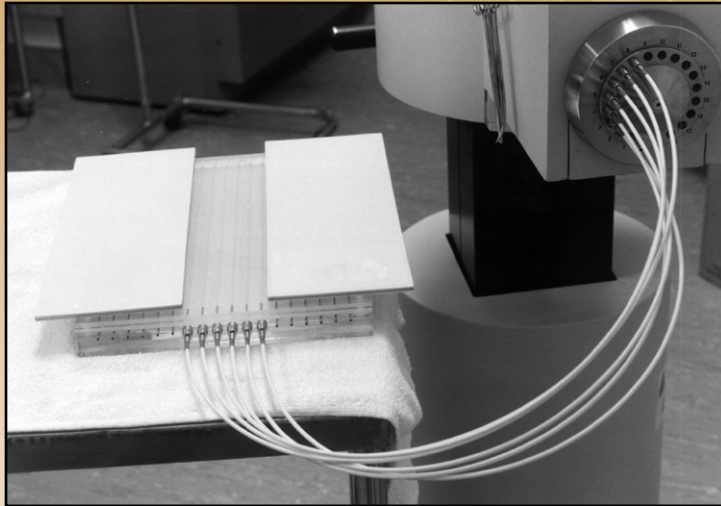




FOR HDR AND LDR BRACHYTHERAPY



Developed by Robert Luthmann, PhD
Atlantic Beach, FL
The Luthmann QA Tool in position for
advancement of the HDR source.

● FOR HDR QUALITY ASSURANCE

Accurate positioning of the HDR ^{192}Ir - source is essential for proper treatment. The Luthmann Source Positioning QA Tool has been developed to perform required quality assurance checks for your HDR unit.

- Determine the distance to the most distal position.
- Verify the accuracy of HDR unit's stepping motor in positioning the source for up to 18 channels at one time.
- Perform quick, daily constancy checks of source positioning by the HDR unit.
- Verify accuracy of the stepping motor in positioning the source at dwell positions in each channel.
- Eliminate the need for expensive and cumbersome video camera and monitor.
- Provide excellent hard copy documentation for QA files.

● FOR LDR QUALITY ASSURANCE TESTS OF RIBBON ISOTOPES

Upon receipt of LDR sources, the following quality assurance tests are useful to verify the integrity of your LDR sources.

- Confirm the relative uniformity of sources.
- Verify custom loading of ribbons.
- Visual verification of source spacing.
- Provide excellent hard copy documentation for QA files.



For HDR QA

Test One

Performed Upon System Acceptance and After Source Changes

Purpose: The purpose of this test is to:

1. Determine the distance from the HDR unit to the most distal position of the source.
2. Verify accuracy of the stepping motor in positioning the source at various dwell positions in each channel.
3. Verify the integrity of each of the localization dummies used clinically for HDR source position localization.

Frequency: Test One is performed at the time of machine acceptance, after source change and at specific intervals as a QA check to verify the integrity of each localization dummy.

Test Two,

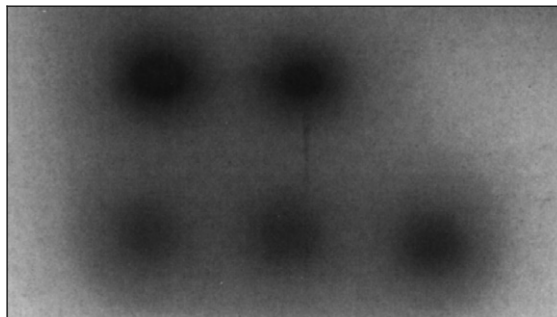
Periodic Quality Assurance Tests

Purpose: The purpose of this test is to act as a constancy check for the three parameters in Test One.

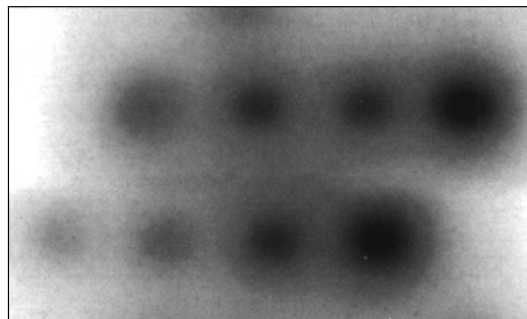
Frequency: Test Two is performed on a daily basis before the HDR unit is used clinically for patient treatment.

For LDR QA

The Luthmann Source Positioning QA Tool provides for an autoradiograph of the sources and visual inspection of the spacing of ribbon seeds. The ribbons with multiple seeds are placed in the channels for the autoradiograph. Steel rulers placed along the outer two channels can be used for visual verification.



Autoradiograph showing relative uniformity of sources.



Autoradiograph confirming custom loading of sources.

LUTHMANN QA TOOL (REF 90011) SPECIFICATIONS

TOOL DIMENSIONS

Height: 2.7 cm (1.06 in)	Width: 22.2 cm (8.75 in)
Length: 32.4 cm (12.75 in)	Weight: 1.8 kg (4 lbs)

LEAD BLOCKER DIMENSIONS

Height: 0.32 cm (0.125 in)	Width: 10.16 cm (4 in)
Length: 30.48 cm (12 in)	Weight: 1.4 kg (3 lbs)

Specifications subject to change without notice.



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