

# nHT SERIES HIGH-THROUGHPUT DIFFUSION PUMPS





# 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.



# nHT SERIES

## NEXT-GENERATION HIGH-THROUGHPUT DIFFUSION PUMPS

The Edwards nHT series diffusion pumps provide stable high-throughput vacuum performance. Designed for optimum energy efficiency, flexibility and low maintenance, the nHT series is the ideal solution for a variety of demanding industrial applications.

### ENERGY EFFICIENCY

The nHT series diffusion pumps have been designed for optimum heat transfer to the oil, resulting in faster heat-up times and a significant reduction in energy consumption. In addition, the use of the Energy Efficiency Controller (EEC) provides further reduction in power consumption – up to 30% without the loss of pumping performance.

#### Energy Efficiency Controller



#### Cut energy consumption by up to 30%

- 100% power during the warm-up phase
- 70% power on reaching the required oil temperature
- Further energy reduction with the use of standby mode
- USB interface and Ethernet connectivity
- Ease of operation and control



# BENEFITS

## Performance and stability

Optimised pumping speed and high throughput with good stability between  $10^{-2}$  and  $10^{-3}$  mbar – critical for many applications.

## Economy

Significant energy savings through innovative heating design providing faster warm-up time. When used with the Energy Efficiency Controller a further energy saving can be achieved – up to 30%.

## Reliability

Smart temperature control and on-board sensors as standard ensure minimum load with a longer lifetime for heaters and oil. Increased productivity through long maintenance intervals with non-wearing components and easy-to-change heater cartridges.

## Flexibility

Available in both ANSI and ISO flange options with voltage variants to cover global requirements. A broad range of accessories is available.

## Control

The Energy Efficiency Controller enables ease of use and operating convenience along with effective monitoring with USB and Ethernet interface.

# ADVANTAGES

- High-throughput pumping performance
- Energy efficiency
- Fast warm-up time
- High system uptime
- Easy to operate
- Low and simple maintenance
- Control capability via Energy Efficiency Controller (optional accessory)





# APPLICATIONS

## Metallurgy

- Sintering, precision investment casting (PIC)

