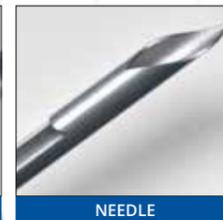
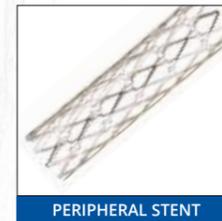
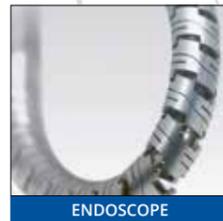
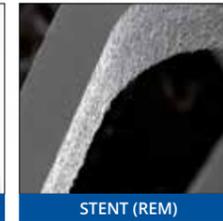
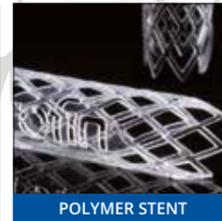
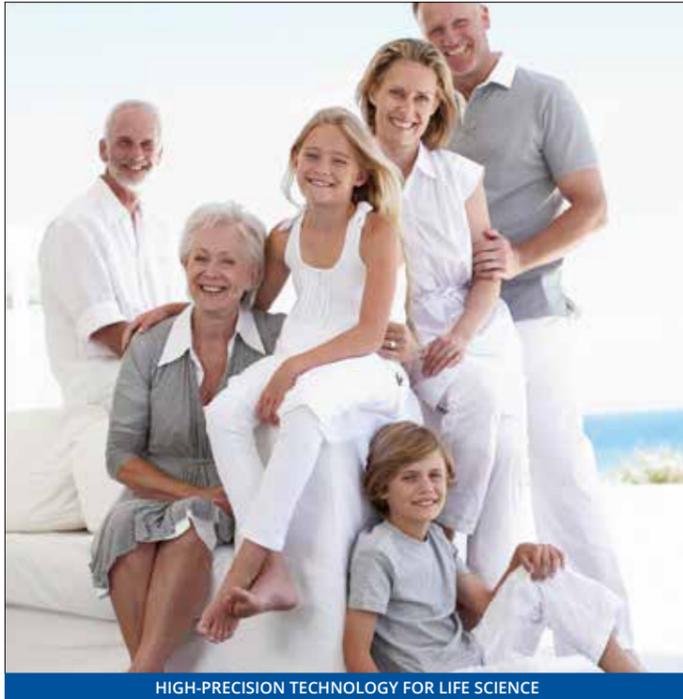


# Laser Solutions for Medical Device Technology

The Future of Medical Manufacturing

# Laser Solutions for Medical Device Manufacturing – When Precision Matters Most



# Laser Solutions for Cutting Stents and Tubes

# Laser Solutions for Cutting Welding, Drilling, Structuring and Marking



STAR CUT TUBE



STAR CUT TUBE SL



LASER WORKSTATIONS



SELECT



PERFORMANCE



EASYMARK



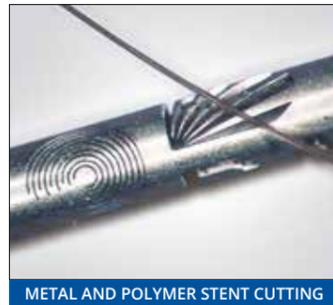
PWS MINI WITH SLS



NEEDLE DRILLING SYSTEM



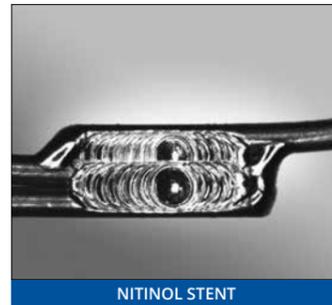
LAPAROSCOPIC INSTRUMENT



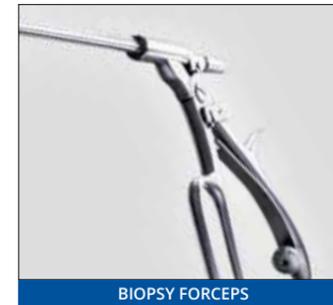
METAL AND POLYMER STENT CUTTING



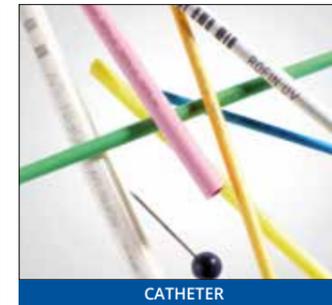
BLACKMARKING



NITINOL STENT



BIOPSY FORCEPS



CATHETER



LEADS



NEEDLE

- High-precision cutting system for medical implants and instruments (stents, endoscopes, tubes etc.)
- Camera and/or stereo microscope for exact monitoring
- Automatic tube loader for dry and wet cutting (optional)
- Versatile 2+2 option for off-axis cutting
- Various ultra-precise tube guiding systems
- Integrates StarFiber and/or Monaco laser

