



# AGILENT TPS TURBO PUMPING SYSTEMS

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**Agilent Technologies**

# AGILENT TPS

## INTEGRATED PUMPING SOLUTIONS, NOW AVAILABLE WITH TWISTORR 304 FS

Powered by Agilent Turbomolecular pumps, featuring the new TwisTorr 304 FS, and backed by Agilent Dry Scroll or Rotary Vane Pumps.

### Mini-TASK AG81

Portable, dry system with the smallest footprint.

### TPS-compact

Turbo-V 81 or TwisTorr 304 FS: best vacuum performance, fast pumpdown time, integrated IDP-3 Dry Scroll Pump.

### TPS-bench

Table-top solutions, backed by Agilent Dry Scroll Pump or Rotary Vane Pump.

### TPS-mobile

Roll-around carts, high capacity systems, wide pumping speed range, now also available with the state-of-the-art IDP-15 Dry Scroll Pump.

Customized configurations on request



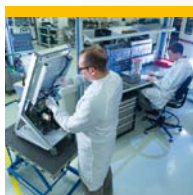
#### IDP-3 Dry Scroll Pump

- The most compact and light scroll pump in the market
- Innovative hermetic design, with motor and bearings outside the vacuum space
- Integrated pump isolation valve
- Cost effective and easy tip-seal replacement



#### Design for Reliability

- A rigorous test regime of product performance, reliability and durability according to Agilent standards
- Environmental Test method (Shock, Humidity, Noise, Temperature, Vibration Tests)
- Reliability assessment on Agilent systems
- Vacuum Test, Life Tests

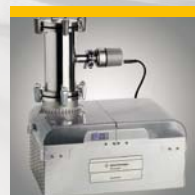


#### Manufacturing

- New TPS Manufacturing Line in Agilent Vacuum Products plant in Torino, Italy

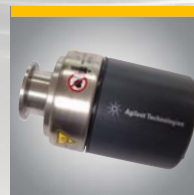
#### Service and Support

- Several levels of Service Programs to help you maximize your productivity: Advance Exchange, Upgrade Program, Factory Repair, Field Support



#### Active Gauge Capability

- FRG-700 Active Full Range combined gauge: Pirani and Cold Cathode from atmosphere to  $5 \times 10^{-9}$  mbar ( $7 \times 10^{-9}$  Torr)
- Pressure data available on three independent channels:
  - Serial communication
  - Analog output
  - On board display



# TPS TURBO PUMPING SYSTEMS



## On Board Direct Pressure Reading

- Large pressure reading display
- Torr, Pascal and mbar options
- Ready for FRG-700 Active Gauge



## User-friendly Interface

T-Plus software for full PC/Laptop control enables easy data download and graphic display.



NOW  
AVAILABLE WITH  
THE NEW IDP-15  
DRY SCROLL  
PUMP

Turbo Pumping  
Systems

## TwisTorr FS Technology

### High Performance, Innovation, Reliability



#### Agilent

#### Floating Suspension, to ensure:

- Low vibration and acoustical noise
- Extended bearings operating life
- Exceptional stability for demanding applications



#### Unique TwisTorr stages

to deliver the best vacuum performance available:

- High pumping speed and compression ratio
- High throughput, high foreline tolerance
- Low power consumption, low operating temperature





## AGILENT TPS

### INTEGRATED PUMPING SOLUTIONS, NOW AVAILABLE WITH TWISTORR 304 FS

#### The new TPS Turbo Pumping Systems: just plug and pump!

Portable, fully integrated vacuum solutions, available as light dry bench-top solutions, for small and medium volumes, or high capacity, wide pumping speed range cart versions.

Now available with the innovative, breakthrough TwisTorr FS technology, for outstanding performance and reliability.

#### Turbo Pumping Systems: key features

Integrated, complete vacuum systems

- Wide range from bench-top to cart versions
- Flexible: broad choice of gauges, valves and components
- Compact and portable: small footprint, light weight
- Enhanced, reliable vacuum performance
- Easy-to-use, simply plug and pump!
- Cost-effective solutions
- Worldwide power configurations and safety standards
- Global Technical, Application and Customer Service support
- Advance Exchange, Upgrade and Repair programs available
- Dry versions: no hydrocarbon contamination, no oil leaks
- **Improved reliability with the new TwisTorr FS pumps**

## Innovative Vacuum Technologies for Your System



#### Agilent Turbo Pump Technology

- Wide pumping speed range from 67 to 600 l/sec
- TwisTorr 304 FS: the innovative molecular-drag technology
- Outstanding reliability
- Highest compression ratio and pumping speed



#### Agilent Dry Scroll Pumps

- No maintenance required, simple tip seal replacement
- CE, CSA certified
- Isolation valve integrated/included
- IDP-3: the smallest scroll pump in the market; pumping speed 3.0 m<sup>3</sup>/h, and ultimate pressure 3.3 x 10<sup>-1</sup> mbar
- SH-110: pumping speed 5.4 m<sup>3</sup>/h



#### Agilent Rotary Vane Pumps

- Wide pumping speed range from 1.8 to 20.5 m<sup>3</sup>/h
- Dual stage
- Forced oil circulation
- Gas ballast valve
- Anti-suckback valve and vent device



## High Energy Physics and Research Centers

This new TPS Turbo Pumping System may be used in any laboratory where there is a need to create high vacuum in small-volume chambers quickly and easily.

