PatternPro
Variable Pitch Applicators

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NORDSON BENELUX • MAASTRICHT • THE NETHERLANDS

CE

Order number
P/N = Order number for Nordson articles

Note

- Translation of Original -

Trademarks

http://www.nordson.com/en/global-directory

Table of Contents

PatternPro Variable Pitch Applicators

Safety

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.

WARNING: Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.

WARNING: Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

CAUTION: (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.

Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer's product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility's engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.

User Qualifications

Equipment owners are responsible for ensuring that users:

- receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- are familiar with the equipment owner's safety and accident prevention policies and procedures
- receive, equipment- and task-specific training from another qualified individual

  NOTE: Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- possess industry- and trade-specific skills and a level of experience appropriate to their job function
- are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities

Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to *Safety Labels and Tags* at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.

Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used and that the processing characteristics of the material will not create a hazardous environment. Refer to the Material Safety Data Sheet (MSDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to *Equipment Safety Information* or the material manufacturer's instructions and MSDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new factory-authorized refurbished or replacement parts.
- Read and comply with the manufacturer's instructions and the MSDS supplied with equipment cleaning compounds.

  NOTE: MSDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.

- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable MSDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.

Equipment Safety Information

This equipment safety information is applicable to the following types of Nordson equipment:

- hot melt and cold adhesive application equipment and all related accessories
- pattern controllers, timers, detection and verification systems, and all other optional process control devices

Equipment Shutdown

To safely complete many of the procedures described in this document, the equipment must first be shut down. The level of shut down required varies by the type of equipment in use and the procedure being completed.
If required, shut down instructions are specified at the start of the procedure. The levels of shut down are:

Relieving System Hydraulic Pressure

Completely relieve system hydraulic pressure before breaking any hydraulic connection or seal. Refer to the melter-specific product manual for instructions on relieving system hydraulic pressure.

De-energizing the System

Isolate the system (melter, hoses, applicators, and optional devices) from all power sources before accessing any unprotected high-voltage wiring or connection point.

1. Turn off the equipment and all auxiliary devices connected to the equipment (system).
2. To prevent the equipment from being accidentally energized, lock and tag the disconnect switch(es) or circuit breaker(s) that provide input electrical power to the equipment and optional devices.

   NOTE: Government regulations and industry standards dictate specific requirements for the isolation of hazardous energy sources. Refer to the appropriate regulation or standard.

Disabling the Applicators

All electrical or mechanical devices that provide an activation signal to the applicators, applicator solenoid valve(s), or the melter pump must be disabled before work can be performed on or around a applicator that is connected to a pressurized system.

1. Turn off or disconnect the applicator triggering device (pattern controller, timer, PLC, etc.).
2. Disconnect the input signal wiring to the applicator solenoid valve(s).
3. Reduce the air pressure to the applicator solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the applicator.

General Safety Warnings and Cautions

Table 1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1 as follows:

HM = Hot melt (melters, hoses, applicators, etc.)

PC = Process control

CA = Cold adhesive (dispensing pumps, pressurized container, and applicators)

Table 1 General Safety Warnings and Cautions

Equipment Type	Warning or Caution
HM	**WARNING:** Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material's MSDS. Ensure that the material's processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with MSDS requirements can cause personal injury, including death.
HM	**WARNING:** Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and applicators contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.
HM, CA	**WARNING:** System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.
HM	**WARNING:** Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.

General Safety Warnings and Cautions (contd)

Table 1 General Safety Warnings and Cautions *(contd)*

Equipment Type	Warning or Caution
HM, PC	**WARNING:** Equipment starts automatically! Remote triggering devices are used to control automatic hot melt applicators. Before working on or near an operating applicator, disable the applicator's triggering device and remove the air supply to the applicator's solenoid valve(s). Failure to disable the applicator's triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.
HM, CA, PC	**WARNING:** Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.
CA	**WARNING:** Risk of fire or explosion! Nordson cold adhesive equipment is not rated for use in explosive environments and should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the MSDS for the adhesive to determine its processing characteristics and limitations. The use of incompatible solvent-based adhesives or the improper processing of solvent-based adhesives can result in personal injury, including death.
HM, CA, PC	**WARNING:** Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage to the equipment.

General Safety Warnings and Cautions (contd)

Table 1 General Safety Warnings and Cautions *(contd)*

Equipment Type	Warning or Caution
HM	**CAUTION:** Hot surfaces! Avoid contact with the hot metal surfaces of applicators, hoses, and certain components of the melter. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.
HM	**CAUTION:** Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment's ability to process PUR, contact your Nordson representative for assistance.
HM, CA	**CAUTION:** Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer's instructions and the MSDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.
HM	**CAUTION:** Nordson hot melt equipment is factory tested with Nordson Type R fluid that contains polyester adipate plasticizer. Certain hot melt materials can react with Type R fluid and form a solid gum that can clog the equipment. Before using the equipment, confirm that the hot melt is compatible with Type R fluid.

Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.
- Never point a dispensing handapplicator at yourself or others.
- Suspend dispensing handapplicators by their proper suspension point.

First Aid

If molten hot melt comes in contact with your skin:

1. Do NOT attempt to remove the molten hot melt from your skin.
2. Immediately soak the affected area in clean, cold water until the hot melt has cooled.
3. Do NOT attempt to remove the solidified hot melt from your skin.
4. In case of severe burns, treat for shock.
5. Seek expert medical attention immediately. Give the MSDS for the hot melt to the medical personnel providing treatment.

Safety Labels and Tags

Figure 1 illustrates the location of the product safety labels affixed to the equipment. Table 2 provides an illustration of the hazard identification symbols that appear on each safety label, the meaning of the symbol, or the exact wording of any safety message. Occasionally, the safety labels may be located elsewhere on the applicator.

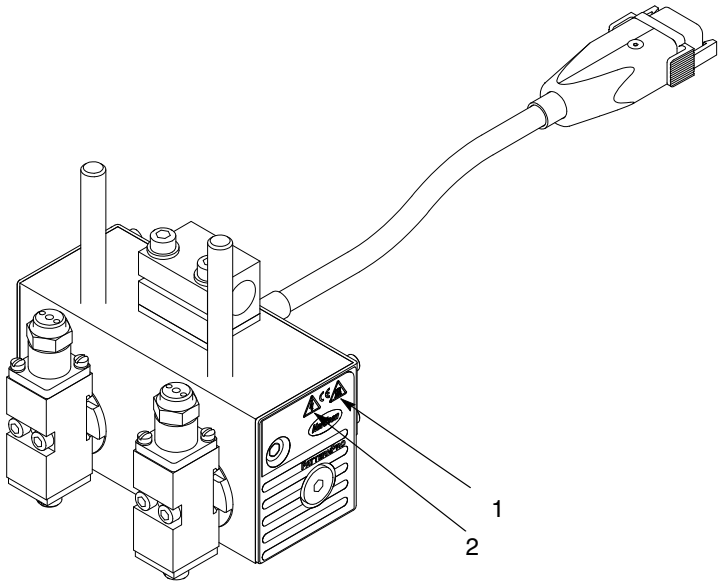


Fig. 1 Safety labels

Table 2 Safety Labels

Item	Part	Description
1.	N/A	 **WARNING:** Hot surface! Before touching the applicator body, allow the applicator to cool, or wear heat-protective gloves. Failure to allow the applicator body to cool or to wear heat-protective gloves may cause personal injury.
2.	N/A	 **WARNING:** Risk of electrical shock. Failure to observe may result in personal injury, death, or equipment damage.

Description

The PatternPro pneumatic applicator has a unique rotating disk design (twist adapter), which enables an applicator module to be pivoted for application of variable pitch patterns.

The applicator is designed to be configured with the following components:

- Applicator modules
- Nozzles
- Solenoid valves
- Cordsets
- Glue connector / Filter

Refer to Figure 3 for *applicator Configuration Options* and Table 3 for *Component Specifications*.

Intended Uses

PatternPro applicators are designed for use

- in industrial applications that require the deposition of a precise application of hot melt adhesive onto a moving substrate
- with an electrically controlled solenoid valve
- with melters, hoses, and pattern controllers designed and manufactured by Nordson Corporation

NOTE: The applicator should only be connected to approved devices. Use only new Nordson replacement parts or approved factory refurbished parts.

