Сухие винтовые насосы GXS, IDX, GV, EDS, EXS

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

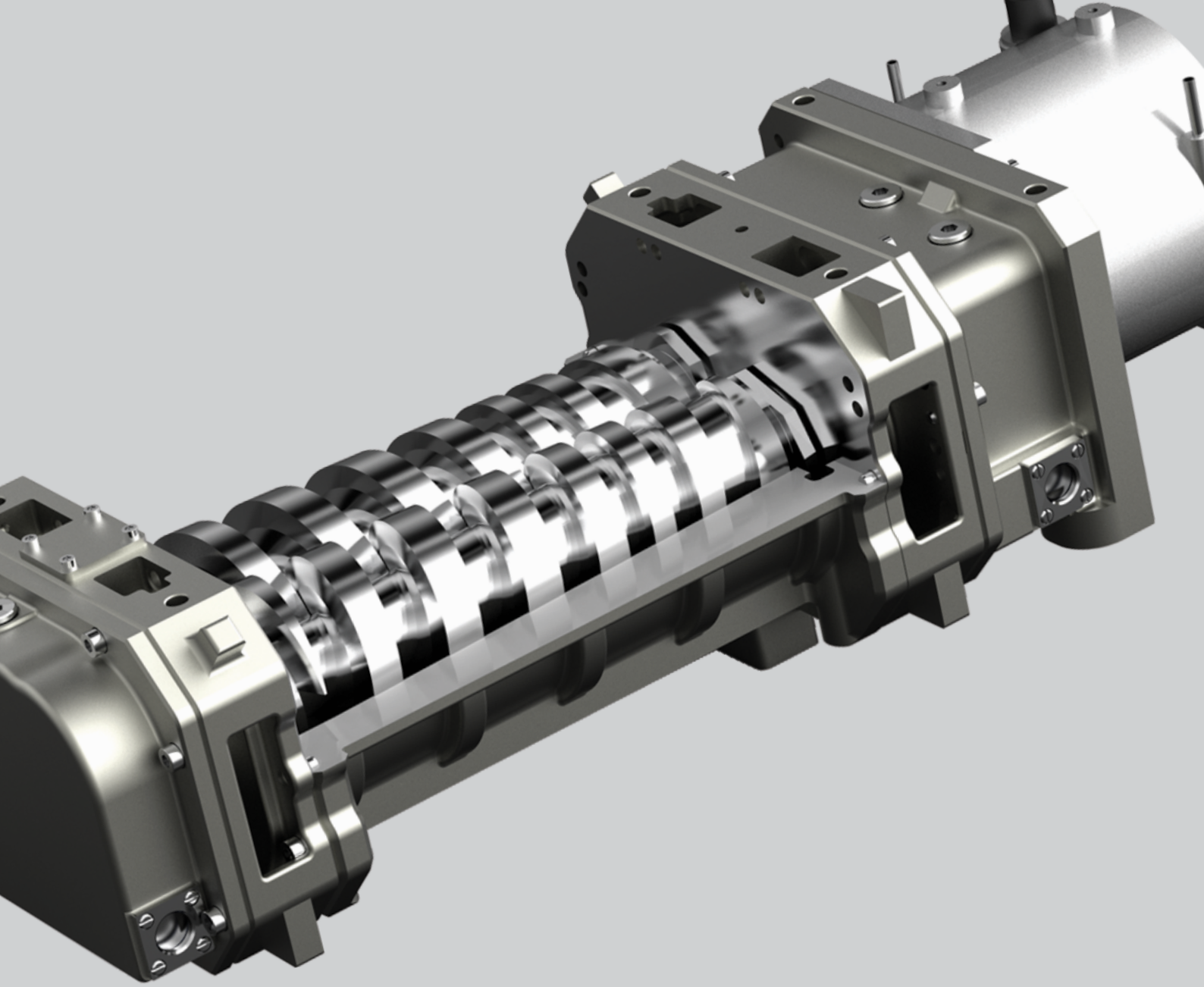
Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Казахстан +7(727)345-47-04
Беларусь +(375)257-127-884
Узбекистан +998(71)205-18-59
Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: https://edwards.nt-rt.ru/

GXS DRY SCREW VACUUM PUMPS

EDWARDS



EDWARDS
THE PARTNER OF CHOICE

Edwards is a world leader in the design, technology and manufacture of vacuum pumps with over 95 years' history and more than 75 years' manufacturing experience.

Edwards believes in delivering results that bring value to our customers by using our breadth of industry experience to identify and apply solutions to your problems. 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.

GXS DRY SCREW PUMPS AND COMBINATIONS

Our new GXS dry pumps take vacuum performance to the next level. With unique screw technology and world leading high efficiency drives, enabling advanced temperature control and long service intervals, you are guaranteed best-in-class pumping speeds and low running costs for many years to come.

Fast – *Reduced pump down times with ultimate vacuum of 5 X 10-4 mbar*

- **Increased productivity:** faster process
- **Improved product quality:** better ultimate vacuum

Robust – *Reliable operation even in harsh industrial applications*

- **Low maintenance cost:** no unplanned down-time
- **Increased productivity:** longer intervals between service

Intelligent – *On-board controller with extensive communication and automated control capabilities*

- **Reduced installation costs:** easy integration with other systems
- **Safe operation, consistent output:** automated control of your process

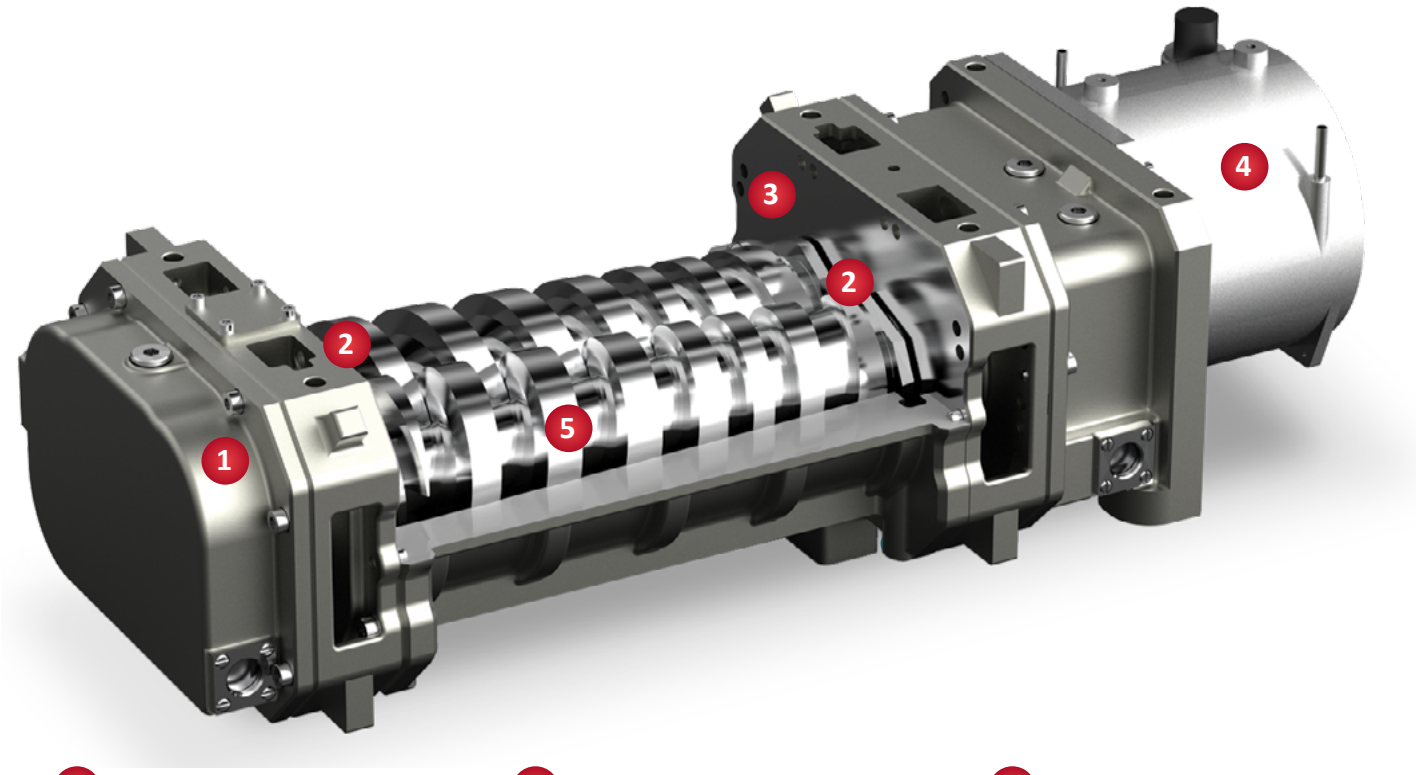
Economical – *Affordable capital investment and low cost of ownership*

- **Substantial savings:** low utilities and energy usage costs
- **Save on space:** small footprint

Environmental – *Smooth, quiet running with low power and utilities consumption*

- **Small carbon footprint:** low power and utilities usage
- **Easy on environment:** no contaminated or dirty disposable oil

GXS innovative screw technology



1

Double ended shaft support

- Non-cantilever design provides secure rotor support for extremely low vibration and superior starting reliability, especially on harsh processes
- Superior liquid and powder handling. Tests demonstrate a five litre water slug and one kilogram fine powder slug handling capability

2

Bearing and lubrication

- Oil lubricated gears eliminate grease and the need for periodic maintenance
- Uses advanced quality bearings and special purpose oil with low vapour pressure for application compatibility and greatly improved life

3

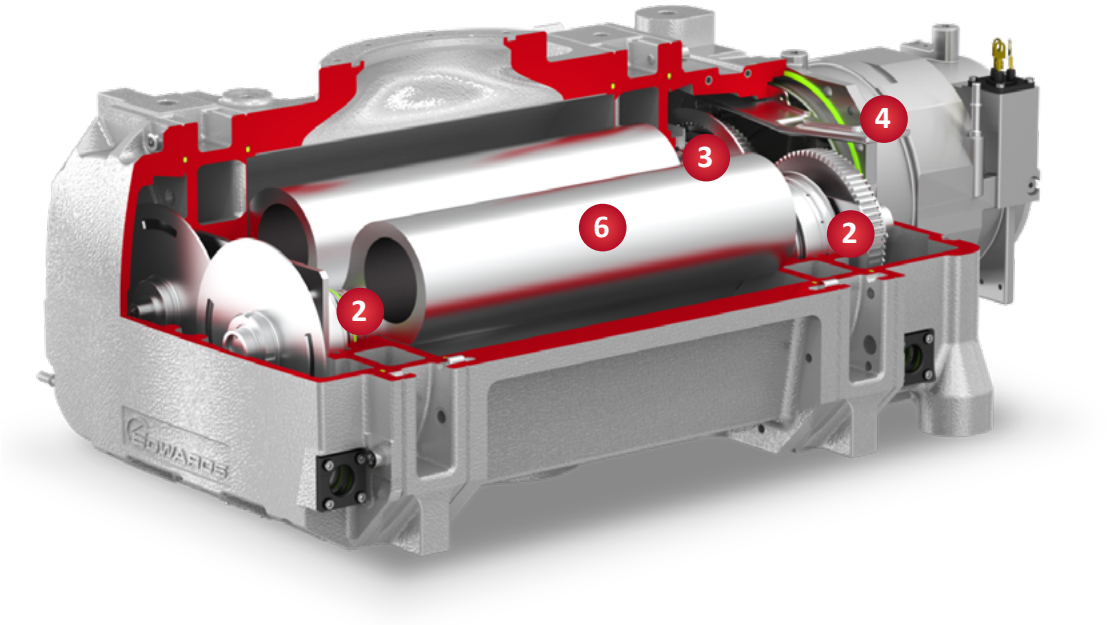
Advanced shaft sealing technology

- Non-contacting long-life seals with integral oil blocking labyrinth seal provides for highly effective sealing
- Combined with a six litre per minute seal purge the gearbox is protected from contamination and the vacuum space is kept free of oil

Fully enabled intelligent on-board control panel

- Running mode and fault status indicator with soft button control
- True “plug and pump” capability for immediate operation
- Intelligently programmed with automatic start/stop routines, power saving, green mode AUC and self cleaning options
- Remote control and monitoring functionality through Ethernet and serial connectors (including Profibus, simple text control protocol, and discrete hard-wired I/O options)
- Optional Pump Display Terminal (PDT) for improved diagnostic and configuration capacity

GXS booster



4

World leading motor and drive technology

- Extremely high efficiency motors with electronic drives deliver maximum torque performance for difficult processes
- Hermetically sealed motor eliminates oil leaks and improves pump reliability
- Water-cooled motors and drives provide for improved reliability and long life to reduce service costs

5

Advanced pumping mechanism design

- Enhanced screw-type rotor design results in smooth, gradual compression along the length of the rotor for improved thermal control and optimised pumping at all inlet pressures
- Integrated heat management and unique rotor and stator design features provide argon gas pumping capability at full concentration
- Advanced machining techniques and design features eliminate the need for rotor coatings while maintaining superb ultimate vacuum performance
- Improved manufacturing technology and design contributes to low vibration and extremely quiet running without a silencer

6

Roots booster mechanism

- High efficiency vacuum booster design
- Optimised for maximum performance with automatic thermal management

Applications

Metallurgy

- Vacuum Brazing
- E-beam welding
- Nitro carburising
- Low pressure nitriding
- Low pressure carburising
- Carbon vapour impregnation
- Sintering
- Metal injection moulding
- Precision investment casting
- Electroslag remelting
- Vacuum induction melting
- Vacuum arc refining
- Steel degassing

Coating

- Roll web coating
- Hard coating (CVD/DLC)
- Surface activation
- Plasma spray
- Glass coating

Drying

- Freeze drying
- Bushing filling
- Transformer drying
- Pipeline drying
- Capacitor drying
- Lithium-Ion battery drying

Plasma processes

- Plasma welding
- Plasma nitriding

Solar

- Silicon crystal-pulling
- PV lamination

LED manufacture

Vacuum chamber evacuation

- Space simulation chambers
- Gas recovery/circulation
- Load lock chambers

Customised solutions for your application

Whether you require a single pump, pump and booster combination or complete vacuum system, we have a range of pumps designed to provide optimal performance in a wide range of applications.

Following are some typical applications where GXS is used. There are several other applications where GXS is suitable. For detailed advice and availability, please consult one of our application engineers.

	GXS Pump type					Recommended Accessories	
Application	**LIGHT DUTY** Shaft Seal Purge only	**MEDIUM DUTY** Shaft Seal Purge plus adjustable Gas Ballast. Inlet purge on start up and shut down	**MEDIUM DUTY** 450 / 750 As standard Medium duty + option of additional Gas Ballast	**MEDIUM DUTY** + As Medium Duty plus HIGH FLOW PURGE ONLY at shutdown	**MEDIUM DUTY** + High Flow Purge AND SOLVENT FLUSH at shutdown	**INLET FILTER** Metal mesh type	**SILENCER** Cleanable and drainable type
Annealing	✓						
CVI carbon vapour impregnation		✓	✓		✓	✓	✓
EB welding		✓				✓	
Gas quenching	✓						
LPC low pressure carburising		✓	✓		✓*	✓	✓
LPN low press. Nitriding	✓						
Sintering (Metal Injection Molding) & debinding		✓	✓		✓**		
Oil quenching		✓				✓	
PIC precision investment casting & fast cycling		✓		✓		✓	
Plasma nitriding (PN)	✓						
Tempering	✓						
Vacuum brazing		✓			✓	✓	
VAR		✓	✓	✓		✓	
VIM		✓	✓	✓		✓	

** use MD+ for LPC with propane*
*** use MD+ for waxy binders*

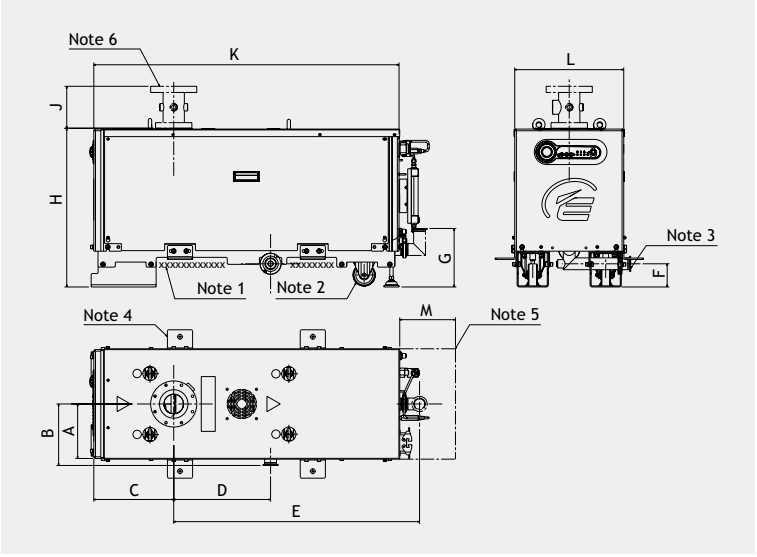
Technical data

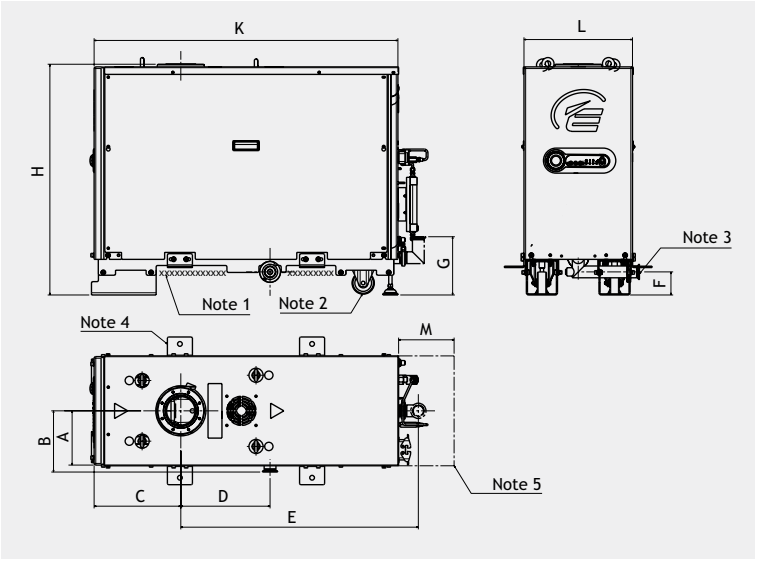
		Unit	GXS160	GXS160/1750	GXS250	GXS250/2600
Peak Pumping Speed		m^3/hr (cfm)	160 (94)	1200 (706)	250 (147)	1900 (1118)
Ultimate Pressure (without purge)		mbar (Torr)	$7x10^{-3}$ ($5.3x10^{-3}$)	$7x10^{-4}$ ($5.3x10^{-4}$)	$4x10^{-3}$ ($3.0x10^{-3}$)	$5x10^{-4}$ ($3.8x10^{-4}$)
Full Load Power	@ ultimate pressure	kW (hp)	3.8 (5.1)	5.1 (6.8)	4.0 (5.4)	5.3 (7.1)
	@ peak pumping load	kW (hp)	5.0 (6.7)	7.4 (9.9)	9.0 (12.1)	9.7 (13.0)
Electrical	Supply options	High volt	380-460V 3Ø 50/60Hz		380-460V 3Ø 50/60Hz	
		Low volt	200-230V 3Ø 50/60Hz		200-230V 3Ø 50/60Hz	
	Connection	High volt	Harting Han K 4/4-F		Harting Han K 4/4-F	
		Low volt				
Vacuum Couplings	Inlet		ISO63	ISO100	ISO63	ISO160
	Exhaust		NW40		NW40	
Cooling Water	Supply pressure (max)	bar (psig)	6.9 (100)		6.9 (100)	
	DP across pump (min)	bar (psig)	1.0 (14.7)		1.0 (14.7)	
	Flow @ min DP	l/min (gal/min)	4.0 (1.1)	7.0 (1.9)	4.0 (1.1)	7.0 (1.9)
	Temperature	°C (°F)	5-40 (41-104) All variants		5-40 (41-104) All variants	
	Connection		3/8" BSP Male (G 3/8")		3/8" BSP Male (G 3/8")	
Purge Gas*	Pressure	bar (psig)	2.5-6.9 (36-100)		2.5-6.9 (36-100)	
	Light Duty	sl/min	12		12	
	Medium Duty	sl/min	18-52		18-52	
	Connection		Swagelok® Ø ¼" tube with olive		Swagelok® Ø ¼" tube with olive	
High Flow Purge/ Solvent Flush	Supply pressure	bar (psig)	2.5-6.9 (36-100)		2.5-6.9 (36-100)	
	Control valve connection		Swagelok® Ø 3/8" tube with olive		Swagelok® Ø 3/8" tube with olive	
	Filter connection		½" NPT Male		½" NPT Male	
	Solvent connection		3/8" BSP Male (G 3/8")		3/8" BSP Male (G 3/8")	
Mass		Kg (lbs)	305 (672)	475 (1047)	305 (672)	515 (1035)
Noise (with suitable exhaust pipe)		dB(A)	<64		<64	
Operating Temperature		°C (°F)	5-40 (41-104)		5-40 (41-104)	
Exhaust Back Pressure (MAX)		mbar (psia)	1400 (20)		1400 (20)	
System IP rating	Standard		21D		21D	
Lubrication	Type		PFPE Drynert® 25/6		PFPE Drynert® 25/6	
	Volume	l (gal)	0.7 (0.2)	1.4 (0.4)	0.7 (0.2)	1.4 (0.4)
Monitoring & Control	Standard	Control	Front panel "Dashboard" Serial - RS232		Front panel "Dashboard" Serial - RS232	
		Monitoring	Ethernet Webserver		Ethernet Webserver	
	Option	Control	Parallel - MCM MicroTIM		Parallel - MCM MicroTIM	
		Control & Monitoring	Profibus DP Pump Display Terminal (PDT)		Profibus DP Pump Display Terminal (PDT)	
		Monitoring	FabWorks®		FabWorks®	
*Pump combinations		Light duty	Shaft Seal Purge only		Shaft Seal Purge only	
		Medium duty	Shaft Seal Purge, High Vac Purge, Inlet Purge, variable Gas Ballast & Exhaust Purge (with Exhaust Pressure Sensor)		Shaft Seal Purge, High Vac Purge, Inlet Purge, variable Gas Ballast & Exhaust Purge (with Exhaust Pressure Sensor)	
		Medium duty +	As Medium duty, plus High Flow Purge / Solvent Flush		As Medium duty, plus High Flow Purge / Solvent Flush	

** Purge Gas information, Light duty: shaft seal purge only, Medium duty: Shaft seal purge, inlet purge, variable gas ballast & exhaust purge (with exhaust pressure sensor), Medium duty plus: As Medium duty, plus High Flow Purge/Solvent Flush*

