



# AGILENT DRY SCROLL PUMPS

|       |                            |
|-------|----------------------------|
| 2-3   | Features and Benefits      |
| 4-5   | Typical Applications       |
| 6-7   | New IDP-15 Dry Scroll Pump |
| 8-26  | Pump Models                |
| 27-33 | Scroll Accessories         |
| 34-35 | Scroll Maintenance         |



**Agilent Technologies**

## SCROLL PUMPS FEATURES AND BENEFITS

**Agilent dry scroll pumps** create vacuum using a dual scroll mechanism where one nested scroll orbits the other creating moving zones of captured gas.

Gas enters the scroll set at the perimeter and is displaced and compressed toward the center hub where it is exhausted. This design offers many benefits such as low noise and vibration, simple and infrequent maintenance, and elimination of catastrophic failure modes.



Gas enters scroll set



Gas is displaced and...



...compressed toward center hub



Gas exhausted at center hub

**SH and IDP series of scroll pumps** employ a single stage design that delivers dry vacuum in a small, economical, reliable package making these pumps ideally suited for many applications including Analytical Instruments and Research and Development. This simple design utilizes proven seal technology for longer demonstrated maintenance intervals.

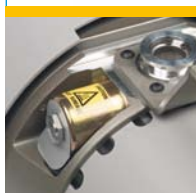
**Agilent TriScroll and TriScroll Inverter pumps** are two-stage scroll pumps that achieve the lowest ultimate pressure of any dry pump technology on the market today.

**NEW**

**IDP-15**



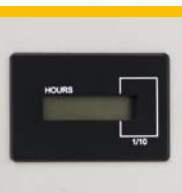
**SH-110**



### **Built-In Vacuum Pump Isolation Valve**

SH Series standard, IDP and TriScroll optional

Isolates the pump during vacuum system fault conditions and power loss; prevents contamination of the vacuum system.



### **Hour Meter**

SH and IDP Series standard  
Gives an accurate measurement of total run time which facilitates maintenance planning.



### **Fuse Holder and Voltage Changeover Tab**

SH-110, SH-112 and IDP-15 only  
Easy and quick voltage selection.

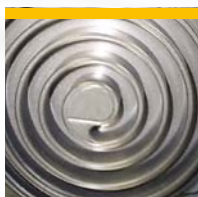
### **On/Off Switch**

Easily accessible.

### **IEC 320 Power Connection**

Flexible electrical connections for easy installation worldwide.

# DRY SCROLL PUMPS



## Single-sided Scroll

SH and IDP series

Enables quick and easy tip seal change.



## Proven Reliability

With over 25,000 Agilent manufactured scroll pumps operating worldwide, the Agilent scroll technology has demonstrated exceptional reliability.



## Unique TriScroll Design

Delivers high pumping speed and achieves low ultimate pressure, within a compact design.



IDP-3



TriScroll 600  
Inverter



TriScroll 300

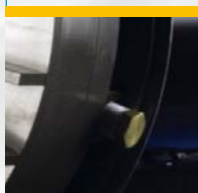


## Inverter-driven Scroll Pumps

deliver constant pumping speed worldwide regardless of line frequency. Inverters allow selection of the optimal pumping speed for any application by adjusting the rotational speed of the pump.

A 9 pin D-shell connector allows remote start and stop with a contact closure, and the serial interface enables monitoring of the pump parameters and remote start capability.

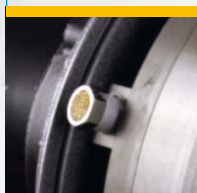
For more information, see page 26.



## Bearing Purge Port

TriScrolls only

Improved tolerance for condensable gases by purging the shaft bearings with dry gas.



## Gas Ballast Port

All scrolls

Improves tolerance for water vapor and handling of condensable gases for consistent performance.

## TYPICAL APPLICATIONS



### Load Locks and Transfer Chambers

Scroll pumps are proven as a highly reliable and low maintenance choice for clean dry pumping in production equipment on load locks and transfer chambers.

### Beam Lines

Fast and oil-free pump down in combination with turbomolecular pumps and ion pumps. Scroll pumps are part of a total Agilent Technologies dry product offering, including turbo pumps and ion pumps.

### Mass Spec Instruments

The quiet, clean, low-vibration IDP-15 Scroll pump provides dry primary vacuum with simple, infrequent tip seal change.

### Scanning Electron Microscopes

Agilent scroll pumps provide clean and reliable dry vacuum, ideal for maintaining the critical condition of instrument columns.

### General Purpose Laboratory Applications

Proven scroll technology provides predictable dry vacuum at low base pressure for long periods of time. Scroll design eliminates all possibility of sudden and catastrophic failure associated with technologies such as diaphragm pumps. The IDP-3 and the SH-110 are light in weight – the IDP-3 weighs in at 21 pounds – and are equipped with handles for easy mobility around the lab.



# DRY SCROLL PUMPS

## Drying Ovens

Scroll pumps eliminate the risk of backstreaming rotary vane pump oil vapors into the oven system.

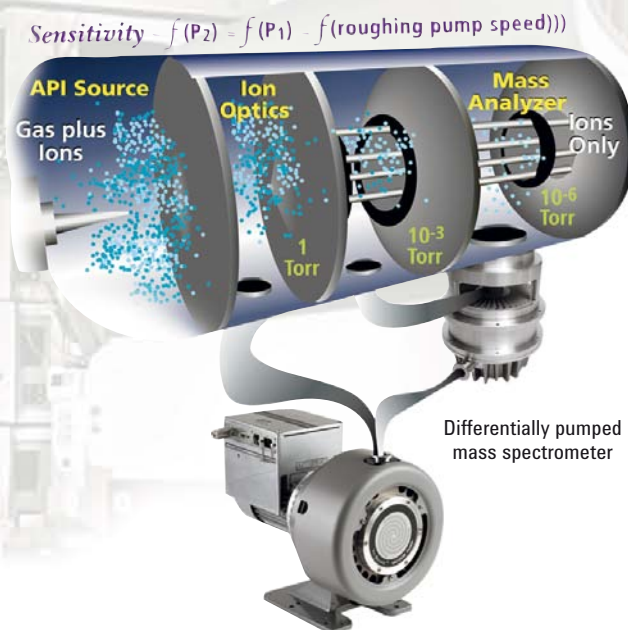
The gas ballast feature guarantees reliable operation where water vapor is to be pumped.

## Cryogenics/Helium Recirculation

Scroll pumps are commonly used for regeneration of cryogenic pumps. Use of the inert gas purge kit accessory is recommended for this application to enhance pumping of condensable vapor.

## Manufacturing/Glove Box Enclosures

Scroll pumps are an economical choice for critical manufacturing, eliminating the risk of oil contamination, and costly waste disposal. Agilent scroll pumps keep the manufacturing environment hydrocarbon free.



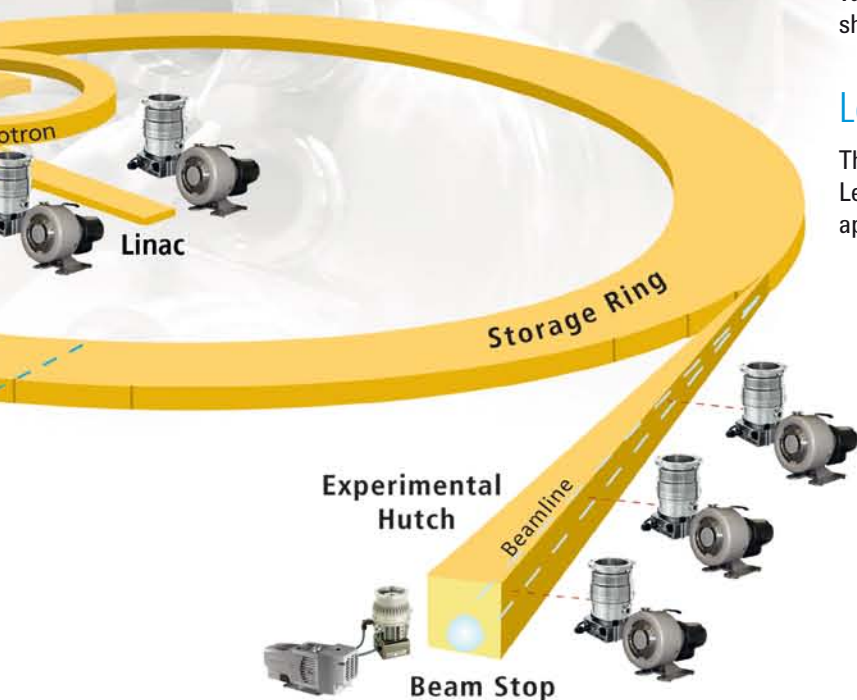
Dry Scroll  
Pumps

## Primary Backing Pump for Turbo Systems

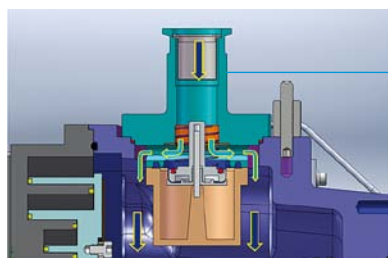
The scroll pump is the ideal selection for backing high vacuum turbo pumps, such as in the mass spectrometer shown above, eliminating the risk of system contamination.

## Leak Detection

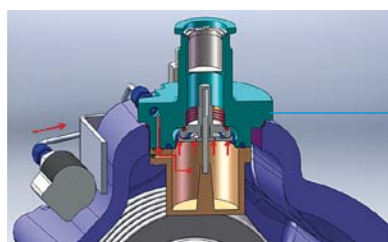
The TriScroll modules used in Helium Mass Spectrometer Leak Detection have been specifically optimized for this application, improving the compression ratio for Helium.



## NEW IDP-15 DRY SCROLL PUMP



*Vacuum in pump,  
inlet valve opens*



*Pump vents,  
inlet valve closes*

### Optional Integral Isolation Valve

- The Integral Inlet Isolation Valve is installed inside the module; it adds no height to the pump inlet
- Valve protects against backward migration through the inlet, and sudden venting of customer chamber/instrument
- Spring holds inlet valve normally closed
- Lower pressure in pump causes spring to open
- On power loss, solenoid valve vents pump causing inlet valve to close (20 ms)
- Power is restored, solenoid closes, inside of pump begins evacuating, inlet valve opens (about 10 sec)

*High/Low  
voltage switch*

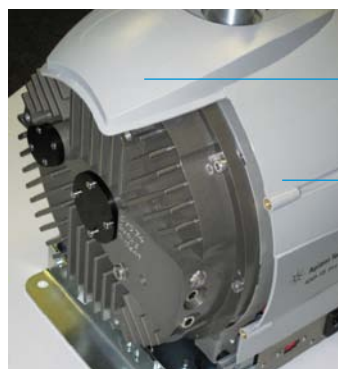
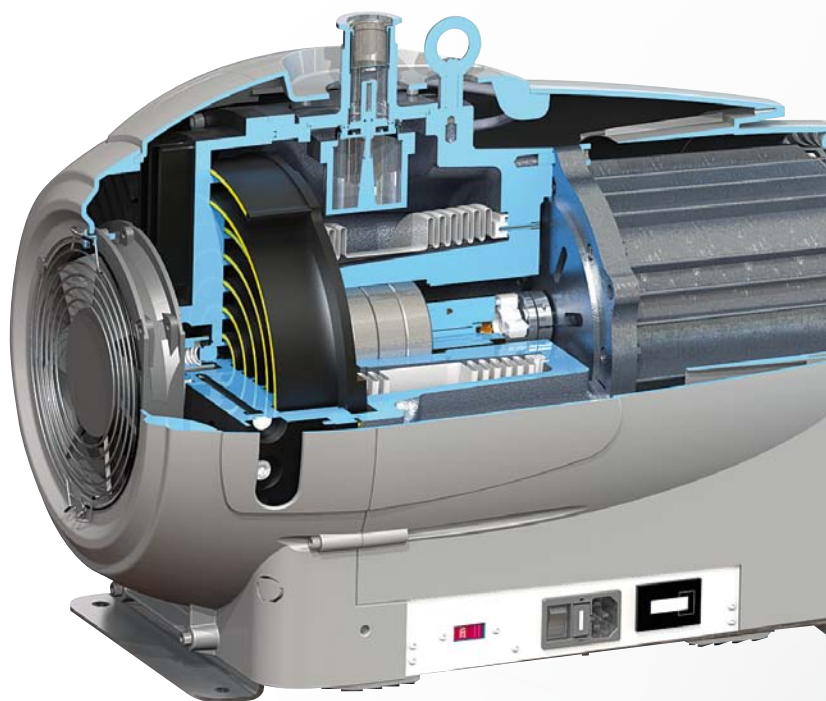
*Power module  
On/Off switch*

