Agilent IDP Series Dry Scroll Pumps

Dry. High Performance.

The Measure of Confidence

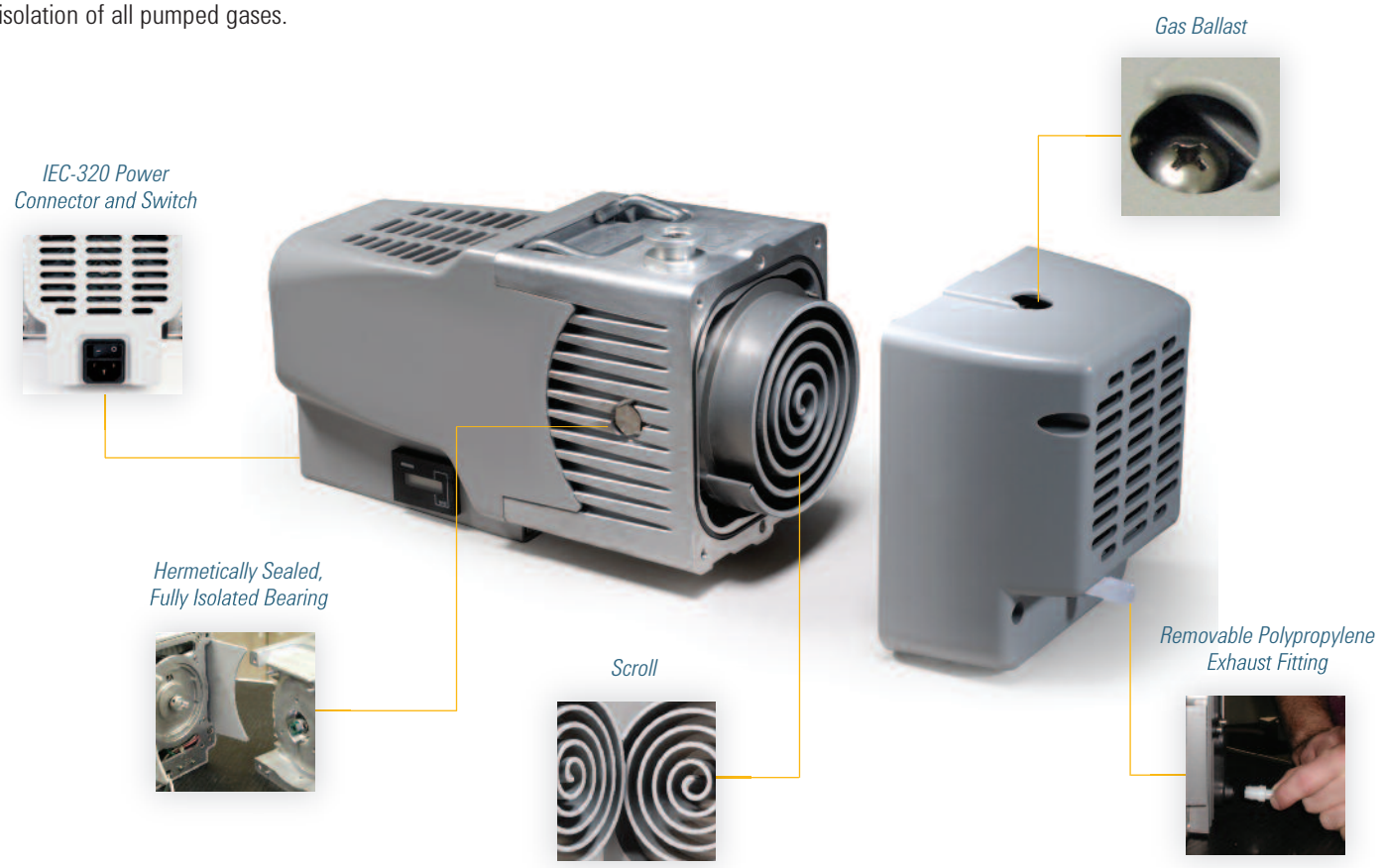
Agilent Technologies

High Performance. Compact. Dry.

