MEDIUM AND LARGE DRY PUMPS AND SYSTEMS

THE INTELLIGENT CHOICE

Medium and Large Dry Pumps and Systems

- Mid-Range Dry Vacuum Pumps
- GXS Dry Vacuum Pumps
- IDX Dry Vacuum Pumps

Edwards is a market leader in dry pump technology and has pioneered the use of dry vacuum in some of the harshest applications.

Why Dry?

Dry Vacuum Pumps - why not you? The competitive nature of today's business means changes are required to improve performance, lower costs, and provide optimal process solutions. The Dry pumping solution is the change from traditional oil sealed pumps to a proven technology for this industry. Edwards, a world leader in dry pump technology, has demonstrated the ability to provide a low-cost, tailored solution to your vacuum application. The benefits offered by Edwards dry pumping solutions are:

Maintenance

- Low capital cost and minimal maintenance requirements lead to lowest cost of ownership
- Extended periods between user interventions
- Lower consumable costs

Environmental

- No oil disposal
- No oil emissions into atmosphere

Performance

- Very stable pumping speed gives repeatability to processes
- Continuous pumping at atmosphere
- Ability to handle particulates
- Dry eliminates back-streaming, thus protecting reactive alloys from contamination
- Significantly higher capacity for water vapour pumping than traditional oil sealed pumps

Safety

- Unobtrusive noise levels
- No unsightly oil spills
- No hazardous oil vapours

All Edwards dry pump ranges are ideally suited to:

- Heat treatment
- Metallurgy
- Coating
- Solar
- Drying
- and many more.

With such a range of pumping speeds, combinations and applications available, Edwards retains a comprehensive Applications Engineering capability and are able to offer a solutions package that includes:

- Process design
- Equipment specification and selection
- Safety and operating procedures
- Vacuum system and control integration
- Commissioning advice

Solutions Engineering

The range and complexity of industrial applications means a ‘one size fits all’ policy does not result in system optimisation. A detailed appreciation of the process, environmental and safety issues is required to tailor systems to match performance and process.

Applications Design and Support

Edwards comprehensive design service is based on in-depth knowledge of the industries and applications involved. This expertise is held in the highly focused and experienced applications team, which consists of a Central Applications Group supported by a regional network of Applications Specialists. Proprietary software is used to define pumping requirements and a suite of optional accessories or modules are available. For larger or more unusual applications a custom engineering service is available.

Solutions could cover:

- Process design
- Equipment selection
- Safety and Operating Parameters
- Integration with plant control system(s)
- Commissioning advice and more

Contact your local office to request an initial discussion with an Applications Specialist. Typically, discussions will include gases / materials to be pumped, cycle times and duty pressures, system capacities, control systems, utilities, system footprint and all other aspects of the vacuum system to ensure that we are able to offer the most effective solution for your application.

Product range

Mid-Range Dry Vacuum Pumps

Several industrial processes require Mid-Range vacuum pumps. Small scale or pilot processes are the ideal size to try a dry vacuum technology for the first time and to discover the many benefits that dry pumping delivers. Edwards, with the largest installed base of dry vacuum pumps in the world, is able to offer the most appropriate solution to your needs in this performance range.

Entry Level Dry Pumping

Drystar80 – the robust and highly reliable Drystar80 is the most cost effective introduction to dry pumping.

Intelligent Dry Vacuum Pumps

Edwards is offering 3 models of intelligent and compact dry pumps delivered with a fully enabled on board controller providing:

- Automated start up and shut down routines
- Vacuum speed control with inverter driven motors
- Smart communications via Ethernet, Profibus or hard-wired interfaces
- "Green mode" energy-saving with reduced power consumption during idle periods

iXL – for clean applications

GX – for medium applications

iXH – for harsh applications

GXS Dry Vacuum Pumps

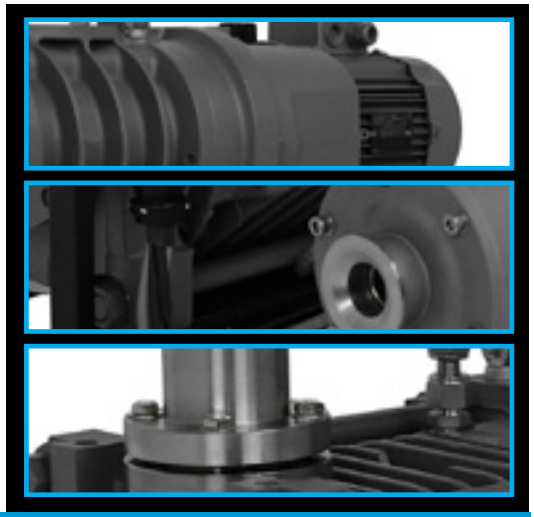
The new range of GXS dry vacuum pumps takes vacuum performance to the next level. With unique screw technology and world leading high efficiency drives our customers are granted best in class pumping speeds, reliable operation even in harsh applications and low running costs for many years to come.
GXS is available in sizes from 160 to 750 m^3h^{-1} and can be systemised with inverter driven mechanical booster pumps from 1750 to 4200 m^3h^{-1} displacement.
Every pump and pumping system is supplied with on-board controller with extensive communication and automated control capabilities for a true 'plug and pump' solution.

IDX Dry Vacuum Pumps

Available in sizes from 1000 to 1300 m^3h^{-1} IDX are the pumps optimised for demanding processes requiring large pumping speeds. Installed mainly in large, high productivity environments, these pumps have been designed to withstand process malfunctions and to minimise down time from line maintenance to overhaul.

DRYSTAR 80 PUMP AND BOOSTER PACKAGE

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Drystar80 is the most cost effective introduction to basic dry pumping. It is available as a stand-alone unit for 80 m^3h^{-1} repeatable pumping performance; or in a combination with the respected EH500 hydrokinetic drive mechanical booster, offering 500 m^3h^{-1} displacement for applications where increased pumping speed and/or lower vacuum levels are required. Depending upon the application the Drystar80 can be supplied with mineral oil or PFPE lubrication.

Features and Benefits

- Specifically designed for demanding industrial applications
- Industry proven, tried and tested
- Consistent and repeatable performance
- High and repeatable product quality
- No oil changes and waste oil disposal
- No disposal cost, environmentally friendly

Applications

R&D / others
- Backing of turbomolecular pumps
- House / central vacuum

Drying
- Freeze drying
- Refrigeration / air conditioning drying
- Transformer drying
- Automotive drying / filling
- Transformer vapour phase drying
- Bush filling

Coating
- Load lock pump down
- Plasma deposition
- Plasma cleaning / sterilising
- Reflective / decorative coating
- Optical / ophthalmic coating
- Roll / web coating
- Hard coating / CVD
- Surface activation

Heat Treatment
- Tempering / annealing
- Oil or gas quenching

Metallurgy
- EB welding / vacuum brazing
- Plasma nitriding
- LPN (nitriding) and nitrocarburising
- LPC with acetylene
- Plasma beam welding
- MIM / vacuum sintering
- PIC (investment casting)

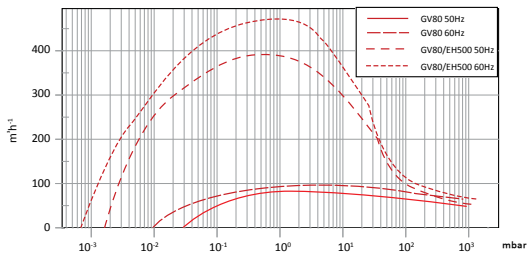
Performance Curves

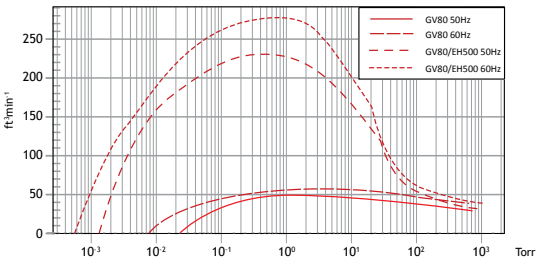
Drystar80/ EH500 Booster Pump and Booster Package

Drystar 80/ EH500

Peak pumping speed	
50 Hz	80/ 390 m^3h^{-1}
	47/ 230 cfm
60 Hz	94/ 471 m^3h^{-1}
	56/ 277 cfm
Ultimate Pressure	
mbar	<3 x 10^{-1}
Torr	<2 10^{-2}

Drystar 80 Performance Curve





Ordering information

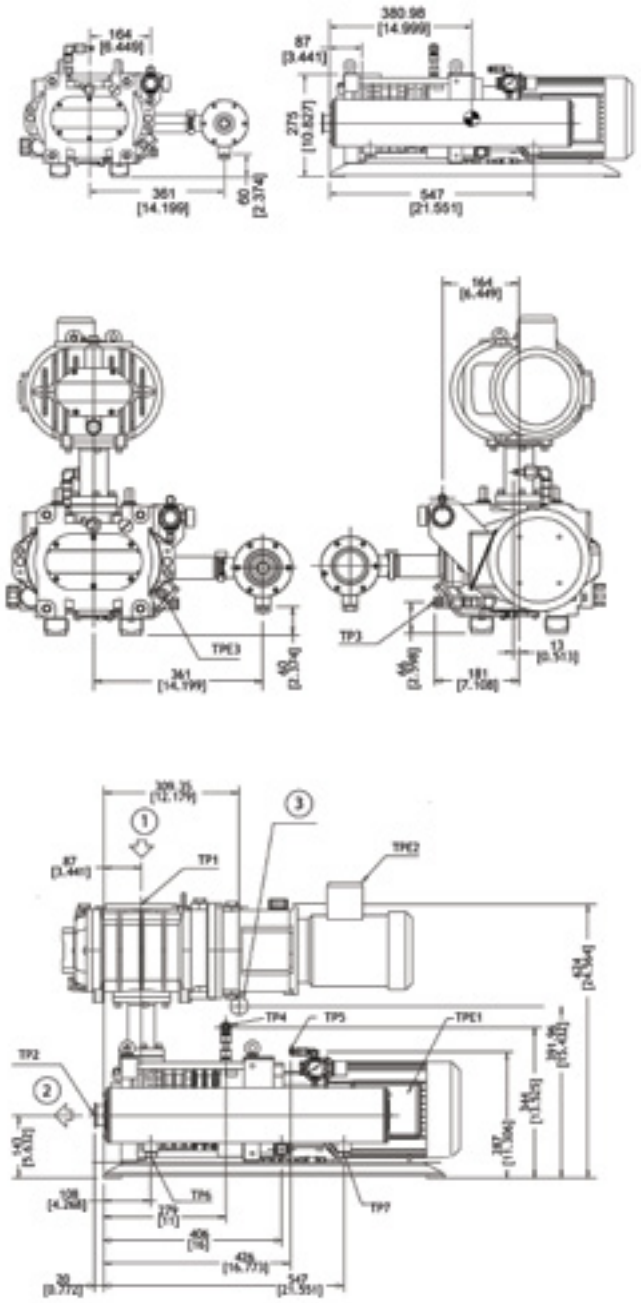
Product description	Order no:
Drystar80 SSP 380-415V 50Hz	NR8030000
Drystar80 SSP 230-460V 60Hz	NR8031000
Drystar80 PFPE SSP 380-415V 50Hz	NR8035000
Drystar80 PFPE SSP 230-460V 60Hz	NR8036000
Drystar80/EH500 SSP 380-415V 50Hz	NRY041000
Drystar80/EH500 SSP 230-460V 60Hz	NRY042000
Drystar80/EH500 PFPE SSP 380-415V 50Hz	NRY046000
Drystar80/EH500 PFPE SSP 230-460V 60Hz	NRY047000

