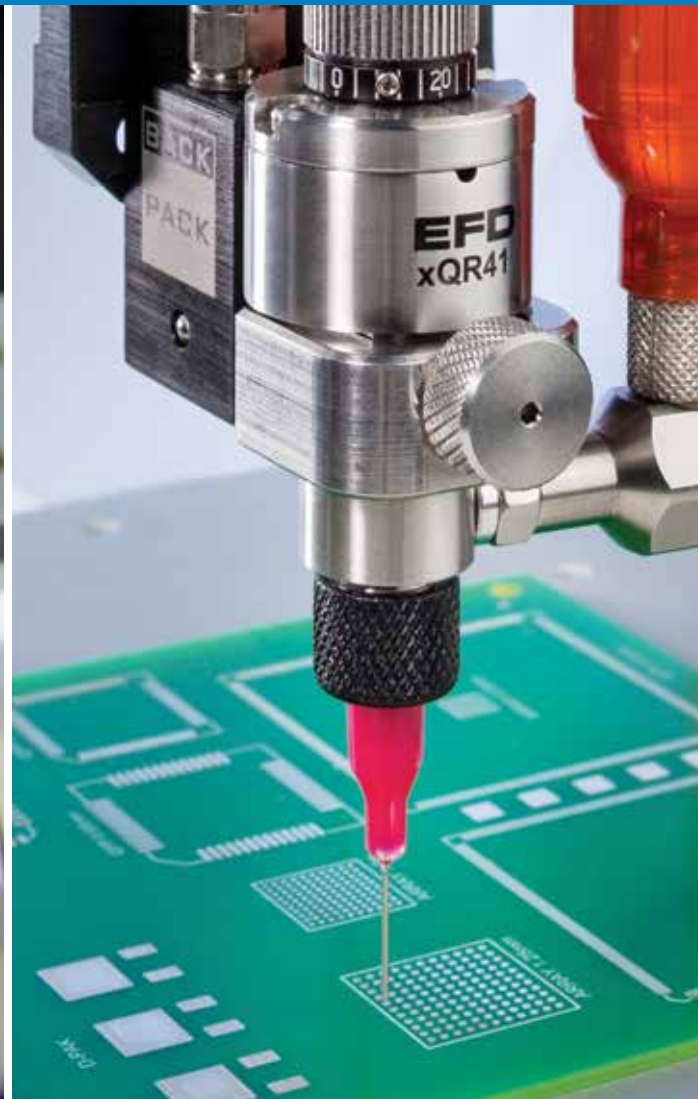


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# Dispense Valve Selection Guide

**Nordson**  
EFD



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



### Dots

Any deposit having a volume larger than 5  $\mu$ 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 <sup>1</sup>	Dots	Jetting	Potting	Encapsulating	Lines / Stripes	Filling / Packaging	Microspray	316L Aseptic Microspray	Spray	Internal Spray	Internal Band
Accelerators	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet, P-Dot	—	—	xQR41V	752V-UHSS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
Activators	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet, P-Dot	—	—	xQR41V	752V-UHSS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
Alcohol	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	—	xQR41V	752V-UHSS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
Anaerobics	xQR41 PEEK, <sup>2</sup> 752V-UHSS	QR41 PEEK, <sup>2</sup> 752V-UHSS	<i>Pulse</i> , P-Jet	—	—	752V-UHSS	725HF-A	—	—	—	—	7860C-RS
Conformal Coatings	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	752V-UHSS	752V-UHSS	725HF-SS	781Mini	784S-SS	781S-SS	—	—
Copper Braze Paste	—	725DA-SS	—	—	—	725DA-SS	725HF-SS	—	—	—	—	—
Cyanoacrylates	QR41 PEEK, <sup>2</sup> 752V-UHSS	QR41 PEEK, <sup>2</sup> 752V-UHSS	<i>Pulse</i> , P-Jet, P-Dot	—	—	752V-UHSS	—	—	—	—	—	7860C-RS
Electrolytes	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	—	—	752V-UHSS	781Mini	784S-SS	781S-SS	—	—
Epoxies	xQR41	752V-UHSS	<i>Pulse</i> , P-Dot	725DA-SS	725DA-SS	725DA-SS	725HF-SS	—	—	—	—	—
Fluxes, Liquid	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	—	752V-UHSS	725HF-SS	781Mini	784S-SS	781S-SS	—	—
Fluxes, Paste	xQR41	725DA-SS	<i>Pulse</i> , P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—	—
<b>Grease: Low Pressure</b> (to 7.0 bar, 100 psi)	xQR41	725DA-SS	<i>Pulse</i> , P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	781S-SS	—	—
<b>Grease: Medium Pressure</b> (to 20.7 bar, 300 psi)	xQR41	736HPA-NV	<i>Pulse</i> , P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	—	781S-SS	—	—
<b>Grease: High Pressure</b> (to 172 bar, 2500 psi)	—	736HPA-NV	<i>Pulse</i> , P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	—	—	—	—
Inks / Paints	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	—	xQR41V	725HF-SS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
Oils	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet, P-Dot	—	—	xQR41V	725HF-SS	781Mini	784S-SS	781S-SS	782RA	7860C-RS

