



Agilent Technologies

Vacuum Products Division

***Flapper Box
Installation Kit for VS
Series and (G8610,
G8611, or G8612)
Series Leak Detectors***

*FIELD INSTALLATION
INSTRUCTIONS*

Part Number 699910006

Rev. B

July 2017



699910006

Agilent Field Instruction Sheet

Flapper Box Installation Kit for VS Series and (G8610, G8611, or G8612) Series Leak Detectors

Preface

Documentation Standards

This manual uses the following documentation standards:

NOTE Notes contain important information.



CAUTION Cautions appear before instructions, which if not followed, could cause damage to the equipment or data loss.



WARNING Warnings appear for a particular procedure or practice which, if not followed correctly, could lead to serious injury or death.



Hazard and Safety Information

The common international symbols used in this manual and on the equipment are defined below.

	OFF Supply (Power)		Earth (Ground) Terminal
	ON Supply (Power)		Caution, Hot Surface
	AC – Alternating Current		Caution, Risk of Electrical Shock
	Warning, Risk of danger		Protective Conductor Terminal
	Frame or chassis Terminal		

Operators and service personnel must be aware of all hazards associated with this equipment. They must know how to recognize hazardous and potentially hazardous conditions, and know how to avoid them. The consequences of unskilled, improper, or careless operation of the equipment can be serious. Every operator or service person must read and thoroughly understand operation/maintenance manuals and any additional information provided by Agilent. All warning and cautions must be read carefully and strictly observed. Consult local, state, and national agencies regarding specific requirements and regulations. Address any safety, operation, and/or maintenance questions to your nearest Agilent office.

Solvents

WARNING



The mechanical components of leak detectors may be cleaned with one of the recommended solvents. When heated, sprayed, or exposed to high-temperature equipment, these solvents become flammable and explosive, causing serious injury or death. Do not use these solvents near a high-temperature source. Ventilate the working area with a blower and work in a large, well-ventilated room.

Solvents are irritants, narcotics, depressants and/or carcinogens. Their inhalation and/or ingestion may produce serious side effects. Prolonged or continued contact with the skin results in absorption through the skin and moderate toxicity. Always ensure that cleaning operations are carried out in large, well-ventilated rooms, and wear eye shields, gloves, and protective clothing.

Due to the effective cleaning nature of VacuSolv solvent and its residue-free properties, Agilent' Component and Spectrometer Cleaning Kit (Part Number 670029096), used in accordance with the kit instructions, is recommended for cleaning spectrometer components. The kit can also be used for fine cleaning of other parts in the leak detector's vacuum system such as valves and fittings. No rinsing steps or high-temperature drying is required following cleaning with VacuSolv. Although appropriate precautions are advised, VacuSolv is compatible with most materials and does not contain toxic chemicals or CFCs (chlorofluorocarbons). Other acceptable solvents are isopropyl alcohol (IPA) or Dow Corning® OS-20.

To clean the leak detector plastic enclosure, the LCD display and Front Panel buttons, use only a soft cloth slightly dampened with water or a mild soap.

Do NOT use excess water or cleaning solvents of any kind.

Avoid splashing any cleaning solvents into the unit through the ventilation openings or Front Panel buttons. Wipe the surface with a dry lint-free cloth.

Vacuum Equipment and Cleanliness

Cleanliness is vital when servicing the leak detector or any vacuum equipment. There are some techniques that are more important in leak detector servicing than in general vacuum work:

CAUTION



Wear non-powdered, ESD-safe Nitride or equivalent gloves to prevent skin oils from getting on spectrometer internal components.

O-ring Care

When removing, checking or replacing O-rings, keep in mind the following:

NOTE



Agilent recommends replacing all O-rings during routine maintenance or during any maintenance procedure requiring that O-rings be removed.

CAUTION



Remove O-rings carefully with your fingers. Do not use metal tools for this task; this prevents scratching of any sealing surfaces.

- **Wipe all O-rings clean with a lint-free cloth before installation to ensure that no foreign matter is present to impair the seal.**
- **Do not use grease or any other substance on O-rings that will come in contact with the vacuum surfaces.**
- **Do not use alcohol, methanol or other solvents on O-rings. Doing so causes deterioration and reduces their ability to hold a vacuum.**
- **Agilent does not recommend the use of vacuum grease. If applicable, apply a small amount of Apiezon[®] L grease and wipe the O-rings shiny dry.**

Metal Seal Care

CAUTION



Metal Seals must be replaced any time a spectrometer is opened. All fasteners must be installed and torqued per assembly procedure specifications. Remove Metal Seals carefully with your fingers or a soft tool. Metal tools scratch sealing surfaces.

- **Metal Seals are supplied in pre-cleaned condition. No cleaning is required. If necessary, Metal Seals can be cleaned using the recommended solvents. Wipe Metal Seals clean with a lint-free cloth before installation to ensure that no foreign matter impairs the seal.**
- **Do not use grease or any other substance on Metal Seals that will come in contact with the spectrometer.**

Spectrometer

CAUTION



Store the Ion Source/Preamplifier sub-assembly in a cool, dry area in a tightly sealed, ESD protected container. Wear non-powdered, ESD-safe Nitride or equivalent gloves when handling the spectrometer. Wash hands thoroughly after handling the spectrometer filaments and especially before smoking or eating.