*Hours meter*



### Fixed Speed Motor Supports Global Input Voltages

- Supports single phase operating voltages:
  - 100 V, 50/60 Hz
  - 115 V, 60 Hz
  - 220-230 V, 50/60 Hz
- Simple switch to change between high and low voltage use



*Outer cowling acts  
as noise enclosure*

### Designed for Quiet Operation Low Noise

- Agilent consulted with noise experts to aid in designing Pump Module to minimize noise
- Three piece outer cowling acts as a built-in noise enclosure
- IDP-15 is specified at 50 dBA  $\pm$  2 dBA, much lower than other scroll pumps available

# DRY SCROLL PUMPS

## Isolated and Hermetic Design

**Motor and bearings completely isolated from the vacuum path**

- Motor and bearings are not exposed to any process gases or water vapor from the application
- Bearings run at atmospheric pressure

**Hermetic design**

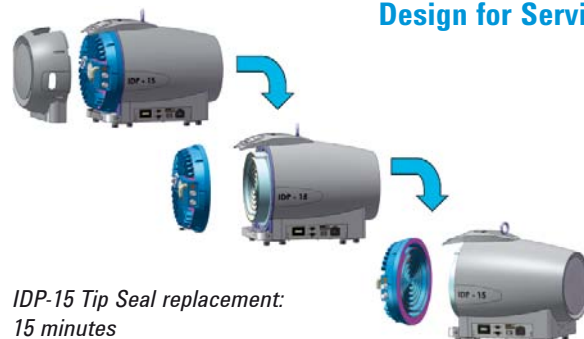
- Appropriate for Rare Gas and Helium recirculation applications
- Gas ballast normally closed
- Closed system from inlet to exhaust
- Each pump is leak checked



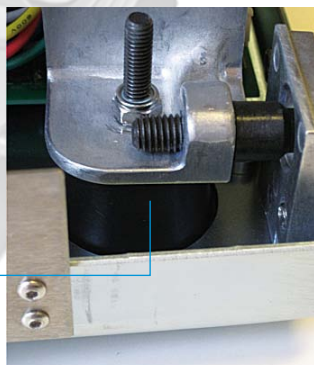
## Single Sided Scroll Design

- Only Fixed Scroll needs to be removed to change tip seals
- Very easy basic service, 15 minutes using two tools
- Simple design still achieves a low ultimate pressure of 10 mTorr

### Design for Service



Vibration isolators



## Low Vibration

The IDP-15 is equipped with integral Vibration Isolation feet, which:

- Decouple vibration from motor and scrolls from the mounting brackets
- Dampen vibration of the pump module

## How Quiet is the IDP-15?

| Noise                                | dBA |
|--------------------------------------|-----|
| Chainsaw; thunder clap               | 120 |
| Car horn (1 m); live rock music      | 110 |
| Lawn mower; airplane take off (1km)  | 100 |
| Motorcycle (8 m away)                | 90  |
| Freight train (25 m); food blender   | 80  |
| Cars on freeway; vacuum cleaner      | 70  |
| Air conditioner (30 m); office noise | 60  |
| Best competing scroll pump           | 52  |
| Conversation at home; IDP-15         | 50  |
| Library                              | 40  |

Every additional 10 dBA is a doubling of noise

## PUMP SPECIFICATIONS

|                                          |                                                                            | IDP-3                                                     | SH-110/SH-112                                                                                              | IDP-15                                         |
|------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Pumping speed                            | 60 Hz l/min, m <sup>3</sup> /h, cfm<br>50 Hz l/min, m <sup>3</sup> /h, cfm | 60, 3.6, 2.1<br>50, 3.0, 1.8                              | 110, 6.6, 4.0<br>90, 5.4, 3.3                                                                              | 256, 15.4, 9.1<br>214, 12.8, 7.5               |
| Ultimate pressure, mbar (Torr)           |                                                                            | $3.3 \times 10^{-1}$ ( $2.5 \times 10^{-1}$ )             | SH-110: $6.6 \times 10^{-2}$ ( $5 \times 10^{-2}$ )<br>SH-112: $2.6 \times 10^{-1}$ ( $2 \times 10^{-1}$ ) | $1.3 \times 10^{-2}$ ( $1 \times 10^{-2}$ )    |
| Maximum inlet pressure, atm (psig)       |                                                                            | 1.0 (0)                                                   | 1.0 (0)                                                                                                    | 1.0 (0)                                        |
| Maximum outlet pressure, atm (psig)      |                                                                            | 1.4 (6.5)                                                 | 1.5 (7.5)                                                                                                  | 1.4 (6.5)                                      |
| Inlet connection                         |                                                                            | NW16                                                      | NW25                                                                                                       | NW25                                           |
| Exhaust connection                       |                                                                            | ¼ " Female NPT<br>(10 mm hose barb provided)              | ¼ " Female NPT<br>(NW16 adapter provided)                                                                  | ¼ " Female NPT<br>(NW16)                       |
| Gas ballast                              |                                                                            | ⅜ " Female NPT<br>(20 micron sintered plug provided)      | ⅜ " Female NPT<br>(20 micron sintered plug provided)                                                       | ¼ " Female NPT<br>(two positions)              |
| Motor rating (1 phase), HP (kW)          |                                                                            | 0.16 (0.12)                                               | 0.25 (0.19)                                                                                                | 0.75 (0.56)                                    |
| Operating voltages (610%)                | 1Ø 60 Hz<br>50 Hz<br>3Ø 60 Hz<br>50 Hz                                     | 100, 115, 220-230 V<br>100, 220-230 V<br>—<br>—<br>24 VDC | 100-115, 200-230 V<br>100-115, 200-230 V<br>—<br>—                                                         | 100-115, 220-230 V<br>100, 200-230 V<br>—<br>— |
| Motor thermal protection                 |                                                                            | Type U automatic                                          | Type U automatic                                                                                           | Type U automatic                               |
| Operating speed                          | 60 Hz (rpm)<br>50 Hz (rpm)                                                 | 3200<br>2600                                              | 1725<br>1425                                                                                               | 1725<br>1450                                   |
| Cooling system                           |                                                                            | Air-cooled                                                | Air-cooled                                                                                                 | Air-cooled                                     |
| Ambient operating temperature, °C (°F)   |                                                                            | 5 to 40 (41 to 108)                                       | 5 to 40 (41 to 104)                                                                                        | 5 to 45 (41 to 113)                            |
| Storage temperature, °C (°F)             |                                                                            | -20 to 60 (-4 to 140)                                     | -20 to 60 (-4 to 140)                                                                                      | -20 to 60 (-4 to 140)                          |
| Weight pump only, kg (lbs)               |                                                                            | 9.5 (21)                                                  | 19 (43)                                                                                                    | 34 (75)                                        |
| Shipping weight, kg (lbs)                |                                                                            | 10.5 (23)                                                 | 20 (44)                                                                                                    | 45 (100)                                       |
| Noise level (per ISO 11201), dB(A)       |                                                                            | 55                                                        | 56                                                                                                         | 50 ±2                                          |
| Vibration level (per ISO 10816-1) mm/sec |                                                                            | 1.5                                                       | 1.5                                                                                                        | < 0.9                                          |



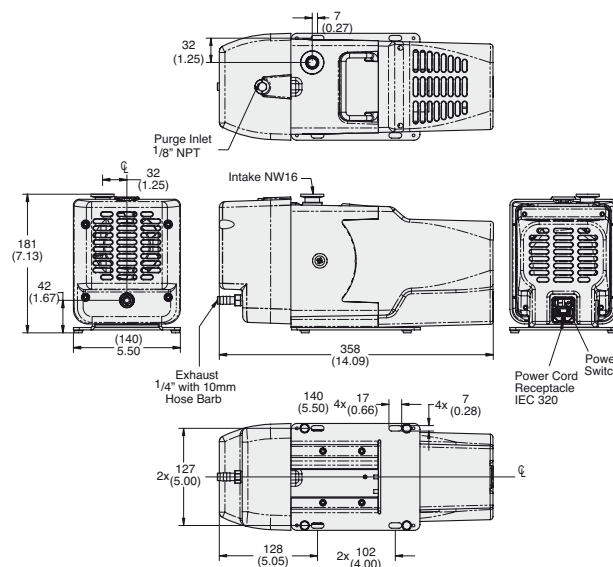
# DRY SCROLL PUMPS

| TriScroll 300                                                                    | TriScroll 600                                                                    | TriScroll 300 Inverter                                    | TriScroll 600 Inverter                                    |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| 250, 15, 8.8<br>210, 12.6, 7.4                                                   | 500, 30, 17.7<br>420, 25.2, 14.8                                                 | 250, 15, 8.8                                              | 500, 30, 17.7                                             |
| $1.3 \times 10^{-2}$ ( $1 \times 10^{-2}$ )                                      | $9.3 \times 10^{-3}$ ( $7 \times 10^{-3}$ )                                      | $1.3 \times 10^{-2}$ ( $1 \times 10^{-2}$ )               | $9.3 \times 10^{-3}$ ( $7 \times 10^{-3}$ )               |
| 1.0 (0)                                                                          | 1.0 (0)                                                                          | 1.0 (0)                                                   | 1.0 (0)                                                   |
| 1.1 (1.5)                                                                        | 1.1 (1.5)                                                                        | 1.1 (1.5)                                                 | 1.1 (1.5)                                                 |
| NW25                                                                             | NW40                                                                             | NW25                                                      | NW40                                                      |
| ¼ " Female NPT with swivel<br>(NW16 adapter provided)                            | ¾ " Female NPT with swivel<br>(NW25 adapter provided)                            | ¼ " Female NPT with swivel<br>(NW16 adapter provided)     | ¾ " Female NPT with swivel<br>(NW25 adapter provided)     |
| ¼ " Female NPT<br>(40 micron sintered filter<br>provided)                        | ¼ " Female NPT<br>(40 micron sintered filter<br>provided)                        | ¼ " Female NPT<br>(40 micron sintered filter<br>provided) | ¼ " Female NPT<br>(40 micron sintered filter<br>provided) |
| 0.75 (0.56)                                                                      | 1.0 (0.76)                                                                       | 0.67 (0.5)                                                | 0.67 (0.5)                                                |
| 100-115, 200-230 V<br>100-115, 200-230 V<br>200-230, 460 V<br>200-230, 380-415 V | 100-115, 200-230 V<br>100-115, 200-230 V<br>200-230, 460 V<br>200-230, 380-415 V | 100-115, 200-240 V<br>100-115, 200-240 V<br>—<br>—        | 200-240 V<br>200-240 V<br>—<br>—                          |
| Type U automatic                                                                 | Type U automatic                                                                 | Automatic                                                 | Automatic                                                 |
| 1725<br>1425                                                                     | 1725<br>1425                                                                     | 1800 @ 62 Hz                                              | 1800 @ 62 Hz                                              |
| Air-cooled                                                                       | Air-cooled                                                                       | Air-cooled                                                | Air-cooled                                                |
| 5 to 40 (41 to 104)                                                              | 5 to 40 (41 to 104)                                                              | 5 to 40 (41 to 104)                                       | 5 to 40 (41 to 104)                                       |
| -20 to 60 (-4 to 140)                                                            | -20 to 60 (-4 to 140)                                                            | -20 to 60 (-4 to 140)                                     | -20 to 60 (-4 to 140)                                     |
| 26.4 (57)                                                                        | 32 (70)                                                                          | 26 (57)                                                   | 31 (68)                                                   |
| 34.2 (75)                                                                        | 40 (87)                                                                          | 34 (74)                                                   | 39 (85)                                                   |
| 68                                                                               | 68                                                                               | Variable with frequency<br>55 - 68                        | Variable with frequency<br>55 - 68                        |
| 6.3                                                                              | 6.3                                                                              | Variable with frequency                                   | Variable with frequency                                   |



## PUMP MODELS

### ► Agilent IDP-3



Dimensions: millimeters (inches)

The Agilent IDP-3 Dry Scroll Pump is an innovative, compact, high-performance, oil-free vacuum pump that is suitable for a wide variety of applications. It is the smallest scroll pump made for general vacuum applications, which makes it easy to integrate into OEM systems, and it weighs only 21 pounds (9.5 kg). Yet with a pumping speed of 60 l/m and a very low base pressure of 250 milliTorr, it is the highest-performing dry pump in its class.

