

# YOUR PARTNER

In The Global Life Sciences Market

Value Plastics **Fluid Management Components**

Biomaterial Delivery **Devices**

Avalon **Catheter Solutions**

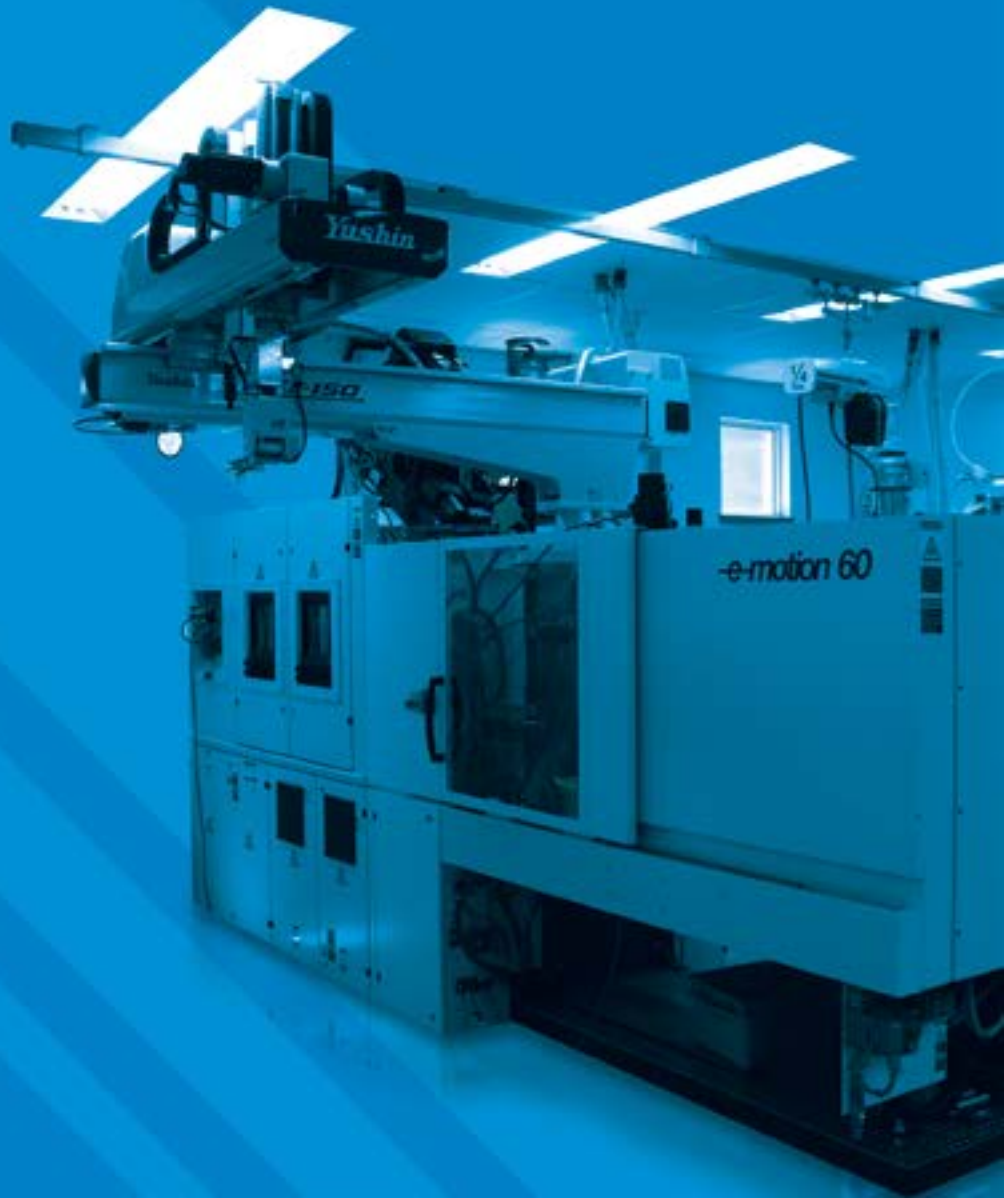


**Nordson**  
MEDICAL

# COMMITMENT

To Quality and Consistency

With a solid reputation for quality, service and reliability, Nordson MEDICAL can provide the detailed support you need from idea to market. Our global regulatory and registration expertise is at your service.