Technical Data

	Units	Drystar80	Drystar80/EH500
Peak pumping speed 50 Hz	m^3h^{-1} / cfm	80 / 47	390 / 230
Peak pumping speed 60 Hz	m^3h^{-1} / cfm	94 / 56	471 / 277
Ultimate pressure	mbar / Torr	$3x10^{-2}$ / $2x10^{-2}$	$3x10^{-3}$ / $2x10^{-3}$
Power @ ultimate	kW	3.6	4.3
Motor Power	kW	4	6.6
Inlet connection		ISO40	ISO100
Outlet connection		NW40	NW40
Cooling water connection		1/2” Quick Connect	1/2” Quick Connect
Nitrogen connection		1/4” Quick Connect	1/4” Quick Connect
Water flow	$lmin^{-1}$	1	1
Typical purge flow	slm	15	15
Weight	kg	145	220
Noise level	dB(A)	<78	<78

Dimensions

Drystar Dimensions



1	Process inlet
2	Process exhaust
3	Estimated centre of gravity

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IXL DRY PUMP SYSTEMS

THE INTELLIGENT CHOICE

iXL is the most compact and low energy dry pump option. It provides repeatable fast pump down of small load lock chambers and clean process operations, with extremely low power consumption.
It is available as the iXL120N stand-alone unit, or as the iXL1000N combination, which includes an inverter-driven booster delivering 930 m^3h^{-1} peak pumping speed

Features and Benefits

- Integral controller and safety systems for 'Plug and Pump', flexible operation
- Low installation costs
- Minimal power consumption
- Best in class cost of ownership

Applications

R&D / others
- Backing of turbomolecular pumps

Drying
- Freeze drying

Coating
- Load lock pump down
- Plasma deposition
- Plasma cleaning / sterilising

Performance Curves

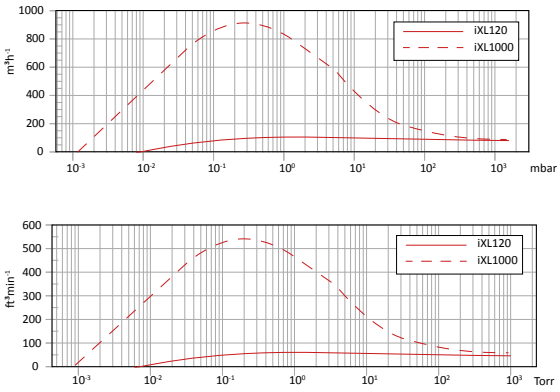
iXL

iXL

Ordering information

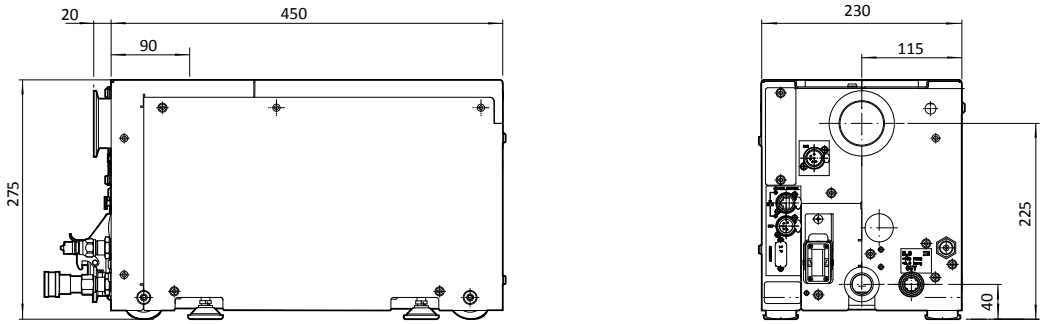
Product description	Order no:
iXL120N 200-460V 50/60 Hz	A54114010
iXL1000N 200-460V 50/60 Hz	A54154020

iXL Performance Curve

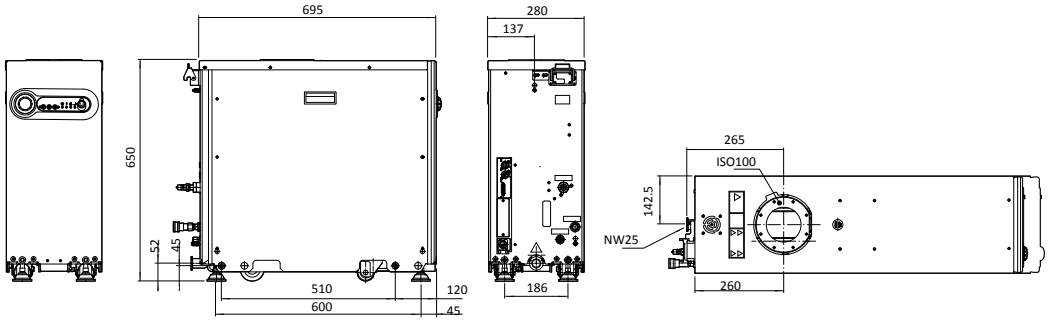


Dimensions

iXL120N Dimensions



iXL1000N Dimensions



Technical Data

	Units	iXL120N	iXL1000N
Peak pumping speed	m^3h^{-1} / cfm	110 / 65	930 / 547
Ultimate pressure	mbar / Torr	$1.3x10^{-2}$ / $9x10^{-3}$	$1.0x10^{-3}$ / $7.5x10^{-4}$
Power @ ultimate (1)	kW	0.55	1
Power @ green mode	kW	0.045	0.05
Motor Power	kW	3	4.9
Inlet connection	Vertical / Horizontal	ISO63 / NW50	ISO100
Outlet connection		NW25	NW25
Cooling water connection		3/8" Quick Connect	3/8" Quick Connect
Nitrogen connection		1/4" tube fitting	1/4" tube fitting
Water flow (2)	$lmin^{-1}$	1	1.6
Typical purge flow	slm	5	0-40 (default 10)
Weight	kg	59	168
Noise level	dB(A)	<55	<55

(1) Average power at 700T exhaust pressure
(2) Flow with Constant Flow Valve accessory fitted

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GX DRY PUMP SYSTEMS

THE INTELLIGENT CHOICE

GX is the ideal choice for medium duty applications and sets new standards for zero maintenance between overhauls and low cost of ownership. It is available as the stand-alone GX100N pump, or combined with an inverter-driven booster as the GX600N (620 m^3h^{-1} peak speed) and GX1000N (800 m^3h^{-1} peak speed) units.

Features and Benefits

- Integral controller and safety systems for 'Plug and Pump' flexible operation
- Low installation costs
- No preventive maintenance between major overhauls
- Maximum uptime for high productivity

Applications

R&D / others
- House / central vacuum

Drying
- Refrigeration / air conditioning drying
- Transformer drying
- Automotive drying / filling

Coating
- Reflective / decorative coating
- Optical / ophthalmic coating

Heat Treatment
- Tempering / annealing
- Oil or gas quenching

Metallurgy
- EB welding / vacuum brazing
- Plasma nitriding
- LPN (nitriding) and nitrocarburising

Pump range

GX
- GX100N
- GX600N
- GX1000N

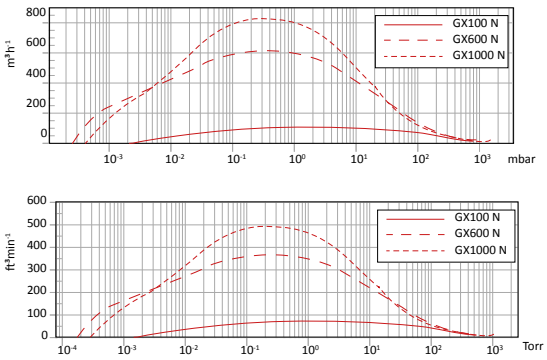
Performance Curves

GX Dry Pump System

GX

Peak pumping speed	
	90 m^3h^{-1} - 800 m^3h^{-1}
	53 cfm - 471 cfm
Ultimate Pressure	
GX100N	$5.0x10^{-3}$ mbar
	$3.75x10^{-3}$ Torr
GX600N	$1.0x10^{-3}$ mbar
	$7.5x10^{-4}$ Torr
GX1000N	$1.0x10^{-3}$ mbar
	$7.5x10^{-4}$ Torr

GX Performance Curve

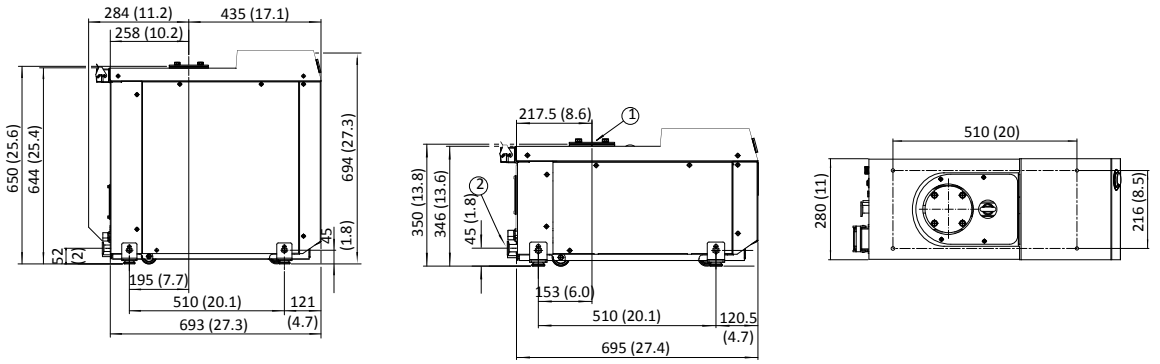


Ordering information

Product description	Order no:
GX100N 200-230V 50/60 Hz	A54711958
GX100N 380-460V 50/60 Hz	A54711959
GX600N 200-230V 50/60 Hz	A54731958
GX600N 380-460V 50/60 Hz	A54731959
GX1000N 200-230V 50/60 Hz	A54781958
GX1000N 380-460V 50/60 Hz	A54781959

