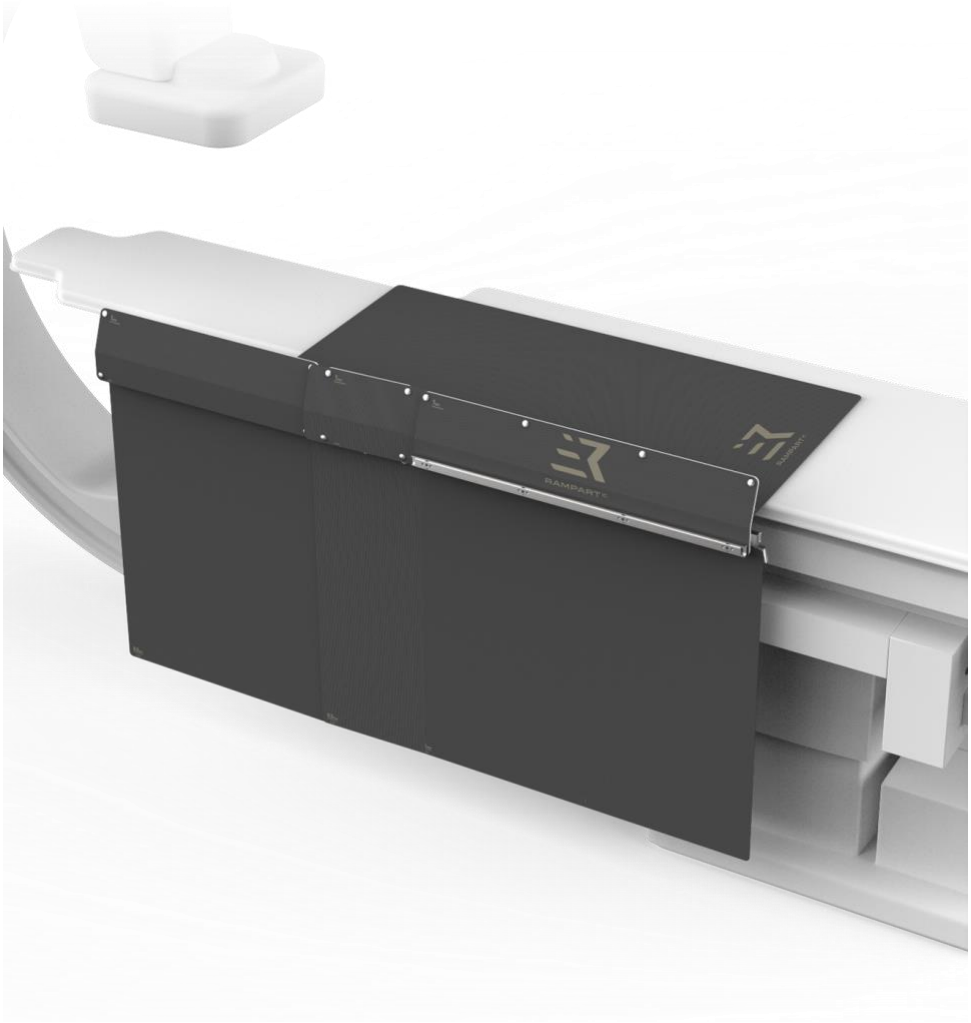
RAMPART IC



BUNKER L148-TMS® & SHADOW L148-MPS®

Table-Mounted & Multi-Purpose Shields User Guide

L148-UIG, Rev. D
LBL-085, Rev. D
Date of Issue: June 2025

This document should be stored with or within the immediate vicinity of the *Bunker L148-TMS or the Shadow L148-MPS* and the medical team using the unit.

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Within the bounds of legal requirements, the manufacturer is only responsible for the technical safety characteristics of this device if the maintenance, repairs, and modifications to this apparatus are performed by RampartIC or an approved RampartIC representative.

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Live Technical Support

Live technical support is available at (855) 236-3777 between the hours of 8 am to 5 pm Central Standard Time (CST), Monday through Friday. Phone calls received outside business hours will be returned as quickly as possible.

Training

A PDF version of this user guide is available at www.RampartIC.com/training.

This user guide includes assembly and instructions for use for the Bunker L148-Table-mounted Shield (TMS) System, and instructions for use for the Shadow L148-Multi-purpose Shield (MPS).

Bunker L148-TMS 45° Configuration

Bunker L148-TMS + Shadow L148-MPS

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Overview

Congratulations on your purchase of the Rampart® L148 TMS! Rampart^{IC} ensures your team is equipped with the latest, state-of-the art radiation protection equipment and has freedom of mobility during fluoroscopic procedures. We hope you will ***PROTECT THE TEAM™*** and ***SHED THE LEAD®*** associated with lead aprons as you ***FIGHT THE GOOD FIGHT®*** in the cath lab. We think ***YOU ARE WORTH IT™***.

This user guide provides guidance for the proper installation and use of the Rampart^{IC} Bunker L148-TMS and Shadow L148-MPS. Please read this document in its entirety, especially the warnings and caution statements identified throughout and summarized under *Safety & General Symbols* before use.

WARNING!

To reduce risk of injury to user(s) and patient(s), user(s) must read and understand this user guide and be trained prior to using the Bunker L148-TMS and Shadow L148-MPS.

Intended Use

The Rampart^{IC} Bunker L148-TMS and Shadow L148-MPS are protective table-mounted radiation shields intended to safeguard users from radiation exposure during fluoroscopic medical procedures.

Safety & Liability

Rampart^{IC} assumes no liability for the safe and reliable operation of the Bunker L148-TMS and Shadow L148-MPS where:

- Installation, modifications, or repairs are not performed by Rampart^{IC} technicians or people authorized by Rampart^{IC}.
- Authorized Rampart^{IC} replacement parts are not used.
- Authorized Rampart^{IC} sterility protection accessories are not used.
- The Bunker L148-TMS and Shadow L148-MPS have not been installed or set up for a procedure in accordance with the steps in this user guide.
- The Bunker L148-TMS and Shadow L148-MPS are not operated in accordance with steps in this user guide.
- The Bunker L148-TMS and Shadow L148-MPS are used in a manner other than the intended use as stated above.

Notice to Users: *Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.*

Safety & General Symbols

Please pay special attention to important safety information marked with **WARNING**, **CAUTION**, or **ATTENTION** keywords and symbols.

WARNING!

Indicates a potentially hazardous situation which could result in the *serious risk* of injury or death to the patient or operator, and/or damage to equipment or property.

- To reduce risk of injury to user(s) and patient(s), user(s) must carefully read and understand this user guide and be trained prior to using the Bunker L148-TMS and Shadow L148-MPS.
- Repairs must only be performed by Rampart^{IC} authorized personnel.
- The shielding of the Bunker L148-TMS and Shadow L148-MPS must not be altered in any way and must be used only as outlined in this user guide.

WARNING: MR-Unsafe

The Bunker L148-TMS and Shadow L148-MPS systems are MR-unsafe. MR-unsafe items should not be brought into MRI scanner rooms.

WARNING: Radiation Exposure

- According to the *Expert Consensus Document on Optimal Use of Ionizing Radiation in Cardiovascular Imaging*[1], proper radiation protection is in place when a minimum of 0.5 mm lead equivalency is placed between the radiation source and medical personnel. When used correctly, the Rampart^{IC} Bunker L148-TMS and Shadow L148-MPS provide lead equivalent radiation protection as follows: 1.0 mm lead equivalency for the abdominal shields, 0.5 mm lead equivalency for the lower curtains, and 0.5 mm lead equivalency for the multi-purpose shield.
- The shielding must be handled with care so that it is not damaged due to contact with other objects. If the abdominal shields, curtain panels, curtain bar assemblies, or the multi-purpose shield are damaged, they must be rechecked according to the *Maintenance and Care* section on page *27* of this user guide.

Explanation of Symbols

	Catalogue Number		Keep Dry
	Serial Number		Instructions for Use Found at www.RampartIC.com
	Quantity		Complies with Applicable European Union Regulations
	Batch Code		Prescription User or Licensed Healthcare Practitioner Use Only
	Manufacturer		Authorized Representative in the European Community/European Union

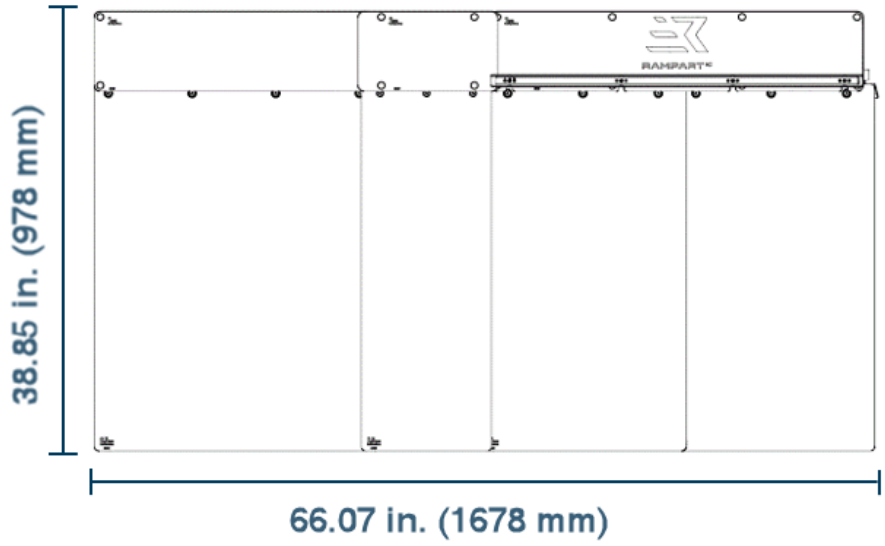
[1] J. W. Hirshfeld and V. A. Ferrari, "2018 ACC/HRS/NASCI/SCAI/SCCT Expert Consensus Document on Optimal Use of Ionizing Radiation in Cardiovascular Imaging: Best Practices for Safety and Effectiveness," 2018, http://www.onlinejacc.org/content/early/2018/04/30/j.jacc.2018.02.016 (accessed August 10, 2019).

