# Сухие спиральные насосы EDO, mXDS, nXDS, XDS, корпусы для снижения шума вакуумных насосов

Технические характеристики

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## EDO DRY SCROLL VACUUM PUMP

FDO65-100





## EDWARDS THE PARTNER OF CHOICE

Edwards is a world leader in the design, technology and manufacture of vacuum pumps for industrial applications with over 100 years' history.

We believe in delivering results that bring value to our customers by using our breadth of industry experience to identify and apply solutions. Using the most innovative and up-to-date modelling techniques, we can optimise the pumping configuration for customers to provide a system design giving the maximum performance in the most reliable and cost-effective way.

### INDUSTRIAL DRY SCROLL VACUUM PUMPS

Edwards vacuum has led the technological advancement of dry vacuum pumps for more than 30 years. With close to 100,000 dry scroll vacuum pumps sold till date, our latest innovation in the dry vacuum pump technology is the new industrial dry scroll vacuum pumps named EDO. With lower ultimate vacuum and improved roughing performance in the higher pressure region, this pump is suitable for all rough and medium vacuum applications.







#### Reliable and flexible

**Process protection:** Inlet non-return valve prevents back contamination. Integrated inlet filter protects the scroll mechanism against particle ingress.

**Robust:** Made with high quality precision engineered parts offering extended life time.



#### Simplicity

**Environmentally friendly:** There is no need to worry about oil disposal. No additional oil filter and oil mist filter required as it's a dry pump. The internals are easy to clean, so easy to service.



#### **Optimised design**

**Compact:** Our patented anti-rotation mechanism reduces stress at critical points supporting long running life time. This replaces the usual bellows, pins and cranks making the pump more compact.

**Higher pumping speed:** The dual inlet stage increases the gas throughput.



EDWARDS EDO Dry Scroll Vacuum Pumps

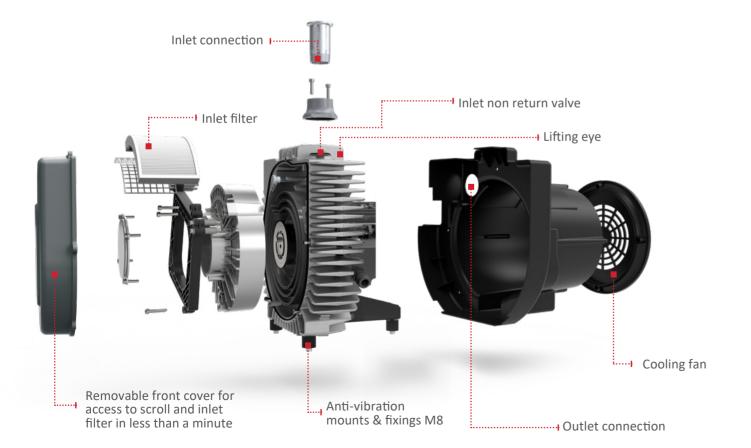
## **EDO65-100 EDWARDS** INDUSTRIAL DRY SCROLL VACUUM PUMP

Compact dry scroll vacuum pumps with latest orbiting scroll technology that are reliable, clean, modular and energy efficient.

- 100% oil-free
- Much lower ultimate pressure than standard dry rough vacuum pumps with claw or vane technology (1.5 mbar)
- Full aluminum design providing corrosion resistance
- Extended service intervals (up to 8,000 hours or 2 years)

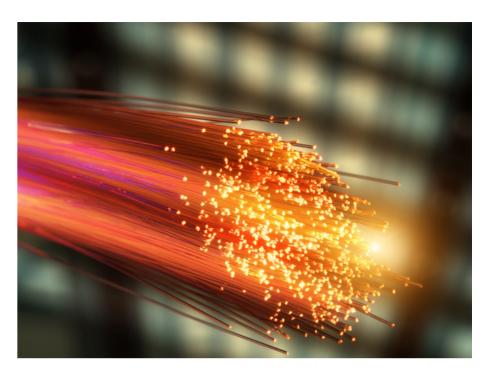


- Operation possible at all pressures
- Simple and easy to maintain
- Inlet non-return valve
- Integrated gas ballast
- Two blow-off valves that reduce power consumption compare to oil sealed rotary pumps



