The next generation 15 m^3/h Scroll Pump,
designed for quiet and low vibration operation

AGILENT IDP-15 DRY SCROLL PUMP

CLEAN. QUIET. RELIABLE.

The Measure of Confidence

Agilent Technologies

The state-of-the-art in dry scroll pump technology

The Agilent IDP-15 Scroll Pump is a high performance dry primary vacuum pump, providing rapid pump-down at 15.4 m^3/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.

Applications

The IDP-15 Dry Scroll Pump is the ideal solution for vacuum users in most clean applications, for backing a turbo pump, and for loadlock applications in general. Key target applications include:

Academic and Research

- Government Research Labs
- University Labs
- High Energy Physics/Beam Lines

Industrial

- Glovebox
- Crystal Pulling
- LED/Light Manufacturing
- Freeze Drying
- Gel Drying
- Sample Preparation

Instrumentation

- Cryogenics
- Electron Microscope
- Helium Recirculation
- Leak Detectors
- Mass Spectrometry
- Ion Implant
- Leak Detection
- Surface Science Instruments

Features and Benefits

IDP-15 Feature	Advantage	Benefits
Isolated bearings/motor	No risk of oil or grease back streaming from the pump	Longer Service Interval with condensable vapor applications
Single Sided Scroll Design	Easier, quicker basic service	
Solid Tip Seals	Longer Tip Seal Life in most applications	Longer Service Interval with condensable vapor applications
Very low noise and vibration	Appropriate for use in laboratory settings	Required in applications such as Mass Spec and Microscopy
Hermetic Design	Necessary for use in helium and other pure gas applications	No risk of non-process gases entering the vacuum path
Optional Integral Isolation Valve	Fast acting isolation valve at relatively low cost	Valve is built into pump module and adds no height to the inlet of the pump
IEC Power Cord Module	All pumps use standard IEC power cords	Power cord not hard-wired to the motor

Understanding Scroll Pump Technology

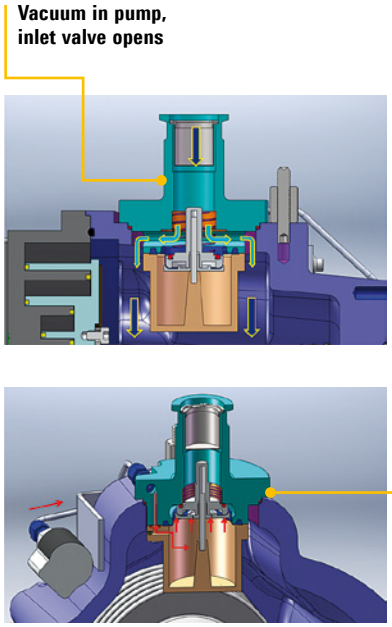
Gas enters scroll set | Gas is displaced and... | ...compressed toward center hub | Gas exhausted at center hub

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.

