

SMALL PUMPS AND PUMPING SYSTEMS

THE INTELLIGENT CHOICE

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Small Pumps and Pumping Systems

To meet the diverse needs of applications ranging from analytical instrumentation, wet chemistry and R&D to light industrial, Edwards offers a comprehensive range of different pumping technologies. Refer to the application and accessory guide to select pumps and accessories for your application.

Oil Free Scroll Pumps

Scroll pumps are an excellent alternative to rotary vane pumps where oil free pumping is desirable. The innovative XDS pumps in particular use a bearing shield to isolate the vacuum environment from all forms of lubricant not only making them totally dry, but also protecting the bearing from any process gases. Vapour handling is enabled by a gas ballast; this allows the range of pumps to satisfy many applications that were previously off limits to scroll pumps.

- $\leq 2 \times 10^{-2}$ mbar / $\leq 1.5 \times 10^{-2}$ Torr
- 5 to 35 m³h⁻¹ / 2.9 to 20.6 ft³min⁻¹

Oil free scroll pumps



Oil Sealed Rotary Vane Pumps

- $\leq 10^{-3}$ mbar / $\leq 10^{-3}$ Torr
- 0.9 to 32.3 m³h⁻¹ / 0.5 to 19.5 ft³min⁻¹
- This wide range of rugged pumps offers an excellent ultimate with good pumping speed. RV pumps have superior vapour handling capabilities, while operating quietly.

Oil sealed rotary vane pumps



Oil Free Diaphragm Pumps

- ≤ 2 mbar / ≤ 1.5 Torr
- 0.6 to 2.0 m³h⁻¹ / 0.35 to 1.2 ft³min⁻¹

The D-LAB diaphragm pumps are made of corrosion resistant materials to withstand attack from chemicals. They are ideal for applications such as gel drying and other wet chemistry processes. The XDD1 diaphragm pumps provide oil free backing for compound turbomolecular pumps.

Easy to Service

All Edwards pumps are designed for easy routine maintenance. Key components are easily accessible and, with RV and XDS pumps, no special tools are required. Service kits of guaranteed parts are available for routine service by the user. Worldwide support from the Edwards service organisation is also available.

Quality Manufacture

Edwards pumps are manufactured on state of the art machine tools for high consistency of components. For example, RV rotors are manufactured in a robotic cell to remove errors and inconsistencies from the manufacturing process.

Applications

Edwards high performance pumps are used in many industrial and laboratory applications, including the following:

- Electron microscopes, mass spectrometry, residual gas analysers and surface analysis
- Epoxy degassing, powder materials processing
- Solvent concentration
- Sterilization, distillation and centrifuges
- Gel dryers and glove boxes
- Atomic emission spectrometers, nuclear physics, fusion technology and space research
- Vacuum ovens
- TV tube evacuation
- Automotive system filling
- Freeze drying
- Vacuum metallurgy

Small Pumps: Application and Accessory Information

Use the information in the list below to select the best pump and accessories for your application. The information is given as a guide only; the optimum set-up may depend on your specific method of operation. Note that you need to buy the accessories separately, unless otherwise stated.

ATEX and Flammable Gases

The following standard pump models have an internal ATEX classification of II 3 G c IIB T4:

- E2M0.7, E2M1.5
- E1M18, E2M18 & E2M28
- RV3, RV5, RV8, RV12
- nXDS6i, nXDS10i, nXDS15i, nXDS20i, XDS35i

The following standard pump models operating on hydrocarbon oil can be supplied with flameproof motors providing an external classification of II 2 G IIB T4 (or IIC):

- RV3, RV5, RV8, RV12
- E1M18, E2M18



Gel Dryers

Recommended pump: nXDS/XDS or DLAB.
Suggested accessories for DLAB: Separator.
Optional accessories for DLAB: Condenser, gas ballast valve.

Rotary Evaporation and Vacuum Ovens

Recommended pump: nXDS/XDS or DLAB.
Suggested accessories for DLAB: Separator.
Optional accessories for DLAB: Condenser, gas ballast valve.

Centrifugal Concentration

Recommended pump: nXDS/XDS.

Vacuum Filtration

Recommended pump: nXDS/XDS or DLAB.
Suggested accessories for DLAB: Separator.
Optional accessories for DLAB: Condenser, gas ballast valve.

Distillation/Extraction Apparatus

Recommended pump: nXDS/XDS or DLAB.
Suggested accessories for DLAB: Separator.
Optional accessories for DLAB: Condenser, gas ballast valve.

Freeze Dryers

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories: Mist filters, oil return.

MS Inlet Systems (like Electro-Spray)

Recommended pump: XDS35i or E2M28.
Suggested accessories for rotary pumps: Mist filter, oil return.
Suggested accessories for nXDS/XDS: Silencer.

Load Locks, Fume Hoods and Glove Boxes

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: Mist filter, oil return.
Suggested accessories for nXDS/XDS: Silencer.

Ultra High Speed Centrifuges

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories: Mist filter
Suggested accessories for rotary pumps: Mist filters, oil return.

Leak Detection, Electron Microscopes, Mass Spectrometers and Lasers

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Surface Science and Particle Size Analysers

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

High Energy Physics

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Helium or Rare Gas Recirculation

Recommended pumps: nXDS/XDS

Backing Turbomolecular Pumps

Recommended pump: nXDS/XDS, XDD1 or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Backing Diffusion Pumps

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Notes

- FL20K is an inlet trap, to prevent oil back-streaming.
- ITF20K is an inlet trap, to capture dust particles.
- The gas ballast facility allows atmospheric air into the pump, minimising the formation of condensates (which contaminate the oil in rotary pumps).
- An oil return kit is available for E2M0.7, E2M1.5, RV, EM18 and E2M28 pumps to allow oil to be returned from the mist filter to the pump. A gas ballast oil return is also available to allow oil to return and have gas ballast flow.

Refrigeration, Air Conditioning Systems

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: FL20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Vacuum Furnace

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: ITF20K, Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Azide Forming Applications

Recommended pump: nXDS/XDS or Rotary pumps.
Suggested accessories for rotary pumps: Mist filter.
Suggested accessories for nXDS/XDS: Silencer.

Small Pumps and Accessories: Frequently Asked Questions

Oil Mist

Question: What accessory do I use to trap oil mist (which all oil sealed pumps emit during pump down or with gas ballast)?

Answer: To meet regulations and preserve pump oil, fit a recommended Edwards oil mist filter (EMF) to the pump outlet, and connect the exhaust to an exhaust line.

Question: If I operate an RV pump continuously or with high inlet pressure, what accessories do I need?

Answer: Fit an Edwards mist filter (EMF) and a gas ballast oil return (GBOR) kit. Then the pump can be operated with the mode switch open and gas ballast oil return. The oil condensed in the filter will be continuously returned to the pump oil box.

Vapour Processes

Question: Which pump and accessories should I use if my process generates vapours which could condense in the pump?

Answer: You can choose either an nXDS/XDS pump, or rotary pump. Gas ballast should be used with both pumps; to sweep the vapour through the pump. This prevents condensation and oil contamination. Operate the pump with gas ballast for at least an hour before and after use. Choose the size of pump taking into account the vapour pumping rate. If you selected a rotary pump, then you should fit a gas ballast oil return kit and mist filter. Change the oil frequently and keep an oil change reminder tag on the pump. DLAB would also be a suitable alternative depending on required pumping speed.

Dust and Particle Processes

Question: Which pump and accessory should I use if my process generates dust or grit, which could clog or damage the pump?

Answer: Use a rotary pump fitted with an inlet dust filter. We do not recommend the use of scroll pumps or XDD1 pumps for these applications.

Special Chemical Cleaning Processes

Question: Which pump and accessory should I use if my process generates oxygen or ozone?

Answer: Use a rotary pump adapted to run with Fomblin® oil or nXDS/ XDS. Contact Edwards for more information.

Question: Are there any special considerations if my pump will be used in the vicinity of organic gases, like propane?

Answer: Use a rotary pump fitted with a flameproof motor. Contact Edwards for more information.

Contamination

Question: Which pump and accessories should I use if I must ensure that my process and process chamber (operated below 0.1) are not contaminated with oil from the pump?

Answer: Use an nXDS/XDS scroll pump. Alternatively, you can use a rotary pump with a FL20K foreline trap fitted to the system inlet. The trap contains activated alumina which traps the oil molecules. To maintain the alumina charge, bake the charge basket or replace as required.

Question: How can I reduce the noise level of my pump?

Answer: If the noise is only obvious during pumping down then fitting the exhaust with a silencer (nXDS/XDS pumps), or fitting an exhaust line will reduce the level. An alternative is to fit an acoustic enclosure. Contact Edwards for more information.

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SMALL DRY PUMPS

THE INTELLIGENT CHOICE

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nXDS DRY SCROLL PUMP

THE ULTIMATE DRY CHOICE



The nXDS is the next generation in completely oil free, dry scroll pumps and replaces the XDS5 and XDS10. nXDS improves on the original XDS pumps by offering increased pumping speeds, combined with lower ultimate pressures, lower power consumption and lower noise. Gas ballast allows for pumping of condensable vapours including, water, solvents, dilute acids and bases. nXDS pumps also feature the latest in tip seal technology giving significantly longer life between tip seal changes. Integrated inverter drive with auto sensing voltage input delivers optimised pumping performance globally. nXDS pumps are designed to be completely field serviceable.



Features and Benefits

- **Better work environment and low environmental impact** - quiet operation
- **Simple operation** - intelligent and easy to use controls
- **No contamination and no oil to dispose of** - hermetically sealed for a lubricant-free vacuum environment
- **Low cost of ownership** - long service interval and low power consumption from a single sided scroll arrangement

Applications

- General clean pumping applications
- Scanning Electron Microscopes - SEM
- Beam lines and high energy physics
- Backing turbo pumps
- Centrifuges, ultra-high speed

Pump Range

nXDS6i	nXDS15i
- nXDS6i	- nXDS15i
- nXDS6iC	- nXDS15iC
- nXDS6iR	- nXDS15iR
nXDS10i	nXDS20i
- nXDS10i	- nXDS20i
- nXDS10iC	- nXDS20iC
- nXDS10iR	- nXDS20iR

C Version. More Chemically resistant version fitted with Chemraz[®] internal valves and stainless steel fittings

R Version. For gas recirculation with gas ballast feature blanked off

Chemraz[®] is a registered trademark of Greene Tweed

Performance Curves

nXDS6i Dry Scroll Pump

nXDS6i



Peak Pumping Speed

6.2 m³h⁻¹
(3.6 ft³min⁻¹)

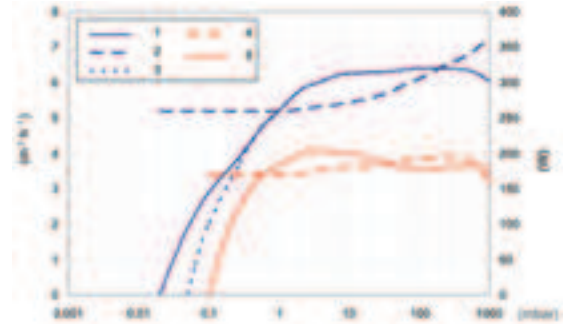
Ultimate Pressure

0.020 mbar
(0.015 Torr)

Ordering information

Product description	Order no:
nXDS6i 100 - 240 V, 50 - 60 Hz, Single Phase	A73501983
nXDS6iC 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73502983
nXDS6iR 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73503983

nXDS6i Performance Curve



1 Normal Pumping Speed	4 min Standby Power
2 Normal Full Power	5 min Standby speed
3 Normal GB Speed	

nXDS10i Dry Scroll Pump

nXDS10i



Peak Pumping Speed

11.4 m³h⁻¹
(6.7 ft³min⁻¹)

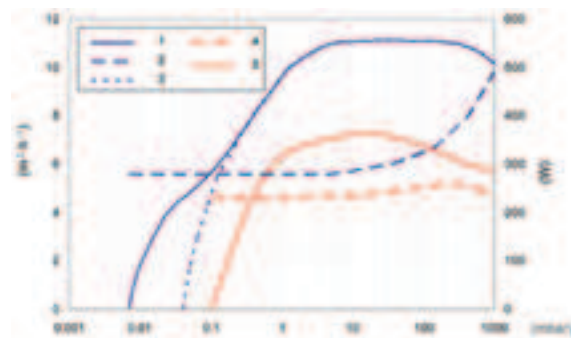
Ultimate Pressure

0.007 mbar
(0.005 Torr)

Ordering information

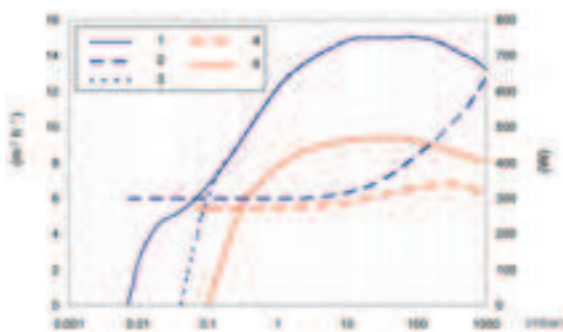
Product description	Order no:
nXDS10i 100 - 240 V, 50 - 60 Hz, Single Phase	A73601983
nXDS10iC 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73602983
nXDS10iR 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73603983

nXDS10i Performance Curve



1 Normal Pumping Speed	4 min Standby Power
2 Normal Full Power	5 min Standby speed
3 Normal GB Speed	

nXDS15i Performance Curve



nXDS15i

Peak Pumping Speed

15.1 m³h⁻¹
(8.9 ft³min⁻¹)

Ultimate Pressure

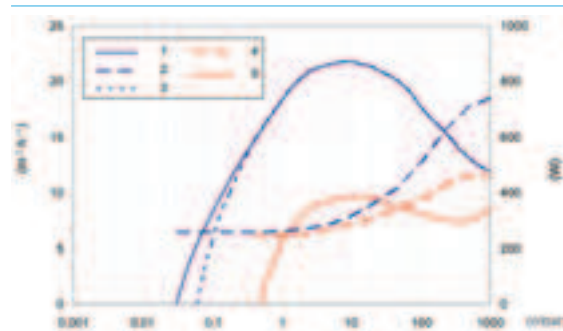
0.007 mbar
(0.005 Torr)



