

# Design and Manufacture of Radiation Protection Equipment

For Nuclear Medicine, X-ray,  
Radiopharmacy, Radiochemistry  
and Radiotherapy applications



**BriTec**  
Bright Technologies Ltd

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# RADIATION PROTECTION

## Unilock® 5 Tungsten Syringe Shields

The UNILOCK® 5 Syringe shield is designed for low energy/low activity Radionuclide use. For higher activity work such as kit preparation we recommend using Unilock® 4.

The shield incorporates a single handed, quick release locking mechanism and an anti-roll design.

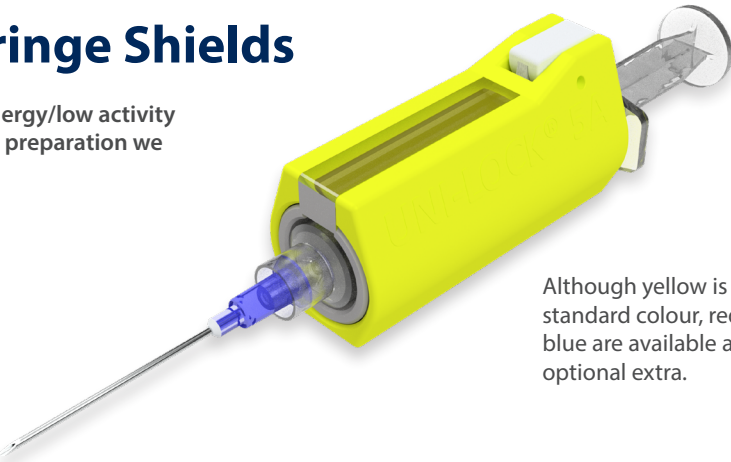
Other colours are available when ordering 5 or more syringe shields in any one size.

### Specifications

**Tungsten barrel:** Minimum 1.8 mm wall thickness.

**Lead glass window:** Minimum 2 mm Pb equivalent.

The shield is available to suit most size and make of syringes.



Although yellow is the standard colour, red and blue are available as an optional extra.

## Unilock® 4 Tungsten Syringe Shields

With a full Tungsten barrel the Unilock® 4 Syringe Shield has increased shielding making it suitable for higher activity contents. There is also the added advantage of a wider lead glass window for increased viewing of the syringe graduations.

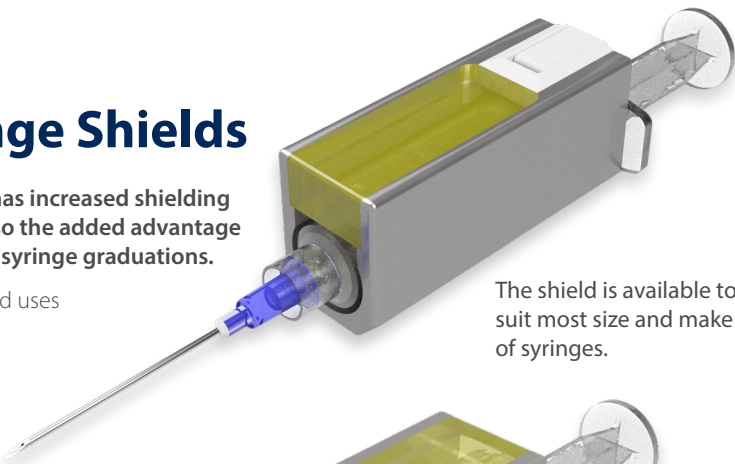
The Unilock 4 has a flat base to prevent rolling whilst in use and uses the same quick release locking mechanism as the Unilock® 5.

