



AADCO Medical Inc

“Ergonomic Solutions for X-ray Safety”

***RayShield® Adjust-a-Height™
Floor Standing Over Table
Pivoting Barrier
Assembly & Specifications***

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Disclaimer

Improper installation or use of the barrier systems described in this manual, could result in personal injury and property damage. AADCO Medical, Inc., disclaims liability for any modifications or attachments to other equipment which are not in conformity with the specifications and information contained within this manual. Because of various site conditions, user preferences and other unknown factors, these installation instructions are for guidance only and should not be considered appropriate in every case.

Important

Important information: The electrical or mechanical instructions, and other information referred to in this manual, should be carried out by suitably qualified engineers who have sole responsibility for this work. Carefully read the information contained in this manual before beginning to assemble and install the equipment. Failure to read and understand the warnings and instructions could lead to serious injury and property damage.

WARNING

WARNING Collision of the Radiation Shields with other equipment will damage the shield and may cause it to fail.

Applicability

This manual applies to AADCO Medical, Inc. RayShield® Adjust-a-Height™ Floor Standing Over Table Pivoting Barriers and attachments. AADCO Medical reserves the right to change specifications and contents of this manual without obligation.

Questions or Comments

If any problems are encountered while installing any AADCO Medical product, contact the Tech Support Department at:

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Safety Precautions

Where applicable, electrical connections, installation, removal and repairs should only be carried out by a qualified electrician.

CAUTION

The S-615 pivot arm is tensioned by a spring. Always raise the arm slowly to its upper limit before assembling or dismantling



1. Overview

The S-615 Floor Standing Over-Table Pivoting Barrier is designed for Labs and Operating Rooms where the installation or use of a Ceiling Mounted Barrier is impossible or impractical.

This X-ray Protective Barrier can easily be moved to the table or away as needed. The Barrier is entirely mobile on its four caster base. The cantilevered design of this barrier allows it to be wheeled into position and used from either side of the table. The low profile split-leg base takes up minimal space while providing excellent stability. The dual jointed tilting arm allows the lead acrylic shield to be raised or lowered to the desired height. The Ball and Socket center mount allows the clear lead acrylic shield to be pivoted 360 degrees along both vertical and horizontal planes, allowing shield movement into a large number of working positions. Semicircular cutout is contoured to fit closely to the patient's torso for maximized shielding from X-ray exposure.

The 6 inch offset pivot position helps provide a maximum over-table extension of 36 inches. The barrier is of 0.5mm lead equivalent clear acrylic that is 24 inches wide x 24 inches high. The barrier height is adjustable from 63 inches above floor to 30 inches at center.

The Barrier may be most conveniently used when positioned from the side of the table opposite the operator and extended over the table to provide necessary protection from fluoroscopic X-ray exposure on the operator's side of the table. This keeps the mechanism entirely out of the operators way while providing necessary X-ray Protection.



2. Assembly

2.1 Parts List

S-615 Parts List

- 1 Base Assembly with column socket and legs with 2 attached casters
- 1 Column
- 1 Pivot arm
- 1 Center vertical support
- 1 Lead acrylic window
- 1 Cover assembly for pivot arm

Fasteners

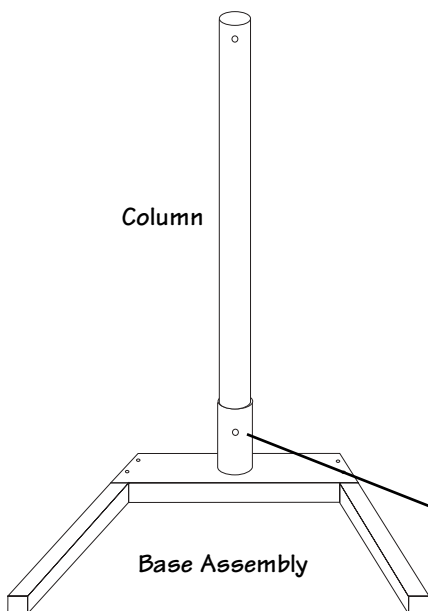
- 2 M6x10 Hex socket head screws
- 1 M6x12 Hex flat head screw

