Data Sheet

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Agilent TwisTorr 804 FS



The new generation Turbo Pump with Agilent Floating Suspension

The Agilent TwisTorr 804 FS turbomolecular high-vacuum pump combines TwisTorr drag stage technology and Agilent Floating Suspension to provide high performance, reliability, and economy.

TwisTorr drag stages create high compression ratios for light gases such as hydrogen and helium to deliver high throughput and high tolerance of foreline pressure, thereby permitting the use of smaller and more economical backing pumps. This technology results in a compact rotor design that is energy-efficient and maintains a low operating temperature.

The Agilent Floating Suspension system reduces noise and vibration, and ensures optimal bearing operating conditions to extend operating life, minimize system downtime, and assure stability over time.

The unique bearing and dry lubrication in the TwisTorr 704 FS eliminate oil and maintenance, and permit operation of the pump in any orientation. Available with onboard or rack controllers.

Technical Specification

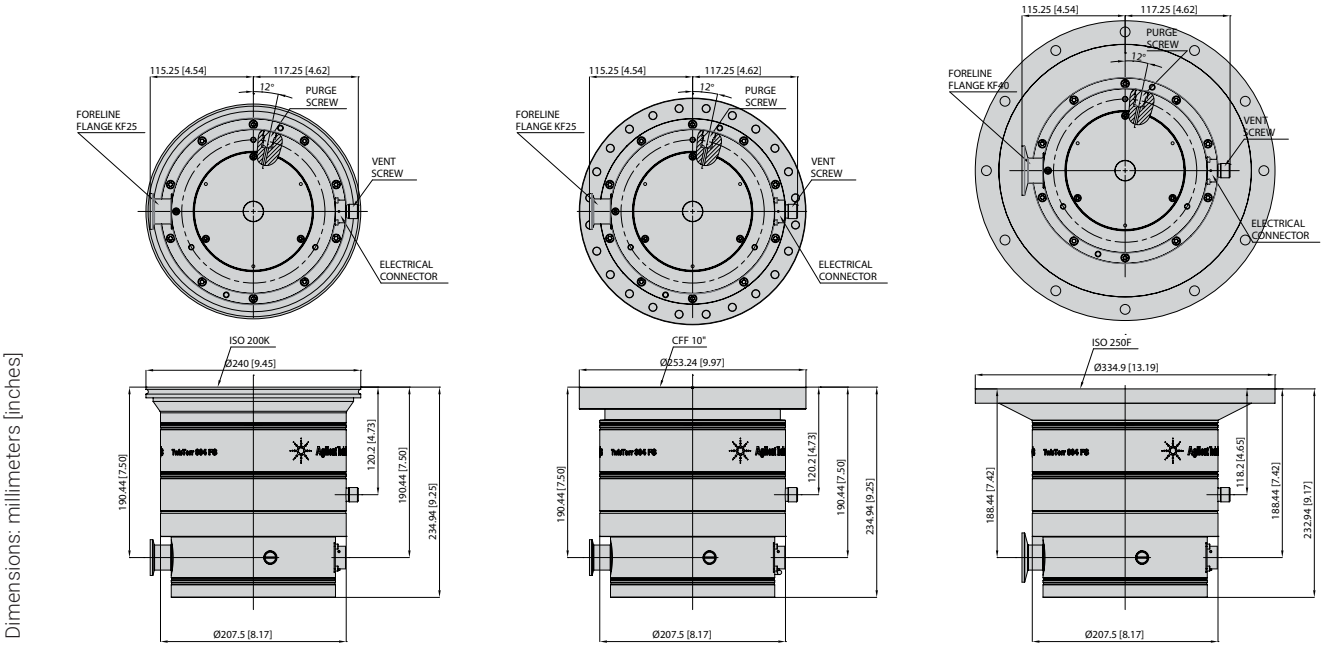
Technical Specification			
Pumping speed	ISO200K-F	ISO250K-F	CFF10
N_2 He H_2 Ar	720 L/s 660 L/s 485 L/s 690 L/s		
Max Gas Throughput(*)	Air Cooling (25°C Air temperature)	Water Cooling (15°C Water temperature / 25°C room temperature)	
N_2	4.3 mbarL/s 255 SCCM	6.1 mbar L/s 367 SCCM	
He	7.9 mbar L/s 467 SCCM	10.4 mbar L/s 615 SCCM	
Ar	1.5 mbar L/s 89 SCCM	3.3 mbar L/s 195 SCCM	
(*) Backing pump 11.6 m3/hr			
Compression ratio and foreline tolerance*			
N_2 He H_2 Ar	>1E+11 2E+08 3E+06 >1E+11	10 mbar 10 mbar >4 mbar 8.5 mbar	
(*) Foreline Tolerance defined as the pressure at which the turbopump still produce a compression of 100 and estimated in water cooling mode			
Base pressure with re-comm. forepump	< 1 x 10^{-10} mbar (< 1 x 10^{-10} Torr)		
Inlet flange	ISO 200K, ISO 200F, ISO 250K, ISO 250F, CFF 10"		
Foreline flange	NW25 or NW40		
Rotational speed	Auto setting from 40'800 RPM to 49'500 RPM		
Start-up time	< 5 minutes		