Key Components

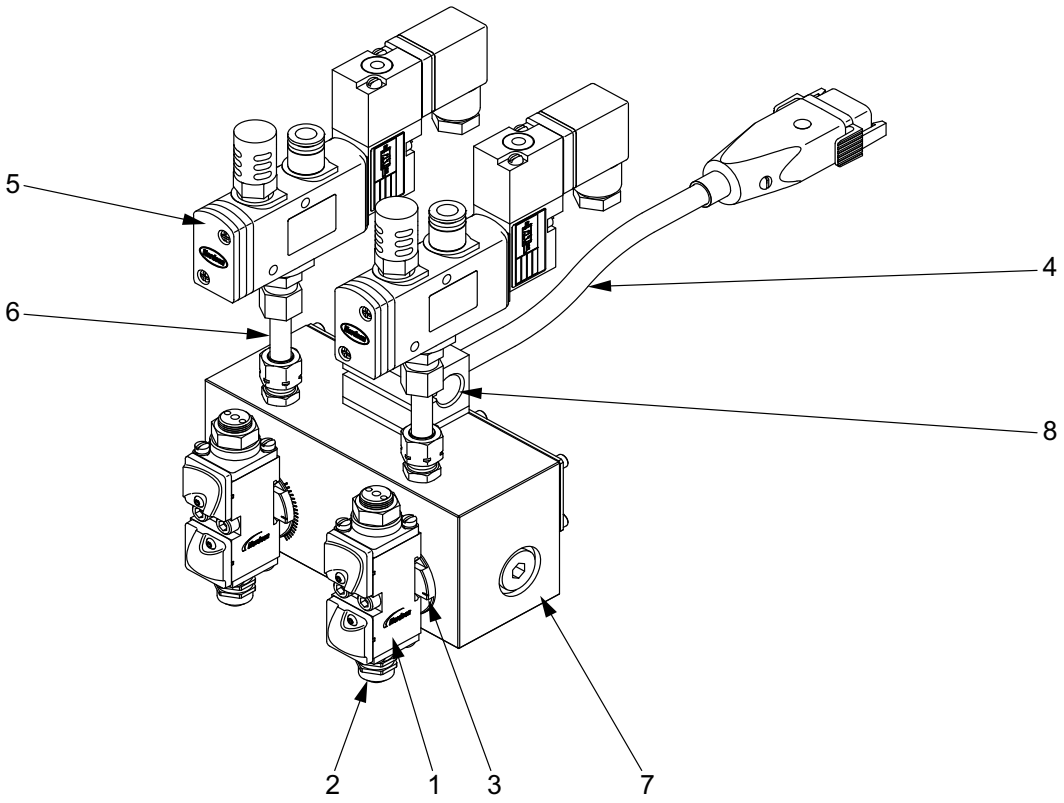


Fig. 2 Key Components of the applicator

1 Applicator Module
2 Nozzle
3 Rotating disk
4 Cordset
5 Solenoid valve
6 Tube to Solenoid valve
7 Applicator body
8 Mounting bracket

Note: Hose connector is located on the back of the applicator.

Applicator Configuration Options

The PatternPro should be configured with the “PatternPro Excel Configurator”.

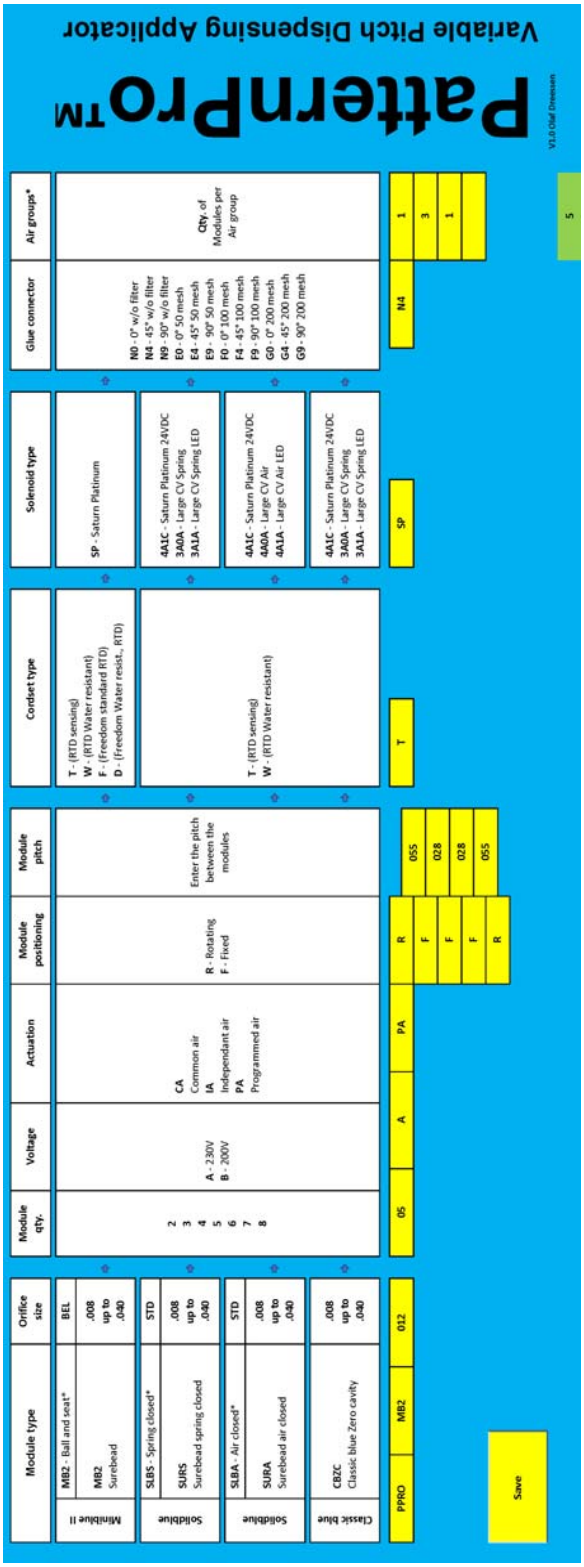


Fig. 3 Component Options for the PatternPro applicator. Refer to Table 3 for *Component Specifications*.

Component Specifications

Module type		Orifice size	Module qty.	Voltage	Actuation	Module positioning	Module pitch
Miniblue II	**MB2** - Ball and seat*	**BEL**	**2** **3** **4** **5** **6** **7** **8**	**A** - 230V **B** - 200V	**CA** Common air **IA** Independant air **PA** Programmed air	**R** - Rotating **F** - Fixed	Enter the pitch between the modules
	MB2 Surebead	**.008 up to .040**					
Solidblue	**SLBS** - Spring closed*	**STD**					
	SURS Surebead spring closed	**.008 up to .040**					
Solidblue	**SLBA** - Air closed*	**STD**					
	SURA Surebead air closed	**.008 up to .040**					
Classic blue	**CBZC** Classic blue Zero cavity	**.008 up to .040**					

Cordset type	Solenoid type	Glue connector	Air groups*
T - (RTD sensing) **W** - (RTD Water resistant) **F** - (Freedom standard RTD) **D** - (Freedom Water resist., RTD)	**SP** - Saturn Platinum	**N0** - 0° w/o filter **N4** - 45° w/o filter **N9** - 90° w/o filter **E0** - 0° 50 mesh **E4** - 45° 50 mesh **E9** - 90° 50 mesh **F0** - 0° 100 mesh **F4** - 45° 100 mesh **F9** - 90° 100 mesh **G0** - 0° 200 mesh **G4** - 45° 200 mesh **G9** - 90° 200 mesh	**Qty.** of Modules per Air group
T - (RTD sensing) **W** - (RTD Water resistant)	**4A1C** - Saturn Platinum 24VDC **3A0A** - Large CV Spring **3A1A** - Large CV Spring LED		
	4A1C - Saturn Platinum 24VDC **4A0A** - Large CV Air **4A1A** - Large CV Air LED		
	4A1C - Saturn Platinum 24VDC **3A0A** - Large CV Spring **3A1A** - Large CV Spring LED		

Table 3 Components Specifications

Installation

Applicators are installed using the following six-step process:

- unpack and inspect
- mount
- connect the solenoid/air supply
- connect the hose
- flush
- install nozzles (refer to *Maintenance*)

Refer to *Parts* at the end of this manual for applicator-specific parts. For nozzle, hose, and solenoid parts refer to the appropriate product manuals, Nordson *Adhesive and Sealants Equipment Guide,* or contact a Nordson representative.

Installation Guidelines

Mounting

- Mount the applicator such that the nozzle will be as close as possible to the substrate. Typically, the minimum distance is two times the diameter of the nozzle orifice.
- Ensure that the mounting location provides sufficient clearance around the rear and side of the applicator to allow for removal of the applicator body cover.
- Mount the applicator on a rigid support to prevent external vibration and applicator rotation.
- Insulate the applicator from the support using the insulation plate provided with the applicator.

Hydraulic and Pneumatic Connections

- Use only one fitting to connect the hose to the hose connector on the applicator.
- Insulate the hose-to-applicator joint. Insulation cuffs may be ordered separately.
- Use only clean, dry, non-lubricated air for consistent applicator operation.
- Ensure that the plant air supply and regulator provide a minimum of 3.4 bar (50 psig) to the applicator solenoid valve.

Unpacking and Inspection

1. Carefully unpack the applicator.
2. Inspect the applicator and check for any damage that may have been caused during shipping. The applicators are shipped fully assembled.

   Applicators ordered with optional features may be shipped with additional components.

Mounting the Applicator

Equipment and production line configuration may dictate a variation in the mounting options described in this section. Regardless of the mounting method used, follow the guidelines provided in *Installation Guidelines*.

This section describes the following applicator-mounting options:

- mounting an applicator on a new or existing system
- replacing an applicator on an existing system

Mount an Applicator on a New or Existing System

See Figure 4.

1. Slide the mounting bracket onto a 12-mm, 13-mm, or $^1/_2$-in. mounting bar, or disassemble the mounting bracket and reassemble them (with the applicator and insulation plate) onto the mounting bar.

   Ensure that the insulation plate is placed between the applicator body and the mounting bracket.

