GXS

DRY SCREW PUMPS & COMBINATIONS

EDWARDS

www.edwardsvacuum.com

VACUUM & ABATEMENT | INNOVATIVE TECHNOLOGY | GLOBAL STRENGTH | LOCAL SUPPORT

FAST

Dry pumping down to 1x10^{-3} mbar ultimate vacuum

ROBUST

Reliable operation in harsh applications

COMPACT

Smaller footprint than pumps of similar capabilities

ECONOMICAL

Affordable capital investment and low cost of ownership

ENVIRONMENTAL

Smooth, quiet running with low power and utilities consumption

EDWARDS



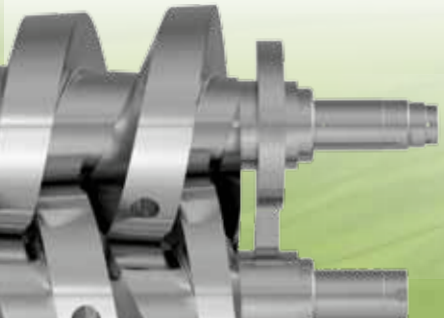
GXS DRY PUMP

GXS Dry Screw Pumps & Combinations

Edwards, the pioneer in dry pumping technology, launches a new generation of dry vacuum pumps.

With more than 90 years vacuum experience and over 150,000 dry pumps installed world wide, Edwards leads the way in every vacuum application including those handling harsh dust and process contaminants.

Edwards GXS range incorporates our unique screw technology with a world leading high efficiency drive to achieve excellent vacuum performance and low running costs. With advanced temperature control, low maintenance and long service intervals, the GXS is the most robust and economical vacuum pump that establishes a new standard in dry pumping.



Applications

GXS pump and pump/booster combinations may be configured for optimum performance. The range of applications include:

Coating
- Architectural glass coating
- Optical lens coating
- Reflective coating
- Roll coating
- Thin film coating

Drying
- Freeze drying food/pharmaceutical
- Pipeline drying
- Transformer drying

LED manufacture

Metallurgy
- Brazing/welding
- Casting
- Surface and heat treatments
- Sintering
- VIM and VAR

Plasma processes
- Cleaning
- Sterilisation

Solar
- Lamination
- Silicon crystal growing
- Solar coating

Vacuum chamber evacuation
- Fusion chamber
- Load-lock
- R&D
- Space chamber

Vacuum packaging
- Food
- Pharmaceutical

Systemisation

The range of GXS screw pumps may be further enhanced through the addition of accessories which have been specially designed to give optimum performance in a wide range of applications.

For detailed advice and availability please consult one of our applications engineers.

Inlet and Exhaust accessories (ISO-ANSI and NW-ANSI)
- Foreline spool adaptor
- Inlet isolation valve (with position indicator)
- Inlet spool
- Inlet filter
- Inlet cyclone
- Inlet knock-out pot
- Exhaust knock-out pot
- Cleanable and drainable silencer
- Exhaust check valve

Control and monitoring accessories
- Operator panel with IP54 enclosure
- MCM microTIM (I/O control module)
- Profibus DP control module
- Cooling water flow sensor
- Purge gas flow switch
- Instrument pack (PT100, ASG and cables)

Special accessories
- IP54 enclosure
- Solvent injection
- Heated/insulated exhaust
- Air blast cooler

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Features & Benefits

Designed for high reliability

Edwards patented screw-rotor design delivers excellent pumping speed and is part of an advanced thermal management system that maximises pump performance and life of the seals, bearings and motor, to ensure long pump service life.

Adaptable to a wide range of applications

GXS pumps are offered with a range of purge options, filters, catchpots, inlet isolation valves and silencers; together with our special high flow purge and solvent flush accessory enabling the inside of the pump to be kept clean without disassembly.

Long service intervals

Long-life non-oxidizing gearbox oil enables service intervals of up to 5 years to be achieved.

Low cost of ownership

Custom high-efficiency motor and drive system with advanced seal technology provides for greatly reduced power consumption. Minimal cooling water and purge gas requirements coupled with improved powertrain technology provide for long service intervals and near maintenance-free operation.

