Dispense Valve Selection Guide
Choosing the right dispense valve for an application starts with the fluid.

Use this guide to:

• See which Nordson EFD valves work with specific fluids and applications

• Compare the features of EFD valves and controllers

• Select a type of fluid for an application

For example, if you know you want to use a jet dispensing valve because of its significant precision and fast cycle rate, you could use this guide to identify the types of fluids most suitable for jetting.

Benefits

• Performance that’s proven for millions of dispense cycles

• Long service life with minimal maintenance

• Worldwide technical assistance

• Global application testing labs

Please note this guide does not include every EFD dispensing solution available. It’s important to speak with an experienced EFD application specialist when choosing the right solution for your application.

APPLICATION DEFINITIONS

Microdots

Any deposit having a volume less than 5 µl. (5 µl = 5 microliters = 5/1000 cc)

Dots

Any deposit having a volume larger than 5 µl.

Jetting

Applying microdots, dots, lines, stripes, and encapsulates without making contact with a surface—also called non-contact dispensing.

Potting

Filling a cavity usually containing an electronic device, electronic circuit or wires.

Encapsulating

Applying a coating to an electronic component for protection from mechanical or environmental damage.

Lines / Stripes

A line, bead or stripe of material.

Filling / Packaging

Filling containers such as small bottles, cartridges and tubes.

Microspray

Narrow spray pattern capability as small as 1 mm (0.04") wide.

Spray

Applying fluids using low pressure air to break the fluid into fine droplets for coating or marking.

Internal Spray

Spraying the inside diameter of holes and cylinders.
## FLUIDS

### Accelerators
- xQR41
- 752V-UHSS
- Pulse, P-Jet, P-Dot
- 752V-UHSS
- 7181Mini
- 7815-SS
- 782RA
- 7860C-RS

### Activators
- xQR41
- 752V-UHSS
- Pulse, P-Jet, P-Dot
- 752V-UHSS
- 7181Mini
- 7815-SS
- 782RA
- 7860C-RS

### Alcohol
- xQR41
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 725HFA
- 781Mini
- 7815-SS
- 782RA
- 7860C-RS

### Anaerobics
- xQR41 PEEK
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 725HFA
- 781Mini
- 7815-SS
- 782RA
- 7860C-RS

### Conformal Coatings
- xQR41
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 725HFA
- 781Mini
- 7815-SS
- 782RA

### Copper Braze Paste
- 725DA-SS
- 725HFA
- 781Mini
- 7815-SS

### Cyanoacrylates
- xQR41 PEEK
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 725HFA
- 781Mini
- 7815-SS
- 782RA
- 7860C-RS

### Electrolytes
- xQR41
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 781Mini
- 7815-SS
- 782RA

### Epoxies
- xQR41
- 752V-UHSS
- Pulse, P-Dot
- 725DA-SS
- 725HFA
- 781Mini
- 7815-SS
- 782RA

### Fluxes, Liquid
- xQR41
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- 781Mini
- 7815-SS
- 782RA

### Fluxes, Paste
- xQR41
- 725DA-SS
- Pulse, P-Jet, P-Dot
- 725DA-SS
- 725HFA
- 781Mini
- 7815-SS
- 782RA

### Grease: Low Pressure
- (to 7.0 bar, 100 psi)
- xQR41
- 725DA-SS
- Pulse, P-Jet, P-Dot
- 725DA-SS
- 725HFA
- 781Mini
- 7815-SS
- 782RA

### Grease: Medium Pressure
- (to 20.7 bar, 300 psi)
- xQR41
- 736HPA-NW
- Pulse, P-Jet, P-Dot
- 736HPA-NW
- 736HPA-NW
- 781Mini
- 7815-SS
- 782RA

### Grease: High Pressure
- (to 172 bar, 2500 psi)
- xQR41
- 736HPA-NW
- Pulse, P-Jet, P-Dot
- 736HPA-NW
- 736HPA-NW
- 781Mini
- 7815-SS
- 782RA

### Inks / Paints
- xQR41
- 752V-UHSS
- Pulse, P-Jet
- 752V-UHSS
- xQR41V
- 781Mini
- 7815-SS
- 782RA
- 7860C-RS

### Oils
- xQR41
- 752V-UHSS
- Pulse, P-Jet, P-Dot
- 752V-UHSS
- xQR41V
- 781Mini
- 7815-SS
- 782RA
- 7860C-RS

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1. **Note:** For microdot applications requiring general purpose tip sizes between 27 and 33 gauge, specify valve model xQR41 in place of 741V-SS.

