



TwisTorr 305 turbo pump



The TwisTorr 305 turbomolecular pump is the first example of a new way of designing and manufacturing Agilent vacuum products.

Performance, innovation, attention to detail and reliability are the main pillars of this high-quality products that offers an impressive number of features in a compact package.

Two main versions of the products are available: TwisTorr 305-IC, featuring a powerful and sleek integrated control unit, and the TwisTorr 305 FS, a stand-alone pump powered and controlled by a remote control unit.

In addition to the patented TwisTorr drag stages, which provide high compression ratios for light gases and high foreline pressure tolerance, the product offers very quiet operation and low vibration.

The new Vacuum Link App offers remote control of the pump, making it easy to monitor your system, and providing a quick way to share pump information with your colleagues and with Agilent personnel. Support is just a few clicks away: Agilent dedicated Support Team will assist readily and professionally.

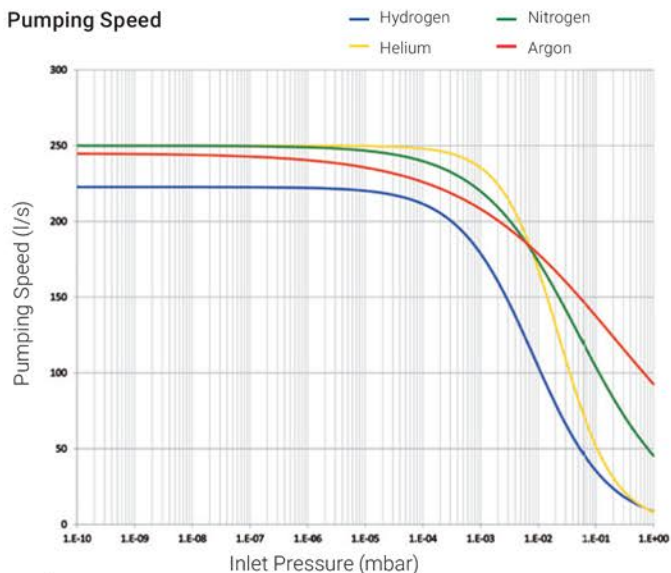
Vacuum Link installs on you Apple or Android mobile phone, it allows real-time monitoring of the parameters of your choice, and even offers recording capability: data can be exported to your computer to be easily displayed and shared.



Technical Specifications

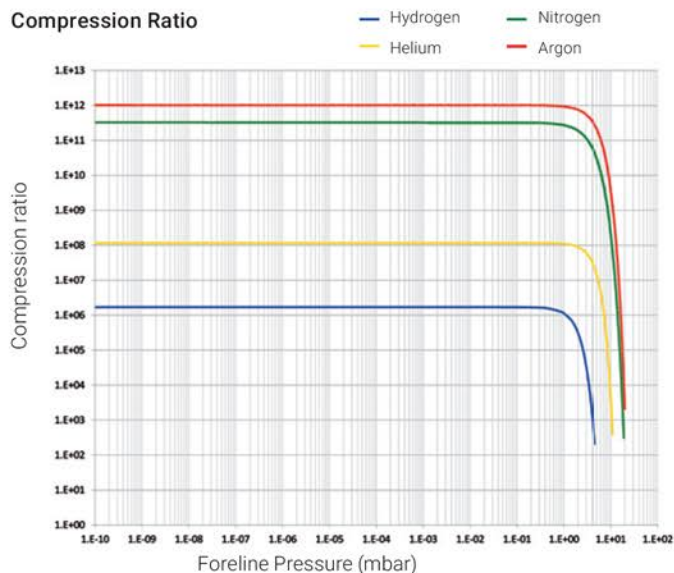
Technical Specifications	
Pumping speed	ISO 100 K / CFF 6" ISO 160 K / CFF 8"
N ₂	250 L/s
He	255 L/s
H ₂	220 L/s
Ar	250 L/s
Max gas flow rate	
N ₂	250 SCCM
Note: value refer to water-cooling pump version with: - water temperature between 15°C and 20°C (non condensing) - backing pump with pumping speed equal or above (5 m ³ /h) 170 SCCM	
Compression ratio	
N ₂	> 1 x 10 ¹¹
He	> 1 x 10 ⁹
H ₂	1.5 x 10 ⁶
Ar	> 1 x 10 ¹¹
Max foreline pressure tolerance N₂	12 mbar
Note: foreline Tolerance defined as the pressure at which the turbopump still produces a compression of 100. For continuous operation, water cooling is recommended (water temperature between 15°C and 20°C).	
Base pressure with recommended forepump	<1 x 10 ⁻¹⁰ mbar (<1 x 10 ⁻¹⁰ Torr)
According to standard DIN 28 428, the base pressure is that measured in a leak-free test dome, 48 hours after the completion of test dome bake-out, with a Turbopump fitted with a ConFlat flange and using the recommended pre-vacuum pump	
Inlet flange	ISO 100 K, CFF 6", ISO 160 K, CFF 8"
Foreline flange	KF16 NW (KF25 - optional)
Rotational speed	60000 rpm (1010 Hz driving frequency)
Start-up time	< 3 minutes (it can be longer in case of soft start active)
Recommended forepump	Dry pumps: IDP-3 (no gas flow), IDP-7, IDP-10, Mechanical: DS102, DS302
Operating position	Any
Oper. ambient temperature	+5 °C to +35 °C
Bakeout temperature	Max 80 °C at inlet flange (ISO flange)
Lubricant	Permanent lubrication
Cooling requirements	
Air cooling	Natural convection (only with no gas load) Forced air (5- 35 °C ambient temperature)
Water cooling	Minimum flow: 50 l/h (0.22 GPM) Temperature: +15 °C to +30 °C Max pressure: 5 bar (75 psi)