Minimum workplace and environmental impact

GXS pumps are incredibly compact compared to pumps of similar capabilities. Edwards advanced screw-rotor design provides for remarkably quiet, low vibration operation even without a silencer.

Simple to install and operate

GXS pumps are easily wheeled or fork-lifted into position, coupled to the process and services using the supplied mating connectors and run at the push of a button.

Ideal for integration into larger systems

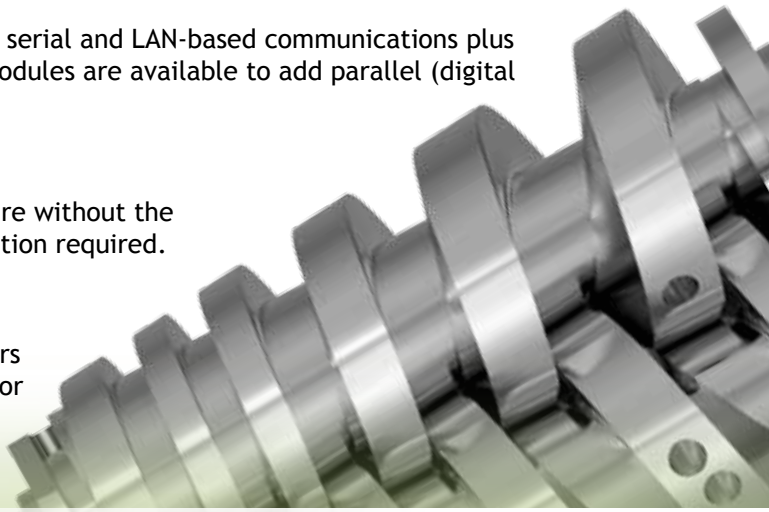
GXS pumps and combinations are supplied with serial and LAN-based communications plus web-serving capability as standard. Optional modules are available to add parallel (digital I/O) and Profibus control functionality.

Onboard PID pressure control

Allows the pump to control the chamber pressure without the need for additional control hardware. Cable option required.

At your service

Edwards has highly skilled applications engineers who will advise on the optimum configuration for your process or application.