2. Securely tighten the Allen head screws to 3.4 N•m (30 in.-lb).
3. Go to *Connecting the Solenoid Valve*.

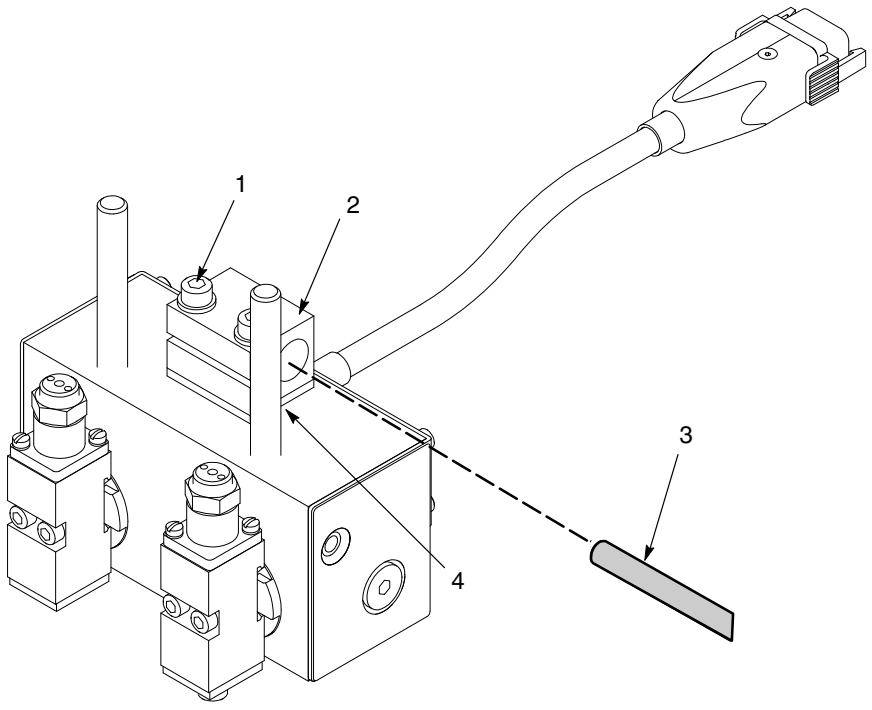


Fig. 4 Mounting an applicator using the Mounting Bar

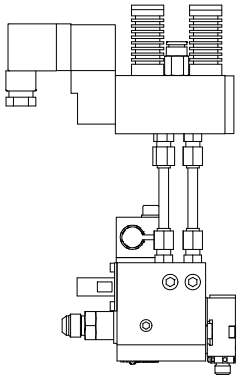
1 Allen head screws
2 Mounting bracket
3 Mounting bar (supply by customer)
4 Insulation plate

Replace an Applicator on an Existing System

NOTE: If the applicators preassembled with performance-matched solenoid valve require replacement, the entire applicator assembly (both the applicator and solenoid valve) should be replaced as a single unit.

1. Relieve system hydraulic pressure and disable the applicator to be replaced. Refer to *Safety*.
2. Disconnect the hose from the applicator both electrically and hydraulically.
3. Separate the existing applicator from its mounting. If a mounting bracket will not be reused, remove it from the mounting bar.
4. Disconnect the pipe nipple and solenoid valve from the old applicator and install them on the new applicator.
5. Mount the new applicator and insulation plate onto the existing mounting bracket (or rod) or disassemble a new applicator's mounting bracket and then reassemble the clamp (with the applicator and insulation plate) onto the existing mounting bar. Tighten the screws securely.
6. Go to *Connecting the Solenoid Valve*.

Connecting the Solenoid Valve



MiniBlue ll applicator presassembled with a solenoid valve
(P/N 771129)

Follow the instructions below to connect air supply and triggering device.

Connect Air Supply

Connect a clean, dry, non-lubricated air supply to the air inlet on the solenoid valves. The pipe nipple should have a 6-mm ($^1/_4$-in.) internal diameter.

NOTE: A pipe nipple with an internal diameter smaller than 6-mm ($^1/_4$-in.) will negatively impact the applicators's performance.

Connect Triggering Device

Be sure to refer to the correct triggering device connection procedure for the solenoid valve on your applicator.

For solenoids that do not have an M8 connection see the instruction below.

See Figure 5.

1. Remove the solenoid valve terminal block. Save the gasket that is positioned between the terminal block and the valve.

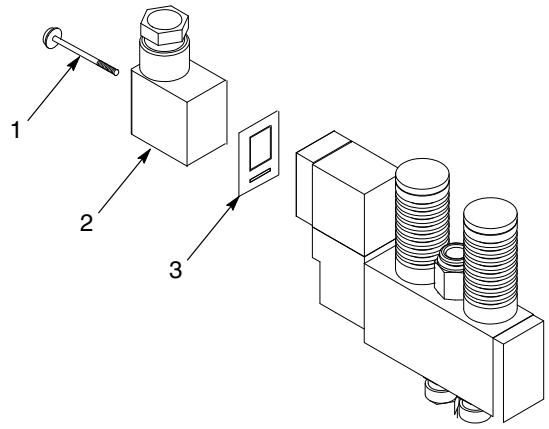


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Fig. 5 Removing the Solenoid Valve Terminal Block

1 Terminal block screw
2 Terminal block
3 Gasket

See Figure 6.

CAUTION: Do not attempt to pry the terminal block out of the housing. Doing so can damage the electrical connection pins.

2. Gently press against the edge of one of the terminal block retaining prongs to remove the terminal block from the housing.

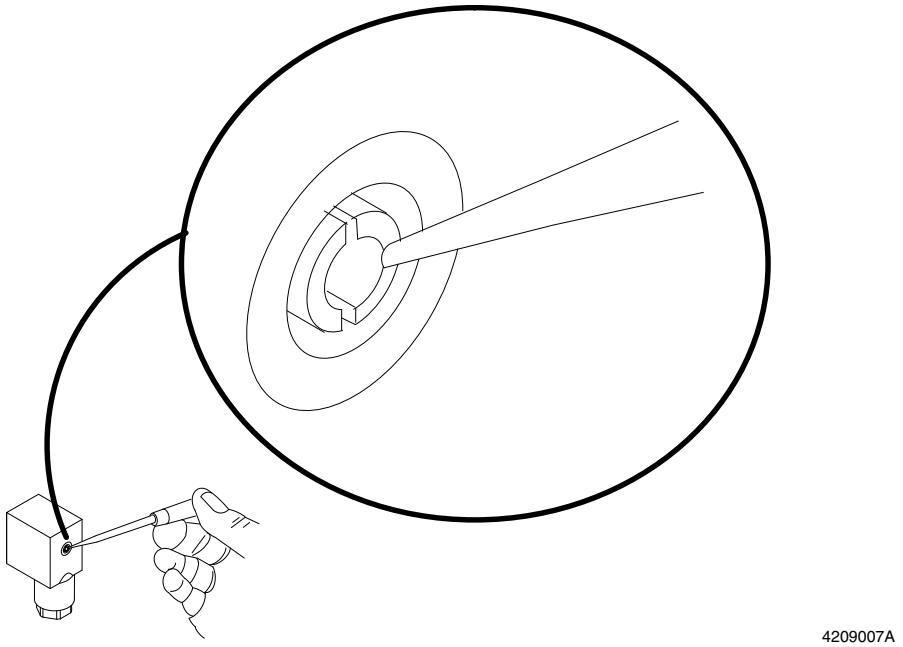
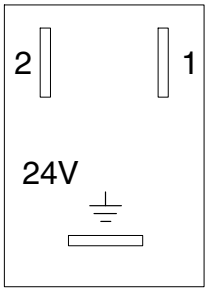


Fig. 6 Removing the Terminal Block from the Housing

NOTE: Solenoid valves must be rated for the output voltage of the triggering device. Make sure the ratings match.



Solenoid valve terminal block positions

3. Thread a 0.75-0.34 mm^2 (18-22 AWG) three-conductor cable through the housing strain relief and then connect the positive and negative leads to terminals 1 and 2 (polarity does not matter) and connect the ground wire to the ground terminal. The terminal positions are marked on the bottom of the terminal block.
4. Snap the terminal block back into its housing.
5. Align the gasket on the terminal block housing, plug the terminal block into the solenoid valve, and secure it with the screw removed earlier.
6. Connect the three-conductor cable to the triggering device. Refer to the instructions that came with the triggering device.
7. Go to *Connecting the Hose.*

Connecting the Hose

Refer to the user's guide shipped with the hose for detailed hose installation guidelines.

1. Do one of the following:
   - If an in-line filter is to be used, remove the hose connector preinstalled on the applicator and then install the in-line filter. Refer to the instruction sheet provided with the in-line filter.
   - If no in-line filter is used, check the tightness of the preinstalled hose connector.

   See Figure 7.
2. Connect the hose swivel fitting to the applicator hose connector. Use two wrenches to tighten the hose fitting.
3. Connect the applicator cordset to the hose.
4. Connect the hose to the melter. Refer to the hose user's guide and/or the melter product manual as needed.
5. Go to *Flushing the applicator*.