#### **APPLICATIONS**

- Pick and place
- PCB manufacturing
- Optical fibre
- Rubber vulcanisation
- Forming and shaping
- Holding and lifting
- Electronics testing
- Inhalers testing
- Vacuum degassing











4 EDO Dry Scroll Vacuum Pumps **EDWARDS EDWARDS** EDO Dry Scroll Vacuum Pumps 5

## P

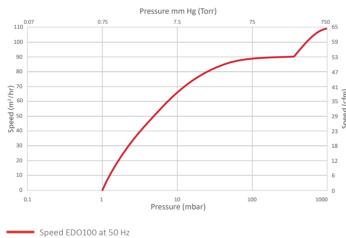
#### **TECHNICAL SPECIFICATIONS**

	Max pumping speed	Ultimate vacuum level	Nominal motor power	Inlet/Outlet	Length	Width	Height
	m³/h / ACFM	mbar / torr	kW / hp	Inch	mm	mm	mm
	65 m³/h @ 50Hz	≤ 1.5mbar / 1.13					
EDO65	80 m³/h @ 60Hz	torr	1.5 kW / 2 HP	NW 40	446	447	435
EDO100	100 m³/h @ 50Hz	≤ 1.5mbar / 1.13 torr	2.2 kW @ 50Hz	NW 40	446	447	435

#### **PERFORMANCE CURVES**



#### EDO100



#### ORDERING INFORMATION

Part number	Product description
A50871957	EDO65 380V 50Hz
A50871958	EDO65 230V / 400V 50Hz & 460V 60Hz
A50871959	EDO65 200V 50Hz & 208V / 230V / 380V 60Hz
A50871960	EDO65 500V 50Hz & 575V 60Hz
A50871954	EDO100 230V / 400V 50Hz
A50871955	EDO100 200V 50Hz
A50871956	EDO100 380V 50Hz
A50871961	EDO100 230V / 380V 60Hz
A50871962	EDO100 460V 60Hz

#### **ACCESSORIES**

A50871100	EDO Exhaust silencer kit
A50871101	EDO INLET / OUTLET CONNECTION KIT NPT

### SERVICE AND SUPPORT

To ensure your EDO pump maintains optimal performance and reliability, we propose a wide range of service solutions tailored to meet your needs. However, EDO has an excellent serviceability. To save time and money, we recommend that you service your pump using the original spare kits we offer. It is quick, easy and safe; visit our YouTube channel to find our more. In case of difficulties our professional and trained Field Service Engineers are always available to provide the appropriate service.

Selecting original spare parts, kits and grease, means that every critical part performs as intended and ensures you receive the best result from each and every service. Form, fit and function are guaranteed.



IOTES		



## mXDS3 AND mXDS3s DRY SCROLL VACUUM PUMPS

Edwards range of small dry scroll pumps is expanding with the introduction of the compact mXDS3 and mXDS3s.

The new mXDS3 dry scroll pump delivers 3m<sup>3</sup>h<sup>-1</sup> pumping speed together with an ultimate pressure of 0.1 mbar making it well suited for backing turbomolecular pumps. mXDS3 is the standard option supplied with no inlet valve fitted.

mXDS3s comes factory fitted with an inlet valve featuring delay opening. It is also supplied with an exhaust silencer. Both offer the same vacuum performance and feature an IEC connector for main supply and an on/off switch for easy control.

This compact dry pump offers flexibility to the system designer and end user alike with a wide range of accessories available to choose from to meet your configuration requirements.



#### FEATURES AND BENEFITS



#### **DRY PUMP**

no oil to check, replace and dispose of making this pump more environmentally friendly.



#### QUIET OPERATION

with low noise level, it makes for a better-quality working environment.



#### **COMPACT**

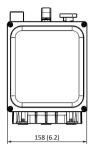
at only 8kg it is well suited for integration into OEM and analytical instruments, small system builder and laboratories.

