RAMPART



P914 VANGUARD MOBILE RADIATION SHIELD

User Guide

P914-UGD, Rev. A
LBL-139 Rev A
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This document should be stored with or within the immediate vicinity of the P914 Vanguard Mobile Radiation Shield and the medical team using the unit.

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Pursuant to continuous product improvement, Rampart reserves the right to change the equipment design and the technology at any time.

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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 Rampart or an approved Rampart representative.

Manufacturer

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Live Technical Support

Live technical support is available at (855) 236-3777 from 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.rampart.com/training.

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Overview

Congratulations on your purchase of the Rampart® P914 Vanguard Mobile Radiation Shield! Rampart ensures your team is equipped with the latest, state-of-the-art radiation protection equipment and has the 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 use of the P914 Vanguard and for training personnel. Read this document in its entirety, especially the warnings and caution statements identified throughout and summarized under the *Safety & General Symbols* section on page *4,* before use.



WARNING!

To reduce the 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 P914 Vanguard.

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

Intended Use

The P914 Vanguard is a protective radiation shield intended to safeguard users from radiation exposure during fluoroscopic and interventional medical procedures. The system is designed to provide configurable radiation protection while maintaining procedural access, workflow flexibility, and user mobility through adjustable shielding assemblies and an integrated access panel.

Safety & Liability

Rampart assumes no liability for the safe and reliable operation of the P914 Vanguard radiation protection system, where:

- Installation, modifications, or repairs are not performed by Rampart technicians or people authorized by Rampart.
- Authorized Rampart replacement parts are not used.
- The P914 Vanguard is not installed or set up for a procedure in accordance with the steps in this user guide.
- The P914 Vanguard is not operated in accordance with the steps in this user guide.
- The P914 Vanguard is not used in accordance with its intended use as described in this user guide.

Notice to Users: *Any serious incident involving 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

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 the 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 P914 Vanguard.
- Repairs must only be performed by Rampart authorized personnel.
- The weight of the P914 Vanguard system must not be altered in any way.
- The system must be carefully monitored during positioning to avoid damage to persons or property.



WARNING: MR-Unsafe

The P914 Vanguard system is MR-unsafe. MR-unsafe items should not be brought into MRI scanner rooms.



WARNING: Radiation Exposure

- Failure to set the P914 Vanguard lead-equivalent acrylic panel at the proper height and position may cause 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 P914 Vanguard panel provides a protection level of 0.5 mm lead equivalency. The abdominal shield provides 1.0 mm lead equivalency, and the undertable shielding provides 0.5 mm lead equivalency against radiation exposure.
- The acrylic panel must be handled with care so that it is not damaged due to contact with other objects. If the panel is damaged, it must be rechecked according to the *Maintenance* section on page *18* of this user guide.



ATTENTION!

The P914 Vanguard acrylic panel and soft shielding will be permanently damaged if cleaned with abrasive cleaners. When cleaning the acrylic panel and soft shielding, DO NOT use the following cleaning supplies**:**

- Sporicidan[2] disinfectant towelettes, rough or abrasive-faced sponges, brushes, cleaning pads, scrapers, or metal tools, paper towels, and linen washcloths
- Strong detergents or abrasives, such as scouring powders
- Aerosol cleaners with Butyl Cellosolve[3]
- Hydrocarbon or chlorinated solvents, ammonia (more than 0.5%), or strong alkali cleaners
- Cleaners that are designed for grease cutting
- Excessively hot water or steam

[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).
[2] Sporicidan® is a registered trademark of Contec, Inc.
[3] Butyl Cellosolve™ is a trademark of the Dow Chemical Company.



CAUTION!