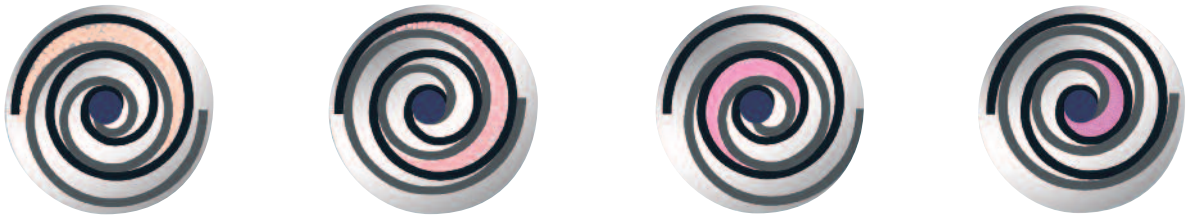
High performance in a compact package – the Agilent IDP Series Dry Scroll Pumps provide affordable oil-free vacuum with easy system integration and they are suitable for a wide variety of applications.

The IDP Series employs an innovative hermetic design in which the motor and bearings are outside the vacuum space allowing full isolation of all pumped gases.

In addition, the IDP dry pump technology is environmentally friendly, as it eliminates the need for oil disposal or the handling of contaminated oil in your laboratory.



Understanding Scroll Technology



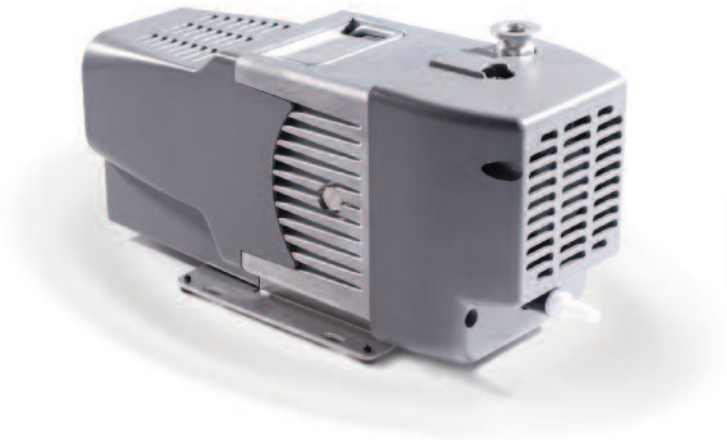
Gas enters scroll set | *Gas is displaced and...* | *...compressed toward center hub* | *Gas exhausted at center hub*

IDP Pumps create vacuum using a simple dual scroll mechanism in which one of the nested scrolls orbits about 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.

The uncomplicated dual scroll design offers many benefits including lower noise and vibration levels, simple and infrequent maintenance requirements, plus the elimination of catastrophic failure modes.

High Pumping Speed. Low Base Pressure.

Agilent IDP Series Scoll Pumps, with high pumping speed and very low base pressure, provide all the advantages of scroll pump technology in a clean, compact, lightweight, and cost-effective package.



IDP-2 Dry Scroll Pump

- Pumping speed of 35 l/m (2.1 m3/hr)
- Achieves a base pressure of 750 milliTorr (1.0 mbar)
- Economical solution for the wide range of less demanding applications

IDP-3 Dry Scroll Pump

- Pumping speed of 60 l/m 7(3.6 m3/hr)
- Very low base pressure of less than 250 mTorr (0.3 mbar)
- Truly high-performance solution for demanding applications

Why Choose IDP Series?

IDP Series *vs.* Rotary Vane Pumps

- ✓Oil-free technology of IDP Pumps eliminate the possibility of oil contamination in the vacuum system or of oil spills or leaks into the work environment.
- ✓Maintenance of the IDP Pumps require only a simple, infrequent tip seal change as compared to oil checks, changes, and disposal.
- ✓The IDP Pumps do not depend on the presence of sufficient oil to prevent seizing.