The new generation electronics and the pressure display ensure the accuracy of the process.

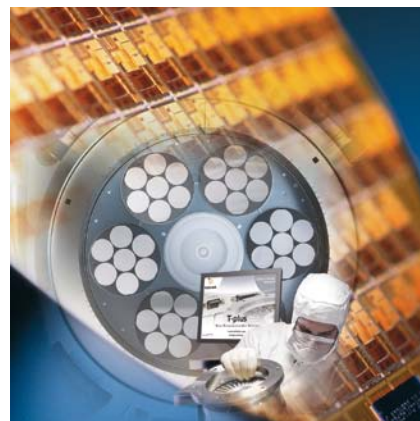
Agilent TPS are well suited for UHV System pump down, Ion pump roughing, High Vacuum Systems operation, High and Ultra High Vacuum systems bake out.



## Electron Microscopy and Mass Spectrometry

The new TPS Integrated Turbo Pumping System are the perfect tool to keep the column of an electron microscope under vacuum while performing maintenance or repair on the device.

The oil-free nature of the dry systems guarantees freedom from contamination of the column.



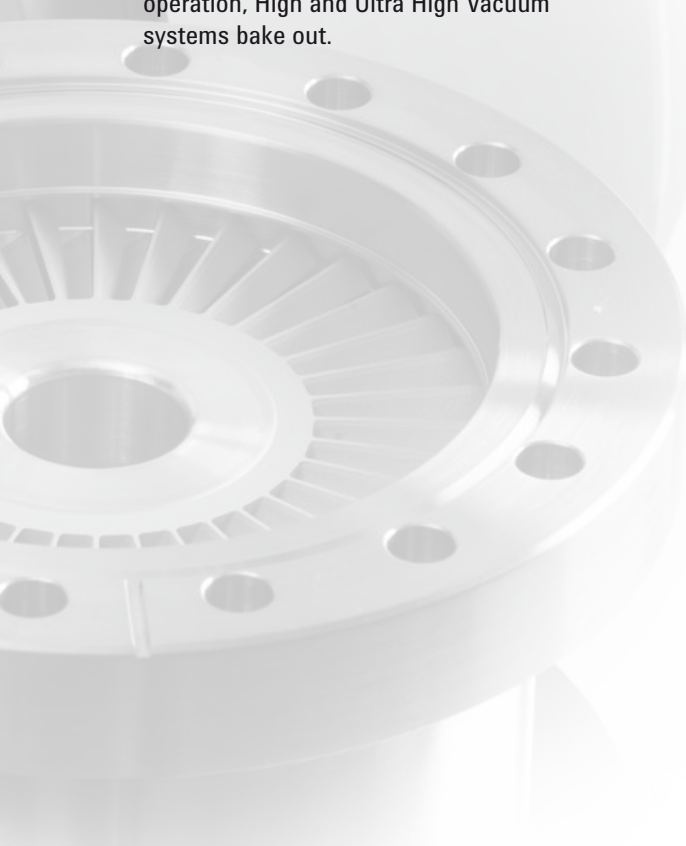
## Industrial Applications

The Agilent TPS Turbo Pumping Systems can create and maintain the required vacuum level in separate chamber of an industrial system during maintenance or repair.

The TPS with Dry Scroll Pumps are particularly well suited for evacuating load-lock chambers, or in Medical Accelerators applications.

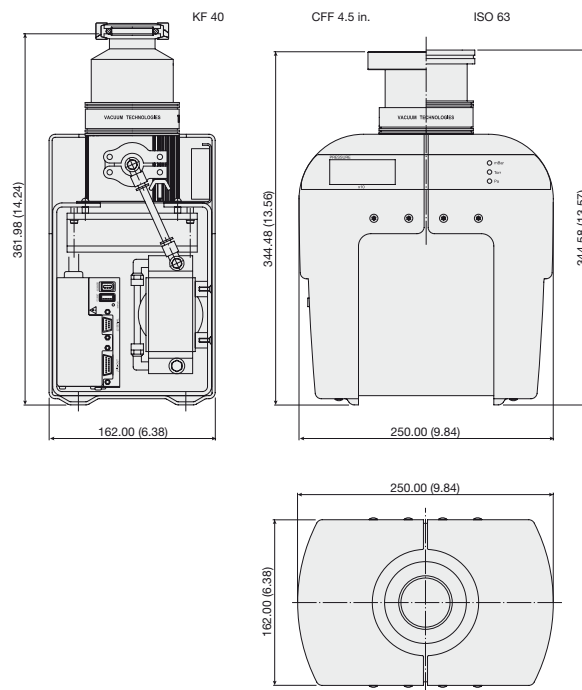
Their oil-free design ensures the purity of the process.