GXS450	GXS450/2600	GXS450/4200	GXS750	GXS750/2600	GXS750/4200
450 (265)	2200 (1295)	3026 (1781)	740 (436)	2300 (1354)	3450 (2031)
$5x10^{-3}$ ($3.8x10^{-3}$)	$5x10^{-4}$ ($3.8x10^{-4}$)		$3x10^{-3}$ ($2.3x10^{-3}$)	$5x10^{-4}$ ($3.8x10^{-4}$)	
7.2 (9.6)	8.8 (11.8)	9.4 (12.6)	10.0 (13.4)	11.1 (14.9)	11.5 (15.4)
17.3 (23.2)	20.0 (26.8)	21.1 (28.3)	37.0 (49.6)	40.0 (53.6)	40.0 (53.6)
380-460V 3Ø 50/60Hz			380-460V 3Ø 50/60Hz		
200-230V 3Ø 50/60Hz			200-230V 3Ø 50/60Hz		
Harting Han K 4/4-F	Harting Han 100A-F		Harting Han 100A-F		
			Harting Han 200A-F		
ISO100	ISO160		ISO100	ISO160	
NW50			NW50		
6.9 (100)			6.9 (100)		
1 (15)	1 (15)		1 (15)	0.75 (11)	
10 (2.6)	12 (3.2)		12 (3.2)	15 (4)	
5-40 (41-104) All variants			5-40 (41-104) High Volt variants		
			5-30 (41-86) Low Volt variants		
1/2” BSP Male (G 1/2”)			1/2” BSP Male (G 1/2”)		
2.5-6.9 (36-100)			2.5-6.9 (36-100)		
12			12		
18-146			18-146		
Swagelok® Ø ¼” tube with olive			Swagelok® Ø ¼” tube with olive		
2.5-6.9 (36-100)			2.5-6.9 (36-100)		
Swagelok® Ø 3/8" tube with olive			Swagelok® Ø 3/8" tube with olive		
½" NPT Female			½" NPT Female		
3/8" BSP Male (G 3/8")			3/8" BSP Male (G 3/8")		
640 (1411)	860 (1996)	868 (1914)	640 (1411)	908 (2002)	953 (2101)
<64			<70		
5-40 (41-104)			5-40 (41-104)		
1400 (20)			1400 (20)		
21D			21D		
PFPE Drynert® 25/6			PFPE Drynert® 25/6		
1.8 (0.5)	2.5 (0.7)	3.6 (1.0)	2.4 (0.6)	3.1 (0.8)	4.2 (1.1)
Front panel "Dashboard" Serial - RS232			Front panel "Dashboard" Serial - RS232		
Ethernet Webserver			Ethernet Webserver		
Parallel - MCM MicroTIM			Parallel - MCM MicroTIM		
Profibus DP Pump Display Terminal (PDT)			Profibus DP Pump Display Terminal (PDT)		
FabWorks®			FabWorks®		
Shaft Seal Purge & High Vac Purge only			Shaft Seal Purge & High Vac Purge only		
Shaft Seal Purge, High Vac Purge, Inlet Purge, variable Gas Ballast & Exhaust Purge (with Exhaust Pressure Sensor)			Shaft Seal Purge, High Vac Purge, Inlet Purge, variable Gas Ballast & Exhaust Purge (with Exhaust Pressure Sensor)		
As Medium duty, plus High Flow Purge / Solvent Flush			As Medium duty, plus High Flow Purge / Solvent Flush		

Dimensions





Notes:

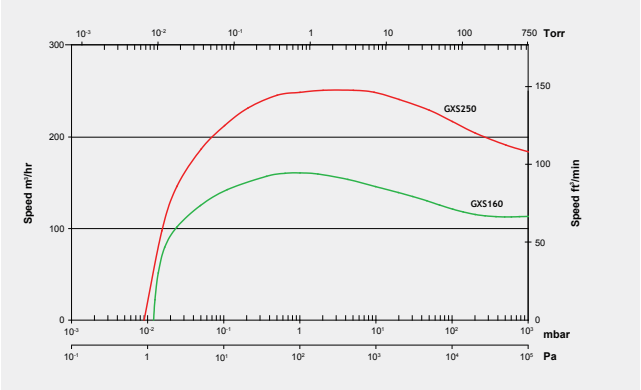
1. xxxxxx indicate forklift/pallet truck access points.
2. Pumps are available either with skids (side-exit exhaust) or castors (rear-exit exhaust). Both options are shown for clarity.
3. Pumps supplied with side or rear exhaust only; both options shown in views. The side exhaust outlet direction is customer adjustable.
4. Earthquake restraints are provided only for pumps with castors.
5. Minimum required service area for access to the rear panel connections.
6. The High-Flow Purge / Solvent Flush accessory is located outside of the pump enclosure for dry pump only. It is inside the enclosure for pump/booster combinations.

	A	B	C	D	E	F	G	H	J	K	L	M
GXS160	195 (7.68)	220 (8.66)	285.9 (11.26)	346.5 (13.64)	879.5 (34.63)	83 (3.27)	209.4 (8.24)	568 (22.36)	150 (5.9)	1092 (42.99)	390 (15.35)	250 (9.84)
GXS250												
GXS160/1750			311.6 (12.27)	320.8 (12.63)	853.8 (33.61)			829.5 (32.66)	-			
GXS250/2600												
GXS450	258.5 (10.18)	283.5 (11.16)	394 (15.51)	300 (11.81)	871.6 (34.31)		261.4 (10.29)	717 (28.23)	150 (5.9)	1186 (46.69)	517 (20.35)	250 (9.84)
GXS750			576.4 (22.69)	413 (16.23)	1133.6 (44.63)					1622 (63.86)		
GXS450/2600			361.8 (14.24)	332.3 (13.08)	903.8 (33.58)			1030.5 (40.57)	-	1186 (46.69)		
GXS450/4200												
GXS750/2600			657.2 (25.87)		1052.8 (41.45)					1622 (63.86)		
GXS750/4200												

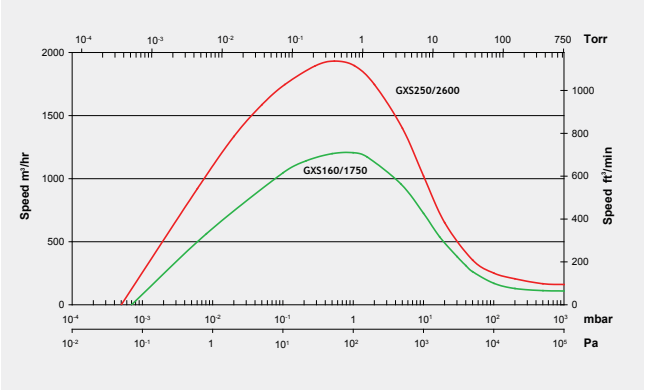
Key pump dimensions: mm (ins)

Performance curves

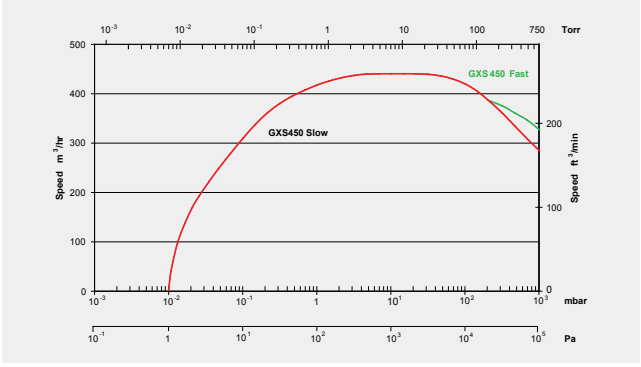
Pumping speed curves for GXS160 & GXS250



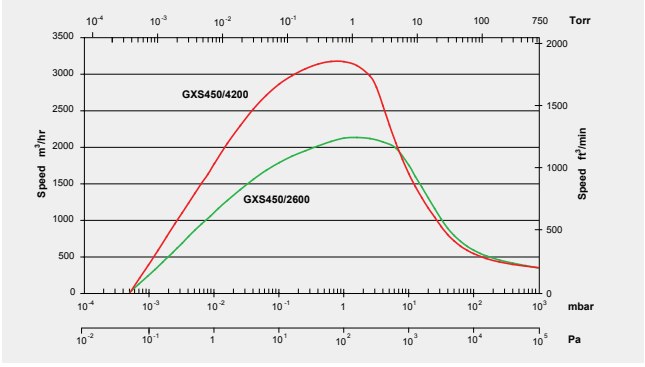
Pumping speed curves for GXS160/1750 & GXS250/2600



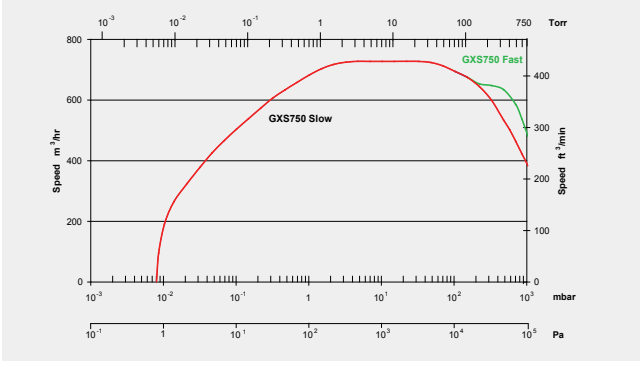
Pumping speed curves for GXS450



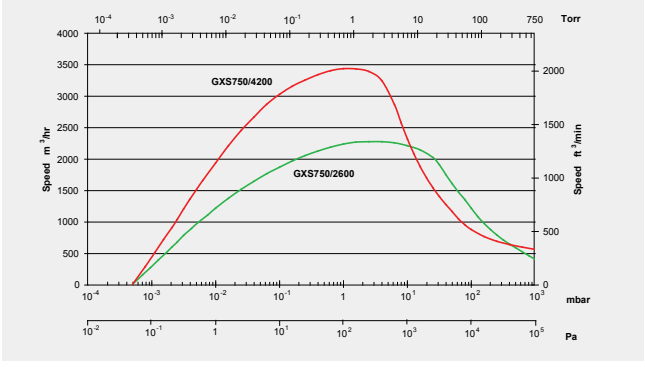
Pumping speed curves for GXS450/2600 & GXS450/4200



Pumping speed curves for GXS750



Pumping speed curves for GXS750/2600 & GXS750/4200



NOTE: Performance curves displayed are with purge.

Accessories

There are a range of accessories available with the GXS to suit a variety of applications. These provide reduced engineering and systemisation resulting in low cost of ownership. All accessories are fully integrated with GXS to provide an efficient and safe system.

Inlet and exhaust accessories

Inlet and exhaust accessories have been especially designed to match the pumping capacities of the GXS range and optimise performance.

- Foreline spool adapters for mounting instrumentation
- Fully integrated Inlet isolation valves
- Inlet filter housing with polyester or stainless steel elements
- Exhaust silencers with cleanable drainable options
- Exhaust check valves

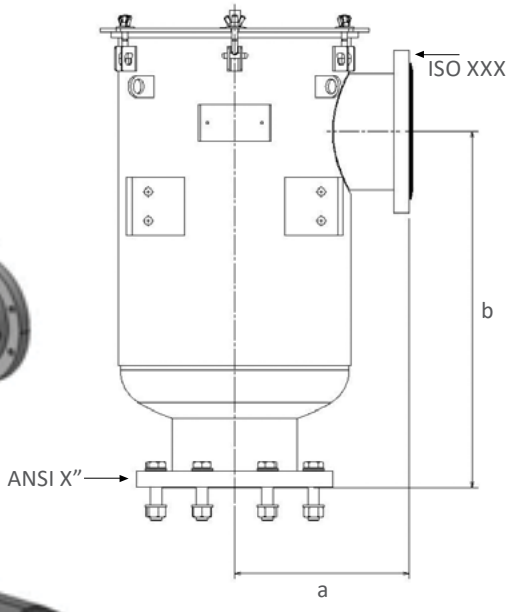
Control and monitoring accessories

We have designed a range of control and monitoring accessories specifically for the GXS range to enable complete integration into your control systems.

- Hand held terminals
- Profibus / Digital interface modules
- Water / N_2 flow monitoring kits
- Pressure and temperature transmitters
- Visual pressure and temperature gauges

Inlet Vacuum Filters

The GXS range of pumps all have excellent powder handling capabilities and under fault conditions they will succeed where other dry pumps fail. However dry vacuum pumps aren't designed to continuously pump solid material so on certain applications an inlet filter would dramatically extend the time between services.



Specifications

Helium leak tested to $1x10^{-6}$ mbar/l/sec

- Polyester Elements: >99% efficient to 5µm
- Rugged carbon steel construction
- Large dirt holding capacity

Options

- Stainless steel housing construction
- Stainless steel mesh filter elements

Pump Type	Recommended Inlet Filter			Inlet Connection ISO Flange	Outlet Connection ANSI Flange	Dimensions	
	Size	CS Part No.	SS Part No.			a	b
All Pump only and 1750 booster combination	4"	M58808005	M58808137	100	4"	254 (10.0)	251 (9.9)
All 2600 booster combinations	6"	M5882805	M58828137	160	6"	305 (12.0)	521 (20.5)
All 4200 booster combinations	8"	M59848005	M59848137	200	8"	305 (12.0)	622 (24.5)

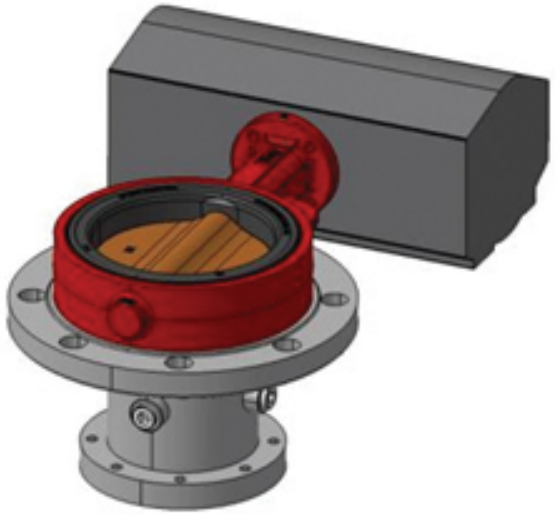
Element Construction	Replacement Filter Element			Particle Size	Efficiency
	4" Part Number	6" Part Number	8" Part Number		
Polyester / Galvanised	A22304363	A22304367	A22304371	5 micron	>99%
Polyester / Stainless Steel	A22304365	A22304369	A22304373	5 micron	>99%
Stainless Mesh	A22304366	A22304370	A22304374	300 micron	90%

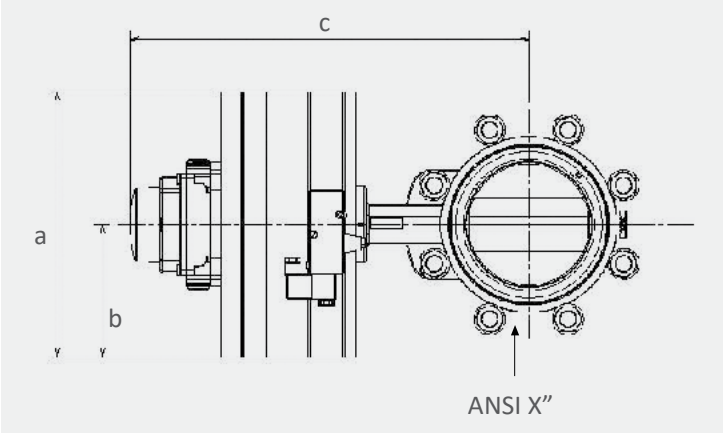
Automatic Inlet Isolation Valves

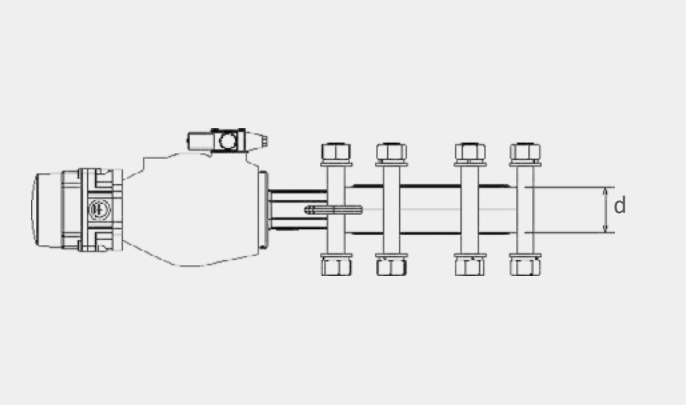
The automatic GXS isolation valve is designed to fully integrate into the GXS control system to protect the pump and your process.
The valve will close in the event of an alarm or power failure and will isolate the process when in green mode for energy saving between production batches.

Specifications

- Stainless steel and EPDM construction for corrosion resistance
- High CV, low pressure drop
- Pneumatic actuation with spring return
- Fully integrated to enable ‘green’ energy saving mode
- Protects pump by not allowing it to go online until it is up to operating temperature







Pump Type	Recommended Silencer		Connection ANSI Flange Pattern	Dimensions mm (inches)			
	Size	Part No.		a	b	c	d
All Pump only and 1750 booster combination	4"	M58808004	4"	302 (11.9)	152.5 (6.0)	424.4 (16.7)	51.2 (2.0)
All 2600 booster combinations	6”	M58828004	6”	313 (12.3)	156.5 (6.2)	470 (18.5)	55.3 (2.2)
All 4200 booster combinations	8”	M59848004	8”	452 (17.8)	228 (8.9)	595 (23.4)	59.3 (2.3)

Harsh Duty Exhaust Silencers

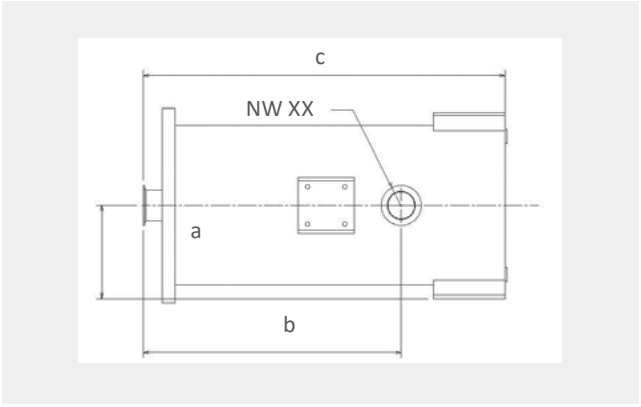
The GXS already has ‘best in class’ decibel ratings but in some tricky installations noise attenuation is essential. A range of silencers have a bespoke design tailored to the pumping capacity of the GXS high speed screw pumps.

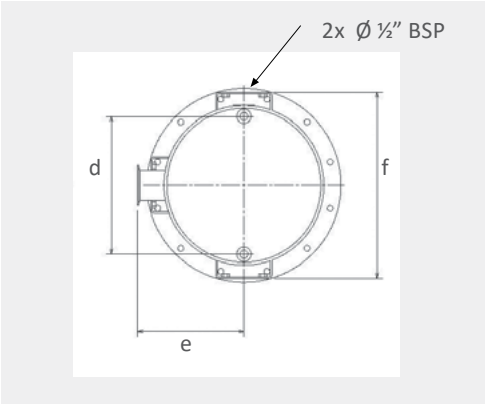
Specifications

- Painted carbon steel or stainless steel construction
- Drainable and cleanable design for condensable / harsh processes
- Greater than 15 dBA noise reduction on some installations

Options

- Drain valve assembly
- Mounting kits





Pump Type	Recommended Silencer		Inlet and exhaust connection type	Dimensions mm (inches)					
	Carbon Steel	Stainless Steel		a	b	c	d	e	f
All GXS 160 and GXS 250	M58808161	M58808162	NW40	105 (4.1)	333 (13.1)	525 (20.7)	132 (5.2)	105 (4.1)	210 (8.3)
All GXS 450 and GXS 750	M59838161	M59838162	NW50	175 (6.9)	485 (19.1)	680 (26.8)	259 (10.2)	200 (7.9)	350 (13.8)

Silencer Mounting Kits

Rear Exhaust (RE)	
GXS 160 / 250 & booster combinations	M58808151
GXS 450 / 750 & booster combinations	M59808151

Side Exhaust (SE)	
GXS 160 / 250 & booster combinations	M58808009
GXS 450 / 750 & booster combinations	M59838009

** SE mounting kit raises pump to accommodate silencer.*

Inlet Spools

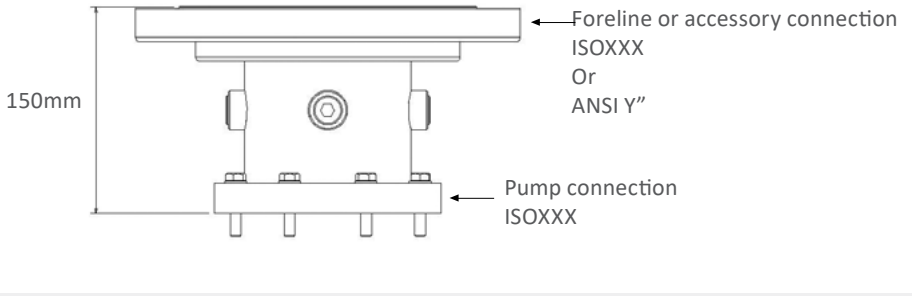
As every installation is different, a range of inlet spools are available for the GXS pumps. These are designed to mount our inlet valves and filters but also have instrumentation ports and the number of options ensure ease of connection to customers pipework.

Specifications

- Painted carbon steel or stainless steel construction
- ½" BSP ports to connect GXS accessories or other ancillary devices
- Sizes available for complete range of GXS pumps and accessories

Options

- Pressure gauge assembly
- Pressure transducer assembly (For PID control)
- Temperature transmitter assembly



Description	Part Number						
	Carbon Steel	Stainless Steel	Mass / Kg	Pump Connection	Foreline / Accessory Connection	Height /mm	Accessory Ports
Inlet spool ISO63 - ANSI 4 inch	M58808002	M58808134	10	ISO63	4 inch ANSI	150	1 x 1 inch BSP female 3 x ¾ inch BSP female
Inlet spool ISO100 - ANSI 4 inch	M59808002	M59808134	12	ISO100	4 inch ANSI	150	1 x 1 inch BSP female 3 x ¾ inch BSP female
Inlet spool ISO100 - ANSI 6 inch	M58938002	M58938134	16	ISO100	6 inch ANSI	150	4 x ¾ inch BSP female
Inlet spool ISO160 - ANSI 6 inch	M58858002	M58828134	20	ISO160	6 inch ANSI	150	4 x ¾ inch BSP female
Inlet spool ISO160 - ANSI 8 inch	M59848002	M59848134	25	ISO160	8 inch ANSi	150	4 x ¾ inch BSP female
Inlet spool ISO163 - ISO100	M58808138	M58808135	9	ISO63	ISO100	150	1 x 1 inch BSP female 3 x ¾ inch BSP female
Inlet spool ISO100 - ISO100	M59808138	M59808135	10	ISO100	ISO100		1 x 1 inch BSP female 3 x ¾ inch BSP female
Inlet spool ISO100 - ISO160	M58828003	M58828135	13	ISO100	ISO160	150	4 x ¾ inch BSP female
Inlet spool ISO160 - ISO160	M58938003	M58938135	15	ISO160	ISO160	150	4 x ¾ inch BSP female
Inlet spool ISO160 - ISO200	M59848003	M59848135	19	ISO160	ISO160	150	4 x ¾ inch BSP female

GXS ordering information

G	S		1		0			0	0	0	0

Application

G Industrial

Pump Mechanism

S Screw

Pumps/Boosters

2 160 (7.5 kW)
5 160 (7.5 kW) / 1750 (5.5 kW)
7 250 (7.5 kW)
A 250 (7.5 kW) / 2600 (5.5 kW)
D 450 (11 kW)
F 450 (11 kW) / 2600 (7.5 kW)
G 450 (11 kW) / 4200 (7.5 kW)
L 750 (22 kW)
N 750 (22 kW) / 2600 (7.5 kW)
P 750 (22 kW) / 4200 (7.5 kW)

Lubrication

1 PFPE (Drynert 25/6)

Electrical

2 Low volt 200-230 V 3Ø 50/60 Hz
5 High volt 380-460 V 3Ø 50/60 Hz

Installation

0 Side exhaust & skids
5 Rear exhaust & castors

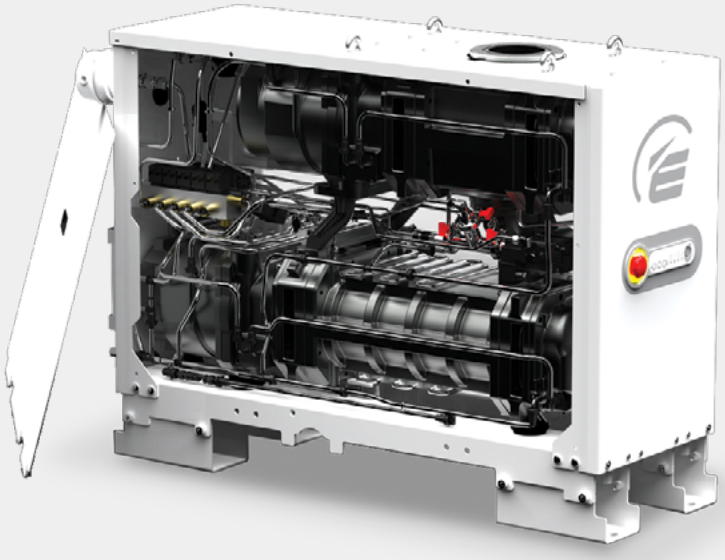
Pump Purges

0 Light Duty (SSP+HVP)
3 Medium Duty (SSP+HVP+Inlet+GB+Exh PM)
4 Medium Duty + High Flow Purge/Solvent Flush

SSP = Shaft seal purge,
HVP = High vacuum gearbox purge
Inlet = Inlet purge,
GB = Gas ballast,
Exh PM = Exhaust pressure monitor & purge
GXS450 & GXS750 Medium Duty (MD) variants require optional PDT for operation
All pump variants configured for Medium Duty + High Flow Purge / Solvent Flush (MD+) require optional PDT for operation

Cooling

0 TMS Standard (GXS160 and GXS250)
2 TMS+ (GXS450 and GXS750)



Complementary accessories

Control & Communication	
Pump Display Terminal (PDT)*	D37280700
Virtual Pump Display Terminal (VPDT)	D37488500
MCM MicroTIM	D37360320
Connector kit for MCM MicroTIM	D37422802
Profibus® Module	D39753000
Equipment support toolkit	D37217090

Instrumentation	
Water flow monitoring	A50783000
N2 Flow Switch	
Standard - Up to and including GXS450 LD	A50633000
High Flow - GXS450 MD pumps and higher	A50634000
Pressure Indicator Assembly	M58808141
Pressure Transducer Assembly (ASG)	M58808152
Temp Trans Assy	
Pump only	M58808160
Combinations	M58828160

Ancillary Equipment	
3/8" SS quick connector for water	A50721000
3/8” BSPF to 3/8” NPTM Brass Adaptor	U30011199
3/8” BSPM to 3/8” NPTM Brass Adaptor	U30011200
Connector plug 06 IL CM XLR	D37207061
Holster pump display module	D37209800
GXS Auxiliary gauge cable (0-10V)	D37241017
GXS Pressure input cable (4-20mA)	D37241019
GXS Pressure input connector (4-20mA)	D37241023
Drynert 25/6 fluid 1 kg (528 ml)	H11312021
Drynert 25/6 fluid 5 kg (2646 ml)	H11312025

Service and Support

Your business success depends on maximum equipment uptime and minimum total cost of ownership, and we constantly strive to support those objectives. As a global leader in vacuum technology and processes, we understand how vacuum pumps and systems perform in real life. Our wide portfolio of services is designed with you in mind: to help keep your processes and equipment running in the most economical and environmentally efficient manner.

