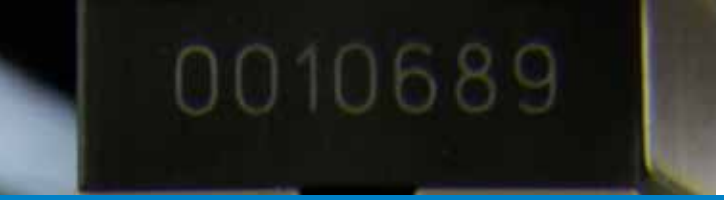
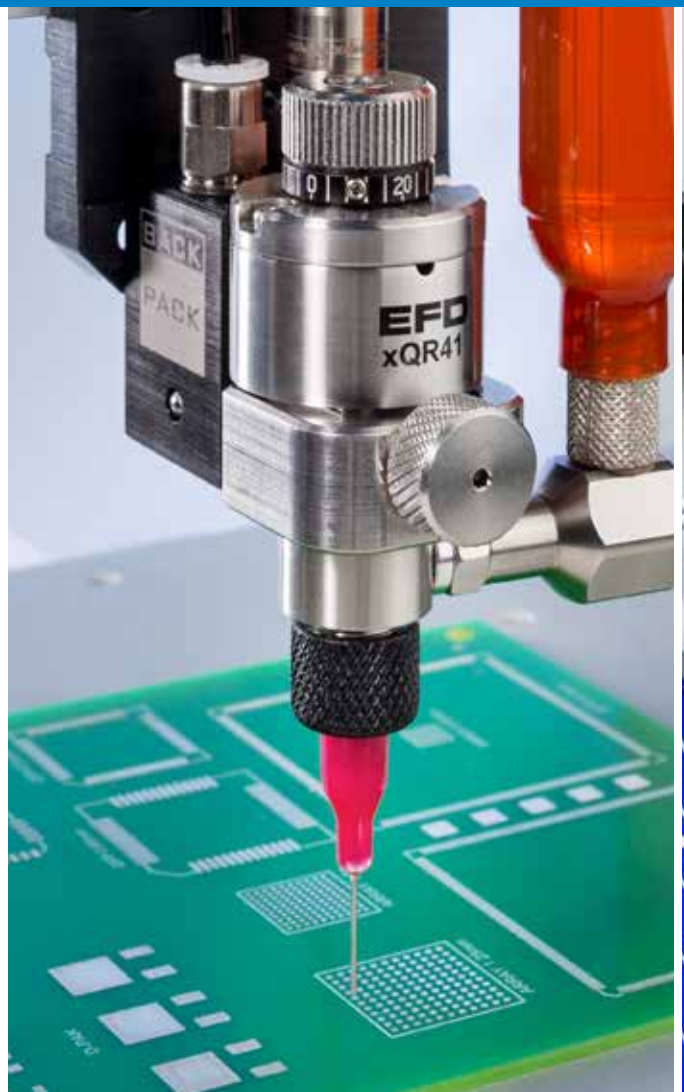