IDP Series *vs.* Membrane Diaphragm Pumps

- ✓IDP Pumps are compact at 358 x 181 x 140 mm (14 x 7 x 6 in.), yet provide base pressure of less than 250 mTorr, almost 4 times lower than equivalently sized membrane/diaphragm pump.
- ✓In turbo pump applications, the pumps' lower base pressure reduce power consumption and bearing temperature and increase the reliability of the system.
- ✓IDP Pumps avoid catastrophic failure mechanisms. A diaphragm-pumped system may suffer sudden, rapid loss of pressure when a membrane ruptures.
- ✓IDP Pumps produce lower noise and vibration levels than diaphragm pumps, creating a quiet, pleasant work environment, and much lower contribution to system noise and vibration.

Features and Benefits

Powerful – High Performance

IDP Dry Scroll Pumps deliver better vacuum performance than other pumps of similar size.

- High pumping speed provides rapid pumpdown and high gas throughput
- Very low base pressure ensures optimal turbo pump performance with increased system reliability

Oil-free – Affordable Dry Vacuum

Convenient, low maintenance pumps provide affordable dry vacuum for research and industrial applications alike.

- IDP Pumps eliminate hydrocarbon contamination in the vacuum system
- No oil leaks into the work environment

Innovative – Hermetic Design

IDP Pumps fully isolate the bearings and motor from the vacuum space and contain all pumped gases.

- Allows recovery of precious process gases
- Prevents leakage of toxic gases

Economical – Low Cost of Ownership

Robust, efficient scroll pump technology has a long service interval resulting in very low cost of ownership.

- Maintenance time and costs of oil topping, replacement and disposal are eliminated
- Simple tip seal or module exchange requires less than 30 minutes

System Friendly – Easy to Integrate

With a small footprint, low weight, and low power requirements, IDP Pumps are easy to accommodate in system design.

- IDP Pumps place little additional burden on system utilities and are suitable for use inside cabinet enclosures
- At only 21 pounds (9.5 kg), IDP Pumps are lighter than mechanical rotary vane and membrane pumps of similar pumping speed
- Low noise and vibration provide a quiet, pleasant work environment

Applications

Analytical Instrumentation

Monitoring, maintenance and environmental challenges of oil disposal make oil-sealed rotary vane pumps, at best, a nuisance in the laboratory environment. Without oil, high capacity IDP Pumps provide your instrument the required pumping speed and base pressure not available with other dry pump technologies.

- GC/MS
- Residual gas analyzers
- Load locks for mass spectrometers
- Electron microscopes
- Surface area analyzers
- EM Sample prep coaters

Semiconductor Fabrication

IDP Series hermetic design ensures against gas leakage into the environment, essential for evacuation and cycle purging of gas transfer lines and gas panels in wafer fabs. The pumps maintain ultra-pure gases by reducing the number of purge/vent cycles, so that on a single pumpdown the pumps low base pressure eliminates 99.9% of the volume gas.

- Gas panels
- Gas delivery systems
- Double wall containment vessels

High Energy Physics

Chamber evacuation and backing of turbo pumps on beam lines are just a couple of the applications that benefit from the clean, dry pump technology of the IDP Series. A compact, rugged, high performance design makes it a superior choice over membrane pumps, and the 55 dBA noise spec makes it virtually unnoticeable in the work environment.

- Accelerators
- Beam lines
- Synchrotrons

Industrial processing

IDP pumps deliver clean vacuum critical for many precision components – optics, lasers, electron devices – with a hermetically sealed design with all bearings outside the vacuum space. With low base pressure and high pumping speed, the IDP Series is the superior choice compared to membrane pumps.

- Laser evacuation
- Cryogenic dewars
- Glove boxes
- Gas recovery and recirculation
- Cryopump roughing
- Tube processing
- Vacuum chucks

General Research & Development

A cost effective solution for clean vacuum when fast pumpdown times are desired, the IDP Series outperforms other dry technologies with higher retained pumping speed both at high pressure and at base vacuum.