# EXCEEDING

Expectations

## Global Capabilities

- Backed by the global capabilities of Nordson Corporation (Nasdaq: NDSN) – a world leader in precision dispensing and fluid management technology

## Quality and Regulatory Management

- Comprehensive global regulatory and registration support to improve speed to market
- Quality system of interrelated processes meeting the requirements of ISO 13485 and ISO 9001
- FDA registered manufacturing facilities
- ISO 13485 certified
- Production and packaging meet Class 8 clean room standards
- Clean room environments meeting the requirements of ISO 14644-1 Class 8 (Class 100,000) standards
- Continuous improvement and commitment to lean manufacturing

## Molding and Manufacturing Consistency

- Multiple injection molding machines including plastic injection molding and over molding including 2-shot and insert molding
- In-house mold design, build, and repair
- Mold qualifications and process qualifications
- Robotic pick and place
- 24/7 manufacturing machine process monitoring

# RELIABLE

## Fluid Management Components

Nordson MEDICAL's Value Plastics line of precision engineered plastic tubing components is critical to the widest variety of medical fluid management applications and includes over 4,000 fittings in different style and material combinations.





# SUPPLYING

Device Manufacturers

## Thousands of Components In Stock

- Stopcocks designed to easily control the flow of a liquid or a gas in three basic configurations: 1-way, 3-way, and 4-way
- Six distinct families of quick connect fittings: MQC, PQC, RQC, RQX, SBL, and XQ Series for applications covering 1/8" (3.2 mm) through 1/2" (12.7 mm) ID tubing
- All-inclusive bioprocessing line offering a broad range of sanitary fittings, clamps, bag ports, gaskets, quick connects, and large tube-to-tube fittings
- Check valves featuring low priming volumes and materials satisfying USP Class VI and ISO 10993 criteria
- Luers in a variety of material options, including both Class VI certified and animal-free resins that fit tubing ranging from 1/16" (1.6 mm) to 1/4" (6.4 mm) IDs
- Tube-to-tube fittings including press-in plugs, straight connectors, elbow fittings, tee fittings, crosses, Y connectors, multi-port connectors, and multiple reducer combinations
- Acetal and nylon blood pressure fittings available to fit tube sizes from 3/32" (2.4 mm) to 1/4" (6.4 mm)
- Hundreds of threaded plastic tube fittings to join tubing to commonly used threaded ports
- Several additional components with samples available in all configurations

## Major Applications

- Ophthalmic/cataract surgery, patient monitoring, endoscopy, minimally invasive surgery, Biopharm, and more