Dispense Valve Selection Guide

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 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	VALVE APPLICATIONS											
	Microdots*	Dots	Jetting	Potting	Encapsulating	Lines/Stripes	Filling/Packaging	Microspray	316L Aseptic Microspray	Spray	Internal Spray	Internal Band
Accelerators	xQR41 741MD	752V-UHSS	Pµlse P-Jet, P-Dot	—	—	xQR41V 741V-SS	752V-UHSS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Activators	xQR41 741MD	752V-UHSS	Pµlse P-Jet, P-Dot	—	—	xQR41V 741V-SS	752V-UHSS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Alcohol	xQR41 741MD	752V-UHSS	Pµlse P-Jet	—	—	xQR41V 741V-SS	752V-UHSS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Anaerobics	xQR41 752V-UHSS	xQR41 752V-UHSS	Pµlse P-Jet	—	—	752V-UHSS	725HF-A	—	—	—	—	7860C-RS
Conformal Coatings	xQR41 741MD	752V-UHSS	Pµlse P-Jet	—	752V-UHSS	752V-UHSS	725HF-SS	781Mini 787MS-SS	784S-SS	781S-SS	—	—
Copper Braze Paste	—	725DA-SS	—	—	—	725DA-SS	725HF-SS	—	—	—	—	—
Cyanoacrylates	752V-UHSS	752V-UHSS	Pµlse P-Jet, P-Dot	—	—	752V-UHSS	—	—	—	—	—	7860C-RS
Electrolytes	xQR41 741MD	752V-UHSS	Pµlse P-Jet	—	—	—	752V-UHSS	781Mini 787MS-SS	784S-SS	781S-SS	—	—
Epoxies	xQR41 741MD	752V-UHSS	Pµlse P-Dot	725DA-SS	725DA-SS	725DA-SS	725HF-SS	—	—	—	—	—
Fluxes, Liquid	xQR41 741MD	752V-UHSS	Pµlse P-Jet	—	—	752V-UHSS	725HF-SS	781Mini 787MS-SS	784S-SS	781S-SS	—	—
Fluxes, Paste	xQR41 741MD	725DA-SS	Pµlse P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—	—
Grease: low pressure (to 100 psi, 7.0 bar)	xQR41 741MD	725DA-SS	Pµlse P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	781S-SS	—	—
Grease: med. pressure (to 300 psi, 20.7 bar)	xQR41 741MD	736HPA-NV	Pµlse P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	—	781S-SS	—	—
Grease: high pressure (to 2500 psi, 172 bar)	—	736HPA-NV	Pµlse P-Jet, P-Dot	—	—	736HPA-NV	736HPA-NV	—	—	—	—	—
Inks	xQR41 741MD	752V-UHSS	Pµlse	—	—	xQR41V 741V-SS	725HF-SS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Lubricants	xQR41 741MD	—	Pµlse P-Jet, P-Dot	—	—	xQR41V	725HF-SS	—	—	—	782RA	7860C-RS
Oils	xQR41 741MD	752V-UHSS	Pµlse P-Jet, P-Dot	—	—	xQR41V 741V-SS	725HF-SS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS

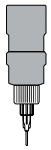
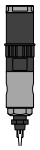
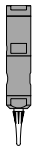
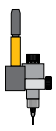
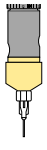
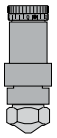
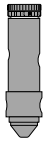
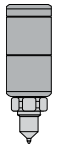
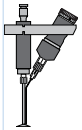
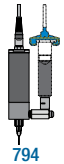
***Note:** For microdot applications requiring general purpose tip sizes between 27 and 33 gauge, specify valve model xQR41 in place of 741V-SS.

FLUIDS	VALVE APPLICATIONS											
	Microdots	Dots	Jetting	Potting	Encapsulating	Lines/Stripes	Filling/Packaging	Microspray	316L Aseptic Microspray	Spray	Internal Spray	Internal Band
Optical Dyes	702M-SS	702M-SS	PμIse	—	—	702M-SS	—	—	—	—	—	—
Optical Lacquers	702M-SS	702M-SS	PμIse	—	—	702M-SS	—	—	—	—	—	—
Paints	xQR41	752V-UHSS	P-Jet	—	—	xQR41V 741V-SS	725HF-SS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Primers	xQR41	—	PμIse P-Jet	—	—	—	—	781Mini 787MS-SS	—	—	782RA	—
Reagents	754V-SS*	754V-SS*	PμIse P-Jet	—	—	754V-SS*	754V-SS*	781Mini 787MS-SS	784S-SS	781S-SS	—	—
RTV/Sealants *low pressure*	xQR41	725DA-SS	P-Jet P-Dot	725DA-SS	725DA-SS	725DA-SS	725HF-SS	—	—	—	—	—
RTV/Sealants *medium pressure*	xQR41	736HPA-NV	P-Jet P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	736HPA-NV	—	—	—	—	—
RTV/Sealants *high pressure*	—	736HPA-NV	P-Jet P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	736HPA-NV	—	—	—	—	—
Saline	—	754V-SS*	PμIse P-Jet	—	—	754V-SS*	754V-SS*	—	784S-SS	—	—	—
Silicones	—	736HPA-NV	PμIse P-Jet, P-Dot	736HPA-NV	736HPA-NV	736HPA-NV	—	781Mini 787MS-SS	—	781S-SS	—	—
Silicone Oils	xQR41 741MD	xQR41V 741V-SS	PμIse P-Jet, P-Dot	—	—	xQR41V 741V-SS	—	—	784S-SS	—	—	—
SMD Glue	—	—	PμIse	—	—	—	—	—	—	—	—	—
Solder Resists	—	725DA-SS	PμIse P-Jet, P-Dot	—	—	725DA-SS	725HF-SS	—	—	—	—	—
Solvents	xQR41 741MD	xQR41V 741V-SS	PμIse P-Jet	—	—	xQR41V 741V-SS	752V-UHSS	781Mini 787MS-SS	784S-SS	781S-SS	782RA	7860C-RS
Solder Pastes	794, 794-TC	794, 794-TC	P-Jet SolderPlus	—	—	794, 794-TC	—	—	—	—	—	—
UV-cure & Light-cure	xQR41 741MD	752V-SS	PμIse P-Jet, P-Dot	752V-SS	752V-SS	xQR41V 752V-SS	725HF-A	—	—	—	—	—
UV-Cure with Anaerobics	xQR41 752V-SS	xQR41 752V-SS	PμIse P-Jet	752V-SS	752V-SS	752V-SS	725HF-A	—	—	—	—	—
Water	xQR41	752V-UHSS	PμIse P-Jet	—	—	xQR41V 741V-SS	752V-UHSS	781Mini 787MS-SS	784S-SS	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.

