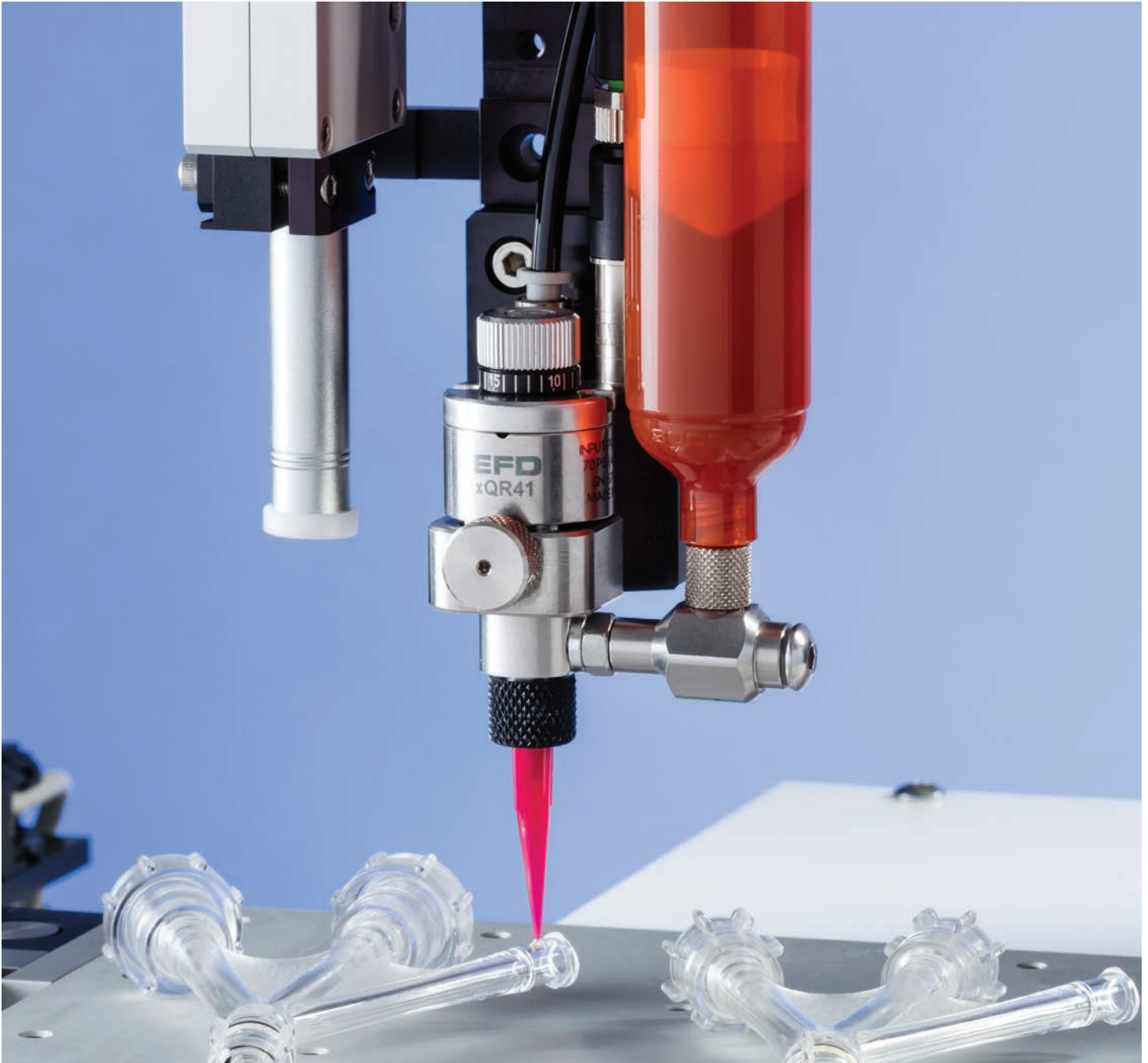


# Nordson EFD Solutions:

Recommendations for High Performance Dispensing in the Life Sciences Industry



Life Sciences Fluid Applications

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## Introduction



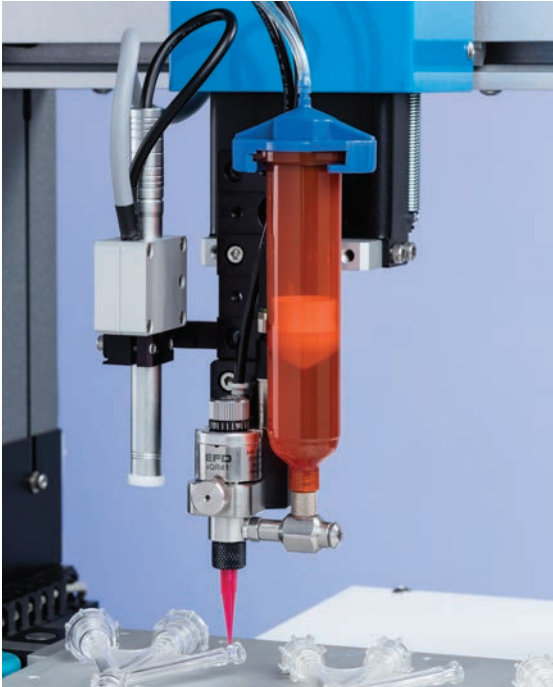
The Life Sciences industry continues to be a growing market segment for EFD. Medical device manufacturers must meet stringent FDA and other agency regulations for quality and product consistency, making process control a critical issue.