Date of Manufacture	Do Not Use If Package is Damaged and Consult Instructions for Use Found at www.RampartIC.com
MD Medical Device	

Technical Specifications

Dimensions

After *Bunker L148-TMS Assembly* on page *18*, the maximum dimensions of the Bunker L148-TMS system are 38.85 in. (987 mm) tall by 66.07 in. (1678 mm) wide. The maximum weight of the fully assembled Bunker L148-TMS is 48 lbs. (21.55 kg). The maximum dimensions of the Shadow L148-MPS are 48.00 in. (1219 mm) long by 24.00 in. (610 mm) wide. The maximum weight of the Shadow L148-MPS is 10 lbs. (4.54 kg).



Operating Environment

The Bunker L148-TMS and Shadow L148-MPS are designed for indoor use and storage only and must not be subjected to weathering, UV light, or corrosive environments. The working environment defined for these devices is a clinical or hospital surgical suite with a working temperature range of 50°F (10°C) to 77°F (25°C) at 20% to 75% non-condensing humidity.

Conditions for Shipping and Storage

The Bunker L148-TMS and Shadow L148-MPS are carefully packaged to provide protection to the systems and their components during shipping. Care must be taken to ensure that, during shipment or storage, the system is kept between 14°F (-10°C) to 104°F (40°C).

Identification Tag

The identification tag for the Bunker L148-TMS can be found on the back of the large curtain bar assembly.

The identification tag for the Shadow L148-MPS can be found on the side of the shield opposite the Rampart^{IC} logo.

This identifies key information about your product that may need to be referenced during service calls:

- Product Name
- Reference Number
- Serial Number/Lot Number
- Bar Code/Data Matrix
- Manufacturer Name
- Manufacturer City, State and Zip
- Manufacturer Website
- Manufacturer Phone

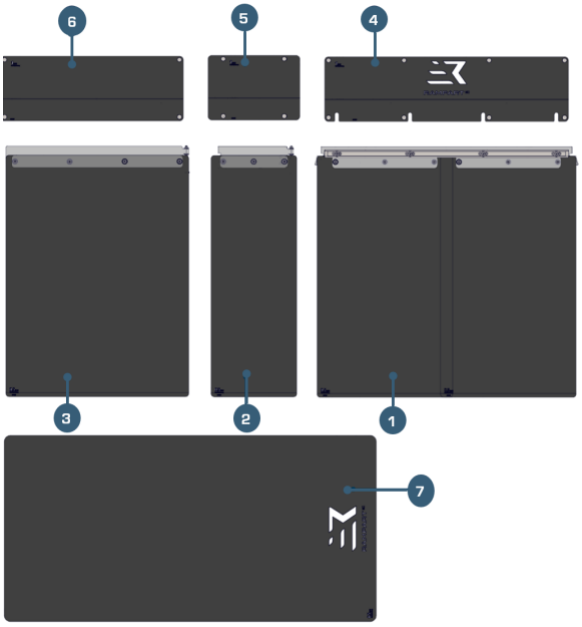
System Overview

The Bunker L148-TMS and Shadow L148-MPS are lead-free, protective radiation shields designed to provide lower body protection for users.

The Bunker L148-TMS is comprised of seven individual shields: four (4) soft-shielding curtains which provide 0.5 mm of lead equivalency and three (3) rigid abdominal shields which offer 1.0 mm of lead equivalency.

The Shadow L148-MPS is comprised of one (1) independent and repositionable 0.5 mm lead equivalent shield.

Bunker L148-TMS Components



1	**Large Curtain Bar Assembly:** The large curtain bar and its accompanying panels attach to the table's accessory rail and serve as the foundation for mounting the L148's other curtain bars and shielding. This assembly can easily be adapted for use on 7.7 mm, 9.0 mm, and 10.0 mm accessory rails. In addition to this adaptability, the large curtain bar assembly can be configured for use on the right or left side of the procedure table prior to shipment. Attached to this curtain bar are the two large panel assemblies which provide 0.5 mm of lead equivalency and the large abdominal shield which provides 1.0 mm of lead equivalency.
2	**Small Curtain Bar Assembly:** Attaching to the large curtain bar assembly via a pivot pin, the small curtain bar assembly supports a total of 90° of rotation about the large curtain bar assembly. This rotation allows for optimal radiation protection and provides configuration specific to user needs. This curtain bar supports the small panel assembly which provides 0.5 mm of lead equivalency and the small abdominal shield which provides 1.0 mm of lead equivalency.
3	**Medium Curtain Bar Assembly:** Connecting to the small curtain bar assembly, the medium curtain bar can also pivot 90° to cater to user needs. This curtain bar supports the medium panel assembly which provides 0.5 mm of lead equivalency and the medium abdominal shield which provides 1.0 mm of lead equivalency.
4	**Large Abdominal Shield:** The lead-free large abdominal shield provides 1.0 mm of lead equivalency and affixes to the large curtain bar assembly via two durable clips to provide straightforward installation and removal.
5	**Small Abdominal Shield:** The lead-free small abdominal shield provides 1.0 mm of lead equivalent radiation protection. Radiation protection is further optimized due to the soft shielding overlap between the small, medium, and large abdominal shields.
6	**Medium Abdominal Shield:** The lead-free medium abdominal shield provides 1.0 mm of lead equivalency and affixes to the medium curtain bar assembly via two durable clips to provide straightforward installation and removal.
7	**Shadow L148-MPS:** This free-moving and repositionable lead-free shield offers 0.5 mm of lead equivalency and is designed to be used in conjunction with the table mounted assembly in situations where procedure table shape warrants the need for supplemental protection.

Key Characteristics

- Lead-free shielding material provides 1.0 mm lead equivalency above the table and 0.5 mm lead equivalency beneath the table.
- Three-piece curtain bar assembly easily attaches to bed accessory rails to fit a variety of rail sizes (7.7 mm, 9.0 mm, and 10.0 mm).
- Modular curtain bar can be adapted for use on both sides of the bed.
- Three (3) rigid abdominal shields are easily installed on the curtain bar to provide seamless installation and removal depending on user need.
- One (1) multi-purpose shield allows for adaptability and optimization of radiation protection.
- Curtain panels and abdominal shielding overlap to maximize protection and reduce radiation exposure.

Bunker L148-TMS Assembly

Care must be taken to ensure the user thoroughly reviews and follows the assembly instructions outlined in this user guide. Proper installation and use of the L148-TMS shield ensures optimal radiation protection. Failure to review the assembly instructions below may lead to damage to the system or inadequate radiation protection.

Note: *A PDF version of this user guide is available at* www.RampartIC.com/training.

What Comes Out of the Box

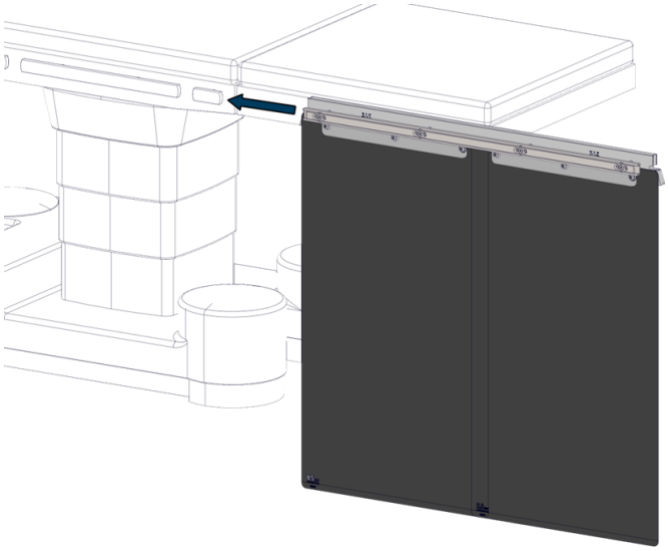
L148 Table Mounted Shield Components	
One (1) Large Curtain Bar Assembly	One (1) Large Abdominal Shield
One (1) Small Curtain Bar Assembly	One (1) Small Abdominal Shield
One (1) Medium Curtain Bar Assembly	One (1) Medium Abdominal Shield

