

MRI PRODUCTS - STRETCHER & ACC., PHANTOM

BED, MANUAL, MR/TBI/HDR WITH 0-60° FOWLER POSITIONING



Shown with Optional Items (not included)

- MR Conditional to 3T
- Made from only Non-Ferromagnetic Materials
- Collapsible Guard Rails
- Slots for Attaching Straps
- Easy to Maneuver

This treatment bed is MR conditional to 3T and can also be used for TBI or HDR treatment.

The Slessinger board (Item 946-004) will work with this bed and can also go into an MR suite. When using the Slessinger board with the bed, a stop mounted into the keyhole slots at the foot end of the bed will prevent the Slessinger board from sliding.

This all aluminum, non-magnetic bed has an adjustable backrest for fowler positioning at 15°, 30°, 45° and 60° angles. The backrest can be adjusted to the angle needed by raising the backrest to the desired position. To lower the backrest, raise the backrest a little and pull knob at the end of the bed to lower. The flat, fixed end of the bed is 52" long and the adjustable backrest is 27" long. There are four slots on each side of the bed to allow for up to four sets of the optional 4" Universal Velcro Straps.

Three removable aluminum plates, with Velcro attached, fit into the keyhole slots on the bed. These removable plates are used when the optional Treatment Bed Cushions (Item 182-310) are being used and will prevent cushion movement. The optional Treatment Bed Cushions have Velcro mounted to the bottom of the cushions which attaches to the Velcro on the removable plates.

The collapsible guard rails are 11" high from the top of the bed and 36" long and can be locked in the up or down position.

The bed height can be set at 28", 29" or 30" with the four locking pins. With the optional Caster Leg Extensions (Item 182-304), the bed height can be set from 46" to 48".

The 5" non-magnetic, lockable casters make this unit easy and convenient for one person to maneuver.

Specifications

Frame Material: Aluminum
Bed Size: 80"L x 25" W x 28"-30"H
Bed Height in 3 positions: 28", 29" and 30"
Caster Size: 5" Non-Magnetic with lock
Paint: Precision Tan
Anodized Aluminum: Blue
Weight Capacity: 350 lbs
Shipping Weight: 95 lbs via truck

Optional Accessories

Item 182-304 - Caster Leg Extension 4/Set
 Item 182-310 - Treatment Bed Cushions
 Item 182-320 - IV Pole 5/8" x 32", MRI Conditional, Non-Ferromagnetic
 Item 253-204 - 4" Universal Straps for 18" to 30" Wide Tables
 Item 946-004 - CT/MR Slessinger Board for HDR Brachytherapy

Item #	Description
182-300	Bed, Manual, MR/TBI/HDR with 0-60° Fowler Positioning
182-304	Caster Leg Extensions 4/Set
182-310	Treatment Bed Cushions
182-320	IV Pole 5/8" x 32", MRI Conditional, Non-Ferromagnetic
253-204	Straps, 4" Universal for 18" to 30" W. Tables (Pair)
946-004	CT/MR Slessinger Board V2.0 for HDR Brachytherapy

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LEG STAND

For use in CT, MR, Radiation Therapy and Diagnostic Radiology

This leg Stand will support one leg in a cushioned cradle. The cradle swivels to allow for a comfortable position. The cradle height can be adjusted in 1" increments. The telescoping cradle post has 7 holes at 1" spacing to accommodate the locking rod.

The 10" square aluminum base has the cradle post welded to it and also includes rubber pads to minimize movement.

Specifications

Cradle

Width: 5.1" (13 cm)

Length: 6.8" (17.5 cm)

Pad: 0.25" (0.635 cm) Blue Foam

Base: 0.25" (0.635 cm) White PVC

Base

Base size: 10" x 10" x 0.25" Thick (25.4 x 25.4 x 0.635 cm)

Cradle Post Height: 9" (22.86 cm)

Minimum Height from Couch Top: 7.1" (18.03 cm)

Maximum Height from Couch Top: 16.6" (42.16 cm)

Base Material: Aluminum



- For use in CT, MR, Radiation Therapy and Diagnostic Radiology

Item	Description
250-100	Leg Stand

MRI STEP STOOL WITH HANDRAIL

- Has a green rubber tread to distinguish them from similar stools that may not be safe near the magnet
- Made of heavy-duty stainless steel