1	Normal Pumping Speed	4	min Standby Power
2	Normal Full Power	5	min Standby speed
3	Normal GB Speed		

Product description	Order no:
nXDS15i 100 - 240 V, 50 - 60 Hz, Single Phase	A73701983
nXDS15iC 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73702983
nXDS15iR 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73703983

nXDS20i Performance Curve



nXDS20i

Peak Pumping Speed

22.0 m³h⁻¹
(13.0 ft³min⁻¹)

Ultimate Pressure

0.030 mbar
(0.022 Torr)

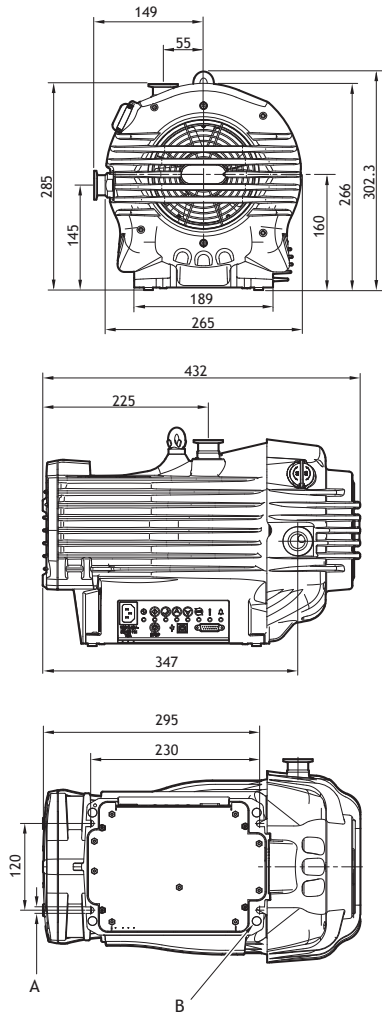



1	Normal Pumping Speed	4	min Standby Power
2	Normal Full Power	5	min Standby speed
3	Normal GB Speed		

Product description	Order no:
nXDS20i 100 - 240 V, 50 - 60 Hz, Single Phase	A73001983
nXDS20iC 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73802983
nXDS20iR 100 - 127 V, 200 - 240 V, 1ph 50 - 60 Hz	A73803983



Dimensions

nXDS Dimensions	Pump views
	

A 9 mm wide slots 4 off

B Rubber feet 4 off

All variants are the same Dimensions in mm (in)

Technical Data



	Units	nXDS6i	nXDS10i	nXDS15i	nXDS20i
Nominal rotational speed	rpm	1800			
Displacement	m ³ h ⁻¹ / ft ³ min ⁻¹	6.8/ 4.0	12.7/ 7.5	17.1/ 10.1	28.0/ 16.5
Peak pumping speed	m ³ h ⁻¹ / ft ³ min ⁻¹	6.2/ 3.6	11.4/ 6.7	15.1/ 8.9	22.0/ 13.0
Ultimate vacuum (total pressure)	mbar/ Torr	0.020/ 0.015	0.007 / 0.005		0.030/ 0.022
Minimum standby rotational speed	rpm	1200			
Speed control resolution (percentage of full rotation speed)		1%			
Max water vapour pumping rate	gh ⁻¹	110	145	280	220
Maximum continuous inlet pressure	mbar	200			50
Voltage input	V	100-127, 200-240 (+/-10%)			
Voltage frequency	Hz	50/60			
Motor power 1-ph*	W	260	280	300	260
Power connector 1-ph		IEC EN60320 C13			
Recommended fuse		10A, 250Vac rms			
Weight	kg / lb	26.2/ 58	25.8/ 57	25.2/ 56	25.6/ 56
Inlet flange		NW25			
Exhaust flange		NW25			
Noise level**	dB(A)	52			
Vibration at inlet flange	mms ⁻¹ (rms)	< 4.5			
Leak tightness (static)	mbar ls ⁻¹	< 1x10 ⁻⁶			
Operating temperature range	°C / F	10 to 40 / 41 to 104			

* Typical.

** For low fan speed, typical at ultimate end when load/ambient conditions allow.



Service, Spares and Accessories

The control cable is used to connect the nXDS pump directly to the RS485 or RS232 serial input on your control equipment or a PC, or alternatively, to an Edwards controller such as a TIC (Turbo Instrument Controller) or TAG (Turbo & Active Gaugecontroller).

Pump-to-Controller Cable

Product description	Order no:	Product description	Order no:
Interface cable 1.0 m	D39500835	2m electrical supply cable for 1-ph pumps, UK, Three-pin plug	A50505000
Interface cable 2.0 m	D39500836	2m electrical supply cable for 1-ph pumps, North European plug	A50506000
Interface cable 5.0 m	D39500837	2m electrical supply cable for 1-ph pumps, North America/Japan plug	A50507000
		2m electrical supply cable for 1-ph pumps, no plug	A50508000

Gas Ballast Adaptor

Product description	Order no:
Gas Ballast adaptor blank	A73501806
Gas Ballast adaptor	A73501809

Exhaust

Product description	Order no:
NW25 inlet/outlet exhaust filter silencer	A50597805
Silencer spares kit	A50597800
Exhaust nozzle kit 3/4" to 15mm	A50509000
Exhaust Silencer	A50597000
XDS Filter 5 micron element kit	A50597802
XDS Filter 1 micron element Kit	A50597803

Vibration Isolator

Product description	Order no:
nXDS vibration isolator (0.45kg)	A24801411

Chemical Resistance Conversion Unit

Product description	Order no:
nXDS6i,10i & 15i chemical resistance conversion unit	A73501807
nXDS20i chemical resistance conversion unit	A73501808

nXDS Kits

Product description	Order no:
nXDS Tip Seal Service Kit	A73501801
nXDS Bearing Replacement Kit	A73501802

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.

XDS SCROLL VACUUM PUMP

THE ULTIMATE DRY CHOICE



The XDS35i pump has an innovative bearing shield design that isolates the vacuum environment from all forms of lubricant, not only making it totally dry but hermetically sealed. The XDS46i pump is a development on the XDS35i and thus shares many of the same features and benefits but with a peak speed boosted to $40 \text{ m}^3\text{h}^{-1}$. The XDS46i is optimised for maximum pumping speed at inlet pressures between 1 mbar and 10 mbar making it ideally suited for LCMS and ICPMS applications requiring a higher pumping speed than that offered by the XDS35i. Recent improvements in tip seal technology have lead to reduced tip seal wear therefore giving a longer time between service interventions.



Features and Benefits

- Lubricant-free within the vacuum envelope and hermetically sealed means totally clean and dry vacuum to prevent cross contamination
- No atmosphere to vacuum shaft seals means bearings are completely isolated, this prevents process attack and means bearings run cooler and last longer
- No oil changes required eliminating costs of contaminated oil disposal
- Simple single sided scroll design means maintenance is done in minutes for low cost of ownership and maximum up-time
- Inverter drive for consistent pumping speed at 50/60Hz

Applications

- Clean pumping applications
- Automotive
- Beam lines and high energy physics
- Centrifuges, ultra high speed
- Coating
- ICPMS inlet
- Coating
- High throughput – LCMS

Pump Range

- XDS
- XDS35i
 - XDS46i

Performance Curves

XDS35i Scroll Vacuum Pump

XDS35i



Peak Pumping Speed

35 m³h⁻¹
(21 ft³min⁻¹)

Ultimate Pressure

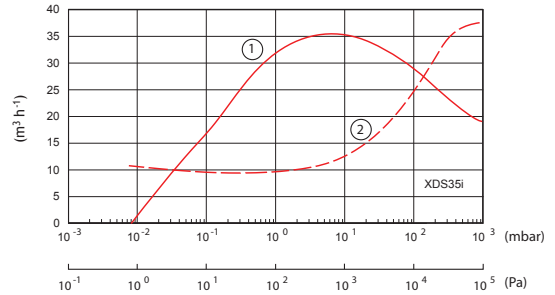
1 x 10⁻² mbar
(8 x 10⁻³ Torr)

Ordering information

Product description	Order no:
XDS35i 100-120/200-230V, 1-ph, 50/60Hz with an IEC60320 connector, factory set to 230V	A73001983
XDS35i-NGB 1-ph 100-120/200-230V set to 230V	A73005983

Note: Mains leads must be ordered separately, please see accessories and spares at the end of this section for the relevant standard XDS pump for the correct mains lead.

XDS35i Performance Curve



1	Speed
2	Power

XDS46i Scroll Vacuum Pump

XDS46i



Peak Pumping Speed

40 m³h⁻¹
(23.5 ft³min⁻¹)

Ultimate Pressure

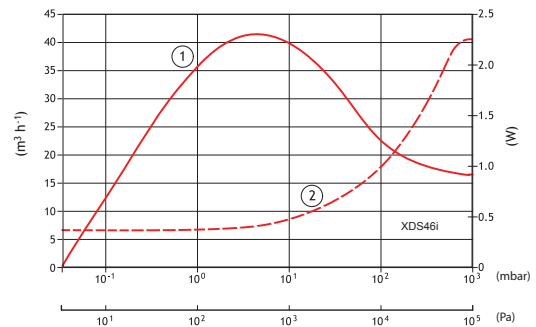
5 x 10⁻² mbar
(4 x 10⁻² Torr)

Ordering information

Product description	Order no:
XDS46i 100-120/200-230V, 1-ph, 50/60Hz with an IEC60320 connector, factory set to 230V	A73101983

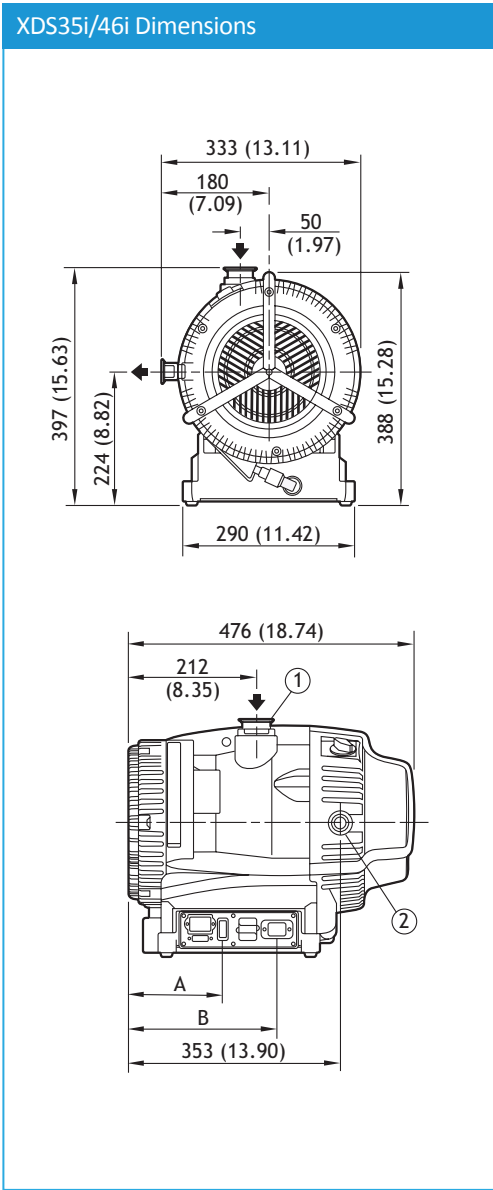
Note: Mains leads must be ordered separately, please see accessories and spares at the end of this section for the relevant standard XDS pump for the correct mains lead.

XDS46i Performance Curve



1	Speed
2	Power

Dimensions



XDS35i/ 46i	
A	150 (5.91)
B	247.5 (9.74)
1	NW40
2	NW25



Technical Data



	Units	XDS35i	XDS46i
Displacement 50 or 60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	43/ 25	60/ 35
Peak pumping speed 50 or 60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	35 / 21	40 / 23.5
Ultimate vacuum (Total pressure)	mbar/ Torr	1 x 10 ⁻² / 8 x 10 ⁻³	5 x 10 ⁻² / 4 x 10 ⁻²
Max inlet pressure for water vapour	mbar/ Torr	35 / 23	40 / 30
Max water vapour pumping rate – GB I	gh ⁻¹	70	-
Max water vapour pumping rate – GB II	gh ⁻¹	240	-
Max allowed outlet pressure	bar gauge / psig*	0.2/ 2.9	
Max allowed inlet and GB pressure	bar gauge / psig*	0.5 / 7	
Motor power	kW	0.52	
Power connector		IEC EN60320 C19	
Nominal rotation speed	rpm	1750	
Weight	kg / lb	48 / 105	
Inlet flange		NW40	
Exhaust flange		NW25	
Noise level	dB(A)	57	55.4
Vibration	mms ⁻¹ (rms)	<4.5	
Leak tightness (static)	mbar ls ⁻¹	<1 x 10 ⁻⁶	
Operating temperature range	°C / F	10 to 40 / 50 to 104	

*1 bar gauge/ 14 psig for short period of time only

Service, Spares and Accessories

XDS Accessories

Product description	Order no:
Exhaust silencer XDS35i	A50597001
Gas Ballast Adapter with 0.25mm hole	A50626801
XDS NW25 Inlet Outlet filter	A50597805
XDS NW40 Inlet Outlet Filter	A50597806
XDS Filter 5 micron Element Kit	A50597802
XDS Filter 1 micron Element Kit	A50597803

Electrical Supply Cable

Product description	Order no:
2m Electrical supply cable, no plug	A50508003
2m Electrical supply cable, North America/Japan plug	A50507003
2m Electrical supply cable, North European plug	A50506003
2m Electrical supply cable, UK, three-pin plug	A50505003

XDS Kits

Product description	Order no:
Tip seal kit XDS35i	A73001801
Tip seal kit XDS46i	A73101801
Silencer spares kit	A50597801

Acoustic Enclosure

Product description	Order no:
XDS acoustic enclosure 110-120V	NRY5C0000
XDS acoustic enclosure 200-240V	NRD797000

Service

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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

Small Dry Pumps

77.



