

Agilent G3199B Quiet Cover II

User Information

Notices

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Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

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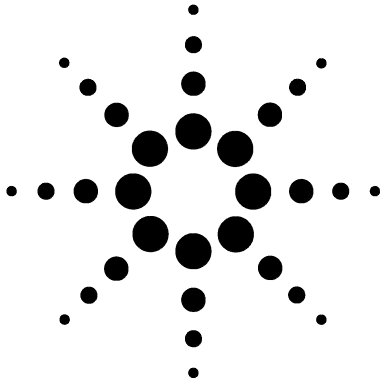
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This manual describes how to install, operate, and troubleshoot the Agilent G3199B Quiet Cover II for LC/MS rough pumps.


Your rough pump fits in the Quiet Cover II to significantly reduce noise, while two internal fans ensure your pump will not overheat. There is an easy-to-use kickstand and a full size oil tray to facilitate changing the oil. There are also multiple access panels for easy access to the pump for routine maintenance.

The Quiet Cover II is compatible with BOC Edwards E1M18 and E2M28 pumps used with the Agilent 1100/1200 LC/MS Series instruments and with the BOC Edwards E2M18 pump used with the Agilent ICP/MS.

General Information

The Quiet Cover II conforms to the International Electrotechnical Commission (IEC) 61010–1 safety standard.

It also conforms to the following regulations on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):

- CISPR 11/EN 55011: Group 1, Class A
- IEC/EN 61326
- AUS/NZ 



1 Introduction

This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme a la norme NMB-001 du Canada.



The Quiet Cover II is designed and manufactured under a quality system registered to ISO 9001.

Information

The Agilent Technologies Quiet Cover II meets the following IEC classifications: Category II, Pollution Degree 2, Class III.






Quiet Cover II has been designed and tested in accordance with recognized safety standards and is designed for use indoors. If it is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired. Whenever the safety protection of the Quiet Cover II has been compromised, disconnect it from all power sources and secure it against unintended operation.

Refer servicing to qualified service personnel. Substituting parts or performing any unauthorized modification to the instrument may result in a safety hazard.

Symbols

Warnings in the manual or on the instrument must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions violates safety standards of design and the intended use of the instrument. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements. Table 1 lists the safety symbols that may appear on Quiet Cover II.

Table 1 Safety symbols

Description	Symbol
See accompanying instructions for more information.	
Indicates a hot surface.	
Pinch hazard.	
Indicates earth (ground) terminal	
Indicates that you must not discard this electrical/ electronic product in domestic household waste.	

Important Safety Warnings

Safety cautions and warnings must be observed during all phases of operation, service, and repair of Quiet Cover II. Failure to comply with these precautions violates safety standards of design and Quiet Cover II's intended use. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

WARNING

Never run the pump without also running Quiet Cover II.

CAUTION

While running Quiet Cover II:

- Do not block air flow to the fans.
- Do not set items on top of Quiet Cover II.
- It is important that the Quiet Cover II not recirculate hot air. Always position the back end of the Quiet Cover II where it can draw cool air.

CAUTION

Be sure to position Quiet Cover II so that there is plenty of room to allow access to panels and controls. See Table 3 on page 12 for more information.

WARNING

In the event of a temperature alarm malfunction or if the alarm has been on for an extended period of time, Quiet Cover II and the pump may be dangerously hot. Check that the Quiet Cover II and pump are cool before you touch them.

Electromagnetic compatibility

This device complies with the requirements of CISPR 11. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Relocate the radio or antenna.
- Move the device away from the radio or television.
- Plug the device into a different electrical outlet, so that the device and the radio or television are on separate electrical circuits.
- Make sure that all peripheral devices are also certified.
- Make sure that appropriate cables are used to connect the device to peripheral equipment.
- Consult your equipment dealer, Agilent Technologies, or an experienced technician for assistance.
- Changes or modifications not expressly approved by Agilent Technologies could void the user's authority to operate the equipment.

Sound emission certification for Federal Republic of Germany

- Sound pressure – $L_p < 70$ dB am according to EN 27779:1991.
- Schalldruckpegel – $LP < 70$ dB am nach EN 27779:1991.

Cleaning

To clean the oil tray:

- 1 Reach under the front of Quiet Cover II and pull out the tray.
- 2 Wipe out excess oil with a clean, lint-free cloth.
- 3 Wash the tray with a mild soap solution.

Recycling the Product

For recycling, contact your local Agilent sales office.