2. **Conditional use with cyanoacrylates.**
### FLUIDS

<table>
<thead>
<tr>
<th>optical dyes / lacquers</th>
<th>microdots</th>
<th>dots</th>
<th>jetting</th>
<th>potting</th>
<th>encapsulating</th>
<th>lines / stripes</th>
<th>filling / packaging</th>
<th>microspray</th>
<th>316l aseptic microspray</th>
<th>spray</th>
<th>internal spray</th>
<th>internal band</th>
</tr>
</thead>
<tbody>
<tr>
<td>702m-SS</td>
<td>702m-SS</td>
<td>pulse</td>
<td></td>
<td></td>
<td></td>
<td>702m-SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Primers | xQR41 |         |         |         |               |                   |                   |            |                      |       |               |              |

| reagents | 754v-SS | pulse |         |         |               |                   |                   |            |                      |       |               |              |

| rTv / sealants | xQR41 | 725DA-SS |         |         |               |                   |                   |            |                      |       |               |              |

**Important Note:** For dispensing applications of low- to medium-viscosity fluids where a 316L SS wetted fluid body with aseptic fluid flow path is preferred, choose the 754V-SS diaphragm valve.

**Note:** xQR41 for medium pressure only.

### Valves

**Maximum operating temperatures of EFD valves should not exceed 43° C (110° F) except for the 736HPA-NV, 741V, 781S, and 781Mini Series valves, which can operate up to 110° C (215° F).**
| Adjustable Fluid Flow | PICO Pulse | Liquidyn | 702M-SS | 725DA-SS | 725HF-SS | 725HF-A | 736HPA-NV | xQR41 / V | 741V / MD | 752V-SS | 752V-UHSS | 754V-SS | 781Mini | 787MS-SS | 787RA | 7845-SS | 7860C-RS | 794-TC |
| ✓ | ✓ | ✓ | ✓ | — | — | — | — | ✓ | ✓ | ✓ | ✓ | ✓ | — | — | — | — | — | — | — |
| Air Cutoff | — | ✓ | — | — | — | — | — | — | — | — | — | — | ✓ | ✓ | ✓ | ✓ | — | — | — |
| Cycle Rate > 150Hz | 1.000Hz | P-Jet, P-Dot | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Fail-Safe Normally Closed | — | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | — | — | — | — |
| Fluid Body | 303 SS | 303 SS | 303 SS | 303 SS | Acetal | 303 SS | 303 SS | Acetal | — | — | 316L | 303 SS | 303 SS | — | 316L | — | — | — | 440C / Tungsten Carbide |
| Modular Design | ✓ | ✓ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Quick Release Maintenance | ✓ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Small Form Factor | — | — | ✓ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Snuff-Back Cutoff | — | — | — | ✓ | ✓ | ✓ | ✓ | — | — | — | — | — | — | — | — | — | — | — | ✓ |
| Stroke Control Reference | — | — | ✓ | — | — | — | — | — | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | — | — | — | — |
| Tamper-Resistant Stroke Control | — | — | ✓ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| UHMW² Polymer Diaphragm | — | — | ✓ | ✓ | ✓ | ✓ | — | — | ✓ | ✓ | ✓ | ✓ | ✓ | — | PTFE | — | — | — | — |
| 303 Stainless Steel Air Cylinder | — | — | ✓ | — | — | — | — | — | ✓ | ✓ | — | — | — | — | — | — | — | — | 316L | — | — |

1 With approved conditional settings
2 Ultra High Molecular Weight polyethylene
3 741V-SS model only
4 Available with PEEK fluid body for xQR41 model only
5 781Mini model only
6 Available with PEEK fluid body for PICO Pulse, P-Dot, and P-Jet
7 Optional stainless steel fluid body

✓ Applicable | Optional | — Not applicable
## DISPENSE VALVE SELECTION GUIDE / VALVE CONTROLLER FEATURES

