

PrepSeal

User's Guide

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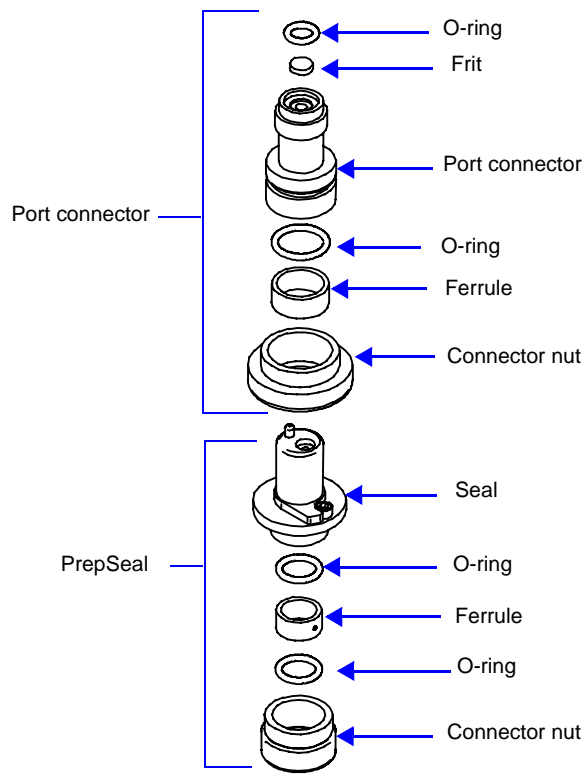
Description

Micromeritics PrepSeals permit air sensitive samples to be degassed and transferred to an analysis port without contamination. The PrepSeal can be used with Micromeritics' VacPrep 061 Degasser, Flow Prep 060 Degasser, or SmartPrep 065 Degasser and Gemini VII Analyzer. The PrepSeal Kit consists of two main components: the seal, which fits on the sample tube, and the port connector, which is attached to the sample and balance ports of the Gemini.

The PrepSeal Kit contains the following components.

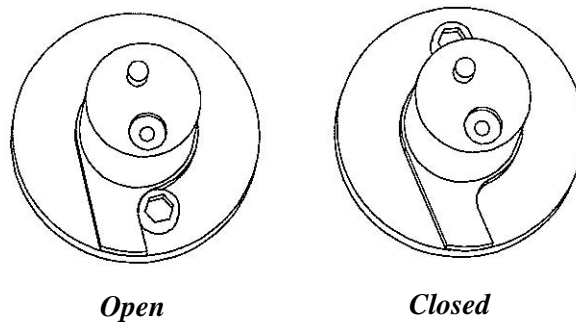
| Quantity | Description |
|----------|--|
| 2 | Port connectors (1 for Gemini sample port, 1 for Gemini balance port) |
| 1 | 11/16-in. wrench, used to remove existing sample and balance port connectors |
| 1 | 40- μ m sample port frit |
| 1 | 2- μ m balance port frit |
| 2 | Port frit O-rings |
| 12 | O-rings for port connector and for sealing PrepSeal to sample connector fitting on the VacPrep |
| 1 | Installation tool, used to tighten the sample port connector |
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The PrepSeal may be used with sample tubes having 3/8-in. (9.5-mm) outside diameter stems only. It may be used with both straight wall tubes and bulb tubes. The following illustration shows an exploded view of the PrepSeal assembly.



PrepSeal Assembly

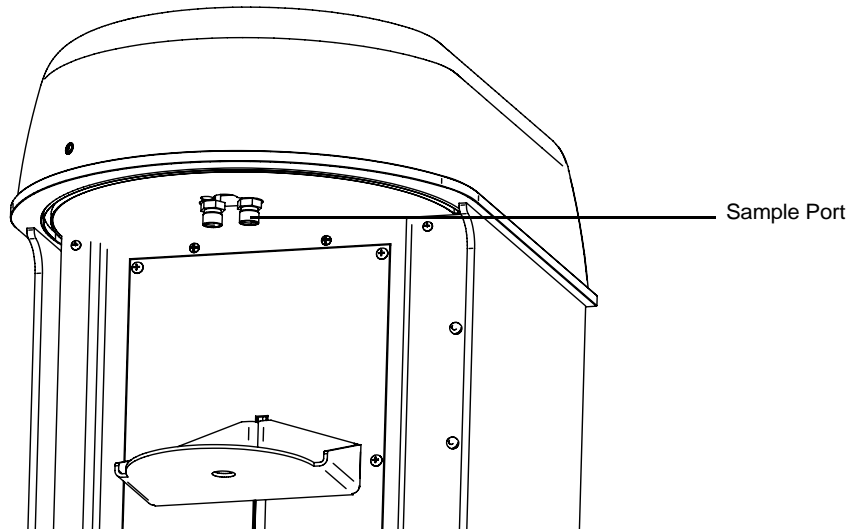
When the PrepSeal is open, access is allowed to the sample tube. When it is closed, the seal prevents contaminants from entering the tube. The following illustration shows both states (looking down on the PrepSeal).