- Oil-free - no contamination of the vacuum system
- Hermetic design with fully isolated motor and bearings
- Low noise and vibration
- No mechanisms subject to catastrophic failure
- Lower base pressure than diaphragm pumps
- Speed control on 24 VDC motor with 0-10V control signal
- Hour meter is standard on all IDP-3 units

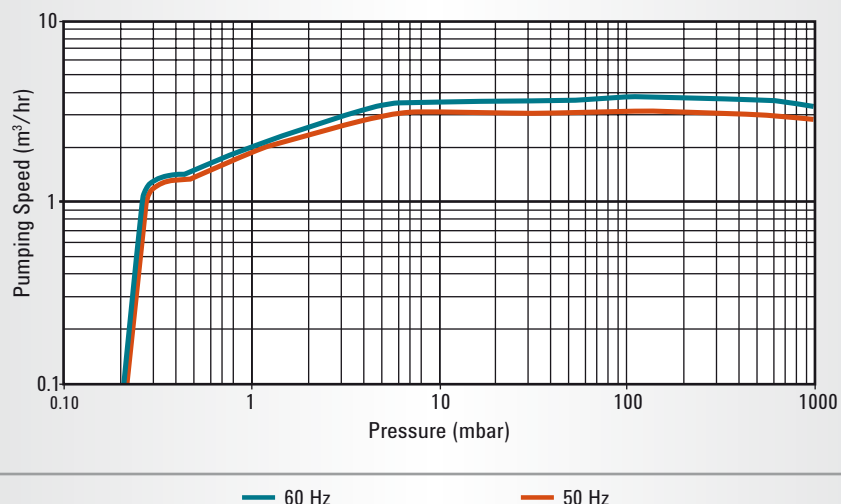
### Technical Specifications

|                                |                                                                                                    |
|--------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Pumping speed</b>           | 60 Hz: 60 l/m, 3.6 m <sup>3</sup> /hr, 2.1 cfm<br>50 Hz: 50 l/m, 3.0 m <sup>3</sup> /hr, 1.8 cfm   |
| <b>Ultimate pressure</b>       | 2.5 x 10 <sup>-1</sup> Torr (3.3 x 10 <sup>-1</sup> mbar)                                          |
| <b>Maximum inlet pressure</b>  | 1 atmosphere (0 psig)                                                                              |
| <b>Maximum outlet pressure</b> | 1.4 atmosphere (6.5 psig)                                                                          |
| <b>Inlet connection</b>        | NW16 flange                                                                                        |
| <b>Exhaust connection</b>      | 1/4" Female NPT (10 mm hose barb provided)                                                         |
| <b>Gas ballast</b>             | 1/8" Female NPT (shipped with gas ballast port plug installed; 20 micron sintered filter provided) |
| <b>Weight</b>                  | Pump only: 9.5 kg (21 lbs.)<br>Shipping weight: 10.5 kg (23 lbs.)                                  |
| <b>Leak rate</b>               | <1 x 10 <sup>-6</sup> std-cc/sec helium                                                            |
| <b>Certification</b>           | Conforms with CE, CSA, CSA/CUS, Semi S2-703, and RoHS                                              |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

IDP-3 Pumping Speed - Air/N<sub>2</sub>



## Ordering Information

| Description                                | Part Number |
|--------------------------------------------|-------------|
| IDP-3 dry vacuum pump, 1Ø, 220 V, 50/60 Hz | IDP3A01     |
| IDP-3 dry vacuum pump, 1Ø, 115 V, 60 Hz    | IDP3B01     |
| IDP-3 dry vacuum pump, 1Ø, 100 V, 50/60 Hz | IDP3C01     |
| IDP-3 dry vacuum pump, 24 VDC              | IDP3D01     |

### with Isolation Valve

|                                                                     |         |
|---------------------------------------------------------------------|---------|
| IDP-3 dry vacuum pump with isolation valve, 1Ø, 220-230 V, 50/60 Hz | IDP3A21 |
| IDP-3 dry vacuum pump with isolation valve, 1Ø, 115 V, 60 Hz        | IDP3B21 |
| IDP-3 dry vacuum pump with isolation valve, 1Ø, 100 V, 50/60 Hz     | IDP3C21 |
| IDP-3 dry vacuum pump with isolation valve, 24 VDC                  | IDP3D21 |

### Power Cord Selection

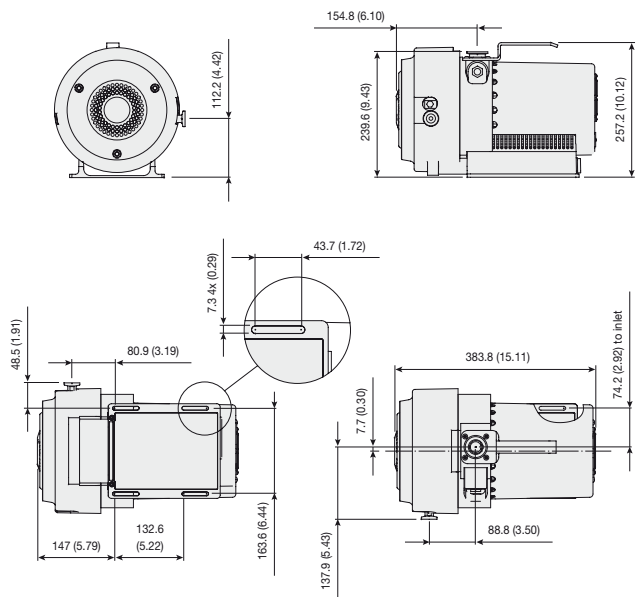
| Power Cord Selection                     | Part Number |
|------------------------------------------|-------------|
| Europe, 10 A / 220-230 V, 2.5 meter      | 656494220   |
| Denmark, 10 A / 220-230 V, 2.5 meter     | 656494225   |
| Switzerland, 10 A / 220-230 V, 2.5 meter | 656494235   |
| UK/Ireland, 13A / 230 V, 2.5 meter       | 656494250   |
| India, 10 A / 220 - 250 V, 2.5 meter     | 656494245   |
| Israel, 10 A / 230 V, 2.5 meter          | 656494230   |
| Japan, 12 A/100 V, 2.3 meter             | 656494240   |
| North America, 15 A / 125 V, 2.0 meter   | 656458203   |
| North America, 10 A / 230 V, 2.5 meter   | 656494255   |

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ► Agilent SH-110



Dimensions: millimeters (inches)

The Agilent SH-110 is a dry, hermetic scroll pump that provides industry-leading features designed for easy integration into original-equipment manufacturer (OEM) systems. This single-stage pump produces a pumping speed of 110 l/m and achieves an ultimate pressure of 50 mTorr (0.07 mbar) in a compact package that is also ideally suited to end-user applications.

- Two-ply tip seal for improved base pressure performance
- Low-temperature operation
- ¼-horsepower motor for low power consumption
- Optional air ballast for effective handling of water vapor
- Built-in fail-safe isolation valve protects the vacuum system
- Universal 100-230 VAC power for easy installation worldwide
- Quick tip-seal replacement for low cost of ownership

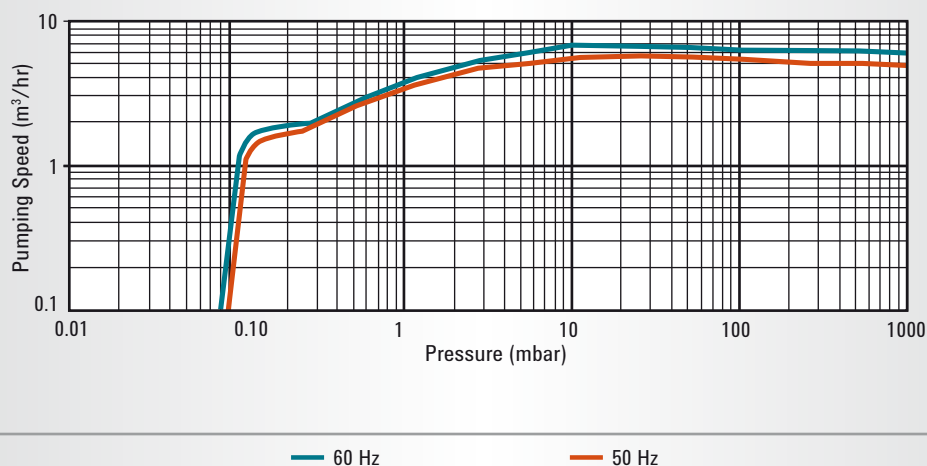
### Technical Specifications

|                                        |                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Pumping speed</b>                   | 60 Hz: 110 l/m, 6.6 m <sup>3</sup> /hr, 4.0 cfm<br>50 Hz: 90 l/m, 5.4 m <sup>3</sup> /hr, 3.3 cfm |
| <b>Ultimate pressure</b>               | 6.6 x 10 <sup>-2</sup> mbar (5.0 x 10 <sup>-2</sup> Torr)                                         |
| <b>Maximum inlet pressure</b>          | 1.0 atmosphere (0 psig)                                                                           |
| <b>Maximum outlet pressure</b>         | 1.5 atmosphere (7.5 psig)                                                                         |
| <b>Inlet connection</b>                | NW25                                                                                              |
| <b>Exhaust connection</b>              | ¼" Female NPT (NW16 adapter provided)                                                             |
| <b>Gas ballast</b>                     | ⅜" Female NPT (shipped with gas ballast port plug installed; 20 micron sintered filter provided)  |
| <b>Weight</b>                          | Pump only: 19 kg (43 lbs)<br>Shipping weight: 20 kg (44 lbs)                                      |
| <b>Leak rate (with exhaust sealed)</b> | <1 x 10 <sup>-7</sup> cc/sec Helium                                                               |
| <b>Certification</b>                   | Conforms with CE, CSA, Semi S2-2000 and RoHS                                                      |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

SH-110 Pumping Speed - Air/N<sub>2</sub>



Dry Scroll  
Pumps

## Ordering Information

| Description                                         | Part Number |
|-----------------------------------------------------|-------------|
| SH-110 dry vacuum pump, 1Ø, 100 V - 230 V, 50/60 Hz | SH01101UNIV |