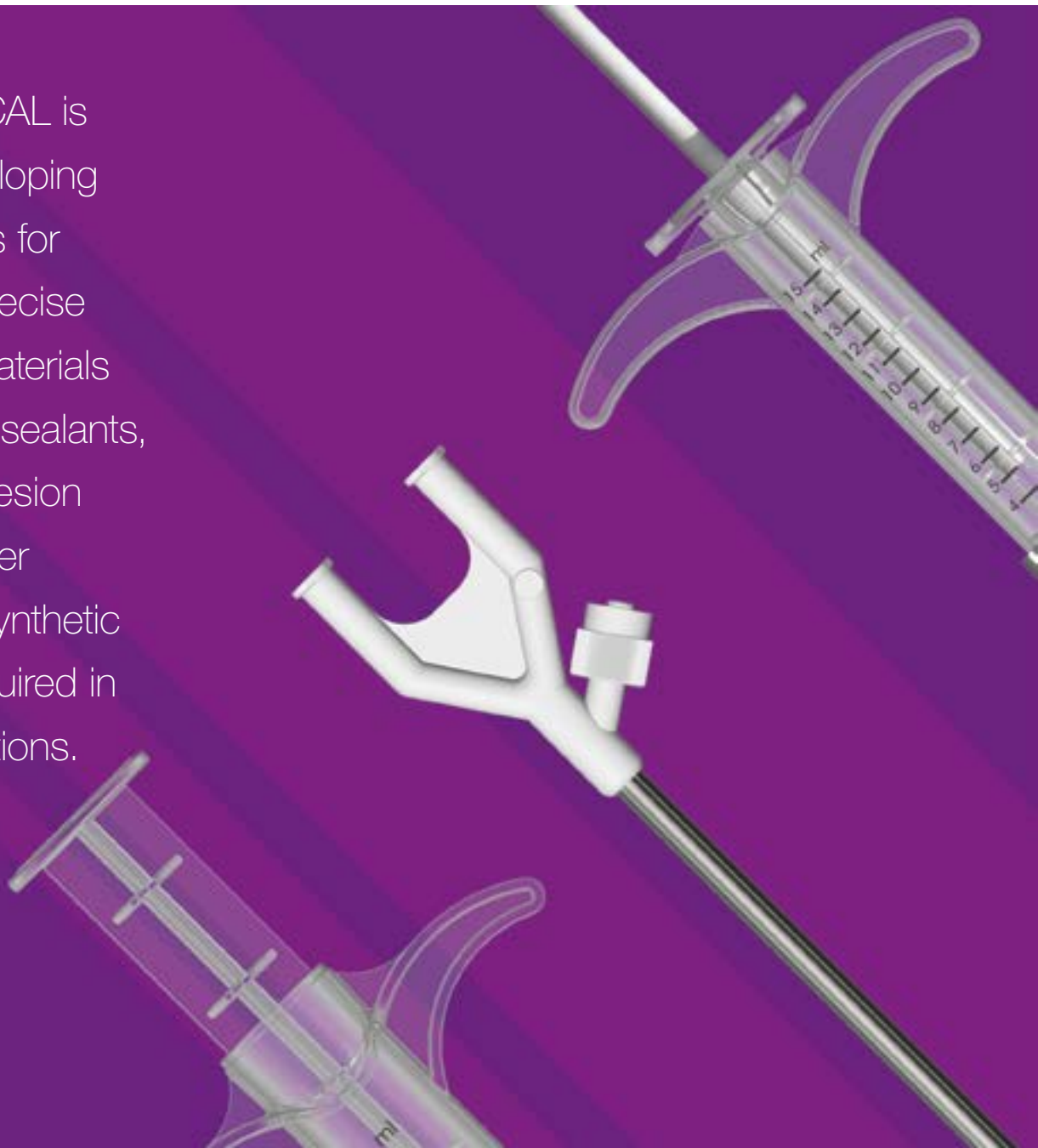
## State-of-the-Art Colorado Facility

- 115,000 square foot facility
- Clean room molding and packaging
- ISO 13485 and ISO 9001 certified
- R&D/testing lab
- FDA registered

# INNOVATIVE

## Biomaterial Delivery Devices

Nordson MEDICAL is a leader in developing proven products for accurate and precise delivery of biomaterials including tissue sealants, hemostats, adhesion barriers and other autologous or synthetic biomaterials required in surgical applications.





# SOPHISTICATED

Designs

## **Biomaterial Applicators and Tips**

- The “Gold Standard” for dispensing biomaterials
- Part design, mold design, build, and plastic processing expertise
- Gas assisted laparoscopic applicators for biomaterials
- Patented spray applicators with positional spray tips
- Applicator assemblies allow controlled, simultaneous application of two materials in 11:1 or 1:1 ratios to a localized treatment site
- Single and dual syringe applicators meet the needs of specific surgical procedures
- Simple, one-handed operation

## **Patented Orthobiologic Graft Delivery Devices**

- Maximize material utilization
- Designed to facilitate the premixing of bone graft materials with fluids such as IV fluids, blood, plasma, platelet rich plasma, bone marrow or other specified blood components
- Designed to deliver allograft, autograft, or synthetic bone graft materials to an orthopedic surgical site
- 5cc and 15cc devices
- Vented options for better saturation and hydration of materials
- Non-vented options allowing for the pre-filling of materials when hydration is not required

## **Marketed to a Variety of Customers**

- Distributors, surgeons, OEMs, hospitals, and outpatient clinics

## **Minnesota Facility**

- Biomaterial delivery technology center

# HIGH PERFORMANCE

Catheter Solutions

Nordson MEDICAL is a world-leading developer and supplier of Avalon Laboratories' wire-reinforced catheters and tubing for medical device delivery systems for surgical and minimally invasive procedures.