The Mini-TASK may be mounted in any position, making it suitable for most system.



# AGILENT TPS TURBO PUMPING SYSTEMS MODELS

## ▶ Agilent Mini-TASK AG81



Dimensions: millimeters (inches)

A small and compact, easy-to-use, integrated dry vacuum system, featuring the Agilent Turbo-V 81 MacroTorr pump with top vacuum performance, backed by a dry 10 l/min diaphragm pump. It can operate in any position, and does not require maintenance. Active Gauge capability, large pressure display, T-Plus Navigator Software to connect to your PC. Universal voltage (90-240 V), CE/CSA certified.

### Features

- New generation turbomolecular pump Turbo-V 81-M
- Compact, light, dry, clean and robust system
- Universal voltage (90-240 V) - CE/CSA certified
- RS-232 or analogical communication
- Vacuum gauge driving card
- Large pressure data display
- Pressure driven set point, analog set point

### Benefits

- Designed for demanding applications
- Cost-effective pumping solution for small volumes
- Can be used world-wide
- Easy to use: plug and pump system
- Compatible with world-wide power configurations
- Complies with world-wide safety standards
- Easy system pressure measurement

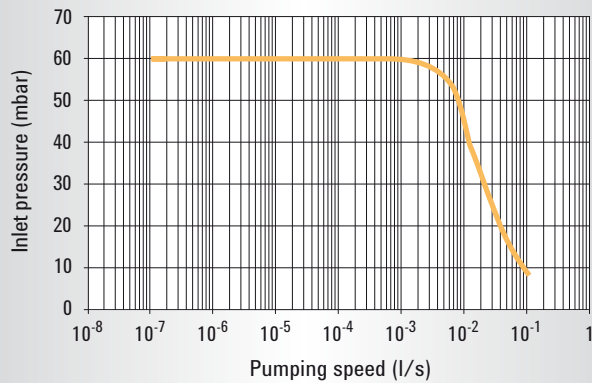
### Technical Specifications

Flange		KF40	ISO63	CFF 4.5 in.
Pumping speed (l/s)	N <sub>2</sub>	40	60	60
	H <sub>2</sub>	36	40	40
	He	45	55	55
Base pressure		2 x 10 <sup>-7</sup> mbar	2 x 10 <sup>-7</sup> mbar	5 x 10 <sup>-8</sup> mbar*
Bakeout temperature		80 °C at inlet	80 °C at inlet	120 °C at inlet
Shipping weight		7.5 kg (16.4 lbs)	7.5 kg (16.4 lbs)	8.3 kg (18.3 lbs)
Pumpdown time (1 liter volume)		60 sec. to 24 mbar; 120 sec. to 1 x 10 <sup>-4</sup> mbar; 160 sec. to 7 x 10 <sup>-5</sup> mbar		
Turbo pump rotational speed		80,000 rpm		
Start-up time		Less than 2 minutes		
Operating position		Any		
Operating ambient temperature		5 °C to 35 °C / 32 °F to 122 °F		
Input Voltage and frequency		90V to 240V AC; 50 Hz / 60 Hz		
Maximum input power		220 VA		
Serial communications		RS-232, 9-pin D-type, T-Plus Software		

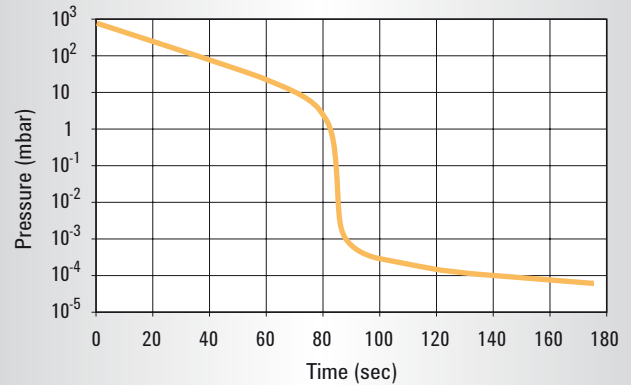
\* According to standard DIN 28 428.

# TPS TURBO PUMPING SYSTEMS

**Pumping Speed VS Inlet Pressure**



**Pressure VS time (with a pump down vol. of 1 lt.)**



## Ordering Information

Mini-TASK AG81	KF40	ISO63	CFF 4.5 in
	G8703A#020	G8703A#021	G8703A#022
<b>Accessories</b>			
DIY Full Range Gauge Kit*	9699190	9699192	9699193
EU plug power cable**, 2 meters (1 ph)	9499396	9499396	9499396
USA plug power cable**, 2 meters (1 ph)	9499397	9499397	9499397
UK plug power cable**, 2 meters (1 ph)	9499398	9499398	9499398
Serial Cable and T-Plus Navigator Software	9699883	9699883	9699883

**NOTE** Special Vent Valve available on request

\* The DIY Gauge Kit can be ordered separately, and includes Full Range Gauge FRG-700, Cable for gauge connection, Vacuum Tee and Connecting Hardware (Flanges according to the System inlet flange)

\*\* Power Cord to be ordered separately

# AGILENT TPS TURBO PUMPING SYSTEMS MODELS

## ▶ Agilent TPS-compact



A portable, fully Integrated, hydrocarbon-free pumping system powered by the Turbo-V 81M or by the innovative TwisTorr 304 FS pumps, backed by the unique Agilent 60 l/min IDP-3 Dry Scroll, new generation primary pump.