## Heat treatment

- Quenching, tempering, annealing

## Welding

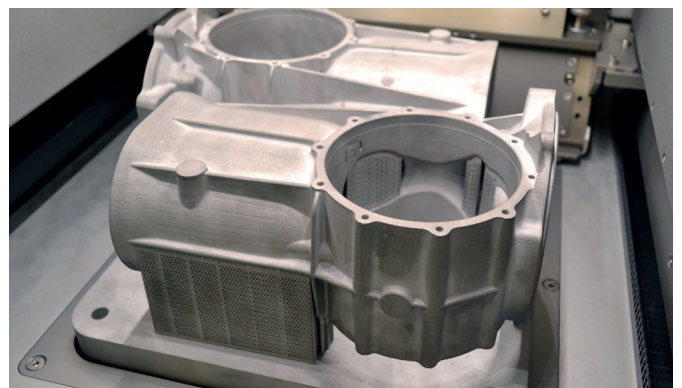
- E-beam welding, plasma welding

## Coating

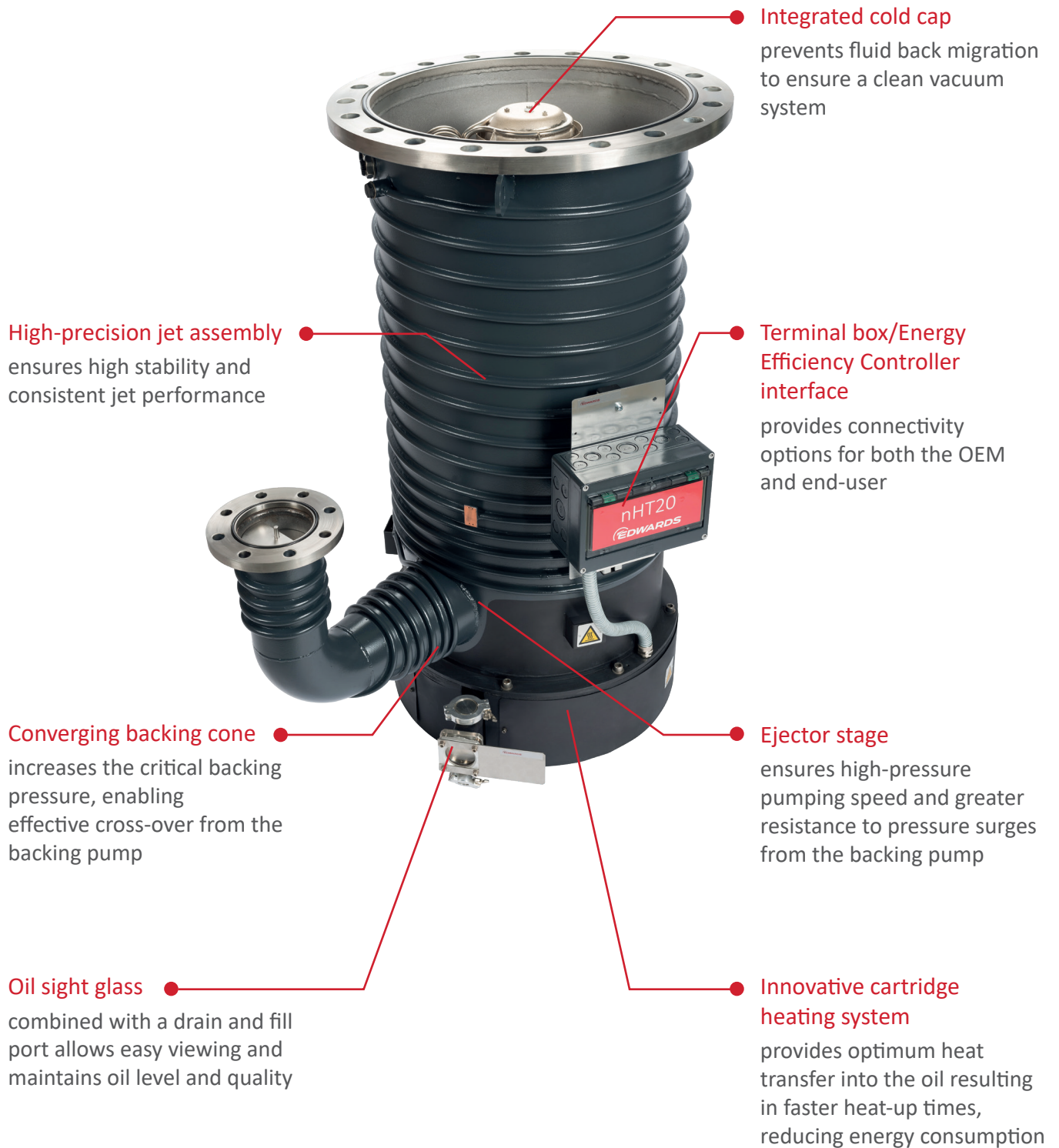
- Glass coating
- Surface coating (plasma, spray, surface activation, hard coating, reflective, decorative, plasma deposition)
- Roll/web coating, optical/ophthalmic coating, display coating

