Agilent Technologies

Vacuum Products Division

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IDP-15 Dry Scroll Vacuum Pump

INSTRUCTION MANUAL

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Revision F
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IDP-15
Dry Scroll Vacuum Pump

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Warranty

Products manufactured by Seller are warranted against defects in materials and workmanship for twelve (12) months from date of shipment thereof to Customer, and Seller's liability under valid warranty claims is limited, at the option of Seller, to repair, to replace, or refund of an equitable portion of the purchase price of the Product. Items expendable in normal use are not covered by this warranty. All warranty replacement or repair of parts shall be limited to equipment malfunctions which, in the sole opinion of Seller, are due or traceable to defects in original materials or workmanship. All obligations of Seller under this warranty shall cease in the event of abuse, accident, alteration, misuse, or neglect of the equipment. In-warranty repaired or replaced parts are warranted only for the remaining unexpired portion of the original warranty period applicable to the repaired or replaced parts. After expiration of the applicable warranty period, Customer shall be charged at the then current prices for parts, labor, and transportation.

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All claims under warranty must be made promptly after occurrence of circumstances giving rise thereto, and must be received within the applicable warranty period by Seller or its authorized representative. Such claims should include the Product serial number, the date of shipment, and a full description of the circumstances giving rise to the claim. Before any Products are returned for repair and/or adjustment, written authorization from Seller or its authorized representative for the return and instructions as to how and where these Products should be returned must be obtained. Any Product returned to Seller for examination shall be prepaid via the means of transportation indicated as acceptable by Seller. Seller reserves the right to reject any warranty claim not promptly reported and any warranty claim on any item that has been altered or has been returned by non-acceptable means of transportation. When any Product is returned for examination and inspection, or for any other reason, Customer shall be responsible for all damage resulting from improper packing or handling, and for loss in transit, notwithstanding any defect or non-conformity in the Product. In all cases, Seller has the sole responsibility for determining the cause and nature of failure, and Seller's determination with regard thereto shall be final.

If it is found that Seller's Product has been returned without cause and is still serviceable, Customer will be notified and the Product returned at the Customer's expense; in addition, a charge for testing and examination may be made on Products so returned.

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Instructions for Use

General Information

This equipment is designed for use by professionals. The user should read this instruction manual and any other additional information supplied by Agilent before operating the equipment. Agilent will not be held responsible for any events that occur due to non-compliance with these instructions, improper use by untrained persons, non-authorized interference with the equipment, or any action contrary to that provided for by specific national standards.

The IDP-15 is a hermetic, dry scroll vacuum pump. This pump is suitable for pumping air or inert gases. The pump is not intended to pump corrosive, explosive, or particulate-forming gases.

The following paragraphs contain all the information necessary to guarantee the safety of the operator when using the equipment. Detailed information is supplied in “Technical Information” on page 12.

This manual uses the following standard safety protocol:

WARNING

The warning messages are for attracting the attention of the operator to a particular procedure or practice which, if not followed correctly, could lead to serious injury.

CAUTION

The caution messages are displayed before procedures, which if not followed, could cause damage to the equipment.

NOTE

The notes contain important information taken from the text.

CAUTION

To reduce the risk of electric shock or injury, use indoors only.

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Storage

When transporting and storing the pump, the following environmental requirements should not be exceeded:

Temperature:	–20 °C to +60 °C (–4 °F to 140 °F)
Relative humidity:	0 to 95% (non-condensing)

Maintenance

Personnel responsible for pump operation and maintenance must be well-trained and aware of the accident prevention rules.

WARNING

- ❑ *Death may result from contact with high voltages. Always take extreme care and observe the accident prevention regulations in force.*
- ❑ *When machine is powered up, be careful of moving parts and high voltages.*
- ❑ *If you have to perform maintenance on the pump after a considerable time in operation, allow it to cool as the temperature of the interior metal parts can be in excess of 60 °C.*
- ❑ *Always disconnect your power supply to the pump before beginning maintenance work.*

NOTE

Before returning the pump to the factory for repair, the "Health and Safety" sheet attached to this instruction manual must be completed and sent to the local sales office. A copy of the sheet must be inserted in the pump package before shipping.

Disposal

Meaning of the WEEE logo found in labels.The following symbol is applied in accordance with the EC WEEE (Waste Electrical and Electronic Equipment) Directive. This symbol (valid only in countries of the European Community) indicates that the product it applies to must NOT be disposed of together with ordinary domestic or industrial waste but must be sent to a differentiated waste collection system.

The end user is therefore invited to contact the supplier of the device, whether the Parent Company or a retailer, to initiate the collection and disposal process after checking the contractual terms and conditions of sale.

For more information refer to: *http://www.agilent.com/ environment/ product/ index.shtml.*

Instructions d'utilisation

Informations générales

Cet équipement est conçu pour être utilisé par les professionnels. L'utilisateur doit lire ce manuel d'utilisation et toute autre information supplémentaire fournie par Agilent avant d'utiliser l'équipement. Agilent ne sera pas tenu pour responsable en cas d'événements survenant à la suite du non-respect de ces instructions, de l'utilisation inappropriée par des personnes non formées, de l'interférence non autorisée avec l'équipement, ou toute action contraire à celle fournie par les normes nationales spécifiques.

L'IDP-15 est une pompe à vide à spirales sans huile hermétique. Cette pompe s'adapte au pompage de l'air ou des gaz inertes. La pompe n'est pas destinée à pomper les gaz corrosifs, explosifs, ou formant des particules.

Les paragraphes suivants contiennent toutes les informations nécessaires pour garantir la sécurité de l'opérateur lors de l'utilisation de l'équipement. Les informations détaillées sont fournies dans “Technical Information” on page 12.

Le présent manuel utilise le protocole de sécurité standard suivant:

Avertissement

Les messages d’avertissement sont destinés à attirer l’attention de l’opérateur sur une procédure ou pratique particulière qui, si elle n’est pas suivie correctement, pourrait entraîner de graves dommages corporels.

Attention

Les messages d’attention sont affichés avant les procédures, qui, s’ils ne sont pas suivis, pourraient provoquer des dommages matériels à l’équipement.

REMARQUE

Les remarques contiennent des informations importantes prises du texte.

Attention

Pour réduire le risque de choc electrique ou de blessures, utilisez uniquement à l'intérieur.

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Entreposage

Lors du transport et du rangement de la pompe, les conditions environnementales suivantes ne doivent pas être dépassées:

Température:	-20 °C à +60 °C
Humidité relative:	0 to 95% (non-condensation)

Entretien

Le personnel responsable de l'utilisation et de l'entretien de la pompe doit être bien formé et informé des règles de prévention des accidents.

Avertissement

- ❑ *Le contact avec les tensions élevées peut provoquer des blessures fatales. Faites toujours extrêmement attention et respectez les règlementations de prévention des accidents en vigueur.*
- ❑ *Lorsque la machine est sous tension, faites attention aux pièces mobiles et aux tensions élevées.*
- ❑ *Si vous devez effectuer un entretien sur la pompe après un temps considérable de marche, laissez-la refroidir car la température des pièces métalliques intérieures peut dépasser les 60°C.*
- ❑ *Mettez toujours la pompe hors tension avant de commencer des travaux d'entretien.*

REMARQUE

Avant de ramener la pompe à l'usine pour réparation, la fiche « Santé et Sécurité » jointe au présent manuel d'instructions doit être complétée et envoyée au bureau local des ventes. Une copie de la fiche doit être insérée dans l'emballage de la pompe avant expédition.

Mise au rebut

Signification du logo WEEE retrouvé dans les étiquettes. Le symbole suivant est appliqué conformément à la Directive CE WEEE (Déchets d'équipements électriques et électroniques). Ce symbole (uniquement valide dans les pays de la Communauté européenne) indique que le produit appliqué ne doit PAS être éliminé avec les déchets domestiques ou industriels ordinaires mais être envoyé à un système de collecte des déchets différencié.

L'utilisateur final est ainsi invité à contacter le fournisseur de l'appareil, la Société mère ou un détaillant, pour initier le processus de collecte et de mise au rebut après avoir vérifié les conditions contractuelles et générales de vente.

