TRANSEAL™

micromeritics®

INSTRUCTIONS

350-42803-00
Feb 2023
(Rev D)

micromeritics®

TRADEMARKS

Micromeritics is a registered trademark of Micromeritics Instrument Corporation.
TranSeal is a trademark of Micromeritics Instrument Corporation.

Copyright

The software described in this manual is furnished under a license agreement and may be used or copied only in accordance with the terms of the agreement.

CORPORATE PROFILE

Micromeritics Instrument Corporation is the world's leading supplier of high-performance systems to characterize particles, powders and porous materials with a focus on physical properties, chemical activity, and flow properties. Our technology portfolio includes: pycnometry, adsorption, dynamic chemisorption, particle size, intrusion porosimetry, powder rheology, and activity testing of catalysts. The company has R&D and manufacturing sites in the USA, UK, and Spain, and direct sales and service operations throughout the Americas, Europe, and Asia. Micromeritics systems are the instruments-of-choice in more than 10,000 laboratories of the world's most innovative companies and prestigious government and academic institutions. Our world-class scientists and responsive support teams enable customer success by applying Micromeritics technology to the most demanding applications. For more information, please visit www.micromeritics.com.

micromeritics®

CONTACT US

Micromeritics Instrument Corporation
4356 Communications Drive
Norcross, GA 30093-2901 USA
Phone: 1-770-662-3636
www.Micromeritics.com

Instrument Service or Repair
Phone: 1-770-662-3636
International: Contact your local distributor or call 1-770-662-3636
Service.Helpdesk@Micromeritics.com

Micromeritics Application Support
Support@Micromeritics.com

TRANSEAL INSTRUCTIONS

The TranSeal enables the transfer of a sample under vacuum from a preparation station to the analysis port of the analyzer. Its leak (permeation) rate against atmospheric pressure is better than 1.6×10^{-3} Std cm^3/hr. Both styles may be used with 1/2 in. or 12 mm sample tubes.

The instructions below apply to both styles of the TranSeal.

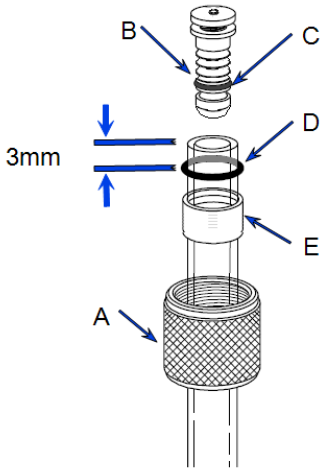
There are currently two styles of TranSeal, the difference being the number of O-ring grooves. Style 1 has five O-ring grooves and Style 2 has three O-ring grooves.

Both styles can be disassembled for cleaning. HOW? SEE OTHER DOCUMENT SENT.

Plunger screw tightness should be checked before use. WHERE DOES THIS INFO NEED TO BE ADDED?

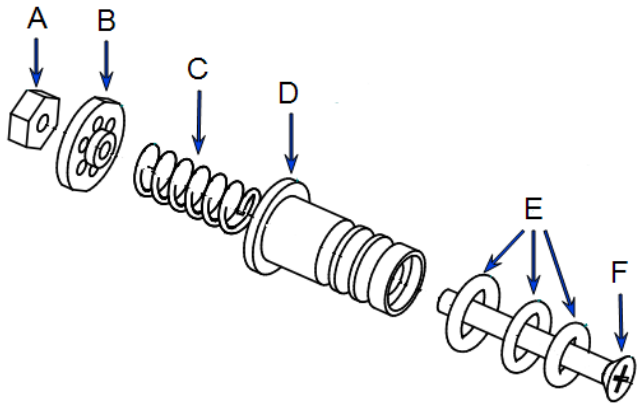
We should have an illustration or photo showing the difference in appearance of the fully assembled TranSeal styles. The other illustrations can show just one style. NEED 2 PHOTOS SHOWING EACH STYLE FULLY ASSEMBLED.