Mount the Curtain Bars

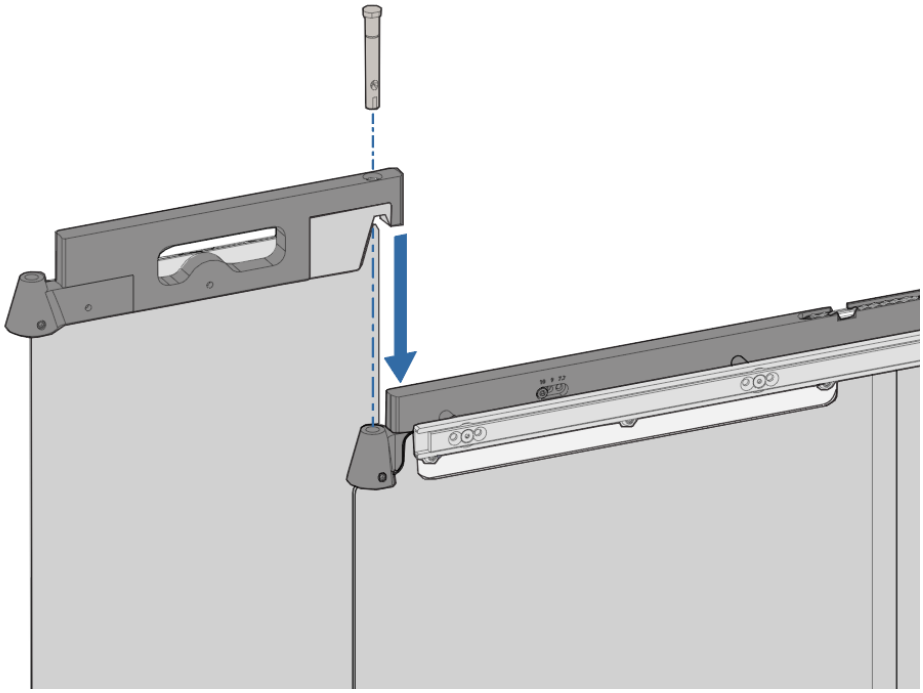
1. **Unpack** the Bunker L148-TMS and ensure all components are present according to the contents listed under *What Comes Out of the Box*.
2. **Locate** the large, medium, and small curtain bar assemblies and prepare to install them onto the procedure table's accessory rail.

Note: *The Bunker L148-TMS is designed to be compatible with 7.7 mm, 9.0 mm, and 10.0 mm bed rails. If the system needs to be adjusted for use with a different accessory rail size, proceed to* *Bunker L148-TMS System Adjustment on page 18.*

3. **Install the large curtain bar assembly onto the bed** by gently sliding the two mounting brackets onto to the bed's accessory rail. This should be accomplished by sliding the curtain bar from the foot of the bed to the head of the bed.



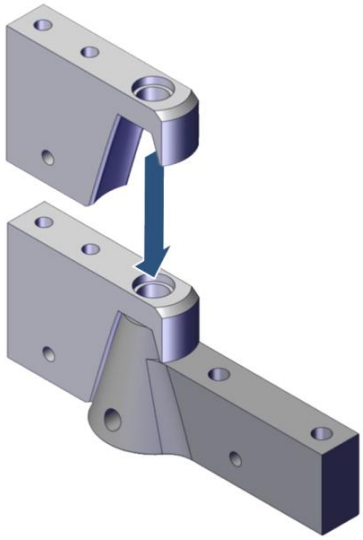
4. **Install small curtain bar assembly onto large curtain bar assembly** by gently inserting the pivot pin into the machined hole on the large curtain bar.



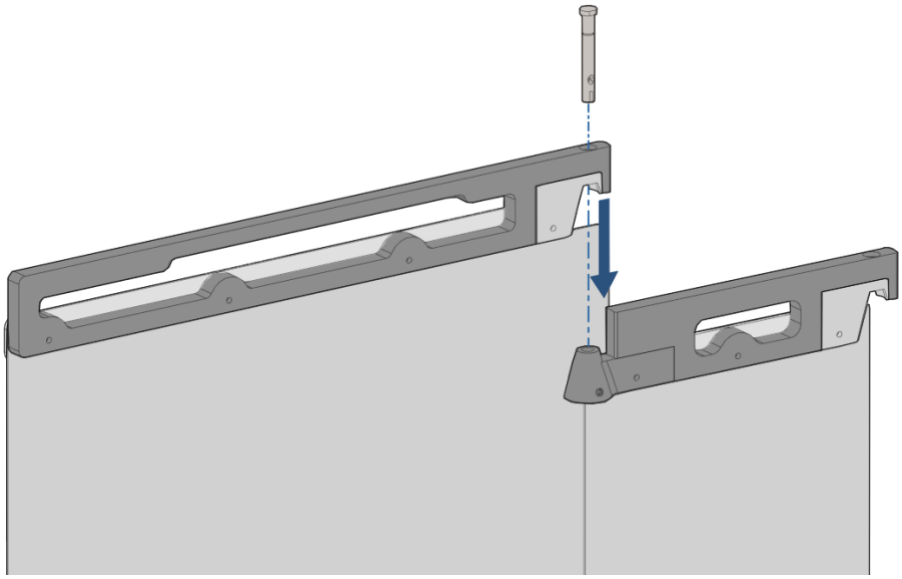
Note: *The pivot pin comes pre-installed on the small curtain bar assembly. It is shown unattached in the illustration for clarity.*

Note: *The flat part on the head of the pivot pin should be aligned with the set screw hole. After fully inserting the pivot pin into the hole, tighten the set screw with the included 4 mm Allen wrench.*

Note: *Ensure that the small curtain bar assembly is fully seated on the large curtain bar assembly. There should be full contact between the bushing and the conical joint.*



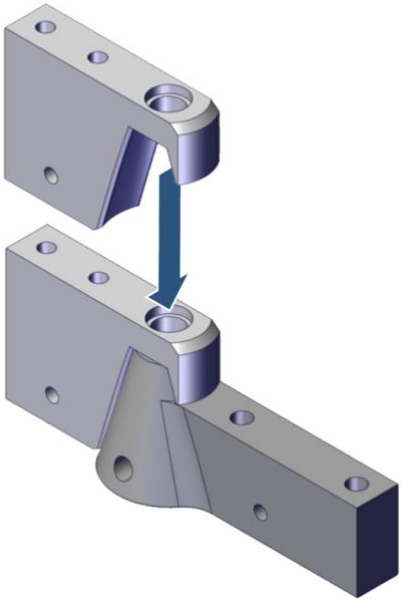
5. **Install the medium curtain bar assembly onto the small curtain bar assembly** by gently inserting the pivot pin into the machined hole on the small curtain bar until firmly seated.



Note: *The pivot pin comes pre-installed on the medium curtain bar assembly. It is shown unattached in the illustration for clarity.*

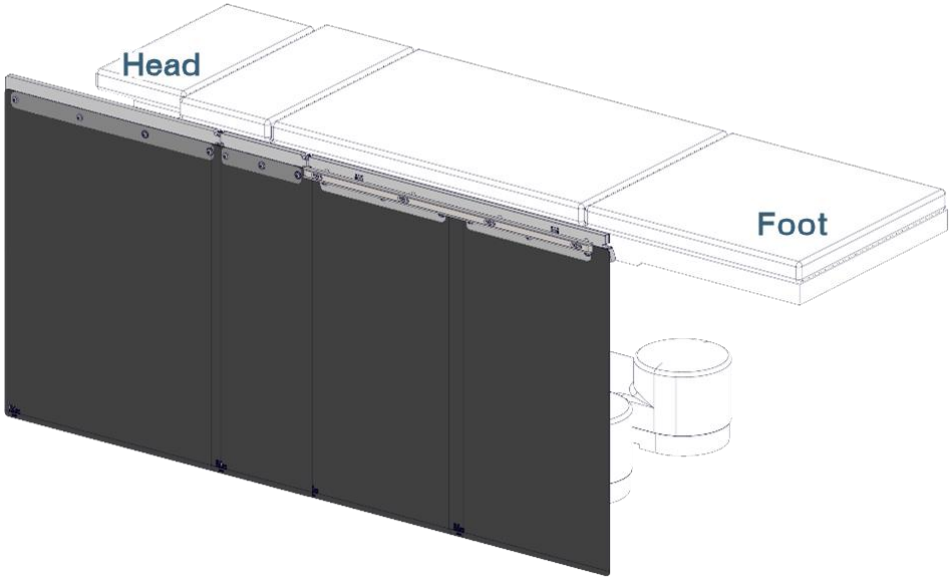
Note: *The flat part on the head of the pivot pin should be aligned with the set screw hole. After fully inserting the pivot pin into the hole, tighten the set screw with the included 4 mm Allen wrench.*

Note: *Ensure that the medium curtain bar assembly is fully seated on the small curtain bar assembly. There should be full contact between the bushing and the conical joint.*