# POLYMER

Solution Casting™

## Advanced Technology

- Ability to add multiple components, varying wall thickness, or diameter along the length of a medical device in a single piece construction
- Customized medical tubing options including single to multi-lumens
- Braid, coil or hypotube reinforcements
- Bump tubing, imaging targets, custom atraumatic, tapered and reinforced tips, holes and ports
- Casting methods allowing for the incorporation of materials with different properties including strength, lubricity, flexibility, color and multi-lumens
- Contract manufacturer for many of the top global medical device manufacturers for cannula products such as high-flow, specialty femoral and extracorporeal membrane oxygenation and ventricular assist devices
- World leader cardiopulmonary bypass cannulas
- Low profile, thin wall, lubricious, and long length microcatheters

## Secondary Operations

- Printing, tipping, skiving, hole punching, forming, bonding, custom branding, packaging, and labeling
- Sub-assembly to fully-finished device services

## Clinical Applications

- Cardiovascular, peripheral vascular, neurovascular, endovascular, structural heart, pulmonary support, and more

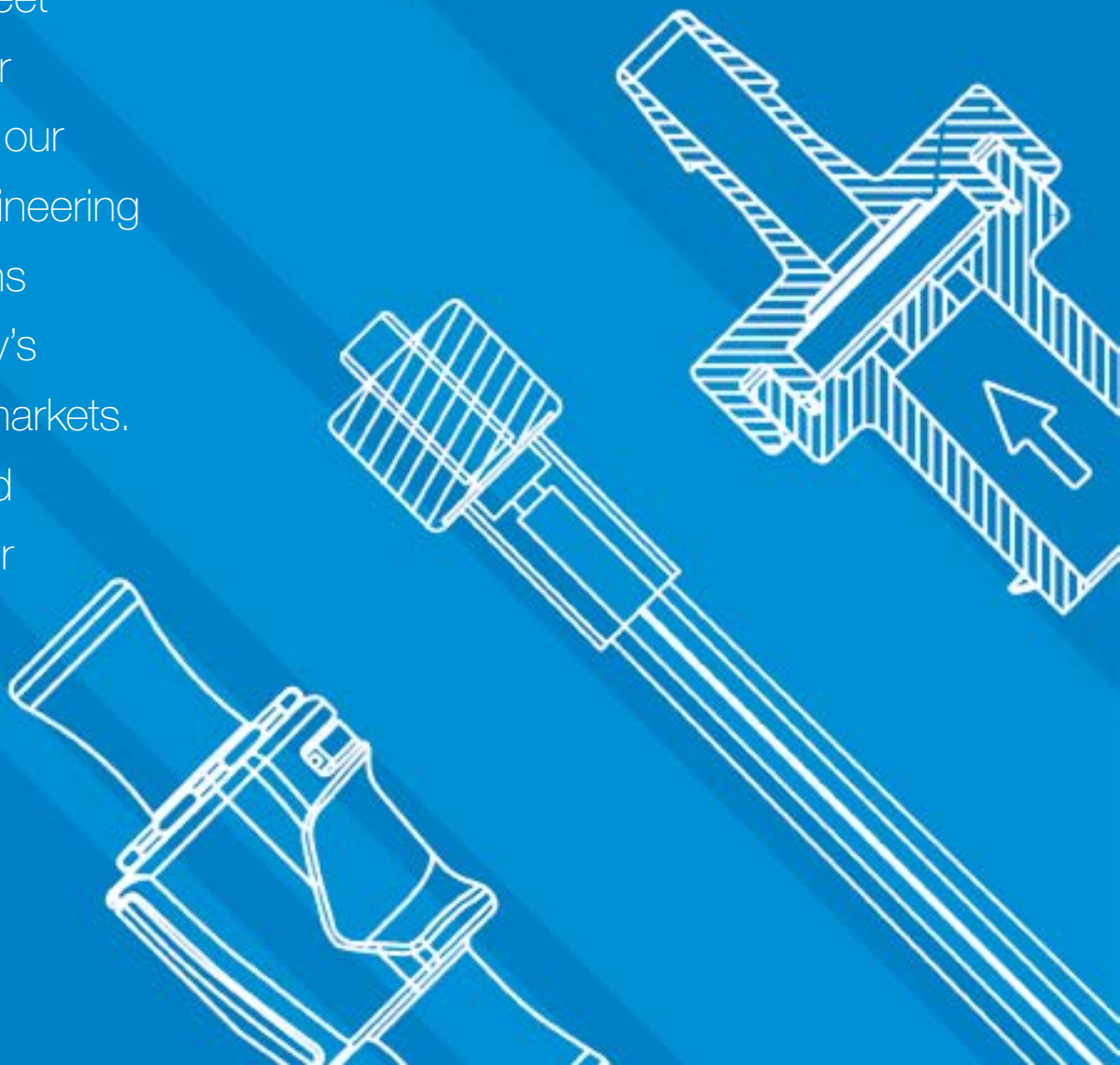
## Guaymas, Mexico and California Facilities