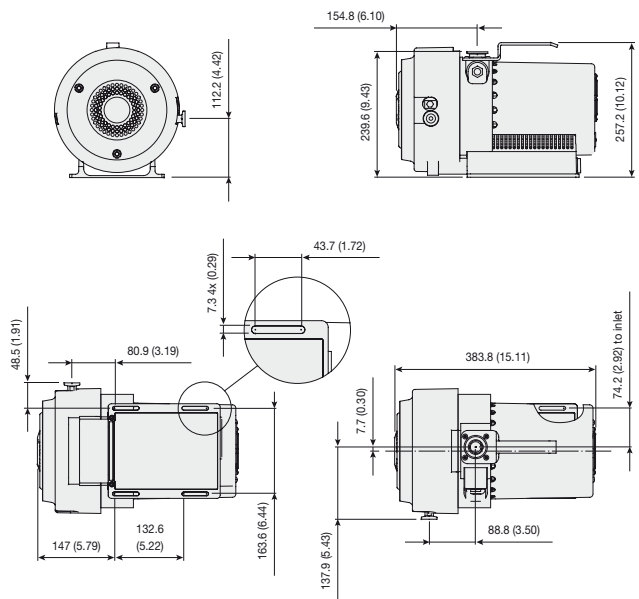
| Power Cord Selection                   | Part Number |
|----------------------------------------|-------------|
| Europe, 10 A / 220-230 V, 2.5 meter    | 656494220   |
| Denmark, 10 A / 220-230 V, 2.5 meter   | 656494225   |
| Switzerland, 10 A / 230 V, 2.5 meter   | 656494235   |
| UK/Ireland, 13 A / 230 V, 2.5 meter    | 656494250   |
| India, 10 A / 220-250 V, 2.5 meter     | 656494245   |
| Israel, 10 A / 230 V, 2.5 meter        | 656494230   |
| Japan, 12 A / 100 V, 2.3 meter         | 656494240   |
| North America, 15 A / 125 V, 2.0 meter | 656458203   |
| North America, 10 A / 230 V, 2.5 meter | 656494255   |

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ► Agilent SH-112



Dimensions: millimeters (inches)

The Agilent SH-112 is a dry, hermetic scroll pump that provides industry-leading features designed for easy integration into original-equipment manufacturer (OEM) systems. This single-stage pump produces a pumping speed of 110 l/m and achieves an ultimate pressure of 200 mTorr (0.26 mbar) in a compact package that is also ideally suited to end-user applications.

- Solid tip seals for extended service interval
- Low-temperature operation
- ¼-horsepower motor for low power consumption
- Optional air ballast for effective handling of water vapor
- Built-in fail-safe isolation valve protects the vacuum system
- Universal 100-230 VAC power for easy installation worldwide
- Quick tip-seal replacement for low cost of ownership

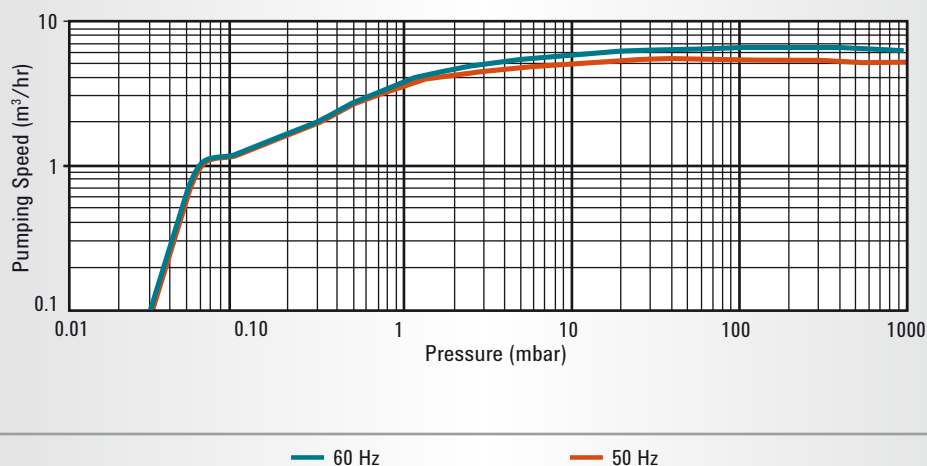
### Technical Specifications

|                                        |                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Pumping speed</b>                   | 60 Hz: 110 l/m, 6.6 m <sup>3</sup> /hr, 4.0 cfm<br>50 Hz: 90 l/m, 5.4 m <sup>3</sup> /hr, 3.3 cfm |
| <b>Ultimate pressure</b>               | 2.6 x 10 <sup>-1</sup> mbar (2.0 x 10 <sup>-1</sup> Torr)                                         |
| <b>Maximum inlet pressure</b>          | 1.0 atmosphere (0 psig)                                                                           |
| <b>Maximum outlet pressure</b>         | 1.5 atmosphere (7.5 psig)                                                                         |
| <b>Inlet connection</b>                | NW25                                                                                              |
| <b>Exhaust connection</b>              | ¼" Female NPT (NW16 adapter provided)                                                             |
| <b>Gas ballast</b>                     | ½" Female NPT (shipped with gas ballast port plug installed; 20 micron sintered filter provided)  |
| <b>Weight</b>                          | Pump only: 19 kg (43 lbs)<br>Shipping weight: 20 kg (44 lbs)                                      |
| <b>Leak rate (with exhaust sealed)</b> | <1 x 10 <sup>-7</sup> cc/sec Helium                                                               |
| <b>Certification</b>                   | Conforms with CE, CSA and RoHS                                                                    |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

SH-112 Pumping Speed - Air/N<sub>2</sub>



Dry Scroll  
Pumps

## Ordering Information

| Description                                         | Part Number |
|-----------------------------------------------------|-------------|
| SH-112 dry vacuum pump, 1Ø, 100 V - 230 V, 50/60 Hz | SH01121UNIV |

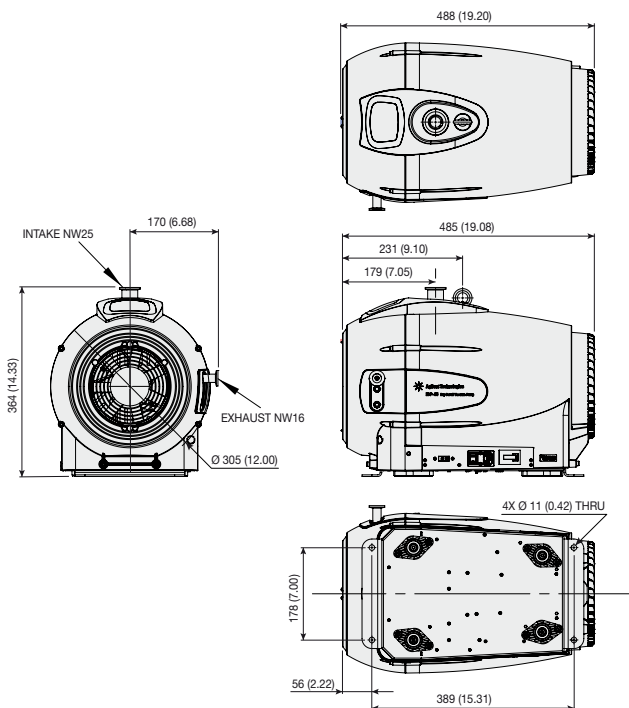
| Power Cord Selection                   | Part Number |
|----------------------------------------|-------------|
| Europe, 10 A / 220-230 V, 2.5 meter    | 656494220   |
| Denmark, 10 A / 220-230 V, 2.5 meter   | 656494225   |
| Switzerland, 10 A / 230 V, 2.5 meter   | 656494235   |
| UK/Ireland, 13 A / 230 V, 2.5 meter    | 656494250   |
| India, 10 A / 220-250 V, 2.5 meter     | 656494245   |
| Israel, 10 A / 230 V, 2.5 meter        | 656494230   |
| Japan, 12 A / 100 V, 2.3 meter         | 656494240   |
| North America, 15 A / 125 V, 2.0 meter | 656458203   |
| North America, 10 A / 230 V, 2.5 meter | 656494255   |

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ▶ Agilent IDP-15



Dimensions: millimeters (inches)

The Agilent IDP-15 Scroll Pump is a high performance dry primary vacuum pump, providing rapid pump-down at 15.4 m<sup>3</sup>/hour (60 Hz). With a single-sided scroll design it offers fast, easy yearly maintenance and low cost of ownership. It is hermetic, with the motor and all bearings completely isolated from the vacuum path and protected from process gases for extended life.

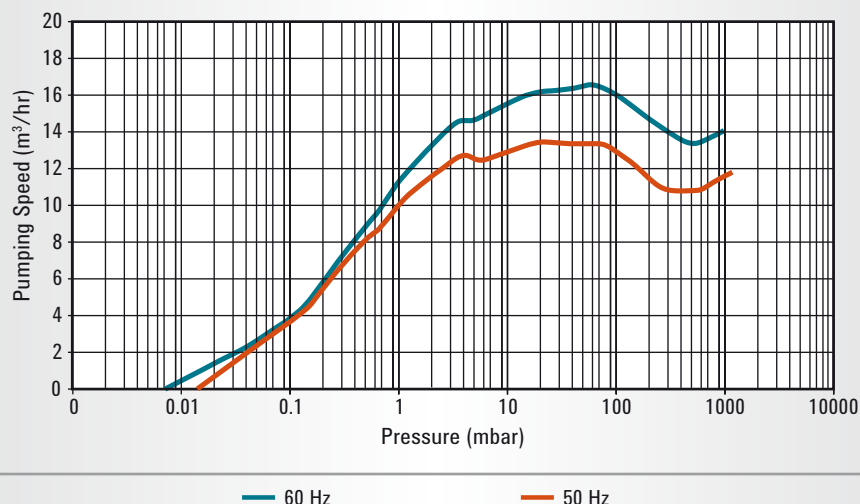
The IDP-15 is exceptionally quiet (<50db) and vibration-free, and is ideal for use in Analytical Instrument and Research applications, and many industrial applications as well.

