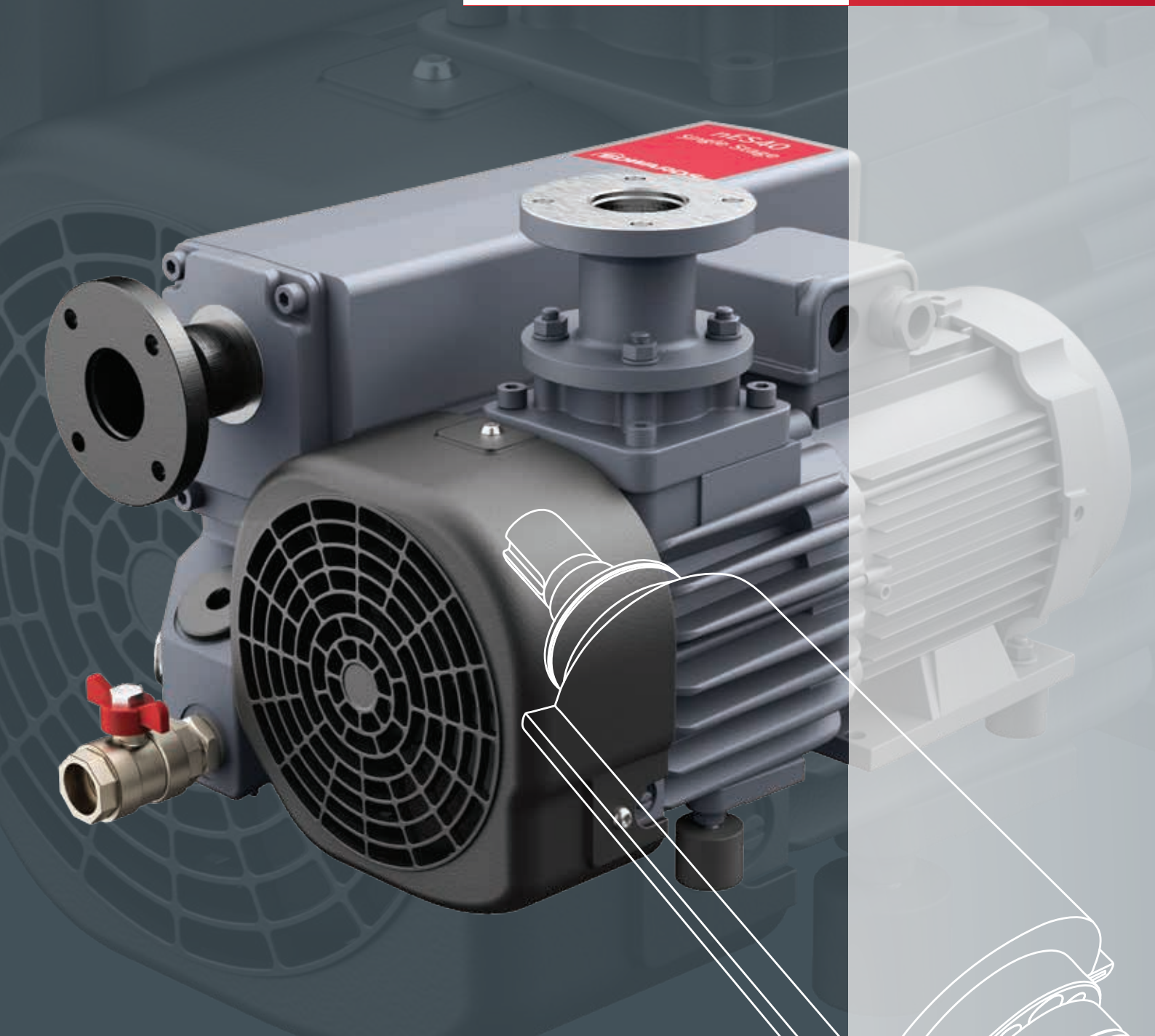
edwardsvacuum.com

nES SERIES SINGLE STAGE ROTARY VANE 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 99 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.

nES SERIES

NEXT GENERATION SINGLE STAGE ROTARY VANE PUMPS

The Edwards nES single stage series represents the next advancement in oil sealed rotary vane vacuum pumps for use in a wide of range industries and applications.

Offering high reliability, low life cycle cost and proven performance, the nES series provides an ideal solution to suit a broad range of requirements.

FEATURES

Proven performance

The Edwards nES series delivers consistent pumping performance with excellent vacuum stability. High pumping speed at low pressures with good condensable vapour handling capability provides an ideal solution for a range of applications.

High reliability

The pump mechanism provides high reliability ensuring maximum productivity. Engineered with high quality components, an effective oil return system and integrated mist filter, the nES series is designed to maximise process efficiency.

Low lifecycle cost

Efficient cooled motors, optimised oil retention, low pump temperatures, high reliability and minimum maintenance provides excellent lifecycle cost compared to other single stage rotary vane pumps.

