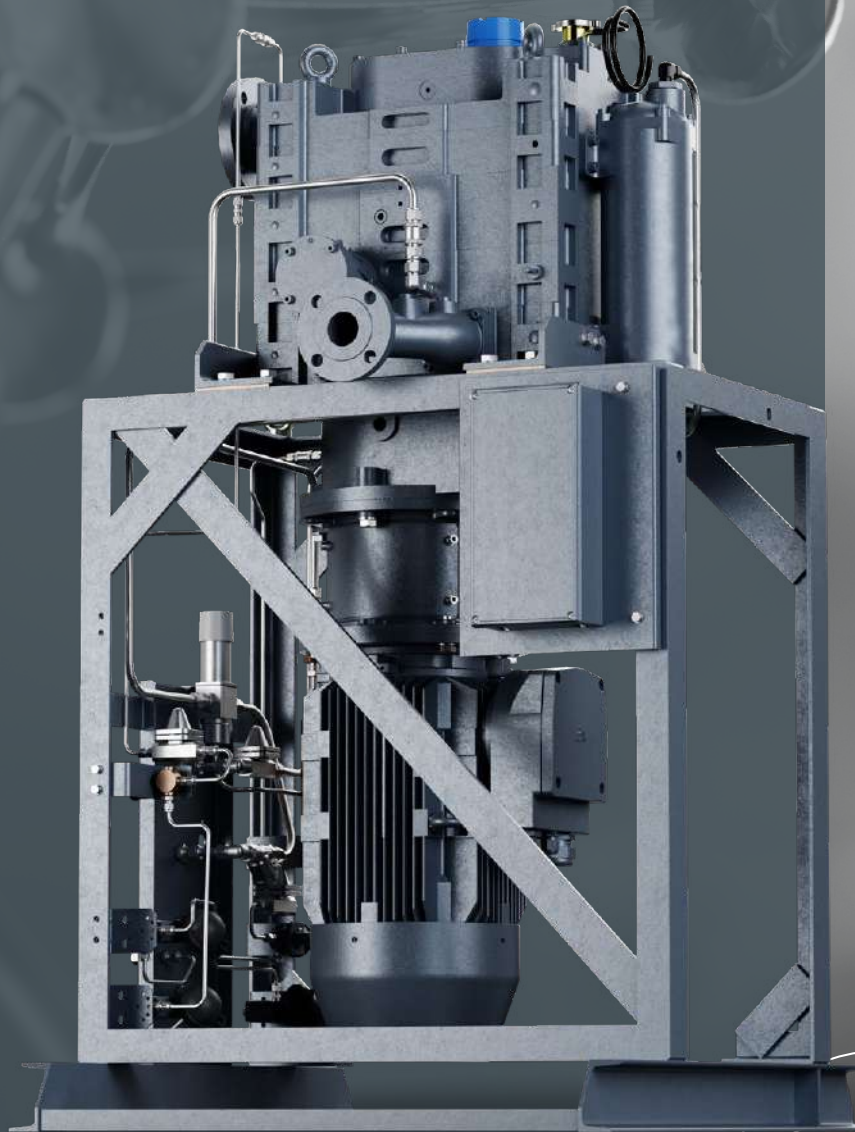


# EDP CHEMICAL DRY VACUUM PUMP

EDP 80-400

 **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.

## EDP CHEMICAL DRY PUMP

Edwards, a world leader in dry vacuum pump technology, successfully pioneered the use of environmentally friendly dry vacuum pumps in the early 1980s. With more than 100,000 systems installed worldwide, Edwards dry pumps create significant benefits for customers in many applications and industries.

This expertise is incorporated in the chemical dry pumps to satisfy the demanding requirements of the chemical, petrochemical and pharmaceutical industries. We offer a range of four pumps with 80 - 400 m<sup>3</sup>h<sup>-1</sup> capacity, and ultimate vacuums of below 1 mbar. Our chemical dry pumps meet the highest safety and performance standards and are second to none in this respect.