Parts Identification

Table 2 lists the contents of the Quiet Cover II kit. Figure 1 and Figure 2 depict the parts of the Quiet Cover II.

Table 2 Contents list

Part	Quantity	Part number
Quiet Cover II	1	5067-0211
Oil tray	1	5188-1184
Power supply	1	5188-1164
Mist filter extension	1	5188-1181
Clamp for mist filter extension	1	0100-0549
Seal for mist filter extension	1	0100-1597
User information (this document)	1	G3199-90000

1 Introduction

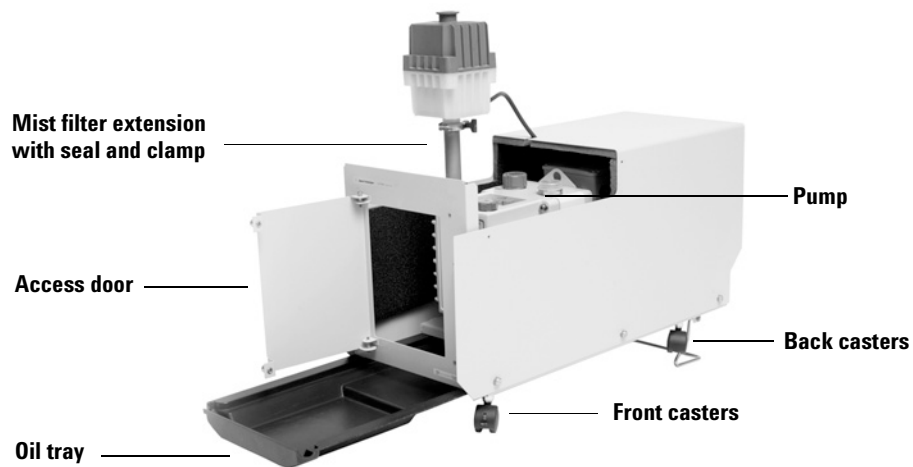


Figure 1 Quiet Cover II (front view).

NOTE

See Figure 11 on page 24 for a view of the front panel controls.

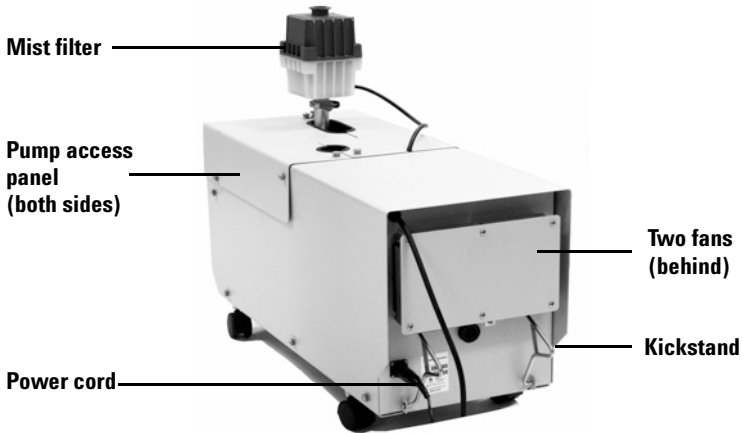


Figure 2 Quiet Cover II (rear view).

NOTE

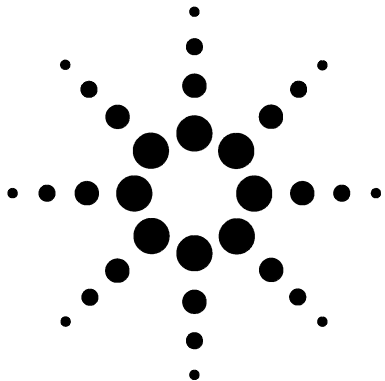
Power supply not shown.

Site Preparation

Prepare the installation site to meet the criteria in Table 3.

Table 3 Site prep information

Criteria	Description
Physical dimensions	
Weight	20.5 kg (45 lbs)
Dimensions	Kickstand up: 85 × 32 × 44 cm (33.5 × 12.5 × 17.3 inches) (L × W × H)
Power supply	
AC input voltage	100 to 240 VAC ±10%
DC output voltage	+24 V
Output load (max.)	1.25 A
Input frequency	47 to 63 Hz
Power consumption	11 W
Rated current	450 mA
Temperature and humidity ranges	
Ambient temperature	5 to 35 °C (41 to 95 °F)
Humidity	15 to 95%
Altitude	≤ 4600 m (14950 ft)



2 Installation

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This chapter describes how to assemble the Quiet Cover II and install the rough pump.