Dimensions

GX Dimensions



	GX100	GX600, 1000
Length	695	719
Width	280	280
Height	400	694
1.	Inlet flange	
2.	Exhaust flange	

Technical Data

	Units	GX100N	GX600N	GX1000N
Peak pumping speed	m^3h^{-1} / cfm	90 / 53	600 / 353	800 / 471
Ultimate pressure	mbar / Torr	$5.0x10^{-3}$ / $3.75x10^{-3}$	$1.0x10^{-3}$ / $7.5x10^{-4}$	$1.0x10^{-3}$ / $7.5x10^{-4}$
Power @ ultimate (1)	kW	1.0	1.5	1.6
Power @ green mode	kW	0.05	0.05	0.05
Motor Power	kW	1.9	3.8	3.8
Inlet connection		ISO63	ISO100	ISO100
Outlet connection		NW25	NW25	NW25
Cooling water connection		3/8" quick connect	3/8" quick connect	3/8" quick connect
Nitrogen connection		1/4" compression fitting	1/4" compression fitting	1/4" compression fitting
Water flow (2)	$lmin^{-1}$	1	2	2
Typical purge flow	slm	4 to 39	4 to 39	4 to 39
Weight	kg	120	220	230
Noise level	dB(A)	<60	<55	<55

(1) Average power at 700T exhaust pressure
(2) Flow with Constant Flow Valve accessory fitted

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IXH DRY PUMP SYSTEMS

THE INTELLIGENT CHOICE

iXH sets new standards for really harsh process capabilities, reliability, and low cost of ownership. iXH pumps offer greatly increased dust and powder handling capabilities.
A wide pump temperature range allows optimisation to minimise by-product accumulation from condensation and plating reactions. iXH is available as primary pump at 100 m^3h^{-1} (the iXH100) or combined with inverter-driven boosters delivering peak speeds of 665 m^3h^{-1} (iXH610) or 1025 m^3h^{-1} (iXH1210).

Features and Benefits

- Integral controller and safety systems for 'Plug and Pump', flexible operation
  - low installation costs
- Cutting edge reversed claw technology for corrosion-free operation and robust dust and powder handling capabilities
  - robust and reliable

Applications

Drying
- Transformer vapour phase drying

Coating
- Roll / web coating
- Hard coating / CVD
- Surface activation
- Plasma spray

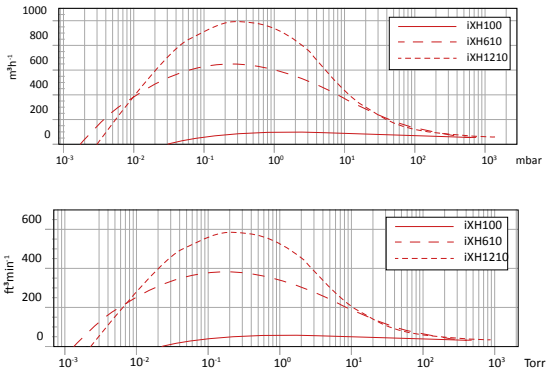
Metallurgy
- LPC with acetylene
- Plasma beam welding
- MIM / vacuum sintering
- PIC (investment casting)

Performance Curves

iXH

iXH

iXH Performance Curve



Ordering information

Product description	Order no:
iXH100 200-230 50/60Hz	AC0102121000
iXH100 380-460 50/60Hz	ACA102121000
iXH610 200-230 50-60Hz	AC1102121100
iXH610 380-460V 50/60Hz	ACB102121100
iXH1210 200-230 50/60Hz	AC3102121200
iXH1210 380-460 50/60Hz	ACD102121200

Dimensions

iXH Dimensions

Type	L	W	H
iXH100	784	390	526
iXH610	784	390	780
iXH1210	784	390	780

Technical Data

	Units	iXH100	iXH610	iXH1210
Peak pumping speed	m^3h^{-1} / cfm	100 / 59	665 / 391	1025 / 603
Ultimate pressure	mbar / Torr	$2.0x10^{-2}$ / $1.5x10^{-2}$	$5.0x10^{-3}$ / $3.7x10^{-3}$	$5.0x10^{-3}$ / $3.7x10^{-3}$
Power @ ultimate (1)	kW	2.1	2.6	3.2
Power @ green mode	kW	0.045	0.045	0.045
Motor Power	kW	4.5	6.4	9
Inlet connection		ISO63	ISO100	ISO100
Outlet connection		NW40	NW40	NW40
Cooling water connection		3/8" quick connect	3/8" quick connect	3/8" quick connect
Nitrogen connection		1/4" compression fitting	1/4" compression fitting	1/4" compression fitting
Water flow (2)	$lmin^{-1}$	2	3	4
Typical purge flow	slm	28 or 44	22 or 44	22 or 44
Weight	kg	260	355	430
Noise level	dB(A)	63	64	64

(1) Average power at 700 T exhaust pressure
(2) Water consumption varies with pump operating temperature; figures at 110 °C

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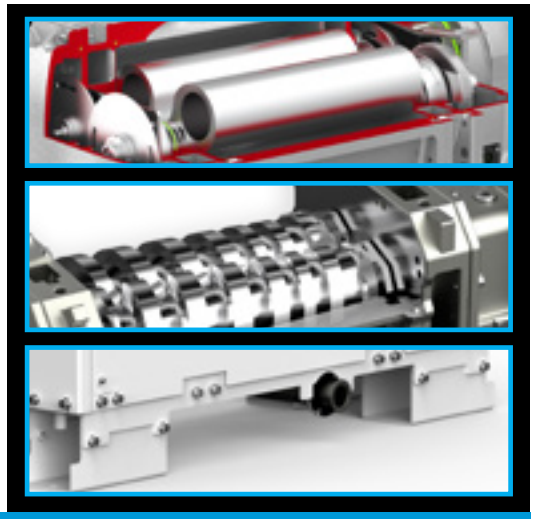
GXS DRY PUMP

THE INTELLIGENT CHOICE



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Features and Benefits

- **Maintenance**
  - Low capital cost and minimal maintenance requirements lead to lowest cost of ownership
  - Extended periods between user intervention
  - Lower consumable costs
- **Environmental**
  - No oil disposal
  - No oil emissions into atmosphere
- **Performance**
  - Very stable pumping speed gives repeatability to processes
  - Continuous pumping at atmosphere
  - Ability to handle particulates
  - Dry eliminates back-streaming, thus protecting reactive alloys from contamination.
- **Safety**
  - Unobtrusive noise levels
  - No unsightly oil spills
  - No hazardous oil vapours

Applications

- Metallurgy
- Coating
- Drying
- Solar
- Vacuum chamber evacuation

Pump Range

GXS160
- GXS160
- GXS160/1750

GXS250
- GXS250
- GXS250/2600

GXS450
- GXS450
- GXS450/2600
- GXS450/4200

GXS750
- GXS750
- GXS750/2600
- GXS750/4200

(GXSXXX/YYYY where XXX = backing screw pump and YYYY = roots booster)

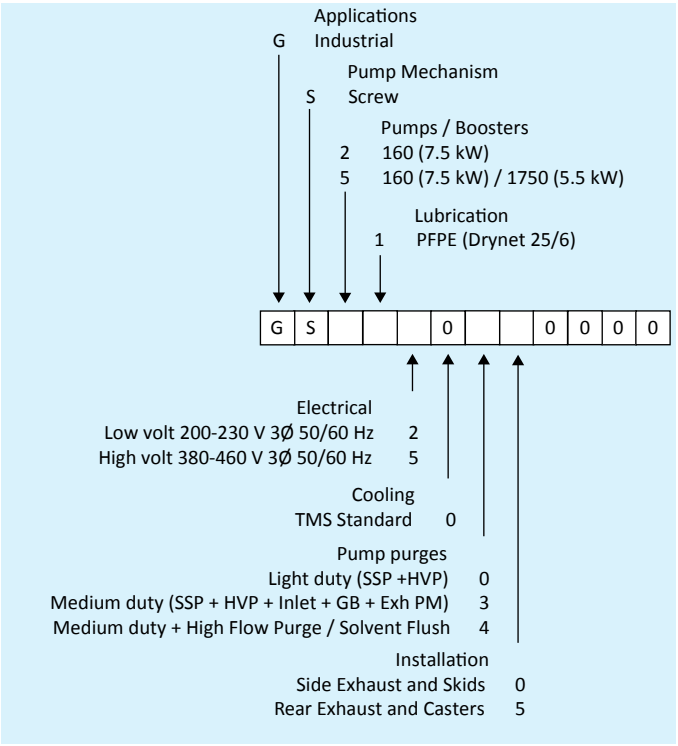
Performance Curves

GXS160 Dry Pump

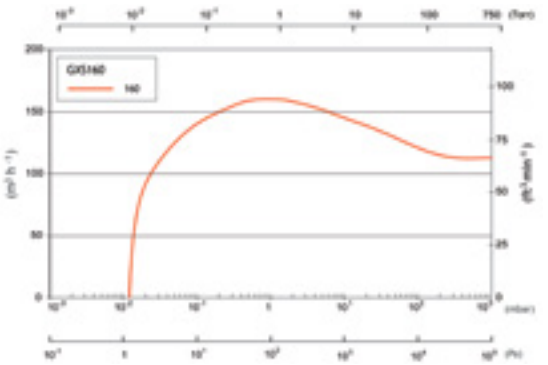
GXS160 & GXS160/1750

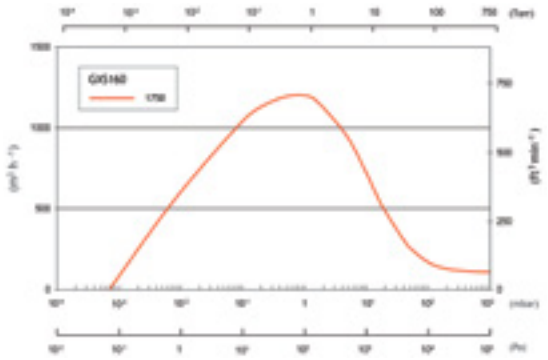
Peak Pumping Speed		
	160 m^3h^{-1}	1200 m^3h^{-1}
	95 cfm	706 cfm
Ultimate Pressure		
with purge	1.2 x 10^{-2} mbar	7 x 10^{-4} mbar
	(9 x 10^{-3} Torr)	(5.3 x 10^{-4} Torr)
without purge	7 x 10^{-3} mbar	7 x 10^{-4} mbar
	(5.3 x 10^{-3} Torr)	(5.3 x 10^{-4} Torr)