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

<sup>2</sup> Conditional use with cyanoacrylates.

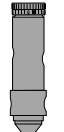
FLUIDS	VALVE APPLICATIONS											
	Microdots	Dots	Jetting	Potting	Encapsulating	Lines/Stripes	Filling / Packaging	Microspray	316L Aseptic Microspray	Spray	Internal Spray	Internal Band
Optical Dyes / Lacquers	702M-SS	702M-SS	<i>Pulse</i>	—	—	702M-SS	—	—	—	—	—	—
Primers	xQR41	—	<i>Pulse</i> , P-Jet	—	—	—	—	781Mini	—	—	782RA	—
Reagents	754V-SS <sup>1</sup>	754V-SS <sup>1</sup>	<i>Pulse</i> , P-Jet	—	—	754V-SS <sup>1</sup>	754V-SS <sup>1</sup>	781Mini	784S-SS	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 <sup>2</sup>	736HPA-NV	P-Jet, P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	736HPA-NV	—	—	—	—	—
Saline	—	754V-SS <sup>1</sup>	<i>Pulse</i> , P-Jet	—	—	754V-SS <sup>1</sup>	754V-SS <sup>1</sup>	—	784S-SS	—	—	—
Silicones	—	736HPA-NV	<i>Pulse</i> , P-Jet, P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	—	781Mini	—	781S-SS	—	—
Silicone Oils	xQR41 741MD	xQR41V, 741V-SS	<i>Pulse</i> , P-Jet, P-Dot	—	—	xQR41V, 741V-SS	—	—	784S-SS	—	—	—
Solder Resists	—	725DA-SS	<i>Pulse</i> , P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—	—
Solvents	xQR41 741MD	xQR41V, 741V-SS	<i>Pulse</i> , P-Jet	—	—	xQR41V, 741V-SS	752V-UHSS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
Solder Pastes	794	794	P-Jet SolderPlus	—	—	794	—	—	—	—	—	—
Thermal Interface Materials (TIM)	794-TC	794-TC	—	—	—	794-TC	—	—	—	—	—	—
UV-Cure & Light-Cure	xQR41, 741MD	752V-SS	<i>Pulse</i> , P-Jet, P-Dot	752V-SS	752V-SS	xQR41V, 752V-SS	725HF-A	—	—	—	—	—
UV-Cure with Anaerobics	xQR41, 752V-SS	xQR41, 752V-SS	<i>Pulse</i> , P-Jet	752V-SS	752V-SS	752V-SS	725HF-A	—	—	—	—	—
Water	xQR41	752V-UHSS	<i>Pulse</i> , P-Jet	—	—	xQR41V, 741V-SS	752V-UHSS	781Mini	784S-SS	781S-SS	782RA	7860C-RS
White Glue	—	725DA-SS	P-Jet	—	—	725DA-SS	725HF-SS	—	—	—	—	7860C-RS

<sup>1</sup> **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.

<sup>2</sup>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).