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XDS100B BOOSTER PUMP

THE ULTIMATE DRY CHOICE



The XDS100B is a scroll booster, with a pumping mechanism designed specifically for high pumping speed. Like all booster pumps, it needs to be used in conjunction with a primary pump and is ideally matched with Edwards XDS35i or XDS46i scroll pumps. The XDS100B is optimised for maximum pumping speed at inlet pressures between 1 mbar and 10 mbar making it ideally suited for high throughput LCMS applications. The advanced pump design has resulted in virtually no tip seal wear thus reducing service intervention and maximising uptime. The inverter drive allows the pump to be connected to a single phase supply and controls the motor characteristics and ensures the pump always runs at optimum speed and allows the user to control the pump remotely.



Features and Benefits

- Lubricant-free within the vacuum envelope and hermetically sealed means totally clean and dry vacuum to prevent cross contamination
- No atmosphere to vacuum shaft seals means bearings are completely isolated, this prevents process attack and means bearings run cooler and last longer
- No oil changes required eliminating costs of contaminated oil disposal
- Simple single sided scroll design means maintenance is done in minutes for low cost of ownership and maximum up-time
- Inverter drive for consistent pumping speed at 50/60Hz

Applications

- High throughput – LCMS

Pump Range

XDS
- XDS100B



Performance Curves

XDS100B Scroll Booster Vacuum Pump

XDS100B



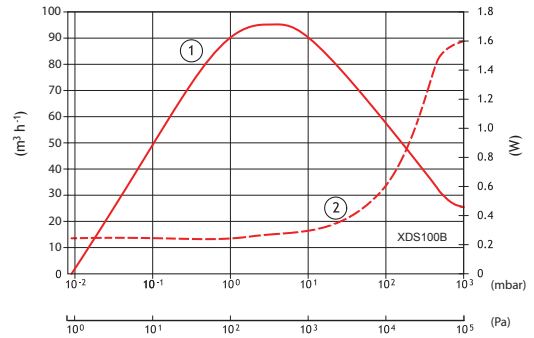
Peak Pumping Speed

95 m³h⁻¹
(56 ft³min⁻¹)

Ultimate Pressure

<1 x 10⁻² mbar
(<8 x 10⁻³ Torr)

XDS100B (with appropriate backing pump) Performance Curve



Ordering information

Product description

XDS100B 1-ph, 100-120/200-230V Set to 230V

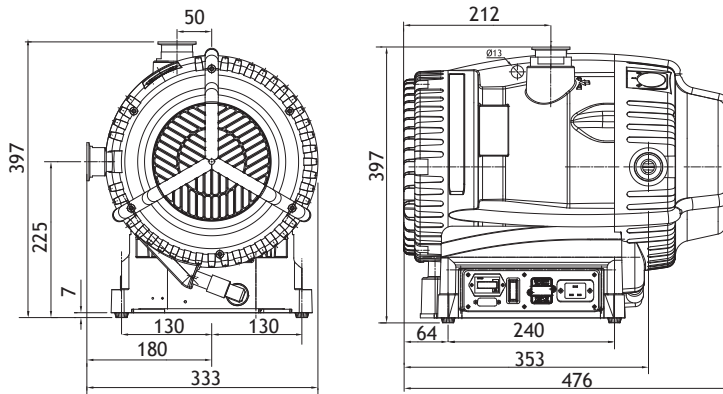
Order no:

A73201983

- | | |
|---|-------|
| 1 | Speed |
| 2 | Power |

Dimensions

XDS100B Dimensions



Technical Data



	Units	XDS100B
Displacement 50 or 60Hz		
Peak pumping speed 50 or 60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	95/ 56
Ultimate vacuum (Total pressure - depends on backing pump)	mbar / Torr	<1 x 10 ⁻² / <8 x 10 ⁻³
Max inlet pressure for water vapour	mbar / Torr	20 / 15
Max permitted continuous exhaust pressure	mbar	60
Max chamber volume to pump down from Atmospheric pressure	litres	100
Max chamber volume for cyclic duty - max 6 per hour	litres	50
Max allowed inlet and GB pressure for short duration	bar gauge / psig	0.5 / 7
Motor power	kW	0.52
Power connector		IEC EN60320 C19
Nominal rotation speed	rpm	1750
Weight	kg/ lb	48 / 105
Inlet flange		NW40
Exhaust flange		NW40
Noise level	dB(A)	52.1
Vibration	mms ⁻¹ (rms)	<4.5
Leak tightness (static)	mbar ls ⁻¹	<1 x 10 ⁻⁶
Operating temperature range	°C / F	10 to 40 / 50 to 104



Service, Spares and Accessories

Electrical Cables

Product description	Order no:
Lead Assembly, 13 A, C19, UK	A505-05-003
Lead Assembly, 16 A, C19, Europe	A505-06-003
Lead Assembly, 15 A, C19, USA	A505-07-003
Lead Assembly, 20 A, C19, No Plug	A505-08-003

Silencer

Product description	Order no:
Silencer	A50597001
Silencer spares kit	A50597801

Gas-Ballast

Product description	Order no:
Gas-ballast adaptor	A50502000

Tip Seal and Exhaust Kit

Product description	Order no:
Tip Seal and exhaust Kit XDS35i / 100B	A73001801

Service

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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.

XDD1 DIAPHRAGM VACUUM PUMP

THE ULTIMATE DRY CHOICE



The Edwards XDD1 diaphragm pumps are used for backing small compound turbomolecular pumps in clean, high vacuum applications. They comply with EN61010, EN1012, CSA/UL and are designed to be free standing bench top units. The a.c. voltage motor can be used on worldwide supplies ranging from 100 to 115 V, and 200 to 230 V. The d.c. voltage motor runs on 24 V via a 15 pin DIN connector. By selecting the appropriate mode the pump speed can be controlled by the user to provide variable pumping speed. This version is suited to the customer who is building their own a system. Pumps are not supplied with connection cables. A suitable cable should be ordered with the pump.



Features and Benefits

- Dry pumping, oil free turbomolecular backing pump with no oil disposal issues
- Compact and lightweight with a small footprint
- Worldwide a.c. voltage or 24 V d.c.
- On/off switch
- EN 60320 connector on AC pumps

Applications

- RGA
- Mass spectrometers
- Cryostat and Dewar evacuation
- Ion pump evacuation
- Surface science

Pump Range

XDD1

- XDD1 a.c.
- XDDS d.c.



Performance Curves

XDD1 Diaphragm Vacuum Pump

XDD1



Pumping Speed

a.c. 50Hz	1.2 m ³ h ⁻¹
60Hz	1.5 m ³ h ⁻¹
d.c. 600 rpm	0.6 m ³ h ⁻¹
2200 rpm	1.6 m ³ h ⁻¹

Ultimate Vacuum (Typical)

<2 mbar
1200 rpm

Ordering information

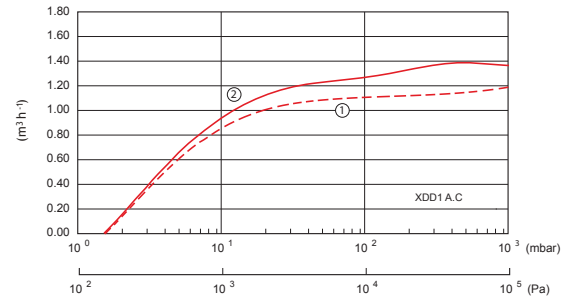
Product description

XDD1 Diaphragm Pump 100-115V/200-230V 50/60 Hz
XDD1 Diaphragm Pump 24 V d.c.

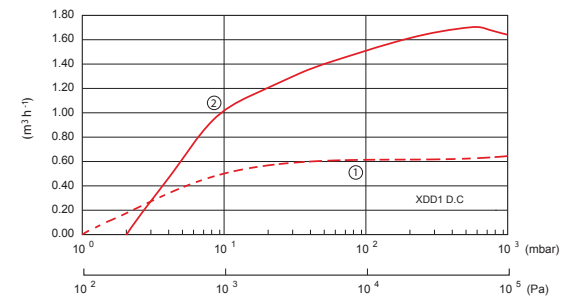
Order no:

A74602983
A74602991

XDD1 Performance Curve



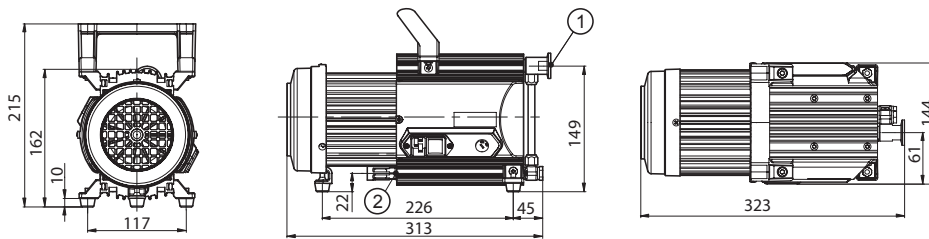
1 50 Hz 2 60 Hz



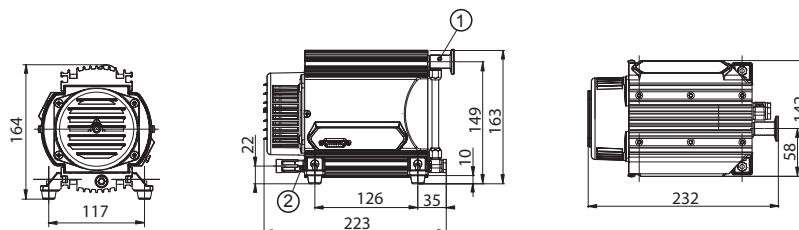
1 600 rpm 2 2200 rpm

Dimensions

XDD1 a.c. Dimensions



XDD1 d.c. Dimensions



1 Inlet

2 Outlet

Technical data



	Units	XDD1
Pumping Speed		
a.c.		
50 Hz	m ³ h ⁻¹	1.2
60 Hz	m ³ h ⁻¹	1.4
d.c.		
600 rpm	m ³ h ⁻¹	0.6
1700 rpm (factory settings)	m ³ h ⁻¹	1.4
2200 rpm	m ³ h ⁻¹	1.7
Ultimate vacuum (typical)	mbar	<2
Ambient temperature limit	°C	10 to 40
Inlet connection		NW16
Exhaust connection		The pump is fitted with a silencer which can be removed and an exhaust line connected with a 1/8 inch BSP fitting
Max allowed inlet pressure	bara	1
Power connector		IEC EN60320 C13
Motor power		
a.c.	W	80
d.c.	W	64
Weight		
a.c.	kg	6.5
d.c.	kg	4.1



Service, Spares and Accessories

Service Kit

Product description	Order no:
XDD1 diaphragm service kit	A74601800

2m Electrical Supply Cable

Product description	Order no:
2m electrical supply cable for 1-ph pumps, UK plug 3A	A50516000
2m electrical supply cable for 1-ph pumps, North European plug	A50506000
2m electrical supply cable for 1-ph pumps, North America/Japan plug	A50507000
2m electrical supply cable for 1-ph pumps, no plug	A50508000

Extension Cable

Product description	Order no:
XDD/DX/EXDC Extension Cable 1m	D39700835
XDD/DX/EXDC Extension Cable 2m	D39700836
XDD/DX/EXDC Extension Cable 5m	D39700837

Service

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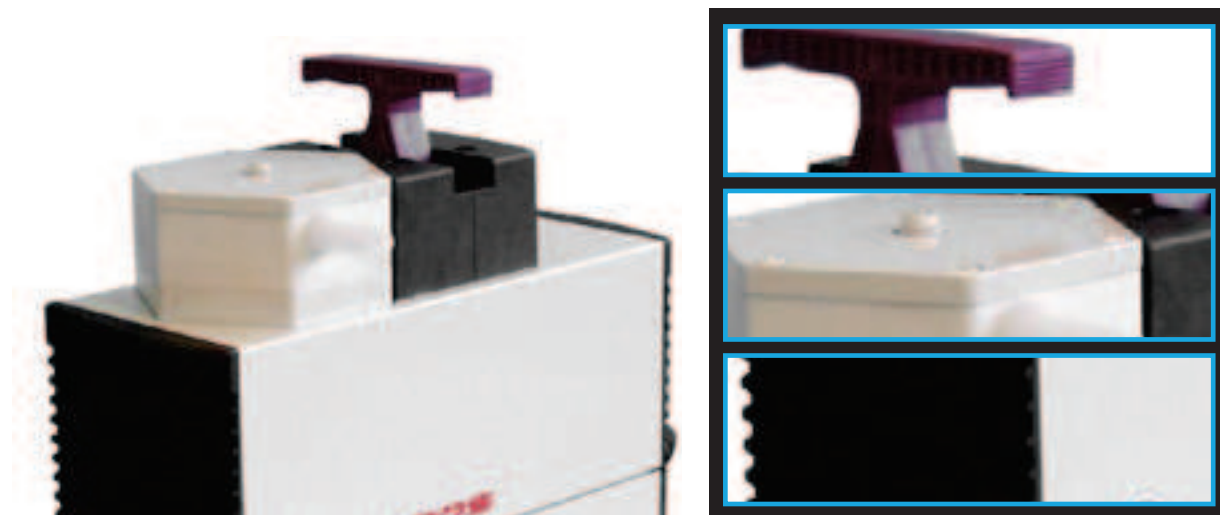
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Order spare parts and accessories from your nearest Edwards company or distributor. When you order, please state for each part required:

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

D-LAB DIAPHRAGM VACUUM PUMP

THE ULTIMATE DRY CHOICE



The D-LAB membrane pumps with their chemically resistant Teflon® heads, diaphragms and Kalrez® valves offer the chemical or pharmaceutical laboratory user a wide range of choice, either used as stand-alone pumps or as part of a sophisticated system. The one head, 100 mbar ultimate vacuum pumps are suitable for use with drying equipment or for replacing water-jet pumps, whilst the two head, 8 mbar ultimate vacuum pumps are suitable for rotary evaporation, gas transfer and a wide range of medium vacuum applications. 110V pumps are supplied with USA plug; 220-240V pumps are supplied with an IEC connector but mains cable with correct plug must be ordered separately.