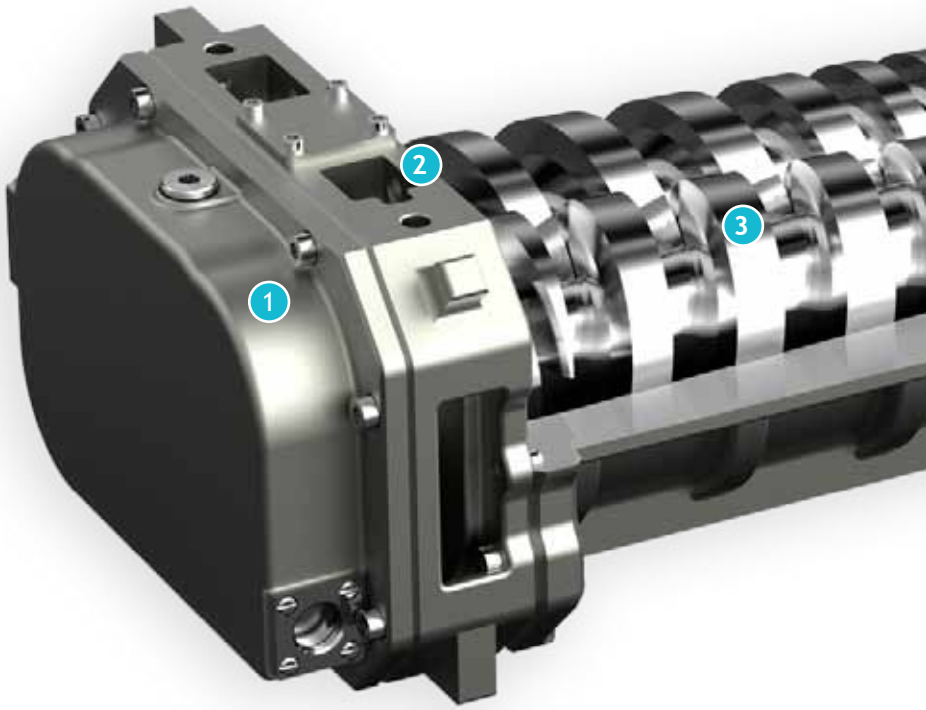
GXS Innovative Screw Technology

3 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

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



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

Built-in control panel

- All pumps are fitted with a built-in control panel for direct local control of the pump
- Full start / stop control with indication of running mode and state of the pump with a connector for an optional Pump Display Terminal (PDT) for improved diagnostic and configuration capability

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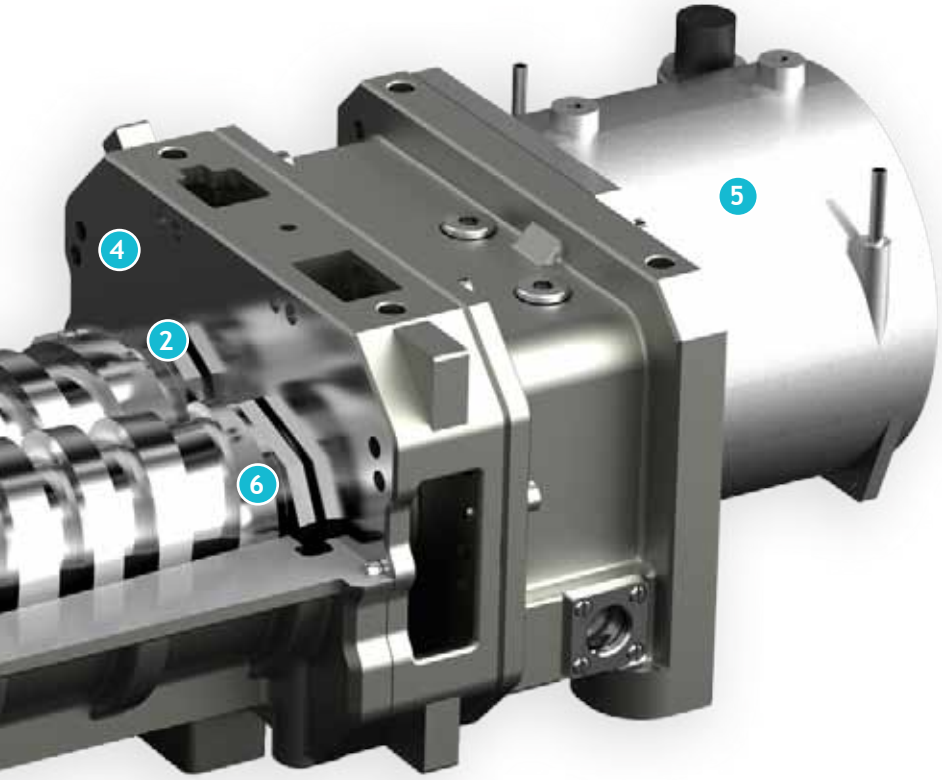
4 Advanced shaft sealing technology