Ordering information

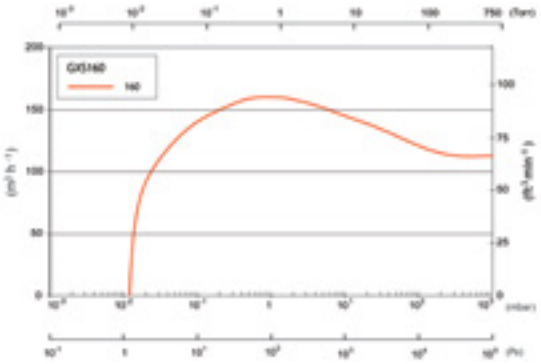


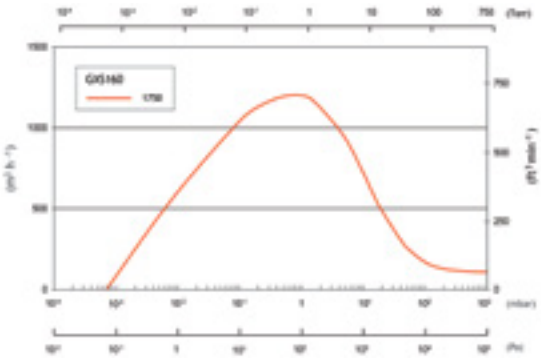
GXS160 & GXS160/1750 Performance Curve





GXS250 & GXS250/2600 Performance Curve





GXS250 & GXS250/2600

Peak Pumping Speed		
	250 m^3h^{-1}	1900 m^3h^{-1}
	148 cfm	1118 cfm
Ultimate Pressure		
with purge	9 x 10^{-3} mbar	5 x 10^{-4} mbar
	(6.8 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)
without purge	4 x 10^{-3} mbar	5 x 10^{-4} mbar
	(3 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)

Ordering information

G	S				0			0	0	0	0

Applications
G Industrial

Pump Mechanism
S Screw

Pumps / Boosters
7 250 (7.5 kW)
A 250 (7.5 kW) / 2600 (5.5 kW)

Lubrication
1 PFPE (Drynet 25/6)

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

Cooling
TMS Standard 0

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

Installation
Side Exhaust and Skids 0
Rear Exhaust and Casters 5

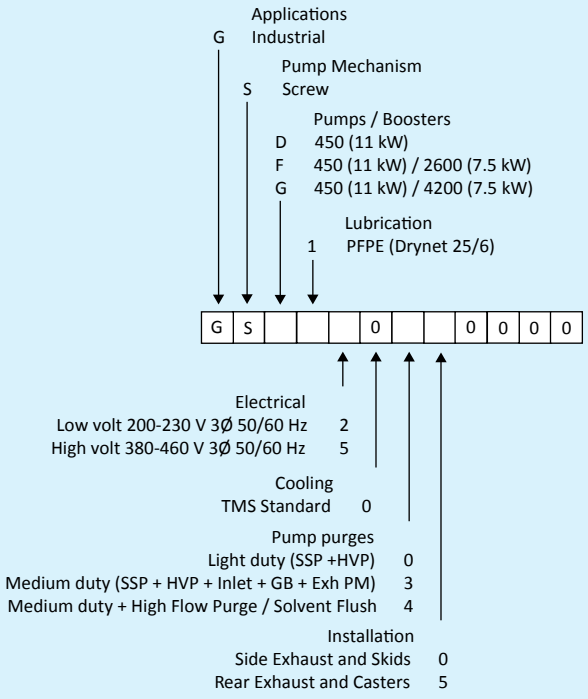
Performance Curves

GXS450 Dry Pump

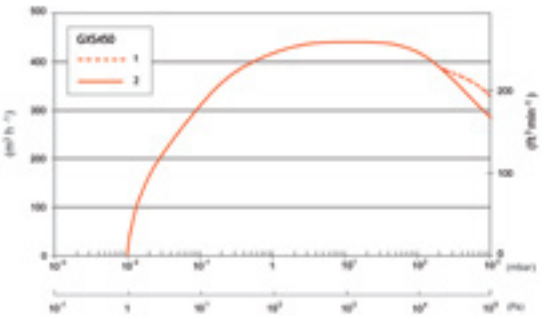
GXS450, GXS450/2600 & GXS450/4200

Peak Pumping Speed			
	450 m^3h^{-1}	2200 m^3h^{-1}	3026 m^3h^{-1}
	265 cfm	1295 cfm	1781 cfm
Ultimate Pressure			
with purge	1 x 10^{-2} mbar	5.4 x 10^{-4} mbar	5.4 x 10^{-4} mbar
	(7.5 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)	(3.8 x 10^{-4} Torr)
without purge	5 x 10^{-3} mbar	5 x 10^{-4} mbar	5 x 10^{-4} mbar
	(3.8 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)	(3.8 x 10^{-4} Torr)

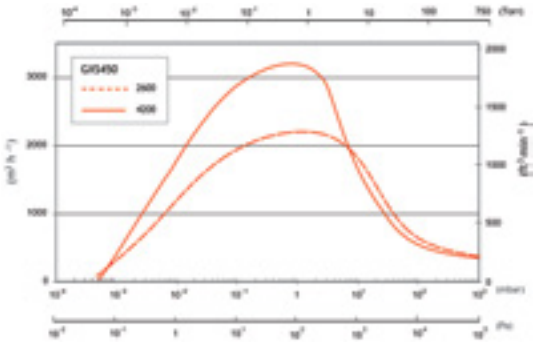
Ordering information



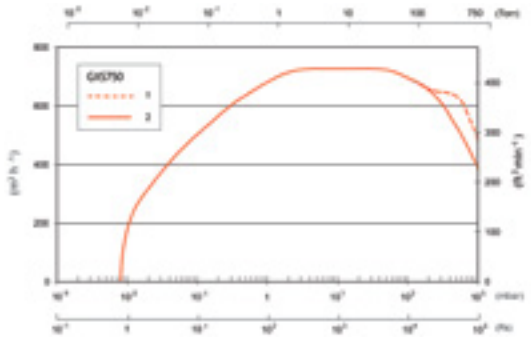
GXS450, GXS450/2600 & GXS450/4200
Performance Curve



1.	Fast
2.	Slow



GXS750, GXS750/2600 & GXS750/4200 Performance Curve



1.	Fast
2.	Slow

GXS750, GXS750/2600 & GXS750/4200

Peak Pumping Speed			
	740 m^3h^{-1}	2300 m^3h^{-1}	3450 m^3h^{-1}
	436 cfm	1354 cfm	2031 cfm
Ultimate Pressure			
with purge	8 x 10^{-3} mbar	5 x 10^{-4} mbar	5 x 10^{-4} mbar
	(6 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)	(3.8 x 10^{-4} Torr)
without purge	3 x 10^{-3} mbar	5 x 10^{-4} mbar	5 x 10^{-4} mbar
	(2.3 x 10^{-3} Torr)	(3.8 x 10^{-4} Torr)	(3.8 x 10^{-4} Torr)

Ordering information

Applications
G Industrial

Pump Mechanism
S Screw

Pumps / Boosters
L 750 (22 kW)
N 750 (22 kW) / 2600 (7.5 kW)
P 750 (22 kW) / 4200 (7.5 kW)

Lubrication
1 PFPE (Drynet 25/6)

G	S				0			0	0	0	0

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

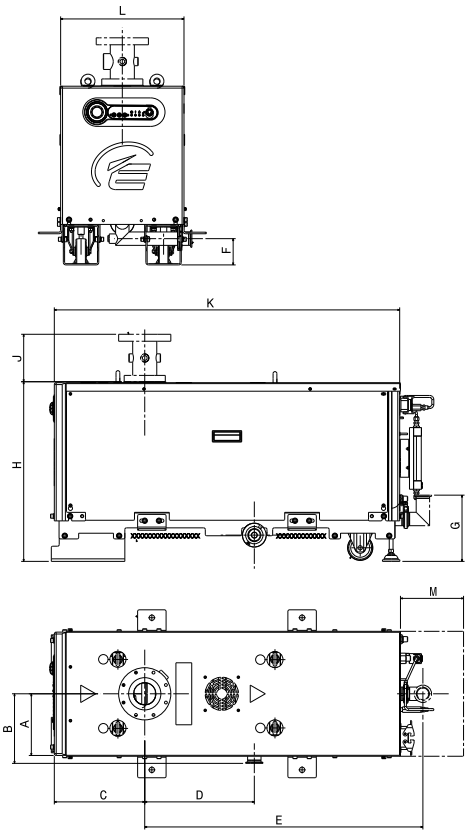
Cooling
TMS Standard 0

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

Installation
Side Exhaust and Skids 0
Rear Exhaust and Casters 5

Dimensions

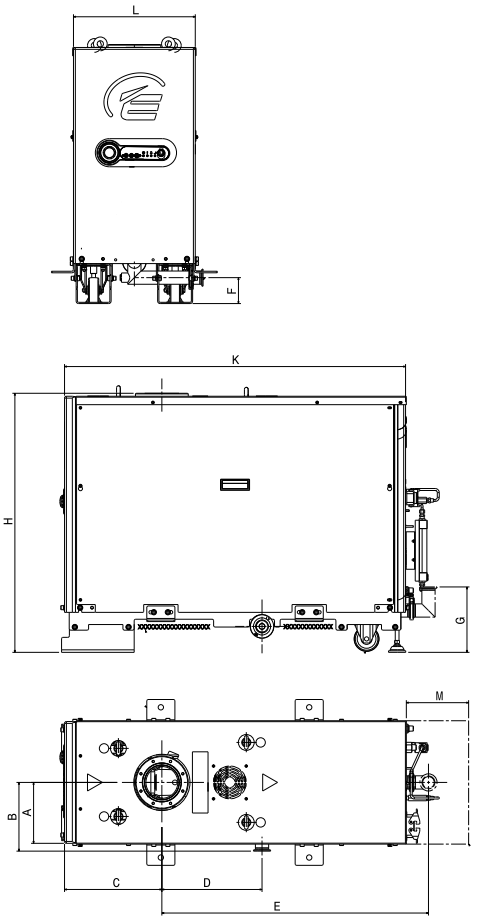
GXS Dimensions



Pump views

(mm)	A	B	C	D	E	F	G	H	J	K	L	M
GXS160	195	220	285.9	346.5	879.5	83	209.4	568	150	1092	390	250
GXS160/1750	195	220	311.6	346.5	853.8	83	209.4	829.5	-	1092	390	250
GXS250	195	220	285.9	346.5	879.5	83	209.4	568	150	1092	390	250
GXS250/2600	195	220	311.6	346.5	853.8	83	209.4	829.5	-	1092	390	250
GXS450	258.5	283.5	394	300	871.6	83	261.4	717	150	1186	517	250
GXS450/2600	258.5	283.5	362	332	903.8	83	261.4	1031	-	1186	517	250
GXS450/4200	258.5	283.5	362	332	903.8	83	261.4	1031	-	1186	517	250
GXS750	258.5	283.5	576	413	1134	83	261.4	717	150	1622	517	250
GXS750/2600	258.5	283.5	657	332	1053	83	261.4	1031	-	1622	517	250
GXS750/4200	258.5	283.5	657	332	1053	83	261.4	1031	-	1622	517	250

