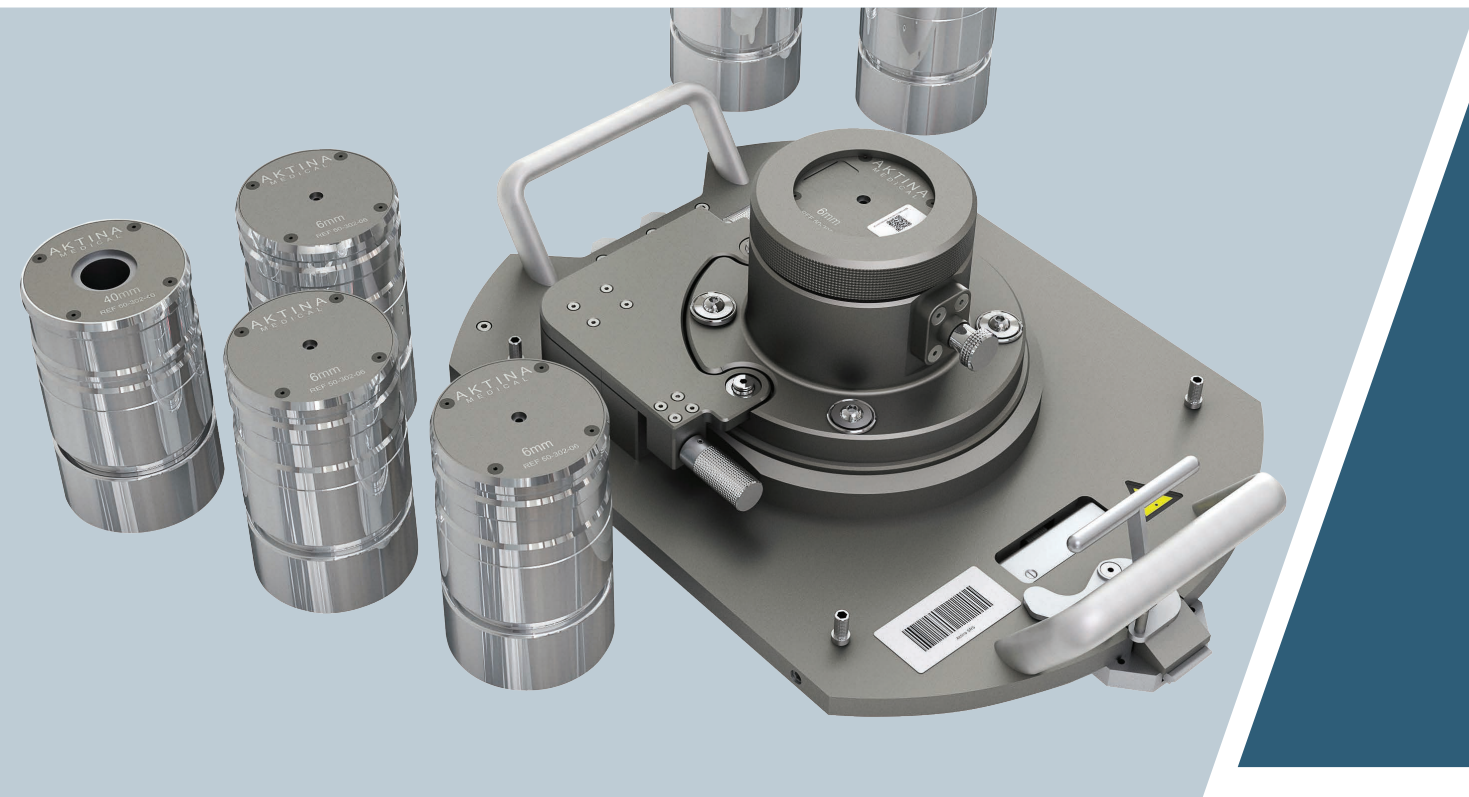# Electronically Interlocking Small Field Circular Cones


Ensure Accurate Radiation Dosage Delivery with Automated Treatment Verification.

Aktina Medical's SRS cones were an industry first for providing true cone size interlocking. The system features a patented coding system which the host LINAC utilizes to check the inserted cone size against the patient's plan and blocks treatment if a mismatch is present. And since the system has been formally validated collaboratively by Elekta and Aktina Medical, one can have the confidence that they are using a system that has been designed and built at the highest levels of both patient safety and clinical accuracy.

AKTINA
M E D I C A L

Electronically Interlocking Small Field Circular Cones
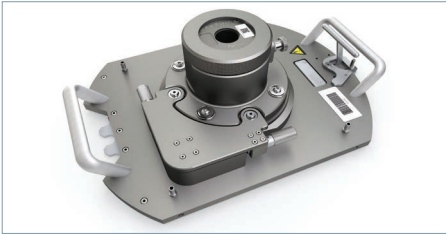
SRS Cone Adapter

REF: 50-370

The Adapter interfaces to the Elekta LINAC head without the need for modifications to the LINAC collimator face plate. Attaching and detaching utilize the same mechanism as electron applicators, making the system extremely easy to use. Interchangeable cones are provided over a range of 5mm through 40mm field sizes (increments of 1mm). Each cone is uniquely recognized by the Elekta LINAC by a simple coding system: code value = size of the cone in mm.

The system has been jointly validated by Aktina and Elekta and is compatible with Elekta's bar code scanner system for jaw size verification.