### Specifications

**Tungsten barrel:** Minimum 2 mm wall thickness.

**Lead glass window:** Minimum 2 mm Pb equivalent.

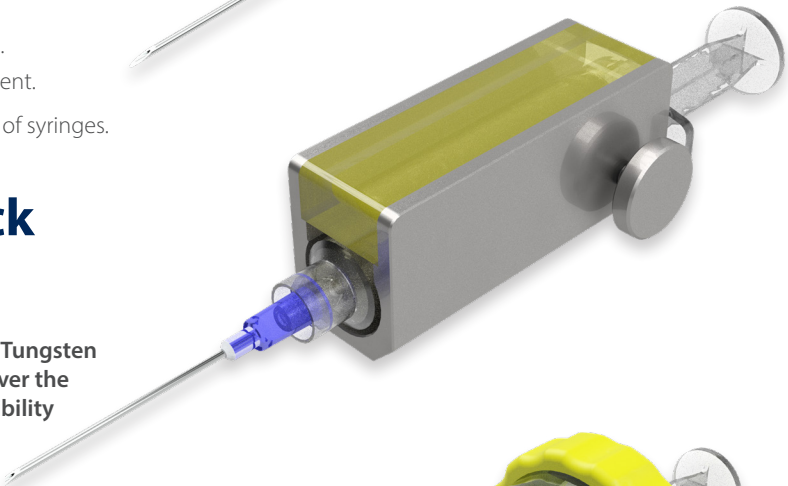
The shield is available to suit most size and make of syringes.



The shield is available to suit most size and make of syringes.

## Tungsten Screw-Lock Syringe Shields

The Screw lock design incorporates the same Tungsten barrel as the Uni-Lock® 4 syringe shield however the screw-lock mechanism allows for greater flexibility with different lengths of syringe.



## TwistLock Plastic Beta Shields

Light weight acrylate shield with 360° unobstructed view of syringe and contents. Shield wall 10 mm thick for maximum beta absorption.

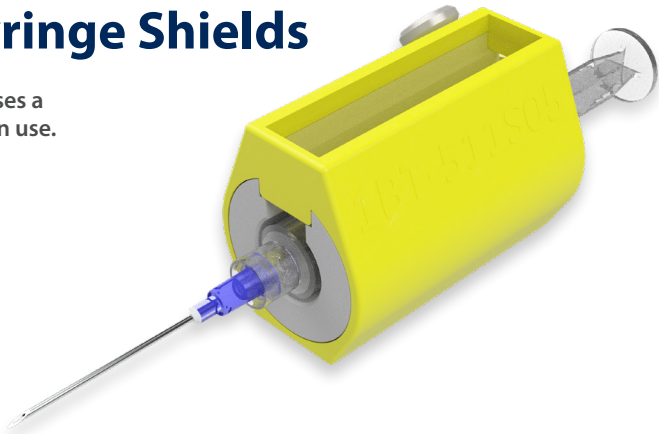
Available in 1 ml, 1 ml Luer Lock, 2 ml, 3 ml, 5 ml, 10 ml, 20 ml and 50 ml sizes.



## 511 KeV PET Tungsten Syringe Shields

Designed to incorporate an anti-roll feature, this shield uses a screwlock mechanism to hold the syringe in place when in use.

- Tungsten 90% plus Ni and Cu balanced barrel.
- Lead glass 11 - 13 mm (4 mm LE) window.
- M4 x 16 socket cap screw.



## Syringe Shields and Replacement Glass

Bright Technologies will undertake to repair or replace broken glass in syringe shields of most types of syringe shields in our workshops.

## Needle Recapper

The main body of the needle recapper is made from natural white acetal copolymer resin.

Both the top and the bottom of the needle recapper are recessed. The outside wall of the needle recapper has a non-slip textured finish to help you grip the recapper during cleaning, etc.

Available with differing diameter holes or all holes of the same diameter.



## Tungsten Vial Shields

Lightweight unbreakable shield providing maximum protection.

The smooth polished surface of the Tungsten alloy is easy to keep clean or sterilise. Designed to accommodate vials from most Radiopharmaceutical manufacturers. The removable screw top has a dished opening to expose the vial septum. The vial top is held firmly against the opening by an internal spring.

Available in 3 mm or 6 mm Tungsten with either a separate push fit lid or swivel lid.



## Windowed Vial Shields

Universal Tungsten vial shield with outer acrylic window protection.

- Two large lead glass windows set at 180°.
- Base contains spring to hold vial against top orifice.
- Supplied with plastic cup to hold small diameter vials centrally against orifice.
- Push-on plastic cap with lead insert provides complete shielding and protects vial septum.





## Vial Storage Box

A lead shield bench top box designed for the safe storage of radioactive vials and small sources.

- The Lid is hinged and has a built in stop to hold the lid at 100 degrees when open.
- It also comes with a lockable butterfly catch and a chrome finished handle.
- Constructed from steel with lead lining.



## Syringe Carriers 3/6 mm Pb

Ideal for transporting loaded syringes and/or small radioactive sources.