The spectrometer and PCB's are static sensitive devices. Wear a grounding strap when performing any maintenance on these units and especially when performing maintenance of static sensitive parts.

CAUTION



The spectrometer operates at a very high vacuum produced by the high vacuum turbomolecular pump. Service of the spectrometer requires that this vacuum be vented to the atmosphere.

This manual includes two sections: "Part One", VS Leak Detector Instructions, and "Part Two", G8610,G8611, or G8612 Series Leak Detector Instructions.



Part One: VS Leak Detector

Equipment Required

- Extended Length M5 Allen Wrench
- Metric Allen Wrench Set
- Flapper box kit, P/N VSFLDFBCP for leak detectors with Compression Port adapter installed.
- Flapper box kit, P/N VSFLDFBNW25 for leak detectors with NW-25 Flange

NOTE



To operate the Flapper Box the leak detector must have CPU software LD02.11 or greater. If correct software is not installed, contact Agilent Customer Service.

Installation Procedure

For clarity, some items have been omitted from views.

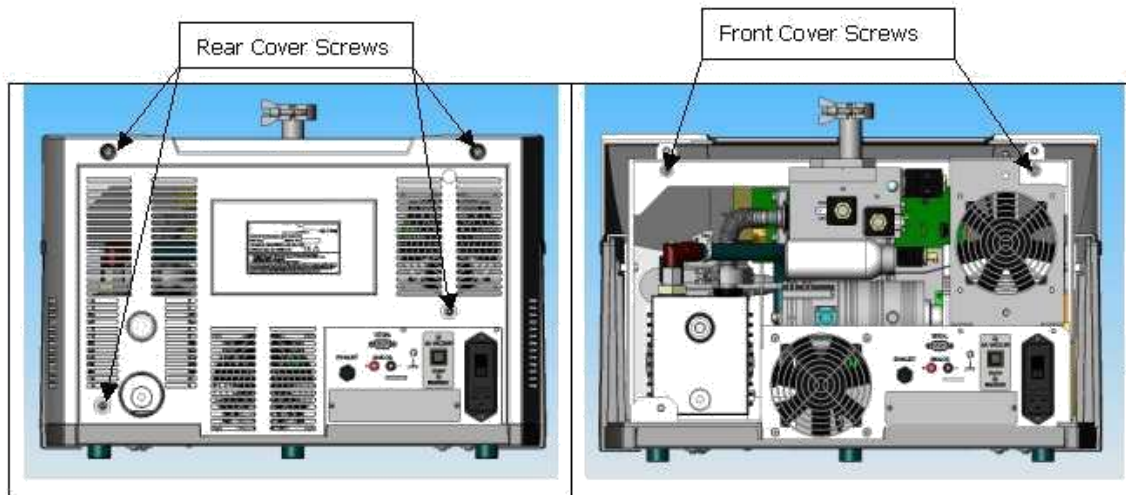


Figure 1: Covers

WARNING



Disconnect power from the unit before performing any maintenance procedure that requires physically disconnecting any part of the system.

1. Turn off the power switch located on the back of the unit and unplug.
2. Wait 30 seconds for the high voltage to dissipate.
3. Using an extended length M5 Allen wrench, remove the four screws holding the rear plastic cover (“Figure 1: Covers”) and detach the rear plastic cover from the unit.
4. Remove the four screws holding the front plastic cover and detach the cover from the unit. Two screws are situated at the front of the unit (not shown) and two screws are positioned inside the unit (“Figure 1: Rear and Front Cover Screws”).



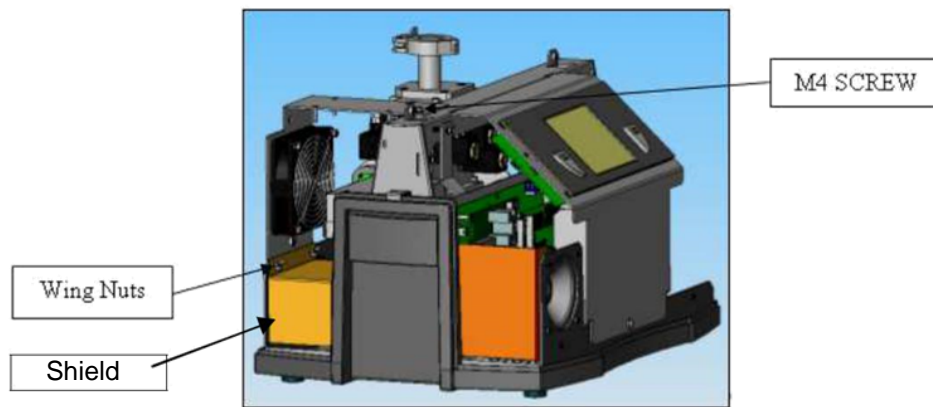


Figure 2: Plastic Shield

5. Remove the two wing nuts holding the plastic shield around the leak detector power input area and remove the shield (“Figure 2: Plastic Shield”).
6. Remove the fan assembly by loosening the M4 socket head cap screw (“Figure 2: Plastic Shield”).