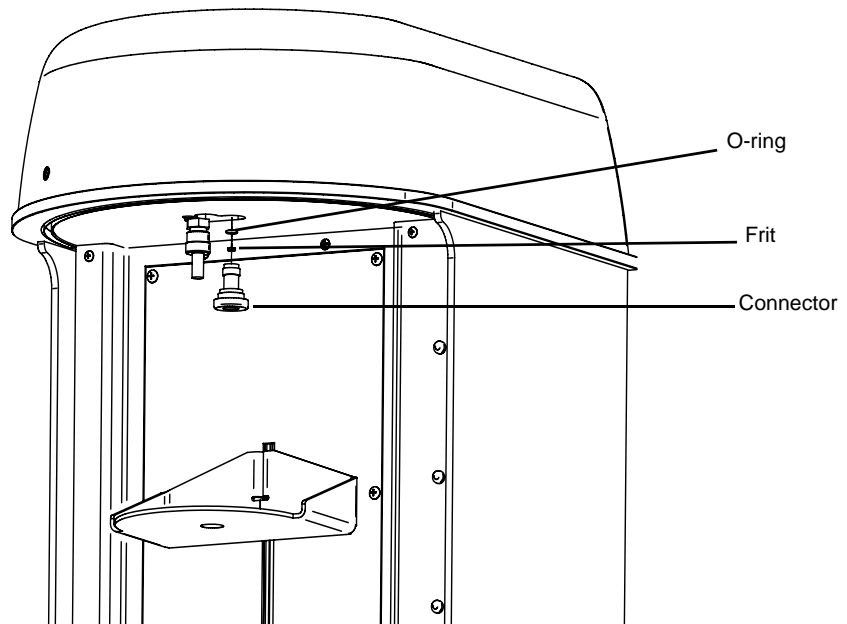
Attaching the Connector to Gemini's Sample and Balance Ports

When you wish to analyze samples using PrepSeals, a special connector must be attached to both the sample and the balance ports of the Gemini. Two connectors are included in the PrepSeal Kit. Install these connectors as follows.

1. Remove the sample port connector from the sample port using the wrench provided in the kit.



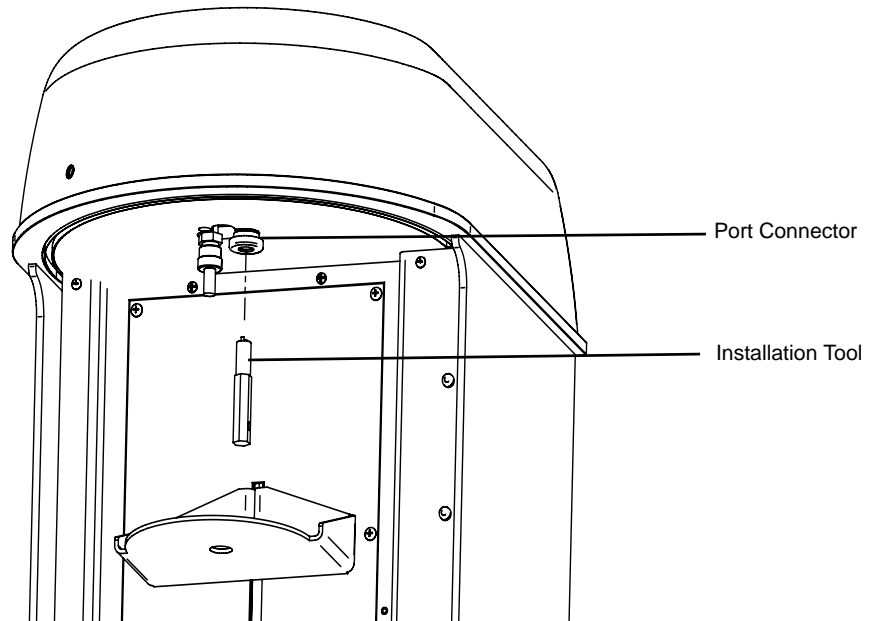
2. Assemble the 40- μ m frit, O-ring, and connector included in the kit. Install them in the sample port connector as shown below.



