

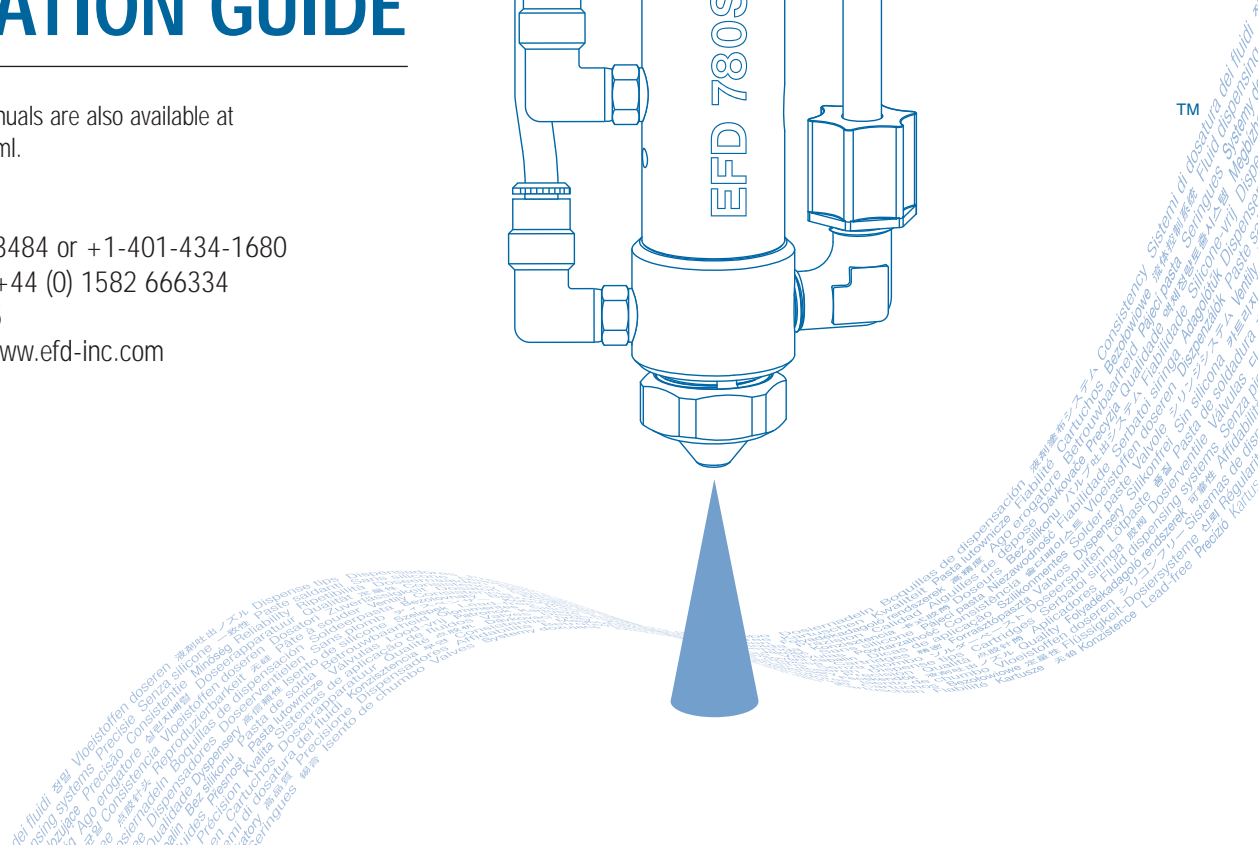
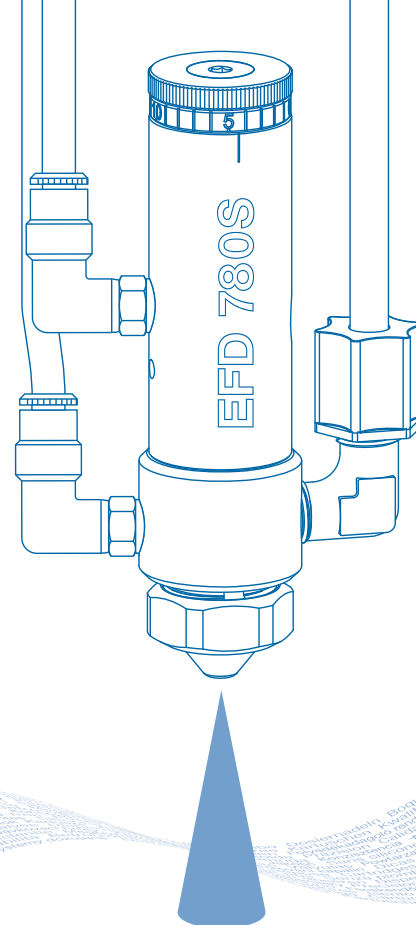
780S Series Spray Valve