### CONTROLLER FEATURES

<table>
<thead>
<tr>
<th></th>
<th>PICO Touch</th>
<th>V200</th>
<th>9000</th>
<th>8000</th>
<th>8040</th>
<th>7160RA</th>
<th>7194</th>
<th>7100</th>
<th>7140</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jet Valve Control</strong></td>
<td>Pico Pulse</td>
<td>P-Jet, P-dot, P-Jet SolderPlus</td>
<td>702, 725, 736, 741, 752, 754, xQR41 / V</td>
<td>702, 725, 736, 741, 752, 754, xQR41 / V</td>
<td>781S, 784S, 781Mini, 787MS</td>
<td>782RA, 7860C-RS Spinner</td>
<td>794, 794-TC</td>
<td>702, 725, 736, 741, 752, 754, xQR41 / V</td>
<td>781S, 784S, 781Mini, 787MS</td>
</tr>
<tr>
<td><strong>Air Pressure Display</strong></td>
<td>Touchscreen</td>
<td>Digital</td>
<td>Digital</td>
<td>Analog</td>
<td>Analog</td>
<td>Digital</td>
<td>Digital</td>
<td>Digital</td>
<td>Digital</td>
</tr>
<tr>
<td><strong>Auto Sequence Mode</strong></td>
<td>—</td>
<td>—</td>
<td>—</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Cycle Rate</strong></td>
<td>1000Hz</td>
<td>280Hz / 150Hz</td>
<td>500Hz</td>
<td>&gt; 600/minute</td>
<td>&gt; 400/minute</td>
<td>&gt; 400/minute</td>
<td>&gt; 400/minute</td>
<td>&gt; 400/minute</td>
<td>&gt; 400/minute</td>
</tr>
<tr>
<td><strong>Digital Time Set &amp; Display</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Dual 24V Temperature Control</strong></td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tr>
<tr>
<td><strong>5-Micron Filter/Regulator</strong></td>
<td>—</td>
<td>—</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td><strong>I/O Communication-PLC</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>I/O Interface Circuitry</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Independent Multi-Valve Control</strong></td>
<td>Single Channel</td>
<td>Single Channel</td>
<td>2-Channel Control</td>
<td>4-Channel Control</td>
<td>2-Channel Control</td>
<td>Single Channel</td>
<td>Single Channel</td>
<td>Single Channel</td>
<td>Single Channel</td>
</tr>
<tr>
<td><strong>Low Air Pressure Sensing</strong></td>
<td>✓</td>
<td>—</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
<td>&lt; 4.1 bar (60 psi)</td>
</tr>
<tr>
<td><strong>Nozzle Air Shutoff Delay</strong></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Adjustable 0 to 9.99 sec.</td>
<td>Adjustable 0 to 2.5 sec.</td>
<td>—</td>
<td>Adjustable 0 to 9.99 sec.</td>
</tr>
<tr>
<td><strong>On The Fly Adjustability</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Panel Mount / Panel Cutout Size</strong></td>
<td>142 x 133 mm (5.6 x 5.25&quot;)</td>
<td>450 x 125 mm (18 x 5&quot;)</td>
<td>257.2 x 96.8 mm (10.13 x 3.81&quot;)</td>
<td>183.6 x 51.6 mm (7.23 x 2.03&quot;)</td>
<td>183.6 x 51.6 mm (7.23 x 2.03&quot;)</td>
<td>226.3 x 68.8 mm (8.91 x 2.71&quot;)</td>
<td>226.3 x 68.8 mm (8.91 x 2.71&quot;)</td>
<td>142.9 x 68.8 mm (5.62 x 2.71&quot;)</td>
<td>205.4 x 68.8 mm (8.08 x 2.71&quot;)</td>
</tr>
<tr>
<td><strong>Pre-Dispense Time Cycle Delay</strong></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Programmable</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Purge Control</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Spike &amp; Hold Capability</strong></td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Test Cycle Verification</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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1. With approved conditional settings
2. Programmable lockout

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✓ Applicable | Optional | — Not applicable
**Dispense Valve Selection Guide / Tanks, Reservoirs, and Pumps**