## Vacuum drying

## Research & development



# FEATURES





# TECHNICAL DATA

		nHT10		nHT16		nHT20		nHT32		nHT35	
		ANSI	ISO	ANSI	ISO	ANSI	ISO	ANSI	ISO	ANSI	ISO
Inlet connection		10" ANSI	320 ISO-K	16" ANSI	500 ISO-K	20" ANSI	630 ISO-K	32" ANSI	800 ISO-F	35" ANSI	1000 ISO-F
Backing connection		2" ANSI	63 ISO-K	3" ANSI	100 ISO-K	4" ANSI	160 ISO-K	6" ANSI	200 ISO-K	6" ANSI	200 ISO-K
Pumping speed* Nitrogen <10 <sup>-4</sup> mbar	l/s	3,000		6,800		10,000		21,000		30,000	
Pumping speed Argon <10 <sup>-4</sup> mbar	l/s	2,750		6,350		9,000		18,000		26,000	
Pumping speed Helium <10 <sup>-4</sup> mbar	l/s	4,500		9,500		17,000		30,000		42,000	
Gas throughput	mbar l/s	8		11		17		36		36	
Operating range	mbar	< 10 <sup>-1</sup> to 10 <sup>-7</sup>		< 10 <sup>-1</sup> to 10 <sup>-7</sup>		< 10 <sup>-1</sup> to 10 <sup>-7</sup>		<10 <sup>-2</sup> to 10 <sup>-7</sup>		< 10 <sup>-2</sup> to 10 <sup>-7</sup>	
Ultimate pressure (Edwards 704)	mbar	< 5 x 10 <sup>-7</sup>		< 5 x 10 <sup>-7</sup>		< 5 x 10 <sup>-7</sup>		< 10 <sup>-6</sup>		< 10 <sup>-6</sup>	
Critical backing pressure (Edwards 704)	mbar	5 x 10 <sup>-1</sup>		5 x 10 <sup>-1</sup>		5 x 10 <sup>-1</sup>		5 x 10 <sup>-1</sup>		5 x 10 <sup>-1</sup>	
Heating power	kW	3.6		7.2		10.8		21.6		21.6	
Heating cartridges	qty	3		6		9		18		18	
Warm-up period	min	< 15		< 15		< 25		< 25		< 25	
Weight	kg	105		185		210		570		720	
Recommended oil		Edwards 704									
Oil	l	3.0–4.0		3.5–4.5		5.5–7.0		9.0–11.0		9.0–11.0	
Recommended holding pump		E2M40		E2M40		E2M40		E2M80		E2M80	
Recommended backing pump		nES200, E2M80, EDS200, EH1200		nES200, E2M175, EDS200, EH1200		nES300, E2M175, EDS300, EH1200		nES630, E2M275, GXS450, EH2600		nES630, E2M275, GXS450, EH2600	

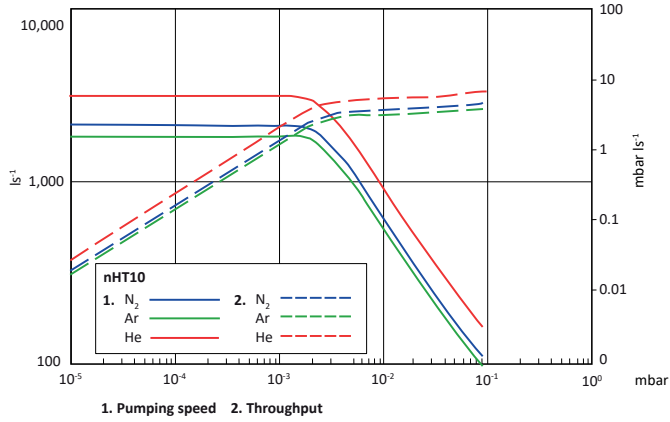
\* Measures as per DIN 28 427

# ORDERING INFORMATION

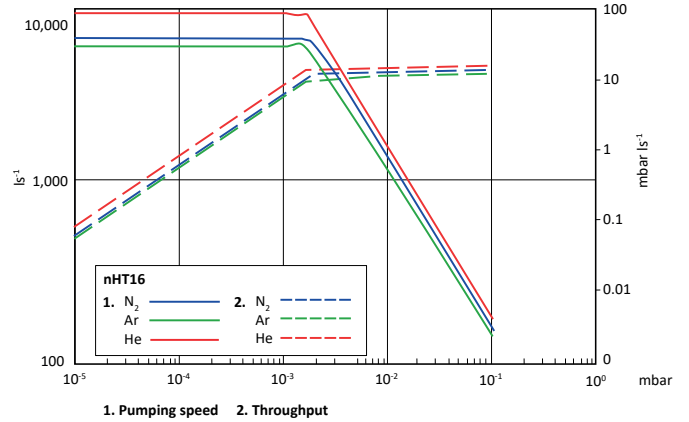
nHT series diffusion pumps										
Voltage variant	nHT10		nHT16		nHT20		nHT32		nHT35	
	ANSI	ISO	ANSI	ISO	ANSI	ISO	ANSI	ISO	ANSI	ISO
380–415V, 230V (50 Hz/60 Hz)	B31130400	B31132400	B31230400	B31232400	B31430400	B31432400	B31630400	B31632400	B31530400	B31532400
440–480V (50/60 Hz)	B31130460	B31132460	B31230460	B31232460	B31430460	B31432460	B31630460	B31632460	B31530460	B31532460
nHT Series Accessories										
Inlet valve	B61130100	B61132100	B61230100	B61232100	B61430100	B61432100	B61630100	B61632100	B61530100	B61532100
Extended cold cap	-		B61233100		B61433100		B61633100		B61533100	
Inlet baffle	-		B61234100		B61434100		B61634100		B61534100	
Energy Efficiency Controller (EEC)	B61001100 (accessory cables not included)									
Cooling fail switch	12284									
Water flow monitor	500006623									