Installing the Oil Tray

Your Quiet Cover II is shipped to you with the oil tray packaged separately. You need to install it prior to using Quiet Cover II.

To install it, slide it into the bottom of Quiet Cover II, with the deep part of the tray forward. There are a set of rails along the bottom edges of the frame that guide the tray into place. See Figure 3.



Figure 3 Installing the oil tray.

Installing the Mist Filter Extension

The Quiet Cover II requires that the rough pump use a mist filter extension. If a suitable extension is not already installed, install it as follows:

- 1 Shut off the rough pump.

NOTE

The location of the mist filter may vary from pump to pump. The mist filter and oil fill ports are interchangeable. For this application, the mist filter must be installed in the left port when viewed facing the pump from the sight glass end.

- 2 Remove the existing mist filter.
- 3 Install the extension, the new seal, and clamps onto the outlet port.
- 4 Install the mist filter with the seal and clamp onto the top of the extension.

Refer also to your rough pump documentation for more information.

Preparing the Rough Pump

NOTE

In some cases, the orientation of the stainless steel vacuum hose that connects the LC/MS to the rough pump must be reversed. The Quiet Cover II is designed to attach to a straight end-fitting of the vacuum hose.

The Quiet Cover II is designed for a straight vacuum-hose connection to the rough pump. Depending upon the configuration, an LC/MS instrument may have a curved fitting on the end of the vacuum hose, protruding for connection to the rough pump (Figure 4A). A hose installed in this orientation prevents the access panels from being properly attached to the Quiet Cover II.

- 1 Through the **Diagnostics View** of the ChemStation software, release vacuum from the LC/MS system.
- 2 Loosen the clamp at each end of the hose. See Figures 4A and 4B.

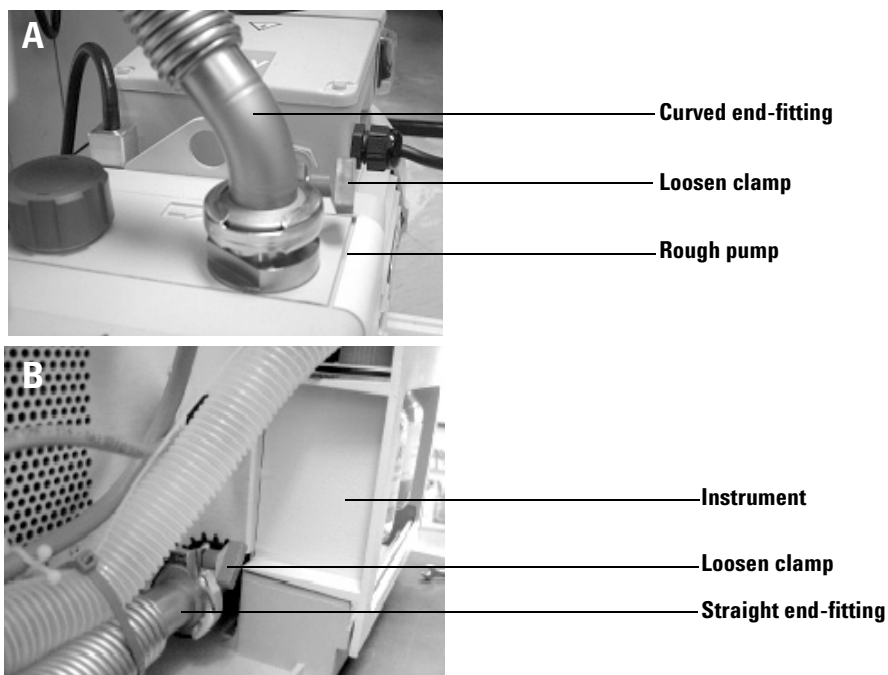


Figure 4 Curved end of vacuum hose to rough pump (A); straight end to instrument (B) — incorrect.

2 Installation

- 3 Reverse the orientation of the stainless-steel vacuum tubing so that its curved end-fitting connects inside the LC/MS instrument and its straight end-fitting connects to the rough pump (Figure 5).