Compact and clean

The nES series is both robust and compact in design. In addition, low noise and vibration minimises environmental impact.

nES PUMP TECHNOLOGY

PUMP MECHANISM

The pump mechanism is designed to provide optimum pumping performance without fluctuation in vacuum levels.

EFFICIENT COOLING

The efficient cooling system enables low operating temperatures and increased oil life improving reliability.

OIL RETURN SYSTEM

The optimised oil return and separation system supports stable pumping performance and minimises oil loss. Use of Edwards Ultragrade Performance 70 oil enables optimum pumping performance, and effective time between service.

GAS BALLAST FACILITY

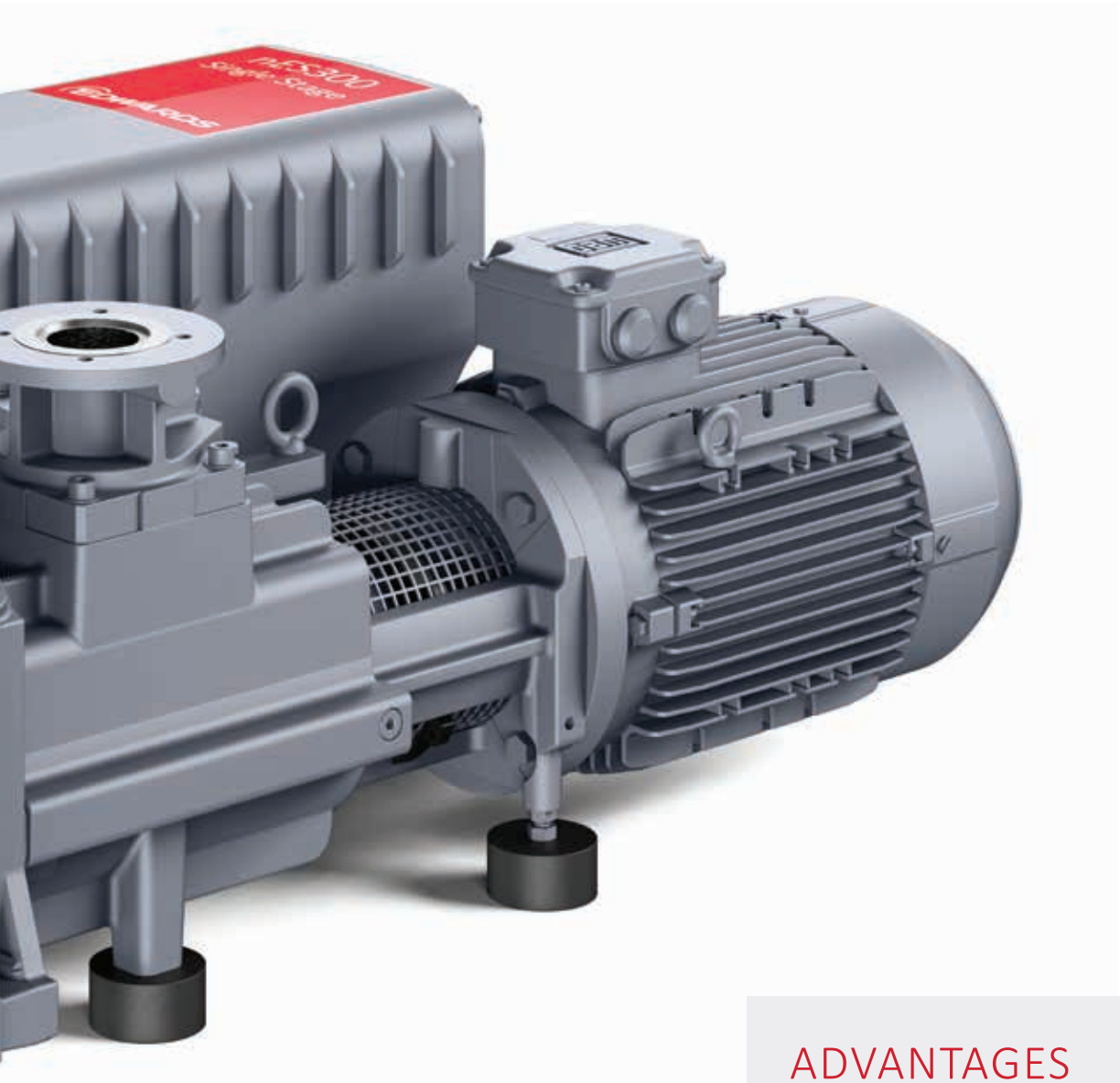
The gas ballast mechanism facilitates effective pumping and management of condensable vapours.

DRIVE TECHNOLOGY

Motors are highly efficient meeting latest efficiency standard and are in accordance with UL and European standards.

INSTALLATION FLEXIBILITY

Pumps are compatible with both ISO and G connections, providing flexibility in installation.