EDP pumps are based on Edwards' oil-free, non-contacting, reverse claw mechanism. They provide consistent vacuum at high efficiencies and low costs of ownership.

Dry pumps reduce the risk of process contamination and creation of polluted effluent, which are experienced with traditional wet vacuum pump technologies.



Staged compression for optimum temperature profile within the pump and no requirement for cooling gas injection



Vertical design means reduction in overall footprint along with it being inherently free draining



Short gas path reduces risk of particulate build-up and corrosion



Able to handle liquid or particulate carry-over



No internal valves to block or corrode and no interstage condensers that reduce risk of corrosion



Can flush with solvents, water or steam depending on process compatibility



Pump flammable gases safely



EDP 250



Non-contacting mechanisms gives long life and high reliability



Designed for long life and easy maintenance

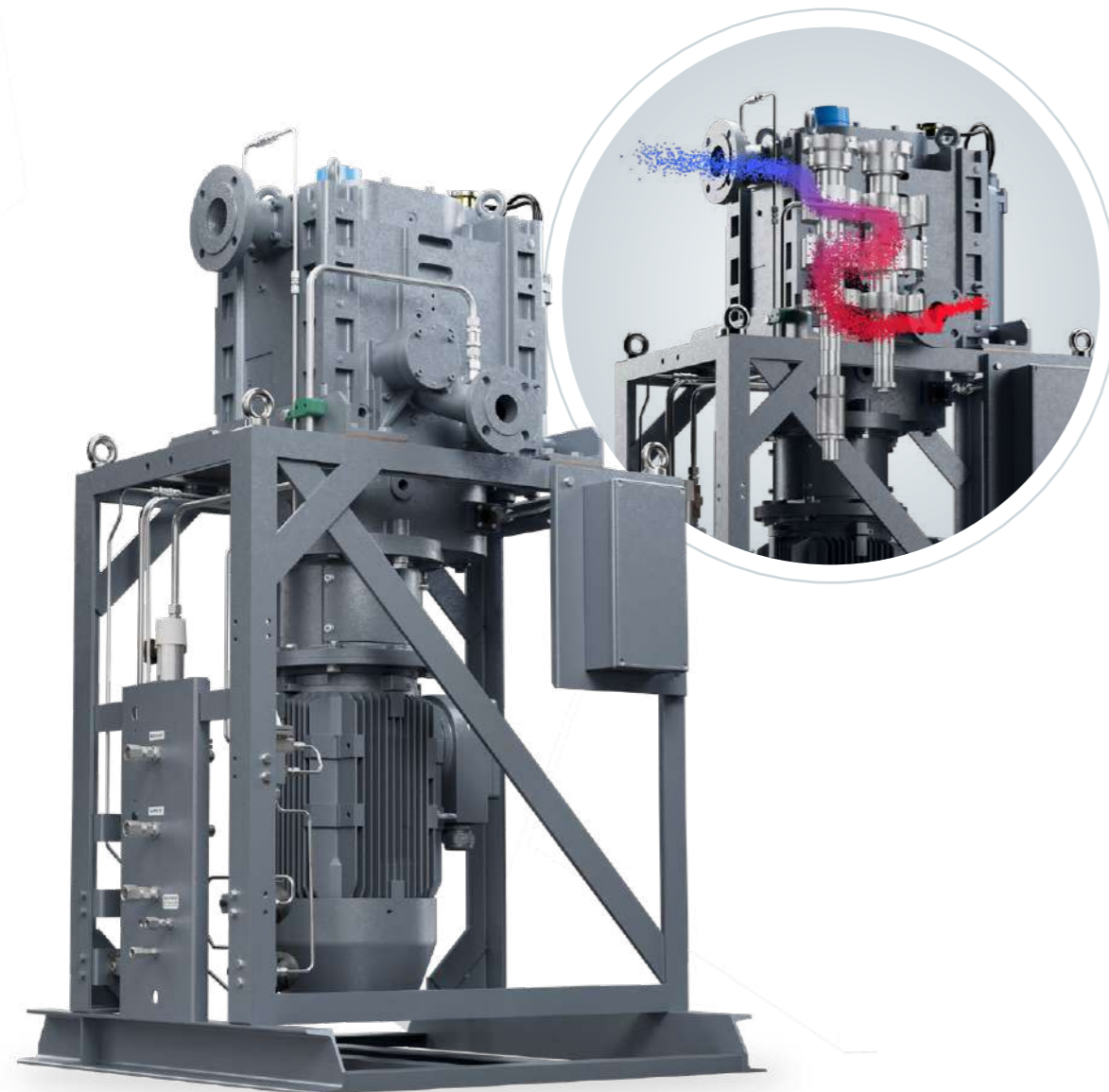


Lower cost of ownership



## DESIGNED AND TESTED FOR SAFETY AND RELIABILITY

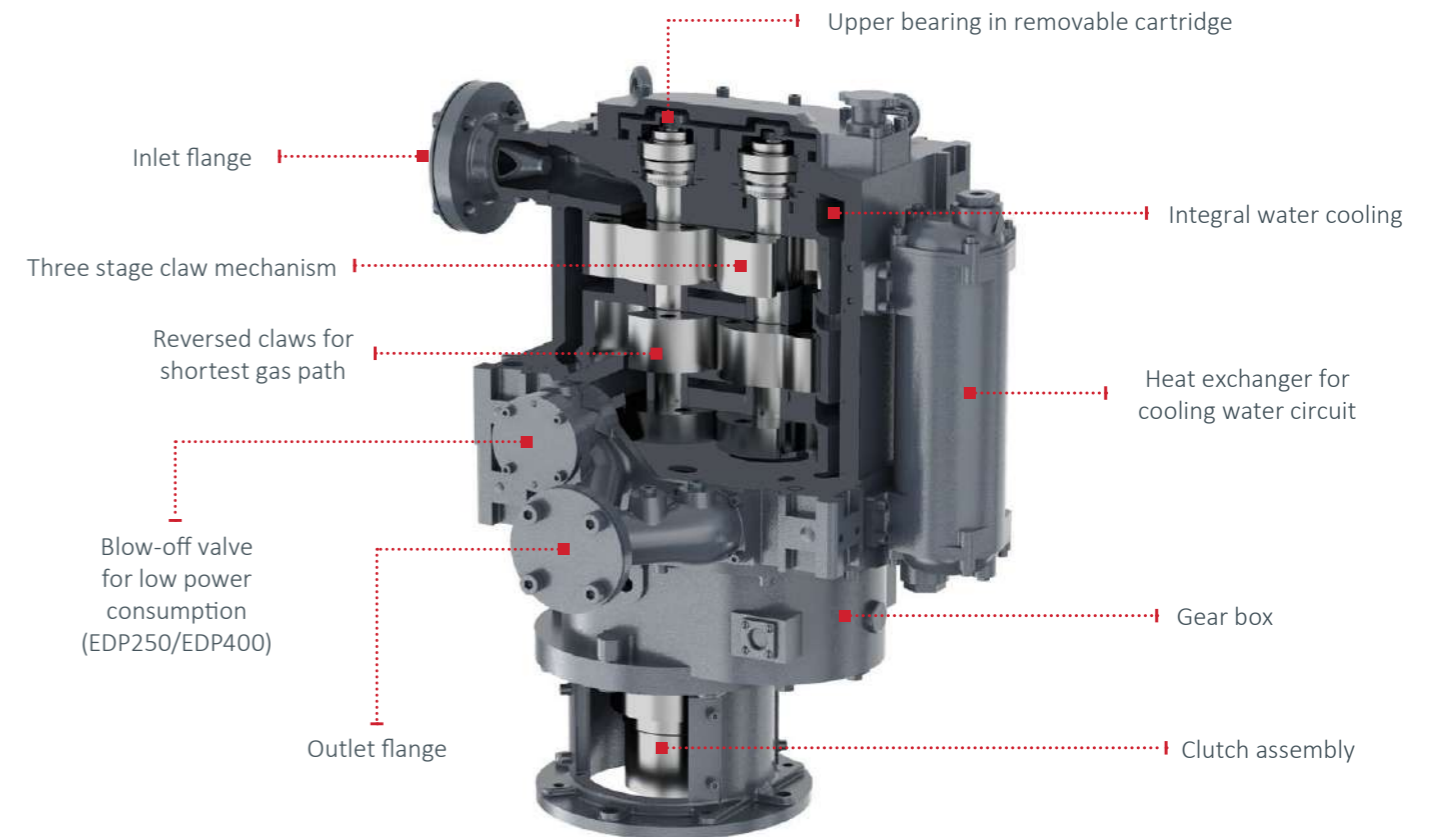
- Temperature control for optimised operating conditions- hot for corrosive applications and cool for other gases, if required
- Over-temperature protection for fault conditions
- Dynamically explosion tested and certified by independent authorities
- Non-brittle ductile iron materials of construction for stator and rotors
- Leak checked to  $10^{-3}$  mbar l/s and type pressure tested
- Largest installed base- most leading companies in the chemical and pharmaceutical industries are on our customer list
- Torque limiters to prevent damage to pump element in case of process build up