Specifications

Handrail: 41" H

Step Platform: 16" W x 8.5" H x 12" D

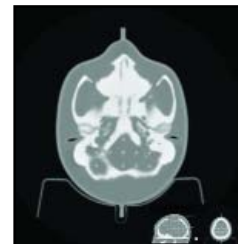
Weight: 11 lbs with handrail



Item	Description
250-150	MRI Step Stool with Handrail

MRI DISTORTION PHANTOM FOR SRS

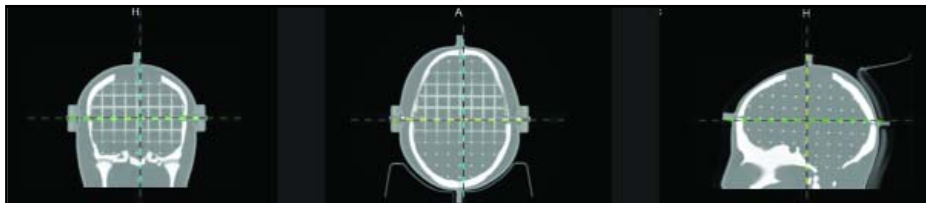
For Assessment of Image Distortion in Treatment Planning Systems



CT

MRI

CT Showing Ear Canals



CT Reconstruction

- Provides a realistic anthropomorphic scenario for CT and MR imaging
- Unique inter-cranial 3D grid design allows assessment of spatial distortion
- Special pads enable use with all fixation frames
- CT/MR markers facilitate positioning and image registration
- 335 control points
- Works with Distortion Check Software

CIRS Model 603A was designed for assessment of MR image distortion in Stereotactic Radiosurgery Planning. It is also a useful tool for verifying image fusion and deformable image registration algorithms used in various treatment planning systems. The tissue equivalent, anthropomorphic design provides the closest conditions to a clinical imaging scenario. The phantom can be imaged using X-ray, Computed Tomography and Magnetic Resonance. It images well with all MRI sequences tested to date, including T1 weighted, T2 weighted, 3D Time of Flight, MPRAGE and CISS.

The skull is manufactured from a plastic-based bone substitute, and the interstitial and surrounding soft tissues are made from a proprietary signal generating water-based polymer. The entire phantom is encased in a clear plastic shell to protect gel from desiccation. The phantom is supplied with specially designed pads that allow fixation with any stereotactic frame or mounting for end-to-end testing. The phantom is also suitable for frameless SRS QA.

The entire inter-cranial portion of the skull volume is filled with an orthogonal 3D grid of 3 mm diameter rods spaced 15 mm apart. Five extended axis-rods intersect at the reference origin of the grid. The end of each extended axis is fitted with CT/MR markers allowing for accurate positioning with lasers and co-registration of CT and MR image sets.

The phantom includes right and left air voids, 3 mm in diameter by 17 mm long to simulate each ear canal for evaluation of potential distortions commonly found in clinical settings.

682-825 Includes

- (1) 3D Anthropomorphic Skull Phantom
- (1) ABS Cradle
- (1) Complimentary 90 day license for 5 successful analyzed scans using Distortion Check Software
- (1) SRS Frame Support Cups (Set of 4)
- (1) Custom Carry Case
- (1) User Guide
- (1) 48-Month Warranty

