



Agilent IDP Dry Scroll Pump Family

TRANSFORMING YOUR NEEDS INTO VACUUM INNOVATIONS



THE ONLY DRY PUMPS WORRY-FREE ENOUGH TO BE CALLED AGILENT

Before any product can earn the name Agilent, it must first measure up to our uncompromising quality and performance standards.

That's why, when we set out to make our vacuum solutions even more worry free, we took the time to do the job right. We watched and listened... examining workflow challenges while drawing upon deep technical expertise. And every step of the way, *your* goals became *our* goals: minimizing downtime, maintaining a safe working environment, and creating the cleanest, driest vacuum path.

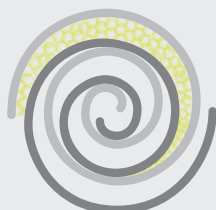
The result is the NEW Agilent family of dry scroll pumps

More than just clean, compact alternatives to conventional oil-sealed pumps, Agilent scroll pumps reflect the spirit of Agilent innovation, and our collaborative efforts to bring industry-changing ideas to fruition.



How does the scroll mechanism work?

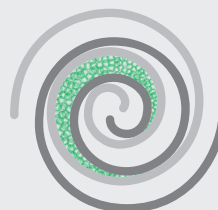
Agilent IDP pumps generate vacuum using a simple dual-scroll mechanism in which one nested scroll orbits within the other, creating moving zones of captured gas. After the gas enters the scroll set at the perimeter, it is displaced and compressed toward the center hub, where it is exhausted.



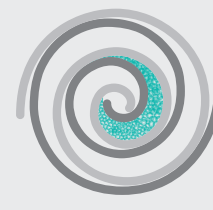
Gas enters scroll set



Gas is displaced and...



...compressed toward center hub



Gas is exhausted at center hub

Are Agilent scroll pumps really dry?

Yes... and that makes all the difference for research and industrial applications

Better performance than pumps of similar size

Isolated Dry Pumps (IDP) rapidly pump down to low base pressures, maximizing turbo pump performance and system reliability.

A cleaner environment inside—and outside—your lab

IDP scroll pumps do not use oil, which can spill, leak, or infiltrate the vacuum system. They also eliminate the risk of hydrocarbon contamination in the vacuum system. Perhaps most importantly, IDP scroll pumps reduce pollutants in our air, water, and soil.

Less downtime, lower ownership costs

Unlike traditional pumps that demand hours of scheduled maintenance, IDP scroll pumps require a simple seal replacement that takes about 15 minutes. And even this procedure can be performed infrequently, because Agilent solid tip seals are built to last up to 3 years.

Dry scroll pumps also eliminate expensive oil topping, changing, and disposal—plus the risk of pump seizure. Even better, you won't have to worry about oil leaks/spills, or hazardous waste disposal of used oil.

Easy installation and integration

With their small footprint, lighter weight, and minimal power requirements, IDP pumps accommodate any system design. They place little burden on utilities, require no special voltage, and are suitable for use inside cabinet enclosures. Agilent IDP scroll pumps also use standard IEC power cords that are not hard-wired to the motor.

A more pleasant workday

The innovative scroll design reduces noise and vibration without using a quiet cover. Plus, there's no hydrocarbon exhaust and no oil mist filter required.



Innovative hermetic design

IDP Pumps fully isolate the bearings and motor from the vacuum space, which prevents leakage and allows recovery of process gases.



IDP-3 tip seal replacement is fast and easy.

See how simple replacing the tip seals can be:

www.agilent.com/chem/idpscrollpumps

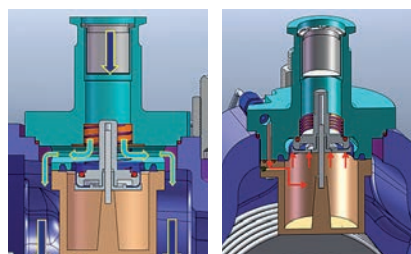
CLEAN. QUIET. RELIABLE. OIL FREE.