IDP-15 Key Design Elements

A state-of-the-art Vacuum Pump



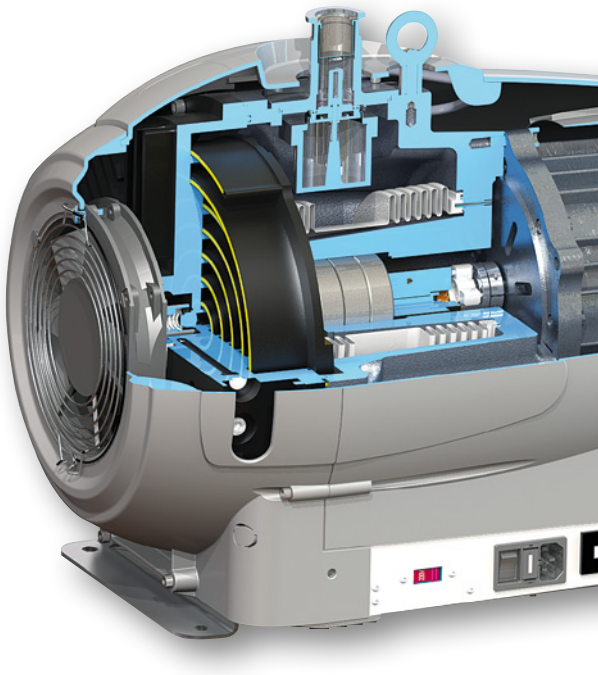
Isolated and Hermetic Design

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

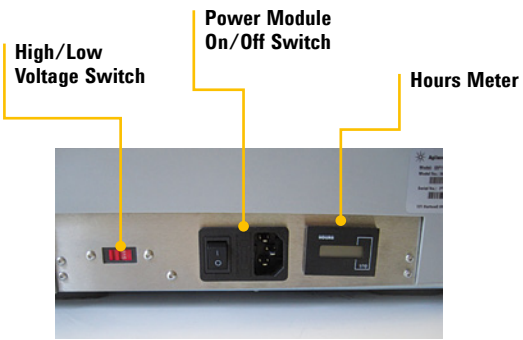


Optional Integral Isolation Valve

- 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)

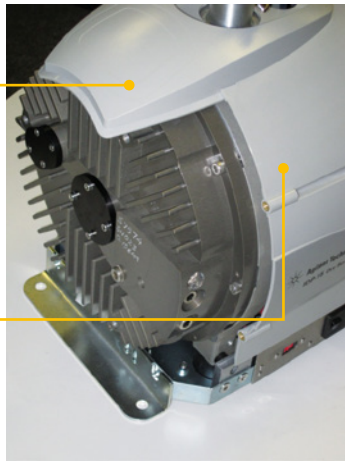
Fixed Speed Motor Supports Global Input Voltages

- Supports Single Phase Operating Voltages:
  - 100V, 50/60 Hz
  - 115V, 60Hz
  - 220-230V, 50/60Hz
- Simple Switch to change between high and low voltage use.



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 ±2 dBA, much lower than other scroll pumps available

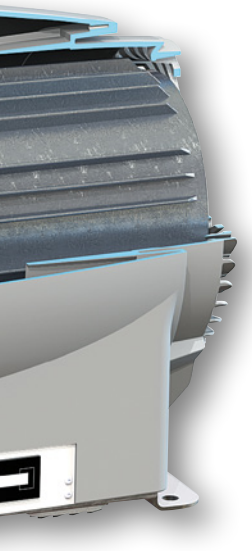


Outer Cowling acts as Noise Enclosure

How Quiet is the IDP-15?

Noise	dBA
Chainsaw; Thunder Clap	120
Car Horn (1m); Live Rock Music	110
Lawn Mower; Airplane Take off (1km)	100
Motorcycle (8m away)	90
Freight Train (25m); Food Blender	80
Cars on Freeway; Vacuum Cleaner	70
Air Conditioner (30m); Office Noise	60
Best competing scroll pump	52
Conversation at Home; IDP-15	50
Library	40

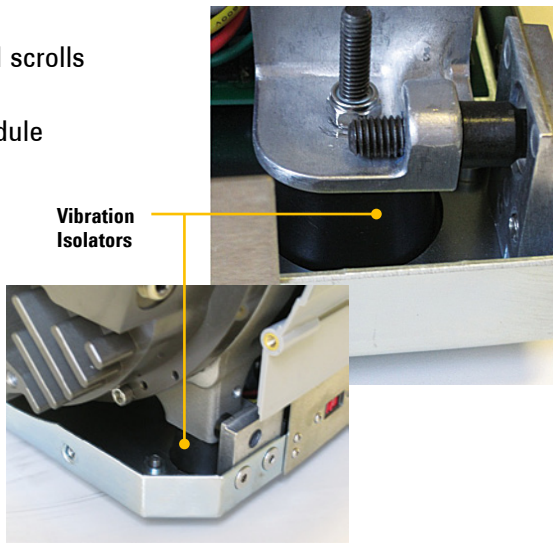
Every additional 10 dBA is a doubling of noise



Low Vibration

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

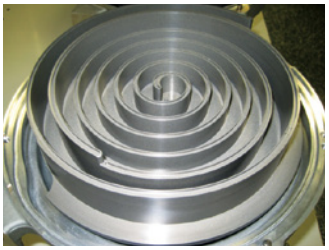
- Decouple vibration from motor and scrolls from the mounting brackets
- Dampen vibration of the pump module



