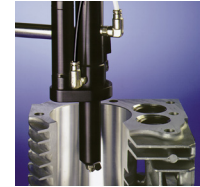
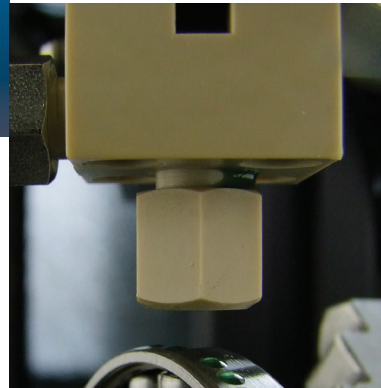


# DISPENSE VALVE

## 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  $\mu\text{l}$ .  
(5  $\mu\text{l}$  = 5 microliters = 5/1000 cc)



### Dots

Any deposit having a volume larger than 5  $\mu\text{l}$ .



### 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	VALVE APPLICATIONS										
	Microdots*	Dots	Jetting	Potting	Encapsulating	Lines / Stripes	Filling / Packaging	Microspray	Spray	Internal Spray	Internal Band
<b>Accelerators</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	xQR41V	752V-UHSS	781Mini	781S-SS	782RA	7860C-RS
<b>Activators</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	xQR41V	752V-UHSS	781Mini	781S-SS	782RA	7860C-RS
<b>Alcohol</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	—	xQR41V	752V-UHSS	781Mini	781S-SS	782RA	7860C-RS
<b>Anaerobics</b>	xQR41 PEEK**, 752V-UHSS	xQR41 PEEK**, 752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	—	752V-UHSS	725HF-A	—	—	—	7860C-RS
<b>Conformal Coatings</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	752V-UHSS	752V-UHSS	725HF-SS	781Mini	781S-SS	—	—
<b>Copper Braze Paste</b>	—	725DA-SS	—	—	—	725DA-SS	725HF-SS	—	—	—	—
<b>Cyanoacrylates</b>	xQR41 PEEK**, 752V-UHSS	xQR41 PEEK**, 752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	752V-UHSS	—	—	—	—	7860C-RS
<b>Electrolytes</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	—	—	752V-UHSS	781Mini	781S-SS	—	—
<b>Epoxies</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Dot	725DA-SS	725DA-SS	725DA-SS	725HF-SS	—	—	—	—
<b>Fluxes, Liquid</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	—	752V-UHSS	725HF-SS	781Mini	781S-SS	—	—
<b>Fluxes, Paste</b>	xQR41	725DA-SS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—
<b>Grease: Low Pressure</b> <i>(to 7.0 bar, 100 psi)</i>	xQR41	725DA-SS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	781S-SS	—	—
<b>Grease: Medium Pressure</b> <i>(to 20.7 bar, 300 psi)</i>	xQR41	736HPA-NV	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	781S-SS	—	—
<b>Grease: High Pressure</b> <i>(to 172 bar, 2500 psi)</i>	—	736HPA-NV	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	—	—	—
<b>Inks / Paints</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet	—	—	xQR41V	725HF-SS	781Mini	781S-SS	782RA	7860C-RS
<b>Oils</b>	xQR41	752V-UHSS	PICO <i>Pulse / XP</i> , P-Jet, P-Dot	—	—	xQR41V	725HF-SS	781Mini	781S-SS	782RA	7860C-RS

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

\*\*Conditional use with cyanoacrylates.