### Technical Specifications

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| <b>Pumping speed</b>                   | 60 Hz: 256 l/m, 15.4 m <sup>3</sup> /hr<br>50 Hz: 214 l/m, 12.8 m <sup>3</sup> /hr |
| <b>Ultimate pressure</b>               | 1.3 x 10 <sup>-2</sup> mbar (1 x 10 <sup>-2</sup> Torr)                            |
| <b>Maximum inlet pressure</b>          | 1.0 atmosphere (0 psig)                                                            |
| <b>Maximum outlet pressure</b>         | 6.5 psig                                                                           |
| <b>Inlet Connection</b>                | NW25                                                                               |
| <b>Exhaust Connection</b>              | NW16                                                                               |
| <b>Gas ballast</b>                     | ¼" Female NPT (two positions)                                                      |
| <b>Weight</b>                          | Pump only: 34 kg (75 lbs)<br>Shipping weight: 45 kg (100 lbs)                      |
| <b>Leak rate (with exhaust sealed)</b> | <1 x 10 <sup>-6</sup> cc/sec Helium                                                |
| <b>Certification</b>                   | Conforms with CE, CSA and RoHS                                                     |

# DRY SCROLL PUMPS

IDP-15 Pumping Speed - Air/N<sub>2</sub>



Dry Scroll  
Pumps

## Ordering Information

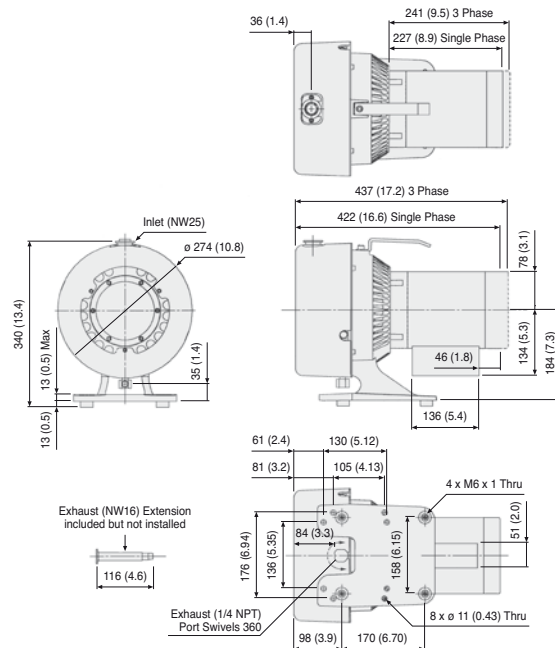
| Description                                                                       | Part Number        |
|-----------------------------------------------------------------------------------|--------------------|
| IDP15 Scroll Pump, Std                                                            | X3815-64000        |
| IDP15 Scroll Pump, Std w/inlt vlv                                                 | X3815-64010        |
| <b>Service</b>                                                                    | <b>Part Number</b> |
| IDP-15 Tip Seal Replacement Kit                                                   | X3815-67000        |
| <b>Spares</b>                                                                     | <b>Part Number</b> |
| Shipping Box Set, IDP-15                                                          | X3815-67001        |
| <b>Accessories</b> – Refer to the Scroll Accessories section beginning on page 27 | <b>Part Number</b> |
| Inlet Trap, NW25, HEPA                                                            | SCRINTRPNW25       |
| Exhaust Silencer Kit, SH110                                                       | EXSLRSH110         |

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

| Line Cords                         | Part Number |
|------------------------------------|-------------|
| Europe, 10A/220-230V, 2.5 meter    | 656494220   |
| Denmark, 10A/220-230V, 2.5 meter   | 656494225   |
| Switzerland, 10A/230V, 2.5 meter   | 656494235   |
| UK/Ireland, 13A/230V, 2.5 meter    | 656494250   |
| India, 10A/220-250V, 2.5 meter     | 656494245   |
| Israel, 10A/220-230V, 2.5 meter    | 656494230   |
| Japan, 12A/100V, 2.3 meter         | 656494240   |
| North America, 15A/125V, 2.0 meter | 656458203   |
| North America, 10A/230V, 2.5 meter | 656494255   |

## PUMP MODELS

### ► Agilent TriScroll 300



Dimensions: millimeters (inches)

The TriScroll series are two-stage dry scroll pumps that have high pumping speeds and low base pressure. TriScroll pumps eliminate the frequent maintenance requirements of oil-sealed rotary vane pumps, simplifying regulatory and environmental compliance, and eliminating oil disposal costs. The unique, patented TriScroll features proven reliability and durability, delivering consistent performance and superior cost of ownership.

- High pumping speed and low ultimate pressure provide clean, dry vacuum
- Long-life tip seals routinely last more than a year before replacement
- Bearing purge port permits simple maintenance and delivers long bearing life
- Automatic air ballast manages water vapor without reducing pumping speed

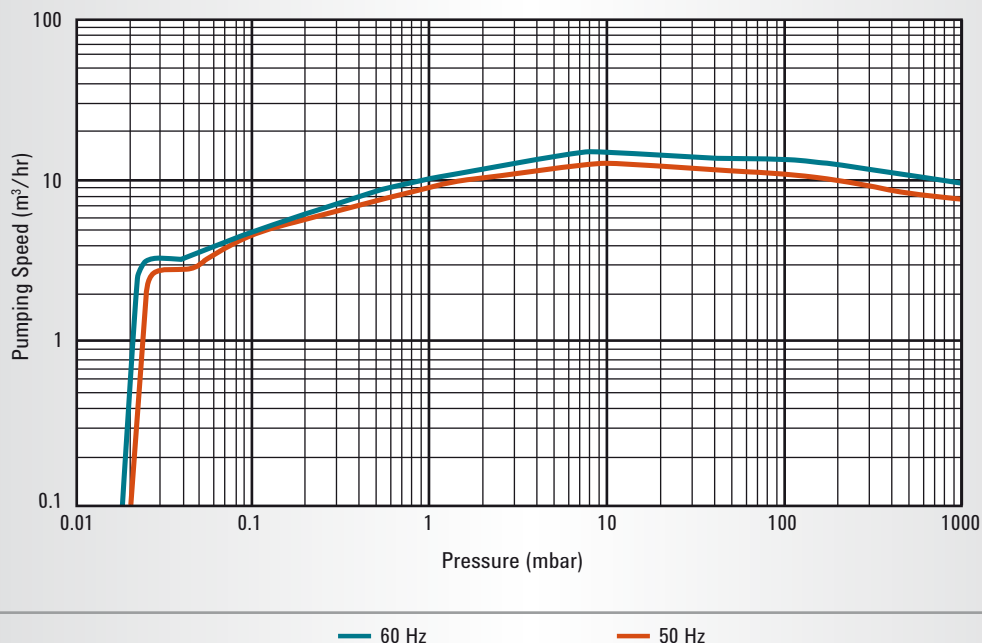
### Technical Specifications

|                                |                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Pumping speed</b>           | 60 Hz: 250 l/m, 15 m <sup>3</sup> /hr, 8.8 cfm<br>50 Hz: 210 l/m, 12.6 m <sup>3</sup> /hr, 7.4 cfm       |
| <b>Ultimate pressure</b>       | 1.3 x 10 <sup>-2</sup> mbar (1 x 10 <sup>-2</sup> Torr)                                                  |
| <b>Maximum inlet pressure</b>  | 1.0 atmosphere (1.0 psig)                                                                                |
| <b>Maximum outlet pressure</b> | 1.1 atmosphere (1.5 psig)                                                                                |
| <b>Inlet connection</b>        | NW25                                                                                                     |
| <b>Exhaust connection</b>      | ¼" Female NPT with swivel (NW16 adapter provided)                                                        |
| <b>Gas ballast</b>             | ⅜" Female NPT (shipped with 40 micron filter installed; port plug also provided)                         |
| <b>Operating voltages</b>      | 10 models: 50-60 Hz/100-115:200-230 VAC<br>30 models: 50 Hz/200-230, 380-415 VAC; 60 Hz/200-230, 460 VAC |
| <b>Weight</b>                  | Pump only: 26.4 kg (58 lbs)<br>Shipping weight: 34.2 kg (75 lbs)                                         |
| <b>Certification</b>           | CE, CSA and RoHS                                                                                         |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

TriScroll 300 Pumping Speed – Air/N<sub>2</sub>



## Ordering Information

| Description                                                 | Part Number       |
|-------------------------------------------------------------|-------------------|
| TriScroll 300 dry vacuum pump, 1Ø motor, US cord            | PTS03001UNIV      |
| TriScroll 300 dry vacuum pump, 1Ø motor, Euro cord          | PTS03001UNIVEU    |
| TriScroll 300 dry vacuum pump, 1Ø motor, UK cord            | PTS03001UNIVUK    |
| TriScroll 300 dry vacuum pump, 3Ø motor                     | PTS03003UNIV      |
| TriScroll 300, 1Ø, with vacuum isolation valve (VPI), 120 V | PTS03001UVPI*     |
| TriScroll 300, 1Ø, with VPI, 220 V, EU power cord           | PTS03001UVPIEU    |
| TriScroll 300, 1Ø, with VPI, 220V, UK power cord            | PTS03001UVPIUK    |
| TriScroll 300, 3Ø, with VPI, 200 V                          | PTS03003200VPI    |
| TriScroll 300, 3Ø, with VPI, 230 V                          | PTS03003230VPI    |
| TriScroll 300, 3Ø, with VPI, 380/415 V                      | PTS03003380415VPI |
| TriScroll 300, 3Ø, with VPI, 460 V                          | PTS03003460VPI    |
| TriScroll 300 exhaust extension                             | S4707002          |

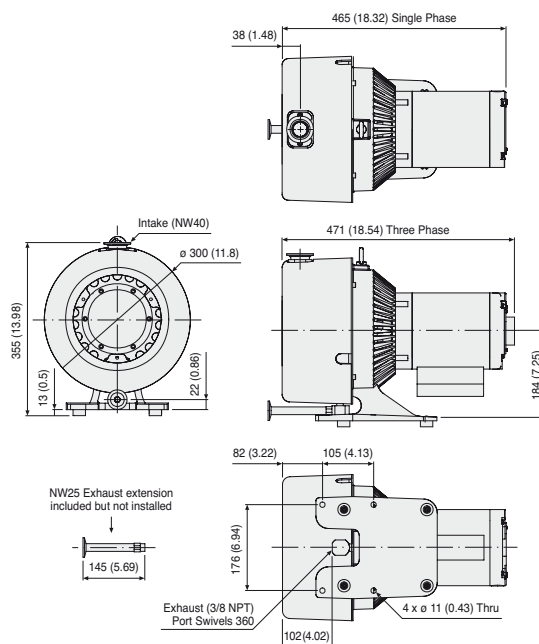
\* Contact Agilent for other voltages.

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ► Agilent TriScroll 600



The TriScroll series are two-stage dry scroll pumps that have high pumping speeds and low base pressure. TriScroll pumps eliminate the frequent maintenance requirements of oil-sealed rotary vane pumps, simplifying regulatory and environmental compliance, and eliminating oil disposal costs. The unique, patented TriScroll features proven reliability and durability, delivering consistent performance and superior cost of ownership.

- High pumping speed and low ultimate pressure provide clean, dry vacuum
- Long-life tip seals routinely last more than a year before replacement
- Bearing purge port permits simple maintenance and delivers long bearing life
- Automatic air ballast manages water vapor without reducing pumping speed

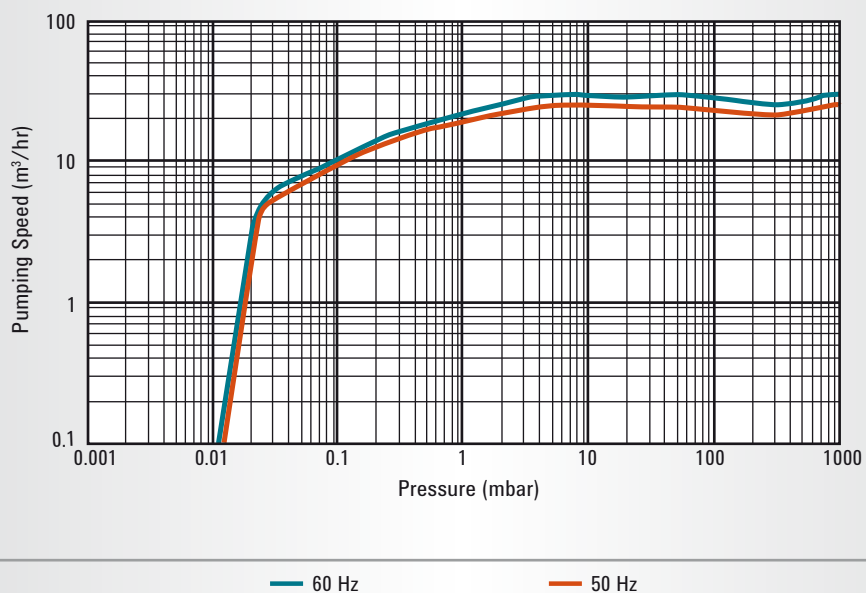
### Technical Specifications

|                                |                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Pumping speed</b>           | 60 Hz: 500 l/m 30 m <sup>3</sup> /hr, 17.7 cfm<br>50 Hz: 420 l/m, 25.2 m <sup>3</sup> /hr, 14.8 cfm       |
| <b>Ultimate pressure</b>       | 9.3 x 10 <sup>-3</sup> mbar (7.0 x 10 <sup>-3</sup> Torr)                                                 |
| <b>Maximum inlet pressure</b>  | 1.0 atmosphere (0 psig)                                                                                   |
| <b>Maximum outlet pressure</b> | 1.1 atmosphere (1.5 psig)                                                                                 |
| <b>Inlet connection</b>        | NW40                                                                                                      |
| <b>Exhaust connection</b>      | 3/8" Female NPT with swivel (NW25 adapter provided)                                                       |
| <b>Gas ballast</b>             | 1/4" Female NPT (shipped with 40 micron filter installed; port plug also provided)                        |
| <b>Operating voltages</b>      | 10 models: 50-60 Hz/100-115, 200-230 VAC<br>30 models: 50 Hz/200-230, 380-415 VAC; 60 Hz/200-230, 460 VAC |
| <b>Weight</b>                  | Pump only: 32 kg (70 lbs)<br>Shipping weight: 40 kg (87 lbs)                                              |
| <b>Certification</b>           | CE, CSA and RoHS                                                                                          |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