# PERFORMANCE CURVES

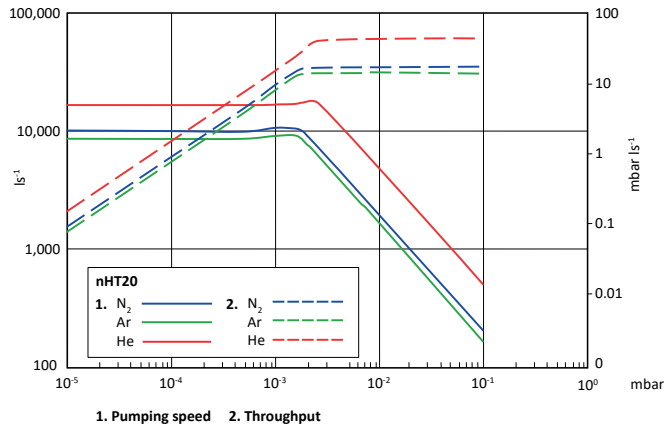
## nHT10



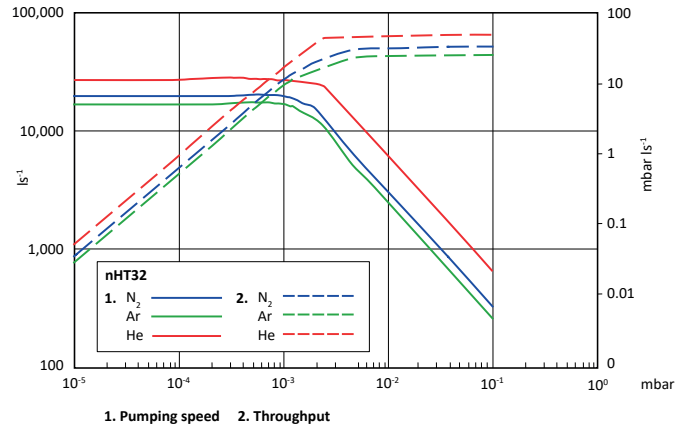
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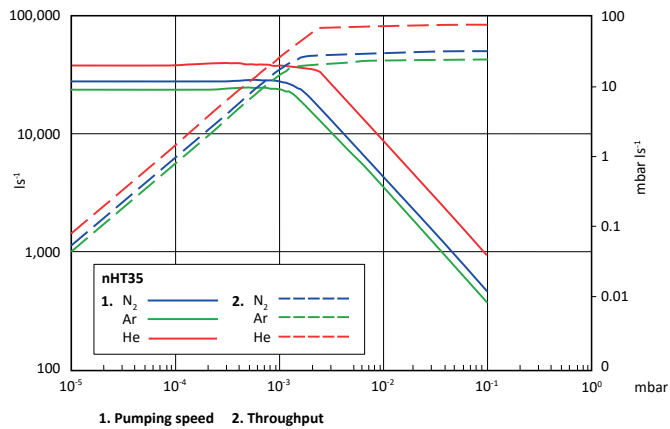
## nHT20



