

Triple Modality 3D Abdominal Phantom

Model 057A



USER GUIDE

CIRS

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OVERVIEW

Abdominal imaging is useful for diagnosing disease and monitoring treatments. The Model 057A is representative of a small adult abdomen and can be imaged under CT, MR and ultrasound. This feature makes the phantom a useful tool for applications such as image fusion studies; imaging protocol developments; scan technique training; and system testing, validation and demonstration.

The Model 057A simulates the abdomen from approximately the thorax vertebrae (T9/T10) to the lumbar vertebrae (L2/L3) using simplified anthropomorphic geometry. The materials provide contrast between the structures under CT, MR and ultrasound.

Internal structures include the liver, the portal vein, two partial kidneys, a partial lung, the abdominal aorta, the vena cava, a simulated spine and six ribs. The liver has six lesions and the kidneys each have one lesion. A muscle layer and outside fat layer surround these structures and plastic end caps make the phantom durable enough for extended scanning.

SPECIFICATIONS

DIMENSIONS

26 cm x 12.5 cm x 19 cm (10.2" x 4.9" x 7.5")

Weight: 5.5 kg (11 lb)

MATERIALS

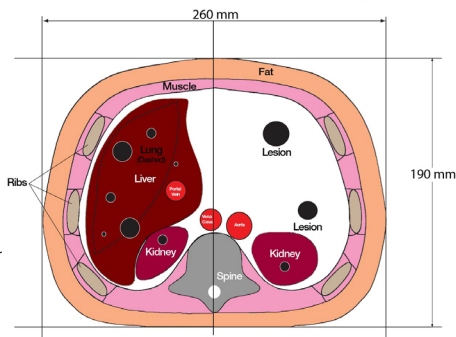
Housing: ABS

Outer Fat Layer/ Scanning Surface: Z-Skin™ elastomer

Hard Tissue: Epoxy Resin

Lungs: Epoxy Resin

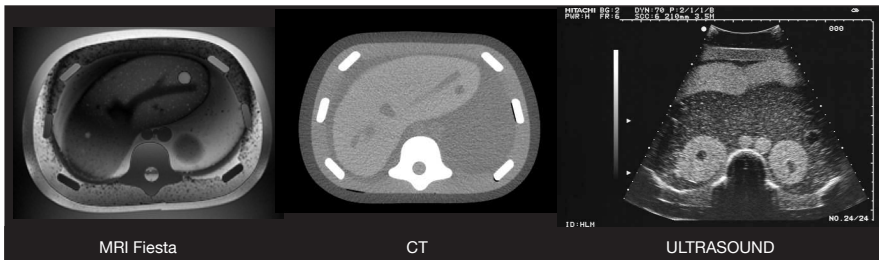
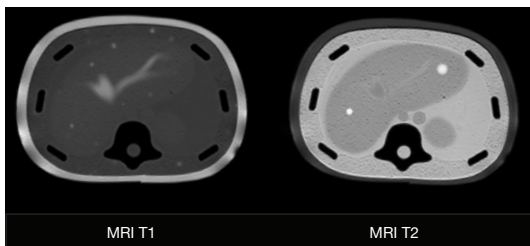
Other Soft Tissue: Zerdine®(1) gel



*Lung is under liver in Model 057A

INTERNAL STRUCTURE

- (1) Liver with six lesions
 - (2) Kidneys with one lesion each
 - (1) Spine
 - (1) Partial lung
 - (1) Portal Vein (with CT contrast)
 - (1) Vena Cava
 - (1) Aorta
 - (6) Ribs
- Surrounding Soft Tissue with two lesions



USE OF THE PHANTOM

The phantom was designed for demonstration and training of image-guided navigation technologies, and biopsies of the liver and kidney.

1. Remove phantom from the case.
2. Scan using normal abdominal scan protocol for Ultrasound, MRI, or CT.
3. Phantom can be biopsied. (Note that the lung and bones are made of hard epoxy resins that cannot be biopsied)

CARE AND HANDLING

Please image the phantom and inspect the Z-Skin™ fat layer immediately upon receipt. Each phantom is individually hand crafted and as such will have minor variations and anomalies. Our QA system has established processes to review these various anomalies to ensure they do not jeopardize the utility of the phantom. Minor surface blemishes will not adversely affect ultrasonic scans. If any are found, contact CIRS immediately.

This phantom has a soft Z-Skin™ elastomer membrane designed to allow testing and demonstration of biopsy procedures. It should be handled with care to prevent tearing or separation of the Z-Skin™ material. **DO NOT PINCH THE SKIN.** With heavy use, air pockets may develop between the Z-Skin™ material and the gel inside. You can continue to image the phantom by applying pressure to the membrane when scanning with an ultrasound transducer.

There will be some degradation in image quality over time if the skin material is biopsied. The soft membrane will seal up on itself and continue to act as a desiccation barrier for the gel inside. However, the effectiveness of the seal will vary with needle size and insertion technique. Store the phantom in an airtight case or re-sealable plastic bag for best results. In very dry environments, add a damp sponge to the case/bag to increase humidity. Use of an antimicrobial solution is recommended.

After biopsy of the phantom, you may notice needle tracks whose strength depends on the size of the needle used (smaller needles produce less pronounced tracks), the needle insertion technique (avoid changing the direction of the needle insertion mid-biopsy; to change the needle trajectory, remove the needle and re-insert) and the location of the biopsy (tearing of the gel is more pronounced at tissue interfaces).

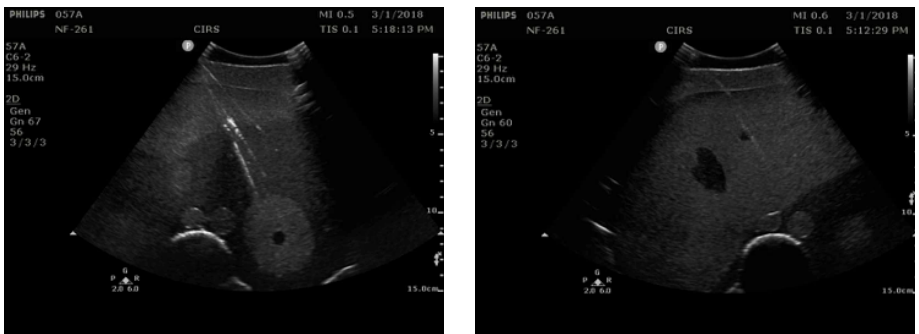


Figure 1: In both images, the target lesion was biopsied five times with a 20 gauge needle. The tracking is less pronounced in the liver, as the needle traveled a shorter distance and passed through fewer tissue interfaces.

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 057A - Triple Modality 3D Abdominal Phantom	12 Months*

*Please note: once any device has been inserted into the phantom (such as biopsy needles, localization wires, etc.) the 12 month warranty will not cover claims related to material desiccation or needle tracking.