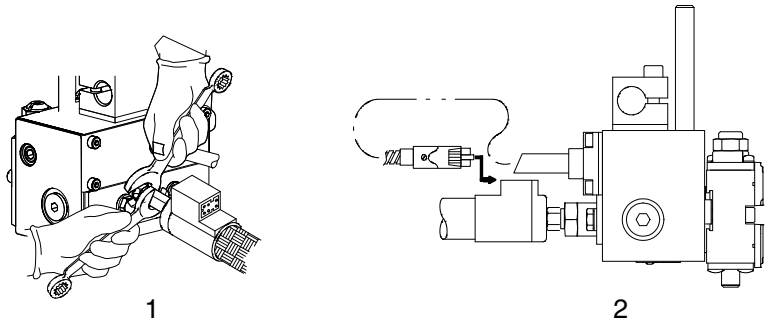


Fig. 7 Connecting the Hose to the applicator

1 Tightening the hose-to-applicator fitting

2 Plugging in the cordset

Flushing the Applicator

Before operating the system, the applicator must be flushed to remove residue left over from factory-testing. Install the nozzles after this procedure. For information on installing nozzles, refer to *Maintenance*.

NOTE: This equipment is factory tested with Nordson Type R fluid containing polyester adipate plasticizer. Certain adhesives may react with the Type R fluid residue to form a solid gum that can be difficult to remove. Consult with the adhesive supplier to determine the compatibility of the adhesive with Type R fluid.

1. Disconnect or turn off the solenoid valve triggering device.
2. Turn on the melter and allow it to reach operating temperature. Refer to the melter manual for the startup procedure.
3. Place a drain pan under all applicators.
4. Flush according to the type of applicator module being used:

For standard Applicators

a. Dispense hot melt material from the applicator by manually triggering the solenoid valve(s).

b. Stop dispensing when the flow of hot melt material is clear and free of residue.

For all Applicators except zero and reduced cavity applicators

a. Ensure that all nozzles are removed.

b. Dispense hot melt material from the applicator by manually triggering the solenoid valve(s).

c. Stop dispensing when the flow of hot melt material is clear and free of residue.

For zero and reduced cavity Applicators

a. Relieve system hydraulic pressure and disable the applicator. Refer to *Safety*.

b. Remove the applicator module by removing the two mounting screws from the front of the module.

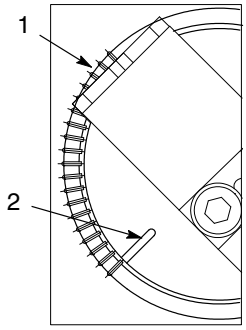
c. Re-pressurize the system; then place the applicator into operation.

d. Dispense hot melt material from the port(s) in the applicator body, increasing the pump output in small increments.

e. Stop dispensing when the hot melt material is clear and free of residue.

5. Check for leaks between the applicator, hose, and melter.
6. Do one of the following:
   - Continue to the next procedure, *Pivoting the applicator Modules*.
   - Install the nozzles, refer to *Maintenance*.

Pivoting the Applicator Modules



1 Pivot marks
2 Reference marks

Fig. 8 *Marks on the MiniBlue II applicators*

Before operating the system, pivot the applicator module to the required position for application of variable pitch patterns.

NOTE: The applicators have typically pivot marks on the rotating disk that are spaced in increments of 5°. The reference marks are also provided on the rotating disk.

1. Relieve the system hydraulic pressure. Refer to *Safety*.

CAUTION: Do not pivot the the applicator modules if the applicator is cold. Pivoting the applicator modules when the applicator is not heated will damage the O-rings.

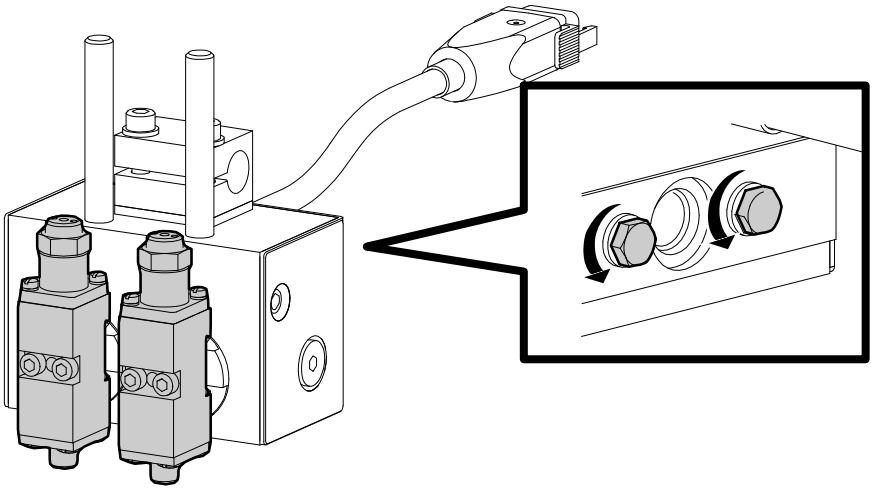


Fig. 9

WARNING: System pressurized! Relieve system pressure before adjusting the applicator. Failure to relieve system pressure can result in personal injury.

2. Loosen the two hexagon head screws located on the back of the applicator body.
3. Pivot the applicator modules to the desired position.
4. Tighten the hexagon head screws.

Operation

The applicator is now ready for operation.

Starting the System

Follow this procedure to start the system.

CAUTION: Risk of equipment damage. Nordson Corporation recommends turning off the applicator air supply during system startup to prevent unexpected pressure buildup in the module and applicator body caused by the expansion of the cold adhesive as it melts.

1. Make sure the applicator air supply is turned off.
2. Turn on the melter and allow it to reach operating temperature. Refer to your melter manual for details on the startup procedure.
3. Turn on the applicator air supply.
4. Turn on the solenoid valve power supply, enable any triggering devices, and start the production line.

Shutting the System Down

Follow this procedure to shut down the system.

1. Stop the production line.

WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury.

2. Turn off the pump and relieve hydraulic pressure. Refer to your melter manual.
3. Turn off the melter. Refer to your melter manual for details on the system shut down procedure.

WARNING: Hot! Risk of burns. Wear heat-protective clothing, safety goggles, and heat-protective gloves.

4. Place a drain pan under all applicators.
5. Manually trigger the applicators until they are drained of hot melt material.
6. Turn off the solenoid valve power supply.
7. Turn off the applicator air supply.
8. Manually trigger the applicator solenoid valves to relieve applicator air pressure.

Maintenance

The following table provides the recommended schedule for applicator maintenance. Detailed procedures for weekly and semi-annual maintenance tasks are provided.

Frequency	Task	Notes
Daily	Remove hot melt material and char from the exterior of the applicator assembly.	
Weekly	Clean the applicator nozzle(s).	A, B
Semi-annually	Inspect the applicator wiring.	

NOTE A: Use a nozzle cleaning kit, P/N 901915.

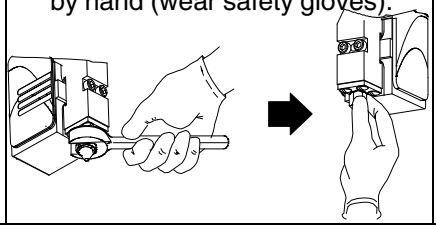
B: Process-specific nozzle performance history may indicate the need for more or less frequent nozzle cleaning.

Cleaning Nozzles

Applicator nozzles may become clogged when char, a by-product of overheating the hot melt material, becomes lodged in the nozzle. The use of an in-line or integral filter will significantly reduce nozzle clogging.

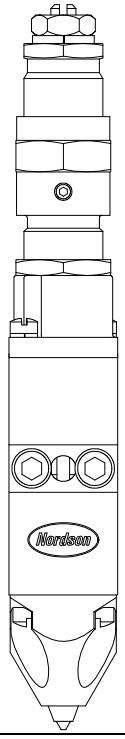
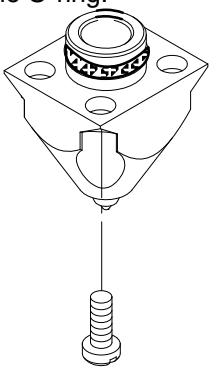
1. Heat the applicator to operating temperature.
2. Disable the applicator. Refer to *Safety*.
3. Remove nozzles as shown in Table 4.

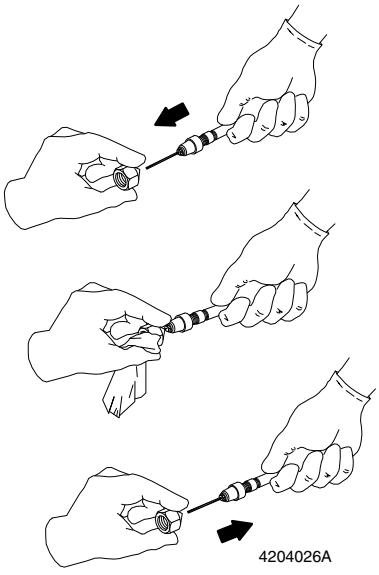
Table 4 Nozzle Removal and Installation Procedures

Nozzle Type	Removal Procedure	Installation Procedure
Ball and seat (for use with Saturn nozzles). SureBead 	Use a wrench to loosen the nozzle, then remove the nozzle by hand (wear safety gloves). 	Thread the nozzle onto the module threads by hand; then use a torque wrench to tighten the nozzle to 4.5 N•m (40 in.-lb).