Key IDP scroll pump design features

Fail-safe integral isolation valve prevents accidental contamination

This optional valve protects against backwards migration and sudden venting. It is installed inside the module, adding no extra height to the pump inlet. Here's how it works:

- Under normal conditions, a spring holds the inlet valve open.
- Upon power loss, the solenoid valve vents a small chamber beneath the valve, which closes the inlet valve (approximately 20 milliseconds).
- Once power is restored, the solenoid closes, the pump evacuates, and the inlet valve opens (approximately 10-30 seconds).



Vacuum in pump,
inlet valve opens

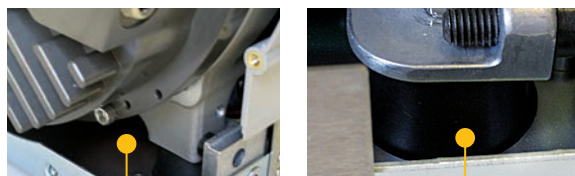
Pump vents,
inlet valve closes

Recover process gases and prevent toxic gas leaks

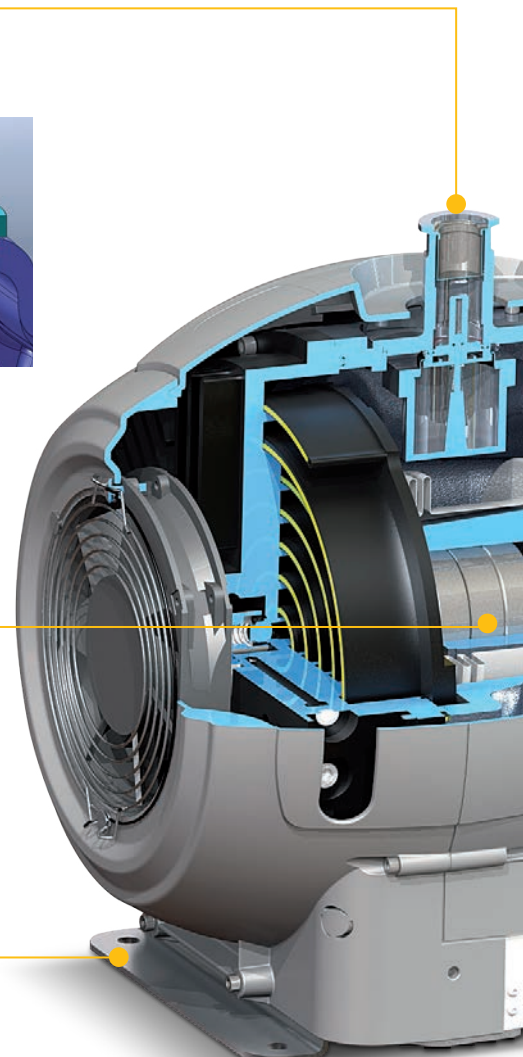
Agilent IDP scroll pumps employ a hermetic design in which the motor and bearings are located outside the vacuum space at atmospheric pressure—completely isolating all pumped gases. This closed system from inlet to exhaust is particularly well suited for rare gas and helium recirculation applications.

Protect your system from vibration damage

Integral vibration isolation feet on the IDP-15 scroll pump dampen module vibration and decouple motor and scroll vibration from the mounting brackets.



Vibration isolators



IDP-15

Hermetically designed IDP pumps eliminate the risk of nonprocess gases entering the vacuum path.