A cost-effective pumping solution with large pressure display, Active Gauge capability, universal voltage (90-240 V), CE/CSA certified.

### Features

- Available with TwisTorr 304 FS or Turbo-V 81 Turbomolecular Pumps
- IDP-3 Dry Scroll backing pump
- Compact, light, dry, clean and robust system
- Nominal voltage (90-240 V) - CE/CSA certified
- RS-232 or analogical communication
- Vacuum gauge driving capability
- Large pressure data display
- Pressure driven set point, analog set point
- Wheels option available

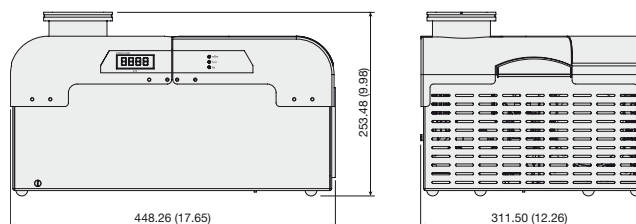
### Technical Specifications

	Equipped with TV 81M	Equipped with TwisTorr 304 FS
<b>Pumping speed</b>	N <sub>2</sub> : 77 l/s	N <sub>2</sub> : 180 l/s (with inlet screen)*
<b>Base pressure**</b>	1x10 <sup>-9</sup> mbar (CFF flanges) - 1x10 <sup>-8</sup> mbar (ISO flanges)	1 x 10 <sup>-9</sup> mbar (CFF flanges) - 1 x 10 <sup>-8</sup> mbar (ISO flanges)
<b>Pumpdown time</b> (15 lt volume)	80 sec (100 mbar); 110 sec (1 mbar); 155 sec (1 <sup>-4</sup> mbar); 400 sec (1 <sup>-5</sup> mbar)	80 sec (16 mbar); 110 sec (3 mbar); 155 sec (6 x 10 <sup>-5</sup> mbar); 200 sec (1 x 10 <sup>-5</sup> mbar)
<b>Turbo pump rotational speed</b>	80,000 RPM	60,000 RPM
<b>Start-up time</b>	15 sec.	15 sec.
<b>Operating ambient temperature</b>	5 °C to 35 °C	5 °C to 35 °C
<b>Input voltage and frequency</b>	115 Vac 60 Hz or 220-240 Vac 50/60 Hz	115 Vac 60 Hz or 220-240 Vac 50/60 Hz or 100 Vac 50/60 Hz
<b>Maximum input power</b>	260 VA	310 VA
<b>Bakeout temperature</b>	120 °C at inlet (CFF flanges) - 80 °C at inlet (KF/ISO flanges)	120 °C at inlet (CFF flanges) - 80 °C at inlet (ISO flanges)
<b>Communication</b>	RS232 - Analogical I/O	RS232 - Analogical I/O
<b>Weight</b>	16.7 kg (36.8 lbs)	20.1 kg (44.3 lbs)

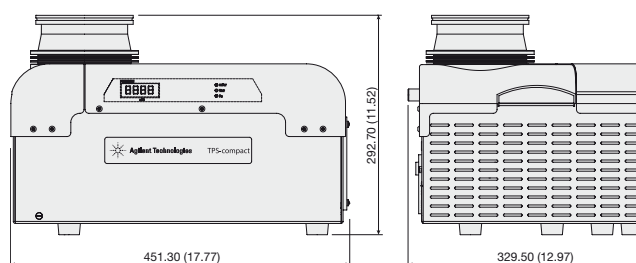
\* Pump nominal speed: TwisTorr 304 FS N<sub>2</sub>: 250 l/s

\*\* According to standard DIN 28 428.

TPS-compact with  
Turbo-V 81M – ISO 63



TPS-compact with  
TwisTorr 304 FS – ISO 100



Dimensions: millimeters (inches)

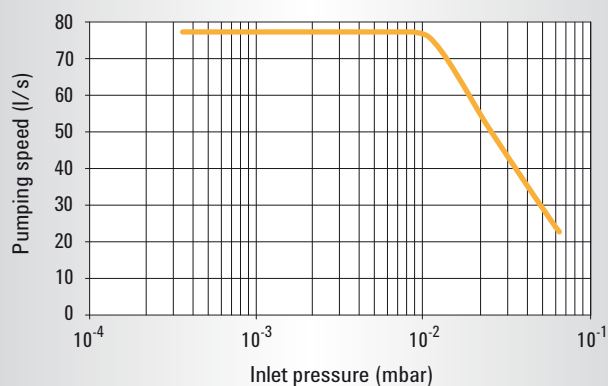
### Benefits

- Designed for demanding applications
- Cost-effective pumping solution
- Easy to use: plug and play system
- Complies with world-wide safety standards
- Easy system pressure measurement
- Easy Tip-seal replacement (10 min)
- Excellent base pressure up to 10<sup>-9</sup> mbar
- Easy to be moved in small space

