. At the same time, you should ensure that any materials discharged from the system to atmosphere are not harmful to the environment and to people nearby.

Broad Application Coverage

Industrial

Industrial EM primary pumps are annotated with the suffix "IND". EM primary pumps are safe to handle non-flammable gases and vapours within the normal operating parameters of the pump. Flammable gases and vapours may also be pumped, provided they are outside the flammable range, please consult Edwards for advice.

PFPE

EM primary pumps may be supplied for use with PFPE oil. This enables them to be used in harsh corrosive processes, or where the presence of Oxygen will result in rapid degradation of hydrocarbon oils. Fomblin® must be purchased separately for PFPE prepared pumps

ATEX

- EM primary pumps (hydrocarbon oil only) may be supplied with ATEX classification either as part of a pump system or stand-alone. Please consult Edwards.
- ATEX compliance is typically specified for use in Europe, but may also be required in other areas.

ATEX compliant EM primary pumps are suitable for operation in ATEX systems rated as follows:

Pump Classification	Internal Classification	External Classification
E2M40 & E2M80	II 3 Gc IIB T4	II 2 G IIB T4
E2M175 & E2M275	II 3 Gc IIB T3	II 2 G IIB T160

Where the following classification...

Symbol	Meaning
	Specifies that an ATEX-compliant EM pump can be used in a potentially explosive atmosphere
II	Equipment Group – II = non-mining equipment
3 (Int) 2 (Ext) G	Equipment Category 3 (or 2) – G = Gas
c	Constructional safety
IIB	Gas Group – Suitable to pump gases in gas group IIB Where no gas group is mentioned, there are no limitations
T4 T160 T3	Temperature Class – Gas auto-ignition temperature greater than: – T4 =135 °C, T160 = 160 °C, T3 = 200 °C

A four-pole, three-phase ATEX approved flameproof motor provides direct drive through an ATEX certified flexible coupling to the E2M40, E2M80, E2M175 and E2M275 pumps. A cooling fan is attached to the drive coupling on the E2M40 and E2M80 pumps. The E2M175 and E2M275 pumps are water-cooled.

Lubrication is provided by a sliding vane oil pump, which delivers pressurised oil to the vacuum pumping mechanism. Pumps are supplied with sealed gas ballast. Plugs have been fitted to prevent flammable atmospheres accidentally entering the pump. If the gas ballast facility is required, an N₂ purge must be used, or clean air supplied from a safe area.

For much of the operating cycle the pump operates at pressures significantly below 0.8 bar (11.6 psi) absolute. However, the final stage of the pump will exhaust to atmosphere and there is a startup and shutdown period where the whole pump is briefly operating at atmospheric pressure. A surface temperature thermal snap switch is fitted to the body of the E2M175 and E2M275 rotary pumps. This must be connected to an intrinsically safe circuit suitable for the hazardous zone in which it may be located; otherwise it must be located in a safe area. If the pump temperature should rise due to a fault condition, the snap switch activates and the pump will shut-off.

Trapping Particulates

In any application, first ensure that particulates in the process stream are trapped before they get into the pump: use the ITM or ITF inlet filters which are suitable for use with oil-sealed and dry pumps. However, in processes which generate or contain large amounts of particulates, some will enter the pump: use our EOF, an external oil filter, to remove particulates from the pump oil during operation. **ITF inlet dust filters** If the mechanical pump is a backing pump for a diffusion pump, the diffusion pump will trap particulates during normal operation, but the diffusion pump will not trap dust during the roughing stage of the process cycle. We recommend you fit an ITF filter to the mechanical pump inlet (that is, in the foreline): this filter has a replaceable element. Note that the impedance of a clean filter will cause the pumping speed to decrease by about 10% at 1 mbar and 20% at 10⁻² mbar. The ITF filter is more than 96% efficient, when tested in accordance with BS2831.

ITM High Capacity Inlet Dust Filters use an ITM filter for applications where there is a high load of dust and particulates. Fit the ITM directly to the inlet of a rotary or mechanical booster pump. This filter has a stainless steel mesh element that can be washed and reused. It is ideal for use when backing diffusion pumps or for wet processes where a paper filter may become blocked quickly. The ITM filter has high conductance and is therefore ideal for applications which require fast pump down times. The ITM filter has an efficiency of 90%, when tested in accordance with BS3831.

EOF External Oil Filters Use the EOF's with the EM oil-sealed rotary pumps to remove particulates trapped in the pump oil. The EOFa and EOFm filters use the internal pressurized oil system of the pump to continually filter a proportion of the pump oil. These filters are only suitable for hydrocarbon oil. The EOFm filter removes particulates down to 0.5 microns, and the EOFa filter both removes particulates and includes an active element to remove acidic and other aggressive contaminants from the oil.

Pumping Vapours

The use of gas ballast significantly improves vapour handling capability of oil sealed rotary pumps. We offer a number of accessories to improve the utility of gas ballast.

EBV Gas Ballast Control Valve Fit EBV gas ballast control valve to allow remote or automated control of gas ballast.

TCV Temperature Control Valve The vapour pumping performance of the larger oil sealed pumps can be enhanced by fitting a TCV. Use the TCV both to warm-up the pump faster (which reduces the amount of condensation in the pump) and to reduce water usage and cost.

ITC Inlet Chemical Traps Fit an ITC trap to the inlet of the pump to protect against the aggressive process vapours that may corrode the pump or degrade the oil.

Trapping Liquids

The use of gas ballast allows an oil sealed pump to process significant quantities of vapour. However, oil sealed pumps cannot pump liquid streams and it is important both to remove liquids before they reach the pump inlet and to prevent condensed liquids from flowing back into the pump outlet. The following accessories may be suitable for your application:

ITO Inlet Trap The ITO inlet trap is ideal for processes where there is a risk of liquids in the process entering the pump inlet. Fit the ITO trap to the pump inlet or elsewhere in the foreline.

CP Catchpot Process vapours passing through the pump may condense after the pump outlet, in the exhaust line. Fit a CP catchpot to the pump outlet to trap the condensates and prevent them flowing back into the pump.

Exhaust Management

You should aim to minimise the impact of gases and vapours which exhaust from the pump outlet. Edwards offers a range of exhaust management systems for the most exacting applications. However, for most straight-forward applications of oil sealed rotary pumps, we recommend that you fit an oil mist filter to the pump outlet to remove oil mist vapour. A mist filter is not required if you vent the exhaust gases remotely or pass them through exhaust scrubbing equipment.

MF Oil Mist Filters The MF filters remove oil mist (vapour) from the process gases exhausted from the outlet of an oil sealed pump. The filters remove both odour and oil vapour and so prevent it from reaching the atmosphere and the workplace.

Back Migration

When operated at ultimate pressure for extended periods of time, any oil sealed pump allows oil vapour to back migrate into the process chamber. The back-migration of oil vapour could contaminate your process or your vacuum system.

ITC Inlet Chemical Trap Fit an ITC inlet chemical trap (filled with an alumina charge) to the pump inlet to trap oil vapour and to prevent back migration.

Applications

- Refrigeration dehydration
- Brake line evacuation
- TV aluminisers
- Vacuum metallurgy
- Fluorescent light tube pumping
- Thin film coating
- IT hard disc coating
- Vacuum distillation
- Cryogenic vessel evacuation
- Transformer and cable drying
- Pharmaceutical freeze drying
- Space simulation
- Crystal growing
- Automotive
- Chemical processing

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ES ROTARY VANE PUMP

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



The Edwards ES range of pumps represents the advanced single stage oil sealed rotary vane pumps. The pump mechanism has been refined to produce a better quality of vacuum. It extends the pressure range over which the pump operates giving an unrivalled ultimate vacuum level. The vacuum performance is stable without the pressure fluctuations that are often seen in single stage pumps. Extended service intervals and easy in-house maintenance make the ES range a flexible vacuum solution for a wide range of industrial applications. The ES range of pumps is designed to be used in a wide range of industrial applications. They can be used individually or with mechanical booster pumps to increase both performance and ultimate vacuum.



Features and Benefits

- **Enhanced performance** - class leading ultimate vacuum level and extended operating pressure range
 - Suitable for a **wider range of industrial applications**, with good water vapour handling
 - **Low cost of ownership** - runs cool giving long oil lifetime
 - **Environmentally friendly** - minimal oil emission
 - **Quieter** - than most comparable single stage rotary vane pumps
- **Stability** - strike off perfectly stable vacuum performance, with no pressure fluctuations
 - **Improved product quality with consistent process results** - optimised oil return system
- **Convenience** - combined ISO/BSP connection, easily serviceable on site
 - **Ease of integration** - in-built ISO and BSP connections
 - **Easy to maintain** - easy oil and filter changes
 - **Higher productivity** - can be serviced on site by the user
- **Flexibility** - use individually or with mechanical booster

pumps, for a wide range of applications

- **Simple and easy** - fully assembled package with EH boosters, suits a variety of performance requirement

Applications

- Heat Treatment
- Drying
- Coating
- General Industrial

Pump Range

- ES
- ES65
 - ES100
 - ES200
 - ES300
 - ES630



Performance Curves

ES65 Rotary Vane Pump

ES65

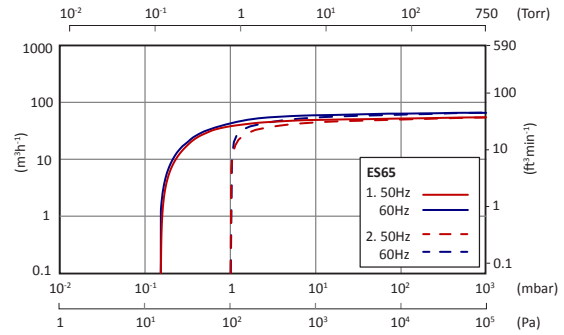


Pumping speed	
50 Hz	59 m ³ h ⁻¹ 35 cfm
60 Hz	70 m ³ h ⁻¹ 41 cfm
Ultimate vacuum	
With gas ballast	1.0 mbar
Without gas ballast	0.15 mbar

Ordering information

Product description	Order no:
ES65 200/380V 50/60Hz IE2	A35245934
ES65 400V 50Hz IE2	A35245935
ES65 208-230V/460V 60Hz IE2	A35245982

ES65 Performance Curve



1. Without Gas Ballast
2. With Gas Ballast

ES100 Rotary Vane Pump

ES100

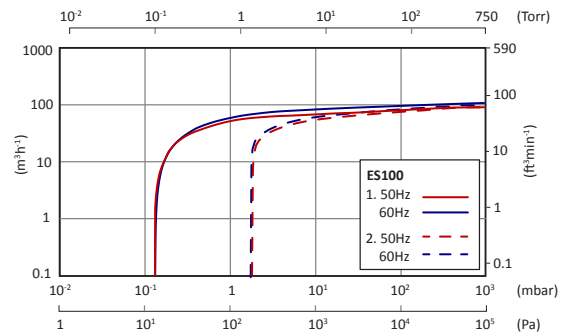


Pumping speed	
50 Hz	90 m ³ h ⁻¹ 53 cfm
60 Hz	105 m ³ h ⁻¹ 62 cfm
Ultimate vacuum	
With gas ballast	2.0 mbar
Without gas ballast	0.15 mbar

Ordering information

Product description	Order no:
ES100 200/380V 50/60Hz IE2	A35250934
ES100 400V 50Hz IE2	A35250935
ES100 208-230V/460V 60Hz IE2	A35250982

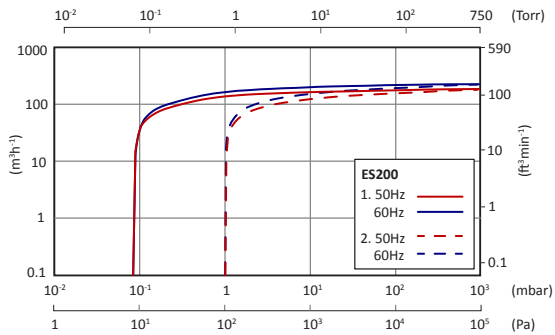
ES100 Performance Curve



1. Without Gas Ballast
2. With Gas Ballast

ES200 Rotary Vane Pump

ES200 Performance Curve



1. Without Gas Ballast
2. With Gas Ballast

Pumping speed

50 Hz	190 m ³ h ⁻¹
	112 cfm
60 Hz	225 m ³ h ⁻¹
	132 cfm

Ultimate vacuum

With gas ballast	1.0 mbar
Without gas ballast	0.08 mbar



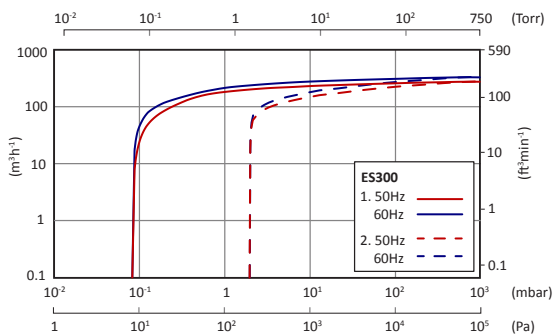
ES200

Ordering information

Product description	Order no:
ES200 200/380V 50/60Hz IE2	A35255934
ES200 400V 50Hz IE2	A35255935
ES200 208-230V/460V 60Hz IE2	A35255982

ES300 Rotary Vane Pump

ES300 Performance Curve



1. Without Gas Ballast
2. With Gas Ballast

Pumping speed

50 Hz	275 m ³ h ⁻¹
	162 cfm
60 Hz	320 m ³ h ⁻¹
	188 cfm

Ultimate vacuum

With gas ballast	2.0 mbar
Without gas ballast	0.08 mbar



ES300

Ordering information

Product description	Order no:
ES300 200/380V 50/60Hz IE2	A35260934
ES300 400V 50Hz IE2	A35260935
ES300 208-230V/460V 60Hz IE2	A35260982



Performance Curves

ES630 Rotary Vane Pump

ES630



Pumping speed

50 Hz	575 m ³ h ⁻¹
	338 cfm
60 Hz	674 m ³ h ⁻¹
	397 cfm

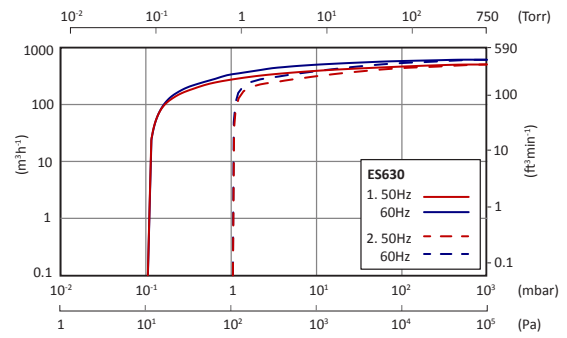
Ultimate vacuum

With gas ballast	1.0 mbar
Without gas ballast	0.1 mbar

Ordering information

Product description	Order no:
ES630 200/380V 50/60Hz IE2	A35265934
ES630 400V 50Hz IE2	A35265935
ES630 208-230V/460V 60Hz IE2	A35265982

ES630 Performance Curve



1. Without Gas Ballast
2. With Gas Ballast

Technical Data

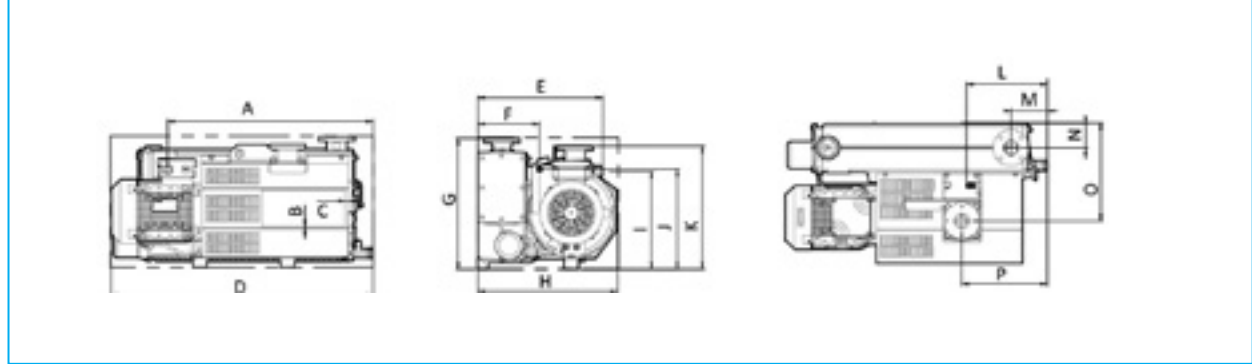


Units	ES65	ES100	ES200	ES300	ES630	
Maximum Displacement						
50 Hz	m ³ h ⁻¹ / cfm	64/38	96/56	198/117	293/172	635/374
60 Hz	m ³ h ⁻¹ / cfm	77/45	115/68	240/141	354/208	769/453
Pumping Speed						
50 Hz	m ³ h ⁻¹ / cfm	59/35	90/53	190/112	275/162	575/338
60 Hz	m ³ h ⁻¹ / cfm	70/41	165/62	225/132	320/188	674/397
Ultimate vacuum (total pressure) no gas ballast	mbar / Torr	0.15/0.11		0.08/0.06		0.1/0.08
Ultimate vacuum (total pressure) with gas ballast	mbar / Torr	1.0/0.8	2.0/1.5	1.0/0.8	2.0/1.5	1.0/0.8
Inlet Connection		ISO40/1"BSP	ISO63/2"BSP			ISO100/3"BSP
Outlet Connection		ISO40/11/2"BSP		ISO40/2"BSP		ISO100/3"BSP
Max permitted outlet pressure	bar gauge	0.5				
Max water vapour pumping rate						
50Hz	kg h ⁻¹ / lb h ⁻¹	1.3/2.9	2.6/5.7	2.2/4.8	2.3/5.1	5.6/12.3
60Hz	kg h ⁻¹ / lb h ⁻¹	1.6/3.5	4.3/9.4	2.8/6.7	3/6.6	8.1/17.8
Weight	kg / lb	78/171	88/194	140/388	179/394	497/1095
Motor Protection rating		IP55				
Motor Power						
50Hz	kW / hp	1.5/2.0	2.3 / 3	4.5/6.0	6/8.0	12.5/16.7
60Hz	kW / hp	1.8/2.4	2.5/3.4	5.8/7.7	7.5/10.0	15/20
Noise level						
50Hz	dB(A)	64	65	67	69	75
60Hz	dB(A)	66	67	69	71	77
Oil refill capacity	litre	4			5	
Recommended oil		Ultragrade 20				