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

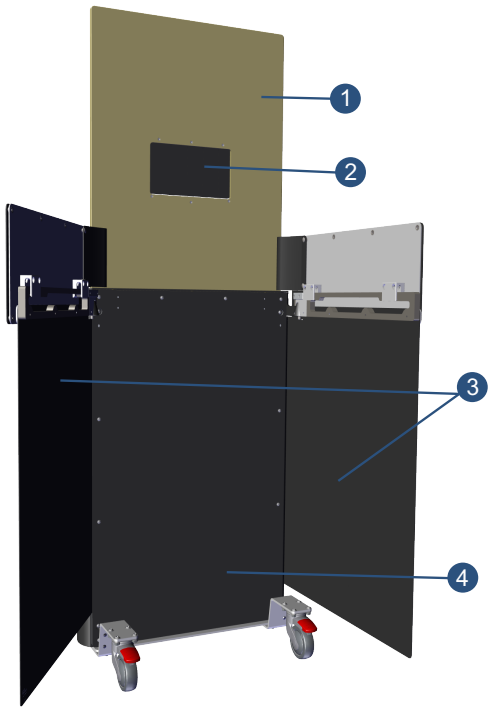
- When cleaning the acrylic panel and soft shielding, never use rough or abrasive sponges, steel wool, brushes, or cleaning pads.
- When cleaning any component of the P914 Vanguard, never use scrapers or metal tools of any kind.

Explanation of Symbols

REF	Catalogue Number		Keep Dry
SN	Serial Number		Instructions for Use Found at www.rampart.com
QTY	Quantity	CE	Complies with Applicable European Union Regulations
LOT	Batch Code	℞	Prescription User or Licensed Healthcare Practitioner Use Only
	Manufacturer	EC REP	Authorized Representative in the European Community/European Union
	Date of Manufacture		Do Not Use If Package is Damaged and Consult Instructions for Use Found at www.rampart.com
MD	Medical Device		

P914 Vanguard System Overview

The P914 Vanguard Mobile Shield is a configurable radiation protection system designed to reduce radiation exposure to physicians and clinical staff during fluoroscopic and interventional procedures. The system combines lead-equivalent shielding, articulated assemblies, and folding panel assemblies to provide effective protection while maintaining procedural access and workflow flexibility. An integrated access port allows convenient access to the patient during procedures without compromising protective coverage.



1	**Retracting Panel:** The retracting panel serves as the primary radiation shield. This panel can be raised and lowered from the frame to accommodate specific user needs. The panel features 0.5 mm lead-equivalent protection and can extend vertically to a maximum height of 72 in. (183 cm).
2	**Access Port:** An opening integrated into the P914 Vanguard shielding system that allows clinical personnel, such as anesthesia providers, echocardiography technologists, or imaging staff, to access the patient's airway or perform procedures while remaining protected behind the radiation-attenuating panel. The access port is positioned near the patient's head and is used in conjunction with foldable side wings that nest using a conical joint mechanism.
3	**Wing Shield:** The rotating shield assembly includes the curtain bar assembly, abdominal shield, and lower shield. It features 1.0 mm lead-equivalent abdominal shields and 0.5 mm lead-equivalent under-table shieldings. The assembly can rotate from a fully nested position against the P914 Vanguard to an extended position, providing additional radiation protection.
4	**Base:** The base features four lockable caster wheels to easily maneuver the P914 Vanguard into position and lock it in place for procedures. The low-profile design of the base plate assembly minimizes potential tripping hazards.

Key Characteristics

A. An acrylic panel with 0.5 mm of lead-equivalent protection can be adjusted vertically to adapt to table and physician height.

B. An ergonomic handle that allows for one-handed maneuvering while keeping the user safely behind the shield.

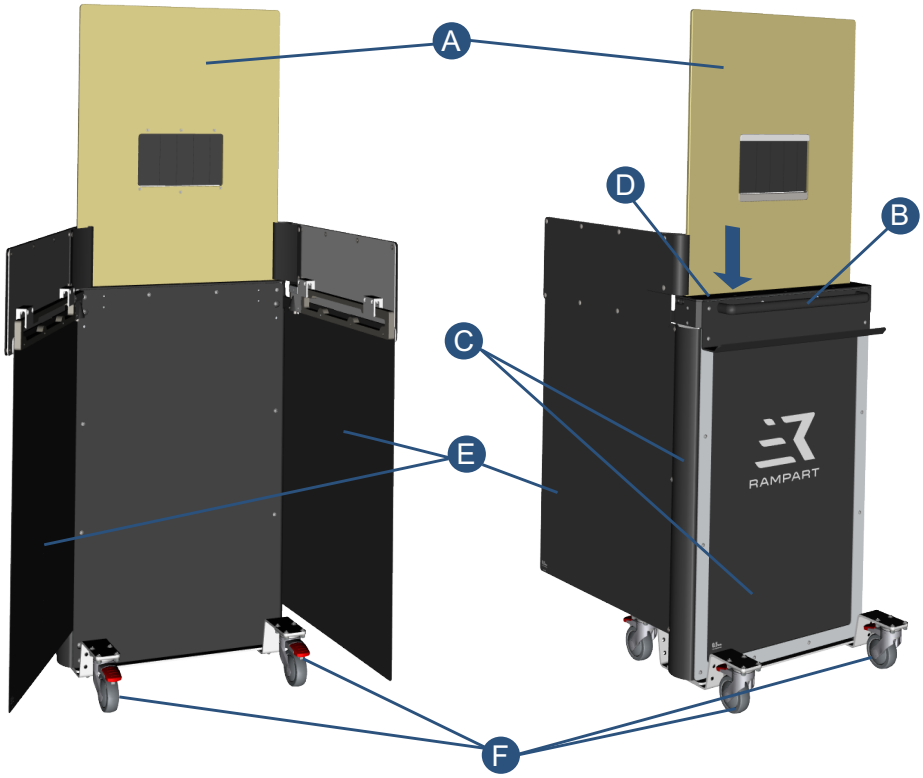
C. Pliable radiation shielding covers the base and sides to ensure optimal radiation protection when the wing shields are deployed.