ADVANTAGES

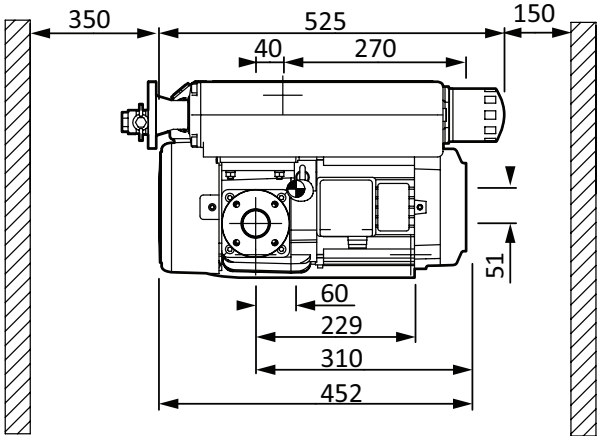
- High pumping speed at low pressure
- Stable vacuum performance with no pressure fluctuation
- Good condensable vapour handling capability with gas ballast
- Optimised oil return system and integrated exhaust mist filter
- Low noise and vibration
- Efficient cooled motor
- High reliability through proven technology
- Compact design
- Low and easy maintenance - therefore high productivity

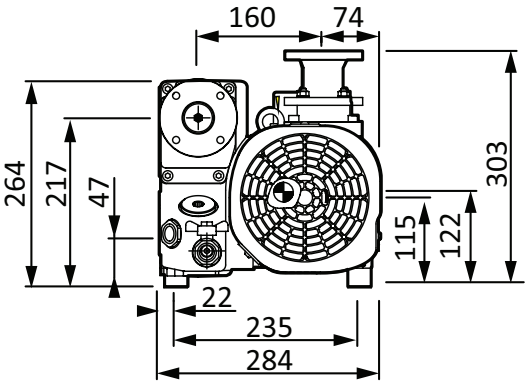
TECHNICAL DATA

	Units	nES40	nES65	nES100	nES200	nES300
Maximum Displacement 50Hz	m^3h^{-1} / cfm	44.0/25.9	59.0/34.8	98.0/57.4	180/106	280/165
Maximum Displacement 60Hz	m^3h^{-1} / cfm	53.0/31.2	71.0/41.8	117/68.9	230/130	340/200
Pumping Speed (50 Hz)	m^3h^{-1} / cfm	38.5/22.7	54.0/31.8	87.5/51.5	170/100	240/141
Pumping Speed (60 Hz)	m^3h^{-1} / cfm	47.0/27.7	64.0/37.7	105/61.8	200/118	290/171
Ultimate vacuum without gas ballast	mbar / torr	0.5/0.4	0.5/0.4	0.5/0.4	0.08/0.06	0.08/0.06
Ultimate vacuum with gas ballast	mbar / torr	1.5/1.1	1.5/1.1	1.5/1.1	0.7/0.5	0.7/0.5
Inlet Connection	ISO / G	ISO40 / G1 ¼	ISO40 / G1 ¼	ISO40 / G1 ¼	ISO63 / G2	ISO63 / G2
Outlet Connection	ISO / G	ISO40 / G1 ¼	ISO40 / G1 ¼	ISO40 / G1 ¼	ISO63 / G2	ISO63 / G2
Max permitted outlet pressure	bar gauge	1.15 abs	1.15 abs	1.15 abs	1.15 abs	1.15 abs
Max water vapour pumping rate (50Hz)	kgh^{-1} / lbh^{-1}	0.76/0.80	1.0/1.1	1.60/1.69	3.4/3.6	1.3/1.4
Max water vapour pumping rate (60Hz)	kgh^{-1} / lbh^{-1}	0.90/0.95	1.25/1.32	1.70/1.80	5.4/5/7	1.8/1.9
Dimensions (L, W, H) Approximate (tbc)	mm	623/332/296	706/367/312	762/434/317	1100/535/415	1143/573/450
Weight Approximate (tbc)	kg / lb	67/148	86/190	104/230	142/313	244/539
Motor protection rating		IP55	IP55	IP55	IP55	IP55
Motor power (50Hz)	kW / hp	1.5/2.0	2.2/3.0	3.0/5.0	5.5/8	7.5/10
Motor power (60Hz)	kW / hp	1.8/3.0	2.6/4/0	3.6/6.0	6.6/10	9/13
Noise level (50 Hz)	dB(A)	58	60	61	69	72
Noise level (60 Hz)	dB(A)	60	64	64	73	76
Oil refill capacity	litre	1	2	2	5-9	8.5-11.5
Recommended oil		Edwards ULTRAGRADE Performance 70				