Easy on the ears

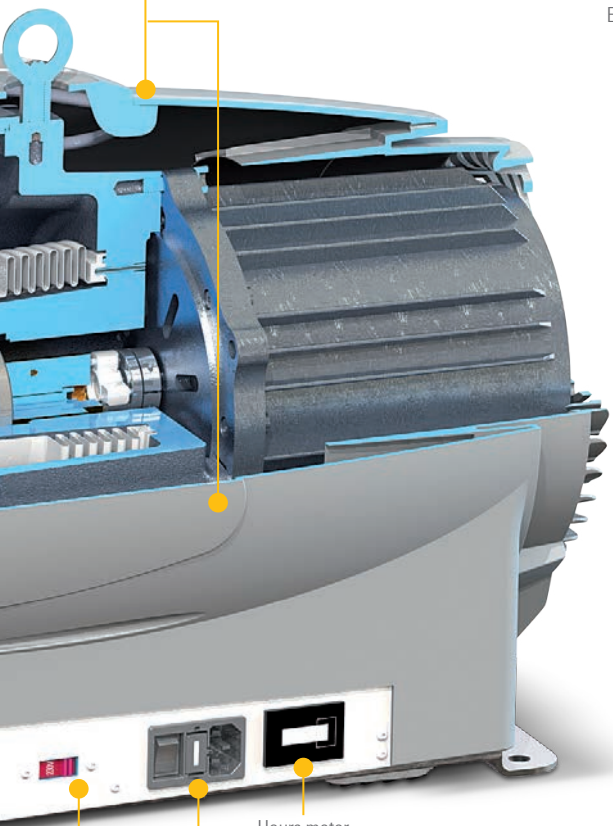
When designing our IDP scroll pump module, Agilent consulted with noise experts to ensure quiet operation. Just look at how Agilent IDP scroll pumps compare with common everyday noises.

Noise	dBA
Chainsaw / thunder clap	120
Car horn (1 m) / live rock music	110
Lawn mower / airplane take off (1 km)	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
Agilent IDP-7 scroll pump	52
Conversation at home	50
Public library	40

Every additional 10 dBA represents a doubling of noise.



Outer cowling acts as noise enclosure



High/low voltage switch
Power module on/off switch
Hours meter

SERVICE YOUR PUMP IN LESS THAN 15 MINUTES



Our single-sided scroll design means that you only need to remove the fixed scroll when changing the tip seals. This procedure can be accomplished in about 15 minutes using only two basic tools. Even with this simple design, Agilent IDP scroll pumps achieve a low ultimate pressure of 10 mTorr.

Watch our live video to see how easy it is to replace the tip seals:

www.agilent.com/chem/idp3

Fixed speed motor enables operation around the world

Agilent IDP pump motors (IDP-3, -7, -15) support the following single-phase operating voltages:

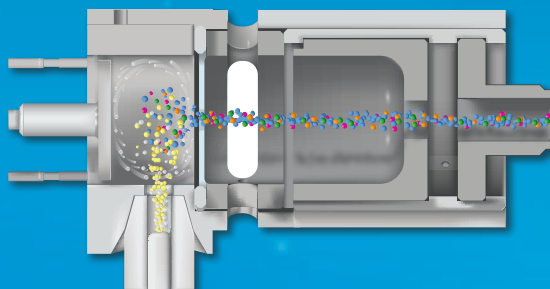
- 100 V, 50/60 Hz
- 115 V, 60 Hz
- 220-230 V, 50/60 Hz
- 24 VDC (IDP-3 only)

In addition, a simple switch lets you change between high and low voltage use.

EXPANDED PUMPING SPEED OPTIONS ENABLE NEW APPLICATION POSSIBILITIES

The addition of our IDP-10 and IDP-7 scroll pumps brings Agilent quality and performance to applications such as freeze drying, glove boxes, sample prep, SEM, and more. They are also ideal for backing a turbo pump and loadlock applications.

Best of all, our full range of pumping speeds also lets you optimize your system configuration for maximum performance at the lowest possible cost.



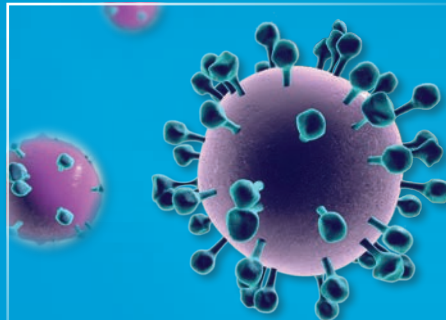
Mass Spectrometry

- Oil-free—no messy maintenance, no contamination risk
- Inlet isolation valve assures system protection
- Quiet operation—no quiet cover required