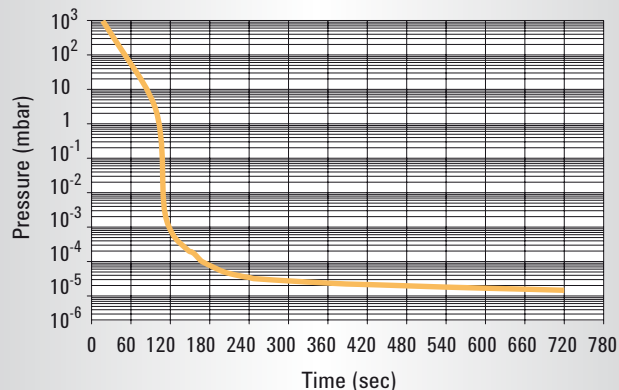


# TPS TURBO PUMPING SYSTEMS

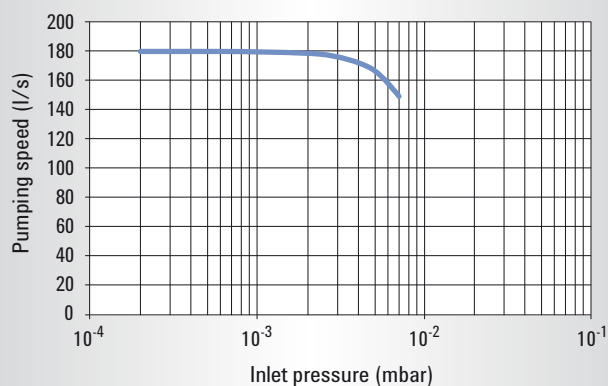
**Pumping Speed vs Inlet Pressure - TV 81M (DN 63)**



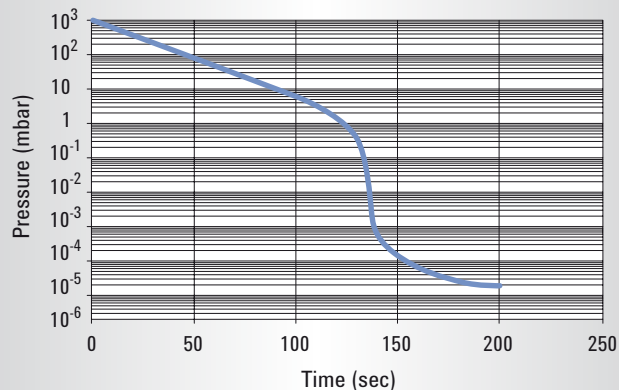
**Pressure vs Time - TV 81M (with a pump down vol. of 15 lt.)**



**Pumping Speed vs Inlet Pressure - TwisTorr 304 FS**



**Pressure vs Time - TwisTorr 304 FS (with a pump down vol. of 15 lt.)**



## Ordering Information

TPS-compact TV 81M	KF40	CFF 2 3/4"	ISO 63	CFF 4 1/2"
105 V*	G8702A#010#020#105	G8702A#010#027#105	G8702A#010#021#105	G8702A#010#022#105
120 V	G8702A#010#020#120	G8702A#010#027#120	G8702A#010#021#120	G8702A#010#022#120
220 V	G8702A#010#020#220	G8702A#010#027#220	G8702A#010#021#220	G8702A#010#022#220

### Accessories

DIY Full Range Gauge Kit**	9699190	9699199	9699192	9699193
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TPS-compact TwisTorr 304 FS	ISO 100	CFF 6"	ISO 160	CFF 8"
105 V*	X3580A#011#023#105	X3580A#011#024#105	X3580A#011#025#105	X3580A#011#026#105
120 V	X3580A#011#023#120	X3580A#011#024#120	X3580A#011#025#120	X3580A#011#026#120
220 V	X3580A#011#023#220	X3580A#011#024#220	X3580A#011#025#220	X3580A#011#026#220

### Accessories

DIY Full Range Gauge Kit**	9699194	9699201	9699195	9699202
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**NOTE** Special Vent Valve available on request

\* For Japanese market

\*\* The DIY Gauge Kit can be ordered separately, and includes Full Range Gauge FRG-700, Cable for gauge connection, Vacuum Tee and Connecting Hardware (Flanges according to the System inlet flange)

## Other Accessories

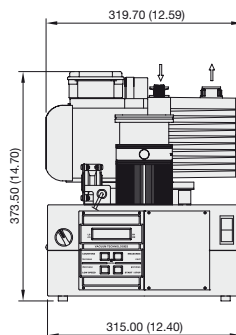
Wheels accessory kit	9698233	EU Power cord (5 m)	9698450
EU Power cable (2 m)	9499396	US Power cord (5 m)	9698452
US Power cable (2 m)	9499397	UK Power cord (5 m)	9698451
UK Power cable (2 m)	9499398	Serial Cable and T-Plus Navigator Software	9699883