Specifications

Overall Dimensions: 32 cm x 24 cm x 18 cm

Materials

Skull: Plastic-based bone substitute

Interstitial/Soft Tissues: Water-base polymer

Grid: Reinforced nylon

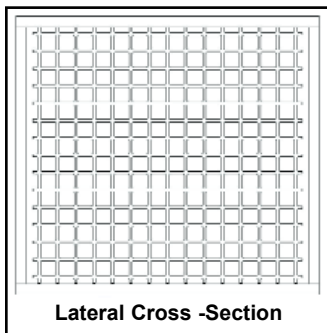
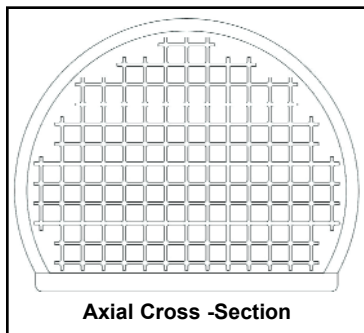
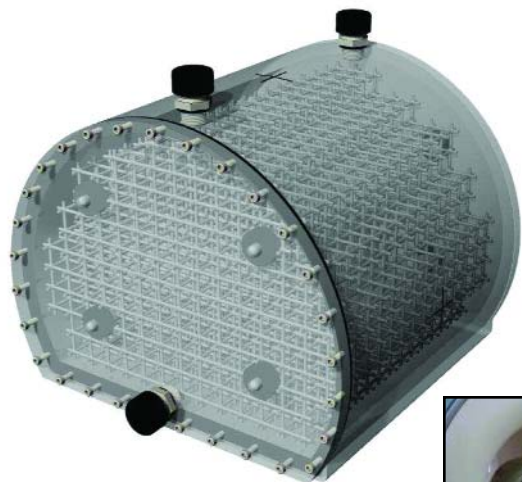
Weight: 12 lbs (5.5 kg)

Item	Description
682-825	MRI Distortion Phantom for SRS

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MRI PRODUCTS - STRETCHER & ACC., PHANTOM

LARGE FIELD MRI DISTORTION PHANTOM



The phantom's 3D grid of large size and equal spacing in all three orthogonal dimensions makes it suitable for distortion QA of large bore MRI and CT scanning for distortion-free imaging. It can be filled with various signal-generating solutions for use in magnetic resonance imaging. Contrast of the grid-liquid interface varies under computed tomography depending on the liquid used for generating MRI background signal. When empty, the grid-air interface provides good contrast under CT. The phantom images well with all CT techniques and MRI sequences tested to date, including T1 weighted, T2 weighted, 3D Time of Flight, MPRAGE and CISS sequences.

The phantom is comprised of a leak-proof PMMA cylinder and measures 330 mm in diameter by 300 mm long. The entire volume is filled with a unique orthogonal 3D grid of 3 mm diameter rods to provide complete geometric data throughout the imaging volume. The phantom is marked for ease of alignment to positioning lasers and is designed for use with both curved and flat gantry tables.

Patient induced magnetic inhomogeneity occurs when a patient is placed in the scanner due to magnetic susceptibility, which causes the tendency of a material to magnetize in the presence of a magnetic field. Regions of abrupt change in tissue density or voids between tissue and air are prone to high magnetic susceptibility which disturbs the magnetic field. Distortions due to susceptibility and smaller distortions due to chemical shifts are better qualified by a phantom that presents such distortions caused throughout the entire field of view (FOV).

Phantoms with MR signals suspended in foam, PMMA or other plastics or phantoms with MR signals only at the phantom's outer boundaries mainly characterize only B0 and Gradient Inhomogeneity related distortions. Such distortions are typically addressed by manufacturer correction algorithms.

CIRS phantoms are filled entirely with 3D orthogonal grids surrounded by background signal generating liquids to mimic distortions due to susceptibility and chemical shifts that are most likely to occur when a patient is scanned. All the components of distortion are thereby observed in MRI images and taken into account

ASSESS IMAGE DISTORTION IN LARGE-BORE MRI

- Large FOV distortion evaluation
- Unique orthogonal grid with equal 3D spacing
- Leak-proof design
- Sub-millimeter precision
- Easy integration and laser alignment
- Ground truth files for grid available in various digital formats
- 2152 control points
- Works with Distortion Check Software

The Large Field MRI Distortion Phantom is designed for assessment of magnetic resonance imaging distortion caused mainly by the nonlinearity of the magnetic gradients. It can also help quantify MRI image distortion due to chemical shifts and susceptibility due to density differences common in Diagnostic and RT treatment planning.

682-840 Includes

- (1) Large Field MRI Distortion Phantom
- (1) 3/4" garden hose filling tube (USA)
- (1) Complimentary 90 day license for 5 successful analyzed scans using Distortion Check Software
- (1) Foam-lined Carry Case
- (1) User Guide
- (1) 48-Month Warranty

Specifications

Overall Dimensions: 30 cm L x 27.6 cm H x 33 cm Dia.