D. When the retracting panel is fully lowered, the system provides 1.0 mm of lead-equivalent protection.

E. Pivoting wing shields attach through a conical joint mechanism and rotate between nested and extended positions to provide additional radiation protection and compact storage.

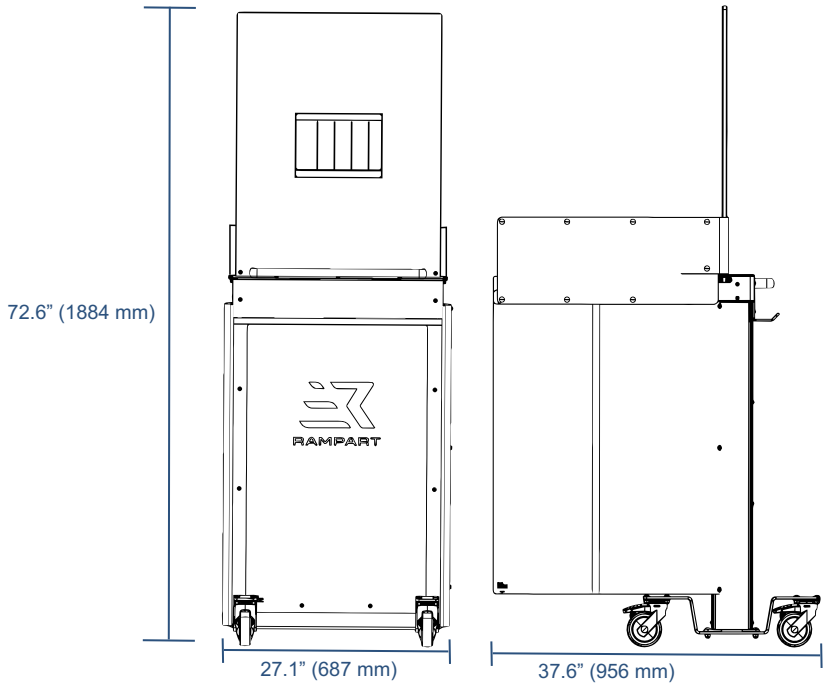
F. Equipped with locking caster wheels for smooth, easy movement and stability when stationary.

The P914 Vanguard panel can be configured into a storage position when not in use. See the *Storage Mode* section on page *11*.


A
D
B
C
E
F
RAMPART

Technical Specifications

Dimensions



The P914 Vanguard, at its maximum dimensions, is positioned with the retracting panel and the wing shields fully extended. With the P914 Vanguard configured in this manner, the maximum dimensions are 27.1 in. (687 mm) wide, 72.6 in. (1884 mm) tall, and 37.6 in. (956 mm) deep.

Operating Environment

The P914 Vanguard system is designed for indoor use and storage only and must not be subjected to weathering, UV light, or corrosive environments. The working environment for this device 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. The storage temperature is between 14°F (-10°C) and 104°F (40°C).

Weight

The weight of the assembled P914 Vanguard is 155 lbs. (70.3 kg).

IP Protection Class

The P914 Vanguard mobile shield is rated in the IPX6 washable protection class.