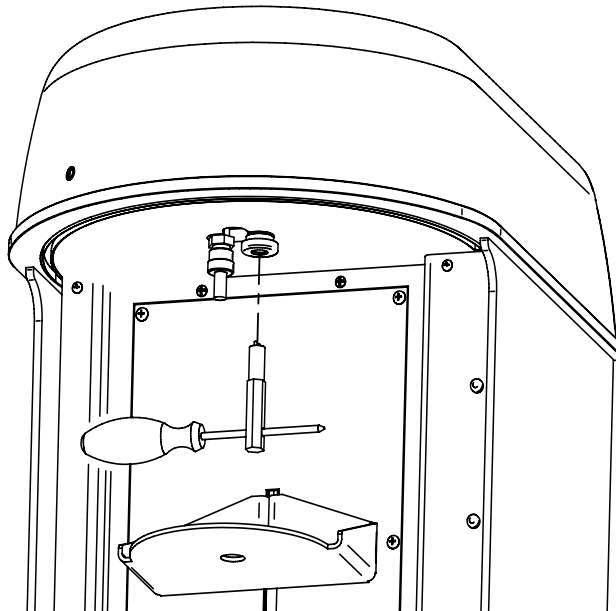


Do not interchange the 2- μm frit (fine texture) from the balance port with the 40- μm frit (coarse texture) from the sample port. The analyzer will not operate properly if this occurs.

3. Insert the installation tool provided in the kit into the port connector and tighten by hand.



4. Using a 1/2-in. wrench or screwdriver, tighten the installation tool, hand-tight plus 1/4 turn.



5. Repeat steps 1 through 4 for the balance port, using the 2- μm frit.

Attaching the PrepSeal to a Sample Tube



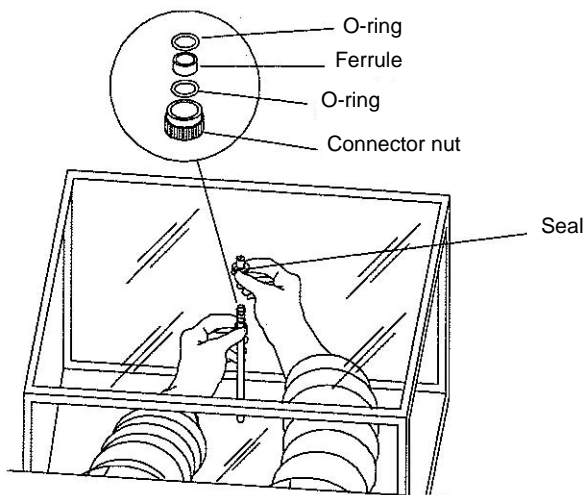
To obtain an accurate weight of a degassed sample, the same gas type must be present in the sample tube during both weighings; that is, when weighed without and with the sample present. Buoyancy differences can cause significant errors when helium is used inconsistently.

The PrepSeal may be used with samples that are degassed by either vacuum or flowing gas. Attach the Prep-Seal as described below.



A PrepSeal must also be attached to the balance tube and remain in the open position. This will maintain the equal volume scheme which is required for proper operation of the Gemini.

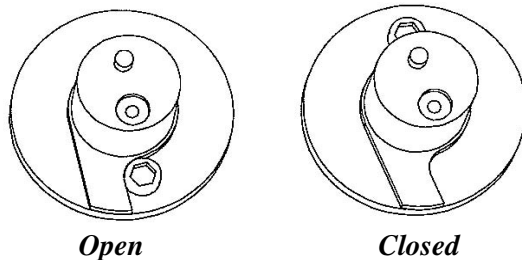
1. Attach the connector nut, O-rings, ferrule, and seal to the sample tube as shown in the following illustration.



Samples that may react to air should be loaded into the sample tube in an inert atmosphere. A glove box filled with argon or helium is recommended.