EFD offers quality unmatched by any other dispensing equipment manufacturer.

All materials and manufacturing processes are documented for complete traceability and process validation, and all molding, machining, assembly and packaging are performed in our certified silicone-free facilities.

EFD's advanced fluid dispensing systems apply accurate, consistent amounts of UV-cure adhesives, cyanoacrylates, silicones, and other fluids used in medical device assembly processes.

## Automation for process uniformity



An EV robot dispensing UV material onto medical components.

Nordson EFD's range of automated dispensing systems are specifically designed and configured for precise fluid dispensing using EFD syringe barrel and valve systems.

Specialized DispenseMotion™ software and fully integrated vision and laser height sensing capabilities make EFD automated systems quick to set up and easy to program. True three-dimensional motion control allows easy programming of dots, lines, circles, arcs, compound arcs, and complex patterns on different planes.

The systems set up quickly and are easy to run, allowing more time for other projects while increasing product yield.

## Component bonding



Easy-to-program full electronic pressure regulation keeps critical fluid dispensing processes consistent from start to finish.

The UltimusPlus™ High Precision Dispenser provides the highest level of accuracy and process control when applying fluids that change viscosity, including 2-part epoxies and other fluids that thicken over time, as well as UV-cure adhesives and materials that get thinner as ambient temperatures rise. Fully electronic control of dispense time, air pressure and vacuum ensures exceptionally high accuracy, repeatability and shot consistency. Programmable memory automatically adjusts dispensing parameters for viscosity changes. Built-in calibration for dispense time and pressure allows for validated processes.

## Precision non-contact dispensing



Jet UV-cure adhesive with greater repeatability.

Nordson EFD's PICO *Pulse*® system is a non-contact jetting system capable of dispensing a wide variety of fluids at speeds of up to 1500 shots per second. By combining high speed with exceptional accuracy, the Pico *Pulse* system allows medical products to be built more cost-effectively with consistently high quality.

### Applications include:

- Syringes
  - Lubricating interiors with silicone oil
  - Bonding needles with UV adhesive
- Endoscopes
  - Bonding lenses with optical adhesives
- Test strips
  - Jetting or dispensing protein solution
  - Insulin/blood sugar test strips
  - Veterinarian test strips
- Blood bags
  - Sealing bags with cyanoacrylate



Use the PICO *Touch* controller to set precise operating parameters for optimal dispensing performance.



A pneumatic jetting system, the Liquidyn® P-Jet valve applies micro-deposits as small as 3 nL.

## Aseptic dispensing



The 784S-SS aseptic valve is ideal for sterile applications.

Nordson EFD's aseptic valves have been designed to accurately control the application of most low- to medium-viscosity fluids used in medical and biomedical dispensing applications. Typical applications include dispensing saline solutions to fill contact lens packages, filling lens molds with monomers, and vial filling. Machined from 316L stainless steel, the aseptic valves feature an easy-to-clean design that is suitable for CIP (clean-in-place) and SIP (sterilize-in-place) processes.

The 784S-SS aseptic spray valve uses a small gauge dispensing tip to produce uniform round spray patterns between 3.3 mm and 19.1 mm (0.130" and 0.75") in diameter. For a wider area of coverage, the 784S-SS-F with fan air cap is available.

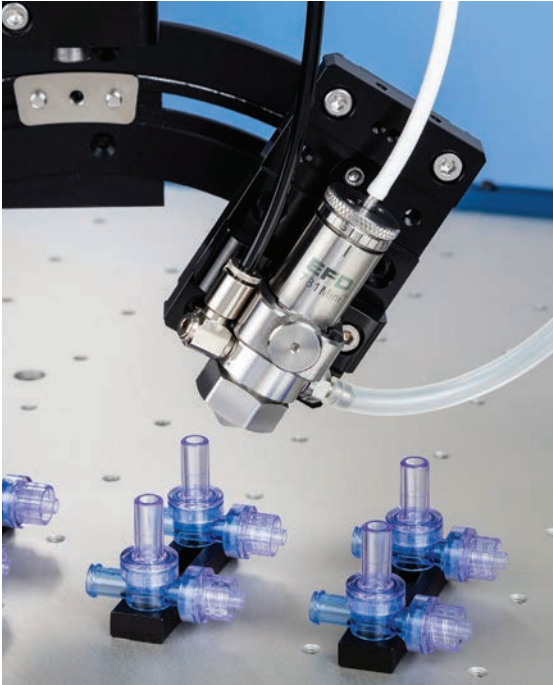
## High-pressure dispensing tool



HPx makes it easy to apply medical-grade adhesives.

