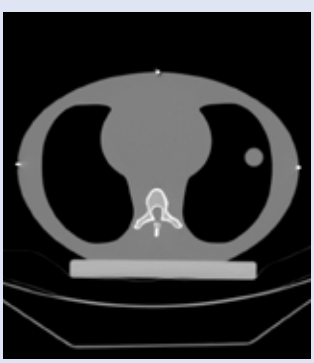
Dynamic Thorax Phantom

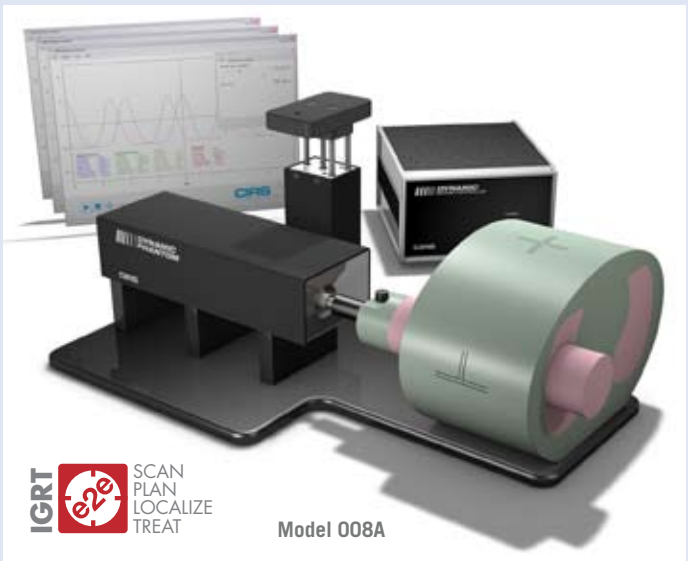
The CIRS Dynamic Thorax phantom is an easy-to use precision instrument for investigating and minimizing the impact of tumor motion inside the lung. It provides known, accurate and repeatable three-dimensional target motion inside the tissue equivalent phantom. It is designed for comprehensive analysis of image acquisition, planning and dose delivery in image guided radiation therapy.

The phantom body represents an average human thorax in shape, proportion and composition. A lung equivalent rod containing a spherical target and or various detectors is inserted into the lung-equivalent lobe of the phantom. The body is connected to a motion actuator box that induces three-dimensional target motion through linear translation and rotation of the lung equivalent rod. Motion of the rod itself is radiographically invisible due to its matching density with the surrounding material. The target and its motion, given its density difference, can be resolved.

Target and surrogate motion are independently controlled with CIRS Motion Control Software. The graphical user interface provides an unlimited variety of motions while simplifying the operation of the Dynamic Thorax Phantom to the intuitive level. Patient specific profiles are easily imported while there is no need to make hardware adjustments or have special programming skills.



Tissue equivalent phantom body with anthropomorphic spine, external alignment marks and CT fiducials for phantom image registration



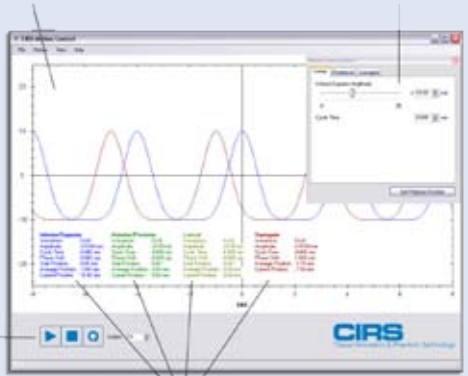
Model 008A

Image Acquisition • Treatment Planning • Dose Delivery

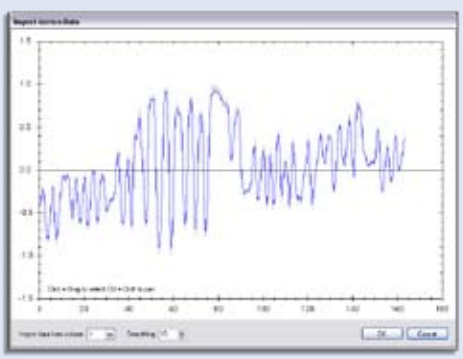
Graphical user interface simplifies operation of the Model 008A

Adjust motion amplitude, cycle time and phase shift with pull down menus and slider bars

Instantly start, stop, pause or loop motion



Real-time display of target and surrogate motion parameters.



Import patient specific waveforms from tab delimited or comma separated file formats.

Dynamic Platform

Model 008PL

Programmable motion for any phantom

The CIRS Dynamic Platform provides an economical, user-friendly solution for the complex tasks associated with tumor motion and patient positioning in radiation therapy.

The platform is made from stiff, low-density plastics. The device enables precisely controlled inferior-superior motion up to 50 mm for any phantom up to 70 lb. A removable pin system in the main platform allows consistent placement and fixation of almost any phantom and traditional laser alignment marks enable accurate positioning of the entire device. An independently controlled smaller platform provides Posterior-Anterior surrogate chest wall motion.

The CIRS Dynamic Platform is operated using CIRS Motion Control Software, a user-friendly graphical user interface that can be installed on any computer running Windows XP or Vista.