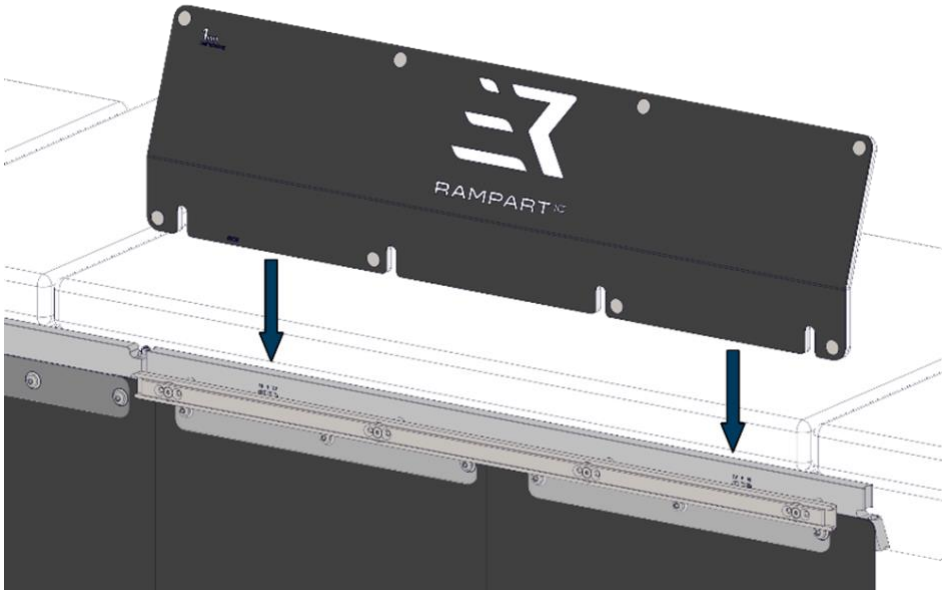
Note: *To ensure proper installation, verify that both the medium and small curtain bar assemblies can rotate about their pivot pins.*

Note: *The medium and small curtain bar assemblies should be pointed in the direction of the head of the table:*

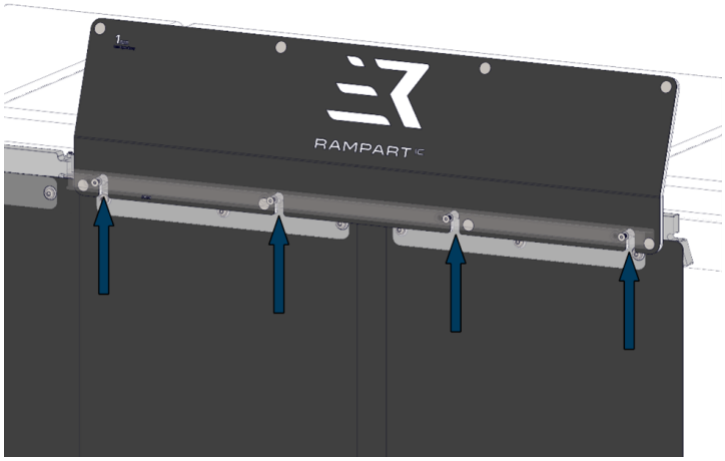


Install the Abdominal Shields

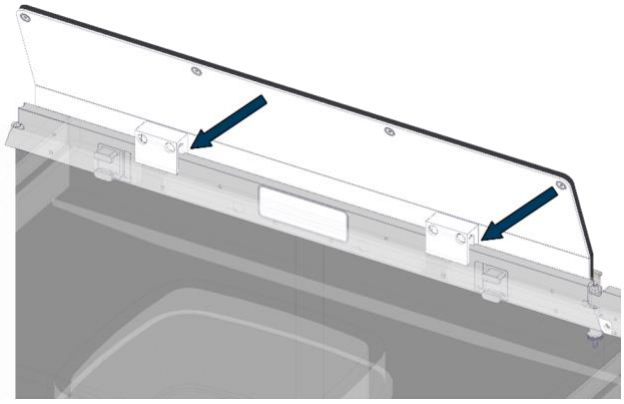
1. **Affix the large abdominal shield to the large curtain bar assembly** by sliding the shield onto the curtain bar so that the two (2) shield clips securely clamp onto the large curtain bar.



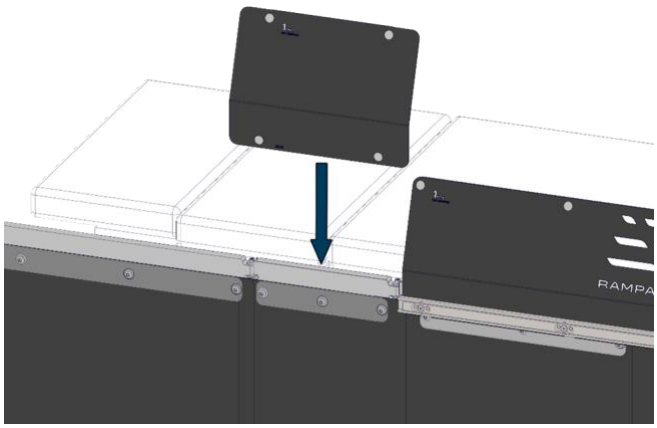
The four (4) access slots on the bottom of the shield should rest over the four (4) accessory rail stand-offs.



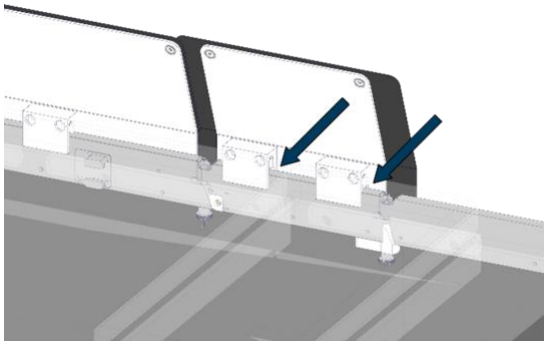
2. Ensure that the two (2) shield clips are fully seated on the curtain bar.



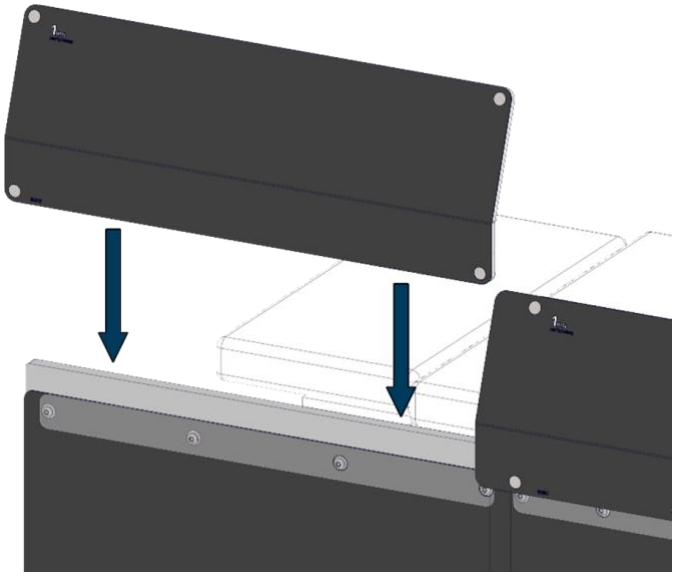
3. **Install the small abdominal shield onto the small curtain bar assembly** by sliding the shield onto the curtain bar so that the two (2) shield clips securely clamp onto the small curtain bar.



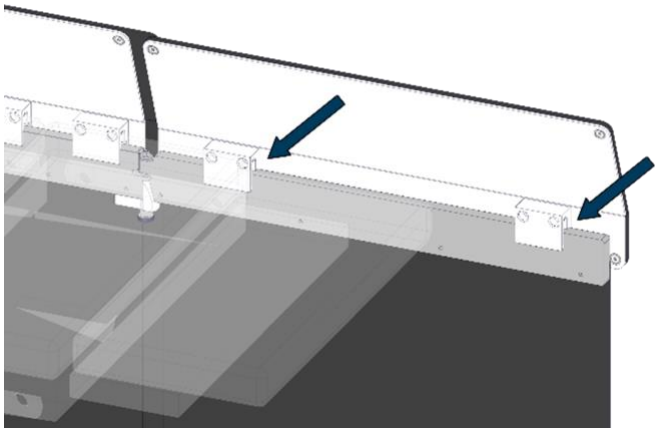
4. **Ensure** that the two (2) shield clips are fully seated on the curtain bar.



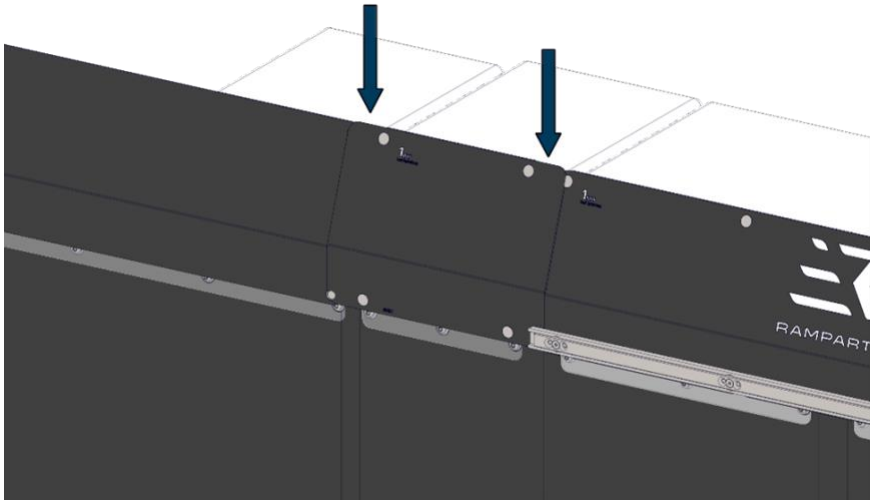
5. **Install the medium abdominal shield onto the medium curtain bar assembly** by sliding the shield onto the curtain bar so that the two (2) shield clips securely clamp onto the medium curtain bar.



6. Ensure that the two (2) shield clips are fully seated on the curtain bar.



7. **Verify** that all abdominal shield clips are fully engaged on the curtain bars and ensure that the soft shielding of the small abdominal shield overlaps the medium and large abdominal shields.