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).

✓ Applicable | O Optional | — Not applicable

FEATURES	VALVES																
	 PICO Pµlse	 P-Jet, P-Dot P-Jet SolderPlus	 702M-SS	 725DA-SS	 725HF-SS	 725HF-A	 736HPA-NV	 xQR41, xQR41V 741MD-SS 741V-SS	 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	1000Hz* 1500Hz* bursts	P-Jet P-Dot	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fail-safe normally closed	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—
FDA-compliant wetted parts	—	—	✓	✓	✓	✓	—	✓	✓	✓	✓	✓	✓	—	✓	✓	—
Fluid body *Acetal*	—	—	—	—	—	✓	—	—	✓	—	—	—	—	—	—	—	—
Fluid body *PEEK*	✓	✓	—	—	—	—	—	✓****	—	—	—	—	—	—	—	—	—
Fluid body *303 Stainless Steel Tungsten Carbide*	✓	✓	✓	✓	✓	—	✓	✓	O	O	316L	✓	✓	—	316L	—	440C Tungsten Carbide
Fluid body *UHMW* Polymer*	—	—	—	—	—	—	—	—	—	✓	—	—	—	—	—	—	—
Micro-deposits	✓	✓	—	—	—	—	—	xQR41 xQR41V	—	—	—	✓****	—	—	—	—	—
Modular design	✓	✓	—	—	—	—	—	xQR41 xQR41V	—	—	—	✓****	—	—	—	—	—
Quick Release maintenance	✓	—	—	—	—	—	—	xQR41 xQR41V	—	—	—	✓****	—	—	—	—	✓
Small form factor	—	—	✓	—	—	—	—	xQR41 xQR41V	—	—	—	✓****	—	—	—	—	—
Snuff-back cutoff	—	—	—	✓	✓	✓	✓	—	—	—	—	—	—	—	—	—	✓
Stroke control reference	—	—	✓	—	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓	—	—
Tamper-resistant stroke control	—	—	✓	—	—	—	—	O***	O	✓	✓	—	O	O	✓	—	—
UHMW* polymer diaphragm	—	—	✓	✓	✓	✓	—	—	✓	✓	PTFE	—	—	—	PTFE	—	—
303 stainless steel air cylinder	—	—	✓	—	—	—	✓	xQR41 741V-SS	✓	✓	316L	✓	✓	—	316L	—	—

*With approved conditional settings **Ultra High Molecular Weight polyethylene ***741V-SS model only ****xQR41 model only *****781Mini model only

