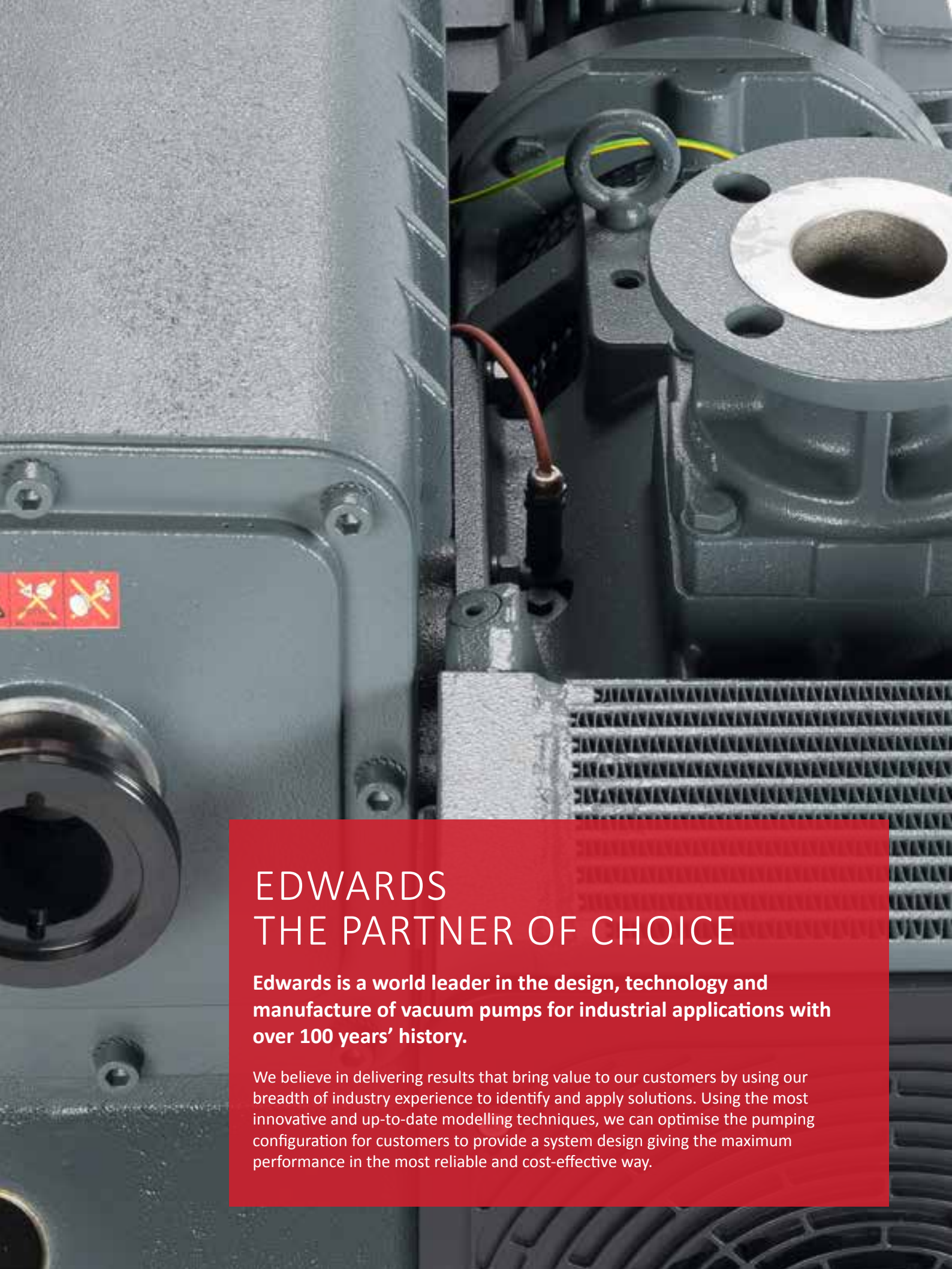


nES SINGLE STAGE EX SERIES ROTARY VANE PUMPS FOR EXPLOSIVE ENVIRONMENTS





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.

nES SINGLE STAGE EX SERIES

NEXT GENERATION SINGLE STAGE ROTARY VANE PUMPS

The Edwards nES single stage EX series represents the next advance in single stage oil sealed rotary vane vacuum pumps for use in explosive environments.

