Pro-Swirl Applicator and Controller

Customer Product Manual

Document Number 1009910-04
Issued 07/24

For parts and technical support, call the Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

This document is subject to change without notice.
Check http://emanuals.nordson.com for the latest version.

NORDSON CORPORATION • AMHERST, OHIO • USA

Table of Contents

Contact Us
Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address:
http://www.nordson.com.
Address all correspondence to:
Nordson Corporation
Attn: Customer Service
555 Jackson Street
Amherst, OH 44001

Change Record

Revision	Date	Change
01	01/02	Update B: Initial Release; update C: Parts update and revision to repair and parts sections.
02	02/10	Administrative change
03	09/14	Updated part number for swirl motor from 1058071 to 1605673; updated formatting.
04	07/24	New controller utilized. Update affects specifications, repair procedures, and parts detail (illustrations and tables).

Pro-Swirl Applicator and Controller

Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson® equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include:

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Safety Data Sheets (SDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- Make sure the spray area is adequately ventilated. To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

High-Pressure Fluids

High-pressure fluids, unless they are safely contained, are extremely hazardous. Always relieve fluid pressure before adjusting or servicing high pressure equipment. A jet of high-pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

If you suffer a fluid injection injury, seek medical care immediately. If possible, provide a copy of the SDS for the injected fluid to the health care provider.

The National Spray Equipment Manufacturers Association has created a wallet card that you should carry when you are operating high-pressure spray equipment. These cards are supplied with your equipment. The following is the text of this card:

WARNING: Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show them this card
- Tell them what kind of material you were spraying

MEDICAL ALERT — AIRLESS SPRAY WOUNDS: NOTE TO PHYSICIAN

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable.

The seriousness of the wound depends on where the injury is on the body, whether the substance hit something on its way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound. If the injected paint contains acrylic latex and titanium dioxide that damage the tissue's resistance to infection, bacterial growth will flourish. The treatment that doctors recommend for an injection injury to the hand includes immediate decompression of the closed vascular compartments of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement, and immediate antibiotic treatment.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored. Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material SDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

Element	Symbol	Prefix
Fluorine	F	“Fluoro-”
Chlorine	Cl	“Chloro-”
Bromine	Br	“Bromo-”
Iodine	I	“Iodo-”

Check your material SDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your Nordson representative for information about compatible Nordson components.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Description

See Figure 1.

The Pro-Swirl system consists of an applicator (2) and applicator controller (3) used in conjunction with

- an on/off dispensing gun (1),
- gun controller,
- robot, and
- robot controller.

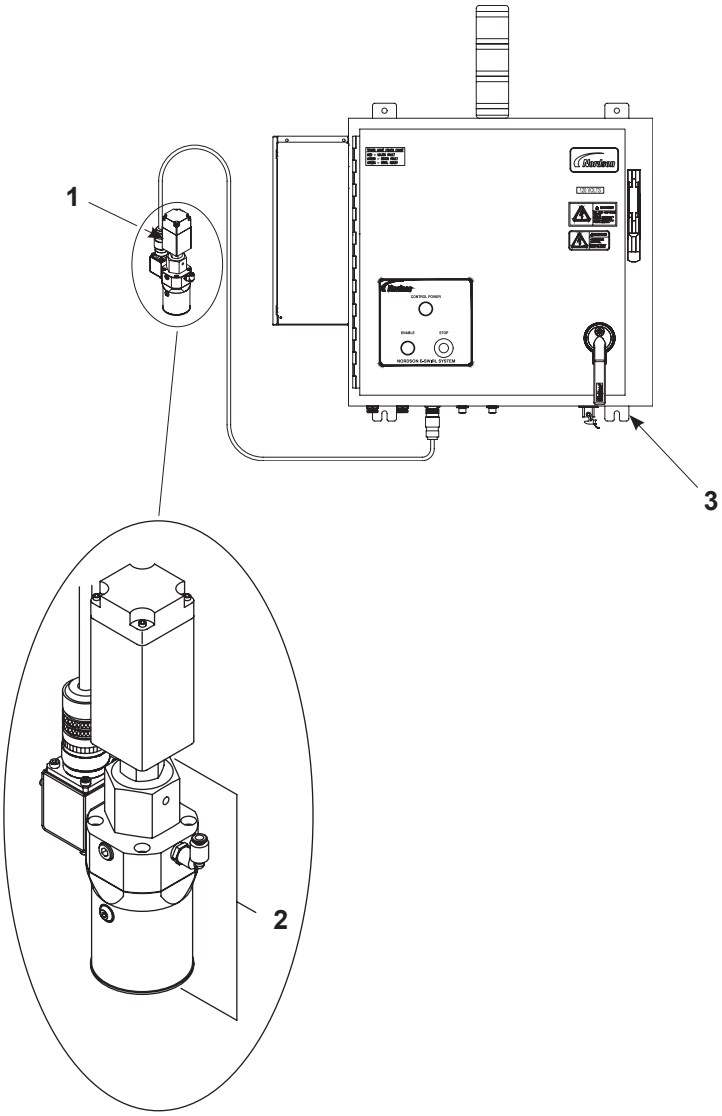


Figure 1 Applicator and Applicator Controller

1. On/off dispensing gun
2. Applicator
3. Applicator controller

Applicator

NOTE: The swirl cartridge and swirl bearing retainer are not shown in Figure 2.

See Figure 2.

The applicator consists of an electric motor (1), a swirl cartridge retainer (2), and a rotary shield (3).

Slight variations to the applicator, dispensing gun, and robot configuration are possible due to your specific configuration.

The electric motor rotates an offset bearing, producing an orbit angle. A shop air supply source cools the electric motor while it is operating.

Six versions of the applicator are available, with orbit angles measuring 1/8° to 11/4° from center.

Pattern width, thickness, and swirl density are maintained by adjusting

- nozzle size,
- material flow rate and pressure,
- nozzle-to-substrate distance,
- rotary speed, and
- orbit angle

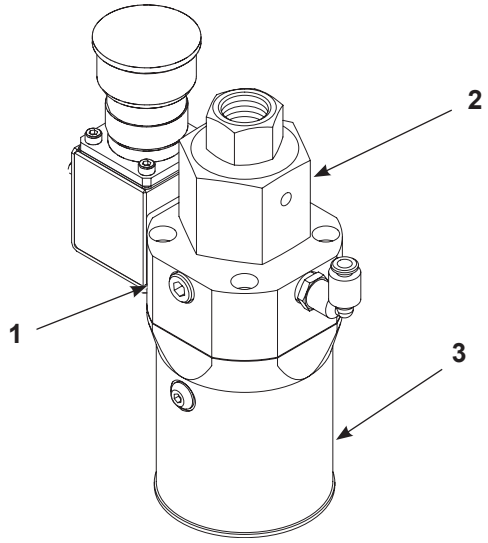


Figure 2 Applicator

1. Electric motor
2. Swirl cartridge retainer
3. Rotary shield

Applicator Controller

The applicator controller monitors and controls the applicator. It also interfaces with an on/off dispensing gun controller and a robot controller.