Services include:

- Overhaul and repair using genuine Edwards OEM parts
- OEM spares and kits available for immediate despatch
- ReManufactured products available for cost-effective expansion and backups
- Global network of expert field service engineers available to respond quickly to unexpected equipment failures
- Extended warranty, to help manage the cost of the unexpected

Our Expert Advantage Service Plans provide you with the on-going support necessary to continuously improve your operational efficiency and meet your business objectives. As service offerings may vary slightly from product to product, please contact your Edwards representative to discuss your specific requirements.

Instruction Manual

CDX1000 Chemical Dry Vacuum Pumps and IDX1000 and IDX1300 Industrial Dry Vacuum Pumps

Description	Item Number
CDX1000, 30 kW, 50 Hz, Flameproof with Integral Flame Arrestors	A70801985
CDX1000, 40 h.p., 60 Hz, Flameproof with Integral Flame Arrestors	A70811985
CDX1000, 30 kW, 50 Hz, Flameproof (without Flame Arrestors)	A70802985
CDX1000, 40 h.p., 60 Hz, Flameproof (without Flame Arrestors)	A70812985
IDX1000, 22 kW, 50 Hz, Safe Area	A70803985
IDX1000, 30 h.p., 60 Hz, Safe Area	A70813985
IDX1000, 30 kW, 50 Hz, Safe Area, Extended Performance	A70804985
IDX1000, 40 h.p., 60 Hz, Safe Area, Extended Performance	A70814985
IDX1300, 30 kW, DIN, Safe Area	A70904985
IDX1300, 40 h.p., ANSI, Safe Area	A70914985

Notes: The Item Numbers listed above are for bareshaft pumps without motors. However, this manual contains general information on pump motors. For detailed information on the specific motor fitted to the pump, refer to the Motor Instruction Manual (P60074000) supplied with the pump.

The CDX/IDX Pumping System Instruction Manual (P60074600) supplied with the system will define the build specification of the pump; that is, the type of motor and any accessories fitted.

If the CDX pump is part of an ATEX system, an ATEX system instruction manual (P60074500) will be supplied, which defines the installation, operation and maintenance requirements for ATEX compliance.

Original Instructions

EDWARDS

CE Declaration of Incorporation

P20000780G

Edwards Ltd
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
UK

The following product(s):

CDX1000, 30 kW, 50 Hz, Flameproof with Integral Flame Arrestors	A708-01-985
CDX1000, 40 h.p., 60 Hz, Flameproof with Integral Flame Arrestors	A708-11-985
CDX1000, 30 kW, 50 Hz, Flameproof (without Flame Arrestors)	A708-02-985
CDX1000, 40 h.p., 60 Hz, Flameproof (without Flame Arrestors)	A708-12-985
IDX1000, 22 kW, 50 Hz, Safe Area	A708-03-985
IDX1000, 30 h.p., 60 Hz, Safe Area	A708-13-985
IDX1000, 30 kW, 50 Hz, Safe Area, Extended Performance	A708-04-985
IDX1000, 40 h.p., 60 Hz, Safe Area, Extended Performance	A708-14-985
IDX1300, 30 kW, DIN, Safe Area	A709-04-985
IDX1300, 40 h.p., ANSI, Safe Area	A709-14-985

Note: The part numbers listed above are for bare shaft pumps without motors.

is intended to be incorporated into other machinery and is not for independent use.

It must not be put into service until the final machinery into which it is incorporated has been declared to be in conformity with the applicable provisions of the essential safety requirements of Annex I of Directive 2006/42/EC and the essential safety requirements Annex II of Directive 2014/34/EU on ATEX, as specified below:

Based on the relevant requirements of harmonised standards:

EN 1012-2:1996 +A1:2009	Compressors and vacuum pumps. Safety requirements. Vacuum pumps
EN 80079 36:2016*	Non-electrical equipment for explosive atmospheres – Basic method and requirements
EN 80079 37:2016*	Non-electrical equipment for explosive atmospheres – Non-electrical type of protection constructional safety “c”, control of ignition source “b”, liquid immersion “k”

**applicable to CDX pumps only.*

The relevant technical documentation has been compiled in accordance with Machinery directive 2006/42/EC Annex VII Part B. In response to a reasoned request by the national authorities, we undertakes to provide relevant information on the partly completed machinery (via email).

So far as practicable this product also complies with the essential requirements of:

Additional Legislation and Compliance Information

EU RoHS Directive: Material Exemption Information

This product is compliant with the following Annex III Exemptions:

- 6(b) **Lead** as an alloying element in aluminium containing up to 0.4% by weight
- 6(c) Copper alloy containing up to 4% **lead** by weight

EU REACH Regulation Compliance

This product is a complex article which is not designed for intentional substance release. To the best of our knowledge the materials used comply with the requirements of REACH. The product manual provides information and instruction to ensure the safe storage, use, maintenance and disposal of the product including any substance based requirements.

Article 33.1 Declaration

This product does contain Candidate List Substances of Very High Concern above 0.1%ww by article as clarified under the 2015 European Court of Justice ruling in case C-106/14.

- Lead (Pb) added to the Candidate List June 2018

As indicated by the applied RoHS exemption(s) above this substance is present in certain aluminium/brass components.

材料成分声明

China Material Content Declaration

	有害物质 Hazardous Substances					
部件名称 Part name	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr VI)	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
铸铝及铝合金制品 Aluminium alloys	X	O	O	O	O	O
铜管管件 Brass pipe fitting	X	O	O	O	O	O
铜接头 Brass connectors	X	O	O	O	O	O

O: 表示该有害物质在该部件的所有均质材料中的含量低于 GB/T 26572 标准规定的限量要求。
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 标准规定的限量要求。
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

1.2 Description

The CDX and IDX pumps are rugged, reliable dry vacuum pumps designed specifically for use in the chemical and pharmaceutical industries, and in industrial processing applications.

The CDX and IDX pumps are single stage pumps which use the screw principle, in which a pair of intermeshing, non-contacting rotors are held in correct phase relation by a pair of timing-gears. The gears and the double-row angular contact ball bearings are oil lubricated.

The double-ended design means that the bearings, seals and gearbox remain at atmospheric pressure, and that axial loading on the bearings is minimal.

1.3 Shaft-seals purge system

Refer to Figure 1, 2 and 3, detail C. The shaft-seals purge pipelines (24) deliver an air or nitrogen purge to the shaft-seals. This purge:

- Ensures that the shaft-seals are maintained at a positive pressure during pump operation.
- Prevents the entry of corrosive or toxic process vapours into the pump gearbox.
- Prevents contamination of the process gases by pump oil.
- Prevents damage to the shaft-seals by debris.

Note: Accessory kits are available to provide gas ballast, inlet and exhaust purge facilities on the pump: refer to Section 7.4.

1.4 Air bleed - IDX1300 only

CAUTION

Blockage of the air bleed intake and/or the filter element will lead to seizure of the pump.

Refer to Figure 2. The IDX1300 is fitted with a permanent atmospheric air bleed at each end of the pump.

Refer to Section 5.16 for details of how to clean/replace the filter element.

1.5 Temperature control system

Refer to Figure 1, 2 and 3. The CDX and IDX pumps have an indirect cooling system. A coolant circulation pump (driven by the vacuum pump mechanism) circulates secondary coolant, in a closed loop, through jackets around the pump body, and through oil coolers. A heat exchanger in the circuit transfers heat to the primary coolant (that is, cooling water).

The primary coolant supply passes through a filter (Figure 12, item 20).

In operation, the pump is maintained at a constant temperature by a thermostatic control-valve (TCV, 17) which controls the supply of primary coolant (cooling water) to the heat exchanger.

The heat exchanger has a pressure cap and a coolant overflow pipe (Figure 7, item 4). As the temperature of the pump body increases, and the secondary coolant expands, excess coolant may be discharged from this pipe.

Two positive displacement oil pumps located in the gearbox and the end cover circulate oil (through a filter) to cool and control the temperature of the rotors, and to lubricate the bearings and gears.

The oil circulates through oil coolers (10, 22). The oil coolers are plate heat exchangers, in which heat is transferred from the oil to the secondary coolant.

Each oil circuit is also fitted with a pressure switch (IDX) or transmitter (CDX) to protect against loss of oil supply.

Refer to Figure 1. IDX pumps have a thermal snap-switch box (9) on the end cover which contains two thermal snap-switches and a pressure switch (32) attached to the oil supply pipe at each end:

- Connect the shut-down thermal snap-switch to a suitable control circuit to shut down the pump if it overheats: refer to Section 3.7.
- Connect the two pressure switches to a suitable control circuit to shut the pump down if either of the oil circuits loses pressure. This is most easily done by wiring them in series. The shut-down thermal snap switch can be wired in series with the two pressure switches to shut down the pump if any one of the three switches trip.
- Connect the warning thermal snap-switch to the control equipment to provide an indication that the pump is too hot: refer to Section 3.7.

Refer to Figure 3. CDX pumps have a temperature sensor (9) fitted to the end cover and a pressure transmitter (32) attached to the oil supply pipe at each end. Connect these sensors to a suitable control circuit, in order to shut down the pump if it overheats or if either of the oil circuits loses pressure, refer to Section 3.6.

1.6 Drive coupling operation

The pump has a flexible drive coupling which transmits the drive from the pump motor to the pump rotors.

Refer to Figure 14. A coupling hub (10) is fitted to the pump shaft (14) and a drive hub (19) is fitted to the motor shaft (4). A flexible insert (18) fits between the two hubs.

1.7 Hazardous area and safe area versions of the pump

1.7.1 Safe area (in relation to an external atmosphere)

A safe area is one where there is no possibility of a potentially explosive atmosphere existing, therefore it is not necessary to take special precautions to avoid mechanical or electrical ignition sources.

1.7.2 Hazardous area

A hazardous area (in relation to an external atmosphere) is one where there is the possibility of a potentially explosive atmosphere existing, therefore it is necessary to take special precautions to avoid mechanical or electrical ignition sources.

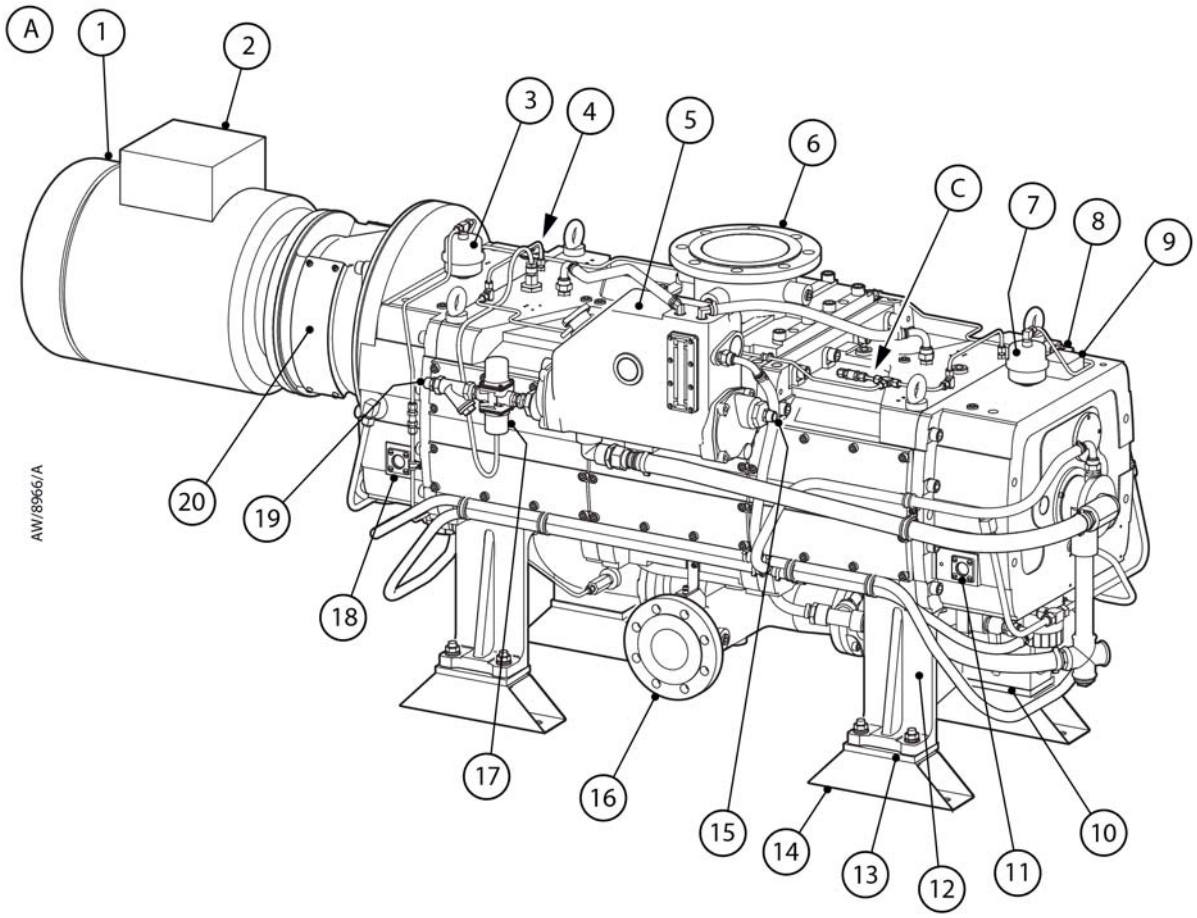
1.7.3 Pumped gases

Hazardous gases and vapours can be defined as materials that could be one or more of the following:

- Toxic
- Corrosive
- Pyrophoric
- Flammables in the flammable range
- Oxidants
- Flammables below the upper flammability limit.

Pumps that are suitable for pumping hazardous gases and vapours have a leak tightness specification of better than 10^{-3} mbar l s.

Figure 1 - The IDX pump (Sheet 1 of 2)



1. Pump motor (typical)
2. Motor terminal box (typical)
3. Gearbox vent filter
4. Gearbox oil filler plug and bonded seal (in filler port)
5. Heat exchanger
6. Pump inlet
7. End cover vent filter
8. End cover oil filler plug and bonded seal (in filler port)
9. Thermal snap-switch box
10. End cover oil cooler
11. End cover oil level sight-glass (2 off*)
12. Mounting brackets (4 off)
13. Mounting pads (4 off, between items 12 and 14)
14. Mounting feet (4 off, box section)
15. Cooling water outlet
16. Pump outlet
17. TCV (thermostatic control valve)
18. Gearbox oil level sight-glass (2 off*)
19. Cooling water inlet
20. Coupling cover (2 off*)
21. Motor fan
22. Gearbox oil cooler
23. Lifting-bolts (4 off)
24. Shaft-seals purge pipelines
25. Shaft-seals purge inlet
26. Sight-glass bezel
27. Temperature measurement area
28. Earth (ground) stud
29. Nut (on tube fitting)
30. Vent filter body top
32. Pressure switch

* *One on each side of the pump*

Figure 1 - The IDX pump (Sheet 2 of 2)

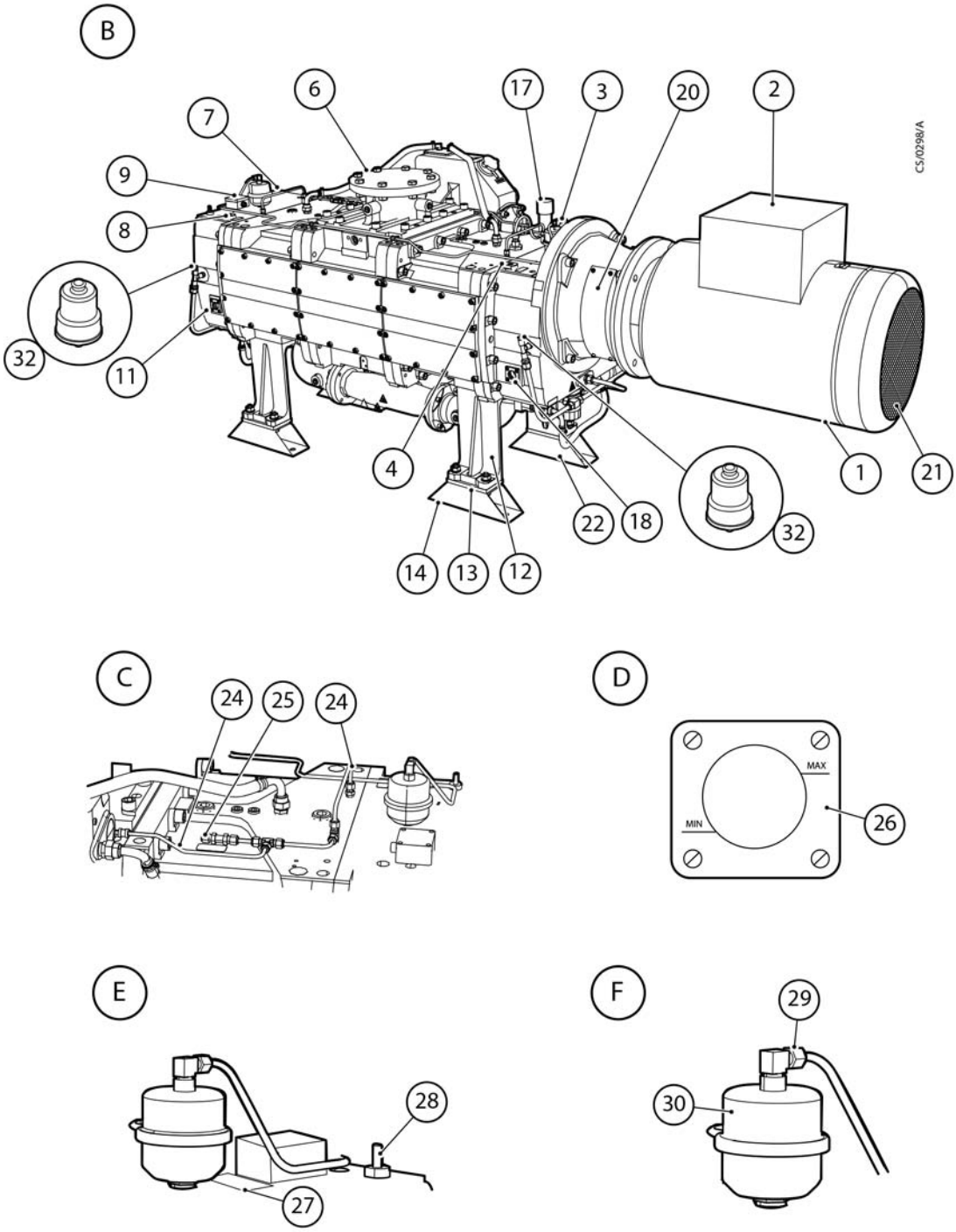
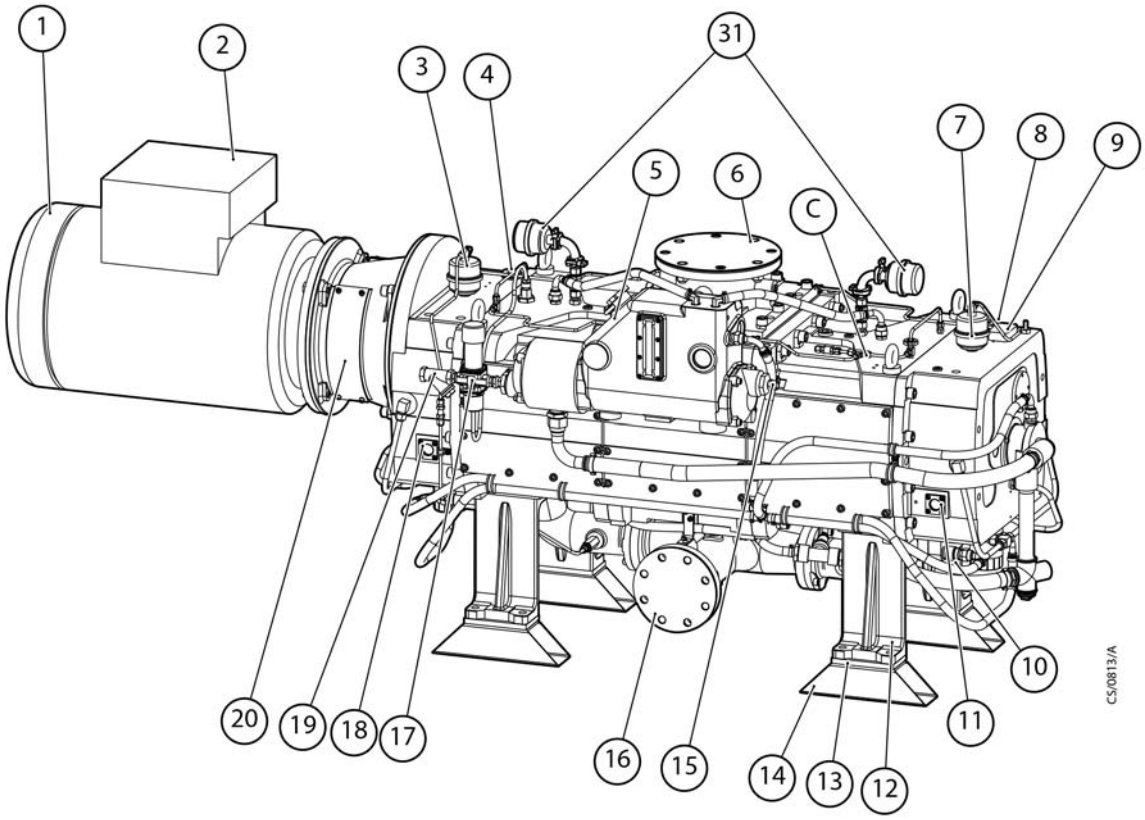


