

Pediatric Anthropomorphic Training Phantoms

Model 715



USER GUIDE

CIRS

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OBJECTIVE

An ideal addition to any imaging department or Radiologic Technology training program, the CIRS Model 715 Series can assist in the monitoring, training and improvement of parameters and protocols common to most pediatric imaging procedures.

SPoRT™ is designed to aid teaching and improvement of patient positioning, collimation and anatomical comprehension and it's wide range of features facilitate effective instruction of safe, high quality, pediatric imaging.

SPoRT™ can be used in film radiography, CR, DR and Computed Tomography.

DESCRIPTION OF THE PHANTOM

The phantom represents a typical 5-year old in both size and structure, making it portable and easy to position. The full body with head, arms and legs measures 110 cm (43 inches) tall and weighs 20 kg (44 lb).

Right extremities are available in extended or flexed configurations. Left arm and leg are available with or without embedded fractures. The fracture versions contain the most common pediatric fracture types, including buckle fracture to tibia and common fracture to fibula; fracture to first metatarsal; radius fracture with open reduction and hardware and a common fracture to second intermediate phalange.

Components are made from propriety urethane and epoxy materials that mimic X-ray attenuation properties of human tissues for both diagnostic and therapy energy ranges (50keV-15MeV). The materials are durable, impact resistant and suitable for continuous handling.

The Model 715 series consists of six sectional phantoms available separately or as a complete set. Complete set includes head, trunk, right and left arms with natural and oblique hand positions and right and left legs with natural and plantar flexion foot positions.



SPECIFICATIONS AND OPTIONAL ACCESSORIES

PART NO.	DESCRIPTION	INCLUDES	WEIGHT	DIMENSIONS
715-HN	Head	Skull, Homogeneous Brain, Sinus, Cavities, Ear Canals, C1-C7 Spine, Spinal Disks, Deciduous and Descending Teeth with enamel and dentin, Small positioning stand for use with head only	2.75 kg	21 cm H x 14 cm W x 17 cm D
715-T	Trunk	Chest, Rib Cage, Spine, Spinal Disks, Lungs, Bronchial Tree to third bifurcation, Lung Vasculature, Trachea, Scapula, Clavicles, Top Third of Humerus, Pelvis, Top Third of Femur	9.85 kg	44.5 cm H x 24 cm W x 14 cm D
715-A-R	Right Arm	Elbow in natural position, Full bone structure, Oblique hand position	0.7 kg	37 cm L x 8 cm W x 7cm D
715-A-R-90	Right Arm Flexed 90 Degrees	Elbow flexed 90 degrees, Full bone structure, Oblique hand position	0.7 kg	32 cm L x 8 cm W x 13 cm D
715-A-L	Left Arm	Elbow in natural position, Full bone structure, Natural hand position	0.7 kg	37 cm L x 9 cm W x 5 cm D
715-A-L-FX	Left Arm with Fractures	Elbow in natural position, Full bone structure, Natural hand position, Radius fracture with open reduction and hardware, Common fracture to second intermediate phalange	0.7 kg	37 cm L x 9 cm W x 5 cm D
715-L-R	Right Leg	Knee in natural position, Full bone structure, Relaxed foot position	2.50 kg	42.5 cm L x 9 cm W x 18 cm D
715-L-R-90	Right Leg Flexed 90 Degrees	Knee flexed 90 degrees, Full bone structure, Relaxed foot position	2.50 kg	34 cm L x 9 cm W x 19 cm D
715-L-L	Left Leg	Knee in natural position, Full bone structure, Plantar foot flexion	2.50 kg	51.5 cm L x 9 cm W x 18 cm D
715-L-L-FX	Left Leg with Fractures	Knee in natural position, Full bone structure, Plantar foot flexion Buckle fracture to tibia and common fracture to fibula; Fracture to first metatarsal	2.50 kg	51.5 cm L x 9 cm W x 18 cm D

MODEL	DESCRIPTION
9508	Optional custom carry case for entire 715 (not including optional large positioning stand).
715-S-1	Optional large positioning stand for head, torso and appendages. Includes positioning stand, "HEAD" and "TRUNK" base/ quick-release plates, (2) long thumb screws, (2) short thumb screws, (4) unattached quick-release plates, and allen wrench.
038-20	SRS Frame Support Cups, Set of 4 (compatible with 715-HN)

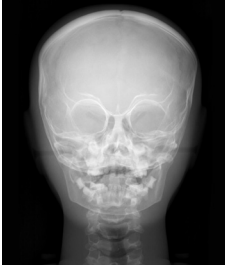
SOFT TISSUE

ENERGY- MEV	REF. MUSCLE	CIRS	RATIO, %
0.04	0.2804	0.2548	90.87
0.06	0.2146	0.2121	98.84
0.08	0.1913	0.1940	101.41
0.10	0.1777	0.1822	102.53
0.20	0.1426	0.1478	103.65
0.40	0.1104	0.1147	103.89
0.60	0.0932	0.0969	103.97
0.80	0.0818	0.0851	104.03
1.00	0.0736	0.0765	103.94
2.00	0.0514	0.0534	103.89
4.00	0.0354	0.0365	103.11
6.00	0.0288	0.0295	102.43
8.00	0.0252	0.0256	101.59
10.0	0.0230	0.0233	101.30
20.0	0.0188	0.0185	98.40
30.0	0.0177	0.0171	96.61
El. Density, $\times 10^{23}, \text{cm}^{-3}$	3.621	3.616	99.86
Density, gcm^{-3}	1.10	1.103	-

USE OF THE PHANTOM

The phantom should be used as a training aid for positioning techniques, collimation, and anatomical comprehension. Simply scan phantom using the same x-ray technical factors as would be used on a lean patient.

