

ART Phantoms for Radiation Treatment Planning

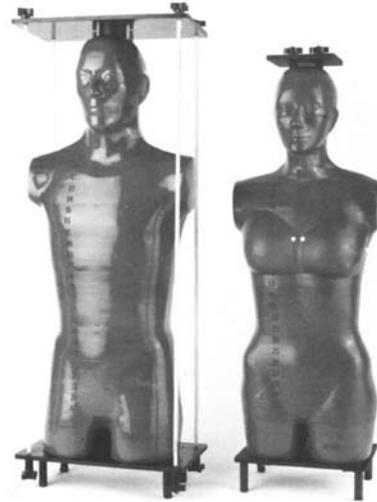
Because of variations of natural human skeletons, unknown calcium loss (approaching osteoporosis in some cases) and contamination by bleaches and other chemical agents in bone preparation, the ART "Superhuman" skeletons are designed and constructed to be both realistic and consistent. Molds for both the cortical bone and the medullary cavities were made using natural skeletons. Bone uniformity derived by this method facilitates positioning within the soft tissues, eliminating the need to make compromises and modifications, as must be done with natural bones, to fit within fixed molds. Complete average-sized male and small-sized female phantoms may be assembled externally, for film dosimetry, or internally, for TLD. Plates and tie rods for both assembly methods are included with every phantom.

Soft tissue materials are matched to muscle in specific gravity, mass density and absorption coefficients. Lungs are molded from syntactic foam, with a specific gravity of 0.30. The ART phantom is transected horizontally in 1 in slices and may be ordered undrilled for film dosimetry or drilled for TLD. The drilled phantoms are supplied with pins of appropriate material that may be replaced with optional TLD holders. Holes are available in 5 or 7 mm diameters on 1.5 x 1.5 cm or 3 cm x 3 cm grids.

Breasts can be ordered in various sizes. They can be drilled in the AP direction for dosimetry or sliced in frontal planes (drilled or undrilled) for film dosimetry. The male chest with breasts attached serves as a large female.

Nylon rods for internal assembly pass through registration holes, held by aluminum assembly plates, and clamped by knobs at the ends. The external assembly plates are larger, allowing tie rods to remain external to the larger phantom contours.

Solid pins are provided with drilled phantoms in appropriate quantity and materials. TLD holders are available in bone-, tissue- or lung-equivalent material and in 5 or 7 mm O.D.



Features:

- ▶ The worldwide standard for Quality Assurance for Radiation Therapy
- ▶ Artificial skeleton for consistent shape, mass density and attenuation coefficient

Accessories

- ART-10 TLD chip holder, 0.32 cm x 0.32 cm cavity, 2.5 cm long
 - ART-12 TLD rod holder, (1 mm I.D. x 3 mm long), 5 or 7 mm pins 2.5 cm long
 - ART-15 TLD rod holder, (1 mm I.D. x 6mm long), 7 mm pins 2.5 cm long
 - ART-20 Solid pin, 5 mm diameter, 2.5 cm long
 - ART-21 Solid pin, 7 mm diameter, 2.5 cm long
- (Specify outside diameter (5 or 7 mm) and bone, tissue, or lung equivalency when ordering TLD holders or solid pins.)

Ordering Guide		Hole Grid Pattern		
		None	3 x 3 cm	1.5 x 1.5 cm
Complete, Sec. 0-35	Male	ART-200X	ART-200	ART-200A
	Female	ART-300X	ART-300	ART-300A
Head & Neck, Sec. 0-9	Male	ART-210X	ART-210	ART-210A
	Female	ART-310X	ART-310	ART-310A
Chest, Sec. 10-35	Male	ART-211X	ART-211	ART-211A
	Female	ART-311X	ART-311	ART-311A
Pelvis, Sec. 26-35	Male	ART-212X	ART-212	ART-212A
	Female	ART-312X	ART-312	ART-312A
			3 x 2.5 cm	1.5 x 2.5 cm
*Breast Attachments	Male		ART-250	ART-250A
	Female		ART-350	ART-350A

*Specify: Left or Right; Sliced or Unsliced; 5 or 7 mm holes
Male sizes: 250, 500, 750, 1000, 1250 ml
Female sizes: 200, 300, 400, 500, 650 ml