Cleaning Nozzles (contd)

Table 4 Nozzle Removal and Installation Procedures *(contd)*

Nozzle Type	Removal Procedure	Installation Procedure
Zero cavity module nozzle 	1. Scribe or otherwise place a distinctive mark on the side of the nozzle. Use the same mark on the applicator body to identify the correct replacement location for the nozzle. 2. Remove the nozzle by removing the four screws that secure it to the module. 3. Remove and discard the nozzle O-ring. 	1. Lubricate with heat-resisting lubricant and install a new nozzle O-ring. 2. Install the nozzle on the module, verifying that the needle guide is still inside the nozzle and that the nozzle is properly aligned with the needle tip and with the scribe made earlier. 3. Secure the nozzle with the screws removed previously.



Cleaning a nozzle with a probe (typical)

WARNING: Risk of fire. Do not heat Nordson Type R fluid above 245 °C (475 °F). Use only an industrial grade, regulated, electrical heating device that is designed to heat industrial fluids. Personal injury or property damage can result if Type R cleaning fluid is heated with an open flame or in an unregulated heating device.

4. Soak the nozzles in Nordson Type R cleaning fluid that has been heated above the melting point of the hot melt material, to a maximum of 177 °C (350 °F).
5. Remove the nozzles from the cleaning fluid.

CAUTION: Use the correct size precision pin probe to clean Nordson nozzles. The use of non-precision or incorrectly sized probes may damage the nozzle. The Nordson nozzle cleaning kit (P/N 901915) contains a variety of probe sizes.

6. At the outlet of each nozzle, insert a correctly sized cleaning probe.
7. With a clean cloth, firmly grip the cleaning probe, then pull the probe out of the nozzle, wiping the probe clean.
8. Reinstall the nozzles. Refer to Table 4.

Inspect the Applicator Wiring

For details on inspecting the applicator wiring, refer to *Replacing the RTD or Heater* in *Repair*.

Troubleshooting

WARNING: Risk of personal injury. This equipment contains pressurized hot melt material and high voltage circuits. Read the *Safety* information provided in this document before completing any troubleshooting procedure. Failure to observe safety messages and hazard-avoidance procedures can result in personal injury, including death.

Troubleshooting Table

The following table lists the applicator problems that are most likely to occur, the possible causes of each problem, and steps for corrective action. Where applicable, cross-references are made to expanded diagnostic procedures (DPs) provided later in this section or to other sections of this manual.

Table 5 Troubleshooting Table

Problem	Possible Cause	Corrective Action
1. No adhesive flow from a single applicator module or from any module on a multi-module applicator	Adhesive level low	Add adhesive.
	No input power	Connect power to the melter and auxiliary devices. Ensure that all disconnect switches or circuit breakers are on.
	Melter, hose, or applicator temperature setting too low	Adjust the setting. Refer to the melter manual.
	System not at operating temperature	Verify that the READY light is on and the hot melt material is molten.
	Insufficient air pressure to melter piston pump (piston pump melters)	Flush the melter filter. Refer to the melter manual.
	Melter motor not operating (gear pump melters)	Check the motor operation. Refer to the melter manual.
	No air supply to solenoid valve	Check the plant air supply pressure.
	Solenoid valve failed	Check the solenoid valve and replace if necessary. Refer to *DP1*.
	Hose clogged	Replace the hose.
	Nozzle clogged	Check the nozzle. Refer to *DP2*.

Troubleshooting Table (contd)

Table 5 Troublehooting Table *(contd)*

Problem	Possible Cause	Corrective Action
1. No adhesive flow from a single- module applicator or from any module of a multi-module applicator *(contd.)*	Adhesive in air section of module	Replace the O-rings. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.
	Module failed	Replace the module. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.
	Dirty or faulty triggering device	Clean or replace the triggering device. Refer to *DP1*.
	Faulty encoder	Test the encoder and replace if defective.
2. No adhesive flow from some modules in a multi-module applicator	Nozzle clogged	Check the nozzle. Refer to *DP2*.
	Module failed	Replace the module. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.
3. Uncontrolled adhesive flow from module	Hydraulic pressure too high	Decrease the system hydraulic pressure.
	Hydraulic pressure too high and applicator air pressure lost (MiniBlue II applicator only)	Stop the melter pump and restore the air pressure to the applicator.
	Module failed open	Replace the module. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.
	Solenoid valve ported to applicator body backwards or failed open	Correct the solenoid valve porting or replace the solenoid valve. Refer to *Connecting the Solenoid Valve*.
4. Adhesive leaking out of the disk cavity	Damaged O-rings	Replace the O-ring. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.

Troubleshooting Table (contd)

Table 5 Troublehooting Table *(contd)*

Problem	Possible Cause	Corrective Action
5. Modules not triggering at the same time on multi-module applicator	Applicator module adjustment screw not properly set (all applicators except MiniBluell)	Contact Nordson technical support.
	Module failed	Replace the O-ring. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.
	Insufficient applicator air pressure	Increase the applicator air pressure.
6. Applicator fails to heat or underheats	No power	Check that the melter is on. Refer to the melter manual.
	Applicator temperature setting too low	Adjust the temperature setting. Refer to the melter manual.
	Applicator heater failed (open or short)	Check for an open heater circuit. Refer to *DP4*.
	Applicator RTD failed (open or short)	Check the RTD resistance. Refer to *DP4*.
7. Applicator overheats	Melter, hose, or applicator temperature setting too high	Adjust the setting. Refer to the melter manual.
	Applicator RTD shorted (melter should shut down)	Check the RTD resistance. Refer to *DP4*.
	Short in heater control circuit	Troubleshoot the melter. Refer to the melter manual.

Diagnostic Procedures (DPs)

The following diagnostic procedures (DPs) are referenced in the *Troubleshooting Table*.

DP1. Check a Solenoid Valve

1. Place the system into operation.
2. Trigger the applicator using the timer or pattern controller:
   - Hot melt material flows—normal indication. Return to the *Troubleshooting Table*.
   - Hot melt material does not flow—go to step 3.
3. Manually trigger the applicator at the solenoid valve:
   - Hot melt material flows—normal indication. Return to the *Troubleshooting Table*.
   - Hot melt material does not flow—go to step 4.
4. Check the solenoid valve coil for continuity:
   - Continuity okay—normal indication. Return to the *Troubleshooting Table*.
   - No continuity—failed solenoid valve. Replace the solenoid valve. Refer to *Connecting the Solenoid Valve*.

     NOTE: Verify that the solenoid valve being used has a rated service temperature above 85 °C (185 °F).

DP2. Check for a Clogged Nozzle or Module

1. Disable the applicator. Refer to *Safety*.
2. Remove the nozzle. Refer to *Cleaning Nozzles* in *Maintenance* for the nozzle-removal procedure.
3. Place the applicator back into operation.
4. Trigger the applicator:
   - Hot melt material flows—normal indication. Clean the nozzle. Refer to *Cleaning the Nozzles* in *Maintenance*.
   - Hot melt material does not flow—the module is clogged. Replace the module. Refer to *Replacing the Rotating Disk and applicator Module* in *Repair*.

DP3. Check a Heater

1. Disable the applicator. Refer to *Safety*.
2. Unplug the applicator cordset from the hose.
3. See Figure 10. Test for continuity across the heater circuit (pins 1 and 2):
   - Continuity okay—normal indication. Return to the *Troubleshooting Table.*
   - No continuity—the heater is defective. Replace the heater. Refer to *Replacing a RTD or Heater* in *Repair*.

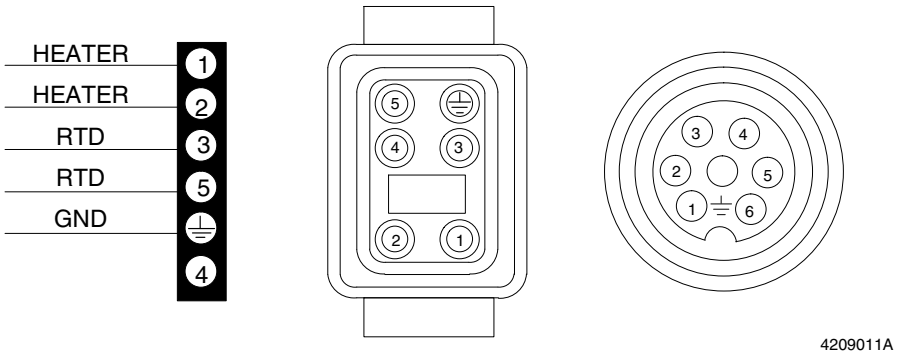


Fig. 10 Applicator Cordset Pins

DP4. Check an RTD

1. Disable the applicator. Refer to *Safety*.
2. Unplug the applicator cordset from the hose.
3. Allow the applicator to reach room temperature or use a pyrometer to determine the temperature of the applicator.

See Figure 10.

4. When the applicator temperature is known, measure the resistance across the RTD circuit (pins 3 and 5).
5. See Figure 11 to determine the expected resistance of RTD at the known temperature. Compare the expected and measured resistance values:
   - Measured resistance is within the expected range—normal indication. Return to the *Troubleshooting Table*.
   - Measured resistance is not within the expected range—the RTD is defective. Replace the RTD. Refer to *Replacing a RTD or Heater in Repair*.