Sample Preparation

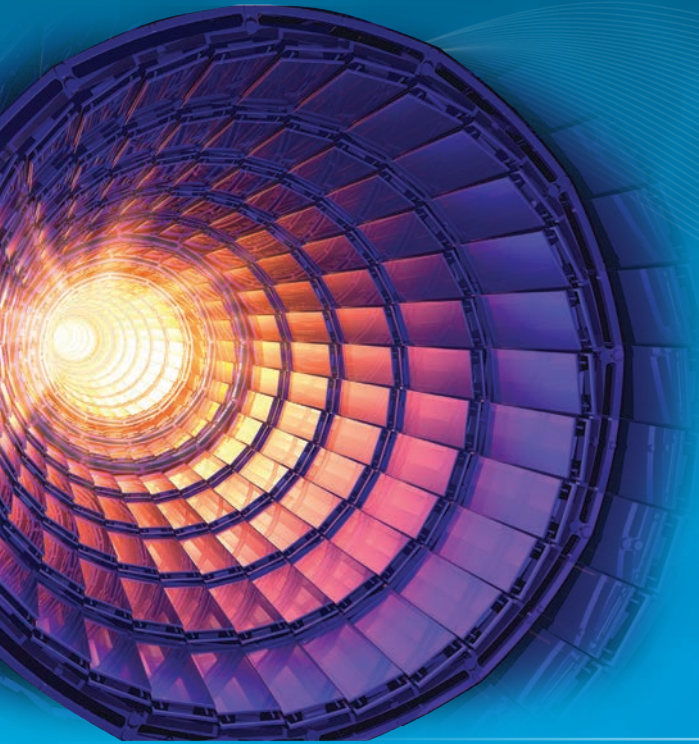
- Protected bearings enable use with light solvents
- Clean, oil-free vacuum path
- Easy on the ears
- Long service life



Electron Microscopy

- Very low vibration—no impact on the instrument
- Oil-free—no messy maintenance, no contamination risk
- Inlet isolation valve assures system protection
- Quiet operation—no quiet cover required





Research

- Oil-free— no messy maintenance, no contamination risk
- Inlet isolation valve assures system protection
- Quiet operation for workplace comfort
- Long service life



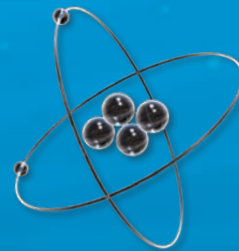
Glove Box

- Protected bearings provide high tolerance for water vapor
- Quiet operation for workplace comfort
- Long service life



Freeze Drying

- Protected bearings provide high tolerance for water vapor
- Quiet operation for workplace comfort
- Long service life







Helium Recirculation

- Clean, oil-free vacuum path, no messy maintenance, no contamination risk
- Long service life
- Hermetic design guaranteed to be leak free



HOW TO SELECT YOUR AGILENT IDP DRY SCROLL VACUUM PUMP

This at-a-glance guide will help you choose the Agilent IDP pump with the right pumping speed, base pressure, and motor specifications for your applications.

IDP model	Pumping speed		Base pressure		Motor rating/ operating voltage
IDP-3 	60 Hz/24 VDC 60 L/min 3.6 m ³ /h	50 Hz 50 L/min 3.0 m ³ /h	60 Hz/24 VDC 3.3 x 10 ⁻¹ mbar 2.5 x 10 ⁻¹ Torr	50 Hz 3.3 x 10 ⁻¹ mbar 2.5 x 10 ⁻¹ Torr	0.16 HP (120 W)/ 100-120; 200-240 VAC
NEW! IDP-7 	60 Hz 152 L/min 9.1 m ³ /h	50 Hz 120 L/min 7.2 m ³ /h	60 Hz 2.6 x 10 ⁻² mbar 2.0 x 10 ⁻² Torr	50 Hz 4.0 x 10 ⁻² mbar 3.0 x 10 ⁻² Torr	0.38 HP (300 W)/ 100-120; 200-240 VAC
NEW! IDP-10 	50 Hz or 60 Hz at full rotational speed (factory setting) 170 L/min 10.2 m ³ /h		50 Hz or 60 Hz at full rotational speed (factory setting) 2.0 x 10 ⁻² mbar 1.5 x 10 ⁻² Torr		0.5 HP (350 W)/ 100-127; 200-240 VAC
IDP-15 	60 Hz 256 L/min 15.4 m ³ /h	50 Hz 214 L/min 12.8 m ³ /h	60 Hz 1.3 x 10 ⁻² mbar 1.0 x 10 ⁻² Torr	50 Hz 1.3 x 10 ⁻² mbar 1.0 x 10 ⁻² Torr	0.75 HP (560 W)/ 100-115; 220-230 VAC

