ORTEC®

ICS™ Stand II

User Manual

ORTEC® Part No. 1108265
Manual Revision B, ORT-X4548

Advanced Measurement Technology, Inc.
a/k/a/ ORTEC®, a subsidiary of AMETEK®, Inc.

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Quality Control

Before being approved for shipment, each ORTEC instrument must pass a stringent set of quality control tests designed to expose any flaws in materials or workmanship. Permanent records of these tests are maintained for use in warranty repair and as a source of statistical information for design improvements.

Repair Service

If it becomes necessary to return this instrument for repair, it is essential that Customer Services be contacted in advance of its return so that a Return Authorization Number can be assigned to the unit. Also, ORTEC must be informed, either in writing, by telephone [(865) 482-4411] or by facsimile transmission [(865) 483-2133], of the nature of the fault of the instrument being returned and of the model, serial, and revision ("Rev" on rear panel) numbers. Failure to do so may cause unnecessary delays in getting the unit repaired. The ORTEC standard procedure requires that instruments returned for repair pass the same quality control tests that are used for new-production instruments. Instruments that are returned should be packed so that they will withstand normal transit handling and must be shipped PREPAID via Air Parcel Post or United Parcel Service to the designated ORTEC repair center. The address label and the package should include the Return Authorization Number assigned. Instruments being returned that are damaged in transit due to inadequate packing will be repaired at the sender's expense, and it will be the sender's responsibility to make claim with the shipper. Instruments not in warranty should follow the same procedure and ORTEC will provide a quotation.

Damage in Transit

Shipments should be examined immediately upon receipt for evidence of external or concealed damage. The carrier making delivery should be notified immediately of any such damage, since the carrier is normally liable for damage in shipment. Packing materials, waybills, and other such documentation should be preserved in order to establish claims. After such notification to the carrier, please notify ORTEC of the circumstances so that assistance can be provided in making damage claims and in providing replacement equipment, if necessary.

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SAFETY INSTRUCTIONS AND SYMBOLS

This manual contains up to three levels of safety instructions that must be observed in order to avoid personal injury and/or damage to equipment or other property. These are:

DANGER Indicates a hazard that could result in death or serious bodily harm if the safety instruction is not observed.

WARNING Indicates a hazard that could result in bodily harm if the safety instruction is not observed.

CAUTION Indicates a hazard that could result in property damage if the safety instruction is not observed.

Please read all safety instructions carefully and make sure you understand them fully before attempting to use this product.

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ICS™ Stand Manual

1. INTRODUCTION

The ICS Stand is designed to operate only with the Integrated Cryocooling System (ICS). This stand is designed to support the ICS in the vertical orientation and is useful for mounting the ICS under standard lead shields.

For a standard 10cm (4 inch) thick lead shield, the ICS detector package is installed from the bottom of the shield. This is different than a regular dewar cooled detector that is installed in the shield from the top. Therefore, before installing the ICS detector and ICS, you must ensure that the detector endcap and metal seals will easily fit through the shield's opening from the bottom.

To decrease background streaming into the shield, the cooling rod neck length of the ICS (reference the "LL" dimension in the ICS brochure) must be at least 10cm (4 inches) long and optional custom split plugs may be needed.

For cooling rod neck lengths greater than 10cm (4 inches), the shield table may need to be raised or the ICS Stand may require tilting when positioning under the shield table.

1.1. SPECIFICATIONS[1]

1.1.1. Performance

- **Maintenance** The ICS Stand doesn't require periodic maintenance. Consult the detector and ICS manuals for regular maintenance of the HPGe detector and the cryocooler.

1.1.2. Mechanical

- **Stand Weight** 26lbs.
- **Maximum load** 100lbs. The ICS Stand is designed to support the weight of any ICS configured HPGe detector. It can also support the additional weight of the shield's lead plugs which can be positioned on top of the ICS Stand up to a combined total of 100lbs.
- **Operating Temperature and Humidity** None specified for the ICS Stand, however, please consult the ICS brochure for details on the ICS and associated detectors.