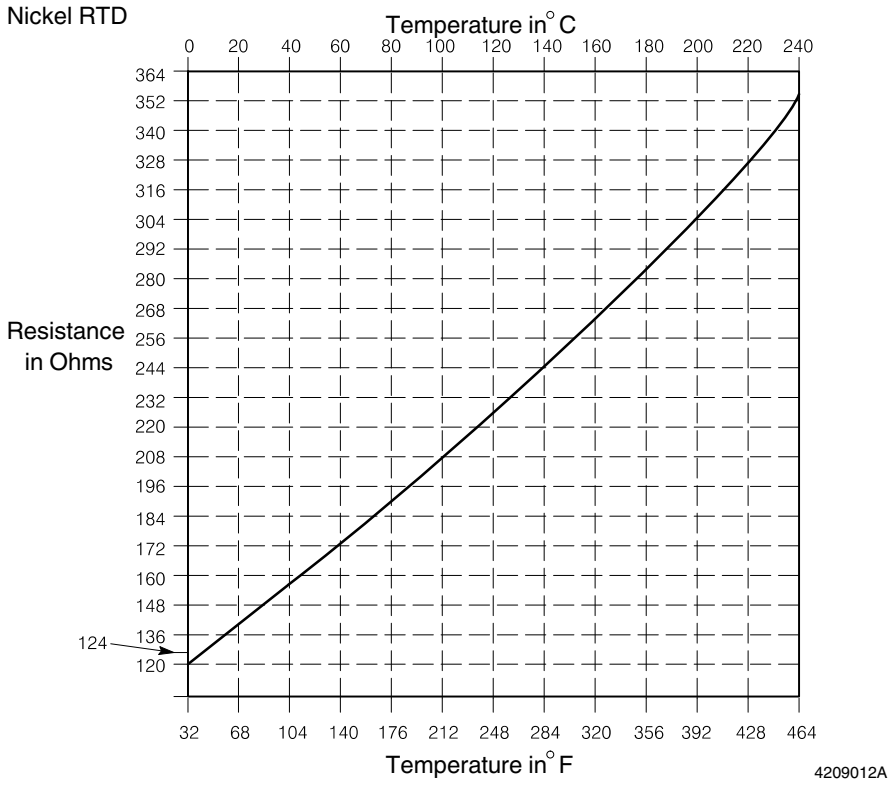


Fig. 11 RTD Resistance vs. Temperature

Repair

Refer to these repair procedures as needed. For repair procedures not included in this section, refer to the instructions supplied with the replacement part.

Replacing a RTD or Heater

Resistance temperature detectors (RTD) are hardwired through the applicator cordset. If an RTD fails, the entire applicator cordset should be replaced. Heaters are located inside the applicator body and can be replaced individually without replacing the entire cordset.

The following procedure describes the replacement of an RTD and heater.

1. De-energize the system and disable the applicator. Refer to *Safety*.
2. Unplug the applicator cordset from the hose.
3. (Optional) Relieve system hydraulic pressure. Refer to *Safety*.
4. (Optional) Using two wrenches, disconnect the hose from the applicator.

   NOTE: Steps 3 and 4 are not necessary if the applicator is easily accessible and can be serviced without the need to disconnect the hose.

See Figure 12.

5. Remove the applicator body cover, by loosening and removing the Allen head screws.

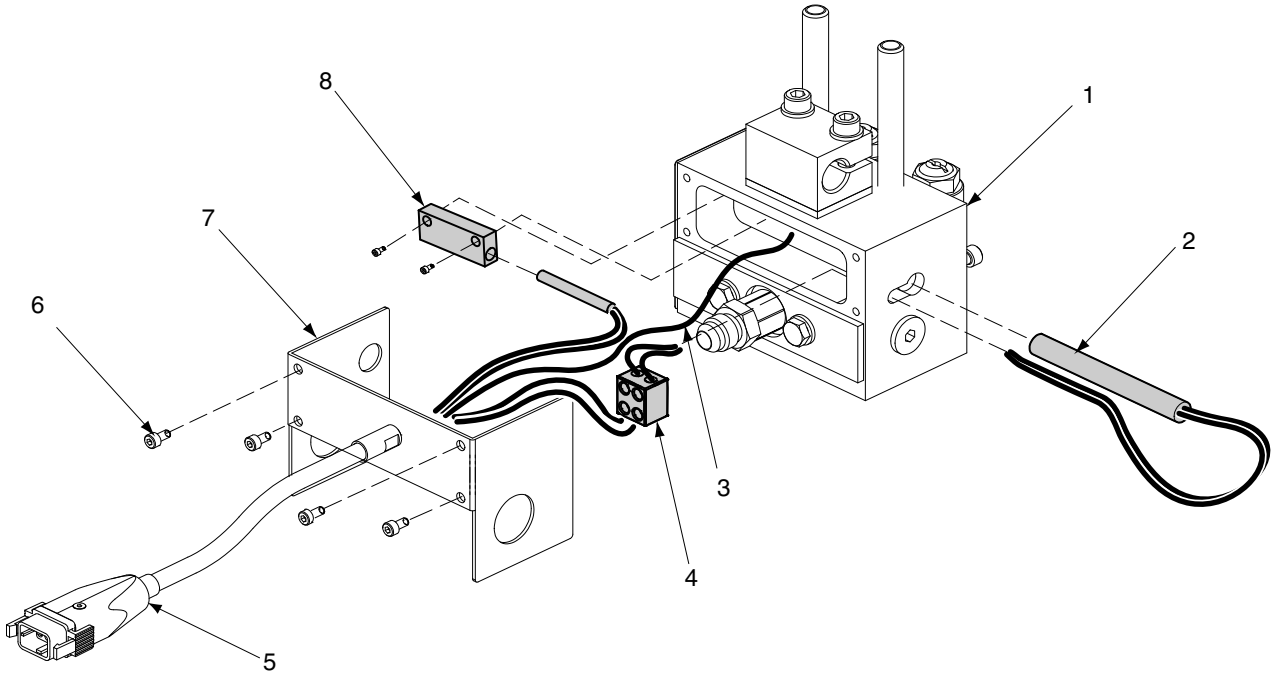


Fig. 12 Replacing the RTD or Heater

1 Applicator body
2 Heater
3 Ground lead
4 Terminal block
5 Cordset
6 Allen head screws
7 Applicator body cover
8 RTD block

6. Disconnect the cordset leads from the terminal block. If the heater is being replaced, disconnect the heater leads from terminal block.
7. Remove the RTD and heater:

Replacing a RTD or Heater *(contd)*

To replace the RTD

a. Disconnect the ground lead from the applicator body and remove the cordset.

b. Install a new cordset and insert the RTD in the applicator body by tightening the screws.

c. Reconnect the ground lead to the applicator body.

To replace the heater

a. If necessary, trim the leads of the new heater to match the leads of the old heater.

b. Insert the heater in the applicator body.

c. Insert each heater lead into the terminal block and tighten the terminal block screws.

d. Insert the heater leads from the cordset into the terminal block and tighten the terminal block screws.

8. Check the internal applicator wiring for signs of damage and the terminal block connections for tightness.
9. Reinstall the applicator body cover, by reinstalling and tightening the four Allen head screws.
10. If the hose was removed earlier, use two wrenches to connect the hose to the applicator.
11. Plug the applicator cordset into the hose.
12. Restore the system to normal operation.

Replacing the Rotating Disk and Applicator Module

WARNING: System or material pressurized. Relieve pressure. Failure to observe this warning may result in serious injury.

1. De-energize the system and relieve system pressure. Refer to *Safety*.
2. Place a drain pan under the nozzles and trigger the applicator modules to relieve any system pressure which may have accumulated.
3. If applicable, remove the nozzle from the applicator module.

See Figure 13.

4. Loosen the two hexagon head screws located on the back of the applicator body to remove rotating disk with O-rings, and applicator module