FLUIDS	VALVE APPLICATIONS										
	Microdots	Dots	Jetting	Potting	Encapsulating	Lines / Stripes	Filling / Packaging	Microspray	Spray	Internal Spray	Internal Band
Optical Dyes / Lacquers	702M-SS	702M-SS	PICO <i>Pulse</i> / XP	—	—	702M-SS	—	—	—	—	—
Primers	xQR41	—	PICO <i>Pulse</i> / XP, P-Jet	—	—	—	—	781Mini	—	782RA	—
Reagents	754V-SS*	754V-SS*	PICO <i>Pulse</i> / XP, P-Jet	—	—	754V-SS*	754V-SS*	781Mini	781S-SS	—	—
RTV / Sealants <i>low pressure</i>	xQR41	725DA-SS	P-Jet, P-Dot	725DA-SS	725DA-SS	725DA-SS	725HF-SS	—	—	—	—
RTV / Sealants <i>medium / high pressure</i>	xQR41**	736HPA-NV	P-Jet, P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	736HPA-NV	—	—	—	—
Saline	—	754V-SS*	PICO <i>Pulse</i> / XP, P-Jet	—	—	754V-SS*	754V-SS*	—	—	—	—
Silicones	—	736HPA-NV	PICO <i>Pulse</i> / XP, P-Jet, P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	—	781Mini	781S-SS	—	—
Silicone Oils	xQR41, 741MD	xQR41V, 741V-SS	PICO <i>Pulse</i> / XP, P-Jet, P-Dot	—	—	xQR41V, 741V-SS	—	—	—	—	—
Solder Resists	—	725DA-SS	PICO <i>Pulse</i> / XP, P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—
Solvents	xQR41, 741MD	xQR41V, 741V-SS	PICO <i>Pulse</i> / XP, P-Jet	—	—	xQR41V, 741V-SS	752V-UHSS	781Mini	781S-SS	782RA	7860C-RS
Solder Pastes	794	794	—	—	—	794	—	—	—	—	—
Thermal Interface Materials (TIM)	794-TC	794-TC	—	—	—	794-TC	—	—	—	—	—
UV-Cure & Light-Cure	xQR41, 741MD	752V-SS	PICO <i>Pulse</i> / XP, P-Jet, P-Dot	752V-SS	752V-SS	xQR41V, 752V-SS	725HF-A	—	—	—	—
UV-Cure with Anaerobics	xQR41, 752V-SS	xQR41, 752V-SS	PICO <i>Pulse</i> / XP, P-Jet	752V-SS	752V-SS	752V-SS	725HF-A	—	—	—	—
Water	xQR41	752V-UHSS	PICO <i>Pulse</i> / XP, P-Jet	—	—	xQR41V, 741V-SS	752V-UHSS	781Mini	781S-SS	782RA	7860C-RS
White Glue	—	725DA-SS	P-Jet	—	—	725DA-SS	725HF-SS	—	—	—	7860C-RS

\* **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.

\*\* xQR41 for medium pressure only.

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).

VALVE FEATURES	VALVES															
																
	PICO <i>Pulse</i> / <i>Pulse XP</i>	Liquidyn	702M-SS	725DA-SS	725HF-SS	725HF-A	736HPA-NV	xQR41 / V 741V / MD	752V-SS	752V-UHSS	754V-SS	781Mini 787MS-SS	781S-SS	782RA	7860C-RS	794 794-TC
Adjustable Fluid Flow	✓	P-Jet	✓	✓	—	—	—	✓	✓	✓	✓	✓	✓	✓	—	✓
Air Cutoff	—	✓	—	—	—	—	—	—	—	—	—	✓	✓	✓	✓	—
Cycle Rate ≥ 150Hz	1,000Hz <sup>1</sup>	P-Jet, P-Dot	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fail-Safe Normally Closed	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—
FDA-Compliant Wetted Parts	—	—	✓	✓	✓	✓	—	✓	✓	✓	✓	✓	✓	—	✓	—
Fluid Body	303 SS <sup>6</sup>	303 SS <sup>6</sup>	303 SS	303 SS	303 SS	Acetal	303 SS	303 SS <sup>4</sup>	Acetal <sup>7</sup>	UHMW <sup>2/7</sup>	316L	303 SS	303 SS	—	—	440C / Tungsten Carbide
Modular Design	✓	✓	—	—	—	—	—	xQR41 / V	—	—	—	✓ <sup>5</sup>	—	—	—	—
Quick Release Maintenance	✓	—	—	—	—	—	—	xQR41 / V	—	—	—	✓ <sup>5</sup>	—	—	—	✓
Small Form Factor	—	—	✓	—	—	—	—	xQR41 / V	—	—	—	✓ <sup>5</sup>	—	—	—	—
Snuff-Back Cutoff	—	—	—	✓	✓	✓	✓	—	—	—	—	—	—	—	—	✓
Stroke Control Reference	—	—	✓	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	—	—
Tamper-Resistant Stroke Control	—	—	✓	—	—	—	—	○ <sup>3</sup>	○	✓	✓	—	○	○	—	—
UHMW <sup>2</sup> Polyethylene Diaphragm	—	—	✓	✓	✓	✓	—	—	✓	✓	PTFE	—	—	—	—	—
303 Stainless Steel Air Cylinder	—	—	✓	—	—	—	✓	xQR4, 741V-SS	✓	✓	316L	✓	✓	—	—	—