Tools

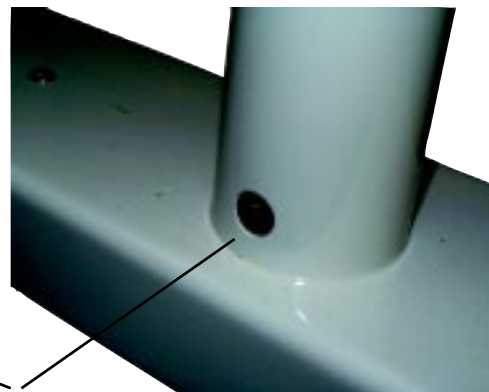
- 1 M6 Hex head wrench
- 1 M5 Steel adjusting rod



2.2 Attaching Column

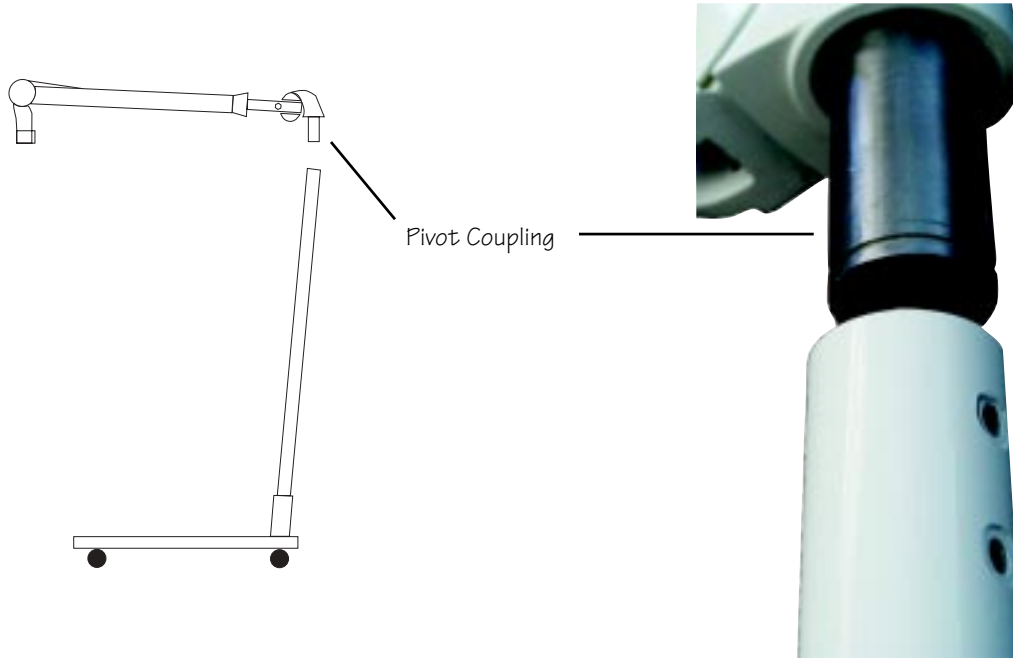


Insert the column into the base assembly, align the base hole in the column with the hole in the base assembly. Insert a M6x12 hex head flat head screw and tighten.