The applicator controller stops, starts, and adjusts applicator speed by controlling voltage to the electric motor.

Slight variations to the controls and connector layout are possible due to your specific configuration.

Specifications

Applicator

Table 1 Applicator Specifications

Description	Specification
Air	Ambient air temperature: 4-43 °C (39-109 °F)
	Maximum airflow: 0.06 m^3/min (2.01 scfm)
	Operating pressure: 4.1-6.2 bar (59.5-89.9 psi)
Speed	24,000 rpm
Fluid pressure	Static: 241 bar (3,495 psi), maximum Dynamic: 83 bar (1,204 psi), maximum
Operating temperature of material (maximum)	51 °C (124 °F)
Weight	1.1 kg (2.4 lb)

Applicator Detail

See Figure 3.

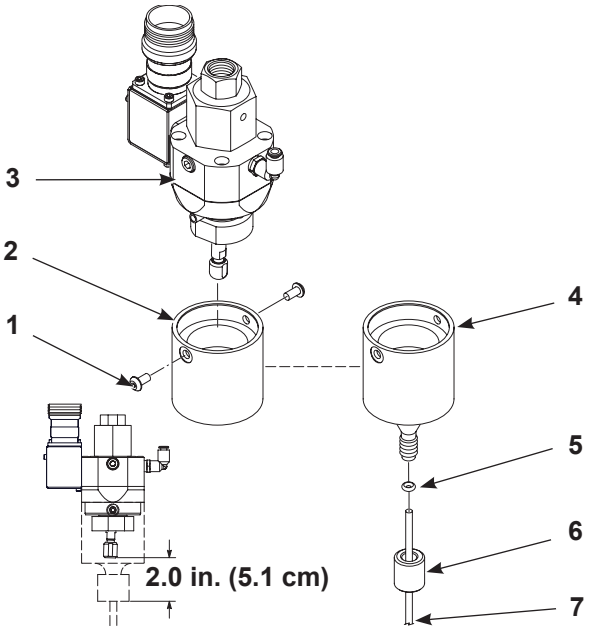


Figure 3 Applicatior Detail

1. Button head screw
2. Rotary shield and shield liner
3. Applicator
4. Teach tip holder
5. Teach tip O-ring
6. Teach tip nut
7. Teach tip

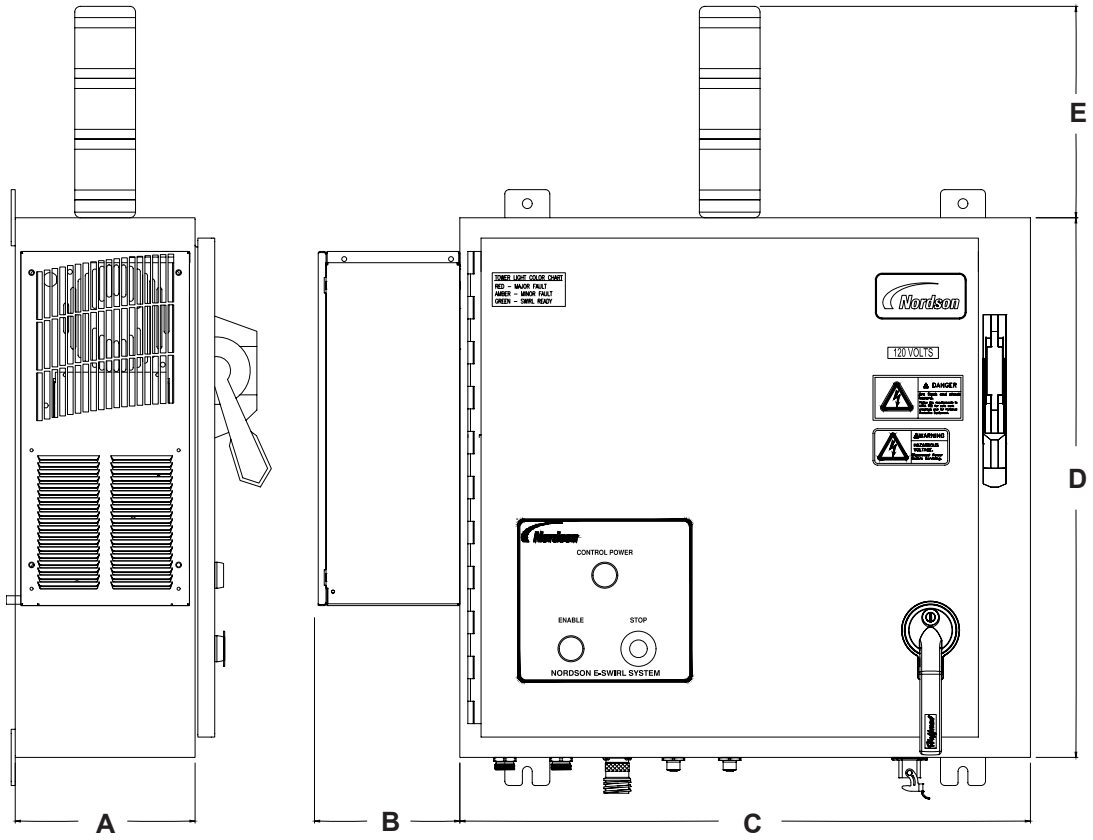
Applicator Controller

Table 2 Applicator Controller Specifications

Description	Specification
Voltage	120 Vac, 1 phase, 60 hz; FLA 15; fuse 20A
Full load amps	1 at 120 Vac
Circuit breaker	5A
Remote speed signal	0-5 Vdc
	0-10 Vdc (robot interface cable)

Applicator Controller Detail

See Figure 4.



A. 8.0 in. (20.3 cm)
B. 6.5 in. (16.5 cm)
C. 25.4 in. (64.5 cm)
D. 24.0 in. (61.0 cm)
E. 9.4 in. (23.9 cm)

Figure 4 Applicator Controller Detail

Installation

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Applicator Installation

See Figure 5.

1. Install the applicator onto the on/off dispensing gun by screwing the swirl cartridge retainer swivel nut (3) onto the on/off dispensing gun (2), orienting the applicator control connector (1) in the desired location.

NOTE: Route the applicator control cable carefully around the robot arm to the applicator controller to avoid damage to the cable.

2. Connect the cable to the applicator control connector.

NOTE: Air must pass through a coalescent filter.

3. Connect 1/4 in. air tubing from a shop air supply source to the air inlet fitting (4).
4. Turn on the drum unloader and check for leaks from the hose and fittings.
5. Purge the on/off dispensing gun and applicator to remove air.

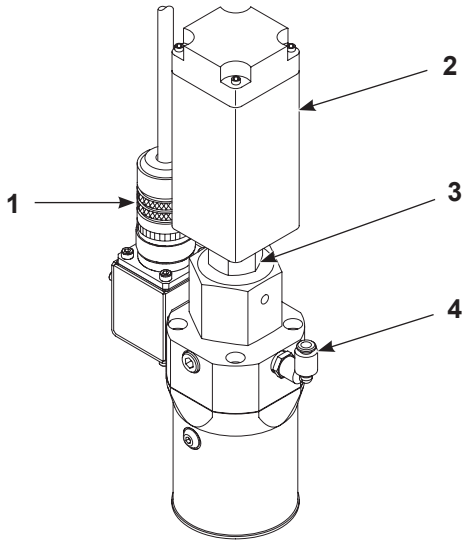


Figure 5 Applicator Installation

1. Applicator control connection
2. On/off dispensing gun
3. Swirl cartridge swivel nut
4. Air inlet fitting

Nozzle Installation

See Figure 6.