TriScroll 600 Pumping Speed – Air/N<sub>2</sub>



## Ordering Information

| Description                                                 | Part Number       |
|-------------------------------------------------------------|-------------------|
| TriScroll 600 dry vacuum pump, 1Ø motor                     | PTS06001UNIV      |
| TriScroll 600 dry vacuum pump, 1Ø motor, Euro cord          | PTS06001UNIVEU    |
| TriScroll 600 dry vacuum pump, 1Ø motor, UK cord            | PTS06001UNIVUK    |
| TriScroll 600 dry vacuum pump, three phase motor            | PTS06003UNIV      |
| TriScroll 600, 1Ø, with vacuum isolation valve (VPI), 120 V | PTS06001UVPI*     |
| TriScroll 600, 1Ø, with VPI, 220 V, EU power cord           | PTS06001UVPIEU    |
| TriScroll 600, 1Ø, with VPI, 220V, UK power cord            | PTS06001UVPIUK    |
| TriScroll 600, 3Ø, with VPI, 200 V                          | PTS06003200VPI    |
| TriScroll 600, 3Ø, with VPI, 230 V                          | PTS06003230VPI    |
| TriScroll 600, 3Ø, with VPI, 380 / 415 V                    | PTS06003380415VPI |
| TriScroll 600, 3Ø, with VPI, 460 V                          | PTS06003460VPI    |
| TriScroll 600 exhaust extension                             | S4807001          |

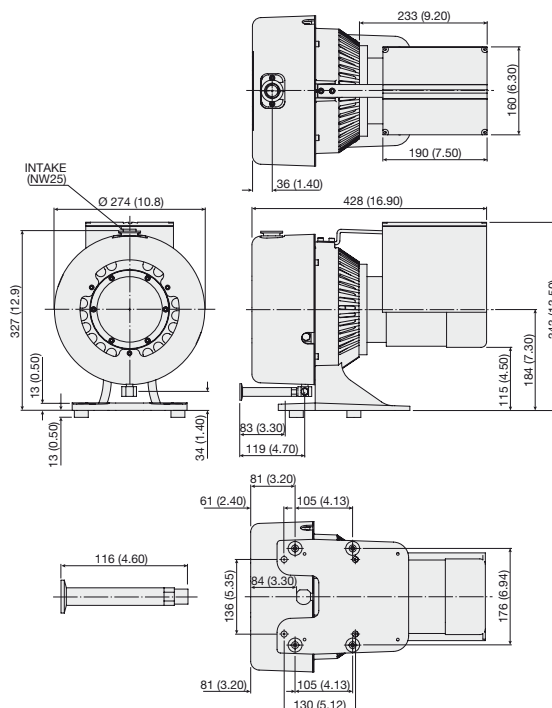
\* Contact Agilent for other voltages.

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ▶ Agilent TriScroll 300 Inverter



Dimensions: millimeters (inches)

TriScroll Inverter pumps apply the benefits of frequency inverter technology to the performance of Agilent TriScroll dry primary vacuum pumps. TriScroll Pumps eliminate the frequent maintenance requirements of oil-sealed rotary vane pumps, simplifying regulatory and environmental compliance, and eliminating oil disposal costs. Inverter-driven TriScroll 300 pumps also deliver:

- Constant pumping speed worldwide regardless of line frequency
- Optimal pumping speed selection by adjustment of the rotational speed of the pump via RS232 or 0–10 V control signal
- Monitoring of pump parameters via serial interface
- Remote start/stop with a contact closure made possible by a standard D-shell connector
- Optimal rotational speed selection reduces noise and vibration levels in the work area with little loss in base pressure performance of the pump

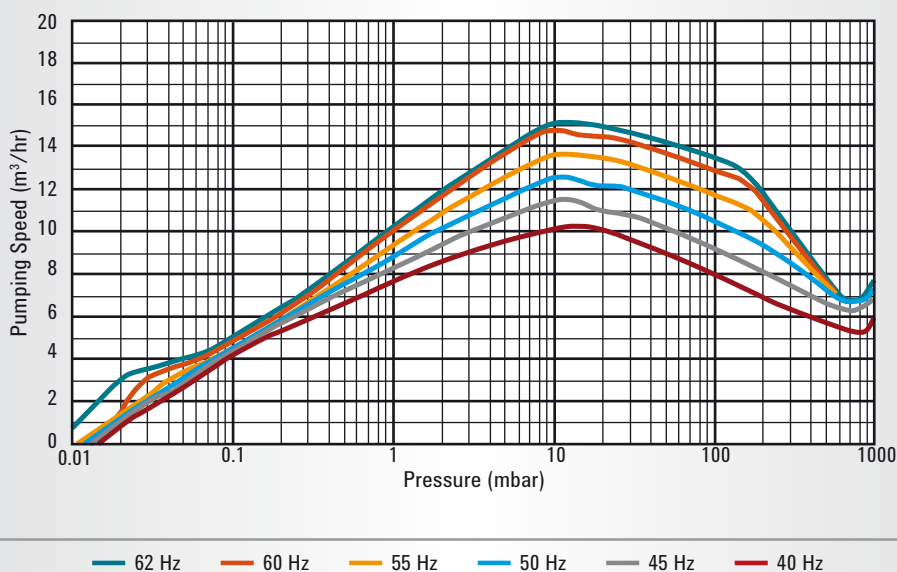
### Technical Specifications

|                                |                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------|
| <b>Pumping speed @ 60 Hz</b>   | 250 l/m, 15 m <sup>3</sup> /hr, 8.8 cfm (at 60 Hz drive frequency, variable)     |
| <b>Ultimate pressure</b>       | 1.3 x 10 <sup>-2</sup> mbar (1.0 x 10 <sup>-2</sup> Torr)                        |
| <b>Maximum inlet pressure</b>  | 1.0 atmosphere (0 psig)                                                          |
| <b>Maximum outlet pressure</b> | 1.1 atmosphere (1.5 psig)                                                        |
| <b>Inlet connection</b>        | NW25                                                                             |
| <b>Exhaust connection</b>      | ¼" Female NPT with swivel (NW16 adapter provided)                                |
| <b>Gas ballast</b>             | ¼" Female NPT (shipped with 40 micron filter installed; port plug also provided) |
| <b>Operating voltages</b>      | 100-115 V, 200-240 V, 1Ø, 50/60 Hz                                               |
| <b>Maximum line current</b>    | 200 V; 5 A 240 V; 4.2 A                                                          |
| <b>Weight</b>                  | Pump only: 26 kg (57 lbs)<br>Shipping weight: 34 kg (74 lbs)                     |
| <b>Certification</b>           | CE, CSA and RoHS                                                                 |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

TriScroll 300 Inverter Pumping Speed – Air/N<sub>2</sub>



Dry Scroll  
Pumps

## Ordering Information

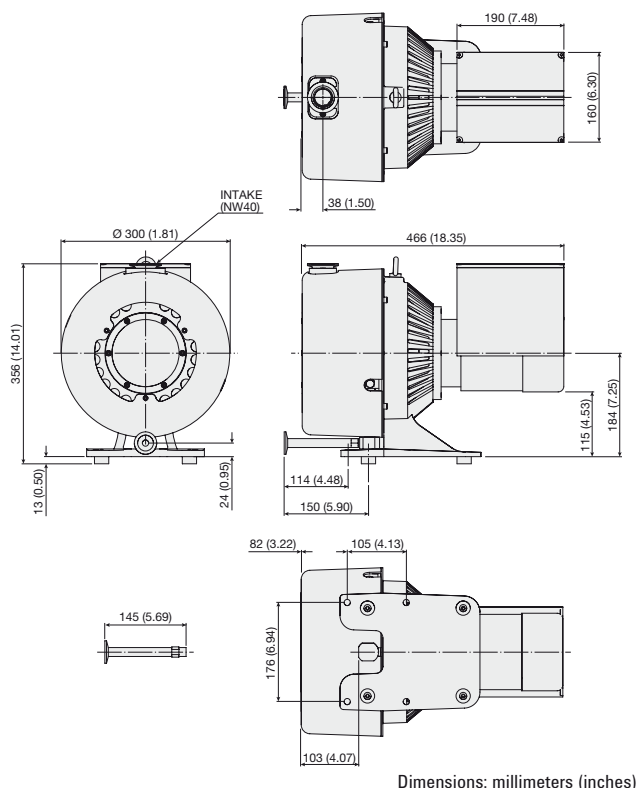
| Description                                        | Part Number |
|----------------------------------------------------|-------------|
| TriScroll 300 dry vacuum pump, 10 motor, 100-240 V | PTS03001INV |
| Power Cord Selection                               | Part Number |
| Europe, 10 A / 220-230 V, 2.5 meter                | 656494220   |
| Denmark, 10 A / 220-230 V, 2.5 meter               | 656494225   |
| Switzerland, 10 A / 230 V, 2.5 meter               | 656494235   |
| UK/Ireland, 13 A / 230 V, 2.5 meter                | 656494250   |
| India, 10 A / 220-250 V, 2.5 meter                 | 656494245   |
| Israel, 10 A / 220-230 V, 2.5 meter                | 656494230   |
| Japan, 12 A / 100 V, 2.3 meter                     | 656494240   |
| North America, 15 A / 125 V, 2.0 meter             | 656458203   |
| North America, 10 A / 230 V, 2.5 meter             | 656494255   |

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## PUMP MODELS

### ▶ Agilent TriScroll 600 Inverter



TriScroll Inverter pumps apply the benefits of frequency inverter technology to the performance of Agilent TriScroll dry primary vacuum pumps. TriScroll Pumps eliminate the frequent maintenance requirements of oil-sealed rotary vane pumps, simplifying regulatory and environmental compliance, and eliminating oil disposal costs. Inverter-driven TriScroll 600 pumps also deliver:

- Constant pumping speed worldwide regardless of line frequency
- Optimal pumping speed selection by adjustment of the rotational speed of the pump via RS232 or 0–10V control signal
- Monitoring of pump parameters via serial interface
- Remote start/stop with a contact closure made possible by a standard D-shell connector
- Optimal rotational speed selection reduces noise and vibration levels in the work area with little loss in base pressure performance of the pump