Technical Specification		
Recommended forepump	DS302 IDP10 IDP15	
Operating position	Any	
Oper. ambient temperature	+5 °C to +35 °C	
Rel. humidity of air	0 to 90% (not condensing)	
Bakeout temperature	ISO pump: 80°C at inlet flange CFF pump: 120°C at inlet flange	
Lubricant	Permanent grease lubrication	
Cooling requirements		
Air cooling	Air temperature from +5°C to 35°C	
Water cooling	Water temperature from +15°C to +25°C Water flow min. 100L/h	
Noise Pressure Level (at 1m at full speed)	43dB(A)	
Storage temperature	-40 °C to +70 °C	
Max altitude	3000 m	
Weight kg (lbs)	ISO200K ISO200F ISO250K ISO250F CFF 10"	20.7 Kg / 45.5 lbs. 23.6 Kg / 51.9 lbs. 23.3 Kg / 51.2 lbs. 27.6 Kg / 60.9 lbs. 22.1 Kg / 48.6 lbs.

Conformity to norms	
EMC (Control Units)	61326-1
Safety (CE/CSA)	61010-1
Machinery Directive	DIR 2006/42/CE
Low Voltage Directive	DIR 2014/35/EU
EMC Directive (Control Units)	DIR 2014/30/EU
ROHS	DIR 2011/65/EU

Outline Drawing

Dimensions: millimeters [inches]