EXPLOSIVE ENVIRONMENTS

Edwards nES single stage EX series rotary vane pumps have been specifically designed to be capable of handling gases from a potentially explosive atmosphere and to operate in environments where a potentially explosive atmosphere can be present. Pumps have been certified under the ATEX directive 2014/34/EU.

nES single stage EX series pumps are equipped with a variety of sensors:



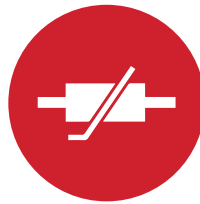
PUMP
TEMPERATURE



PRESSURE IN
OIL CASING



OIL LEVEL



PTC MOTOR
THERMISTORS

nES single stage EX series pumps are also supplied with:

- ATEX rated exhaust mist filter
- FPM seals
- Oil filter bypass
- ATEX rated motor and coupling
- Approved oil
- Gas ballast facility

BENEFITS

1. PROTECTION

Equipment with a range of sensors providing protection in-line in with ATEX directive 2014/34/EU.

2. INTERNAL MECHANISM

Designed for minimal hot spots ensuring lowest possible temperature class. The pump mechanism is designed with attention to detail that guarantees a class-leading ultimate vacuum level without the pressure fluctuations.

3. INTEGRATED OIL MIST FILTER

The improved integrated exhaust mist filter is effective in preventing oil mist from being exhausted into the environment. It is user serviceable and gives the pump a much cleaner operation with low maintenance.

4. AIR COOLING

The pump is provided with an efficient air flow management system that enables a low operating temperature and increased oil life, without the need for water cooling.

5. OIL RETURN SYSTEM

The enhanced oil return system gives an excellent vacuum stability. Use of Edwards Ultragrade Extend 110 Oil not only gives an improved vacuum performance but also enables the pump to withstand high operating temperatures without oil degradation thus extending intervals between oil changes.

6. INLET CONNECTION

Inlet connections are compatible with DN ISO and ANSI flanges providing the user with installation flexibility.

7. DIRECT DRIVE TECHNOLOGY

Motors are certified to ATEX directive 2014/34/EU. Variants are also available for the US market.



ADVANTAGES

- Built-in sensors and monitoring providing added protection
- Suitable for a wide range of applications
- High pumping speed at low pressures
- Stable vacuum performance with no pressure fluctuation
- Good condensable vapour handling capability with gas ballast
- High reliability through proven technology
- Low noise and vibration
- Space efficient through compact design
- Optimised oil return system and integrated exhaust mist filter
- Efficient air cooled motor
- Low and easy maintenance - therefore high productivity



APPLICATIONS

The nES single stage EX series pumps are suitable for use in a broad range of applications where protection in explosive environments is required.

Few applications areas where an appropriate level of protection is required:

- Chemical
- Pharmaceutical
- Sterilising with ethylene oxide
- Recovery of air conditioning gases
- Degassing of power plant alternator oil
- Automotive
- Gas vapour recovery
- Gas bottle filling



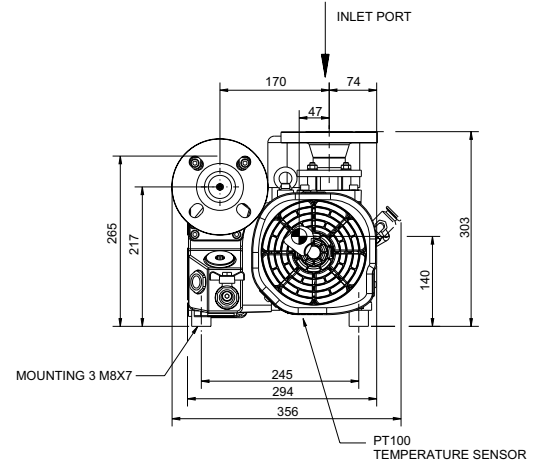
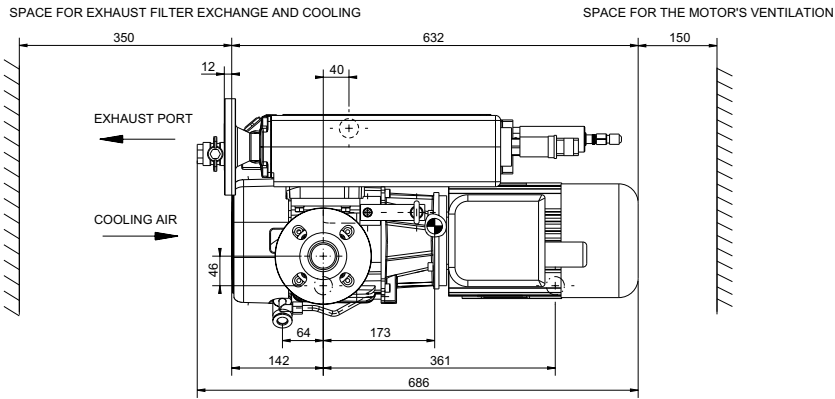
TECHNICAL DATA

