Fluid Pressure Booster

Operating Manual

Electronic pdf files of Nordson EFD manuals are also available at nordsonefd.com

Nordson EFD

You have selected a reliable, high-quality dispensing system from Nordson EFD, the world leader in fluid dispensing. The fluid pressure booster was designed specifically for industrial dispensing and will provide you with years of trouble-free, productive service.

This manual will help you maximize the usefulness of your fluid pressure booster.

Please spend a few minutes to become familiar with the controls and features. Follow our recommended testing procedures. Review the helpful information we have included, which is based on more than 50 years of industrial dispensing experience.

Most questions you will have are answered in this manual. However, if you need assistance, please do not hesitate to contact EFD or your authorized EFD distributor. Detailed contact information is provided on the last page of this document.

The Nordson EFD Pledge

Thank You!

You have just purchased the world's finest precision dispensing equipment.

I want you to know that all of us at Nordson EFD value your business and will do everything in our power to make you a satisfied customer.

If at any time you are not fully satisfied with our equipment or the support provided by your Nordson EFD Product Application Specialist, please contact me personally at 800.556.3484 (US), 401.431.7000 (outside US), or Srini.Subramanian@nordsonefd.com.

I guarantee that we will resolve any problems to your satisfaction.

Thanks again for choosing Nordson EFD.

Srini Subramanian

Srini Subramanian, General Manager

Contents

Introduction

The fluid pressure booster increases the pressure applied to dispensed materials, thus facilitating the supply of high viscosity pastes such as greases, adhesives, and silicones. Its modular design allows quick and easy cleaning of all fluid carrying components, making it particularly suitable for the supply of adhesives and reactive materials.

A transmission ratio of 1:13 allows you to achieve a material pressure of up to 100 bar (1,450 psi). Only a 24V power supply is required for the operation of this standalone device.

Specifications

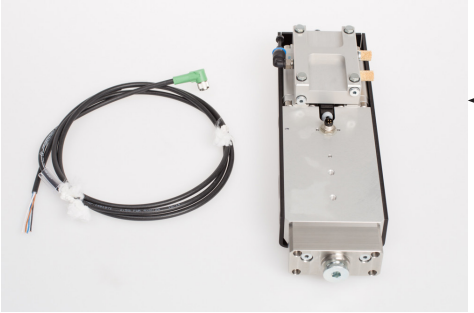
NOTE: Specifications and technical details are subject to engineering change without prior notification.

Item	Specification
Size	240W x 57.7H x 86.2D mm 9.5W x 2.3H x 3.4D"
Weight	1,600 g (3.5 lb)
Electrical power input	24 VDC, 0.5 A maximum
Electrical input connector	M8 x 0.5 power cable, 4-pin
Input air pressure (actuating)	1.5–8 bar (20–115 psi)
Material pressure	Input: 0.5–5 bar (7–70 psi) (depending on viscosity) Output: 20–104 bar (290–1,500 psi) (multiply air pressure by a factor of 13)
Wetted parts	Stainless steel
Seals	NBR
Viscosity range	100–100,000 mPas (cps)

Installation

Use this section in tandem with any other system component operating manuals to install all components of the system.

Unpack the System Components



1 • Fluid pressure booster
• M8 x 0.5 power cable, 4-pin

2 4 x 40 mm cylindrical pin (for maintenance)

(Not shown)

Operating manual

Installation (continued)

Verify the Installation Requirements

⚠CAUTION

Ensure that the specific limit values for compressed air for the cartridges and tubing are not exceeded.

⚠WARNING

Spiral-type air supply tubing can cause injury. Use pneumatic tubing for high pressure operation.

⚠WARNING

Do not operate the fluid pressure booster without dispensing material.

