

.decimal[®]

A DIVISION OF CQ MEDICAL®

PATIENT-SPECIFIC
TREATMENT
DEVICES, DESIGNED
AND DELIVERED
ON DEMAND



REPLACE YOUR MOLD ROOM WITH AN ON-DEMAND MACHINE SHOP

Think of .decimal as an extension of your clinic: a modern, on-demand manufacturing partner specializing in high-precision, patient-specific devices for radiation therapy. With .decimal, you can reduce the costs, responsibilities and liabilities associated with maintaining an in-house mold room.



RESPONSIBILITY/LIABILITY/COST	YOU	.DECIMAL
Equipment cost & maintenance	✗	✓
Risk of accidents & injuries	✗	✓
Inventory management & storage	✗	✓
Facility space & maintenance	✗	✓
Regulatory compliance	✗	✓

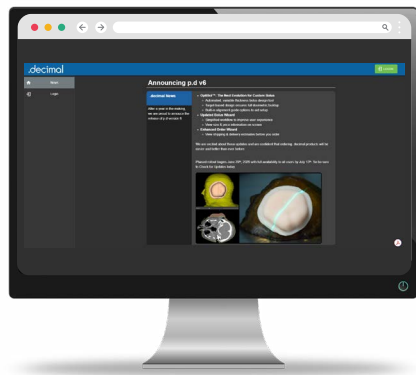
OUTSOURCE THE COMPLIANCE BURDEN

Choosing .decimal eliminates the regulatory and operational overhead associated with maintaining an in-house mold room, including:

- Blood testing for applicable staff
- Air monitoring and safety compliance
- OSHA reporting for adverse events
- Device accuracy, precision and QA
- Initial and ongoing staff training

ONLINE ORDER TRACKING

Track orders in real time through .decimal's easy-to-use customer portal, with visibility into order and delivery status across all product types.



FAST, RELIABLE MANUFACTURING & DELIVERY

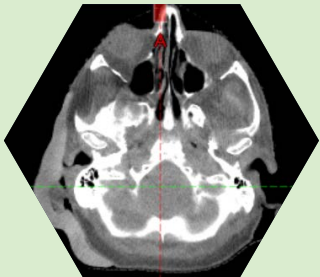
Typical turnaround times by custom device type, from order to delivery.

DEVICE	TURN-AROUND (DAYS)
 Optibol Custom Bolus	2-3
 Flexibol Custom Bolus	2-3
 Electron Bolus	1-2
 Electron Cutout	1-2
 Proton Aperture	1-2
 Proton Range Compensator	1-2
 TBI Block	2-3

“I have used .decimal products for more than five years and have been consistently impressed with the quality of their products and service. For anyone considering a switch from Cerrobend cutouts, I would recommend contacting .decimal to learn more about what they have to offer.

Our clinic has used multiple silicone electron compensators, and we would not treat a patient without one now. We recently started using the new OptiBol product and have been very pleased with how conformal the boluses have been.”

- Larry Slate, Physicist, Rocky Mountain Cancer Centers, Boulder, Colorado



OPTIBOL®

RESHAPING RADIATION THERAPY WITH OPTIMIZED, VARIABLE THICKNESS BOLUSES

OptiBol is a custom-made, variable-thickness silicone bolus designed around each patient's unique anatomy and target volume. Its automated, optimized design helps achieve dose coverage to shallow targets while eliminating much of the manual editing required with conventional uniform-thickness boluses.

OPTIMIZED FOR QUALITY. DESIGNED FOR EFFICIENCY.

Optimize dose coverage with a variable thickness bolus designed based on the patient's unique target volume and external shape.

- Simplify treatment planning with automated bolus design that reduces the need for manual cropping, thickening, and smoothing
- Support efficient treatment delivery with sufficient buildup for potential beam geometries, which can help reduce monitor units and beam complexity and potentially shorten delivery time
- Adapt to the patient with flexible silicone that accommodates small per-fraction anatomical changes
- Streamline setup with built-in alignment guides that help orient the bolus and position the patient in the beam
- Integrate with surface-guided radiation therapy with color-optimized silicone designed for compatibility with SGRT

SMOOTH, REFINED SURFACES

OptiBol is designed with smooth outer and patient-side surfaces for a more consistent fit and treatment experience. Processing of the inner surface helps eliminate small irregularities and roughness that can result from TPS-generated contours based on CT or MR pixel-threshold algorithms.

