



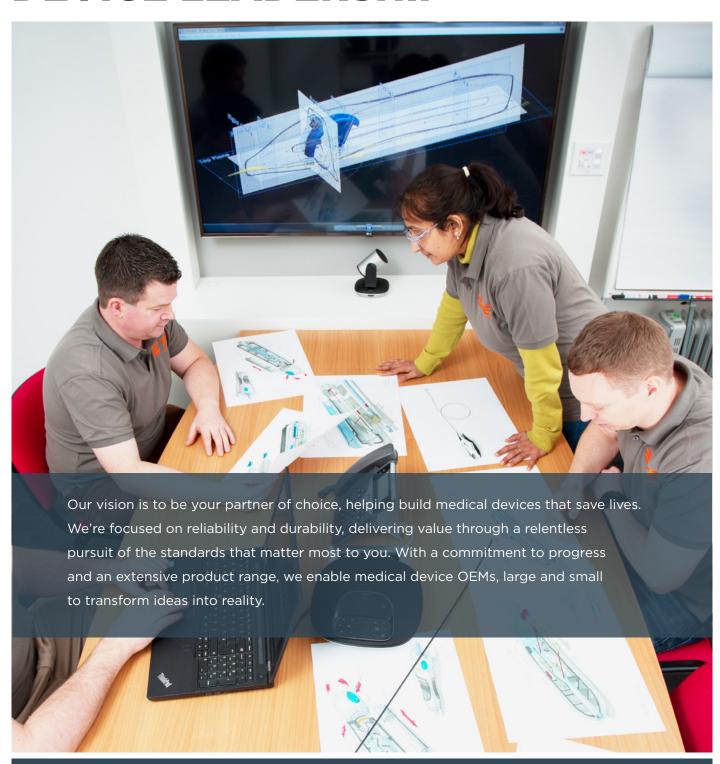




## WHERE LASTING BONDS BEGIN - PEOPLE, CAPABILITIES AND PRODUCTS

Dedicated to Delivering a Higher Standard for Medical Device OEMs

# CONNECT TO A HIGHER STANDARD OF MEDICAL DEVICE LEADERSHIP



#### Our medical division unleashes the potential of every connection









#### The power of TE for medical device OEMs - a connected ecosystem

Building on a legacy of innovation with each new portfolio addition.

#### **Precision Interconnect**

fine wire and medical cable assemblies

#### AMP

connectors and electro-mechanical components

#### Raychem

material science and heat shrink tubing

#### 2015

#### Advancedcath

access and delivery solutions for minimally invasive devices

#### 2016

#### Creganna Medical

access and delivery solutions for minimally invasive devices

#### 2017

#### MicroGroup

precision metal components and advanced medical metals tubing

#### 2018

### Heat Shrink Innovations

FEP heat shrink for catheter manufacturing

#### 2019

#### Optinova

Extruded tubing & PTFE etched liners

#### Why TE Connectivity?



We're more than a components supplier. With TE, you get an integrated solutions partner who can develop your idea from prototyping to volume manufacturing. This connected value gives you a competitive advantage in today's marketplace.

**Engineering expertise:** Early design collaboration takes you from concept to production, and beyond.

**Extensive manufacturing capabilities:** TE has the expertise in a range of manufacturing processes to develop components to fully functional devices.

**Global footprint:** Improved supply chain resilience, responsiveness and access to emerging and low-cost manufacturing markets.

**End user focus:** We design for ergonomics, small spaces, high speed, high performance, and reliable connectivity.

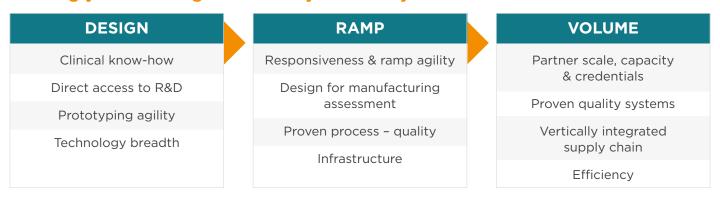
# CONNECT TO A HIGHER STANDARD OF VALUE CHAIN RESILIENCE

#### Flexibility of location

Your design and development projects can be managed from one or more global centers of excellence, depending on the capabilities you required. Many locations offer dedicated R&D fabrication and testing labs, support tools, prototyping facilities and pilot manufacturing capacity to support your project through all phases of the product development cycle.



#### Meeting your evolving needs today with an eye to the future



#### Forming lasting bonds in key medical device hubs around the world



# CONNECT TO A HIGHER STANDARD OF MEDICAL SPECIALTY EXPERIENCE

#### Every minute, 120+ patients are treated with a device containing TE technology

This is where the promise of lasting bonds gets real – partnering with customers to medical device innovation in core medical specialties:



Interventional Cardiology: From access to closure, providing leading medical device companies with interventional technologies to diagnose and treat cardiovascular disease, including access and delivery of transcatheter, aortic and mitral valves.