STYLE 1



A. Retaining nut
B. TranSeal assembly
C. O-ring (adjustable to 5 positions)
D. Sample tube O-ring
E. Ferrule

STYLE 2



A. Hex nut
B. Cap
C. Spring
D. TranSeal body
E. O-rings
F. Screw

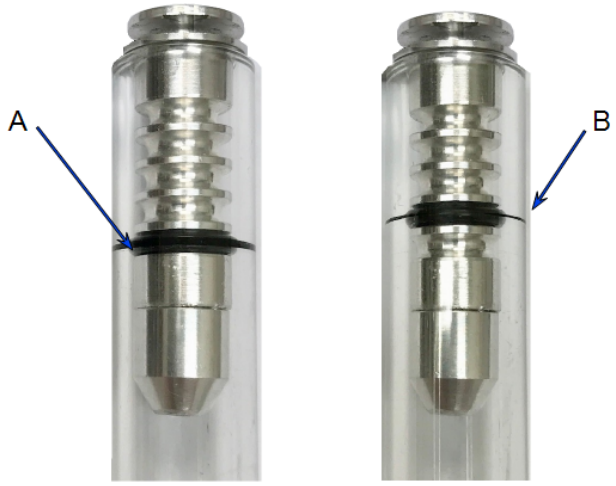
INSTALL THE TRANSEAL IN THE SAMPLE TUBE

1. Place the sample into the sample tube.
2. Install the sample tube O-ring and other components in the orientation shown, then insert the TranSeal into the sample tube.

   The TranSeal O-ring can be shifted into one of the grooves to provide a tight seal regardless of small variations on the inside diameter of the sample tube. The top position is the loosest.

   - 12 mm OD sample tube: Use the brown O-ring (comes installed on the TranSeal assembly).
   - 1/2 in. OD sample tube: Remove the brown O-ring and install the black one.

3. Place the sample tube O-ring approximately 3 mm below the top of the sample tube, as shown. It is important to have a good seal between the glass and the TranSeal to ensure that the vacuum inside the sample tube is maintained, as shown below.

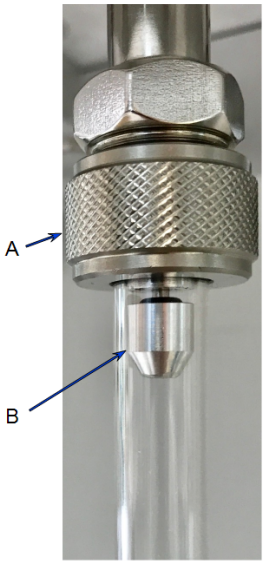


A. Good contact between O-ring and sample tube
B. Poor contact between O-ring and sample tube

INSTALL THE SAMPLE TUBE

PREPARATION STATION

1. Seat the sample tube firmly into the attachment port.
2. Securely tighten the retaining nut. The sealing plunger of the TranSeal should clearly protrude into the sample tube, showing the TranSeal is open. If it is not, loosen the retaining nut and push harder on the sample tube, then re-tighten the retaining nut.



A. Retaining nut
B. Protruded plunger indicates TranSeal is open

3. When removing a TranSeal with the sample under vacuum, first loosen the nut only as much as needed to allow the tube to be pulled down with firm pressure. Initially as the tube is pulled down, the visible lower portion of the TranSeal will remain stationary while the upper portion moves down with the tube, closing the O-ring seal between the upper and lower portions of the TranSeal.

4. Continue pulling down until the lower portion begins to move as well. Pull down until the lower portion has lowered 1 to 2 mm. Then retighten the nut and verify the tube does not rise back up due to the pull of the vacuum.