INSTALLATION GUIDE



Electronic pdf files of EFD manuals are also available at www.efd-inc.com/manuals.html.

USA & Canada: 800-556-3484 or +1-401-434-1680
 Europe: 0800 585733 or +44 (0) 1582 666334
 Asia: +86 (21) 5854 2345
technical@efd-inc.com www.efd-inc.com

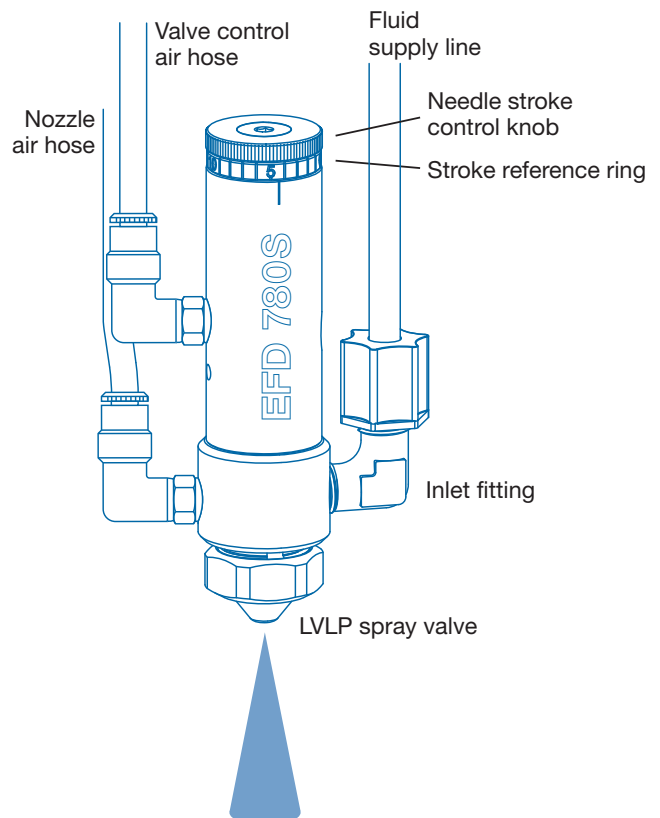


Introduction

The 780S Series precision low volume low pressure (LVLP) liquid spray valves are designed for high transfer efficiency without overspray or airborne mist and provide consistent coating of low to medium viscosity fluids.

780S Series valves are simple to use and will operate many millions of cycles without maintenance. Spray valve cleaning is accomplished by purging with the appropriate solvent.

The 780S air cylinder body and fluid body are hard-coated aluminum. The 780S-SS valve model uses stainless steel throughout.

