

- Anthropomorphic phantom disassembles into 9 parts
- Small size and low weight simplify positioning
- Unlimited repetition of most views for which patients cannot be used
- Provides valid feedback to evaluate trainee performance
- Designed to image any clinical view (AP, oblique, lateral, frog legs, etc.)
- Custom pathologies and traumas available
- **NEW!** Inclusive skin tones at no additional cost

IDEAL SUBSTITUTE FOR TEACHING & TRAINING RADIOLOGICAL TECHNOLOGISTS

Offered in opaque or transparent, Take-Apart Pixy is an anatomically and radiologically correct female designed specifically for training radiologic technologists. At 5' 1" (156 cm) weighing 105 lb. (48 kg), Take-Apart Pixy is a repeatable, convenient substitute for patients and virtually indestructible.

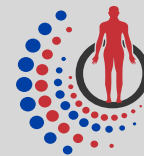
Take-Apart Pixy may be ordered with or without abdominal and pelvic organs: stomach, gall bladder, urinary bladder, kidneys, rectum, and sigmoid flexure. The organs are air-filled but accept water or contrast media that can be easily flushed after use. Custom pathologies and traumas available at an additional cost.

Built with soft-tissue mold and skeleton molds that are matched for anatomic fidelity, Take-Apart Pixy permits unlimited exposures, demonstrates the effects of changing technical factors, and allows for evaluation of student performance. Students have no difficulty in maneuvering Take-Apart Pixy into most desired positions as the phantom is built to tolerate trainee errors.

Take-Apart Pixy is used to demonstrate anatomy and evaluate positioning and imaging techniques, including kVp, mAs, contrast, optical density, digital processing, OFD and TFD. Made of tissue-equivalent materials and life-like articulations, Take-Apart Pixy is more realistic than a cadaveric skeleton with radiographs that are optically equivalent in density and contrast to human patients.

C1, C2, and C7 vertebrae were converted to mechanical nylon joints because educators in the field prefer full positioning capabilities for the head. This design permits the remaining neck vertebrae to be fixed in a normal position while assuring a full range of head motion.





Applications

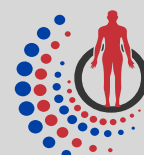
Teaching & training
of patient positioning

Image quality

Diagnostic radiology

Dosimetry verification

Protocol verification

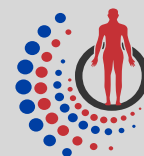


Modalities

CT

X-Ray

Fluoroscopy



Anatomy

Shoulders have ball
and socket joints

Elbows and knees flex
90° to 100°

A “frog position” is
possible at the hips

Right hand is molded
with fingers positioned
for an AP view

Left hand is in an
oblique-lateral position

Feet are in natural position

The skull of Take-Apart Pixy has frontal and sphenoidal sinuses, ethmoidal and mastoid air cells, and the auditory ossicles. Bone sutures are radiographically visible.

Soft tissues are available in opaque or transparent tissue-equivalent materials. The transparent Take-Apart Pixy has visible organs and skeleton.

Take-Apart Pixy lungs are molded of tissue-equivalent foam with the mass density of inflated human lungs (0.30 g/cc). They are connected to the oro-nasal cavity by the stem bronchi and trachea. The oro-nasal pharynx is filled with a nearly air-equivalent foam.



Model Numbers

Model No.	Product Description
RS-103	Opaque with Fill Ports and Organs
RS-103T	Transparent with Fill Ports and Organs
RS-104	Opaque with Organs but NO Fill Ports
RS-104T	Transparent with Organs but NO Fill Ports
RS-105	Opaque with NO Fill Ports and NO Organs
RS-105T	Transparent with NO Fill Ports and NO Organs

Contact us for custom pathologies, traumas, and inclusive skin tone options.

Materials See page 30 for more information.

RSD Soft Tissue	RSD Cortical Bone	RSD Trabecular Bone
•	•	•

Specifications

Packing Size	Packing Weight
152W x 69D x 84H cm	111 kg
60W x 27D x 33H in	245 lb.

