

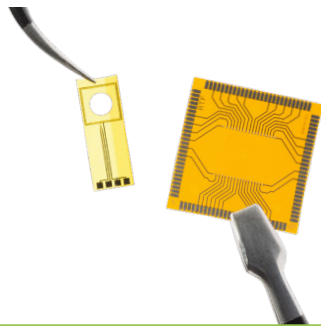
Interventional Market Solutions

Accelerating time-to-market with expert catheter design, precision engineering, and integrated manufacturing and full device assembly



Complex Delivery System Integration

- Over 70k sq/ft of class 7 cleanroom assembly
- Deflectable and steerable vertical integration
- Rapid shaft prototyping: 2-3 weeks
- Neuro Microcatheters, Structural Heart Valve & Delivery Systems, Electrophysiology and Ablation Catheters
 - ◊ Wire termination, flex circuit fab, and sensor integration
- Machining, molding, tipping, and shape setting



Microelectronics and Thin Film Integration

- Interventional micron-scale thin film circuits and electroformed components
- Custom ASICs and Off-the-Shelf ASSPs
- Wrapped flexible circuits
- Mapping sensor integration and testing
- Custom spline design and assembly
- Electroforming, photolithography and metallization
- Device miniaturization



Laser Processing & Assembly

- Fiber, Femto, UV Lasers
 - ◊ Automated for Electrode to wire and tube welding
 - ◊ Stocked Pull Ring Assemblies
 - ◊ Dual Beam Laser Welding
 - ◊ Valve & PCI stents to laser-cut hypotubes
- Typical Kerf Width .0007"
- Tubes as small as .013"
- Laser welding, marking/etching, ablation, and hole drilling
- Stainless steel, Nitinol, Platinum, L605, MP35, Cobalt Chromium, and plastics



Extrusion, FEP Heat Shrink, PTFE Liners

- Single & multi-lumen (1Fr - 40Fr)
- .0015" tolerance wall thickness
- TPU's, TPE's, and all PE's (specialty compounded resins such as H&L Stabilizers, Performance Additives, etc.)
- FEP: .054" to .375" Expanded ID
 - ◊ 1.3:1 to 1.9 ratio
- PTFE liner capability



Braided & Coiled Reinforced Sheath Assembly

- Stainless steel, MP35N, Nitinol, and polymer fibers
- Round or flat wire
- Single or multi-variable durometer
- Braid to coil transition
- Constant or variable pick pattern
- Coil winding up to 12 filar
- 8, 16, or 32 Filaments



Handle Design & Development

- Navigator Platform
 - ◊ Platform Handle for rapid development and prototyping
- OTS modules to meet requirements for 5 to 24Fr Catheters or Sheaths
 - ◊ Up to 2-way steerability
- Customized Prototypes 6-8 weeks
 - ◊ Validated handle 4-6 months

SECONDARY OPERATIONS:

Overmolding, EDM, EtO sterilization, functional and electrical testing, deburring, cleaning and packaging/labeling

Costa Rica Catheter Assembly

- FDA registered delivery system manufacturing
- Braiding, coiling, extrusion, and assembly
- Packaging, labeling and sterilization management
- Proven track record of successful shaft transfers



Since 1987, we've build our success on a foundation of innovation and an unwavering commitment to quality. Our expertise includes mapping and ablation catheters, transcatheter valve delivery systems, pacemakers, and ICDs. With in-house capabilities spanning multi-lumen extrusion, metal machining, sensor integration, and ASIC development, we deliver high-performance solutions that accelerate time-to-market for our partners.

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