⚠WARNING

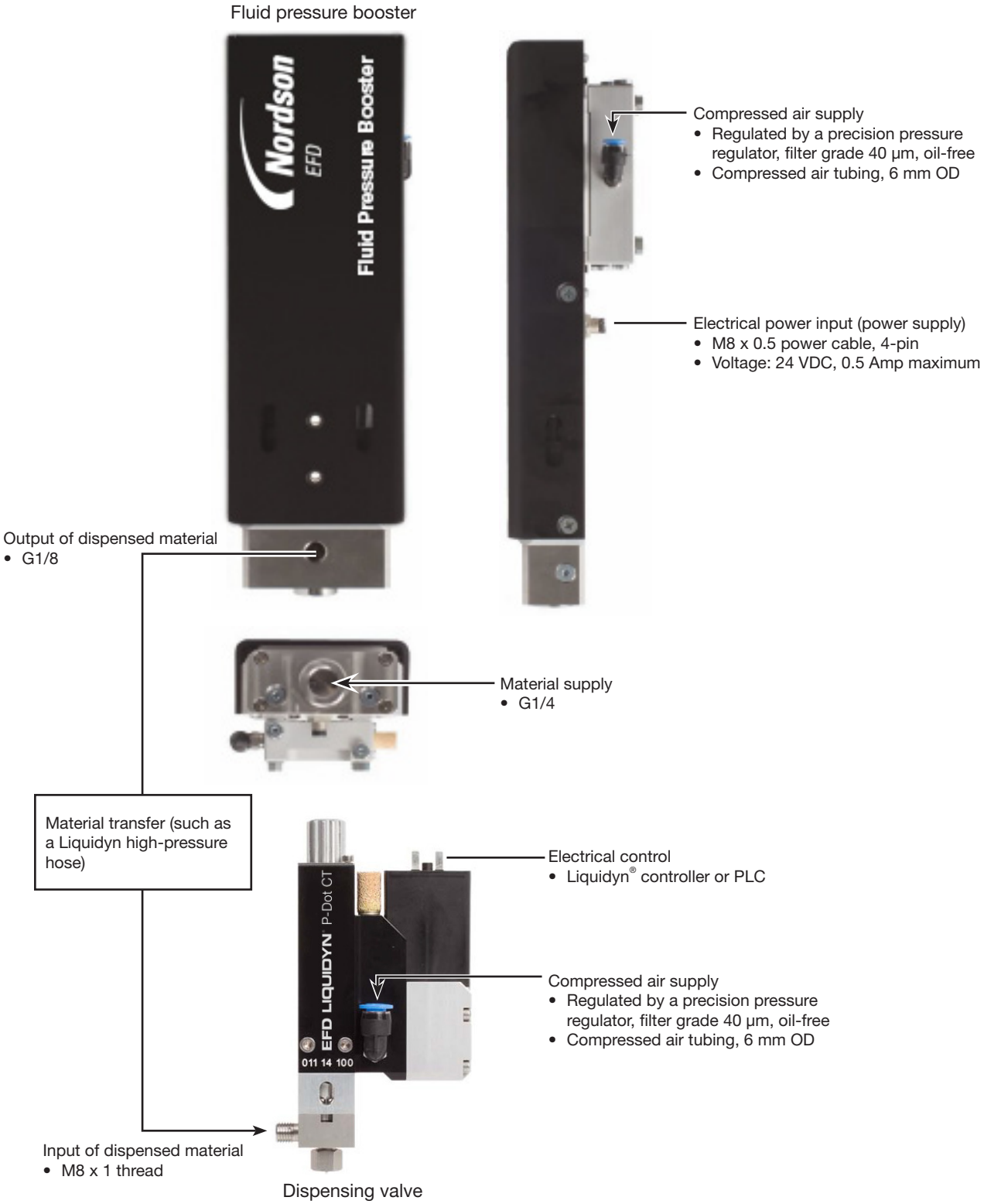
Do not operate the fluid pressure booster without its housing.

The following infrastructure and customer-supplied items are required for installation.

Item	Description
Pneumatic connections	• Oil-free, regulated by a precision pressure regulator with a 40 µm filter grade • Compressed air tubing, 6 mm outside diameter (OD) • Compressed air supply for actuating input air pressure: 1.5–8 bar (20–115 psi)
Fluid connections	• Input tubing for the dispensing material: G1/4 • Output tubing for the dispensing material: G1/8
Electrical connections	• Supplied cable: M8 x 0.5 power cable, 4-pin • Electrical power input (power supply): 24 VDC, 0.5 Amp maximum

Install the Fluid Pressure Booster

Installation Example



Example of an installation using a Liquidyn P-Dot CT valve

Service

Cleaning and Maintenance Intervals

Cleaning and maintenance intervals depend on the dispensing process. Contact your Nordson EFD representative for assistance.

Cleaning Kit

The fluid pressure booster cleaning kit, P/N 7825201, includes all the replacement parts and supplies needed for disassembly and cleaning.