Add the inlet isolation valve if...



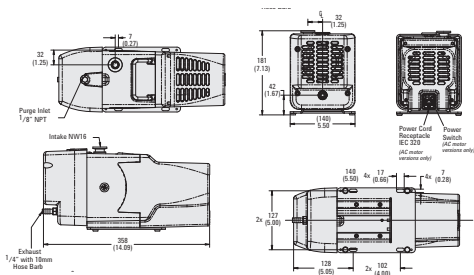
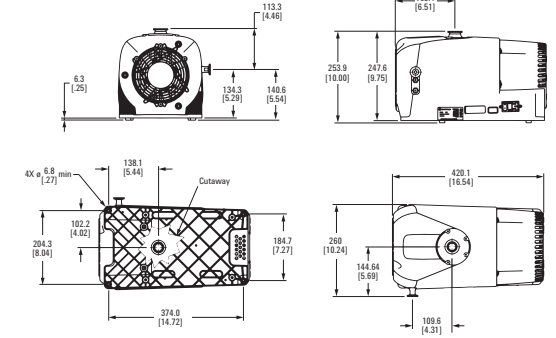
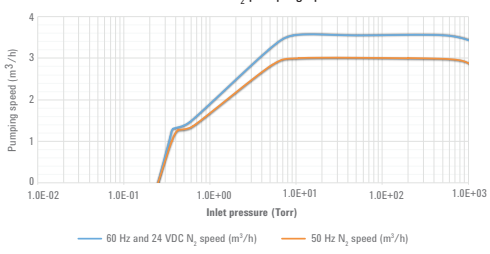
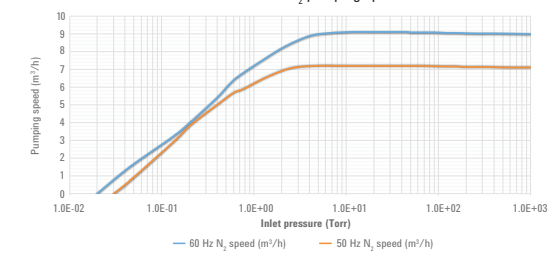


Common applications	Choose this model if...
<ul style="list-style-type: none"> • Leak detection • GC/MS • Helium recirculation 	<ul style="list-style-type: none"> • You want the lightest, most compact primary pump • You need to integrate the pump into your instrument • You want a 24 V drive
<ul style="list-style-type: none"> • Vacuum ovens • Helium recirculation • Backing high vacuum pump • General laboratory vacuum 	<ul style="list-style-type: none"> • You need a bit more pumping speed, but you want a compact, tabletop pump • You need to handle water vapor
<ul style="list-style-type: none"> • Microscopy instruments • Surface analysis instruments • Helium recirculation • Thin film deposition 	<ul style="list-style-type: none"> • You want to guarantee universal pumping performance at all input frequencies • You want remote speed control or on/off capability
<ul style="list-style-type: none"> • General laboratory vacuum • Thin film deposition • LED, bulb manufacturing 	<ul style="list-style-type: none"> • You want the quietest pump available • You want the lowest vibration at inlet available • You need to evacuate a large chamber
<ul style="list-style-type: none"> • Instrumentation • Beam and particle physics • Backing a turbo pump 	<ul style="list-style-type: none"> • You want to protect your system and high vacuum pump in case of power loss • You want to isolate the pump inlet during turbulent stop and start

PUMP SPECIFICATIONS

This quick-reference table lists the key differentiating specifications of each Agilent IDP scroll pump.