- 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



5 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

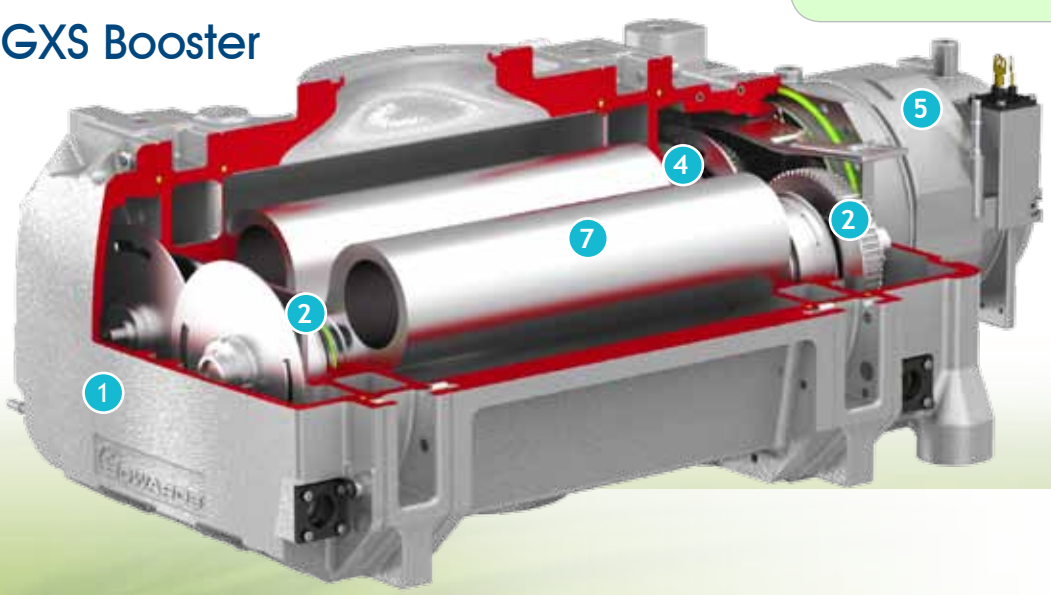
6 Accessories for enhanced reliability

- High-flow inlet purge accessory available to aid powder removal from the pump mechanism
- Solvent flush accessory for in-situ cleaning and removal of sticky substances from the pump mechanism
- Solvent injection accessory for use during vacuum processing
- All accessories controllable via the pump's advanced control system with optional hand-held Pump Display Terminal (PDT)

7 Roots booster mechanism

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

GXS Booster



Technical data - GXS160 and GXS250

		Unit	GXS160	GXS160/1750	GXS250	GXS250/2600
Peak Pumping Speed		m^3/hr (cfm)	160 (95)	1200 (706)	250 (148)	1900 (1118)
Ultimate Pressure		mbar (Torr)	$<1x10^{-2}$ ($<7.5x10^{-3}$)	$<1x10^{-3}$ ($<7.5x10^{-4}$)	$<1x10^{-2}$ ($<7.5x10^{-3}$)	$<1x10^{-3}$ ($<7.5x10^{-4}$)
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)		6.0 (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)		5-40 (41-104)	
	Connection		3/8" BSP Male (G 3/8")		3/8" BSP Male (G 3/8")	
Purge Gas options*	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		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	
	Option		54		54	
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®	

** 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

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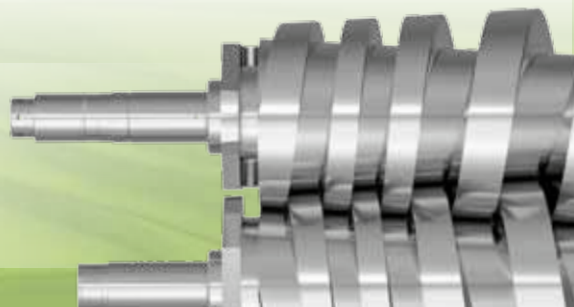
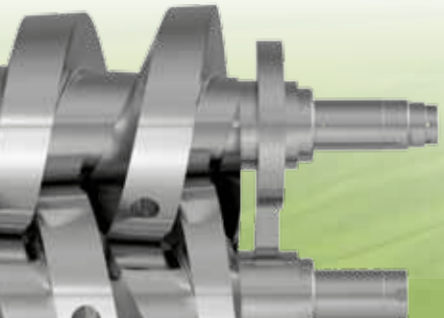