DIMENSIONS

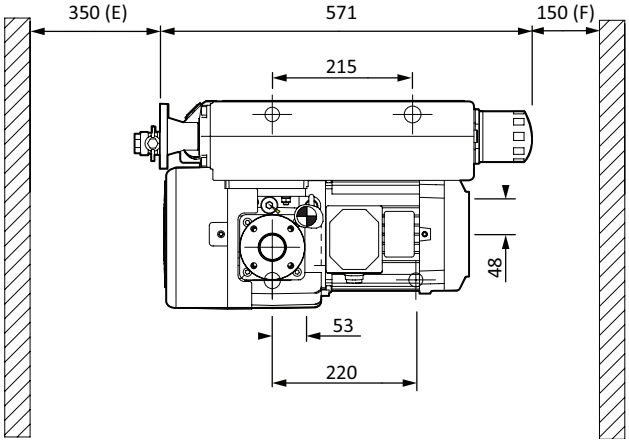
nES40

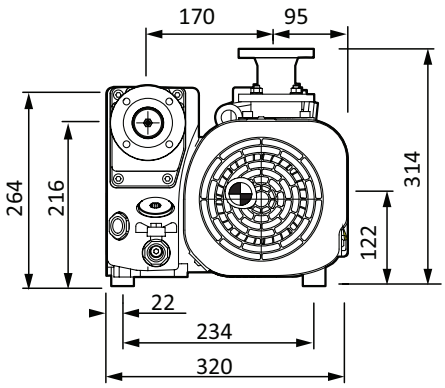




	Units	nES470	nES570	nES630	nES750
Maximum Displacement 50Hz	m^3h^{-1} / cfm	470/277	570/366	700/412	840/494
Maximum Displacement 60Hz	m^3h^{-1} / cfm	570/366	-	840/494	-
Pumping Speed (50 Hz)	m^3h^{-1} / cfm	400/236	470/277	640/377	755/444
Pumping Speed (60 Hz)	m^3h^{-1} / cfm	470/277	-	755/444	-
Ultimate vacuum without gas ballast	mbar / torr	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06
Ultimate vacuum with gas ballast	mbar / torr	0.7/0.5	0.7/0.5	0.7/0.5	0.7/0.5
Inlet Connection	ISO-F / G	ISO100 / G3	ISO100 / G3	ISO100	ISO100
Outlet Connection	ISO-F / G	ISO100 / G3	ISO100 / G3	ISO100	ISO100
Max permitted outlet pressure	bar gauge	1.15 abs	1.15 abs	1.15 abs	1.15 abs
Max water vapour pumping rate (50Hz)	kgh^{-1} / lbh^{-1}	5.0/5.3	7.5/8.0	17/18	24/25
Max water vapour pumping rate (60Hz)	kgh^{-1} / lbh^{-1}	7.5/8.0	-	24/25	-
Dimensions (L, W, H) Approximate (tbc)	mm	1305/863/733	1305/863/733	1566/989/740	1566/989/740
Weight Approximate (tbc)	kg / lb	480/1059	550/1214	760/1678	760/1678
Motor protection rating		IP55	IP55	IP55	IP55
Motor power (50Hz)	kW / hp	11/15	11/15	18.5/26	18.5/26
Motor power (60Hz)	kW / hp	13.2/18	-	21/30	-
Noise level (50 Hz)	dB(A)	72	75	72	75
Noise level (60 Hz)	dB(A)	75	-	75	-
Oil refill capacity	litre	20	20	20-23	20-23
Recommended oil		Edwards ULTRAGRADE Performance 70			

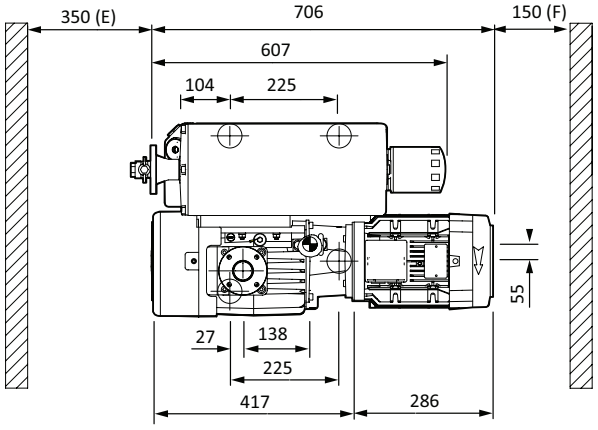
nES65

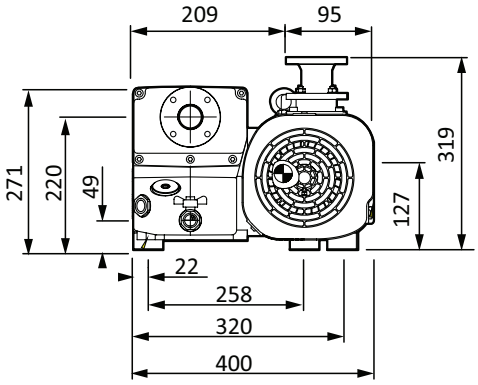




DIMENSIONS

nES100





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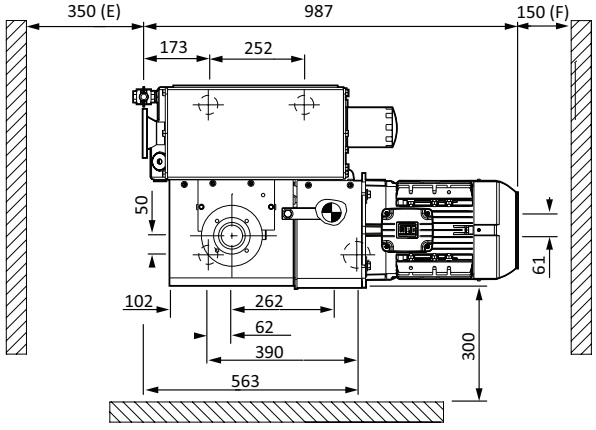