Pour plus d'informations, reportez-vous à: *http://www.agilent.com/environment/product/index.shtml.*

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Technical Information

Table 1 Specifications

Model	IDP-15 Dry Scroll Single Hermetic Vacuum Pump
Interface dimensions	See Figure 1 on page 14
Peak pumping speed	❑ 60 Hz: 257 L/m, 15.4 m^3/hr ❑ 50 Hz: 213 L/m, 12.8 m^3/hr
Media	No corrosive, explosive or particulate forming gases
Ultimate pressure	1 x 10^{-2} Torr (1.3 x 10^{-2} mbar)
Maximum inlet pressure	1.0 atmosphere (0 psig)
Maximum outlet pressure	6.5 psig
Maximum recommended continuous inlet pressure	300 Torr
Inlet connection	NW25
Exhaust connection	NW16
Gas ballast	1/4" NPTF (two positions) Water vapor handling per PNEUROP 6602: ❑ Position 1: 20.7 g/hr ❑ Position 2: 235 g/hr
Ambient operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Motor rating	0.75 HP (550 W)
Operating voltages	❑ 1 phase / 100-120 (± 10%) VAC, 50/60Hz ❑ 1 phase/ 200-240 (± 10%) VAC, 50/60 Hz
Run current	See Table 3 on page 25.
Motor thermal protection	Automatic thermal protection
Operating speed	60 Hz: 1725 RPM, 50 Hz: 1450 RPM
Cooling system	Air-cooled
Weight	Pump only: 30 kg (66 lbs) Shipping weight: 54 kg (118 lbs)
Leak rate (with exhaust and gas ballast sealed)	<1 x 10^{-6} sccs helium

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Table 1 Specifications (Continued)

Vibration level at inlet, per ISO 10816-1	9 mms-1 rms
Noise level, per ISO 11201	50 dBA ± 2dBA
Fuse type	Littelfuse, Series 215, 10 A, 250 V, 20 mm L x 5.2 mm D, Time Delay / Slow Blow or equivalent, vendor part number 0215010 P.
Pollution	Degree 2
Installation	Category II
Altitude	2000 m
Humidity	0- 95% (non-condensing)
Indoor use only	

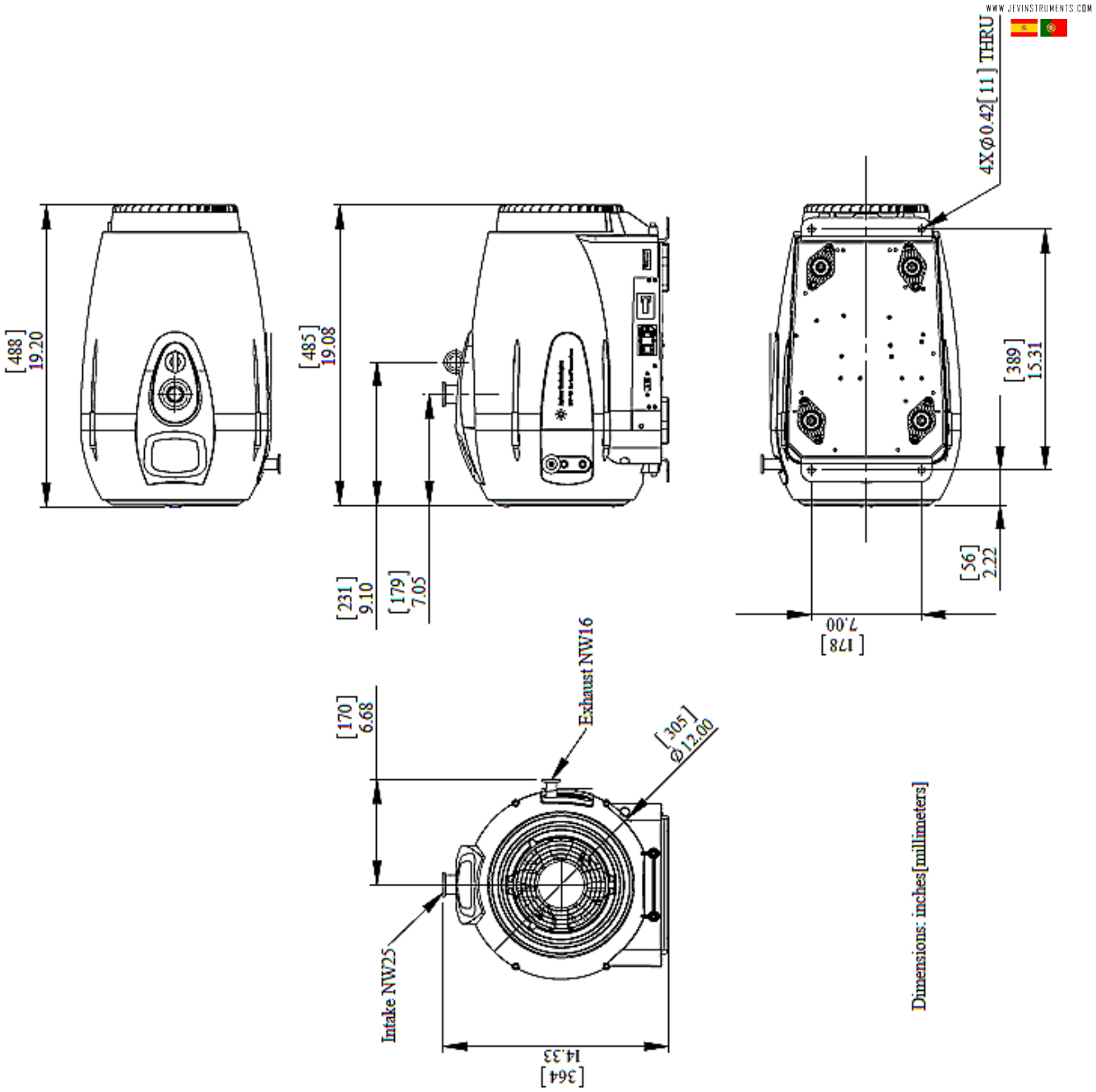
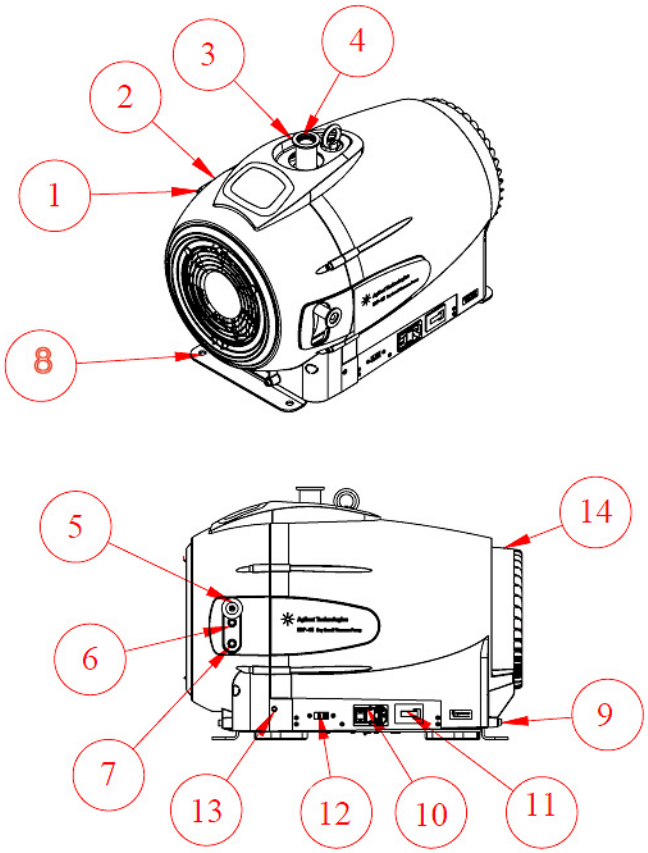


Figure 1 Interface Drawing with Dimensions



① Front Cowling Screws; M5 (6)

② Front Cowling

③ Inlet (NW25)

④ Inlet Screen

⑤ Exhaust NW16

⑥ Gas Ballast Port 1 (1/4" NPT filter plug, provided)

⑦ Gas Ballast Port 2 (1/4" NPT filter plug, provided)

⑧ Mounting Holes

⑨ Rear Cowling Screws: M5 (2)

⑩ On/Off Switch/Power Connection (IEC-320) and Fuse Holder

⑪ Hour Meter

⑫ Voltage Selector Switch

⑬ Access holes: shipping locks

⑭ Rear cowling

Figure 2 Outline Drawing and Principal Items

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Unpacking and Inspection

Preparation for Installation

The pump is supplied in a special protective packing. If this shows signs of damage, which may have occurred during transport, contact your local sales office.

Total weight of the packing, IDP-15 pump included, is approximately 54 kg (118 lbs).