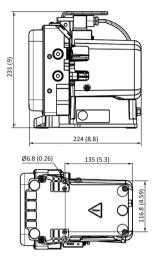


#### LOW MAINTENANCE

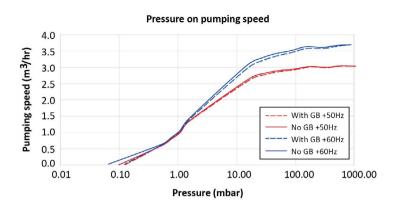
tip seal change when required (typically 2 years)

#### **DIMENSIONS**





#### PERFORMANCE CURVE



#### TECHNICAL DATA

	Units	mXDS3	mXDS3s	
VACUUM DATA				
Ultimate pressure with closed gas ballast	mbar	0.1		
Ultimate pressure with gas ballast (1 turn)	mbar		0.15	
Max pumping speed (50Hz)	m³h-1		3	
Max pumping speed (60Hz)	m³h-1		3.5	
Max permitted inlet pressure*	mbar		1000	
Typical intial pressure rise on power loss (no inlet valve, with no inlet or gas ballast flow)	mbar I		5	
MOTOR DATA				
		100 +	/- 6% 1 phase	
Consultations	V -	115 +/- 10% 1 phase		
Supply voltage	V	200 +/- 10% 1 phase		
		230 +/- 10% 1 phase		
Supply frequency	Hz		50/60	
Power consumption at ultimate	W	180	210	
Mains connector		IEC EN60320 C13		
PHYSICAL DATA				
Weight	kg	7.8	8	
Inlet connection		DI	I 16 ISO-KF	
Outlet connection		1/8" BSP for 6x8mm hose	1/8" BSP for 6x8 mm hose exhaust filter supplied	
Noise level	dB(A)	!	54.0 ±2.5	
Vibration measured in plane of bearing	mms <sup>-1</sup>	Class 1C<4.5 (rms radial)		
Leak tightness	mbar/ls <sup>-1</sup>		1x10 <sup>-4</sup>	
Overall dimensions (L x W x H)	mm	224	x 158 x 231	
Nominal rotational speed	Hz	3000 RPM @	50 / 3600 RPM @ 60	
Ambient temperature range (operation)	°C		+5 to +40	

- \* These pumps are designed to pump down from atmospheric pressure, but prolonged operation at high inlet pressures may reduce bearing life.

  \* These pumps are intended to exhaust to atmospheric pressure. High exhaust pressure may reduce tip-seal life.

  \* Large volumes may be pumped, but prolonged operation at high inlet pressures may reduce bearing life.





### XDS35i DRY SCROLL PUMPS

#### XDS35i and XDS35i Enhanced Family

The XDS35i family of scroll pumps offer proven dry, clean vacuum solutions for a wide range of applications, with smart drive technology to look after the pump and provide world wide performance.

Now, a combination of the double start scroll form technology and by-pass valves have enabled Edwards to offer the XDS35i Enhanced range of pumps to complement our original family.

Take another step.

With reduced peak power requirements at roughing pressures and continuous higher roughing speeds these enhanced pumps enable the user to take another step in terms of the performance envelope to address those special applications where roughing performance or the ability to evacuate a large volume is important.

XDS35i and XDS35i Enhanced pumps are available as standard pumps with gas ballast, versions of the pump with no Gas Ballast (well suited for rare gas recirculation and gas recovery applications) and the C versions of the pumps featuring Chemraz® internal valves and stainless steel fittings for extra protection from the pumped media.



#### **FEATURES AND BENEFITS**

#### **Bearing shield**

ensures separation between process gases and bearing lubrication to ensure clean vacuum and no possibility of contamination to lubrication from process gases, which prolongs bearing life.

#### **Smart motor drive**

means consistent performance globally, pump overload protection and remote start/stop capability.

#### High flow gas ballast feature

allows pumping of vapours including water vapour at up to  $240~{\rm gh^{\text{-}1}}$ .

#### Simple single sided scroll design

allows maintenance to be done in minutes for low cost of ownership and maximum up-time.