## DESIGNED FOR LONG LIFE AND EASY MAINTENANCE

- 1 year unattended operation
- 3 years between stripdowns
- Bearing cartridges quickly accessible
- Minimum number of seals and bearings
- Designed for a minimum of 25 years life expectancy

## INTERNAL MECHANISM OVERVIEW



## LOWER COST OF OWNERSHIP

- Easy maintenance at wide intervals
- Low power at operating vacuum
- Adjustable cooling water flow
- Minimum seal purge flow
- No cooling gas injection required
- Cheap to replace rotating parts

# SYSTEMISATION

Because no two installations are identical, Edwards offers a custom systemisation design and build service, exactly matched to customer needs, using pre-engineered modules together with an extensive CAD capability. This also allows subsequent expansion or reconfiguration. A wide range of modules is available, including:

- EH, HV and Stokes mechanical booster pumps
- Condensers
- Receivers
- Knockout pots
- Dust filters
- Solvent purging
- Flame arrestors
- Isolation and throttle control valves
- Instrumentation
- Silencers
- Inverter drives and pressure controls
- Electrical control panels
- Air blast closed-loop cooling
- Documentation
- Base skids

The requirement for these or other accessories is clarified through expert applications engineering. Work can be carried out to a customer's specifications, or to local or industry standard codes and practices. Full documentation is provided, and full certification can be obtained if necessary.