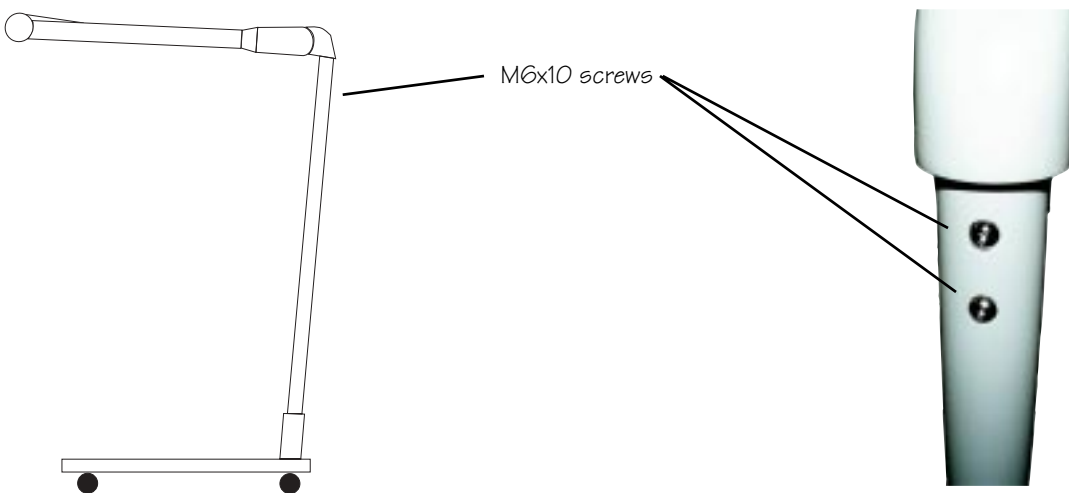


2.3 Attaching Pivot Arm

Remove the two M6x10 hex head socket screws from the Pivot arm coupling and set aside. Place the coupling over the column and insert the arm coupling into the top of the column.



Align the screw holes in both the column and coupling. Using the two M6x10 screws removed in the last step, insert the screws and tighten.





3. Mounting a Protective Window

WARNING

The height adjustable spring arm is under tension and may spring up with considerable force.

3.1 Center Mount protective window

Step 1

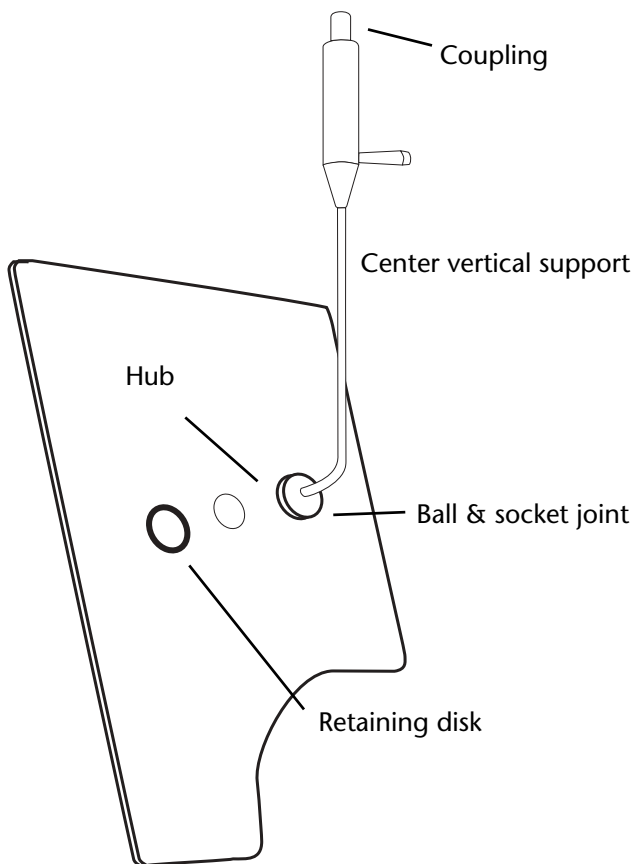
If the clear lead acrylic window has a corner cut-out, determine if it is normally positioned bottom left or bottom right. The central ball & socket joint allows the window to move in any direction and the central vertical support can turn 360° in the Type 2000 arm, so the cut-out can be positioned at any corner. However, backward tilt is restricted by the position of the central support. Maximum forward tilt at the top of the window is achieved when the support is nearest to the practitioner and the window is on the other side.