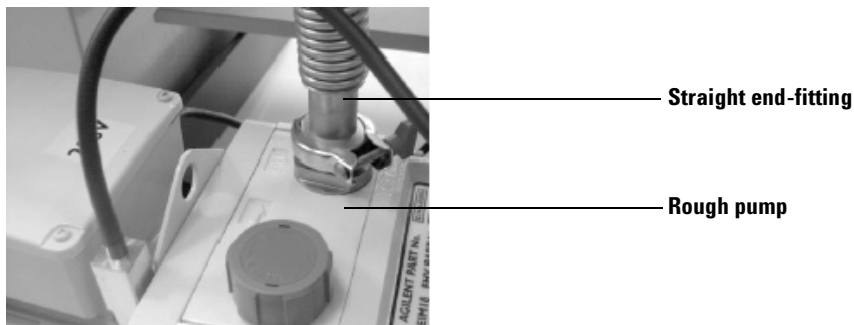


Figure 5 Straight end-fitting to rough pump — correct.

- 4 Turn on the vacuum system and check for proper vacuum through the software.

Installing the Rough Pump Inside Quiet Cover II

NOTE

For this procedure, you will need a 5/16-inch open-end wrench. The pump does not have to be disconnected from the LC/MS when placing it inside the Quiet Cover II.

To install the rough pump inside Quiet Cover II:

- 1 Remove the two pump access panels by loosening the thumbscrews on the top and sides.
- 2 Remove the lid by loosening the three thumbscrews along the bottom of each side.

- 3 Remove the four nuts from the vibration mounts located on the base of the enclosure. See Figure 6.

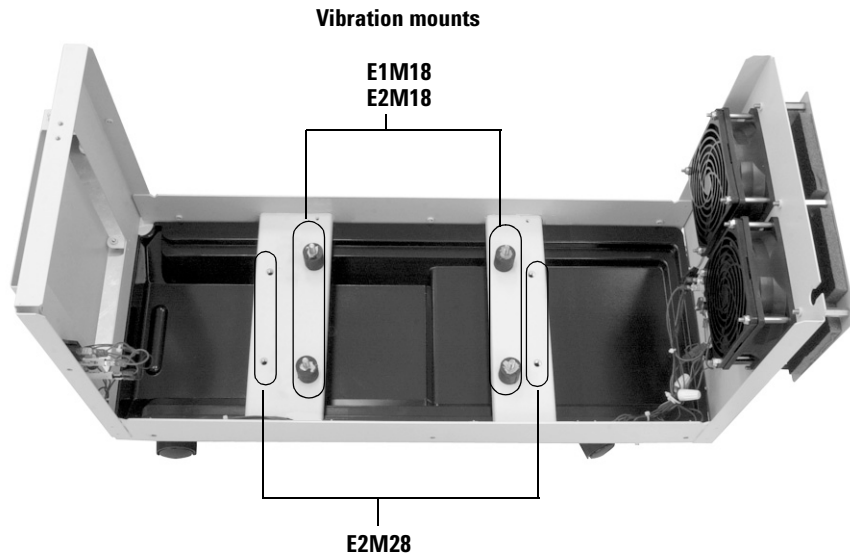


Figure 6 Pump vibration mounts installed for the E1M18 and E2M18 pump.

- 4 Make sure the position of the vibration mounts matches the configuration of your specific pump. The E1M18 and E2M18 pumps use the configuration shown in Figure 6. When using the E2M28 pump, move the vibration mounts to the outer holes shown in Figure 6.

WARNING

The pump:

- **May be hot. Use gloves when moving it or wait until it is cool.**
- **Is heavy. For your safety, two people should move it together.**

- 5 Orient the rough pump onto the vibration mounts so that the oil level window (sight glass) faces away from the fans of the Quiet Cover II and the pump power cord is not crimped or under the pump.

2 Installation

- 6 Secure the pump to the vibration mounts and finger-tighten the nuts. Use a 5/16-inch wrench to tighten them until they are snug against the pump housing.
- 7 Remove the grommet from the back upper edge of the Quiet Cover II frame and place the grommet around the pump power cord.
- 8 Slide the grommet with the power cord back into the groove on the back of the frame. See Figure 7.

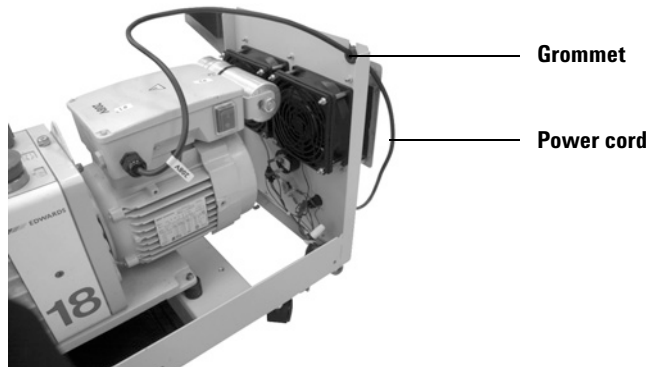


Figure 7 Installed pump power cord.

