

Laser Stent & Tube Cutter

SIGMA® Series



- Femtosecond and fiber lasers
- Precision 4-axis motion standard
- 0.2 to 30 mm tube diameters
- Wet cutting and flat cutting options
- Automated tube loader, robotic arm, and machine vision options
- 22 in touch screen GUI on swing arm
- Material thicknesses > 1 mm

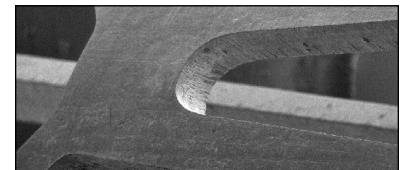
TYPICAL APPLICATIONS



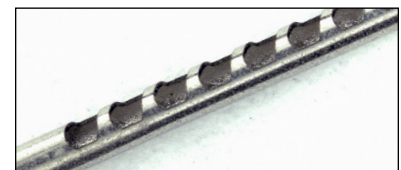
Large diameter biopsy device



Flexible tubing



Metal stents



Micro cannula

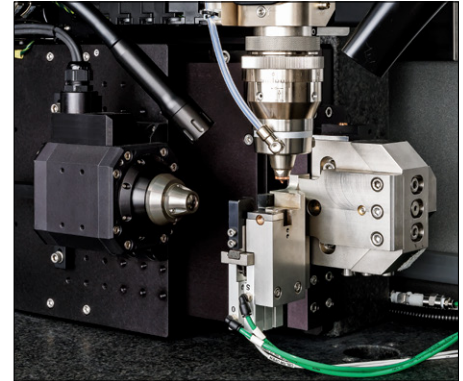
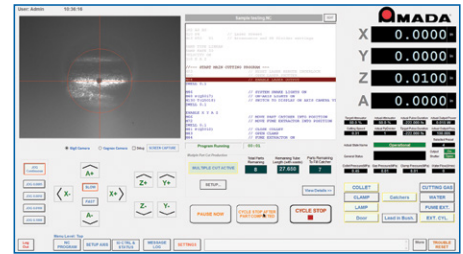


Capsule

- **Maximize throughput with high speed direct drive stages** - Integrated X and rotary "lathe" provide direct drive technology with high dynamic precision performance, delivering the highest accelerations and operating speeds.
- **Multi-axis options** - SIGMA Tube Cutter provides 4 axes as standard: X + Rotary, Y (transverse for off-axis cut geometries), and Z.
- **Designed for precision** - The laser, optics, and stages are secured directly to a granite base that is pneumatically isolated from the machine frame to provide superior rigidity and vibration dampening. Linear and rotary motors with high resolution encoders are combined with a machine design focused on process isolation to ensure high precision and repeatable cutting.
- **User interface with integrated camera** - Large Windows®-format user screens display comprehensive machine status with easy-to-use functionality. The camera image integrated into the user screen provides inline through-the-lens viewing.
- **Wet and dry operation** - Optional integrated water system with flow rate control, level sensors, and easily changed filters. The lathe stages, rated IP54, and all connections are sealed for reliable wet operation.
- **Enclosure features and safety** - The CDRH Class 1 workstation enclosure includes ISO 13849-01 Category 3 safety interlocks. The interlocked full front door lifts easily vertically to provide full access to tooling, focus head, and stages. A smaller window door slides horizontally, maximizing operator productivity.



- All-in-one main run screen provides full view of machine status
- Entire front door lifts up for full access to tooling, tubes, and stages
- Smaller sliding laser-safe window for quick part access
- Major subassemblies on drawer slides for easy maintenance and vibration isolation
- System controlled using touch screen buttons or jog mouse
- Standard and custom part tooling options



TECHNICAL SPECIFICATIONS

Laser and Motion Parameter		Specification
Laser		Femtosecond laser up to 120 W in IR or green wavelengths Fiber laser up to 1 kW in IR wavelength
Focused Spot Size		< 10 μm achievable
Collet		Levin D – tube diameters up to 7.9 mm ER25 and ER40 – tube diameters up to 30 mm
Linear X-Axis	Travel	300 mm or 600 mm
	Accuracy / Repeatability	+/- 1 μm +/- 0.4 μm
Rotary Axis	Accuracy / Repeatability	+/- 2.5 arcsec +/- 1 arcsec (Levin D)
	Accuracy / Repeatability	+/- 6 arcsec +/- 3 arcsec (ER25 and ER40)
Linear Z-Axis	Travel	50 mm
	Accuracy / Repeatability	+/- 1 μm +/- 1 μm
Linear Y-Axis (Optional)	Travel	100 mm
	Accuracy / Repeatability	+/- 1 μm +/- 0.4 μm
XY Platform (Optional)	Travel	100 mm x 100 mm
Input power		208-240 VAC 50-60 Hz, single phase, 30 Amps

WEIGHT & DIMENSIONS

Size (W x D x H) does not include light tower and user interface	71.5 in x 33.0 in x 80.1 in (1816 mm x 838 mm x 2034 mm)
Weight	4800 lb (2177 kg)



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