All carriers are constructed from a steel powder coated box lined with lead. Lead sizes come in either 3 mm or 6 mm. The hinged lid is fitted with a front fixing catch which can be wired and sealed for security.

All carriers are supplied with a choice of fixed or pivoting handle. The pivoting handle is locked in the upright position when carried. All carriers are fitted with an internal, removable, rigid plastic tray. The internal length of the carriers is designed to accept a loaded 10 ml syringe fitted with a 25 mm capped needle. 100 mm handle clearance from lid.

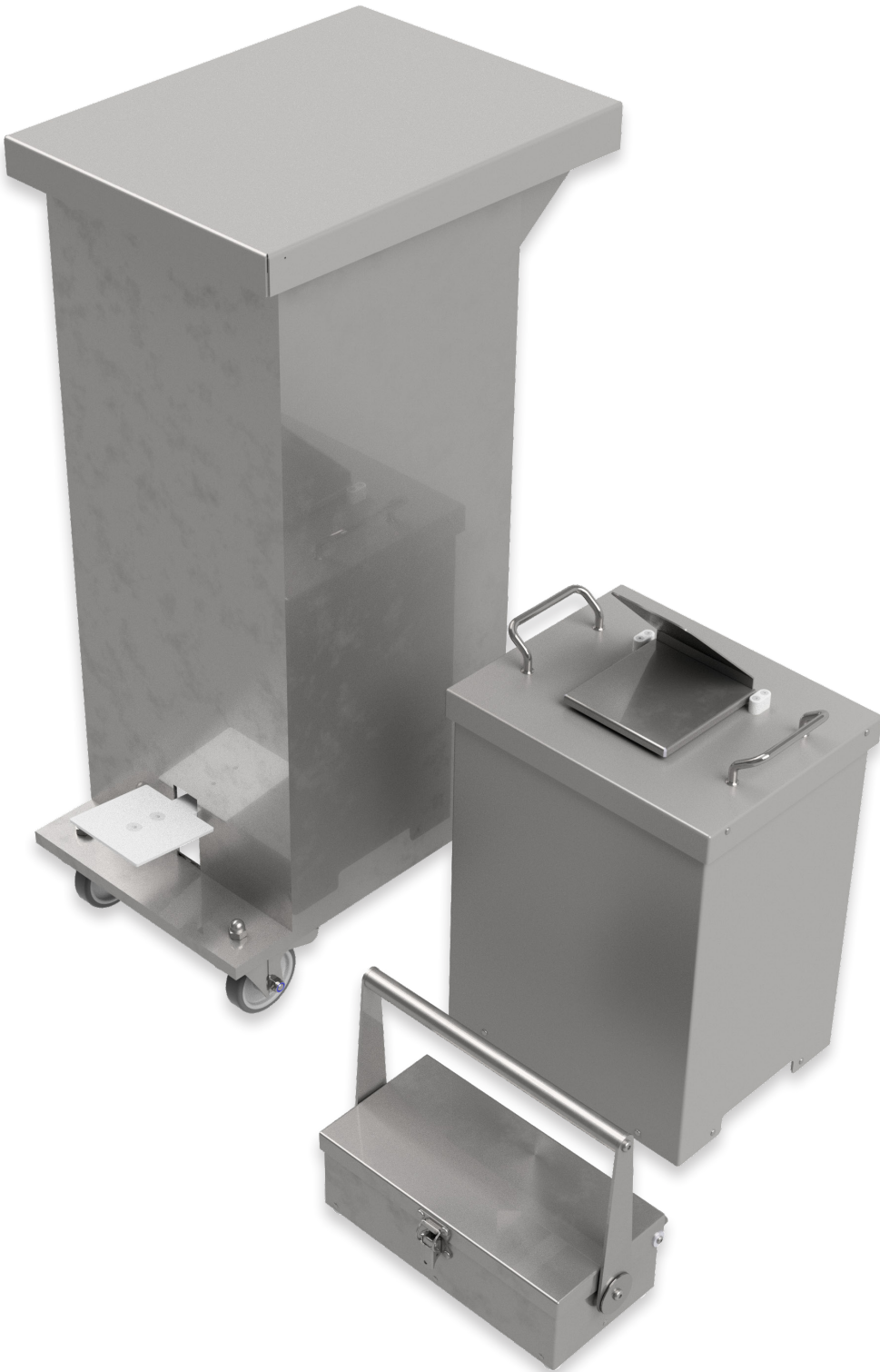


## Clean Room Products

Designed and manufactured in stainless steel ensures these products can be used in a clean room environment or where high levels of cleanliness are required.