Publication References: 1) Xu Q, Tong X, Lin M, et al. Time and frequency to observe fiducial markers in MLC-modulated fields during prostate IMRT/VMAT beam delivery. *Phys Med.* 2020;76:142-149. DOI: <https://doi.org/10.1016/j.ejmp.2020.06.026>. 2) Paysan P. et al. (2020) Deep Learning Methods for Image Guidance in Radiation Therapy. In: Schilling FP, Stadelmann T. (eds) Artificial Neural Networks in Pattern Recognition. ANNPR 2020. Lecture Notes in Computer Science, vol 12294. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-58309-5_1_3. 3) Holmström A. Radiography Students' Learning of Plain X-Ray Examinations in Simulation Laboratory Exercises: An Ethnographic Research. *Journal of Medical Imaging and Radiation Sciences.* 2019 Dec. DOI: <https://doi.org/10.1016/j.jmir.2019.07.005>.

PIXY UPGRADE PROGRAM

Out with the old. In with the new.
Are you ready for an upgrade?



From the original Alderson Pixy Phantom to RSD's Take-Apart Pixy, we continue to advance & improve the 40-year strong industry standard. Trainees will directly benefit from Take-Apart Pixy's improved positioning, the convenience of disassembly, ease of storage/transportation, and the elimination of latex and gel features. Continue to invest in the best and upgrade your Pixy today!

Contact RSD or an authorized RSD Dealer for more details about the Pixy Upgrade Program.

PIXY (RS-102) REFURBISHMENT

Standard Pixy Refurbishment services for RS-102 include:

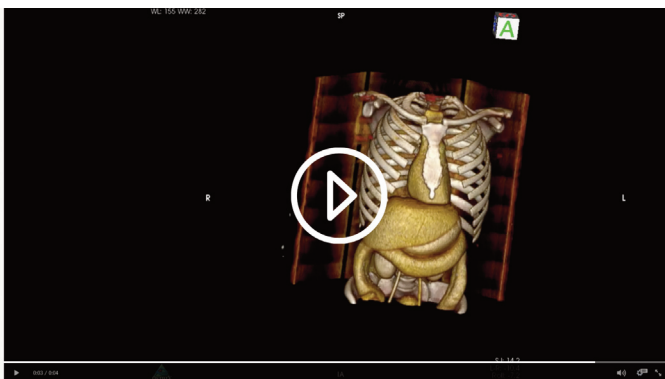


- Replacement of the foam and skin of cervical spine
- Disassembly, inspection, assembly and repacking with "soft tissue" joint gel in elbows, knees & pelvis
- Replacement of skin on elbows, knees, and pelvis
- Replacement of shoulder straps
- Tightening of all joints as required
- Repair of minor breakage of fingers and toes
- Correction of all minor cosmetic damage
- Repainting of the Phantom
- Replace wig
- Replace sweatsuit
- Repair shipping case as required

RSD

Radiology Support Devices, Inc.

Take-Apart CT Pixy



TAKE-APART PIXY WITH ADDITIONAL ORGANS AND CIRCLE OF WILLIS

In addition to the stomach, gall bladder, urinary bladder, kidneys, rectum, and sigmoid flexure, Take-Apart CT Pixy additionally includes lungs, heart, liver, ureters, large intestine, esophagus, [Circle of Willis](#), and a storage case. Take-Apart CT Pixy may also be ordered with or without fill ports. [See pages 6-7 for more information about Take-Apart Pixy.](#)

Model Numbers

Model No.	Product Description
RS-107CT	Opaque with Organs but NO Fill Ports*
	*Fill ports available upon request at an additional fee.

Contact us for custom pathologies, traumas, transparent material, and inclusive skin tone options.

Materials *See page 30 for more information.*

RSD Soft Tissue	RSD Cortical Bone	RSD Trabecular Bone
•	•	•

Specifications

Packing Size	Packing Weight
152W x 69D x 84H cm	111 kg
60W x 27D x 33H in	245 lb.

Soft Tissues: There are unlimited, small variations in density and absorption throughout the human body. Phantom soft tissue is closely controlled to have the average density of these tissues.