Pumping Speed



Technical Specifications	
Noise Pressure Level (at 1m at full speed)	41 dB(A)
Note: mean values based on a significative sample (Ar and N ₂ compression ratio estimated); standard deviation per test: pumping speed: below ± 7%; noise pressure level: ± 10%" (only pump).	
Installation category	II
Pollution degree	2
Storage temp.	-40°C to +70°C
Max altitude	3000 m
Weight kg (lbs) TwisTorr 305-IC	ISO 100 K CFF 6" 5,74 kg (12,6) 8,06 kg (17,7) ISO 160 K CFF 8" 6,18 kg (13,6) 10,33 kg (22,7)
Weight kg (lbs) TwisTorr 305 FS	ISO 100 K CFF 6" 5,84 kg (12,8) 8,16 kg (17,9) ISO 16 0K CFF 8" 6,28 kg (13,8) 10.43 kg (22.9)
Compliance with:	EN 61010-1 EN 61326-1 EN 1012-2 EN 12100 EN 50581 Machinery Directive 2006/42/EC Electromagnetic Compatibility Directive 2014/30/ EU Directive 2011/65/EU
Remote Controller	
Voltage Frequency Power Fuse	100 - 240 Vac (voltage fluctuation +/- 10%) 50 to 60 Hz 450 VA 2 x T4 A (slow blow) 250 V
Power supply (24 Vdc):	
Input voltage Max input power Stand-by power Max operating power	24 Vdc 200 W 10 W 150 W with water or air cooling
Protection fuse	8 A
Max operating altitude	3000 m
USB communication	as per USB 1.1
Power cable	Required motor input voltage is 24V +/- 10%; please dimension power cable to guarantee the minimum voltage level. I.e. for AWG 20 resistance is 33,31 mOhm/m; so for a cable of 6 meters and maximum current (7.5A) the voltage lost is 1.5V.