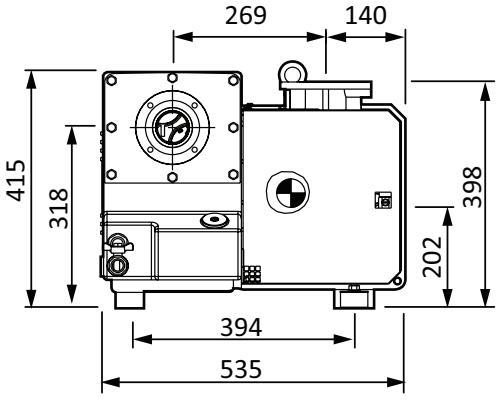

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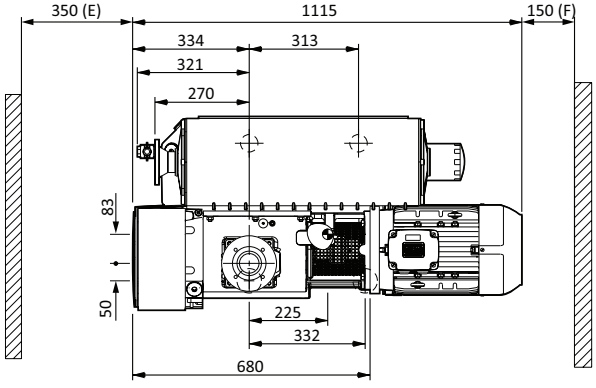
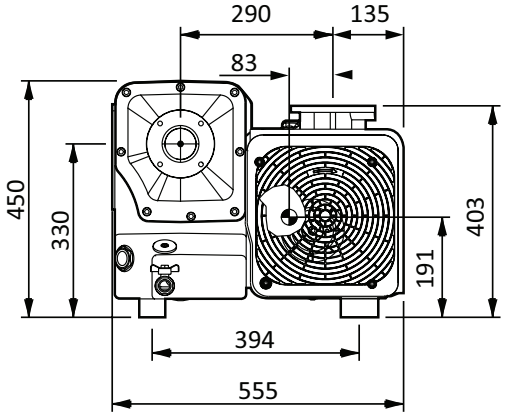
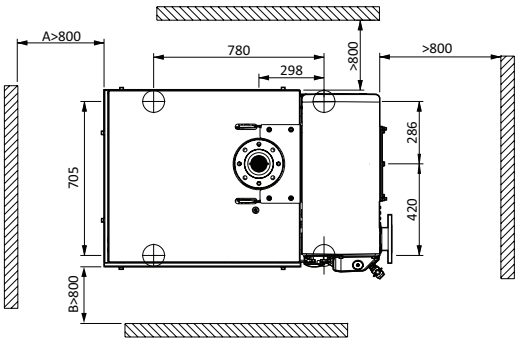
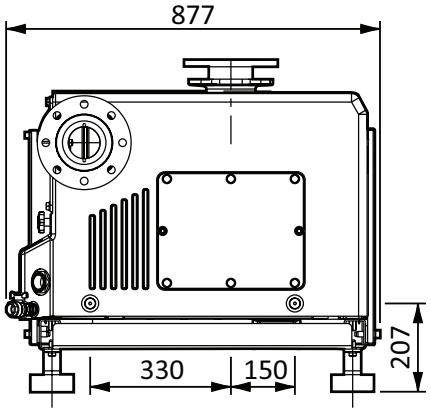