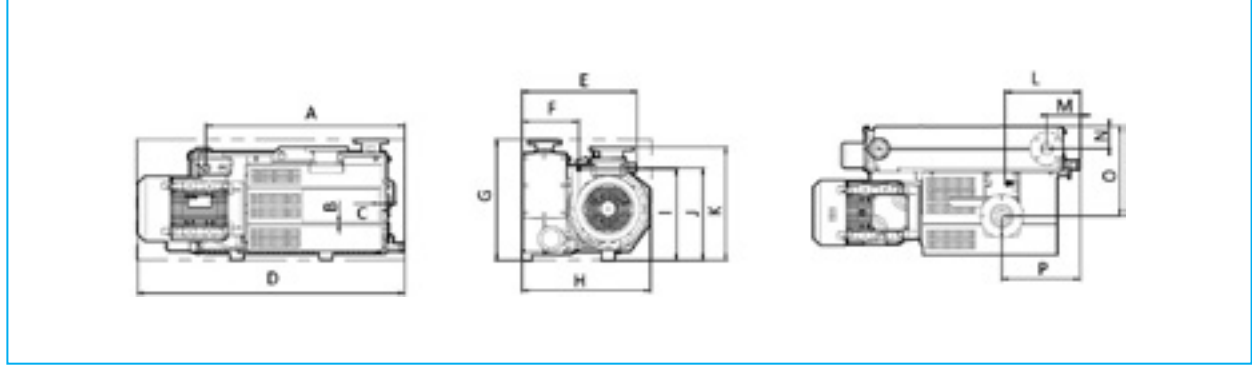


Dimensions

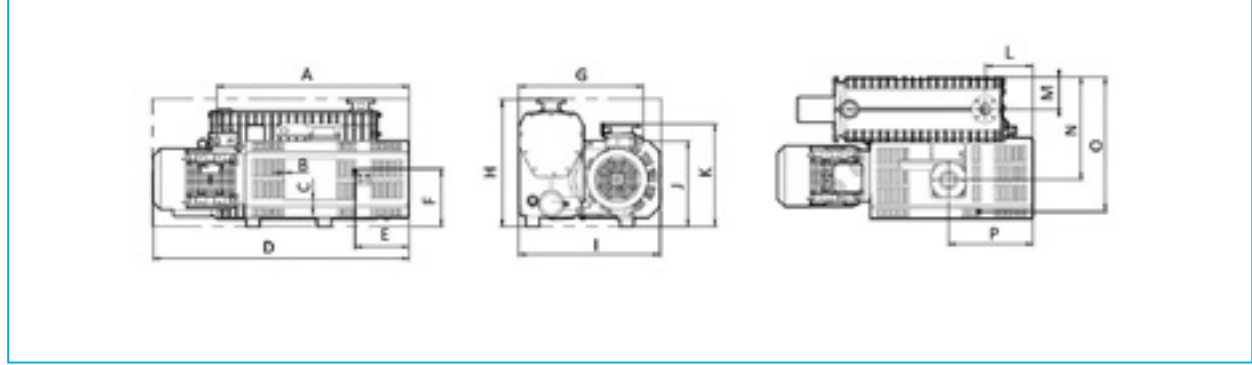
ES65 Dimensions



ES100 Dimensions

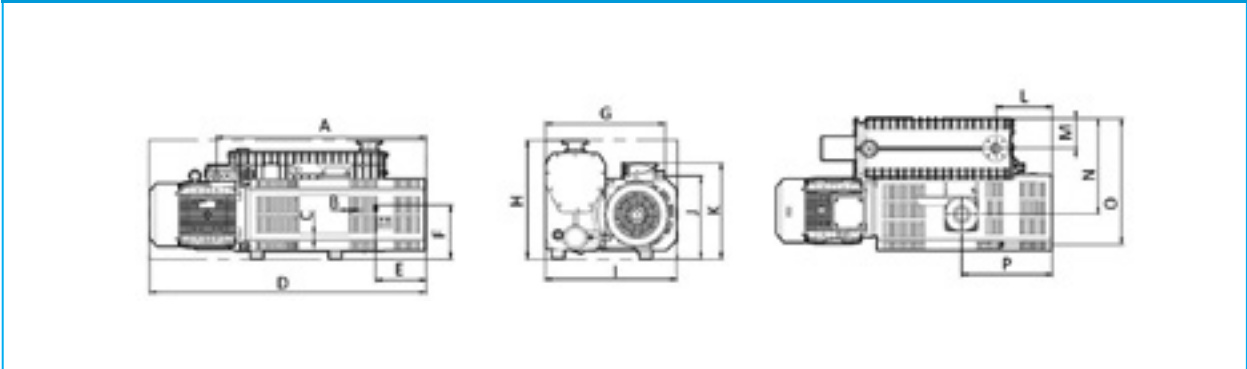


ES200 Dimensions

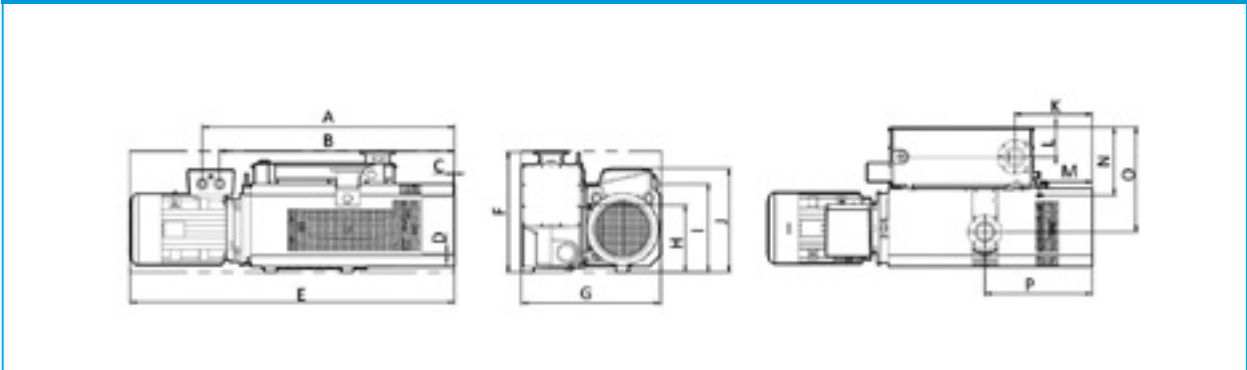


mm (inches)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ES65	568 (22.36)	3.8 (0.15)	8.6 (0.34)	725 (28.54)	346 (13.62)	171 (6.73)	361 (14.21)	387 (15.24)	270 (10.63)	276 (10.87)	340 (13.39)	224 (8.82)	101 (3.98)	68 (2.68)	270 (10.63)	237 (9.33)
ES100	599 (23.58)	3.8 (0.15)	8.6 (0.34)	804 (31.65)	346 (13.62)	171 (6.73)	361 (14.21)	387 (15.24)	275 (10.83)	277 (10.91)	340 (13.39)	226 (8.9)	101 (3.98)	68 (2.68)	270 (10.63)	237 (9.33)
ES200	702 (27.64)	2.8 (0.11)	19 (0.75)	935 (36.81)	198 (7.8)	210 (8.27)	454 (17.87)	462 (18.19)	517 (20.35)	310 (12.2)	373 (14.69)	176 (6.93)	118 (4.65)	373 (14.69)	490 (19.29)	310 (12.2)

ES300 Dimensions



ES630 Dimensions



mm (inches)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ES300	822 (32.36)	7.4 (0.29)	19 (0.75)	1083 (42.64)	198 (7.8)	210 (8.27)	471 (18.54)	462 (18.19)	517 (20.35)	323 (12.72)	373 (14.69)	222 (8.74)	118 (4.65)	375 (14.76)	492 (19.37)	356 (14.02)
ES630	1234 (48.58)	1149 (45.24)	9 (0.35)	8 (0.31)	1587 (62.48)	589 (23.19)	681 (26.81)	329 (12.95)	432 (17.01)	507 (19.96)	377 (14.84)	145 (5.71)	225 (8.86)	334 (13.15)	512 (20.16)	524 (20.63)



Service, Spares and Accessories

ES Spares

The ES series of pumps is designed for simple and easy maintenance that can be conducted by anyone with mechanical equipment maintenance skills. With this product design the ES series has 2 standard available kits to support a self-service approach.

The usual maintenance kits consist of the basic consumable items such as Oil, filters and ballast elements and these are recommended to be changed at approximately 3000 hour intervals

The preventative maintenance kits consist of the additional parts required to conduct a full specification service such as bearings, interior seals and rotary vane blades.

Service Tools

Product description	Order no:
SEAL ASSEMBLY TOOL ES65/100	A22201010
MOUNTING BASE FOR SHAFT SEALS ES65/100	A22201012
BEARING REMOVAL TOOL ES 65/100	A22201014
MOUNTING BASE FOR BEARING REMOVAL ES65/100	A22201016
D10000 COMPLETE SET OF TOOLS for preventive maintenance ES65/100	A22201018
SEAL 1ST ASSEMBLY TOOL ES200/300	A22201020
MOUNTING BASE FOR SHAFT SEAL ES200/300	A22201022
ROTOR HOLDING TOOL ES200/300	A22201024
SEAL 2ND ASSEMBLY TOOL ES200/300	A22201026
SEAL 2ND ASSEMBLY ADDITIONAL TOOL ES200/300	A22201028
COMPLETE SET OF TOOLS for preventive maintenance ES200/300	A22201030
BEARING REMOVAL TOOL ES630	A22201032
MOUNTING BASE FOR BEARING REMOVAL ES630	A22201034
MOUNTING BASE FOR SEAL AND BEARING ES630	A22201036
SHAFT SEAL ASSEMBLY TOOL ES630	A22201038
COUPLING ASSEMBLY TOOL ES630	A22201040
BEARING 1ST ASSEMBLY TOOL ES630	A22201042
COMPLETE SET OF TOOLS for preventive maintenance ES630	A22201044

Service Spares

Product description	Order no:
SUCTION VALVE SPRING – ES65/ES100	A27102085
EXHAUST VALVE – ES65/ES100	A28706032
BOWEX COUPLING RING – ES65/ES100	A27103010
EXHAUST VALVE – ES200	A28706033
SUCTION VALVE SPRING – ES200/ES300	A27102086
SUCTION VALVE SPRING – ES630	A27102087
EXHAUST VALVE – ES300	A28706034
EXHAUST VALVE – ES630	A28706035
ADDITIONAL EXHAUST VALVE – ES630	A28706036
BOWEX PLASTIC RING – ES630	A27103011
BOWEX COUPLING RING – ES200/ES300	A27103012

Maintenance Kits

Product description	Order no:
Minor Service Kit ES65/ES100	A35245990
Minor Service Kit ES200	A35255990
Minor Service Kit ES300	A35260990
Minor Service Kit ES630	A35265990
Major Service Kit ES65	A35245995
Major Service Kit ES100	A35250995
Major Service Kit ES200	A35255995
Major Service Kit ES300	A35260995
Major Service Kit ES630	A35265995

ES Accessories

There are a range of accessories available for ES pumps.

Product description	Order no:
ES65/ES100 Oil Level Sensor	A35266810
ES65/ES100 Oil level & 120°C sensor	A35266811
ES65/ES100 Oil level sensor & PT100	A35266812
ES65/ES100 PT100 Temperature sensor	A35266813
ES200/ES300 Oil level sensor	A35277810
ES200/ES300 Oil level & 120°C sensor	A35277811
ES200/ES300 Oil level sensor & PT100	A35277812
ES200/ES300 PT100 Temperature sensor	A35277813
ES630 Oil level sensor	A35288810
ES630 Oil level & 120°C sensor	A35288811
ES630 Oil level sensor & PT100	A35288812
ES630 PT100 Temperature sensor	A35288813
ITO100 Inlet Catchpot	A44102000
ITO300 Inlet Catchpot	A44103000
ITO800 Inlet Catchpot	A44104000
ITM100 Inlet Dust Filter	A44302000
ITM300 Inlet Dust Filter	A44303000
ITM800 Inlet Dust Filter	A44304000

Service

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A. and a world-wide network of distributors.

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.

Order spare parts and accessories from your nearest Edwards company or distributor.

When you order, please state for each part required:

- Model and item number of your equipment.
- Serial number (if any).
- Item number and description of the part.

- ORDER TODAY -

Shop online at shop.edwardsvacuum.com

Contact our customer service team

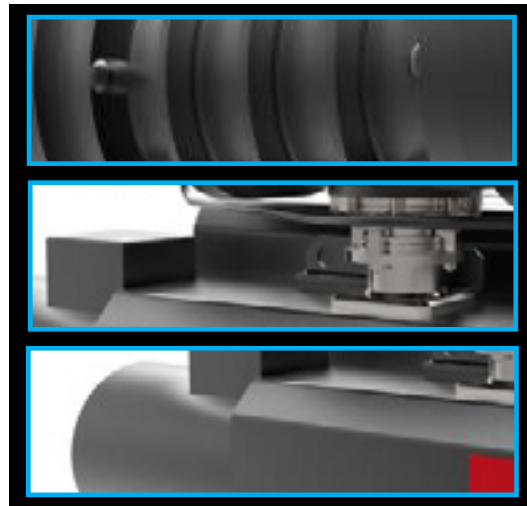
Medium and Large
Wet Pumps



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ES PUMP AND BOOSTER COMBINATIONS

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Edwards is able to offer a range of ES rotary vane pumps and mechanical boosters, complete with combination kits to mount the mechanical booster. The fitting of a mechanical booster to an ES rotary vane pump significantly increases the pumping speed and vacuum performance of your system, as well as increasing the ultimate vacuum attainable by approximately one decade of pressure. Edwards applications specialists are able to assist in the selection of the combination most suited to your requirements. Individual data sheets are available on request for all combinations showing the pumping speed of each combination together with an installation drawing to assist in the design of your system.