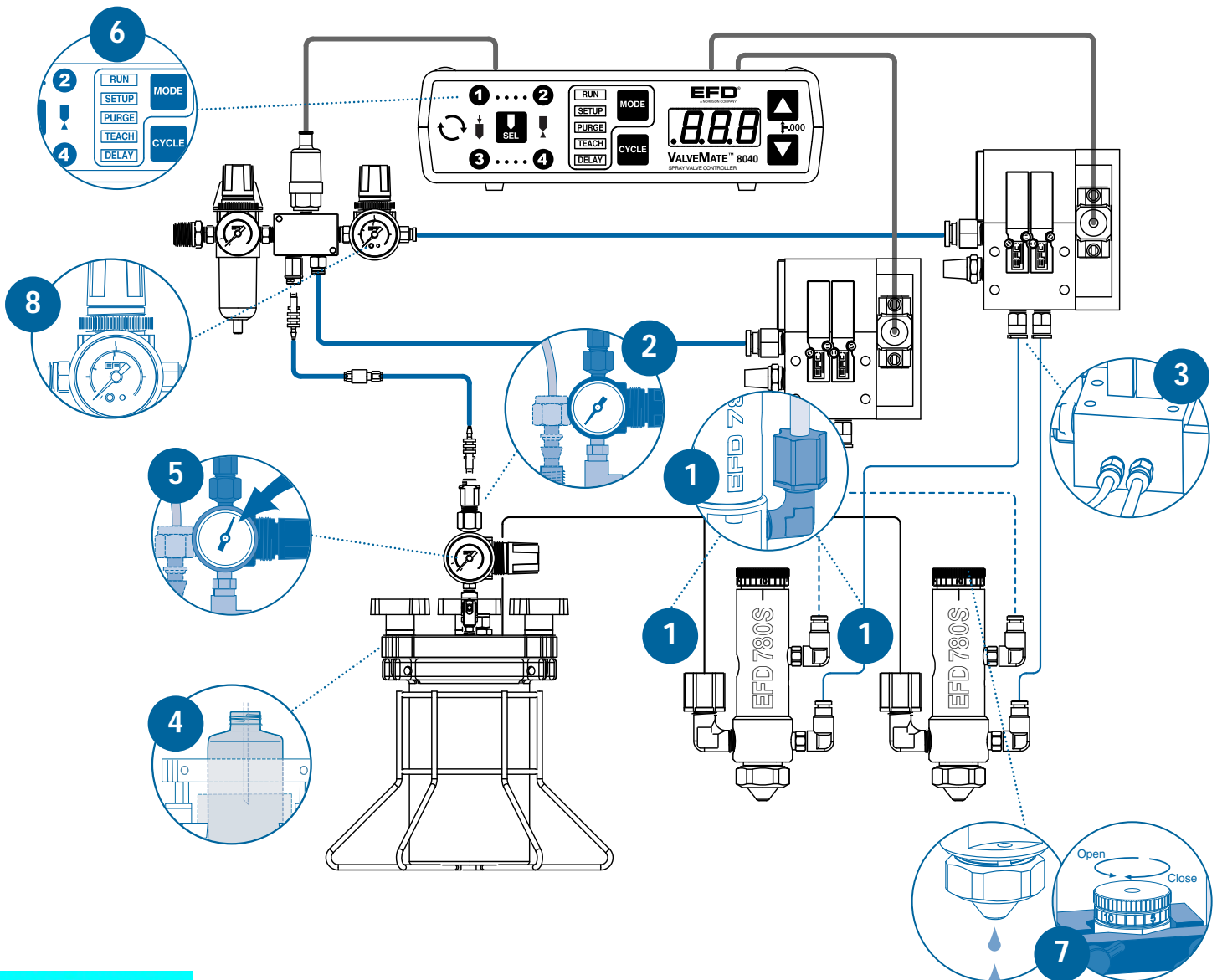


Installation

Prior to installing this valve, please read the associated reservoir and valve controller operating instructions to become familiar with the operation of all components of the spray system.

1. Connect the fluid supply line to the fluid inlet port.
2. Connect the fluid supply line to reservoir.
3. Connect the control air hose and the nozzle air hose to corresponding outputs on solenoid block.
4. Fill reservoir by pouring fluid directly into tank liner or manufacturer's bottle placed inside reservoir. Secure cover prior to setting pressure.
5. Set reservoir pressure to low for thin fluids and higher for thick fluids.
6. Using the Mode **MODE** button on the ValveMate controller, place the controller in the PURGE **PURGE** mode. In PURGE **PURGE** mode only, channels **1** and **3** can be selected **SEL** independently without nozzle air pressure.
7. Using the needle stroke control knob on the 780S valve, set the fluid flow rate to one or two drops per second. Check flow rate by actuating the controller in the time override mode. Make valve stroke adjustments when the controller is off.
8. Set the nozzle air pressure on the nozzle to 10 psi (.7 bar) and actuate the controller. The valve will produce a fine spray. To change fluid flow, use the needle stroke control knob and/or reservoir pressure. To change nozzle air, use the nozzle air pressure regulator. Higher pressures will provide finer spray.