GXS Dimensions



Pump views

(inches)	A	B	C	D	E	F	G	H	J	K	L	M
GXS160	7.7	8.7	11.3	13.6	34.6	3.3	8.2	22.4	5.9	43	15.4	9.8
GXS160/1750	7.7	8.7	12.3	13.6	33.6	3.3	8.2	32.7	-	43	15.4	9.8
GXS250	7.7	8.7	11.3	13.6	34.6	3.3	8.2	22.4	5.9	43	15.4	9.8
GXS250/2600	7.7	8.7	12.3	13.6	33.6	3.3	8.2	32.7	-	43	15.4	9.8
GXS450	10.2	11.2	15.5	11.8	34.3	3.3	10.3	28.2	5.9	46.7	20.4	9.8
GXS450/2600	10.2	11.2	14.2	13.1	33.6	3.3	10.3	40.6	-	46.7	20.4	9.8
GXS450/4200	10.2	11.2	14.2	13.1	33.6	3.3	10.3	40.6	-	46.7	20.4	9.8
GXS750	10.2	11.2	15.5	11.8	34.3	3.8	10.3	28.2	5.9	46.7	20.4	9.8
GXS750/2600	10.2	11.2	25.9	13.1	41.5	3.8	10.3	40.6	-	63.9	20.4	9.8
GXS750/4200	10.2	11.2	25.9	13.1	41.5	3.8	10.3	40.6	-	63.9	20.4	9.8

Technical Data

		Units	GXS160	GXS160/1750	GXS250	GXS250/2600
Peak Pumping Speed		m^3h^{-1} (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	$lmin^{-1}$ (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		31		31	
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)	1.5 (22)		2 (29)	2.5 (36)	
6 (1.6)	12 (3.2)		10 (2.6)	12 (3.2)	
5-40 (41-104) All variants			5-40 (41-104) High Volt variants		
			5-30 (41-86) Low Volt variants		
3/8" BSP Male (G 3/8”)			3/8" BSP Male (G 3/8”)		
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)		
31			31		
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		

Service, Spares and Accessories

Fully Integrated Inlet Valves

Product description	Order no:	
	Carbon Steel	Stainless Steel
GXS INLET VALVE 4in ASSY	-	M58808004
GXS INLET VALVE 6in ASSY	-	M58828004
GXS INLET VALVE 8in ASSY	-	M59848004

Inlet Dust Filters

Product description	Order no:	
	Carbon Steel	Stainless Steel
GXS FILTER 4in ASSY	M58808005	M58808137
GXS FILTER 6in ASSY	M58828005	M58828137
GXS FILTER 8in ASSY	M59848005	M59848137

Cleanable & Drainable Discharge Silencers

Product description	Order no:	
	Carbon Steel	Stainless Steel
GXS SILENCER 100ctrs ASSY	M58808161	M58808162
GXS SILENCER 150ctrs ASSY C-STL	M59838161	M59838162
DRAIN VALVE ASSY.	-	M58808010

Inlet Spools for Valves and Filters

Product description	Order no:	
	Carbon Steel	Stainless Steel
ISO63 4inANSI SPOOL ASSY	M58808002	M58808134
ISO63-ISO100 SPOOL ASSY	M58808138	M58808135
ISO100 4inANSI SPOOL ASSY	M59808002	M59808134
ISO100-ISO100 SPOOL ASY PACKED	M59808138	M59808135
ISO100 6inANSI SPOOL ASSY	M58828002	M58828134
ISO100 ISO160 SPOOL ASSY	M58828003	M58828135
ISO160 6inANSI SPOOL ASSY	M58938002	M58938134
ISO160 ISO160 SPOOL ASSY	M58938003	M58938135
ISO160 8inANSI SPOOL ASSY C-STL	M59848002	M59848134
ISO160 ISO200 SPOOL ASSY C-STL	M59848003	M59848135

Service

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

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.
Order spare parts and accessories from your nearest Edwards company or distributor.
When you order, please state for each part required:

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

Silencer Mounts and Connection Kits

Product description	Order no:
HORIZ SILENCER MOUNT 100CTR	M58808009
REAR SILENCER MT HORIZ 100CTR	M58808151
HORIZ SILENCER MOUNT 150CTR	M59838009
REAR SILENCER MT HORIZ 150CTR	M59808151

Check Valves

Product description	Order no:
C-VALVE HOR SILENCER 100CTR	M58808012
C-VALVE HOR SILENCER 150CTR	M59838012

Instrumentation

Product description	Order no:
Pressure Indicator Assembly 90deg	M58808141
Pressure Transducer Assembly (ASG)	M58808152
Temp Trans Assy GXS Pump Only	M58808160
Temp Trans Assy GXS Combi	M58828160
GXS N2 STD FLOW SWITCH KIT	A50633000
GXS N2 HIGH FLOW SWITCH KIT	A50634000
Cooling water flow monitoring switch	A50783000
GXS Auxiliary gauge cable (0-10V)	D37241017
GXS Pressure input cable (4-20mA)	D37241019
MCM MicroTIM	D37360320
Connector kit for MCM MicroTIM	D37422802
Profibus® Module	D39753000

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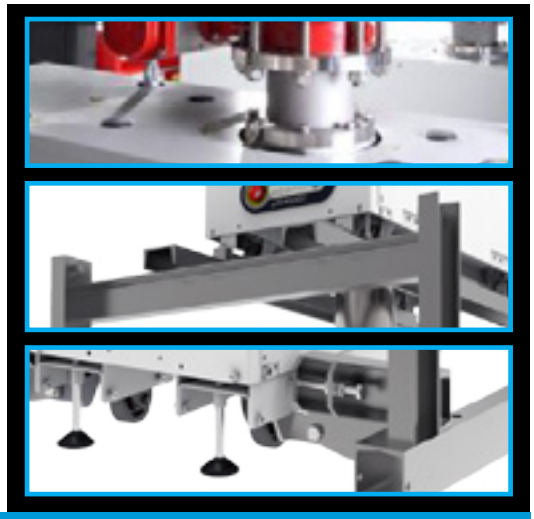
GXS/pXH DRY PUMP

MAXX DRY VACUUM SYSTEM



For high capacity applications our proven GXS dry pump range is available with pXH pumps, the new generation of large mechanical boosters for an integrated flexible modular skid design. pXH booster pumps are provided with high efficiency motor and inverter drives that integrate directly into the GXS pump control system with a single connection. With our unique screw technology and world leading high efficiency booster, you are guaranteed best-in-class pumping speeds and low running cost for many years to come.

Features and Benefits

- **Flexible** - integrated modular skid design
- **Fast** - reduced pump down times with ultimate vacuum < 5 x 10^{-4} mbar
- **Robust** - reliable operation even in harsh industrial applications
- **Intelligent** - on board controller with extensive and automated control capabilities
- **Economical** - affordable capital investment and low cost of ownership
- **Environmental** - smooth, quiet running with low power and utilities consumption

Applications

- Metallurgy
- Coating
- Vacuum packaging
- Drying
- Plasma processes
- Steel degassing
- Vacuum chamber evacuation
- Other applications

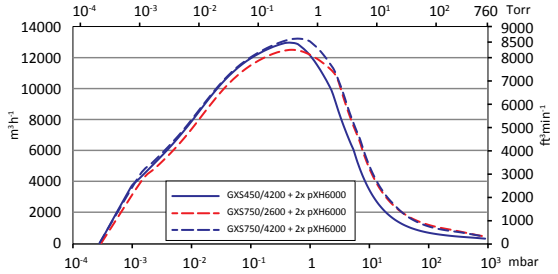
Pump Range

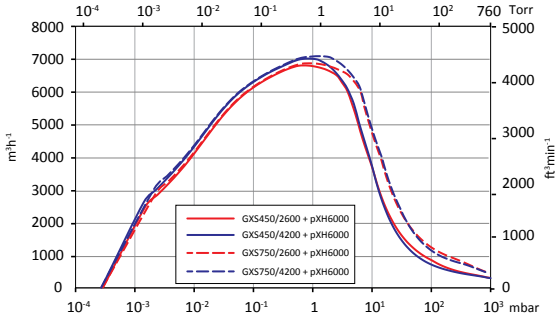
- GXS250
- GXS450
- GXS750
- GXS250/2600
- GXS450/2600
- GXS750/2600
- GXS450/4200
- GXS750/4200
- pXH4500
- pXH6000