We offer a range of:

- Pedal Bins.
- Sharps Waste Containers.
- Syringe Carriers.
- Bespoke Designs.





# RADIATION PROTECTION

## Portable Lead Acrylic Bench Shield

A tough shatter resistant lead loaded acrylic shield which is transparent to permit an unobstructed view of the working area.

Provides front screening and is ideal for use in laminar flow cabinets.

- Shield is 35 mm thick with a lead equivalent thickness of 1.5 mm.
- Height: 300 mm, Width: 230 mm.

## Mini Viewing Barrier

L-shaped lead barriers fitted with cantilevered lead glass window(s) to provide the user with an unobstructed view of the working area whilst still being fully protected. The lead glass window is angled at 45° to the vertical.

Its small size and light weight makes these barriers ideal for use in laminar flow cabinets.

- The steel frame has a durable powder coating.
- Available in three versions with varying degrees of shielding.

## Solid Surface Viewing Barrier

Manufactured with lead encased in Solid Surface material this viewing barrier can be cleaned with a broad range of antimicrobial cleaning products used within clean room environments. The barrier is seamless which eliminates dirt traps.

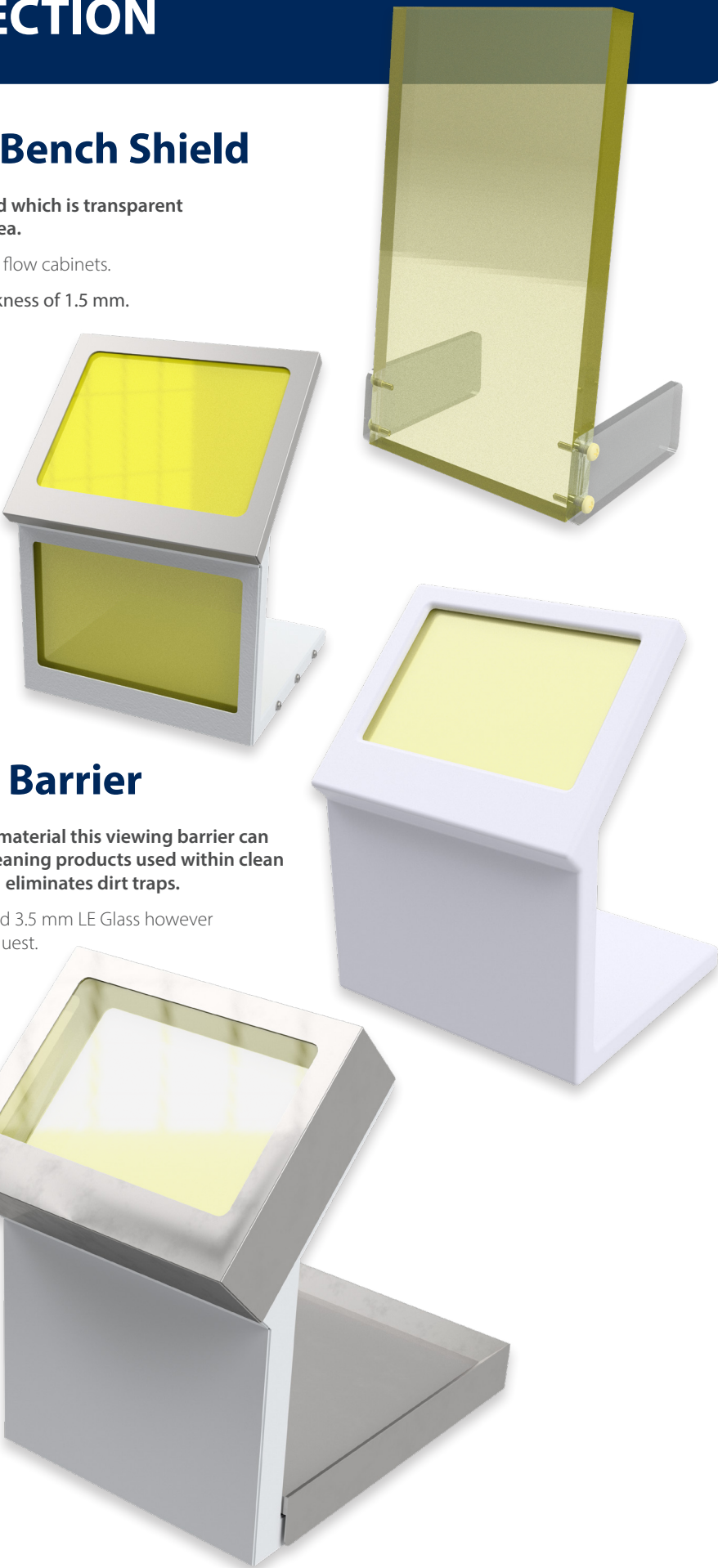
As standard, this comes with 10 mm lead shielding and 3.5 mm LE Glass however custom lead thicknesses and sizes are available on request.