Note: The area of spray coverage is determined by the distance between the spray valve nozzle and the work surface. Refer to the charts on the back page to determine this distance.

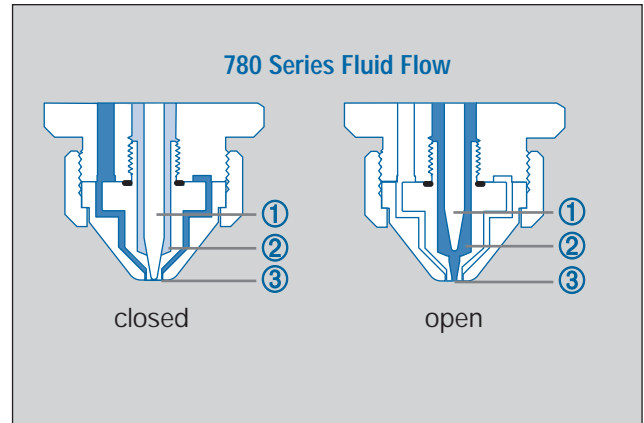


How the Valve Operates

Input air pressure at 70 psi (4.8 bar) retracts the needle ① from its nozzle seat, ② allowing liquid to flow from the nozzle. At the same time, nozzle air is turned on and flows from an annulus ③ around the liquid nozzle. This adjustable nozzle air creates a pressure drop around the nozzle causing the liquid to atomize into fine droplets.

The amount sprayed is controlled by the valve open time, reservoir pressure and needle stroke. Area of coverage is determined by the nozzle size and the distance between the nozzle and work surface.

To calibrate or document the dispensing process, use the stroke control reference. To calibrate, turn the calibrating adjustment (located in the end of the stroke adjustment knob) out two full turns. Close the stroke adjustment knob fully until it bottoms against the air cylinder body. Turn the adjustment until it stops, calibrating the valve to zero stroke.*



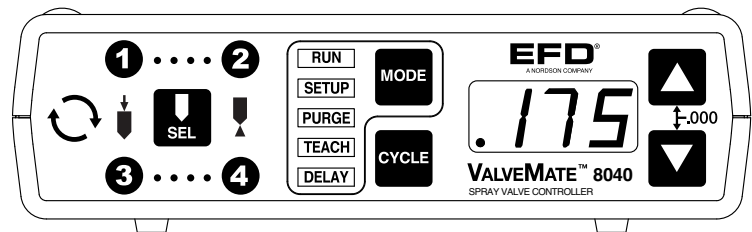
* The 780S valve can be ordered in a tamper-resist configuration to limit unauthorized adjustment. Specify part #780S-TR or #780S-SS-TR.

The primary control of deposit size is the valve open time.

ValveMate Concept

The ValveMate 8040 provides easy adjustment of spray valve output for maximum end-user convenience and efficiency. Valve open time is the primary control of deposit size. The ValveMate 8040 puts adjustment of valve open time where it needs to be – near the spray valve.

External solenoids, combined with a 0-30 psi nozzle air pressure regulator, provide Low Volume Low Pressure (LVLP) air to the nozzle, for high transfer efficiency.