# AGILENT TPS TURBO PUMPING SYSTEMS MODELS

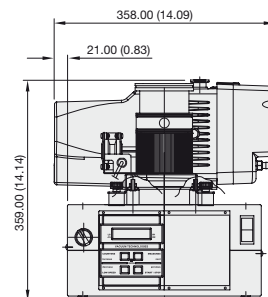
## ▶ Agilent TPS-bench



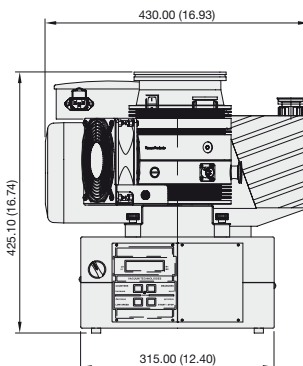
**TPS-bench with  
TV 81M and DS 42**



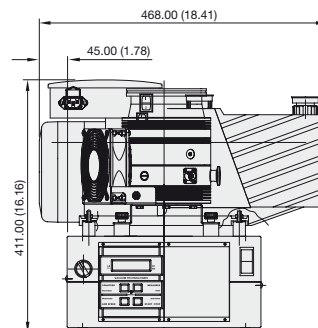
**TPS-bench with  
TV 81M and IDP-3**



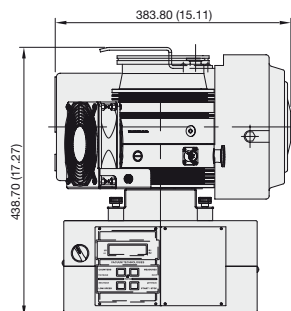
**TPS-bench with  
TwisTorr 304 FS and DS 102**



**TPS-bench with  
TwisTorr 304 FS and DS 302**



**TPS-bench with  
TwisTorr 304 FS and SH110**



Depth: 453 (17.83)

Dimensions: millimeters (inches)

Table-top, compact and reliable vacuum solutions.  
80 possible standard configurations with the Turbo-V 81M and the new TwisTorr 304 FS Turbo Pumps, backed by Agilent Dry Scroll and Rotary Vane Pumps.

Gauges and accessories available. T-Plus Software, and Isolation valve integrated/included.

Voltage 110/230V. CE, UL/CUL, CSA and Semi S2-0200 certified.

Applications include UHV System pump down, Ion pump roughing, Lamp and tube processing, Cryopump regeneration, High Vacuum Systems operation, High and Ultra High Vacuum systems bake out.

## Turbomolecular Pumps - Pumping Speed

	<b>Turbo-V 81M DN 63</b>	<b>TwisTorr 304 FS ISO 100, CFF 6"</b>
<b>Pumping speed</b>	N <sub>2</sub> : 77 l/s	N <sub>2</sub> : 180 l/s (with inlet screen)*

\* Pump nominal speed: TwisTorr 304 FS N<sub>2</sub>: 250 l/s

## Base Pressure\*

	<b>Turbo-V 81M</b>	<b>TwisTorr 304 FS</b>
<b>Base Pressure with SH110 Dry Scroll Pump</b>	5 x 10 <sup>-9</sup> mbar (3.8 x 10 <sup>-9</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)
<b>Base Pressure with DS-102 Rotary Vane Pump</b>	5 x 10 <sup>-10</sup> mbar (3.8 x 10 <sup>-10</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)

\* According to standard DIN 28 428

# TPS TURBO PUMPING SYSTEMS

## Pumpdown Time\*

Pumpdown time (15 liter volume) 40 sec (45 mbar); 60 sec (7 mbar); 80 sec ( $5 \times 10^{-1}$  mbar); 100 sec ( $8 \times 10^{-5}$  mbar); 115 sec ( $1 \times 10^{-5}$  mbar)

\* TPS-bench with TwisTorr 304 FS ISO 100 and SH 110 Scroll Pump

## TPS-bench standard configurations

TPS-compact	TV 81M KF40	TV 81M ISO 63	TV 81M CFF 2 3/4"	TV 81M CFF 4 1/2"	TwisTorr 304 FS ISO 100	TwisTorr 304 FS CFF 6"	TwisTorr 304 FS ISO 160	TwisTorr 304 FS CFF 8"
DS 42 - 120 V	•	•	•	•				
DS 42 - 220 V	•	•	•	•				
DS 102 - 120 V	•	•	•	•	•	•	•	•
DS 102 - 220 V	•	•	•	•	•	•	•	•
DS 202 - 120 V	•	•	•	•	•	•	•	•
DS 202 - 220 V	•	•	•	•	•	•	•	•
DS 302 - 120 V	•	•	•	•	•	•	•	•
DS 302 - 220 V	•	•	•	•	•	•	•	•
IDP-3 - 120 V	•	•	•	•				
IDP-3 - 220 V	•	•	•	•				
SH 110 - 120 V	•	•	•	•	•	•	•	•
SH 110 - 220 V	•	•	•	•	•	•	•	•