Verifying the Mist Filter Drain Tubing Length

The original length of the mist filter drain tubing is sufficient for installation of the Edward's pumps in the Agilent Quiet Cover II; however, in some cases, the tubing may have been shortened for aesthetics or better oil drainage. The tubing must be > 28 cm (> 11 in.) for proper installation in the Quiet Cover II.

If the current tubing is < 28 cm (< 11 in.) long, purchase and replace it with part number 5188-5967, which is an approximately 50 cm (20 in.) length of appropriate tubing.

To replace the drain tubing:

- 1 Clear oil from the bottom of the mist filter and tubing by opening the ballast 2-½ to 3-½ turns.
- 2 After the oil has visually drained from the mist filter, close the pump ballast.
- 3 Place several paper towels under both ends of the tubing.

WARNING

Avoid contact with pump fluid, particularly if hot: use appropriate chemical-resistant gloves and safety glasses.

- 4 Disconnect the existing tubing from the mist filter and the pump. Be careful not to come into contact with the oil, as it may be hot.
- 5 Remove the restrictor (a small steel insert) from the existing tubing by squeezing the tubing behind the restrictor. You may need to cut the tubing with scissors.

CAUTION

Using drain tubing without the restrictor can result in pump damage.

- 6 Insert the restrictor into the new tubing.
- 7 Install one end of the new tubing onto the mist filter drain fitting and the other end onto the pump oil return fitting. Replace the two hose clamps, securing the hose to the fittings.

2 Installation

Installing the Lid and Pump Access Panels

To install the lid and pump access panels:

- 1 Place the lid on the base, making sure the studs (posts) on the inner wall of the top lid align with the grooves along the frame. Tighten the three retained thumbscrews on both sides. See Figure 8.

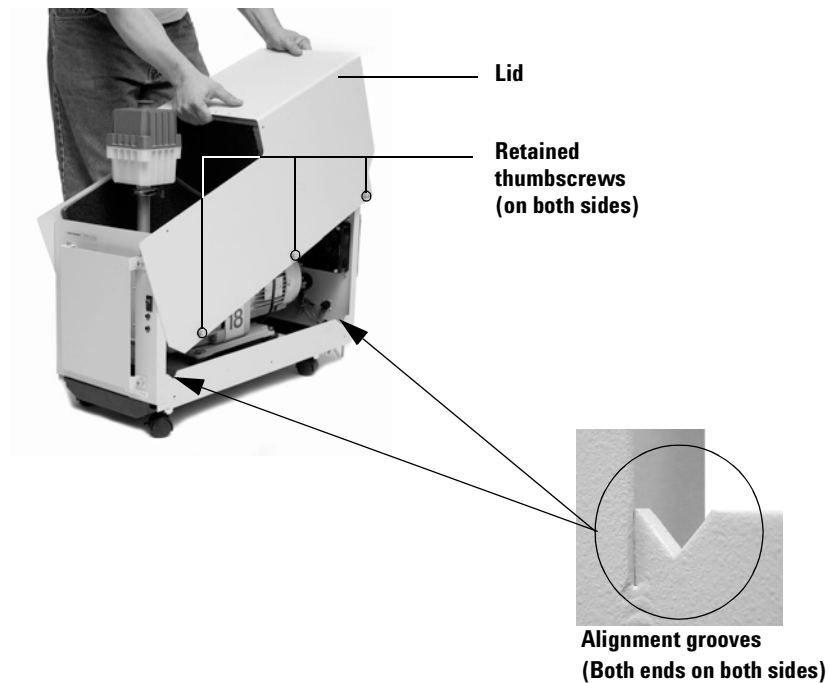


Figure 8 Placing the lid on Quiet Cover II.

- 2 Orient the mist filter drain into the notch in the lid and install the pump access panels, aligning the notch in the access panel with the notch in the lid. Tighten the retained thumbscrews on the top and both sides. See Figure 9.