8. **L148 table-mounted shield installed.** Proceed to *Quality Check* on page *18*.

Bunker L148-TMS Disassembly

Before disassembling or removing the Bunker L148-TMS from the procedure table, ensure adequate space is available so that the Shadow L148-MPS, abdominal shields, and curtain bar assemblies will not be damaged and will pose no tripping hazard once removed.

Note: *Removal of the Bunker L148-TMS is the reverse of the installation. Remove one (1) Shadow L148-MPS, the three (3) abdominal shields, followed by the three (3) curtain bar assemblies.*

Remove the Abdominal Shields

1. **Remove the medium, small, and large abdominal shields** by gently lifting them in an upward direction until the shield clips are fully disengaged from the curtain bars.

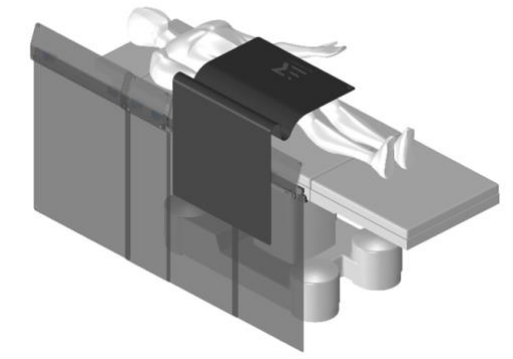
Remove the Curtain Bar Assemblies

1. **Remove the medium curtain bar assembly** by uninstalling the knurled thumbscrew on the pivot pin.
2. **Gently lift the curtain bar in an upward direction** until the pivot pin is disconnected from the small curtain bar assembly.
3. **Remove the small curtain bar assembly** by uninstalling the knurled thumbscrew on the pivot pin.
4. **Gently lift the curtain bar in an upward direction** until the pivot pin is disconnected from the large curtain bar assembly.
5. **Remove the large curtain bar assembly** by sliding it off of the bed's accessory rail toward the direction of the foot of the procedure table.

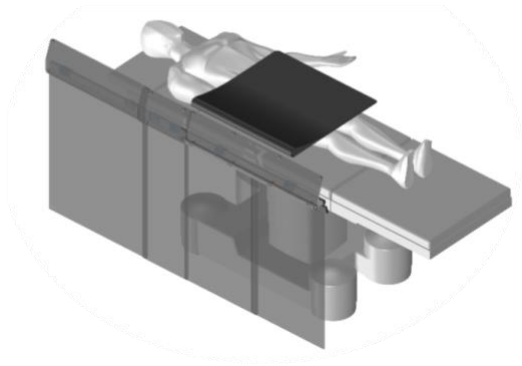
Shadow L148-MPS Overview

The Shadow L148 MPS is a 0.5 mm lead equivalent shield that is designed to optimize radiation protection in the event that the shape of the procedure table or individual user need necessitates supplemental protection. The following images depict various ways in which the shield can be positioned.

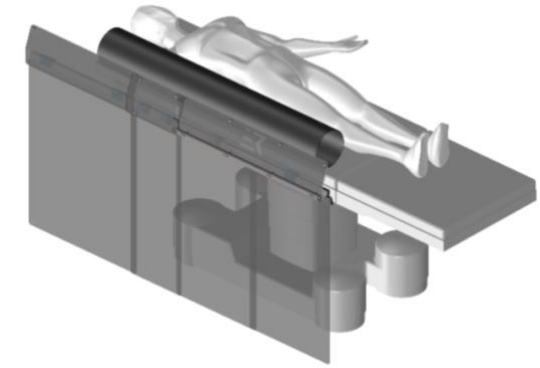
The Shadow L148-MPS can be placed over the patient and draped over the abdominal shields:



The Shadow L148-MPS can be folded in half and placed over the patient:



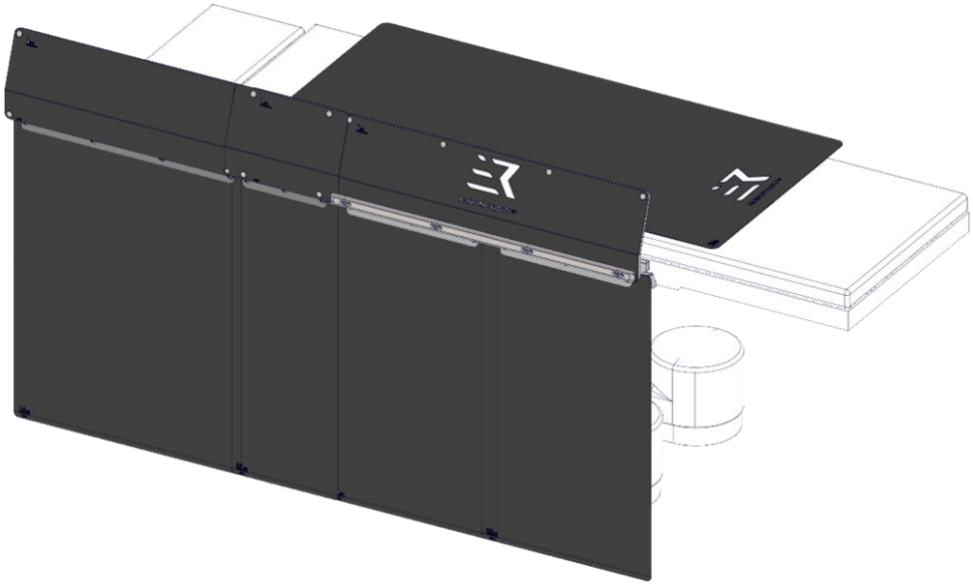
The Shadow L148-MPS can be rolled and placed between the patient and the abdominal shields:



Quality Check

Refer to the following criteria to ensure that the Bunker L148-TMS and Shadow L148-MPS are properly installed and assembled:

- The large curtain bar assembly is securely attached to the table's accessory rail and is set to the correct accessory rail size (7.7 mm, 9.0 mm, or 10.0 mm). To change accessory rail size, proceed to *Bunker L148-TMS System Adjustment* on page *18*.
- The small and medium curtain bar assemblies connected to the large curtain bar are fully seated and secured with knurled thumbscrews and are able to pivot about the pivot pins located on the small and medium curtain bars.
- The small, medium, and large abdominal shields are securely attached to their respective curtain bar:
  - All abdominal shield clips are fully engaged on the curtain bars.
  - Ensure the soft shielding of the small abdominal shield overlaps with the medium and large abdominal shields.
- The small, medium, and two (2) large curtain panels are securely attached to the applicable curtain bar:
  - Ensure that there are no visible gaps between the panels.
- Ensure that the Shadow L148-MPS is properly in place as necessitated by procedure table shape or individual user needs.



Bunker L148-TMS System Adjustment

The L148 table-mounted shield is a reconfigurable system that is designed to attach to 7.7 mm, 9.0 mm, and 10.0 mm procedure table rails. The Bunker L148-TMS is also equipped with a pre-installed and adjustable accessory rail that allows for the attachment of various control systems and accessories.

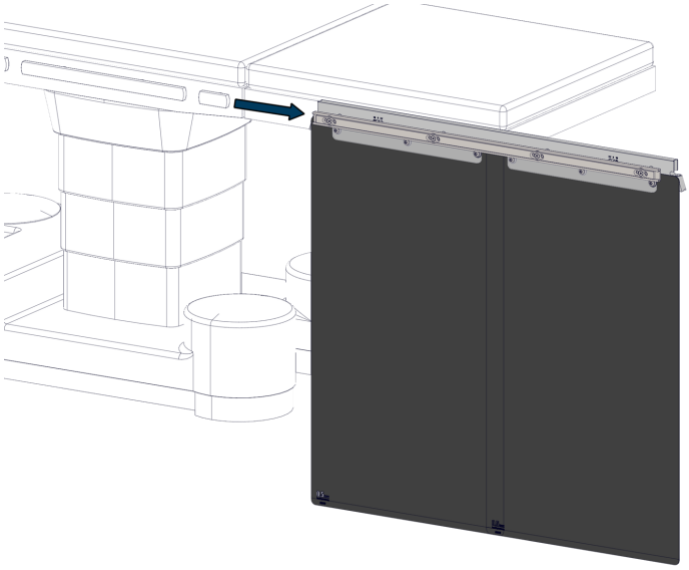
Verifying that the Bunker L148-TMS is set to the correct accessory rail size will ensure that the system safely and securely mounts to the procedure table. The inscribed measurements (7.7 mm, 9.0 mm, and 10.0 mm) located on the large curtain bar of the Bunker L148-TMS indicate the possible rail size applications of the system.