TARGET-BASED, VARIABLE-THICKNESS

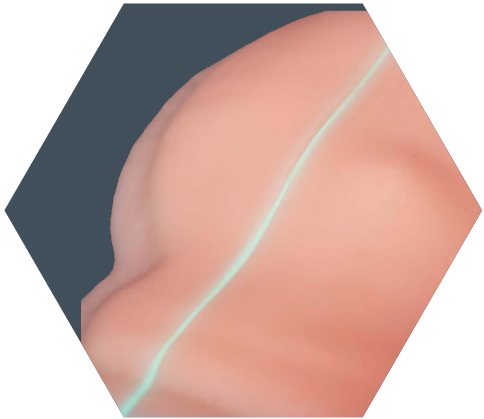
OptiBol is designed around the target rather than as a uniform expansion from the skin. This target-based approach creates a precise 3D thickness profile that provides the buildup needed without unnecessarily oversized or undersized boluses. The design also accounts for potential beam and couch angles, giving you greater flexibility when developing your treatment plan.



ALIGNMENT GUIDES

Built-in alignment guides can be incorporated into OptiBol designs to simplify bolus orientation and patient setup. These small, precisely positioned grooves can be placed at user-defined sagittal and coronal plane locations and are designed to have minimal dosimetric impact.

The grooves provide visual reference points for orienting the bolus on the patient and can also be used with alignment lasers. When the laser falls within the groove, it creates a visible “glow” effect to help confirm alignment.



USER-DEFINED OUTER MARGINS WITH TAPERED EDGES

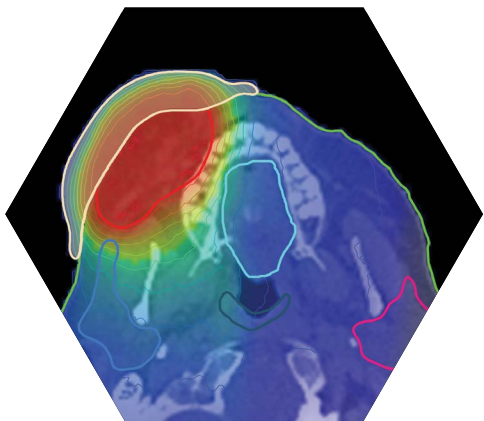
Conventional uniform-thickness boluses with steep or abrupt edges can introduce dosimetric artifacts, particularly when treating targets at or near the skin surface. OptiBol addresses this potential challenge with smooth, tapered edges designed to minimize these effects.

Users can also specify an outer margin in millimeters to extend the bolus beyond the target area. This creates additional surface area with a nominal 3 mm thickness, providing greater flexibility to meet specific treatment needs.



EASILY INTEGRATES WITH YOUR TREATMENT PLANNING SYSTEM (TPS)

To design an OptiBol, transfer the patient's external and target contours to the .decimal p.d. software. Design the OptiBol in p.d., then transfer it back to your TPS as a DICOM RT Structure Set with the bolus represented as contours.



SAME PRICING. SAME FAST TURNAROUND.

OptiBol is manufactured with the same process as FlexiBol, with a typical three-business-day turnaround and pricing based on bolus size and surface area, not thickness.



**LEARN MORE
AT OPTIBOL.COM**

FLEXIBOL®

PATIENT-SPECIFIC PRECISION AND COMFORT

FlexiBol boluses are custom manufactured from flexible silicone to provide a precise, patient-specific fit and a comfortable treatment experience. Benefits include:

- Comfortable fit designed for the individual patient
- Precise, consistent fit to support treatment planning and dosimetry
- Flexibility to accommodate per-fraction changes in patient anatomy
- Color optimization for surface-guided radiation therapy (SGRT)
- Enhanced patient experience through comfort, customization, and a high-quality appearance

EASILY INTEGRATES WITH YOUR TREATMENT PLANNING SYSTEM (TPS)

Design specifications for custom boluses, whether generated by the TPS or edited by the user, are transferred to .decimal's p.d software through DICOM RT Structure Set import.

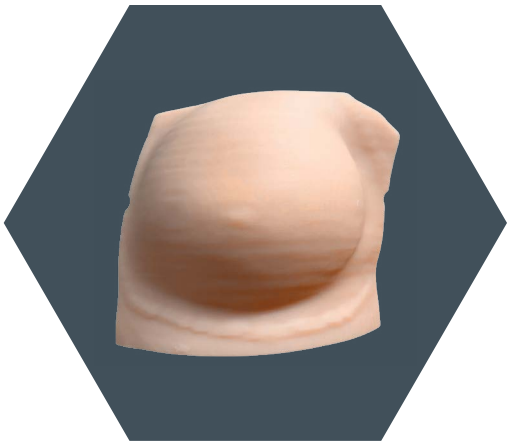
FAST, 2-3 DAY TURNAROUND

.decimal's streamlined manufacturing process enables rapid turnaround, with FlexiBol orders typically delivered within three business days and simpler boluses in as little as two.