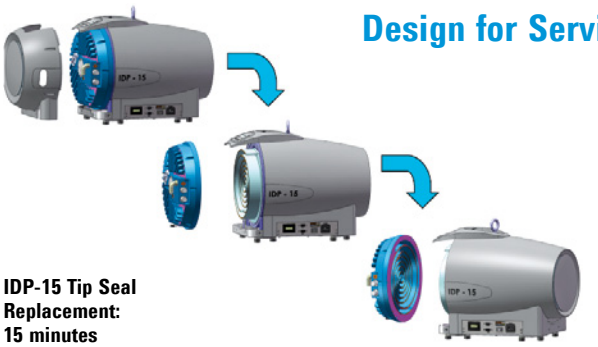
Vibration Isolators

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



IDP-15 Tip Seal Replacement: 15 minutes

Agilent IDP-15 Dry Scroll Pump

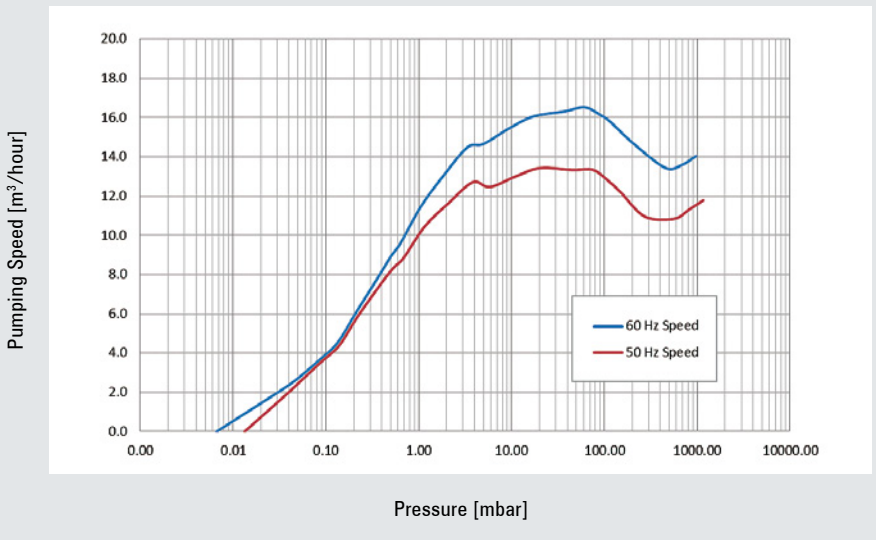
Clean. Quiet. Reliable.

Technical Specifications

Peak pumping speed:	60 Hz: 256 L/m, 15.4 m^3/hr 50 Hz: 214 L/m, 12.8 m^3/hr
Media:	Not suitable for use with corrosive, explosive or particulate-forming gases
Ultimate pressure:	10 x 10^{-3} Torr (13.3 x 10^{-3} mbar)
Maximum inlet pressure:	1.0 atmosphere (0 psig)
Maximum outlet pressure:	6.5 psig
Inlet connection:	NW25
Exhaust connection:	NW16
Gas ballast:	1/4" NPTF (two positions)
Water vapor handling per Pneurop 6602:	Gas Ballast Position 1: 20.7 g/hr Gas Ballast Position 2: 235 g/hr
Ambient operating temp.:	5 °C to 45 °C (41 °F to 113 °F)
Storage temperature:	-20 °C to 60 °C (-4 °F to 140 °F)
Motor rating:	0.75 HP (560 W)
Operating voltages:	1ø / 100 VAC, 50/60 Hz 1ø / 115 VAC, 60 Hz 1ø / 220-230 VAC, 50/60 Hz
Motor thermal protection:	Automatic thermal protection
Operating speed:	60 Hz: 1725 RPM, 50 Hz: 1450 RPM
Cooling system:	Air-cooled
Pump weight:	34 kg (75 lbs)
Shipping weight:	45 kg (100 lbs)
Dimensions:	364mm (14.3") h x 333mm (13.1") w x 485mm (19.1") l
Leak rate*	<1 x 10^{-6} sccs helium
Vibration level at inlet	< 9 mms^{-1} rms
Noise level	50 dBA ± 2dBA
Conformance standards	CE, CSA, RoHS

*(with exhaust and gas ballast sealed)

Pumping Speed



Ordering Information

Pump Part Numbers	
X3815-64000	IDP15 Scroll Pump, Std
X3815-64010	IDP15 Scroll Pump, Std w/inlt vlv