1. Unscrew the button head screws (3) from the rotary shield (4). The shield liner (5) remains in place.
2. Remove the rotary shield (4) from the applicator (1).
3. Restrain the swirl cartridge (8) with a 9/32 in. nozzle wrench (7) supplied with your applicator (1).

CAUTION: The swirl cartridge (8) must not be allowed to rotate in relation to the applicator (1).Thread the nozzle (6) onto the swirl cartridge (8) and tighten it with the 11/32 in. nozzle wrench (2) supplied with your applicator (1).

4.Thread the nozzle (6) onto the swirl cartridge (8) and tighten it with the 11/32 in. nozzle wrench (2) supplied with your applicator (1).

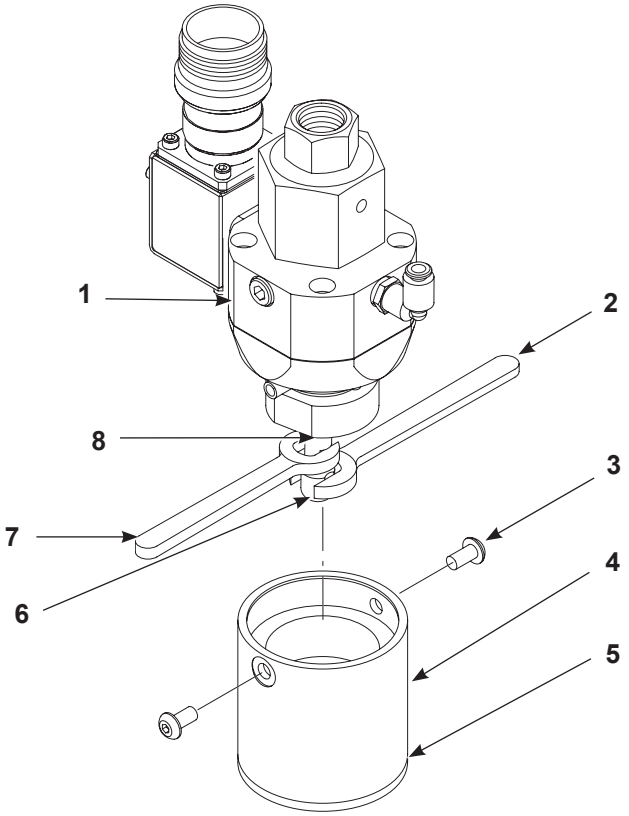


Figure 6 Nozzle Installation

1. Applicator
2. 11/32 in. nozzle wrench
3. Button head screw
4. Rotary shield
5. Shield liner
6. Nozzle
7. 9/32 in. nozzle wrench
8. Swirl cartridge

Teach Tip Installation

NOTE:

- Use this optional tool to show where the bead will be applied when you program the robot.
- The distance from the bottom face of the teach tip nut to the face of the nozzle is 2.0 in. (5.1 cm).

See Figure 7.

1. Place the teach tip O-ring (5) onto the teach tip (7). Make sure that the O-ring is about 1.0 in. (2.5 cm) from the end.
2. Install the teach tip (7) into the teach tip holder (4) until it bottoms out. The O-ring should be against the face of the teach tip holder (4).
3. Using the teach tip nut (6), secure the teach tip (7) to the teach tip holder (4). Hand-tighten the tech tip nut (6).
4. Remove the button head screws (1) and the rotary shield and shield liner (2) from the applicator (3).
5. Install the assembled teach tip (7) on the applicator (3) with the button head screws (1).
6. Cut the teach tip (7) to the desired length using a wire cutter, taking into account the 2.0 in. (5.1 cm) distance from the bottom face of the teach tip nut (6) to the face of the nozzle.
7. When you are finished teaching the on/off dispensing gun path, remove the teach tip (7) and replace it with the rotary shield and shield liner (2).

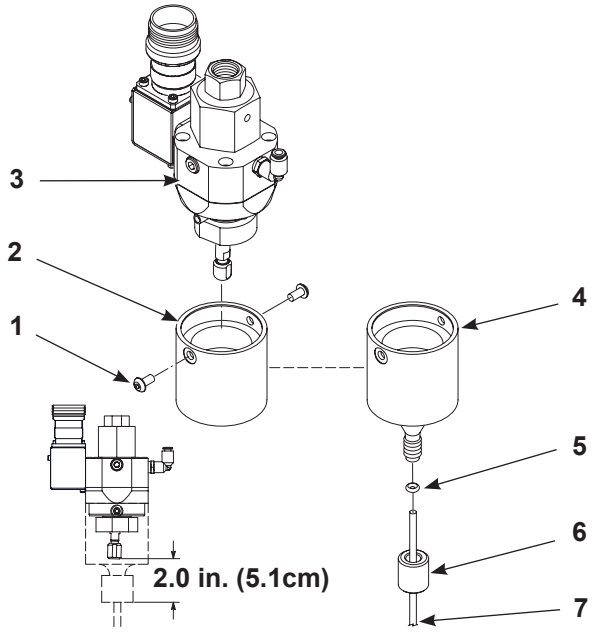


Figure 7 Teach Tip Installation

1. Button head screw
2. Rotary shield and shield liner
3. Applicator
4. Teach tip holder
5. Teach tip O-ring
6. Teach tip nut
7. Teach tip

Applicator Controller Connections

Your Nordson Corporation representative will make the appropriate applicator controller connections.

Operation

NOTE: Applicator operation is controlled by the applicator controller.

WARNING:

- Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.
- Do not operate the applicator unless the rotary shield and shield liner are installed. Failure to do so could result in personal injury.
- Keep hands and clothing free of moving components. Failure to do so could result in personal injury.

Purging

CAUTION: Purge the on/off dispensing gun, hoses, and applicator before attempting to remove air from the system.

1. Place a material waste container under the applicator.
2. Initiate a purge from the on/off dispensing gun controller or robot controller.
3. Continue purging until material flows freely from the applicator nozzle.

Swirl Pattern Parameters

Bead profile is pre-shaped in a uniform pattern of overlaid circular loops. Bead shape is affected by

- nozzle size
- material composition, flow rate, and pressure
- nozzle-to-substrate distance
- applicator electric motor speed, and
- orbit angle.
- Parameters are recommended by Nordson specifically for your application. For more information, contact your Nordson representative.

Applicator Controller

Operator Interface

Refer to Table 3 and see Figure 8.

Table 3 Operator Interface

Item	Description	Function
1	Handle	Allows access to the applicator controller cabinet.
2	Power off/on switch	Main applicator controller power switch.
3	Stop button	Stops applicator.
4	Enable button	Enables applicator.
5	Power on indicator	Lights when the applicator controller is on.