Features and Benefits

- Teflon® heads and diaphragms
- One and two head versions
- 3 Sizes
- Compact, space saving design
- Low noise

Applications

- Rotary evaporation
- Gel drying
- Vacuum desiccation
- Vacuum filtration
- Vacuum degassing

Pump Range

- D-LAB
- D-LAB

Technology

- The vacuum pumps are gas-tight, oil-free, maintenance-free and quiet.
- High ultimate vacuum and fast pump down time.
- All parts of the pump head in contact with gases being pumped are resistant against aggressive substances (materials: PTFE, FFKM, PVDF).
- New valve system is very tolerant of water vapour and condensates.
- Illuminated switch on pump.
- Overload protection by means of thermal cut-out.
- Compact design with space saving dimensions.
- Changing the diaphragms and valves in the vacuum pumps is a simple procedure.
- The individual system components are easily integrated into one unit which can be progressively expanded.
- The entire unit is mounted on a sturdy baseplate which makes it safe and easy to transport.
- Individual components are easily removed because they all have plug in connectors.
- Additional laboratory equipment can easily be mounted on the groove holding the separator or on the support rods and horizontal bars.



Performance Curves

D-LAB Diaphragm Vacuum Pump

D-LAB

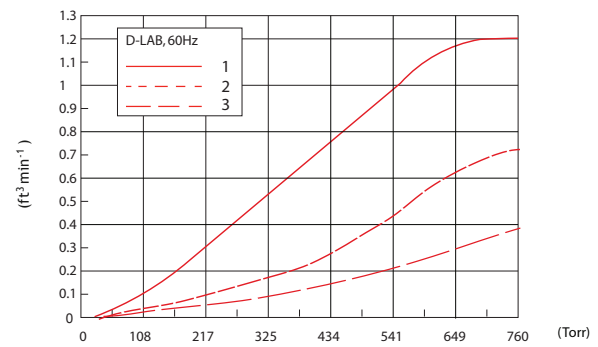
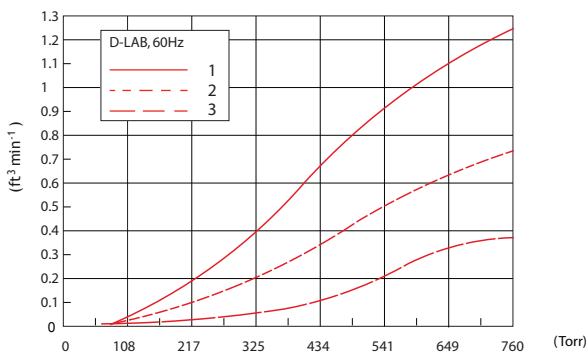
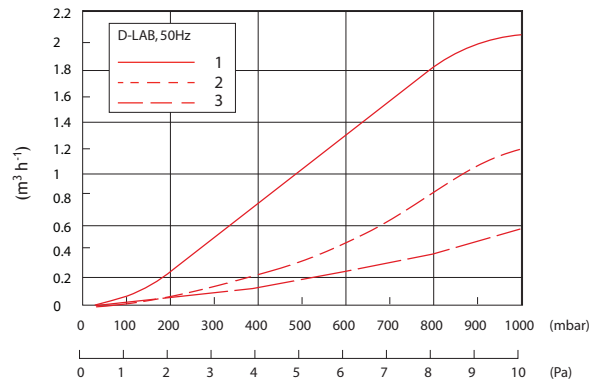
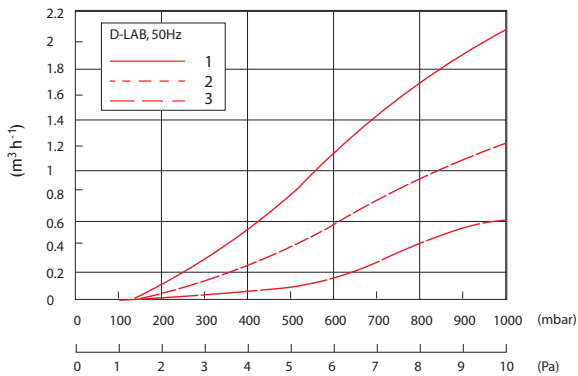


Pumping Speed (air)	
10-100, 10-8	0.6 m ³ h ⁻¹ , 10 lmin ⁻¹
20-100, 20-8	1.2 m ³ h ⁻¹ , 20 lmin ⁻¹
34-100, 34-8	2.0 m ³ h ⁻¹ , 34 lmin ⁻¹
Ultimate Vacuum, 50Hz (60Hz)	
10-100, 20-100, 34-100	100 mbar (75mbar)
10-8, 20-8, 34-8	8 mbar (6mbar)

Ordering information

Product description	Order no:
D-LAB 10-100, diaphragm pump, 110V, 60Hz, 1-ph	A48015941
D-LAB 10-100, diaphragm pump, 220-240, 50Hz, 1-ph	A48015960
D-LAB 20-100, diaphragm pump, 110V 60Hz, 1-ph	A48016960
D-LAB 20-100, diaphragm pump, 220-240~ 50Hz, 1-ph	A48017941
D-LAB 34-100, diaphragm pump, 110~ 60Hz, 1-ph	A48017960
D-LAB 34-100, diaphragm pump, 220-240~ 50Hz, 1-ph	A48018960
D-LAB 10-8, diaphragm pump, 110 V 1-phase 60 Hz	A48021941
D-LAB 10-8, diaphragm pump, 220-240~ 50Hz, 1-ph	A48021960
D-Lab 20-8, diaphragm pump, 110 V 1-phase 60 Hz	A48022941
D-Lab 20-8, diaphragm pump, 220-240V 50Hz, 1-ph	A48016941
D-LAB 34-8, diaphragm pump, 110V 60Hz, 1-ph	A48018941
D-LAB 34-8, diaphragm pump, 220-240 V 1-phase 50 Hz	A48022960

D-LAB Performance Curve



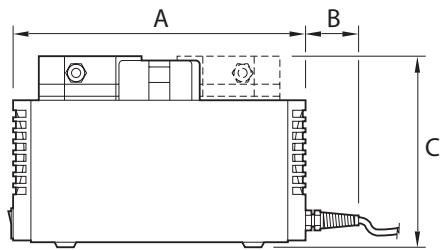
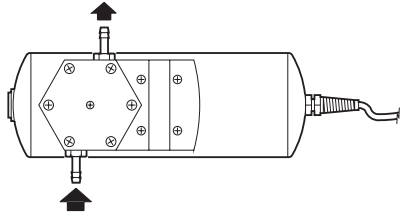
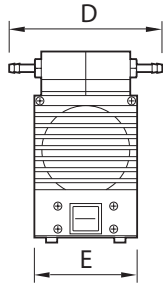
1	D-LAB 34-100
2	D-LAB 20-100
3	D-LAB 10-100

1	D-LAB 34-8
2	D-LAB 20-8
3	D-LAB 10-8

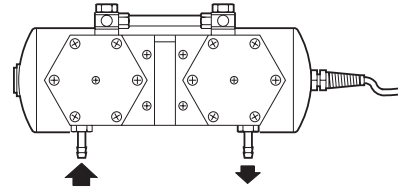
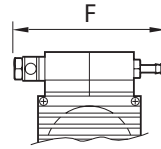
Dimensions

DLAB Dimensions

One head pump



Two head pump



	A	B	C	D	E	F
10-100	255	50	182	144	98	-
20-100	268	60	204	157	110	-
34-100	296	60	222	172	122	-
10-8	288	53	184	-	98	140
20-8	312	59	204	-	110	153
34-8	341	62	222	-	122	169



Technical Data



	Units	D-LAB
Pumping speed (air)		
10-100, 10-8	m ³ h ⁻¹ / lmin ⁻¹	0.6 / 10
20-100, 20-8	m ³ h ⁻¹ / lmin ⁻¹	1.2 / 20
34-100, 34-8	m ³ h ⁻¹ / lmin ⁻¹	2 / 34
Ultimate vacuum		
10-100, 20-100, 34-100	mbar, Hz / mbar, Hz	100, 50/ 75, 60
10-8, 20-8, 34-8	mbar, Hz / mbar, Hz	8, 50 / 6, 60
Inlet and outlet connection		Riffled nozzle, suitable for 9 mm i.d. hose
Maximum inlet pressure	bar	1
Motor power and current		
10-100, 110V 60Hz	W / A	110 / 1.3
10-100, 220-240V 50Hz	W / A	100 / 0.6
20-100, 110V 60Hz	W / A	145 / 1.9
20-100, 220-240V 50Hz	W / A	130 / 0.9
34-100, 110V 60Hz	W / A	220 / 3.2
34-100, 220-240V 50Hz	W / A	180 / 1.4
10-8, 100V 60Hz	W / A	110 / 1.3
10-8, 220-240V 50Hz	W / A	90 / 0.6
20-8, 110V 60Hz	W / A	130 / 1.2
20-8, 220-240V 50Hz	W / A	120 / 0.9
34-8, 110V 60Hz	W / A	250 / 3.2
34-8, 220-240V 50Hz	W / A	200 / 1.5
Enclosure rating		IP44
Operating temperature	°C	5 - 40
Weight		
10-100	kg / lbs	5.8 / 12.8
20-100	kg / lbs	7.1 / 15.6
34-100	kg / lbs	10.3 / 22.7
10-8	kg / lbs	6.9 / 15.2
20-8	kg / lbs	9.3 / 20.5
34-8	kg / lbs	12.6 / 27.7

Service, Spares and Accessories

D-LAB Accessories

Product description	Order no:
D-LAB Controller 230V	A48015138
D-LAB Controller 100/110V	A48015139
D-LAB Baseplate 10+20-x	A48015134
Baseplate for D-LAB Pumps 34-100, 34-8	A48021134
D-LAB Separator	A48015136
D-LAB Condenser	A48015137
Gas Ballast for D-LAB pumps 10-100, 10-8	A48015135
Gas Ballast for D-LAB pumps 20+34-8	A48017135

Electrical Supply Cable

Product description	Order no:
2m electrical supply cable for 1-ph pumps, UK, Three-pin plug	A50505000
2m electrical supply cable for 1-ph pumps, North European plug	A50506000
2m electrical supply cable for 1-ph pumps, No plug	A50508000

Service Kits

Product description	Order no:
Service Kit for D-LAB 10-100	A48015815
Service Kit for D-LAB 20-100	A48017815
Service Kit for D-LAB 34-100	A48021815
Service Kit for D-LAB 10-8	A48016815
Service Kit for D-LAB 20-8	A48018815
Service Kit for D-LAB 34-8	A48022815

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

- ORDER TODAY -

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Contact our customer service team

Small Dry Pumps

91.



Order your pump and accessories today!

How to order your pump and accessories at shop.edwardsvacuum.com

1 Take a look through our products and accessories in our webshop



The screenshot shows the Edwards website homepage. At the top left is the Edwards logo. To the right are links for 'Login', 'Contact Us', and 'EN Cart'. Below the logo is a breadcrumb trail: 'Home > Webshop > Products'. The main banner features a blue-tinted image of laboratory glassware and the text 'WORLD-CLASS VACUUM SOLUTIONS Giving you a clear edge'. Below the banner is a grid of nine product categories, each with a representative image and a yellow 'View' button: Small Wet/Dry Pumps, nEXT/EXT Turbo Pumps, STP Turbo Pumps, Small Diffusion Pumps, Large Diffusion Pumps, Measurement & Control, Vacuum Valves, Vacuum Fittings, and Semiconductor Pumps.

OR

Search the webshop using a product number



The screenshot shows the product page for the nXD56i pump. At the top left is the Edwards logo. To the right are links for 'Login', 'Contact Us', and 'EN Cart'. Below the logo is a breadcrumb trail: 'Home > Webshop > Products > Small Wet/Dry Pumps > nXD5 Small Pumps > nXD56i 100 - 127 V, 200 - 240 V, 1ph 50/60 Hz'. The main content area features a blue-tinted image of laboratory glassware and the text 'WORLD-CLASS VACUUM SOLUTIONS Giving you a clear edge'. Below the banner is a product image of the nXD56i pump, its name 'nXD56i 100 - 127 V, 200 - 240 V, 1ph 50/60 Hz', and a yellow 'Add to cart' button.

2 Click 'Add to cart'

Use our Customer Services helpline

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SMALL WET PUMPS

THE PERFORMANCE YOU CAN RELY ON

E2M0.7 and 1.5 Oil Sealed Rotary Vane Pumps	97
RV Oil-Sealed Rotary Vane Pump	101
EM18 and 28 Oil Sealed Rotary Vane Pumps	113

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E2M0.7 AND 1.5 OIL SEALED ROTARY VANE PUMPS

PERFORMANCE YOU CAN RELY ON



The E2M0.7 and E2M1.5 pumps are two-stage, direct drive, sliding vane pumps. The pump is oil-sealed and designed for reliable, long-term operation. The pump is a free-standing unit. The drive is provided through an Oldham coupling by a totally enclosed fan cooled single phase motor. The pump is well suited for scientific applications such as backing turbomolecular pumps and general laboratory applications.

Supplied with: Ultragrade 15 oil, NW O-ring and centering ring, 2 Allen keys and spare seals for oil drain and filler plug.



Features and Benefits

- E2M0.7 has very low sound level of 43dB(A).
- The pump is designed for reliable, long-term operation.
- Compact dimensions.
- Low energy consumption.
- Low operating temperature will minimise the heat load on the equipment.
- The pump is a free-standing unit.
- The motors are totally enclosed and are cooled by the motor-cooling fan and protected by a thermal overload device.
- Full height O-ring sealed oil sight glass for easy checking of oil level and condition.
- Gas ballast valve for water vapour handling capacity.
- Approved to EN61010, CSA, C22.2 and UL61010.