Identification Tag

An identification tag is located on the bottom of the shelf. This tag identifies key information about your product that may need to be referenced during service calls:

- Product Name
- Reference Number
- Serial Number
- Data Matrix
- Manufacturer Name
- Manufacturer City, State, and ZIP Code
- Manufacturer Website
- Manufacturer Phone

Storage Mode

The P914 Vanguard must be placed in storage mode when not in use to prevent damage to the system. When in storage mode, the retracting panel is lowered to its minimum height, resulting in dimensions of 26.1 in. (663 mm) wide by 43.7 in. (1109 mm) tall.

Place the Unit in Storage Mode

1. Retract the panel inside the P914 Vanguard device. Before doing so, ensure that the access port curtains lie flat to prevent folding or creasing during storage.

WARNING!

Ensure that the access port curtains do not protrude beyond the panel thickness to prevent the shielding from folding or creasing in storage mode.

2. Reposition to a designated area away from foot traffic.
3. Lock the caster wheels.



Panel Lowered and Casters Locked

Instructions for Use

The retraction panel of the P914 Vanguard can be vertically positioned to a variety of configurations to accommodate physician or staff location, multiple procedure table types, and other lab equipment.

Using the P914 Vanguard

To access instructions related to the storage and use of the P914 Vanguard, visit www.rampart.com.

Intended User Group

The intended user group for the P914 Vanguard is physicians and their staff.

Warnings and Cautions



WARNING: Radiation Exposure

- Failure to install the panels at the proper height and position, and to install the curtain bar assemblies and abdominal shields, may cause unwanted radiation exposure.
- According to the *Expert Consensus Document on Optimal Use of Ionizing Radiation in Cardiovascular Imaging*[4], 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 as intended, the P914 Vanguard panel provides 0.5 mm lead-equivalent radiation protection. In addition, the system includes two 1.0 mm lead-equivalent abdominal shields and two 0.5 mm lead-equivalent undertable shields to help reduce radiation exposure to clinicians and staff.
- The panels and shielding must be handled with care, so they are not damaged due to contact with other objects. If the panels or shielding are damaged, they must be rechecked according to the *Maintenance* section on page *18*.



WARNING: MR-Unsafe

The P914 Vanguard is MR-unsafe. MR-unsafe items should not be brought into MRI scanner rooms.

[4] 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).

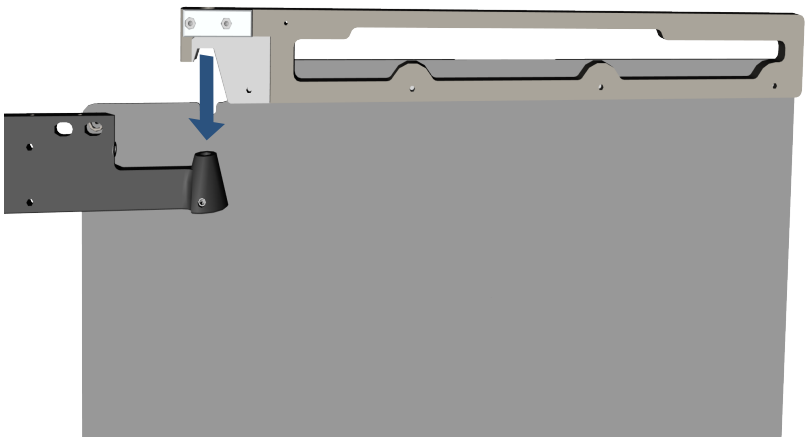
P914 Vanguard Assembly

You must thoroughly review and follow the assembly instructions outlined in this user guide. Proper installation and use of the P914 Vanguard 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.rampart.com/training.

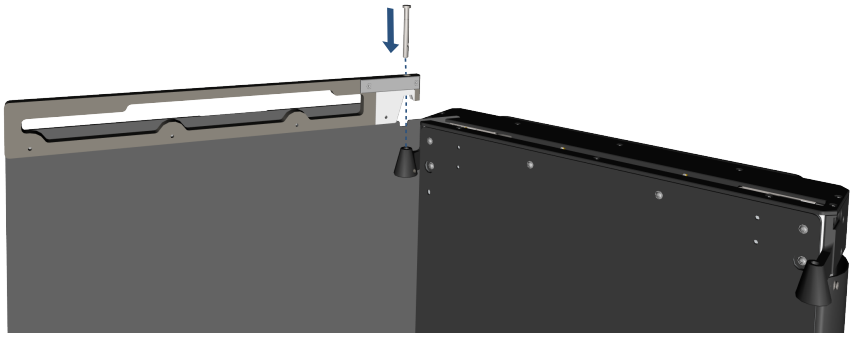
Install the Curtain Bars

1. Unpack the P914 Vanguard package and ensure all components are present.
2. Position the curtain bar assembly so that its pivot interface aligns with the conical joint on the frame.