Figure 2 - The IDX1300 pump (Sheet 1 of 2)



1. Pump motor (typical)
2. Motor terminal box (typical)
3. Gearbox vent filter
4. Gearbox oil filler plug and bonded seal (in filler port)
5. Heat exchanger
6. Pump inlet
7. End cover vent filter
8. End cover oil filler plug and bonded seal (in filler port)
9. Thermal snap-switch box
10. End cover oil cooler
11. End cover oil level sight-glass (2 off*)
12. Mounting brackets (4 off)
13. Mounting pads (4 off, between items 12 and 14)
14. Mounting feet (4 off, box section)
15. Cooling water outlet
16. Pump outlet
17. TCV (thermostatic control valve)
18. Gearbox oil level sight-glass (2 off*)
19. Cooling water inlet
20. Coupling cover (2 off*)
21. Motor fan
22. Gearbox oil cooler
23. Lifting-bolts (4 off)
24. Shaft-seals purge pipelines
25. Shaft-seals purge inlet
26. Sight-glass bezel
27. Temperature measurement area
28. Earth (ground) stud
29. Nut (on tube fitting)
30. Vent filter body top
31. Air Bleed
32. Pressure switch

* *One on each side of the pump*

Figure 2 - The IDX1300 pump (Sheet 2 of 2)

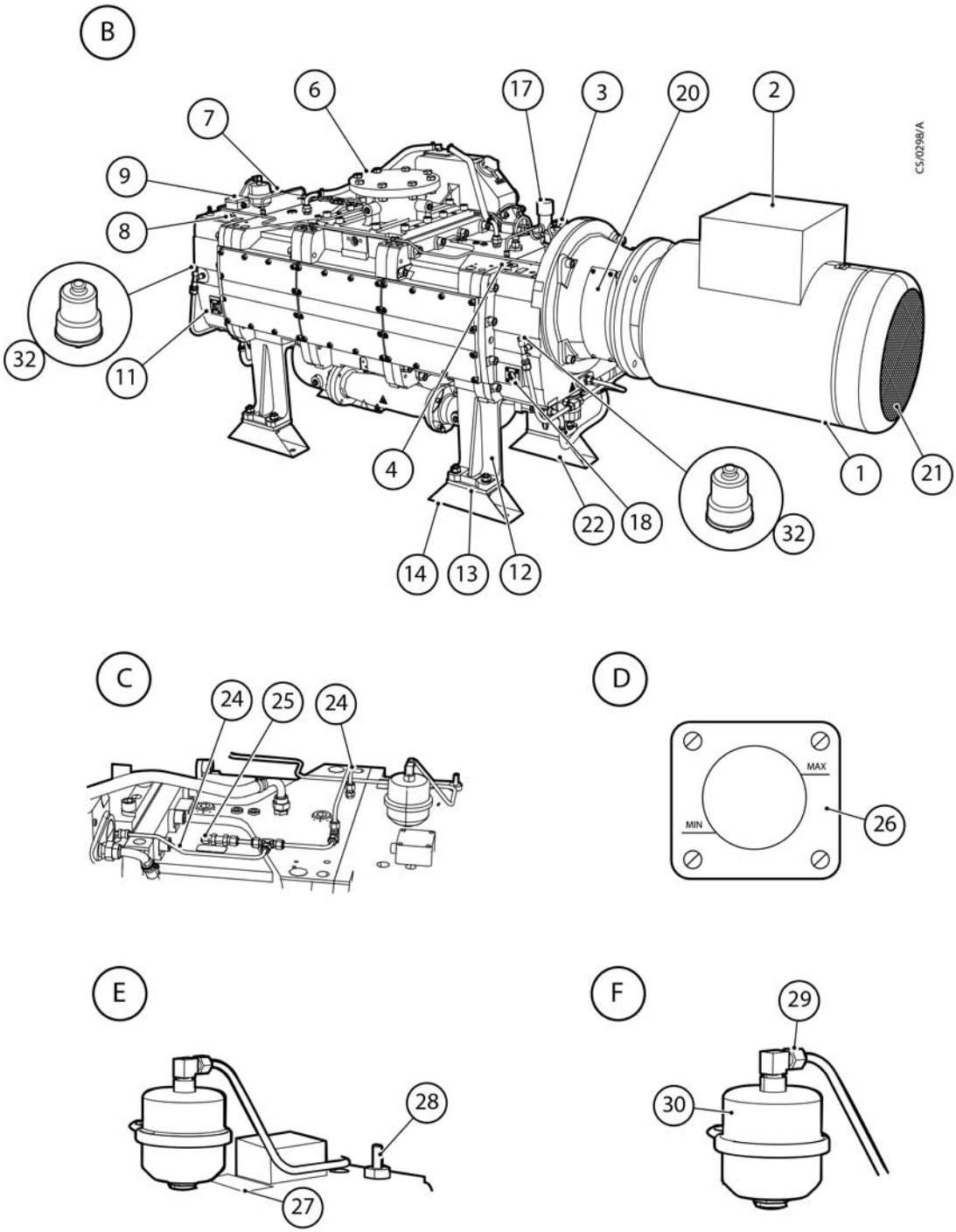
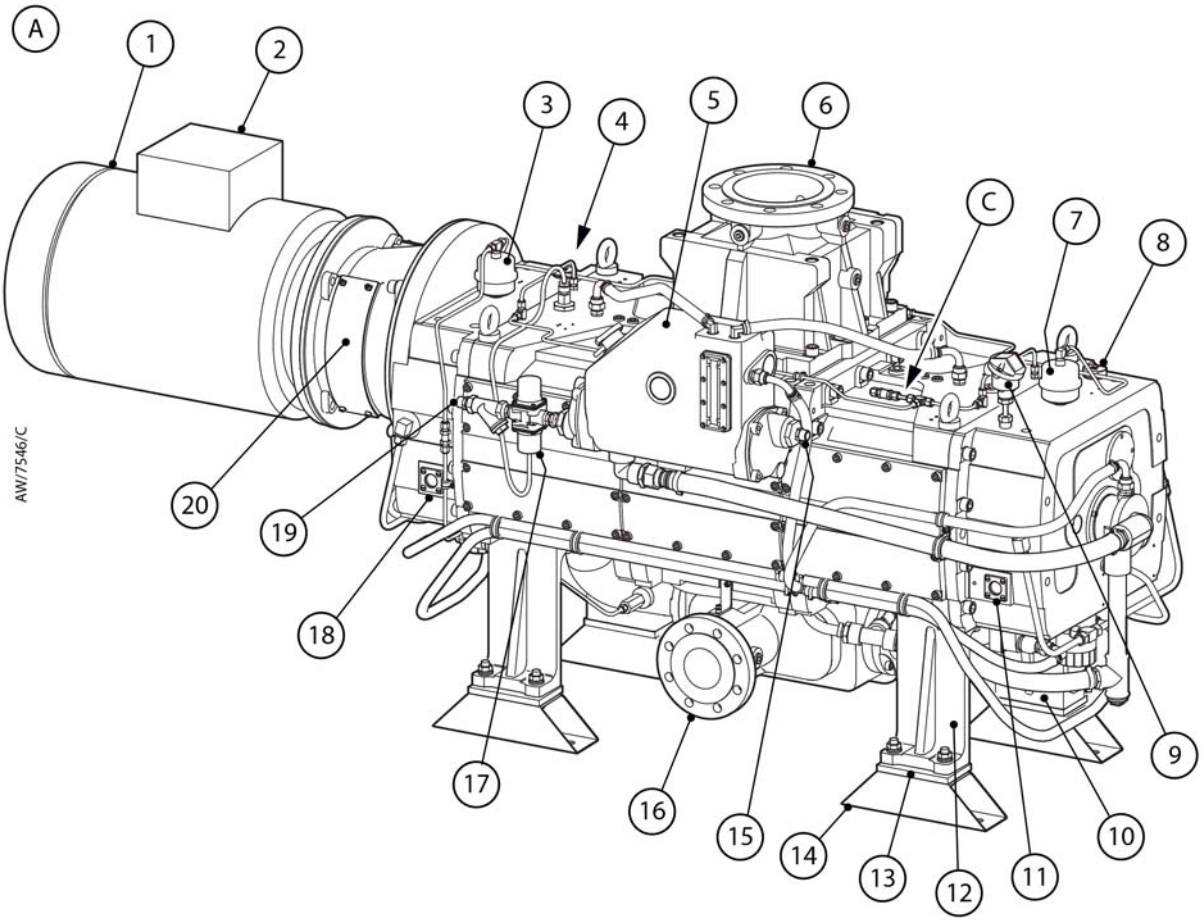


Figure 3 - The CDX pump (Sheet 1 of 2)

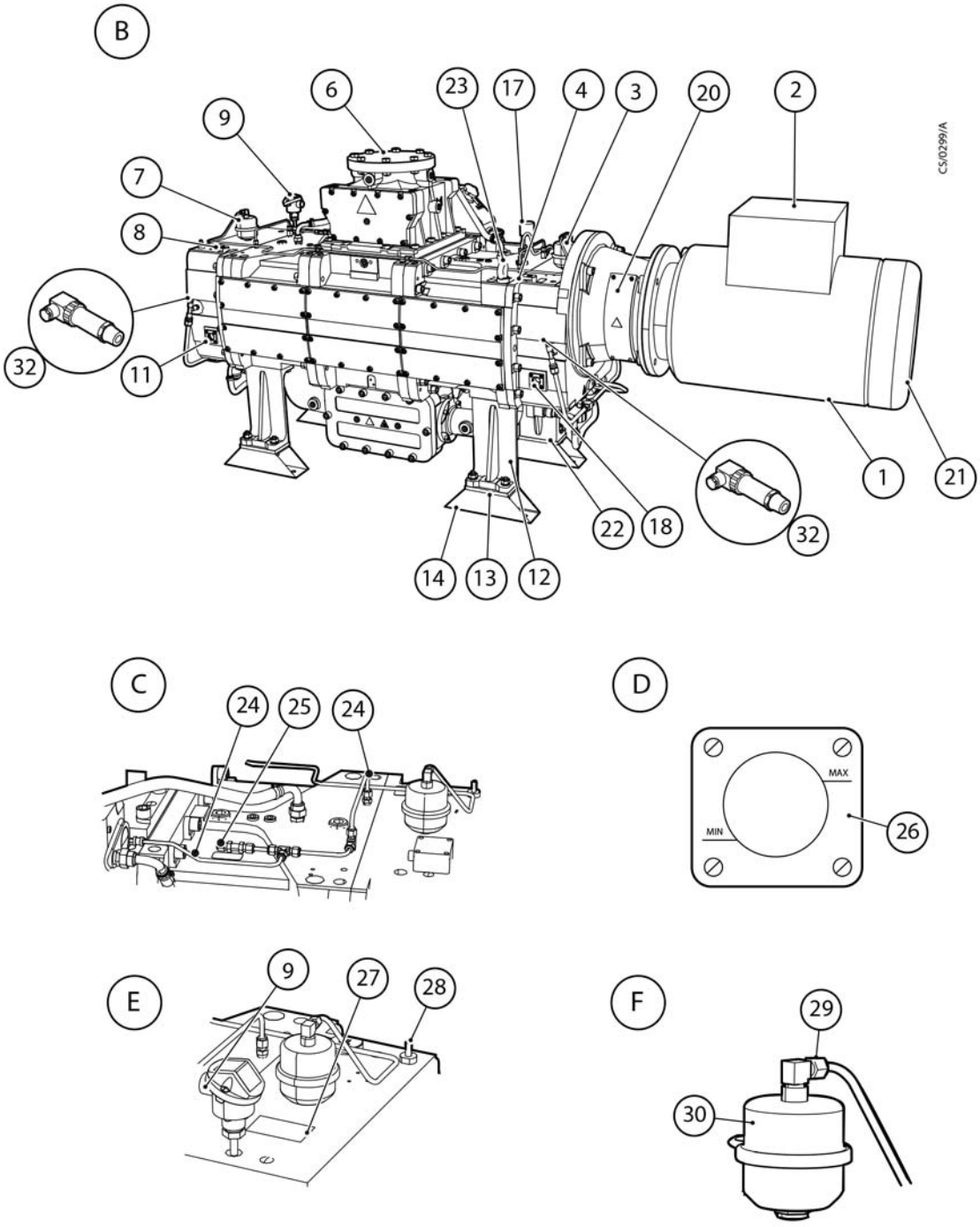


1. pump motor (typical)
2. Motor terminal box (typical)
3. Gearbox vent filter
4. Gearbox oil filler plug and bonded seal (in filler port)
5. Heat exchanger
6. Pump inlet
7. End cover vent filter
8. End cover oil filler plug and bonded seal (in filler port)
9. Temperature transmitter
10. End cover oil cooler
11. End cover oil level sight-glass (2 off*)
12. Mounting brackets (4 off)
13. Mounting pads (4 off, between items 12 and 14)
14. Mounting feet (4 off, box section)
15. Cooling water outlet
16. Pump outlet
17. TCV (thermostatic control valve)
18. Gearbox oil level sight-glass (2 off*)
19. Cooling water inlet
20. Coupling cover (2 off*)
21. Motor fan
22. Gearbox oil cooler
23. Lifting-bolts (4 off)
24. Shaft-seals purge pipelines
25. Shaft-seals purge inlet
26. Sight-glass bezel
27. Temperature measurement area
28. Earth (ground) stud
29. Nut (on tube fitting)
30. Vent filter body top
32. Pressure transmitter

Note: *This Figure shows a CDX with integral flame arrestors. The inlet and outlet configuration on a CDX without integral flame arrestors is as shown in Figure 1.*

* *One on each side of the pump*

Figure 3 - The CDX Pump (Sheet 2 of 2)



2 Technical data

2.1 Operating and storage conditions

Table 1 - Operating and Storage Conditions

Ambient operating temperature range*†	-20 to 40 °C (-4 to 104 °F)
Ambient storage temperature range	-20 to 50 °C (-4 to 122 °F)
Maximum ambient operating humidity	90% RH
Maximum operating altitude	1000 m (3300 ft)
Typical warm-up time‡	90 minutes
Cool-down time (to a safe temperature for maintenance)	3 hours
Normal surface temperature of the pump at ultimate vacuum:	
Case (water jacket)	65 to 90 °C (149 to 194 °F)
End cover and gearbox (oil)	80 to 105 °C (176 to 221 °F)
Typical continuous A-weighted sound pressure level at ultimate vacuum	82 dB(A)

* *Consult Edwards for advice on operation of the pump in ambient temperatures below -5 °C (23 °F).*
† *The pump must be heated to at least +5 °C before starting.*
‡ *To a pump case temperature of 65 °C (149 °F).*

2.2 Performance

Table 2 - Performance Data

	CDX/IDX1000	IDX1300
Minimum pumping speed	800 $m^3 h^{-1}$ (470 cfm)	1100 $m^3 h^{-1}$ (649 cfm)
Displacement (swept volume)	1110 $m^3 h^{-1}$ (655 cfm)	1440 $m^3 h^{-1}$ (850 cfm)
Ultimate vacuum	5 x 10^{-2} mbar, 5 Pa, 0.04 Torr	5 x 10^{-2} mbar, 5 Pa, 0.04 Torr
Pump rotational speed	4300 r min^{-1} (4300 r.p.m.)	5185 r min^{-1} (5185 r.p.m.)
Maximum outlet pressure	1.15 bar absolute, 1.15 x 10^5 Pa, 16.7 psi	1.05 bar absolute, 1.05 x 10^5 Pa, 15.3 psi

2.3 Mechanical data

Table 3 - Mechanical Data

Dimensions	See Figures 4, 5 and 6	
CDX1000 mass (maximum)	**Pump and motor**	**Motor only**
30 kW, 50 Hz, Flameproof with Flame Arrestors	1810 kg (3985 lb)	310 kg (685 lb)
40 h.p., 60 Hz, Flameproof with Flame Arrestors	1805 kg (3965 lb)	305 kg (665 lb)
30 kW, 50 Hz, Flameproof	1710 kg (3765 lb)	310 kg (685 lb)
40 h.p., 60 Hz, Flameproof	1705 kg (3745 lb)	305 kg (665 lb)
IDX1000 mass (maximum)	**Pump and motor**	**Motor only**
22 kW, 50 Hz, Safe Area	1575 kg (3460 lb)	175 kg (380 lb)
30 h.p., 60 Hz, Safe Area	1630 kg (3585 lb)	230 kg (505 lb)
30 kW, 50 Hz, Safe Area	1640 kg (3610 lb)	240 kg (530 lb)
40 h.p., 60 Hz, Safe Area	1705 kg (3745 lb)	305 kg (665 lb)
IDX1300 30 kW Safe Area	1640 kg (3610 lb)	240 kg (530 lb)
IDX1300 40 h.p. Safe Area	1705 kg (3745 lb)	305 kg (665 lb)
Cleaning solution required to flood the pump cavities (see Section 5.9)	40 l (10.56 US gal)	

2.4 Electrical data

Note: The CDX temperature sensor and oil pressure sensors are safety-critical devices for ATEX systems. If applicable, refer to the ATEX system instruction manual for details.

Table 4 - Electrical Data

Nominal electrical supply	Refer to the motor manual supplied with the pump
Voltage tolerance	Refer to the motor manual supplied with the pump
Full load current	Refer to the motor manual supplied with the pump
No load current	Refer to the motor manual supplied with the pump
Starting current/time	Refer to the motor manual supplied with the pump
Recommended electrical supply cable size	Refer to the motor manual supplied with the pump
Temperature sensor and oil pressure sensors (CDX only: see note above)	
Supply voltage	24 V d.c.
Signal current	4 to 20 mA
Thermal snap-switches (IDX only) contact ratings	
Maximum voltage	24 V a.c./d.c.
Maximum current (resistive load)	2 A

2.5 Lubrication data

Note: An Edwards Material Safety Data Sheet for the oil referenced below is available on request.

Table 5 - Lubrication Data

Gearbox	
Oil capacity	
Minimum	5 l (1.32 US gal)
Maximum	5.5 l (1.45 US gal)
Recommended oil (supplied)	Mobil SHC 629
End cover	
Oil capacity	
Minimum	5 l (1.32 US gal)
Maximum	5.5 l (1.45 US gal)
Recommended oil (supplied)	Mobil SHC 629

2.6 Shaft-seals purge gas supply

Note: The compressed gas supply must be dry.

Use a nitrogen purge if operating a CDX pump with an oil temperature (measured on the end cover) higher than 95 °C (203 °F): see Section 3.14.

Table 6 - Shaft-seals purge gas supply data

Suitable compressed gases	Dry air or nitrogen
Purge gas supply pressure	2 to 10 bar, 2 x 10^5 to 1 x 10^6 Pa, 29 to 145 psi
Regulated pressure to shaft-seals*	0.3 to 0.5 bar, 3 x 10^4 to 5 x 10^4 Pa, 5 to 7 psi

* *Above exhaust back-pressure*

2.7 Cooling water supply

Table 7 - Cooling water supply data

Supply temperature range	5 to 35°C (41 to 95 °F)
Maximum supply pressure	10 bar, 1 x 10^6 Pa, 145 psi
Minimum flow rate*	10 l min^{-1}, 2.64 US gal min^{-1}
Typical heat removed from pump	10 kW (13.4 h.p.)

* *With a supply temperature of 20 °C (68 °F).*

2.8 Temperature control system

WARNING

If the CDX pump is part of an ATEX system, there may be an operating case temperature limit. Refer to the ATEX system instruction manual for details.

Note: The CDX temperature sensor senses the temperature of the oil in the end cover, and is a safety-critical device for ATEX systems. If applicable, refer to the ATEX system instruction manual for details.

Table 8 - Temperature Control System Data

Water cooling system	
Type	Indirect water-to-coolant heat exchanger
Coolant capacity	50 l (13.2 US gal)
TCV (Thermostatic Control Valve)	
Sensor operating temperature range	10 to 80 °C (77 to 176 °F)
Maximum sensor temperature	130 °C (266 °F)
CDX temperature sensor (see Note above)	
Type	Platinum resistance thermometer (PRT)
Sensing range	0 to 200 °C (32 to 392 °F)
IDX warning thermal snap-switch	
Opening temperature	88 °C (190 °F)
Closing temperature	78 °C (172 °F)
IDX shut-down thermal snap-switch	
Opening temperature	95 °C (203 °F)
Closing temperature	85 °C (185 °F)

2.9 Connections

Table 9 - Connections

Process connections	
Pump inlet	150 DIN* or 6 inch ANSI†
Pump outlet	80 DIN* or 3 inch ANSI†
Recommended inlet and outlet seals	PTFE envelope gaskets: Klinger milled type with a 1.5 mm (0.06 inch) full-face insert
Cooling water connections	
Supply inlet	½ inch BSP male* or ½ inch NPT male†
Return outlet	½ inch BSP male* or ½ inch NPT male†
Shaft-seals purge gas inlet	¼ inch compression

* *50 Hz pumps*

† *60 Hz pumps*

2.10 Coolant

The pump is supplied filled with Edwards coolant which is monopropylene based, and is both an antifreeze and a corrosion inhibitor. Spare Edwards coolant is available: refer to Section 7.3. A Material Safety Data Sheet for the coolant is available on request.

If using another coolant type to replenish lost coolant:

- It must prevent the formation of visible oxide sludge and scale deposits.
- It must provide frost protection down to a temperature of -14 °C (7 °F), when mixed in accordance with the manufacturer's recommendations.
- It must be compatible with the materials of construction of the cooling system; that is: SG iron, copper, brass, aluminium, stainless steel, rubber (hoses) and fluoroelastomer (Viton) seals.
- It must comply with the requirements of BS 6580-1992 and BS 5117.
- It must be based on monopropylene glycol or ethylene glycol fluid.
- It must not contain amines.

The coolants shown in Table 10 may be suitable for use in the CDX and IDX pumps. All of these coolants are amine free, automotive grade, ethylene glycol antifreezes and must be diluted to between 35% to 50% by volume with water to provide the required cooling protection. However, Edwards recommends the use of Edwards coolant; Edwards cannot guarantee other types of coolant will provide the best corrosion protection for the pump.

Table 10 - Possible Alternative Coolants

Manufacturer	Product
BP (Chemicals) Texaco Lubricants Castrol	NAPGEL C2230 (Universal) Texaco Engine Coolant ETX 6024 Castrol Antifreeze

2.11 Materials of construction

Note: A Material Safety Data Sheet for Fluoroelastomer (Viton) is available on request.