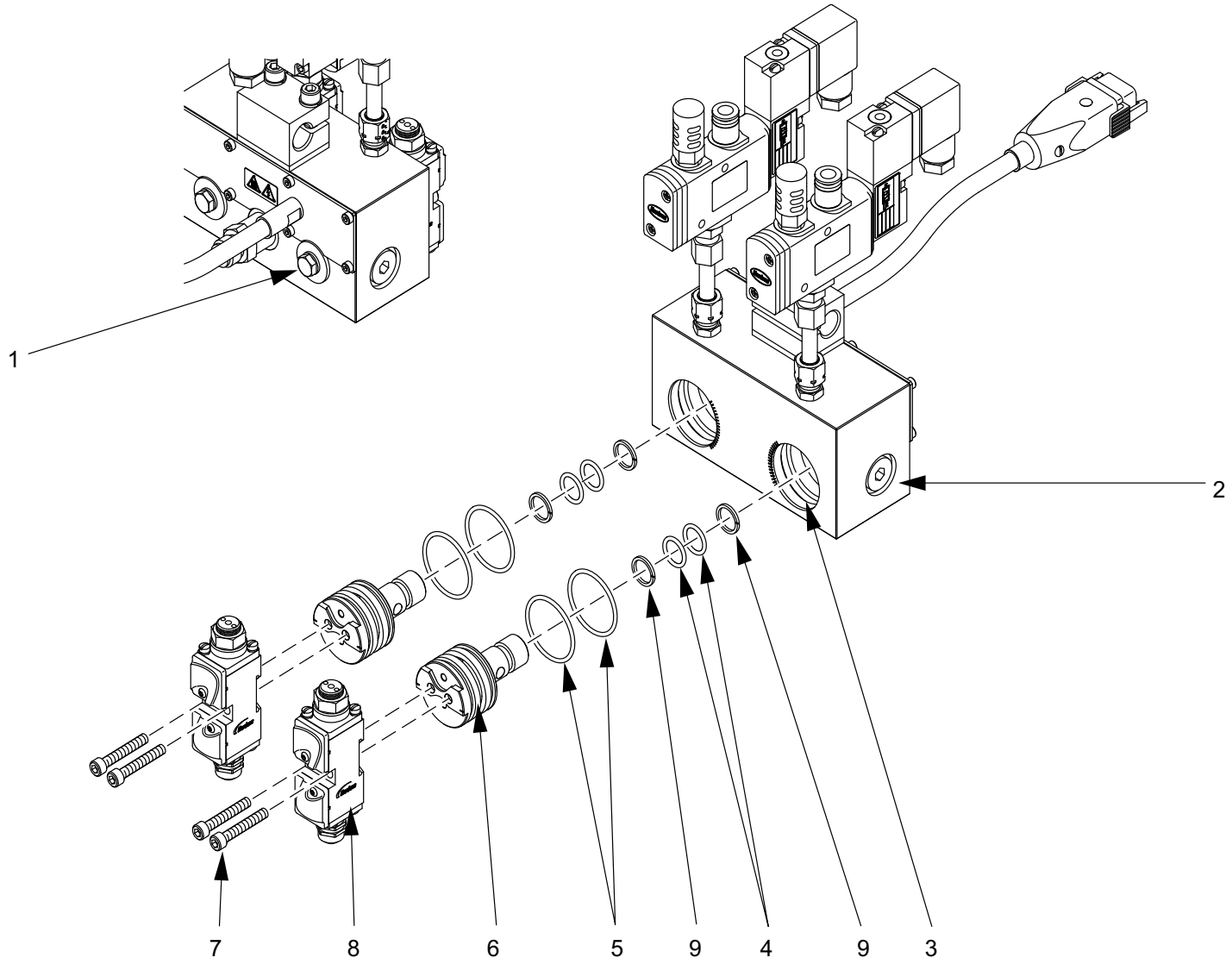


Fig. 13 Replacing the Rotating Disk and applicator Modules

1 Hexagon head screws
2 Applicator body
3 Disk cavity
4 O-rings
5 O-rings
6 Rotating disks
7 Mounting screws
8 Applicator modules
9 Back up rings

Replacing the Rotating Disk and Applicator Module (contd)

CAUTION: Specific to MiniBlue II, and ClassicBlue applicators.
Do not allow hot melt material to enter the module air passages. Adhesive in the air passages will obstruct the flow of air and damage the module. If hot melt material enters the air passages, temporarily place the applicator into operation, shield the operator, and then trigger the applicator to expel the hot melt from the air passages.

5. Carefully remove any residual hot melt material from the module, rotating disk, and the disk cavities.
6. Install the new O-rings. Lubricate the O-rings and rotating disk with heat-resisting lubricant. Check the position of the back up rings(1.) relative to the o-rings (2) carefully.

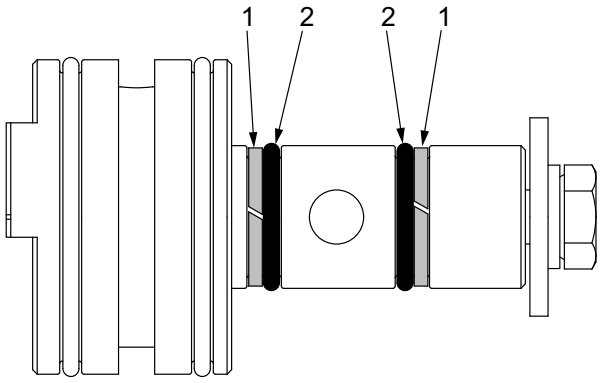


Fig. 14 Position of O-and back up rings.

7. Apply anti-seize compound to the module mounting screws, then install the module on the applicator body.
8. Reattach the mounting screws. Tighten to 3.4 N•m (30 in.-lb).
9. Tighten the hexagon head screws.
10. If applicable, install the old nozzle or a new replacement nozzle. Tighten the nozzle to 4.5 N•m (40 in.-lb).
11. If the hose was removed earlier, use two wrenches to connect the hose to the applicator.
12. Plug the applicator cordset into the hose.
13. Restore the system to normal operation.

Parts

Use this recommended parts list to order the required parts. Call the Nordson Customer Service Center or your local Nordson representative to order the required parts.

Spare Parts

To order specific applicator, nozzle, solenoid, and hose parts, refer to the appropriate product manuals for the recommended spare parts.

PatternPro Applicator Parts

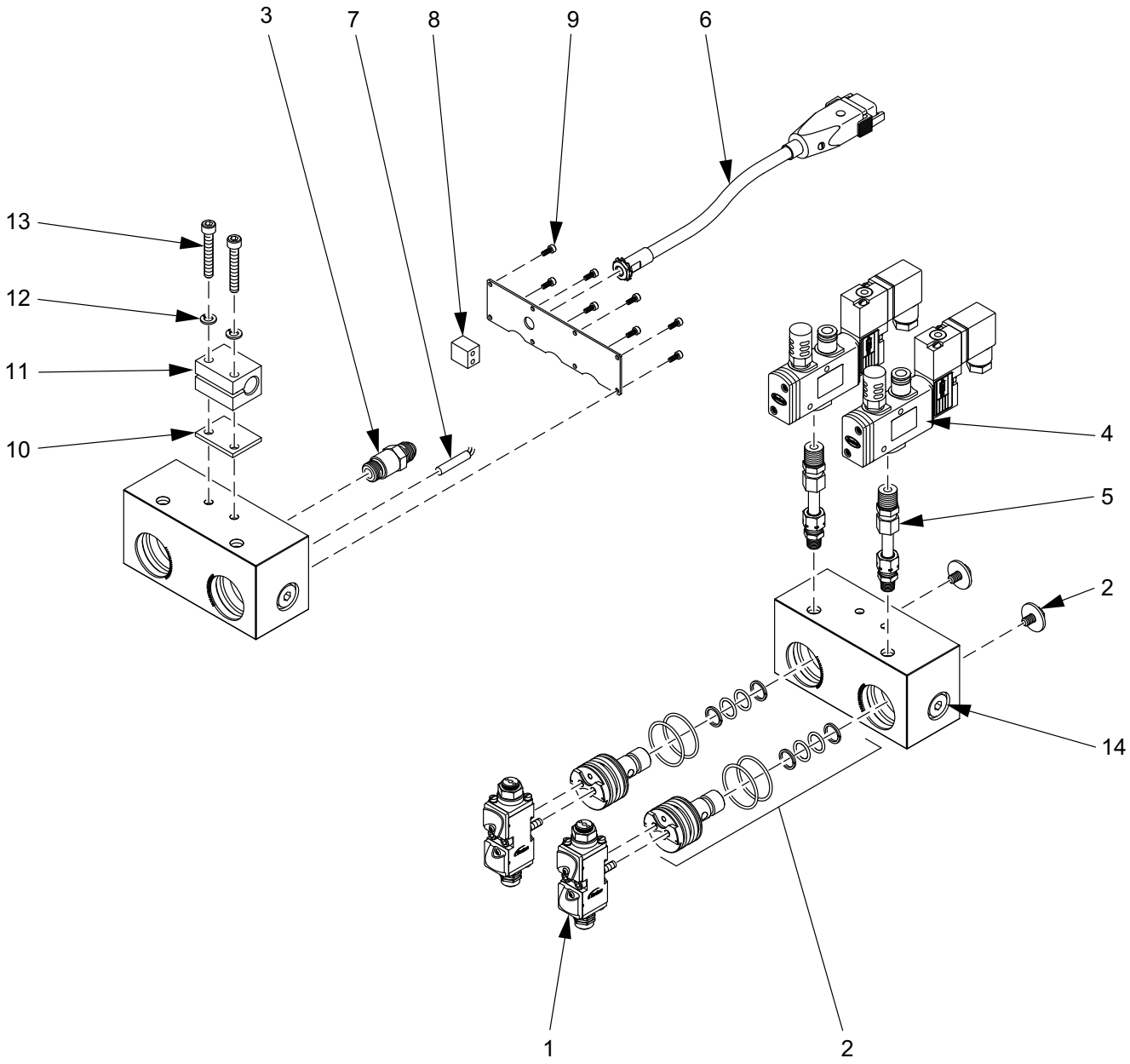


Fig. 15 Key Parts of the applicator Configuration

Reference BOM

Item	Part	Description	Quantity	Note
-	-	PatternPro applicator	-	Partnumber listed on applicator
1	*	Module	*	Refer to: Modules
2	*	Twist adapter	*	Refer to: Twist adapters
3	*	Glue connector	*	Refer to: Glue Connectors
4	*	Solenoid	*	Refer to: Solenoids
5	*	Tube (and Fitting) kit	*	Refer to: Tube (and Fitting) kit
6	*	Cordset	*	Refer to: Cordsets
7	*	Heater	*	Partnumber listed on heater
8	939586	Connector	*	
9	311031	Screw, Allenhead, M4x8, DIN912	*	
10	280084	Insulation plate	*	
11	280083	Mounting bracket	*	
12	377487	Washer, spring, 6mm, DIN128	*	
13	313524	Screw, Allenhead, M6x40, DIN912	*	
14	973574	Plug, o-ring, 9/16-18	*	
NS	973402	Plug, pipe socket, 1/8	*	