(NOTE: Additional general specifications can be found on page 14.)

IDP dry single scroll hermetic vacuum pump	IDP-3	NEW! IDP-7
		
Dimensions (h x w x l)	181 x 140 x 358 mm (7.13 x 5.5 x 14.09 in)	254 x 260 x 420 mm (10 x 10.24 x 16.54 in)
Peak pumping speed	60 Hz/24 VDC: 60 L/min (3.6 m ³ /h) 50 Hz: 50 L/min (3.0 m ³ /h)	60 Hz: 152 L/min (9.1 m ³ /h) 50 Hz: 120 L/min (7.2 m ³ /h)
Ultimate pressure	3.3 x 10 ⁻¹ mbar (2.5 x 10 ⁻¹ Torr)	60 Hz: 2.6 x 10 ⁻² mbar (2.0 x 10 ⁻² Torr) 50 Hz: 4.0 x 10 ⁻² mbar (3.0 x 10 ⁻² Torr)
Operating speed	60 Hz/24 VDC: 3200 rpm 50 Hz: 2600 rpm	60 Hz: 1750 rpm 50 Hz: 1450 rpm
Weight (pump only)	9.5 kg (21 lbs)	24.5 kg (54 lbs)
Shipping weight	10.5 kg (23 lbs)	28.1 kg (62 lbs)
Noise level (per ISO 11201)	55 dB (A)	52+/- 2 dB (A)
Dimensional drawing millimeters [inches]		
Speed curve	<p>IDP-3 air/N₂ pumping speed</p>  <p>— 60 Hz and 24 VDC N₂ speed (m³/h) — 50 Hz N₂ speed (m³/h)</p>	<p>IDP-7 air/N₂ pumping speed</p>  <p>— 60 Hz N₂ speed (m³/h) — 50 Hz N₂ speed (m³/h)</p>



NEW! IDP-10

IDP-15



297 x 260 x 420 mm (11.7 x 10.05 x 16.54 in)

364 x 333 x 485 mm (14.3 x 13.1 x 19.1 in)

170 L/min (10.2 m³/h)
at full rotational speed

60 Hz: 256 L/min (15.4 m³/h)
50 Hz: 214 L/min (12.8 m³/h)

2.0 x 10⁻² mbar (1.5 x 10⁻² Torr)

1.33 x 10⁻² mbar (1 x 10⁻² Torr)

Variable from 63.33 Hz: 1900 rpm (factory setting)
to 45 Hz: 1350 rpm

60 Hz: 1725 rpm
50 Hz: 1450 rpm

24.74 kg (54.5 lbs)