### Features

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<th>Volume</th>
<th>Recommended Fluid Viscosity</th>
<th>Air Pressure</th>
<th>Float Switch</th>
<th>Features &amp; Benefits</th>
<th>Production Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3cc–55cc (3–55 ml)</td>
<td>All Fluids</td>
<td>0–1.0 bar (0–15 psi)</td>
<td>—</td>
<td>Limits fluid waste, Reduces maintenance and cleanup, Assembly fluids often come packaged in EFD syringe barrels, Use for fluids with short shelf life.</td>
<td>Low Volume</td>
</tr>
<tr>
<td>2.5 oz–32 oz (75–960 ml)</td>
<td>All Fluids</td>
<td>0–7.0 bar (0–100 psi)</td>
<td>—</td>
<td>Ideal for low-to-medium pressure dispensing from cartridges, Clear retainer allows visual monitoring of fluid level, Accepts cartridges.</td>
<td>Low-to-Medium Volume</td>
</tr>
<tr>
<td>1/10 gal (300 ml)</td>
<td>Medium-to-High Viscosities</td>
<td>0–0.7 bar (0–10 psi)</td>
<td>Optional 1</td>
<td>Designed for use with pre-filled caulking tubes, Digital gauge delivers exceptional full-to-empty fluid pressure control, regardless of input pressure fluctuations, Accepts pre-filled 1-pound and 1-liter bottles or pourable fluids.</td>
<td>Low-to-Medium Volume</td>
</tr>
<tr>
<td>1 liter &amp; 5 liter (0.26 gal &amp; 1.32 gal)</td>
<td>Low-to-Medium Viscosities (pourable / self-leveling)</td>
<td>0–1.0 bar (0–15 psi)</td>
<td>Optional 1</td>
<td>Maintains steady fluid pressure, Accepts pre-filled 1-pound and 1-liter bottles or pourable fluids.</td>
<td>Medium-to-High Volume</td>
</tr>
<tr>
<td>1 liter &amp; 5 liter (0.26 gal &amp; 1.32 gal)</td>
<td>Low-to-Medium Viscosities (pourable / self-leveling)</td>
<td>0–7.0 bar (0–100 psi)</td>
<td>Optional</td>
<td>Maintains steady fluid pressure.</td>
<td>Medium-to-High Volume</td>
</tr>
<tr>
<td>19 liter (5 gal)</td>
<td>High Viscosities</td>
<td>0–1.0 bar (0–15 psi)</td>
<td>Optional</td>
<td>Maintains steady fluid pressure.</td>
<td>High Volume</td>
</tr>
<tr>
<td>19 liter (5 gal)</td>
<td>High Viscosities</td>
<td>0–7.0 bar (0–100 psi)</td>
<td>No</td>
<td>Maintains steady fluid pressure.</td>
<td>High Volume</td>
</tr>
<tr>
<td>19 liter &amp; 208 liter (5 gal &amp; 55 gal)</td>
<td>High Viscosities</td>
<td>up to 172 bar (2,500 psi)</td>
<td>Yes 2</td>
<td>Superior flow and easy operation for dispensing high-viscosity adhesives and sealants, Accepts pre-filled 5- and 55-gallon drums.</td>
<td>High Volume</td>
</tr>
</tbody>
</table>

1. 5.0 liter (0.26 gal) tanks are available with capacitive (non-contact) fluid level sensor.
2. Please note that the ratio pumps do not come with 5-55 gallon tanks. Those are purchased separately.
3. Low / empty drum indication with light towers.
Choosing and implementing the best possible fluid dispensing equipment starts with access to the best possible resources. Here are some to get you started:

**Application Videos**
Visit our Video Gallery to access 150+ application, how-to, and product videos.
See EFD dispensing solutions in action.
Watch Videos: [www.nordsonefd.com/VideoGallery](http://www.nordsonefd.com/VideoGallery)

**What Our Customers Say**
Find out how Nordson EFD helps manufacturers improve their fluid dispensing processes every day – see what our customers have to say.
Our Customers Know Best: [www.nordsonefd.com/Testimonials](http://www.nordsonefd.com/Testimonials)

**Expert Recommendations**
Knowledgeable Nordson EFD fluid application specialists have, on average, more than 10 years of experience helping customers find the right dispensing solutions.
Request Expert Advice: [www.nordsonefd.com/Advice](http://www.nordsonefd.com/Advice)
Request Lab Test: [www.nordsonefd.com/ApplicationTest](http://www.nordsonefd.com/ApplicationTest)

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**Machine Builder Guide & CAD Models**
When you partner with Nordson EFD, you benefit from a wide range of reliable, best-in-class precision fluid dispensing solutions.
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