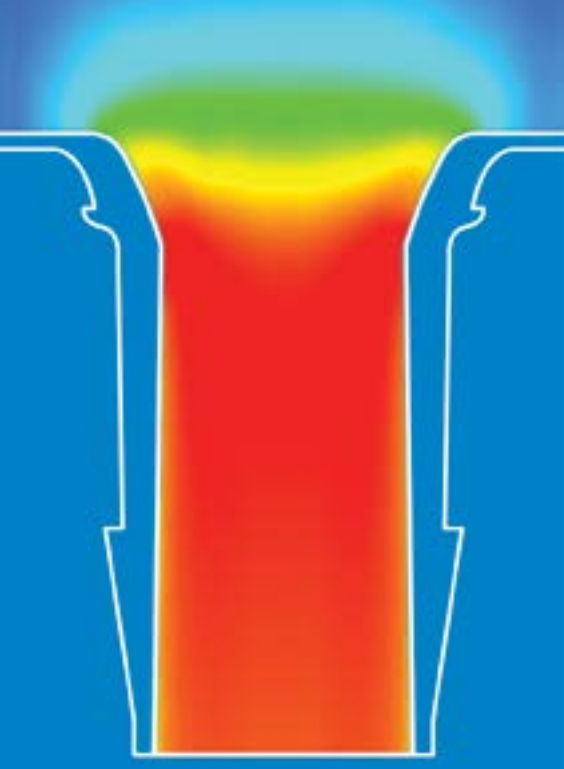
- Manufacturing of complex products
- Class 8 (100,000) clean rooms
- FDA registered
- ISO 13485 certified

# ORIGINAL

Designs and Custom Solutions

All products can be customized to meet your specific user requirements, as our experienced engineering and service teams understand today's medical device markets. We are dedicated to exceeding your expectations.





# WORLD

Class

## Custom Product Development and Design

- Modular designs that allow for easy customization
- Concept and prototype development capabilities
- Research and development labs
- DFM part design
- CAD files - SolidWorks and FEA
- Solid modeling
- Use of Computational Fluid Dynamics (CFD) software
- 3-D printing and rapid prototyping
- Bench testing
- Verification and validation testing including sterilization, packaging, shelf life, and biocompatibility process validation
- Assembly and packaging
- Private labeling options

## Assembly and Finishing Capabilities

- Hypo tube bending and welding
- Ultrasonic welding and bonding
- Pressure and leak testing
- Torque and pull testing
- Secondary operations
- In-process quality inspections with image dimension systems (KEYENCE and Micro-Vu)
- ETO and Gamma sterilization (outsourced)
- Manual, semi-automatic, and fully automatic finished good assembly

Nordson MEDICAL is the partner of choice in the global life sciences market with innovative development and design expertise, comprehensive regulatory support, and broad manufacturing and packaging capabilities. For over 30 years, Nordson MEDICAL has been a provider of innovative products and has earned a solid reputation for quality, service and reliability. All of our products and services are backed by Nordson Corporation, a global leader in precision dispensing equipment serving many consumers and industrial manufacturing industries, helping customers succeed.

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