Note: *Both the mounting brackets and the accessory rail on the large curtain bar must be set to the same accessory rail size.*

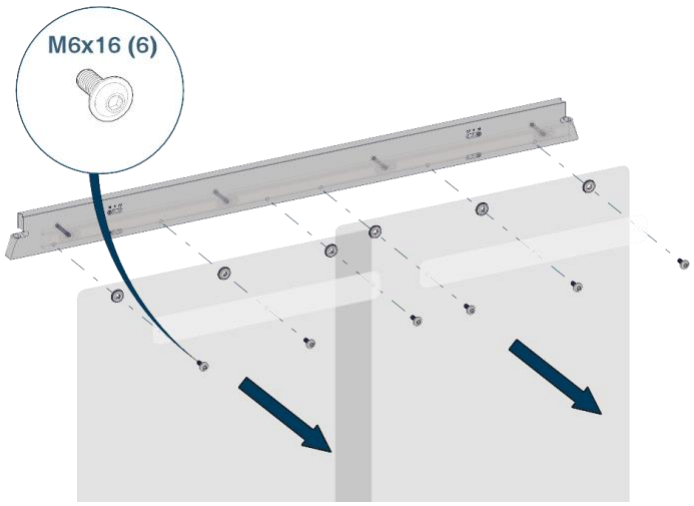
Note: *The Bunker L148-TMS must be removed from the procedure table to complete the accessory rail adjustment. See* *Bunker L148-TMS Disassembly* *on page 16.*

Adjust the Mounting Brackets

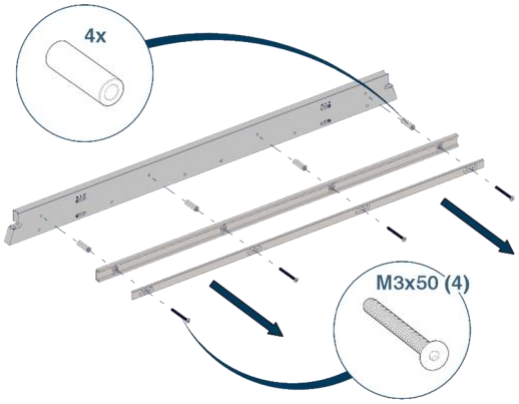
1. After disassembling the abdominal shields and the small and medium curtain bar assemblies, remove the large curtain bar assembly by sliding it off of the procedure table's accessory rail in the direction of the foot of the bed.



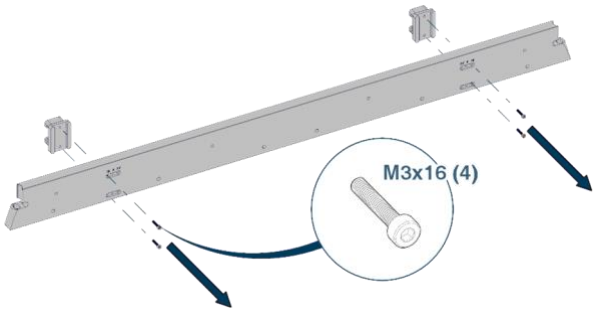
2. **Using a 4.0 mm hex wrench, remove the six (6) M6x16 mm screws** that secure the two soft shielding panels to the large curtain bar.



3. **Using a 3 mm hex wrench, remove the four (4) M5x50 mm screws and four (4) spacers** that attach the spaced and the fixed accessory rails to the large curtain bar.

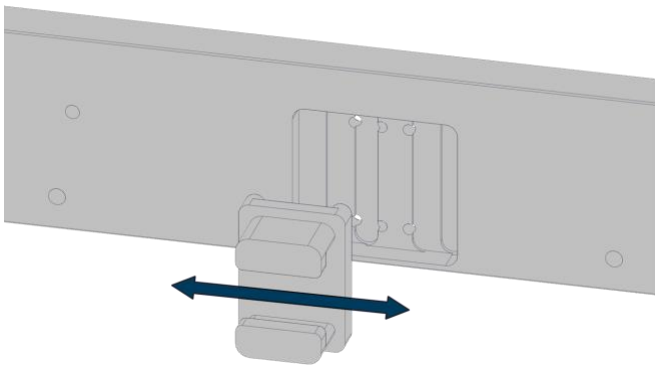


4. After setting aside the accessory rails and accompanying hardware, **use a 2.5 mm hex wrench to remove the four (4) M3x16 screws that secure each mounting bracket** to the large curtain bar.

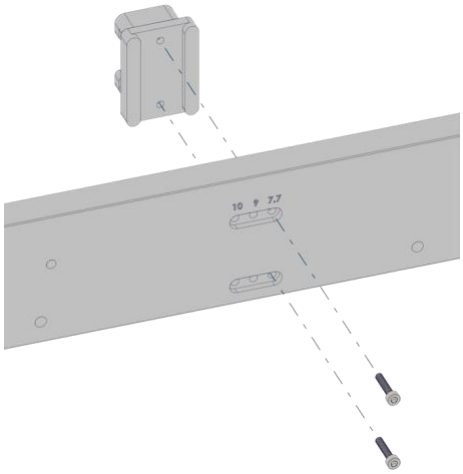


5. Once the mounting brackets are removed, **reposition them to align with the desired procedure table rail size** by moving left or right and seating them within the applicable grooves on the large curtain bar.

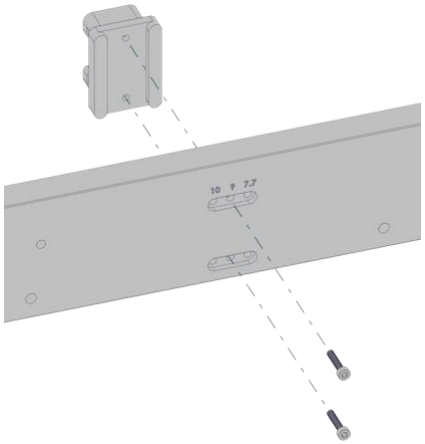
   The applicable rail sizes are engraved above the corresponding screw holes on the opposite face (front face) of the curtain bar.



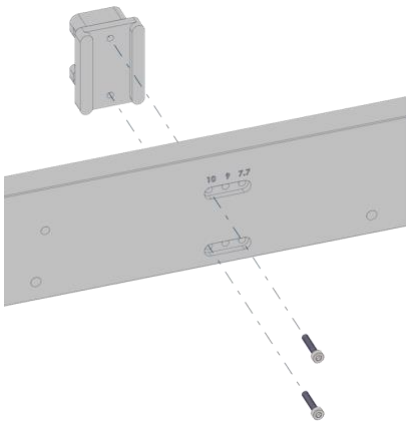
6. **Reposition the two (2) mounting brackets** so that their alignment corresponds to the desired accessory rail size.



Mounting Bracket Set to 7.7 mm Accessory Rail Size

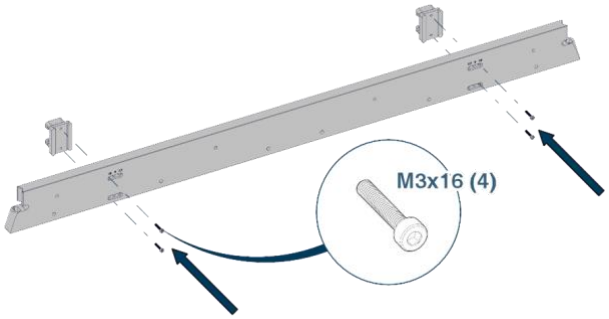


Mounting Bracket Set to 9.0 mm Accessory Rail Size

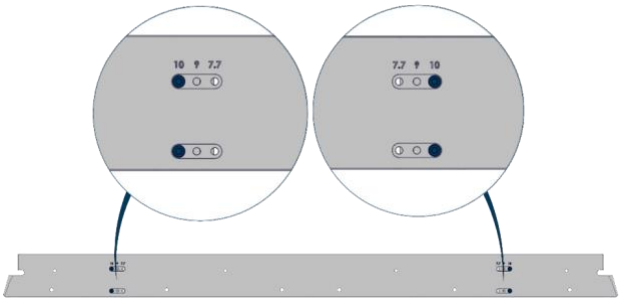


Mounting Bracket Set to 10.0 mm Accessory Rail Size

7. **Apply temporary thread-locking compound, such as Loctite® Threadlocker Blue 242®, to bolt threads and reinstall the four (4) M3x16 mm screws that secure the two (2) mounting brackets.** Torque screws to 2.0 Nm.



Note: *Ensure that both mounting brackets are set to the same accessory rail size.*

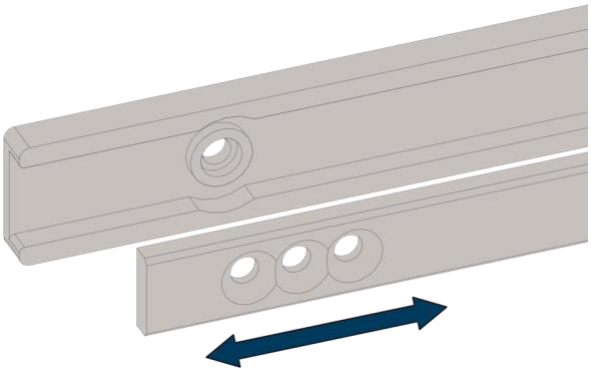


8. The mounting brackets are adjusted. Proceed to *Adjust the Accessory Rail* on page *22*.

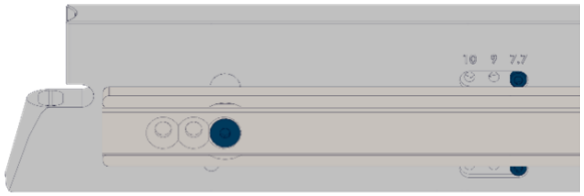
Adjust the Accessory Rail

After adjusting the mounting brackets on the large curtain bar, the accessory rail also needs to be adjusted to attain the desired rail size. Before reassembling the large curtain bar, adjust the accessory rail by following the steps below:

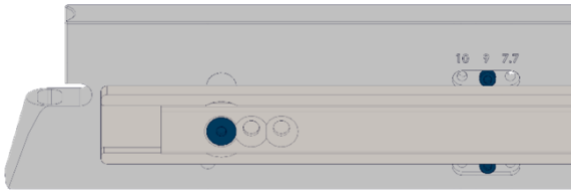
1. With the accessory rail assembly removed, **reposition the spaced accessory rail** to the desired rail size by moving left or right, and engage it with the fixed accessory rail.