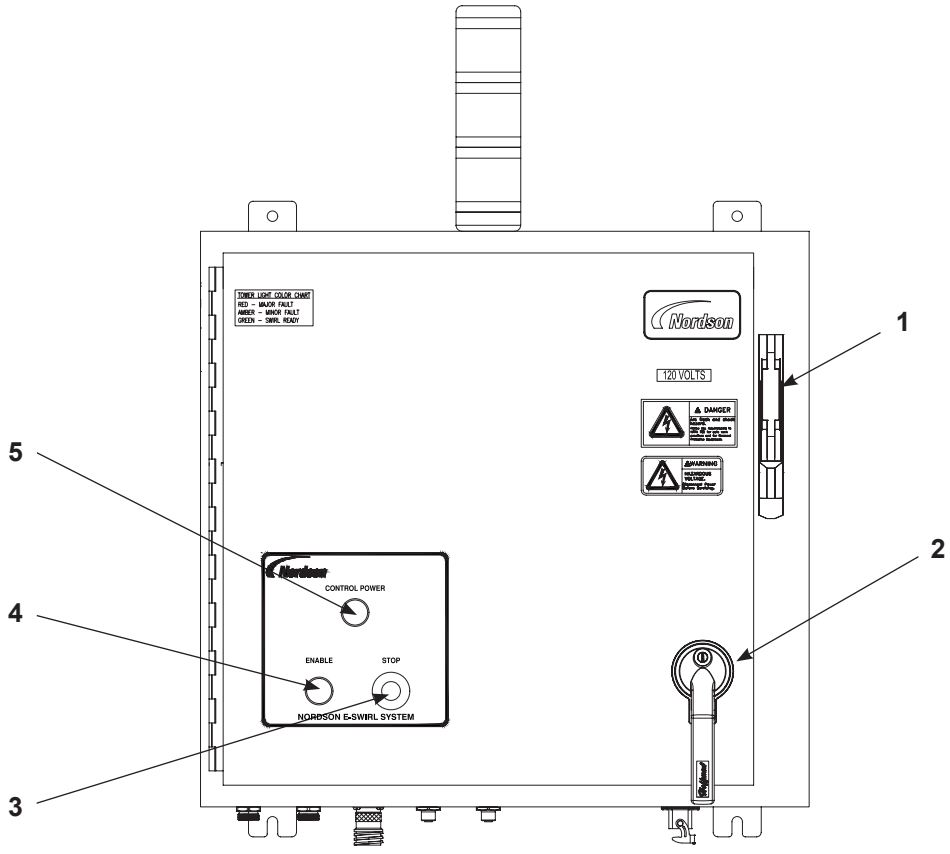


Figure 8 Operator Interface

Maintenance

Refer to Table 4.

Follow a preventive maintenance schedule to keep your applicator operating efficiently.

Table 4 Maintenance Schedule

Frequency	Component	Maintenance Task
Every 4 to 5 hours, or as required	Shield liner	Check the shield liner for material build-up and replace, as needed.
Daily	Nozzle	Check the nozzle for wear and replace, as needed.
	Cable connections	Check and secure all cable connections, as needed.
Weekly	Cable connectors	Check the cable connectors for wear and replace, as needed.
Periodically	On/off dispensing gun mounting	Check and secure the on/off dispensing gun mounting, as needed.
	Cables	Check the cables for wear and replace, as needed.
	Coalescent air filter	Clean/drain the coalescent air filter.

Troubleshooting

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Refer to Table 5.

This section contains troubleshooting procedures. These procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

Applicator Troubleshooting

Table 5 Applicator Troubleshooting

Problem	Possible Cause	Corrective Action
1. Material does not swirl	Applicator electric motor not turning	Verify the cable connection between the applicator controller and the applicator.
		Check that the applicator controller is ON.
		Check the electric motor and replace it if necessary. Refer to *Electric Motor Replacement* in the *Repair* section.
2. Abnormal swirl pattern	Partially plugged nozzle	Clean the nozzle. Refer to *Clearing Material Blockages* in the *Repair* section.
	Loss of temperature conditioning	Refer to the on/off dispensing gun documentation.
	Worn nozzle	Remove and replace the nozzle.
3. Excessive electric motor noise	Worn swirl bearing	Check the swirl bearing for excessive play or roughness, and replace the swirl bearing if necessary. Refer to *Swirl Bearing Retainer Replacement* in the *Repair* section.
	Worn electric motor bearing	Check the electric motor bearing for excessive play or roughness, and replace the electric motor if necessary. Refer to *Electric Motor Replacement* in the *Repair* section.
4. Material leaks through weep hole	Failed swirl cartridge	Replace the swirl cartridge. Refer to *Swirl Cartridge Replacement* in the *Repair* section.
	Damaged or missing swirl cartridge retainer O-ring	Either replace or install a swirl cartridge retainer O-ring. Refer to *Swirl Cartridge Replacement.*
5. Applicator does not dispense material	Plugged nozzle	Clean the nozzle. Refer to *Clearing Material Blockages* in the *Repair* section.
	On/off dispensing gun malfunction	Refer to the on/off dispensing gun documentation.
6. Electric motor overheats	Loss of cooling air	Reinstate the cooling air and check the condition of the swirl bearing.
		Replace the swirl bearing if necessary.
		Refer to *Swirl Bearing Retainer Replacement* in the *Repair* section.

Applicator Controller Troubleshooting

The applicator controller and the on/off dispensing gun controller requires similar troubleshooting. Refer to the on/off dispensing gun controller manual for troubleshooting information.

Cable Continuity Check

Refer to Table 6

1. Disconnect the applicator control cable from the applicator and the applicator controller.
2. Using an ohmmeter, check the continuity of each wire from the applicator controller end to the applicator end.
3. Replace the cable if you find shorts or open circuits in any of the wires.

Table 6 Cable Continuity Check

Pro-Swirl Cable		
Applicator End	**Applicator Controller End**	**Wire**
A	A	9
B	B	8
G	G	2
H	H	1
C	C	7
L	L	5
F	F	3
E	E	4
—	D	—

Repair

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

This section contains detailed disassembly and repair instructions for the applicator. Follow the necessary procedures to remove the applicator from operation, replace various components, and check for electrical continuity or material blockages.

Clearing Material Blockages

The following procedures describe the procedures for clearing blockages from nozzles and material supply hoses.

WARNING: Failure to observe may result in personal injury, death, or equipment damage.

Clearing a Blocked Nozzle

Use the following procedures to clear a blocked nozzle.

1. Shut off the air pressure to the drum unloader and purge all upstream on/off dispensing guns to relieve the pressure in the applicator.
2. Bleed off the pressure using the pressure relief valve on the drum unloader pump body.
3. Shut off and lock out all power to the system.

CAUTION: Prevent the swirl cartridge from rotating while removing the nozzle. Failure to do so may damage the swirl cartridge. For more information, refer to Nozzle Installation in the Installation section.