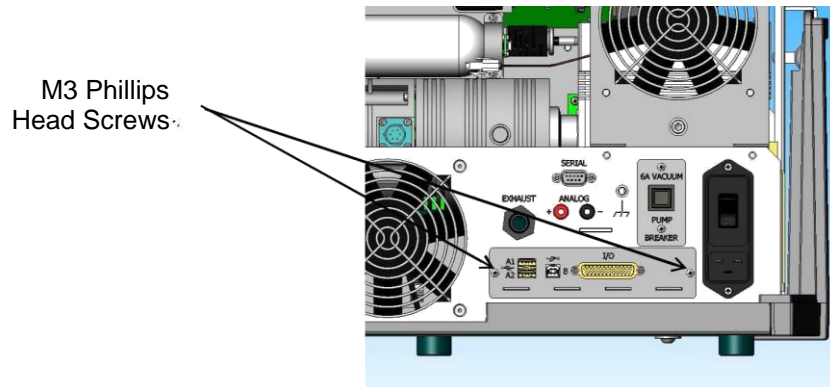


Figure 3: I/O Assembly with Screws

CAUTION



Use proper ESD safety techniques when handling a PCB card.

7. Remove the two I/O board Phillips head screws w/lock washers and remove the I/O board that is installed in the unit (“Figure 3: I/O Assembly with Screws”).
8. Slide the I/O assembly back to allow room to connect the flapper box wiring harness to the I/O board.

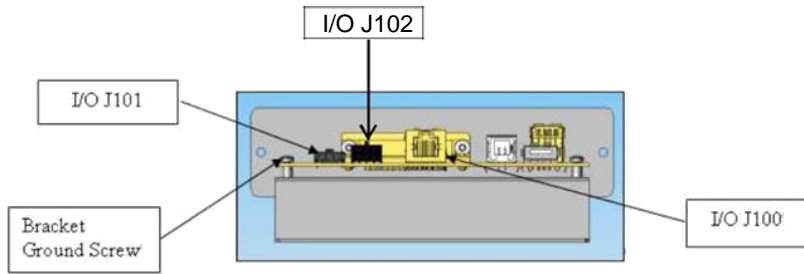


Figure 4: I/O Bracket

9. Connect the *P102* Molex receptacle on the flapper box wire harness to the *J102* connector on the I/O board (“Figure 4: I/O Bracket”).

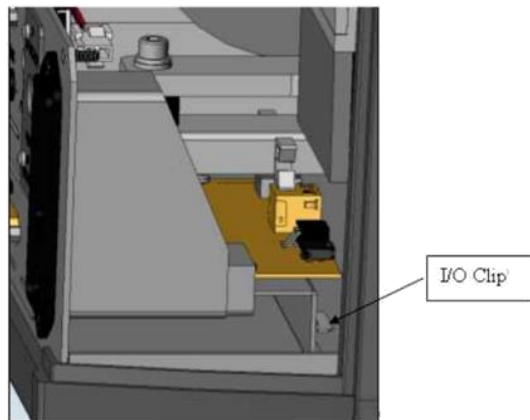


Figure 5: I/O Clip

10. Slide the I/O assembly into the leak detector and ensure that the I/O bracket engages the clip at the base of the leak detector (“Figure 5: I/O Clip”).
11. Reinstall the two I/O board Philips head screws w/lock washers (“Figure 3: I/O Assembly with Screws”).

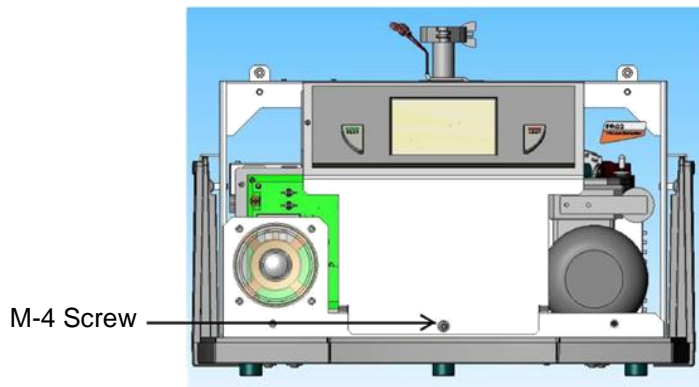


Figure 6: Front Panel Removal

12. Remove M4 screw (“Figure 6: Front Panel Removal”) and open front panel to provide required room for installing the Flapper Box Wiring harness (VS only).