WARNING *When unpacking the pump, be sure not to drop it and avoid any kind of sudden impact or shock vibration to it.*

NOTE *Normal exposure to the environment cannot damage the pump. Nevertheless, it is advisable to keep the pump inlet closed until the pump is installed in the system.*

CAUTION *Before operating the IDP-15 disengage the shipping locks.*

1. Orient the shipping container with *This End Up* on top.
2. Open the box, remove the foam block and carefully lift the IDP-15 out of the box. Attach a hoist capable of lifting 250 pounds onto the eyebolt on the top of the pump. Remove the plywood base.
3. Save the carton and all packing materials.
4. Inspect the pump for damage. If there is shipping damage, contact the freight carrier and your local Agilent sales office immediately.
5. Loosen the two front and two rear cowling screws and slide the L-brackets up. Retighten the cowling screws. The pump now rests on its rubber feet.

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6. Disengage shipping locks and enable vibration isolation by inserting a 4 mm Allen wrench into each of the four shipping lock access holes (*Figure 3 on page 17*) and turning the screws clockwise until significant resistance occurs. The pump body is now floating on its isolation mounts.

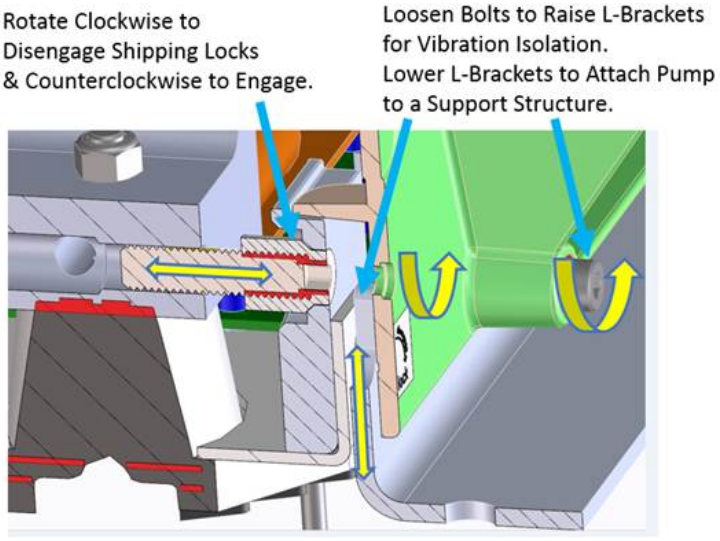

Figure 3 Shipping Locks Disengagement

CAUTION *Engage the shipping locks (Figure 3) when shipping, moving a long distance or during long-term storage.*

Déballage et inspection

Préparation à l'installation

La pompe est fournie dans un emballage protecteur spécial. Si elle présente des signes de dommages qui peuvent s'être produits lors du transport, contactez votre bureau local des ventes.

Le poids total de l'emballage, pompe IDP-15 incluse est d'environ 54 kg (118 lbs).

Avertissement

Lorsque vous déballez la pompe, veillez à ne pas la faire tomber et évitez tout genre d'impact ou de vibration de choc dessus.

REMARQUE

L'exposition normale à l'environnement ne peut endommager la pompe. Néanmoins, il est conseillé de garder l'entrée de la pompe fermée jusqu'à ce que la pompe soit installée dans le système.

Attention

Avant d'utiliser l'IDP-15 désenclenchez les verrous de navigation (Figure 3 on page 17).

1. Orientez le conteneur maritime avec Cette Extrémité vers le haut.
2. Ouvrez la caisse, enlevez le bloc de mousse et soulevez soigneusement l'IDP-15 hors de la caisse. Accrochez un palan capable de soulever 113 kilos sur le boulon à œil en haut de la pompe. Enlevez la base de contre-plaqué.
3. Gardez le carton et tous les matériaux d'emballage.
4. Inspectez la présence de dommages dans la pompe. En cas de dommage lié à l'expédition, contactez immédiatement le transporteur de marchandises et votre bureau local des ventes Agilent.
5. Dévissez les deux vis de carénage avant et les deux arrière et faites glisser les supports en L vers le haut. Revissez les vis de carénage. La pompe repose maintenant sur ses pieds en caoutchouc.

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6. Désenclenchez les verrous de navigation et activez l'isolation vibratoire en insérant une clé Allen de 4 mm dans chacun des quatre trous d'accès des verrous de navigation (*Figure 3 on page 17*) et en tournant les vis vers le sens horaire jusqu'à ce qu'une résistance importante se produise. Le corps de la pompe flotte maintenant sur ses supports d'isolement.

Attention

Enclenchez les verrous de navigation (Figure 3 on page 17) lors de l'expédition, sur de longues distances ou lors de l'entreposage à long terme.

Installation

During operation, the following environmental conditions must be respected:

Temperature:	+5 °C to +40 °C (41 °F to 104 °F)
Relative humidity:	0 to 95% (non-condensing)

Safety

WARNING

Do not remove or modify any safety or insulating equipment from the pump. To do so may create a serious safety hazard and may void the warranty.

WARNING

The pump is designed for operation with neutral or noncorrosive gases. Do not use it with potentially explosive or inflammable substances.

WARNING

- ❑ *This pump is capable of pumping and exhausting air and inert gases only. It is not designed to pump explosive, flammable, corrosive or particulate forming gases. They can cause bodily injury, explosion, or fire.*
- ❑ *Install in an area that is not exposed to rain, steam, or excessive humidity. They can cause electric shock, short circuits, and severe bodily injury.*
- ❑ *Before inspecting or servicing the pump, be sure the electrical supply is disconnected.*
- ❑ *The gas ballast must be sealed whenever pumping any gas not intended to be vented to the atmosphere*
- ❑ *An exhaust silencer option is available for those applications in which it is desirable to diminish the sound level produced by the pump.*
- ❑ *To prevent bodily injury, avoid exposing any part of the human body to vacuum.*
- ❑ *The pump is a heavy object. To avoid muscle strain or back injury, use lifting aids and proper lifting techniques when removing or replacing.*

CAUTION

- ❑ *Although the pump can pump trace particulates normally found in the atmosphere, it is not designed to process solids, chemicals, powders, solvents, condensates, or other particulates. They can damage the equipment, degrade its performance, or shorten its useful life.*
- ❑ *Do not install or use the pump in an environment exposed to atmospheric agents (rain, snow, ice), dust, aggressive gases, or in explosive environments or those with a high fire risk.*
- ❑ *If placing the IDP-15 pump inside an enclosure, provide ample room to supply ambient air to both the front and rear air intakes of the pump.*

CAUTION

Engage the shipping locks (Figure 3 on page 17) when shipping, moving a long distance or during long-term storage.

CAUTION

- ❑ *Be certain that your electrical mains power voltage corresponds to that indicated on the fuse/voltage switch.*
- ❑ *Connect the pump to the power supply using an IEC-320 style power cord of at least 10 A capacity.*

Setting the Mains Voltage

To set the mains voltage:

- ❑ Slide the voltage selector switch to *115* for 100-120 V mains, or to *230* for 200-240 V mains.

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Startup

In order to reach maximum vacuum, the pump must be left running for about an hour with the inlet sealed.

Set voltage selector switch to appropriate setting.

1. Check that the inlet screen is installed before beginning operation.

WARNING

Do not insert a finger or any foreign object in the path of the fan; serious personal injury may result or the pump may be damaged.

2. Operate the pump at an ambient temperature of 5 °C to 40 °C (41 °F to 104 °F), otherwise damage to the pump or shortened operating life may result.

CAUTION

Do not block the fan ducts. Blocking these ducts can cause pump overheating. Leave a minimum gap of 2" between front and back of the pump. A pump surface temperature in excess of 65 °C (150 °F) is potentially damaging. If such conditions are observed, turn the pump off and allow it to cool. Disassemble, inspect for damage, and repair, if necessary.

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Electrical Connections

For 100/120 V service, connect the IDP-15 to a 15 A circuit. Operation in a smaller capacity circuit can cause nuisance circuit breaker trips when the motor is started, especially if mains voltage is below 100 V.

When incorporating the IDP-15 into other equipment, only use circuit breakers rated for the motor start service. Use of circuit breakers smaller than 15 A or that are not rated for motor starting can result in nuisance trips.

Power Cord

Several power cord options are available from your Agilent dealer. Descriptions of the available power cords and their ordering numbers are given in Table 2.

NOTE

For high voltage operation, the pump must be connected to the power supply using a high voltage IEC-320 type power shielded cord of at least 10 A rated capacity.

CAUTION

Be certain that your electrical mains power voltage corresponds to that indicated on the rear of the pump.