4. Remove the nozzle from the swirl cartridge. Refer to *Nozzle Installation* in *Installation*.
5. Clean the nozzle thoroughly with an appropriate solvent.
6. Pass a wire through the dispense side of the nozzle orifice to remove any obstructions.
7. Make sure the orifice is clear.
8. Install the nozzle on the swirl cartridge. Refer to *Nozzle Installation* in *Installation*.

Clearing a Blocked Material Supply Hose

Refer to the on/off dispensing gun documentation for procedures.

Applicator Replacement

See Figure 9.

Removal

1. Shut off the drum unloader.
2. Purge the on/off dispensing gun to relieve the pressure in the hose and the on/off dispensing gun.
3. Bleed off the residual pressure using the pressure relief valve located on the drum unloader pump body.
4. Shut off and lock out all power to the system.
5. Disconnect the air tubing (4) from the air inlet fitting (5).
6. Disconnect the cable (1) from the on/off dispensing gun.
7. Remove the swirl cartridge retainer swivel nut (3) from the on/off dispensing gun (2).

Installation

1. Screw the swirl cartridge retainer swivel nut (3) onto the on/off dispensing gun (2). Orient the cable connector as desired.
2. Connect the cable (1) to the on/off dispensing gun.
3. Connect the air tubing (4) to the air inlet fitting (5).
4. Turn on the drum unloader and check for leaks in the hose, fittings, and the on/off dispensing gun to the applicator connection.
5. Purge the on/off dispensing gun to remove air.

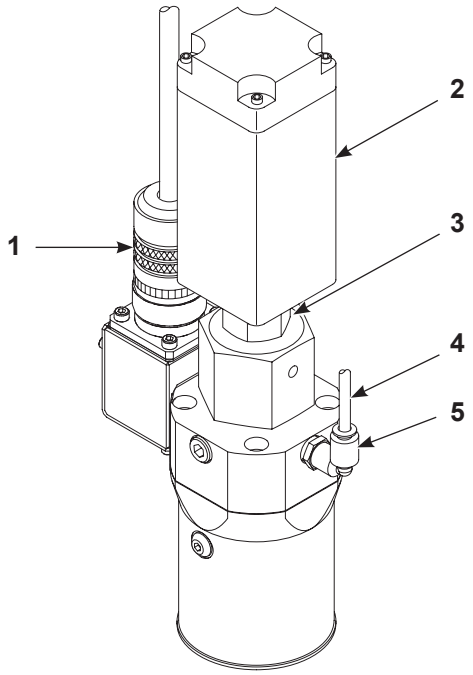


Figure 9 Applicator Replacement

1. Cable
2. On/off dispensing gun
3. Swirl cartridge retainer swivel nut
4. Air tubing
5. Air inlet fitting

Swirl Cartridge Replacement

See Figure 10.

Removal

1. Remove the applicator from the on/off dispensing gun. Refer to *Applicator Replacement* in this section.

CAUTION: Use extreme care when handling the electric motor; it may be hot. Failure to observe this warning could result in burns.

2. Unscrew the swirl cartridge retainer (2) from the electric motor (6). Check the swirl cartridge retainer O-ring (3) for damage and replace if necessary.
3. Turn the electric motor over. Using your thumb, apply pressure to the nozzle (5) and slide the swirl cartridge (4) out of the electric motor (6).

Installation

1. Remove the nozzle (5) from the old cartridge and attach it to the new cartridge. Insert the swirl cartridge (4) into the electric motor (6) and push firmly until it snaps into place.

CAUTION: Be sure not to misplace the swirl cartridge curved springs, swirl tube washer, and the support ring. Refer to Figure 17 for additional information.

2. Screw the swirl cartridge retainer (2) onto the electric motor.
3. Install the applicator on the on/off dispensing gun. Refer to *Applicator Replacement* in this section.
4. Turn on the drum unloader and check for leaks in the hose, fittings, and the on/off gun to the applicator connection.
5. Purge the on/off dispensing gun to remove air.

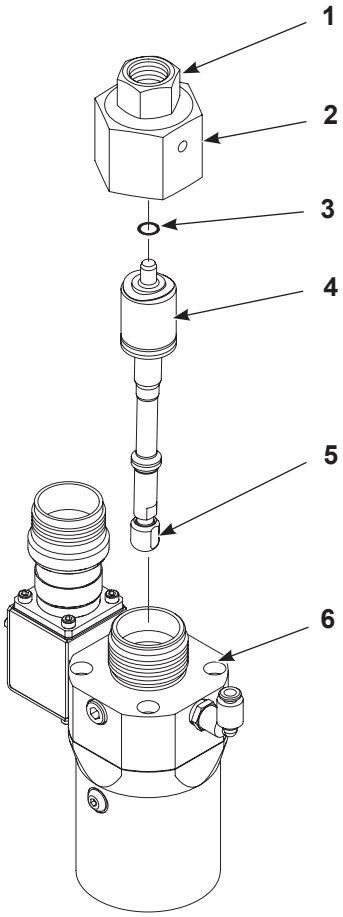


Figure 10 Swirl Cartridge Replacement

1. Swirl cartridge retainer swivel nut
2. Swirl cartridge retainer
3. Swirl cartridge retainer O-ring
4. Swirl cartridge
5. Nozzle
6. Electric motor

Electric Motor Replacement

CAUTION: The electric motor may be hot. Failure to observe this warning could result in burns.

See Figure 11.

Removal

1. Remove the applicator from the on/off dispensing gun. Refer to *Applicator Replacement* in this section.
2. Remove the swirl cartridge (2) from the electric motor (3). Refer to *Swirl Cartridge Replacement* in this section.
3. Remove the button head screws (5) and rotary shield (6) from the electric motor (3).
4. Unscrew the swirl bearing retainer (4) from the electric motor (3) using the spanner wrench supplied with your applicator.

Installation

1. Thread the swirl bearing retainer (4) into the bottom of the new electric motor (3), and tighten it to 27.1 N•m (20 ft-lb).
2. Install the swirl cartridge (2) into the electric motor. Refer to *Swirl Cartridge Replacement* in this section.
3. Screw the swirl cartridge retainer (1) onto the electric motor.
4. Using the button head screws (5), install the rotary shield (6) onto the new electric motor (3).
5. Install the applicator on the on/off dispensing gun. Refer to *Applicator Replacement* in this section.
6. Turn on the drum unloader and check for leaks in the hose and fittings.
7. Purge the on/off dispensing gun to remove air from the applicator.