5. When it is secure, backfill the sample port to atmospheric pressure and then remove the tube.

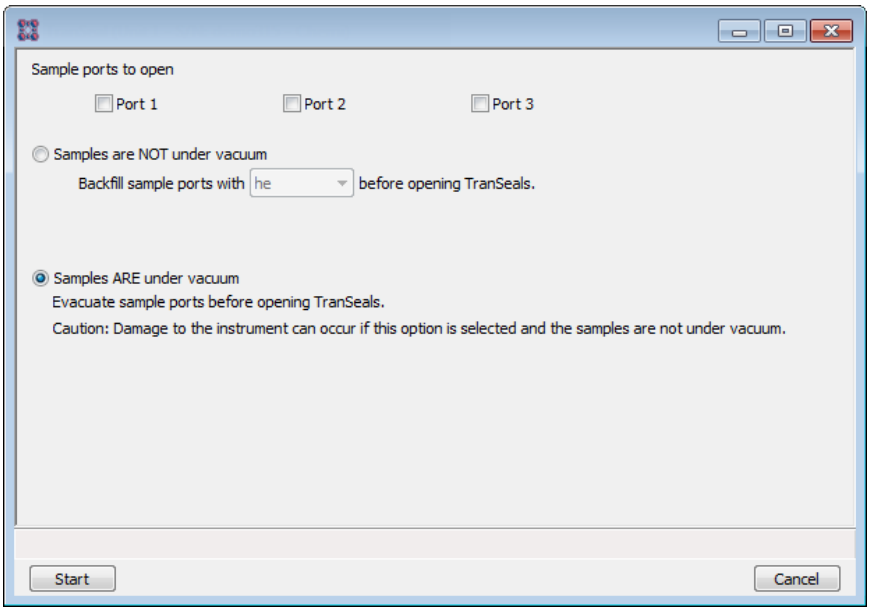
SAMPLE PORT

1. When installing a sample tube containing sample under vacuum and with a TranSeal installed on the tube, place the nut, ferrule, and O-ring over the tube taking care not to disturb the TranSeal. (If not already installed, the isothermal jacket must be slid onto the sample tube before the nut, ferrule, and O-ring.)
2. Position the O-ring on the tube approximately 3 mm below the top edge of the glass tube, not lower than that. Carefully insert the top of the tube into the port without disturbing the TranSeal, but only raise it enough for the O-ring to make contact with the inside of the port fitting.
3. Raise the nut and ferrule and begin tightening the nut. As the nut is tightened, the ferrule will push the O-ring up into the port fitting, raising the sample tube.
4. Ensure the nut is tightened firmly so that the tube will not be pulled further up into the port during evacuation, which could break the vacuum seal and contaminate the sample.

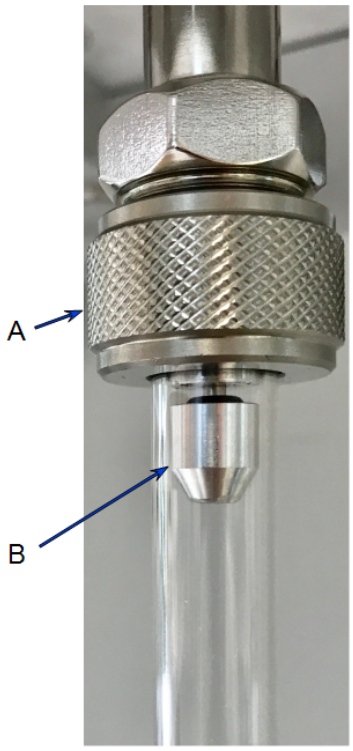
START THE ANALYSIS

FLEX ANALYZER USING THE 12 MM SAMPLE TUBE

1. Go to ***Unit [n] > Open TranSeal***.



2. Select the applicable ports and the *Samples ARE under vacuum* option. Click **Start**. After the ports are evacuated, a window displays to insert the tubes fully into the ports.
3. Slightly loosen the sample port nut and then push up on the sample tube until the plunger of the TranSeal is visible and shows a gap of about 1mm as shown below.



A. Retaining nut
B. Protruded plunger indicates TranSeal is open

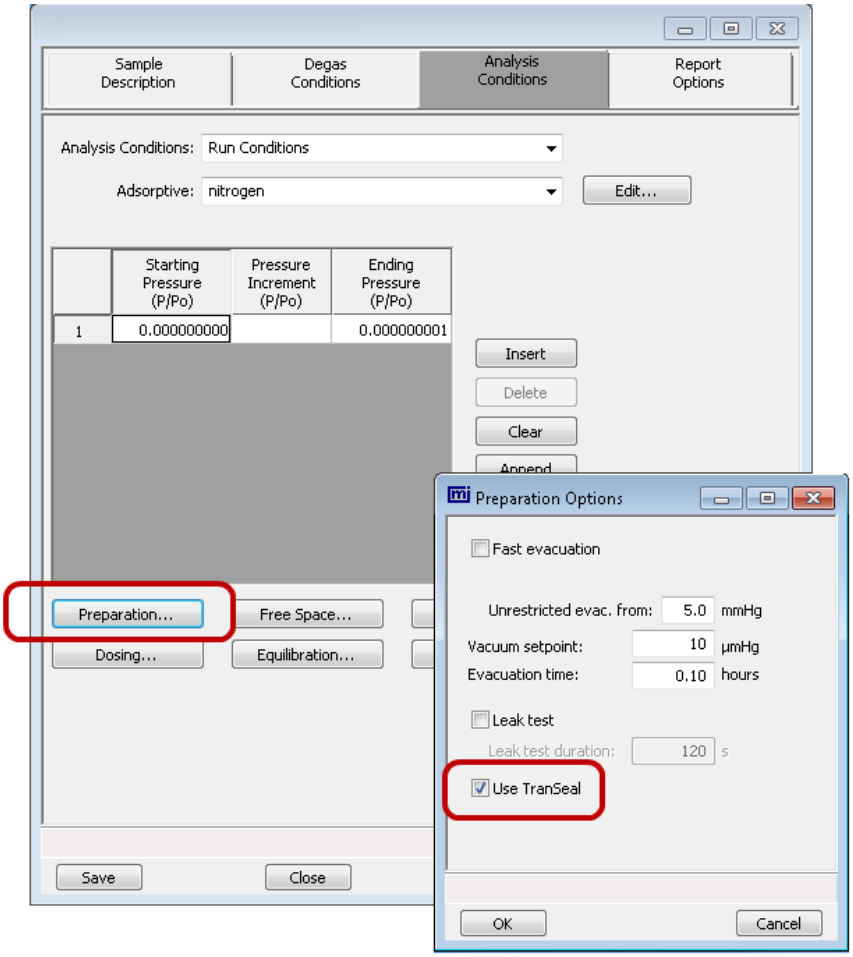
4. Click **Next**, then click **Finish** to close the TranSeal window.