Applications

- Analytical instruments
- Leak detectors, helium
- Research and development
- Backing turbomolecular pumps

Pump Range

- EM
- E2M0.7
 - E2M1.5



Performance Curves

E2M0.7 Rotary Vane Pump

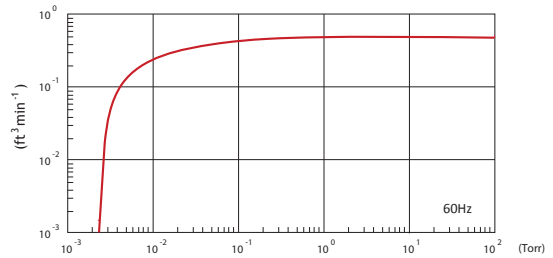
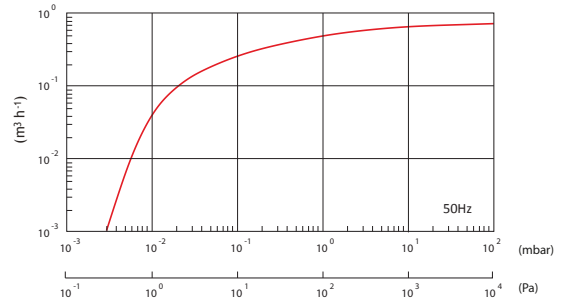
E2M0.7



Displacement	
50 Hz	0.9 m ³ h ⁻¹ / 0.5 ft ³ min ⁻¹
60 Hz	1.1 m ³ h ⁻¹ / 0.6 ft ³ min ⁻¹
Speed	
50 Hz	0.75 m ³ h ⁻¹ / 0.4 ft ³ min ⁻¹
60 Hz	0.95 m ³ h ⁻¹ / 0.5 ft ³ min ⁻¹

Product description	Order no:
E2M0.7 200-230V, 1-ph, 50/60Hz, IEC 60320 connectors	A37141919
E2M0.7 100-120V, 1-ph, 50/60Hz, IEC 60320 connectors	A37141902

E2M0.7 Performance Curve



E2M1.5 Rotary Vane Pump

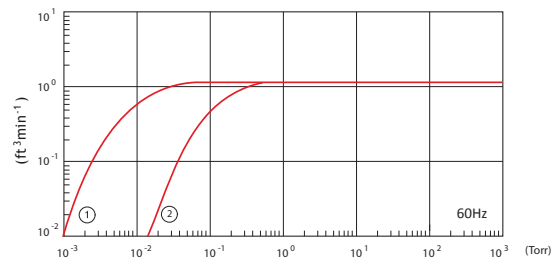
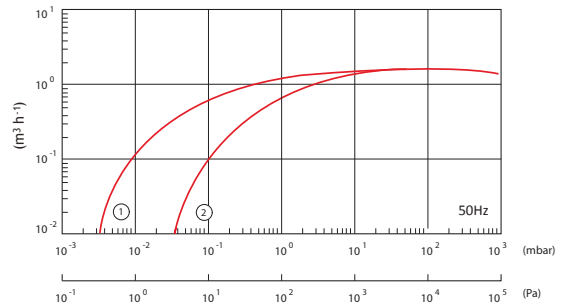
E2M1.5



Displacement	
50 Hz	1.8 m ³ h ⁻¹ / 1 ft ³ min ⁻¹
60 Hz	2.2 m ³ h ⁻¹ / 1.3 ft ³ min ⁻¹
Speed	
50 Hz	1.6 m ³ h ⁻¹ / 0.8 ft ³ min ⁻¹
60 Hz	2.0 m ³ h ⁻¹ / 1.2 ft ³ min ⁻¹

Product description	Order no:
E2M1.5 200-230V, 1-ph, 50/60Hz, IEC 60320 connectors	A37132919
E2M1.5 100-120V, 1-ph, 50/60Hz, IEC 60320 connectors	A37132902
E2M1.5 interstage 200-230V, 1-ph, 50/60Hz, IEC 60320 connectors	A37104919
E2M1.5 interstage 100-120V, 1-ph, 50/60Hz, IEC 60320 connectors	A37149902

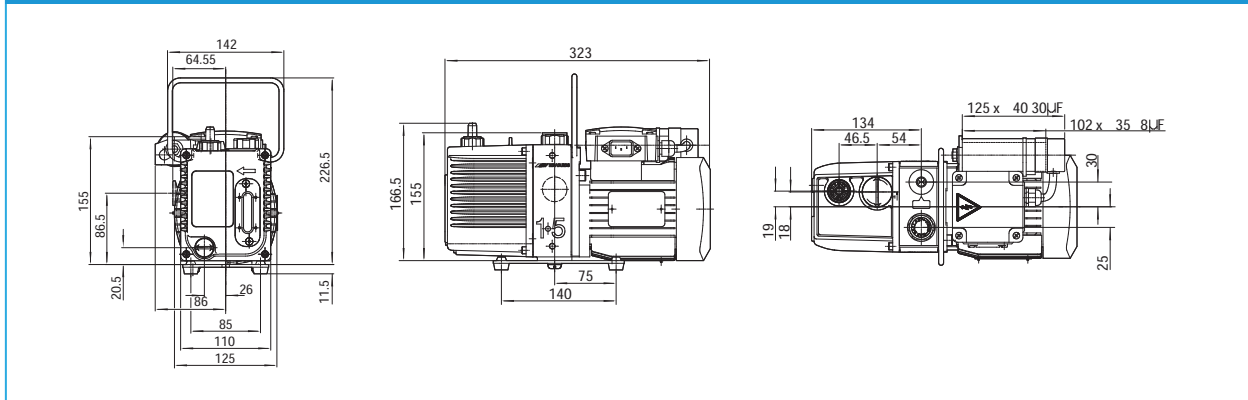
E2M1.5 Performance Curve



- 1 Without Gas Ballast
- 2 With Gas Ballast

Dimensions

E2M0.7/ 1.5. Dimensions



Technical Data



	Units	E2M0.7	E2M1.5
Displacement (swept volume)			
50 Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	0.9/ 0.5	1.8/ 1
60 Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	1.1/ 0.6	2.2/ 1.3
Speed (Pneurop 6602)			
50 Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	0.75/ 0.4	1.6/ 0.8
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	0.95/ 0.5	2.0/ 1.2
Ultimate vacuum (total pressure)			
without gas ballast	mbar/ Torr	3.0 x 10 ⁻³ / 2.3 x 10 ⁻³	3 x 10 ⁻³ / 2.3 x 10 ⁻³
with full gas ballast	mbar/ Torr	2.0 x 10 ⁻¹ / 1.5 x 10 ⁻¹	2.5 x 10 ⁻² / 1.9 x 10 ⁻²
Inlet connection			
		NW10 flange	
Outlet connection			
		Nozzle 11 mm external Ø removable from 3/8 inch BSP tapped hole	
Maximum permitted pressure at outlet			
		0.5 bar gauge / 7 psig	
Maximum inlet pressure for water vapour			
	mbar/ Torr	15/ 11	
Maximum water vapour pumping rate			
	gh ⁻¹	8	16
Motor power			
	kW	0.09	0.16
Nominal rotational speed 50/60Hz			
	rpm	1400/1700	2800/3400
Power connector			
		IEC EN60320 C13	
Operating temperature range			
	°C	12 - 40	
Weight, without oil			
	kg/ lbs	10/ 22	
Noise			
	dB(A)	43 @ 50 Hz	54 @ 50 Hz
Oil capacity - maximum			
	litre	0.28	
Oil capacity - minimum			
	litre	0.2	
Recommended oil (supplied)			
		Ultragrade 15	



Service, Spares and Accessories

Product description	Order no:
Model EMF3 mist filter	A46220000
2m electrical supply cable for 1-ph pumps, UK, Three-pin plug	A50505000
2m electrical supply cable for 1-ph pumps, North European plug	A50506000
2m electrical supply cable for 1-ph pumps, North America/Japan plug	A50507000
2m electrical supply cable for 1-ph pumps, no plug	A50508000
Spares Kit C&O E2M0.7/1/1.5	A37101131
Spares Kit Blade E2M0.7/1.5	A37101132
NW10 Centring Nitrile S/S Pk1	C10511396
NW10 O Ring Viton Pk 5	H02124032
NW10 x 3/8" BSP Adapter	A25908064

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.

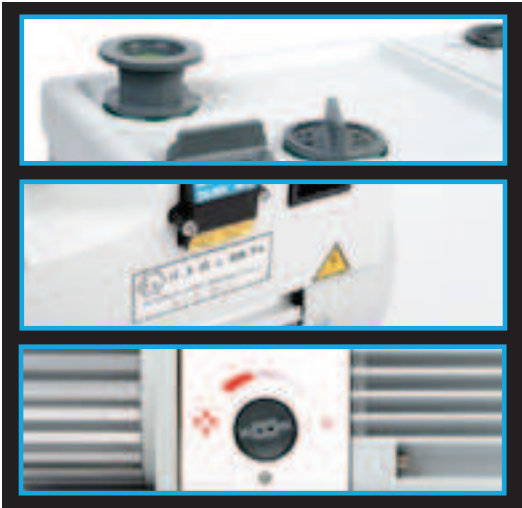
Order spare parts and accessories from your nearest Edwards company or distributor.

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.

RV OIL-SEALED ROTARY VANE PUMP

PERFORMANCE YOU CAN RELY ON



Edwards RV pumps have become the industry standard for scientific primary pumping applications. RV pumps are uniquely capable of delivering high or low throughputs with high ultimate vacuum. This, combined with low noise levels, makes them ideal for a wide range of applications including GCMS and other small bench top type applications. All pumps are approved to UL and CSA standards by an external test house. Edwards has a global network, providing world-wide support for product applications and service.

Supplied with: 1 litre of Ultragrade 19 oil, inlet filter and O-ring. Fomblin® must be purchased separately for PFPE RV pumps.



Features and Benefits

- **High reliability** - generous lubrication of moving parts
- **Safe process and systems** - fast acting inlet valve for best in class anti-suck back protection
- **Configured to meet your vacuum needs** - mode selector and two position gas ballast
- **No unplanned downtime** - designed for easy maintenance
- **Better work environment** - quiet running and intrusive frequencies minimised

Applications

- Analytical instruments
- Laboratory bench top vacuum
- Backing turbomolecular pumps
- Freeze drying
- Research and development

Pump Range

RV3	RV8
- RV3	- RV8
- RV3 ATEX	- RV8 ATEX
- PFPE RV3	- PFPE RV8
RV5	RV12
- RV5	- RV12
- RV5 ATEX	- RV12 ATEX
- PFPE RV5	- PFPE RV12



Performance Curves

RV3 Oil Sealed Rotary Pump

RV3



Displacement

50Hz	3.7 m ³ h ⁻¹ 2.2 ft ³ min ⁻¹
60Hz	4.5 m ³ h ⁻¹ 2.6 ft ³ min ⁻¹

Speed (Pneurop 6602)

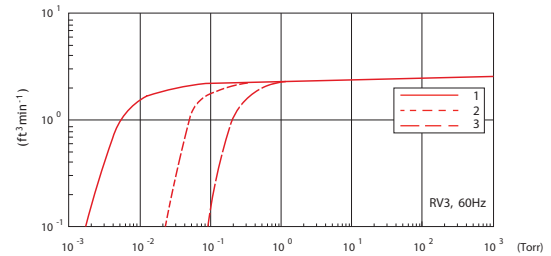
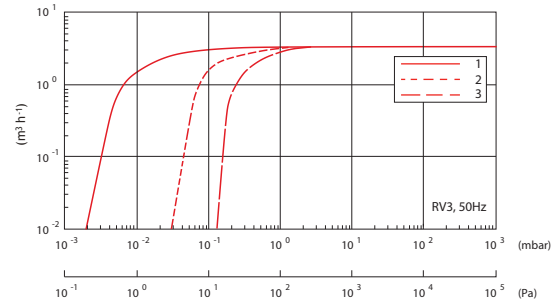
50Hz	3.3 m ³ h ⁻¹ 2.0 ft ³ min ⁻¹
60Hz	3.9 m ³ h ⁻¹ 2.3 ft ³ min ⁻¹

Ordering information

Product description	Order no:
RV3 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65201903
RV3 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65201904
RV3 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz Factory set to 380/460V	A65201905
RV3 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65201906
PFPE RV3 115/230V, 1-ph, 50/60 Hz, Factory set to 230V for Europe	A65209903
PFPE RV3 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65209904
PFPE RV3 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65209905
PFPE RV3 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65209906

Please note that Fomblin® must be purchased separately for PFPE RV pumps

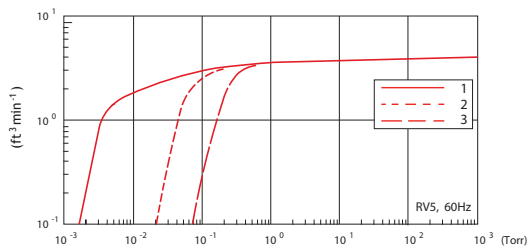
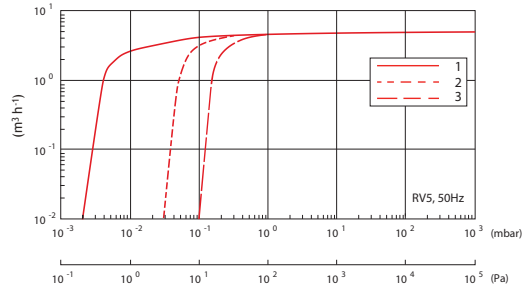
RV3 Performance Curve



- 1 High vacuum mode, gas ballast =0
- 2 High throughput mode, gas ballast mode = 0 and High vacuum mode, gas ballast = 1
- 3 High vacuum and throughput mode, gas ballast =II

RV5 Performance Curve

RV5



Displacement

50Hz	5.8 m ³ h ⁻¹
	3.4 ft ³ min ⁻¹
60Hz	7.0 m ³ h ⁻¹
	4.1 ft ³ min ⁻¹

Speed (Pneurop 6602)

50Hz	5.1 m ³ h ⁻¹
	3.0 ft ³ min ⁻¹
60Hz	6.2 m ³ h ⁻¹
	3.7 ft ³ min ⁻¹



Ordering information

Product description	Order no:
RV5 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65301903
RV5 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65301904
RV5 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65301905
RV5 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65301906
PFPE RV5 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65309903
PFPE RV5 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65309904
PFPE RV5 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65309905
PFPE RV5 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65309906