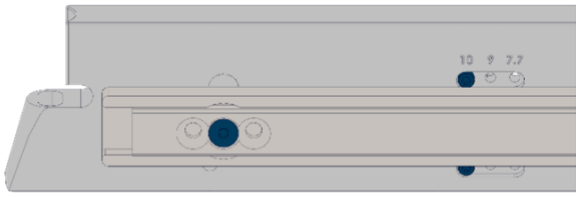
2. **Ensure** the accessory rail is set to desired size by using the etched indications on the accessory rail as a guide.



Accessory Rail Set to 7.7 mm Size

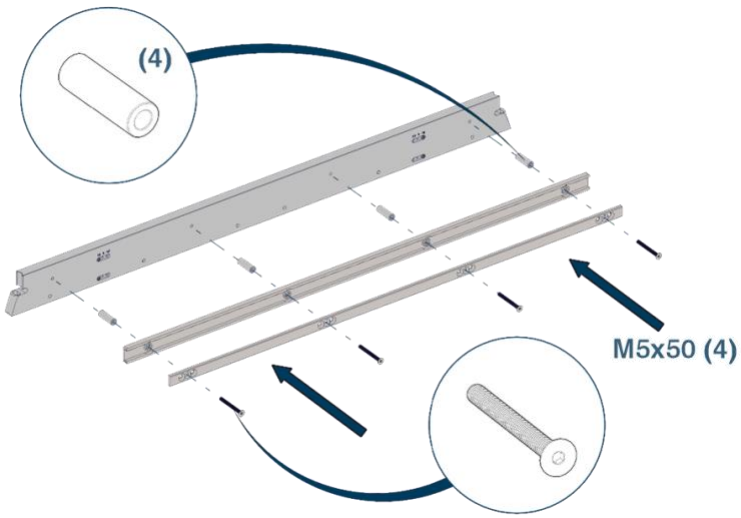


Accessory Rail Set to 9.0 mm Size

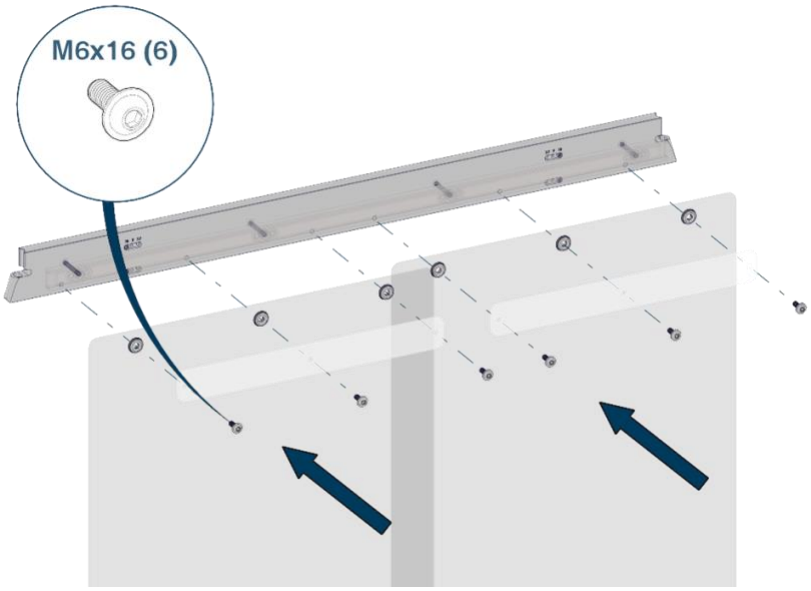


Accessory Rail Set to 10.0 mm Size

3. After setting the desired accessory rail size, **reinstall the accessory rail onto the large curtain bar with four (4) M5x50 mm screws and four (4) spacers**. Tighten the four (4) M5x50 mm screws to 2.0 Nm.



4. **Using a 4.0 mm hex wrench, install the six (6) M6x16 mm screws** that secure the two (2) soft shielding panels to the large curtain bar. Tighten the six (6) M6x16 mm screws to 6.0 Nm.



5. Accessory rail size adjustment is complete. Proceed to *Quality Check* on page *18*.

Instructions for Use

WARNING: Radiation Exposure

- Failure to properly install and configure curtains and abdominal shields may cause unwanted radiation exposure.
- According to the *Expert Consensus Document on Optimal Use of Ionizing Radiation in Cardiovascular Imaging*[2], proper radiation protection is in place when a minimum of 0.5 mm lead equivalency is placed between the radiation source and medical personnel. When used correctly, the Rampart[IC] Bunker L148-TMS and Shadow L148-MPS provide lead equivalent radiation protection as follows: 1.0 mm lead equivalency for the abdominal shields, 0.5 mm lead equivalency for the lower curtains, and 0.5 mm lead equivalency for the MPS. The curtains and shields must be handled with care, so they are not damaged due to contact with other objects. If the curtains or shields are damaged, they must be rechecked according to *Maintenance and Care* on page 27.

Intended User Group

The intended user group for the Bunker L148-TMS and Shadow L148-MPS includes physicians and their staff.

Intended Patient Populations

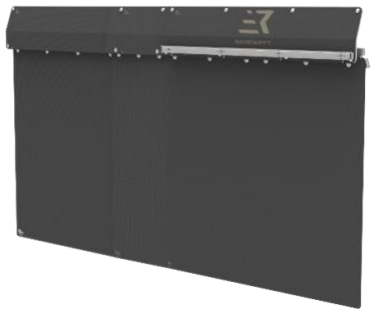
The Bunker L148-TMS and Shadow L148-MPS are designed to function with compatible procedure table rails to provide radiation protection at table level and below. Compatible procedure table rail thicknesses include 7.7mm, 9.0 mm, and 10.0 mm.

[2] J. W. Hirshfeld and V. A. Ferrari, "2018 ACC/HRS/NASCI/SCAI/SCCT Expert Consensus Document on Optimal Use of Ionizing Radiation in Cardiovascular Imaging: Best Practices for Safety and Effectiveness," 2018, http://www.onlinejacc.org/content/early/2018/04/30/j.jacc.2018.02.016 (accessed August 10, 2019).

Sample Configurations

Note: *The Bunker L148-TMS small and medium curtain bar assemblies can pivot in a variety of angles to meet the specific requirements of procedure tables and the individual needs of the user. The following sample configurations depict two common configurations, but do not show all possible curtain bar angles.*

Bunker L148-TMS at 180° Configuration - Pictured with Multi-Purpose Shield



Bunker L148-TMS at 180° Configuration

Bunker L148-TMS at 45° Configuration - Pictured with Multi-Purpose Shield

Bunker L148-TMS at 45° Configuration

Maintenance and Care

The Bunker L148-TMS and Shadow L148-MPS may require post-procedure cleaning, routine inspections, and repairs to maintain optimal performance.

The Bunker L148-TMS and Shadow L148-MPS must be thoroughly cleaned and disinfected in accordance with standard operating room practices and CDC guidelines. Clean each component after use and prior to maintenance.

CAUTION!

- When cleaning soft shielding material and the rigid abdominal shields, never use rough or abrasive-faced sponges, steel wool, brushes, or cleaning pads.
- When cleaning any component of the Bunker L148-TMS and Shadow L148-MPS, never use scrapers or metal tools of any kind.

Cleaning and Disinfection

Disinfect the Bunker L148-TMS and Shadow L148-MPS using one of the following:

- 70% or less isopropyl alcohol (Dry curtains and shielding immediately after application.)
- Sani-HyPerCide[3] Germicidal Disposable Wipes
- Super Sani-Cloth[4] Germicidal Disposable Wipes
- CaviWipes[5] 2.0 Disinfecting Wipes

Note: *Always use detergent or wipe products according to safety precautions and use directions provided by the manufacturer.*

Abdominal Shield Cleaning/Disinfection

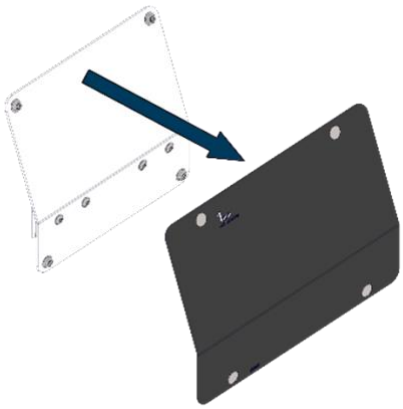
The Bunker L148-TMS's abdominal shields are designed to be disassembled to ensure that all shielding material can be cleaned and disinfected appropriately. The following section outlines the procedure for removing the soft shielding material from their respective shield structures to facilitate cleaning and disinfection.