Step 2

Place the 45mm od. hub of the ball & socket joint in the central hole in the clear lead acrylic window. This joint is located at the lower end of the vertical support. Attach the window-retaining disc to the joint with 4 - M4 x 20mm long countersunk allen head screws. Apply Loctite to the threads.

Step 3

Refer to Section 4.1 Installation of equipment on Pivot Arm



4. Fitting & Adjustment of the Pivot Arm

4.1 Installation of Equipment on the Pivot Arm

Note: We recommend that installation of equipment on the Pivot Arm be carried out by **two people**.

Step 1 Remove the protective cap (3) from the socket of the spring arm.

Step 2 Remove and retain a flat head screw (2) from the collar located at the end of the spring arm.

Step 3. From the bottom, insert a flat blade screwdriver into the slot in the collar and press outward at the top to release the catch on the safety segment. Lift the collar straight up.

Step 4 Take out the exposed Safety Segment Key (4) from the slot in the side of the spring arm.

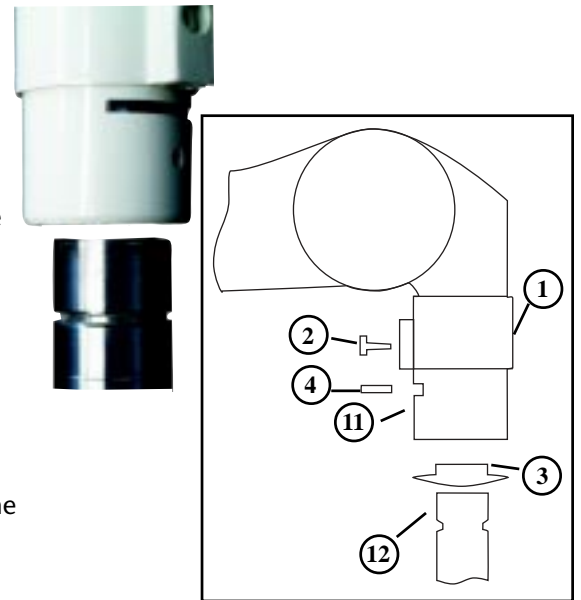
Step 5 Place the mounting stem (12) of chosen equipment into socket (11)

Step 6 replace safety segment Key (4).

Step 7 Pull the safety sleeve (1) downwards till you hear it snap over the safety segment Re-fit screw and tighten (2).

CAUTION

Carefully test for rotation and weight bearing before releasing equipment.



4.2 Protective Barrier Window Adjustments

Each shield is pre-set with a degree of friction that enables the window to maintain its tilt or swivel angle. Adjustments to alter the function, i.e., as a result of loosening due to excessive wear, can be carried out as described below.

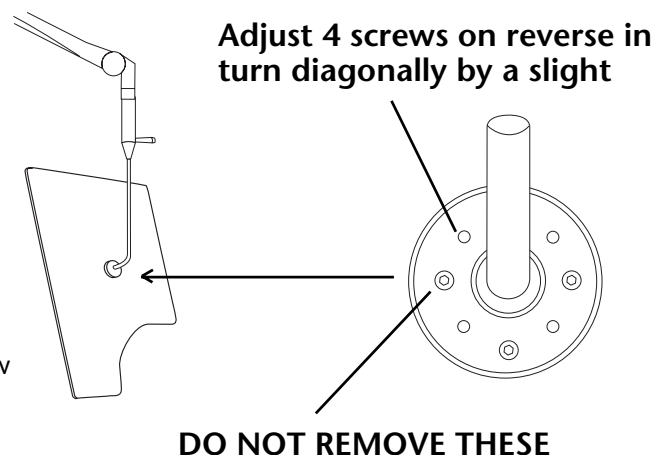
Step 1
 To increase the friction at the central ball & socket joint use a 4mm hex wrench

Step 2
 Turn each of the 4-4mm socket head set screws clockwise by a *slight* amount.

