

Механические турбомолекулярные насосы nEXT730, nEXT930, nEXT1230, nEXT55

Технические характеристики

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nEXT55

TURBOMOLECULAR PUMP

nEXT55 is one of the smaller members of the nEXT family and has been extended to include variants that can be mounted in any orientation. These variants deliver the same performance characteristics as our current pumps but with more flexibility.

This turbomolecular pump is an evolution of Edwards extremely popular nEXT85 platform, with a significantly reduced height while still offering pumping speeds of 55 l/s for nitrogen. nEXT55 offers the highest pumping density of other pumps in its class, with almost double the pumping speed of similar sized turbo pumps.

As it is built on the proven nEXT85 platform, nEXT55 offers high reliability and low risk to adoptors. Also, like nEXT85, field maintenance is only required every 4 years of operation, and this - including replacement of the bearing - can be performed by the end user. nEXT55 brings with it all the benefits in flexibility associated with nEXT85, with the same comprehensive communication and control options available, as well as a full set of accessories.

nEXT55 is the ideal choice in deployable instruments or portable applications where a compact footprint or lower weight are key factors.



FEATURES AND BENEFITS

- Any orientation for flexibility of use
- Class leading pumping speeds
- Outstanding compression ratios
- Ease of integration and installation
- Assured reliability
- End user service capability
- Full nEXT established communication interface



PRODUCT DATA SHEET

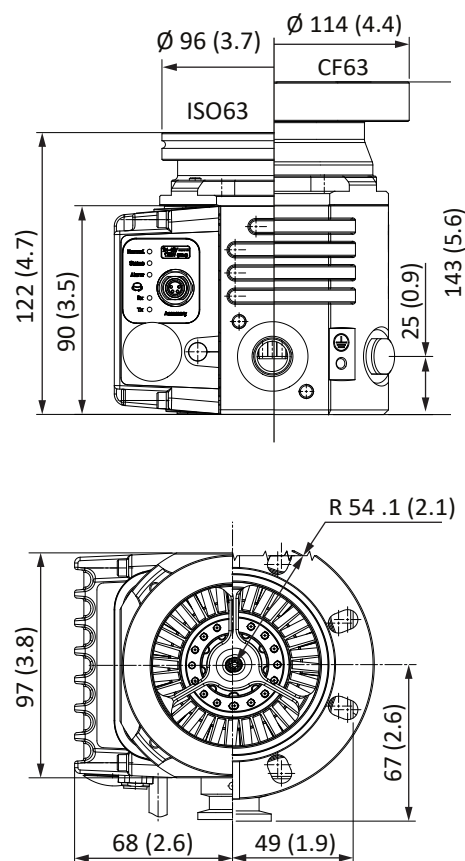
TECHNICAL DATA

		nEXT55	
Pump interface			
Inlet flange		NW40	ISO63/CF63
Exhaust flange		NW16	NW16
Vent port		½ inch BSP	
Key technical specifications			
Rotational speed	Rpm	90,000	
Start time to 90% speed (sec) D		90	
Main inlet pumping speed (l/s)	N ₂	35	55
	He	26	41
	H ₂	17	27
	Ar	35	55
Peak compression ratio backing port to main inlet port (D)	N ₂	>1x10 ¹¹	
	He	6.9x10 ⁵	
	H ₂	2.9x10 ⁴	
	Ar	1x10 ¹¹	
Ultimate pressure	mbar	<1x10 ⁻⁷	
Sound pressure level	dB(A)	34 +/-2.5*	
Mass (kg) D		ISO 2.47 - CF 3.5	
Pumped media			
Designed gas compatibility*	Air, CO, Ne, N ₂ , Kr, Ar, CO ₂ , He and H ₂ O ₂ concentration must be less than 25% by volume Water vapour must not condense inside the pump		
Ambient operating temperature range	°C	5 to 40	
Storage temperature range	°C	-30 to +70	
Cooling method, optional		air/water	
Cooling method, standard		Free convection	
Maximum external magnetic field	mT	5 radial	
Enclosure protection		IP64	
Electrical rating			
Power supply	v	24-48 Vd.c +5% - 10%	
Max power consumption	W	120W	
Factory default setting	W	Refer to pump label	
Connector		15-way D-Type male	