Features and Benefits

- The performance of ES pump is enhanced by the integration with our range of EH boosters to increase both performance and ultimate vacuum thus adaptable to a wide range of applications.
- The EH range of mechanical boosters (250-4200 m³h⁻¹, 150-2500 cfm), with their unique hydrokinetic drive allowing continuous operation from atmosphere to ultimate vacuum, cuts pump down times by up to 50%.
- They are available as fully assembled systemised unit ready to use. Alternatively connection kits can be supplied separately as a kit

Applications

- Heat Treatment
- Drying
- Coating
- General Industrial

Pump Range

- | | |
|-----------------|-----------------|
| - ES100/ EH250 | - ES300/ EH4200 |
| - ES100/ EH500 | - ES630/ EH1200 |
| - ES200/ EH500 | - ES630/ EH2600 |
| - ES200/ EH1200 | - ES630/ EH4200 |
| - ES300/ EH500 | |
| - ES300/ EH1200 | |
| - ES300/ EH2600 | |



Performance Curves

ES100 Combination

ES100



Pumping speed

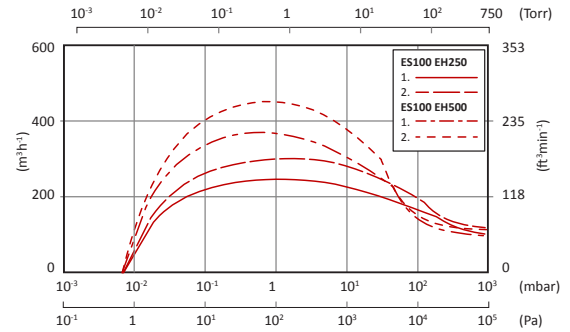
With gas ballast	
ES100/ EH250	0.07 mbar
ES100/ EH500	0.07 mbar
Without gas ballast	
ES100/ EH250	0.008 mbar
ES100/ EH500	0.008 mbar

Ordering information

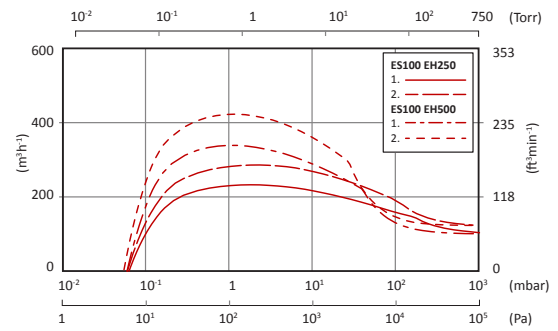
Product description

Please see ordering matrix at the end of this section

ES100 Performance Curve (without Gas ballast)



ES100 Performance Curve (with Gas ballast)



1. 50Hz
2. 60Hz

ES200 Combination

ES200



Pumping speed

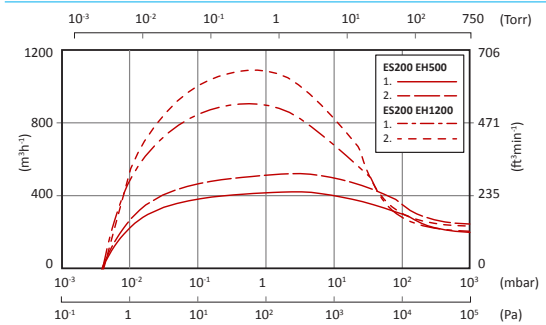
With gas ballast	
ES200/ EH500	0.04 mbar
ES200/ EH1200	0.04 mbar
Without gas ballast	
ES200/ EH500	0.006 mbar
ES200/ EH1200	0.006 mbar

Ordering information

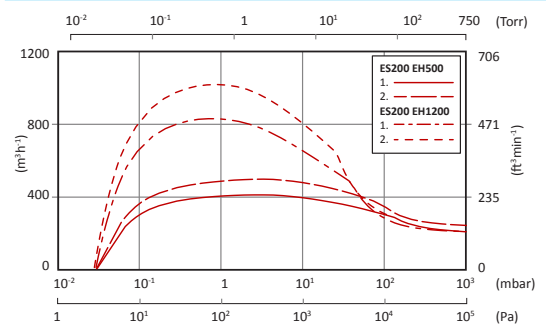
Product description

Please see ordering matrix at the end of this section

ES200 Performance Curve (without Gas ballast)

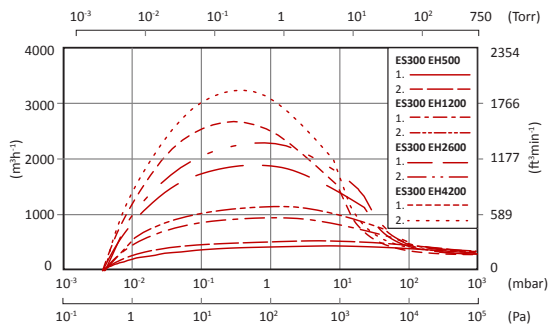


ES200 Performance Curve (with Gas ballast)

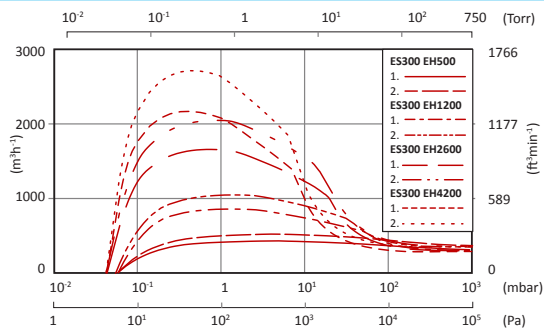


1. 50Hz
2. 60Hz

ES300 Performance Curve (without Gas ballast)



ES300 Performance Curve (with Gas ballast)



- 1. 50Hz
- 2. 60Hz

ES300

Pumping speed

With gas ballast	
ES300/ EH500	0.06 mbar
ES300/ EH1200	0.06 mbar
ES300/ EH2600	0.06 mbar
ES300/ EH4200	0.06 mbar
Without gas ballast	
ES300/ EH500	0.005 mbar
ES300/ EH1200	0.005 mbar
ES300/ EH2600	0.005 mbar
ES300/ EH4200	0.005 mbar

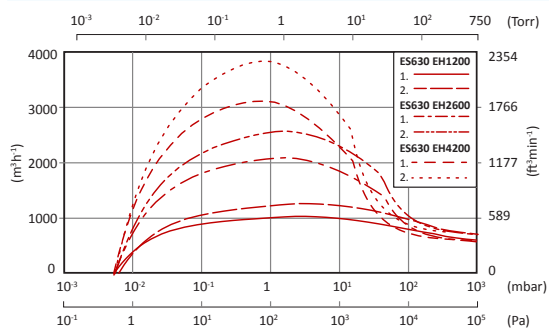


Ordering information

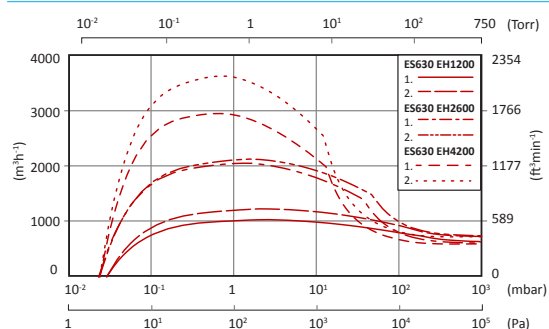
Product description

Please see ordering matrix at the end of this section

ES630 Performance Curve (without Gas ballast)



ES630 Performance Curve (with Gas ballast)



- 1. 50Hz
- 2. 60Hz

ES630

Pumping speed

With gas ballast	
ES630/ EH1200	0.04 mbar
ES630/ EH2600	0.04 mbar
ES630/ EH4200	0.04 mbar
Without gas ballast	
ES630/ EH1200	0.006 mbar
ES630/ EH2600	0.006 mbar
ES630/ EH4200	0.006 mbar



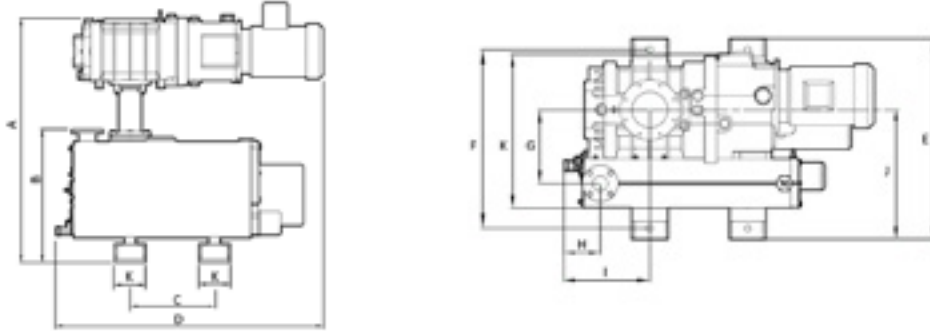
Ordering information

Product description

Please see ordering matrix at the end of this section

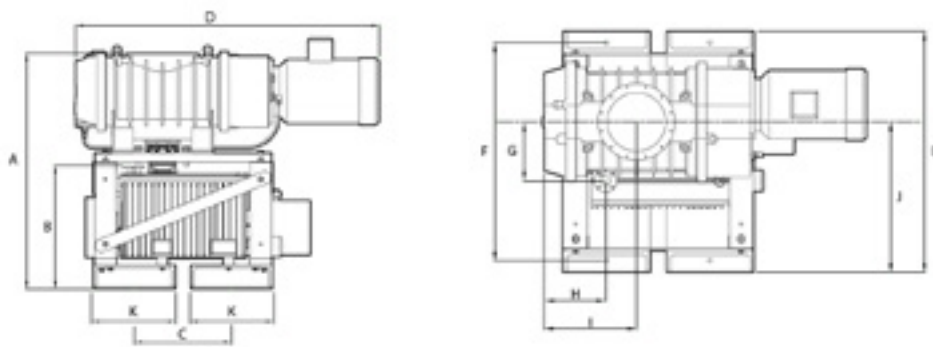
Dimensions

ES/EH combinations direct mount



mm (inches)	A	B	C	D	E	F	G	H	I	J	K
ES100/EH250	744 (29.29)	424 (16.69)	269 (10.59)	790 (31.1)	550 (21.65)	490 (19.29)	202 (7.95)	99 (3.9)	137 (5.39)	355 (13.98)	80 (3.14)
ES100/EH500	780 (30.71)	424 (16.69)	269 (10.59)	853 (33.58)	550 (21.65)	490 (19.29)	202 (7.95)	101 (3.98)	237 (9.33)	355 (13.98)	80 (3.14)
ES200/EH500	813 (32.01)	521 (20.51)	260 (10.24)	934 (36.77)	584 (22.99)	490 (19.29)	257 (10.12)	176 (6.93)	310 (12.2)	425 (16.73)	80 (3.14)
ES200/EH1200	758 (29.84)	521 (20.51)	260 (10.24)	979 (38.54)	615 (24.21)	490 (19.29)	257 (10.12)	176 (6.93)	310 (12.2)	425 (16.73)	80 (3.14)
ES300/EH500	812 (31.97)	521 (20.51)	307 (12.09)	1043 (41.06)	584 (22.99)	490 (19.29)	257 (10.12)	222 (8.74)	256 (10.08)	425 (16.73)	80 (3.14)
ES300/EH1200	758 (29.84)	521 (20.51)	307 (12.09)	1043 (41.06)	615 (24.21)	490 (19.29)	257 (10.12)	222 (8.74)	256 (10.08)	425 (16.73)	80 (3.14)
ES630/EH1200	1058 (41.57)	649 (25.55)	376 (14.8)	1580 (62.2)	772 (30.39)	620 (24.41)	367 (14.45)	375 (14.76)	522 (20.55)	582 (22.91)	80 (3.14)

ES/EH combinations frame mount



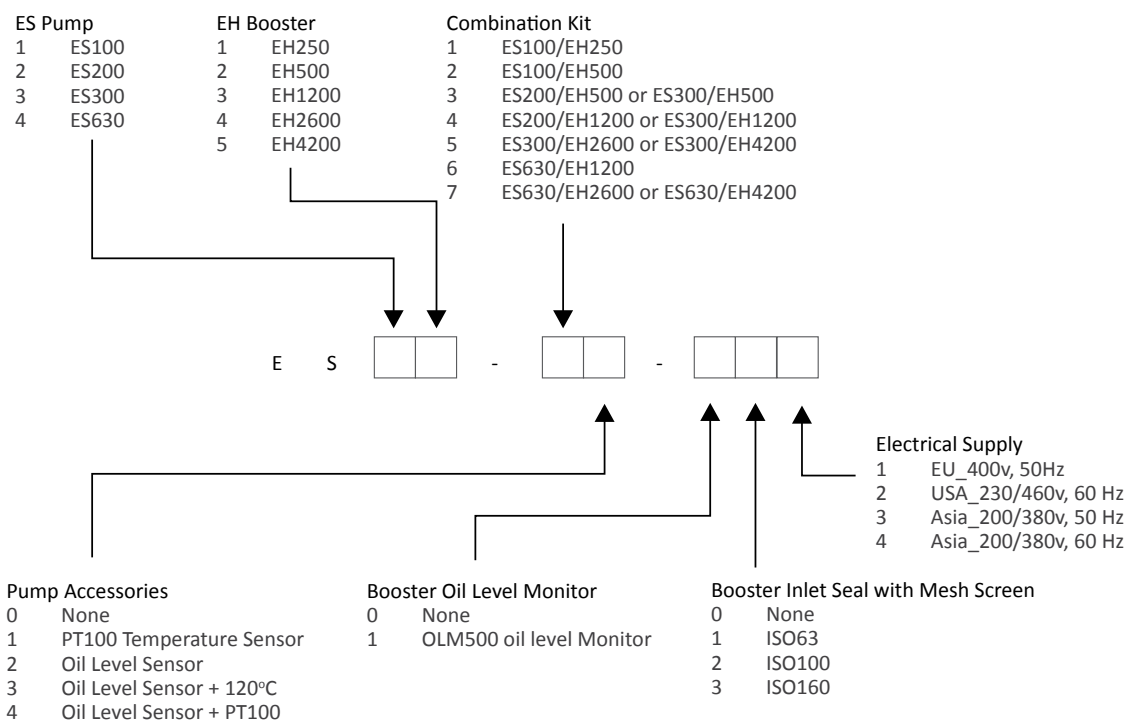
mm (inches)	A	B	C	D	E	F	G	H	I	J	K
ES300/EH2600	1091 (42.95)	573 (22.56)	450 (17.72)	1269 (49.96)	1050 (41.34)	950 (37.4)	257 (10.12)	222 (8.74)	356 (14.02)	655 (25.79)	345 (13.55)
ES300/EH4200	1091 (42.95)	573 (22.56)	450 (17.72)	1406 (55.35)	1050 (41.34)	950 (37.4)	257 (10.12)	268 (10.55)	402 (15.83)	655 (25.79)	345 (13.55)
ES630/EH2600	1218 (47.95)	701 (27.6)	513 (20.2)	1580 (62.2)	1180 (46.46)	1080 (42.52)	367 (14.45)	375 (14.76)	522 (20.55)	775 (30.51)	345 (13.55)
ES630/EH4200	1218 (47.95)	701 (27.6)	513 (20.2)	1580 (62.2)	1180 (46.46)	1080 (42.52)	367 (14.45)	375 (14.76)	522 (20.55)	775 (30.51)	345 (13.55)

Technical Data

Pump Type	Without Gas Ballast	With Gas Ballast
ES100/ EH250	0.008 mbar	0.07 mbar
ES100/ EH500	0.008 mbar	0.07 mbar
ES200/ EH500	0.006 mbar	0.04 mbar
ES200/ EH1200	0.006 mbar	0.04 mbar
ES300/ EH500	0.005 mbar	0.06 mbar
ES300/ EH1200	0.005 mbar	0.06 mbar
ES300/ EH2600	0.005 mbar	0.06 mbar
ES300/ EH4200	0.005 mbar	0.06 mbar
ES630/ EH1200	0.006 mbar	0.04 mbar
ES630/ EH2600	0.006 mbar	0.04 mbar
ES630/ EH4200	0.006 mbar	0.04 mbar
A-weighted sound pressure level*		
ES100/ EH250	71 dB(A)	
ES100/ EH500	71 dB(A)	
ES200/ EH500	72 dB(A)	
ES200/ EH1200	72 dB(A)	
ES300/ EH500	73 dB(A)	
ES300/ EH1200	73 dB(A)	
ES300/ EH2600	76 dB(A)	
ES300/ EH4200	76 dB(A)	
ES630/ EH1200	76 dB(A)	
ES630/ EH2600	78 dB(A)	
ES630/ EH4200	78 dB(A)	

*Noise level with 50 Hz supply at ultimate pressure, running at 60 Hz or at a higher inlet pressure will increase noise level

Ordering information



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E2M40 AND 80 OIL-SEALED ROTARY VANE PUMPS

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Edwards E2M series two stage oil sealed rotary vane vacuum pumps are renowned for their high ultimate vacuum, rapid pumping speeds, quiet operation and ability to handle water vapour. These direct drive rotary vane pumps are inherently compact and vibration free, and with their finger-proof fan and coupling housings they offer excellent operator protection.

A comprehensive range of accessories is available to allow use on a wide variety of vacuum applications.

Supplied with Ultragrade 70 Oil. Fomblin® must be purchased separately for PFPE prepared pumps E2MFX.