Step 3
 Check the friction after each screw is adjusted.

Caution

Do not over tighten and do not loosen the other screws as this might disassemble the ball & socket joint and cause the window to fall from the vertical support.



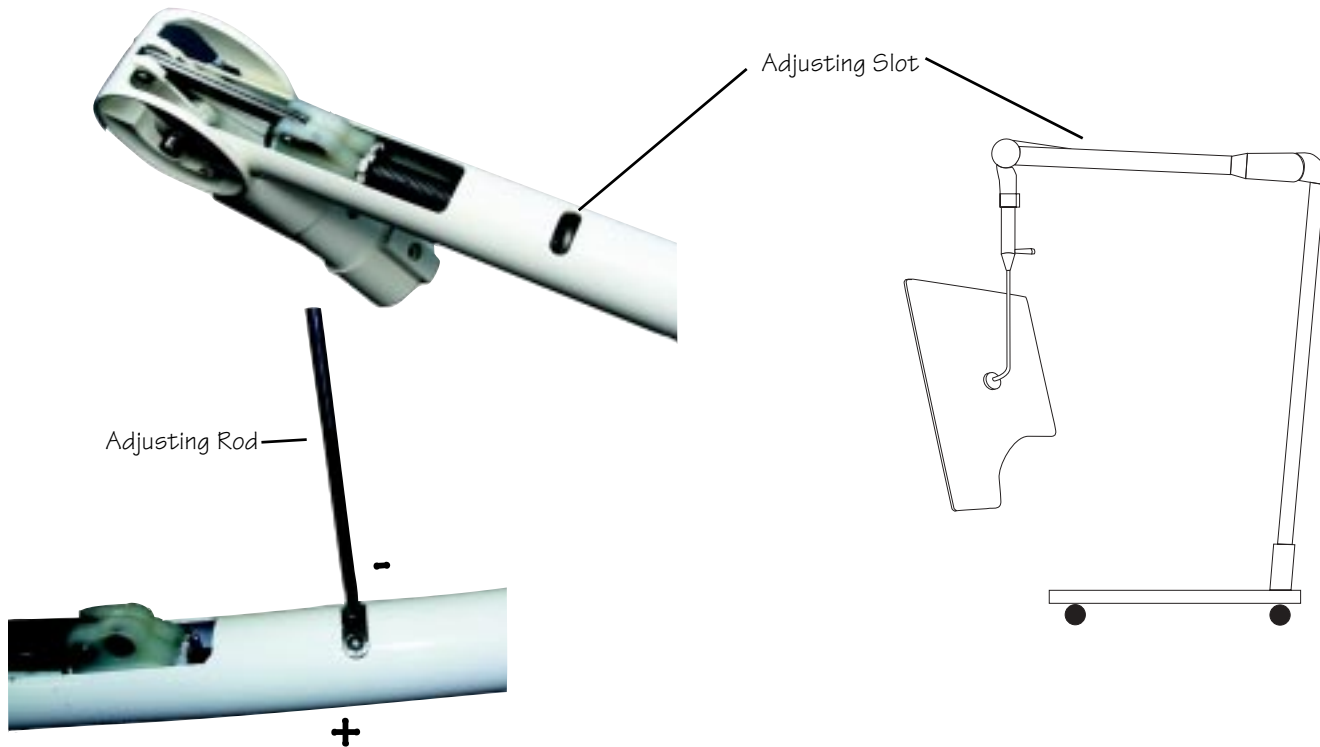


4.3 Adjustment of Load Counterbalance

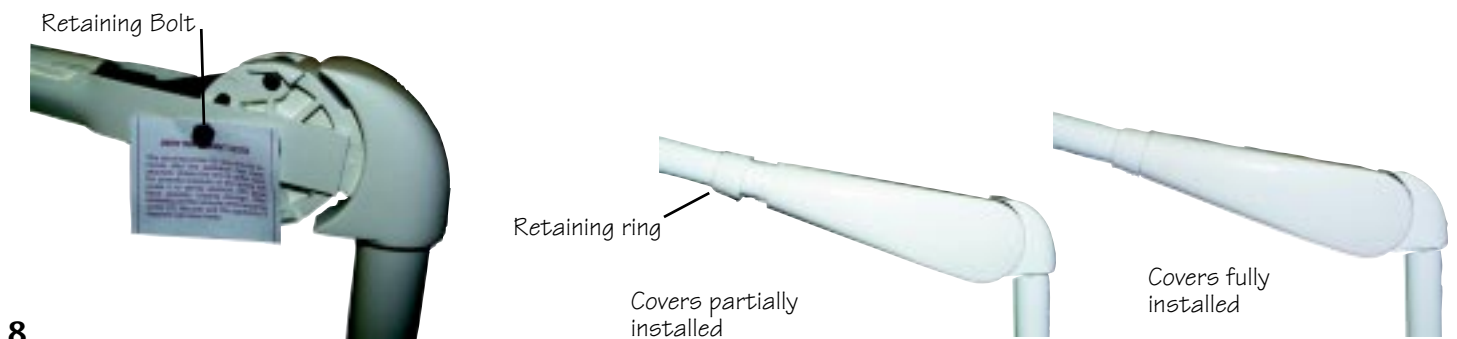
Step 1
Gently spread the circular sides of the 26 cm long plastic cover, which is located on the spring arm joint just above the radiation shield and slide the cover in move the 5 mm o.d. x 10 cm long adjusting rod from its storage clip under the plastic cover.

Step 2
The removal of the plastic cover reveals an adjusting slot. Move the spring arm to a horizontal position or until an internal capstan nut is visible in one of the slots.

Step 3
Insert the adjusting rod into a drilled hole in the capstan nut. Note: grease may obstruct the holes As you stand at the shield end of the arm, turn the nut clockwise (+) to increase the spring force or counter-clockwise (-) to reduce the spring force. If the arm moves upwards too easily turn the nut counter-clockwise. If the arm drops too easily turn the nut clockwise. Replace the cover. Retain the rod, which will be required if future storage height adjustments are to be made.



Step 4