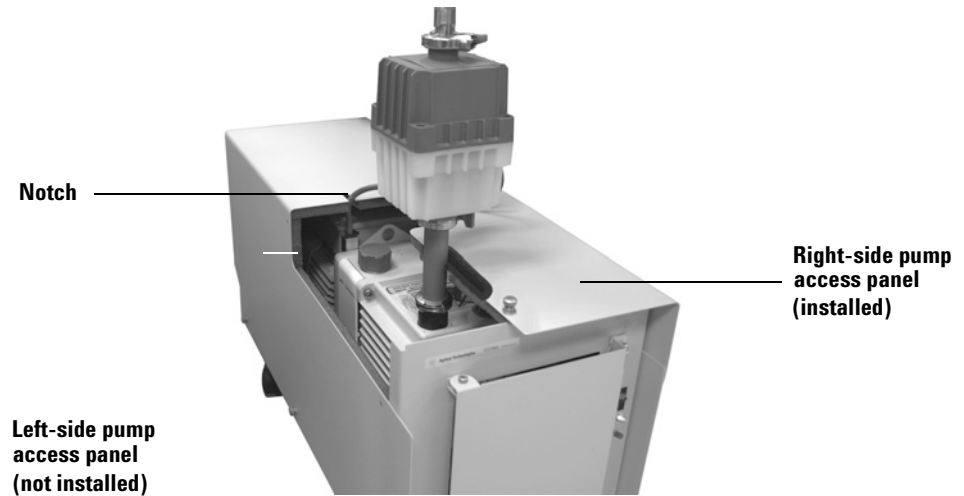


Figure 9 Installing pump access panels.

Connecting the Power Supply

Connect the power supply to the back of Quiet Cover II by twisting the ring on the circular connector of the power cord (see Figure 10). Plug the pronged end of the power cable into the wall outlet.

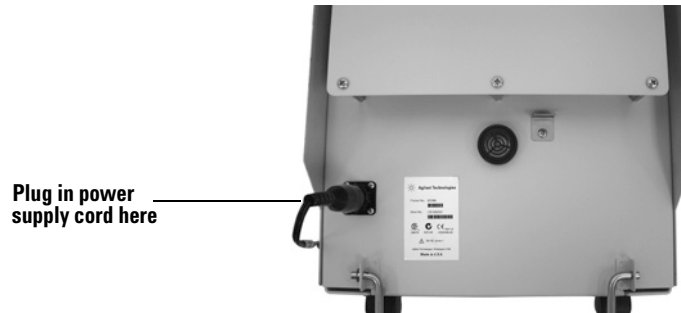
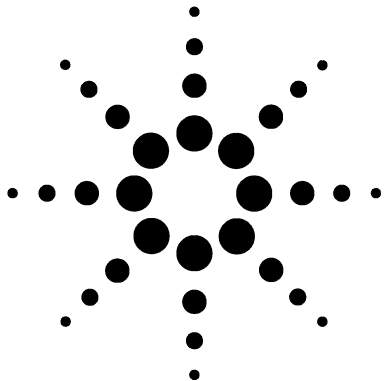


Figure 10 Connecting the power supply.

Verifying the Installation

To verify that you installed Quiet Cover II correctly, press the on/off switch located on the right side of the front panel.

- The green LED should light and the fans should start turning.
- The temperature alarm should be off and the red light should not be lit. If either are on, remove the access panels and lid. Refer to Chapter 4, “Troubleshooting,” for more information.
- There should be neither excessive noise nor vibration. If either condition is true, go back over each installation step to be sure everything was done correctly and all nuts are securely fastened.
- The power cords should be positioned so as to not interfere with the kickstand.



3 Operation

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To operate Quiet Cover II, you will need to:

- Understand the controls and indicators on the front panel
- Know how to handle temperature alarms and signals
- Know how to drain oil from the rough pump and oil tray
- Tilt Quiet Cover II



Front Panel Controls and Indicators

Figure 11 shows the location of the on/off switch and indicators of the Quiet Cover II front panel.

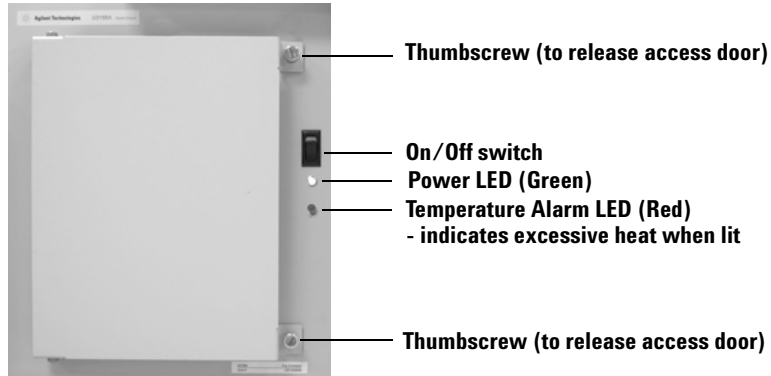


Figure 11 The front panel of Quiet Cover II.