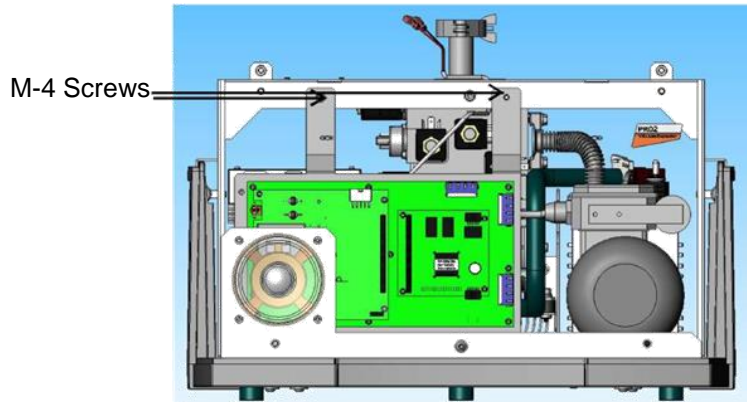


Figure 7: PCB Mounting Tray

13. Remove the M4 screws (“Figure 7: PCB Mounting Tray”) and gently lean the PCB Mounting Tray forward to gain access to the Flapper Box Wiring Harness.

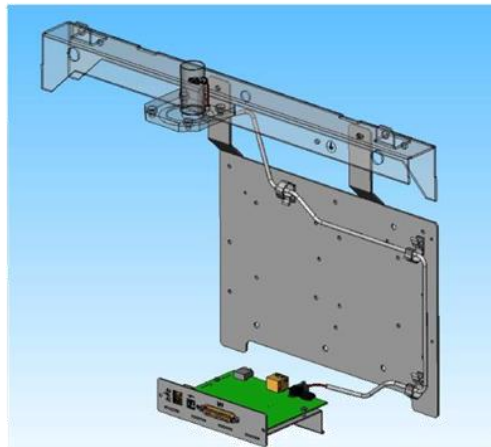


Figure 8: Flapper Box Wiring Harness Layout

14. Install the Flapper Box Wiring Harness, as shown (“Figure 8: Flapper Box Wiring Harness Layout”), utilizing the top two wire clips, only use bottom wire clip, if accessible. These wiring harness clip locations may not be accessible on the G8610, G8611, and G8612 models.

15. Reinstall the M4 screws (“Figure 7: PCB Mounting Tray”).

16. Reinstall the M4 screw (“Figure 6: Front Panel Removal”).

17. Reinstall the (“Figure 2: Plastic Shield”):

- Fan assembly by tightening the M4 socket head screw.
- The plastic shield using the two wing nuts.

18. Attach the front cover and secure to the frame using existing hardware.

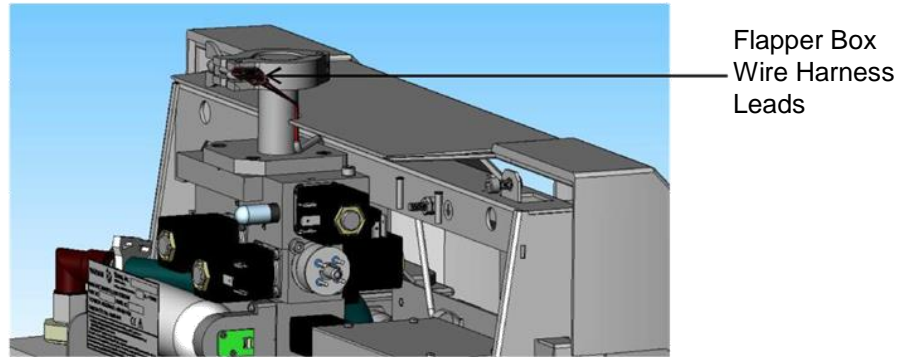


Figure 9: Front Cover Assembly

19. Carefully locate the Flapper Box Wire Harness leads between the front cover and the test port (“Figure 9: Front Cover Assembly”), for the VS model only (shown on right of figure). On the G8610, G8611, and G8612 models, feed these wires through the hole on the top cover by the inlet port, with the top cover still on the unit (shown on left of the figure).

20. Attach covers, and secure the unit using existing hardware.

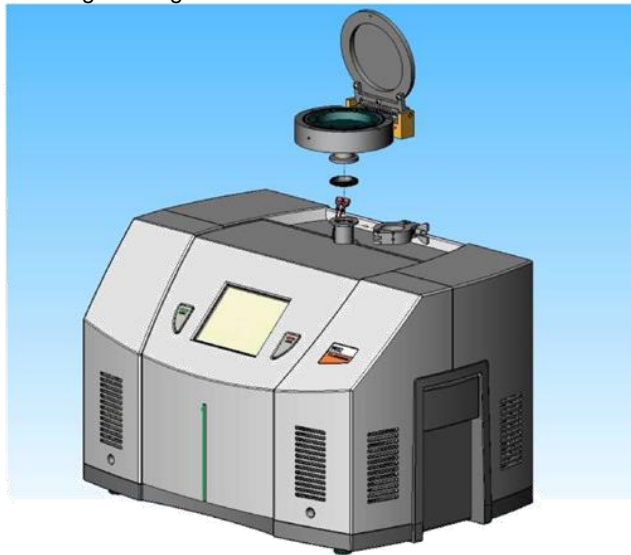


Figure 10: Flapper Box Assembly, NW25 Installation

21. Install the flapper box for:

- P/N VSFLDFBNW25: Utilizing the NW-25 Centering Ring and Quick Clamp (“Figure 10: Flapper Box Assembly, NW25 Installation”).
- P/N VSFLDFBCP: Inserting the Flapper Box into leak detector's Compression Port Adapter and tighten.