With the counterbalance adjusted, the retaining bolt at the rear of the pivot arm may be removed (save the parts in case the shield has to be removed at a later date). The right and left covers may now be snapped together and the retaining ring placed over the end of the covers.



4.4 Mounting a Protective Curtain

This protective curtain is designed to be placed at the bottom edge of overhead lead acrylic protective barriers.

The protective curtain is fixed to the bottom edge of the lead acrylic panel on both sides by pads of adhesive backed Velcro® material. When fixed to the acrylic panel, these pads align with Velcro® material sewn to the protective curtain, holding the curtain in place on the acrylic.

Installation

Installation is best accomplished by laying the acrylic panel on a flat horizontal surface. The acrylic window should be clean and dry.

Step 1

Place protective padding under the acrylic panel to guard against scratching.

Step 2

Separate the protective curtain, as shown in Figure 1. at the top edge, bending back the uppermost panel and exposing the Velcro® pads (the pads that attach to the acrylic panel have protective paper covering the adhesive - DO NOT remove the paper from the adhesive strips yet).

Step 3 Lift the acrylic panel and slide the bottom attaching edge of the protective curtain under it. Now align the bottom attaching panel to conform to the shape of the acrylic panel. The bottom edge of the Velcro® should be at or near the bottom edge of the acrylic panel for maximum protection.