## Large Viewing Barrier

Heavy duty barriers with 30 mm lead shielding and full equivalent lead glass window.

Working surfaces are of stainless steel and the base contains a removable stainless steel tray designed to contain spills and allow for easy decontamination.

- LE-DIN EN 61331-2 (PROTECTIVE GLASS STANDARD) lead glass.
- BSEN 12588 Lead.
- Powder coated white outer frame.
- Stainless steel inner surfaces.
- 350 (W) x 435 (D) mm base.
- 545 mm overall height.
- 296 x 185 mm viewing area.



# RADIATION PROTECTION

## Lead-lined Shields for Radioactive Waste

Our range of lead lined sharps shields comprises three basic sizes and a choice of two lead thicknesses, 3 mm or 6 mm.

The shields are of steel construction with a lead lining. The outer surfaces have a durable powder coated finish and inner surfaces are covered with a white plastic liner.

The top is removable for the replacement of the disposable sharps container. The top is fitted with a flip open lid to provide easy access to the opening in the container. The lid can be operated with the back of the hand to avoid possible contamination.

- Mild steel (CR4) powder coated outer case.
- Rolled lead BSEN12588.
- Rigid plastic liner.

\*When ordering specify 3 mm or 6 mm lead.

## Pedal Bin

Available in two sizes as standard (Small – 17L; Large – 40 litre) with a choice of lead shielding 3 mm or 6 mm lead shielding.

The steel box has a powder coated outer surface and the inner surface is lined with plastic to ensure that any spillages are contained within the bin. The top shielded lid is operated by a foot pedal. The lid is fitted with a damper mechanism allowing it to close smoothly. The bin is supplied with two removable lead lined inner lids, one large for use with sacks and one smaller for use with small items. The pedal bins are primarily for use with plastic sacks but can be adapted for use with some sharps containers and they can also be fitted with castors. The shields are primarily for use with plastic sacks but can be adapted for use with most containers.

For custom lead shielding thicknesses over 6 mm, the bin features a smooth-slide lid designed to enhance safety and eliminate the risk of finger trapping.

- Mild steel (CR4) powder coated outer case.
- Rolled lead .
- 480 micron plastic lining.
- Easy to move castors.





# RADIATION PROTECTION

## Roll Top Storage Containers

The roll-top safe offers a practical solution for storing waste containers and sacks. Available with 10 mm; 25 mm or 50 mm lead shielding as standard.

Whether built into room benching or used as a standalone unit, it is fully customisable in size and lead shielding thickness to meet your exact needs.



## Shielded Safes for Radioisotope Storage

Our range of heavy duty shielded safes comprises of two sizes with either 25 mm or 50 mm lead shielding. The outer surfaces have a durable powder coated finish and the inside is finished with a stainless steel liner. The safes have a hinged front door, opening either side (depending on customer preference).



## Standard Shielded Cupboard

Our standard shielded cupboard is available with 3 mm, 6 mm or 10 mm lead shielding. The outer surface has a durable powder coated finish and the inside is finished with a stainless steel liner.

The cupboard has two lockable hinged doors and is fitted with a one shelf – if required.



# RADIATION PROTECTION

## Portable and Static Flood Storage Cases

Available with 3 or 6 mm lead lining these flood storage cases are designed to fit a flood source size of 130 (L) x 605 (H) x 855 (W) mm.

- 420 (L) x 795 (H) x 957 (W) mm external dimensions.
- 86 mm lid width.
- 3 or 6 mm lead lining.
- Hinged lid.
- Powder coated internal and external surface.
- Fitted with four castors for easier manoeuvrability and stability.