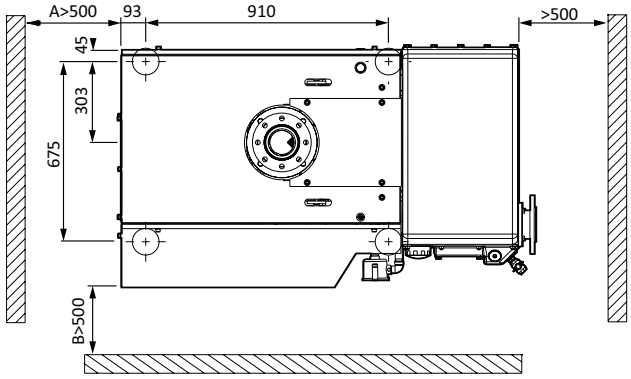


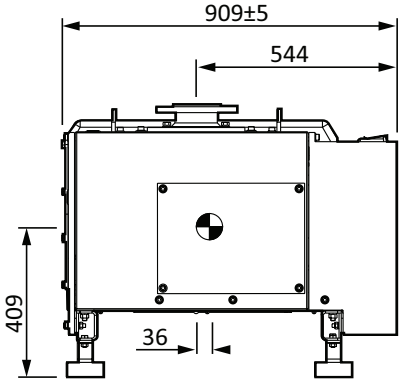
nES470 / nES570





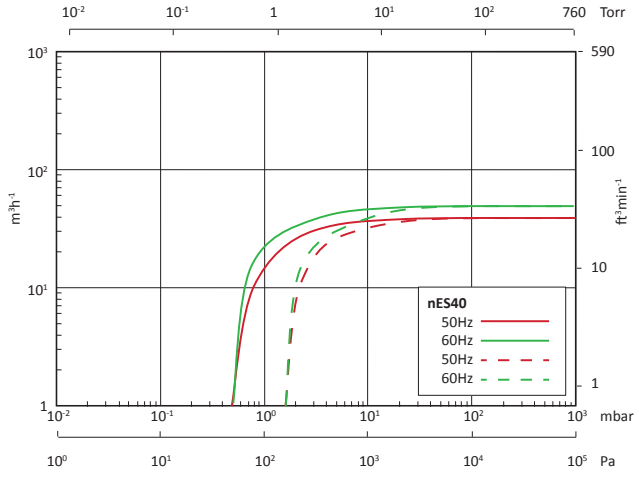
nES630 / nES750





PERFORMANCE CURVES

nES40



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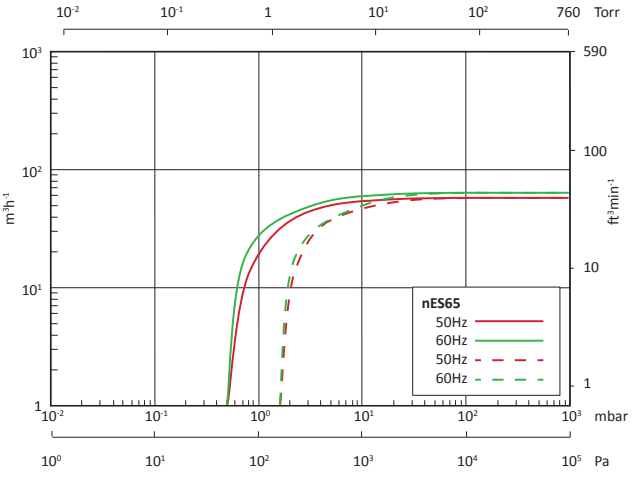
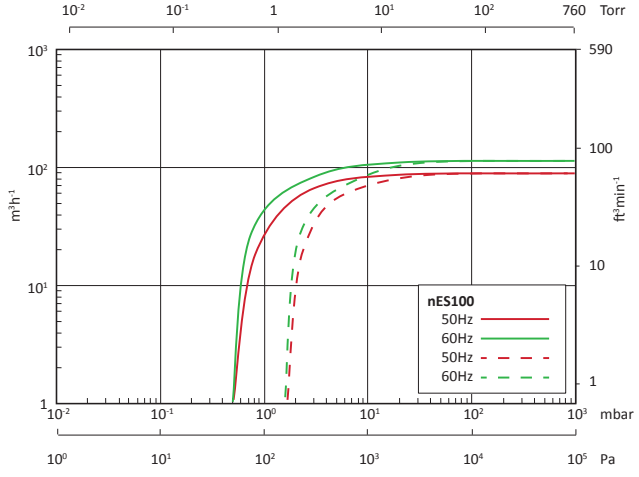
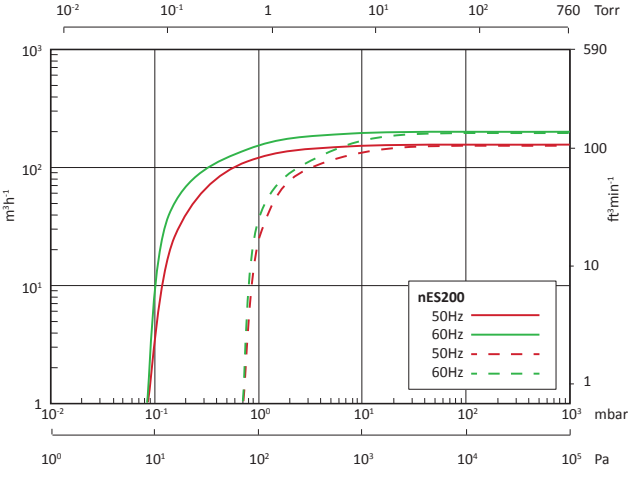