Table 2 IDP-15 Power Cord Selection

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

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Grounding Instructions

This product should be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This pump must be equipped with a power cord that has a grounding wire with an appropriate grounding plug. The plug must be inserted into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING *Improper installation of the grounding plug can result in a risk of electrical shock.*

WARNING *If the product must be reconnected for use on a different type of electric circuit, the connector should be replaced by qualified service personnel.*

Extension Cords

Do not use extension cords.

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Run Currents

Typical full load run currents are listed in Table 3.

Table 3 IDP-15 Typical Full Load Run Currents (A)

Frequency	100 V Nominal	120 V Nominal	200 V Nominal	240 V Nominal	
	100 V	120 V	200 V	230 V	240 V
60 Hz	8.05	7.09	4.01	3.60	3.54
50 Hz	7.80	7.93	3.90	3.90	3.94

Start Current

Table 4 lists the typical IDP-15 maximum starting current and duration.

Table 4 Typical IDP-15 Maximum Starting Current and Duration

Mains Voltage	50 Hz		60 Hz	
	Current (A)	Time (ms)	Current (A)	Time (ms)
100 V	22.6	< 1 sec.	23.5	< 1 sec.
120 V	25	< 1 sec.	21.2	< 1 sec.
220 V	11.9	< 1 sec.	14.2	< 1 sec.
230 V	11.7	< 1 sec.	13.9	< 1 sec.

Installation

Lors de l'opération, les conditions environnementales suivantes doivent être respectées:

Température:	+5°C à +40°C
Humidité relative:	0 to 95% (non-condensation)

Sécurité

Avertissement

N'enlevez ou ne modifiez aucun matériel de sécurité ou isolant de la pompe. Ce faire peut créer un grave danger de sécurité et annuler la garantie.

Avertissement

La pompe est conçue pour fonctionner avec des gaz neutres ou non-corrosifs. Ne l'utilisez pas avec des substances potentiellement explosives ou inflammables.

Avertissement

- *Cette pompe est capable de pomper et d'évacuer l'air et les gaz inertes uniquement. Elle n'est pas destinée à pomper les gaz explosifs, corrosifs ou formant des particules. Ils peuvent provoquer des blessures corporelles, des explosions ou incendies.*
- *Installez dans une zone qui n'est pas exposée à la pluie, vapeur ou humidité excessive. Ils peuvent provoquer un choc électrique, des courts-circuits et de graves blessures corporelles.*
- *Avant d'inspecter ou d'entretenir la pompe, assurez-vous que l'alimentation électrique soit hors tension.*
- *Le lest d'air doit être scellé lors de chaque pompage de gaz non conçu pour être évacué dans l'atmosphère.*
- *Une possibilité de silencieux d'échappement est disponible pour ces applications dans lesquelles on désire diminuer le niveau sonore produit par la pompe.*
- *Pour prévenir les blessures corporelles, évitez d'exposer une quelconque partie du corps humain au vide.*
- *La pompe est un objet lourd. Pour éviter les crampes musculaires ou les blessures au dos, utilisez des équipements d'aide lors du retrait ou du remplacement.*

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Attention

- *Bien que la pompe puisse pomper des particules traces normalement retrouvées dans l'atmosphère, elle n'est pas conçue pour traiter les solides, produits chimiques, poudres, solvants, condensats ou autres particules. Ils peuvent endommager l'équipement, dégrader sa performance ou raccourcir sa durée de service.*
- *N'installez ou n'utilisez pas la pompe dans un environnement exposé à des agents atmosphériques (pluie, neige, glace), à la poussière, aux gaz agressifs, dans des environnements explosifs ou ceux avec un risque élevé d'incendie.*
- *Si vous placez la pompe IDP-15 à l'intérieur d'une enceinte, laissez assez d'espace pour fournir de l'air ambiant aux entrées d'air avant et arrière de la pompe.*

Attention

Enclenchez les verrous de navigation (Figure 3 on page 17) lors de l'expédition, sur de longues distances ou lors de l'entreposage à long terme.

Attention

- *Assurez-vous que votre tension électrique corresponde à celle indiquée sur le commutateur de fusible/tension.*
- *Branchez la pompe à l'alimentation électrique en utilisant un câble d'alimentation style IEC-320 d'une capacité d'au moins 10 A.*

Réglage de la tension secteur

Pour régler la tension secteur

- Faites glisser le sélecteur de tension à *115* pour les secteurs de 100-120 V, ou à *230* pour les secteurs de 200-240 V.

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Démarrage

Afin d'atteindre le vide maximal, la pompe doit être laissée en marche pendant environ une heure avec l'entrée scellée.

Réglez le sélecteur de tension au réglage approprié.

1. Vérifiez que le filtre d'entrée est installé avant de commencer l'opération.

Avertissement

N'insérez pas de doigt ou un quelconque corps étranger dans la voie du ventilateur car de graves blessures corporelles peuvent se produire ou la pompe peut s'abîmer.

2. Utilisez la pompe à une température ambiante comprise entre 5°C et 40°C, autrement des dommages à la pompe ou une durée de service raccourcie peuvent survenir.

Attention

Ne bloquez pas les ventilateurs. Le blocage de ces conduits peut causer une surchauffe de la pompe. Laissez un écart minimal de 2" entre l'avant et l'arrière de la pompe. Une température de surface de pompe excédant 65°C est potentiellement dommageable. Dans de telles conditions, éteignez la pompe et laissez-la refroidir. Démontez, inspectez la présence de dommages et réparez, si cela est nécessaire

Raccordements électriques

Pour un service de 100/120 V, branchez l'IDP-15 à un circuit de 15 A. L'opération dans un circuit d'une capacité plus petite peut provoquer des déclenchements de disjoncteur intempestifs lorsque le moteur est démarré, surtout si la tension secteur est inférieure à 100 V.

Lorsque vous introduisez l'IDP-15 dans un autre équipement, utilisez seulement les disjoncteurs appropriés au service de démarrage du moteur. Utiliser des disjoncteurs plus petits que 15 A ou qui ne sont pas appropriés au démarrage du moteur peut engendrer des déclenchements intempestifs.

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Câble électrique

Plusieurs options de câble électrique sont disponibles auprès de votre distributeur Agilent. Les descriptions des câbles électriques disponibles et leurs numéros de commande sont indiqués dans le Table 5.

REMARQUE

Pour l'opération à tension élevée, la pompe doit être branchée à l'alimentation électrique en utilisant un cordon d'alimentation blindé haute tension type IEC-320 d'une capacité d'au moins 10 A.

Attention

Assurez-vous que votre tension secteur corresponde à celle indiquée à l'arrière de la pompe.

Table 5 Sélection de câble d'alimentation DP-15

Pays	Câble électrique	Numéro de pièce
Europe	10 A / 220-230 VAC, 2.5 m	656494220
Danemark	10 A / 220-230 VAC, 2.5 m	656494225
Suisse	10 A / 230 VAC, 2.5 m	656494235
Royaume-Uni/ Irlande	13 A / 230 VAC, 2.5 m	656494250
Inde	10 A / 220-250 VAC, 2.5 m	656494245
Israël	10 A / 230 VAC, 2.5 m	656494230
Japon	12 A / 100 VAC, 2.3 m	656494240
Amérique du Nord	15 A / 125 VAC, 2.0 m	656458203
	10 A / 230 VAC, 2.5 m	656494255

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Instructions de mise à la terre

Ce produit doit être mis à la terre. En cas de court-circuit électrique, la mise à la terre réduit le risque de choc électrique en fournissant un fil d'évacuation pour le courant électrique. Cette pompe doit être équipée d'un câble électrique qui a un conducteur de terre avec une prise de mise à la terre appropriée. La prise doit être insérée dans une sortie qui est correctement installée et mise à la terre conformément à tous les codes et ordonnances locaux.

Avertissement *L'installation inappropriée de la prise de mise à la terre peut engendrer un risque de choc électrique.*

Avertissement *Si le produit doit être reconnecté pour utilisation sur un différent type de circuit électrique, le connecteur doit être remplacé par un personnel de service qualifié.*

Rallonges

N'utilisez pas de rallonges.

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Courant d'exécution

Les courants d'exécution de charge pleine typiques sont énumérés dans le Table 6.

Table 6 Courants d'exécution de charge pleine typiques (A) IDP-15

Fréquence	100 V Nominale	120 V Nominale	200 V Nominale	240 V Nominale	
	100 V	120 V	200 V	230 V	240 V
60 Hz	8.05	7.09	4.01	3.60	3.54
50 Hz	7.80	7.93	3.90	3.90	3.94

Start Current

Table 7 énumère le courant et la durée de démarrage maximaux typiques de l'IDP-15.