For record-keeping purposes, access the sample tube file for each sample file to be used in the analyses and select *TranSeal* as the Vacuum seal type.

5. Go to ***Unit [n] > Sample Analysis***. Click **Browse** for each port to be used and select the appropriate files. Click **Start** to begin the analyses.

Gas Adsorption Analyzers using the 1/2 in. Sample Tube

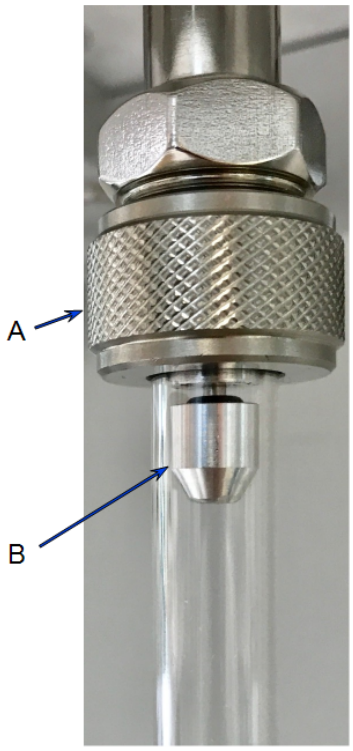
1. Open the sample file(s) to be used for analysis. Ensure the file is in *Advanced* option presentation.
2. Select the *Analysis Conditions* tab.
3. Click **Preparation**.
4. Select the *Use TranSeal* option.



5. Click **OK** then click **Save**.

The *Use TranSeal* option is also located on some of the *Sample Tube* windows. Select the option on either window; both instances do not need to be selected.

6. Go to ***Unit [n] > Sample Analysis***. Click **Browse** for each port to be used and select the appropriate files.
7. Click **Start** to begin the analyses. The analyzer automatically evacuates the system. After a sufficient vacuum is achieved, a message displays to open the TranSeal.
8. Slightly loosen the sample port nut and then push up on the sample tube until the plunger of the TranSeal is visible and shows a gap of about 1 mm as shown below.



A. Retaining nut
B. Protruded plunger indicates TranSeal is open

9. Click **Next** to continue the analysis.

WEIGHING CONSIDERATIONS

The sample may be weighed either after degas or analysis.

- **After degas** — the empty tube weight must be based on an evacuated sample tube with the same TranSeal installed.
- **After analysis** — the empty tube weight must be based on the sample tube and TranSeal back-filled at the same pressure, and with the same gas that is in the sample tube after analysis.

ORDERING INFORMATION

Order system components and accessories using one of the following methods:

- Call our Customer Service Department at 1-770-662-3636
- Email orders to Orders@Micromeritics.com
- Contact your local sales representative

Are these part numbers correct and is the list complete?

Part Number	Item and Description
004-25079-12	O-ring, 5.5mm × 1.5mm, 50 Durometer Buna-N
004-25466-05	O-ring, size -010, 50 Durometer Buna-N
350-25865-00	TranSeal assembly plus one slightly larger O-ring to accomodate glass variability
350-33608-00	TranSeal Kit includes three TranSeal assemblies, three slightly larger o-rings to accomodate glass variability, and installation instructions