<sup>1</sup> With approved conditional settings

<sup>2</sup> Ultra High Molecular Weight polyethylene

<sup>3</sup> 741V-SS model only

<sup>4</sup> Available with PEEK fluid body for xQR41 model only

<sup>5</sup> 781Mini model only

<sup>6</sup> Available with PEEK fluid body for PICO *Pulse* / XP, P-Dot, and P-Jet

<sup>7</sup> Optional stainless steel fluid body

✓ Applicable | ○ Optional | — Not applicable

## DISPENSE VALVE SELECTION GUIDE / VALVE CONTROLLER FEATURES

CONTROLLER FEATURES	VALVE CONTROLLERS								
	PICO <i>Nexus</i>	PICO <i>Touch / XP</i>	V200	8000	8040	7160RA	7194	7100	7140
	<b>Jet Valve Control</b>	<b>Jet Valve Control</b>	<b>Jet Valve Control</b>	<b>Multi Valve Control</b>	<b>Multi Spray Valve Control</b>	<b>Radial Spinner/ Spray Valve Control</b>	<b>Auger Valve Control</b>	<b>Dispense Valve Control</b>	<b>Spray Valve Control</b>
<b>Recommended Valve(s)</b>	PICO <i>Pulse / XP</i>	PICO <i>Pulse / XP</i>	P-Jet, P-Dot	702, 725, 736, 741, 752, 754, xQR41 / V	781S, 781Mini, 787MS	782RA, 7860C-RS Spinner	794, 794-TC	702, 725, 736, 741, 752, 754, xQR41 / V	781S, 781Mini, 787MS
<b>Air Pressure Display</b>	—	—	Digital	Analog	Analog	Digital	Digital	Digital	Analog
<b>Cycle Rate</b>	1000Hz*	1000Hz*	280Hz / 150Hz	> 600/minute	> 400/minute	> 400/minute	> 400/minute	> 600/minute	> 400/minute
<b>Digital Time Set &amp; Display</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>5-Micron Filter / Regulator</b>	—	—	—	Included	Included	Included	Included	Included	Included
<b>Communication</b>	Standard Ethernet, RS-232, EtherNet I/P and PROFINET	Touchscreen, RS-232	—	—	—	—	—	—	—
<b>I/O Communication-PLC</b>	✓	✓	✓	—	—	—	—	—	—
<b>I/O Interface Circuitry</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Independent Multi-Valve Control</b>	Single Channel	Single Channel	Single Channel	4-Channel Control	2-Channel Control	Single Channel	Single Channel	Single Channel	Single Channel
<b>Low Air Pressure Sensing</b>	✓	✓	—	< 4.1 bar (60 psi)	< 4.1 bar (60 psi)	< 4.1 bar (60 psi)	< 4.1 bar (60 psi)	< 4.1 bar (60 psi)	< 4.1 bar (60 psi)
<b>Nozzle Air Shutoff Delay</b>	—	—	—	—	Adjustable 0 to 9.99 sec.	Adjustable 0 to 2.5 sec.	—	—	Adjustable 0 to 9.99 sec.
<b>On The Fly Adjustability</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Panel Mount / Panel Cutout Size</b>	Standard DIN-rail mount	142 x 133 mm (5.6 x 5.25")	450 x 125 mm (18 x 5")	183.6 x 51.6 mm (7.23 x 2.03")	183.6 x 51.6 mm (7.23 x 2.03")	226.3 x 68.8 mm (8.91 x 2.71")	226.3 x 68.8 mm (8.91 x 2.71")	142.9 x 68.8 mm (5.62 x 2.71")	205.4 x 68.8 mm (8.08 x 2.71")
<b>Pre-Dispense Time Cycle Delay</b>	—	—	—	✓	—	—	—	—	—
<b>Programmable</b>	✓**	✓**	✓	✓	✓	✓	✓	✓	✓
<b>Purge Control</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Test Cycle Verification</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓






