Nordson EFD Solutions:

Meter Mix Valves for 2K Mix-and-Dispense Applications





Nordson EFD provides a complete line of 2K modular metal valves that can be easily disassembled and cleaned after mixing. Maintaining valves that handle reactive resins can be time-consuming and expensive — a plugged valve translates to lost production, and even a partially plugged mixer results in poor quality.

Features and Benefits

- Eliminate solvent flushing
- Less adhesive waste
- Cleans up easily for increased productivity

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Using a Meter Mix Valve

If you're using a meter mix valve, your system may include a valve, mixer, and accessories. Here are steps to help you select the best possible 2K meter mix system.

Step 1: Select the Best Spiral Mixer for Your Material

See 2K Selection Guide, *Best Mixer for Your Material.* Keep in mind, when using a meter mix system, you must use spiral mixers. *www.nordsonefd.com/2KSelectionGuide*

Step 2: Select the Best Spiral Mixer for Your Material Viscosity

See 2K Selection Guide, *Best Mixer for Your Material Viscosity.* Material viscosity will help determine the type of spiral mixer you need.

Step 3: Select Your Meter Mix Valve

Nordson EFD's meter mix valves are designed to bring the reactive adhesives and sealants into the static mixer and are engineered for easy disassembly and cleaning. Our pneumatic valves help increase productivity and eliminate the need for solvent flushing.



Series 400 and 400HF Autovalve



Series 450 Autovalve



Series 450XT Snuff Back Valve

Pneumatic Meter Mix Valve Series

Pneumatic meter mix valves provide ON-OFF functions, and metering in the proper ratio of A and B components is controlled by the metering pumps. Different manifolds are offered to assist this metering process. The selection of the manifold for each application depends on the flow rate, viscosity, and volume ratio.

RECOMMENDED VALVES BY MATERIAL OR VISCOSITY			
Meter Mix Valves	**Fluid Material**		
Pneumatic	**Adhesives & Sealants**	**Abrasive Urethanes**	**High Viscosity (162A Series Mixers)**
Series 400	✓	–	–
Series 400HF	–	–	✓
Series 450	✓	–	–
Series 450XT	–	✓	–

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Step 4: Select Your Valve Seal *(for pneumatic valves only)*



If you're dispensing with a Series 400 or Series 450 pneumatic meter mix valve, you'll need to select the correct seal based on the type of material being dispensed.

EFD offers a wide variety of seal configurations. Select both the O-ring and U-cup seals based on chemical compatibility.

RECOMMENDED VALVE SEAL BY MATERIAL TYPE	
O-Rings Model/Color	**Recommended for Contact With**
Viton (Brown)	Methylene Chloride, Alcohol, Carbon Tetrachloride
EP (Black)	MEK, Ketones, Acetone
PTFE (Orange)	All Adhesives and Sealants
U-Cups Model/Color	**Recommended for Contact With**
UHPME-Cup (Clear) & SS Spring	Epoxies Amine Catalyst, Polyesters, Acrylics
PU-Cup (Orange) & Viton O-Ring (Brown)	Epoxies General, Polyurethane, Polysulfides
PTFE Cup (Aqua) & PTFE O-Ring (Orange)	All Adhesives and Sealants

Step 5: Select Your Manifold *(for pneumatic valves only)*



Nordson EFD's two-component manifolds connect your meter mix valve to provide a simple method of bringing the resin and hardener into the mixing nozzle.

MANIFOLD RECOMMENDATIONS					
		Standard Flow 1:1	**Standard Flow Wide Ratio**	**High Flow 1:1**	**High Flow Wide Ratio**
Mixer Diameter	< 1/4"	400 / 450	400 / 450	–	–
	≥ 3/8"	450	450	400	400
Effective Ratio* of the Mixer	< 7:1	400 / 450	–	400	–
	≥ 7:1	–	400 / 450	–	400

Mixer Diameter = Standard vs. High Flow
Effective Ratio = 1:1 or Wide Ratio

*Effective Ratio is determined by multiplying the mix ratio with the component viscosity.

Step 6: Select Your Handle *(for pneumatic valves only)*



Nordson EFD offers electric or pneumatic handles for actuating the air cylinder of the valve. These handles feature an ergonomic design, which make handheld applications easier to execute.