LEARN MORE
ABOUT FLEXIBOL

FlexiBol®



"We needed a 3mm bolus for a reconstructed chest wall...FlexiBol is truly conformal and Flexibol plus a skin rendering eliminates any issues that may come up with how to place the bolus and saves time in the treatment room...I'm a big fan of FlexiBol."

- Erin Mize, R.T.(T), Staff Therapist, Alliance Cancer Center

ELECTRON BOLUS

A CUSTOM ELECTRON BOLUS FOR TARGETED DISTAL DOSE SHAPING

An electron bolus is designed for a specific electron beam and patient anatomy. The inner surface is shaped to fit the patient's external contour, while the outer surface is optimized to conform the electron dose to the distal surface of the target.

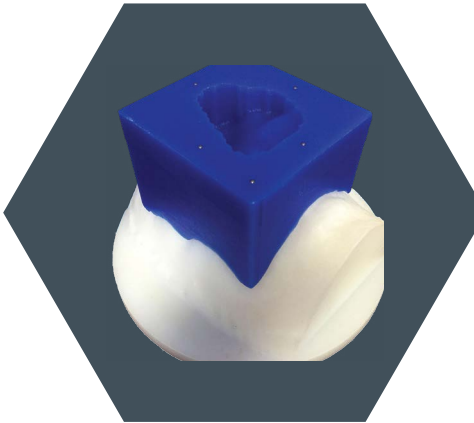
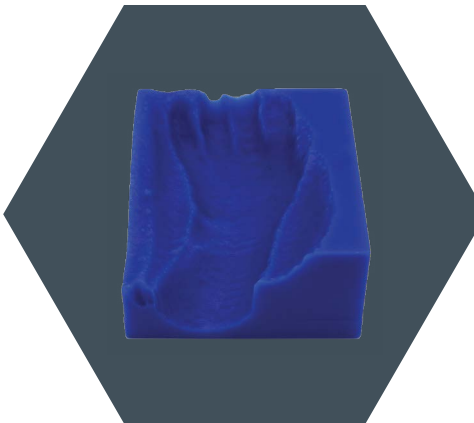
.decimal electron boluses are available in comfortable FlexiBol silicone or rigid blue wax, providing options to meet your clinical and treatment needs.

EASILY INTEGRATES WITH YOUR TREATMENT PLANNING SYSTEM (TPS)

To design an electron bolus, transfer the patient's external and target contours to the .decimal p.d. software. Design and optimize the bolus in p.d., then transfer it back to your TPS as a DICOM RT Structure Set with the bolus represented as contours.



LEARN MORE ABOUT
ELECTRON BOLUS



FLEXISHEETS

For simpler cases where a uniform-thickness bolus is appropriate, FlexiSheets offer a convenient alternative to custom FlexiBols. Made from the same flexible silicone material, FlexiSheets are available in a variety of color-coded thicknesses for easy selection.

Peach-colored sheet bolus also available for compatability with SGRT systems.



ELECTRON CUTOUTS

SIMPLIFY YOUR WORKFLOW. REDUCE YOUR OVERHEAD.

Converting from your in-house mold room to .decimal for custom cutouts offers many advantages:

- No need to manage or store inventory, including Styrofoam blocks, PPE, and hazardous material cleaning supplies
- Eliminate costs of equipment and maintenance
- Mitigate risk of downtime
- Free up valuable space at your facility
- Reduce the regulatory compliance burden associated with in-house fabrication, including blood testing and air monitoring
- Increase safety for your staff

PRECISION-MILLED ELECTRON APERTURES

.decimal uses state-of-the-art CNC milling to manufacture custom electron apertures from copper, delivering:

- Precision and consistency through tight manufacturing tolerances
- Reduced variability compared with manually fabricated apertures
- Effective electron beam blocking with copper
- A non-hazardous material that avoids the OSHA requirements associated with lead-containing Cerrobend