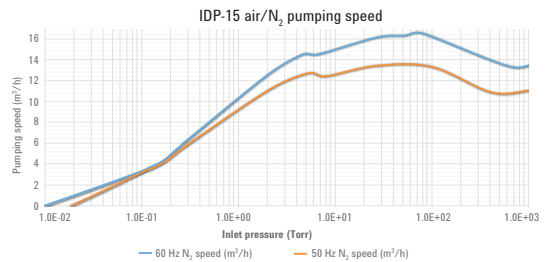
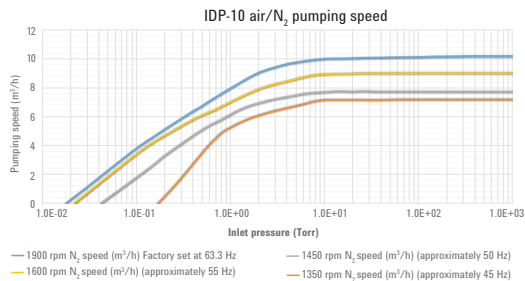
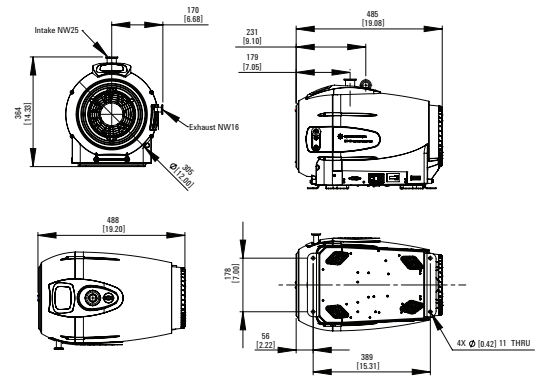
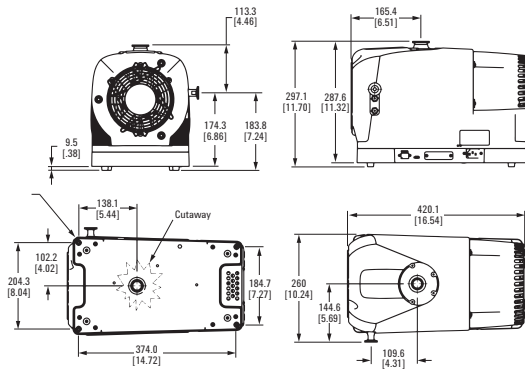
34 kg (75 lbs)

28.1 kg (62 lbs)

45 kg (100 lbs)

53 +/- 2 dB (A)

50 +/- 2 dB (A)



ORDERING INFORMATION

IDP-3



Description

Part number

IDP-3, 1 ϕ , 220 V, 50/60 Hz	IDP3A01
IDP-3, 1 ϕ , 115 V, 60 Hz	IDP3B01
IDP-3, 1 ϕ , 100 V, 50/60 Hz	IDP3C01
IDP-3, 24 VDC	IDP3D01

With inlet isolation valve

IDP-3, 1 ϕ , 220 V, 50/60 Hz	IDP3A21
IDP-3, 1 ϕ , 115 V, 60 Hz	IDP3B21
IDP-3, 1 ϕ , 100 V, 50/60 Hz	IDP3C21
IDP-3, 24 VDC	IDP3D21

Service part numbers

IDP-3 tip seal replacement kit	IDP3TS
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Accessory part numbers

Exhaust silencer kit	EXSLRIDP3
Inlet trap	SCRINTRPNW16
Vibration isolation kit	IDP3VIBISOKIT

IDP-7



Description

Part number

IDP-7	X3807-64000
IDP-7 with inlet isolation valve	X3807-64010

Service part numbers

IDP-7/10 tip seal replacement kit	X3807-67000
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Accessory part numbers

Exhaust silencer kit	X3807-68003
Purge kit	X3807-68004
Gas ballast kit	X3807-68008
Inlet trap	SCRINTRPNW25
Vibration isolation kit	SH110VIBISOKIT



IDP-10



Description	Part number
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IDP-10	X3810-64000
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IDP-10 with inlet isolation valve	X3810-64010
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Service part numbers

IDP-7/10 tip seal replacement kit	X3807-67000
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Accessory part numbers

Exhaust silencer kit	X3807-68003
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Purge kit	X3807-68004
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Gas ballast kit	X3807-68008
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Inlet trap	SCRINTRPNW25
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Vibration isolation kit	SH110VIBISOKIT
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IDP-15



Description	Part number
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IDP-15	X3815-64000
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IDP-15 with inlet isolation valve	X3815-64010
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Service part numbers

IDP-15 tip seal replacement kit	X3815-67000
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Accessory part numbers

Exhaust silencer kit	EXSLRSH110
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Purge kit	X3807-68004
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Gas ballast kit	X3807-68008
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Inlet trap	SCRINTRPNW25
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TECHNICAL SPECIFICATIONS