1.2. INSPECTION FOR SHIPPING DAMAGE

If the shipping carton(s) arrives with externally visible damage, ***do not unpack it***. Notify the carrier and make arrangements to file a damage claim. ***In all cases of shipping damage, it is the customer's responsibility to file a damage claim.***

If, during unpacking, you find concealed damage, *notify the carrier and file a claim*. Be sure to save all packing materials, waybills, and other such documentation to establish claims.

Contact our Global Service Center or your ORTEC representative for further instructions.

[1] All system components and specifications subject to change without notice.

1.3. CONTENTS OF THE SHIPPING CARTON

When you receive the ICS Stand, its shipping carton will contain the following components:

- The ICS Stand main assembly.
- User manual and documentation package.
- Pneumatic air pump (for units shipped after November 2015)

1.4. UPACKING THE ICS STAND

1) Unpack the ICS Stand and make sure the stand is empty of any packing materials.
2) As shipped from the factory, the ICS Stand is fully assembled and only requires mounting of the HPGe detector with the ICS.

1.5. THE ICS STAND



Figure 1 illustrates the main features of the ICS Stand (shown without the ICS and detector).

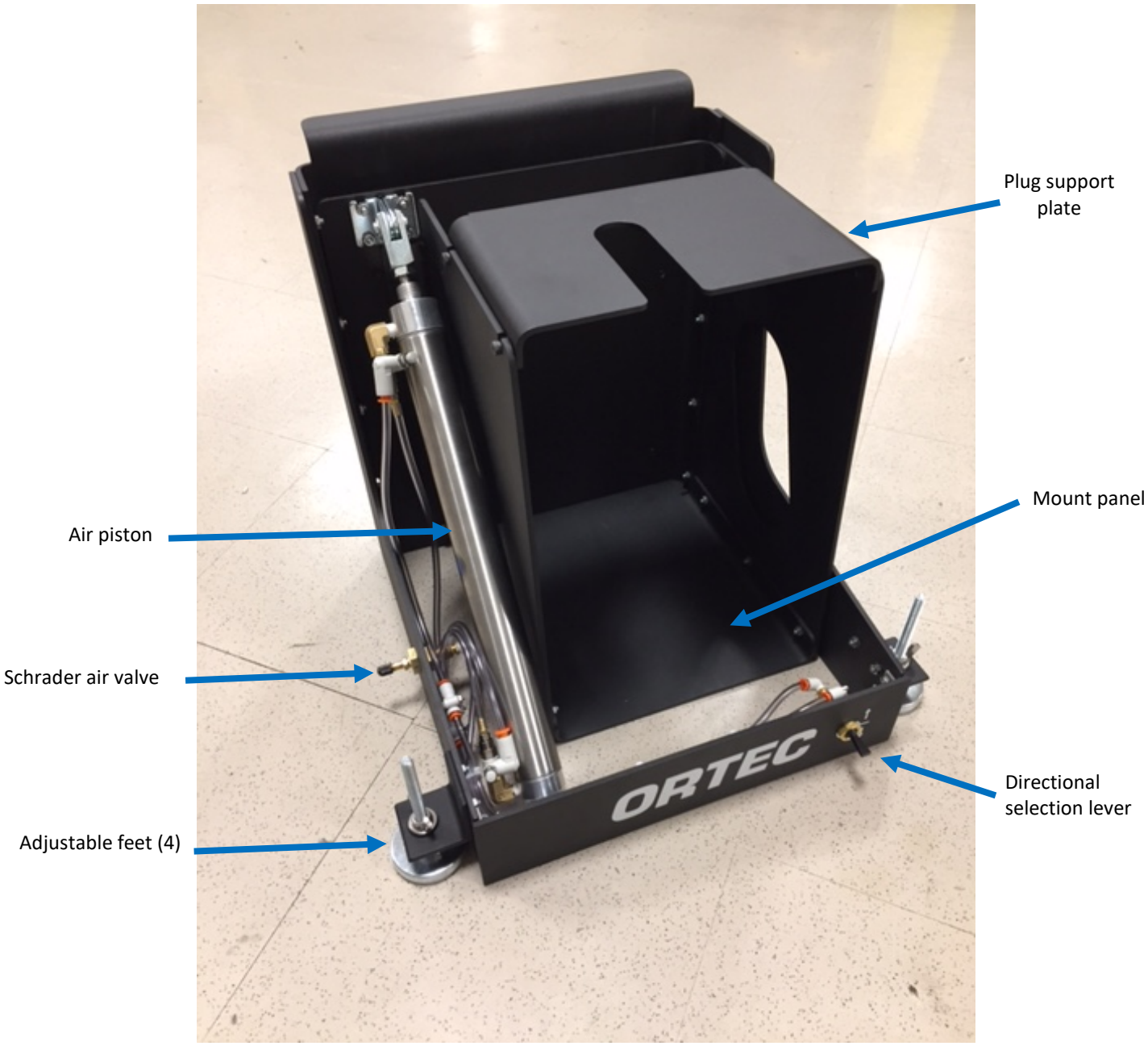


Figure 1. ICS Stand 2 fully compressed.

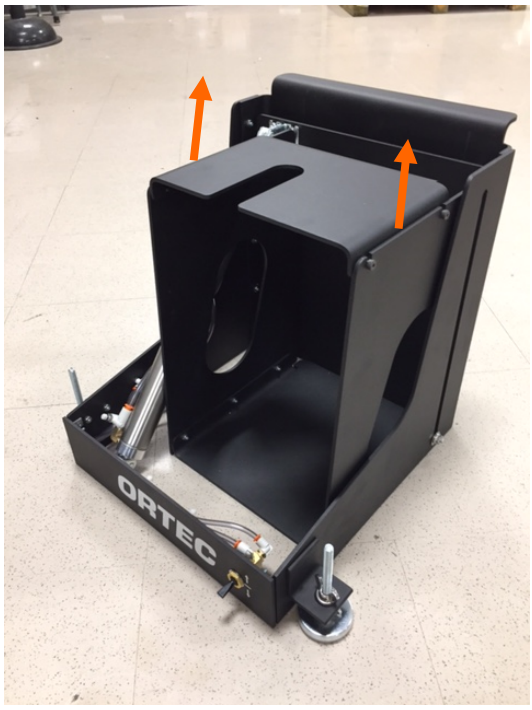
2. ICS INSTALLATION ONTO THE ICS STAND

Tools required:

- One hex wrench (included)
- One pneumatic air pump with a Schrader valve, such as a bicycle pump (included)

2.1. THE ICS AND ICS STAND ASSEMBLY

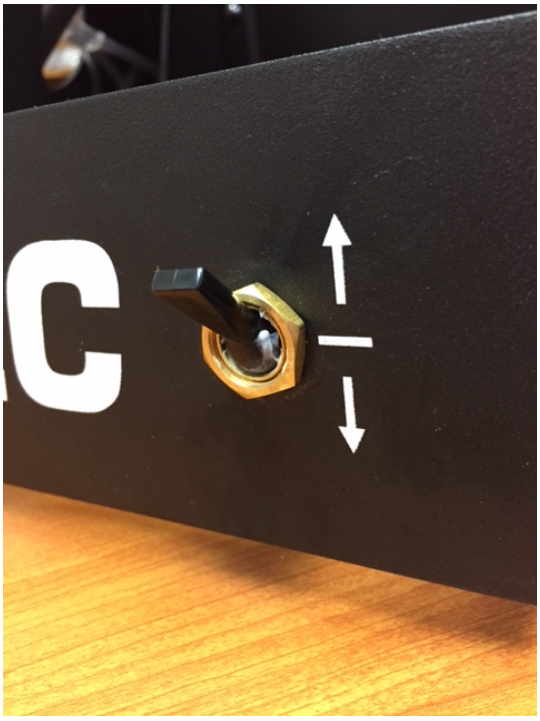
1) Remove the plug support plate by lifting the plate off the main bracket (no tools necessary).