## nHT32



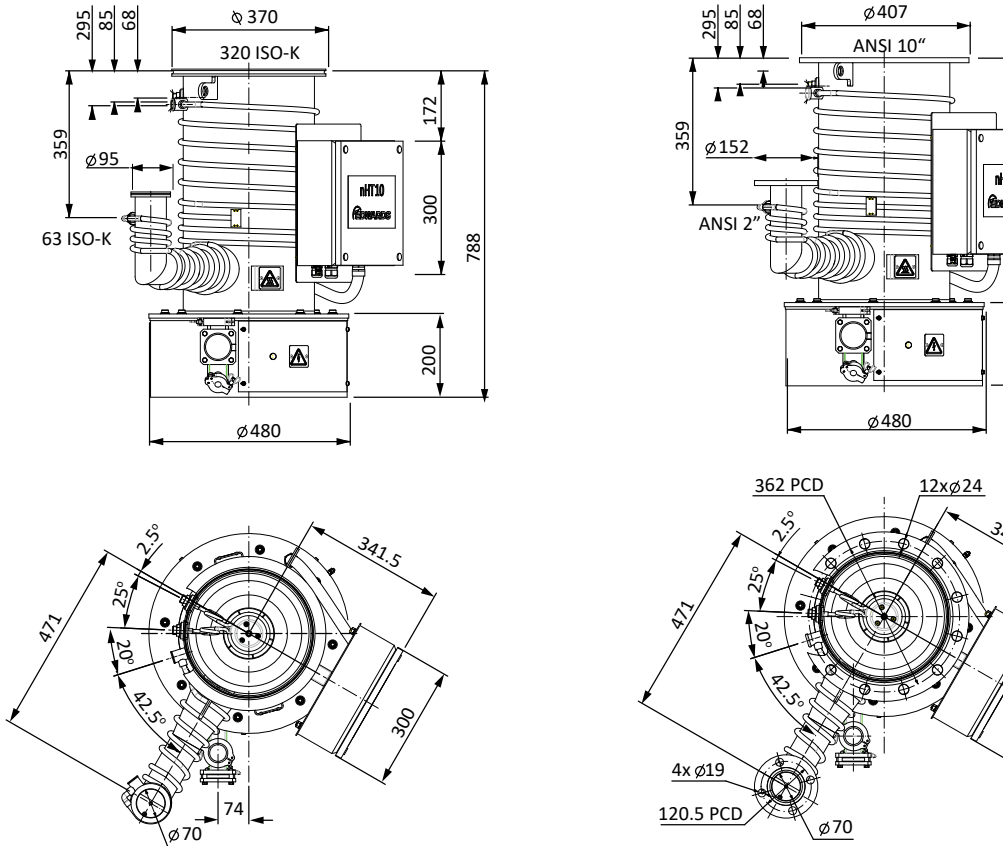
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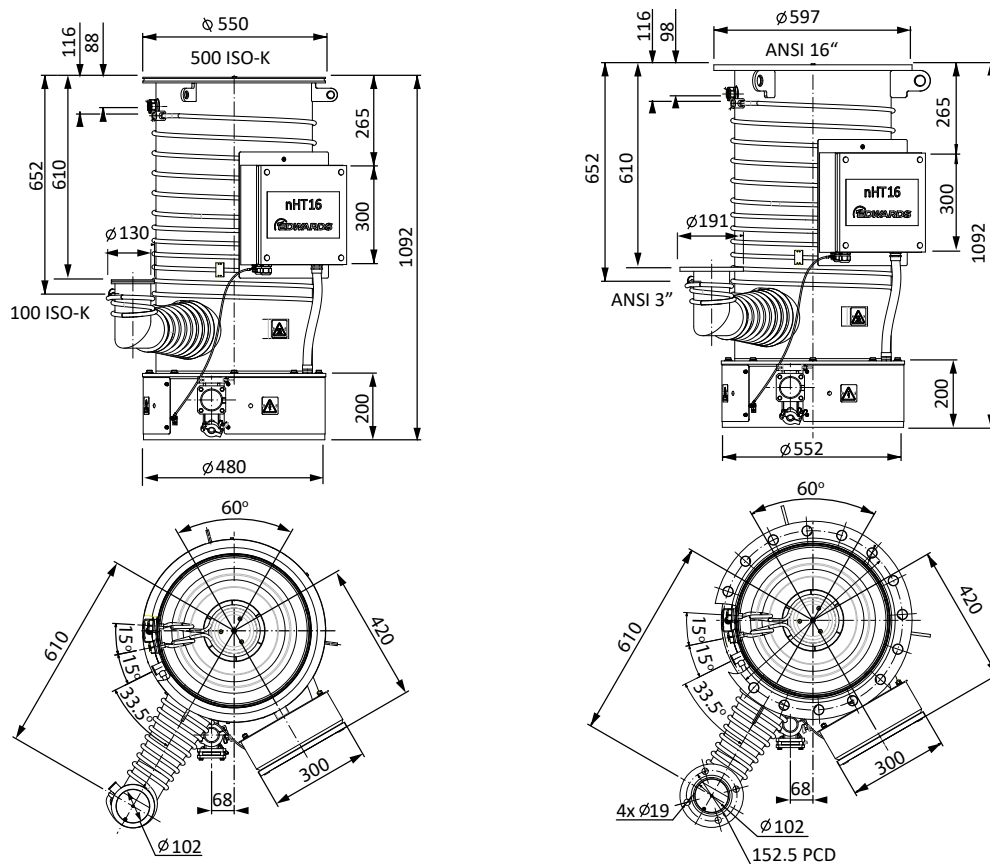