Handling Temperature Alarms

If the air flow to the Quiet Cover II is restricted or if the room temperature is above 35 °C (95 °F), the red LED on the front panel lights and the temperature alarm sounds.

When this condition occurs, remove the panels to cool the pump. Check that both fans are turning and that air flow to the Quiet Cover II is not restricted.

NOTE

It is important that the Quiet Cover II not recirculate hot air. Always position the back end of the Quiet Cover II where it can draw cool air.

You cannot turn the alarm off. It will stop when the temperature returns to an acceptable level.

Changing Rough Pump Oil

Periodically, you must change the rough pump oil. The oil tray of the Quiet Cover II is designed to collect the oil as it drains from the pump. Please refer to your pump documentation for detailed information regarding changing your pump oil.

To change the oil:

- 1 Properly prepare your system for release of primary vacuum.
- 2 Turn off the rough pump.
- 3 Turn off Quiet Cover II.
- 4 Unplug the power supply from Quiet Cover II.
- 5 Open the front access door of Quiet Cover II by unscrewing the thumbscrews.
- 6 Tilt the Quiet Cover II by using the kickstand located at the back of the Quiet Cover II (See “Using the Kickstand” on page 27.) This technique is the most efficient way to drain the pump oil.
- 7 Be sure the oil tray is securely seated.

NOTE

The E2M28 sits close to the front of the Quiet Cover II; pull out the tray 1 to 2 inches to avoid oil spillage.

- 8 Remove the oil drain plug from your rough pump. Refer to your pump documentation. See Figure 12.

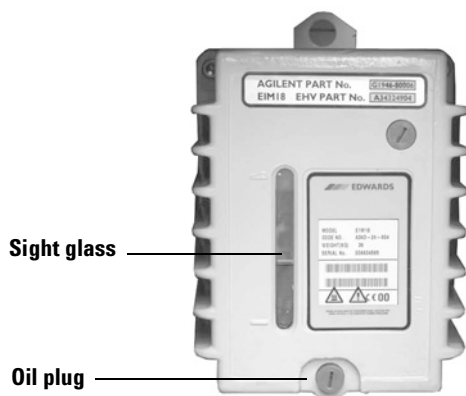


Figure 12 View of E1M18 pump through access door.

3 Operation

- 9 Reinstall the drain plug when the oil has completely drained.
- 10 Remove the oil tray and dispose of the oil according to local safety and environmental guidelines.
- 11 Return the Quiet Cover II to its untilted position. See “Using the Kickstand” on page 27.
- 12 Reinsert the oil tray.
- 13 Remove the access panel over the oil fill plug and refill the pump (see Figure 13). Refer to the pump documentation for more information.

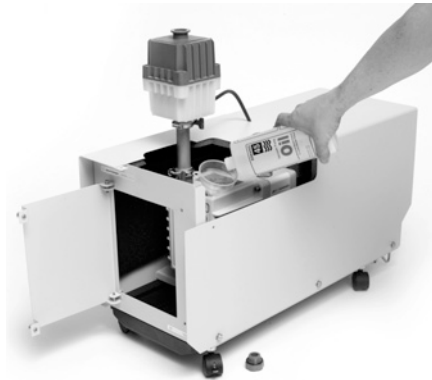


Figure 13 Filling the pump with oil.

- 14 Replace the pump access panel and close the access door.

Using the Kickstand

To tilt the Quiet Cover II:

- 1 Make sure the Quiet Cover II is on a level surface.
- 2 Release the kickstand from its locked position. See Figure 14.

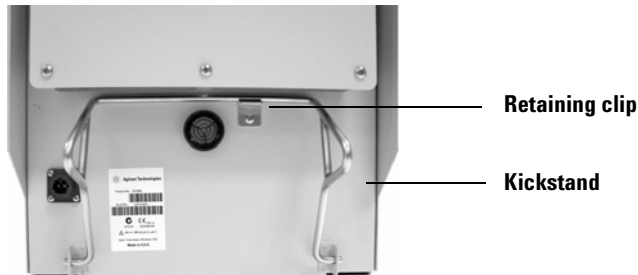


Figure 14 Releasing the kickstand.

- 3 With the kickstand released from the clip, step down on the horizontal bar until the Quiet Cover II is in its tilted position. See Figure 15.

For larger pumps, lift gently on the lid above the fans while stepping on the kickstand to help tilt the Quiet Cover II.