2) Connect the air pump to the Schrader valve. Lift the lever to lock it in place.



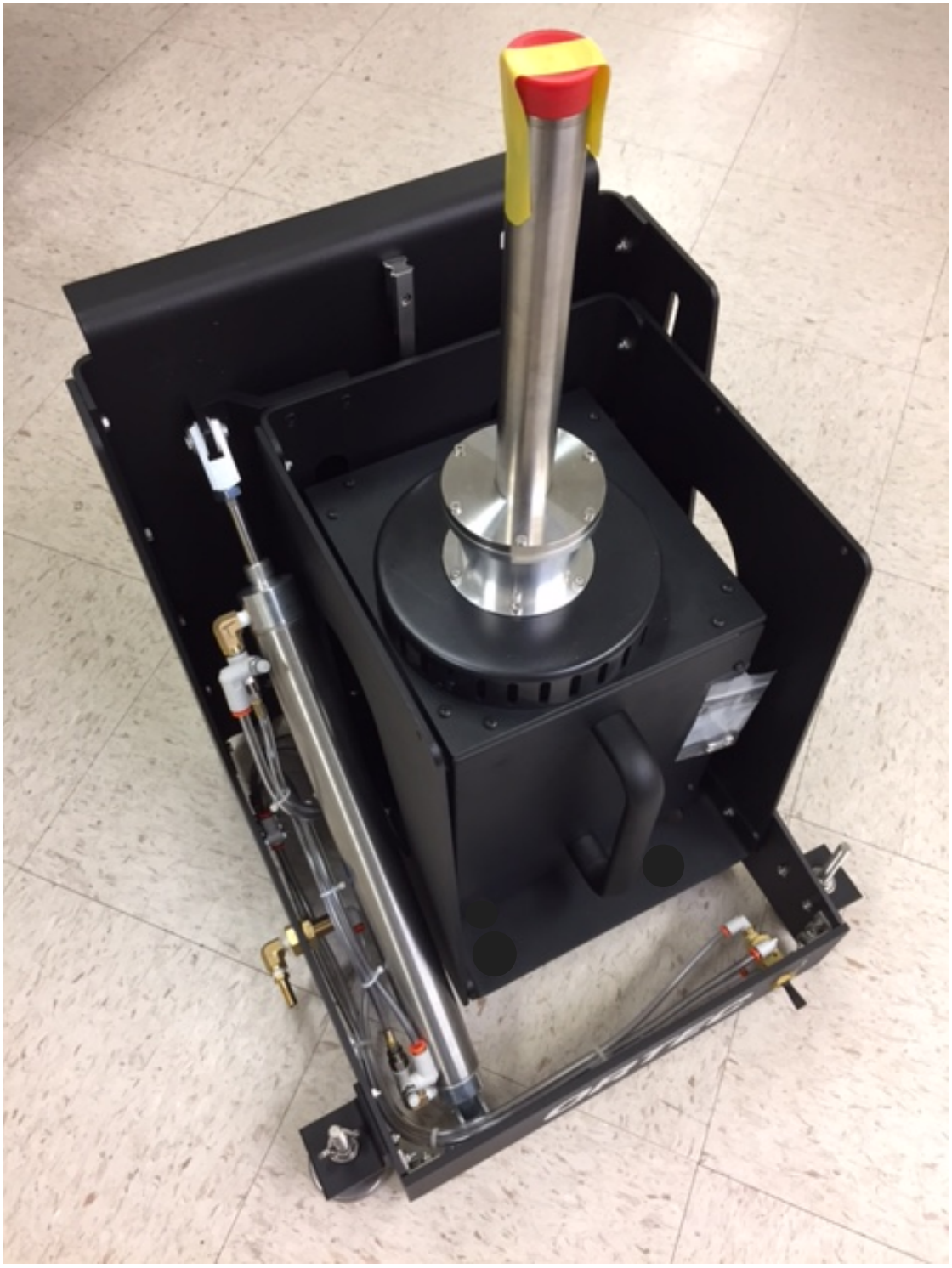
3) Flip the directional valve to the up position.