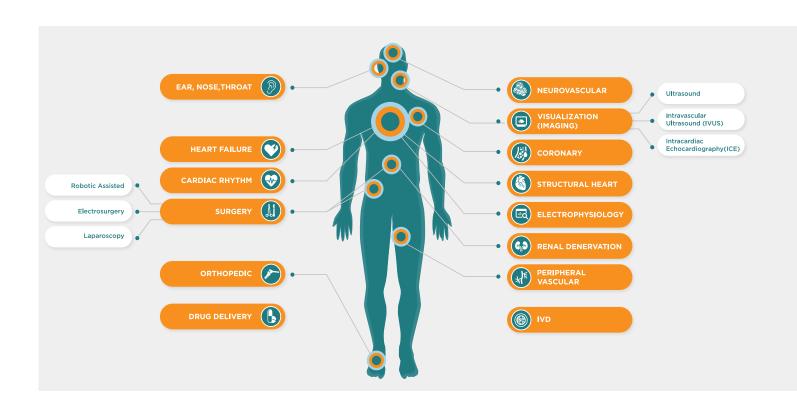
**Imaging:** Solutions for high-density imaging, miniaturization, improved ergonomics, increased data acquisition and multi-function devices.



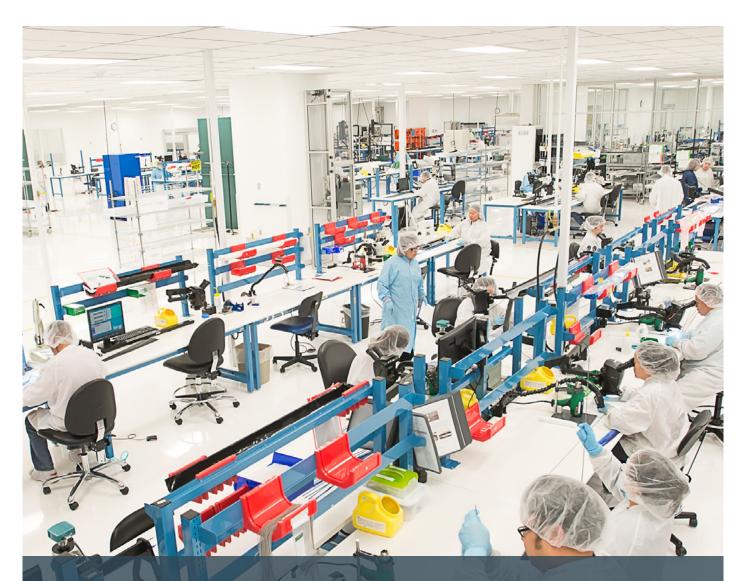
**Surgery:** Robust portfolio of technologies, capabilities and services to develop robotic-assisted surgery, laparoscopy and electrosurgery systems.



In Vitro Diagnostics (IVD): Supporting IVD manufacturers in the design, development, testing, and manufacturing of innovative point-of-care and IVD technology using microfluidic platforms.



## CONNECT WITH OUR BREADTH OF CAPABILITIES



From standard to customized metal shafts and hypotubes to specialty high-density cable assemblies and medical grade polymers, TE has the scale, global capacity, and expertise in a range of manufacturing processes. It's this unique combination that allows us to bring your concept to reality, whether your solution requires a trustworthy partner in metals, molding, laser processing, connectors, cables or other capabilities.

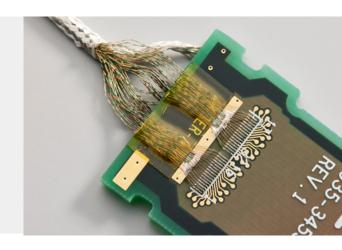


#### LASER PROCESSING

Extensive laser welding and cutting capabilities add value to our catheter and guidewire manufacturing, giving you more options for materials and design.

### FINE WIRE AUTOMATION AND TERMINATION

Our expertise in fine wire termination as small as 0.004 inches in pitch allows for a high number of signal or energy-delivery channels to be packaged in a small form factor.







#### PROPELUS™ PROTOTYPE CENTER

A dedicated rapid prototyping center that supports you with fast turnaround prototypes of your medical components and devices.



#### **Metal Shafts & Hypotubes**

We offer a diverse selection of shafts and hypotubes solutions, all designed to meet specific performance requirements such as transition, trackability, push and torque, kink performance, compression resistance, and flexibility.



#### **Wires & Coils**

We provide high-performing wires with superior surface finishing, tight tolerances, and exceptional stress relief, resulting in increased kink resistance and outstanding torque response. Our team can customize complex wires and coils to precise specifications, even for small profile solutions down to 0.001 inches in diameter.



#### **Heat Shrink Tubing**

Whether you use off-the-shelf—Fluoropolymers, Polyolefins, Pebax®—or custom-formulated materials, our expertise in compounding, expansion, and polymer crosslinking can provide you with the tubing to meet your specifications.



#### **Connectors**

Our durable solutions enable power, data and signal to generate, transmit and provide feedback along a range of devices.



#### **Specialty Needles**

From handle to tip, we specialize in sophisticated needle designs for biopsies, implantation and transseptal crossing.