- High-precision tube cutting system
- Small footprint
- Highest productivity
- Available with StarFiber or Monaco
- User-friendly HMI for validated production processes
- Automatic tube loader for dry and wet cutting (optional)

- Various modular laser workstations suitable for customized applications
- High-precision welding, cutting, drilling, structuring and marking
- Various motion systems with up to +/- 1 μm accuracy
- Latest CNC technology
- Integrates USP, fiber, rod and diode laser sources
- Wide range of laser marking solutions for applying the UDI mark onto the medical product, including corrosion free blackmarking

- Manual welding laser with optional CNC control
- For semi-automated processing
- Motion and laser control fully integrated for complete process control
- IQ/OQ/PQ for FDA documentation according to GMP
- Available with fiber laser as an option

- The standard system of manual laser welding
- Dynamic foot switch for ultimate weld control
- IPM for reliable processes
- MicroWeld for finest welds
- IQ/OQ for FDA documentation according to GMP

- Marking of metals and polymers
- Compact desktop design
- Very easy handling
- Ideally suited for small and midsize parts, flat and concave
- Enhances flexibility through integrated software-controlled z-axis and rotary module

- Desktop laser welding system for high-precision workpieces
- Small footprint
- Highly compact 3-4 axis system

- Laser system for high-precision drilling of blind holes in medical needles
- Up to 5 needles per second
- Highly precise optical components which are fixed to a granite plate

# Laser Solutions – Flexibility in Laser Integration



## ULTRASHORT PULSE LASERS

### Monaco – HyperRapid NX – Powerline Rapid NX

- High-precision processing of biodegradable materials like polymers and magnesium alloys, Nitinol and brittle materials
- Cutting of finest strut widths
- Selective layer ablation
- No heat affected zone
- No burr or dross
- Minimized post-processing and higher yield

## FIBER LASERS

### StarFiber – LFS – PowerLine F

- Fiber laser sources for welding, cutting, drilling and structuring
- Available as laser with supply cabinet and OEM version
- Excellent productivity through high repetition rate
- Super clean cut surface with sharp cutting edges in thick material
- Less burr and taper
- Narrow weld seams with smoothest surface
- Superior flexibility with galvo and fixed optics



## PULSED LASERS

### StarPulse

- Smooth weld seams through flexible pulse shaping
- Power control with Double Closed Loop
- Up to 20 KW pulse peak power for high quality welding of highly reflective materials
- Accurately controlled minimal pulse peak powers down to 10 W allows precise welding of finest components



## DIODE LASERS

### Compact Evolution

- High-precision welding of plastic materials
- Broad wavelength spectrum from 630-2200 nm for a wide range of materials
- Wide variety of processing heads e.g. galvo scanners, with optional process monitoring for reliable process control
- Different focus shapes which allow innovation process solutions

# Laser Solutions – Process Know-how



Coherent-ROFIN has been developing laser solutions for medical device manufacturing for more than three decades.

In our application labs we work with a whole range of laser systems, latest fiber and ultrashort pulse laser technology. Especially for the medical device industry. Several hundred new applications are evaluated each year.

We invest heavily in faithful and long-lasting partnerships with our customers and leading research institutes. Coherent-ROFIN is a global operating company with production, sales and service sites all over the world. An essential precondition to support distributed manufacturing concepts, for instance research and product design in the USA and large scale production in Asian countries.

## COHERENT Application Labs

- Latest fiber and ultrashort pulse technology
- Widest range of laser sources and laser systems dedicated to process evaluation
- Experts with extensive experience in material processing



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Lasers. For full details of this warranty coverage, please refer to the Service section at [www.Coherent.com](http://www.Coherent.com) or contact your local Sales or Service Representative. Printed in Germany. Copyright © 2018 Coherent, Inc.