22. Connect the leads of the Flapper Box to the leads of the Wire Harness: connect either wire to either wire: ignore wire colors.

23. Connect the power cord and power up the unit.

24. Watch the home screen to verify that the *Spectube Pressure Wait* message progresses to *Stabilization Wait* and *System Ready* within ten minutes.

Refer to the operator's manual if the system fails to reach the *System Ready* mode.

25. Manually close the flapper box, the leak detector should transfer into test.

26. After 30 seconds verify that the vent button is operational (the flapper box should open).

27. Agilent recommends a full calibration of the unit prior to leak test operations.

28. Use the Auto Sequencer to configure the flapper box timing.

Equipment Required

- Extended Length M5 Allen Wrench
- Metric Allen Wrench Set
- Flapper box kit, P/N VSFLDFBCP for leak detectors with Compression Port adapter installed.
- Flapper box kit, P/N VSFLDFBNW25 for leak detectors with NW-25 Flange

NOTE



To operate the Flapper Box the leak detector must have CPU software LD02.11 or greater. If correct software is not installed, contact Agilent Customer Service.

Installation Procedure

For clarity, some items have been omitted from views.

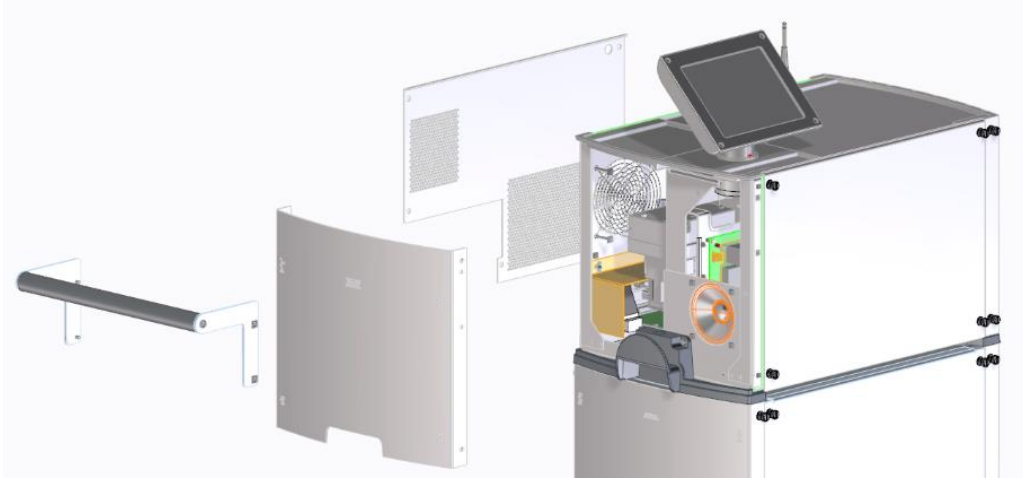


Figure 1: Covers

WARNING



Disconnect power from the unit before performing any maintenance procedure that requires physically disconnecting any part of the system.

1. Turn off the power switch located on the back of the unit and unplug.
2. Wait 30 seconds for the high voltage to dissipate.
3. If the leak detector has an optional push handle, remove the push handle using a metric Allen wrench, and then a 2 mm Allen wrench to remove the panels.



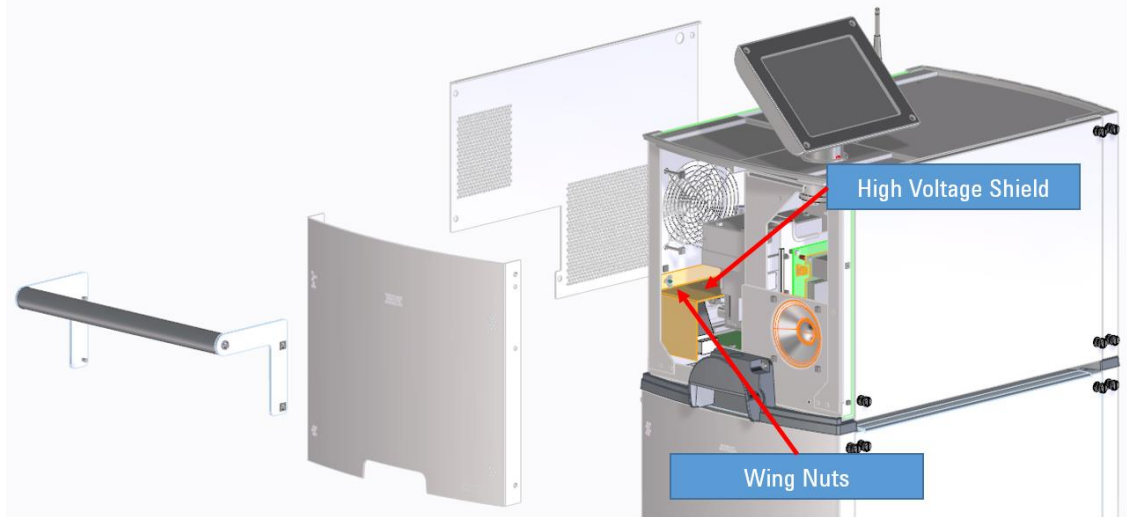


Figure 2: Plastic Shield

- Remove the two wing nuts holding the plastic shield around the leak detector power input area and remove the shield (“Figure 2: Plastic Shield”).