*declared dual number noise emission values in accordance with ISO4871

** To pump an unlisted gas species, contact the supplier for advice

DIMENSIONS



ORDER INFORMATION

nEXT55 Product description	Order number
nEXT55D ISO63 NW16 80W	B8E210B01
nEXT55D CF63 NW16 80W	B8E210C01
nEXT55D ISO100 NW16 80W	B8E210I01
nEXT55D NW40 NW16 80W	B8E210A01
nEXT55D ISO63 NW16 80W AO	B8A210B01
nEXT55D CF63 NW16 80W AO	B8A210C01
nEXT55D ISO100 NW16 80W AO	B8A210I01
nEXT55D NW40 NW16 80W AO	B8A210A01

nEXT730, 930 AND 1230 TURBOMOLECULAR PUMP

Edwards are proud to offer the nEXT730, nEXT930 and nEXT1230 turbomolecular pumps, these larger pumps offer choices for customers requiring higher pumping speeds from 730 up to 1250 l/s for nitrogen.

As well as addressing the R&D market, where high compression, faster pumping speeds are required, these pumps are also designed to meet the requirements of the coating market and other diffuse market sectors such as Heat treatment, Furnace applications, Ebeam welding, Etch, Ion implant, Degassing and Cylinder evacuation.

For our OEM customers derivative versions of these products can be developed, just like the existing nEXT pumps, and like the existing nEXT pumps split flow variants are possible. This will give benefits for our customers with larger instruments as well as the possibility to reduce the total number of pumps on existing instruments.

The new products offer market leading performance for pumps of their class, and in a compact footprint. The pumps feature bearings with a typical life time of at least 4 years with no maintenance, which can then be replaced simply and economically by the customer themselves when required or customers may choose from our other service support offerings.

The pumps are able to operate in any orientation*, and are supported by a full range of accessories for cooling, venting, powering and control.

* for nEXT1230, inverted option available

FEATURES AND BENEFITS

- Class leading pumping speeds
- Outstanding compression ratios
- Ease of integration and installation
- Assured reliability
- End user service capability
- Full nEXT established communication interface



PRODUCT DATA SHEET

TECHNICAL DATA

		nEXT730Q	nEXT730D		nEXT730H	
Inlet flange		DN 160 ISO-K	DN 160 ISO-K	DN 160 CF	DN 160 ISO-K	DN 160 CF
Main inlet pumping speed						
Inlet pumping speed ls ⁻¹	N ₂	730	730	690	720	680
	Ar	665	665	620	655	610
	He	820	820	760	850	790
	H ₂	715	715	670	755	710
Gas throughput						
Gas throughput mbar ls ⁻¹	N ₂	>40	14		4	
	Ar	6.8	3.5		2.6	
	He	>50	21		7	
	H ₂	>50	>> 14		17	
Peak compression ratio backing port to main inlet port						
Compression ratio***	N ₂	>1x10 ⁸	> 1x10 ¹¹		>1x10 ¹³	
	Ar	>1x10 ⁸	> 1x10 ¹¹		>1x10 ¹³	
	He	1x10 ⁵	1.2x10 ⁸		5x10 ⁹	
	H ₂	1x10 ⁴	4.0x10 ⁶		3x10 ⁸	
Ultimate pressure**	mbar	<1x10 ⁻⁷	< 3.5x10 ⁻⁹	< 6x10 ⁻¹⁰	<7x10 ⁻⁹	<1x10 ⁻¹⁰
Max. permissible backing pressure	mbar	6	15		12	
Normal rotational speed	rpm	49200				
Start time to 90% speed (sec)	min	2.5				
Max. power consumption	W	500 (default), 600 (max.)				
Power consumption at ultimate pressure	W	40				
Type of protection	IP	54				
Recommended cooling method		Water*	Convection*			
Optional cooling		n/a	Air or Water*			
Cooling water connection	inch	Plug-in connection for 6x1 hose/alternative G 1/8				
Cooling water consumption	l/h	60				
Critical cooling water pressure	bar(g)	6				
Permissible cooling water temperature	°C	15 to 35				
Mass (kg)	kg	15.4	14.6	19.6	14.6	19.6
Recommended backing pump*		nXRi, XDS35i, E2M28**				
Noise level with convection cooling with radial air cooler	dB(A)	< 40 n/a	< 40 < 55			
Water cooled/forced air cooled max. bake out	°C	n/a	100			
Purge gas flow	mbar · ls ⁻¹ sccm	0.4 24				
Vent/purge port	inch	G 1/8				

*Depending on the ambient temperature, the gas type and throughput, performance may be limited by the cooling method.