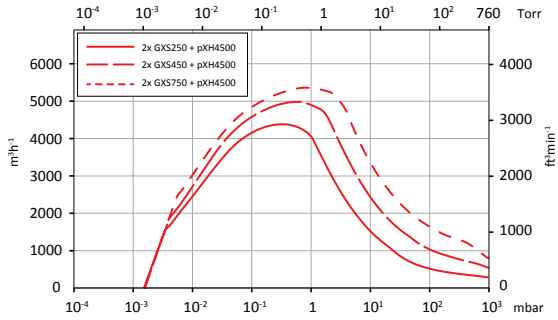
Performance Curves

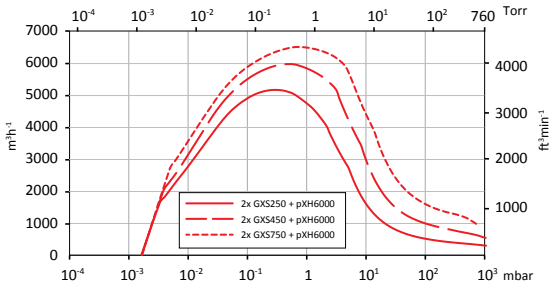
GXS/pXH Combinations

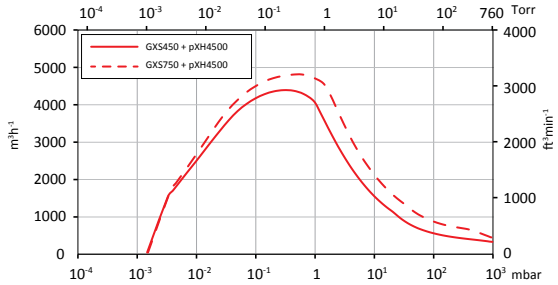
GXS/pXH Combinations Performance Curve

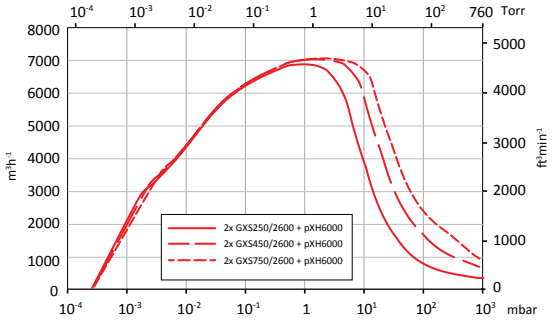


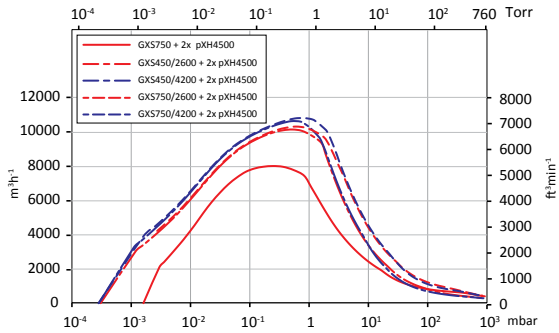


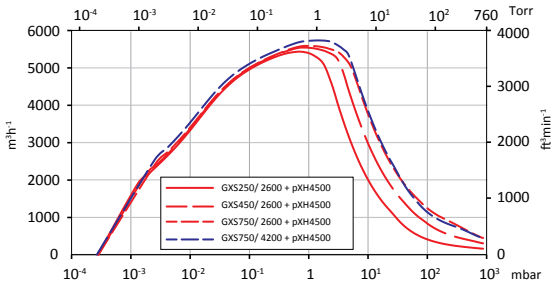


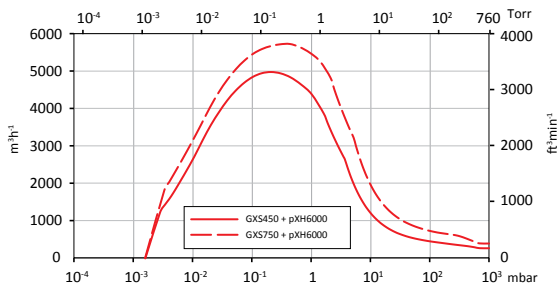












GXS/pXH Combinations

	PXH4500	pXH6000	2 x pXH4500	2 x pXH6000
2x GXS250	•	•		
GXS450	•	•		
2x GXS450	•	•		
GXS750	•	•	•	
2x GSX750	•	•		
GXS250/2600	•			
2x GXS250/2600		•		
GXS450/2600	•	•	•	
2x GXS450/2600		•		
GXS450/4200		•	•	•
GXS750/2600	•	•	•	•
2x GXS750/2600		•		
GXS750/4200	•	•	•	•

MAXX system 1+1 straight spool

MAXX system 3 sets of 1+1 straight spool

MAXX system 2x GXS750 + 1x pXH

MAXX system 1x GXS750 + 2x pXH

Technical Data

		Units	GXS450 & pXH4500 7.5kW	2x GXS750 & pXH6000 7.5kW	GXS750/2600 & pXH6000 7.5kW
Peak pumping speed		m^3h^{-1} (cfm)	4250 (2501)	5350 (3149)	6820 (4914)
Ultimate pressure		mbar (Torr)	1.6 x 10^{-3} (1.2)	1.6 x 10^{-3} mbar (1.17^{-3})	2.8 x 10^{-4} (2.12^{-4})
Motor rating power		kW (hp)	18.5 (24.8)	51.5 (69.0)	37 (49.6)
Full load power	@ ultimate pressure	kW (hp)	7.9 (10.6)	19.2 (25.7)	12.0 (16.09)
	@ peak pumping load	kW (hp)	16.8 (22.5)	56.2 (75.4)	30.6 (41.03)
Electrical	Supply options	High volt (GXS & pXH)	380-460V 3Ø 50/60Hz		
		Low volt (GXS & pXH)	200-230V 3Ø 50/60Hz		
	Connections	High volt (GXS & pXH)	Harting han K 4/4-F	Harting han 100A-F	
		Low volt (GXS & pXH)	Harting han K 4/4-F	Harting han 200A-F	
		pXH	Harting han K 4/4-F		
Vacuum couplings	pXH	Inlet	pXH4500 / ISO200	pXH6000 / ISO250	pXH6000 / ISO250
	GXS	Exhaust	GXS450 / NW50	GXS750 / NW50	GXS750/2600 / NW50
Cooling water	Flow	GXS / pXH	12 $lmin^{-1}$ (3.2 $galmin^{-1}$) (10-25°C)	26 $lmin^{-1}$ (6.9 $galmin^{-1}$) (10-25°C)	18 $lmin^{-1}$ (4.8 $galmin^{-1}$) (10-25°C)
	Supply pressure (max)	GXS / pXH	6.9 bar (100 psig)		
	DP across pump (min)	GXS / pXH	1.25 bar (18 psig)	2 bar (29 psig)	2.5 bar (36 psig)
Operating temperature		°C (°F)	5-40 (41-104)		
N_2 pressure (supply pressure)		bar (psig)	2.5-6.9 (36-100)		
Light duty		slm	12		
Medium duty		slm	18-146		
Control valve connection			Swagelok® Ø 3/8" tube with olive		
Solvent flush	Filter connection		½" NPT Male		
	Solvent connection		3/8" BSP Male (G 3/8")		
Noise		dB (A)	<64	<70	
GXS exhaust back pressure (max)		mbar (psia)	1400 (20)		
System IP rating			21D (IEC60529)		
Lubrication	Type		PFPE Drynert® 25/6 (recommended), Fomblin® 25/6 (alternative), Krytox® 1525 (alternative)		
	Volume	l (US gal)	3.6 (0.9)	6.8 (1.8)	4.9 (1.3)
Monitoring & Control			Profibus DP		
Weight		kg (lbs)	1191 (2625)	2038 (4493)	1598 (3523)

		Units	GXS750/4200 & pXH6000 7.5kW	GXS750/2600 & 2x pXH6000 7.5kW	GXS750/4200 & 2x pXH6000 7.5kW
Peak pumping speed		m^3h^{-1} (cfm)	7040 (4143)	12500 (7357)	13220 (7781)
Ultimate pressure		mbar (Torr)	2.7 x 10^{-4} (2.00^{-4})	3.1 x 10^{-4} (2.32^{-4})	2.9 x 10^{-4} (2.16^{-4})
Motor rating power		kW (hp)	37 (49.6)	44.5 (59.7)	44.5 (59.7)
Full load power	@ ultimate pressure	kW (hp)	12.7 (16.96)	14.0 (18.82)	14.7 (19.74)
	@ peak pumping load	kW (hp)	29.9 (40.09)	31.3 (41.95)	30.5 (40.95)
Electrical	Supply options	High volt (GXS & pXH)	380-460V 3Ø 50/60Hz		
		Low volt (GXS & pXH)	200-230V 3Ø 50/60Hz		
	Connections	High volt (GXS & pXH)	Harting han 100A-F		
		Low volt (GXS & pXH)	Harting han 200A-F		
		pXH	Harting han K 4/4-F		
Vacuum couplings	pXH	Inlet	pXH6000 / ISO250	pXH6000 / ISO250	pXH6000 / ISO250
	GXS	Exhaust	GXS750/4200 / NW50	GXS750/2600 / NW50	GXS750/4200 / NW50
Cooling water	Flow	GXS / pXH	18 $lmin^{-1}$ (4.8 $galmin^{-1}$) (10-25 °C)	24 $lmin^{-1}$ (6.3 $galmin^{-1}$) (10-25°C)	24 $lmin^{-1}$ (6.3 $galmin^{-1}$) (10-25°C)
	Supply pressure (max)	GXS / pXH	6.9 bar (100 psig)		
	DP across pump (min)	GXS / pXH	2.5 bar (36 psig)	2.5 bar (36 psig)	2.5 bar (36 psig)
Operating temperature		°C (°F)	5-40 (41-104)		
N_2 pressure (supply pressure)		bar (psig)	2.5-6.9 (36-100)		
Light duty		slm	12		
Medium duty		slm	18-146		
Control valve connection			Swagelok® Ø 3/8" tube with olive		
Solvent flush	Filter connection		½" NPT Male		
	Solvent connection		3/8" BSP Male (G 3/8")		
Noise		dB (A)	<70		
GXS exhaust back pressure (max)		mbar (psia)	1400 (20)		
System IP rating			21D (IEC60529)		
Lubrication	Type		PFPE Drynert® 25/6 (recommended), Fomblin® 25/6 (alternative), Krytox® 1525 (alternative)		
	Volume	l (US gal)	6.0 (1.6)	6.6 (1.7)	7.7 (2.0)
Monitoring & Control			Profibus DP		
Weight		kg (lbs)	1556 (3430)	2033 (4482)	2021 (4455)

Ordering information

Booster
0 None
1 pXH4500
2 pXH6000
3 2x pXH4500
4 2x pXH6000

Vacuum Instrumentation
0 None
1 GXS / GMB Interstage Active Pirani Gauge
2 pXH / GXS Interstage Active Pirani Gauge
3 GXS / GMB Interstage Active Strain Gauge
4 pXH / GXS Interstage Active Strain Gauge