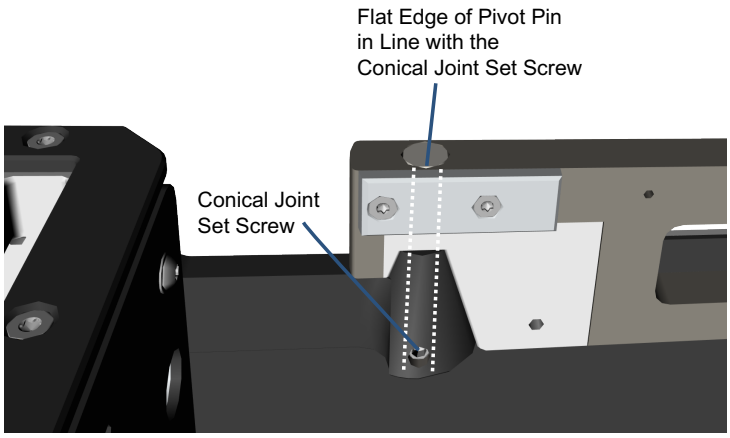


3. Align the curtain bar pivot with the conical joint interface.
4. Insert the curtain bar pivot into the conical joint until fully seated.

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



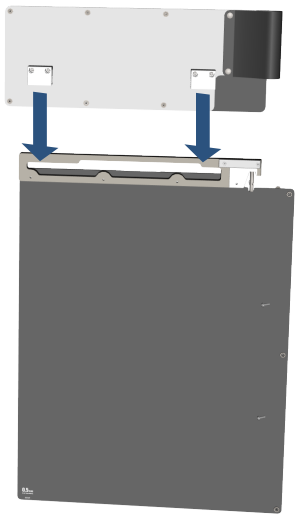
5. Align the flat part of the pivot pin with the set screw hole.



6. After fully inserting the pivot pin into the hole, tighten the set screw with a 4 mm Allen wrench.
7. Ensure that the curtain bar assembly is fully seated within the conical joint and can rotate smoothly about the pivot connection. Verify that the bushing is fully seated in the conical joint.

Install the Abdominal Shields

1. Position the wing shield assembly adjacent to the installed curtain bar assembly.
2. Align the shield clips with the curtain bar assembly.
3. Slide the wing shield assembly onto the curtain bar assembly until the clips engage.
4. Seat the two (2) shield clips fully onto the curtain bar assembly. Verify that the shield clips are fully engaged.



5. Rotate the wing shield assembly through its full range of motion.
6. Verify that the wing shield assembly moves freely.
7. Position the wing shield assembly in the fully extended position.
8. Verify that the wing shield assembly is securely attached.
9. Proceed to *Quality Check* on page *17*.

P914 Vanguard Disassembly

Before disassembling or removing the P914 Vanguard, ensure adequate space is available to prevent damage to the abdominal shields and curtain bar assemblies and to avoid any tripping hazard once removed.

Remove the Wing Shield (Abdominal Shields and Curtain Bars)

1. Lift the abdominal shield upward until the shield clips are fully disengaged from the curtain bar assembly.
2. Remove the abdominal shield assembly carefully and set it aside in a safe location.
3. Loosen the set screw on the pivot pin using a 4 mm Allen wrench.
4. Lift the curtain bar assembly upward to disengage the pivot pin from the conical joint.
5. Remove the curtain bar assembly completely from the conical joint.

Quality Check

Refer to the following criteria to ensure that the P914 Vanguard is properly installed and assembled:

- The curtain bar assemblies are securely attached to the conical joints and show no visible gaps or looseness.
- The pivot connections are properly secured, and the set screws are fully tightened.
- The curtain bar assemblies rotate smoothly through their full range of motion without obstruction.
- The wing shield assemblies are correctly installed onto the curtain bars, and all shield clips are fully engaged.
- The wing shield assemblies move freely and remain stable in both nested and extended positions.
- The retracting panel raises and lowers smoothly and maintains the desired height position.
- All shielding components (retracting panel, abdominal shields, and lower shielding) are properly aligned with no visible gaps.
- The caster wheels are locked, and the unit is stable and secure in position.