4) Use the air pump to raise the platform about 6 inches (150 mm).

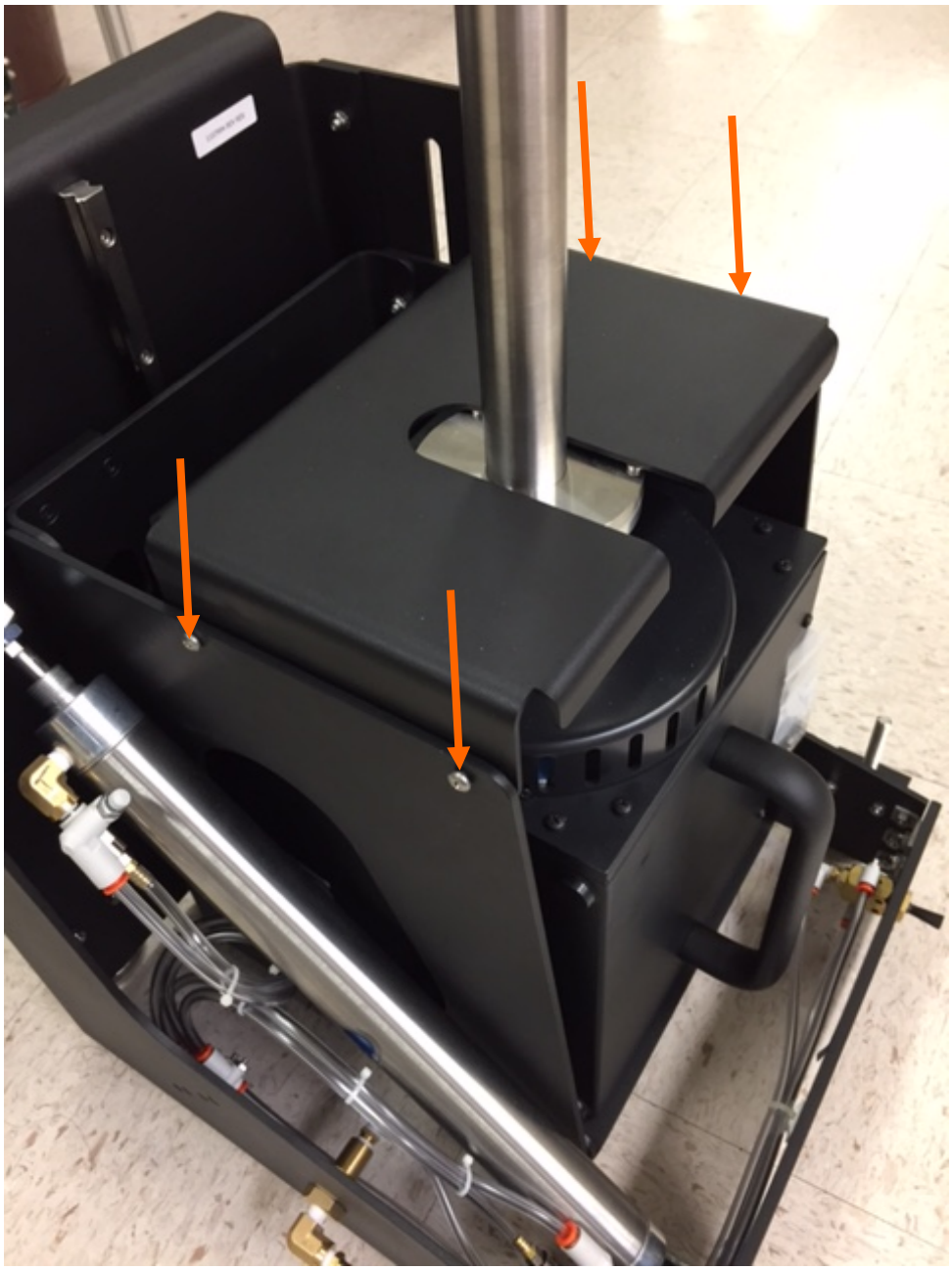


5) Place ICS on the platform. (ICS-P4 shown)