**Please contact the supplier to discuss your specific system details and the achievement of ultimate pressure.

***The compression ration of a TMP describes the performance of the TMP design for the compression of a gas type at special conditions. The compression data were measured only using the CF flange variants.

PRODUCT DATA SHEET

TECHNICAL DATA

		nEXT930Q	nEXT930D	
Inlet flange		DN 200 ISO-K	DN 200 ISO-K	DN 200 CF
Main inlet pumping speed				
Inlet pumping speed ls ⁻¹	N ₂	925	925	720
	Ar	865	865	810
	He	905	905	840
	H ₂	735	735	690
Gas throughput				
Gas throughput mbar ls ⁻¹	N ₂	>40	14	
	Ar	6.8	3.5	
	He	>50	21	
	H ₂	>50	>> 14	
Peak compression ratio backing port to main inlet port				
Compression ratio***	N ₂	>1x10 ⁸	> 1x10 ¹¹	
	Ar	>1x10 ⁸	> 1x10 ¹¹	
	He	1x10 ⁵	1.2x10 ⁸	
	H ₂	1x10 ⁴	4.0x10 ⁶	
Ultimate pressure**	mbar	<1x10 ⁻⁷	< 3.5x10 ⁻⁹	< 6x10 ⁻¹⁰
Max. permissible backing pressure	mbar	6	15	
Normal rotational speed	rpm	49200		
Start time to 90% speed (sec)	min	2.5		
Max. power consumption	W	500 (default), 600 (max.)		
Power consumption at ultimate pressure	W	40		
Type of protection	IP	54		
Recommended cooling method		Water*	Convection*	
Optional cooling		n/a	Air or Water*	
Cooling water connection	inch	Plug-in connection for 6x1 hose/alternative G 1/8		
Cooling water consumption	l/h	60		
Critical cooling water pressure	bar(g)	6		
Permissible cooling water temperature	°C	15 to 35		
Mass (kg)	kg	15.4	15.4	21.7
Recommended backing pump*		nXRi, XDS35i, E2M28**		
Noise level with convection cooling with radial air cooler	dB(A)	< 40 n/a	< 40 <55	
Water cooled/forced air cooled max. bake out	°C	n/a	100	
Purge gas flow	mbar · ls ⁻¹ sccm	0.4 24		
Vent/purge port	inch	G 1/8		

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PRODUCT DATA SHEET

TECHNICAL DATA

		nEXT1230H		
Inlet flange		DN 200 CF	DN 200 ISO-F	DN 200 ISO-K
Main inlet pumping speed				
Inlet pumping speed ls ⁻¹	N ₂	1250		
	Ar	1150		
	He	1350		
	H ₂	1150		
Gas throughput				
Gas throughput mbar ls ⁻¹	N ₂	9		
	Ar	3		
	He	>20		
	H ₂	>20		
Peak compression ratio backing port to main inlet port				
Compression ratio***	N ₂	> 1x10 ¹¹		
	Ar	> 1x10 ¹¹		
	He	4x10 ⁸		
	H ₂	1x10 ⁷		
Ultimate pressure**	mbar	<5x10 ⁻¹⁰	indicate higher pressure for ISO-K and ISO-F	
Max. permissible backing pressure	mbar	15		
Normal rotational speed	rpm	42000		
Start time to 90% speed (sec) H	min	2.5		
Max. power consumption	W	660 (default), 800 (max.)		
Power consumption at ultimate pressure	W	50		
Type of protection	IP	54		
Recommended cooling method		Water*		
Optional cooling		Forced air cooling*		
Cooling water connection	inch	Plug-in connection for 6x1 hose/alternative G 1/8		
Cooling water consumption	l/h	60		
Critical cooling water pressure	bar(g)	15		
Permissible cooling water temperature	°C	15 to 35		
Mass (kg) H	kg	32.6	24.9	23.7
Recommended backing pump*		nXRi, XDS35i, E2M28**		
Noise level with convection cooling with radial air cooler	dB(A)	<44 <55		<44 <55
Water cooled/forced air cooled max. bake out	°C	100	n/a	
Purge gas flow	mbar · ls ⁻¹ sccm	0.4 24		
Vent/purge port	inch	G 1/8		

*Depending on the ambient temperature, the gas type and throughput, performance may be limited by the cooling method.

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