The HP™ Series high-pressure dispensing tool was designed specifically to allow workers to apply small dots of extremely thick assembly fluids through small gauge tips. The HP Series multiplies dispensing pressure by a 7-to-1 ratio and a 4 to 1 ratio. For example: 6.9 bar (100 psi) of input produces 48.3 bar (700 psi) of air pressure inside a disposable 3cc reservoir within the unit. This allows fast, effortless dispensing of thick materials like medical-grade adhesives and RTVs, eliminating the risk of carpal tunnel syndrome. Also available for 5cc and 10cc syringes.

## Coating applications



781Mini MicroSpray valves can be mounted at an angle to spray material onto delicate parts.



The 781S spray valve uses LVLP technology to apply a fine coating of silicone oil inside medical syringes.

EFD spray and MicroSpray™ valve systems consist of a precision spray valve that uses Low Volume Low Pressure (LVLP) air to apply a controlled fine coating without mist or overspray. The valve's high transfer efficiency and clean cutoff result in a dramatic reduction in fluid usage, while the unique non-clogging design reduces maintenance and downtime.

Typical applications for these valves include lubricating the interior of syringes with silicone, coating stents, dispensing protein solutions on membranes for test strips, and coating catheters and guide wires with hydrophilic coatings.

## Other semi-automated dispensing



A 752 valve applies UV-cure adhesive to a medical pump.



The xQR41 MicroDot needle valve's smaller dimensions allow it to dispense in tighter spaces.

Unlike complex mechanical valves, pneumatically operated dispense valves from EFD are designed for low maintenance and outstanding reliability. They have no seals or O-rings to wear out and leak. Whether you need to bond assemblies or tips for syringes, fill small containers with solutions, apply markings on catheters or dispense monomers for lenses, EFD valves increase productivity and reduce downtime.



## Why Nordson EFD?

Dedicated to providing the highest quality products and customer support since 1963, Nordson EFD infuses a depth of application knowledge into every precision dispensing product we develop.

For life sciences, EFD's innovative dispensing technology can improve your manufacturing processes, fostering greater control and cost effectiveness, while increasing overall part quality and throughput.

### Material Savings

Many of the high-performance materials needed to bond dissimilar materials and seal exposed parts are expensive, making waste reduction an important issue. Due to the large number of parts produced, even small cost-reductions per part can provide significant savings.

- Reduce material waste by 50 percent or more
- Emptying material reservoirs as completely as possible minimizes waste during changeovers
- Closed-system design reduces waste by minimizing premature curing of materials
- Significantly fewer part rejects, saving material that would have been used to build reject parts

### Higher Quality

Manufactured using high-quality materials in silicone-free facilities, Nordson EFD fluid dispensing systems are designed to deliver the most consistent, precise fluid deposits. This reduces labor time associated with rejects and reworks, cutting overall operating costs while increasing product quality.

### Productivity Gains

Due to faster, more consistent material dispensing, operators and assembly machines typically produce more parts per hour. In addition, more precise application with EFD systems leads to reduced time and costs associated with clean up, further improving productivity.



## Useful Resources



### Application Videos

Visit our Video Gallery to access 150+ application, how-to, and product videos. See EFD solutions in action.

**Watch Videos:** [videos.nordsonefd.com](https://www.nordsonefd.com/videos)



### Expert Recommendations

Knowledgeable Nordson EFD fluid application specialists have, on average, more than 10 years of experience helping customers find the right solutions.

**Request Expert Advice:** [www.nordsonefd.com/Recommendations](https://www.nordsonefd.com/Recommendations)



### Easy Part Number Search

It's easy to search our digital catalog to find products by part number or keywords. Plus, get links to product specs, videos, and more. With our app, you can even access the catalog from your smartphone.

**Find Part Numbers:** [www.nordsonefd.com/Digital-Catalog](https://www.nordsonefd.com/Digital-Catalog)



### Valve Selection Guide

Quickly find valves by application and fluid type to get an idea of the breadth of dispensing solutions provided by Nordson EFD.

**Download Valve Guide:** [www.nordsonefd.com/ValveGuide](https://www.nordsonefd.com/ValveGuide)



### CAD Models

When you partner with Nordson EFD, you benefit from a wide range of reliable, best-in-class precision fluid dispensing solutions.

**Download CAD models:** [www.nordsonefd.com/CAD](https://www.nordsonefd.com/CAD)



### Request Samples

If you'd like to test EFD Optimum syringe barrels, precision dispense tips, cartridges, 2K mixers, or other disposable dispensing components with your application, please request samples.

**Request Free Samples:** [www.nordsonefd.com/DispensingSamples](https://www.nordsonefd.com/DispensingSamples)



Request More Information



Nordson EFD's worldwide network of experienced product application specialists are available to discuss your dispensing project and recommend a system that meets your technical requirements and budget.

Call or email us for a consultation.

800.556.3484

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[www.nordsonefd.com/advice](http://www.nordsonefd.com/advice)

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