#### Take another step

the Enhanced versions offer up to 20% lower peak power requirements during initial pump down which means it has the ability to pump down large volume chambers with no loss of performance and has up to 25% more pumping speed at these roughing pressures which helps on higher frequency cycling applications as well.

#### **PRODUCT DATA SHEET**

#### **TECHNICAL DATA**

	Units	XDS35i	XDS35i Enhanced	
Peak pumping speed	m³h-¹ (cfm)	35	(21)	
Ultimate vacuum (1)	mbar (Torr)	0.01 (0.008) 0.03 (0.02)		
Ultimate vacuum with gas ballast 1	mbar (Torr)	0.02 (0.015)	0.04 (0.03)	
Ultimate vacuum with gas ballast 2	mbar (Torr)	< 10	(7.5)	
Max inlet pressure for water vapour	mbar (Torr)	35	(23)	
Water vapour handling capacity GBII	gh <sup>-1</sup>	24	40	
Maximum continuous inlet pressure	mbar a (Torr a)	40 (30)(2)	1000 (760) *	
Maximum gas ballast/purge pressure	bar gauge (psig)	0.5	(7)	
Motor data				
Supply voltage	V	100-120/200-240 (+/- 10%)		
Supply frequency	Hz	50/60		
Nominal rotation speed	rpm	1750		
Power at ultimate	W	440		
Motor power	W	520		
Power connector		IEC EN60	0320 C19	
Recommended fuse, 230 V (115 V)	А	16 (3)	(15)	
Physical data				
Weight	kg (lb)	48 (	105)	
Inlet connection		NW	/40	
Exhaust connection		NW25		
Noise level at ultimate	dB(A)	57		
Vibration at inlet flange	mms <sup>-1</sup> (rms)	< 4.5		
Leak tightness (static)	mbar Is <sup>-1</sup>	< 1 x 10 <sup>-6</sup>		
Operating temperature range	°C (°F)	5 to 40 (41 to 104)		







<sup>\*</sup> Use at higher inlet pressure speeds up tip seal wear
(1) measured as total pressure
(2) These pumps are designed to pump down from atmospheric pressure, but prolonged operation at inlet pressures higher than specified may reduce bearing life.
(3) for UK 240 V use 13 A fuse

#### ORDERING INFORMATION

#### **Pumps:**

	Order number
XDS35i 100-120/200-230V 1PH 50/60Hz	A73001983
XDS35i NGB 100-120/200-230V 50/60Hz	A73005983
XDS35iC 100-120/200-230V 1PH 50/60Hz	A73006983
XDS35iE 100-120/200-230V 1PH 50/60Hz Enhanced	A73003983
XDS35iE NGB 100-120/200-230V 50/60Hz Enhanced	A73007983
XDS35iCE 100-120/200-230V 1PH 50/60Hz Enhanced	A73008983

#### **Extended warranty:**

Product	2 year	3 year
XDS35i & E	EW2AA5005	EW3AA5005

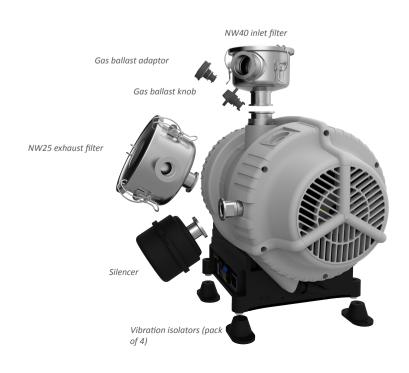
#### Accessories and spares:

Product desc	Order number	
	Exhaust silencer XDS35i	A50597001
	Gas ballast adapter with 0.25 mm restrictor	A50626801
	Gas ballast adaptor with no restrictor	A50502000
Ai	Vibration isolator (pack of 4)	A24801408
Accessories	Inlet/exhaust filter NW25	A50597805
	Inlet/exhaust filter NW40	A50597806
	XDS acoustic enclosure 110-120 V	NRY5C0000
	XDS acoustic enclosure 200-240 V	NRD797000
	Silencer spares kit	A50597801
Spares	XDS filter 5 micron element kit	A50597802
	XDS filter 1 micron element kit	A50597803
	UK, three pin plug	A50505003
Cardanta	North European plug	A50506003
Cord sets	North America/Japan plug	A50507003
	No plug	A50508003