6) If a secondary plug is used in the shield installation, re-install the plug support plate. No tools are necessary. The plate slides into position. Installation of the plate is meant to be snug. If a secondary plug is not used, it is not necessary to reinstall the plug plate.

NOTE: The ICS and plug plate must be installed in the orientation shown. The handle(s) on the ICS should be facing out as shown.



3. INSTALLATION UNDER A TYPICAL 4” TOP LOADING LEAD SHIELD

3.1. Preparing the lead shield

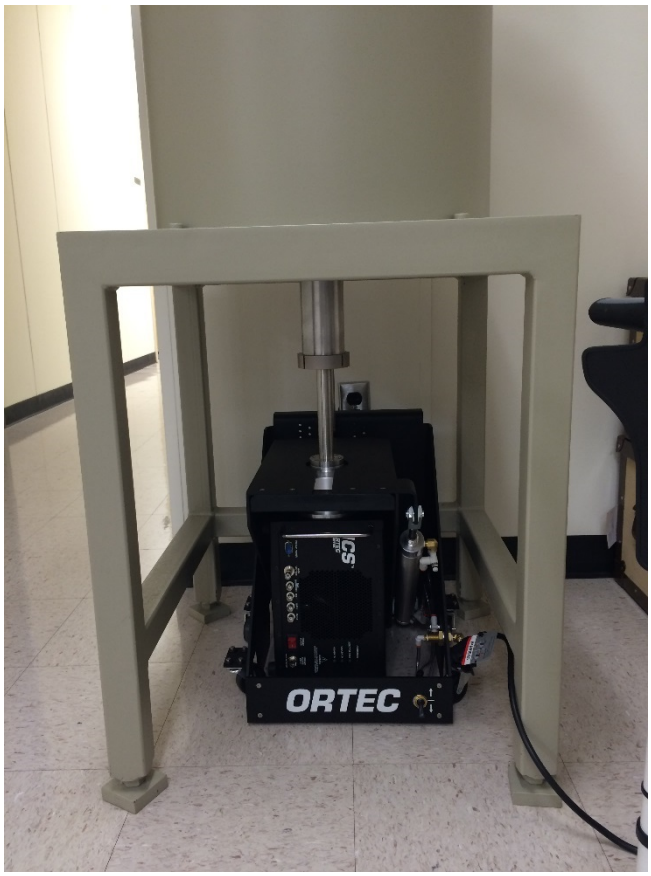
1) The installation is for a typical top loading, 4” lead shield.

2) Remove any shield plugs that may be installed so that there is a clear opening in the bottom of the shield large enough to easily accommodate the size of the detector capsule and endcap.