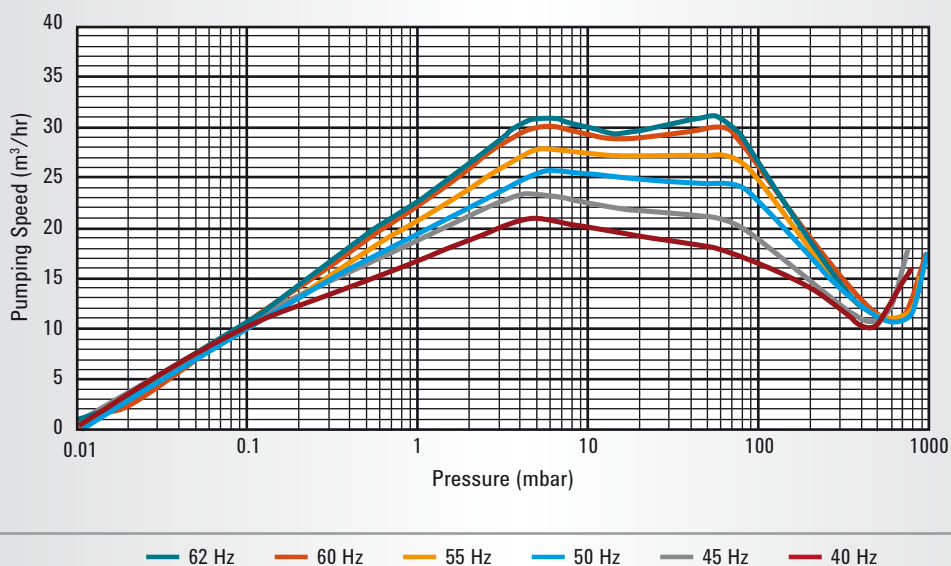
### Technical Specifications

|                                |                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------|
| <b>Pumping speed @ 60 Hz</b>   | 500 l/m, 30 m <sup>3</sup> /hr, 17.7 cfm (at 60 Hz drive frequency, variable)    |
| <b>Ultimate pressure</b>       | 9.3 x 10 <sup>-3</sup> mbar (7.0 x 10 <sup>-3</sup> Torr)                        |
| <b>Maximum inlet pressure</b>  | 1.0 atmosphere (0 psig)                                                          |
| <b>Maximum outlet pressure</b> | 1.1 atmosphere (1.5 psig)                                                        |
| <b>Inlet connection</b>        | NW40                                                                             |
| <b>Exhaust connection</b>      | ¾" Female NPT with swivel (NW25 adapter provided)                                |
| <b>Gas ballast</b>             | ¼" Female NPT (shipped with 40 micron filter installed; port plug also provided) |
| <b>Operating voltages</b>      | 200-240 V, 1Ø, 50/60 Hz                                                          |
| <b>Maximum line current</b>    | 200 V; 5 A 240 V; 4.2 A                                                          |
| <b>Weight</b>                  | Pump only: 31 kg (68 lbs)<br>Shipping weight: 39 kg (85 lbs)                     |
| <b>Certification</b>           | CE, CSA and RoHS                                                                 |

**NOTE:** Scroll pumps are not suitable for pumping corrosive, explosive or particulate-forming gases.

# DRY SCROLL PUMPS

TriScroll 600 Inverter Pumping Speed – Air/N<sub>2</sub>



## Ordering Information

| Description                                  | Part Number |
|----------------------------------------------|-------------|
| TriScroll 600 dry vacuum pump, 1Ø, 200-240 V | PTS06001INV |
| Power Cord Selection                         | Part Number |
| Europe, 10 A / 220-230 V, 2.5 meter          | 656494220   |
| Denmark, 10 A / 220-230 V, 2.5 meter         | 656494225   |
| Switzerland, 10 A / 230 V, 2.5 meter         | 656494235   |
| UK/Ireland, 13 A / 230 V, 2.5 meter          | 656494250   |
| India, 10 A / 220-250 V, 2.5 meter           | 656494245   |
| Israel, 10 A / 230 V, 2.5 meter              | 656494230   |
| North America, 10 A / 230 V, 2.5 meter       | 656494255   |

**Accessories** – Refer to the Scroll Accessories section beginning on page 27

**Maintenance/Service Parts** – Refer to the Scroll Service Parts section beginning on page 34

## ABOUT FREQUENCY INVERTER-DRIVEN SCROLL PUMPS

The application of innovative variable frequency inverter technology to Dry Scroll Pumps provides significant advantages over conventional vacuum pumps. Inverter-driven TriScroll 300, 600 and IDP-15 pumps deliver optimal and consistent performance throughout the worldwide range of voltage and frequency conditions. Operating with low power requirements, the microprocessor-controlled frequency inverter is an efficient driving unit capable of delivering high starting torque and constant pump performance.



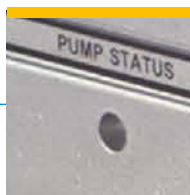
### I/O and RS232/RS485 Communication

Adjustable motor speed from 35 to 65 Hz permits easy matching of pumping speed required and reduces noise levels. Pump performance can be tailored to specific applications to optimize system performance.



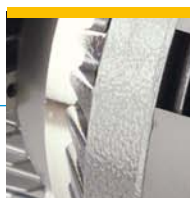
### Universal Input Voltage

Truly universal single-phase voltage and frequency provide worldwide compatibility and constant performance at different input frequencies.



### Remote Diagnostics

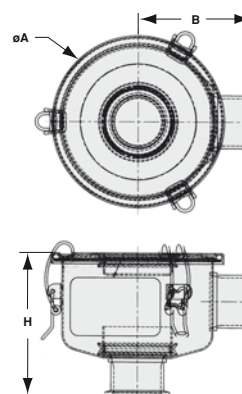
Fully compatible with Agilent TPlus Software, the RS232/485 interface allows data acquisition and control of the pump operation, including pumping speed.



### Reduced Power Requirements

Inverter technology reduces the power required compared to traditional single phase motors.

## HEPA Inlet Filters



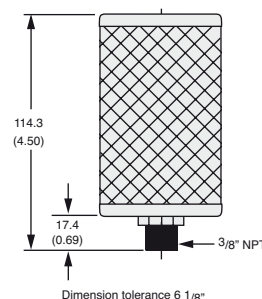
Agilent Inlet HEPA filters for scroll pumps protect the pump from ingested particles and prevent particles from migrating out of the pump. These HEPA filters trap particles > 0.3 microns at a rated 99.97% efficiency.

|   | NW16         | NW25          | NW40          |
|---|--------------|---------------|---------------|
| A | 95.25 (3.75) | 146.05 (5.75) | 146.05 (5.75) |
| H | 99.06 (3.90) | 111.00 (4.37) | 120.90 (4.76) |
| B | 66.17 (2.61) | 185.85 (3.38) | 195.76 (3.77) |

### Ordering Information

| Description                                    | Part Number     |
|------------------------------------------------|-----------------|
| NW40 inlet trap with HEPA filter insert        | SCRINTRPNW40    |
| NW25 inlet trap with HEPA filter insert        | SCRINTRPNW25    |
| NW16 inlet trap with HEPA filter insert        | SCRINTRPNW16    |
| Replacement HEPA filter element (NW25 or NW40) | REPLHEPAFILTER1 |
| Replacement HEPA filter element (NW16)         | REPLHEPAFILTER2 |

## Exhaust Filter Kits for TriScroll Pumps



These HEPA filters trap particles and dust that emanate from the vacuum system and prevent discharge into the room. Kits include one HEPA filter, flange adapter, centering ring seal, and clamp to fit the exhaust extensions. These HEPA filters trap particles > 0.3 microns at a rated 99.97% efficiency. Replacement filters are also available.

### Ordering Information

| Description                       | Part Number |
|-----------------------------------|-------------|
| Exhaust filter kit, TriScroll 300 | PTS300EXFIL |
| Exhaust filter kit, TriScroll 600 | PTS600EXFIL |
| Replacement HEPA filter           | 110420110   |

# SCROLL ACCESSORIES

## ▶ Exhaust Silencer Kits

Exhaust Silencer Kits are designed for those applications in which it is desirable to diminish the sound level produced by the work of gas compression.

An exhaust silencer is not necessary in situations where exhaust is carried away in a ducted manifold, because in that case, the noise level is typically at the same level as when a local silencer is used.

Exhaust Silencers work by breaking up noise pulsation in the discharge line. The kits contain two basic components, as well as installation hardware.

1. The exhaust/muffler filter provides the majority of the actual noise reduction.
2. An optional silencer can be connected to the exhaust of the pump as well. It attenuates certain frequencies associated with the exhaust gas pulsation noise. The silencer is then plumbed to the exhaust muffler.



## Ordering Information

| Description                                   | Part Number    |
|-----------------------------------------------|----------------|
| Exhaust silencer kit for IDP-3                | EXSLRIDP3      |
| Exhaust silencer kit for SH-110/SH-112/IDP-15 | EXSLRSH110     |
| Exhaust silencer kit for TriScroll            | EXSLRTRISCROLL |
| <b>Replacement Filter Element</b>             |                |
| for IDP-3 Silencer                            | REPLSLRFILTER2 |
| for SH-110/SH-112/IDP-15 Silencer             | REPLSLRFILTER1 |
| for TriScroll Silencer                        | REPLSLRFILTER  |

# DRY SCROLL PUMPS

## ► Vibration Isolation Kits

Vibration Isolation Kits are designed to reduce the vibration level transmitted at the base of the scroll pump. The set of vibration isolation mounts provided in the kit will be most beneficial in those applications that require minimal vibration transmission from the pump to the installation. The isolation mounts replace the standard feet installed on the pump and can be used alone or with flexible bellows at the pump inlet to enhance pump isolation.

Please note, the mounts will increase the height of the TriScroll pumps by 0.75 inches compared to the standard mounting feet supplied with the pump.



## Ordering Information

| Description                               | Part Number    |
|-------------------------------------------|----------------|
| Vibration isolation kit for IDP-3         | IDP3VIBISOKIT  |
| Vibration isolation kit for SH-110/SH-112 | SH110VIBISOKIT |
| Vibration isolation kit for TriScroll     | PTSVIBISOKIT   |

**NOTE:** IDP-15 has integral vibration isolation, which is standard.

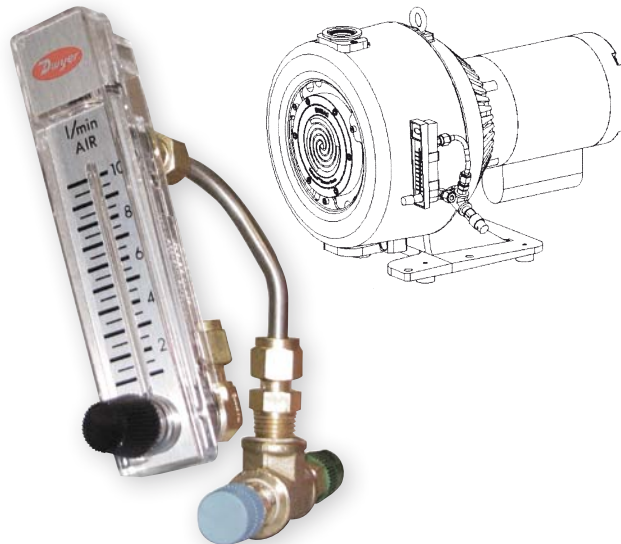
## SCROLL ACCESSORIES

### ► Purge Kits for TriScroll Pumps

This kit enables safe, proper purging of either the main bearings through the TriScroll bearing purge port, or the pump exhaust region through the gas ballast port.

Use of a gas ballast purge is indicated where it is desirable to dilute the pumped gases, and is always recommended when pumping condensable gases.

The kit includes a flow meter with manual throttle valve, a 5-psig relief valve, necessary tubing and fittings, and instructions. The flow meter assembly mounts directly onto the TriScroll pump. The recommended flow rate for both the gas ballast and bearing purge port is 5 liters/minute.



### Ordering Information

| Description              | Part Number |
|--------------------------|-------------|
| Purge kit for TriScrolls | PTSPURGEKIT |

# DRY SCROLL PUMPS

Agilent offers a range of isolation valves that are used with the scroll pump to ensure proper vacuum isolation and eliminate turbulence into the pump foreline.