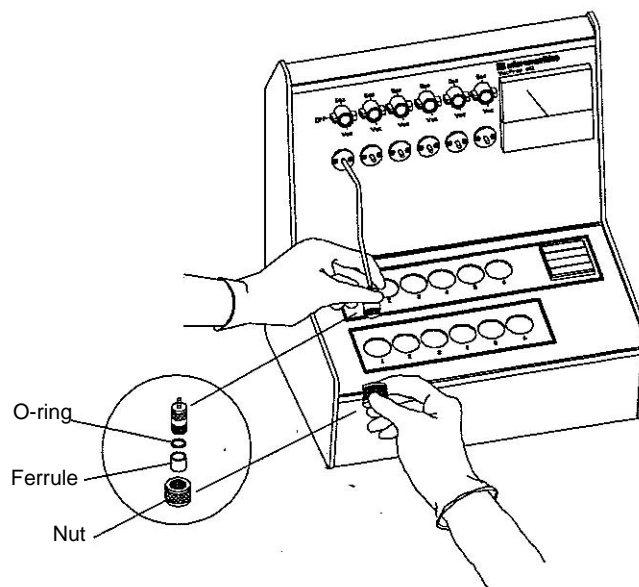
2. Tighten the connector nut.

3. Place the PrepSeal in the open position.



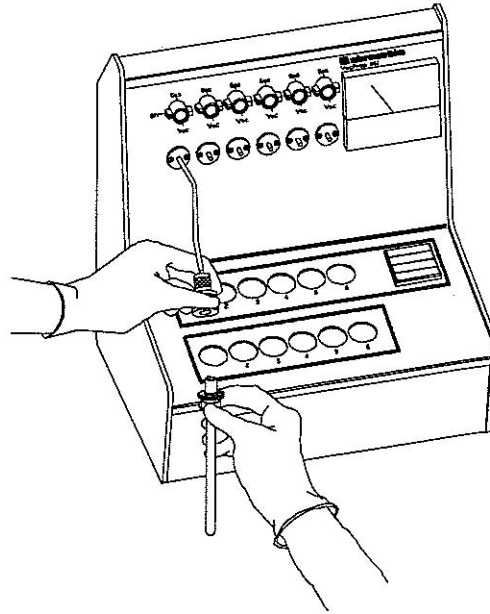
4. Choose one of the following:

- For vacuum preparation on the VacPrep:
 - a. Remove the nut from the VacPrep connector, then remove the 3/8-in. O-ring and 3/8-in. ferrule.



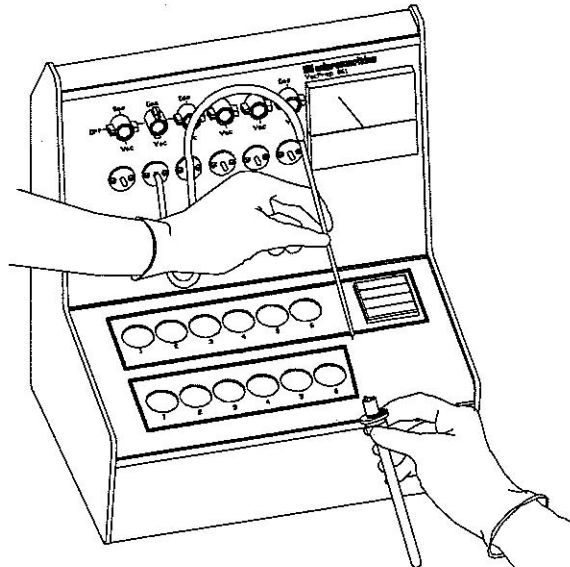
- a.
 - b. Attach the 1/2-in. O-ring and 1/2-in. ferrule that are included in the VacPrep kit to the connector and tighten the connector nut.

- c. Attach the sample tube to the connector on the vacuum tube by turning the vacuum tube connector nut clockwise to tighten.

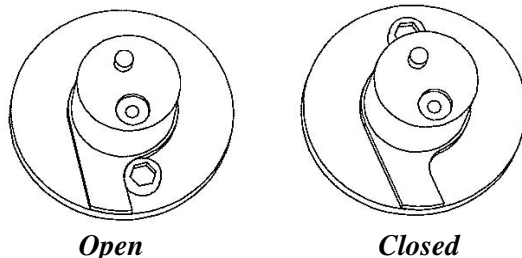


- For flowing preparation on the VacPrep, FlowPrep, or SmartPrep:

Insert the gas delivery tube into the sample tube through the hole in the PrepSeal as shown below.



5. Make sure the PrepSeal is in the open position.



6. Degas the sample following the procedures in the VacPrep, FlowPrep, or SmartPrep manual.
7. When degas is complete, choose one of the following:

- For vacuum preparation:

Close the PrepSeal, then backfill the flexible tubing with gas. Remove the PrepSeal (with sample tube attached) from the VacPrep fitting.