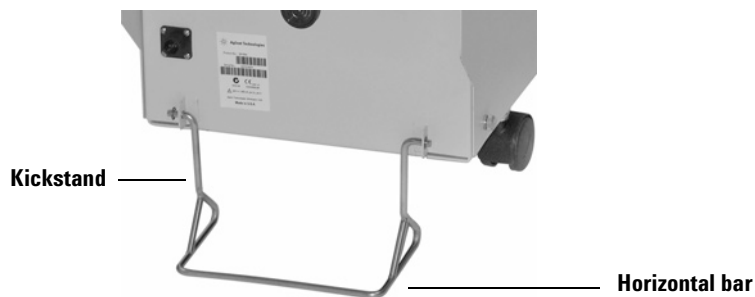


Figure 15 Quiet Cover II in a tilted position.

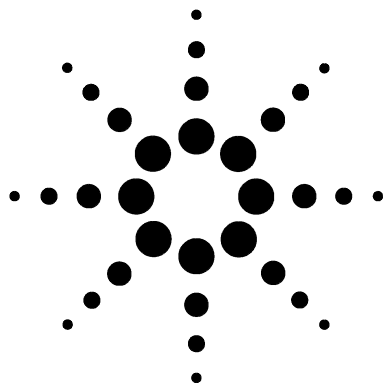
3 Operation

CAUTION

The kickstand's horizontal bar sits flat on the floor when Quiet Cover II is tilted.

To return Quiet Cover II to the untilted position:

- 1 Grasp the back of the lid above the fans and gently push the Quiet Cover II forward, off the kickstand. To avoid dropping it, step on the kickstand as you lower the unit.
- 2 Raise the kickstand to its locked position.



4 Troubleshooting

Table 4 describes solutions to problems that may occur with Quiet Cover II. If your problem is not listed or the solution listed does not work, consult your pump documentation or contact your Agilent service representative.

WARNING

Hot surfaces can cause burns. Observe the cautions and warnings covered elsewhere in this manual.

Table 4 Problems and solutions

Problem	Solution
Pump does not fit in Quiet Cover II.	Check for proper orientation of the pump and configuration of the vibration dampers. See “Installing the Rough Pump Inside Quiet Cover II” on page 16. Call your Agilent service representative if the orientation and configuration are correct.
Quiet Cover II does not turn on.	Check that the power supply is plugged securely into both Quiet Cover II and the wall outlet. If it is, call your Agilent service representative. Do not continue to use your rough pump in the Quiet Cover II.
Temperature alarm does not turn off.	Remove the Quiet Cover II lid. Ensure that adequate cool air is available to the Quiet Cover II. Call your Agilent service representative if the lab temperature is within specifications.



4 Troubleshooting

Table 4 Problems and solutions (continued)

Problem	Solution
Quiet Cover II poorly muffles the sound of the pump.	Ensure that the rough pump and lid are fastened tightly to the base and that the pump access panels are securely in place.
The rough pump oil does not drain completely.	Be sure the kickstand is down, with the bar sitting flat on the floor. If so, refer to the rough pump documentation for more information.
Green LED does not light.	Check that power is supplied to Quiet Cover II and the power switch is on. If it is, call your Agilent service representative.
Fans do not turn.	Check that power is supplied to Quiet Cover II and the power switch is on. If it is, call your Agilent service representative. Do not continue to use your rough pump in the Quiet Cover II.
The temperature alarm does not sound even though the room temperature is above 35 °C (95 °F) and the red over-temperature LED is lit.	Check that power is supplied to Quiet Cover II and the power switch is on. If it is, call your Agilent service representative. Do not continue to use your rough pump in the Quiet Cover II— the alarm may have failed.
The red over-temperature LED is not lit even though the room temperature is above 35 °C (95 °F) and the alarm is sounding.	Check that power is supplied to Quiet Cover II and the power switch is on. If it is, call your Agilent service representative. Do not continue to use your rough pump in the Quiet Cover II— the LED may have failed.
The temperature alarm is not sounding and the red over-temperature LED is not lit even though the room temperature is above 35 °C (95 °F).	Check that power is supplied to Quiet Cover II and the power switch is on. If it is, call your Agilent service representative. Do not continue to use your rough pump in the Quiet Cover II— the thermostat may have failed.

The Service Manual (part number G3199-90020) contains part replacement information (procedures performed by Agilent service representatives). Visit www.agilent.com/chem to download a copy of the Service Manual and look for any other current information.



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