# TECHNICAL SPECIFICATIONS

	Units	EDP80		EDP160		EDP250		EDP400	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Noise (max. with exhaust silencer)									
Maximum pumping speed	m <sup>3</sup> h <sup>-1</sup>	83	102	163	202	260	320	377	427
	ft <sup>3</sup> min <sup>-1</sup>	49	60	96	119	153	188	222	251
Capacity at 10 mbar (7.5 Torr)	m <sup>3</sup> h <sup>-1</sup>	75	102	153	198	255	315	377	422
	ft <sup>3</sup> min <sup>-1</sup>	44	60	90	117	150	185	222	248
Ultimate vacuum	mbar	0.5	0.3	0.5	0.3	0.5	0.2	0.4	0.2
	Torr	0.4	0.2	0.4	0.2	0.4	0.2	0.3	0.2
Maximum back pressure - standard (optional*)	mbar	1150 (1300*)		1150 (1300*)		1150 (1300*)		1150	
	psig	2.2 (4.4*)		2.2 (4.4*)		2.2 (4.4*)		2.2	
Power consumption at 10 mbar (7.5 Torr)	kW	3.3	4.0	4.9	4.9	6.0	6.0	7.0	7.0
	hp	4.4	5.4	6.6	6.6	8.0	8.0	9.4	9.4
Standard motor (380 - 400V, 3 ph, 50 Hz)	kW	5.5	5.5	7.5	11.0	11.0	15.0	18.5	25.0
Standard motor (200 - 460V, 3 ph, 60 Hz)	hp	7.5	7.5	10.0	15.0	15.0	20.0	25.0	30.0
Cooling water flow rate (adjustable)	l min <sup>-1</sup>	1 - 8	1 - 10	1 - 8	1 - 10	1 - 10	1 - 10	1 - 10	1 - 10
	gal min <sup>-1</sup>	0.3 - 2.1	0.3 - 2.6	0.3 - 2.1	0.3 - 2.6	0.3 - 2.6	0.3 - 2.7	0.3 - 2.6	0.3 - 2.7
Cooling water supply pressure	barg	2 - 10							
	psig	29 - 145							
Seal purge flow (maximum), regulated to 0.3 - 0.5 barg (5 - 7 psig)	l min <sup>-1</sup>	20							
	ft <sup>3</sup> min <sup>-1</sup>	0.7							
Seal purge supply pressure (minimum - maximum)	barg	2 - 10							
	psig	29 - 145							
Noise (max. with exhaust silencer)	dB(A)	73	73	77	78	79	79	82	82
Weight (with frame and standard motor)	kg	648	650	747	756	848	860	918	960
	lbs	1429	1433	1647	1667	1870	1909	2024	2116
Process connection, inlet	ANSI/DIN	2"/DN50		3"/DN80		3"/DN80		3"/DN80	
Process connection, outlet	ANSI/DIN	1.5"/DN40		1.5"/DN40		2"/DN50		2"/DN50	
Pumping mechanism		3 stage reversed claw							

\* Consult Edwards

Data shown here refers to dry pumps only. Higher capacities and deeper vacuum levels are available by combining one or more dry mechanical boosters with EDP pumps. A wide range of systemisation accessories is also available, including condensers for enhanced performance and a number of safety, instrumentation and control options. Although every care has been taken in the preparation of data and dimensional drawings, please discuss your individual requirements with Edwards.

# APPLICATIONS

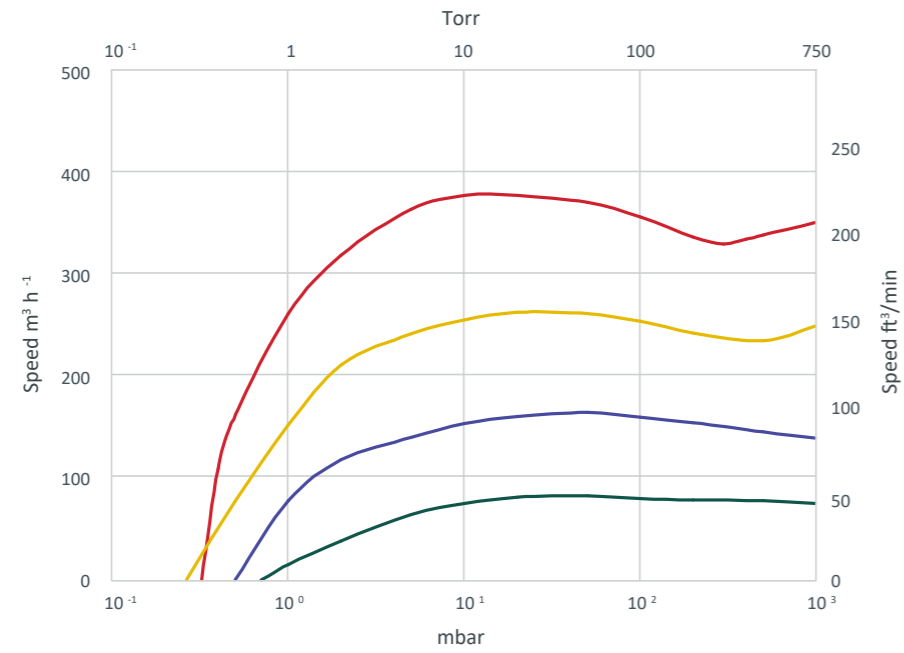
- Drying
- Distillation
- Reactor service
- Solvent recovery
- House/central vacuum
- Evaporation
- Polymerisation
- Ethylene oxide sterilisation
- Fatty acids and alcohols
- Bio-fuels
- Corrosive gases
- Flammable gases
- Pervaporation
- Absorption/desorption
- Crystallisation
- Filtration