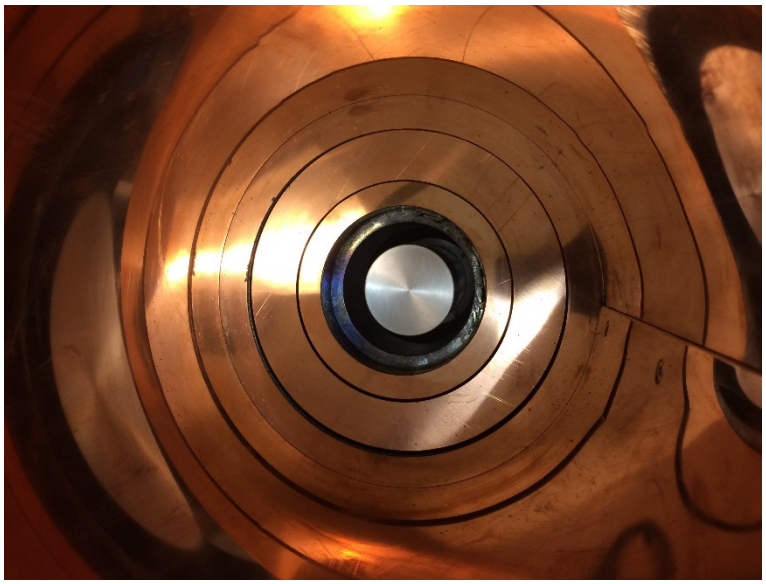
3) Verify the height of the shield bottom and/or lip of the shield stand and whether or not the ICS Stand in the fully lowered position will have sufficient clearance to roll underneath, or if there will be inference.

3.2. Positioning the ICS and ICS Stand with Adequate Shield Clearance

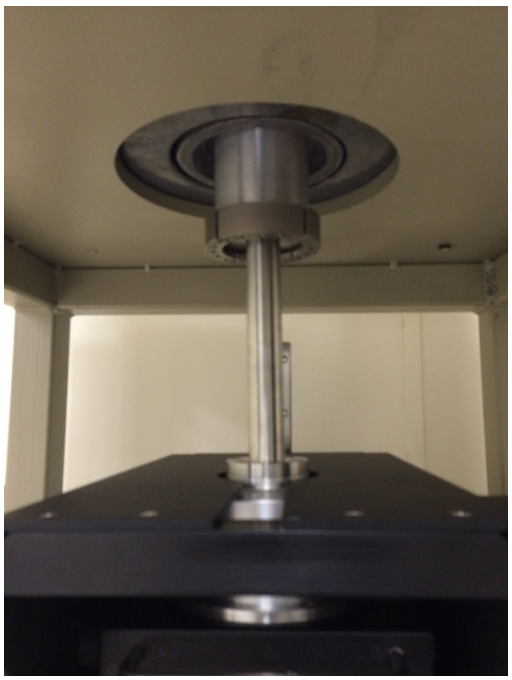
1) With the ICS Stand fully lowered, carefully slide the ICS underneath the lead shield. The adjustable feet can be used to level the instrument when it is in place.



2) Continue to adjust the position of the ICS Stand to align the detector capsule with the center of the access hole in the shield bottom.



3) Once centered, attach the pneumatic air pump, move the directional selection lever on the front of the ICS Stand to the UP (↑) position and slowly raise the ICS detector into the bottom opening of the lead shield.



4) Continue to raise the ICS detector until the proper position is reached. Disconnect the pneumatic air pump and move the directional selection lever to the LOCK (–) position.

CAUTION: The shield should not electrically contact the cryostat. Plastic sheeting or tape may be used to insulate.



5) Reinstall any shield plugs as necessary.

3.3. Positioning the ICS and ICS Stand with Inadequate Shield Clearance

CAUTION: This procedure requires careful handling and alignment to prevent possible damage to the detector. It is recommended to keep the protective cover on the endcap when installing. Additionally, this installation is NOT recommended for a single person, and multiple individuals should be present to assist.

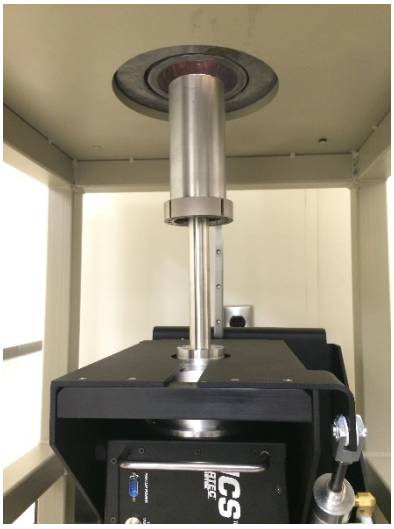
1) With the ICS Stand fully lowered, carefully roll the ICS assembly to the front of the lead shield.