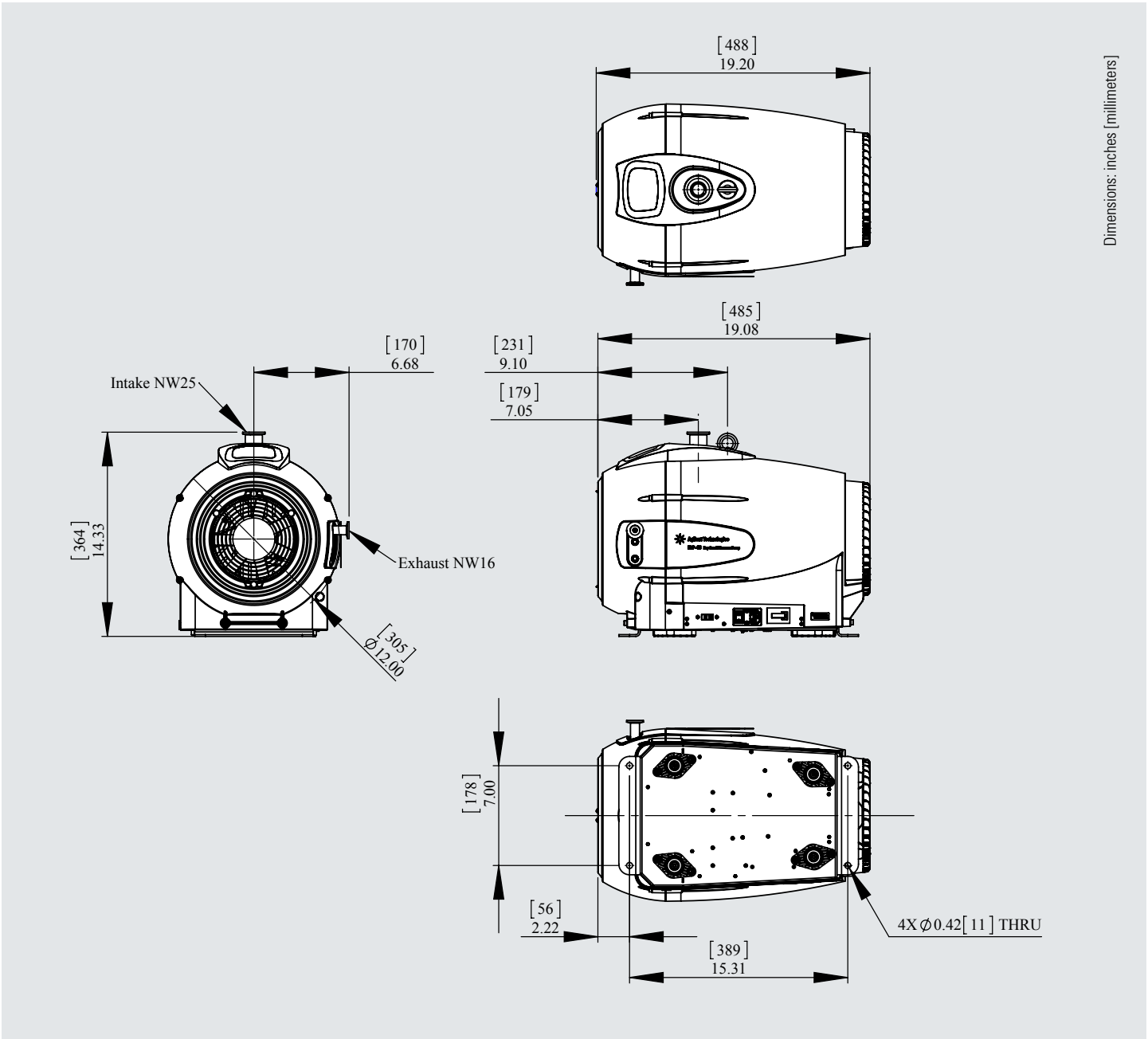
Service Part Numbers	
X3815-67000	IDP-15 Tip Seal Replacement Kit

Spares Part Numbers	
X3815-67001	Shipping Box Set, IDP-15

Accessories:	
SCRINTRPNW25	Inlet Trap, NW25, HEPA
EXSLRSH110	Exhaust Silencer Kit, SH110

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

Outline Drawing



Agilent IDP-15 Dry Scroll Pump

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