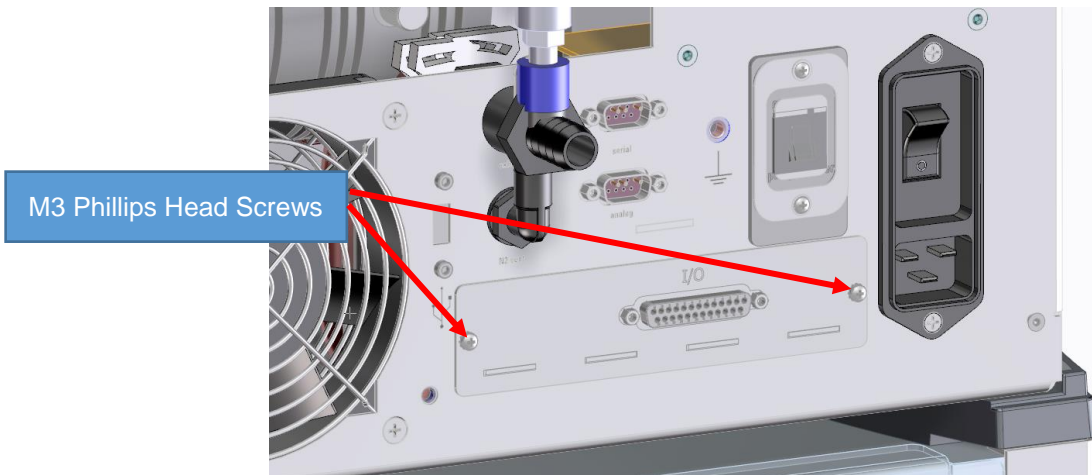


Figure 3: I/O Assembly with Screws

CAUTION



Use proper ESD safety techniques when handling a PCB card.

- Remove the two I/O board Phillips head screws w/lock washers and remove the I/O board that is installed in the unit (“Figure 3: I/O Assembly with Screws”).
- Slide the I/O assembly back to allow room to connect the flapper box wiring harness to the I/O board.

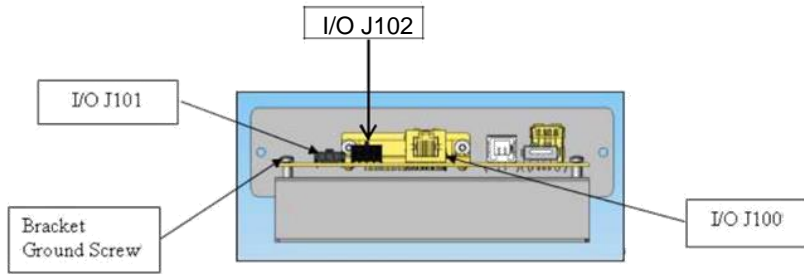


Figure 4: I/O Bracket

7. Connect the P102 Molex receptacle on the flapper box wire harness to the J102 connector on the I/O board (“Figure 4: I/O Bracket”).