- 1 High vacuum mode, gas ballast =0
- 2 High throughput mode, gas ballast mode = 0 and High vacuum mode, gas ballast = 1
- 3 High vacuum and throughput mode, gas ballast =II

Please note that Fomblin® must be purchased separately for PFPE RV pumps



Performance Curves

RV8 Oil Sealed Rotary Pump

RV8



Displacement

50Hz	9.7 m ³ h ⁻¹
	5.7 ft ³ min ⁻¹
60Hz	11.7 m ³ h ⁻¹
	6.9 ft ³ min ⁻¹

Speed (Pneurop 6602)

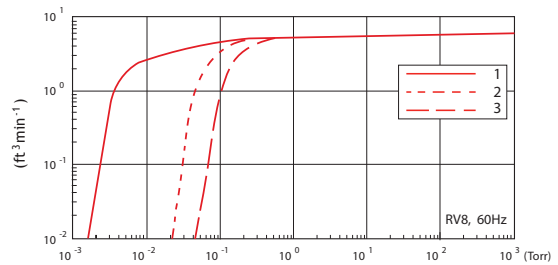
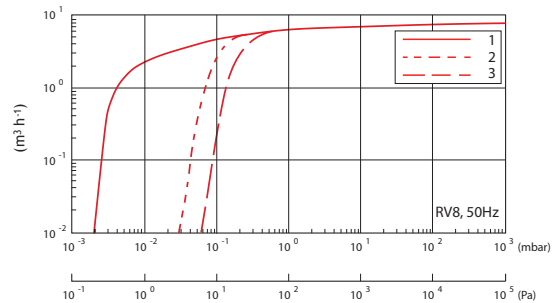
50Hz	8.5 m ³ h ⁻¹
	5.0 ft ³ min ⁻¹
60Hz	10 m ³ h ⁻¹
	5.9 ft ³ min ⁻¹

Ordering information

Product description	Order no:
RV8 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65401903
RV8 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65401904
RV8 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65401905
RV8 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65401906
PFPE RV8 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65409903
PFPE RV8 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65409904
PFPE RV8 200-220/380-415V, 3-ph, 50Hz, and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65409905
PFPE RV8 115/230V, 1-ph, 50/60Hz, Factory set to 115V for Europe	A65409906

Please note that Fomblin® must be purchased separately for PFPE RV pumps

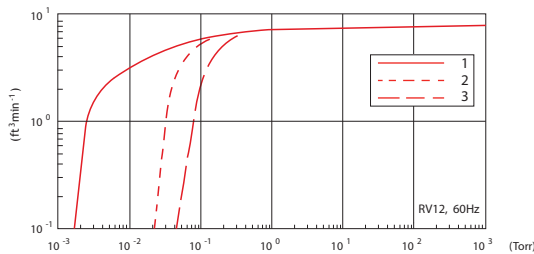
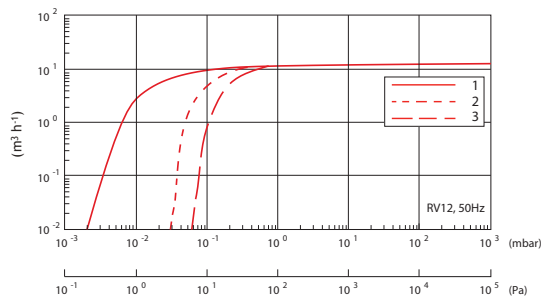
RV8 Performance Curve



- 1 High vacuum mode, gas ballast = 0
- 2 High throughput mode, gas ballast mode = 0 and High vacuum mode, gas ballast = 1
- 3 High vacuum and throughput mode, gas ballast = II

RV12 Performance Curve

RV12



Displacement

50Hz	14.2 m³h ⁻¹ 8.4 ft³min ⁻¹
60Hz	17 m³h ⁻¹ 10 ft³min ⁻¹

Speed (Pneurop 6602)

50Hz	12 m³h ⁻¹ 7.1 ft³min ⁻¹
60Hz	14.2 m³h ⁻¹ 8.4 ft³min ⁻¹



Ordering information

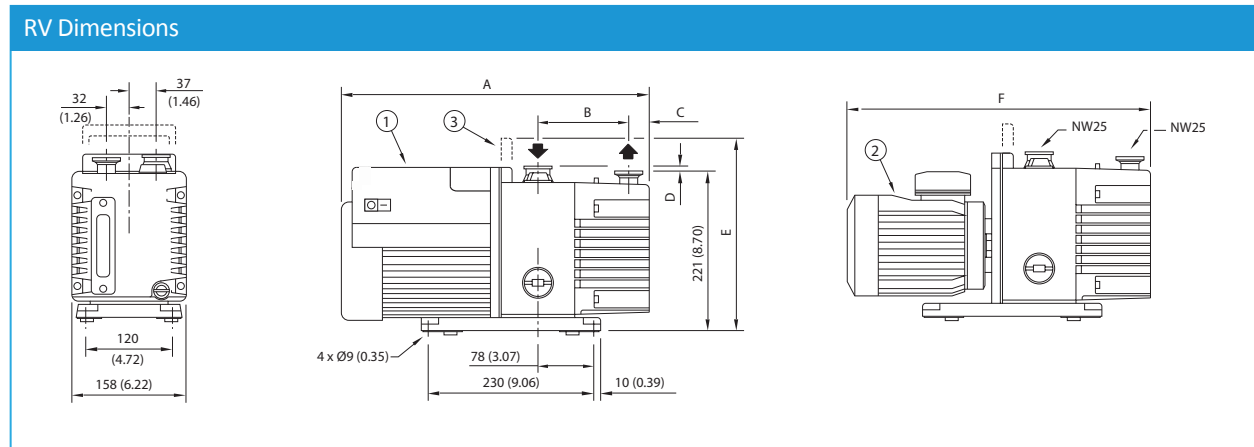
Product description	Order no:
RV12 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65501903
RV12 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65501904
RV12 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65501905
RV12 115/230V, 1-ph, 50/60Hz, Factory set to 115V for USA	A65501906
PFPE RV12 115/230V, 1-ph, 50/60Hz, Factory set to 230V for Europe	A65509903
PFPE RV12 100/200V, 1-ph, 50/60Hz, Factory set to 200V for Japan	A65509904
PFPE RV12 200-220/380-415V, 3-ph, 50Hz and 200-230/460V, 3-ph, 60Hz, Factory set to 380/460V	A65509905
PFPE RV12 Two Stage Rotary Vane Pump 115/230V 1ph 50/60Hz, Factory set to 115V for USA	A65509906

- 1 High vacuum mode, gas ballast =0
- 2 High throughput mode, gas ballast mode = 0 and High vacuum mode, gas ballast = 1
- 3 High vacuum and throughput mode, gas ballast =II

Please note that Fomblin® must be purchased separately for PFPE RV pumps



Dimensions



	RV3/5	RV8	RV12
A	430 (16.93)	470 (18.50)	490 (19.29)
B	127 (5)	161 (6.34)	181 (7.13)
C	29 (1.14)	35 (1.38)	35 (1.38)
D	4 (0.16)	4 (0.16)	4 (0.16)
E	267 (10.51)	261 (10.28)	261 (10.28)
F	429 (16.89)	469 (18.46)	489 (19.25)
1	1-Phase motor		
2	3-Phase motor		
3	Retractable handle		

Technical Data

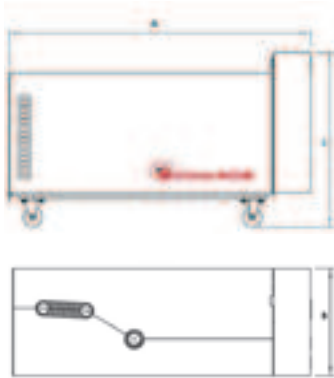


Units	RV3	RV5	RV8	RV12	
Displacement					
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.7/ 2.2	5.8/ 3.4	9.7/ 5.7	14.2/ 8.4
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	4.5/ 2.6	7.0/ 4.1	11.7/ 6.9	17/ 10
Speed (Pneurop 6602)					
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.3/ 2	5.1/ 3.0	8.5/ 5	12/ 7.1
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.9/ 2.3	6.2/ 3.7	10/ 5.9	14.2/ 8.4
Ultimate pressure	mbar/ Torr	2.0 x 10 ⁻³ / 1.5 x 10 ⁻³			
Ultimate pressure GB I	mbar/ Torr	3.0 x 10 ⁻² / 2.3 x 10 ⁻²			
Ultimate pressure GB II	mbar/ Torr	1.2 x 10 ⁻¹ / 9.1 x 10 ⁻²	1.0 x 10 ⁻¹ / 7.5 x 10 ⁻²	6 x 10 ⁻² / 4.6 x 10 ⁻²	
Ultimate Pressure with Fomblin®	mbar/ Torr	2 x 10 ⁻² / 1.5 x 10 ⁻²			
Max inlet pressure for water vapour	mbar/ Torr	80/ 60	50/ 38	38/ 28.5	32/ 24
Max water vapour pumping rate – GB I	gh ⁻¹	60			
Max water vapour pumping rate – GB II	gh ⁻¹	220			
Max allowed outlet pressure	bar gauge/ psig	0.2/ 2.8			
Max allowed inlet and gas ballast pressure	bar gauge/ psig	0.5/ 7			
Motor power 50/60Hz	W	450 / 550			
Power connector 1-ph		IEC EN60320 C13			
Nominal rotation speed 50/60Hz	rpm	1500 / 1800			
Weight (without oil)	kg/ lb	25/ 55		28/ 61.6	29/ 63.8
Oil capacity min/max	litres	0.42/0.7		0.4/ 0.75	0.65/ 1
Recommended oil		Ultragrade 19			
Inlet flange		NW25			
Exhaust flange		NW25			
Noise level	dB(A)	48 @ 50 Hz			
Operating temperature range	°C	12 – 40			



Service, Spares and Accessories

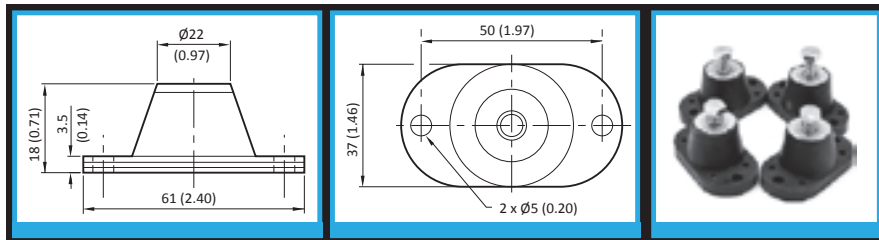
RV Acoustic Enclosure



Technical Data		
Mass	22.5 kg	
Electrical supply for cooling fans		
Voltage	100-120 V/ 200-240 V	
Fuse rating	2.5A Type T 20mm	
Connector	IEC320 socket	
Approximate noise reduction	7dBA	
A	B	C
789	282	456

Vibration Isolators

You may need to fit vibration isolators to your pump if you mount it into a frame or a system, if the mounting points are not level or if you need to minimise the transmission of vibration and noise in your application. You must fit flexible bellows or other flexible pipes to the pump inlet and outlet. The height of these neoprene rubber isolators reduces by about 1 mm when the pump is fitted.



Service

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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.

RV Accessories

Product description	Order no:
2m electrical supply cable for 1-ph pumps, UK, Three-pin plug	A50505000
2m electrical supply cable for 1-ph pumps, North European plug	A50506000
2m electrical supply cable for 1-ph pumps, North America/Japan plug	A50507000
2m electrical supply cable for 1-ph pumps, no plug	A50508000
Model EMF10 mist filter	A46226000
Clean and overhaul kit	A65201131
Clean and overhaul kit (Nitrile)	A65201137
Outer Shaft Seal Kit RV	A65201134
Gas Ballast adaptor	A50502000

Acoustic Enclosure

Product description	Order no:
RV acoustic enclosure 110-120V	NRD317000
RV acoustic enclosure 200-240V	NRD318000

Vibration Isolator

Product description	Order no:
RV Vibration isolator (0.45 kg)	A24801404

Accessory Kits

Product description	Order no:
Clean application oil return kit	A50419000
Adjustable gas ballast oil return kit	A50523000
RV easy oil box drain kit	A50503000
Exhaust nozzle kit 3/4" to 15mm	A50509000

Spares Kits

Product description	Order no:
Spares Kit Cartridge RV3	A65201032
Spares Kit Cartridge RV5	A65301032
Spares Kit Cartridge RV8	A65401032
Spares Kit Cartridge RV12	A65501032
Spares Kit Blade RV3	A65201130
Spares Kit Blade RV5	A65301130
Spares Kit Blade RV8	A65401130
Spares Kit Blade RV12	A65501130
Spares Kit Inlet Valve RV3/5/8/12	A65201036



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Small Wet Pumps

109.