Features and Benefits

- **Reliability**
 - **Reliable and stable process** - effective lubrication even under high gas loads
- **Robust**
 - **No contamination of process** - oil and air suck-back protection
- **Performance**
 - **Long and trouble free life** - industrial roller bearings on drive shaft
- **Reassurance**
 - **Peace of mind** - tried, tested and industry standard for years
 - **Reliable and stable** - high vacuum performance

Applications

- Vacuum metallurgy processes
- Thin film coating technologies
- Pharmaceutical freeze drying
- Refrigeration and air conditioning system evacuation, drying, and backfilling

Pump Range

E2M40	E2M175
- E2M40	- E2M175
- E2M40FX	- E2M175FX
- E2M40T4	- E2M175T3
E2M80	E2M275
- E2M80	- E2M275
- E2M80FX	- E2M275T3
- E2M80T4	



Performance Curves

E2M40 Oil Sealed Rotary Pump

E2M40



Displacement

50Hz 42.5 m³h⁻¹/ 25 ft³min⁻¹

60Hz 50.5 m³h⁻¹/ 29.7 ft³min⁻¹

Speed (Pneurop)

50Hz 37 m³h⁻¹/ 21.8 ft³min⁻¹

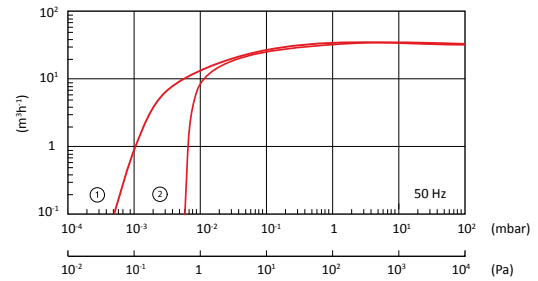
60Hz 44 m³h⁻¹/ 25.9 ft³min⁻¹

Ordering information

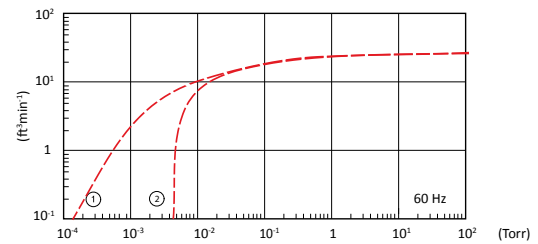
Product description	Order no:
E2M40 220-240 / 380-415V, 3-ph, 50Hz	A36401935
E2M40 208 - 230 / 440 - 460V, 3-ph, 60Hz	A36402982
E2M40 200/380V, 3-ph, 50/60Hz	A36401934
E2M40FX 220-240/380-415V, 3-ph,	A36411935
E2M40FX 208 - 230 / 440 - 460V, 3-ph 60Hz	A36412982
E2M40FX 200/380V, 3-ph, 50/60Hz	A36411934
E2M40T4 400V, 3-ph, 50Hz	A36418993

Please note that Fomblin® must be purchased separately for FX EM pumps

E2M40 Performance Curve



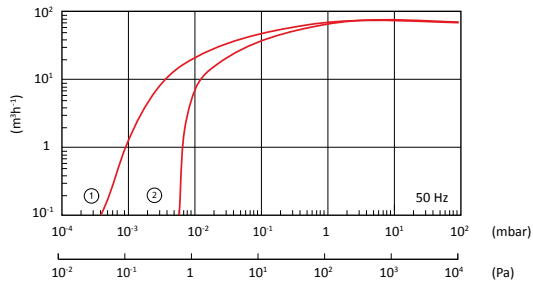
- 1 Without gas ballast
- 2 With gas ballast



- 1 Without gas ballast
- 2 With gas ballast

E2M80 Performance Curve

E2M80



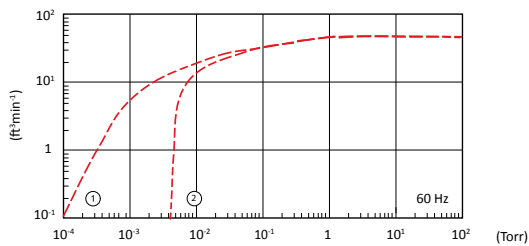
Displacement	
50Hz	80 m ³ h ⁻¹ / 47.1 ft ³ min ⁻¹
60Hz	96 m ³ h ⁻¹ / 56.5 ft ³ min ⁻¹
Speed (Pneurop)	
50Hz	74 m ³ h ⁻¹ / 43.6 ft ³ min ⁻¹
60Hz	90 m ³ h ⁻¹ / 53 ft ³ min ⁻¹



Ordering information

- 1 Without gas ballast
- 2 With gas ballast

Product description	Order no:
E2M80 220-240/380-415V, 3-ph, 50Hz	A36501935
E2M80 208 - 230 / 440 - 460V, 3-ph, 60Hz	A36502982
E2M80 200/380V, 3-ph, 50/60Hz	A36501934
E2M80FX 220-240/380-415V, 3-ph, 50Hz	A36511935
E2M80FX, 208 - 230 / 440 - 460V, 3-ph, 60Hz	A36512982
E2M80FX 200/380V, 3-ph, 50/60Hz	A36511934
E2M80T4 400V, 3-ph, 50Hz	A36518993



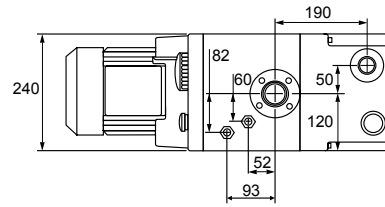
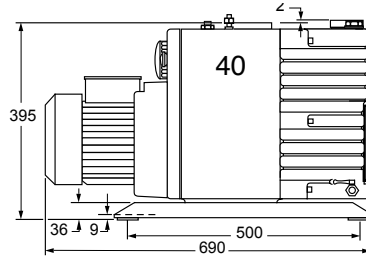
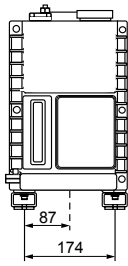
- 1 Without gas ballast
- 2 With gas ballast

Please note that Fomblin® must be purchased separately for FX EM pumps

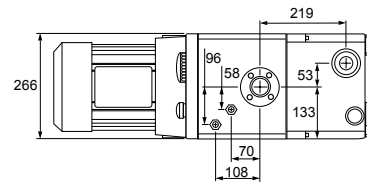
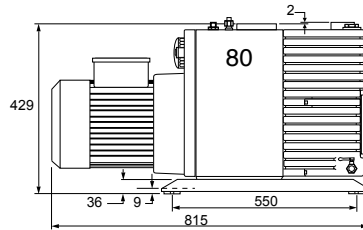
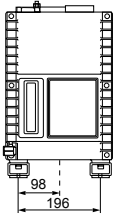


Dimensions

E2M40 Dimensions



E2M80 Dimensions



Technical Data



Units	E2M40	E2M80	
Displacement			
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	42.5/ 25	80/ 47.1
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	50.5/ 29.7	96/ 56.5
Speed (Pneurop)			
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	37/ 21.8	74/ 43.6
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	44/ 25.9	90/ 53
Number of stages		2	
Ultimate vacuum (total pressure)			
Without gas ballast	mbar/ Torr	1 x 10 ⁻³ / 7.7 x 10 ⁻⁴	
With gas ballast	mbar/ Torr	7 x 10 ⁻³ / 5.4 x 10 ⁻³	
Ultimate with Fomblin®			
Without gas ballast	mbar	1 x 10 ⁻²	
Inlet connection		ISO40	
Outlet connection		25 mm flange suitable for NW25	
Max outlet pressure		0.5 bar gauge	
Max inlet pressure for water vapour	mbar/ Torr	7/ 5.3	5/ 3.8
Max water vapour pumping rate	kg h ⁻¹ / lb h ⁻¹	0.2/ 0.4	0.3/ 0.7
Weight	kg/ lb	82/ 179	125/ 275
Motor protection rating		IP55	
Motor power			
50Hz	kW/ hp	1.1/ 1.5	2.2/ 3
60Hz	kW/ hp	1.5/ 2	3/ 4
Standard oil capacity			
maximum	litre	4.0	6.3
minimum	litre	2.2	4
PFPE oil capacity			
maximum	litre	4.0	
minimum	litre	2.2	
Recommended oil		Ultragrade 70	
Noise level	dB(A)	65	70



Service, Spares and Accessories

EM Accessories

Product description	Order no:
ITF100 Inlet Dust Filter (7kg/15 lb)*	A44202000
ITM100 High Capacity Dust Filter (7.2 kg/16 lb)*	A44302000
ITC100 Inlet Chemical Trap*	A44402000
ITO100 Inlet Catchpot, 5.47 Litres/5.2 qt (6.8kg/15lb)*	A44102000

Maintenance Kits

Product description	Order no:
E2M40	
Clean and Overhaul Kit	A34401131
Blade Kit	A36401050
Major Service Kit	A36401814
Interior Assembly	A36401100
E2M80	
Interior Assembly	A36501100
Clean and Overhaul Kit	A34501131
Blade Kit	A36501050
Major Service Kit	A36501814
All models	
Fine oil-filter	A22304041
Common Seals Kit	A34401820

Service Kits

Product description	Order no:
E2M40	
Spares Kit C&O E1/2M40 HC/F	A34401131
Spares Kit Blade E1M40	A34401050
Spares Kit Blade E2M40	A36401050
Spares Kit Major E1M40	A34401814
Spares Kit Major Service E2M40	A36401814
E2M80	
Spares Kit C&O E1/2M80 HC/F	A34501131
Spares Kit Blade E2M80	A36501050
Spares Kit Blade E1M80	A34501050
Spares Kit Major Service E1M80	A34501814
Spares Kit Major Service E2M80	A36501814

CP Outlet Catchpots

Product description	Order no:
Model CP100 Outlet Catchpot, 6.5 Litre/6.2 qt (12kg/26.5lb)*	A46103000

External Oil Filter

Product description	Order no:
External oil filter, without connection kit	
EOF100A External Oil Filter	A50024000
EOF100M External Oil Filter	A50025000
External oil filter, with E1M/E2M175 and 275 connection kit	
EOF300A External Oil Filter	A50003000
EOF300M External Oil Filter	A50023000
Connection kit for E1M/E2M40 and E1M/E2M80	
EOF100A and M Connection Kit	A50039000
EOF300A and M Connection Kit	A36401020
Activated Earth element	
Activated Earth Element for EOF100A	A22304043
Activated Earth Element for EOF300A	A22304033
Dust filter element	
Mechanical Filter Element for EOF100M	A22304044
Mechanical Filter Element for EOF300M	A22304042

MF Outlet Mist Filters

Product description	Order no:
MF100 Mist Filter (12kg/26.5lb)*	A46203000
Clean Application Oil Return Kit (E1M40 - E2M80)	
	A50004000

Gas Ballast Adaptor

Product description	Order no:
EBV300D (1.0 kg) 220-240V s.ph 50/60Hz	A50017930

Oil-Level Monitor

Product description	Order no:
OLM100 Oil Level Monitor	A50433000

Vibration Isolator

Product description	Order no:
Vibration Isolators (set of 4) *for E2M40/80	A24801405

Service

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A. and a world-wide network of distributors.

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.

Order spare parts and accessories from your nearest Edwards company or distributor.

When you order, please state for each part required:

- Model and item number of your equipment.
- Serial number (if any).
- Item number and description of the part.

- ORDER TODAY -

Shop online at shop.edwardsvacuum.com

Contact our customer service team

Medium and Large
Wet Pumps



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E2M175 AND 275 OIL-SEALED ROTARY VANE PUMPS

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Edwards E2M175/275 series two stage oil sealed rotary vane vacuum pumps are renowned for their high ultimate vacuum, rapid pumping speeds, quiet operation and ability to handle water vapour. These direct drive rotary vane pumps are inherently compact and vibration free, and with their finger-proof fan and coupling housings they offer excellent operator protection. This pump is suitable for most duties and is safe to handle non-flammable gases and vapours within the normal operating parameters of the pump. Supplied with Ultragrade 70 Oil. Fomblin® must be purchased separately for PFPE prepared pumps E2M175FX.



Features and Benefits

- **Reliability**
 - **Reliable and stable process** - effective lubrication even under high gas loads
- **Robust**
 - **No contamination of process** - oil and air suck-back protection
- **Performance**
 - **Long and trouble free life** - industrial roller bearings on drive shaft
- **Reassurance**
 - **Peace of mind** - tried, tested and industry standard for years
 - **Reliable and stable** - high vacuum performance

Applications

- Vacuum metallurgy processes
- Thin film coating technologies
- Pharmaceutical freeze drying
- Refrigeration and air conditioning system evacuation, drying, and backfilling

Pump Range

E2M175

- E2M175
- E2M175FX
- E2M175T3

E2M275

- E2M275
- E2M275T3

Performance Curves

E2M175 Oil Sealed Rotary Pump

E2M175

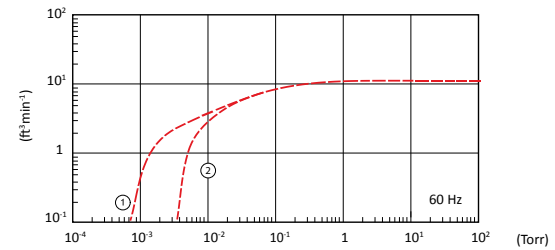
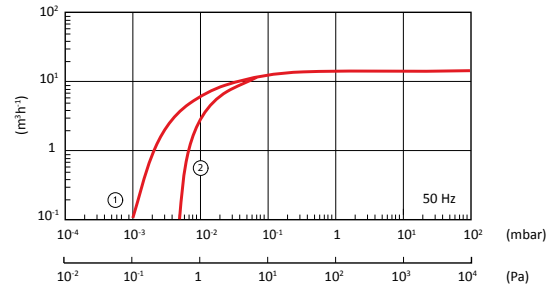


Displacement	
50Hz	178 m ³ h ⁻¹ / 105 ft ³ min ⁻¹
60Hz	214 m ³ h ⁻¹ / 126 ft ³ min ⁻¹
Speed (Pneurop)	
50Hz	160 m ³ h ⁻¹ / 94 ft ³ min ⁻¹
60Hz	196 m ³ h ⁻¹ / 115 ft ³ min ⁻¹

Ordering information

Product description	Order no:
E2M175 220-240/380-415V, 3-ph, 50Hz	A36601935
E2M175 208-230 / 440 - 460V, 3 ph 60 Hz	A36603982
E2M175 200/380V, 3-ph, 50/60Hz	A36601934
E2M175FX 220-240/380-415V, 3-ph, 50Hz	A36615935
E2M175FX 208-230 / 440 - 460V, 3 ph 60 Hz	A36616982
E2M175T3 220-240/380-415V, 3-ph, 50Hz	A36618993

E2M175 Performance Curve



- 1 Without gas ballast
- 2 With gas ballast

E2M275 Oil Sealed Rotary Pump

E2M275

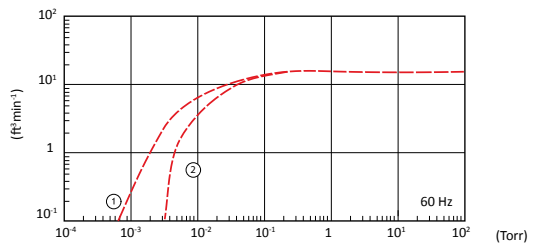
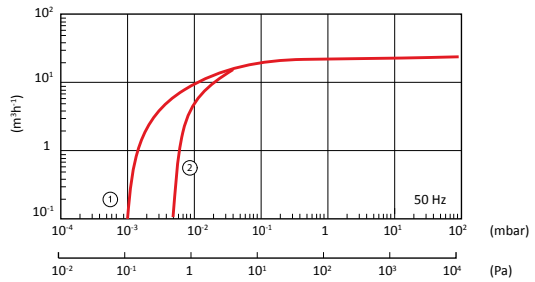


Displacement	
50Hz	292 m ³ h ⁻¹ / 172 ft ³ min ⁻¹
60Hz	350 m ³ h ⁻¹ / 206 ft ³ min ⁻¹
Speed (Pneurop)	
50Hz	255 m ³ h ⁻¹ / 150 ft ³ min ⁻¹
60Hz	306 m ³ h ⁻¹ / 180 ft ³ min ⁻¹

Ordering information

Product description	Order no:
E2M275 220-240/380-415V, 3-ph, 50Hz	A36701935
E2M275 208-230 / 440-460V, 3-ph, 60Hz	A36703982
E2M275 200/380V, 3-ph, 50/60Hz	A36701934
E2M275T3 400V, 3-ph, 50Hz	A36718993

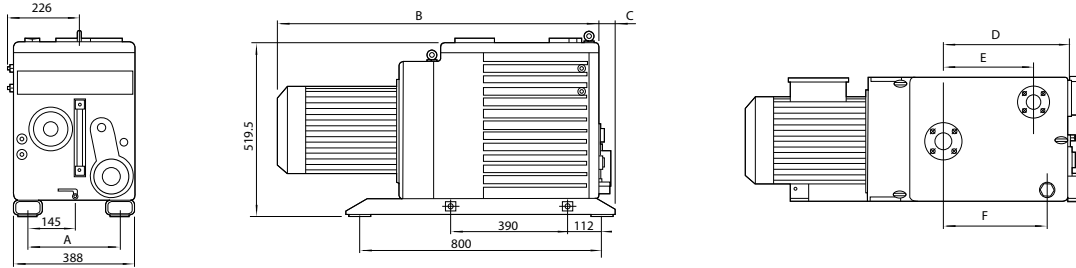
E2M275 Performance Curve



- 1 Without gas ballast
- 2 With gas ballast

Dimensions

E2M175/ 275 Dimensions



	A	B	C	D	E	F
E2M175	290 (11.42)	1085 (42.72)	55 (2.17)	329 (12.95)	196 (7.72)	237(9.33)
E2M275	290 (11.42)	1130 (44.49)	55 (2.17)	425 (16.73)	294 (11.58)	333 (13.11)