	Units	nES40ex	nES65ex	nES100ex	nES200ex	nES300ex	nES630ex
Maximum displacement (50 Hz)	m ³ h ⁻¹ / cfm	44.0 / 25.9	59.0 / 34.8	98.0 / 57.4	180 / 106	280 / 165	700 / 412
Maximum displacement (60 Hz)	m ³ h ⁻¹ / cfm	53.0 / 31.2	71.0 / 41.8	117 / 68.9	220 / 130	340 / 200	-
Pumping Speed (50 Hz)	m ³ h ⁻¹ / cfm	38.5 / 22.7	54.0 / 31.8	87.5 / 51.5	170 / 100	240 / 141	640 / 377
Pumping Speed (60 Hz)	m ³ h ⁻¹ / cfm	47.0 / 27.7	64.0 / 37.7	105 / 61.8	200 / 118	290 / 171	-
Ultimate vacuum (total pressure) no gas ballast	mbar / torr	0.5 / 0.4	0.5 / 0.4	0.5 / 0.4	0.15 / 0.13	0.15 / 0.13	0.15 / 0.13
Ultimate vacuum (total pressure) 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	0.7 / 0.5
Inlet connection	ISO / ANSI	DN40 / ANSI 1"1/2	DN40 / ANSI 1"1/2	DN40 / ANSI 1"1/2	DN50 / ANSI 2"	DN50 / ANSI 2"	DN100 ISO-K / ANSI 4"
Outlet connection	ISO / ANSI	DN40 / ANSI 1"1/2	DN40 / ANSI 1"1/2	DN40 / ANSI 1"1/2	DN50 / ANSI 2"	DN50 / ANSI 2"	DN100 ISO-K / ANSI 4"
Max permitted outlet pressure	bar (abs)	1.15	1.15	1.15	1.15	1.15	1.15
Max water vapour pumping rate (50 Hz)	kg h ⁻¹ / lb h ⁻¹	0.76 / 0.80	1.0 / 1.1	1.60 / 1.69	3.4 / 3.6	1.3 / 1.4	17 / 18
Max water vapour pumping rate (60 Hz)	kg h ⁻¹ / lb h ⁻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)	mm	686 / 356 / 303	748 / 386 / 349	810 / 434 / 319	1084 / 535 / 435	1143 / 573 / 450	1568 / 989 / 740
Weight	kg / lb	67 / 148	86 / 190	104 / 230	142 / 313	244 / 539	695 / 1534
Motor Protection rating		IP55	IP55	IP55	IP55	IP55	IP65
Motor Power (50 Hz)	kW / hp	1.5 / 2.0	2.2 / 3.0	3.0 / 5.0	5.5 / 8	7.5 / 10	18.5 / 26
Motor Power (60 Hz)	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	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	20 - 23
Recommended oil	Ultragrade Endurance Extend 110						