Ordering Information available on request: call Agilent for details

## Turbomolecular Pumps

Turbo Pump Model	Inlet Flange
Turbo-V 81M	ISO 63, KF 40*, CFF 2 3/4", CFF 4 1/2"*
TwisTorr 304 FS Pump	ISO 100, CFF 6", ISO 160, CFF 8"*

\* Configuration available on request

## Primary Pumps

Dry Scroll Pumps	Peak Pumping Speed 50 Hz
SH 110, single phase	90 l/min - 5.4 m <sup>3</sup> /h - 3.3 cfm
IDP-3, single phase	50 l/min - 3.0 m <sup>3</sup> /h - 1.8 cfm
Rotary Vane Dual Stage Pumps	Pumping Speed 50 Hz
DS 42 - 1 phase worldwide motor	2.3 m <sup>3</sup> /h
DS 102 - 1 phase worldwide motor	5.0 m <sup>3</sup> /h
DS 202 - 1 phase worldwide motor	8.3 m <sup>3</sup> /h
DS 302 - 1 phase worldwide motor	11.6 m <sup>3</sup> /h

## Managing Gauges

GAUGE KIT	Inlet Flange	DIY FRG-700 Full Range Gauge Kit (atmosphere to $3.8 \times 10^{-9}$ Torr)
Turbo-V 81M	KF 40	9699190
	ISO 63	9699192
	CFF 4 1/2"	9699193
TwisTorr 304 FS	ISO 100	9699194
	CFF 6"	9699201

For other gauge configurations, please contact your local Agilent representative.

## Cables

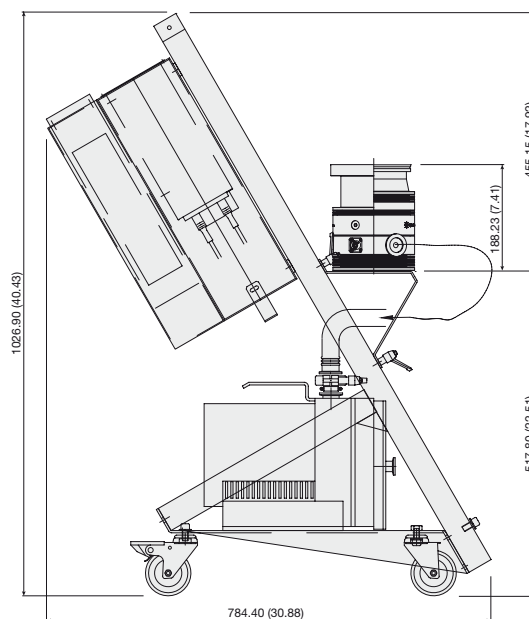
Power cords are included free of charge in all TPS-bench and TPS-mobile models, with US, EU or UK plug.

## AGILENT TPS TURBO PUMPING SYSTEMS MODELS

### ▶ Agilent TPS-mobile



TPS-mobile with  
TwisTorr 304 FS and SH110



Depth: 453 (17.83)

Dimensions: millimeters (inches)

Roll-around cart, high capacity systems, with higher compression ratio and wide pumping speed range. 168 possible configurations, with the Agilent Turbo-V 81M, the new TwisTorr 304 FS, the Turbo-V 551 Navigator Pumps, backed by Dry Scroll Pumps (including the new IDP-15) or DS Mechanical Pumps. Gauges and accessories available for customized solutions.

T-Plus Software, Isolation valve integrated/included. Voltage 110/230V. CE, UL/CUL, CSA and Semi S2-0200 certified.

Applications include UHV System pump down, Ion pump roughing, Lamp and tube processing, Cryopump regeneration, High Vacuum Systems operation, High and Ultra High Vacuum systems bake out.

### Turbomolecular Pumps - Pumping Speed

	Turbo-V 81M DN 63	TwisTorr 304 FS ISO 100, CFF 6"	Turbo-V 551 Navigator DN 160
<b>Pumping speed</b>	N <sub>2</sub> : 77 l/s	N <sub>2</sub> : 180 l/s (with inlet screen)*	N <sub>2</sub> : 550 l/s (with inlet screen)

\* Pump nominal speed: TwisTorr 304 FS N<sub>2</sub>: 250 l/s

### Base Pressure\*

	Turbo-V 81M	TwisTorr 304 FS	Turbo-V 551 Navigator
<b>Base Pressure with SH110 Dry Scroll Pump</b>	5 x 10 <sup>-9</sup> mbar (3.8 x 10 <sup>-9</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)
<b>Base Pressure with DS-102 Rotary Vane Pump</b>	5 x 10 <sup>-10</sup> mbar (3.8 x 10 <sup>-10</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)	< 1.0 x 10 <sup>-10</sup> mbar (< 7.5 x 10 <sup>-11</sup> Torr)