Technical Data



Units		E2M175	E2M275
Displacement			
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	178/ 105	292/ 172
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	214/ 126	350 / 206
Speed (Pneurop)			
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	160/ 94	255/ 150
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	196/ 115	306/ 180
Number of stages		2	
Ultimate vacuum (total pressure)			
Without gas ballast	mbar/ Torr	1 x 10 ⁻³ / 7.7 x 10 ⁻⁴	
With gas ballast	mbar/ Torr	7 x 10 ⁻³ / 5.4 x 10 ⁻³	5.0 x 10 ⁻³ / 3.8 x 10 ⁻³
Ultimate with Fomblin®			
Without gas ballast	mbar	1 x 10 ⁻²	-
Inlet connection		ISO63 blank flange with seal	
Outlet connection		ISO40 flange centre tapped	
Max outlet pressure		0.5 bar gauge	
Max inlet pressure for water vapour	mbar/ Torr	20/ 15	12/ 9
Max water vapour pumping rate	kg h ⁻¹ / lb h ⁻¹	0.3/ 0.7	2.3/ 5.1
Weight	kg/ lb	230/ 508	253/ 558
Motor protection rating		IP44	
Motor power			
50Hz	kW/ hp	5.5/ 7.5	7.5/ 10
60Hz	kW/ hp	6.5/ 8.5	8.5/ 11
Standard oil capacity			
maximum	litre/ qt	25/ 26	28/ 29.5
minimum	litre/ qt	16/ 17	19/ 20
PFPE oil capacity			
Maximum	litre/ qt	18/ 19	-
Minimum	litre/ qt	6.5/ 6.9	-
Recommended oil		Ultragrade 70	
Noise level	dB(A)	75	
Water cooling requirement	lmin ⁻¹	1.3	2

Service, Spares and Accessories

EM Accessories

Product description	Order no:
ITF300 Inlet Dust Filter (8.3kg/18 lb)†	A44203000
ITM300 High Capacity Dust Filter (8.7kg/19 lb)†	A44303000
ITC300 Inlet Chemical Trap†	A44403000
ITO300 Inlet Catchpot, 7.87 Litres/7.5 qt (8kg/18lb)†	A44103000
Model CP300 Outlet Catchpot, 23 Litres/22 qt (28kg/62lb) †	A46104000
TCV300 (1.2 kg/2.6 lb)	A50001000

Maintenance Kits

Product description	Order no:
E2M175	
Maintenance Kit	A36601830
Seals Kit	A36601840
Complete Interior Assembly	A36601100
E2M275	
Maintenance Kit	A36701830
Seals Kit	A36601840
Complete Interior Assembly	A36701100

Spares Kits

Product description	Order no:
E2M175	
Spares Kit C&O E1M175/275S	A34601131
Spares Kit C&O E2M175/275	A36601131
Service Interior Assy E1M175	A34601100
Service Interior Assy E2M175	A36601100
Spares Kit Blade E2M175	A36601134
Spares Kit Blade Springless E1M175	A34601134
Spares Kit Major E1M175S	A34601831
Spares Kit Major Service E2M175	A36601831
E2M275	
Spares Kit C&O E1M175/275S	A34601131
Spares Kit C&O E2M175/275	A36601131
Service Interior Assy E1M275	A34701100
Service Interior Assy E2M275	A36701100
Spares Kit Blade E2M275	A36701134
Spares Kit Blade Springless E1M275	A34701134
Spares Kit Major E1M275S	A34701831
Spares Kit Major Service E2M275	A36701831



External Oil Filter

Product description	Order no:
External oil filter, with E1M/E2M175 and 275 connection kit	
EOF300A External Oil Filter	A50003000
EOF300M External Oil Filter	A50023000
Connection kit for E1M/E2M40 and E1M/E2M80	
EOF300A and M Connection Kit	A36401020
Activated Earth element	
Activated Earth Element for EOF300A	A22304033
Dust filter element	
Mechanical Filter Element for EOF300M	A22304042

MF Outlet Mist Filters

Product description	Order no:
MF300 Mist Filter (28kg/62lb)*	A46203000
Clean Application Oil Return Kit (E1M175 - E2M275)	A50005000

Solenoid-Operated Gas-Ballast Control Valve

Product description	Order no:
EBV300D (1.0 kg) 220-240V s.ph 50/60Hz	A50017930

Vibration Isolator

Product description	Order no:
Vibration Isolators (set of 4) *for E2M175/275	A24801406

Service

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A. and a world-wide network of distributors.

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.

Order spare parts and accessories from your nearest Edwards company or distributor.

When you order, please state for each part required:

- Model and item number of your equipment.
- Serial number (if any).
- Item number and description of the part.

EM PUMP AND EH BOOSTER COMBINATIONS

R	C								
---	---	--	--	--	--	--	--	--	--

Rotary Pump
(Includes pump, frame and coupling components)

- 2 E2M40 - with Ultragrade Oil
- 3 E2M40 - with PFPE Oil
- 5 E2M80 - with Ultragrade Oil
- 6 E2M80 - with PFPE Oil
- 8 E2M175 - with Ultragrade Oil
- 9 E2M175 - with PFPE Oil
- B E2M275 - with Ultragrade Oil
- D E2M40FX - PFPE prepared No Oil
- E E2M80FX - PFPE prepared No Oil
- F E2M175FX - PFPE prepared No Oil

Booster Pump
(Includes booster and coupling components)

- 1 EH250 - with Ultragrade Oil
- 2 EH250 - with PFPE Oil
- 3 EH500 - with Ultragrade Oil
- 4 EH500 - with PFPE Oil
- 5 EH1200 - with Ultragrade Oil
- 6 EH1200 - with PFPE Oil
- 7 EH2600 - with Ultragrade Oil

Mist Filter

- 0 No Mist Filtr
- 1 MF100
- 2 MF100AE
- 3 MF300
- 4 MF100 with clean Oil Return Kit
- 5 MF100AE with clean Oil Return Kit
- 6 MF300 with clean Oil Return Kit

Vibration Isolators

- 0 No vibration isolators
- 1 Vibration isolators – small
- 2 Vibration isolators – large

Voltage

- 1 EU_400v, 50Hz
- 2 USA_460v, 60 Hz
- 3 Japan/Korea_200/380v, 60Hz
- 4 Japan/China_200/380v, 50Hz
- 5 USA_230v, 60 Hz

Oil Level Monitor

- 0 No oil level monitor
- 1 Oil level monitor – rotary pump only
- 2 Oil level monitor – booster pump only
- 3 Oil level monitors – both pumps

On-line Starter

- 0 No on-line starter
- 1 Starter Box E2M40 / E2M80
- 2 Starter Box E2M175 / E2M275

Oil Filtration (Includes connection kit)

- 0 No oil filtration
- 1 EOF100A
- 2 EOF100M
- 3 EOF300A
- 4 EOF300M

Note: Please copy the link: <http://edwebid3.edwardshighvacuum.net/Edconfigurator/index.aspx> and order your pump and booster combination.



- ORDER TODAY -

Shop online at shop.edwardsvacuum.com

Contact our customer service team

Medium and Large
Wet Pumps

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STOKES MICROVAC SERIES OIL SEALED ROTARY PISTON PUMPS MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



The Stokes Microvac rotary piston pump has set the standard for performance, efficiency, reliability and repair ability in the industry for over 80 years. The Stokes Microvac J series rotary piston pump has been improved, upgraded, and fine-tuned to deliver even better dependability and productivity combined with minimal maintenance and process downtime. The integral oil distribution system eliminates external piping and delivers leak-free operation in a stylized design. A stiffer motor mounting platform cuts flexibility to minimise motor belt wear. A stylized oil reservoir cover and side cover 'O' rings improve sealing to eliminate oil leakage. An integral gas ballast valve built into the side cover allows quick adaptation to automatic gas ballast. A wide range of versatile accessories are available along with the ability to integrate with a range of mechanical boosters making the Stokes Microvac easily adaptable to suit your application and pumping requirements.



Features and Benefits

- **Reliable**
 - Over 80 years of time tested proven performance with experienced service and technical support
 - **Dependability** - low rotational speed enables longest pump life cycle
- **Robust**
 - **Easy on-site maintenance** - robust simple mechanism for high reliability and ease of rebuild
- **Flexible**
 - **Configured for you** - choice of pumping combinations available with a variety of boosters
- **Reassurance**
 - **Up to date technology** - continued investment in design and technology improvements
 - **No unplanned downtime** - worry free pumping backed by full warranty and after sales support

Application

- Automotive
- General applications
- Metallurgy
- Vacuum coating
- Vacuum melting
- Chemical processing
- Heat treatment
- Leak detection
- PET processing
- Pharmaceuticals
- Transformer drying and cable fluid conditioning

Pump Range

- Stokes microvac
- 212J
 - 412J
 - 612J

Performance Curves

Stokes Microvac Model 212J

212J



Pumping Speed

234 m³h⁻¹
(138 ft³min⁻¹)

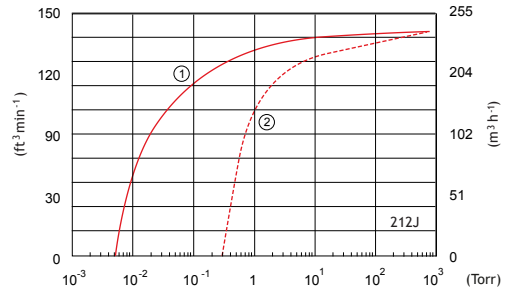
Displacement (swept volume)

255 m³h⁻¹
(150 ft³min⁻¹)

Ordering information

Product description	Order no:
212J 230/460V, 3Ø, 60Hz (230/460V Coil)	900-212-014
212J 230/460V 3 PH 60Hz (230/460V Coil) with Water Miser	970-212-014
212J 400V, 3-ph, 50Hz, IEC motor, 380V Coil (CE compliant)	900212014501
212J 400V, 3-ph, 50Hz, IEC motor, 415V Coil (CE compliant)	900212014502
212J 400V, 3-ph, 50Hz, IEC motor, 380V Coil with Water Miser (CE compliant)	900212014503
212J 400V, 3-ph, 50Hz, IEC motor 415V Coil with Water Miser (CE compliant)	900212014504

212J Performance Curve



- 1 Without gas ballast
- 2 With gas ballast

Stokes Microvac Model 412J

412J



Pumping Speed

422 m³h⁻¹
(260 ft³min⁻¹)

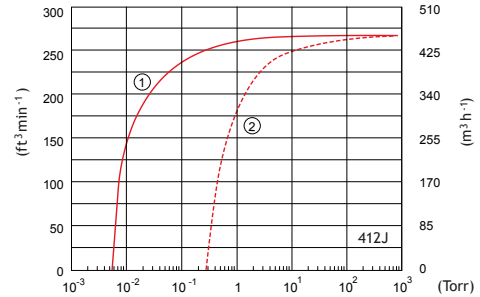
Displacement (swept volume)

510 m³h⁻¹
(300 ft³min⁻¹)

Ordering information

Product description	Order no:
412J 230/460V, 3Ø, 60Hz (230/460V Coil)	900-412-014
412J 230/460V 3 PH 60Hz (230/460V Coil) with Water Miser	970-412-014
412J 400V, 3-ph, 50Hz, IEC motor 380V Coil (CE compliant)	900412014501
412J 400V, 3-ph, 50Hz, IEC motor 415V Coil (CE compliant)	900412014502
412J 400V, 3-ph, 50Hz, IEC motor, 380V Coil with Water Miser (CE compliant)	900412014503
412J 400V, 3-ph, 50Hz, IEC motor 415V Coil with Water Miser (CE compliant)	900412014504

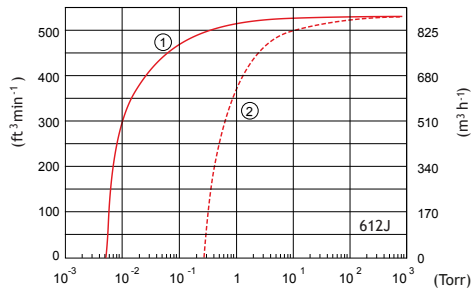
412J Performance Curve



- 1 Without gas ballast
- 2 With gas ballast

612J Performance Curve

612J



Pumping Speed

884 m³h⁻¹
 (520 ft³min⁻¹)

Displacement (swept volume)

1020 m³h⁻¹
 (600 ft³min⁻¹)



Ordering information

- 1 Without gas ballast
- 2 With gas ballast

Product description

612J 230/460V, 3-ph, 60Hz (230/460V Coil)

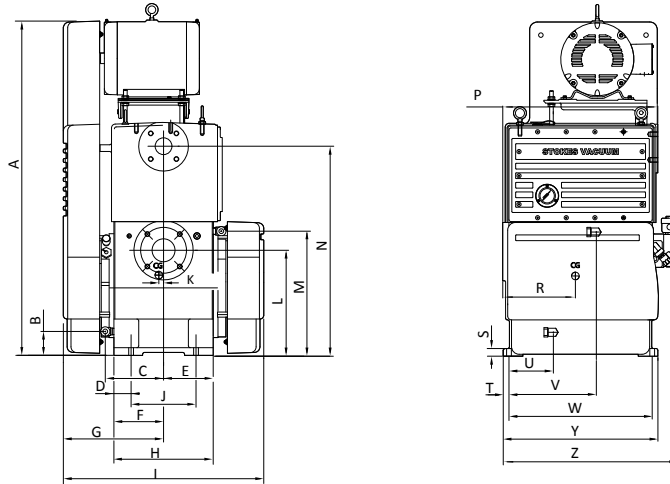
Order no:

900-612-014



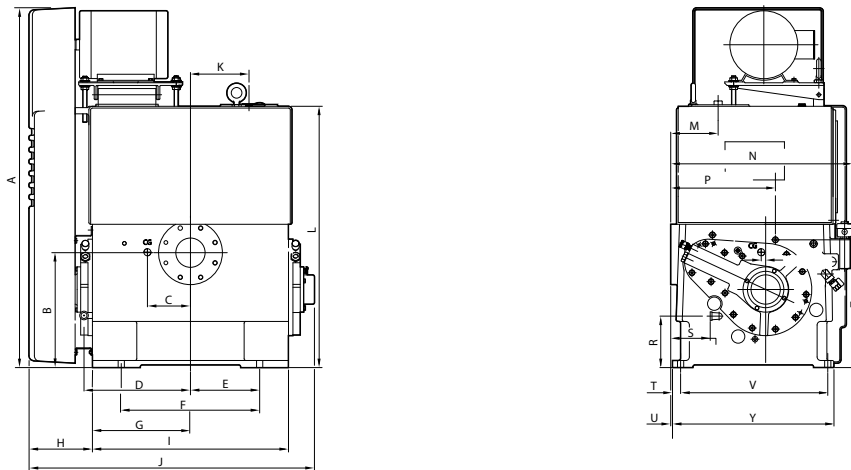
Dimensions

Stokes 212J Dimensions



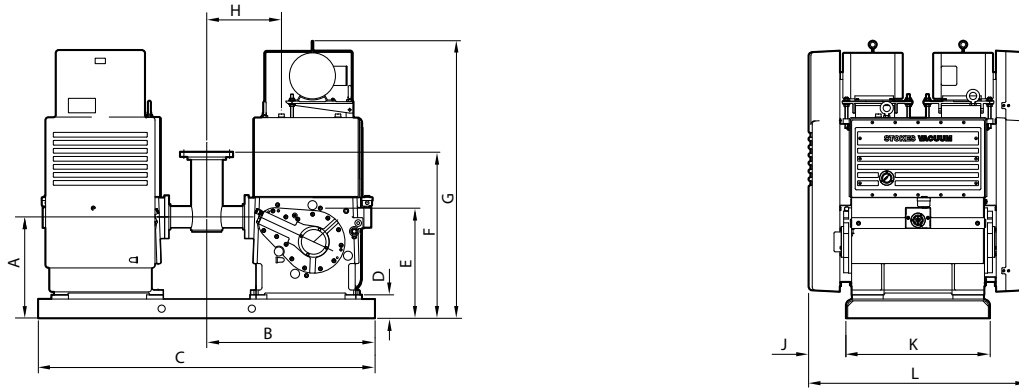
A	B	C	D	E	F	G	H	I	J	K	L
1111	79	194	57	192	165	333	330	667	216	16	349
M	N	P	R	S	T	U	V	W	Y	Z	
413	695	516	241	25	19	148	291	476	514	581	