Table 11 - Construction Materials

Component	Material(s)
Stators and W/C plates	SG iron
Rotors	SG iron
Gear/end covers	SG iron
Inlet flange and exhaust manifold	SG iron
Coupling cover	Grey iron
Bearings, gears and oil pumps	Steel
Layshaft	Steel
Heat exchanger	Aluminium/copper
Oil coolers and pipelines	Stainless steel
Coolant pump	SG iron/PPS/Neodymium magnets
Hoses	Rubber
Hose fittings	Brass/iron
Seals purge pipelines and fittings	Stainless steel
Shaft seals	PTFE (polytetrafluoroethylene)
O-rings	Fluoroelastomer (Viton)
Flame arrestor housings	SG iron
Flame arrestor elements	Stainless steel

Figure 4 - IDX1000 Dimensions: mm (inch) (key)

A. Side view
B. Plan view
C. End view
D. Front fixing dimensions with mounting feet removed

1. Pump inlet
2. Pump outlet
3. Fixing-holes: Ø18 mm (0.71 inch), 2 holes on each mounting foot
4. Fixing-holes: Ø17 mm (0.67 inch), 2 holes on each mounting bracket

Specifications

Connection Vacuum Inlet Flange	ASA/ANSI 6" DN 150
Connection vacuum outlet flange	ASA/ANSI 3" DN 80
Cooling Method	Water Cooling
Pressure Ultimate	5.00
Supply Voltage	AC 24V DC 24V
Power Total Rated	30000.00

IDX1300 - Dry Screw Pump, AC 24V

Part Number: **A70904985**

1

0 In Stock
Click For Availability

Add To Cart

Request A Quote

Variant
Explore the range of variants given below to compare the product

	SHORT DESCRIPTION	PART NUMBER	SUPPLY VOLTAGE
●	IDX1300 - bareshaft DIN	A70904985	AC 24V DC 24V
○	IDX1300 - 60Hz bareshaft ANSI for 40hp Mtr	A70914985	Bareshaft without motor

Dry Screw Pumps

Vacuum dry screw pumps are positive displacement pumps that are designed to operate in rough application conditions. These products do not use any lubricant in the pumping mechanism to seal therefore the are defined as dry compressing machines. They offer high pumping speed and can handle a wide range of gases and vapors. These pumps are ideal for applications in the industrial, chemical, pharmaceutical, and semiconductor industries, among others, where oil-free and contamination-free vacuum is required. They have a compact design and require minimal maintenance, making them a reliable and cost-effective solution for many vacuum applications.

IDX Dry Screw

The Edwards IDX dry pumps use the latest screw technology to provide a clean, effluent free vacuum. These pumps offer the ability to handle large volumes of dust and water vapor without any loss of performance while minimizing maintenance requirements and running costs. The IDX dry pumps are capable of continually operating from atmosphere to ultimate.

IDX1300

The IDX1300 is the new benchmark in performance for fast pumpdown of large chambers and high capacity pumping for industrial processes.

Based on the double-ended screw technology, the IDX Dry Vacuum Pump will give you all the reliability and performance you want for your process. The IDX outperforms all other dry pumps in robustness, performance and ease of operation, giving you faster pump-down from atmosphere and managing higher throughput at low pressures. Dry pumping systems reduce energy costs, eliminate effluent and can give significant improvements in product quality, making them the ideal solution for many coating and metallurgy processes.

Features and Benefits

- Improved Performance and Reliability
- Continuous performance from atmosphere to ultimate
- Excellent thermal profile and temperature control
- Tolerates liquid and particles
- Does not contaminate your process
- Cost Efficient and Environmentally Friendly
- Low power
- No effluent generation
- Dry running mechanism
- Designed for Reliability and Ease of Maintenance
- Flushable with water or solvent
- Elimination of compression plate for better dust handling
- Balanced rotor design
- Standard accessory modules
- Cooled and filtered oil
- Double-ended design for improved thermal stability

IDX1300 - Dry Screw Pump, AC 24V

Part Number: **A70904985**

− 1 +

0 In Stock
Click For Availability

Add To Cart Request A Quote

Specifications

Connection Vacuum Inlet Flange	ASA/ANSI 6" DN 150
Connection vacuum outlet flange	ASA/ANSI 3" DN 80
Cooling Method	Water Cooling
Pressure Ultimate	5.00 Pa
Supply Voltage	AC 24V DC 24V
Power Total Rated	30000.00 W

Variant
Explore the range of variants given below to compare the product

	SHORT DESCRIPTION	PART NUMBER	SUPPLY VOLTAGE
◯	IDX1300 - bareshaft DIN	A70904985	AC 24V DC 24V
◯	IDX1300 - 60Hz bareshaft ANSI for 40hp Mtr	A70914985	Bareshaft without motor

PRODUCT DETAILS ›

Dry Screw Pumps

Vacuum dry screw pumps are positive displacement pumps that are designed to operate in rough application conditions. These products do not use any lubricant in the pumping mechanism to seal therefore the are defined as dry compressing machines. They offer high pumping speed and can handle a wide range of gases and vapors. These pumps are ideal for applications in the industrial, chemical, pharmaceutical, and semiconductor industries, among others, where oil-

free and contamination-free vacuum is required. They have a compact design and require minimal maintenance, making them a reliable and cost-effective solution for many vacuum applications.

IDX Dry Screw

The Edwards IDX dry pumps use the latest screw technology to provide a clean, effluent free vacuum. These pumps offer the ability to handle large volumes of dust and water vapor without any loss of performance while minimizing maintenance requirements and running costs. The IDX dry pumps are capable of continually operating from atmosphere to ultimate.

IDX1300

The IDX1300 is the new benchmark in performance for fast pumpdown of large chambers and high capacity pumping for industrial processes.

Based on the double-ended screw technology, the IDX Dry Vacuum Pump will give you all the reliability and performance you want for your process. The IDX outperforms all other dry pumps in robustness, performance and ease of operation, giving you faster pump-down from atmosphere and managing higher throughput at low pressures. Dry pumping systems reduce energy costs, eliminate effluent and can give significant improvements in product quality, making them the ideal solution for many coating and metallurgy processes.

Features and Benefits

- Improved Performance and Reliability
- Continuous performance from atmosphere to ultimate
- Excellent thermal profile and temperature control
- Tolerates liquid and particles
- Does not contaminate your process
- Cost Efficient and Environmentally Friendly
- Low power
- No effluent generation
- Dry running mechanism
- Designed for Reliability and Ease of Maintenance
- Flushable with water or solvent
- Elimination of compression plate for better dust handling
- Balanced rotor design
- Standard accessory modules
- Cooled and filtered oil
- Double-ended design for improved thermal stability

SPECIFICATIONS

General Product Information

Connection Vacuum Inlet Flange	ASA/ANSI 6"
	DN 150
Weight	1640.00 kg

Connection vacuum outlet flange	ASA/ANSI 3" DN 80
Leak Rate	1.000×10^{-4} $Pa \cdot m^3/s$
Supply Voltage	AC 24V DC 24V
Dimension Length	2.46 m
Dimension Height	1.00 m
Dimension Width	0.749 m
dimensionsCombinedLengthWidthHeight	2.46 m 2.46 m 2.46 m
Noise Level	82.00 db(A)
Cooling Method	Water Cooling
Connection Purge Gas Ballast Vent Connector	1/4" BSPP (G) Female
Connection Cooling	1/2" BSPP (G) Male 1/2" NPT Male
connectionVacuumFlangeCombined	ASA/ANSI 6" / ASA/ANSI 3"
dimensionComments	The dimensions length, width and height try to describe the outer shape of this particular product in its typical orientation when standing on the ground. We always recommend checking the detailed dimensions given in 2D drawings in the instruction manual or the 3D shapes given in 3D models.

Operation Conditions - Limitations

Pressure Inlet Continous Max.	1.000×10^{8} Pa

Altitude Max.	10000.00 m
Oil Capacity Min.	5.000×10^{-3} m^3
Oil Capacity Max.	5.500×10^{-3} m^3
Flow Cooling Water Min.	1.667×10^{-4} m^3/s
Temperature Cooling Water Max.	308.15 K
Temperature Cooling Water Min.	278.15 K
pressureOutletMaxContinous	105.00 Pa
operatingConditionsComment	The specific conditions to operate the machine reliably and safely like cooling water flows, purge flows and so on, and in detail described in the instruction manual please read the correct sections of the manual.

Environmental Conditions

Temperature Ambient Operation Max	313.15 K
Temperature Ambient Operation Min.	253.15 K
Temperature Ambient Storage Min.	253.15 K
Temperature Ambient Storage Max.	323.15 K

Classification

Product Pressure Range	Medium Vacuum: 1 mbar - $1 \cdot 10^{-3}$ mbar Rough Vacuum: 1000 mbar - 1 mbar
High / Medium / Rough Vacuum Classification	Rough Vacuum Pump
Dry or Wet Pump	Dry
Vacuum Pump Technology	Dry Screw Pump

Performance Data

Power Total Rated	30000.00 W
Pressure Ultimate	5.00 Pa
Rotational Speed Nominal	86.42 Hz

Pumping Speed Nominal	0.306 m^3/s
Warm Up Time	5400.00 s

Lubricants

lubricantProductDefault	Mobil SHC 629

Material of Construction

Material Of Construction	SG iron, Gray iron, Steel, Aluminum/copper, Stainless steel, Rubber, Brass/iron, PTFE, Fluoroelastomer (Viton)
materialRotor	Cast Iron GGG40
materialStator	Cast Iron GGG40

DOCUMENTS

English - Instructions - Booster Mounting Frame (with and without Integral Flame Arrestors) Support Instructions

English - Instructions - CDX, IDX Motors Support Instructions

English - Instructions - CDX, IDX, EDP Systems Pressure Gauges Support Instruction

English - Instructions - CDX1000 Chemical, IDX1000, IDX1300 Industrial Dry Vacuum Pumps

English - Instructions - EDPS_DPS_EDP Series Chemical Dry Pump Systems

English - Instructions - IDX Industrial Dry Vacuum Pumps Pressure Switch with Optional Timer Relay

English - Instructions - Industrial (MS), Chemical (SS), ANSI and DIN Flanges Vacuum Pumps Silencer Support Instructions

English - Instructions - Solenoid Valve Support Instructions

English, French, Italian, German, Korean, Japanese - Instructions - CDX1000 Chemical, IDX1000, IDX1300 Industrial Dry Vacuum Pumps Sensor Installation

SPARES

PRODUCT TITLE	PART NUMBER	PRICE	ADD TO CART
Mobil SHC 629 - Vacuum Pump Oil, 1 x 4 l, H11023011	H11023011	GBP 212.00	
Filter (DIN150), A22305078	A22305078	GBP 189.00	
Air Bleed replacement Kit CDX1300, A70904801	A70904801	GBP 129.00	
Pipe Check Valve-Mist Filter, A70801174	A70801174	GBP 25.16	
Oil Mist Filter, A22304225	A22304225	GBP 214.00	

More information

IDX1300 - Dry Screw Pump, Bareshaft without motor 60 Hz

Part Number: **A70914985**

− 1 +

0 In Stock
Click For Availability

Add To Cart Request A Quote

Specifications

Connection Vacuum Inlet Flange	ASA/ANSI 6" DN 150
Connection vacuum outlet flange	ASA/ANSI 3" DN 80
Cooling Method	Water Cooling
Pressure Ultimate	5.00 Pa
Supply Voltage	Bareshaft without motor
Power Total Rated	29820.00 W

Variant
Explore the range of variants given below to compare the product

	SHORT DESCRIPTION	PART NUMBER	SUPPLY VOLTAGE
○	IDX1300 - bareshaft DIN	A70904985	AC 24V DC 24V
◉	IDX1300 - 60Hz bareshaft ANSI for 40hp Mtr	A70914985	Bareshaft without motor

PRODUCT DETAILS

Dry Screw Pumps

Vacuum dry screw pumps are positive displacement pumps that are designed to operate in rough application conditions. These products do not use any lubricant in the pumping mechanism to seal therefore the are defined as dry compressing machines. They offer high pumping speed and can handle a wide range of gases and vapors. These pumps are ideal for applications in the industrial, chemical, pharmaceutical, and semiconductor industries, among others, where oil-

free and contamination-free vacuum is required. They have a compact design and require minimal maintenance, making them a reliable and cost-effective solution for many vacuum applications.

IDX Dry Screw

The Edwards IDX dry pumps use the latest screw technology to provide a clean, effluent free vacuum. These pumps offer the ability to handle large volumes of dust and water vapor without any loss of performance while minimizing maintenance requirements and running costs. The IDX dry pumps are capable of continually operating from atmosphere to ultimate.

IDX1300

The IDX1300 is the new benchmark in performance for fast pumpdown of large chambers and high capacity pumping for industrial processes.

Based on the double-ended screw technology, the IDX Dry Vacuum Pump will give you all the reliability and performance you want for your process. The IDX outperforms all other dry pumps in robustness, performance and ease of operation, giving you faster pump-down from atmosphere and managing higher throughput at low pressures. Dry pumping systems reduce energy costs, eliminate effluent and can give significant improvements in product quality, making them the ideal solution for many coating and metallurgy processes.

Features and Benefits

- Improved Performance and Reliability
- Continuous performance from atmosphere to ultimate
- Excellent thermal profile and temperature control
- Tolerates liquid and particles
- Does not contaminate your process
- Cost Efficient and Environmentally Friendly
- Low power
- No effluent generation
- Dry running mechanism
- Designed for Reliability and Ease of Maintenance
- Flushable with water or solvent
- Elimination of compression plate for better dust handling
- Balanced rotor design
- Standard accessory modules
- Cooled and filtered oil
- Double-ended design for improved thermal stability

SPECIFICATIONS

General Product Information

Connection Vacuum Inlet Flange	ASA/ANSI 6"
	DN 150
Weight	1705.00 kg

Connection vacuum outlet flange	ASA/ANSI 3" DN 80
Leak Rate	1.000×10^{-4} $Pa \cdot m^3/s$
Power Supply Phase	3-Ph
Supply Voltage	Bareshaft without motor
Dimension Length	2.46 m
Supply Frequency	60 Hz
Dimension Height	1.00 m
Dimension Width	0.749 m
dimensionsCombinedLengthWidthHeight	2.46 m 2.46 m 2.46 m
Noise Level	82.00 db(A)
Cooling Method	Water Cooling
Connection Purge Gas Ballast Vent Connector	1/4" BSPP (G) Female
Connection Cooling	1/2" BSPP (G) Male 1/2" NPT Male
connectionVacuumFlangeCombined	ASA/ANSI 6" / ASA/ANSI 3"
dimensionComments	The dimensions length, width and height try to describe the outer shape of this particular product in its typical orientation when standing on the ground. We always recommend checking the detailed dimensions given in 2D drawings in the instruction manual or the 3D shapes given in 3D models.

Operation Conditions - Limitations

Pressure Inlet Continous Max.	1.000×10^{8} Pa
Altitude Max.	1000.00 m

Oil Capacity Min.	5.000×10^{-3} m^3
Oil Capacity Max.	5.500×10^{-3} m^3
Flow Cooling Water Min.	1.667×10^{-4} m^3/s
Temperature Cooling Water Max.	308.15 K
Temperature Cooling Water Min.	278.15 K
pressureOutletMaxContinous	105.00 Pa
operatingConditionsComment	The specific conditions to operate the machine reliably and safely like cooling water flows, purge flows and so on, and in detail described in the instruction manual please read the correct sections of the manual.

Environmental Conditions

Temperature Ambient Operation Max	313.15 K
Temperature Ambient Operation Min.	253.15 K
Temperature Ambient Storage Min.	253.15 K
Temperature Ambient Storage Max.	323.15 K

Classification

Product Pressure Range	Medium Vacuum: 1 mbar - $1 \cdot 10^{-3}$ mbar Rough Vacuum: 1000 mbar - 1 mbar
High / Medium / Rough Vacuum Classification	Medium Vacuum Pump
Dry or Wet Pump	Dry
Vacuum Pump Technology	Dry Screw Pump

Performance Data

Power Total Rated	29820.00 W
Pressure Ultimate	5.00 Pa
Rotational Speed Nominal	86.42 Hz
Pumping Speed Nominal	0.306 m^3/s

Warm Up Time	5400.00 s

Lubricants

lubricantProductDefault	Mobil SHC 629

Material of Construction

Material Of Construction	SG iron, Gray iron, Steel, Aluminum/copper, Stainless steel, Rubber, Brass/iron, PTFE, Fluoroelastomer (Viton)
materialRotor	Cast Iron GGG40
materialStator	Cast Iron GGG40

DOCUMENTS

English - Instructions - Booster Mounting Frame (with and without Integral Flame Arrestors) Support Instructions

English - Instructions - CDX, IDX Motors Support Instructions

English - Instructions - CDX, IDX, EDP Systems Pressure Gauges Support Instruction

English - Instructions - CDX1000 Chemical, IDX1000, IDX1300 Industrial Dry Vacuum Pumps

English - Instructions - EDPS_DPS_EDP Series Chemical Dry Pump Systems

English - Instructions - IDX Industrial Dry Vacuum Pumps Pressure Switch with Optional Timer Relay

English - Instructions - Industrial (MS), Chemical (SS), ANSI and DIN Flanges Vacuum Pumps Silencer Support Instructions

English - Instructions - Solenoid Valve Support Instructions

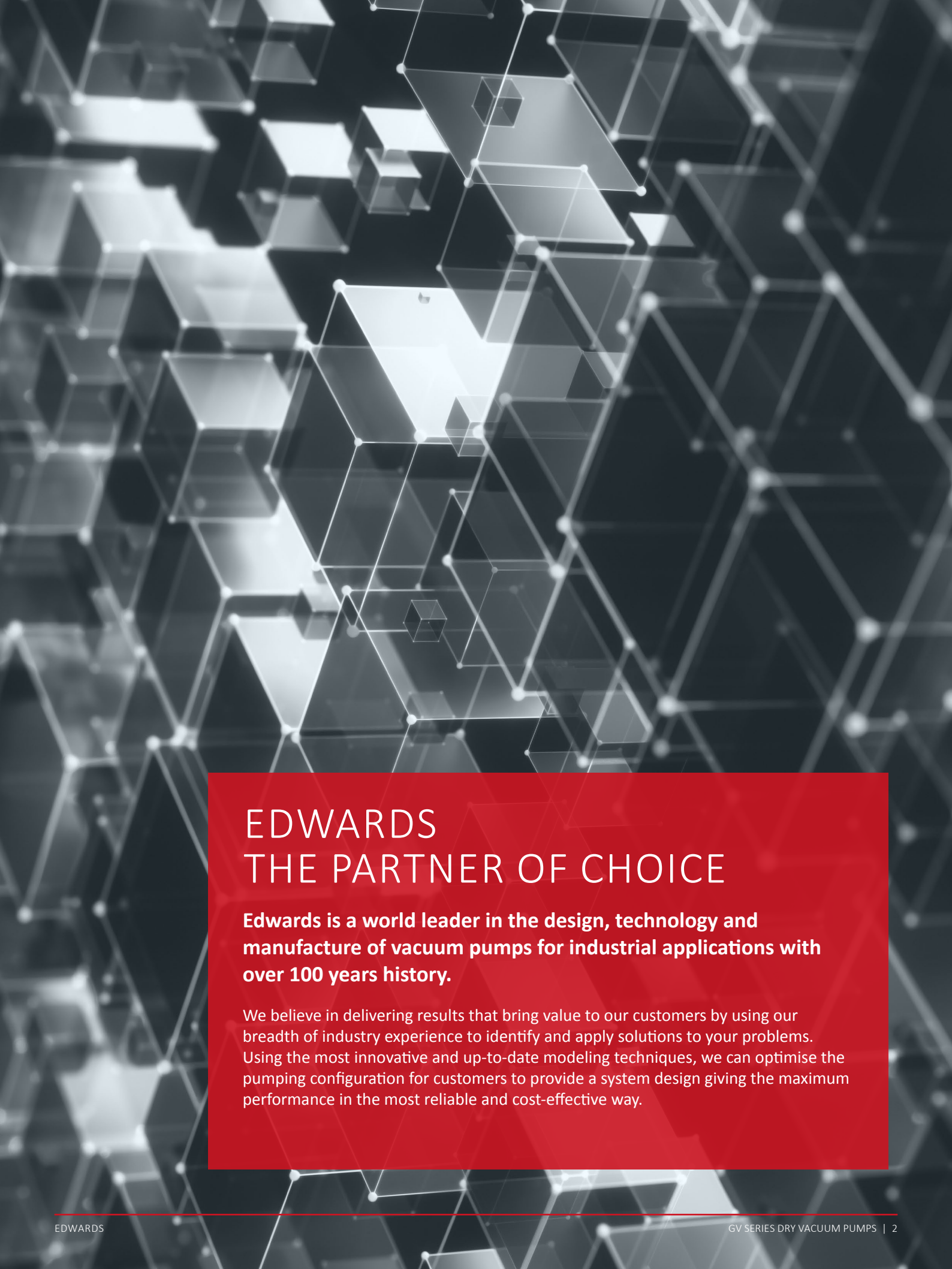
English, French, Italian, German, Korean, Japanese - Instructions - CDX1000 Chemical, IDX1000, IDX1300 Industrial Dry Vacuum Pumps Sensor Installation

SPARES

PRODUCT TITLE	PART NUMBER	PRICE	ADD TO CART
Mobil SHC 629 - Vacuum Pump Oil, 1 x 4 l, H11023011	H11023011	GBP 212.00	
Filter (DIN150), A22305078	A22305078	GBP 189.00	
Pipe Check Valve-Mist Filter, A70801174	A70801174	GBP 25.16	
Air Bleed replacement Kit CDX1300, A70904801	A70904801	GBP 129.00	
Oil Mist Filter, A22304225	A22304225	GBP 214.00	

GV SERIES DRY VACUUM PUMPS

EDWARDS



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 to your problems. Using the most innovative and up-to-date modeling 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.

Get the Edwards dry advantage

Maximise your productivity and performance

Edwards has the largest installed base of dry vacuum pumps in the world. Edwards' dry claw vacuum pumps are built to the exacting standards and quality demanded by our customers. The technology is packaged into two products, the GV80 and GV110, offering many key advantages for industrial applications.

GV110

GV80

Both products offer a trouble-free and cost-effective solution to meet your needs, and offer the following advantages:

Robust
Continuous operation with the ability to handle large volumes of condensable vapours

Reliable
High tolerance of process dust and particles

Consistent output
Providing delivery of repeatable pumping performance

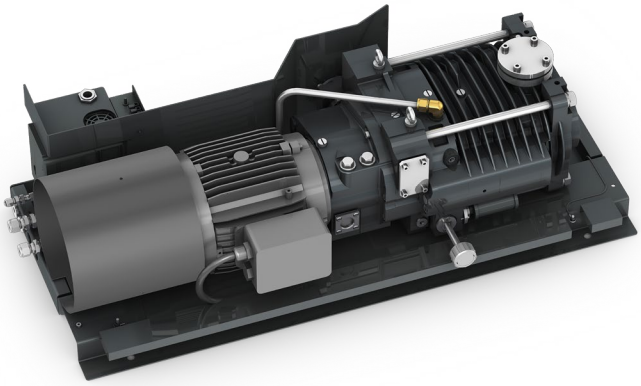
Low cost of ownership
With clean, quiet pumping and minimal service disruption

Environment friendly
Eliminating frequent oil changes and waste oil disposal

Industry proven, tried and tested
Specifically designed for demanding industrial applications

GV110 DRY VACUUM PUMP

The GV110 is the latest industrial dry claw vacuum pump from Edwards. Building on the advantages of the GV80, the product offers additional features and benefits including an integrated variable speed drive, modern acoustic enclosure and improved pumping performance. Like the GV80, the new product offers consistent pumping performance, minimal service intervention and low cost of ownership for a variety of industrial applications.



Variable Speed Drive technology to meet process demand

Consistent and repeatable performance in the most demanding of applications

Cooling water circulation optimization

Maximum uptime with minimal maintenance for reduced user intervention

Modern acoustic enclosure for a quieter operation

No contaminated waste oil for disposal or reclaim

Able to operate continuously at high-pressure levels

Drystar® GV80 and EH500 booster configured packages

Standard configured packages are available based on the GV80 offering additional features, the Drystar® GV80. These standard options are available as a pump only option or combined with the EH500 hydrokinetic drive mechanical booster offering 500m^3h^{-1} for applications where increased pumping speed and/or lower vacuum levels are required. For further details please contact your Edwards representative.