Maintenance

The Rampart P914 Vanguard requires post-procedure cleaning, routine inspections, and repairs by Rampart authorized personnel to maintain optimal performance.

Cleaning and Disinfection

The P914 Vanguard 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. Always use disposable drape kits to maintain sterility during procedures and dispose of them after.



CAUTION!

- When cleaning acrylic panels and curtains, never use rough or abrasive-faced sponges, steel wool, brushes, or cleaning pads.
- When cleaning any component, never use scrapers or metal tools of any kind.



ATTENTION!

The P914 Vanguard acrylic panels and shielding will be permanently damaged if cleaned with abrasive cleaners. **When cleaning acrylic panels and shielding, DO NOT clean with the following cleaning supplies:**

- Sporicidan[5] Disinfectant Towelettes
- Rough or abrasive-faced sponges, brushes, cleaning pads, scrapers, or metal tools
- Strong detergents or abrasives such as scouring powders
- Aerosol cleaners with Butyl Cellosolve[6]
- Hydrocarbon or chlorinated solvents, ammonia (more than 0.5%), or strong alkali cleaners
- Cleaners that are designed for grease cutting
- Excessively hot water or steam

Clean

Clean by wiping with a soft cloth and a neutral pH enzymatic detergent (typically pH 6- 8) diluted in water.

Disinfect

Disinfect using one of the following:

- 70% or less isopropyl alcohol (Dry shielding immediately after application.)
- Sani-HyPerCide[7] Germicidal Disposable Wipes
- Super Sani-Cloth[8] Germicidal Disposable Wipes
- CaviWipes[9] 2.0 Disinfecting Wipes

Notes:

[5] Sporicidan® is a registered trademark of Contec, Inc.
[6] Butyl Cellosolve™ is a trademark of the Dow Chemical Company.
[7] Sani-HyPerCide® is a registered trademark of PDI.
[8] Super Sani-Cloth® is a registered trademark of PDI.
[9] CaviWipes® is a registered trademark of Metrex Research LLC.

- *Always use detergent or wipe products according to safety precautions and use directions provided by the manufacturer.*
- *The use of disinfecting products may cause panel discoloration over time.*
- *Rampart cleaning clothes are designed for safely cleaning P914 Vanguard panels and shielding and are available for purchase. To purchase, email info@rampart.com.*

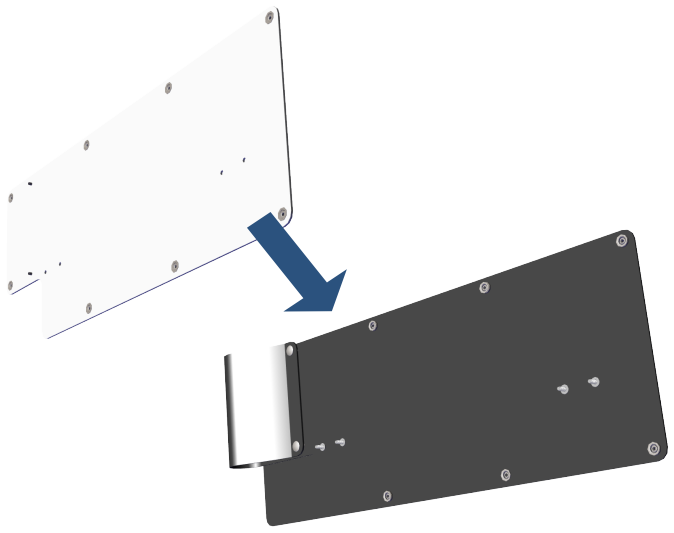
Abdominal Shield Cleaning/Disinfection

The 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.