- Yellow seals (quantity of 2)
- Small balls, 3.0 mm OD (quantity of 2)
- Large balls, 6 mm OD (quantity of 2)
- Large springs, 4.7 mm (quantity of 2)
- Small springs, 3.1 mm (quantity of 2)
- Black O-rings (quantity of 2)
- Pipe cleaners (quantity of 25)

Disassembly and Cleaning

⚠ WARNING

Wear protective clothing during maintenance and cleaning of the fluid pressure booster.

1. • Loosen the four M4 screws and remove the protective housing.

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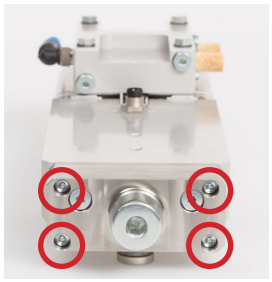
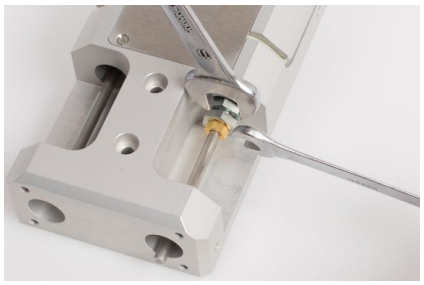
Service (continued)

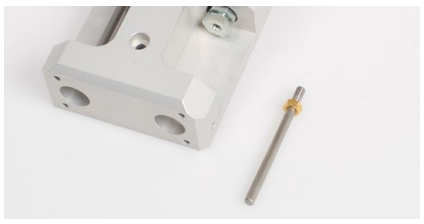
Disassembly and Cleaning (continued)

2. • Loosen the four M3 screws on the bottom side of the valve block, then pull down on the valve block to remove it.



3. • If the pistons are only slightly soiled:
   - By hand, pull the pistons down and clean them with a lint-free cloth.
   • If the pistons are significantly soiled:
   - Use an 11 mm open-end wrench to hold the lock nut and then use a 7 mm open-end wrench to loosen the piston.
   - Unscrew the piston by hand.





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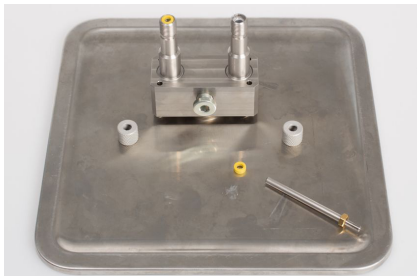
Service (continued)

Disassembly and Cleaning (continued)

4.
- Place the valve block in a basin to avoid losing small parts during the following steps.
- Loosen the cap nut.



⚠ CAUTION

Do not use sharp objects or pointed tools.

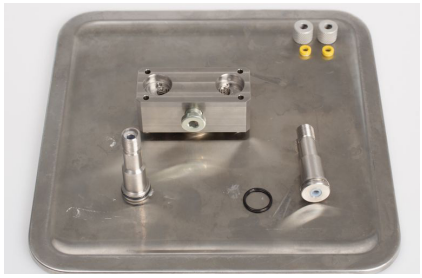
- Use a round, smooth tool (4 mm OD) to remove the yellow seals. The supplied 4 x 40 mm cylindrical pin is suitable for this purpose.

5.

⚠ CAUTION

Do not use sharp objects or pointed tools.

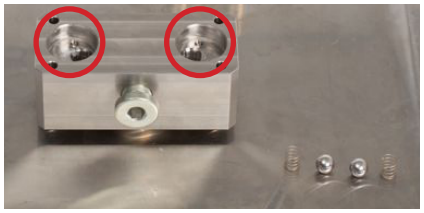
- Remove the bearing bushings.
- Remove the black O-rings.
- Use tweezers or a toothpick to remove the springs (4.7 mm OD) from under the bearing bushings (2 pieces total).



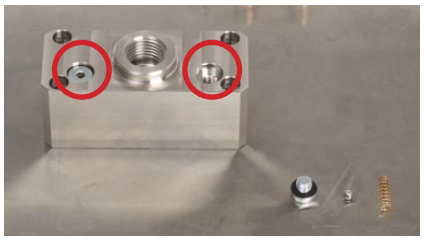
⚠ CAUTION

Do not use a metal tool to remove balls and ball bearings. These items must not be damaged.