Choose from three types of electric handles:

1. Pistol grip handle with pneumatic switch
2. Pistol grip handle with electric momentary switch (24 V)
3. Pistol grip handle with electric push on/off switch (24 V)

Keep in mind if you're using an electric handle, a solenoid from an outside vendor is required.

Step 7: Select a Metal Jacket for High Pressure Applications



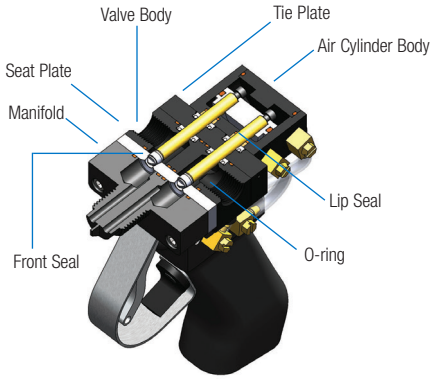
Nordson EFD recommends the One Piece Metal Jacket attachment when pressure inside the mixer is greater than 150 psi (10 bar). We offer a wide variety of one-piece, affordable jackets that can be used over the mixing nozzle.

Additionally, we offer precision machined jackets for automated dispensing applications.

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Series 400 Autovalve





With meter mix and dispense systems, the pneumatic Series 400 Autovalve is a durable and reliable valve. The A and B shut off pistons have PTFE seals allowing high flow with minimal maintenance as these seals can be adjusted without disassembly of the valve body. The 9/16-18 fluid inlet ports of the Series 400 Autovalve allows flow rates of 3-4 gallons per minute, depending on pump capability and material viscosity.

Specifications 400/400HF/450

Valve

Size: 83.8L x 63.5W x 58.4H mm (3.3 x 2.5 x 2.3")

Body: 6061-T6 aluminum or 303 stainless steel

O-ring options*: Viton, PTFE, Ethylene-Propylene (E-P)

Lip seal options*: Viton, Polyurethane (PU), PTFE, Polytuff, Ethylene-Propylene (E-P)

* Repair kits containing a complete set of lip seals and O-rings are available.

Manifold

Size: 48.3L x 63.5W x 38.1H mm (1.9 x 2.5 x 1.5")

Material: 6061-T6 aluminum or 303 stainless steel

Outlet thread size options: 7/8"-14 (for standard bell mixers); 1 5/16"-12 (for oversized bell mixers)

Valve System

Weight: Aluminum valve and manifold: 1.6 lb (0.7 kg)
Stainless steel valve and manifold: 2.5 lb (1.1 kg)

Operating Parameters: Min. operating pressure: 5.5 bar (80 psi)
Max. fluid pressure: 240 bar (3500 psi)

Electric handle mount switch: 24V

MANIFOLDS FOR SERIES 400 AUTOVALVES

Ratio	Part # (Manifold)	Part # (Manifold with solvent port)	Material	Flow
1:1	7701933	7701935	Aluminum	Low Flow
1:1	7701942	-	Aluminum	High Flow
Wide	7701946	-	Aluminum	High Flow

Recommended Mixer:

Series 160 Mixer

7701895 400 Autovalve
Aluminum Valve, Single Air Cylinder, TPV Seals

Order handle separately; see Autovalve Accessories for details.

ORDERING GUIDE

- Valve, manifold, and handle are ordered individually
- For high back pressure conditions (i.e. over 1000 psi/69 bar) order a double air cylinder
- Seal Designations: T=PTFE, P=Polyurethane, V=Viton, G=Polytuff

Series 400HF Autovalve

The 400HF Valve provides flow rates that are 15-30% greater than the standard 400 Valve configuration, without compromising accuracy or consistency. The large 3/4" material inlet ports permit flow rates of 4-5 gallons per minute, depending on pump capability and material viscosity.

Recommended Mixer:

Series 162A Mixer

Specifications
See Series 400, above

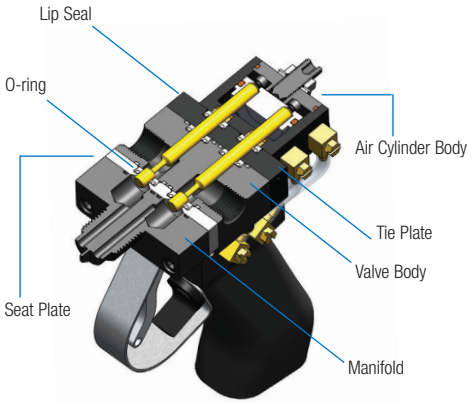
7704105 400HF Autovalve
Aluminum Valve, Single Air Cylinder, TGT Seals

7701924 400HF Autovalve
Aluminum Valve, Single Air Cylinder, TPV Seals

Order handle separately; see Autovalve Accessories for details.