RV ATEX

Performance Curves

RV ATEX Oil Sealed Rotary Pump

RV ATEX

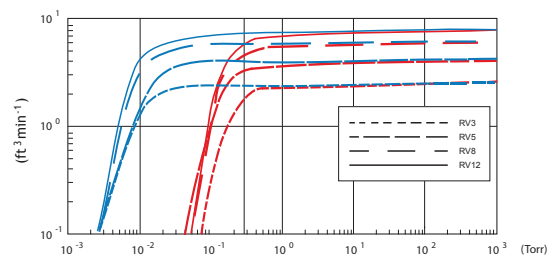
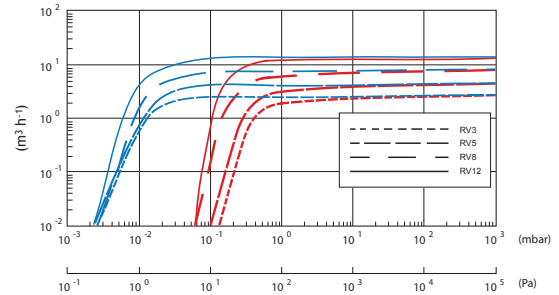


	RV3	RV5	RV8	RV12
Displacement				
50Hz	3.7 m ³ h ⁻¹	5.8 m ³ h ⁻¹	9.7 m ³ h ⁻¹	14.2 m ³ h ⁻¹
	2.2 ft ³ min ⁻¹	3.4 ft ³ min ⁻¹	5.7 ft ³ min ⁻¹	8.4 ft ³ min ⁻¹
60Hz	4.5 m ³ h ⁻¹	7.0 m ³ h ⁻¹	11.7 m ³ h ⁻¹	17 m ³ h ⁻¹
	2.6 ft ³ min ⁻¹	4.1 ft ³ min ⁻¹	6.9 ft ³ min ⁻¹	10 ft ³ min ⁻¹
Speed (Pneurop 6602)				
50Hz	3.3 m ³ h ⁻¹	5.1 m ³ h ⁻¹	8.5 m ³ h ⁻¹	12 m ³ h ⁻¹
	2.0 ft ³ min ⁻¹	3.0 ft ³ min ⁻¹	5.0 ft ³ min ⁻¹	7.1 ft ³ min ⁻¹
60Hz	3.9 m ³ h ⁻¹	6.2 m ³ h ⁻¹	10 m ³ h ⁻¹	14.2 m ³ h ⁻¹
	2.3 ft ³ min ⁻¹	3.7 ft ³ min ⁻¹	5.9 ft ³ min ⁻¹	8.4 ft ³ min ⁻¹

Ordering information

Product description	Order no:
ATEX RV3 115V, 1-ph, 60Hz Ex II 2G IIC T4	A65218986
ATEX RV3 230V, 1-ph, 50Hz Ex II 2G IIC T4	A65218989
ATEX RV3 400V, 3-ph, 50Hz Ex II 2G IIC T4	A65218992
ATEX RV5 115V, 1-ph, 60Hz Ex II 2G IIC T4	A65318986
ATEX RV5 230V, 1-ph, 50Hz Ex II 2G IIC T4	A65318989
ATEX RV5 400V, 3-ph, 50Hz Ex II 2G IIC T4	A65318992
ATEX RV8 115V, 1-ph, 60Hz Ex II 2G IIC T4	A65418986
ATEX RV8 230V, 1-ph, 50Hz Ex II 2G IIC T4	A65418989
ATEX RV8 400V, 3-ph, 50Hz Ex II 2G IIC T4	A65418992
ATEX RV12 230V, 1-ph, 50Hz Ex II 2G IIC T4	A65518989
ATEX RV12 400V, 3-ph, 50Hz Ex II 2G IIC T4	A65518992

RV ATEX Performance Curve

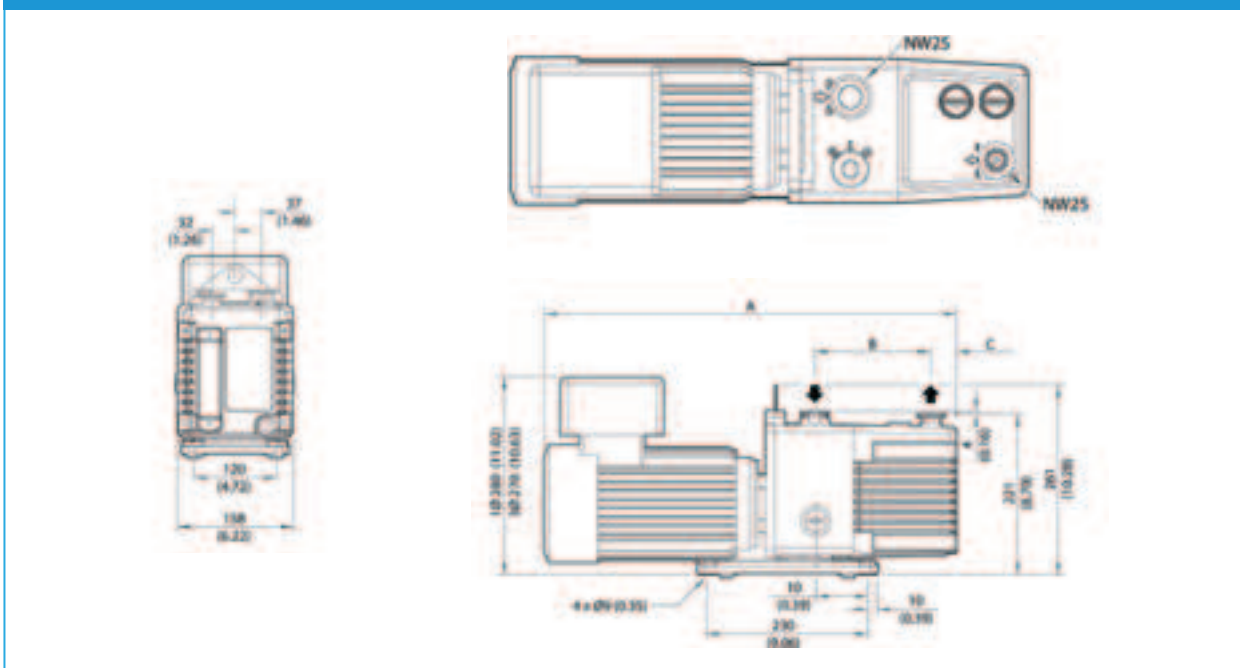


Blue - No gas purge

Red - With inert gas purge

Dimensions

RV ATEX Dimensions



Pump	A	B	C
RV3	520 (20.47)	127 (5)	29 (1.06)
RV5	520 (20.47)	127 (5)	29 (1.06)
RV8	560 (22.05)	161 (6.34)	35 (1.38)
RV12	580 (22.83)	181 (7.13)	35 (1.38)

Technical Data



	Units	RV3 ATEX	RV5 ATEX	RV8 ATEX	RV12 ATEX
Displacement					
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.7/ 2.2	5.8/ 3.4	9.7/ 5.7	14.2/ 8.4
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	4.5/ 2.6	7/ 4.1	11.7/ 6.9	17/ 10
Speed (Pneurop 6602)					
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.3/ 2	5.1/ 3	8.5/ 5	12/ 7.1
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	3.9/ 2.3	6.2/ 3.6	10/ 5.9	14.2/ 8.4
Max allowed outlet pressure	bar gauge/ psig	0.2/ 2.8			
Max allowed inlet and gas purge pressure	bar gauge/ psig	0.5/ 7			
Nominal rotation speed 50/60Hz	rpm	1430 / 1710			
Motor power 50/60Hz	W	550		750	
Weight (without oil)	kg/ lb	28/ 61.6		31/ 68.2	
Inlet flange		NW25			
Exhaust flange		NW25			
Operating temperature range	°C	12 – 40			

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Small Wet Pumps

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EM18 AND 28 OIL SEALED ROTARY VANE PUMPS

PERFORMANCE YOU CAN RELY ON



The EM range of oil-sealed rotary pumps - renowned for their high ultimate vacuum, rapid pumping speed, quiet operation and ability to handle vapour - have become the industry standard for laboratory and light industrial applications. The pump is a freestanding unit with the drive provided through a flexible coupling by either a single-phase or three-phase (four pole) motor.

Supplied with: Ultragrade 19 oil, NW25 O-ring and centering ring. Fomblin® must be purchased separately for PFPE pumps.



Features and Benefits

- The pump is designed for reliable, long-term operation.
- Thermal overload device prevents overheating (single phase only).
- The drive is provided through a flexible coupling by a single-phase or three-phase (four pole) motor.
- The motors are totally enclosed and are cooled by the motor cooling fan.
- Full height O ring sealed oil sight glass for easy checking of oil level and condition.
- Large sight glass and operating oil range

Applications

- Analytical instruments
- Leak detectors, helium
- Research and development
- Backing turbomolecular pumps
- Automotive
- Beam lines and high energy physics
- Centrifuges, ultra-high speed
- Coating

Pump Range

EM

- E1/E2M18
- E1/E2M18 ATEX
- PFPE E1/E2M18
- E2M28
- PFPE E2M28



Performance Curves

E1M18 One Stage, E2M18 Two Stage Rotary Vane Pumps

E1/E2M18



Displacement

50Hz	20.5 m ³ h ⁻¹ (12.1 ft ³ min ⁻¹)
60Hz	25 m ³ h ⁻¹ (14.7 ft ³ min ⁻¹)

Speed (Pneurop 6602)

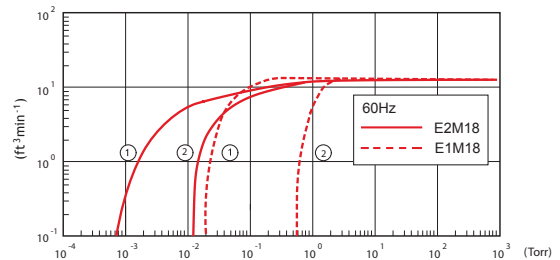
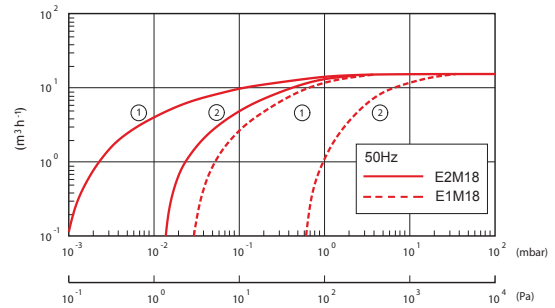
50Hz	17 m ³ h ⁻¹ (10 ft ³ min ⁻¹)
60Hz	20.4 m ³ h ⁻¹ (12.1 ft ³ min ⁻¹)

Ordering information

Product description	Order no:
E1M18 200-230/380-415V, 3-ph, 50Hz or 200-230/460V, 3-ph, 60Hz	A34310940
E1M18 100/200V, 1-ph, 50Hz or 100-105/200-210V, 1-ph, 60Hz	A34315904
E1M18 115/200-230V, 1-ph, 50/60Hz with IEC60320 connector, factory set to 230V	A34317984
E1M18 PFPE 115/200-230V, 1-ph, 50/60Hz with IEC60320 connector	A34325984
E2M18 200-230/380-415V, 3-ph, 50Hz or 200-230/460V, 3-ph, 60Hz	A36310940
E2M18 100/200V, 1-ph, 50Hz or 100-105/200-210V, 1-ph, 60Hz	A36315904
E2M18 115/200-230V, 1-ph, 50/60Hz with IEC60320 connector	A36317984
E2M18 PFPE 200-230/380-415 V, 3-ph, 50 Hz or 200-230/460 V, 3-ph, 60 Hz	A36321940
E2M18 PFPE 100/200V, 1-ph, 50Hz or 100-105/200-210V, 1-ph, 60Hz	A36325904
E2M18 PFPE 115/200-230 V, 1-ph, 50/60 Hz with IEC60320 connector fitted	A36325984

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

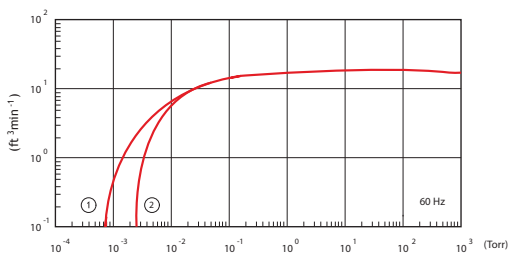
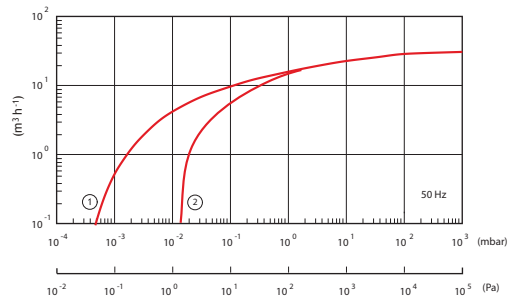
E1/E2M18 Performance Curve



- 1 Without gas ballast
- 2 With gas ballast

E2M28 Performance Curve

E2M28



- 1 Without gas ballast
- 2 With gas ballast

Displacement

50Hz	32.2 m ³ h ⁻¹ (19 ft ³ min ⁻¹)
60Hz	38.9 m ³ h ⁻¹ (22.3 ft ³ min ⁻¹)

Speed (Pneurop 6602)

50Hz	27.5 m ³ h ⁻¹ (16.2 ft ³ min ⁻¹)
60Hz	33 m ³ h ⁻¹ (19.5 ft ³ min ⁻¹)



Ordering information

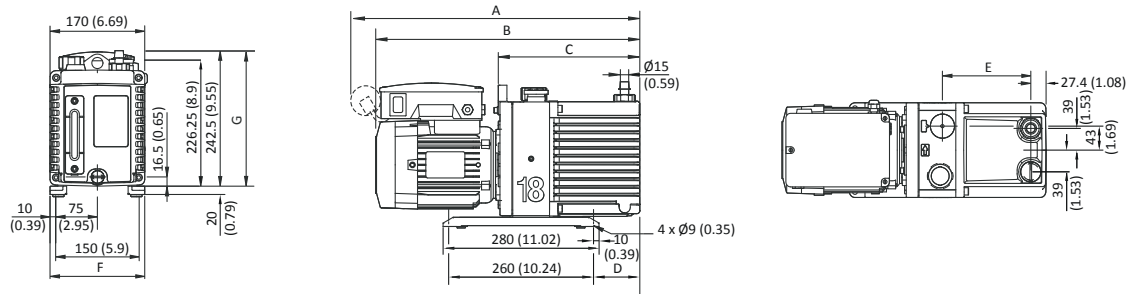
Product description	Order no:
E2M28 200-220/380-415 V, 3-ph, 50 Hz or 200-230/460 V, 3-ph, 60 Hz IE2	A37330940
E2M28 100/200 V, 1-ph, 50 Hz or 100-105/200-210 V, 1-ph, 60 Hz	A37315904
E2M28 115/200-230 V, 1-ph, 50/60 Hz with IEC60320 connector fitted	A37317984
E2M28 PFPE 200-220/380-415 V, 3-ph, 50 Hz or 200-230/460 V, 3-ph, 60 Hz IE2	A37341940
E2M28 PFPE 115/200-230 V, 1-ph, 50/60 Hz with IEC60320 connector fitted	A37325984