- Carefully shake the valve block to remove the balls (6 mm OD) from under the springs (2 pieces total).



6.
- Turn the valve block upside down.
- Loosen the two M5 locking screws and seal washers.
- Use tweezers or a toothpick to remove the springs (3.1 mm OD) (2 pieces total).



⚠ CAUTION

Do not use a metal tool to remove balls or ball bearings. These items must not be damaged.

- Carefully shake the valve block to remove the balls (3.0 mm OD) from underneath the springs (2 pieces total).

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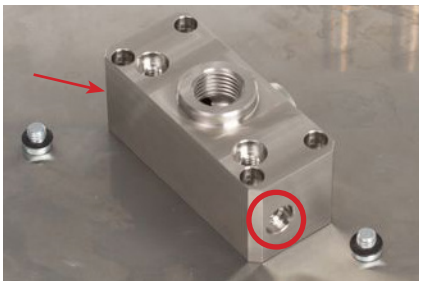
Service (continued)

Disassembly and Cleaning (continued)

7. • Loosen the two M5 locking screws and sealing washers on the side of the valve block.



8. • Place all disassembled parts (except for the housing, the two O-rings, and the four M5 locking screws with seal washers) in a container filled with a cleaning agent (such as a petroleum ether or acetone).

• Wait about 5 minutes and then remove the parts from the cleaning agent.

NOTE: As an alternative, the parts can be cleaned in an ultrasonic bath.

⚠ CAUTION

Do not damage the fluid carrying paths or seals during cleaning; use only a metal-free cleaning bush.

• Clean the parts with a metal-free cleaning brush, compressed air, and a lint-free cloth.

• Examine the parts for residue and repeat the cleaning process if necessary.

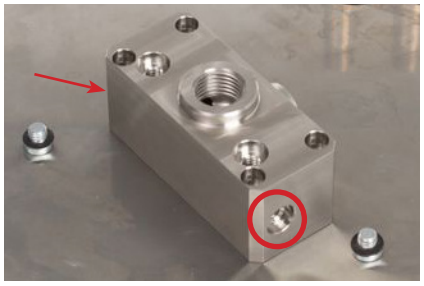
Service (continued

Assembly

⚠ WARNING

Wear protective clothing during maintenance and cleaning of the fluid pressure booster.

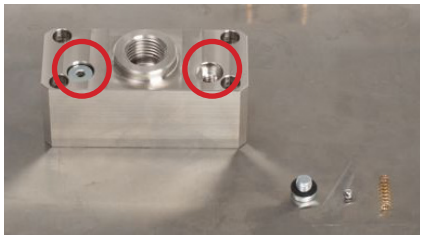
1. Insert and tighten two of the M5 locking screws, including the seal washers, on both sides of the valve block.



2. **⚠ CAUTION**

Do not use a metal tool to remove balls or ball bearings. These items must not be damaged.

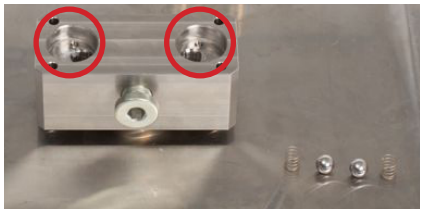
- Insert the parts on the bottom side of the valve block in the following order:
  - (1) Balls (3.0 mm OD)
  - (2) Springs (3.1 mm OD)
- Insert the remaining two M5 locking screws, with the seal washers, in the drill holes.

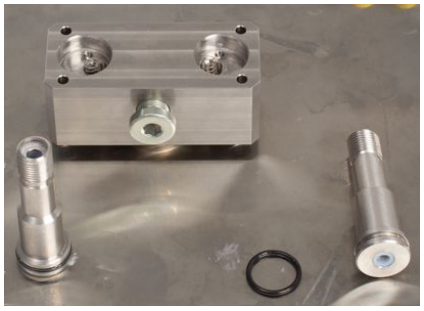


3. **⚠ CAUTION**

Do not use a metal tool to remove balls or ball bearings. These items must not be damaged.

- Insert the parts on the top side of the valve block in the bearing bushing bores (marked in red) in the following order:
  - (1) Balls (6 mm OD)
  - (2) Springs (4.7 mm OD)
- Place the black O-rings on the bearing bushings and secure the bushings in their bores.





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Service (continued)

Assembly (continued)

4.