Interface Accessories
0 None
1 Full Profibus (2x Profibus Modules)
2 One Profibus Module + pXH Serial Link
3 Full MCMmicroTIM (2x TIMs)
4 One MCMmicroTIM + pXH Serial Link
5 Full SIM control by Ethernet

Material option
1 Carbon steel
2 Stainless steel 1x pXH & 1x GSX, straight spool
3 Stainless steel 1x pXH & 1x GXS, cross spool
4 Stainless steel 1x pXH & 2x GXS
5 Stainless steel 2x pXH & 1x GXS
6 Stainless steel extension kit 1x GXS or 1x pXH only

Pump
0 None
1 2x GXS250
2 GXS450
3 2x GXS450
4 GXS750
5 2x GXS750
6 GXS250/2600
7 2x GXS250/2600
8 GXS450/2600
9 2x GXS450/2600
A GXS450/4200
B GXS750/2600
C 2x GXS750/2600
D GXS750/4200

Pump Purge / Voltage
0 None
1 Light duty 200-230V 3Ø 50/60 Hz
2 Light duty 380-460V 3Ø 50/60 Hz
3 Medium duty 200-230V 3Ø 50/60 Hz
4 Medium duty 380-460V 3Ø 50/60 Hz
5 Medium duty+ 200-230V 3Ø 50/60 Hz
6 Medium duty+ 380-460V 3Ø 50/60 Hz
7 Light duty EES 200-230V 3Ø 50/60 Hz
8 Light duty EES 380-460V 3Ø 50/60 Hz

Spool & Manifold / Extension Kit
1 Straight spool *
2 Cross spool **
3 Standard manifold 2x GXS & 1x pXH
4 Standard manifold 2x pXH & 1x GXS
5 Extension kit 1x GXS or 1x pXH only ***

Notes
* Cost effective variant
** Ready for future module extension
*** Select, if already installed 1x GXS & 1x pXH with cross spool and want extension to module C or D.
Extension kit includes necessary spool(s), frame for 2x pXH, valve, bellows, hardware etc. Important: the pump or booster you select for extension must be of the same size or type as bought previously

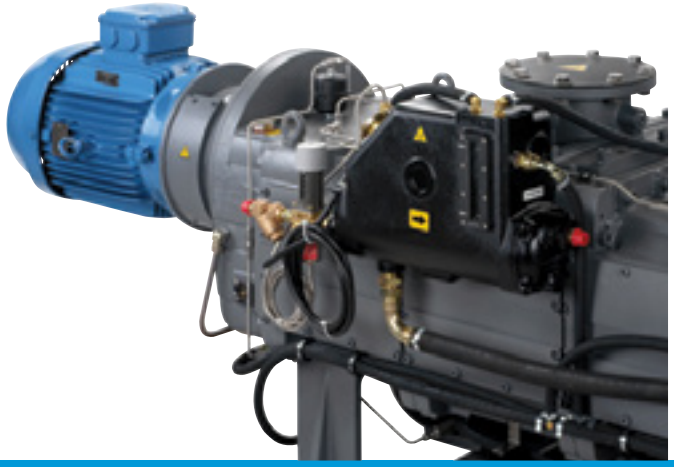
Material Options
1: Carbon steel except GXS valve made of iron cast & stainless steel, bellows made of st. steel / flanges CS
2 - 6: Stainless steel except GXS valve made of iron cast & st. steel, bellows made of st. steel / flanges CS, recommended for chemical applications

Pump Purge / Voltage include:
Light duty: SSP
Medium duty: SSP + Inlet + GB + Exh PM, pressure monitoring
Medium duty+ : the same as medium duty with high flow purge / solvent flush
Light duty EES includes SSP & external evacuation system

Please contact your sales representative for more information

IDX 1000/1300 DRY PUMP

MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



The IDX1000 is the benchmark in performance for fast pump-down 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

Applications

- Metallurgy
- Vacuum Induction Melting (VIM)
- Vacuum Arc Refining (VAR)
- Precision Investment Casting (PIC)
- Steel Degassing

Pump Range

IDX
- IDX1000
- IDX1300

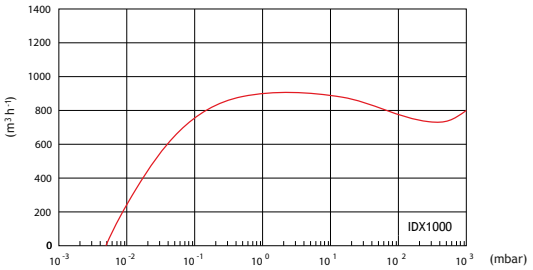
Performance Curves

IDX1000

IDX1000

Peak Pumping Speed	
	1000 m^3h^{-1}
	(589 cfm)
Ultimate Pressure	
	5 x 10^{-2} mbar
	(3.75 x 10^{-2} Torr)

IDX1000 Performance Curve



Ordering information

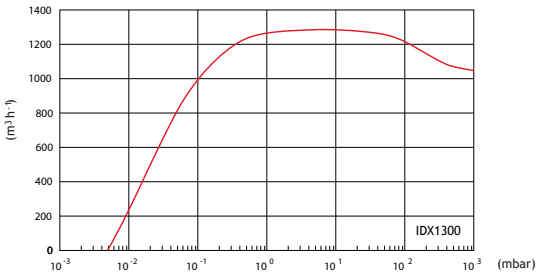
Product description	Order no:
IDX1000 22 kW 50 Hz safe area	A70803985
IDX1000 30 kW 50 Hz safe area extended performance	A70804985
IDX1000 30 hp 60 Hz safe area	A70813985
IDX1000 40 hp 60 Hz safe area extended performance	A70814985

IDX1300

IDX1300

Peak Pumping Speed	
	1300 m^3h^{-1}
	(766 cfm)
Ultimate Pressure	
	5 x 10^{-2} mbar
	(3.75 x 10^{-2} Torr)

IDX1300 Performance Curve

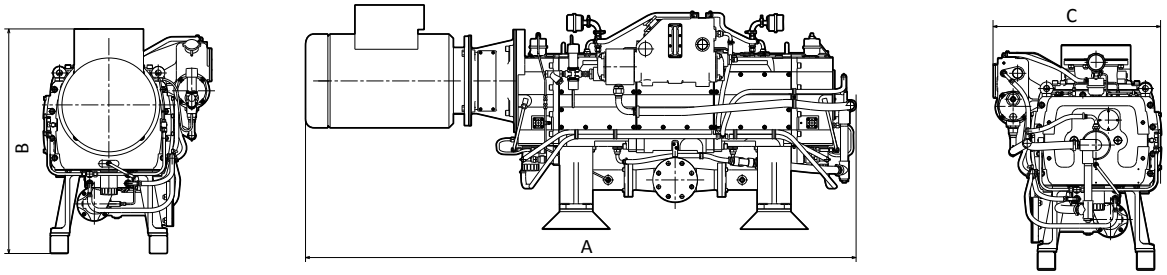


Ordering information

Product description	Order no:
IDX1300 30kW DIN Safe Area	A70904985
IDX1300 40hp ANSI Safe Area	A70914985

Dimensions

IDX Dimensions



		IDX1000	IDX1300
A	50Hz	2250mm (88.5”)	2465mm (97”)
	60Hz	2290mm (90.1”)	2515mm (99”)
B		854mm (33.6”)	1005mm (39.6”)
C		750mm (29.5”)	750mm (29.5”)

Technical Data

		IDX1000	IDX1300
50 Hz	kg (lb)	1560 (3439)	1590 (3506)
60 Hz	kg (lb)	1630 (3594)	1660 (3660lb)
Pumping Speed			
Nominal	m^3h^{-1} (cfm)	1000 (589)	1300 (766)
Actual	m^3h^{-1} (cfm)	900 (560)	1250 (736)
Ultimate pressure	mbar (Torr)	5×10^{-2} (3.75×10^{-2})	
Noise	dB(A)	82	
Motor	kW (hp)	30 (40)	
Optional	kW (hp)	22 (30)	-

Service, Spares and Accessories

Gear Box Oil

Product description	Order no:
Gear Box Oil 4 Ltr Mobil SHC 629	H11023011

Coolant

Product description	Order no:
Coolant 0.9/2L Drystar	H12810003
* 0.9 litres (0.24 US gal) as supplied, 2.0 litres (0.53 US gal) when diluted.	

IDX Kit

Product description	Order no:
IDX Routine maintenance kit	A70801800
IDX Heat exchanger cleaning kit	A70801801
IDX Cooling system overhaul kit	A70801802
IDX Motor fitting kit	A70801803
IDX Drive coupling kit	A70801804
IDX Bearing and seal replacement kit	A70801805
IDX Oil pump replacement kit	A70801806
IDX Strip and rebuild kit	A70801807
IDX Flame arrestor cleaning kit	A70801808
IDX Hoses kit	A70801809
IDX Flame arrestor replacement kit (inlet)	A70801810
IDX Flame arrestor replacement kit (outlet)	A70801811
IDX Flame arrestor tooling kit	A70801812

A number of accessories are available for the CDX and IDX pumps, as listed below. Contact your supplier or Edwards for details of these accessories.

- Exhaust Silencers (mild steel or stainless steel)
- Flame arrestors
- Acoustic enclosures and acoustic cover kits
- Gas ballast kits
- Inlet purge kit
- Exhaust purge kit

Service

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

The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.
Order spare parts and accessories from your nearest Edwards company or distributor. When you order, please state for each part required:

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

EPX SEMICONDUCTOR PUMP

MODERNISING YOUR WORLD THROUGH VACUUM

The EPX series uses a unique, patented, single-shaft regenerative / Holweck® stage mechanism that makes them capable of pumping from atmosphere to ultimate pressures of $<1x10^{-4}$ mbar or $<1x10^{-6}$ mbar depending on model. They are ideal for applications where a better base pressure is required than can be delivered by a typical primary pump and where otherwise a turbomolecular pump and primary pump would be required and also for applications that cycle frequently from atmosphere to low pressures as they can operate continuously at all inlet pressures.

Features and Benefits

- **Compact footprint** - the EPX is more compact than the equivalent turbomolecular pump and primary pump combination
- **Low cost of ownership** - zero routine maintenance with a 5 year service interval
- **Unique patent protected pumping mechanism** - the EPX can pump down from atmosphere to turbomolecular base pressure and can operate continuously at all inlet pressures. No separate “rough pumping” required.
- **Ultra clean mechanism** - EPX pumps have no grease or oil under vacuum and present no other source of potential contamination.
- **Extremely reliable** - based on field proven IPX technology, the EPX has a MTBFp = 13 years (SEMI E10) with service periods of around every 5 years to maximize the life of the pump.
- **Water cooled** - low environmental heat load
- **Low noise and vibration** - better working environment. Ideal for vibration sensitive environments.