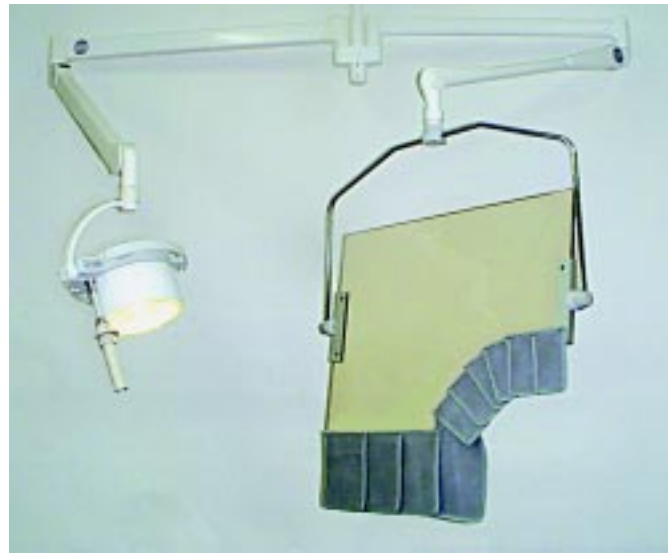
Step 4 At this point, you need some assistance, preferably one person on either side of the panel to lift the acrylic enough for you to gently remove the paper backing from the bottom pads on the protective curtain. Be sure to hold the curtain in the proper alignment.

Step 5 When the paper backing is removed make any necessary final adjustments in the position of the curtain.

Step 6 Now the acrylic should be gently lowered to the adhesive surface and pressed down firmly along the length of the acrylic to establish the bond. Figure 2.

Step 7 The protective paper can now be removed from the upper attaching panel and the pads pressed down in alignment with the bottom panel. We recommend leaving the panel and curtain in the flat position for 8 hours to allow the bond to set.

Step 8 Due to the added weight of the protective curtain, it may be necessary to adjust the arm to compensate, following the instructions in Section 4.3, *Adjustment of load Counterbalance*



S-568 w Lamp & Protective Curtain

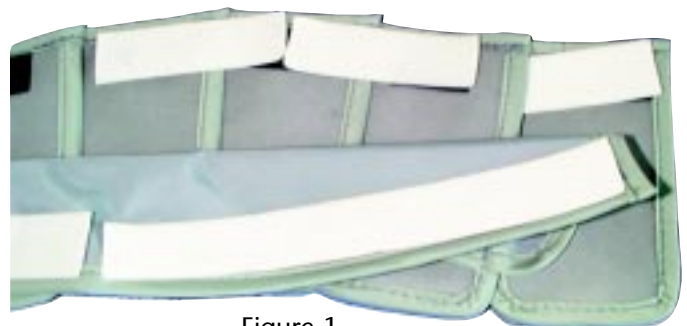


Figure 1.



Figure 2.



5. Inspection & Maintenance

WARNING

Insert the retaining bolt and nut into the spring arm before removing a protective window. (See Sections 4 & 5) The suspension system has joints and pivots, which may create pinch points. Keep body parts away when these are in motion.

Inspection

After initial installation and periodically thereafter:

- Inspect all screws/bolts to ensure that they are tightened.
- Inspect all parts for signs of wear or damage.
- Check the total system to ensure that it moves smoothly.

If any worn or damaged parts are found do not continue to use them.

Cleaning

The **suspension parts** are provided with high quality baked enamel coating. They can be cleaned and disinfected using agents normally used in operating rooms.

Protective Windows fitted to radiation shields contain *lead acrylic*. Small marks on the surface of lead acrylic can be removed with be fine acrylic polish. Use isopropyl alcohol on a soft cloth to remove marks.

Maintenance

The radiation shields described in this manual are constructed in such a way that all mechanical elements, bearings and joints only need periodic inspection. However, preventative maintenance procedures are recommended where the articulated joints are greased annually with a light coat of a lithium based automotive grease (*or equivalent*).

6. Weights

Catalog No.	Description	Weight/kg.	Weight/lbs.
S-615	Base and Column	16.4 kg.	36 lbs.
S-615	Pivot Arm	5.3 kg.	11.5 lbs.
PS-568NS	Protective Window(largest)	12 kg.	26.4 lbs.