**: depending on the configuration of the applicators*

NS= not shown

Modules

MiniBlue II modules

Part	Description	Note
1095703	Kit, repl, Module, MiniBlue II, BAS	Saturn nozzle
1121479	Kit, repl, Module, MiniBlue II, SUR, 008	SureBead nozzle
1121480	Kit, repl, Module, MiniBlue II, SUR, 012	SureBead nozzle
1121481	Kit, repl, Module, MiniBlue II, SUR, 016	SureBead nozzle
1121482	Kit, repl, Module, MiniBlue II, SUR, 020	SureBead nozzle
1121483	Kit, repl, Module, MiniBlue II, SUR, 032	SureBead nozzle
1121484	Kit, repl, Module, MiniBlue II, SUR, 040	SureBead nozzle

Solidblue S modules

Part	Description	Note
1052925	Kit, Module, SolidBlue S	Saturn nozzle
1052928	Kit, Module, SureBead S, 008, Purple	SureBead nozzle
1052929	Kit, Module, SureBead S, 012, Green	SureBead nozzle
1052931	Kit, Module, SureBead S, 016, Orange	SureBead nozzle
1052932	Kit, Module, SureBead S, 020, Beige	SureBead nozzle
1056127	Kit, Module, SureBead S, 032, Gold	SureBead nozzle
1056128	Kit, Module, SureBead S, 040, Turquoise	SureBead nozzle

SolidBlue A modules

Part	Description	Note
1052927	Kit, Module, SolidBlue A	Saturn nozzle
1052934	Kit, Module, SureBead A, 008, Purple	SureBead nozzle
1052935	Kit, Module, SureBead A, 012, Green	SureBead nozzle
1052936	Kit, Module, SureBead A, 016, Orange	SureBead nozzle
1052937	Kit, Module, SureBead A, 020, Beige	SureBead nozzle
1056129	Kit, Module, SureBead A, 032, Gold	SureBead nozzle
1056130	Kit, Module, SureBead A, 040, Turquoise	SureBead nozzle

ClassicBlue zero cavity modules

Part	Description	Note
1054375	Kit, Module, ClassicBlue ZC, 008	Zero cavity nozzle
1051741	Kit, Module, ClassicBlue ZC, 012	Zero cavity nozzle
1051742	Kit, Module, ClassicBlue ZC, 016	Zero cavity nozzle
1051743	Kit, Module, ClassicBlue ZC, 020	Zero cavity nozzle
1051744	Kit, Module, ClassicBlue ZC, 032	Zero cavity nozzle
1051745	Kit, Module, ClassicBlue ZC, 040	Zero cavity nozzle

Twist Adapters

Miniblue II twist adapter

Part	Description	Note
735702	Kit, Twistadapter, PPRO, MiniBlue	

SolidBlue S twist adapter

Part	Description	Note
735700	Kit, Twistadapter, PPRO, SLBS	

SolidBlue A twist adapter

Part	Description	Note
735701*	Kit, Twistadapter, PPRO, SLBA	ø41.22mm
735704	Kit, Twistadapter, PPRO, SLBA, Small	ø38.5mm
		**Discontinued. Only delivered as spare part for legacy products.*

ClassicBlue zero cavity twist adapter

Part	Description	Note
735700	Kit, Twistadapter, PPRO, SLBS	

Glue Connectors

Glue connector without filter

Part	Description	Note
972628	Connector 0° w/o filter, long, N0	
962657	Connector 0° w/o filter, short, N0	
962647	Connector 45° w/o filter, long, N4	
274179	Connector 45° w/o filter, short, N4	
972646	Connector 90° w/o filter, long, N9	
274180	Connector 90° w/o filter, short, N9	

Glue connector with filter

Part	Description	Note
1007033	Filter, Saturn, 50 mesh, 0°, E0	
1007233	Filter, Saturn, 50 mesh, 45°, E4	
1007230	Filter, Saturn, 50 mesh, 90°, E9	
1007034	Filter, Saturn, 100 mesh, 0°, E0	
1007234	Filter, Saturn, 100 mesh, 45°, E4	
1007231	Filter, Saturn, 100 mesh, 90°, E9	
1007035	Filter, Saturn, 200 mesh, 0°, E0	
1007235	Filter, Saturn, 200 mesh, 45°, E4	
1007232	Filter, Saturn, 200 mesh, 90°, E9	

Solenoids

Solenoids for MiniBlue II

Part	Description	Note
1120826	Solenoid, SP, 24VDC	Actuation: Common & programmed air
1095800	Solenoid, SP, 24VDC	Actuation: Independant air
771458	Solenoid, SD, 24VDC	Actuation: Independant air

Solenoids for SolidBlue S

Part	Description	Note
1120875	Solenoid, SP, 24VDC, 4A1C	Actuation: All types
1055481	Solenoid, Saturn L3, 24VDC, RV, 3A0A	Actuation: All types
1056119	Solenoid, Saturn L3, 24VDC, RV, LED, 3A1A	Actuation: All types

Solenoids for SolidBlue A

Part	Description	Note
1120875	Solenoid, SP, 24VDC, 4A1C	Actuation: All types
1055480	Solenoid, Saturn L4, 24VDC, RV, 4A0A	Actuation: All types
1053894	Solenoid, Saturn L4, 24VDC, LED, RV, 4A1A	Actuation: All types

Solenoids for ClassicBlue zero cavity

Part	Description	Note
1120875	Solenoid, SP, 24VDC, 4A1C	Actuation: All types
1055481	Solenoid, Saturn L3, 24VDC, RV, 3A0A	Actuation: All types
1056119	Solenoid, Saturn L3, 24VDC, RV, LED, 3A1A	Actuation: All types

Tube (and Fitting) kits

Tube (and Fitting) kits for MiniBlue II

Part	Description	Note
1123673	Kit, Solenoid tubing, MB2, W/CA/PA, SP	For Solenoid P/N 1120826
*1123004	Kit, Solenoid tubing, MB2, M5x39, W/IA	For Solenoid P/N 1095800
*1123004	Kit, Solenoid tubing, MB2, M5x39, W/IA	For Solenoid P/N 771458
		*Kit incl. *O-ring 375291(can be ordered seperately)*

Tube (and Fitting) kits for SolidBlue S

Part	Description	Note
1102143	Kit, Solenoid mounting, AO/SC	For Solenoid P/N 1120875
1063229	Kit, Solenoid mounting, large CV, 3-way	For Solenoid P/N 1055481
1063229	Kit, Solenoid mounting, large CV, 3-way	For Solenoid P/N 1056119

Tube (and Fitting) kits for SolidBlue A

Part	Description	Note
1085964	Kit, Solenoid mounting, small CV, 4-way	For Solenoid P/N 1120875
1063251	Kit, Solenoid mounting, large CV, 4-way	For Solenoid P/N 1055480
1063251	Kit, Solenoid mounting, large CV, 4-way	For Solenoid P/N 1053894

Tube (and Fitting) kits for ClassicBlue zero cavity

Part	Description	Note
1102143	Kit, Solenoid mounting, AO/SC	For Solenoid P/N 1120875
1063229	Kit, Solenoid mounting, large CV, 3-way	For Solenoid P/N 1055481
1063229	Kit, Solenoid mounting, large CV, 3-way	For Solenoid P/N 1056119

Cordsets

MiniBlue II cordsets

Part	Description	Note
1103014	Cordset, MBII, T (RTD sensing)	
1124315	Cordset, MBII, W (RTD Water resistant)	
1124172	Cordset, Freedom, F (Freedom standard RTD)	
1124172	Cordset, Freedom, D (Freedom Water resistant, RTD)	

SolidBlue S cordsets

Part	Description	Note
223826	Cordset, 2300 w/eyelet, T (RTD sensing)	
223804	Cordset, water wash w/eyelet, W (RTD Water resistant)	

SolidBlue A cordsets

Part	Description	Note
223826	Cordset, 2300 w/eyelet, T (RTD sensing)	
223804	Cordset, water wash w/eyelet, W (RTD Water resistant)	

ClassicBlue zero cavity cordsets

Part	Description	Note
223826	Cordset, 2300 w/eyelet, T (RTD sensing)	
223804	Cordset, water wash w/eyelet, W (RTD Water resistant)	

Technical Data

Performance Specifications

Item	MiniBlue II (RC) (See Notes A, B)	ClassicBlue (ZC) (See Note B)	SolidBlue (See Note B)	SureBead (See Note B)
Operating hydraulic pressure	103 bar (1,500 psi) maximum			
Operating air pressure	3.4-5.5 bar (50-80 psi)	2.8-4.8 bar (40-70 psi)	3.4-5.5 bar (50-80 psi)	2.8-5.5 bar (40-80 psi)
Electrical service	240 VAC, 50/60 Hz			
Operating temperature	205 °C (400 °F) maximum			
Solenoid valve power supply	24 VDC, high temperature solenoids recommended			

NOTE A: Operating hydraulic pressures are application dependent. Factors including hot melt material properties and product line speed will contribute to establishing optimal working hydraulic pressure.

B: Contact a Nordson representative when using an alternate power supply.

Torque Specifications

Item	Torque Specification
Module mounting screws (Allen head)	3.4 N•m (30 in.-lb)
Reduced cavity nozzles	2.0-2.7 N•m (18-24 in.-lb)
Saturn nozzles	4.5 N•m (40 in.-lb)