Prodigy® Porcelain Enamel Automatic Powder Spray Gun

Customer Product Manual
Part 1093412-03

Issued 4/12

For parts and technical support, call the Finishing Customer Support Center at (800) 433-9319.

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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:

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Prodigy® Porcelain Enamel Automatic Spray Gun

Safety

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 all 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.

All phases of equipment installation must comply with all federal, state, and local codes.

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 any 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.

- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- 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.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits while 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.
- 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.

Grounding

WARNING: Operating faulty electrostatic equipment is hazardous and can cause electrocution, fire, or explosion. Make resistance checks part of your periodic maintenance program. If you receive even a slight electrical shock or notice static sparking or arcing, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.

Grounding inside and around the booth openings must comply with NFPA requirements for Class 2, Division 1 or 2 Hazardous Locations. Refer to NFPA 33, NFPA 70 (NEC articles 500, 502, and 516), and NFPA 77, latest conditions.

- All electrically conductive objects in the spray areas shall be electrically connected to ground with a resistance of not more than 1 megohm as measured with an instrument that applies at least 500 volts to the circuit being evaluated.
- Equipment to be grounded includes, but is not limited to, the floor of the spray area, operator platforms, hoppers, photoeye supports, and blow-off nozzles. Personnel working in the spray area must be grounded.
- There is a possible ignition potential from the charged human body. Personnel standing on a painted surface, such as an operator platform, or wearing non-conductive shoes, are not grounded. Personnel must wear shoes with conductive soles or use a ground strap to maintain a connection to ground when working with or around electrostatic equipment.
- Operators must maintain skin-to-handle contact between their hand and the gun handle to prevent shocks while operating manual electrostatic spray guns. If gloves must be worn, cut away the palm or fingers, wear electrically conductive gloves, or wear a grounding strap connected to the gun handle or other true earth ground.
- Shut off electrostatic power supplies and ground gun electrodes before making adjustments or cleaning powder spray guns.
- Connect all disconnected equipment, ground cables, and wires after servicing equipment.

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 electrical power. Close pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the equipment.

Disposal

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

Description

The Prodigy Automatic Porcelain Enamel Powder Spray Guns is a bar-mount powder spray gun designed for use with porcelain enamel powder coatings. The gun is used with Nordson HDLV® (high-density powder, low-volume air) pumps.

A dual-slot flat spray nozzle with 1-mm slots is shipped with each gun. A wide variety of plastic and ceramic flat spray and conical nozzles are available; refer to pages 23 and 25 for descriptions and part numbers.

Features

- 8-mm flexible tubing for powder delivery
- Separate high voltage and powder paths.
- Uses same nozzles as Prodigy manual porcelain enamel powder spray gun.
- Unique low-surface-area profile sheds powder for fast cleaning.
- Ion collector included.