Stokes 412J Dimensions



A	B	C	D	E	F	G	H	I	J	K	L
1289	411	154	381	248	495	351	229	702	1022	210	940
M	N	P	R	S	T	U	V	Y	Z		
168	651	375	184	141	29	6	527	578	457		

Stokes 612J Dimensions



A	B	C	D	E	F	G	H	J	K	L
535	889	1778	124	581	876	1464	394	197	762	1156

Technical Data



	Units	212J	412J	612J
Displacement (swept volume)				
	m ³ h ⁻¹ / ft ³ min ⁻¹	255 / 150	510 / 300	1020 / 600
Pumping Speed				
	m ³ h ⁻¹ / ft ³ min ⁻¹	234 / 138	442 / 260	884 / 520
Ultimate vacuum (total pressure)				
without gas ballast	mbar / Torr	<3.3x10 ⁻² / <2.5x10 ⁻²		
with gas ballast	mbar / Torr	<2.6x10 ⁻² / <2x10 ⁻²	<2.6x10 ⁻¹ / <2x10 ⁻¹	
Motor size (TEFC)				
50Hz	kW IEC (CE variant)	5.5	11	11 (x2)
60Hz	hp TEFC	7.5	10	10 (x2)
Motor speed	rpm	1800		
Inlet connection	inch ASA/ANSI flange	3	4	6
Exhaust connection		2 inch ASA/ANSI flange or 2 inch NPT	3 inch ASA/ANSI flange or 3 inch NPT	2 x 3 inch ASA/ANSI flange or 3 inch NPT
Water inlet/outlet connection	inch NPT	½	½	2 x ½
Recommended cooling flow @ 85°C / 30°F	lmin ⁻¹ / galmin ⁻¹	5.7 / 1.5	7.6 / 1.5	7.6 / 1.5 (X2)
Water vapour pumping rate	kg h ⁻¹ / 11 lb h ⁻¹	5	10.45 / 23	20.9 / 46
Oil capacity	litre / gal	15 / 4	46 / 12	92 / 24
Recommended oil		V lube F	V lube F	V lube F
Noise	dB(A)	<77	<83	<85
Weight	kg / lbs	431 / 950	794 / 1750	1724 / 3800

Service, Spares and Accessories

Water Miser

Features & Benefits

- Saves cooling water, improves efficiency
- Remote bulb temperature sensor in oil reservoir of vacuum pump
- Throttles valve on cooling water to control oil temperature
- Fits most water cooled vacuum pumps

Ordering Information

Product Description	For Pump	Order no:
Water Miser	149H-612J	900-412-124

Gas Ballast Silencer

Features & Benefits

- Cuts noise level
- Simple thread-in unit reduces noise level
- Filters gas ballast intake air

Ordering Information

Product Description	For Pump	Order no:
151 Series Gas Ballast Silencer/Filter # Required		
1	146H, 148H, 149H/S	900-151-001
1	212J	900-151-002
2 or 4	412J / 612J	900-151-002

Min-Max Cooler

The Edwards Model 170-116 mini-max compact cooler provides closed circuit cooling specially designed for mobile pumping systems. It includes pump, radiator, fan, motor (115/60/1), on-off switch, connection kit for the microvac pumps, and has a cooling capacity of 14000 BTU/hr. The mini-max cooler is ideal when cooling water is not convenient or clean enough to ensure peak performance.

Technical Data

For use with Model 149, 212 & 412 Rotary Piston Pumps	
Motor	1/4 hp (Pump and Fan)
Motor Voltage	115 V, 1-ph, 60 Hz
	230 V, 1-ph, 60 Hz
Cooling Capacity	14000 BTU/hour
Hose Length	5 feet
Reservoir Tank Capacity	3 gallons
Overall Dimensions	12 1/4" W x 23 1/4" L x 13 1/4" H
Weight	50 lbs

Ordering Information

Product Description	Order no:
Minimax Cooling System	900-170-116
Includes: Pump, Radiator, Fan, Motors, On-Off Switch, Piping, Wiring and Hoses.	

Oil Mist Separators

The 291 series oil mist separators are high performance air/oil coalescing separators that will virtually eliminate all liquids and solids from a gas stream. These units produce exhaust liquid levels as low as 0.05 PPMW and solids removal in excess of 99.79% efficiency for particulate as small as 0.3 micron.

Features & Benefits

- Clean pump exhaust, saves oil
- Two-stage design removes oil smog and traps particles as small as 0.3 microns
- Standard and heavy models available

Heavy Duty Oil Mist Filter

Heavy-duty oil mist separators are designed to handle the most severe oil exhaust situations from rotary oil sealed mechanical pumps. For true measure of efficiency, it is important to go beyond the weight to consider the actual number of particles collected. The heavy-duty oil mist separators efficiency by weight approaches 100% and total particle collection 97.8%. Edwards guarantees to collect and remove the stated percentage of particles by size, not by weight alone. The HD mist separator will effectively prevent fume emissions unlike existing separators that do not remove the sub micron particles.

Ordering Information

Product Description	For Pump	CFM	Replacement Elements	Order no:
Oil Mist Separators with Fiberglass Element				
291 - 30S	146H		085-021-473	900-291-021
291-50S	148H		085-021-474	900-291-022
291-100S	149H		085-021-475	900-291-023
291-150S	212H		085-052-035	900-291-024
291-150J	212J only		085-052-263	900-291-J24
291-300S	412H, 612H		085-052-036	900-291-025
291-300J	412J only		085-052-264	900-291-J25
291-750MB	612MB		085-021-478	900-291-027
Oil Mist Separator with Polypropylene Element				
291-30SO	146H		085-039-836	900-291-031
291-50SO	148H		085-039-837	900-291-032
291-100SO	149H		085-039-838	900-291-033
291-150SO	212H		085-039-839	900-291-034
291-300SO	412H, 612H		085-039840	900-291-035
291-750SO	612MB		085-039-841	900-291-036
Heavy Duty Oil Mist Separators				
291- 150HD	212H and smaller	150	085-038-239	900-291-048
291-300HD	412H	300	085-038-125	900-910-049
291-600HD	612H	600	085-038-226	900-291-050
291-1000HD	Combinations	1000	085-044-934	900-291-054
291-1500HD	Combinations	1500	085045429	900291055

Oil Reservoir Heater

Edwards model 212 and 412 oil reservoir heaters are recommended for pre-heating oil in the reservoir prior to pump start up at temperatures below 55 °F. Below 1 Torr., it will help maintain the oil at a temperature high enough to prevent condensation of water vapour in the oil when running with full gas ballast. The 212 and 412 oil reservoir heaters consist of an immersion heater to be inserted into the oil reservoir and an over-temperature switch with sensing bulb to control power to the heater. The heater arrangement can be factory or field installed.

Ordering Information

Product Description	For Pump	Order no:
Oil Reservoir Heater	600w 120v	085-034-331

Vacuum Break Solenoid

Features & Benefits

- 2-way 240 V 3/8 inch FNPT
- 2-way 110 V 3/8 inch FNPT

Ordering Information

Product Description	For Pump	Order no:
Vacuum Break Solenoid	All 240 V	085-046-623
	All 110 V	085-046-998

Gask-O-Seal

Features & Benefits

- For tight joint seals
- Combination anodised aluminium retainer with Buna-N seals
- Range to 0.0001 microns

Ordering Information

Product Description	Order no:
Gask-O-Seal, Pipe Size (inch)	
1.5	900-318-005
2	900-318-006
3	900-318-007
4	900-318-008
6	900-318-010
8	900-318-011
10	900-318-012
12	900-318-013
14	900-318-014
16	900-318-015
18	900-318-016
20	900-318-017
24	900-318-018

Flex Hose

The model 820 high vacuum hose from Edwards is an all-plastic hose with aluminium flanges tough enough for easy handling streamline use. This rugged, reliable hose is suitable for use in a temperature range of -50 °F to 150 °F, tested to 10⁻² Torr absolute pressure

Ordering Information

Product Description	For Pump	Order no:
Series 820 High Vacuum Hose		
Size		
2" x 20' long	085-100-28	900-820-220
3" x 20' long	023-001-141	900-820-220
4" x 20' long	023-001-129	900-820-208

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Shop online at shop.edwardsvacuum.com

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Medium and Large
Wet Pumps

Flex Connectors

Model 315 flexible connectors feature rugged type 321 stainless steel bellows to sharply ease potential alignment and thermal expansion problems, while significantly reducing vibration transmissions from other equipment. They are designed to provide years of trouble-free service.

Features & Benefits

- Free-formed bellows minimise stress concentration
- Solve alignment problems
- Convoluted bellows of AISI 321 stainless steel
- ASA standard carbon steel flanges
- Sizes from 1.5 inch to 24 inch

Ordering Information

Product Description	Order no:
Type Standard: Flexible connector, vacuum service, convoluted, stainless steel bellows, carbon steel pipe flange, 150# ASA – both ends – 63 micro finish, Mass spec tested.	
Pipe Size (inch)	
1 -1/2	900-315-005
2	900-315-006
3	900-315-008
4	900-315-009
6	900-315-011
8	900-315-012
10	900-315-013
12	900-315-014

Type CE: Flexible connector, vacuum service, convoluted, stainless steel bellows, carbon steel weld band – one end – to fit over ASA pipe for lap weld, carbon steel pipe flange, 150# ASA – one end – 63 micro finish, Mass spec tested.

Pipe Size (inch)	
1-1/2	900-315-099
3	900-315-102
4	900-315-103
6	900-315-105

Type PP: Flexible connector, vacuum service, convoluted, stainless steel bellows, carbon steel pipe ends – both ends – for butt welding, Mass spec tested.

Pipe Size (inch)	
1-1/2	900-315-069
2	900-315-070
3	900-315-072
4	900-315-073
6	900-315-075
8	900-315-076
10	900-315-077
12	900-315-078

Type EE: Flexible connector, vacuum service, convoluted, stainless steel bellows, carbon steel weld band – both ends – to fit over ASA pipe for lap weld, Mass spec tested.

Pipe Size (inch)	
2	900-315-090
4	900-315-093
6	900-315-095
8	900-315-096
10	900-315-097
12	900-315-098

Type CP: Flexible connector, vacuum service, convoluted, stainless steel bellows, carbon steel pipe end – one end – for butt welding, carbon steel pipe flange, 150# ASA – one end – 63 micro finish, Mass spec tested.

Pipe Size (inch)	
2	900-315-080
3	900-315-082
4	900-315-083
6	900-315-085
8	900-315-086
12	900-315-088

High Volume Inlet Filters

Features & Benefits

- Traps particulates ahead of pump
- Recommended ahead of all vacuum pumps
- Provide protection to pump internals
- Extends the change interval up to 10 times
- Variety of filter elements available
- 146H pump has a 2 inch flange – 333-30A has a 1 inch flange. 333-100A (2 inch flange) can be used as an option
- 1754 and 1755 have 8 inch flange. Customer must supply an adaptor to mate with 10 inch flange on filter
- Polyester replacement element max temp 200 °F, Glastex replacement element 450 °F
- 1700 Series requires 2 replacement elements

Ordering Information

Product Description	For Pump	CFM	Order no:
Intake Pipeline Filters			
333-30A*	146H	30	900-333-031
333-50A	148H	50	900-333-032
333-100A	149H	100	900-333-033
333-165A	212J	165	900-333-034
333-330A	412J	400	900-333-035
333-750A	612J, 912J	850	900-333-036
333-1125A	1721, 1722, 1738	2000	900-333-037
333-2250A†	1739, 1733, 1754	2800	900-333-038
Spares			Order No.
Replacement Glastex Elements‡			
333-30A*			085-032-573
333-50A			085-032-576
333-100A			085-032-579
333-165A			085-032-582
333-330A			085-032-585
333-750A			085-032-079
333-1125A			085-032-588**

333-2250A†	085-032-591**
Replacement Polyester Elements‡	
333-30A*	085-039-010
333-50A	085-039-011
333-100A	085-039-012
333-165A	085-039-013
333-330A	085-039-014
333-750A	085-039-077
333-1125A	085-039-015**
333-2250A†	085-039-016**

* 146H Pump has a 2" Flange, Filter 333-30A has a 1" Flange. Use Filter 333-100A w/2" Flange as an Option.
† 1754 and 1755 have 8" Flange. Customer must supply an adapter to mate w/10" Flange on Filter.
‡ Replacement Element is Polyester w/Maximum Temp of 200°F, Glastex has a Maximum Temp. of 450°F.
** Two Elements Are Required.

Small Volume Inlet Filter

Features & Benefits

- For small volumes and fast pump down cycles
- Effective protection from harmful solid particles of 0.01 inch or larger
- Less expensive than conventional filters

Ordering Information

Product Description	Flange Size	For Pump	Replacement Elements	Order no:
Small Volume Inlet Filters				
332-3	3"	212J	085-036-701	900-332003
332-4	4"	412J	085-036-702	900-332-004
332-6	6"	612J - 912J	085-036-703	900-332-006
332-8	8"	1721-1722	085-036-704	900-332-008

Oil Purifiers

Oil purifiers continuously supply clean oil to the vacuum pump to assure peak uptime while prolonging the life of both the oil and the pump. Oil purifiers from Edwards are designed for use with rotary oil sealed pumps used in dirty applications or for corrosive and hazardous gases. These oil purifiers are commonly used in heat treating, annealing, sintering, brazing, nitriding, and metal melting. The Edwards models are available to handle hydrocarbon and inert oils for rotary oil sealed pumps up to 750 ft³min⁻¹ and can filter out solids to 3 microns.

Features & Benefits

- Keep pump fluids cleaner
- Self-contained and portable
- Suitable for mechanical vacuum pumps up to 730 ft³min⁻¹
- Models available for hydrocarbon and inert oils

Ordering Information

Product Description	For Pump	GPM	Elements Required	Order No.
Vacuum Pump Oil Purifiers				
339-015 (115 V, 1-ph, 60 Hz)	146, 148, 149	1.5	1	900339015

339-015 CE (230 V, 1-ph, 50 Hz)	146, 148, 149	1.2	1	900339015501
339-015 CE (200/400 V, 3-ph, 50 Hz)	146, 148, 149	1.2	1	900339015502
339-030 (115 V, 1-ph, 60 Hz)	212, 412	3	1	900339030
339-030 CE (200/400 V, 3-ph, 50 Hz)	212, 412	2.3	1	900339030501
339-215 (115v 1 ph, 60 Hz)	All	1.5	2	900-339-215

Special Service (all pumps)

339-15 (115 V, 1-ph, 60 Hz)*	146, 148, 149	1.5	1	900-339-151
339-152 (115 V, 1-ph, 60 Hz)†	146-412	1.5	2	900-339-152
339-252 (115 V, 1-ph, 60 Hz)†	146-412	1.5	4	900-339-252

Spares	Order No.
Standard 339 Filter Fullers Earth 10 microns	085-033-395
Standard 339 Filter Pleated Paper 3 microns	085-039-432
Standard 339 Filter Activated Alumna	085-039-890
Special Service 339 Pleated Paper 3 microns	085-037-794
Special Service 339 Activated Alumna	085-039-956

Note: the 215 is the only one that is dual canister all the above are single canister

- * Single element canister
- † Double element canister



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Contact our customer service team

Medium and Large Wet Pumps

MV SERIES VERTICALLY ORIENTED MICROVAC BOOSTER COMBINATIONS



Edwards multi-stage pumping systems, backed by over a century of in-depth applications knowledge and technical experience. These compact, efficient pumping systems feature a Stokes Microvac pump and rugged, proven Stokes 6" Series boosters or the Edwards EH series with patented hydrokinetic drive.

The MV Series Mechanical Booster Pump Packages comprises of either the Stokes 212J or 412J rotary piston pump. Each can be directly coupled with a range of mechanical booster pumps. The range includes Edwards EH series offering the patented Hydrokinetic Drive or the full range of Stokes 6" series. All are vertical gas flow orientation for a compact space saving design. The MV Series offers a broad selection of configurations which enables the flexibility to mix and match the complete range of Stokes Microvac accessories along with various electrical control options. This enables the user to customise the pumping package to meet their application requirements.