\* According to standard DIN 28 428



# TPS TURBO PUMPING SYSTEMS

## Pumpdown Time\*

Pumpdown time (15 liter volume) 40 sec (50 mbar); 60 sec (8 mbar); 80 sec ( $7 \times 10^{-1}$  mbar); 100 sec ( $1 \times 10^{-4}$  mbar); 130 sec ( $1 \times 10^{-5}$  mbar)

\* TPS-mobile with TwisTorr 304 FS ISO 100 and SH 110 Scroll Pump

## TPS-mobile standard configurations

TPS-compact	TV 81M KF40	TV 81M ISO 63	TV 81M CFF 2 3/4"	TV 81M CFF 4 1/2"	TwisTorr 304 FS ISO 100	TwisTorr 304 FS CFF 6"	TwisTorr 304 FS ISO 160	TwisTorr 304 FS CFF 8"	TV 551 ISO 160	TV 551 CFF 8"	TV 551 ISO 100	TV 551 CFF 6"
DS 42 - 120 V	•	•	•	•								
DS 42 - 220 V	•	•	•	•								
DS 102 - 120 V	•	•	•	•	•	•	•	•				
DS 102 - 220 V	•	•	•	•	•	•	•	•				
DS 202 - 120 V	•	•	•	•	•	•	•	•				
DS 202 - 220 V	•	•	•	•	•	•	•	•				
DS 302 - 120 V					•	•	•	•	•	•	•	•
DS 302 - 220 V					•	•	•	•	•	•	•	•
DS 402 - 120 V					•	•	•	•	•	•	•	•
DS 402 - 220 V					•	•	•	•	•	•	•	•
DS 602 - 120 V					•	•	•	•	•	•	•	•
DS 602 - 220 V					•	•	•	•	•	•	•	•
IDP-3 - 120 V	•	•	•	•	•	•	•	•				
IDP-3 - 220 V	•	•	•	•	•	•	•	•				
SH 110 - 120 V	•	•	•	•	•	•	•	•				
SH 110 - 220 V	•	•	•	•	•	•	•	•				
IDP-15 - 120 V					•	•	•	•	•	•	•	•
IDP-15 - 220 V					•	•	•	•	•	•	•	•
TS 300 VPI - 120 V					•	•	•	•	•	•	•	•
TS 300 VPI - 220 V					•	•	•	•	•	•	•	•
TS 600 VPI - 120 V					•	•	•	•	•	•	•	•
TS 600 VPI - 220 V					•	•	•	•	•	•	•	•

Ordering Information available on request: call Agilent for details

## Turbomolecular Pumps

Turbo Pump Model	Inlet Flange
Turbo-V 81M	ISO 63, KF 40*, CFF 2 3/4", CFF 4 1/2"
TwisTorr 304 FS Pump	ISO 100, CFF 6", ISO 160, CFF 8"
Turbo-V 551 Navigator	ISO 100, CFF 6", ISO 160, CFF 8"

\* Configuration available on request

## Primary Pumps

Dry Scroll Pumps	Peak Pumping Speed 50 Hz
IDP-3, single phase	50 l/min - 3.0 m <sup>3</sup> /h - 1.8 cfm
SH 110, single phase	90 l/min - 5.4 m <sup>3</sup> /h - 3.3 cfm
TriScroll 300, single phase, with Vacuum Pump Isolation Valve (VPI)	220 VAC 210 l/min 2.6 m <sup>3</sup> /h - 7.4 cfm
TriScroll 600, single phase, with Vacuum Pump Isolation Valve (VPI)	220 VAC 420 l/min 25.2 m <sup>3</sup> /h - 14.8 cfm
IDP-15, single phase	214 l/min - 12.8 m <sup>3</sup> /h

Rotary Vane Dual Stage Pumps	Pumping Speed 50 Hz
DS 42 - 1 phase worldwide motor	1.8 m <sup>3</sup> /h
DS 102 - 1 phase worldwide motor	5.0 m <sup>3</sup> /h
DS 202 - 1 phase worldwide motor	9.6 m <sup>3</sup> /h
DS 302 - 1 phase worldwide motor	11.6 m <sup>3</sup> /h
DS 402 - 1 phase worldwide motor	17.4 m <sup>3</sup> /h
DS 602 - 1 phase worldwide motor	30.2 m <sup>3</sup> /h

## AGILENT TPS TURBO PUMPING SYSTEMS MODELS

### **Agilent TPS-mobile** *(Cont'd)*

#### Managing Gauges

GAUGE KIT	Inlet Flange	DIY FRG-700 Full Range Gauge Kit (atmosphere to $3.8 \times 10^{-9}$ Torr)
Turbo-V 81M	KF 40	9699190
	ISO 63	9699192
	CFF 4 ½"	9699193
TwisTorr 304 FS	ISO 100	9699194
	CFF 6"	9699201
Turbo-V 551 Navigator	ISO 160 K	9699195
	CFF 8"	9699202

For other gauge configurations, please contact your local Agilent representative.

#### Cables

Power cords are included free of charge in all TPS-bench and TPS-mobile models, with US, EU or UK plug.