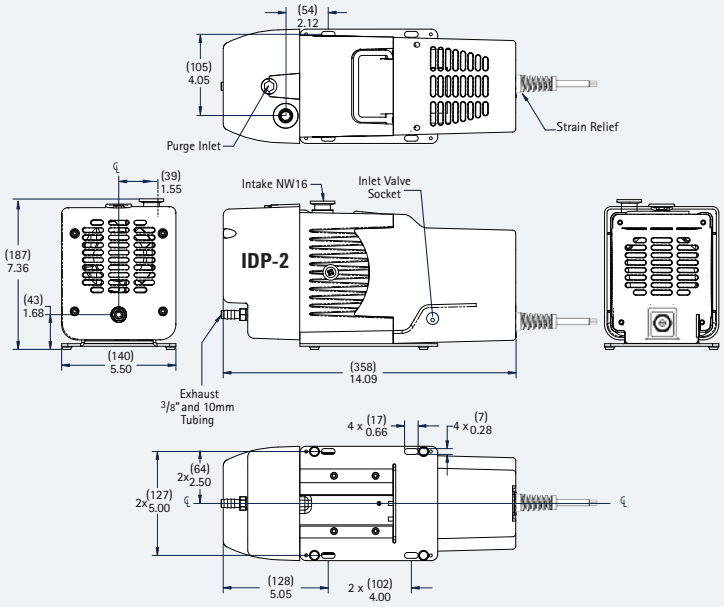
- Experimental chambers
- Sample prep systems
- Surface analysis systems
- Backing turbo pump on beam lines

Technical Specifications

		IDP-2	IDP-3
Peak pumping speed	*60 Hz*	35 l/m, 2.1 m^3/hr, 1.2 cfm	60 l/m, 3.6 m^3/hr, 2.1 cfm
	50 Hz	30 l/m, 1.8 m^3/hr, 1.1 cfm	50 l/m, 3.0 m^3/hr, 1.8 cfm
Ultimate pressure		7.5 x 10^{-1} torr (1.0 mbar, 100 Pa)	2.5 x 10^{-1} torr (3.3 x 10^{-1} mbar, 33 Pa)
Maximum inlet pressure		1 atmosphere (1.0 bar, 101 kPa)	
Maximum outlet pressure		1.4 atmospheres (1.4 bar, 142 kPa)	
Inlet connection		NW16 KF flange	
Exhaust connection		Female 1/4 in. NPT (10 mm hose barb provided)	
Gas ballast connection		Female 1/8 in. NPT	
Ambient operating temperature		5 to 40°C (41 to 108°F)	
Storage temperature		–20 to 60 °C (–4 to 140°F)	
Motor rating		0.16 horsepower (0.12 kW)	
Supply power		1Ø – 100 VAC, 50-60 Hz : 115 VAC, 60 Hz : 220-240 VAC, 50-60 Hz	
Motor thermal protection		Automatic	
Rotation speed	*60 Hz*	3200 RPM	
	50 Hz	2600 RPM	
Cooling		Air-cooled	
Weight		9.5 kg (21 lbs) Shipping-10.5 kg (23 lbs)	
Restrictions		No corrosive, explosive, or particulate-forming gases	
Leak rate		<1 x 10^{-6} std-cc/sec helium	
Noise level (per ISO 11201)		55 dB(A)	
Vibration level at inlet (per ISO 10816-1)		1.5 mm/second	
Compliance		Conforms with CE, CSA, CSA/CUS, Semi S2-703, and RoHS	