Skeletons: RSD skeletons are highly detailed polymer moldings which reproduce the shape, mass density and attenuation coefficients of cortical bone and spongiosa. RSD's proprietary moldings allow for continuous production, eliminate the restrictions of human skeleton bones (including limited availability, unethical collection of human bone specimen, variable size, and uncertain chemical composition), and avoid the loss of marrows in dried natural skeletons thereby making RSD skeletons superior to "real bone."

Molds: Molds for the RSD cortical bone and spongiosa were made from human skeletons consistent with the sizes of the soft tissue molds.

ICRU 44: RSD skeletons conform closely to the standards established by the International Commission on Radiation Units and Measurements ([ICRU Report No. 44](#)); mass density is reduced slightly to take into account a small decrease in calcium content for older patients.

LINEAR ATTENUATION DATA

1. Monte Carlo simulation was used to calculate linear attenuation coefficients as a function of beam.
2. Monte Carlo results were validated with linear attenuation coefficients derived from Hounsfield Unit measurements at discreet energy levels.
3. RSD Phantom material linear attenuation data was compared to NIST data using ICRU Report 44 compositions of human tissues.
4. NIST data was interpolated when necessary.

MATERIALS	DENSITY (g/cc)
RSD Soft Tissue (Opaque)	1.08
RSD Soft Tissue (Transparent)	1.10
RSD Cortical Bone	1.83
RSD Trabecular Bone	1.17

RSD SOFT TISSUE					
Energy (MeV)	Mean (HU)	Calculated (M)	μ (ICRU 44)	% Difference	Ratio
00.08	60.30	0.1948	0.1932	0.0080	0.9921
00.10	52.88	0.1797	0.1795	0.0015	0.9985
00.12	57.10	0.1717	0.1709	0.0044	0.9956
00.14	52.95	0.1623	0.1624	0.0007	1.0007
00.20	--	0.1477	0.1439	0.0261	0.9746
00.30	--	0.1245	0.1246	0.0004	1.0004
00.60	--	0.0950	0.0941	0.0101	0.9900
00.80	--	0.0825	0.0826	0.0013	1.0013
01.00	--	0.0744	0.0743	0.0018	0.9982
02.00	--	0.0520	0.0519	0.0018	0.9982
03.00	--	0.0351	0.0357	0.0171	1.0174
06.00	--	0.0288	0.0291	0.0088	1.0088
08.00	--	0.0252	0.0255	0.0098	1.0099
10.00	--	0.0229	0.0232	0.0149	1.0151
15.00	--	0.0203	0.0203	0.0015	0.9985
20.00	--	0.0189	0.0189	0.0017	1.0017

RSD CORTICAL BONE					
Energy (MeV)	Mean (HU)	Calculated (M)	μ (ICRU 44)	% Difference	Ratio
00.08	1365	0.4345	0.4280	0.0151	0.9851
00.10	1048	0.3496	0.3562	0.0184	1.0188
00.12	0977	0.3211	0.3274	0.0191	1.0195
00.14	0902	0.2932	0.2986	0.0180	1.0184
00.20	--	0.2511	0.2513	0.0009	1.0009
00.30	--	0.2155	0.2137	0.0084	0.9916
00.60	--	0.1596	0.1598	0.0011	1.0011
00.80	--	0.1403	0.1402	0.0010	0.9990
01.00	--	0.1274	0.1261	0.0106	0.9895
02.00	--	0.0883	0.0885	0.0017	1.0017
03.00	--	0.0611	0.0625	0.0229	1.0235
06.00	--	0.0512	0.0525	0.0246	1.0253
08.00	--	0.0468	0.0474	0.0120	1.0121
10.00	--	0.0446	0.0444	0.0039	0.9962
15.00	--	0.0410	0.0409	0.0016	0.9984
20.00	--	0.0393	0.0397	0.0102	1.0103

RSD TRABECULAR BONE (SPONGIOSA)					
Energy (MeV)	Mean (HU)	Calculated (M)	μ (ICRU 44)	% Difference	Ratio
00.08	551	0.2849	--	--	--
00.10	515	0.2586	--	--	--
00.12	439	0.2337	--	--	--
00.14	318	0.1541	--	--	--