Table 7 Typical IDP-15 Maximum Starting Current and Duration

Tension secteur	50 Hz		60 Hz	
	Courant (A)	Temps (ms)	Courant (A)	Temps (ms)
100 V	22.6	< 1 sec.	23.5	< 1 sec.
120 V	25	< 1 sec.	21.2	< 1 sec.
220 V	11.9	< 1 sec.	14.2	< 1 sec.
230 V	11.7	< 1 sec.	13.9	< 1 sec.

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Raccordements mécaniques

Entrée de la pompe

Utilisez un matériel de vide propre NW25 ou plus grand d'une longueur la plus courte possible entre la pompe et l'enceinte sous vide.

Insérez un soufflet entre la pompe et l'enceinte sous vide pour fournir une isolation vibratoire et un soulagement de traction.

Échappement de la pompe

Une tubulure d'extraction est située sur le côté de la pompe. Pour éviter la surchauffe de la pompe, ne limitez pas le flux d'échappement à des longueurs longues de tubage de petit diamètre. Utilisez des longueurs aussi courtes que 16 mm ID, ou un matériel de diamètre plus grand.

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Mechanical Connections

Pump Inlet

Use NW25, or larger, clean vacuum hardware with as short a length as practical between the pump and vacuum chamber.

Insert a bellows between the pump and vacuum chamber to provide both vibration isolation and strain relief.

Pump Exhaust

An NW16 exhaust fitting is located on the side of the pump. To avoid overheating the pump, do not restrict the exhaust flow with long lengths of small diameter tubing. Use as short as practical lengths of 16 mm ID, or larger, diameter hardware.

Mechanical Support

The IDP-15 pump is designed for three different modes including:

1.) a bench top mode,

2.) a mode where the pump is bolted to a support structure, and

3.) a shipping mode.

Referring to Figure 3 on page 17, the bench top mode requires the shipping locks to be disengaged with the L-brackets raised for maximum vibration isolation. Alternatively, the pump can be attached to a support structure or another piece of equipment using the L-brackets, which must be lowered in this configuration with the shipping locks disengaged for vibration isolation. Depending on the shock and vibration experienced during shipping, the pump may or may not be shipped on a support structure without potential damage to the pump. Note that any time the pump is transported, the shipping locks must be engaged and disengaged prior to operation. It is recommended that the pump be shipped in the Agilent supplied shipping container, with the shipping locks engaged to avoid the potential of any damage during transportation.

Gas Ballast

When pumping gas containing water vapor or any condensible gases, it is recommended that one of the two gas ballast ports be opened. Even very low amounts of water or condensible gases could require the use of gas ballast, as liquid will slowly, but continuously accumulate in the pump eventually resulting in loss of vacuum performance and reduced tip seal life. Running the pump with gas ballast open for a period of time may also be beneficial if the pump has been shutoff for a period of time, allowing water to adsorb inside the pump. Temporarily activating the gas ballast when the pump is initially installed removes any water vapor that has been adsorbed during storage and shipping, allowing the pump to achieve its full performance specifications. The most common cause of poor performance on initial install and startup is adsorbed water vapor.

To activate the gas ballast feature for long term continuous operation, remove the ¼ NPT plug from either port 1 or port 2 using a 9/16 wrench, and install the ¼" NPT sintered filter plug provided with the pump (see Figure 2 on page 15). For short term application of the gas ballast feature, the removable insert shown in Figure 4 can be removed using a 1/8" hex wrench. Figure 4 shows an optional gas ballast accessory with a calibrated orifice, that can precisely meter the gas ballast flow on port 2. Contact Agilent for more information regarding this customizable option.

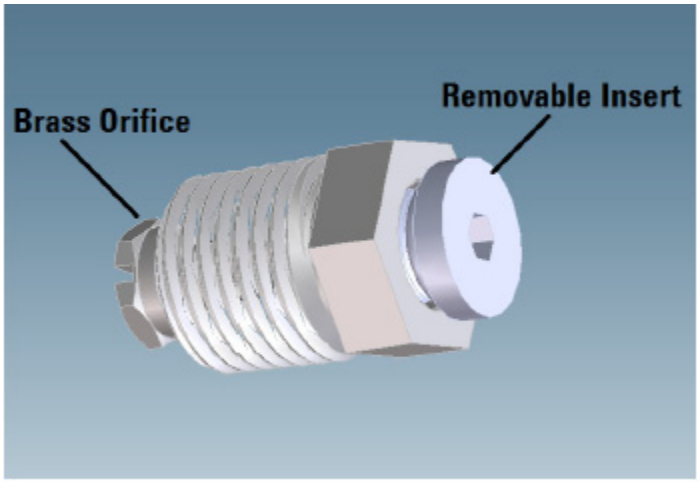

Figure 4 Optional Gas Ballast

Figure 4 shows the Gas Ballast optional accessories for port 2.

CAUTION *If hazardous materials are pumped, do not use gas ballast.*

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Attention

Si des matériaux dangereux sont pompés, n'utilisez pas de lest d'air.

The IDP-15 pump is equipped with two gas ballast ports. Gas ballast port 1 is used for moderate water vapor loads, such as intermittently pumping out a volume exposed to normal ambient humidity. Gas ballast port 2 is used for high water vapor loads, such as repetitively pumping out a volume exposed to excessive ambient humidity, or process gas loads with a high-water vapor content. If running for long term usage with the gas ballast open, the sintered filter plug should be installed in the opened port to prevent particulates from the ambient environment entering the pump.

For applications where ingress of air is undesirable, dry nitrogen at a flow rate of approximately 5 l/min can be provided to the gas ballast inlet by using a 1/4 NPT connection to the port. If either gas ballast is to be used for only short intervals, the removable insert may be taken out of the gas ballast without removing the entire plug. When a controlled flow is beneficial to the application, a customized orifice can be installed into the gas ballast 2 port to precisely control the flow rate of the gas entering. Contact Agilent for more information.

Caution

Pumping high water vapor loads can cause a temporary increase in ultimate pressure, due to adsorption and absorption of water vapor by the internal surfaces of the pump. Pumping water vapor loads in excess of the water vapor handling capability of the gas ballast can cause reduced time between tip seal replacements.

Attention

Le pompage de charges de vapeur d'eau élevées peut provoquer une augmentation temporaire de la pression ultime, en raison de l'adsorption et de l'absorption de la vapeur d'eau par les surfaces internes de la pompe. Pomper des charges de vapeur d'eau supérieures à la capacité de traitement de la vapeur d'eau du lest d'air peut engendrer un temps réduit entre les remplacements des joints d'étanchéité

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Operation

Cleaning the Pump

Unlike conventional oil-sealed pumps, Agilent dry scroll pumps do not contain fluid for the cleansing of accumulated dust and debris. Run the pump periodically with the inlet open to atmosphere for a minute or two to flush it out. Until experience is gained on your specific process, flush the pump regularly and adjust this schedule according to your specific conditions.

IDP-15 Integrated Isolation Valve

The IDP-15 scroll pump offers an optional, factory-installed Integrated Isolation Valve built into the pump head. This option is installed into the body of the pump and does not affect the performance, the external size of the pump, or the height of the inlet fitting. The valve is designed and tested for long life and trouble free operation.

All IDP-15 scroll pumps are supplied with an exhaust valve to prevent rapid leak-up to atmospheric pressure in the event of power loss. However, even with the exhaust valve there will be a rise of pressure at the inlet of any vacuum pump, which is typically above a safe value for backing a turbomolecular pump. High vacuum systems or those sensitive to contamination are typically protected by a rapid-closing valve which prevents venting of the system to atmosphere, and also helps mitigate contamination from the pump and other debris such as tip seal dust during power loss or shut down. Depending on the requirements of the high vacuum system, one or more redundant protection schemes may be required for adequate protection from all possible failure modes.

The Integrated Isolation Valve is a safety valve that protects the vacuum system in the event of power failure to the pump by isolating the vacuum system from the vacuum pump, while simultaneous slowly venting the pump to atmosphere through a small orifice in the body of the valve. Additional protection is generally recommended when high risk items are in the vacuum system to protect against other failure modes, as the Integrated Isolation Valve is designed to engage only in the event of loss of power to the pump or thermal shutdown of the motor. For example, a sudden leak in the foreline of the turbo is not something the Integrated Isolation Valve would protect against. The Integrated Isolation Valve is designed as a fast acting valve, which will give time to place the vacuum system into a safe mode, which can include shutting down the turbomolecular pumps, and isolating the vacuum system with additional valves, or alternatively restoring power to the pump. The Integrated Isolation Valve is not designed for long term sealing of a vacuum system, nor will it necessarily allow a turbo molecular pump to continue operation for any guaranteed period of time without restoration of a backing pump.