⚠ CAUTION

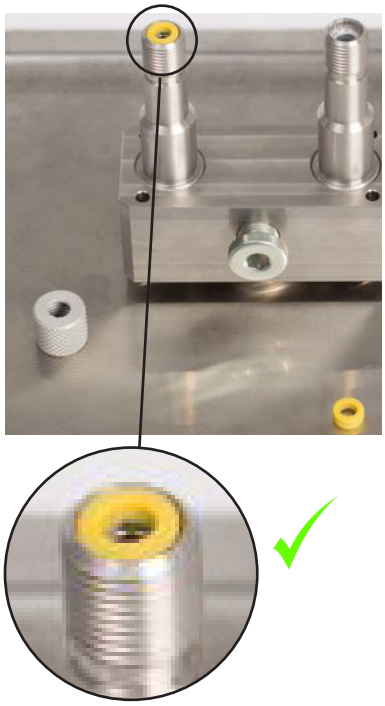
The yellow seals must be installed in the correct orientation; otherwise, the equipment could malfunction.

- Insert the yellow seals in the correct orientation.

⚠ CAUTION

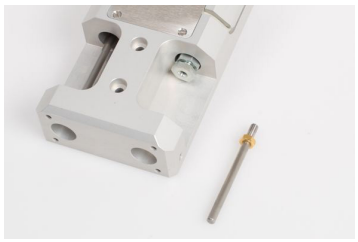
Do not use sharp objects or pointed tools.

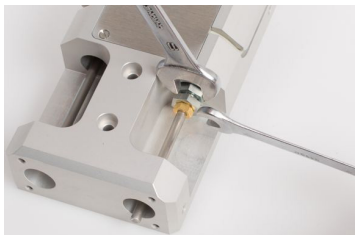
- Install the cap nuts to secure the yellow seals.



5.

- If the pistons were removed during disassembly, screw the pistons into the lock nuts on the valve block.
- Use an 11 mm open-end wrench to hold the lock nut and then use a 7 mm open-end wrench to tighten the pistons.





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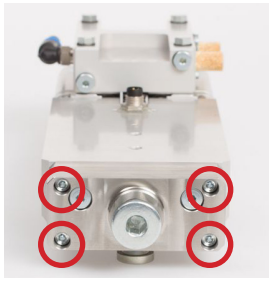
Service (continued)

Assembly (continued)

6. • Mount the valve block:
   - (1) Place the valve block in the correct orientation on the pistons.
   - (2) Use the four M3 screws to secure the valve block.



7. • Use the four M4 screws to install the protective housing.

Replacement Parts

Part #	Description	
7825243	Fluid pressure booster	
7825201	Fluid pressure booster cleaning kit • Yellow seals (quantity of 2) • Small balls, 3.0 mm OD (quantity of 2) • Large balls, 6 mm OD (quantity of 2) • Large springs, 4.7 mm (quantity of 2) • Small springs, 3.1 mm (quantity of 2) • Black O-rings (quantity of 2) • Pipe cleaners (quantity of 25)	 

Troubleshooting

Problem	Corrective Action
A longer downtime of the fluid pressure booster or too high / too low air pressure can prevent the pressure booster from starting properly.	 If the fluid pressure booster does not start properly, use a slim object to press the button located in the middle of the housing (shown at left). The pressure booster should now operate normally. If this problem persists, contact Nordson EFD.

Technical Data

Connection Cable Wire Colors (Output)

Wire Color	Description
Brown	Operating voltage, +24 VDC
White	Ground, 0 V
Blue	NC
Black	NC

NORDSON EFD ONE YEAR LIMITED WARRANTY

Nordson EFD products are warranted for one year from date of purchase to be free from defects in material and workmanship (but not against damage caused by misuse, abrasion, corrosion, negligence, accident, faulty installation or by dispensing material incompatible with equipment) when the equipment is installed and operated in accordance with factory recommendations and instructions. Nordson EFD will repair or replace free of charge any part of the equipment thus found to be defective, on authorized return of the part prepaid to our factory during the warranty period. In no event shall any liability or obligation of Nordson EFD arising from this warranty exceed the purchase price of the equipment. This warranty is valid only when oil-free, clean, dry, filtered air is used.

Nordson EFD makes no warranty of merchantability or fitness for a particular purpose. In no event shall Nordson EFD be liable for incidental or consequential damages.

Nordson EFD

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