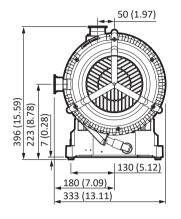
#### XDS35i Family Pump spares kits:

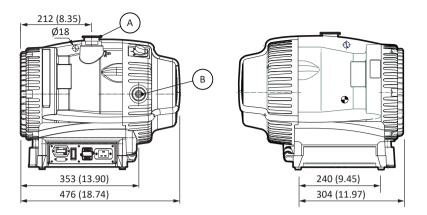
Product	Part number	XDS 35i	XDS 35iC	XDS 35i NGB	XDS 35iE	XDS 35iCE	XDS 35iE NGB
Tip seal & exhaust service kit XDS35i	A73001801	X	Х	X	Χ	X	Х
Exhaust valve kit (Chemraz®)	A73001814	-	Х	-	-	Х	-
Gas ballast kit XDS35i	A73001803	Х	-	-	Х	-	-
Gas ballast kit (Chemraz®)	A73001815	-	Х	-	-	Х	-
By-pass valve Kit 35iE	A73003804	-	-	-	Х	-	Х
By-pass valve Kit 35iEC (Chemraz®)	A73008804	-	-	-	-	Х	-

Please remember to order appropriate valve and gas ballast kits as required



#### **DIMENSIONS**

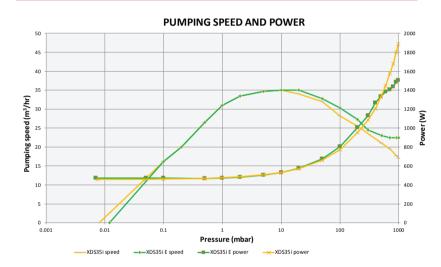




## PERFORMANCE

#### XDS35i

A. NW40 B. NW25



The graph shows typical pump performance

Note that peak power for XDS35i is supplied for a short period of time before the intelligent drive reduces the power and speed

XDS35i Enhanced, with its bypass valves, is not limited and will pump down continuously at full speed



## XDS DRY SCROLL PUMPS

XDS dry scroll pumps have become industry standard when dry pumping is essential, proving to be a robust and clean vacuum pump solution in a range of applications. The XDS35i pump has an innovative bearing shield that isolates the vacuum environment, making it not only lubricant-free but hermetically sealed.

XDS35i No Gas Ballast variant has had the gas ballast feature removed for applications such as rare gas recirculation and gas recovery.

The XDS46i shares many of the same features of the XDS35i but with a peak speed of 40 m<sup>3</sup>h<sup>-1</sup>. The pump has been optimised for maximum pumping speed at inlet pressures between 1 mbar and 10 mbar, making it well suited for backing turbomolecular pumps.

For more aggressive applications, 'C' variants are available which features Chemraz® internal valves and stainless steel fittings for extra protection from the pumped media.



#### **FEATURES AND BENEFITS**

#### **Bearing shield**

ensures separation between process gases and bearing lubrication to ensure clean vacuum and no possibility of contamination to lubrication from process gases, which prolongs bearing life.

#### **Smart motor drive**

means consistent performance globally, pump overload protection and remote start/stop capability.

#### High flow gas ballast feature

allows pumping of vapours including water vapour at up to  $240~{\rm gh^{\text{-}1}}$ .

#### Axial air gap motor

reduces overall pump size and gives low power and noise.

#### Simple single sided scroll design

allows maintenance to be done in minutes for low cost of ownership and maximum up-time.