Technical data - GXS450 and GXS750

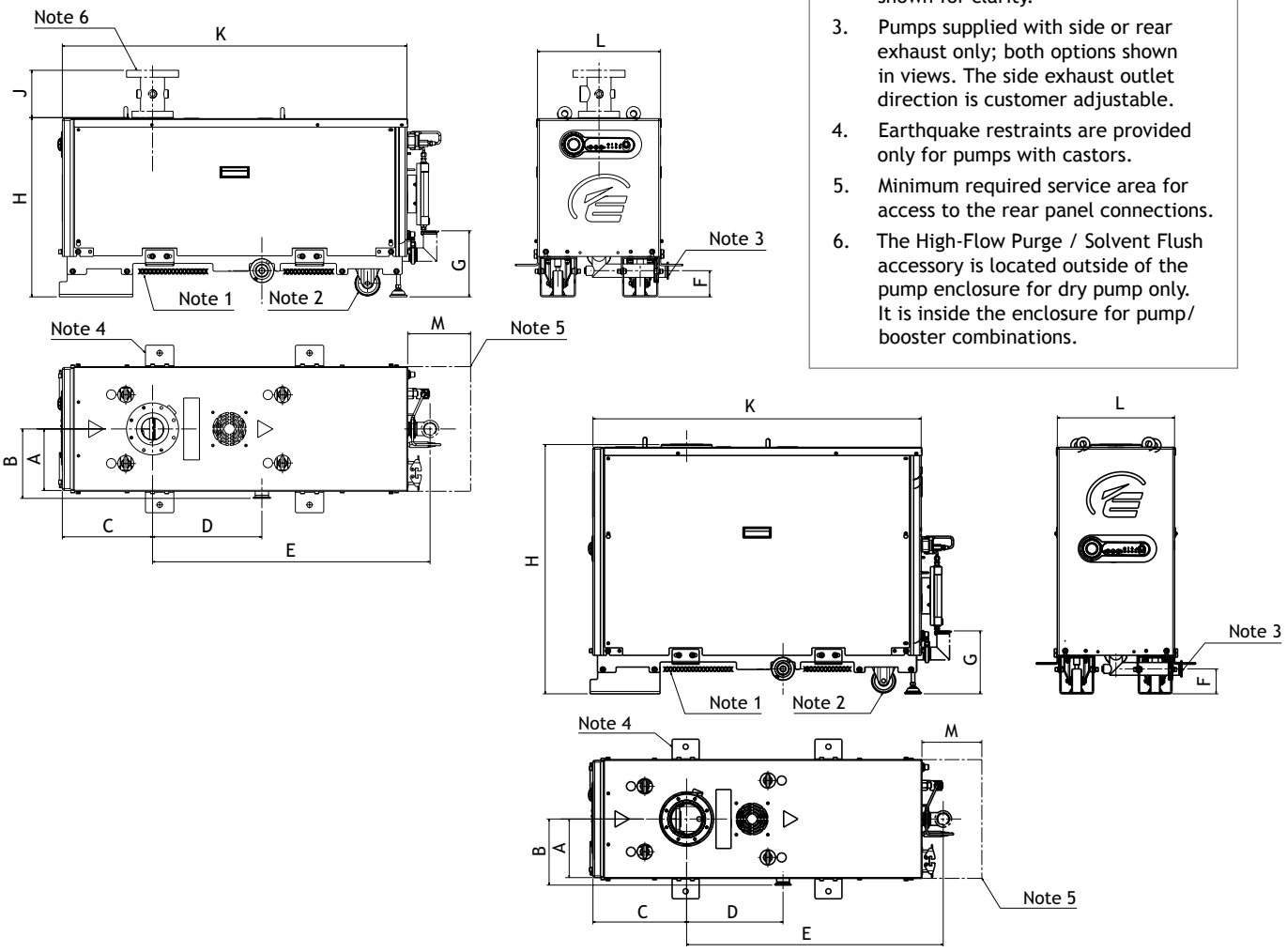
GXS450	GXS450/2600	GXS450/4200	GXS750	GXS750/2600	GXS750/4200
450 (265)	2200 (1295)	3026 (1781)	740 (436)	2300 (1354)	3450 (2031)
$<1x10^{-2}$ ($<7.5x10^{-3}$)	$<1x10^{-3}$ ($<7.5x10^{-4}$)		$<1x10^{-2}$ ($<7.5x10^{-3}$)	$<1x10^{-3}$ ($<7.5x10^{-4}$)	
6.3 (8.4)	7.3 (9.8)	7.3 (9.8)	8.8 (11.8)	10.8 (14.5)	10.3 (13.8)
16.0 (21.4)	17.0 (22.8)	20.0 (34.9)	26.2 (35.1)	27.3 (36.4)	28.3 (37.9)
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)		
1.5 (22)			1.5 (22)		
12 (3.2)			12 (3.2)		
5-40 (41-104)			5-40 (41-104)		
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		
54			54		
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®		



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.