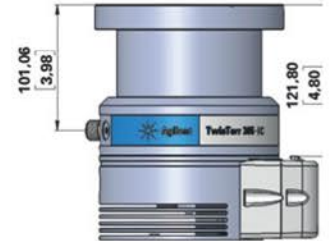
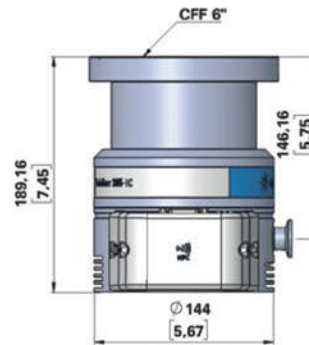
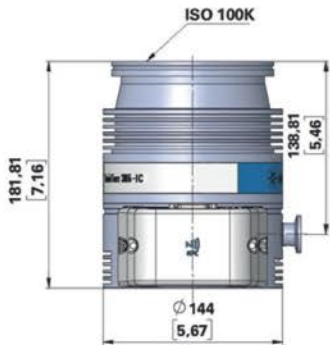
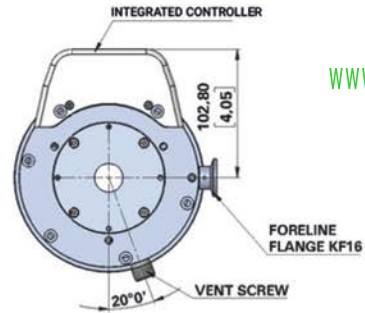
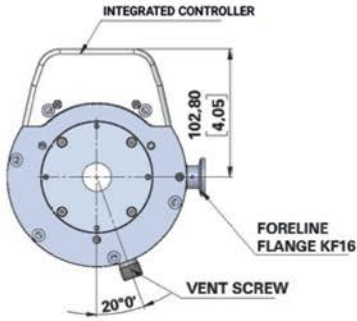
Compression Ratio



Outline Drawings
Agilent TwisTorr 305-IC

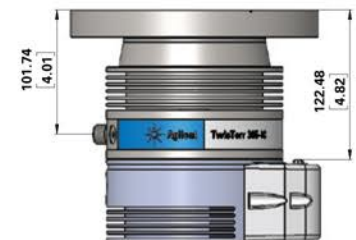
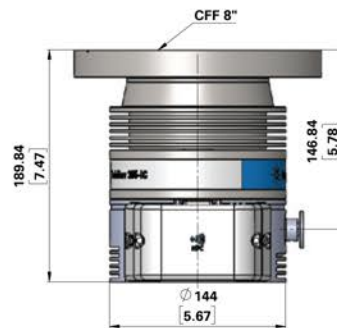
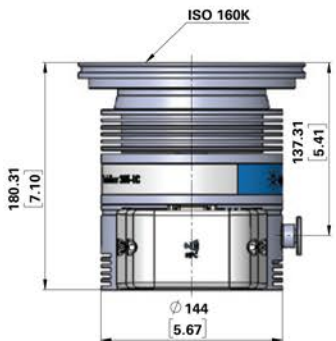
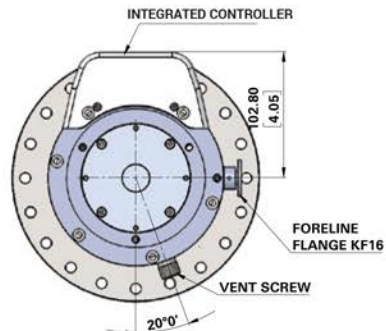
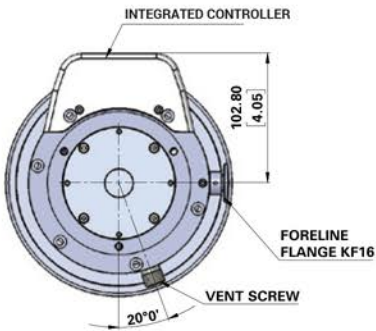


Dimensions: millimeters [inches]



3D Drawings available for download

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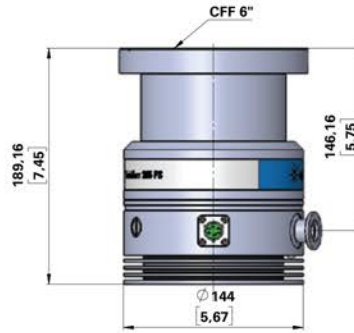
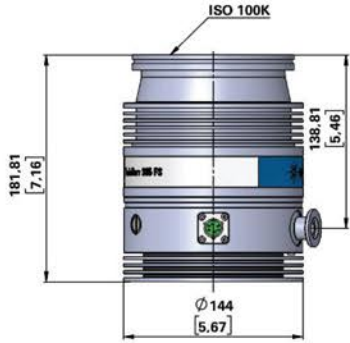
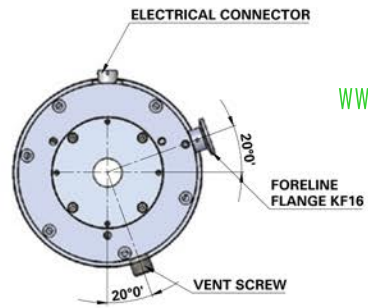
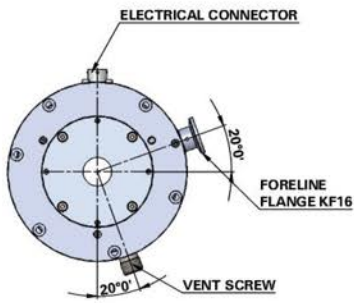