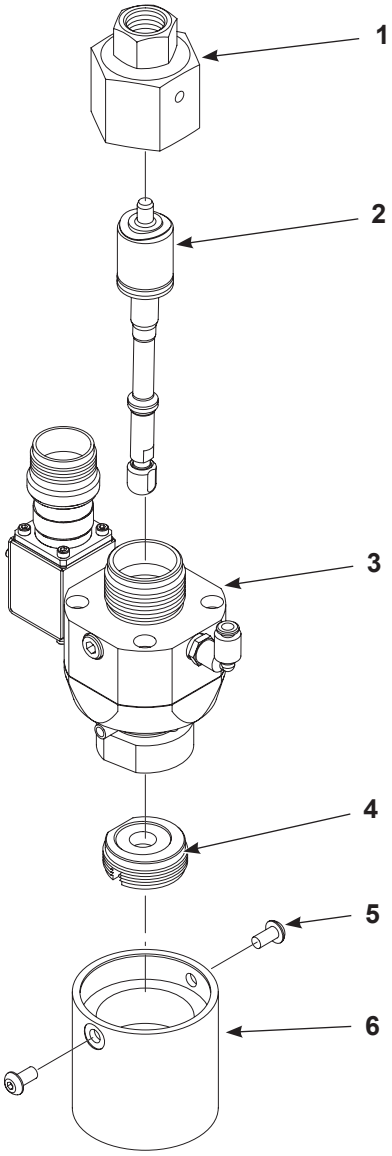


Figure 11 Electric Motor Replacement

1. Swirl cartridge retainer
2. Swirl cartridge
3. Electric motor
4. Swirl bearing retainer
5. Button head screw
6. Rotary shield

Swirl Bearing Retainer Replacement

Refer to Figure 11.

1. Shut off and lock out all power to the system.
2. Unscrew the button head screws (5) from the rotary shield (6). Remove the rotary shield.

NOTE: The shield liner will remain in place.

3. Remove the old swirl bearing retainer (4) using the spanner wrench supplied with your applicator.
4. Install the new swirl bearing retainer with the spanner wrench. Tighten to 27.1 N•m (20 ft-lb).
5. Install the rotary shield using the button head screws (5).

Shield Liner Replacement

See Figure 12.

1. Shut off and lock out all power to the system.
2. Pull the two tabs on the lip of the shield liner (2) and remove it from the rotary shield (1).
3. Discard the shield liner (2).
4. Press a new shield liner (2) into the rotary shield (1) with the palm of your hand.

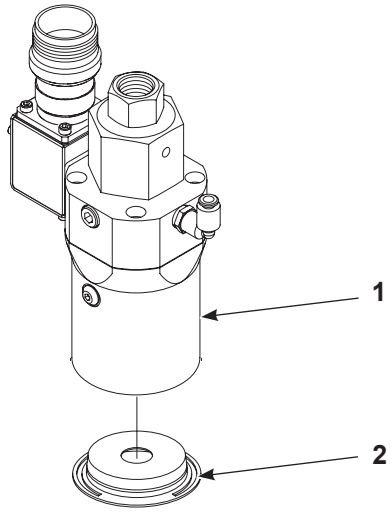


Figure 12 Shield Liner Replacement

1. Rotary shield
2. Shield liner

Parts

Applicator and Bearings

Table 7 Applicator and Bearings

Applicator Part Number	Applicator Angle	Bearing Retainer Part Number
1058072	1/8˚	1041349
1058073	1/4˚	1041410
1058074	1/2˚	1041411
1058075	3/4˚	1041412
1058076	1˚	1041413
1058077	1 1/4˚	1041414

Applicator Controller

See Figure 13 along with the following parts list.

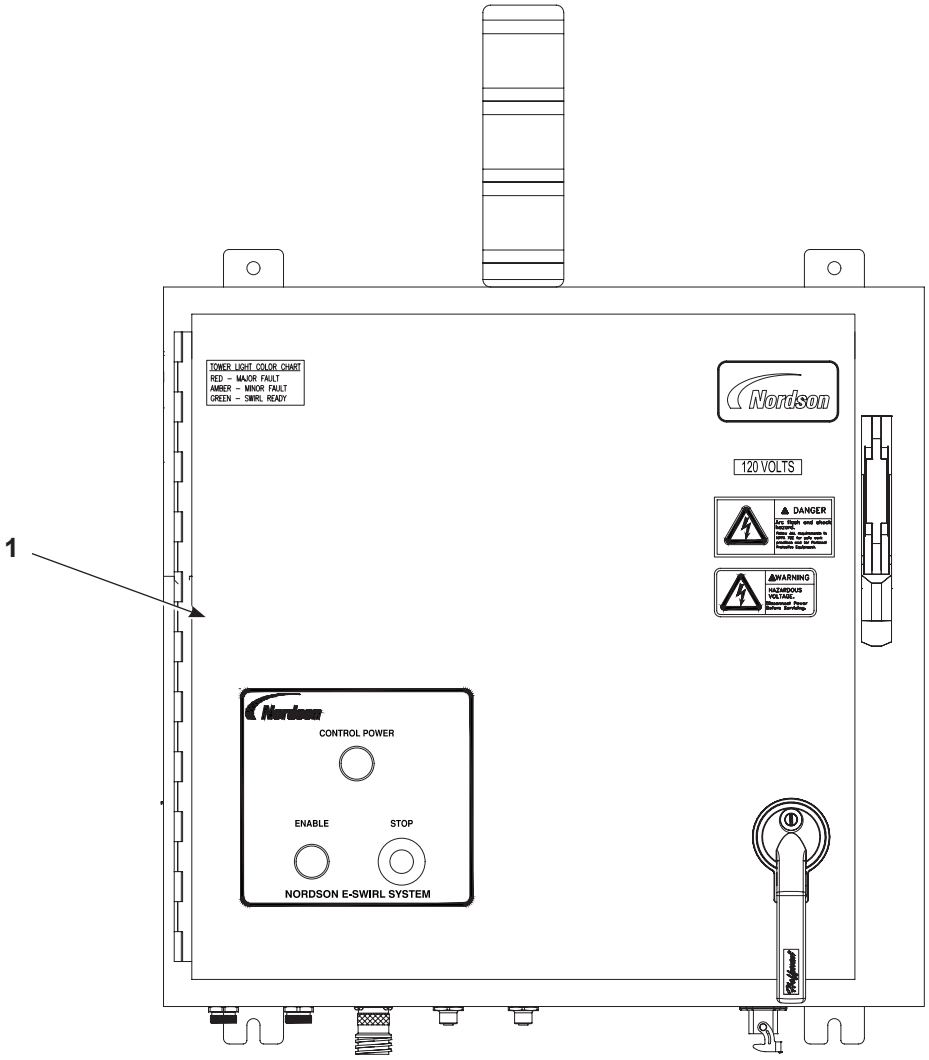


Figure 13 Applicator Controller

Item	Part	Description	Quantity
1	1626141	APPLICATOR CONTROLLER	1
NS	1626169	DRIVE MOTOR	1
NS: Not Shown			

Common Applicator

See Figure 14 along with the following parts list.