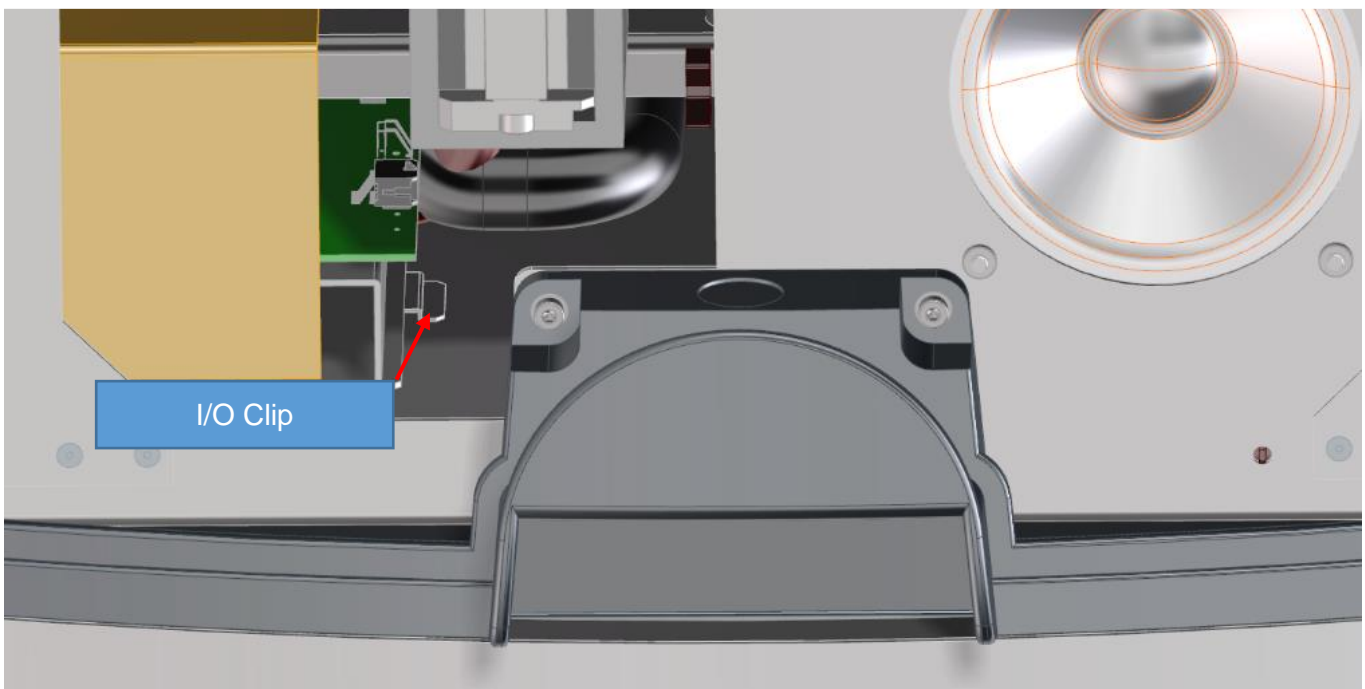


Figure 5: I/O Clip

8. Slide the I/O assembly into the leak detector and ensure that the I/O bracket engages the clip at the base of the leak detector (“Figure 5: I/O Clip”)
9. Reinstall the two I/O board Philips head screws w/lock washers (“Figure 3: I/O Assembly with Screws”).



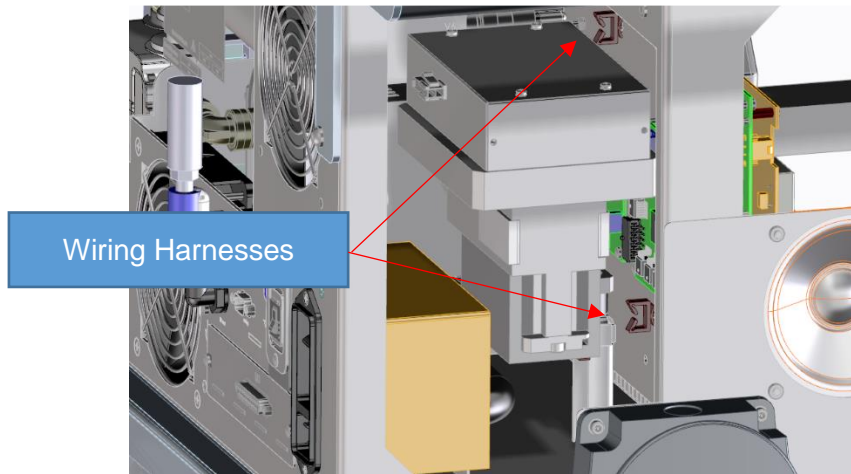


Figure 6: Wiring Harnesses

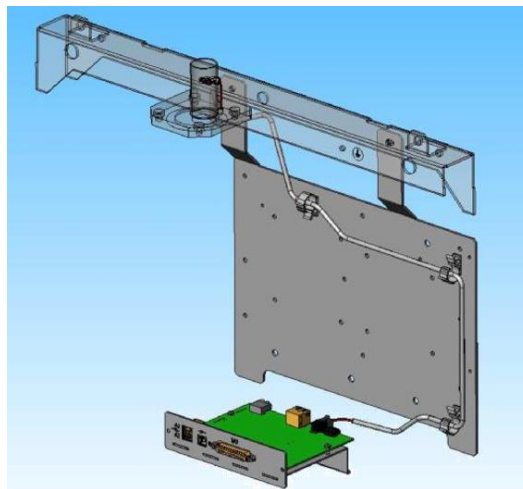


Figure 7: Flapper Box Wiring Harness Layout

10. Install the Flapper Box Wiring Harness, as shown ("Figure 6: Wiring Harnesses") and ("Figure 7: Flapper Box Wiring Harness Layout"), utilizing the top two wire clips; only use bottom wire clip if accessible.
11. Reinstall the ("Figure 2: Plastic Shield").

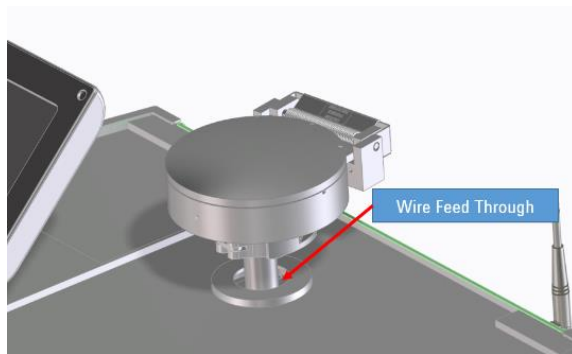


Figure 9: Wire Feed Through

19. Carefully feed the Flapper Box Wire Harness leads through the hole by the test port (“Figure 9: Wire Feed Through”).
20. Attach covers, and secure the unit using existing hardware.