## Mobile Lead/Lead-Glass Screens

Mobile shields provide effective radiation protection for personnel during patient procedures. Each unit features lead shielding encased between durable solid core plates, all securely mounted within a robust steel frame with smooth-rolling castors. They can be supplied with or without a viewing window that can be customised with a range of sizes and materials to suit your specific requirements.





## Stand-alone PET Dispensing Unit

In response to growing demand for a cost-effective solution for sub-dispensing of PET isotopes in a Grade A air environment, Bright Technologies developed a standalone, self-contained PET dispensing unit designed for safety, efficiency, and compliance.

These units are available in 1000 mm, 1200 mm and 1500 mm widths.

- Solid surface worktop.
- Vertical grade A air downflow hood.
- Counter sunk 50 mm lead shielded waste safe to take sharps containers.
- Counter sunk 50 mm lead shielded dose calibrator housing.
- 50 mm lead shielded safe for the storage of calibration sources, etc.
- 13 Amp socket incorporated into the rear wall of the unit.
- Unshielded storage cupboard.
- These units can be customised to meet customer specifications.



## PET Dispensing Pot

The PET Pot offers a simple, effective solution for manually dispensing PET isotopes. specifically designed to draw doses from a vial into one of our PET Syringe Shields while significantly reducing finger dose exposure.

Includes stand, body, lid, cap, base sleeve holder, 1 ml, 2/3 ml, 5 ml, 10 ml syringe sleeves, various vial inserts, and a spring for the vials.

- Removable shielded syringe sleeves allow the user to choose the most appropriate syringe.
- Removable vial sleeves allow the user to choose the most appropriate vial.

## SPECT Dispensing Unit

Due to increasing demand for an economical solution to sub dispensing of SPECT Isotopes in a grade A air environment Britec has developed a free standing SPECT dispensing unit. This incorporates:

- Solid surface worktop.
- Vertical grade A air downflow hood.
- Counter sunk shielded waste cupboard to take sharps containers. 3 mm lead shielding as standard .
- Counter sunk dose calibrator housing. Unshielded as standard. Shielding is an optional extra as below.
- 3 Amp socket incorporated into the rear wall of the unit.

The following options extras can be added if required:

- Waste shielding + 3 mm lead (6 mm in total).
- + 7 mm lead (10 mm in total).
- Dose calibrator shielding + 3 mm lead.
- + 6 mm lead.
- + 10 mm lead.





## Generator Hoist

The Generator Hoist has been reviewed from top to bottom with upgrades to provide improved features and performance for lifting and transporting Tc generators around nuclear medicine departments.

- Easy to move and position on 4 swivel castors.
- Extendable boom arm for extra reach.
- Electrically powered boom height with remote hand controller.
- 24 V volt electrics powered from rechargeable battery.
- Overload protection within ON/OFF switch.
- Durable powder coated finish.

### Specification

**Footprint Area:** 750 mm x 530 mm

**Overall Height:** 1740 mm

**Distance Between Front Forks:** 450 mm

**Height under Boom:** Min. 315 mm, Max. 1640 mm

**Boom Lift Rate:** 1800 mm/min (no load)

**Boom Arm Extension:** Min. 530 mm, Max. 945 mm

**Safe Working Load:** 25 kg

**Mass:** 71 kg

**Operating Voltage:** 24 V dc (sealed lead acid battery)

**Nominal Power Consumption:** 85 W



## Paediatric X-ray Chair

Designed specifically for paediatric chest X-ray purposes, this X-ray chair has many operational features which facilitate positioning for X-ray imaging.

- Individual locking castors to allow precision movement.
- Adjustable front and side bolsters designed for single hand use.
- Adjustable x-ray plate holder.
- Removable cushions which can be cleaned with Atichlor.
- Head cushion to protect the child's head.
- Fire retardant cushions and bolsters.
- Tilt tested up to 20 degrees.
- Minimal seams to comply with infection control.
- CE Marked 'Medical Device Directive 93/42/EEC.
- Non-rust and light weight materials used.

### Specifications

**Dimensions:** 1300 (H) x 660 (W) x 600 (D) mm

**Seat Height:** 15 mm

**Weight:** 33 Kg

**Max. Load:** 40 Kg



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