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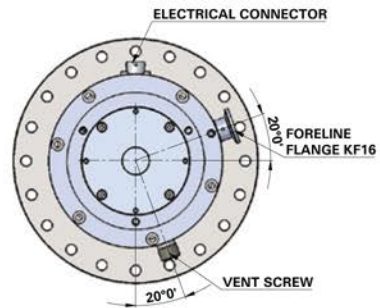
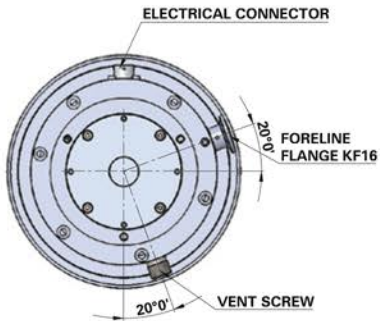
Agilent TwisTorr 305 FS



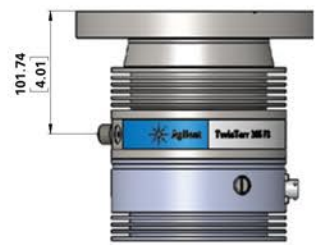
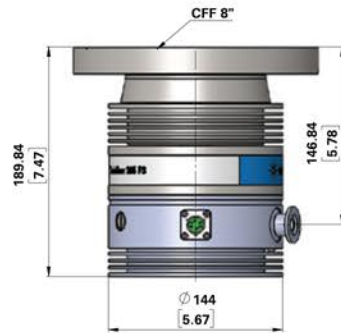
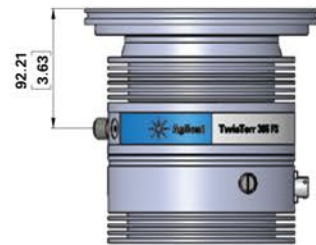
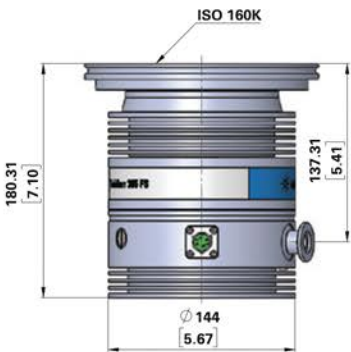
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3D Drawings available for download