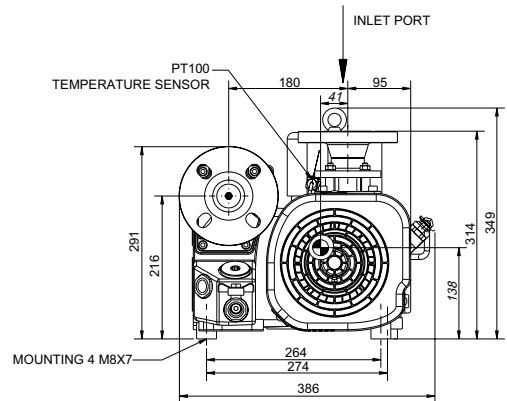
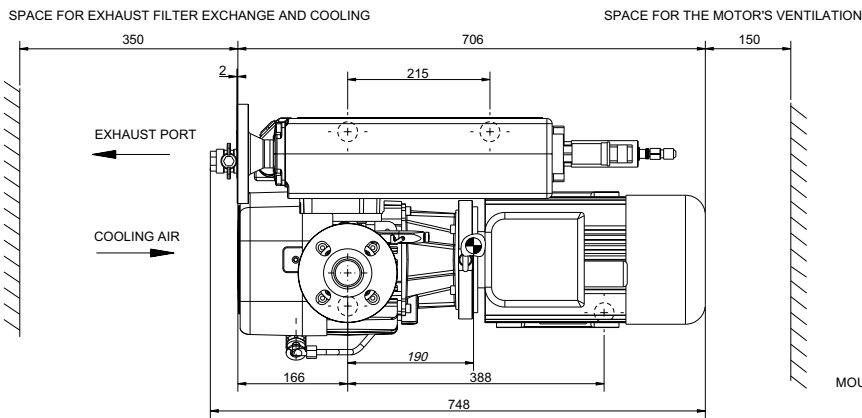


DRAWINGS AND DIMENSIONS

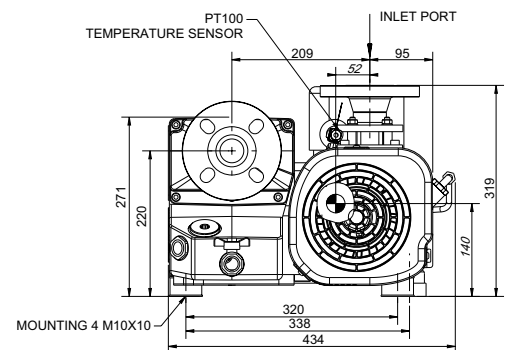
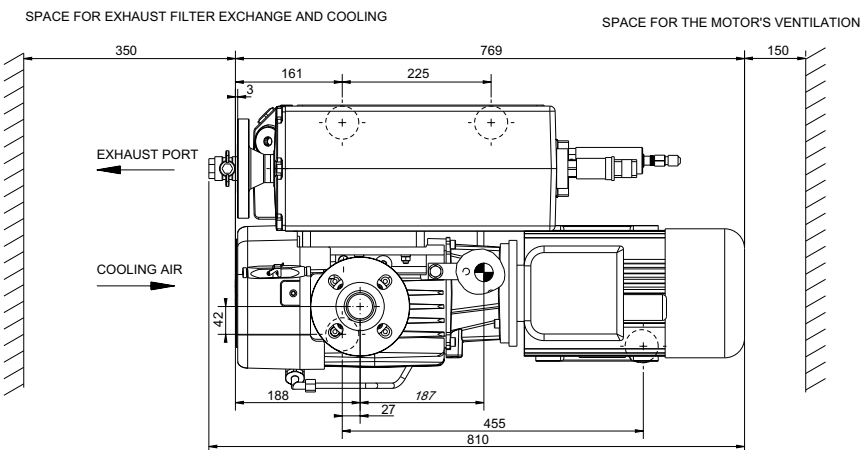
nES40ex