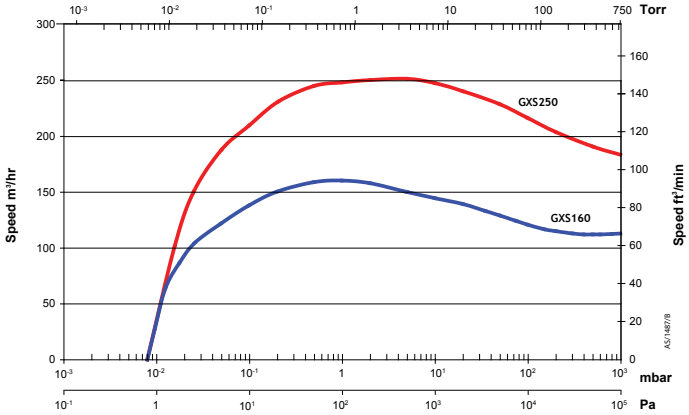


	A	B	C	D	E	F	G	H	J	K	L	M
GXS160	195 (7.68)	220 (8.66)	285.9 (11.26)	346.5 (13.64)	879.5 (34.63)	83 (3.27)	209.4 (8.24)	568 (22.36)	150 (5.9)	1092 (42.99)	390 (15.35)	250 (9.84)
GXS250												
GXS160/1750			311.6 (12.27)		853.8 (33.61)			829.5 (32.66)	-			
GXS250/2600												
GXS450	258.5 (10.18)	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)												

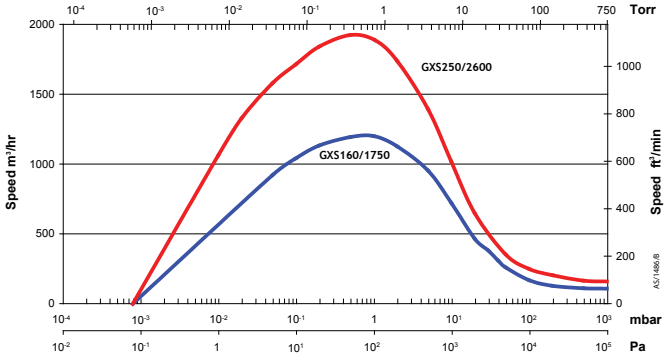


Performance curves

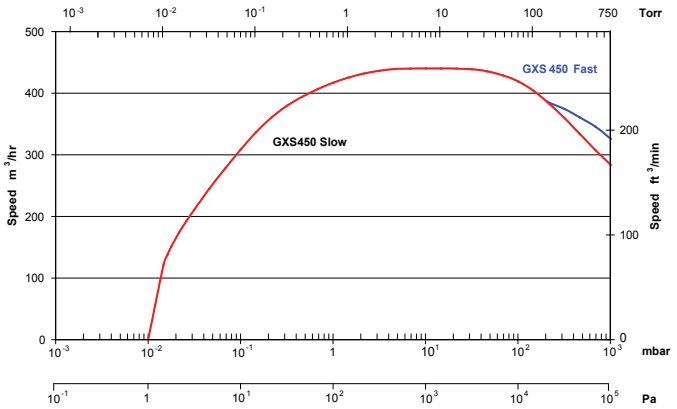
Pumping Speed Curves for GXS160 & GXS250