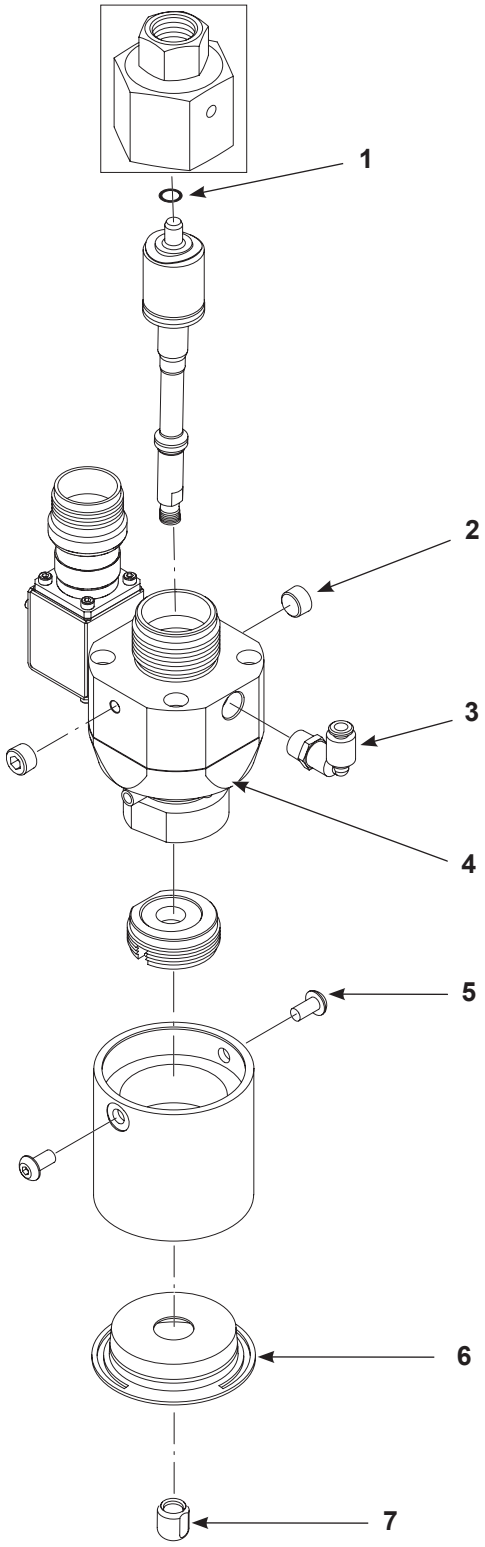


Figure 14 Common Applicator

Electric Motor Kit

Refer to Figure 15 along with the following parts list.

Item	Description	Quantity
1605673 - ELECTRIC MOTOR KIT		—
1	• ELECTRIC MOTOR ASSEMBLY	1

Rotor Motor Kit

See Figure 15 along with the following parts list.

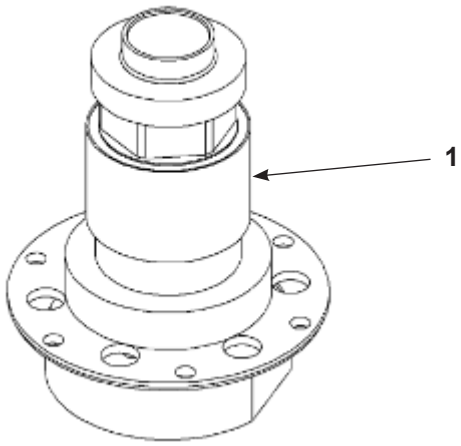


Figure 15 Rotor Motor Kit

Item	Description	Quantity
1041571 - ROTOR MOTOR KIT		—
1	• ROTOR MOTOR ASSEMBLY	1

Swirl Cartridge Kit

See Figure 16 along with the following parts list.

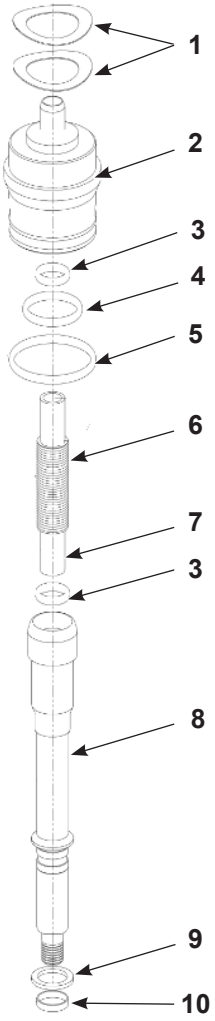


Figure 16 Swirl Cartridge Kit

Item	Description	Quantity
1041263 - SWIRL CARTRIDGE KIT		—
1	• CURVED SPRING	2
2	• FLEX JOINT RETAINER	1
3	• O-RING, Viton, PTFE, .239 ID x .070 width	2
4	• O-RING, polyurethane, .489 x .629 x .070, 65-75 duro	1
5	• O-RING, hotpoint, .750 x .875 x .063	1
6	• FLEXJOINT GARTER SPRING	1
7	• FLEXJOINT TUBE	1
8	• SWIRL TUBE	1
9	• SWIRL TUBE WASHER	1
10	• SUPPORT RING	1
NS	• LUBRICANT, PTFE, grease, .75 oz	AR

Miscellaneous Applicator Parts

Refer to Figure 14 along with the following parts list.

Item	Part	Description	Quantity	Note
1	UA	O-RING, 0.25-0 x 0.375 x 0.063 in.	1	
2	UA	PLUG, pipe, socket, flush, 1/8 in.	2	
3	UA	FITTING, swivel, elbow, 1/4 x 1/8 NPT	1	
4	- - - - - -	ELECTRIC MOTOR ASSEMBLY	1	C
5	UA	BUTTON SCREW, M5 x 1.0, black oxide	2	
6	1016956	SHIELD LINER	1	A
7	—	NOZZLE	1	B
NS	1041573	KIT, nozzle wrenches, Pro-Swirl	1	
NS	1018127	KIT, swirl bearing, spanner wrench, Pro-Swirl	1	
NS	1031834	LUBRICANT, PTFE, grease, 5 lb, 1 gallon	AR	
NS	UA	ADHESIVE, pipe/thread/hydraulic sealant	AR	
NOTE A: Refer to Table 7 for applicator and bearing retainer part numbers. B. Refer to *Options, Nozzles* (Table 8) for additional information regarding available nozzles. C. Component is contained within service kit 1605673. Refer to *Electric Motor Kit* in this section for additonal information. NS: Not Shown UA: Unavailable for purchase through Nordson. Contact local distributor or local source. AR: As Required				

Options

Refer to Table 8 and the *Miscellaneous Applicator Parts* list (above).

Nozzles

Table 8 Nozzles

Part	Description
1041281	NOZZLE, 25, Pro-Swirl
1041282	NOZZLE, 30, Pro-Swirl
1041283	NOZZLE, 35, Pro-Swirl
1041284	NOZZLE, 40, Pro-Swirl
1041285	NOZZLE, 45, Pro-Swirl
1041286	NOZZLE, 50, Pro-Swirl
1041287	NOZZLE, 60, Pro-Swirl
1041288	NOZZLE, 70, Pro-Swirl
1041300	NOZZLE, 90, Pro-Swirl

Teach Tip

See Figure 17 along with the following parts list.