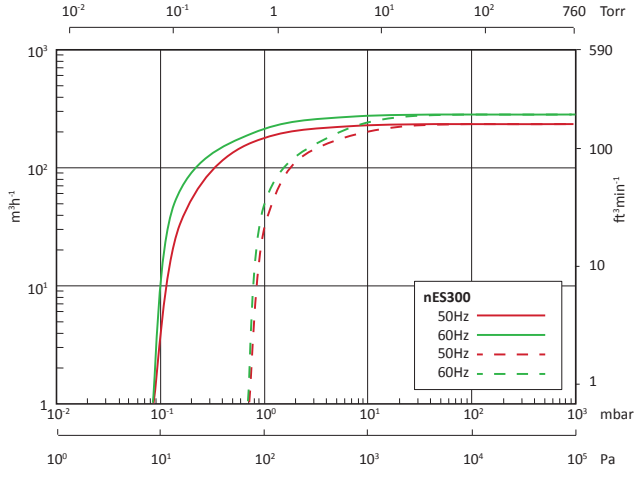
nES100



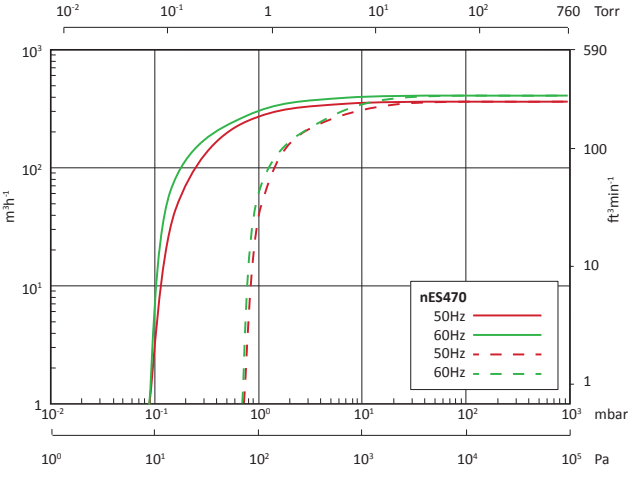
nES200



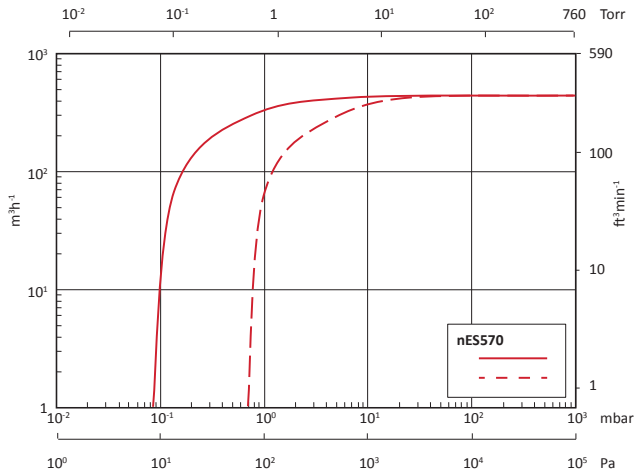
nES300



nES470



nES570



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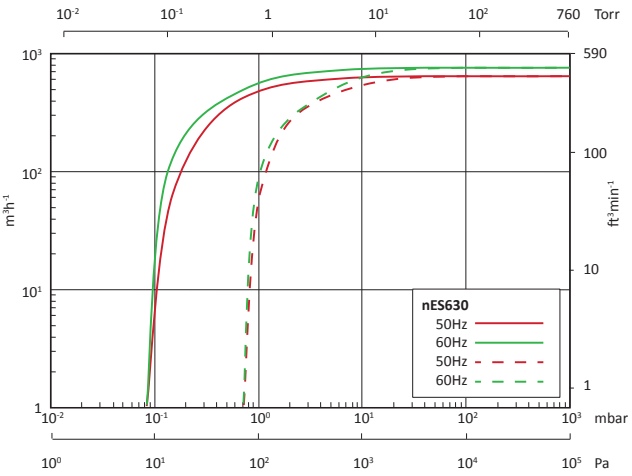

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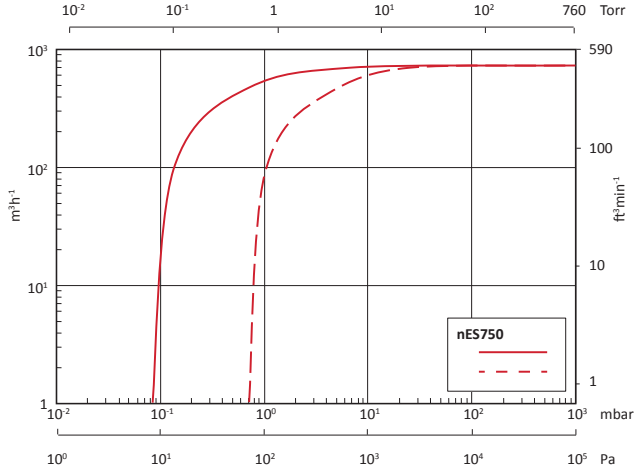

Without gas ballast

With gas ballast

APPLICATIONS

nES series single stage pumps offer an ideal combination of vacuum performance and stability with convenience and investment affordability in a wide range of Industrial applications.