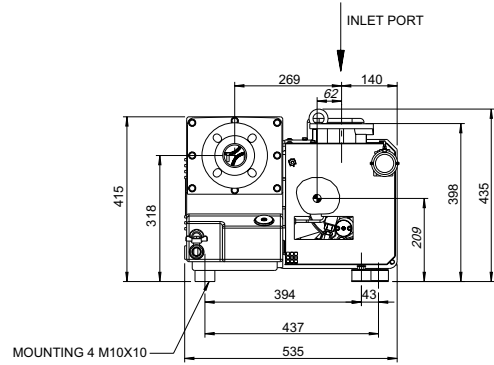
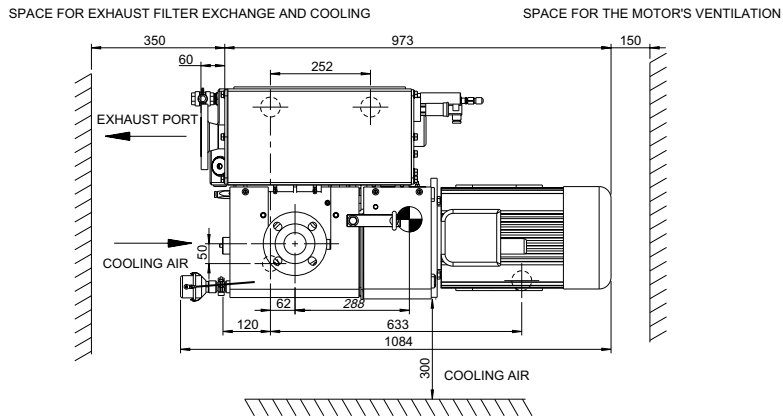
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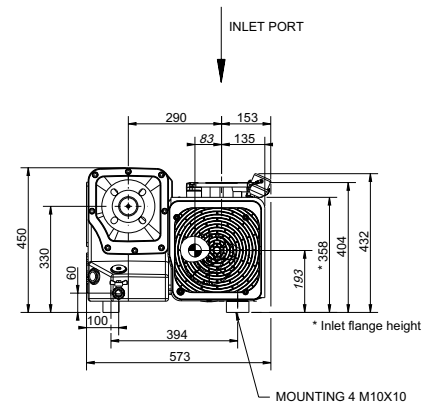
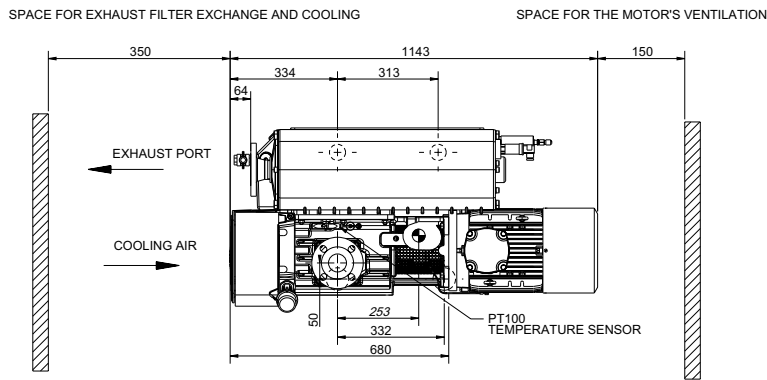
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nES200ex

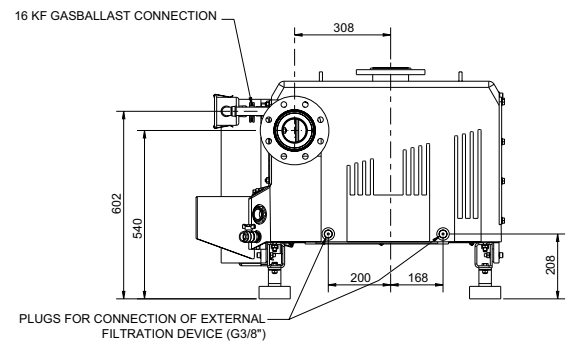
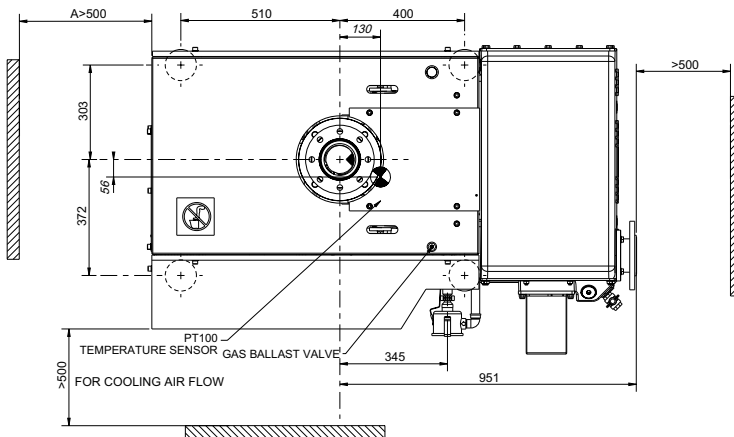