Series 450 Autovalve





The pneumatic Series 450 Autovalve is similar to the Series 400 Autovalve, except for the shut-off pistons which ensure good control of dot or shot volume. After each shot, the dual pistons retract and "snuff back" material from the end of the mixing nozzle. This feature helps eliminate "after drool." This valve includes hard-coated and lubricated pistons. It can be used either as a stationary head or hand-held unit. In addition, seals can be adjusted without disassembly of the valve body.

MANIFOLDS FOR SERIES 450 / 450RC / 450XT AUTOVALVES				
Ratio	**Part #** (Manifold)	**Part #** (Manifold with solvent port)	**Material**	**Flow**
1:1	7702221	7702222	Aluminum	Low Flow
Wide	7702224	-	Aluminum	Low Flow
1:1	7702541	-	Stainless Steel	Low Flow

Recommended Mixer:

Series 160 Mixer

Specifications

See Series 400, previous page

7702201 450 Autovalve
Aluminum Valve, Single Air Cylinder w/Snuff Back, GT Seals

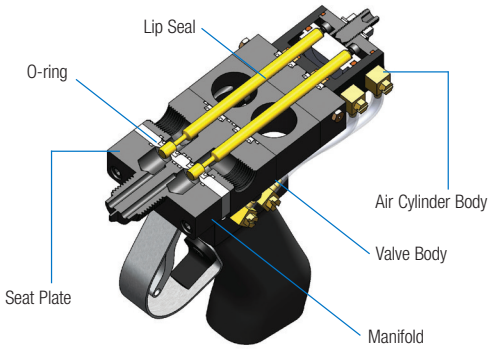
7702209 450 Autovalve
Aluminum Valve, Single Air Cylinder w/Snuff Back, PV Seals

7702443 450 Autovalve
Stainless Steel Valve, Single Air Cylinder w/Snuff Back, GT Seals

Order handle separately; see Autovalve Accessories for details.

Series 450XT Snuff Back Valve





This innovative dispense valve is designed specifically for two-component urethanes and eliminates exposure of wetted shafts to air. Since 2K urethanes are moisture sensitive, any contact with air can cure the material, locking up the dispense valve.

Specifications

Weight: Aluminum valve and manifold: 1.6 lb (0.7 kg)
Stainless steel valve and manifold: 2.5 lb (1.1 kg)

Pressure Rating: 240 bar (3500 psi)

Accessories

Polytuff, PTFE, Viton, and EP seals:
For varying chemical formulations and abrasive conditions

Optional Night Cap & Ratio Check Cap:
Available for 1:1 ratio manifolds

Recommended Mixer:

Series 160 Mixer

Manifolds:
See Series 450 Manifold Table, previous page

7702216 450XT Autovalve
Aluminum Valve, Extended Air Cylinder with Snuff Back and GT Seals

Order handle separately; see Autovalve Accessories for details.

CARBON STEEL PIPE ADAPTERS

Part	Part #	Description
	7702420	90° Elbow w/3/8" FNPS
	7702425	Straight Adapter w/3/8" FNPS

TRIGGER HANDLES

If using an electric handle, a solenoid from an outside vendor is required.
Elbow adapters are available to connect material lines to the valve.

Part	Part #	Description
	7701971	Pistol Grip Handle w/Electric Momentary Switch (24V)
	7701977	Pistol Grip Handle w/Pneumatic Switch

RATIO CHECK CAP AND NIGHT CAP

Part	Part #	Description
	7701181	PTFE Night Cap & Nut
	7701184	PTFE Ratio Check Cap & Nut

REPAIR KITS

Part	Part #	Description
	7704093	2K Kit 4X0 Repair TGT
	7704095	2K Kit 4X0 Repair TPV

VALVE SEALS

EFD offers a wide variety of seal configurations for Series 400/450 autovalves.
Select both the O-ring and U-cup seals based on chemical compatibility.