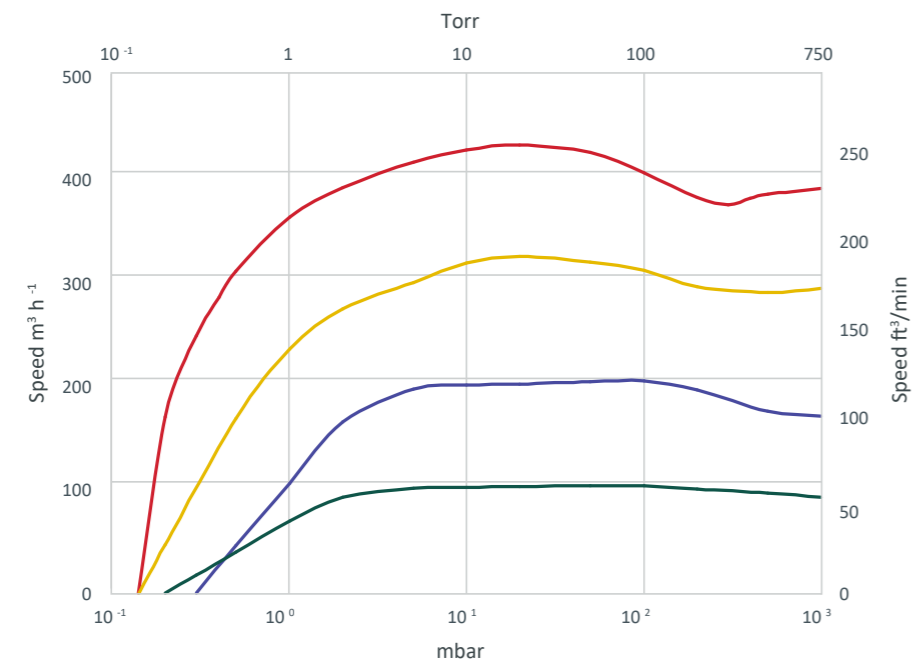


## PERFORMANCE CURVES

### EDP - 50Hz

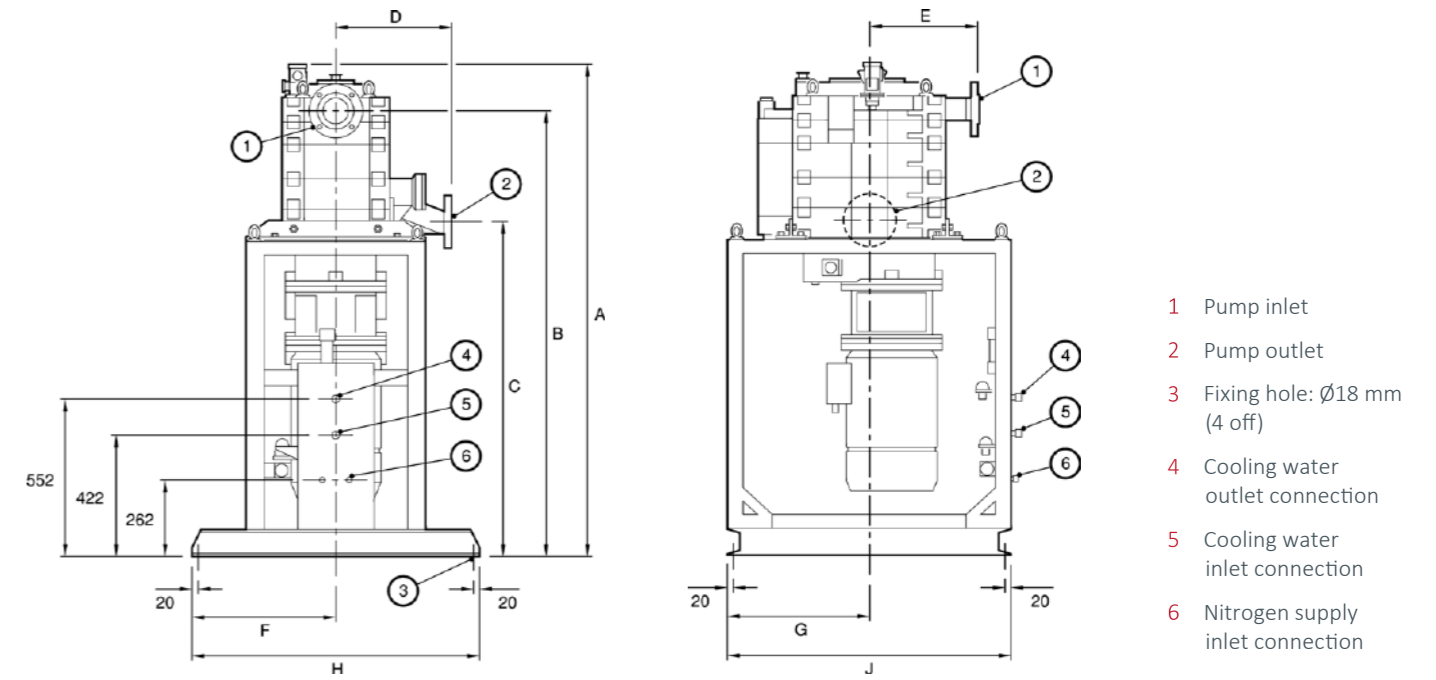


### EDP - 60Hz



— Speed EDP80     
 — Speed EDP160     
 — Speed EDP250     
 — Speed EDP400

## DIMENSIONS



Key	EDP80	EDP160	EDP250	EDP400 50 Hz	EDP400 60 Hz
A	1423 (56.0)	1458 (57.4)	1681 (66.2)	1730 (68.1)	1721 (67.8)
B	1254 (49.4)	1289 (50.7)	1514 (59.6)	1562 (61.5)	1549 (61.0)
C	974 (38.3)	974 (38.3)	1148 (45.2)	1148 (45.2)	1149 (45.2)
D	353 (13.9)	353 (13.9)	377 (14.8)	377 (14.8)	349 (13.7)
E	443 (17.4)	448 (17.6)	359 (14.1)	359 (14.1)	362 (14.3)
F	350 (13.8)	350 (13.8)	500 (19.7)	500 (19.7)	476 (18.7)
G	350 (13.8)	350 (13.8)	475 (18.7)	475 (18.7)	476 (18.7)
H	700 (27.6)	700 (27.6)	1000 (39.4)	1000 (39.4)	997 (39.3)
J	850 (33.5)	850 (33.5)	950 (37.4)	950 (37.4)	946 (37.2)

## ORDERING INFORMATION

Part number	Pump description
A70545000	EDP80 (50 Hz) Bareshaft Pump
A70547000	EDP80 (60 Hz) Bareshaft Pump
A70544000	EDP160 (50 Hz) Bareshaft Pump
A70546000	EDP160 (60 Hz) Bareshaft Pump
A70543000	EDP250 (50/60 Hz) Bareshaft Pump
A70542000	EDP400 (50 Hz) Bareshaft Pump
A70541000	EDP400 (60 Hz) Bareshaft Pump





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