nES300ex



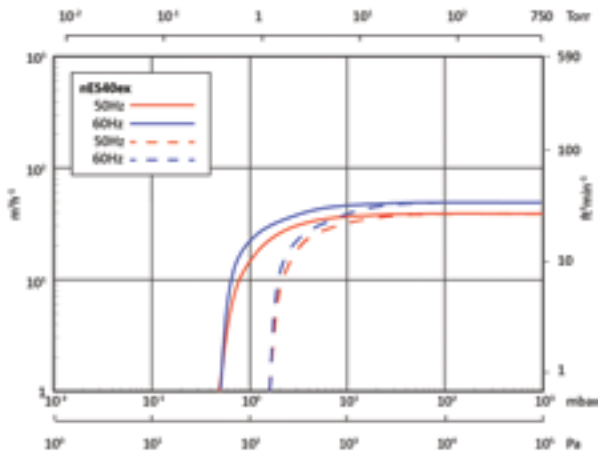
nES630ex

A: SPACE TO ACCESS TO ELECTRICAL CONNECTION

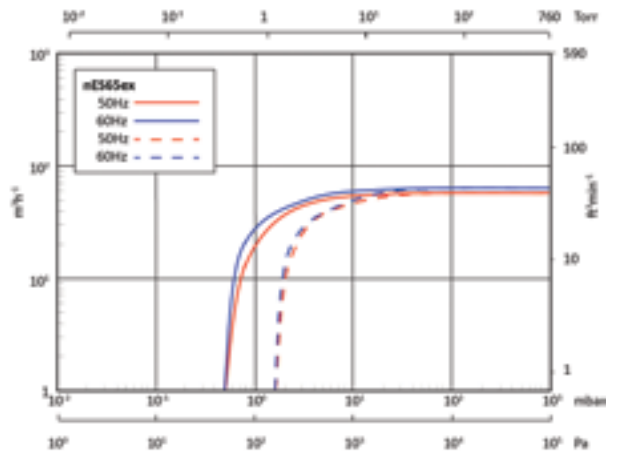


PERFORMANCE CURVES

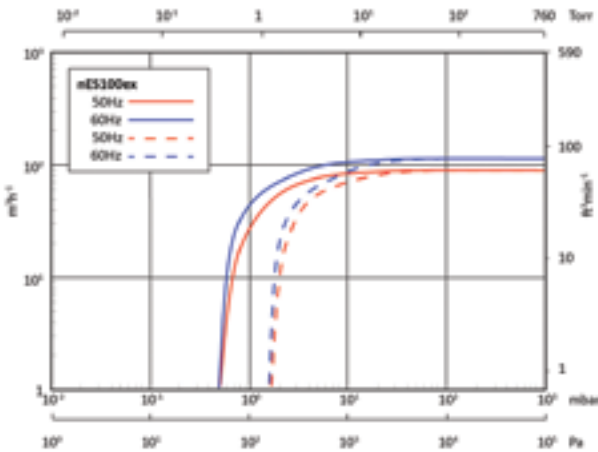
nES40ex



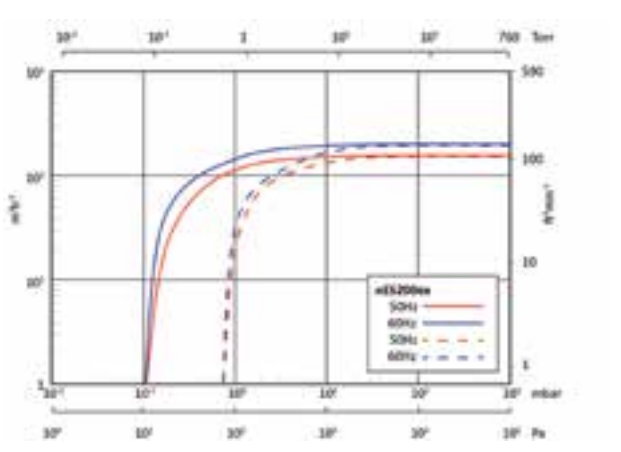
nES65ex



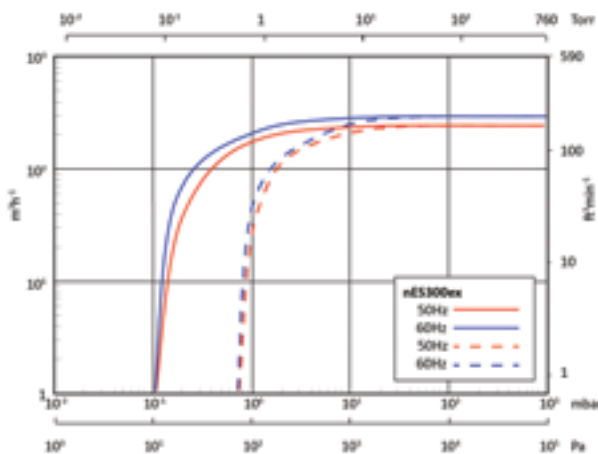
nES100ex



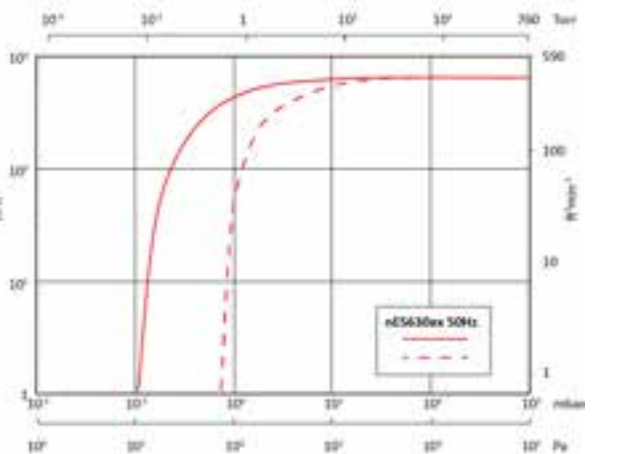
nES200ex



nES300ex



nES630ex



Without gas ballast



With gas ballast

SERVICE AND SUPPORT

nES single stage EX series pumps are designed with a number of features which enable both 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 ATEX 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 provide the following fast and effective service solutions for nES single stage EX 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 teams 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 turnaround, 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 STC 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 bearing and shaft seals.

ORDERING INFORMATION

nES single stage EX series: ATEX Category 2

Compliant to ATEX Directive 2014/34/EU

Model	Motor rating	ATEX Category 2	Part Number
nES40ex	230 & 400 V +- 10 %; 50 Hz and 460 V +- 10 %; 60 Hz. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 2 G IIC T4 (10 <Ta< 40 °C) X	A35118940
