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 804 FS eliminate oil and maintenance, and permit operation of the pump in any orientation. Available with onboard or rack controllers.
### Technical Specifications

<table>
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<tr>
<th>Technical Specifications</th>
<th>ISO200K-F</th>
<th>ISO250K-F</th>
<th>CFF10</th>
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<tbody>
<tr>
<td><strong>Pumping speed</strong></td>
<td>720 L/s</td>
<td>660 L/s</td>
<td>485 L/s</td>
</tr>
<tr>
<td><strong>N₂</strong></td>
<td>4.3 mbar L/s</td>
<td>6.2 mbar L/s</td>
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<tr>
<td><strong>He</strong></td>
<td>7.9 mbar L/s</td>
<td>10.4 mbar L/s</td>
<td>8.5 mbar L/s</td>
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<tr>
<td><strong>H₂</strong></td>
<td>1.5 mbar L/s</td>
<td>3.3 mbar L/s</td>
<td>1.5 mbar L/s</td>
</tr>
<tr>
<td><strong>Ar</strong></td>
<td>467 SCCM</td>
<td>615 SCCM</td>
<td>89 SCCM</td>
</tr>
</tbody>
</table>

**Max Gas Throughput (%)**
- **N₂**: 255 SCCM
- **He**: 255 SCCM
- **H₂**: 89 SCCM
- **Ar**: 89 SCCM

**Materials**
- NW25 or NW40

**Rotational speed**
- Auto setting from 40'800 RPM to 49'500 RPM

**Start-up time**
- < 5 minutes

**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

**Recommended forepump**
- Agilent DS302 Rotary Vane Pump
- Agilent IDP-10 Dry Scroll Pump
- Agilent IDP-15 Dry Scroll Pump

**Recommended forepump**
- Any

**Oper. ambient temp.**
- +5 °C to +35 °C

**Rel. humidity of air**
- 0 to 90% (not condensing)

**Bakeout temp.**
- ISO pump: 80°C at inlet flange
- CFF pump: 120°C at inlet flange

**Lubricant**
- Permanent lubrication

**Cooling requirements**
- Air cooling: Air temperature from +5°C to 35°C
- Water cooling: Water temperature from +15°C to +25°C

**Noise Pressure Level**
- 43dB(A)

**Storage temp.**
- -40 °C to +70 °C

**Max altitude**
- 3000 m

**Weight kg (lbs)**
- ISO200K: 20.7 kg (45.5)
- ISO200F: 23.8 kg (51.9)
- ISO250K: 27.6 kg (60.9)
- ISO250F: 28.3 kg (61.9)
- CFF 10": 22.1 kg (48.6)

**EMC (Control Units)**
- 61326-1
- 61010-1

**Safety (CE/CSA)**
- DIR 2006/42/CE
- DIR 2014/35/EU

**Machinery Directive**
- DIR 2014/30/EU

**Low Voltage Directive**
- DIR 2011/65/EU

**EMC Directive (Control Units)**
- DIR 2014/35/EU

**ROHS**
- DIR 2011/65/EU

**Dimensions**: mm (inches)

**Outline Drawing**

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**3D Drawings available for download**
### Ordering Information

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<tr>
<th>Pumps</th>
<th>Configuration Options</th>
<th>Part Numbers</th>
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<td>X3511-64007</td>
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<tr>
<td>TwisTorr 804 FS ISO200K KF40 air cooling</td>
<td>X3511-64008</td>
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<td>TwisTorr 804 FS ISO200F KF25 air cooling</td>
<td>X3511-64009</td>
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<tr>
<td>TwisTorr 804 FS ISO200F KF40 air cooling</td>
<td>X3511-64010</td>
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<tr>
<td>TwisTorr 804 FS CFF10” KF25 air cooling</td>
<td>X3511-64011</td>
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<td>X3511-64012</td>
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<td>X3511-64023</td>
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<tr>
<td>TwisTorr 804 FS ISO250K KF40 water cooling</td>
<td>X3511-64024</td>
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<tr>
<td>TwisTorr 804 FS ISO250F KF40 water cooling</td>
<td>X3511-64025</td>
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<td>X3511-64026</td>
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<td>TwisTorr 804 FS ISO250K KF40 water cooling</td>
<td>X3511-64028</td>
<td></td>
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<tr>
<td>TwisTorr 804 FS ISO250F KF40 water cooling</td>
<td>X3511-64029</td>
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#### 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: 9699983

#### 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 ISO200/CF10: 9699316
- Inlet screen ISO250: 9699350

#### 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: Ask Agilent for details
- PVG 500 Pirani Vacuum Gauge
- PCG 750 Pirani Capacitance Gauge
- CDG-500 Capacitance Diaphragm Gauge

### Compression Ratio

![Compression Ratio Graph](image)

### Pumping Speed

![Pumping Speed Graph](image)