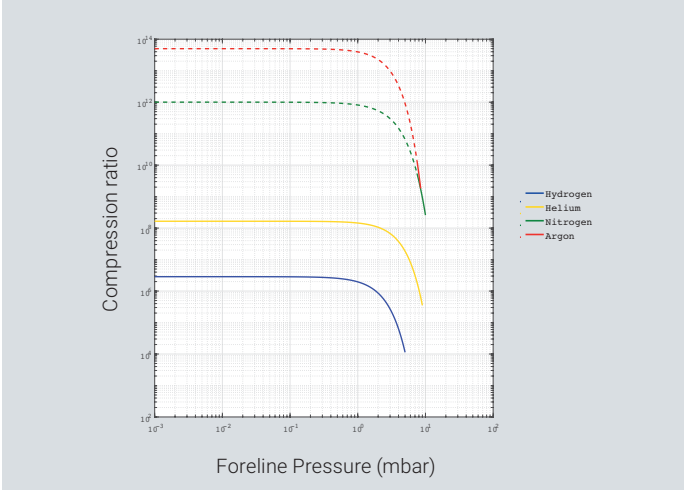


3D Drawings available for download

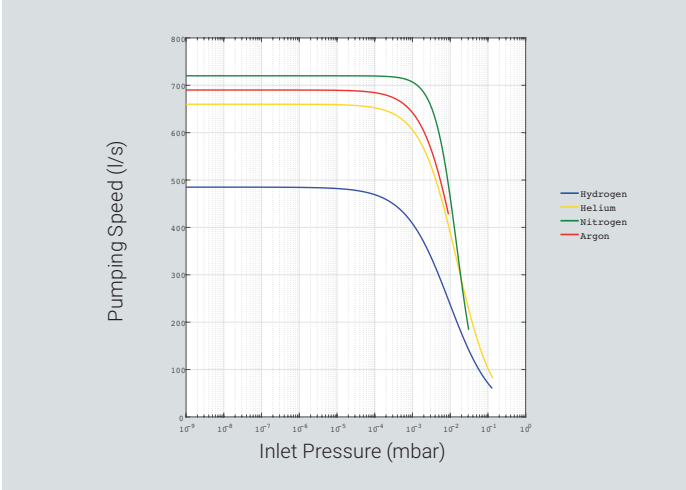
Ordering Information

Pumps	Configuration Options
TwisTorr 804 FS ISO200K KF25 air cooling	X3511-64007
TwisTorr 804 FS ISO200K KF40 air cooling	X3511-64008
TwisTorr 804 FS ISO200F KF25 air cooling	X3511-64009
TwisTorr 804 FS ISO200F KF40 air cooling	X3511-64010
TwisTorr 804 FS CFF10" KF25 air cooling	X3511-64011
TwisTorr 804 FS CFF10" KF40 air cooling	X3511-64012
TwisTorr 804 FS ISO250K KF40 air cooling	X3511-64013
TwisTorr 804 FS ISO250F KF40 air cooling	X3511-64014
TwisTorr 804 FS ISO200K KF25 water cooling	X3511-64022
TwisTorr 804 FS ISO200K KF40 water cooling	X3511-64023
TwisTorr 804 FS ISO200F KF25 water cooling	X3511-64024
TwisTorr 804 FS ISO200F KF40 water cooling	X3511-64025
TwisTorr 804 FS CFF10" KF25 water cooling	X3511-64026
TwisTorr 804 FS CFF10" KF40 water cooling	X3511-64027
TwisTorr 804 FS ISO250K KF40 water cooling	X3511-64028
TwisTorr 804 FS ISO250F KF40 water cooling	X3511-64029
Controllers	**Part Numbers**
TwisTorr Medium-TMP Rack Controller	X3501-64016
TwisTorr Medium-TMP on board Controller	X3512-64016
Cables	**Part Numbers**
Mains cable NEMA plug 3 m long	9699958
Mains cable EU plug 3 m long	9699957
Mains cable UK plug 2.5 m long	X3501-68005
Serial Cable & T-plus Software	9699883
Medium-TMP Extension Cable	9699948M001 (5 m) 9699948M003 (10 m) 9699948M004 (15 m) 9699948M002 (20 m) 9699948M005 (30 m) 9699948M006 (50 m) 9699948M009 (75 m) 9699948M010 (100 m)
Inlet Screen	**Part Numbers**
Inlet Screen ISO100/CFF6	9699302
Cooling	**Part Numbers**
Medium-TMP Air Cooling Kit for Rack Controller	X3501-68001
Medium-TMP Air Cooling Kit for on board Controller	9699297
Plastic Water cooling Kit	9699347
Metal Water cooling Kit	9699337
Air Cooling Kit Extension Cable 5m	X3501-68101
Air Cooling Kit Extension Cable 10m	X3501-68051
Air Cooling Kit Extension Cable 15m	X3501-68061
Air Cooling Kit Extension Cable 20m	X3501-68021
Air Cooling Kit Extension Cable 30m	X3501-68011
Air Cooling Kit Extension Cable 50m	X3501-68071
Air Cooling Kit Extension Cable 75m	X3501-68081
Air Cooling Kit Extension Cable 100m	X3501-68091
Venting	**Part Numbers**
Vent valve driven by Rack Controller	X3501-68002
Vent valve driven by onboard Controller	9699834
Vent flange, NW 10 KF / M8	9699108
Spare Vent Screw	X3511-68000
Vent valve Rack Extension Cable	X3501-68004 (5 m) X3501-68054 (10 m) X3501-68064 (15 m) X3501-68074 (20 m) X3501-68084 (30 m) X3501-68034 (50 m) X3501-68094 (75 m) X3501-68104 (100 m)
Purge	**Part Numbers**
Purge 10SCCM M12-NW16KF	9699239
Purge 10SCCM M12-1/4Swagelok	9699240
Purge 20SCCM M12-NW16KF	9699241
Purge 20SCCM M12-1/4Swagelok	9699242
Spare Purge Screw	X3502-68004
Mounting	**Part Numbers**
Medium-TMP onboard Controller side-mounting bracket	X3511-68003
Medium-TMP KF25 foreline flange	X3511-68001
Medium-TMP KF40 foreline flange	X3511-68002
Active Gauges	**Part Numbers**
FRG 700 Full Range Gauge PVG 500 Pirani Vacuum Gauge PCG 750 Pirani Capacitance Gauge CDG-500 Capacitance Diaphragm Gauge	Ask Agilent for details

Compression Ratio



Pumping Speed



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