#### **XDS DRY SCROLL PUMPS**

#### **TECHNICAL DATA**

	Units	XDS35i	XDS46i	
Peak pumping speed	m³h⁻¹ (cfm)	35 (21)	40 (23.5)	
Ultimate vacuum (1)	mbar (Torr)	0.01 (0.008) 0.05 (0.04)		
Ultimate vacuum with gas ballast 1	mbar (Torr)	0.02 (0.015)	0.08 (0.06)	
Ultimate vacuum with gas ballast 2	mbar (Torr)	< 10	(7.5)	
Max inlet pressure for water vapour	mbar (Torr)	35 (23)	40 (30)	
Water vapour handling capacity GBII	gh <sup>-1</sup>	24	40	
Maximum continuous inlet pressure (2)	mbar a (Torr a)	40 (	(30)	
Maximum gas ballast/purge pressure	bar gauge (psig)	0.5	(7)	
Motor data				
Supply voltage	V	100-120/200-	240 (+/- 10%)	
Supply frequency	Hz	50/60		
Nominal rotation speed	rpm	1750		
Power at ultimate	W	440 380		
Motor power	W	52	20	
Power connector		IEC EN60	0320 C19	
Recommended fuse, 230 V (115 V)	А	16 <sup>(3)</sup>	(20)	
Physical data				
Weight	kg (lb)	48 (:	105)	
Inlet connection		NW	/40	
Exhaust connection		NW	/25	
Noise level at ultimate	dB(A)	57 55.4		
Noise level with acoustic enclosure	dB(A)	48 46.4		
Vibration at inlet flange	mms <sup>-1</sup> (rms)	< 4.5		
Leak tightness (static)	mbar ls <sup>-1</sup>	< 1 x 10 <sup>-6</sup>		
Operating temperature range	°C (°F)	5 to 40 (41 to 104)		

- (1) measured as total pressure
   (2) These pumps are designed to pump down from atmospheric pressure, but prolonged operation at inlet pressures higher than specified may reduce bearing life.
   (3) for UK 240 V use 13 A fuse







#### **ORDERING INFORMATION**

#### **Pumps:**

Product description	Order number		
	XDS35i	A73001983	
Chandard analyse	XDS35iC*	A73006983	
Standard product	XDS46i	A73101983	
	XDS46iC*	A73106983	
Variants without gas ballast (NGB)	XDS35i	A73005983	

<sup>\*</sup> C variants

#### **Extended warranty:**

Product	2 year	3 year
XDS35i	EW2AA5005	EW3AA5005
XDS46i	EW2AA5006	EW3AA5006

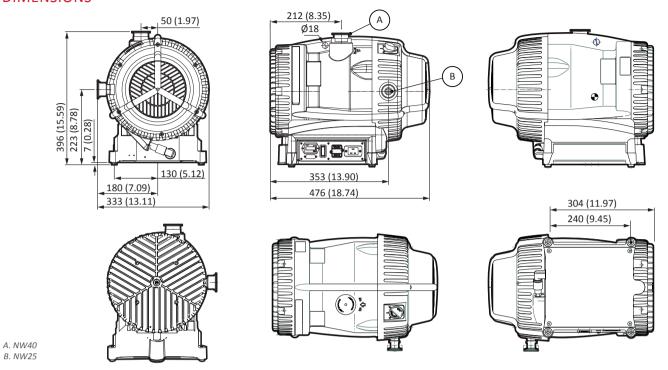
#### Accessories and spares:

Product description		Order number
	Exhaust silencer XDS35i	A50597001
	Gas ballast adapter with 0.25 mm restrictor	A50626801
	Gas ballast adaptor with no restrictor	A50502000
Accessories	Vibration isolator (pack of 4)	A24801408
7.0003301103	Inlet/exhaust filter NW25	A50597805
	Inlet/exhaust filter NW40	A50597806
	XDS acoustic enclosure 110-120 V	NRY5C0000
	XDS acoustic enclosure 200-240 V	NRD797000
	Tip-seal kit XDS35i	A73001801
	Tip-seal kit XDS46i	A73101801
Spares	Silencer spares kit	A50597801
	XDS filter 5 micron element kit	A50597802
	XDS filter 1 micron element kit	A50597803
	UK, three pin plug	A50505003
Contrate	North European plug	A50506003
Cord sets	North America/Japan plug	A50507003
	No plug	A50508003