MV Series Oil Sealed Piston Pumps and Mechanical Booster Combinations

	M	V																		
CE Marking																				
0 No CE mark required																				
1 CE marked system																				
Microvac Pump																				
1 212J No CE Marked System																				
2 212J CE Marked System																				
3 412J No CE Marked System																				
4 412J CE Marked System																				
5 212J with base No CE Marked System																				
6 212J with base CE Marked System																				
7 412J with base No CE Marked System																				
8 412J with base CE Marked System																				
Booster																				
0 No Booster																				
1 EH250																				
2 EH500																				
3 EH1200																				
4 EH2600																				
5 EH4200																				
6 EH250 with 3" ASA inlet (for EH250)																				
7 EH500 with 4" ASA inlet (for EH500)																				
8 EH1200 with 6" ASA inlet																				
9 EH2600 with 8" ASA inlet																				
A 607 low speed low power																				
B 607 low speed high power																				
B 607 low speed high power																				
C 615 low speed																				
D 615 high speed																				
E 61B low speed																				
F 61B high speed																				
G 622 high speed																				
H 607 high speed (EU and Asia)																				
Oil Mist Filter																				
0 No mist filter																				
1 MF 291-150J																				
2 MF 291-300J																				
Cooling Options																				
0 No cooling options																				
1 Water miser (TCV)																				
2 Min max cooler 115 V 1-ph 60 Hz																				
3 Min max cooler 230 V 1-ph 60 Hz																				
Motor Control Module																				
0 No Motor Control / No Pressure Switch																				
1 Motor starter control box pedestal mount without pressure																				
2 Motor starter control box wall mount without pressure																				
3 Motor starter control box pedestal mount with pressure																				
4 Pressure switch only																				
5 Motor starter control box wall mount with pressure																				
Coil Voltage																				
1 Coil Voltage 24 V AC 50 Hz																				
2 Coil Voltage 24 V AC 60 Hz																				
3 Coil Voltage 120 V 60 Hz / 110 V 50 Hz																				
4 Coil Voltage 240 V 60 Hz / 220 V 50 Hz																				
5 Coil Voltage 380 V 50 Hz (CE)																				
6 Coil Voltage 415 V 50 Hz (CE)																				
7 Coil Voltage 480 V 60 Hz / 440 V 50 Hz																				
8 Coil Voltage 380 V 60 Hz																				
Motor Voltage																				
1 230V 3-ph 60 Hz																				
2 460V 3-ph 60 Hz (for Non CE marked systems)																				
3 400V 3-ph 50 Hz (only for CE Marked systems)																				
4 220V 3-ph 50 Hz (for Non CE marked systems)																				
5 380V 3-ph 50 Hz (for Non CE marked systems)																				
6 440V 3-ph 50 Hz (for Non CE marked systems)																				
7 380V 3-ph 60 Hz (for Non CE marked systems)																				
8 200V 3-ph 60Hz (for Non CE marked systems)																				
9 200V 3-ph 50Hz (for Non CE marked systems)																				
Gas Ballast Silencer & Vacuum Break																				
0 No Gas ballast, No Silencer																				
1 Gas Ballast Silencer (212J / 412J)																				
2 Auto gas ballast 24 V AC 60 Hz																				
3 Auto gas ballast 24 V DC DIN																				
4 Auto gas ballast 120 V 60 Hz / 110 V 50 Hz																				
Oil Purifier and Connection Kit																				
0 No oil purifier																				
1 OP 339-030 115 V 1-ph 60 Hz																				
2 OP 339-030CE 230 V 1-ph 50 Hz																				
3 OP 339-030CE 200/400 V 3-ph 50 Hz																				
4 OP 339-215 115 V 1-ph 60 Hz																				

Note* Above booster combinations are direct mount vertical flow.

Note** Oil mist filters and min max coolers will ship separately unless ordered with base frame.

Note*** Oxygen service pumps are available, please contact your local Edwards representative to discuss your requirements.

Note**** Not applicable in CE versions.

For other possible combinations, please contact your local Edwards representative to discuss your requirements.

Note: please click on the link: <http://edwebid3.edwardshighvacuum.net/Edconfigurator/index.aspx> to order your pump & booster combination or a system.

- ORDER TODAY -

Shop online at shop.edwardsvacuum.com

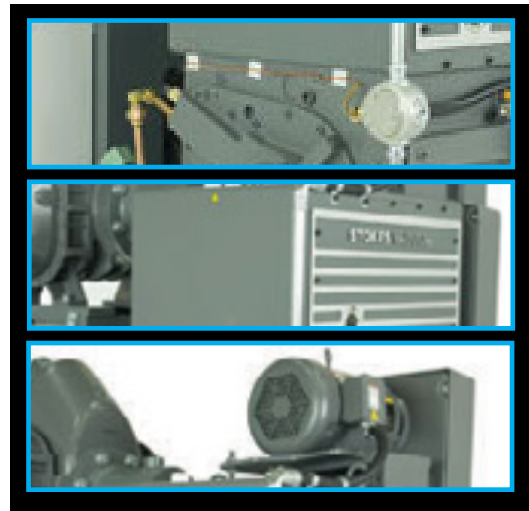
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Medium and Large Wet Pumps

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STOKES 1700 SERIES MECHANICAL BOOSTER COMBINATIONS

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Whether you need to increase the capacity of your existing system or achieve peak performance for a new installation; Edwards makes taking advantage of the latest technology easy. These field-proven pumping systems are the workhorse of countless industrial and large chamber applications. Each Stokes1700 series mechanical booster pump combination includes a Stokes Microvac backing pump and a belt driven, horizontal flow, high vacuum Stokes 6" series mechanical booster pump. In harsh applications where chemical or particulate contamination is present, process isolation boosters are available as an option. Controls for Stokes 1700 series mechanical booster pump combination include a pressure switch, motor starters, overloads, remote booster selection switch and lights for pump running and fault indication.



Features and Benefits

- **Reliable**
 - Over 80 years of time tested proven performance with experienced service and technical support
- **Robust**
 - **Easy on-site maintenance** - robust simple mechanism for high reliability and ease of rebuild
 - **Highly reliable** - ability to handle harsh processes
- **Flexible**
 - **Configured for you** - choice of pumping combinations available with a variety of 6" boosters and rotational speed
 - Optimise the configuration for your process
- **Reassurance**
 - **Up to date technology** - continued investment in design and technology improvements

Applications

- Vacuum Heat Treatment
- Vacuum Melting
- Metallurgical
- Transformer Drying
- Vacuum Coating
- General Industrial Applications
- Leak Detection

Pump Range

Stokes 1700	
- 1721	- 1738BP
- 1721S	- 1738HCBP
- 1722	- 1739
- 1722S	- 1739HC
- 1733	- 1739BP
- 1733HC	- 1739HCBP
- 1738	- 1754
- 1738HC	- 1754HC



Performance Curves

1721 & 1721S

1721 & 1721S

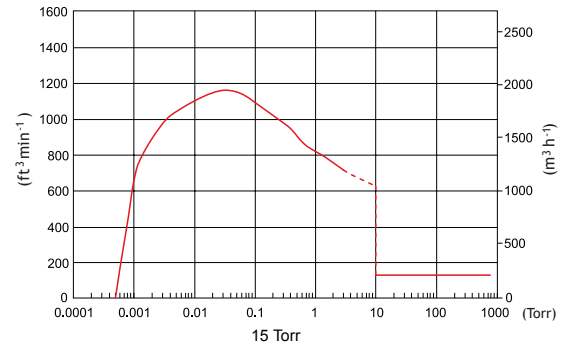


Booster Displacement	2210 -2720 m ³ h ⁻¹ (1300 - 1600 ft ³ min ⁻¹)
Booster Speed	1800 - 2200 rpm
Pump Displacement	255 m ³ h ⁻¹ (150 ft ³ min ⁻¹)

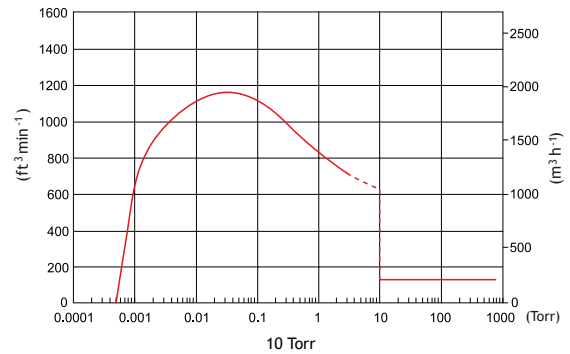
Ordering information

Product description	Order no:
1721 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-061
1721S 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-074

1721 Performance Curve



1721S Performance Curve



1722 & 1722S

1722 & 1722S

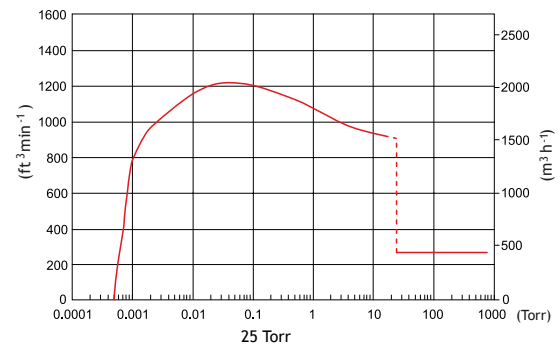


Booster Displacement	2210 -2720 m ³ h ⁻¹ (1300 - 1600 ft ³ min ⁻¹)
Booster Speed	1800 - 2200 rpm
Pump Displacement	510 m ³ h ⁻¹ (300 ft ³ min ⁻¹)

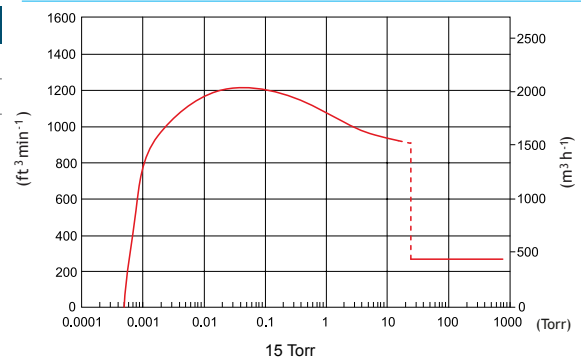
Ordering information

Product description	Order no:
1722 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-062
1722S 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-075

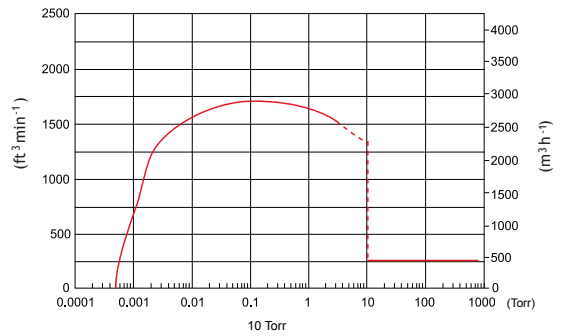
1722 Performance Curve



1722S Performance Curve



1738 Performance Curve

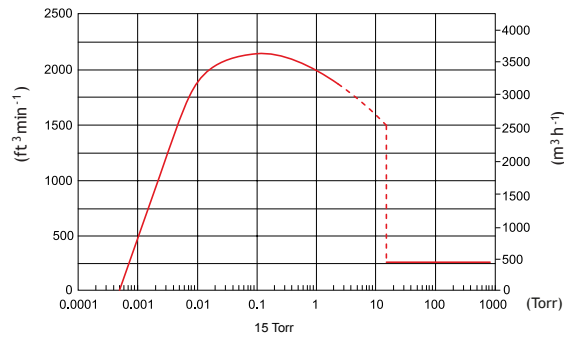


Booster Displacement	3398 - 4420 m ³ h ⁻¹ (2000 - 2600 ft ³ min ⁻¹)
Booster Speed	2750 - 3600 rpm
Pump Displacement	510 m ³ h ⁻¹ (300 ft ³ min ⁻¹)



1738 & 1739

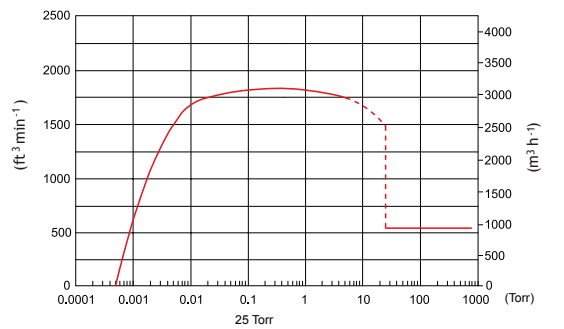
1739 Performance Curve



Ordering information

Product description	Order no:
1738 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-038
1739 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-039

1738 HC Performance Curve

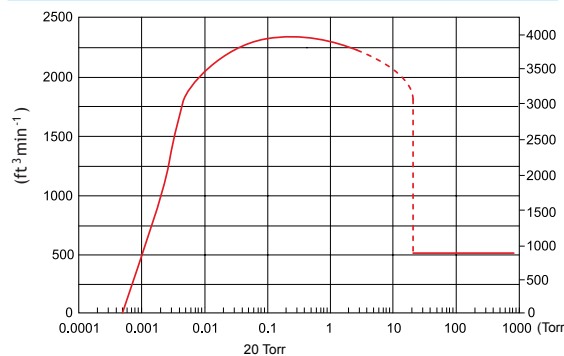


Booster Displacement	3398 - 4420 m ³ h ⁻¹ (2000 - 2600 ft ³ min ⁻¹)
Booster Speed	2750 - 3600 rpm
Pump Displacement	1020 m ³ h ⁻¹ (600 ft ³ min ⁻¹)



1738 HC & 1739 HC

1739 HC Performance Curve



Ordering information

Product description	Order no:
1738HC 230/460V, 3-ph, 60Hz (230/460V Coil)	900-17C-038
1739HC 230/460V, 3-ph, 60Hz (230/460V Coil)	900-17C-039

Performance Curves

1738 BP & 1739 BP

1738 BP & 1739 BP



Booster Displacement

3398 - 4420 m³h⁻¹
(2000 - 2600 ft³min⁻¹)

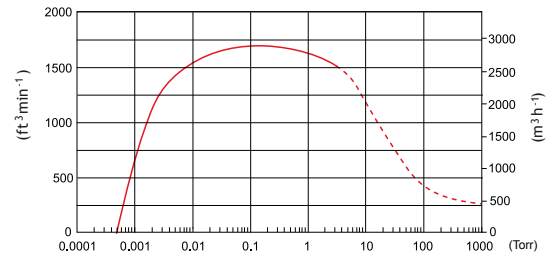
Booster Speed

2750 - 3600 rpm

Pump Displacement

510 m³h⁻¹
(300 ft³min⁻¹)

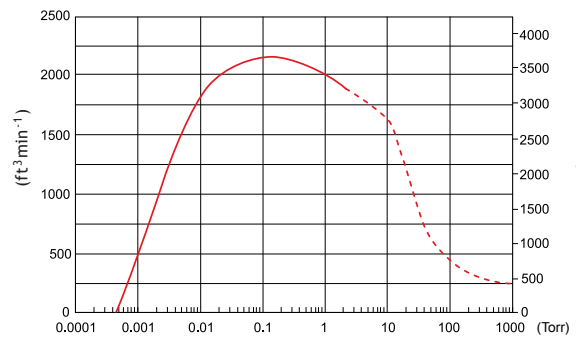
1738 BP Performance Curve



Ordering information

Product description	Order no:
1738BP 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-38B
1739BP 230/460V, 3∅, 60 Hz with 230/460V Coil	900-170-39B

1739 BP Performance Curve



1738 HCBP & 1739 HCBP

1738 HCBP & 1739 HCBP



Booster Displacement

3398 - 4420 m³h⁻¹
(2000 - 2600 ft³min⁻¹)

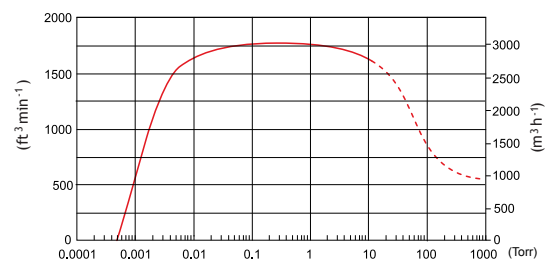
Booster Speed

2750 - 3600 rpm

Pump Displacement

1020 m³h⁻¹
(600 ft³min⁻¹)

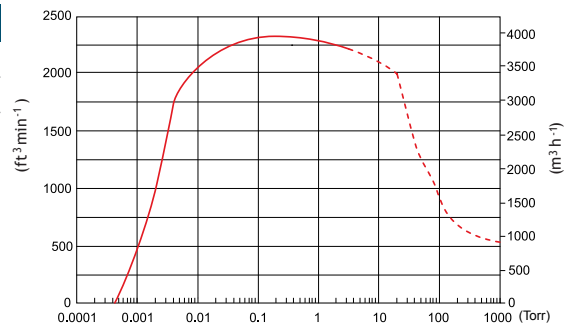
1738 HCBP Performance Curve



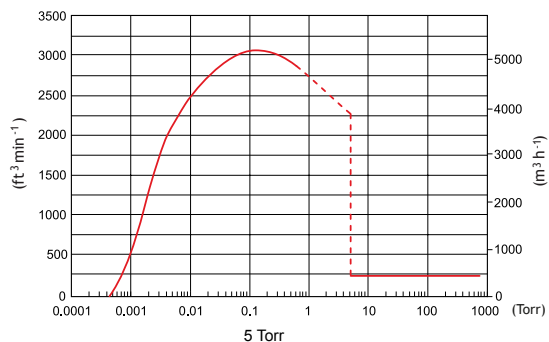
Ordering information

Product description	Order no:
1738HCBP 230/460V, 3-ph, 60Hz (230/460V Coil)	900-17C-38B
1739HCBP 230/460V, 3-ph, 60Hz (230/460V Coil)	900-17C-39B