# DIMENSIONS

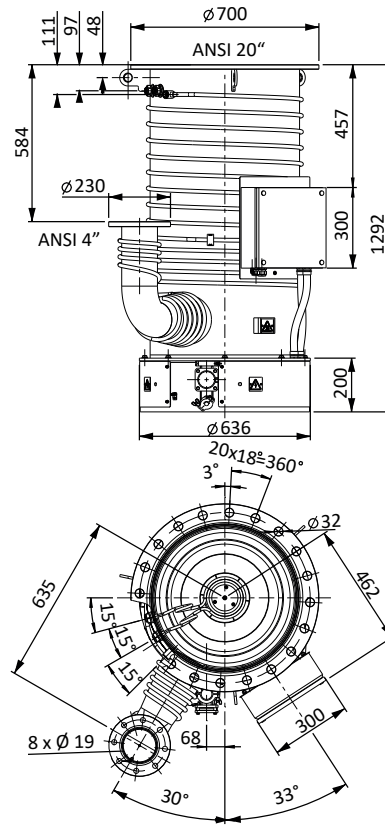
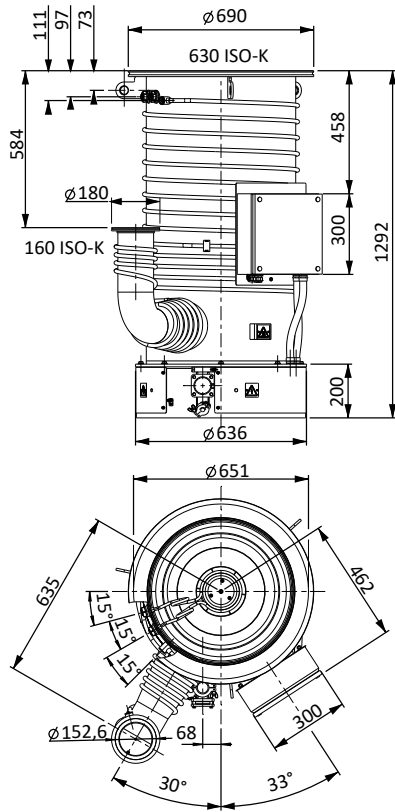
## nHT10



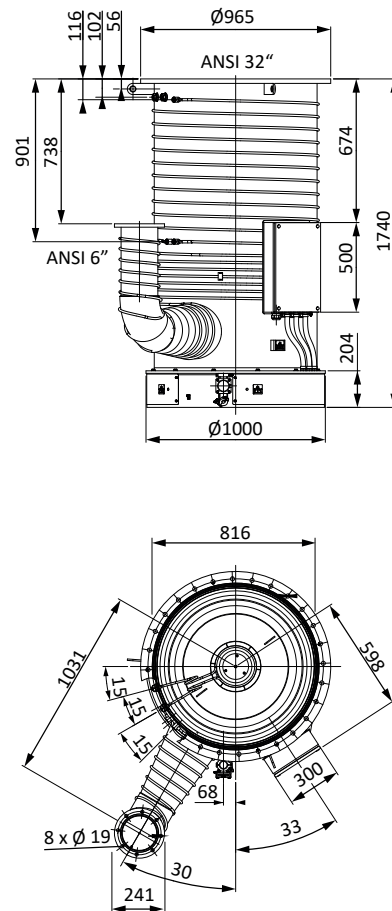
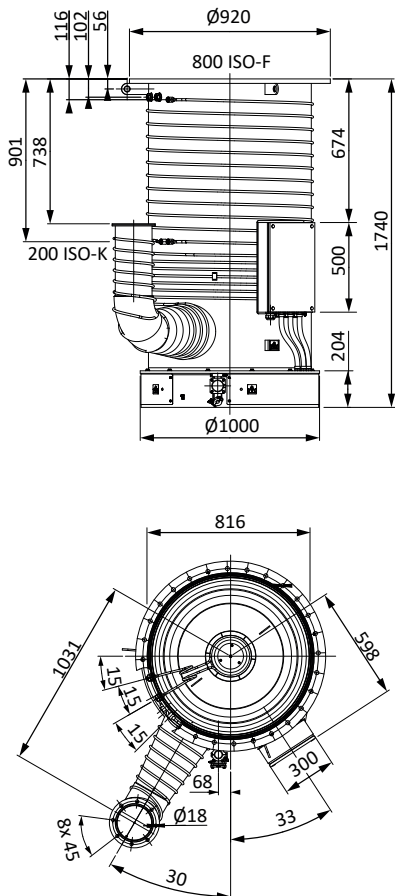
## nHT16