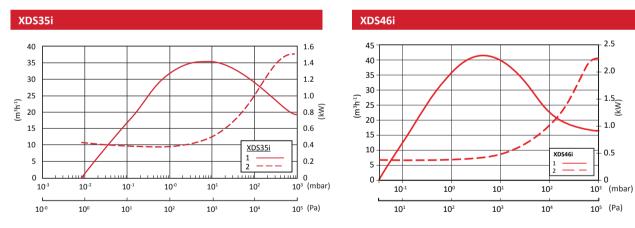


#### **PRODUCT DATA SHEET**

#### **DIMENSIONS**



#### **PERFORMANCE**



2.5

2.0

1.5

1.0

0.5

0





**PRODUCT DATA SHEET** 



# ACOUSTIC ENCLOSURES FOR REDUCED VACUUM PUMP NOISE

Edwards' acoustic enclosures are the ideal noise reduction solution for use in a laboratory or an industrial environment. The specially designed soundproof enclosures are made of materials with high noise absorption, reducing vacuum pump noise by up to 9 dB(A), with no impact on vacuum pump efficiency.

Two integrated air cooling fans provide ventilation to maintain optimum pump running temperature; this is backed by an over temperature buzzer alarm (with battery back-up) for that extra peace of mind.

The design of the enclosure allows for easy assembly or disassembly without complex tooling. A removable front panel enables quick visible access to the oil sight glass, and if required a side panel can be quickly removed for access to the oil filter cap (RV/EM only).

Our acoustic enclosures are fully compatible with all RV rotary vane pumps, E2M18/28 rotary vane pumps, and the complete range of nXDS and XDS dry scroll pumps.



#### Features and benefits

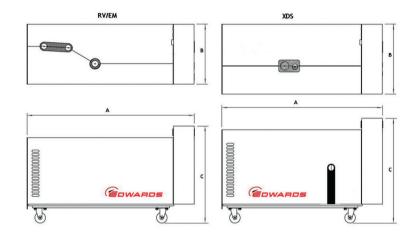
- Simple slot together assembly/disassembly with no tools
- Noise reduction of the E2M28 by 7 dB(A) and the XDS35i by 9 dB(A)
- Castor wheels with brakes make the enclosure and pump easy to move and lock into place
- Integrated cooling fans maintain optimum pump running temperature
- Over temperature buzzer alarm with battery back-up for added security
- Easy access for vacuum pump maintenance
- Powered via a power cable fitting into an IEC 320 socket

#### **TECHNICAL DATA**

Mass	
RV/EM	23 kg
nXDS/XDS	37 kg
Electrical supply for cooling fans	
Voltage	100-120 V/200-240 V
Fuse rating	5 A Type T 20 mm
Connector	IEC320 socket
Approximate noise reduction	
RV	7 dB(A)
E2M28	7 dB(A)
XDS35i/46i	9 dB(A)
XDS5/10	8 dB(A)
nXDS	5 dB(A)

#### **DIMENSIONS MM (INCH)**

Dimension	RV/EM	nXDS/XDS
А	790 (31.10)	778 (30.63)
В	285 (11.22)	442 (17.40)
С	460 (18.11)	580 (22.83)



#### ORDERING INFORMATION

Product description	Item number
RV/EM acoustic enclosure 100-120 V	NRD317000
RV/EM acoustic enclosure 200-240 V	NRD318000
nXDS/XDS acoustic enclosure 100-120 V	NRY5C0000
nXDS/XDS acoustic enclosure 200-240 V	NRD797000

Spares and accessories	Item number
2 m electrical supply cable, UK 3 pin plug	A50505000
2 m electrical supply cable, N.Europe plug	A50506000
2 m electrical supply cable, USA/Japan plug	A50507000
2 m electrical supply cable, no plug	A50508000
NW25 aluminium nipple 100 mm long	C10514409
NW40 aluminium nipple 130 mm long	C10516409



#### По вопросам продаж и поддержки обращайтесь:

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