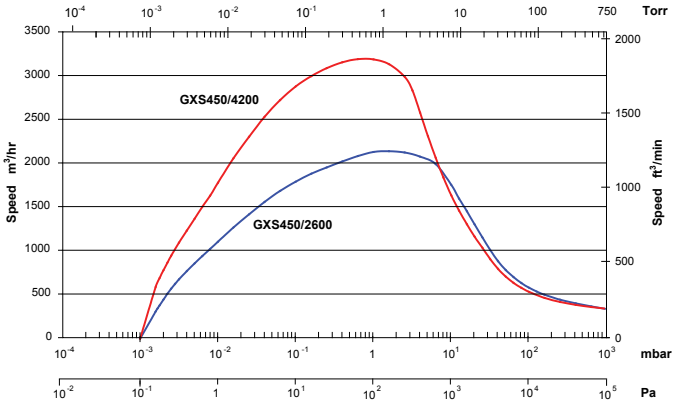
Pumping Speed Curves for GXS160/1750 & GXS250/2600



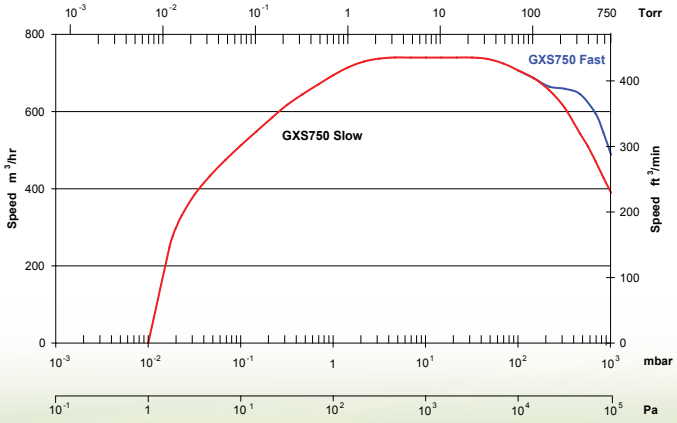
Pumping Speed Curves for GXS450



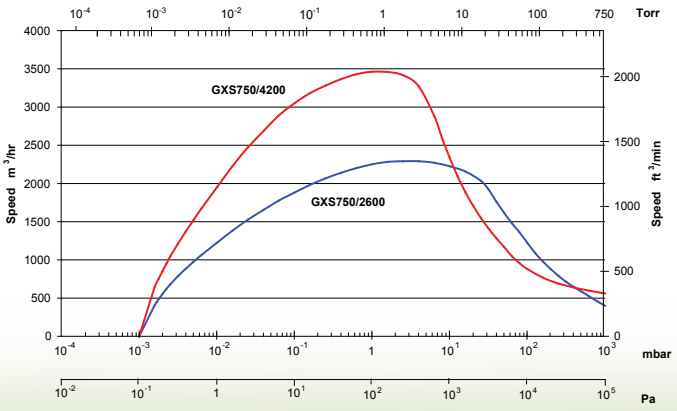
Pumping Speed Curves for GXS450/2600 & GXS450/4200



Pumping Speed Curves for GXS750



Pumping Speed Curves for GXS750/2600 & GXS750/4200





GXS Ordering Information

G	S				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* only)
3 Medium Duty (*SSP*+*Inlet*+*GB*+*Exh PM*)
4 Medium Duty + High Flow Purge/Solvent Flush

Cooling
0 TMS standard

SSP = Shaft seal purge,
Inlet = Inlet purge,
GB = Gas ballast,
Exh PM = Exhaust pressure monitor & purge
High Flow Purge / Solvent Flush accessory requires optional Pump Display Terminal (PDT) for operation

Recommended Accessory:

Pump Display Terminal (PDT)*	D37280700

**Access to full functionality for Medium Duty & Medium Duty+ pumps requires a PDT*

Optional Accessories:

GXS Auxilliary gauge cable (0-10V)	D37241017
GXS Pressure input cable (4-20mA)	D37241019
MCM MicroTIM	D37360320
Connector kit for MCM MicroTIM**	D37422802
Profibus® Module	D39753000
Cooling water flow monitoring switch	A50783000
Purge gas flow switch options	
160 LD/MD/MD+, 250 LD/MD/MD+, 450 LD, 750 LD	A50784000
450 MD/MD+, 750 MD/MD+	A50785000

*** Required to build interface cable*

Global Contacts

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