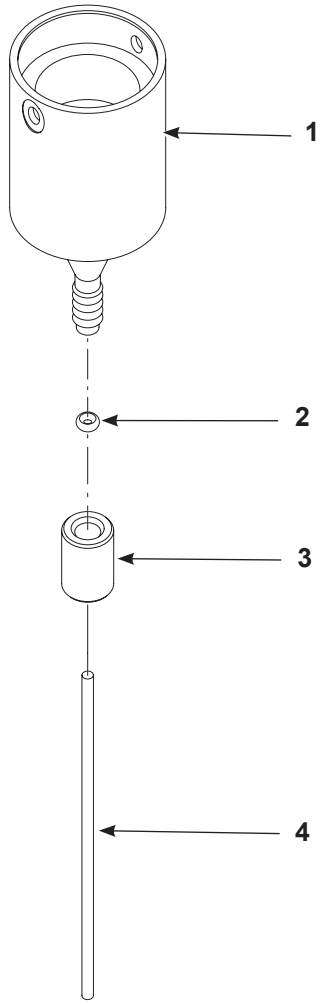
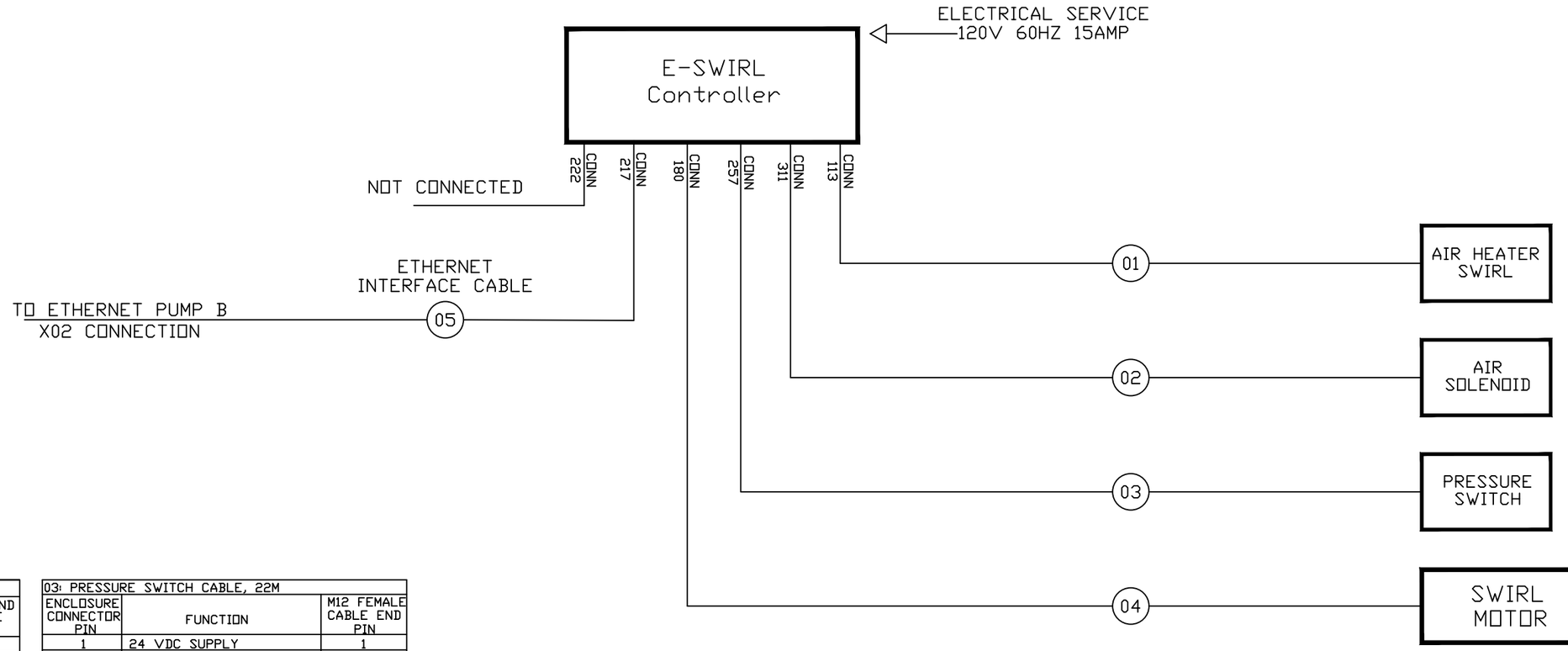


Figure 17 Teach Tip

Item	Description	Quantity
1018128 - TEACH TIP KIT		—
1	• HOLDER, teach tip	1
2	• O-RING, Buna-N, 0.112 x 0.318 x 0.103 in., 70 duro	1
3	• NUT, teach tip	1
4	• TEACH TIP POINTER	1

MATERIAL NO.	REVISION
10023160	01

CHG LET	REVISION	BY	CHK	ECR NO.	DATE
01	RELEASED	RJP		AP-107412	13JUN24



01: HEATER CABLE, 120V, 23M		
ENCLOSURE CONN113 PIN	FUNCTION	CABLE END FEMALE PIN
1	120V, HEATER POWER	1
2	NEUATRAL, HEATER POWER	2
3	RTD	3
4	N/C	4
5	RTD	5
6	N/C	6
7	N/C	7
G	GROUND	G
NORDSON# 1613106		

02: AIR SOLENOID VALVE CABLE, 22M		
ENCLOSURE CONNECTOR PIN	FUNCTION	M12 FEMALE CABLE END PIN
1	N/C	1
2	N/C	2
3	VDC COMMON	3
4	SOLENOID VALVE	4
NORDSON# 1618382		

03: PRESSURE SWITCH CABLE, 22M		
ENCLOSURE CONNECTOR PIN	FUNCTION	M12 FEMALE CABLE END PIN
1	24 VDC SUPPLY	1
2	NOT USED	2
3	VDC COMMON	3
4	OUT (+), 24 VDC	4
NORDSON# 1618382		

04: SWIRL MOTOR CABLE, 75 FT		
ENCLOSURE PIN	FUNCTION	CABLE END FEMALE PIN
1	GROUND	1
2	HALL PHASE C	2
3	HALL +5V	3
4	HALL PHASE B	4
5	POWER PHASE C	5
6	HALL COMON	6
7	N/C	7
8	HALL PHASE A	8
9	POWER PHASE B	9
10	POWER PHASE A	10
11	N/C	11
NORDSON# 1074182		

05: ETHERNET INTERFACE CABLE, 18M
NORDSON# 1615842

ELECTRICAL INTERCONNECT
E-SWIRL TO DISPENSE
SYSTEM NETWORK

ALL DIMENSIONS IN INCHES EXCEPT AS NOTED	NORDSON CORPORATION WESTLAKE, OH, U.S.A. 44145			
X.XX±.03 X.XXX±.010	DESCRIPTION REF DWG,CABLE LAYOUT,E-SWIRL,ENET/IP			
MACHINED SURFACES 125	DRAWN BY RJP	DATE 13JUN24	RELEASE NO. AP-107412	
BREAK INSIDE/OUTSIDE CORNERS .005/.030	CHECKED BY	APPROVED BY		
THREAD LENGTH DIMENSIONS ARE FULL THREAD	SIZE D	FILE NAME 10023160-01	MATERIAL NO. 10023160	REVISION 01
INTERPRET DRAWINGS PER ASME Y14.5-2009				
PERFECT FORM AT MMC REQUIRED FOR INTERRELATED FEATURES				
THIRD ANGLE PROJECTION	SCALE: NTS	CADD GENERATED DWG.	SHEET 1 OF 1	