## nHT20

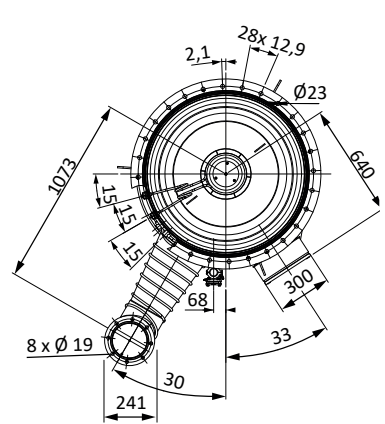
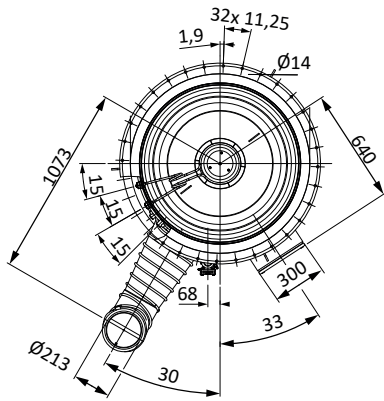
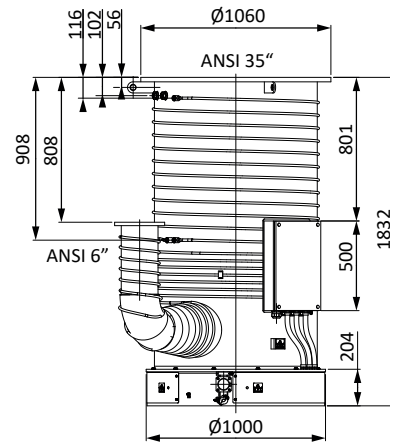
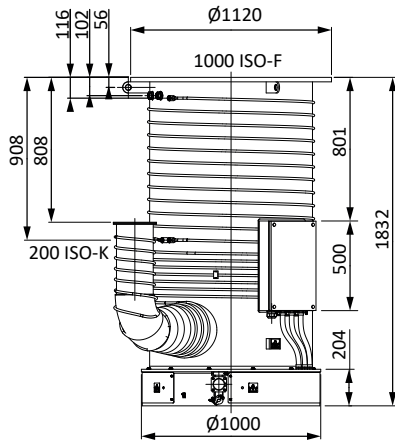


## nHT32





## nHT35



## SERVICE AND SUPPORT

The nHT series diffusion pumps are designed with a number of features that enable routine maintenance to be conducted, ensuring optimum performance and safe operation. Scheduled routine maintenance shall include activities deemed beneficial to the continued performance and longevity of the product. All work must be completed by suitably trained personnel. Before any maintenance operations are carried out, the pump must be isolated from the electrical supply and vacuum system.

Our field service teams carry out essential maintenance, repair and commissioning service at your site. We can also assist site staff in performing routine maintenance.

We offer original spares kits for the nHT series diffusion pumps. This enables your maintenance team to start work with all the materials they need to complete the job successfully, saving time, reducing cost and extending the life of your product.





## GLOBAL CONTACTS

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