Applications

- Gas recirculation
- Gas recovery
- Beamlines
- Distillation, drying and degassing

Pump Range

EPX180
- EPX180LE
- EPX180NE

EPX500
- EPX500LE
- EPX500NE

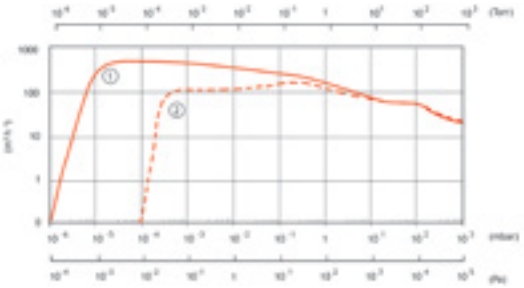
Performance Curves

EPX180LE Dry Pump

EPX180LE

Peak speed	
	170 m^3h^{-1}
	105 ft^3min^{-1}
	2835 $lmin^{-1}$
Ultimate vacuum	
	<1 x 10^{-4} mbar
	<7.5 x 10^{-5} Torr
	<1 x 10^{-2} Pa

EPX180LE Performance Curve



1	Comparative pumping speeds from back to back testing
2	ISO pumping speed obtained using total pressure gauges

Ordering information

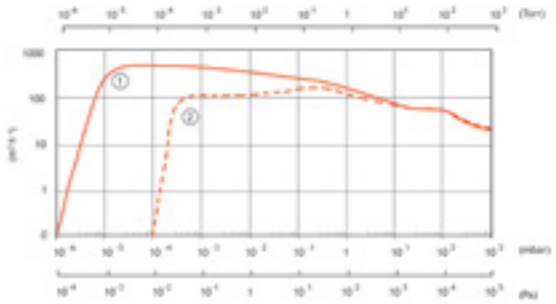
Product description	Order no:
EPX180LE Dry Pump 208V No TIM 3/8 water connector	A41943012
EPX180LE Dry Pump 400V No TIM 3/8 water connectors	A41943014
EPX180LE Dry Pump 208V No TIM 1/4 water connector	A41943022
EPX180LE Dry Pump 400V No TIM 1/4 water connectors	A41943024
EPX180LE Dry Pump 208V MCM TIM 3/8 water connector	A41943712
EPX180LE Dry Pump 400V MCM TIM 3/8 water connectors	A41943714
EPX180LE Dry Pump 208V MCM TIM 1/4 water connector	A41943722

EPX180NE Dry Pump

EPX180NE

Peak speed	
	170 m^3h^{-1}
	105 ft^3min^{-1}
	2835 $lmin^{-1}$
Ultimate vacuum	
	<1 x 10^{-4} mbar
	<7.5 x 10^{-5} Torr
	<1 x 10^{-2} Pa

EPX180NE Performance Curve



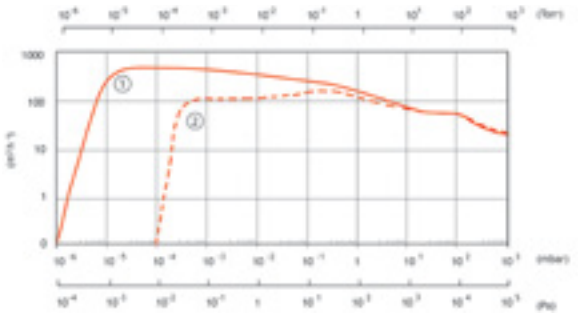
1	Comparative pumping speeds from back to back testing
2	ISO pumping speed obtained using total pressure gauges

Ordering information

Product description	Order no:
EPX180NE Dry pump 208V MCM TIM 3/8 water connector	A41944514
EPX180NE Dry pump 400V MCM TIM 3/8 water connectors	A41944712
EPX180NE Dry pump 400V MCM TIM 1/4 water connectors	A41944714
EPX180NE Dry pump 208V No TIM 3/8 water connector	A41944724
EPX180NE Dry pump 400V No TIM 3/8 water connector	A41944012

EPX500L Dry Pump

EPX500 Performance Curve



1	Comparative pumping speeds from back to back testing
2	ISO pumping speed obtained using total pressure gauges

EPX500LE

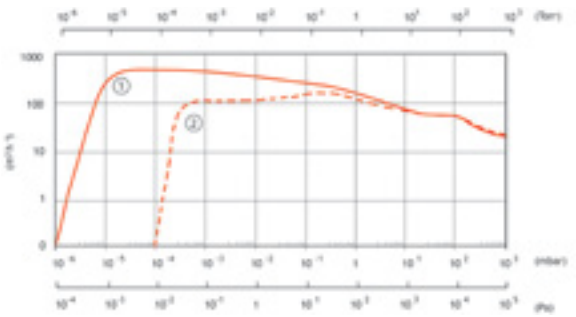
Peak speed	
	500 m^3h^{-1}
	295 ft^3min^{-1}
	8338 $lmin^{-1}$
Ultimate vacuum	
	<1 x 10^{-6} mbar
	<7.5 x 10^{-7} Torr
	<1 x 10^{-4} Pa

Ordering information

Product description	Order no:
EPX500LE Dry pump 208V No TIM 3/8 water connector	A41953012
EPX500LE Dry pump 400V No TIM 3/8 water connectors	A41953014
EPX500LE Dry pump 208V MCM TIM 3/8 water connector	A41953712

EPX500N Dry Pump

EPX500 Performance Curve



1	Comparative pumping speeds from back to back testing
2	ISO pumping speed obtained using total pressure gauges

EPX500NE

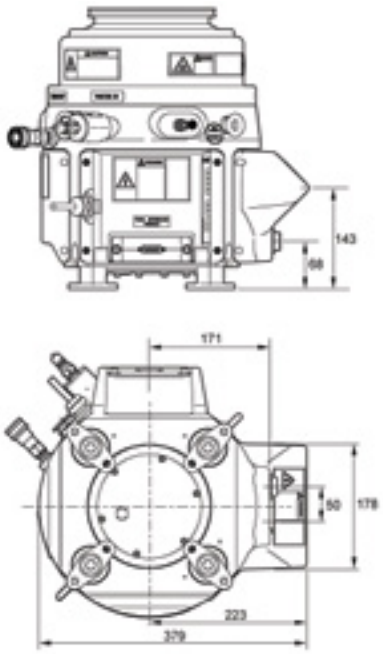
Peak speed	
	500 m^3h^{-1}
	295 ft^3min^{-1}
	8338 $lmin^{-1}$
Ultimate vacuum	
	<1 x 10^{-6} mbar
	<7.5 x 10^{-7} Torr
	<1 x 10^{-4} Pa

Ordering information

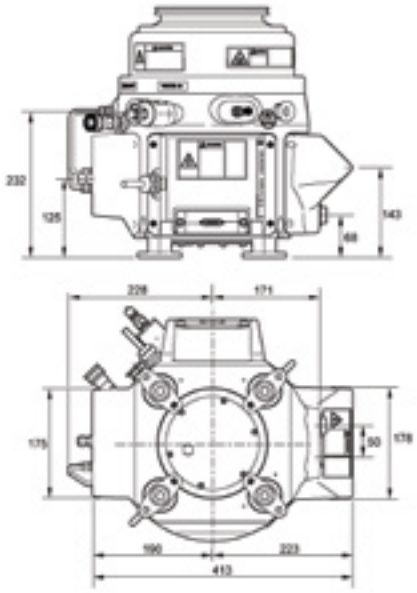
Product description	Order no:
EPX500NE 208V No TIM 3/8 water connector	A41954012
EPX500NE 400V No TIM 3/8 water connector	A41954014
EPX500NE 208V No TIM 1/4 water connector	A41954022
EPX500NE 208V MCM TIM 3/8 water connector	A41954712
EPX500NE 400V MCM TIM 3/8 water connectors	A41954714

Dimensions

LE variant Dimensions



NE variant Dimensions



Technical Data




	Units	EPX180 LE	EPX180NE	EPX500LE	EPX500NE
Peak speed	m^3h^{-1}	170	170	500	500
	ft^3min^{-1}	105	105	295	295
	$lmin^{-1}$	2835	2835	8338	8338
Ultimate vacuum					
	mbar	$<1 \times 10^{4}$	$<1 \times 10^{-4}$	$<1 \times 10^{-6}$	$<1 \times 10^{-6}$
	Torr	$<7.5 \times 10^{-5}$	$<7.5 \times 10^{-5}$	$<7.5 \times 10^{-7}$	$<7.5 \times 10^{-7}$
	Pa	$<1 \times 10^{-2}$	$<1 \times 10^{-2}$	$<1 \times 10^{-4}$	$<1 \times 10^{-4}$
Warm-up time (to nominal performance)	min	30	30	30	30
Inlet flange		ISO63	ISO63	ISO160	ISO160
Outlet flange		NW25	NW25	NW25	NW25
Noise	dB(A)	<59	<59	<59	<59
Water connectors		3/8 in Quick	3/8 in Quick		
Minimum cooling water flow rate	$lmin^{-1}$	2	2	2	2
Cooling water temperature	°C	15 – 35	15 – 35 °C	15 – 35 °C	15 – 35 °C
Electrical Supply		200/208 V, 50/60 Hz 3 phase	400 V, 50/60 Hz 3 phase	200/208 V, 50/60 Hz 3 phase	200/208 V, 50/60 Hz 3 phase
Power at ultimate	kW	1.4	1.4	1.4	1.4
Rated motor power	kW	3.0	3.0	3.0	3.0
TIM		none	None	None	None
Weight	kg	43.5	43.5	45.2	45.2
Nitrogen supply interface		-	1/4 in (6.5 mm) tube	-	1/4 in (6.5 mm) tube
Nitrogen supply pressure	Pa	-	$3 \times 10^{5} – 7 \times 10^{5}$	-	$3 \times 10^{5} – 7 \times 10^{5}$
Minimum nitrogen purity		-	99.95%	-	99.95%

Service, Spares and Accessories

Foot Adapter

Product description	Order no:
IPX-EPX foot adapter	A41900186

Pump Display Terminal (PDT)

Product description	Order no:
Pump Display Terminal (PDT)	D37272000

Protection Box Accessory

Product description	Order no:
200/208 V, 50/60 Hz	D37330000
400 V, 50/60 Hz	D37331000

Service

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

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