- Pre-configured pumping systems enabling ease of installation and operation
- Packages and pumping systems suitable for a wide range of applications and environments
- Packages configured for hydrocarbon or PFPE lubrication (fluid Included)

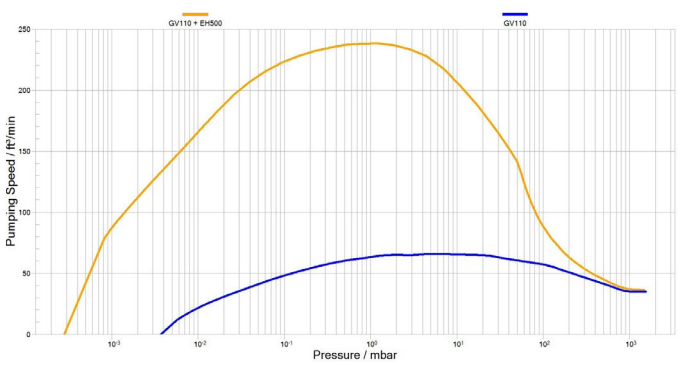
Industrial applications

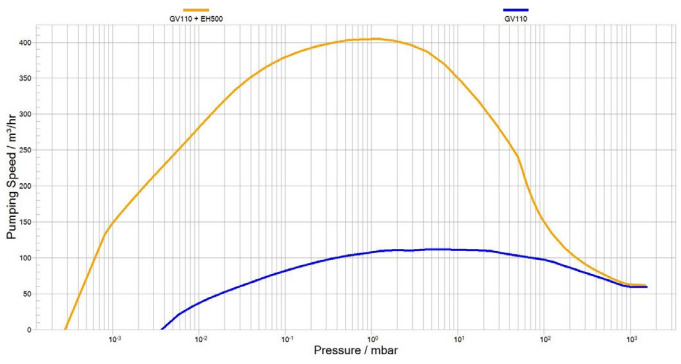
- Backing pump for high vacuum applications
- Flat panel display
- Gas cylinder evacuation
- Heat treatment
- Pharmaceutical freeze drying
- Research and development
- Refrigeration and air conditioning
- System evacuation
- Drying, and backfilling
- Surface treatment
- Thin film coating technologies
- Vacuum drying and distillation
- Vacuum metallurgy processes

Technical data for GV110

		Unit	GV100
Peak pumping speed 50 Hz		m^3/hr (cfm)	110 (64.7)
Peak pumping speed 60 Hz		m^3/hr (cfm)	
Ultimate pressure		mbar (Torr)	6 x 10^{-3} (4.5 x 10^{-3})
Full load power	@ ultimate pressure	Kw (hp)	2.6 kW (3.5)
	@ peak pumping load	Kw (hp)	4.5 kW (4.7)
Electrical	Supply options		EU-US-CN 50/60Hz, 400V/50Hz - 460V/60Hz - 380V/50Hz ASIA 50/60Hz 200V/50Hz, 200V/60Hz, 380V/60Hz Note: See part number for specific voltage offerings.
Vacuum couplings	Inlet		ISO40
	Exhaust		NW40
Cooling			Water
Cooling water	Nominal Flow	l/min (gal/min)	5 (1.32)
	Supply pressure (MAX)	bar.a (psig)	8 (116)
	DP across pump (MIN)	bar.a (psig)	2.1 (30)
	Temperature	°C (°F)	5-35 (41-95)
	Connection	In	1/2” Quick connect coupling (mating half provided)
		Out	1/2” Quick connect plug (mating half provided)
Purge gas (N2 or CDA)	Pressure	bar.a (psig)	0.5 (6-8)
	Light duty	sl/min	15 (typically)
	Connection		1/4” Quick connect coupling (mating half provided)
Dimensions	L x W x H	mm (in)	1060 x 502 x 316 (42 x 20 x 12.5)
	Footprint	m^2 (ft^2)	0.532 m^2 (5.73)
Weight		Kg (lbs)	210 kg (463)
Noise level with exhaust silencer		dB(A)	<75 dBA
Exhaust Back Pressure (MAX)		bar.a (psig)	1.3 (0.4)
Lubrication	Volume	l (gal)	0.4 (0.1)
	Type	Hydrocarbon	SHC 629
Pump Electrical motor rating		kW/HP	4/4.5
Typical pump rotation speed - 50/60 Hz electrical supply		rev.min-1	4100
Protection grade		IP	42
Warm-up time to pump operating temperature		min	15
Ambient operating temperature range		°C (°F)	0 to 40 (32 to 104)
Maximum ambient operating humidity		RH	80%

Performance Curves

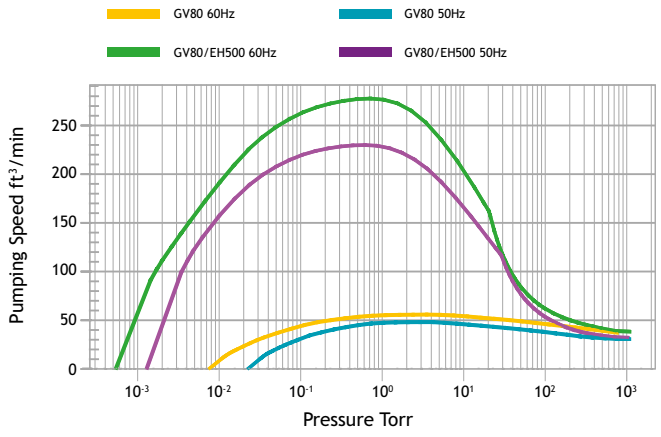


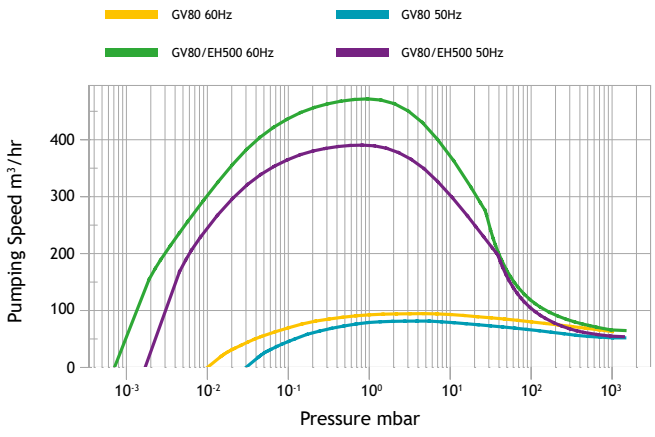


Technical data for GV80

		Unit	GV80	Drystar® GV80/EH500
Peak pumping speed 50 Hz		m^3/hr (cfm)	80 (47)	390 (230)
Peak pumping speed 60 Hz		m^3/hr (cfm)	94 (56)	471 (277)
Ultimate pressure		mbar (Torr)	<3 x 10^{-2} (<2 x 10^{-2})	<3 x 10^{-2} (<2 x 10^{-2})
Full load power	@ ultimate pressure	Kw (hp)	3.6 (4.8)	4.3 (5.6)
	@ peak pumping load	Kw (hp)	5.8 (7.8)	6.7 (9.0)
Electrical	Supply options		EU-US-CN 50/60Hz, 400V/50Hz - 460V/60Hz - 380V/50Hz ASIA 50/60Hz 200V/50Hz, 200V/60Hz, 380V/60Hz Note: See part number for specific voltage offerings.	
Vacuum couplings	Inlet		ISO40	ISO100
	Exhaust		NW40	
Cooling			Water	Water/Air
Cooling water	Flow	l/min (gal/min)	8 (2.1)	8 (2.1)
	Supply pressure (MAX)	bar.a (psig)	8 (116)	
	DP across pump (MIN)	bar.a (psig)	2.1 (30)	
	Temperature	°C (°F)	5-35 (41-95)	
	Connection	In	1/2" Quick connect coupling (mating half provided)	
		Out	1/2" Quick connect plug (mating half provided)	
Purge gas (N2 or CDA)	Pressure	bar.a (psig)	0.5 (6-8)	
	Light duty	sl/min	15 (typically)	
	Connection		1/4" Quick connect coupling (mating half provided)	
Dimensions	L x W x H	mm (in)	860 x 607 x 344 (33.8 x 23.9 x 13.5)	932 x 607 x 624 (36.7 x 23.9 x 24.6)
	Footprint	m^2 (ft^2)	0.43 (4.63)	
Weight		Kg (lbs)	165 (364)	240 (529)
Noise level with exhaust silencer		dB(A)	<78	
Exhaust Back Pressure (MAX)		bar.a (psig)	1.3 (0.4)	
Lubrication	Volume	l (gal)	0.4 (0.1)	1.4 (0.4)
	Type	Hydrocarbon	SHC 629	SHC 629/Ultragrade 20
		PFPE	YVAC 25/6	YVAC 25/6 / YVAC 16/6
Pump Electrical motor rating		kW/HP	4/4.5	
Typical pump rotation speed - 50Hz electrical supply		rev.min-1	3000	
Typical pump rotation speed - 60Hz electrical supply		rev.min-1	3600	
Protection grade		IP	55	
Warm-up time to pump operating temperature		min	15	
Ambient operating temperature range		°C (°F)	0 to 40 (32 to 104)	
Maximum ambient operating humidity		RH	100%	

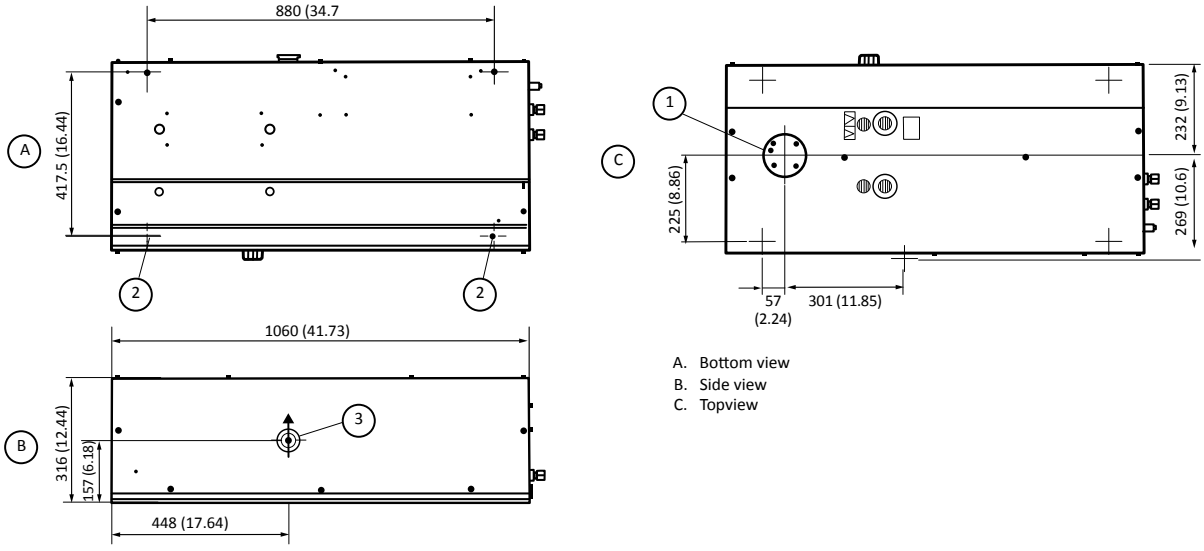
Performance Curves





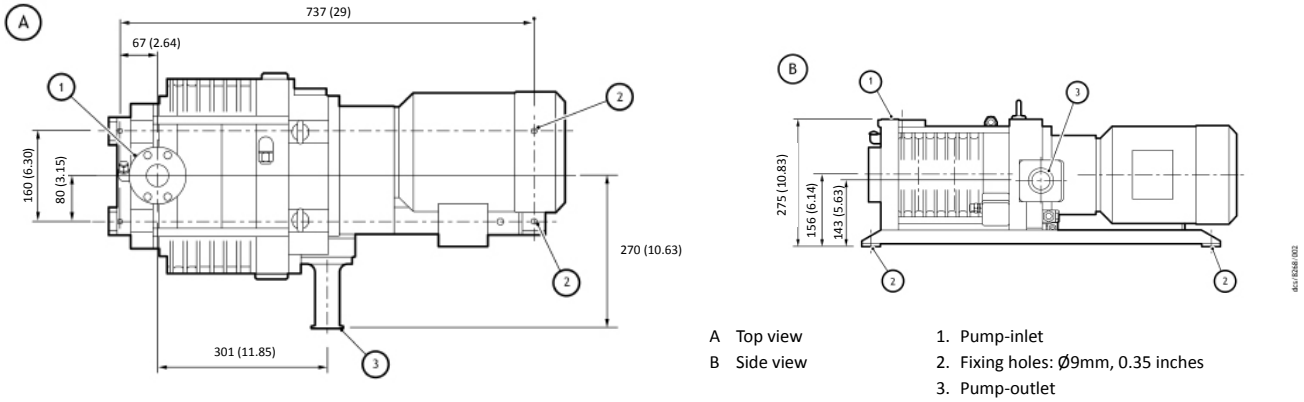
Drawings and dimensions

GV110



A. Bottom view
B. Side view
C. Topview

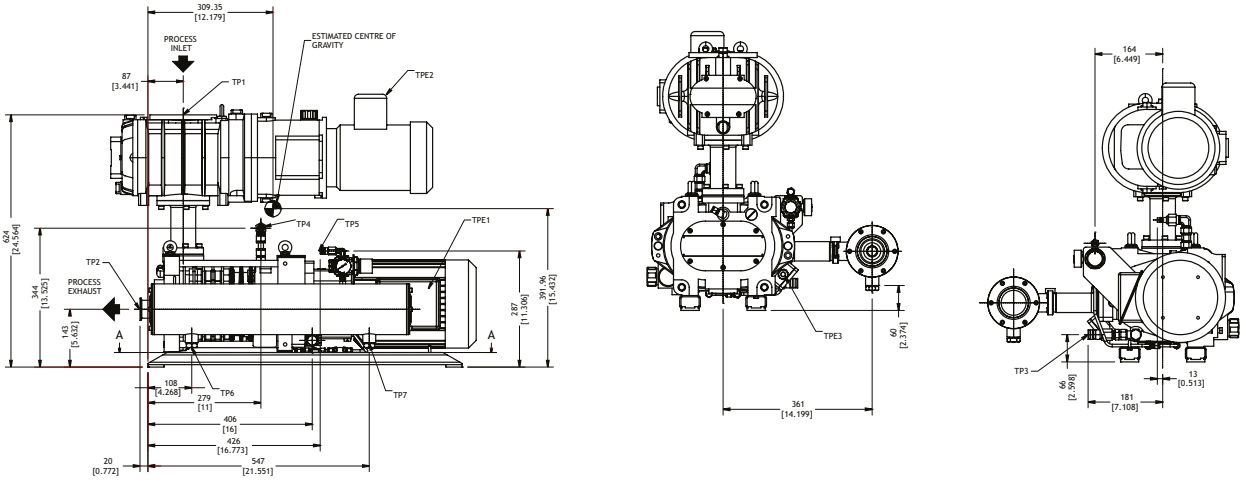
GV80



A Top view
B Side view

1. Pump-inlet
2. Fixing holes: Ø9mm, 0.35 inches
3. Pump-outlet

Drystar® GV80 & EH500 combination



Ordering information

GV110

Part Number	Description	Voltage
A70227900	GV110 HV Dry Vacuum Pump	400 V 50 Hz
A70227940	GV110 LV Dry Vacuum Pump	200 V 50 Hz

Existing GV80 accessories are compatible with the GV110:

Part Number	Description
A50559000	GV80-EH250 Booster Connection Kit
A50560000	GV80-EH500A Booster Connection Kit
NCD089000	GV80/160 Exhaust Silencer

GV80

Part Number	Description	Voltage
A70216940	GV80 IE3	EU/US/CN 50/60HZ
A70217940	GV80 FX IE3	EU/US/CN 50/60HZ
NR8030000	GV80	EU/US/CN 50/60HZ
NR8035000	GV80F	EU/US/CN 50/60HZ
NRA523000	GV80 EURO + TCV KIT + SILENCER	EU/US/CN 50/60HZ
A70217934	GV80 FX IE3 (with gearbox purge)	ASIA 50/60HZ
NRY2VZ100	GV80 PUMP PACKED	EU/US/CN 50/60HZ
A70216934	GV80 IE3	ASIA 50/60 Hz

Service and support

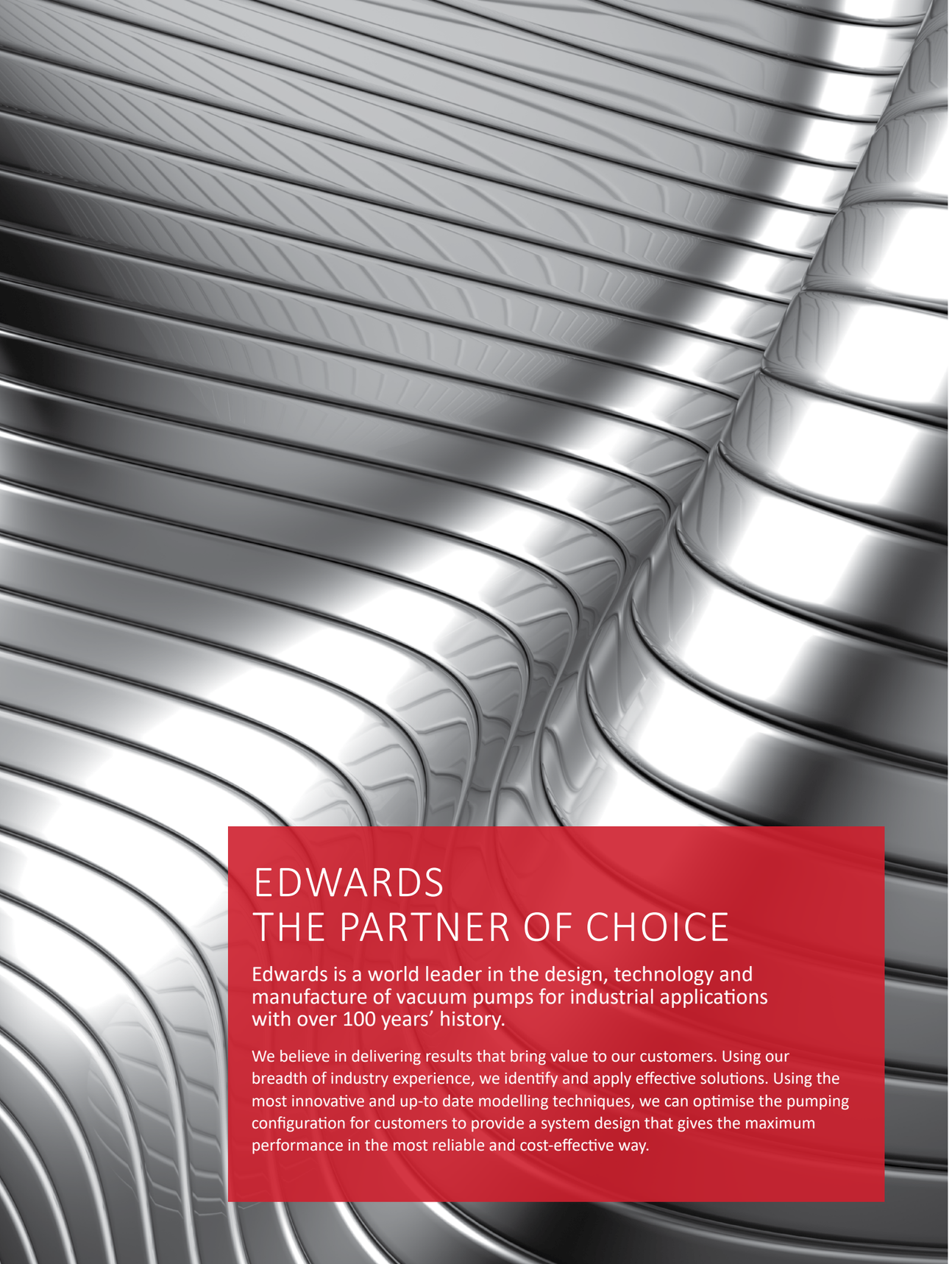
To ensure your GV110 and GV80 pump and system maintains optimal performance and reliability, we offer a wide range of service solutions, tailored to meet your needs. From Field Service intervention to Managed Maintenance agreements, we will take care of your pump to ensure that it continues to deliver clean, consistent, efficient performance, with lower running cost and optimum total cost of ownership for it entire operating life.

Selecting original spare parts, maintenance kits and oil, means that every critical part performs as it was intended. Form, fit and function are guaranteed. Our services engineers only fit 100% genuine parts to ensure you receive the best result from each and every service.

- Service at your convenience. Our highly trained Service Technicians carry out commissioning, vacuum health check, routine maintenance, troubleshooting and repair for many types of vacuum equipment. We invest in the tools, training and inventory to enable service in a timely, safe and consistent manner, utilising our best known methods.
- Managed Maintenance agreements. Regular scheduled maintenance can identify potential problems before they occur and plans can be structured around different levels of care. It enables cost management and will help you to avoid the risk and expense associated with unplanned downtime. Managed Maintenance let you focus on your business, we will take care of your maintenance.
- Service and re-manufacturing in one of our Service Technology Centres. No matter the condition of your pump our vacuum specialists can handle it. We are experts in vacuum pump maintenance and support pumps from virtually every type of application.

EDS INDUSTRIAL DRY SCREW VACUUM PUMPS

EDWARDS



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

STATE-OF-THE-ART TECHNOLOGY MADE SIMPLE

We are known for providing our customers with robust vacuum solutions that include superior products with application and process expertise comprised of decades of real-world, real-scenario experience. Edwards' new range of EDS Industrial Dry Screw pumps continues that tradition.

The EDS range is developed in the UK and designed for a global market, it creates a new benchmark in the screw pump market with its innovative design. Featuring tapered variable pitch dry screws, the EDS is an intricate piece of engineering built to the exacting standards and quality that Edwards is recognised for.

Available in water-cooled and air-blasted variants, the EDS range - EDS200, EDS300 and EDS480 - has second-to-none contaminant handling capabilities in the harshest industrial conditions and dirtiest industrial installations. Housed in a modern outer enclosure, the EDS offers robust performance standards that most production processes demand. The EDS vacuum pumps offer all the extra performance you need for the harshest and toughest industrial applications.