Ordering Information

Pumps	Cooling	Flange	Part Number
TwisTorr 305-IC, 485A	Air	ISO 100 K	X3513-64000
TwisTorr 305-IC, 485A	Air	CFF 6"	X3513-64001
TwisTorr 305 IC, 485A	Air	ISO 160 K	X3513-64002
TwisTorr 305 IC, 485A	Air	CFF 8"	X3513-64003
TwisTorr 305 IC, 485A	Water	ISO 100 K	X3513-64004
TwisTorr 305 IC, 485A	Water	CFF 6"	X3513-64005
TwisTorr 305 IC, 485A	Water	ISO 160 K	X3513-64006
TwisTorr 305 IC, 485A	Water	CFF 8"	X3513-64007
TwisTorr 305-IC, 485P	Air	ISO 100 K	X3513-64016
TwisTorr 305-IC, 485P	Air	CFF 6"	X3513-64017
TwisTorr 305-IC, 485P	Air	ISO 160 K	X3513-64018
TwisTorr 305-IC, 485P	Air	CFF 8"	X3513-64019
TwisTorr 305-IC, 485P	Water	ISO 100 K	X3513-64020
TwisTorr 305-IC, 485P	Water	CFF 6"	X3513-64021
TwisTorr 305-IC, 485P	Water	ISO 160 K	X3513-64022
TwisTorr 305-IC, 485P	Water	CFF 8"	X3513-64023
TwisTorr 305-IC, 232	Air	ISO 100 K	X3513-64024
TwisTorr 305-IC, 232	Air	CFF 6"	X3513-64025
TwisTorr 305-IC, 232	Air	ISO 160 K	X3513-64026
TwisTorr 305-IC, 232	Air	CFF 8"	X3513-64027
TwisTorr 305-IC, 232	Water	ISO 100 K	X3513-64028
TwisTorr 305-IC, 232	Water	CFF 6"	X3513-64029
TwisTorr 305-IC, 232	Water	ISO 160 K	X3513-64030
TwisTorr 305-IC, 232	Water	CFF 8"	X3513-64031
TwisTorr 305 FS	Air	ISO 100 K	X3513-64008
TwisTorr 305 FS	Air	CFF 6"	X3513-64009
TwisTorr 305 FS	Air	ISO 160 K	X3513-64010
TwisTorr 305 FS	Air	CFF 8"	X3513-64011
TwisTorr 305 FS	Water	ISO 100 K	X3513-64012
TwisTorr 305 FS	Water	CFF 6"	X3513-64013
TwisTorr 305 FS	Water	ISO 160 K	X3513-64014
TwisTorr 305 FS	Water	CFF 8"	X3513-64015
Controllers			
TwisTorr 305 FS Remote Controller 232-485			X3506-64130
TwisTorr 305 FS Remote Controller Profibus			X3506-64131
Cables			
Mains cable NEMA plug, 3 m long *			9699958
Mains cable European plug, 3 m long *			9699957
Mains cable China plug, 3 m long *			8121-0723
5 m Turbopump Extension Cable *			969-9942M007
10 m Turbopump Extension Cable *			969-9942M006
15 m Turbopump Extension Cable *			969-9942M005
20 m Turbopump Extension Cable *			969-9942M004
50 m Turbopump Extension Cable *			969-9942M015
5 m Turbopump Fan Extension Cable **			9699949

* For TwisTorr 305 FS

** For TwisTorr 305-IC



Inlet Screens	Part Number
Inlet Screen ISO 100 K	X3500-68000
Inlet Screen CFF 6"	9699302
Inlet Screen ISO 160 K	X3500-68001
Inlet Screen CFF 8"	9699304
Cooling	
Water Cooling Kit	9699337
Metric Water Kit 4 x 6 mm	9699347
Air cooling kit for TwisTorr 305-IC ** (Kit X3514-68001 is required)	X3500-68010
Air cooling kit for TwisTorr 305 Remote controller *	X3500-68011
Fan extension cable for Remote Controller *	9699940
5 m Vent Valve Extension cable *	9699941
Vibration isolators	
Vibration isolator ISO 100 K	9699344
Vibration isolator CFF 6"	9699334
Vibration isolator ISO 160 K	9699345
Vibration isolator CFF 8"	9699335
Venting	
Vent Valve N.O. 1, 2 mm for TwisTorr 305-IC ** (Kit X3514-68001 is required)	9699834
Vent Valve N.O. 0,5 mm for TwisTorr 305-IC ** (Kit X3514-68001 is required)	9699834M006
DB15 Mating Connector not wired 7.5A **	X3514-68000
TwisTorr 305-IC Fan/Vent Adapter kit **	X3514-68001
Vent Valve N.O. 0,5 mm Orifice *	9699844
Vent Valve N.O. 1.2 mm Orifice *	9699845
Vent Valve N.C. 1.2 mm Orifice *	9699846
Vent Valve N.C. 0,5 mm Orifice *	9699847
Purge	
Purge valve 10 SCCM NW16KF - M12	9699239
Purge valve 10 SCCM ¼ Swagelock - M12	9699240
Purge valve 20 SCCM NW16KF - M12	9699241
Purge valve 20 SCCM ¼ Swagelock - M12	9699242
Purge valve 10 SCCM ¼ Swagelock - ¼ Swagelock	9699232
Purge valve 20 SCCM ¼ Swagelock - ¼ Swagelock	9699236
Other accessories	
Serial to Bluetooth adapter (necessary for App) *	X3514-68003
KF25 Foreline flange	X3513-68000

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