\*With approved conditional settings

\*\*Programmable lockout

✓ Applicable | ○ Optional | — Not applicable



EFD

TANKS AND RESERVOIRS					
FEATURES					
	<b>Syringe Barrels, in Clear, Amber, or Black</b>	<b>Cartridge Retainer Systems with Regulators</b>	<b>1/10 Gallon Retainer System with Regulator</b>	<b>1L &amp; 5L Precision Digital Gauge Tanks</b>	<b>1L &amp; 5L Analog Gauge Tanks</b>
Volume	3cc–70cc (3–70 ml)	2.5 oz–32 oz (75–960 ml)	1/10 gal (300 ml)	1 liter & 5 liter (0.26 gal & 1.32 gal)	1 liter & 5 liter (0.26 gal & 1.32 gal)
Recommended Fluid Viscosity	All Fluids	All Fluids	Medium-to-High Viscosities	Low-to-Medium Viscosities (pourable / self-leveling)	Low-to-Medium Viscosities (pourable / self-leveling)
Air Pressure	—	0–1.0 bar (0–15 psi) 0–7.0 bar (0–100 psi)	0–7.0 bar (0–100 psi)	0–0.7 bar (0–10 psi) 0–7.0 bar (0–100 psi)	0–1.0 bar (0–15 psi) 0–7.0 bar (0–100 psi)
Float Switch	—	—	—	Optional	Optional
Features & Benefits	<ul style="list-style-type: none"> <li>· Limits fluid waste</li> <li>· Reduces maintenance and cleanup</li> <li>· Assembly fluids often come packaged in EFD syringe barrels</li> <li>· Use for fluids with short shelf life</li> </ul>	<ul style="list-style-type: none"> <li>· Ideal for low-to-medium pressure dispensing from cartridges</li> <li>· Clear retainer allows visual monitoring of fluid level</li> <li>· Accepts cartridges</li> </ul>	<ul style="list-style-type: none"> <li>· Designed for use with pre-filled caulking tubes</li> </ul>	<ul style="list-style-type: none"> <li>· Digital gauge delivers exceptional full-to-empty fluid pressure control, regardless of input pressure fluctuations</li> <li>· Accepts pre-filled 1-pound and 1-liter bottles or pourable fluids</li> </ul>	<ul style="list-style-type: none"> <li>· Maintains steady fluid pressure</li> <li>· Accepts pre-filled 1-pound and 1-liter bottles or pourable fluids</li> </ul>
Production Capacity	Low Volume	Low-to-Medium Volume	Low-to-Medium Volume	Medium-to-High Volume	Medium-to-High Volume

# Useful Resources

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.

**Learn more:** [www.nordsonefd.com/MachineBuilderGuide](http://www.nordsonefd.com/MachineBuilderGuide)

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



For Nordson EFD sales and service in over 40 countries, contact Nordson EFD or go to [www.nordsonefd.com](http://www.nordsonefd.com).

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