PUMP TECHNOLOGY

SIMPLE

Industry-leading, simply packaged, state-of-the art screw vacuum technology

- Trouble-free peace of mind: Ease of installation, systemisation, support and service
- Pumping: Designed to be simply reliable

INNOVATIVE AND STURDY DESIGN

A plug and play system with a high tolerance for particulates

- Tapered variable pitch dry screws
- Robust water cooling system

FASTER

Extra performance to meet modern technologies

- Quick pump down times: Higher roughing speeds get the job done quicker
- High pumping speeds: Gives more throughput where it matters

PROCESS CAPABLE

Mechanism proven in the most demanding applications

- Extended MTBS: Purge protection options to prolong life on harsh processes
- Increased process uptime: Survives process mishaps and contaminant ingestion

FLEXIBLE

Designed for a changing global market

- Safe and compliant: Easily configured for hazardous area installations
- Engineer to order: Basic modular building blocks for special pumping systems

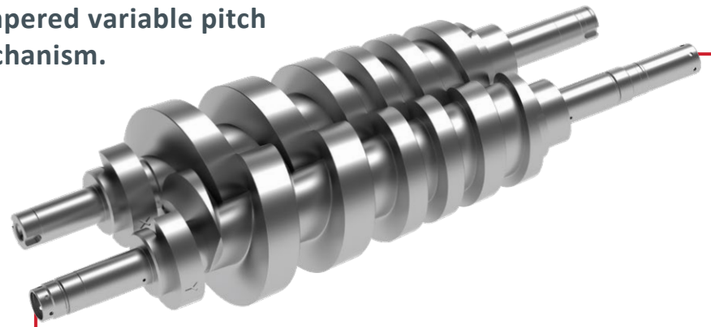
ROBUST

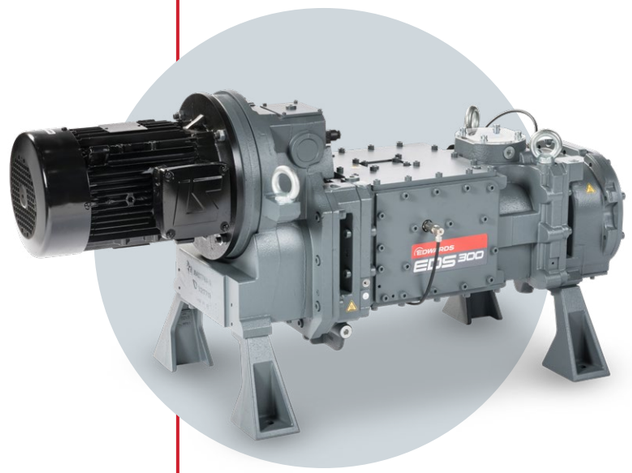
A truly industrial machine for the most challenging installations

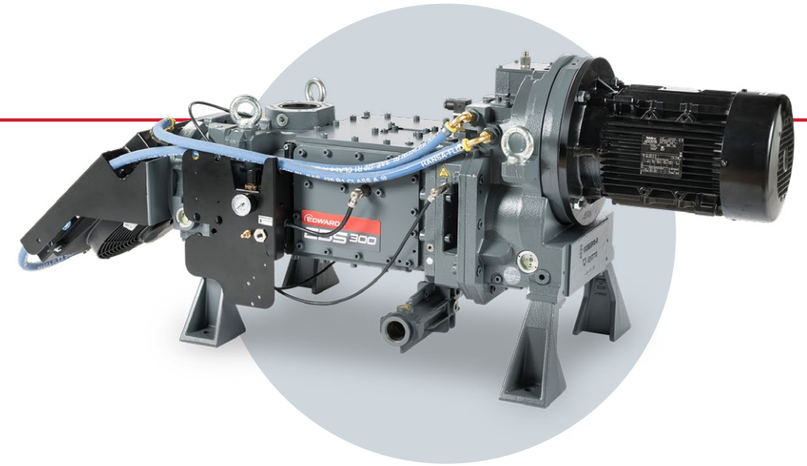
- Installation options: Highly tolerant water-cooled and air blast–cooled standard products
- Protection: High IP ratings and easily cleanable protective canopies

EDS SERIES AT A GLANCE

At the heart of the EDS Dry Screw pump is the tapered variable pitch dry screw mechanism.

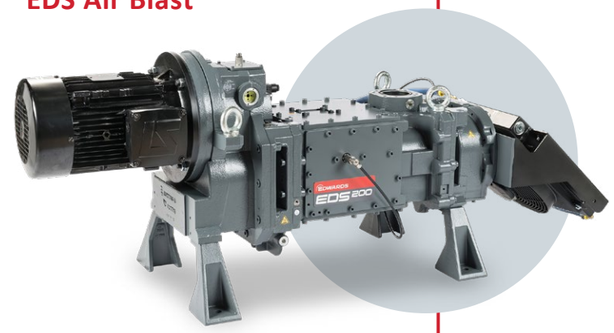




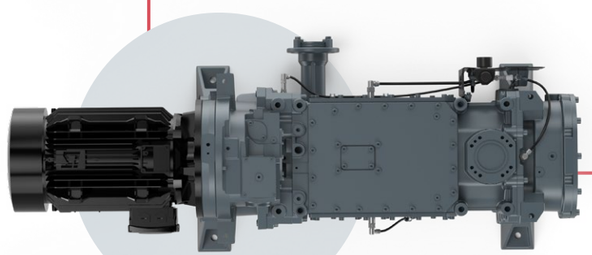


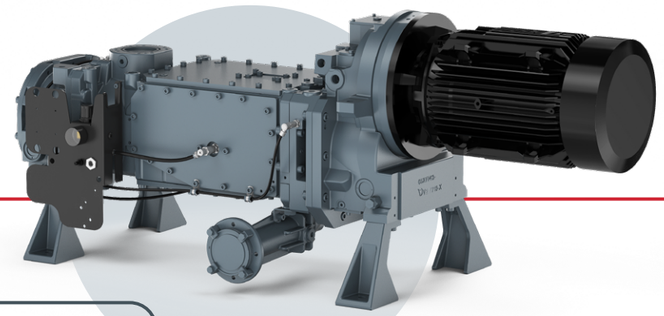
- Direct and Indirect air blast heat exchanger cooling options *(Air blast version available for EDS200 and EDS300)*
- Direct mount motor options for any region
- Modern enclosure design *(Enclosure available as optional)*
- Simple thermal protection
- Wide range of standard accessories available
- Simple, robust seal purge system
- Atmospheric air gas ballast

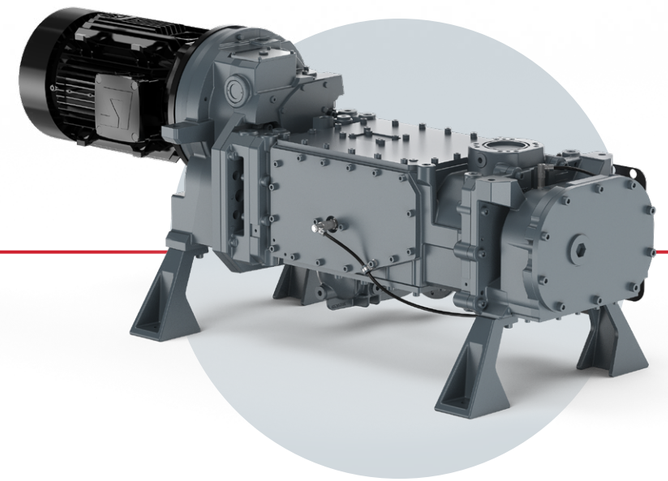
EDS Air Blast



EDS Water Cooled







EDS480

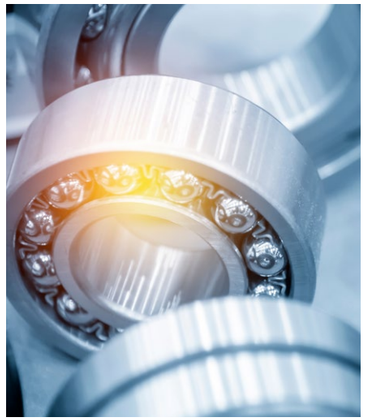
The cutting-edge hybrid rotor design uses a combination of parallel and tapered rotor profiles. This optimises performance while limiting the footprint and power consumption to a market-leading minimum.

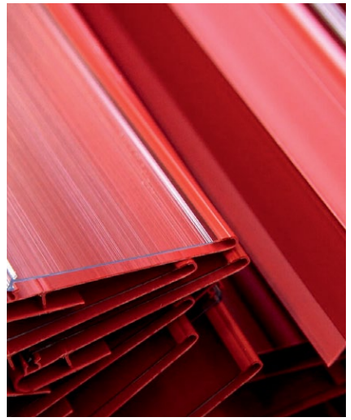
EDWARDS EDS Industrial Dry Screw vacuum pumps

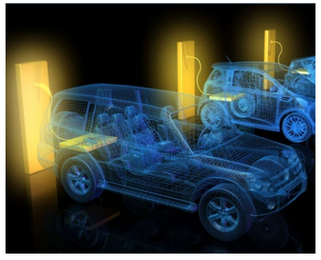
APPLICATIONS

The EDS range is suitable for a range of applications in various industries, including:

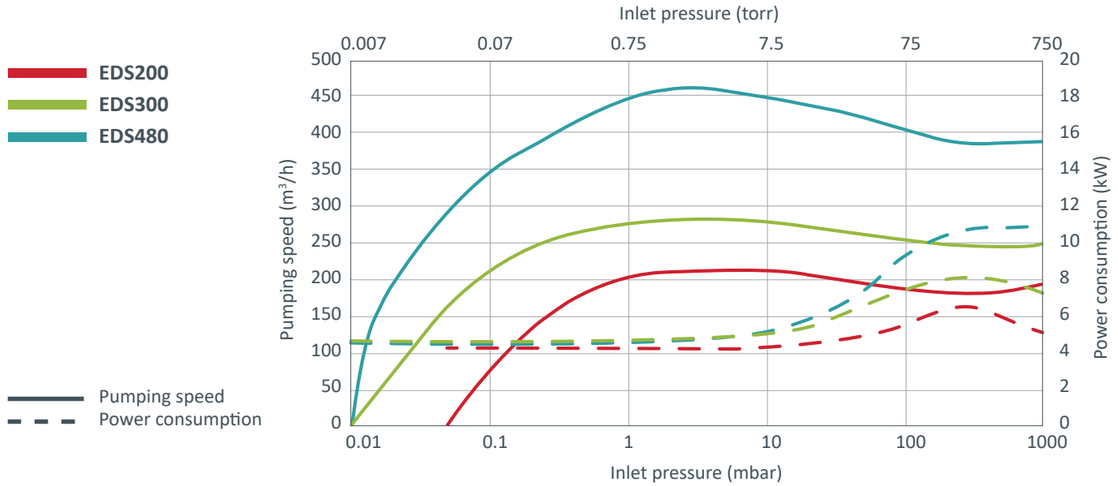
- Lithium-ion batteries
- Automotive coating
- Freeze drying
- Industrial glass coating
- Solar cell manufacturing
- Heat treatment
- Brazing
- Thin film deposition
- Plastic extrusion
- Pharmaceuticals
- Renewable energy







PERFORMANCE CURVES

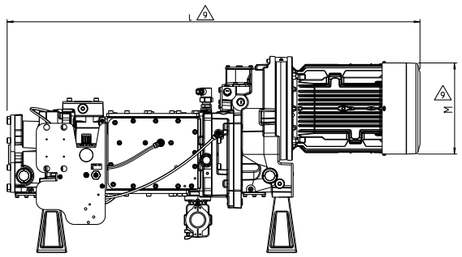


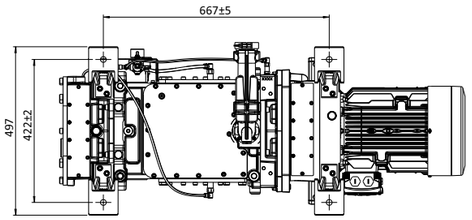
TECHNICAL SPECIFICATIONS

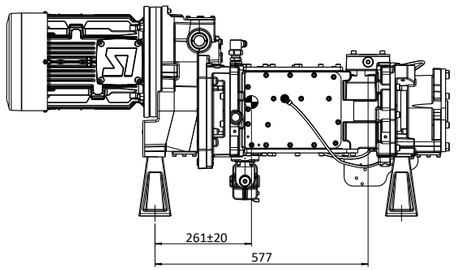
			Water Cooled and Air Blast		
		Units	EDS200	EDS300	EDS480
Performance	Peak pumping speed	m^3h^{-1} / CFM	>210 / >124	>280 / >165	>460 / >271
	Ultimate pressure	mbar / Torr	<0.05 / <0.04	<0.01 / <0.007	<0.01 / 0.007
Full load power	@ ultimate pressure	kW / hp	4.1 / 5.5	4.5 / 6	4.5 / 6
	@ peak pumping load	kW/hp	6.4 / 8.6	8.2 / 11	11 / 15
Vacuum connections	Inlet connection		ISO63		
	Exhaust connection		NW40		ISO 63
Cooling water	Connection		G1/4" female thread		
	Flow	L/min^{-1} / Gal/min^{-1}	<4 / <1.05		<8 / <2.1
	Supply pressure (max)	bar / psig	7 / 100		
	DP across pump (min)	bar / psig	0.2 / 2.9		
	Temperature	°C / °F	5-35 / 41-95		
	Primary cooling circuit volume (Glycol water mixture volume in case of variant with indirect cooling)	l / gal	6 / 1.6		NA
Purge gas	Connection		G1/4" female threads		
	Pressure	bar / psig	4-10 / 58-145		
	SSP flow	$lmin^{-1}$	<12		
	Gas ballast flow*	$lmin^{-1}$	0-50		
Operating data	Noise	dB(A)	<71		
	Operating temperature	°C / °F	5-40 / 41-104		
	Exhaust back pressure (max)**	mbar / psia	1200 / 17.4		
	System IP rating		IP54		
	Lubrication (as supplied)		Extend 110		

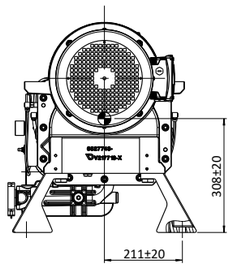
DIMENSIONS

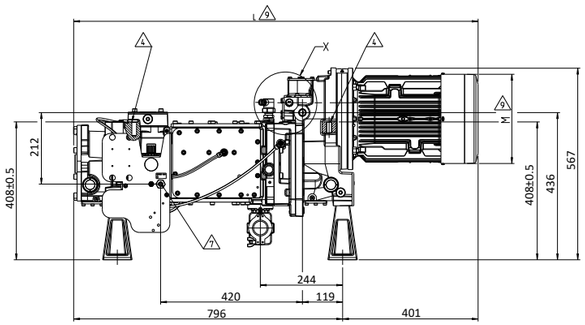
EDS200/300

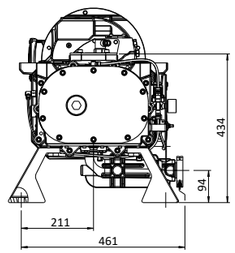


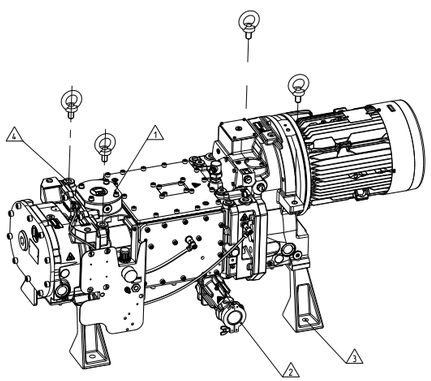


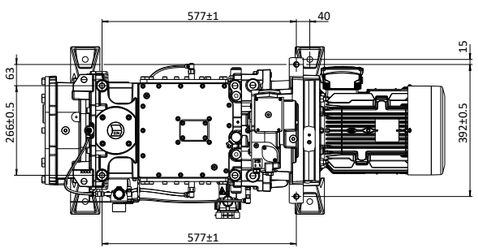




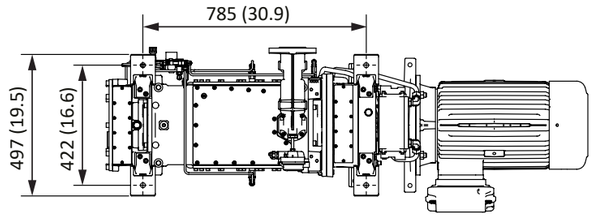


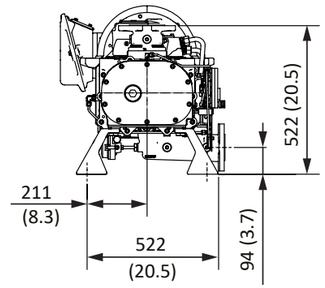


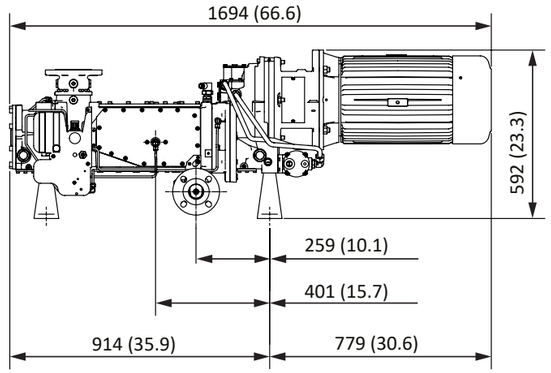


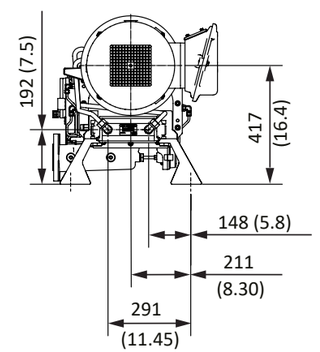


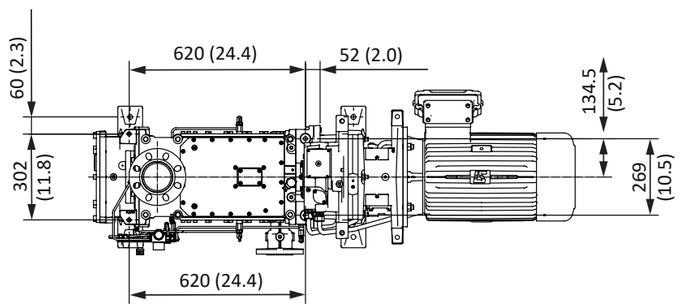
EDS480 (Water Cooled)











ORDERING INFORMATION

Part Number	Size	Cooling	Motor Voltage	Motor Desc.	Freq
A41820945	200	Direct Water	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	50 Hz
A41820946	200	Direct Water	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	60 Hz
A41820934	200	Direct Water	200V 50 Hz, 200/380V 60 Hz	Asia	50 Hz
A41820936	200	Direct Water	200V 50 Hz, 200/380V 60 Hz	Asia	60 Hz
A41820957	200	Direct Water	575V	Canada	60 Hz
A41821945	200	Air Blast	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	50 Hz
A41821946	200	Air Blast	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	60 Hz
A41821934	200	Air Blast	200V 50 Hz, 200/380V 60 Hz	Asia	50 Hz
A41821936	200	Air Blast	200V 50 Hz, 200/380V 60 Hz	Asia	60 Hz
A41821957	200	Air Blast	575V	Canada	60 Hz
A41830945	300	Direct Water	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	50 Hz
A41830946	300	Direct Water	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	60 Hz
A41830934	300	Direct Water	200V 50 Hz, 200/380V 60 Hz	Asia	50 Hz
A41830936	300	Direct Water	200V 50 Hz, 200/380V 60 Hz	Asia	60 Hz
A41830957	300	Direct Water	575V	Canada	60 Hz
A41831945	300	Air Blast	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	50 Hz
A41831946	300	Air Blast	380-400V 50 Hz, 230/460V 60 Hz	EU/US/CN	60 Hz
A41831934	300	Air Blast	200V 50 Hz, 200/380V 60 Hz	Asia	50 Hz
A41831936	300	Air Blast	200V 50 Hz, 200/380V 60 Hz	Asia	60 Hz
A41831957	300	Air Blast	575V	Canada	60 Hz
A41840945	480	Direct Water	200/400V 50 Hz, 230/460 V 60 Hz	EU/US/CN	50 Hz
A41840946	480	Direct Water	200/400V 50 Hz, 230/460 V 60 Hz	EU/US/CN	60 Hz
A41840934	480	Direct Water	200/380V 50/60 Hz	Asia	50 Hz
A41840936	480	Direct Water	200/380V 50/60 Hz	Asia	60 Hz
A41840957	480	Direct Water	575V 60 Hz	Canada	60 Hz

ACCESSORIES

Part Number	Description	Pump Compatibility
A41890000	TCV Kit Direct Cooled	All direct cooled EDS pumps
A41890001	TCV Kit Indirect Cooled	All indirect cooled EDS pumps
A41891001	Solenoid Valve Accessory	All EDS pumps
A41893000	EDS to EH 1200/2600/4200 Connection Kit	EDS200/300
A41893001	EDS to EH500 Connection Kit	EDS200/300
A41894000	Exhaust Pressure Transmitter	All EDS pumps
A41895000	Pt100 Stator Temperature Transmitter	All EDS pumps
A41895001	Pt100 Exhaust Temperature Transmitter	All EDS pumps
A41896009	EDS Dry Silencer	EDS200/300
A41897000	BoV Plug Kit	All EDS pumps
A41896005	Industrial Enclosure	EDS200/300
A41893002	Roots Adapter	EDS480

SERVICE AND SUPPORT

To ensure your EDS Dry Screw vacuum pump maintains optimal performance and reliability, we offer a wide range of service solutions, tailored to meet your needs. Through Field Service intervention, Managed Maintenance agreements and Overhaul service in our Service Technology Centres (STC), we will take care of your pump to ensure that it continues to deliver clean, consistent, efficient performance, with lower running costs and optimum total cost of ownership for its operating life.

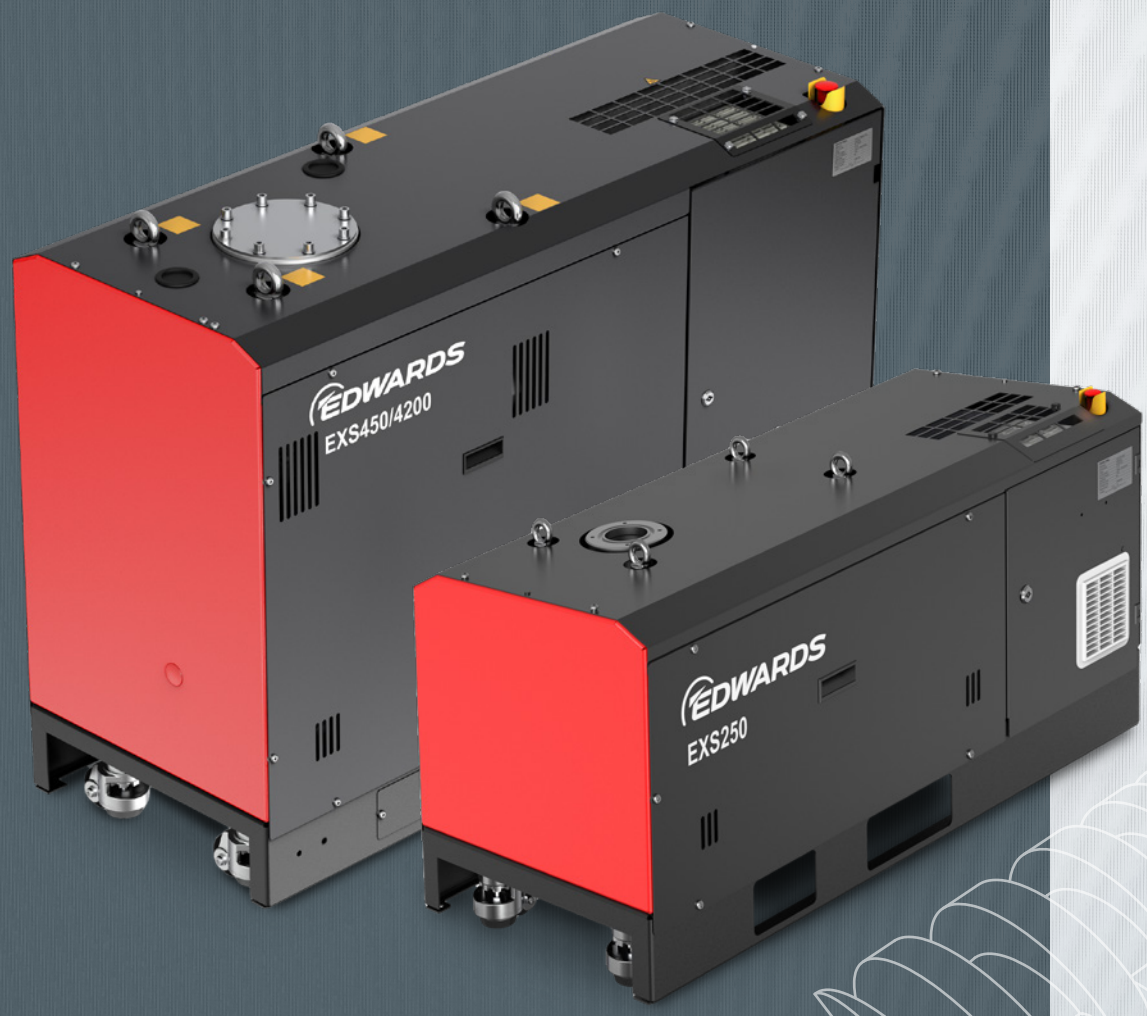
Selecting original spare parts, maintenance kits and oil ensures that every critical part performs as it was intended. Our services engineers only fit 100% genuine parts to ensure that you receive the best result from each service.