# DISPENSE VALVE SELECTION GUIDE / VALVE FEATURES

VALVE FEATURES	VALVES																
																	
	PICO <i>Pulse</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	784S-SS	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	—	316L	—	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> Polymer Diaphragm	—	—	✓	✓	✓	✓	—	—	✓	✓	PTFE	—	—	—	PTFE	—	—
303 Stainless Steel Air Cylinder	—	—	✓	—	—	—	✓	xQR4, 741V-SS	✓	✓	316L	✓	✓	—	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*, 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>Touch</i>	V200	9000	8000	8040	7160RA	7194	7100	7140
	Jet Valve Control	Jet Valve Control	Dual Valve Control	Multi Valve Control	Multi Spray Valve Control	Radial Spinner/ Spray Valve Control	Auger Valve Control	Dispense Valve Control	Spray Valve Control
Recommended Valve(s)	PICO <i>Pulse</i>	P-Jet, P-Dot, P-Jet SolderPlus	702, 725, 736, 741, 752, 754, xQR41 / V	702, 725, 736, 741, 752, 754, xQR41 / V	781S, 784S, 781Mini, 787MS	782RA, 7860C-RS Spinner	794, 794-TC	702, 725, 736, 741, 752, 754, xQR41 / V	781S, 784S, 781Mini, 787MS
Air Pressure Display	Touchscreen	Digital	Digital	Analog	Analog	Digital	Digital	Digital	Analog
Auto Sequence Mode	—	—	✓	—	—	—	—	—	—
Cycle Rate	1000Hz <sup>1</sup>	280Hz / 150Hz	500Hz	> 600/minute	> 400/minute	> 400/minute	> 400/minute	> 600/minute	> 400/minute
Digital Time Set & Display	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dual 24W Temperature Control	—	—	✓	—	—	—	—	—	—
5-Micron Filter/ Regulator	—	—	Included	Included	Included	Included	Included	Included	Included
I/O Communication-PLC	✓	✓	✓	—	—	—	—	—	—
I/O Interface Circuitry	✓	✓	✓	✓	✓	✓	✓	✓	✓
Independent Multi-Valve Control	Single Channel	Single Channel	2-Channel Control	4-Channel Control	2-Channel Control	Single Channel	Single Channel	Single Channel	Single Channel
Low Air Pressure Sensing	✓	—	< 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)	< 4.1 bar (60 psi)
Nozzle Air Shutoff Delay	—	—	—	—	Adjustable 0 to 9.99 sec.	Adjustable 0 to 2.5 sec.	—	—	Adjustable 0 to 9.99 sec.
On The Fly Adjustability	✓	✓	✓	✓	✓	✓	✓	✓	✓
Panel Mount / Panel Cutout Size	142 x 133 mm (5.6 x 5.25")	450 x 125 mm (18 x 5")	257.2 x 96.8 mm (10.13 x 3.81")	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")
Pre-Dispense Time Cycle Delay	—	—	—	✓	—	—	—	—	—
Programmable	✓ <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓	✓
Purge Control	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spike & Hold Capability	—	—	✓	—	—	—	—	—	—
Test Cycle Verification	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

<sup>2</sup>Programmable lockout

✓ Applicable | ○ Optional | — Not applicable

# DISPENSE VALVE SELECTION GUIDE / TANKS, RESERVOIRS, AND PUMPS

		TANKS, RESERVOIRS, AND PUMPS							
FEATURES									
		<b>Syringe Barrels, in Clear, Amber, Green, 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>	<b>19L Stainless Steel Analog Tanks</b>	<b>5-Gallon Pail Analog Tanks</b>	<b>Ratio Pumps with 48:1 or 65:1 ratio</b>
Volume	3cc–55cc (3–55 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)	19 liter (5 gal)	19 liter (5 gal)	19 liter & 208 liter (5 gal & 55 gal) <sup>2</sup>	
Recommended Fluid Viscosity	All Fluids	All Fluids	Medium-to-High Viscosities	← Low-to-Medium Viscosities (pourable / self-leveling) →				High Viscosities	
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)	0–1.0 bar (0–15 psi) 0–7.0 bar (0–100 psi)	0–7.0 bar (0–100 psi)	up to 172 bar (2,500 psi)	
Float Switch	—	—	—	Optional <sup>1</sup>	Optional <sup>1</sup>	Optional	No	Yes <sup>3</sup>	
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>	<ul style="list-style-type: none"> <li>· Maintains steady fluid pressure</li> <li>· Ideal for materials that don't require cleaning, such as oil, solvents, and water</li> <li>· Accepts only pourable fluids</li> </ul>	<ul style="list-style-type: none"> <li>· Maintains steady fluid pressure</li> <li>· No pouring necessary</li> <li>· Eliminates risk of introducing air bubbles</li> <li>· Accepts pre-filled 5-gallon pails</li> </ul>	<ul style="list-style-type: none"> <li>· Superior flow and easy operation for dispensing high-viscosity adhesives and sealants</li> <li>· Accepts pre-filled 5- and 55-gallon drums</li> </ul>	
Production Capacity	Low Volume	Low-to-Medium Volume	Low-to-Medium Volume	Medium-to-High Volume	Medium-to-High Volume	High Volume	High Volume	High Volume	

<sup>1</sup> 5.0 liter (0.26 gal) tanks are available with capacitive (non-contact) fluid level sensor.  
<sup>2</sup> Please note that the ratio pumps do not come with 5-55 gallon tanks. Those are purchased separately.  
<sup>3</sup> Low / empty drum indication with light towers.

# 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)



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