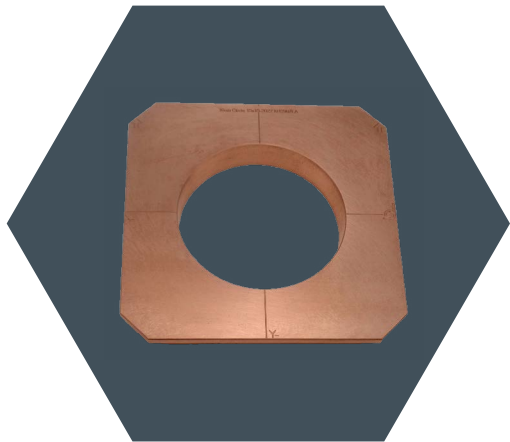
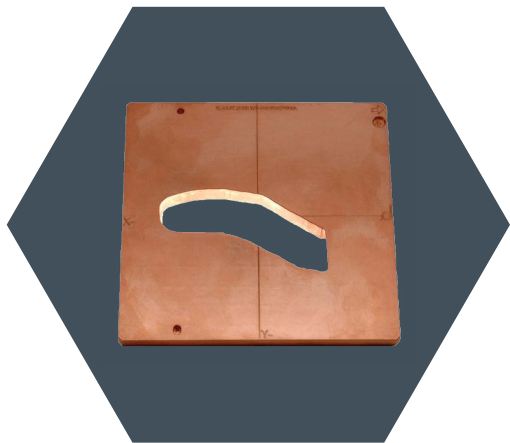
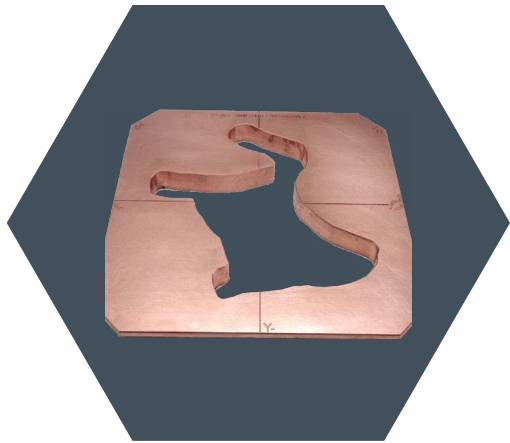
TREATMENT PLANNING SYSTEM (TPS) COMPATIBILITY

Design specifications for custom cutouts are transferred to .decimal's p.d software by importing DICOM RT Plans, which contain aperture and block coordinates.

Alternatively, apertures can be designed from clinical setups using digitized outlines.

NEXT-DAY DELIVERY

Orders received by 3:00 p.m. ET are fabricated and shipped the same business day.

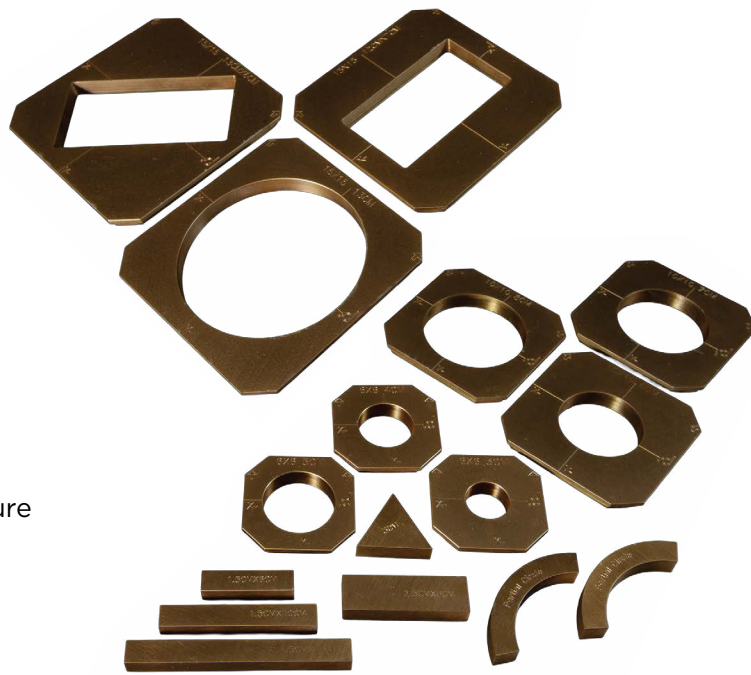


LINEAR ACCELERATOR COMPATIBILITY

.decimal's electron cutouts are compatible with all applicable electron cone designs and sizes across leading linear accelerator models and vendors, including Varian, Elekta, and Siemens.

GENERIC CUTOUTS & KITS

Also available are user-defined generic electron aperture and hand bar kits, allowing you to create custom cutouts using one or more generic components.



RECYCLABLE COPPER = ADDED VALUE

Copper is a highly recyclable material with established value in the recycling market. When a .decimal copper cutout reaches the end of its useful life, it can be recycled for potential recovery value.

With recycling facilities widely available, copper cutouts offer an added value beyond their clinical use.