O-rings	Part #	Material	Color	Description
	7702275	PTFE	Orange	Recommended with all chemicals

U-cups	Part #	Material	Color	Description
	7702280	PTFE	Aqua	With PTFE O-ring / Recommended with all chemicals
	7702277	UHPME	Clear	With SS spring / Epoxies (amine catalyst), polyesters, and acrylics
	7702281	PU	Orange	With Viton O-ring / Epoxies (general), polyurethanes, and polysulfides

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BLOCK MANIFOLDS FOR MIXERS



Nordson EFD's two-component manifolds separately port the resin and hardener into the mixing nozzle. Cleanup simply involves wiping the manifold face after the nozzle has been removed. To prevent back flow or cross contamination of reactive material, inline check valves are available. Designed when you're dispensing without a meter mix valve, but directly through the mixer. For use with Series 160 and 162A.

Part #	Material	Inlet	Outlet	Solvent Ports	Mixer
7701323	Aluminum	(2) 1/8" FNPT	7/8 - 14	1/4" FNPT	Series 160
7701325	Aluminum	(2) 1/4" FNPT	7/8 - 14	1/4" FNPT	Series 160
7701329	Aluminum	(2) 1/2" FNPT	1-5/16 - 12 UN	1/4" FNPT	Series 162A

ADAPTERS FOR MIXERS



Mixers can be connected to some pre-existing manifolds or valves using adapters. Contact Nordson EFD for details. For use with Series 85, 100, 160, and 162A.

Part #	Material	Inlet
7701254	Carbon Steel	1/4" Male NPT

RETAINING NUTS FOR MIXERS & METER MIX VALVES



Available to hold mixing nozzles onto adapters, block manifolds, and meter mix valves. Also used when a metal jacket is not required.

Part #	Material	Thread	Mixer
7701110	Aluminum	2K Standard 7/8 - 14	Series 160 with ID 0.189-0.248"
7701113	Aluminum	2K Standard 7/8 - 14	Series 160 with ID 0.314-0.497"
7701115	Aluminum	2K Standard 7/8 - 14	Series 141 & Series 161 (all)
7701116	Aluminum	Alternative 7/8 - 9	Series 161 (all)
7701108	Aluminum	1-1/16 - 12	Series 141 (all)
7026515	Carbon Steel	1-5/16 - 12 UNF	Series 162A (all)
7701118	Aluminum	2K Standard 7/8 - 14	Series 141 (all)

METAL JACKETS & METER MIX VALVES



Available to hold mixing nozzles onto adapters, block manifolds, and meter mix valves. Also used when a metal jacket is not required.

Part #	Material	Thread	Mixer Part #	Mixer
7701124	Aluminum, Robotic	2K Standard 7/8 - 14	7700837	Series 160
7701140	Aluminum	2K Standard 7/8 - 14	7700819	Series 160
7701143	Aluminum	2K Standard 7/8 - 14	7700856	Series 160
7701163	Aluminum	Alternative 7/8 - 9	7013510	Series 160
7701167	Aluminum	2K Standard 7/8 - 14	7700904	Series 160
7701165	Aluminum, Robotic	2K Standard 7/8 - 14	7700904	Series 160
7701171	Aluminum	2K Standard 7/8 - 14	7700927	Series 160
7701170	Aluminum, Robotic	2K Standard 7/8 - 14	7700927	Series 160
7701174	Aluminum	2K Standard 7/8 - 14	7700932	Series 160
7701203	ACS Nut / SS Jacket	2K Standard 7/8 - 14	7701010, 7701049	Series 160
7701208	Aluminum, Robotic	2K Standard 7/8 - 14	7701010, 7701049	Series 160
7701210	CS Nut / SS Jacket	2K Standard 7/8 - 14	7701028	Series 160
7701396	Aluminum, Robotic	2K Standard 7/8 - 14	7361695	Series 480
7701226	CS Nut / SS Jacket	1-5/16 - 12	7701059	Series 162A

DISPENSING TIPS FOR MIXERS



Luer Lok adapters (locking hubs) are used for attaching Optimum dispensing tips to Series 190 and 160 mixers. If you want to use a metal jacket with the 3.16" ID or 1/4" ID bell mixers, order the mixer and the Luer Lok fitting as two separate items unassembled: square hub outlet and #7700943 Luer Lok fitting (bag of 50). **See Optimum Dispensing Tips for details:** www.nordson.com/tips

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Useful Resources



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*



Expert Recommendations

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

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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*

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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 info@nordsonefd.com

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