For applications where the process is sensitive to particulate or requires the best vacuum isolation, the installation of a fast acting, automatic, normally closed valve is recommended to maintain vacuum and prevent backstreaming of debris which may have accumulated inside the pump.

Vacuum Isolation Valve – SH-110/SH-112



## ► Vacuum Isolation Valves for Scroll Pumps

The SH-110 and SH-112 have an integral solenoid valve at the inlet that provides isolation of the pump in case of power failure and when shut off. At restart there is a 10 second time delay before the valve opens. This time allows a good level of vacuum to be established between the valve and the pump before the pump is exposed to the system vacuum line. This eliminates turbulence that can cause back migration of particulate.

Isolation Valve Retrofit Kits are available for the IDP-3. These kits employ the same valve as used on the SH Series and operate as described above.

Vacuum Isolation Valve – IDP Series



Dry Scroll  
Pumps

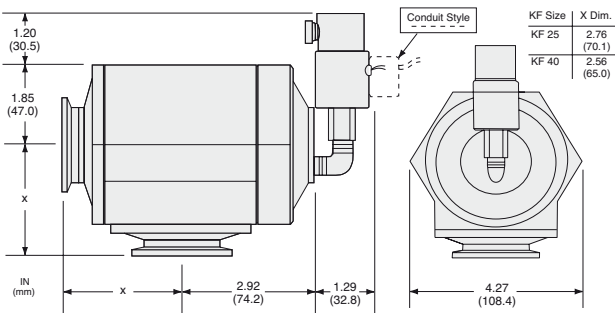
## Ordering Information

| Description                                          | Part Number |
|------------------------------------------------------|-------------|
| Isolation valve retrofit kit for IDP series, 200 VAC | VPI16IDP220 |
| Isolation valve retrofit kit for IDP series, 115 VAC | VPI16IDP115 |
| Isolation valve retrofit kit for IDP series, 100 VAC | VPI16IDP100 |

**NOTE:** A Vacuum Isolation Valve is a standard option for IDP-15.

SCROLL ACCESSORIES

► Agilent Vacuum Pump Isolation Valve (VPI)



Dimensions: inches (millimeters)

Protection for Your Vacuum System

The VPI is electrically connected in parallel with your mechanical pump, and closes rapidly when power is interrupted to prevent oil backstreaming or particle migration into your vacuum system. The valves also vent the pump from the inlet side to push any debris towards the outlet, thereby preventing it from being swept into the system when pumping is restarted. The body design and right-angle configuration provide maximum conductance.

Technical Specifications

|                          |                                                                 |
|--------------------------|-----------------------------------------------------------------|
| <b>Materials</b>         | Body: 6061-T6 aluminum<br>Piston: 2024 aluminum<br>Seals: viton |
| <b>Leak rate</b>         | Body and seal: <1 x 10 <sup>-9</sup> std cc/sec He              |
| <b>Closing time</b>      | <30 milliseconds                                                |
| <b>Power</b>             | 7 watts @ 115 VAC                                               |
| <b>Conductance</b>       | NW25 - 13 l/s    NW40 - 33 l/s                                  |
| <b>Temperature range</b> | Valve: 0 ° to 100 °C, Solenoid 0 ° to 50 °C                     |

Features

- Lock-over-center mechanism
- Fast-acting: valve closes in less than 30 milliseconds
- Provides venting of the pump at the pump inlet
- Remains closed until pump inlet pressure returns to system pressure
- Operates with atmospheric pressure and is activated upon loss of electrical power
- Provides maximum conductance

Benefits

- Reliable, repeatable seals
- Immediate protection of your vacuum system from oil or contaminant migration in the event of power failure
- Flow direction is maintained; oil/debris are not swept into the system
- Continued protection and easy restart
- No compressed air required for operation
- No reduction of pumping speed

# DRY SCROLL PUMPS

## Ordering Information

| Description          | Voltage | Part Number   | Shipping Weight lbs. (kg) |
|----------------------|---------|---------------|---------------------------|
| NW25                 | 120 VAC | VPI251205060  | 5 (2.3)                   |
|                      | 133 VAC | VPI251335060  | 5.0 2.3                   |
|                      | 220 VAC | VPI252205060  | 5.0 2.3                   |
|                      | 266 VAC | VPI252665060  | 5.0 2.3                   |
| NW40                 | 120 VAC | VPI401205060  | 5.0 2.3                   |
|                      | 133 VAC | VPI401335060  | 5.0 2.3                   |
|                      | 220 VAC | VPI402205060  | 5.0 2.3                   |
|                      | 266 VAC | VPI402665060  | 5.0 2.3                   |
| <b>Accessories</b>   |         |               |                           |
| Piston Kit, NW25     |         | VPI25PSTNKIT  | 1.0 (0.5)                 |
| Rebuild Kit, NW25    |         | VPI25RBLDKIT  | 1.0 (0.5)                 |
| Piston Kit, NW40     |         | VPI40PSTNKIT  | 1.0 (0.5)                 |
| Rebuild Kit, NW40    |         | VPI40RBLDKIT  | 1.0 (0.5)                 |
| Replacement Solenoid | 120 VAC | VPISOL1205060 | 1.0 (0.5)                 |
|                      | 133 VAC | VPISOL1335060 | 1.0 (0.5)                 |
|                      | 220 VAC | VPISOL2205060 | 1.0 (0.5)                 |
|                      | 266 VAC | VPISOL2665060 | 1.0 (0.5)                 |
| Seals Kit, NW25/40   |         | VPISEALSKIT   | 1.0 (0.5)                 |

# SCROLL PUMP SERVICE AND SUPPORT PLANS

Agilent's service and support offering is one of the most comprehensive in the industry with an emphasis on quick response time and hassle-free service. The following pages detail the standard sections of our Scroll Pump Service and Support Plan. For more information, or if you have a need for customized solutions, please contact your Agilent representative.

## Product Support

- **Exchange/Repair Program**
- **Upgrade Program**
- **Extended Warranty**
- **Cleaning Service**
- **Worldwide Sourcing**

## Technical Assistance

- **Customer Support**
- **Application Support**
- **Application Training**

## Product Support

### Exchange/Repair Program

The Exchange Program maximizes uptime for those occasions where fast response is essential, offering exchange units for advance shipment. Our exchange units are fully reconditioned to the same strict standards as new products. They are kept in stock in North America, Europe, Japan, Korea, Singapore and Taiwan. If requested, your exchange unit can be shipped for overnight delivery.

The Repair Program is available for those situations where the traceability of assets is important and when the customer must retain possession of the original pump.

Both the Exchange and Repair Programs are available worldwide and provide global OEMs and end-users consistent delivery time, value pricing, and simple order processing procedures.

To order an exchange unit, add the letters "EX" before the product part number you need to exchange. After receipt of the exchange unit, you have up to 20 days to return the original unit to Agilent.

To request repair of your unit, contact the closest Agilent location.

### Upgrade Program

The Upgrade Program is designed for customers who need to replace a Agilent product at the end of its life, or wish to upgrade to the newer technology of a more current product. For example, a customer might wish to replace a TriScroll 300 scroll pump with the newer TriScroll 300 inverter scroll pump with the more advanced inverter technology.

The Upgrade Program includes proactive technical installation support by telephone and full 12-month warranty.

## Technical Assistance

### Customer Support

Our toll-free lines with mother tongue technical support engineers at worldwide locations, allow us to provide you with quick, corrective responses to your needs. When a new problem is identified and solved by our support personnel, it is entered into our technical support system and becomes available to our network of Agilent technical support centers.

This system allows all Agilent locations to provide excellent first and second level technical support to customers worldwide.

In addition, the technical support centers are in daily contact with our R&D departments for a third level support.

### Application Support - Application Training

Agilent has a leadership position in vacuum technology and maintains this position by continuously search for innovative solutions through research and development. To meet the most demanding needs, our application engineering team can bring our knowledge into your factory.

Application Support is a project-based activity where our experts assist you towards the solution of your application issues that might arise pre-sales or post-sales. By designing solutions that meet customer needs, Agilent aims to create a positive and synergetic relationship with customers. Our experts can keep you well informed and up-to-date on industrial and scientific applications with the goal of optimizing the use of our products on your system as well as the development of new vacuum techniques.

For more information, or if you have a need for customized solutions, please contact your Agilent representative.

# DRY SCROLL PUMPS

## Agilent's industry leading service programs maximize your system uptime and productivity.

Agilent offers several scroll pump service and maintenance options depending on your in-house capability and maintenance approach. From "do it yourself" to exchange of the entire pump, we accommodate your maintenance needs.

Routine maintenance of Agilent scroll pumps consists of simple tip seal replacement. The IDP and SH Series pumps require only the tip seal kit and common tools for tip seal replacement; for TriScroll pumps a tip seal tool kit is recommended along with the replacement tip seal kit.

Major maintenance involves bearing and seals replacement in addition to tip seal replacement and is required much less frequently. Major maintenance on the TriScroll 300 and TriScroll 600 pumps is most frequently accomplished

through Agilent's advance exchange program where the used scroll module is exchanged with a factory rebuilt module. Alternatively, a new replacement scroll module may be installed, or the maintenance on the TriScroll pumps can even be accomplished on-site by qualified personnel.

Major maintenance kits contain all bearings, bearing seals, bearing lubricant, o-rings and tip seals required to rebuild TriScroll pumps. Maintenance tool kits are also available and contain all fixtures and tools required to perform any maintenance on TriScroll pumps.

Major maintenance of the SH Series is done through Agilent's Advance Exchange program to exchange the entire pump. Your IDP-3 is maintained using a replacement scroll module.

For many models of Agilent's scroll pumps, advance exchange of the entire pump is available.

## Ordering Information

| Description                                           | Part Number   |
|-------------------------------------------------------|---------------|
| <b>IDP-3</b>                                          |               |
| Tip seal kit                                          | IDP3TS        |
| Replacement module                                    | IDP3          |
| <b>IDP-15</b>                                         |               |
| Tip seal replacement kit                              | X3815-67000   |
| <b>SH-110/SH-112/SH-100</b>                           |               |
| Tip seal replacement kit, SH-110/100                  | SH0110TS      |
| Tip seal replacement kit, SH-112                      | SH0112TS      |
| <b>TriScroll 300/600 and TriScroll Inverter Pumps</b> |               |
| TriScroll 300 exhaust extension                       | S4707002      |
| TriScroll 300 maintenance kit                         | PTSS0300MK    |
| TriScroll 600 maintenance kit                         | PTSS0600MK    |
| TriScroll 300/600 maintenance tool kit                | PTSS0600TK    |
| TriScroll 300 replacement tip seal kit                | PTSS0300TS    |
| TriScroll 600 replacement tip seal kit                | PTSS0600TS    |
| TriScroll 300/600 tip seal tool kit                   | PTSTSTKIT     |
| TriScroll 300/600 three phase cable kit               | S478900       |
| <b>Exchange and Replacement Pumps</b>                 |               |
| Exchange SH-110 scroll pump                           | EXSH01101UNIV |
| Exchange TriScroll 300 pump module                    | EXPTS0300SC   |
| Replacement TriScroll 300 pump module                 | S4700304      |
| Exchange TriScroll 600 pump module                    | EXPTS0600SC   |
| Replacement TriScroll 600 pump module                 | S4800304      |
| Exchange TriScroll 300 pump 300 pump, 1Ø              | EXPPTS03001   |
| Exchange TriScroll 300 pump 300 pump, 3Ø              | EXPPTS03003   |
| Exchange TriScroll 300 pump 600 pump, 1Ø              | EXPPTS06001   |
| Exchange TriScroll 300 pump 600 pump, 3Ø              | EXPPTS06003   |