When using the vacuum method, 15 to 30 minutes is the recommended maximum time for the sample to remain under vacuum after closing the PrepSeal. If you must wait longer than 30 minutes, the sample should be backfilled with a non-adsorbing gas.

- For flowing gas preparation:

Remove the gas delivery tube, with gas still flowing. Close the PrepSeal as soon as the gas delivery tube is removed from the PrepSeal. Turn off the gas flow.

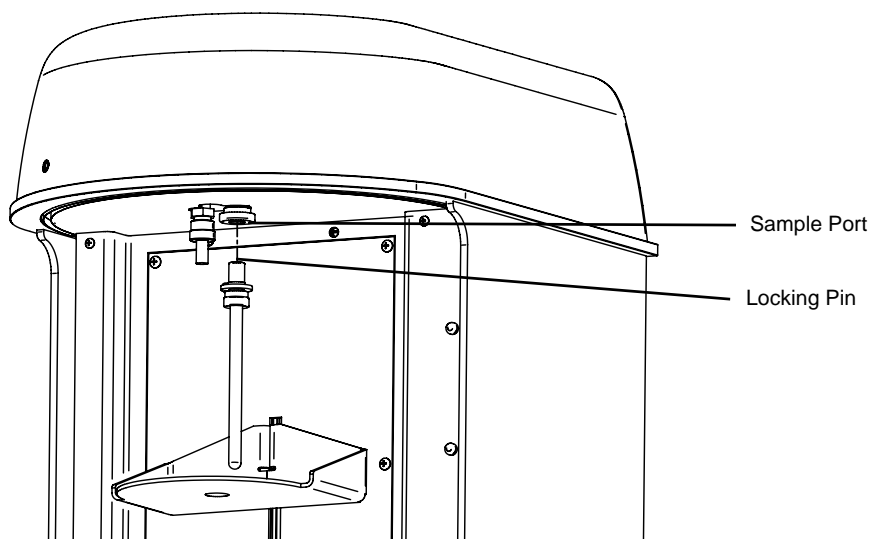
Attaching Sample Tubes to the Sample and Balance Ports



The PrepSeal must be used on both the sample and balance tubes. The PrepSeal on the balance tube must remain open at all times.

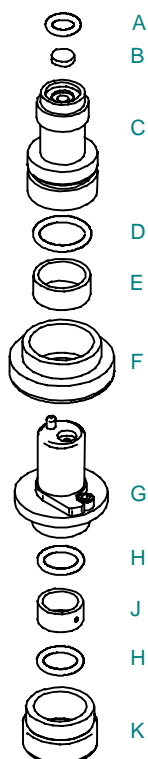
After degassing a sample, make sure the PrepSeal is in the closed position, then attach it to the sample port of the Gemini as described below.

1. Insert the top of the PrepSeal into the port connector making sure that the locking pin fits in one of the four holes in the port connector.



2. Turn the port connector nut clockwise to tighten the connection while gently pushing upward on the PrepSeal to ensure it is fully seated.
3. If a sample tube containing a PrepSeal is not already present on the balance port, repeat steps 1 and 2 to install one on the balance port.
4. Begin the analysis (refer to the Gemini VII Operator's Manual). Before selecting the **Start** command, open the PrepSeal.
5. Close the analysis compartment door.
6. When the analysis is complete, close the PrepSeal, then remove the sample tube from the sample port.

Ordering Information



| Part Number | Description |
|--------------------------------|--|
| 004-25466-00 A | O-ring for sample or balance port frit (size 010) |
| 004-27024-00 B 004-27046-00 | Balance port frit, 2- μm Sample port frit, 40- μm |
| 004-25469-00 D | O-ring for port connector (size 014) |
| 236-25854-00 E | Ferrule for port connector |
| 236-25853-00 F | Nut for port connector |
| 004-25022-00 H | O-ring for PrepSeal (size 012) |
| 236-25858-00 J | Ferrule for PrepSeal |
| 236-25857-00 K | Nut for PrepSeal |
| 239-34013-00 C, D, E, F | Port connector set: connector, ferrule, o-ring, and connector nut |
| 236-34014-00 G, H, J, H, K | PrepSeal set: seal, ferrule, two O-rings, and PrepSeal nut |
| 236-09804-00 | Installation tool for port connector |
| 236-09805-00 | Wrench, 11/16 in. |