#### **Cables**

Small, lightweight, flexible and durable cable solutions that deliver high signal quality using true coax in acoustic applications where cross talk, bandwidth and attenuation affect performance.



#### **Machined Components**

Complex and delicate surgical instruments, implants or analytical devices required highly engineered components and assemblies. We have the expertise, capabilities and raw materials to support your needs, from device prototyping to high-volume production runs.



#### **Sensor-Enabled Smart Catheters**

We're helping to innovate the next generation of catheters with components and sub-assemblies that offer enhanced 3D visualization, integrated sensing abilities and digitization.



#### **Catheter Technologies**

We use our proprietary processes to manufacture a wide range of catheter components and sub-assemblies, including introducer sheaths, braided and coiled catheters, steerable catheters, and sensor-enabled smart catheters.



#### **Extruded Medical Tubing**

Custom extrusion for close-tolerance, single-lumen, multi-lumen and bump tubing as well as wire coating, co-extrusion and profile extrusions are provided.



#### **Molding**

We can provide molding and over-molding services for a variety of devices, including catheter tips and complex distal assemblies. We can work with a diverse selection of materials, configurations, and specifications to meet the specific needs of your device.



#### **Cable Assemblies**

Our innovative designs combine lightweight, flexible, durable cable with highly-reliable system ZIF connectors and precision wire terminations that offer enhanced visual clarity, built to withstand harsh sterilization needs.

See the full range of components and manufacturing capabilities at **TE.com/medical**.

# CONNECT TO A HIGHER STANDARD OF PRODUCT ADVANCEMENT



#### **PROx™** Proximal shaft sub-assembly

PROx is a proximal metal shaft sub-assembly that offers the essential design, service and cost model for a Rx catheter. This high-performance proximal shaft offers premium design features at a lower price point and is manufactured in a high yield, robotic and fully automated environment.



#### **PoleVault**™ The gold standard hypotube

PoleVault<sup>™</sup> is a hypotube solution with up to 40% kink resistance. PoleVault<sup>™</sup> hypotubes are specifically designed to optimize catheter performance. It increases a physician's confidence in your product, reducing patient risk and maximizing revenue.



#### **MICROFLEX** A highly flexible micro metal tube >0.013"

MICROFLEX is a mico-hypotube that is specifically developed for minimally invasive treatment of the body's smallest vasculature, including interventional neuroradiology and is available in dimensions of 1F or less. The single-piece construction provides physicians with a consistent user experience. It is completely customizable, enabling numerous design possibilities and the single-piece design also maximizes end-product margins by decreasing component and assembly costs.



#### **Javelin**<sup>™</sup> An advanced alloy for specialty needles

Javelin™ has greater penetration ability and exhibits superior hardness over Stainless Steel. In comparative testing, Javelin demonstrated up to 24% increased hardness over 304SS. Javelin enables enhanced clinical outcomes, giving physicians control and the ability to accurately navigate to a sample site. It allows for easier biopsy penetration and maintains efficacy during repeat deployments.



#### MP456P Imaging Diagnostic I/O connector

A high-density, interposer-based connector for use in advanced imaging systems. With 20,000 mating cycle to meet industry standards, the MP456P is suitable for the high-end cart-based medical equipmen.



#### **COMFORT™ NX Cables** Assembly product platform

From coax manufacturing, cable assembly and micro-coax termination, the COMFORT NX platform allows you to take advantage of favorable cost and quality enabled by the precision associated with automation.



### **Meridian Technology**™ Laser cut metal tubes with tailored mechanical properties

Precision laser cut metal tubes with tailored mechanical properties based on interrupted spiral cut pattern.

- A full spiral cut is interrupted by short uncut sections
- The helical patterns formed by the uncut sections determine the flexibility, axial stiffness and torque capabilities of the parts
- The pattern can be fully described by 3 variables, cut length, uncut length and pitch
- High-speed cutting techniques have been developed for these patterns
- Patterns and properties can change continuously from distal to proximal



#### **VERSIO™** Catheter Connector

A connector for high-density signal and power transmission in a low-profile catheter.

- High-density transmission analog signal & electrical power
- Up to 272 contact positions in a 1" diameter connector
- Integrated & shielded connector sub-system, single connector
- Ultra-high cycle capability, low insertion forces
- Modular design easy configurability



#### **Specialty Sheath**

Inspired custom sheath design solutions to solve clinical challenges—from concept to the finished packaged product. We specialize in designs required for Structural Heart, Electrophysiology, Endovascular and large-bore access >12F applications.

See the full range of product platforms at **TE.com/medical**.

### CONNECT TO A HIGHER STANDARD OF CUSTOMER DEDICATION



TE Connectivity is a partner of choice to the world's leading medical technology brands. We provide top-tier engineering expertise and manufacturing excellence in the development of optimally engineered components and value-added sub-assemblies to support the production of life-saving medical devices used in interventional cardiology, surgery, imaging, in vitro diagnostics, and other medical specialties.

Explore our extensive range of medical solutions at TE.com/medical.

#### TE.com/medical

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