The Integrated Isolation Valve is designed to engage only in the event of loss of power to the pump, or a thermal shutdown of the motor. IDP-15 pumps with an ***EC*** stamp in the lower right hand corner of the product label are designed to engage the Integrated Isolation Valve in the case of either loss of power to the pump or thermal shut down of the motor. Pumps manufactured prior to the ***EC*** stamp being implemented were designed to engage the Integrated Isolation Valve only in the event of loss of power to the pump, and would require additional protection or an upgrade to the ***EC*** configuration to protect against a thermal shutdown of the motor.

The operation of the Integrated Isolation Valve is described below:

Condition 1: The scroll pump is off and the vacuum system and pump are vented to atmosphere.

- ❑ The Integrated Isolation Valve is open as a result of a mechanical spring force.
- ❑ The electrically actuated solenoid valve is venting the lower chamber of the Integrated Isolation Valve to atmospheric pressure.
- ❑ The pump is turned on.
- ❑ The electrically actuated solenoid valve closes, isolating the lower chamber of the Integrated Isolation Valve from atmosphere.
- ❑ As the pump evacuates the vacuum system, the pressure in the lower chamber of the valve will drop until it is equal to the inlet pressure of the pump, at which point the Integrated Isolation Valve will remain open as a result of a mechanical spring force.
- ❑ During the initial evacuation of the vacuum system it is possible that the Integrated Isolation Valve will momentarily close and then reopen as a result of the vacuum system pressure dropping faster than the pressure in the lower chamber of the Integrated Isolation Valve which is being evacuated through a small orifice.

Condition 2: The scroll pump is off and vented to atmosphere, with the vacuum system under vacuum.

- ❑ The Integrated Isolation Valve is closed as a result of a pressure differential between the vacuum system and pump.
- ❑ The electrically actuated solenoid valve is venting the lower chamber of the valve and the pump to atmosphere.
- ❑ The pump is turned on.
- ❑ The electrically actuated solenoid valve closes, isolating the lower chamber of the valve from atmosphere.
- ❑ As the pump evacuates the pump head, the pressure in the lower chamber of the valve will drop until it is low enough to allow the mechanical spring to open the valve. There is a small orifice in the lower chamber of the valve which gives a ~30second delay, allowing the pump head to be evacuated to a sufficient level

before opening the Integrated Isolation Valve. The time delay is necessary to avoid exposing the vacuum system to sudden, excessive pressures.

- ❑ As the Integrated Isolation Valve opens, the pressure in the vacuum system will momentarily rise as the pump continues to evacuate the pump head. This is known as burst pressure which on typical vacuum systems is around 50 mTorr (below the critical pressure for backing a turbo or diffusion pump), but the exact value is dependent on the details of the vacuum system and should always be verified through testing on the specific vacuum system.

Condition 3: The scroll pump is running and both the pump and vacuum system are evacuated.

- ❑ The Integrated Isolation Valve is open as a result of a mechanical spring force.
- ❑ The electrically actuated solenoid valve is closed isolating the lower chamber of the Integrated Isolation Valve from atmosphere.
- ❑ Power is then disconnected from the pump.
- ❑ The electrically actuated solenoid valve opens, venting the lower chamber of the Integrated Isolation Valve to atmosphere, which immediately closes the valve isolating the vacuum system.
- ❑ The vacuum system may experience a slight rise in pressure resulting from the time required for the valve to close.
- ❑ The pump motor slows down and stops while the pump head slowly vents to atmosphere through a small orifice in the lower chamber.
- ❑ The vacuum system will then start experiencing a slow rise in pressure at a rate depending on the details of the vacuum system and the leak rate through the Integrated Isolation Valve
- ❑ At this point the vacuum system should be placed in a safe mode as soon as possible. It is generally recommended that the vacuum system includes some form of alarm or notification that power has been lost to the pump indicating that the vacuum system should be placed in safe mode.
- ❑ Safe mode for the vacuum system may include:
  - ❑ Restoring power to the vacuum pump or engaging a backup roughing pump.
  - ❑ Closing a valve in the foreline of the turbo or diffusion pump providing long term isolation.
  - ❑ Powering down the turbo or diffusion pump so it can slow down safely to a stop while the foreline is still at low pressure.
  - ❑ The Integrated Isolation Valve is not intended for long term vacuum isolation or continued operation of turbo molecular pump indefinitely while the scroll pump is not operating.

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Troubleshooting

Use the Troubleshooting chart in Table 8 to assist in defining a problem, determining a possible cause, and defining action steps to remedy the situation.

Table 8 Troubleshooting Chart

Problem	Possible Causes	Corrective Actions
Will not start	Motor thermal protector open	Allow motor to cool. Identify cause of overload.
	Blown fuse	Replace fuse.
	Excessive voltage drop	Check size and length of cable.
	Defective motor	Inspect. Contact Agilent.
Poor ultimate pressure	System leak	Locate and repair leak.
	Water in pump	Flush pump with air or dry nitrogen.
	Solvent in pump	Flush pump with air or dry nitrogen. Install trap or filter.
	Seals worn out	Replace tip seals.
	Poor conductance to pump	Replumb with shorter and/or larger diameter tubing.
	Integrated Isolation Valve (option) solenoid failure	Contact Agilent.
Hammering noise	Pump overheated	Check ventilation to pump. Check ambient temperature.
	Debris in pump	Check intake screen. Flush pump. Disassemble pump and inspect.
Pump runs intermittently	Motor thermal protector is cycling open and closed.*	Allow the motor to cool. Identify the cause of the overload.

* *The IDP-15 is equipped with an auto-reset thermal motor protector. This protector automatically shuts down the pump when it detects an overload condition, and automatically restarts the pump when the motor has cooled to within an acceptable temperature range.*

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Maintenance

Cleaning

Exterior

The exterior surfaces of the IDP-15 may be cleaned with alcohol or mild detergents only.

Interior

Run the pump periodically with the inlet open at atmosphere for a minute or two to flush it out. For more information, see “Cleaning the Pump” on page 36.

Kits and Service Options

Agilent pumps will provide many years of trouble-free service if the maintenance procedures and intervals are observed. Cleaning and tip seal replacement are recommended when pump base pressure has risen to an unacceptably high level for your application. If your pump exhibits humming or grinding noises from the bearings, a major overhaul should be done by Agilent personnel or an authorized rebuild center. Advance exchange pumps are available to minimize downtime.

The service kits needed for routine minor maintenance including a tip seal change and advance exchange pumps are shown in Table 9 and are available from your Agilent dealer. A complete list of service and accessory kits is available on Agilent’s website.

Table 9 IDP-15 Service Kits and Advance Exchange Pumps

Part Number	Description	Contents
X3815-67000	Replacement Tip Seal Set	Replacement Tip Seal, O-ring, and grease
X3815-69000	Exchange IDP-15 Standard	IDP-15 Exchange Pumps
X3815-69010	Exchange IDP-15 Pumps with VPI Valve	IDP-15 VPI Valve Exchange Pumps

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Entretien

Nettoyage

Extérieur

Les surfaces extérieures de l'IDP-15 peuvent être nettoyées avec de l'alcool ou des détergents doux uniquement.

Intérieur

Faites marcher la pompe régulièrement avec l'entrée ouverte dans l'atmosphère pendant une minute ou deux pour la rincer. Pour plus d'informations, voir “Cleaning the Pump” on page 36.

Tip Seal Replacement

Required Equipment

- ❑ *Tip Seal Replacement Kit:* P/N X3815-67000
- ❑ Pry tool (screwdriver or something with a flat edge the size of the tip seal)
- ❑ Lint-free wipes
- ❑ 4 mm and 5 mm Allen wrenches
- ❑ Isopropyl alcohol
- ❑ Dry, lint-free gloves

WARNING

Only trained service personnel should attempt this work. Always use eye protection when performing service.

Disconnect the IDP-15 mains connection by unplugging the IEC power cord from the unit before beginning any maintenance activity.

If dangerous gases were being pumped, ensure the pump is clear of all dangerous materials prior to disassembly.

IDP-15 Disassembly

Front Fan Cowling Removal

1. Disconnect the power cord.

2. Remove the two screws holding the bottom bracket using an 4 mm Allen key.
3. Support the cowling from the bottom with one hand.
4. Loosen the four captive screws (two on left side not shown) holding the cowling.

