Nordson MEDICAL

Your Partner
In the Global Life Sciences Market
Nordson Corporation (NASDAQ: NDSN) is one of the world’s leading producers of precision dispensing equipment that applies adhesives, sealants, coatings and other materials to a broad range of consumer, industrial and medical products. The company also manufactures equipment used in the testing and inspection of electronic components as well as technology-based systems for curing and surface treatment processes. Headquartered in Westlake, Ohio, Nordson has direct operations and sales support offices in more than 30 countries.
**Nordson Overview**

**Nasdaq: NDSN**

- Founded: 1954
- FY2016 Sales: $1.8 billion
- Direct Operations: 30+ countries
- Employees: 5,000+
- Headquartered: Cleveland, OH

Percent of 2016 Revenue:

- 36%
- 25%
- 39%

[Map showing global operations]
End Markets
Consumer Non-Durables, Durables, Technology

Every day, you experience the value we bring.

Adhesive Dispensing
- Packaging
- Nonwovens
- Product Assembly

Advanced Technology
- Electronics
- Medical
- Solar
- LEDs
- Industrial

Industrial Coatings
- Appliances
- Agriculture
- Automotive
- Furniture
- Containers
- Construction
Corporate Philosophy

- Nordson Corporation strives to be a vital, self-renewing, worldwide organization which, within the framework of ethical behavior and enlightened citizenship, grows and produces wealth for our customers, employees, shareholders and communities.

Corporate Values

- **Integrity** - We are honest with employees, customers, shareholders, the media, and ourselves. We will do what is right. We will not compromise standards.
- **Respect for People** - We value employees. We thrive on teamwork, collaboration and diversity. We will not compromise safety. We communicate openly and honestly. We give back to our communities.
- **Customer Passion** - Quality and service come first. We expect more from ourselves than our customers do.
- **Excellence** - We expect the best from management, co-workers and ourselves. We are not satisfied with work that is "average" or "OK." We seek innovative approaches to create value.
- **Energy** - We approach challenges with an attitude of "lean forward, let's get it done." Enthusiasm drives the pace of our work. We care… complacency is worse than our toughest competitor.
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.
Quality
And Regulatory Management

Exceeding Expectations

- 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 Capabilities

Exceeding Expectations

- 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
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.
Original and Custom
Design Solutions

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
Our experienced engineering and service teams understand today’s medical device markets.

- 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 & Micro-Vu)
- ETO and Gamma sterilization (outsourced)
- Manual, semi-automatic, and fully automatic finished goods assembly
State-of-the-Art
Manufacturing Facilities

Colorado Manufacturing Facility
- 115,000 sq. ft. facility
- Clean room molding and packaging
- ISO 13485 and ISO 9001 certified
- R&D/testing lab
- FDA registered

Guaymas, Mexico Manufacturing Facility
- Class 8 (100,000) clean rooms
- FDA registered and ISO 13485 certified
- 70,000 sq. ft. facility
Technology Centers

Rancho Dominguez, California Facility
- Catheter solutions technology center

Ventura, California Facility
- Quick disconnect technology center

Eagan, Minnesota Facility
- Biomaterial delivery technology center
Markets Served

Value Plastics Fluid Management Components
- Ophthalmic/cataract surgery, patient monitoring, endoscopy, minimally invasive surgery, Biopharm, and more

LinkTech Quick Disconnect Couplings
- Surgical, wound care, compression therapy, in vitro diagnostics, chemical handling, and more

Biomaterial Delivery Devices
- Cardiovascular, orthopedic, spine, and general surgery

Avalon Catheter Solutions
- Cardiovascular, peripheral vascular, neurovascular, endovascular, structural heart, pulmonary support, and more
Nordson MEDICAL
Divisions

Value Plastics
Fluid Management Components

LinkTech
Quick Disconnect Couplings

Biomaterial Delivery Devices

Avalon
Catheter Solutions
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.
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
One-Stop Shopping

- 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
Nordson MEDICAL's line of LinkTech quick couplings offers the largest selection of sizes and configurations with over 9,600 standard and custom styles. The products are easy to use and purchase and are the connectors of choice.
LinkTech
Quick Disconnect Couplings

A Complete Range with Several Configurations

- Threaded
- Panel mounts
- In-line connectors
- Elbows
- Plastic couplings
- Metal couplings
Interconnect Guarantee

- Compatibility with all industry standard quick couplings
- Audible clicks ensure a secure connection
- Intuitive thumb-latch design
- One-handed operation
- 1/16” – 1/2” flow sizes
- Metal and/or plastic latch technology
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.
Biomaterial Delivery

Devices

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
- 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
Nordson MEDICAL is a world-leading developer and manufacturer of Avalon wire-reinforced catheters and tubing for medical device delivery systems for surgical and minimally invasive procedures.
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 in 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
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.
Nordson MEDICAL
At Your Service

Value Plastics
Fluid Management Components

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