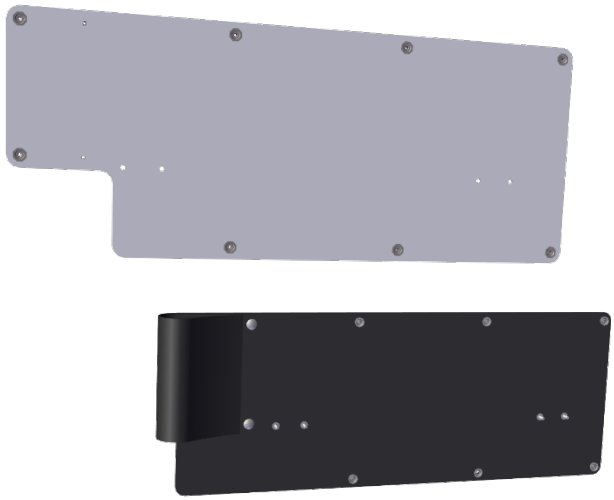
Note: *Prior to disassembly and cleaning, the abdominal shields must be removed from the P914 Vanguard and placed in a safe location per the* *P914 Vanguard Disassembly section on page 16.*

Clean the Abdominal Shield

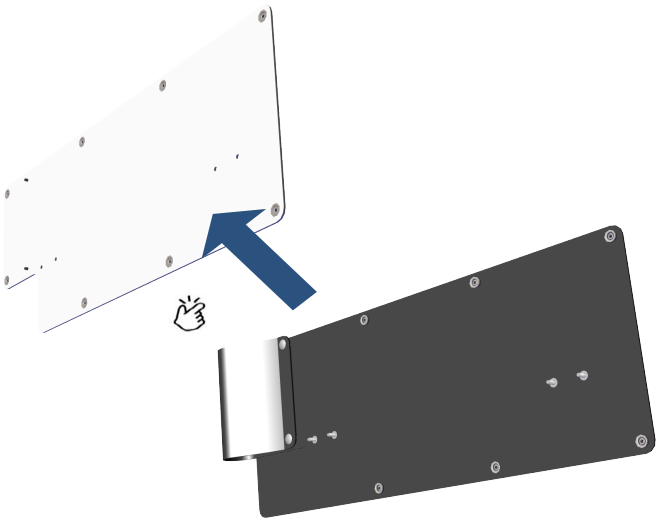
1. Unsnap the ten (10) snap fasteners that secure the soft shielding to the front of the rigid abdominal shield frame.



2. Clean/disinfect both the soft shielding material and the rigid frame of the abdominal shield per *Cleaning* on page *18*.



3. Snap the ten (10) snap fasteners on the front of the shield so that the soft shielding is securely attached to the frame.



Storage

Rampart recommends placing the P914 Vanguard in *Storage Mode* on page *11,* when not in use due to this configuration's minimal footprint.

1. Make sure the P914 Vanguard is cleaned, as described in *Cleaning* on page *18*, before storage.
2. Place the P914 Vanguard in *Storage Mode* on page *11* and reposition it to the side of the cath lab or to another suitable location with minimal foot traffic and activity.

Preventative Inspection

Rampart recommends an annual preventive maintenance inspection by a Rampart-authorized representative.

1. Make sure the P914 Vanguard is cleaned, as described in *Cleaning* on page *18*, before performing a preventative inspection.
2. Inspect the panel and soft shielding to ensure:
    a. All parts are fastened tightly.
    b. There are no cracks or damage to any of the panels or soft shielding.
    c. The retracting panel raises and lowers smoothly.
    d. The retracting panel maintains the desired height setting.
    e. The curtain bar assemblies on both sides pivot smoothly.
    f. The abdominal shields on both sides securely clip onto the curtain bar.
    g. There are no cracks, tears, or damage to any of the curtains and shields.
    h. All snap fasteners on the abdominal shields are present and securely fastened.
3. Preventive maintenance following the equipment-specific maintenance plan will default to the policies and procedures of the institution related to inspecting shielding. The Rampart service team will perform a visual inspection of attenuating components to determine appropriateness. If institution participation is available to operate fluoroscopic equipment, such testing will be performed by institution staff.
4. The Rampart authorized representative will perform or schedule repairs necessary, including ordering replacement parts.

Parts and Accessories

Part Number	Description
P914-VMS	P914 Vanguard Mobile Shield

Disposal

The P914 Vanguard contains lead-equivalent panels and lead-equivalent soft shielding. The system and all components should be disposed of in an environmentally safe manner per local, state, and Federal laws.

Limited Warranty

Rampart warrants to Customer that this product, manufactured by Rampart 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.

RAMPART

P914-VMS-Vanguard Mobile Shield

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