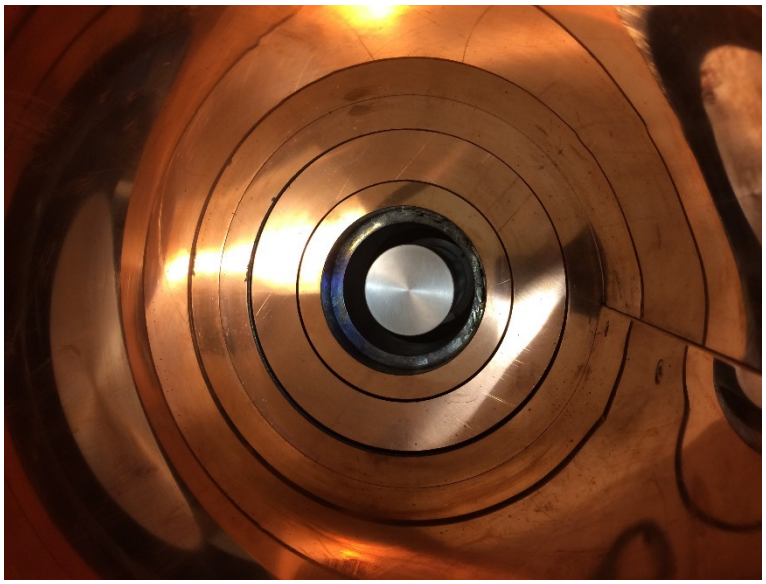
2) Carefully lift and tilt the ICS stand and ICS detector towards off the floor and towards its back as if to lay it on its back.

3) Now rotate the entire assembly underneath the shield while simultaneously aligning the detector endcap into the access hole in the bottom of the shield.

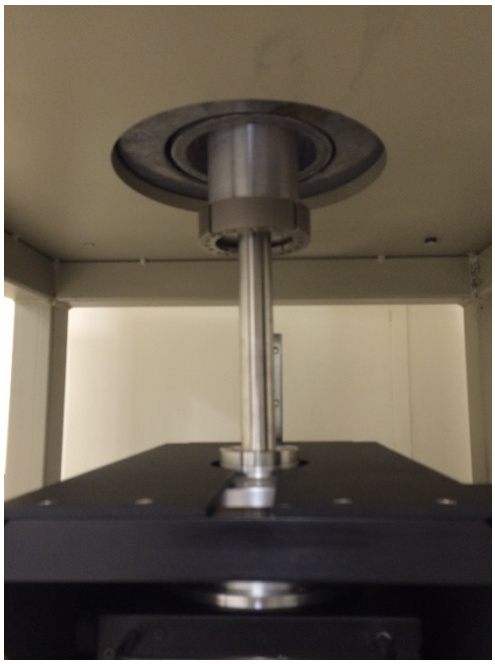
4) Once centered tilt the assembly upright so that the detector endcap is positioned through the bottom shield opening and the ICS assembly is resting on the floor.



5) If necessary, adjust the position of the ICS Stand to align the detector capsule with the center of the access hole in the shield bottom.



6) Once centered, attach the pneumatic air pump, move the directional selection lever on the front of the ICS Stand to the UP (↑) position and slowly raise the ICS detector into the bottom opening of the lead shield.



7) Continue to raise the ICS detector until the proper position is reached. Disconnect the pneumatic air pump and move the directional selection lever to the LOCK (–) position.

CAUTION: The shield should not electrically contact the cryostat. Plastic sheeting or tape may be used to insulate.



8) Reinstall any shield plugs as necessary.

4. LOCKING THE ICS STAND 2 IN POSITION.

This is done after the ICS is installed on the stand and the ICS Stand II is in its desired location in the shield. Using the hex wrench provided, torque the lock nut to a maximum of 130 in-lbs (15 N-m) to lock the stand in position.