Important Note: Order your single or dual valve solenoid assemblies separately. Consult EFD for recommendations.

www.efd-inc.com technical@efd-inc.com USA 800-556-3484 Europe +44 (0) 1582 666334 Asia +86 (21) 5854 2345



Specifications

780S and MM780-SYS

Weight: 235.3 grams (8.29 oz)

Fluid body: Hard-coated aluminum

Air cylinder body: Hard-coated aluminum

780S-SS

Weight: 405.3 grams (14.29 oz)

Fluid body: Type 303 stainless steel

Air cylinder body: Type 303 stainless steel

General

Size: 104.6 mm length x 26.9 mm diameter
(4.12" x 1.06")

Air cap: Type 303 stainless steel

Piston: Type 303 stainless steel

Needle and nozzle: Type 303 stainless steel

Free flow orifice: 1.17 mm (0.046"); 0.71 mm (0.028");
or 0.36 mm (0.014")

Needle packings: Teflon®

Fluid inlet thread: 1/8 NPT female

Mounting: (1) 1/4-28 UNF tapped hole

Air pressure required: 70 to 90 psi (4.8 to 6.2 bar)

Maximum input fluid pressure: 300 psi (20.7 bar)

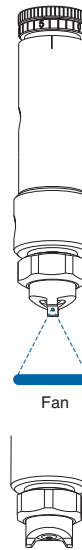
Maximum operating temperature: 102°C (215°F)

Operating frequency: Exceeds 400 cycles/minute

Note: All stainless steel valve parts are passivated.



Round



Fan

Side view of fan air cap

Spray Patterns

Round Pattern Spray Area Coverage

Nozzle Distance from the Work Surface:

Nozzles	25.4 mm	50.8 mm	76.2 mm	152.4 mm
	1"	2"	3"	6"
#7857-46SS Standard 1.17 mm (0.046")	6.35 mm 0.25"	12.70 mm 0.50"	19.05 mm 0.75"	38.10 mm 1.50"
#7857-46WA-SS Wide-angle 1.17 mm (0.046")	19.05 mm 0.75"	38.10 mm 1.50"	50.80 mm 2.00"	Not Recommended
#7857-28SS 0.71 mm (0.028")	5.08 mm 0.20"	10.16 mm 0.40"	15.24 mm 0.60"	30.48 mm 1.20"
#7857-14SS 0.36 mm (0.014")	4.32 mm 0.17"	8.64 mm 0.34"	12.70 mm 0.50"	25.40 mm 1.00"

Fan Pattern Spray Area Coverage

Nozzle Distance from the Work Surface:

Nozzles	25.4 mm	50.8 mm	76.2 mm	152.4 mm
	1"	2"	3"	6"
#7857F-46SS (1.17 mm) 0.046"	25.40 mm 1.00"	38.10 mm 1.50"	50.80 mm 2.00"	82.55 mm 3.25"
#7857-46WF-SS (1.17 mm) 0.046"	38.1 mm 1.50"	63.5 mm 2.50"	82.55 mm 3.25"	165.1 mm 6.50"
#7857F-28SS (0.71 mm) 0.028"	10.16 mm 0.40"	20.32 mm 0.80"	30.48 mm 1.20"	60.96 mm 2.40"
#7857F-14SS (0.36 mm) 0.014"	8.63 mm 0.34"	17.27 mm 0.68"	25.4 mm 1.00"	50.8 mm 2.00"



For EFD sales and service in over 30 countries,
contact EFD or go to www.efd-inc.com/contact

EFD, Inc.

East Providence, RI USA

USA & Canada: 800-556-3484; +1-401-434-1680

info@efd-inc.com

www.efd-inc.com

EFD International Inc.

Dunstable, Bedfordshire, UK

0800 585733 or +44 (0) 1582 666334

Ireland 00800 8272 9444

europa@efd-inc.com

www.efd-inc.com

EFD, Inc., Asia

China: +86 (21) 5854 2345

china@efd-inc.com

www.efd-inc.com/cn

Singapore: +65 6796 9630

sin-mal@efd-inc.com

For consistent dispense valve operation and easy adjustment of valve output, EFD recommends using the ValveMate 8040 controller on all automatic, semi-automatic and benchtop applications.

The EFD Ultra TT Series positioning systems incorporate dispensing control into the main system.

Contact the EFD Dispense Valve Systems Group for details.

Packaging - Processing

Bid on Equipment

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