Our Preventative Maintenance service packages include:

- Health Check and Routine Service Check - Various flexible services – including visual inspections, pump vitals checks and replacement/cleaning of components – to keep your pump running in an optimal condition for your application.
- Overhaul - The overhaul service includes multiple service options to ensure high performance and minimal downtime.
  - » Complete Remanufacturing, including full decontamination of the pump, replacement of consumables and testing of components to factory specifications.
  - » Clean and Overhaul, including cleaning of pump interior, repair/replacement of pipework, replacement of consumables and reassembly.
  - » Module Exchange, including removal and assembly of motor, gearbox, gas and water systems onto the replacement pump module.
  - » Pump Exchange, including exchange of the whole pump (including motor, gear box, gas and water systems) with a remanufactured pump.

EXS DRY SCREW VACUUM PUMP

EDWARDS



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.

EXS DRY SCREW VACUUM PUMP

Our EXS dry screw vacuum pumps take our industry proven screw vacuum technology to the next level. Based around the same technology that we use in our GXS pumps, the EXS has been designed to bring the advantages of our market leading technology in a package that focuses on simplicity and robustness. With more performance, simple control philosophy and low maintenance costs, the EXS will deliver reliable performance for many years to come. Our EXS series of dry screw vacuum pumps are available in EXS160-750 and booster combinations.

EXS 160-750 and booster combinations

PROVEN – Based on existing GXS technology

- Huge install base on hundreds of applications
- Optimised design enables enhanced performance

ENVIRONMENTAL – Smooth, quiet running with low power and utilities consumption

- Small carbon footprint
- **Easy on environment:** No contaminated or dirty disposable oil

ECONOMICAL – Affordable capital investment and low cost of ownership

- **Substantial savings:** Low utilities and energy usage costs for substantial savings
- **Save on space:** Compact design to get the most of your storage, transportation and facility space

ROBUST – Reliable operation even in harsh industrial applications

- **Low maintenance cost:** No unplanned down times reduces maintenance costs
- **Increased productivity:** Longer intervals between service increases productivity

FAST – Increased pumping speed at high pressures and low ultimate performance

- **Increased productivity:** 450 and 750 dry pump with additional blow-off-valve for improved roughing speed, faster processing and pump down time
- **Low ultimate pressure:** Dry pump down to $1x10^{-2}$ mbar ultimate vacuum and booster combinations attain $1x10^{-3}$ mbar

SIMPLE – Easy control and broader connectivity

- **VFD (Variable frequency drive):** Supports speed control, suited to different industrial processes and enables energy savings
- **Connectivity:** Enable effective communication to various plant management systems for smart manufacturing

FEATURES AND INNOVATIVE SCREW TECHNOLOGY

Simple electrical strategy

- In-built, off-shelf inverter for simple connection and communication
- Protection sensors fitted, electrical cabinet design for reliability and safety
- Basic control philosophy for ease of installation and operation

Advanced core technology

- Non-contacting long-life seals with integral oil blocking labyrinth seal provides highly effective sealing
- Combined with a six litre per minute seal purge the gearbox is protected from contamination and the vacuum space is kept free of oil
- Industry proven on hundreds of applications
- Uses advanced quality bearings and special purpose oil with low vapour pressure for application compatibility and improved service life
- Non-cantilever design provides secure rotor support for extremely low vibration and superior starting reliability, especially on harsh processes
- Superior liquid and powder handling thanks to a sealing solution that is industry proven in many applications

Compact and robust design features

- Delivers the benefit of a simple and economical installation
- Reliable constant flow cooling system
- Dependable new gas system with manual gas ballast control
- Sleek sheet metal protective enclosure
- Patented tapered variable pitch Quinby profile screw

Detailed data insight

- **Local monitoring:** Any device can quickly connect to the pump and gain operational data visualisation
- **Remote monitoring:** Support a wide range of fieldbus protocols and achieve real time status tracking and alerts notification
- **IoT (Internet of Things):** GENIUS factory variants enable easy security and 24x7 remote access to the pump's conditions through the Edwards GENIUS Portal

Flexible communication and control

- **I/O:** Digital and analog signal input & output allow variable speed control
- **Modbus RTU** included as standard and offer more flexibilities for remote control
- **Communication cards (optional):** Fitted on the drive and support multi protocols fieldbus communication

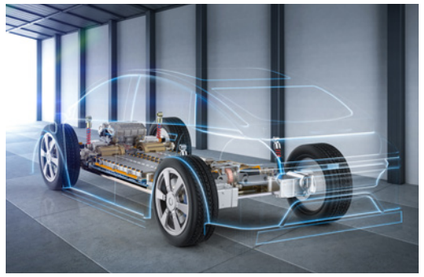
PROFIBUS · PROFINET · Modbus · EtherNet/IP · EtherCAT

APPLICATIONS

The EXS pump is suitable for a range of applications in various industries including:

Lithium-ion battery

- Electrode drying
- Electrolyte filling
- Formation



Vacuum chamber evacuation

- Space simulation chambers
- Gas recovery/circulation
- Load lock chambers

Metallurgy

- Vacuum brazing
- E-beam welding
- Nitrocarburising
- Low pressure nitriding
- Low pressure carburising
- Carbon vapour impregnation
- Sintering
- Metal injection moulding
- Precision investment casting
- Vacuum arc refining
- Steel degassing

Plasma processes

- Plasma welding
- Plasma nitriding

Solar

- Silicon crystal-pulling
- PV lamination

Coating

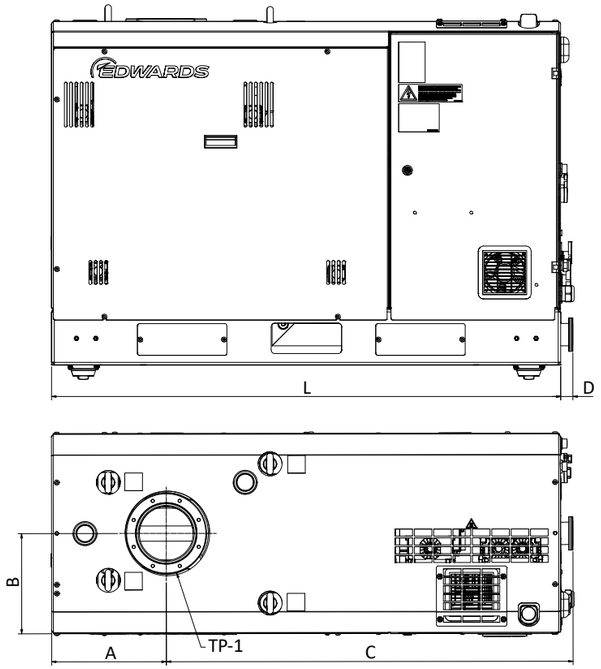
- Roll web coating
- Hard coating (CVD/DLC)
- Surface activation
- Plasma spray
- Glass coating

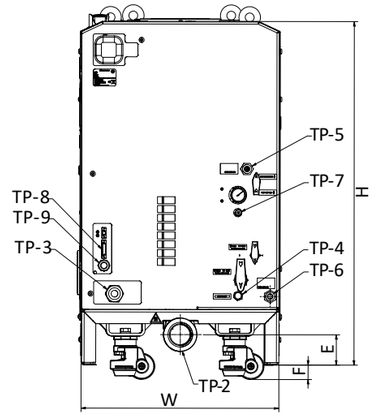
TECHNICAL SPECIFICATIONS

Specification		Unit	EXS160	EXS160/1750	EXS250	EXS250/2600
General	Ultimate vacuum	mbar (Torr)	1 x10^{-2} (8x10^{-3})	<1 x10^{-3} (<8x10^{-4})	1 x10^{-2} (8x10^{-3})	<1 x10^{-3} (<8x10^{-4})
	Peak pumping speed	m^3/hr (cfm)	160 (94)	1200 (706)	250 (147)	1900 (1118)
	Maximum rotor speed	Rev/min	6600	DP: 6600 MB: 6120	6600	DP: 6600 MB: 6120
	Inlet/Outlet		ISO63/NW40	ISO100/NW40	ISO63/NW40	ISO160/NW40
Electrical	Electrical supply	V	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz
	Ultimate power	kW (hp)	3.8 (5.1)	5.1 (6.8)	4.0 (5.4)	5.3 (7.1)
	Full load power	kW (hp)	5.0 (6.7)	7.4 (9.9)	9.0 (12.1)	9.7 (13.0)
Cooling	Connection	inch	⅜" BSP male	⅜" BSP male	⅜" BSP male	⅜" BSP male
	Cooling flow (Always on)	l/min (gal/min)	4.0 (1.1)	7.0 (1.9)	4.0 (1.1)	7.0 (1.9)
	Minimum differential pressure	bar	1	1	1	1
	Maximum supply pressure	barg (psig)	6.9 (100)	6.9 (100)	6.9 (100)	6.9 (100)
	Temperature	°C (°F)	5-40 (41-104)	5-40 (41-104)	5-40 (41-104)	5-40 (41-104)
Purge	Connection	inch	½" BSP male	½" BSP male	½" BSP male	½" BSP male
	Pressure	barg (psig)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5-6.9 (36-100)
	Shaft seal flow (Always on)	l/min (gal/min)	12 (3.17)	12 (3.17)	12 (3.17)	12 (3.17)
	Gas ballast flow (Manual adj.)	l/min (gal/min)	0-50 (0-13.2)	0-50 (0-13.2)	0-50 (0-13.2)	0-50 (0-13.2)
Operation	Ambient temperature range	°C (°F)	5-40 (41-104)	5-40 (41-104)	5 to 40 (41 to 104)	5 to 40 (41 to 104)
	Noise level with silencer	dB(A)	<64	<64	<64	<64
	Maximum exhaust back pressure	bara (psig)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)
Lubrication	Oil		PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6
	Oil volume	l (gal)	0.7 (0.2)	1.4 (0.4)	0.7 (0.2)	1.4 (0.4)

Specification		Unit	EXS450	EXS450/2600	EXS450/4200	EXS750	EXS750/2600	EXS750/4200
General	Ultimate vacuum	mbar (torr)	1 x10^{-2} (8x10^{-3})	<1 x10^{-3} (<8x10^{-4})	<1 x10^{-3} (<8x10^{-4})	1 x10^{-2} (8x10^{-3})	<1 x10^{-3} (<8x10^{-4})	<1 x10^{-3} (<8x10^{-4})
	Peak pumping speed	m^3/hr (cfm)	450 (265)	2200 (1295)	3026 (1781)	740 (435)	2300 (1354)	3450 (2032)
	Maximum rotor speed	Rev/min	6600	DP: 6600 MB: 6120	DP: 6600 MB: 6120	6600	DP: 6600 MB: 6120	DP: 6600 MB: 6120
	Inlet/Outlet		ISO100/NW50	ISO160/ISO63	ISO160/ISO63	ISO100/NW50	ISO160/ISO63	ISO160/ISO63
Electrical	Electrical supply	V	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380-460V 3Ph 50/60Hz 200-230V 3Ph 50/60Hz	380 - 460 3Ph 50/60Hz	380 - 460 3Ph 50/60Hz	380 - 460 3Ph 50/60Hz
	Ultimate power	kW (hp)	7.2 (9.6)	8.8 (11.8)	9.4 (12.6)	10.5 (14)	11.1 (14.9)	12 (16)
	Full load power		17.3 (23.2)	16 (21.5)	18.5 (24.8)	22 (30)	24 (32.2)	24 (32.2)
Cooling	Connection	inch	⅜" BSP male	⅜" BSP male	⅜" BSP male	⅜" BSP male	⅜" BSP male	⅜" BSP male
	Cooling flow (Always on)	l/min (gal/min)	10 (2.6)	12 (3.2)	12 (3.2)	12 (3.2)	15 (4)	15 (4)
	Minimum differential pressure	bar	1	1	1	1	1	1
	Maximum supply pressure	barg (psig)	6.9 (100)	6.9 (100)	6.9 (100)	6.9 (100)	6.9 (100)	6.9 (100)
	Temperature	°C (°F)	5-40 (41-104)	5-40 (41-104)	5-40(41-104)	5-40 (41-104)	5-40 (41-104)	5-40 (41-104)
Purge	Connection	inch	½" BSP male	½" BSP male	½" BSP male	½" BSP male	½" BSP male	½" BSP male
	Pressure	barg (psig)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5-6.9 (36-100)	2.5 - 6.9 (36 - 100)
	Shaft seal flow (Always on)	l/min (gal/min)	12 (3.17)	12 (3.17)	12 (3.17)	12 (3.17)	12 (3.17)	12 (3.17)
	Gas ballast flow (Manual adj.)	l/min (gal/min)	0-130 (0-34.3)	0-130 (0-34.3)	0-130 (0-34.3)	0-130 (0-34.3)	0-130 (0-34.3)	0-130 (0-34.3)
Operation	Ambient temperature range	°C (°F)	5 to 40 (41 to 104)	5 to 40 (41 to 104)	5 to 40 (41 to 104)	5 to 40 (41 to 104)	5 to 40 (41 to 104)	5 to 40 (41 to 104)
	Noise level with silencer	dB(A)	<64	<64	<64	<70	<70	<70
	Maximum exhaust back pressure	bara (psig)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)	1.2 (17.4)
Lubrication	Oil		PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6	PFPE Drynert 25/6
	Oil volume	l (gal)	1.8 (0.5)	2.5 (0.7)	3.6 (1.0)	2.4 (0.6)	3.1 (0.8)	4.2 (1.1)

DIMENSIONS

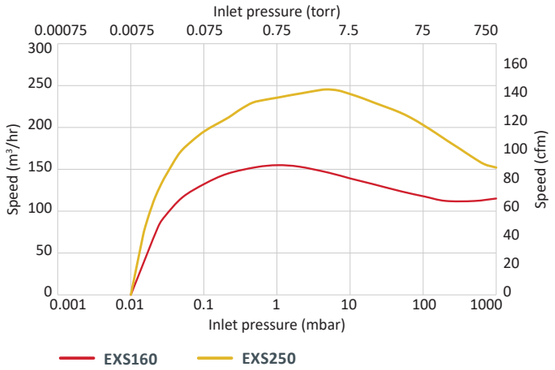


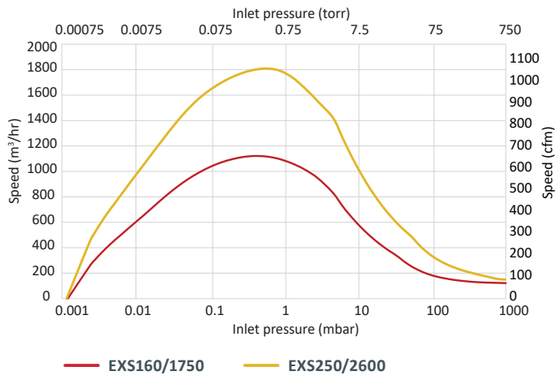


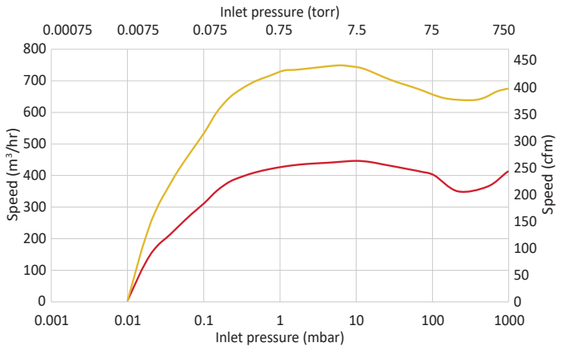
TP-1 Process inlet
TP-2 Exhaust outlet
TP-3 Mains power inlet
TP-4 Gas inlet
TP-5 Cooling water inlet
TP-6 Cooling water outlet
TP-7 Spare gas ports
TP-8 Customer communication connector
TP-9 Customer control cable inlet

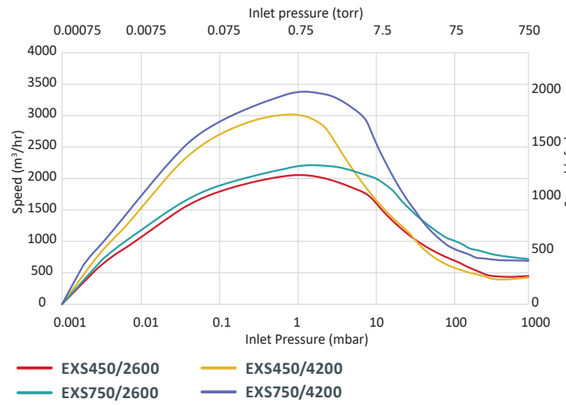
	Dimensions									Mass
	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	A mm (in)	B mm (in)	C mm (in)	D mm (in)	E mm (in)	F mm (in)	Kg (lbs)
EXS160	1265 (49.8)	520 (20.47)	558 (21.96)	290 (11.41)	307 (12.09)	995 (39.18)	20 (0.79)	76 (2.99)	27 (1.06)	305 (672)
EXS160/1750	1265 (49.8)	520 (20.47)	827 (32.66)	290 (11.41)	307 (12.09)	995 (39.18)	20 (0.79)	76 (2.99)	27 (1.06)	514 (1133)
EXS250	1265 (49.8)	520 (20.47)	558 (21.96)	315 (12.40)	307 (12.09)	969 (38.15)	20 (0.79)	76 (2.99)	27 (1.06)	305 (672)
EXS250/2600	1265 (49.8)	520 (20.47)	827 (32.66)	315 (12.40)	307 (12.09)	969 (38.15)	20 (0.79)	76 (2.99)	27 (1.06)	554 (1221)
EXS450	1265 (49.8)	567 (22.3)	642 (25.3)	260 (10.20)	284 (11.02)	1040 (40.90)	35 (1.40)	86 (3.40)	22 (0.90)	540 (1190)
EXS450/2600	1445 (56.9)	567 (22.3)	975 (38.4)	325 (12.80)	284 (11.02)	1155 (45.47)	35 (1.40)	86 (3.40)	41 (1.61)	816 (1799)
EXS450/4200	1445 (56.9)	567 (22.3)	975 (38.4)	325 (12.80)	284 (11.02)	1155 (45.47)	35 (1.40)	86 (3.40)	41 (1.61)	905 (1995)
EXS750	1650 (65)	567 (22.3)	642 (25.3)	949 (37.40)	284 (11.02)	737 (29)	35 (1.40)	86 (3.40)	22 (0.90)	650 (1433)
EXS750/2600	1895 (74.6)	567 (22.3)	975 (38.4)	824 (32.42)	284 (11.02)	1107 (43.58)	35 (1.40)	86 (3.40)	41 (1.61)	968 (2134)
EXS750/4200	1650 (65)	567 (22.3)	972 (38)	824 (32.42)	284 (11.02)	861 (33.88)	35 (1.40)	86 (3.40)	41 (1.61)	996 (2196)

PERFORMANCE CURVES









ORDERING INFORMATION

Part number	Pump description	High voltage	Low voltage	Side exhaust	Rear exhaust	Caster
A41860904	EXS160 HV MD RE CA	✓			✓	✓
A41860905	EXS160 LV MD RE CA		✓		✓	✓
A41860914	EXS160/1750 HV MD RE CA	✓			✓	✓
A41860915	EXS160/1750 LV MD RE CA		✓		✓	✓
A41850904	EXS250 HV MD RE CA	✓			✓	✓
A41850905	EXS250 LV MD RE CA		✓		✓	✓
A41850914	EXS250/2600 HV MD RE CA	✓			✓	✓
A41850915	EXS250/2600 LV MD RE CA		✓		✓	✓
A41840900	EXS450 HV MD SI	✓		✓		
A41840904	EXS450 HV MD RE CA	✓			✓	✓
A41840905	EXS450 LV MD RE CA		✓		✓	✓
A41840914	EXS450/2600 HV MD RE CA	✓			✓	✓
A41840915	EXS450/2600 LV MD RE CA		✓		✓	✓
A41840910	EXS450/4200 HV MD RE CA	✓			✓	✓
A41840911	EXS450/4200 LV MD RE CA		✓		✓	✓
A41870900	EXS750 HV MD SI	✓		✓		
A41870904	EXS750 HV MD RE CA	✓			✓	✓
A41870914	EXS750/2600 HV MD RE CA	✓			✓	✓
A41870910	EXS750/4200 HV RE CA	✓			✓	✓

ACCESSORIES AND SYSTEMISATION

There are a range of standard accessories available with the EXS to suit a variety of applications. All accessories can be fully integrated with EXS to provide an efficient and safe system. The accessories have been especially designed to match the pumping capacities of the EXS range and optimise performance. In addition to these standard accessories, full customer specific systems are also available on request.

	Description	Item number
Filter & separator	Inlet dust filter ISO63 (EXS160, EXS250)	M58810100
	Inlet dust filter ISO100 (EXS450, EXS750 and EXS160/1750)	M58810101
	Inlet dust filter ISO160 (2600 booster combinations)	M58810102
	Inlet dust filter ISO160 (4200 booster combinations)	M58810103
	Inlet gas liquid separator ISO63 (EXS160, EXS250)	M58810120
	Inlet gas liquid filter ISO100 (EXS450, EXS750 and EXS160/1750)	M58810121
	Inlet gas liquid filter ISO160 (2600 booster combinations)	M58810122
	Inlet gas liquid separator ISO160 (4200 booster combinations)	M58810123
Exhaust silencer & check valve	Exhaust check valve kit NW40	A50782000
	Exhaust check valve kit NW50	A50790000
	Cleanable silencer NW40	M58810140
	Cleanable silencer NW40 bottom drain	M58810142
	Cleanable silencer NW50	M58810141
	Cleanable silencer NW50 bottom drain	M58810143
	Cleanable silencer ISO63	M58810162
Inlet valve	Inlet Valve ISO100 kit	M58810145
Purge & flush	Purge free kit (EXS450 and EXS750)	M58810144
Cooling connection	Quick connector 1/2" for cooling water	3002615139
Booster support & castors	EXS750 Booster support kit (EH2600 & EH4200)	M58810148
	EXS450 Booster support kit (EH2600 & EH4200)	M58810150
	Castors (EXS450 and EXS750)	M58810149
Communication	Multi-protocol card (without housing)	M58810169
	Multi protocol module (with housing)	M58810170
	Profibus module	M58810147
	RS485 to Type C cable	M58810153

** More details refer to dry pump accessory manual M58811880 and M58808880*

SERVICE AND SUPPORT

To ensure your EXS Dry Screw vacuum pump maintains optimal performance and reliability, we offer a wide range of service solutions, tailored to meet your needs. From Field Service intervention, Managed Maintenance agreements and Overhaul service in our Service Technology Centres (STC), we will take care of your pump to ensure that it continues to deliver clean, consistent, efficient performance, with lower running costs and optimum total cost of ownership for its operating life.

Selecting original spare parts, maintenance kits and oil means that every critical part performs as it was intended. Our services engineers only fit 100% genuine parts to ensure you receive the best result from each service.

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Казахстан +7(727)345-47-04
Беларусь +(375)257-127-884
Узбекистан +998(71)205-18-59
Киргизия +996(312)96-26-47

эл.почта: ewc@nt-rt.ru || сайт: https://edwards.nt-rt.ru/