Each user of the phantom may find additional uses and CIRS urges one to share findings with others when possible and appropriate.



AP Skull



3D Reconstruction



AP Chest



Lateral Skull



AP Shoulder



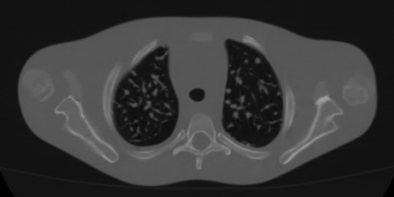
AP Pelvis



Oblique Hand/Wrist



Lateral Lumbar Spine



CT

To download the phantom DICOM data set (Resources) or view the multimedia gallery, visit: www.cirsinc.com/products/all/36



POSITIONING STANDS

The Model 715 can be used with two positioning stands: a small positioning stand included and only for use with the head phantom (Model 715-HN), and an optional large stand (Model 715-S-1) which can be used with all of the components of the Model 715. These stands are designed to allow users to practice alignment and positioning for different x-ray views.

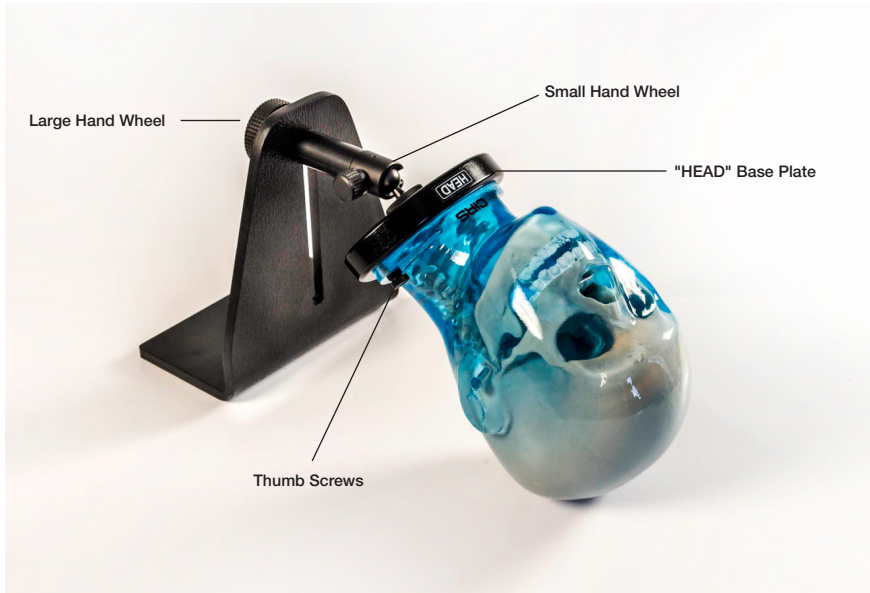


Figure 1

SMALL POSITIONING STAND

The Small Positioning Stand (Figure 1) should be fully assembled when you receive your phantom. The only additional setup required will be to attach the phantom head to the "HEAD" base plate for positioning.

1. Remove the thumb screws from the "HEAD" base plate.
2. Position the phantom face up and align raised cylinder on the phantom with the matching cavity on the "HEAD" base plate.
3. Tighten the thumb screws to secure the phantom head to the small positioning stand and base plate.

To adjust the height of the socket base, turn the large hand wheel on the frame bracket 1/2 turn counter-clockwise, slide socket base to desired height and secure position by turning large hand wheel 1/2 turn clockwise. Use the small hand wheel on socket base to adjust the angle and rotation of the head and neck in relation to the x-ray couch. For greater stability while using the phantom on stand, use a heavy object as counterweight.



Figure 2 (Tension Knob on Socket Base not shown)

LARGE POSITIONING STAND (MODEL 715-S-1)

The optional Large Positioning Stand (Figure 2), can be used with any of SPoRT's sections. The stand includes unattached quick-release plates for appendages and combination base/quick-release plates for the head and trunk sections, along with necessary tools and hardware to attach plates to all SPoRT sections. These plates must be attached to the section before the section may be positioned using the Large Positioning Stand.

Assembling Large Positioning Stand

To assemble frame bracket, lay positioning stand base along the long edge and align with the upright so that orange stickers face toward each other. Ensuring that edges of base and upright are flush, insert provided screws and tighten with screw driver. Be sure not to over tighten.



Figure 3



Figure 4

To attach socket base to frame bracket, unscrew the large hand wheel from socket base. Slide large hand wheel through frame bracket and reattach to socket base. This completes large positioning assembly.