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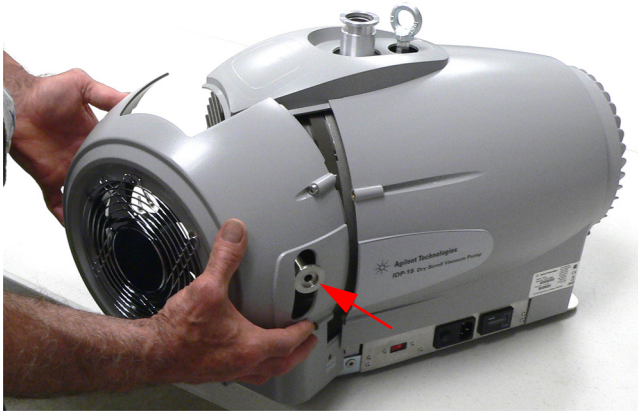
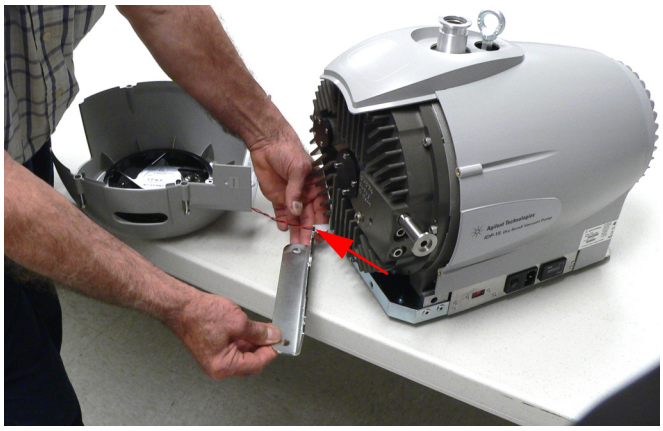
IDP-15 Disassembly (Continued)



5. Rotate the cowl so that it clears the exhaust port (red arrow).



6.Remove the cowling and lay it on its back.

7.Disconnect the white plug (red arrow). This is an integral lock connector and is keyed to plug together only one way.

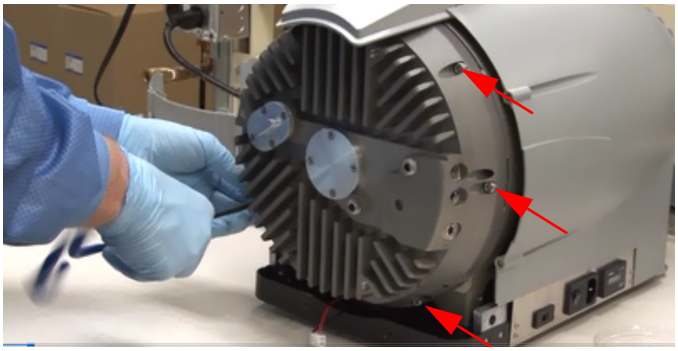
8.Remove the cowling to the side.

9.Remove the L-bracket and place to the side.

10.Lift the top console (red arrow) from the front and rotate to one side.

IDP-15 Disassembly (Continued)

Outboard Housing and Tip Seals Removal

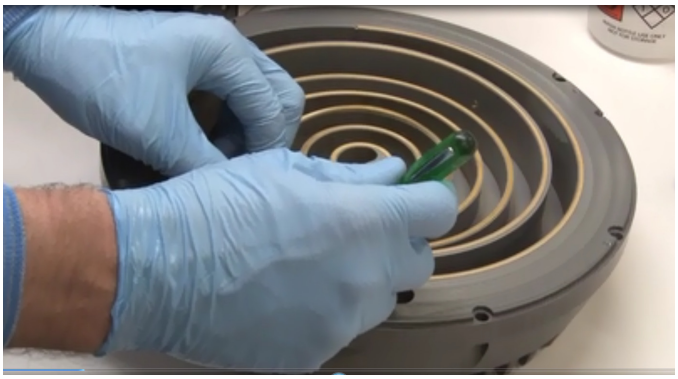


1.Use an 5 mm Allen key to remove the six screws on the outboard housing (the three screws on left not shown).
Remove the lower screws first to support the housing.

2.Remove the housing and place to the side.

3.Ensure you are wearing dry lint-free gloves before proceeding.

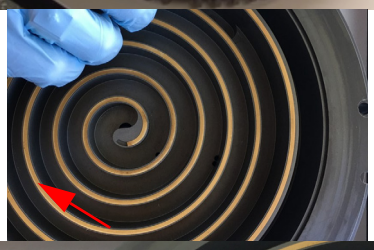
4.Remove the O-ring and discard.

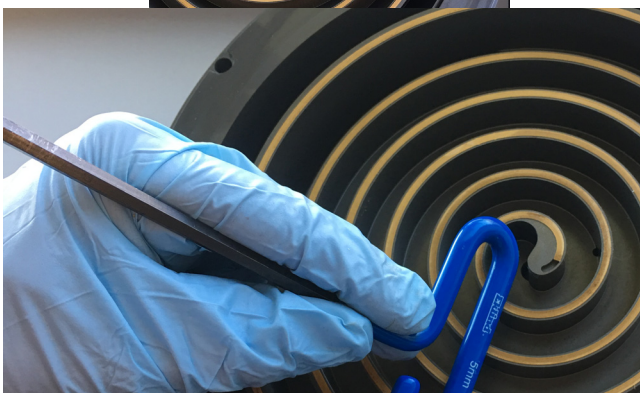


5.Using a pry tool, remove the old tip seals. There are a long and short tip seal on both the orbiting plate and the outboard housing.

6.Clean all debris from the orbiting plate, outboard housing and O-ring groove. Use alcohol along with cotton swabs and wipes.

IDP-15 Disassembly (Continued)





Tip Seal Replacement

1.Remove the new tip seal from the kit.The tip seal is supplied in one length, sufficient to create a short and a long segment for the orbiting plate and the outboard housing (four segments total).The tip seal cross section is rectangular.The width is less than the height.

2.Trim the narrow end of the tip seal blank at approximately a 45˚ angle. Install the trimmed end into the inside end of the inner orbiting plate tip seal groove.Install each tip seal segment, starting at the inside so the 1/8” gap occurs at the end. Use a flat wooden or plastic tool to press each segment into its lock (red arrow). Each segment has a lock (four total). Clean away any tip seal debris generated when pressed into each lock.

3.Cut each tip seal segment to a length that leaves an 1/8” gap at the end.

4.Lightly lubricate the O-ring with a trace of vacuum grease. Use the Krytox grease supplied with the kit. Do not use vacuum grease containing silicone.

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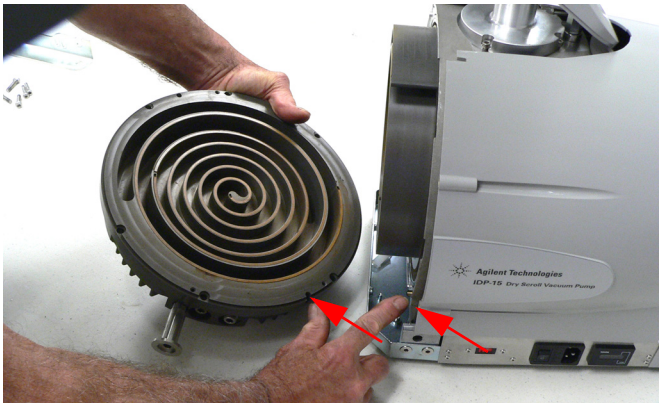
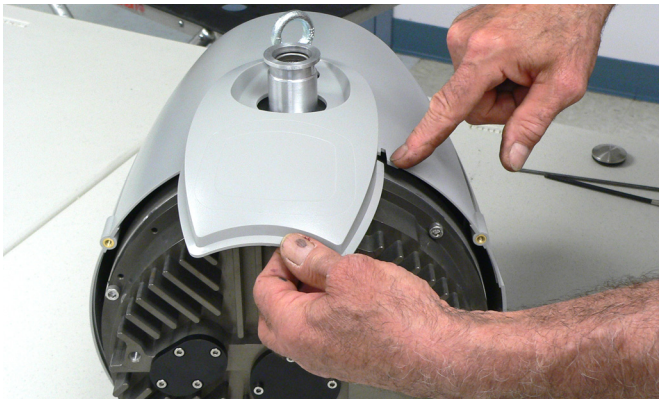
IDP-15 Reassembly



1. Align the outboard housing with the orbiting plate using the pin and pin alignment hole shown by the red arrows. Ensure that the tip seals and O-ring do not get pinched or misaligned.
2. Reinstall the six screws and tighten (85 lbf.in).