Technical specifications – IDP dry single scroll hermetic vacuum pump	
Media	No corrosive, explosive or particulate forming gases
Maximum inlet pressure	1.0 atmosphere (0 psig)
Recommended max inlet pressure	200 mbar (150 Torr)
Maximum outlet pressure	IDP-3 and IDP-15: 1.4 atmosphere (6.5 psig) IDP-7 and IDP-10: 1.34 atmosphere (5 psig)
Inlet connection	IDP-3: NW16 IDP-7, IDP-10, IDP-15: NW25
Exhaust connection	IDP-3: female, 0.25 inch, national pipe thread; 10 mm hose barb provided installed IDP-7 and IDP-10: NW16 IDP-15: female, 0.25 inch, national pipe thread (NW16 adapter provided)
Gas ballast	IDP-3, IDP-7, and IDP-10: female, 0.25 inch national pipe thread (shipped with gas ballast port plug installed; 20 µm sintered filter provided) IDP-15: female, 0.25 inch, national pipe thread (two positions)
Water vapor handling per Pneurop 6602 (maximum)	IDP-7 and IDP-10: 120 grams/hr IDP-15: 235 grams/hr
Ambient operating temperature	5 to 40 °C (41 to 104 °F)
Storage temperature	-20 to 60 °C (-4 to 140 °F)
Motor thermal protection	Automatic thermal protection
Cooling system	Air-cooled
Leak rate (with exhaust sealed)	<1 x 10 ⁻⁶ sccs (1 x 10 ⁻⁶ mbar.l/s)
Vibration level at inlet (per ISO 10816-1)	IDP-3: 5 mms ⁻¹ rms IDP-7 and IDP-10: 7 mms ⁻¹ rms IDP-15: < 9 mms ⁻¹ rms
Hour meter	Integral hour meter provided
Emissions and immunity	EN61236-1: 2013 as a Class A device
Safety	EN/IEC 61010 3rd Edition certified
Ambient relative humidity	5-90 %; noncondensing
Installation	Indoor use, installation category II, pollution degree 2
Altitude	2000 m (6562 feet)

Note: Detailed specifications for each model can be found on pages 10-11

MORE VACUUM SOLUTIONS FROM AGILENT

In addition to delivering state-of-the-art dry scroll pumps, Agilent offers other solutions to keep your lab running at top performance



TwisTorr FS turbomolecular pumps

Delivering superior vacuum performance, these pumps offer:

- quiet, low-vibration operation
- noise and vibration stability over time
- easy system integration
- Agilent quality and reliability



Vacuum measurement for Science and Industry

The XGS-600 high-performance, high-capacity vacuum gauge rack controller provides flexible and cost effective monitoring and control of multiple roughing, high vacuum and ultrahigh vacuum gauges in a standard half-rack package.



VS leak detectors

The simplicity of two-button operation combined with advanced system intelligence makes our VS leak detectors the choice for both industrial and research applications. Start and vent buttons permit simple day-to day operation. Our detectors are precise, reliable, and easy to use.



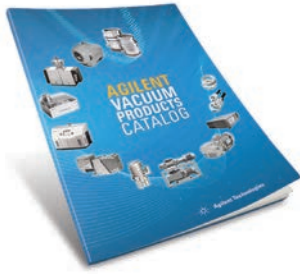
Vacuum and leak detection technology education

Since the invention of the Vaclon ultrahigh vacuum pump over 40 years ago, Agilent (with the acquisition of Varian) has led the way in vacuum and leak detection technology. Our highly-regarded training program—offering webinars, seminars, multiday classroom, and onsite custom classes—is staffed with experts who have the experience to provide comprehensive instruction on a broad range of these technologies.



Vaclon pumps

New from the inventor of ion pumps, the VIP200 is the first ion pump to achieve peak pumping speed at low pressure, in the 10–8 mbar range.



Vacuum Beyond Specifications

Complemented by the acquisition of Varian, Agilent Technologies offers complete vacuum solutions for scientific and industrial applications. Agilent offers unique expertise in applications, support, system design, and training to integrate superior vacuum products into optimized vacuum solutions.

To learn more go to: www.agilent.com/chem/vacuum

Learn more about IDP dry scroll vacuum pumps

www.agilent.com/chem/idpscrollpumps

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