nES65ex	230 & 400 V +- 10 %; 50 Hz and 460 V +- 10 %; 60 Hz. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 2 G IIC T4 (10 <Ta< 40 °C) X	A35318940
nES100ex	230 & 400 V +- 10 %; 50 Hz and 460 V +- 10 %; 60 Hz. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 2 G IIC T4 (10 <Ta< 40 °C) X	A35418940
nES200ex	230 & 400 V +- 10 %; 50 Hz and 460 V +- 10 %; 60 Hz. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 2 G IIC T4 (10 <Ta< 40 °C) X	A35518940
nES300ex	230 & 400 V +- 10 %; 50 Hz and 230 V +- 10 %; 60 Hz. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 2 G IIC T4 (10 <Ta< 40 °C) X	A35618940
nES630ex	400 & 690 V +- 10 %; 50 Hz only. Air cooled.	Ex II (internal) 2 G b IIB+H2 T3 / (external) 3 G IIC T3 (T150 °C)(10 <Ta< 40 °C) X	A35818940

nES single stage EX series: Bare shaft

Edwards nES single stage EX series bare shaft pumps have the same pump protection features, excluding motor related components. Pumps are supplied ready for local motor fitting.

*Bare shaft IEC flange available on request.

*Bare shaft pumps are not ATEX compliant.

Bare shaft pump (Non ATEX compliant)	Motor mounting flange (NEMA)	Part Number
nES40ex - without motor	145TC	A35118986
nES65ex - without motor	145TC	A35318986
nES100ex - without motor	184TCH	A35418986
nES200ex - without motor	213TC	A35518986
nES300ex - without motor	215TC	A35618986



GLOBAL CONTACTS

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