3. Reinstall the console by swinging it back and aligning it with the body slots as shown.

4. Place the bracket against the electrical tray and align the bracket slots with the tapped holes in the tray.
5. Plug the red/black fan connector together.
6. Align fan cowling by wiggling it over the exhaust port. Replace and tighten the four fan cowling screws (10 lbf.in).
7. Replace the two screws at the bottom of the fan cowling. Lift and hold the bracket while tightening these screws (45 lbf.in).
8. Reinstall the power cord.

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To test the pump:

1. Run the pump for about 5 seconds. Verify that the front fan is running.

   If you hear loud noises or observe labored operation, this indicates that the tip seal or main O-ring are possibly out of place.

2. Disassemble and repair as necessary.

   The pump is now ready to return to service.

NOTE

Newly installed tip seals may require several hours of run time to seat properly and enable the pump to meet speed and base pressure specifications.

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Vacuum Products Division
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Dear Customer:

Please follow these instructions whenever one of our products needs to be returned.

1) Complete the attached Request for Return form and send it to Agilent Technologies (see below), taking particular care to identify all products that have pumped or been exposed to any toxic or hazardous materials.

2) After evaluating the information, Agilent Technologies will provide you with a Return Authorization (RA) number via email or fax, as requested.
Note: Depending on the type of return, a Purchase Order may be required at the time the Request for Return is submitted. We will quote any necessary services (evaluation, repair, special cleaning, eg).

3) Important steps for the shipment of returning product:
   - Remove all accessories from the core product (e.g. inlet screens, vent valves).
   - Prior to shipment, drain any oils or other liquids, purge or flush all gasses, and wipe off any excess residue.
   - If ordering an Advance Exchange product, please use the packaging from the Advance Exchange to return the defective product.
   - Engage the four shipping lock as shown in Figure 3, Package the product carefully in the original shipping container. If the original shipping container is not available, a replacement can be ordered. You are responsible for loss or damage in transit.
   - Agilent Technologies is not responsible for returning customer provided packaging or containers.
   - Clearly label package with RA number. Using the shipping label provided will ensure the proper address and RA number are on the package. Packages shipped to Agilent without a RA clearly written on the outside cannot be accepted and will be returned.

4) Return only products for which the RA was issued.

5) Product being returned under a RA must be received within 15 business days.

6) Ship to the location specified on the printable label, which will be sent, along with the RA number, as soon as we have received all of the required information. Customer is responsible for freight charges on returning product.

7) Return shipments must comply with all applicable Shipping Regulations (IATA, DOT, etc.) and carrier requirements.

RETURN THE COMPLETED REQUEST FOR RETURN FORM TO YOUR NEAREST LOCATION:

EUROPE:	**NORTH AMERICA:**	**PACIFIC RIM:**
Fax: 00 39 011 9979 330		
Fax Free: 00 800 345 345 00	Fax: 1 781 860 9252	please visit our website for individual
Toll Free: 00 800 234 234 00	Toll Free: 800 882 7426, Option 3	office information
vpt-customercare@agilent.com	vpl-ra@agilent.com	http://www.agilent.com

Agilent Technologies

Vacuum Products Division
Request for Return Form
(Health and Safety Certification)

Please read important policy information on Page 3 that applies to all returns.

1) CUSTOMER INFORMATION

Company Name:	**Contact Name:**
Tel: **Email:**	**Fax:**
Customer Ship To:	**Customer Bill To:**
Europe only: **VAT reg. Number:**	USA/Canada only: ☐ **Taxable** ☐ **Non-taxable**

2) PRODUCT IDENTIFICATION

Product Description	Agilent P/N	Agilent S/N	Original Purchasing Reference

3) TYPE OF RETURN (**Choose one from each row** and supply Purchase Order if requesting a billable service)

3A. ☐ Non-Billable ☐ Billable ➡ New PO # (hard copy must be submitted with this form):

3B. ☐ Exchange ☐ Repair ☐ Upgrade ☐ Consignment/Demo ☐ Calibration ☐ Evaluation ☐ Return for Credit

4) HEALTH and SAFETY CERTIFICATION

AGILENT TECHNOLOGIES CANNOT ACCEPT ANY PRODUCTS CONTAMINATED WITH BIOLOGICAL OR EXPLOSIVE HAZARDS, RADIOACTIVE MATERIAL, OR MERCURY AT ITS FACILITY.
Call Agilent Technologies to discuss alternatives if this requirement presents a problem.

The equipment listed above (check one):

☐ **HAS NOT** pumped or been exposed to any toxic or hazardous materials. OR
☐ **HAS** pumped or been exposed to the following toxic or hazardous materials. If this box is checked, the following information must also be filled out. Check boxes for all materials to which product(s) pumped or was exposed:

☐ Toxic ☐ Corrosive ☐ Reactive ☐ Flammable ☐ Explosive ☐ Biological ☐ Radioactive

List all toxic/hazardous materials. Include product name, chemical name, and chemical symbol or formula:

_____

NOTE: If a product is received at Agilent which is contaminated with a toxic or hazardous material that was not disclosed, **the customer will be held responsible** for all costs incurred to ensure the safe handling of the product, and **is liable** for any harm or injury to Agilent employees as well as to any third party occurring as a result of exposure to toxic or hazardous materials present in the product.

Print Name: **Authorized Signature: .....** **Date:**

5) FAILURE INFORMATION:

Failure Mode (REQUIRED FIELD. See next page for suggestions of failure terms):
Detailed Description of Malfunction: (Please provide the error message)
Application (system and model):

I understand and agree to the terms of Section 6, Page 3/3.
Print Name: **Authorized Signature: .....** **Date:**

Agilent Technologies

JEVI VACUUM INSTRUMENTS
WWW.JEVINSTRUMENTS.COM

Vacuum Products Division
Request for Return Form
(Health and Safety Certification)

Please use these Failure Mode to describe the concern about the product on Page 2.

TURBO PUMPS and TURBO CONTROLLERS

APPARENT DEFECT/MALFUNCTION		POSITION	PARAMETERS	
- Does not start	- Noise	- Vertical	Power:	Rotational Speed:
- Does not spin freely	- Vibrations	-Horizontal	Current:	Inlet Pressure:
- Does not reach full speed	-Leak	-Upside-down	Temp 1:	Foreline Pressure:
- Mechanical Contact	-Overtemperature	-Other:	Temp 2:	Purge flow:
- Cooling defective	-Clogging	.....	OPERATING TIME:	

ION PUMPS/CONTROLLERS

- Bad feedthrough	- Poor vacuum
- Vacuum leak	- High voltage problem
- Error code on display	- Other

VALVES/COMPONENTS

- Main seal leak	- Bellows leak
- Solenoid failure	- Damaged flange
- Damaged sealing area	-Other

LEAK DETECTORS

- Cannot calibrate	-No zero/high backround
- Vacuum system unstable	- Cannot reach test mode
- Failed to start	- Other

INSTRUMENTS

- Gauge tube not working	- Display problem
- Communication failure	- Degas not working
- Error code on display	- Other

SCROLL AND ROTARY VANE PUMPS

- Pump doesn't start	- Noisy pump (describe)
- Doesn't reach vacuum	- Over temperature
- Pump seized	- Other

DIFFUSION PUMPS

- Heater failure	- Electrical problem
- Doesn't reach vacuum	- Cooling coil damage
- Vacuum leak	- Other

Section 6) *ADDITIONAL TERMS*

Please read the terms and conditions below as they apply to all returns and are in addition to the Agilent Technologies Vacuum Product Division – Products and Services Terms of Sale.

- Customer is responsible for the freight charges for the returning product. Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.
- Customers receiving an Advance Exchange product agree to return the defective, rebuildable part to Agilent Technologies **within 15 business days**. Failure to do so, or returning a non-rebuildable part (crashed), will result in an invoice for the non-returned/non-rebuildable part.
- Returns for credit toward the purchase of new or refurbished Products are subject to prior Agilent approval and may incur a restocking fee. Please reference the original purchase order number.
- Units returned for evaluation will be evaluated, and a quote for repair will be issued. If you choose to have the unit repaired, the cost of the evaluation will be deducted from the final repair pricing. A Purchase Order for the final repair price should be issued within 3 weeks of quotation date. Units without a Purchase Order for repair will be returned to the customer, and the evaluation fee will be invoiced.
- A Special Cleaning fee will apply to all exposed products per Section 4 of this document.
- If requesting a calibration service, units must be functionally capable of being calibrated.

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Service & Support

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Representatives in most countries

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Agilent Technologies

QUALITY SYSTEM ISO 9001 CERTIFIED
ENVIRONMENTAL MANAGEMENT SYSTEM ISO 14001

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