Technical Specifications

Overall Dimensions	Height = 157.3mm [6.192 inches] Width = 279.4mm [11.00 inches] Length = 412.5mm [16.238]
Weight	6.6 kgs [14.5 lbs]
LINAC Interface	Direct mount (no modification to the LINAC required)
Cone Reproducibility at Isocenter	less than 0.5mm
Cone Focus Mechanism	X-Y Stage with micro-adjustment knobs
Cone Focus Adjustment Range	Transverse direction = +/-1mm (+/-2mm at iso center) Gun-target direction = +/-1mm (+/-2mm at iso center)
Cone Focus Adjustment Sensitivity	1 full knob turn (clockwise or counterclockwise) = 1mm physical travel (2mm projected at isocenter)
Acceptable Cone Sizes	5 through 40mm
Required LINAC JAW Sizes	6x6cm
Cone Interlock Type	Block tray ID
Cone Interlock Values	Same as the cone size in mm units (5 through 40)
Adapter Interlock Value (no cone inserted)	64
Bar Code Location	On the adapter
Bar Code Type	Accessory ID
Bar Code Value	Aktina SRS
Cone Retention Mechanism	Retention flange and safety locking mechanism
TPS Compatibility	MLC Agility: • Monaco v5.11+ • Pinnacle v9.8+ • Raystation v5+ (with DICOM filter) • iPlan RT 4.5.6+ MLCi2 • Monaco v5.11+ • Pinnacle v9.8+
IEC Performance Data	See document 50-370-IEC
Source to Bottom of System	66.9cm (33.1cm of clearance)
Cone Distances to Source	Top of attenuating lead: 540.4mm Bottom of attenuating lead: 662.6mm

Storage Cart for Adapter and Cone Inserts

REF: 50-371

Provides ability to store up to 9 cones and cone adapter on the top shelf, first and second shelves are available for other physics equipment.

Technical Specifications

Cart Material	Stainless steel
Dimensions	H = 782mm L = 988mm W = 467mm
Shelves Cart	• Upper shelf: space for 9 cones and 1 cone adapter • Middle and lower shelves: space for accessories
Casters	Four wheels with two lockable casters
Handle Bars	Two opposing

Electronically Interlocking Small Field Circular Cones

Circular Small Field Cone Inserts

REF: 50-302

Cones can be ordered between the sizes of 5mm through 40mm, in increments of 1mm. Each cone is uniquely recognized by the Elekta LINAC by a simple coding system: code value = size of the cone in mm.

Each cone is constructed with a diverging collimation offering optimal penumbra characterizes. With high precision manufacturing techniques such as centerless-grinding, the cones offer a superb fit to the adapter and ensure consistency of placement for each and every treatment.

Technical Specifications

Physical Dimensions	Diameter = 75mm [2.953 inches] Length = 127mm [5 inches]
Attenuating Material	Lead with 3% antimony
Weight	5.3 kgs [11.6 lbs], measured with heaviest 5mm cone
Collimation Type	Source focused diverging
Interface with adapter	Coding grooves

Safety Lock	Ring groove
Exterior	Stainless steel
Available Cone Sizes	5mm to 40mm (in 1mm increments)
LINAC Cone Size Interlock	Block tray ID
Interlock Code ID	Cone insert size in mm units (for example, 12mm cone insert has interlock code of 12)

Ordering Information

|	Part Number	
Small Kit	50-310	Includes a set of 6 cones: 5, 7, 9, 11, 13, and 15mm
Medium Kit	50-312	Includes a set of 6 cones: 17, 19, 21, 23, 25, and 27mm
Large Kit	50-314	Includes a set of 6 cones: 29, 31, 33, 35, 37, and 39mm
Single Cone	50-302-XX0 where XX is the size of the cone in mm increments	For example 50-302-080 is the 8mm cone and 50-302-160 is the 16mm cone

QA Insert

REF: 50-305

Use this cone insert to check all the microswitches of the cone adapter (REF: 50-370). Inserting this insert into the cone adapter produces an interlock code value of 63. Any other value indicates a possible problem with the interlocking circuit.

Technical Specifications

Cone Insert Material	Plastic
Cone Insert Code	63
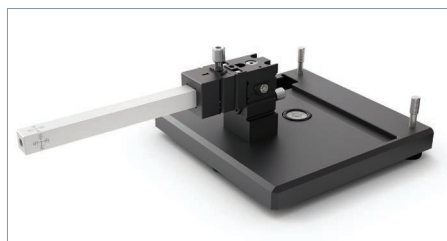
Lutz Marker Positioning System

REF: 50-335

Allow high precision movements of a radio paque sphere in 3-dimensions. The system is ideal for verifying Gantry and Couch rotations for SRS treatments.

Technical Specifications

Ball Material	Tungsten
Ball Size	5mm
Travel Range	9.5mm in 3 directions
Positioning Accuracy	80 pitch drives provide 1 μm sensitivity

Film Holder

REF: 50-375

Compatible with Aktina small field circular cones for Lutz type test to be performed in order to verify gantry iso-centricity. The adapter easily attaches to the Aktina small field circular cone adapter (REF: 50-370) and positions films within the beam axis with a film spring type retention mechanism.

Technical Specifications

Compatibility	Aktina small field cone adapter
Weight	0.5kg (1.2 lbs)
Film Distance from Source	110cm
Buildup	3mm aluminum
Film Holding Mechanism	Steel spring