≥99% DOSIMETRIC AGREEMENT COMPARED TO CERROBEND BLOCKS

Custom-milled copper inserts demonstrated ≥99% of points within ±2% of Dmax or 1 mm DTA compared with Cerrobend across standard clinical conditions.¹

Rusk BD, et al. A dosimetric comparison of copper and Cerrobend electron inserts. J Appl Clin Med Phys. 2016;17(5):245-261



LEARN MORE ABOUT
ELECTRON CUTOUS

PROTON DEVICES

SIMPLIFY PROTON APERTURE AND RANGE COMPENSATOR FABRICATION

Let .decimal handle the high-precision manufacturing of your proton apertures and range compensators, while you:

- Reduce costs associated with equipment, repairs, and specialized engineering staff
- Minimize downtime caused by material shortages or equipment issues
- Reclaim valuable space by eliminating in-house fabrication equipment
- Reduce regulatory burden associated with fabrication machinery and materials
- Increase staff safety by reducing exposure to fabrication-related hazards

PRECISION-MILLED PROTON DEVICES

.decimal uses state-of-the-art CNC milling to manufacture high-precision proton apertures and range compensators, delivering:

- Precision and consistency through tight manufacturing tolerances
- Accurate beam shaping with 5-axis milling that accounts for beam divergence
- Flexible range compensator designs manufactured smooth or plunged to match the proton TPS model
- Reliable, repeatable manufacturing compared with manually fabricated devices

PROTON TREATMENT PLANNING SYSTEM (TPS) COMPATIBILITY

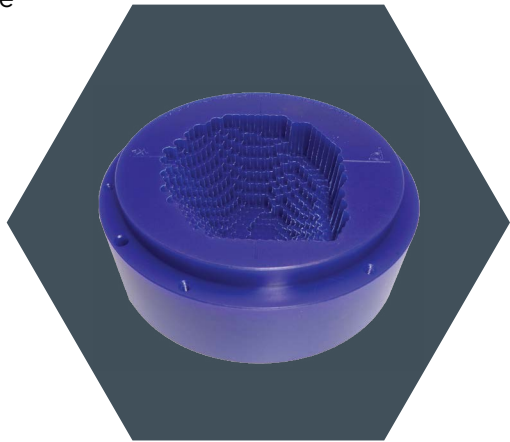
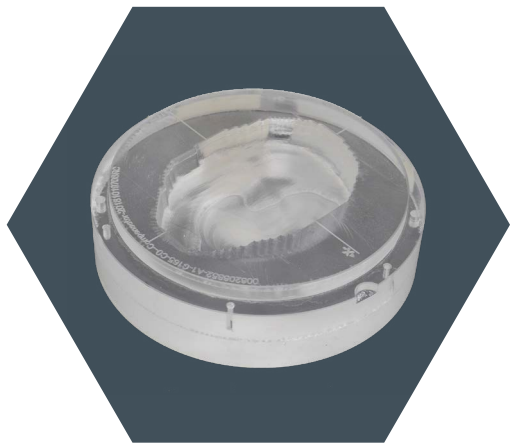
Design specifications for custom proton apertures and compensators are transferred to .decimal's p.d software via import of DICOM RT Ion Plans.

NEXT-DAY DELIVERY

Orders received by 12:00 p.m. ET are fabricated and shipped the same business day.

RECYCLABLE BRASS

Brass can be recovered and recycled at the end of its useful life. Recycling facilities that accept brass are widely available in both metropolitan and rural areas.



LEARN MORE ABOUT
PROTON DEVICES

BECOME PART OF THE .DECIMAL FAMILY. YOUR CHALLENGE. OUR EXPERTISE.

Not every treatment challenge has an off-the-shelf solution. That's where .decimal can help. From custom devices to outsourced fabrication, we work with radiation oncology teams to develop patient-specific solutions designed around their clinical needs. Whether you have an idea for something new, see an opportunity to improve an existing device, or simply need a better way to solve a fabrication challenge, we want to hear from you.

WE'LL HELP YOU IMPROVE:

TREATMENT QUALITY

Have an idea for a custom device that could improve precision, consistency, or treatment delivery?

PATIENT COMFORT

Looking for a better way to position, immobilize, or accommodate your patients?

FABRICATION PROCESSES

Need a patient-specific solution without the time, resources, equipment, or space required to fabricate it in-house?

940+ CLINICS ACROSS THE U.S. CURRENTLY USE .DECIMAL PATIENT-SPECIFIC SOLUTIONS

Join the .decimal family and discover what we can create together.

HAVE AN IDEA? CONTACT US.

You don't need to have all the answers. Bring us your challenge, and our team will explore what's possible.



150,000+ PATIENTS SERVED
540,000+ DEVICES MADE