1739 HCBP Performance Curve



1733 Performance Curve

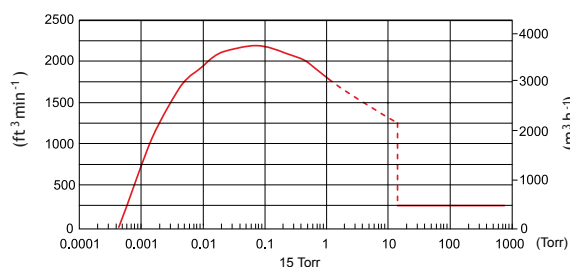


Booster Displacement	6358 - 5100 m ³ h ⁻¹ (3840 - 3000 ft ³ min ⁻¹)
Booster Speed	2750 - 3600 rpm
Pump Displacement	510 m ³ h ⁻¹ (300 ft ³ min ⁻¹)



1733 & 1754

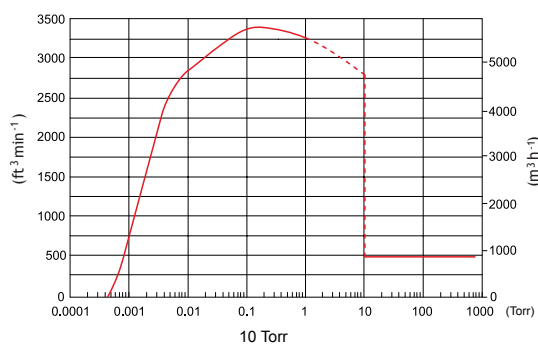
1754 Performance Curve



Ordering information

Product description	Order no:
1733 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-S33
1754 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-054

1733 HC Performance Curve

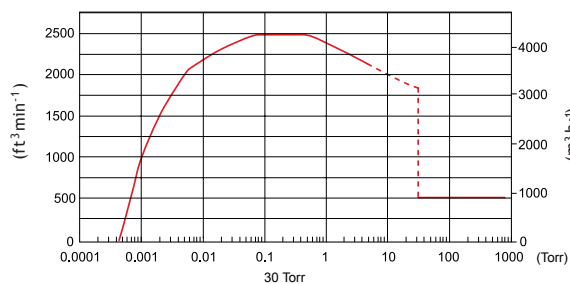


Booster Displacement	6358 - 5100 m ³ h ⁻¹ (3840 - 3000 ft ³ min ⁻¹)
Booster Speed	2750 - 3600 rpm
Pump Displacement	1020 m ³ h ⁻¹ (600 ft ³ min ⁻¹)



1733 HC & 1754 HC

1754 HC Performance Curve

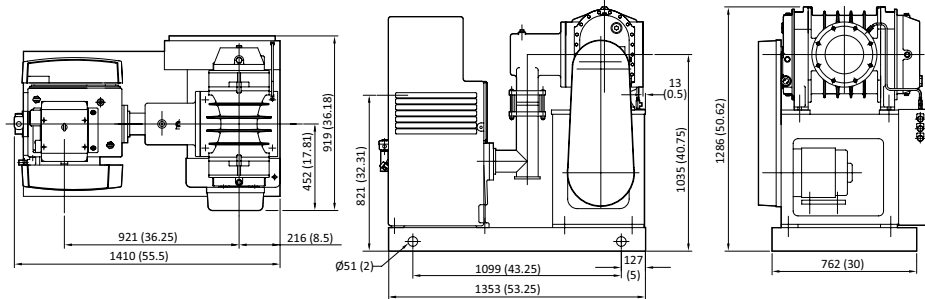


Ordering information

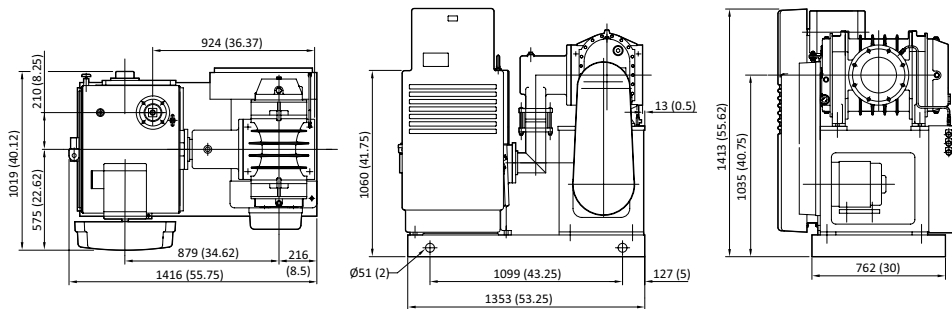
Product description	Order no:
1733HC 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-S34
1754HC 230/460V, 3-ph, 60Hz (230/460V Coil)	900-170-055

Dimensions

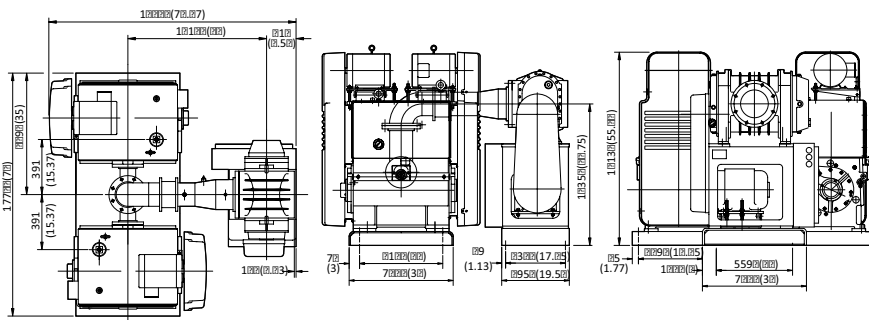
1721/ 1721S Dimensions



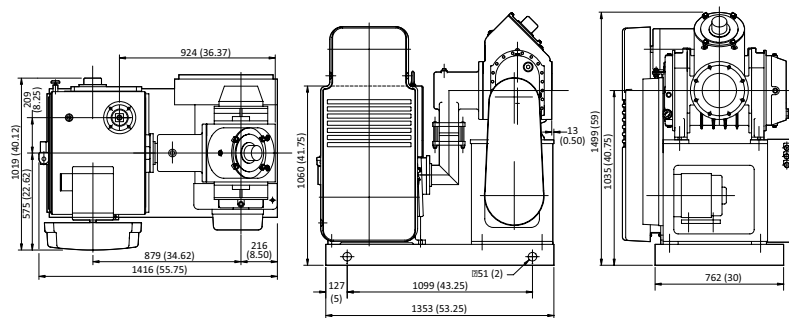
1722/ 1722S/ 1738/ 1739 Dimensions



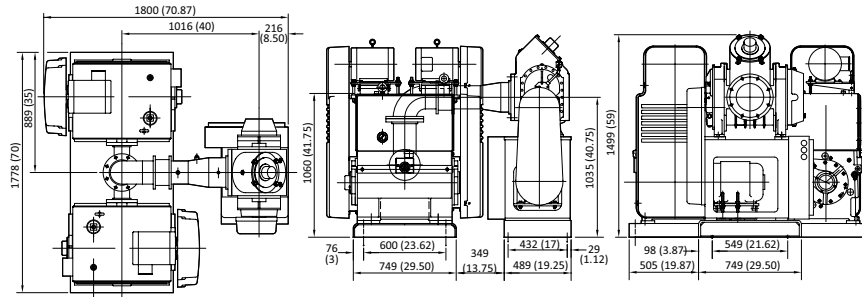
1738HC/ 1739HC Dimensions



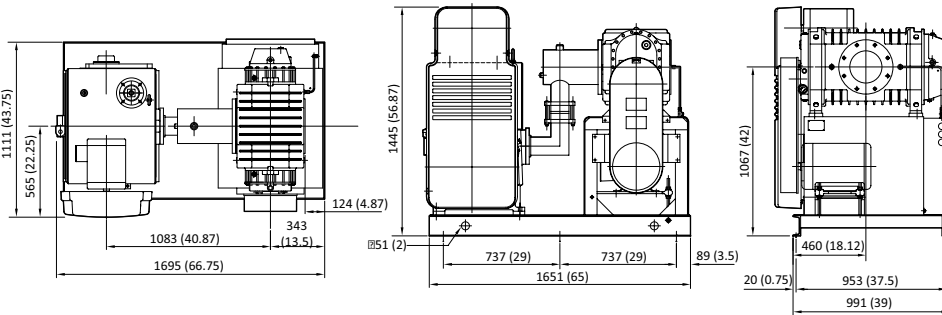
1738BP/ 1739BP Dimensions



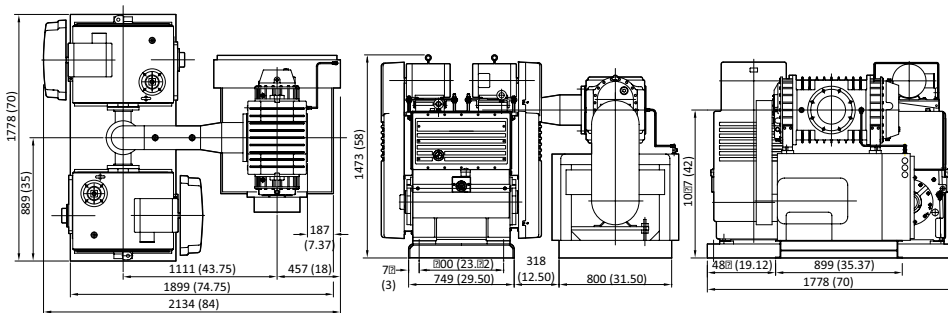
1738HCBP/ 1739HCBP Dimensions



1754/ 1733 Dimensions



1754HC/ 1733HC Dimensions



Technical Data

	Units	1721	1721S	1722	1722S
Booster displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	2210/ 1300	2720/ 1600	2210/ 1300	2720/ 1600
Booster speed	rpm	1800	2200	1800	2200
Booster orientation		Horizontal			
Pump displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	255/ 150		510/ 300	
Pressure switch required		Yes	Yes	Yes	Yes
Normal cut-in pressure	mbar/ Torr	20/ 10	13/ 10	33/ 25	20/ 15
Continuous operation pressure limit	mbar/ Torr	4/ 3	2.6/ 2	20/ 15	10.7/ 8
Booster drive	kW/ hp	5.6/ 7.5	7.5/ 10	5.6/ 7.5	7.5/ 10
Pump drive (TEFC)	kW/ hp	5.6/ 7.5	6.5/ 7.5	7.5/ 10	7.5/ 10
Inlet connections		8 inch ASA/ANSI flange			
Discharge connections		2 inch ASA/ANSI flange, 2 inch NPT		3 inch ASA/ANSI flange, 3 inch NPT	
Water inlet/outlet connection		½ inch NPT			
Recommended cooling flow @ 30°C/85 °F	lmin ⁻¹ / galmin ⁻¹	5.7/ 1.5		7.6/ 2	
Booster oil capacity (V lube H)	litre / US gal	1.9/ 0.51			
Microvac oil capacity (V lube F)	litre / US gal	15/ 4		46/ 12	
Inlet height	mm/ inch	1035/ 40.75			
Footprint (L x W x H)	mm	1419 x 919 x 1260		1407 x 1048 x 1438	
	inch	55.87 x 36.18 x 49.61		55.40 x 41.26 x 56.61	
Weight	kg/ lbs	1225/ 2700	1270/ 2800	1588/ 3500	1633/ 3600

	Units	1738	1739	1738HC	1739HC
Booster displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	3398/ 2000	4420/ 2600	3398/ 2000	4420/ 2600
Booster speed	rpm	2750	3600	2750	3600
Booster orientation		Horizontal			
Pump displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	510/ 300		1020/ 600	
Pressure switch required		Yes			
Normal cut-in pressure	mbar/ Torr	13/ 10	13/ 15	33/ 25	33/ 20
Continuous operation pressure limit	mbar/ Torr	4/ 3	2.7/ 2	6.7/ 5	3.4/ 2.5
Booster drive	kW/ hp	7.5 / 10	22.4/ 30	7.5/ 10	18.6/ 25
Pump drive (TEFC)	kW/ hp	7.5/ 10	7.5/ 10	7.5 (x2) / 10 (x2)	7.5 (x2) / 10 (x2)
Inlet connections		8 inch ASA/ANSI flange			
Discharge connections		3 inch ASA/ANSI flange, 3 inch NPT		3 inch ASA/ANSI flange, 3 inch NPT (x2)	
Water inlet/outlet connection		½ inch NPT		½ inch NPT (x2)	
Recommended cooling flow @ 30°C/85 °F	lmin ⁻¹ / galmin ⁻¹	7.6/ 2		7.6 (x2) / 2 (x2)	
Booster oil capacity (V lube H)	litre / US gal	1.9/ 0.51			
Microvac oil capacity (V lube F)	litre / US gal	46/ 12		92/ 24	
Inlet height	mm/ inch	1035/ 40.75	1067/ 42		
Footprint (L x W x H)	mm	1407 x 1048 x 1438	1905 x 1270 x 1318		
	inch	55.40 x 41.26 x 56.61	75 x 50 x 51.89		
Weight	kg/ lbs	1633/ 3600	1803/ 3975	2404/ 5300	2733/ 6025

	Units	1738 BP	1739 BP	1738 HCBP	1739 HCBP
Booster displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	3398/ 2000	4420/ 2600	3398/ 2000	4420/ 2600
Booster speed	rpm	2750	3600	2750	3600
Booster orientation		Horizontal			
Pump displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	510/ 300		1020/ 600	
Pressure switch required		No	No	No	No
Continuous operation pressure limit	mbar/ Torr	4/ 3	2.7/ 2	6.7/ 5	4/ 3
Booster drive	kW/ hp	11/ 15	22/ 30	11.2/ 15	18.6/ 25
Pump drive (TEFC)	kW/ hp	7.5/ 10		7.5 (x2) / 10 (x2)	
Inlet connections		8 inch ASA/ANSI flange			
Discharge connections		3 inch ASA/ANSI flange, 3 inch NPT		3 inch ASA/ANSI flange, 3 inch NPT (x2)	
Water inlet/outlet connection		½ inch NPT		½ inch NPT (x2)	
Recommended cooling flow @ 30°C/85 °F	lmin ⁻¹ / galmin ⁻¹	7.6/ 2		7.6 (x2) / 2 (x2)	
Booster oil capacity (V lube H)	litre / US gal	1.9/ 0.51			
Microvac oil capacity (V lube F)	litre / US gal	46/ 12		92/ 24	
Weight	kg/ lbs	1690/ 3725	1837/ 4050	2449/ 5400	2767/ 6100

	Units	1733	1754	1733 HC	1754 HC
Booster displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	6538/ 3840	5100/ 3000	6538/ 3840	5100/ 3000
Booster speed	rpm	3600	2750	3600	2750
Booster orientation		Horizontal			
Pump displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	510/ 300		1020/ 600	
Pressure switch required		Yes	Yes	Yes	Yes
Normal cut-in pressure	mbar/ Torr	6.7/ 5	20/ 15	13.3/ 10	40/ 30
Continuous operation pressure limit	kW/ hp	0.8/ 0.6	1.3/ 1	1.3/ 1	4/ 3
Booster drive	kW/ hp	18.5/ 25	15/ 20	22.5/ 30	18.5/ 25
Pump drive		7.5/ 10		7.5 (x2) / 10 (x2)	
Inlet connections		8 inch ASA/ANSI flange			
Discharge connections		3 inch ASA/ANSI flange, 3 inch NPT		3 inch ASA/ANSI flange, 3 inch NPT (x2)	
Water inlet connection		½ inch NPT (2)		½ inch NPT (x2)	
Water outlet connection		½ inch NPT			
Recommended cooling flow @ 30°C/85 °F	lmin ⁻¹ / galmin ⁻¹	7.61/ 2		7.61 (x2) / 2 (x2)	
Booster oil capacity (V lube H)	litre / US gal	1.9/ 0.51		1.9/ 0.51	
Microvac oil capacity (V lube F)	litre / US gal	46/ 12		92/ 24	
Weight	kg/ lbs	1710/ 3770	1678/ 3700	2767/ 6100	2722/ 6000



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