Transfer Shuttle for Air-sensitive Specimens

User Manual

This transfer shuttle is designed to transport air-sensitive specimens from an inert-gas environment, such as a glove box, into the vacuum chamber of a characterization instrument, such as a scanning electron microscope. Air-sensitive samples are protected by an air-free environment in the shuttle, which opens automatically once inside the instrument. This effectively protects the specimen, and allows accurate and precise measurements. The air-free environment is generated conveniently with a hand pump through the check-valve on the shuttle's exterior. Four types of specimen holders are available, accommodating a wide range of specimen types.

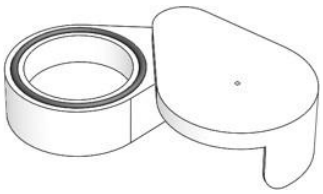
WARNING

Before use, ensure that no part of the instrument chamber is at risk of coming into contact with the shuttle when both fully closed or fully open. Failure to do so may cause damage to the characterization instrument.

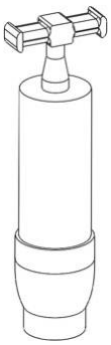
This product contains the following six items:

1.	Transfer Shuttle	x1
2.	Vacuum-Hand Pump	x1
3.	Specimen Holders	
a.	1 mm Flat Holder	x1
b.	2 mm Flat Holder	x1
c.	45° Holder	x1
d.	90° Holder	x1

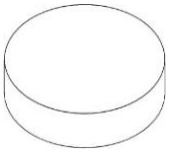
1. x1



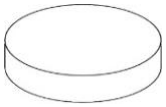
2. x1



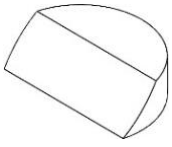
3a. x1



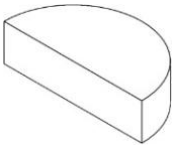
3b. x1



3c. x1

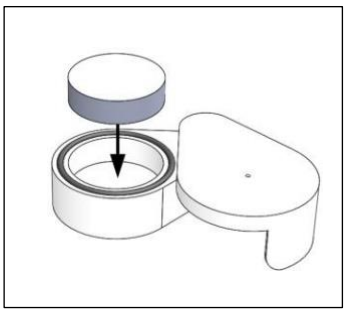


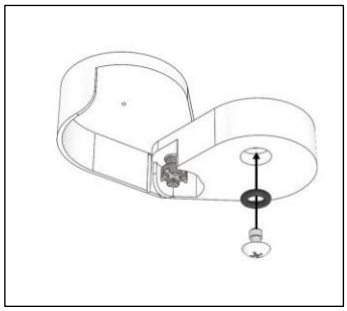
3d. x1



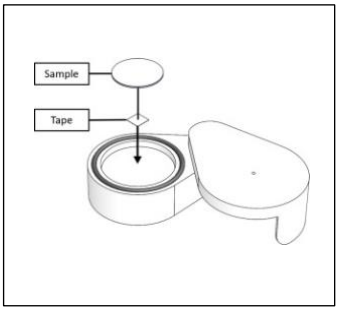
Operating Instructions

1. Install Specimen Holder: Based on the specimen geometry and characterization requirements, select the appropriate specimen holder and insert into the shuttle, aligning the screw thread with the hole at the bottom of the shuttle. Ensure that the rubber O-ring is in place between the screw and the bottom of shuttle, and secure the holder by tightening the screw.

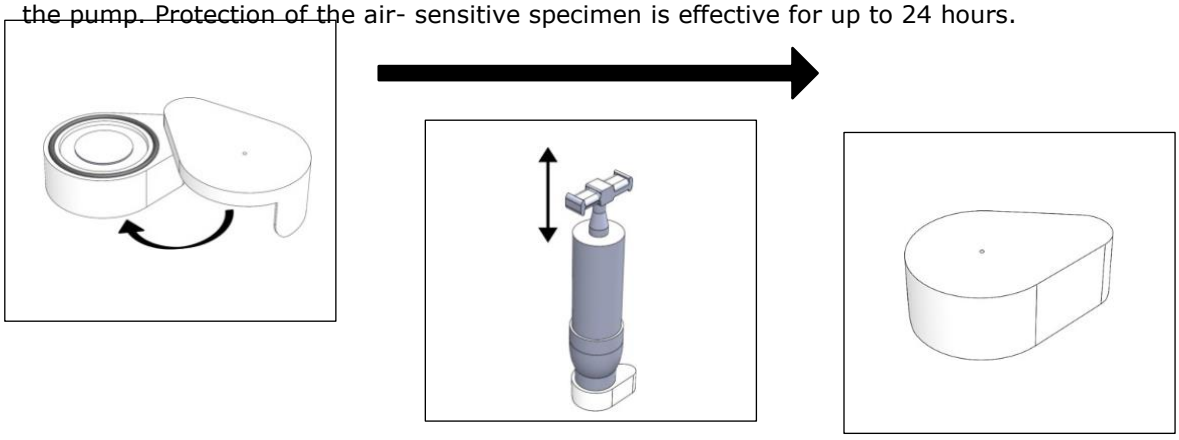




2. Specimen Preparation: Place the specimen onto the holder, and secure using any tape of choice.

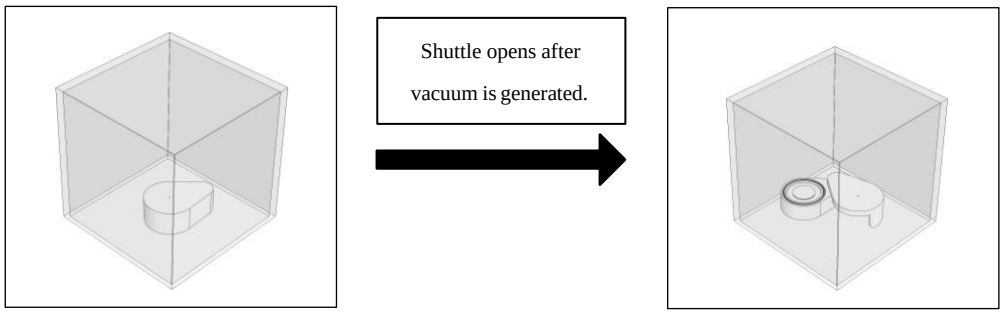


3. Shuttle Sealing: Rotate the lid of the shuttle until it is closed. Align the hand pump with the check valve on the lid of the shuttle, and operate the pump while applying downward pressure onto the lid. A mild vacuum is generated within the shuttle after a few strokes of the pump. Protection of the air- sensitive specimen is effective for up to 24 hours.



Warning: The shuttle will automatically open when exposed to a vacuum environment. To avoid unintended opening, do not expose the shuttle to such environments after this step.

Specimen Transport: Place the shuttle into the vacuum chamber intended characterization instrument. The shuttle automatically opens once a vacuum is generated in the chamber, **and the specimen is ready for**



Technical information:
Dimensions: 16.3mm (h), 46.6mm (l), 32.2mm (w, shut), 63.7mm (w, open)
Weight: 40grams
Material: Aluminum, Clear anodized
Vacuum level (shuttle lid open): 20kPa (150 torr)