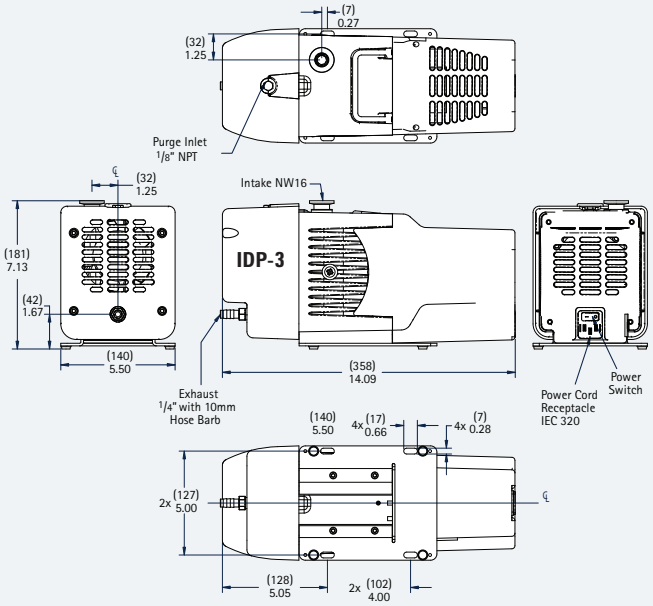
IDP-2

IDP-2 shown with DC power cord available for both pumps



IDP-3

IDP-3 shown with IEC power connector available for both pumps



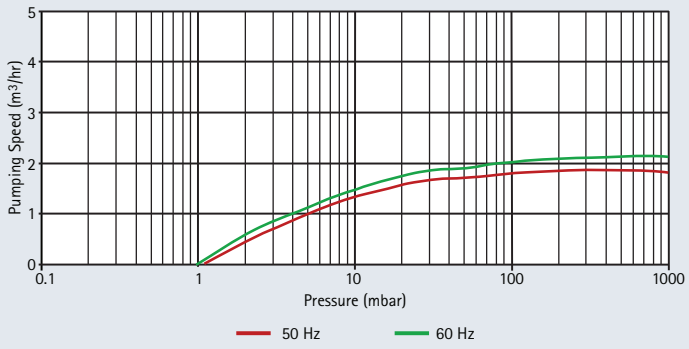
Ordering Information

IDP Series Dry Vacuum Pumps		with Hour Meter	with Isolation Valve	with Hour Meter and Isolation Valve	Tip Seal Kit	Replacement Module
IDP-2, 1Ø, 220V, 50/60Hz	IDP2A01	IDP2A11	IDP2A21	IDP2A31	IDP2TS	IDP2
IDP-2, 1Ø, 115V, 50/60Hz	IDP2B01	IDP2B11	IDP2B21	IDP2B31		
IDP-2, 1Ø, 100V, 50/60Hz	IDP2C01	IDP2C11	IDP2C21	IDP2C31		
IDP-2, 24 VDC	IDP2D01	IDP2D11	IDP2D21	IDP2D31		
IDP-3, 1Ø, 220V, 50/60Hz	IDP3A01	IDP3A11	IDP3A21	IDP3A31	IDP3TS	IDP3
IDP-3, 1Ø, 115V, 50/60Hz	IDP3B01	IDP3B11	IDP3B21	IDP3B31		
IDP-3, 1Ø, 100V, 50/60Hz	IDP3C01	IDP3C11	IDP3C21	IDP3C31		
IDP-3, 24 VDC	IDP3D01	IDP3D11	IDP3D21	IDP3D31		

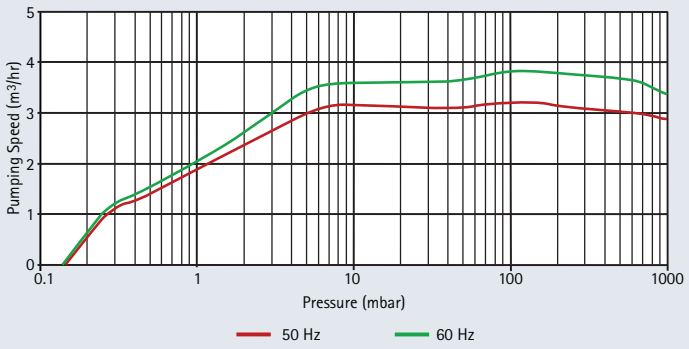
Power Cord Selection

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

IDP-2 Pumping Speed



IDP-3 Pumping Speed



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