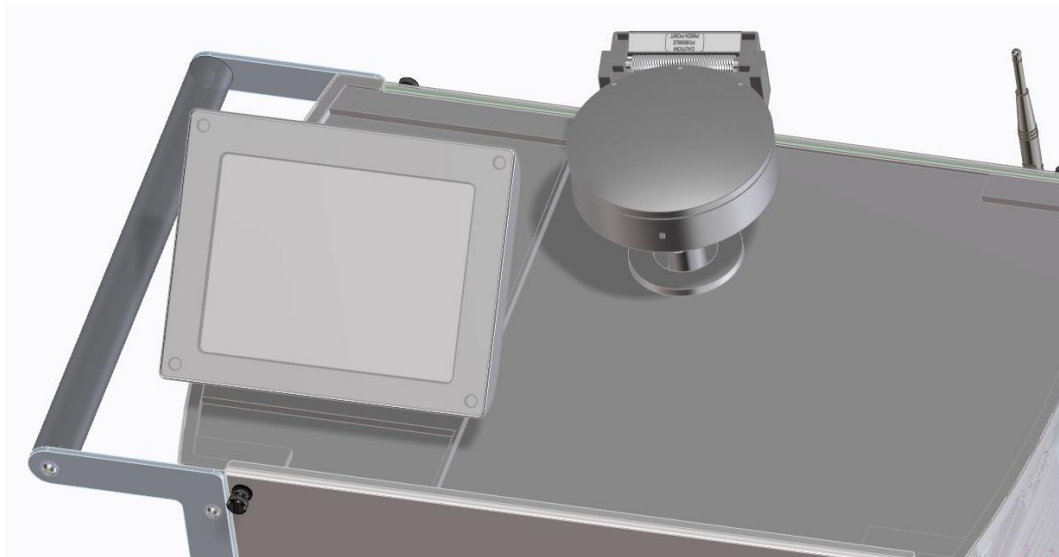


Figure 10: Flapper Box Assembled

21. Install the flapper box for:
 - P/N VSFLDFBNW25: Utilizing the NW-25 Centering Ring and Quick Clamp (“Figure 10: Flapper Box Assembled”).
 - P/N VSFLDFBCP: Inserting the Flapper Box into leak detector's Compression Port Adapter and tighten.
29. Connect the leads of the Flapper Box to the leads of the Wire Harness: connect either color to either color.
30. Connect the power cord and power up the unit.
31. Watch the home screen to verify that the *Spectube Pressure Wait* message progresses to *Stabilization Wait* and *System Ready* within ten minutes.
Refer to the operator's manual if the system fails to reach the *System Ready* mode.
32. Manually close the flapper box, the leak detector should transfer into test. Use Auto Sequencer mode to control timing.
33. After 30 seconds verify that the vent button is operational (the flapper box should open).
34. Agilent recommends a full calibration of the unit prior to leak test operations.

Vacuum Products Division Instructions for returning products

Dear Customer,

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

Complete the attached **Request for Return form** and send it to Agilent Technologies (see below), taking particular care to include the completed **Health and Safety** declaration Section. No work can be started on your unit until we receive a completed copy of this form.

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).

Product preparation

- Remove all accessories from the core product (e.g. inlet screens, vent valves).
- Prior to shipment and if applicable for your product, 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.
- Seal the product in a plastic bag, and package product carefully to avoid damage in transit. You are responsible for loss or damage in transit.
- Include a copy of the Health and Safety Declaration in the shipping documentation on the outside of the shipping box of your returning product.
- 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.
- Return only products for which the RA was issued.

Shipping

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

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

EUROPE:

Fax: 00 39 011 9979 330

Fax Free: 00 800 345 345 00

Toll Free: 00 800 234 234 00

vpt-customer@agilent.com

NORTH AMERICA:

Fax: 1 781 860 9252

Toll Free: 800 882 7426

vpl-ra@agilent.com

PACIFIC RIM:

please visit our website for individual
office information

<http://www.agilent.com>



TERMS AND CONDITIONS

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.

- Unless otherwise pre-negotiated, 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.
- Agilent Technologies is not responsible for returning customer provided packaging or containers.
- 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.
- Products returned that have not been drained from oil will be disposed.
- A Special Cleaning fee will apply to all exposed products
- If requesting a calibration service, units must be functionally capable of being calibrated.



Vacuum Products Division
Request for Return Form

Customer information
Company :
Address:
Contact Name:
Tel:
Fax:
Email:

Equipment
Product description
Agilent PartNo
Agilent Serial No
Original Purchasing Reference
Failure description
Type of process (for which the equipment was used)

Type of return
Non Billable
Billable
Exchange
Repair
Upgrade
Consignment/Demo
Calibration
Evaluation
Return for Credit

Health and safety
Substances (please refer to MSDS forms)
The product has been exposed to the following substances:
Toxic
Harmful
Corrosive
Reactive
Flammable
Explosive (*)
Radioactive (*)
Biological (*)
Oxidizing
Sensitizer
Other dangerous substances

Goods preparation
If you have replied YES to one of the above questions. Has the product been purged?
If yes, which cleaning agent/method:
Has the product been drained from oil?
I confirm to place this declaration on the outside of the shipping box.

I declare that the above information is true and complete to the best of my knowledge and belief.
I understand and agree to the terms and conditions on page 2 of this document.

Name:
Position:
Date:
Authorized Signature:

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.

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