Note: *Prior to disassembly and cleaning, the abdominal shields must be removed from the Bunker L148-TMS and placed in a safe location per the* *Remove the Abdominal Shields section on page 16.*

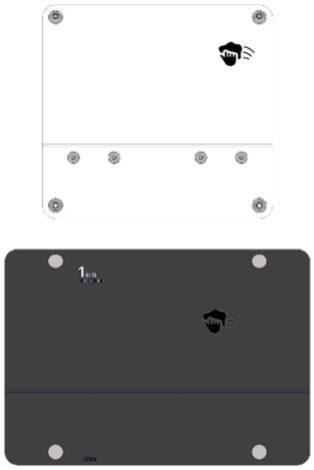
Clean the Small Abdominal Shield

1. **Unsnap the four (4) snap fasteners** that secure the soft shielding to the front of the rigid abdominal shield frame.

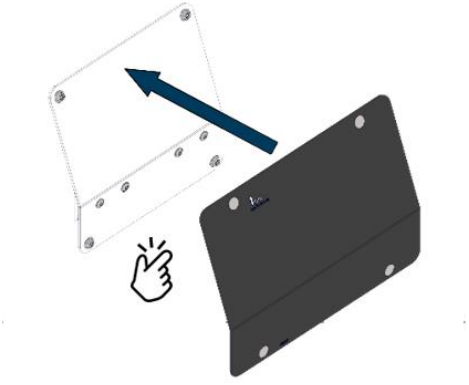
3 Sani-HyPerCide® is a registered trademark of PDI.
4 Super Sani-Cloth® is a registered trademark of PDI.
[5] CaviWipes® is a registered trademark of Metrex Research LLC.



2. **Clean/disinfect both the soft shielding material and the rigid frame of the small abdominal shield** per *Cleaning and Disinfection* on page *27*.

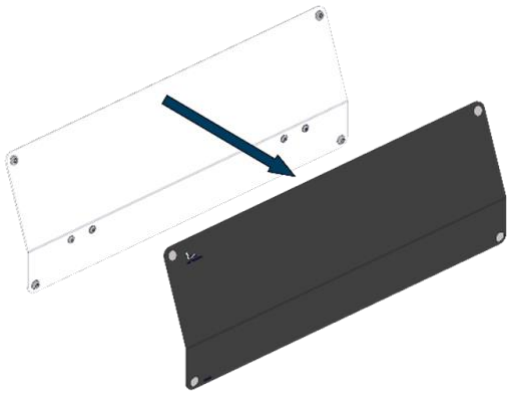


3. **Snap the four (4) snap fasteners** on the front of the shield so that the soft shielding is securely attached to the frame.

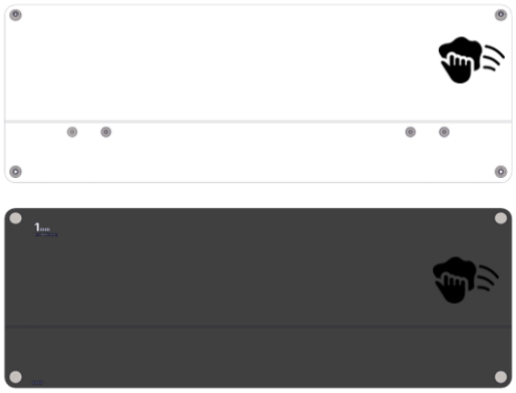


Clean the Medium Abdominal Shield

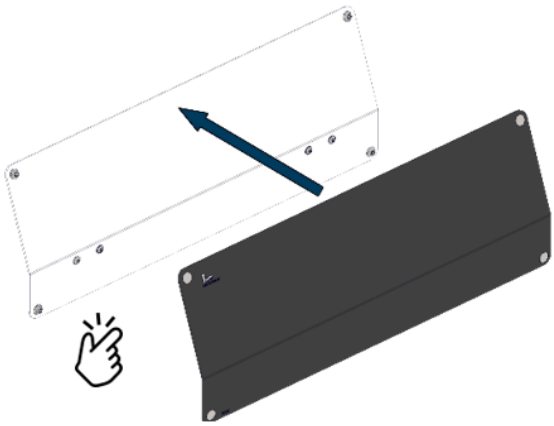
1. **Unsnap the four (4) snap fasteners** that secure the soft shielding to the front of the rigid abdominal shield frame.



2. **Clean/disinfect both the soft shielding material and the rigid frame of the medium abdominal shield** per *Cleaning and Disinfection* on page *27*.

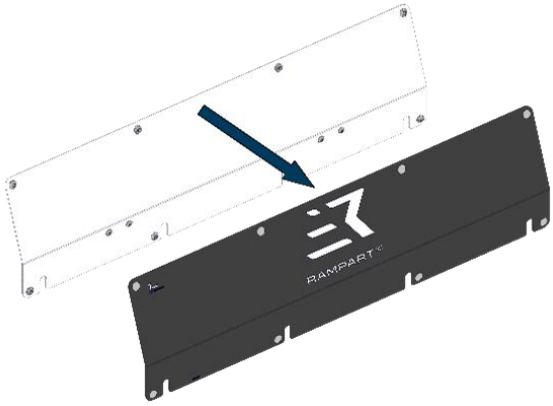


3. **Snap the four (4) snap fasteners** on the front of the shield so that the soft shielding is securely attached to the frame.

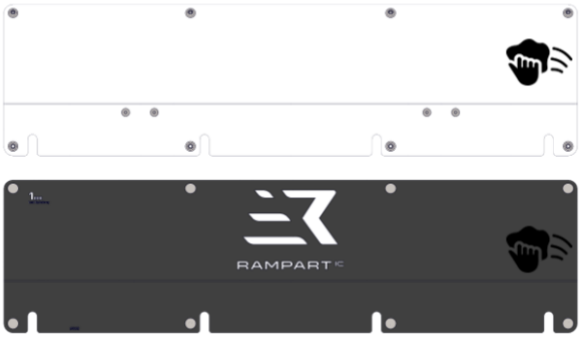


Clean the Large Abdominal Shield

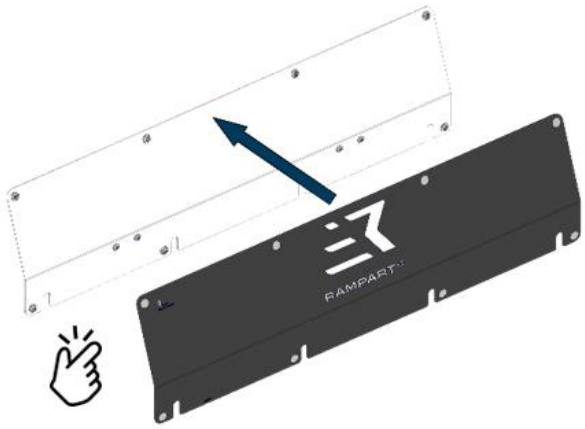
1. **Unsnap the eight (8) snap fasteners** that secure the soft shielding to the front of the rigid abdominal shield frame.



2. **Clean/disinfect both the soft shielding material and the rigid frame of the large abdominal shield** per *Cleaning and Disinfection* on page *27*.



3. **Snap the eight (8) snap fasteners** on the front of the shield so that the soft shielding is securely attached to the frame.



4. **Abdominal shield cleaning and disinfection is complete.** Proceed to *Quality Check* on page *18*.

Storage

When not in use, the Bunker L148-TMS and Shadow L148-MPS can remain installed in the lab. If removal is required, follow these steps to ensure the Bunker L148-TMS and Shadow L148-MPS are stored safely and securely.

1. Remove all abdominal shields, curtain bar assemblies, and the multi-purpose shield from the bed according to *Bunker L148-TMS Disassembly* on page *16*.
2. Relocate all components to a safe storage area that satisfies *Conditions for Shipping and Storage* on page *6*.
3. Ensure that all four (4) curtain panels of the Bunker L148-TMS and the Shadow L148-MPS are laid flat to prevent folding or creasing of the shielding.

Preventative Maintenance Inspection

Rampart^{IC} recommends an annual preventative maintenance inspection as follows:

1. Ensure that the Bunker L148-TMS and Shadow L148-MPS are cleaned (see *Maintenance and Care* on page *27*) before performing a preventative maintenance inspection.
2. Inspect all curtains, abdominal shields, curtain bars, and the multi-purpose shield to ensure:
    a. All components are fastened tightly.
    b. The large curtain bar assembly firmly affixes to the table's accessory rail.
    c. The small and medium curtain bar assemblies pivot smoothly.

Note: *If friction is felt when positioning the curtain bar assemblies, apply an even coating of synthetic based silicone grease with an NLGI viscosity grade 1 to the curtain bar's pivot joints.*

    d. The small, medium, and large abdominal shields securely clip onto the curtain bars.
    e. There are no cracks, tears, or damage to any of the curtains and shields.
    f. All snap fasteners on the abdominal shields are present and securely fastened.

Disposal

The Rampart^{IC} Bunker L148-TMS and Shadow L148-MPS contain lead-free curtains and shielding. The system and all components should be disposed of in an environmentally safe manner per local, state, and Federal laws.

Limited Warranty

Rampart^{IC} warrants to Customer that this product, manufactured by Rampart^{IC} and sold to Customer, will be free from defects in materials and workmanship for a period of one (1) year after delivery to Customer. This warranty shall not apply to any products which have been subjected to misuse, improper installation or repair, alteration, neglect, accident, abnormal conditions of operation, or use under conditions other than those for which the products were designed.

EXCEPT FOR THE FOREGOING LIMITED WARRANTY, SELLER MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF FITNESS OR OF MERCHANTABILITY.

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L148

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