Coating

- Load locks of glass coater and large in line coaters
- Web and roll coating
- Optical, ophthalmic and display coating
- Surface coating like plasma deposition and reflective or decorative

Heat treatment

- Tempering
- Quenching
- Annealing
- Vacuum brazing
- E-beam and plasma welding

Drying

- Transformer drying
- Automotive drying and filling systems
- Refrigeration and air conditioning
- Battery and capacitor drying

General industrial

- Sterilisation
- Plasma cleaning/sterilising
- Oil/resin degassing
- Food processing
- Leak detection
- Cryo interspace evacuation
- Vacuum insulated panels
- Vacuum insulated glass
- Cylinder filling

nES PUMP AND BOOSTER COMBINATIONS

Edwards is able to offer a range of nES rotary vane pumps and mechanical boosters, complete with combination kits to mount the mechanical booster. The fitting of a mechanical booster to an nES rotary vane pump significantly increases the pumping speed and vacuum performance of your system, as well as increasing the ultimate vacuum attainable.

Edwards is able to assist in the selection of the combination most suited to your requirement.

EH range

The EH range of mechanical boosters (250-4200 m^3h^{-1}, 150-2500 cfm), with their unique hydrokinetic drive allowing continuous operation from atmosphere to ultimate vacuum, cuts pump down times by up to 50%.

Systemisation

Our comprehensive range of nES pumps and EH mechanical boosters, complete with combination kits allows the user to specify a complete system. Specifying a combination is simply a process of selecting the nES pump and the required mechanical booster which would enable us to build a complete systemised unit ready to use.

Depending on the type of nES and booster pump combination the assembled unit will either be a Frame Mount or a Direct Mount unit. Alternatively, combination kits are available to allow the nES pump and EH mechanical booster, to be assembled at the customers site.

Please contact Edwards for additional information.

nES40

nES65

nES100

nES200

nES300

nES470

nES570

nES630

nES750

ORDERING INFORMATION

Model	Motor rating	Voltage	Cooling	Part Number
nES40	Wide range	220 - 230 V & 380 - 400 V +-10 %; 50 Hz 220 - 230 V & 380 - 400 V & 440 - 460 V +-10 %; 60 Hz	Air	A35104940
	Japan	200 V -15 % + 10 %; 50 & 60 Hz	Air	A35104934
nES65	Wide range	220 - 230 V & 380 - 400 V +-10 %; 50 Hz 220 - 230 V & 380 - 400 V & 440 - 460 V +-10 %; 60 Hz	Air	A35304940
	Japan	200 V -15 % + 10 %; 50 & 60 Hz	Air	A35304934
nES100	Wide range	220 - 240 V & 380 - 415 V +-10 %; 50 Hz 220 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Air	A35404940
	Japan	200 V -15 % + 10 %; 50 & 60 Hz	Air	A35404934
nES200	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 440 - 460 V +-10 %; 60 Hz	Air	A35504950
nES300	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Air	A35604950
nES470	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Air	A35704950
	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Water	A35705950
nES570	Wide range (incl. JP) 50 Hz only	200 - 240 V & 380 - 415 V +-10 %; 50 Hz only	Air	A35804954
	Wide range (incl. JP) 50 Hz only	200 - 240 V & 380 - 415 V +-10 %; 50 Hz only	Water	A35805954
nES630	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Air	A35904950
	Wide range (incl. JP)	200 - 240 V & 380 - 415 V +-10 %; 50 Hz 200 - 230 V & 380 - 400 V & 460 V +-10 %; 60 Hz	Water	A35905950
nES750	Wide range (incl. JP) 50 Hz only	200 - 240 V & 380 - 415 V +-10 %; 50 Hz only	Air	A36904954
	Wide range (incl. JP) 50 Hz only	200 - 240 V & 380 - 415 V +-10 %; 50 Hz only	Water	A36905954

SERVICE AND SUPPORT

nES series single stage rotary vane pumps are designed with a number of features which enable routine maintenance to be conducted with minimal specialised tooling and knowledge. Scheduled routine maintenance shall include activities deemed beneficial to the continued performance and longevity of the product. All work must be done by suitably trained personnel. Before any maintenance operations are carried out on the pump, it should be ensured that the pump and its surroundings are free from flammable atmospheres and dust deposits.

We can provide the following fast and effective service solutions for nES series pumps.

- Our field service teams carry out essential maintenance, repair and commissioning service at your site.
- We invest in the tools, training and inventory that enable our team of service engineers to deliver quality service in a safe and consistent manner. We can assist site staff in performing routine maintenance or troubleshoot a specific problem.
- We also support module exchange to facilitate rapid and cost effective turn round, and minimise disruption to installed and configured systems. We maintain comprehensive inventory of service exchange products. Every pump has been tested and is ready for immediate installation.
- Alternatively you can return the pump to Edwards for overhaul as required.

If you wish to conduct more complex maintenance or overhaul tasks it is necessary to be trained by fully qualified Edwards engineers and be supplied with the correct maintenance and inspection tooling.

- Dedicated spares kits containing everything required in one simple package for maintenance.
- Low cost dedicated tooling to perform removal and replacement of the critical components.

edwardsvacuum.com

GLOBAL CONTACTS

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