✓ Applicable | O Optional | — Not applicable

FEATURES	VALVE CONTROLLERS								
	PICO Touch	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 Pµlse	P-Jet, P-Dot P-Jet SolderPlus	702, 725, 736, 741, 752, 754, xQR41, xQR41V	702, 725, 736, 741, 752, 754, xQR41, xQR41V	781S, 784S, 781Mini, 787MS	782RA, 7860C-RS Spinner	794	702, 725, 736, 741, 752, 754, xQR41, xQR41V	781S, 784S, 781Mini, 787MS
Air pressure display	—	✓	✓	Analog	Analog	Digital	Digital	Digital	✓
Auto sequence mode	—	—	✓	—	—	—	—	—	—
Cycle rate	1000Hz* 1500Hz* burst	280Hz / 150Hz	500Hz	>600/minute	>400/minute	>400/minute	>400/minute	>600/minute	>400/minute
Digital time set and 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	✓	—	<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 (4.1 bar)
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 mm x 133 mm (5.6" x 5.25")	450 mm x 125 mm (18" x 5")	257.2 mm x 96.8 mm (10.13" x 3.81")	183.6 mm x 51.6 mm (7.23" x 2.03")	183.6 mm x 51.6 mm (7.23" x 2.03")	226.3 mm x 68.8 mm (8.91" x 2.71")	226.3 mm x 68.8 mm (8.91" x 2.71")	142.9 mm x 68.8 mm (5.62" x 2.71")	205.4 mm x 68.8 mm (8.08" x 2.71")
Precise adjustablility	✓	✓	—	—	—	—	—	—	—
Pre-dispense time cycle delay	—	—	—	✓	—	—	—	—	—
Programmable	✓	✓	✓	✓	✓	✓	✓	✓	✓
Programmable lockout	✓	—	—	—	—	—	—	—	—
Purge control	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spike & hold capability	—	—	✓	—	—	—	—	—	—
Test cycle verification	✓	✓	✓	✓	✓	✓	✓	✓	✓
Touchscreen	✓	—	—	—	—	—	—	—	—

*With approved conditional settings

FEATURES	TANKS, RESERVOIRS, AND PUMPS							
								
	Syringe Barrels, in Clear, Amber, Green, or Black	Cartridge Retainer Systems with Regulators	1/10 Gallon Retainer System with Regulator	1L & 5L Precision Digital Gauge Tanks	1L & 5L Analog Guage Tanks	19L Stainless Steel Analog Tanks	5-Gallon Pail Analog Tanks	Ratio Pumps with 48:1 or 65:1 ratio
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)**
Recommended Fluid Viscosity	All Fluids	All Fluids	Medium-to-High Viscosities	← Low-to-Medium Viscosities (pourable / self-leveling) →				High Viscosities
Air Pressure	—	0-15 psi (0-1 bar) 0-100 psi (0-7 bar)	0-100 psi (0-7 bar)	0-10 psi (0-0.7 bar) 0-100 psi (0-7 bar)	0-15 psi (0-1 bar) 0-100 psi (0-7 bar)	0-15 psi (0-1 bar) 0-100 psi (0-7 bar)	0-100 psi (0-7 bar)	up to 2500 psi psi (172 bar)
Float Switch	—	—	—	Optional*	Optional*	Optional	No	Yes***
Features & Benefits	· Limits fluid waste · Reduces maintenance and cleanup · Assembly fluids often come packaged in EFD syringe barrels · Use for fluids with short shelf life	· Ideal for low-to-medium pressure dispensing from cartridges · Clear retainer allows visual monitoring of fluid level · Accepts cartridges	· 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	· Maintains steady fluid pressure · Accepts pre-filled 1-pound and 1-liter bottles or pourable fluids	· Maintains steady fluid pressure · Ideal for materials that don't require cleaing, such as oil, solvents, and water · Accepts only pourable fluids	· Maintains steady fluid pressure · No pouring necessary · Eliminates risk of introducing air bubbles · Accepts pre-filled 5-gallon pails	· Superior flow and easy operation for dispensing high-viscostiy adhesives and sealants · Accepts pre-filled 5- and 55-gallon drums
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

* 5 liter (0.26 gal) tanks are available with capacitive (non-contact) fluid level sensor
** Please note that the ratio pumps do not come with 5-55 gallon tanks. Those are purchased separately.
*** 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

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

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
Request Lab Test: www.nordsonefd.com/ApplicationTest
Follow our Blog: www.nordsonefd.com/Blog

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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
Download CAD models: www.nordsonefd.com/CAD

Nordson EFD

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