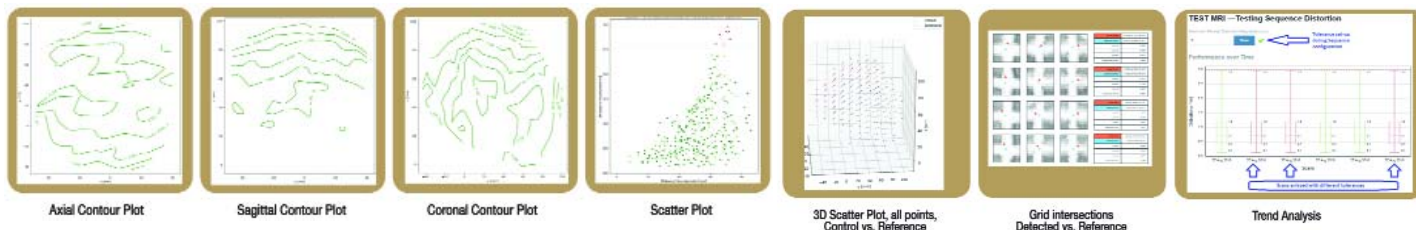
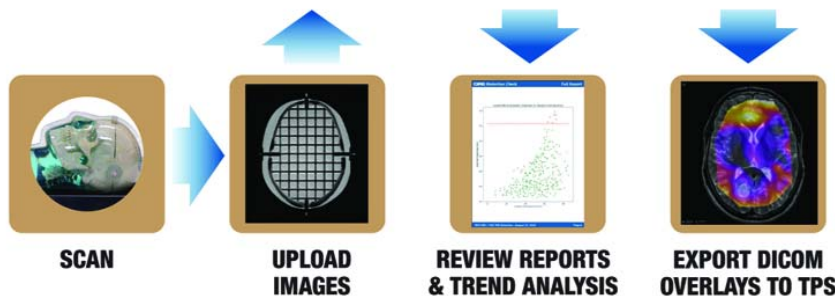
Material: PMMA

Weight (Dry): 17 lbs (7.7 kg)

Weight (Filled): 62 lbs. (28.1 kg)

Item	Description
682-840	Large Field MRI Distortion Phantom

DISTORTION CHECK SOFTWARE



- Quickly & automatically analyze complete MR data sets
- Unique grid phantoms provide physical control points through out entire 3D image volume
- Density of control points optimized to bring interpolation close to linearity
- CIRS materials simulate distortion due to susceptibility and chemical shifts typical to clinical patient scans
- Cloud based solution frees user of operating system and hardware constraints
- Online deployment facilitates collaboration and easy review and portability of results

- Simple, user friendly web interface
- Detect physical control points thru out the 3D image volume
- Web based pdf report in summary or detailed format to NEMA MS 12 standard recommendations.
- Output raw data or DICOM overlay files for use with 3rd party software
- Establish multiple user accounts with different permissions
- Easily analyze and track multiple machines, imaging sequences and phantoms
- Establish distortion tolerance thresholds specific to different imaging sequences
- Re-compute any scans acquired for different tolerance thresholds

Distortion Check is a cloud-based solution designed to quickly and automatically quantify distortion in MRI images. Used in conjunction with CIRS MRI Grid phantoms, the software provides the capability to quickly and accurately measure distortion through out the entire image volume.

Distortion Check Software is an online application. It does not require any installation on a user's PC. Once a User Account is created the software can be accessed from any device that is connected to internet.

After automatically detecting all grid intersections, the software registers either a CAD or CT scan ground truth to these MR detected control points. An interpolation is then performed to generate 3D distortion vector fields.

Distortion Check Software is a licensed product. The licensing of this product is based on the number of scans successfully analyzed by the end user within a period of time. For licensing purposes, a successful analyzed scan is defined as follows: more than 50% of the grid intersections are matched to a gold standard point for Item 682-825, The license will expire based on which terms of the license expire first (time or number of scans).

Results can be reported in a variety of output formats including scatter plots, contour plots, box and whisker plots and DICOM overlays that can be imported to TPS or other 3rd party software. The software algorithms will work with any grid configuration and CIRS employs proprietary 3D printing techniques that enable easy modification of grid phantoms to meet customer requirements.

Item #	Description	License or Scans
682-860	Distortion Check Software	2 years or 25
682-862	Distortion Check Software	2 years or 50
682-864	Distortion Check Software	2 years or 100
682-866	Distortion Check Software	2 years or 200
682-868	Distortion Check Software	2 years or 500

- 1) License is for time or number of scans successfully analyzed, whichever expires first.
- 2) Phantom serial number is Required

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