Preparing SPoRT Sections for attachment to Large Positioning Stand



Figure 5

Head & Trunk sections attach to the Large Positioning Stand using a combination base/quick-release plate. This plate must be secured on the respective section using included thumb screws. Longer thumb screws are used on the trunk section. Shorter thumb screws are used on the head section.

Arm & leg sections attach to the Large Positioning Stand using a quick-release plate. This plate must be secured on the respective section using included screws. Align the holes in the quick-release plate with the pre-drilled holes located on the superior end of each section (Figure 5). Insert screws and tighten with included allen wrench.

WARNING: Phantom may fall off table causing injury to operator. Before securing SPoRT sections on the Large Positioning Stand, place a heavy object on the base of the stand as a counterweight.

Attaching Prepared SPoRT Section to Large Positioning Stand

All prepared sections attach to the Large Positioning Stand by locking the quick-release plate to the pre-assembled positioning stand mount on the Large Positioning Stand socket base. To lock the quick-release plate into the positioning stand mount:

1. Unlock the locking lever on the positioning stand mount. Lever will be in 12 o'clock position when unlocked as shown in Figure 6.
2. Orient the section so anterior surface is facing ceiling.
3. Tilt section so quick-release plate is angled to allow posterior edge to make first contact with posterior edge on the mount.
4. Rotate section to allow entire surface of quick-release plate to make contact with positioning stand mount. The locking lever will automatically flip to locked position as shown in Figure 7.



Figure 6



Figure 7

Using Large Positioning Stand to adjust SPoRT Section Positions

The Large Positioning Stand consists of a frame bracket and socket base. The large hand wheel on the back of the frame bracket is used to secure the height of the socket base on the frame bracket. To adjust the height of the socket base, turn this large hand wheel 1/2 turn counter-clockwise, slide socket base to desired height and secure position by turning large hand wheel 1/2 turn clockwise.

The angle and rotation of the attached SPoRT section is controlled by adjusting the ball-joint within the socket base. The three hand wheels on the socket base control this ball-joint.

- The **small hand wheel** locks the rotation of the entire socket base. Loosen 1/4 turn to adjust rotation.
- The **tension knob** is a tension knob used to add friction while adjusting the phantom positioning. Keep this knob tight for well-controlled movement.
- The **locking knob** will lock/ loosen the ball in the socket. By loosening this wheel, you will be able to adjust the rotation and the angle of the phantom in the positioning stand.

CARE AND HANDLING

Solicit help when moving an assembled head and trunk phantom as it may be heavy and become hazardous if dropped.

The phantom should be stored in a safe place when not in use. The phantom may be cleaned with mild soap and water.

Technical questions should be referred to CIRS customer service at (800) 617-1177.

WARRANTY

All standard CIRS products and accessories are warranted by CIRS against defects in material and workmanship for a period as specified below. During the warranty period, the manufacturer will repair or, at its option, replace, at no charge, a product containing such defect provided it is returned, transportation prepaid, to the manufacturer. Products repaired in warranty will be returned transportation prepaid.

There are no warranties, expressed or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description on the face hereof. This expressed warranty excludes coverage of, and does not provide relief for, incidental or consequential damages of any kind or nature, including but not limited to loss of use, loss of sales or inconvenience. The exclusive remedy of the purchaser is limited to repair, recalibration, or replacement of the product at manufacturer's option.

This warranty does not apply if the product, as determined by the manufacturer, is defective because of normal wear, accident, misuse, or modification.

NON-WARRANTY SERVICE

If repairs or replacement not covered by this warranty are required, a repair estimate will be submitted for approval before proceeding with said repair or replacement.

RETURNS

If you are not satisfied with your purchase for any reason, please contact your local distributor prior to returning the product. Visit <https://www.cirsinc.com/distributors/> to find your local distributor. If you purchased your product direct through CIRS, call Customer Service at 800-617-1177, email rma@cirsinc.com, or fax an RMA request form to 757-857-0523. CIRS staff will attempt to remedy the issue via phone or email as soon as possible. If unable to correct the problem, a return material authorization (RMA) number will be issued. Non-standard or "customized" products may not be returned for refund or exchange unless such product is deemed by CIRS not to comply with documented order specifications. You must return the product to CIRS within 30 calendar days of the issuance of the RMA. All returns should be packed in the original cases and or packaging and must include any accessories, manuals and documentation that shipped with the product. The RMA number must be clearly indicated on the outside of each returned package. CIRS recommends that you use a carrier that offers shipment tracking for all returns and insure the full value of your package so that you are completely protected if the shipment is lost or damaged in transit. If you choose not to use a carrier that offers tracking or insure the product, you will be responsible for any loss or damage to the product during shipping. CIRS will not be responsible for lost or damaged return shipments. Return freight and insurance is to be pre-paid.

WITH RMA NUMBER, ITEMS MAY BE RETURNED TO:

CIRS
Receiving
900 Asbury Ave,
Norfolk, Virginia, 23513 USA

PRODUCT	WARRANTY PERIOD
Model 715 Series - Sectional Pediatric Anthropomorphic Training Phantom	60 Months

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