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



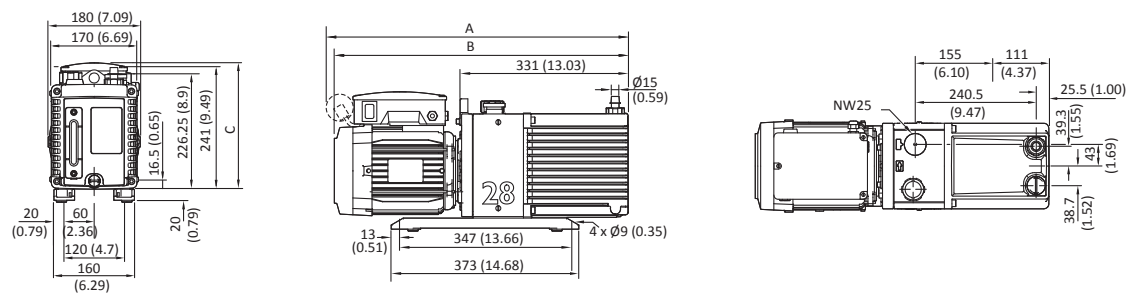
Dimensions

E1/ E2M18 Dimensions



Order no:	A	B	C	D	E	F	G
A34310940	-	474	247	83	159	171.4	217
A34315904	518	474	247	83	159	171.4	241
A34317984	-	504	247	83	159	171.4	251
A36310940	-	520	295	131	207	171.4	217
A36315904	564	520	295	131	207	171.4	241
A36317984	-	550	295	131	207	171.4	251

E2M28 Dimensions



Order no:	A	B	C
A37330940	-	570	217
A37315904	598	584	251
A37317984	-	584	251

Technical Data



	Units	E1M18	E2M18	E2M28
Displacement				
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	20.5 / 12.1		32.2/ 19
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	25.0/ 14.7		38.9/ 22.3
Speed (Pneurop 6602)				
50Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	17.0/ 10		27.5/ 16.2
60Hz	m ³ h ⁻¹ / ft ³ min ⁻¹	20.4/ 12.1		33.0/ 19.5
Ultimate vacuum (total pressure)				
without gas purge	mbar/ Torr	3 x 10 ⁻² / 2.2 x 10 ⁻²	1 x 10 ⁻³ / 7.4 x 10 ⁻⁴	1 x 10 ⁻³ / 7.5 x 10 ⁻⁴
with gas purge	mbar/ Torr	6.5 x 10 ⁻¹ / 4.8 x 10 ⁻¹	1.5 x 10 ⁻¹ / 1.1 x 10 ⁻²	1.5 x 10 ⁻² / 1.1 x 10 ⁻²
with Fomblin®	mbar/ Torr	3 x 10 ⁻¹ / 2.56 x 10 ⁻²	1 x 10 ⁻² / 7.5 x 10 ⁻³	1 x 10 ⁻² / 7.5 x 10 ⁻³
Inlet connection		NW25		
Outlet connection*		Nozzle 15 mm external Ø removable from 3/4 in BSP tapped hole		
Max permitted pressure at outlet	bar gauge/ psig	0.5/ 7		
Max inlet pressure for water vapour	mbar/ Torr	50/ 38	20/ 15	30/ 23
Max water vapour pumping rate	kg h ⁻¹	0.65	0.3	0.7
Operating temp range		13 - 40°C		
Nominal Rotation speed 50/60Hz	rpm	1440 / 1720 rpm		
Power connector 1-ph**		IEC EN60320 C19		
Motor power 50 Hz	kW	0.55 kW		0.75 kW
Motor power 60 Hz	kW	0.75 kW		0.90 kW
Weight	kg/ lbs	37/ 82	39/ 86	44 / 97
Noise @ 50Hz	dB(A)	57		
Oil capacity - max	litre	1.4	1.05	1.5
Oil capacity - min	litre	0.9	0.75	1.2
Recommended oil (supplied)		Ultragrade 19		

* The PFPE are supplied with NW25 outlet connection

** Pumps listed with IEC connector only



Service, Spares and Accessories

EM Accessories

Product description	Order no:
2m Electrical supply cable, UK, three-pin plug	A50505003
2m Electrical supply cable, North European plug	A50506003
2m Electrical supply cable, North America/Japan plug	A50507003
2m Electrical supply cable, no plug	A50508003
Model EMF20 mist filter*	A46229000
*EMF20 is suitable for E2M28 on low throughput applications	
Model MF30 mist filter	A46233000
Clean application oil return kit (E1M18 to E2M28)	A50420000
Suits the E2M0.7 to E2M28 including RV	A50502000
For the E1M18/E2M28 an adapter is required	A50006003
NW25 to 28mm bore tube adaptor	C10520201
3/4" BSP to NW25 outlet adaptor	C10501414

Acoustic Enclosures

Product description	Order no:
EM acoustic enclosure 110-120V	NRD317000
EM acoustic enclosure 200-240V	NRD318000

Vibration Isolators

Product description	Order no:
E1M/E2M18 (0.45 kg)	A24801404
E2M28 (0.45 kg)	A24801412

Spares Kits

Product description	Order no:
Spares Kit C&O E1M18/E2M18	A36301131
Spares Kit Blade E1M18	A34301041
Spares Kit Blade E2M18	A36301020
Spares Kit Blade E2M28/30	A37301135
Clean and overhaul kit (hydrocarbon) E2M28	A37301131

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E1M18 One Stage, E2M18 Two Stage Rotary Vane ATEX Pumps

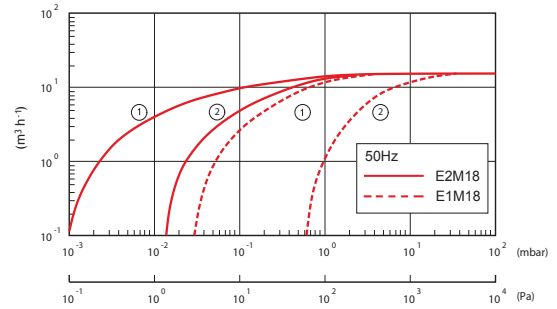
Performance Curves

E1M18 One Stage, E2M18 Two Stage Rotary Vane ATEX Pumps

E1/E2M18 ATEX

	Displacement	
	50Hz	20.5 m ³ h ⁻¹ (12.1 ft ³ min ⁻¹)
	60Hz	25 m ³ h ⁻¹ (14.7 ft ³ min ⁻¹)
	Speed (Pneurop 6602)	
50Hz	17 m ³ h ⁻¹ (10 ft ³ min ⁻¹)	
60Hz	20.4 m ³ h ⁻¹ (12.1 ft ³ min ⁻¹)	

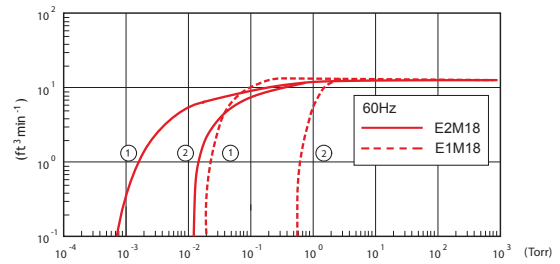
E1/E2M18 ATEX Performance Curve



Ordering information

Product description	Order no:
E1M18 ATEX 115V, 1ph, 60Hz Ex II 2G IIC T4	A34318986
E1M18 ATEX 230V, 1ph, 50Hz Ex II 2G IIC T4	A34318989
E1M18 ATEX 400V, 3ph, 50Hz Ex II 2G IIC T4	A34318992
E2M18 ATEX 115V, 1ph, 60Hz Ex II 2G IIC T4	A36318986
E2M18 ATEX 230V, 1ph, 50Hz Ex II 2G IIC T4	A36318989
E2M18 ATEX 400V, 3ph, 50Hz Ex II 2G IIC T4	A36318992

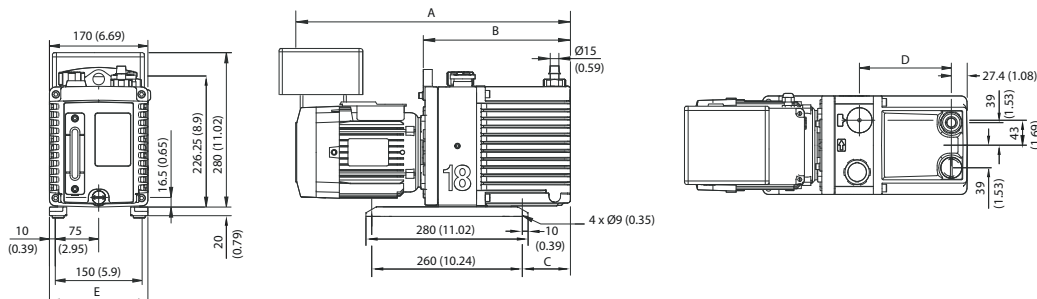
- Without gas ballast
- With gas ballast



- Without gas ballast
- With gas ballast

Dimensions

E1/ E2M18 ATEX Dimensions



	A	B	C	D	E
E1M18	526	247	83	159	171.4
E2M18	576	295	131	207	171.4

Technical Data

		Units	E1M18 ATEX	E2M18 ATEX
Displacement				
50Hz		m ³ h ⁻¹ / ft ³ min ⁻¹	20.5 / 12.1	20.5 / 12.1
60Hz		m ³ h ⁻¹ / ft ³ min ⁻¹	25.0 / 14.7	25.0 / 14.7
Speed (Pneurop 6602)				
50Hz		m ³ h ⁻¹ / ft ³ min ⁻¹	17.0 / 10	17.0 / 10
60Hz		m ³ h ⁻¹ / ft ³ min ⁻¹	20.4 / 12.1	20.4 / 12.1
Ultimate vacuum (total pressure)				
without gas purge		mbar/ Torr	3 x 10 ⁻² / 2.2 x 10 ⁻²	1 x 10 ⁻³ / 7.4 x 10 ⁻⁴
with gas purge		mbar/ Torr	6.5 x 10 ⁻¹ / 4.8 x 10 ⁻¹	1.5 x 10 ⁻¹ / 1.1 x 10 ⁻²
with Fomblin®		mbar/ Torr		
Inlet connection			NW25	
Outlet connection*			Nozzle 15 mm external Ø removable from 3/4 in BSP tapped hole	
Max permitted pressure at outlet		bar gauge/ psig	0.5 / 7	
Max inlet pressure for water vapour		mbar/ Torr	50 / 38	20 / 15
Max water vapour pumping rate		kg h ⁻¹	0.65	0.3
Operating temp range		°C	13-40	
Nominal Rotation speed 50/60Hz		rpm	1440/1720	
Power connector 1-ph**				
Motor power 50 Hz		kW	0.55 kW	0.55
Motor power 60 Hz		kW	0.75 kW	0.75
Weight		kg/ lbs	37 / 82	39 / 86
Noise @ 50Hz		dB(A)	57	
Oil capacity - max		litre	1.4	1.05
Oil capacity - min		litre	0.9	0.75
Recommended oil (supplied)			Ultragrade 19	

* The PFPE are supplied with NW25 outlet connection

** Pumps listed with IEC connector only

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Small Wet Pumps

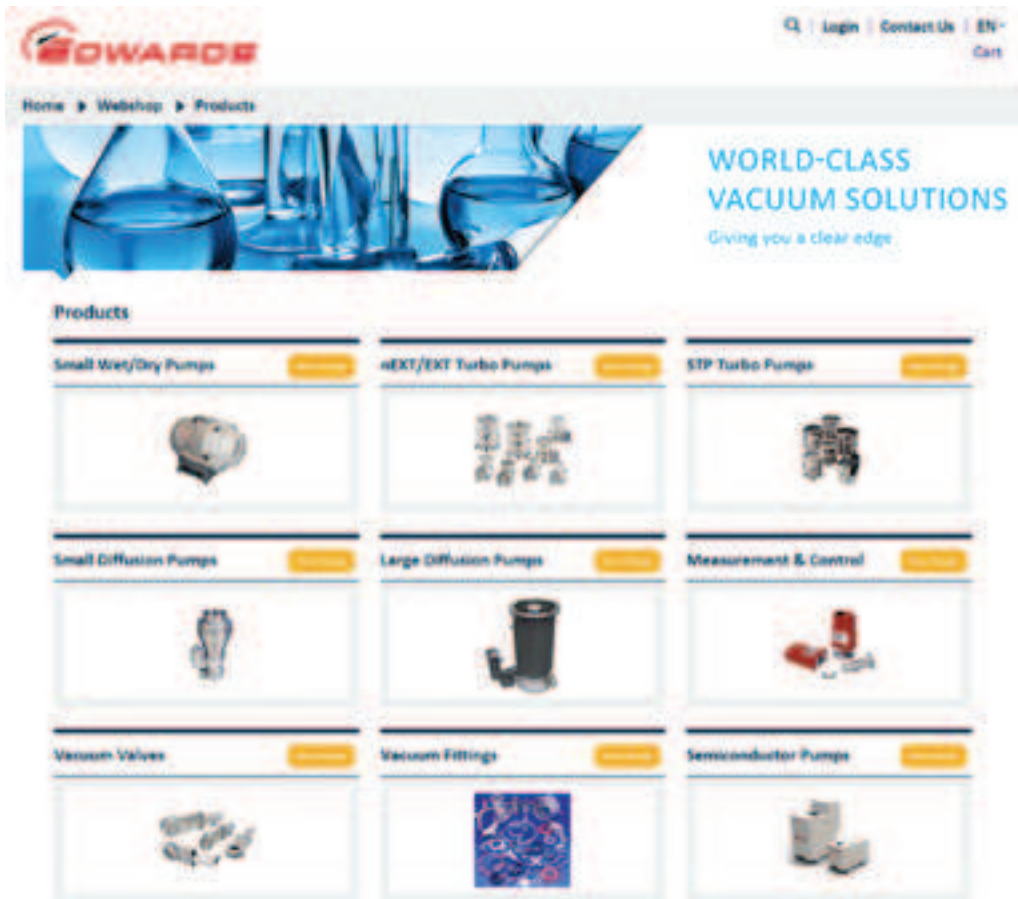
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