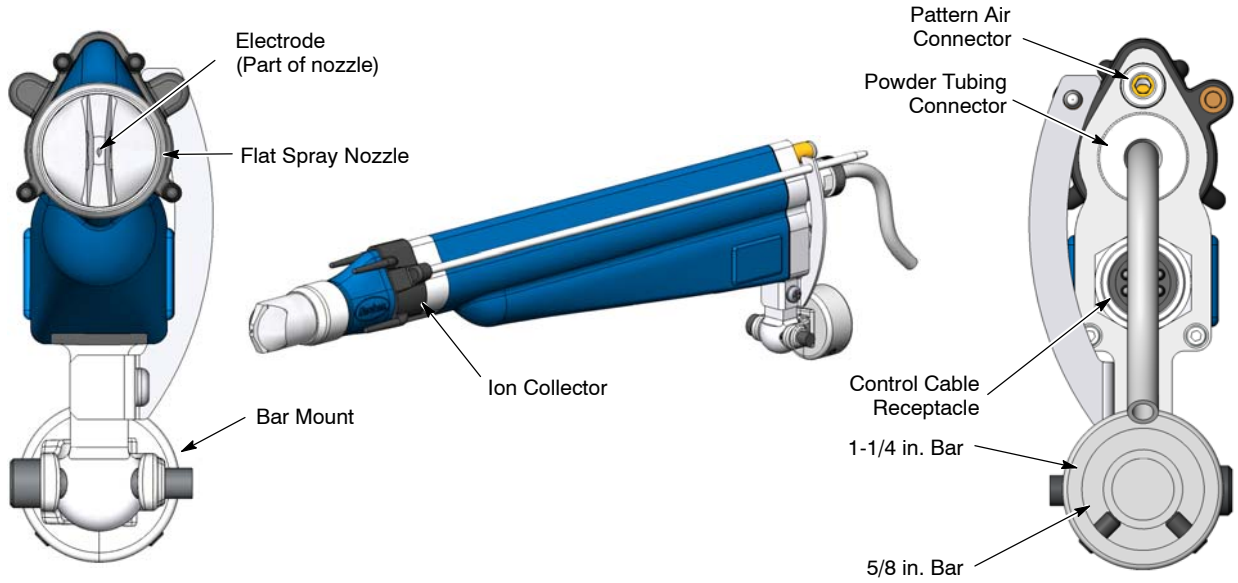


Figure 1 Prodigy Automatic Porcelain Enamel Powder Spray Gun

Spray Gun Components

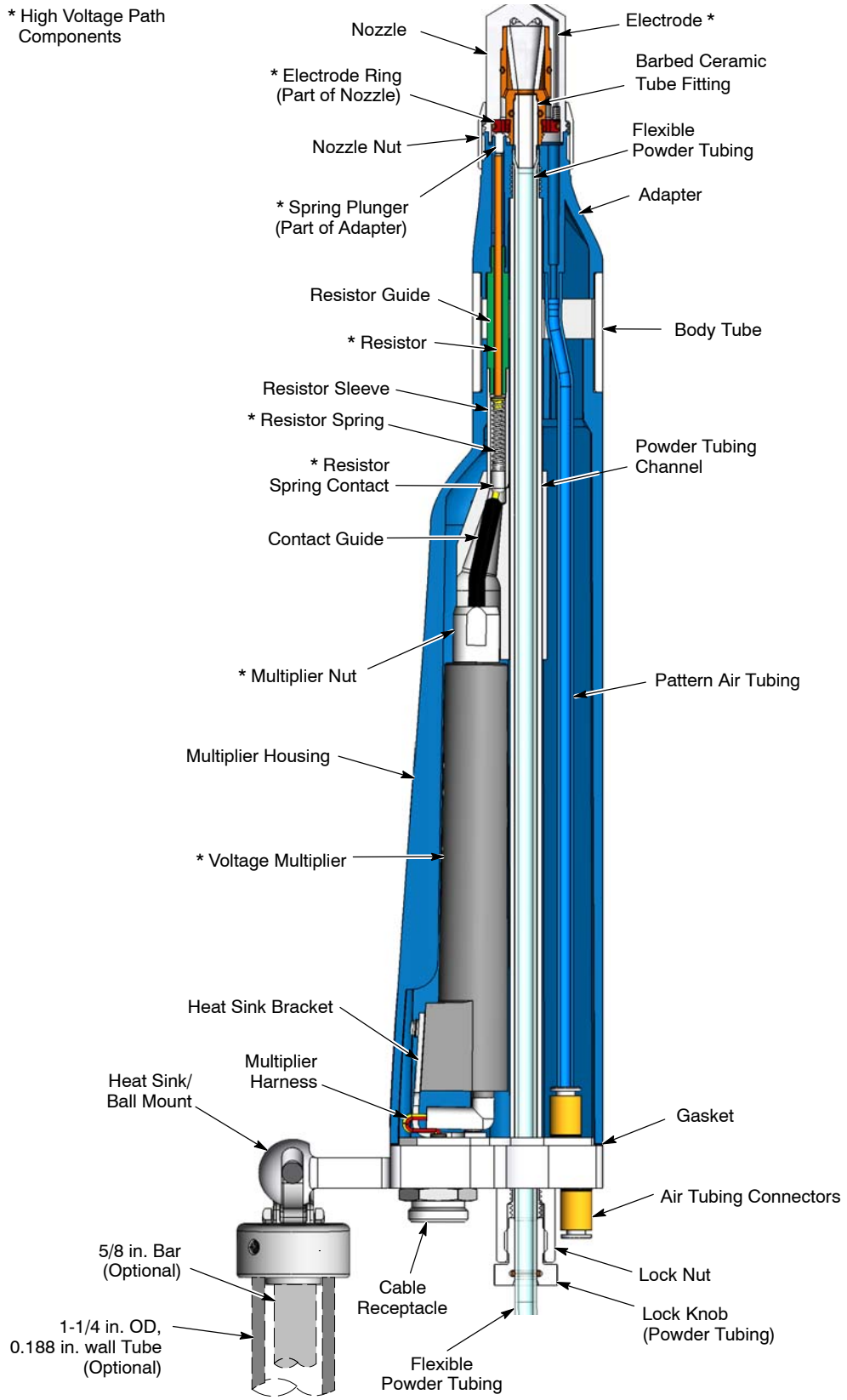


Figure 2 Section View – Bar-Mount Gun Components and Assembly

Specifications

Specifications are subject to change without notice.

Electrical Output	
Maximum rated output voltage at the electrode	95 kV ± 10%
Maximum rated output current at the electrode	100 μA ± 10%
Air Pressure and Flow Requirements	
Minimum input air	4 bar (60 psi)
Maximum input air	6.9 bar (100 psi)
Pattern air	5.9 bar (85 psi), 6–57 l/min. (0.2–2.0 scfm)
Temperature Requirement	
Maximum ambient temperature	40 °C (104 °F)

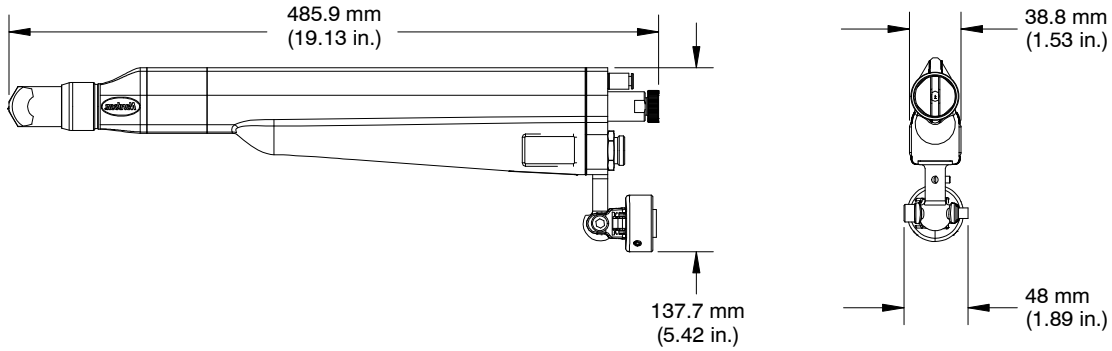


Figure 3 Gun Dimensions

Air Quality Requirements

Powder spray systems require clean, dry, oil-free compressed air. Moist or oil-contaminated air can cause the powder to clog in the pump, powder feed tubing, or spray gun.

Use 3-micron filter/separators with automatic drains and a refrigerated or regenerative desiccant-type air dryer that can produce a 3.4 °C (38 °F) or lower dewpoint at 6.9 bar (100 psi).

Equipment Rating

This applicator is rated for use in a potentially explosive environment (Class II, Division I Group F & G or Zone 21).

Installation

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

NOTE: Control cables, powder and air tubing, and gun bars are optional and must be ordered separately. Refer to *Options* starting on page 20 for part numbers.

Spray Gun Mounting

See Figures 2 and 4. The gun mount accommodates either 5/8 in. round bars or 1.25 in. OD, 0.188 in. wall tubes. Three- and four-foot optional gun bar assemblies with 1.25 in. OD tubes are available. Refer to page 22 for the gun bar assembly part numbers and ordering information.

1. Install the gun bar clamp on a 25.4-mm (1-in.) round bar and tighten the clamp handle.
2. insert the tube end into the gun mount fixed clamp and tighten the set screws.
3. To pivot the gun vertically on the clamp, loosen the gun mount socket screw.

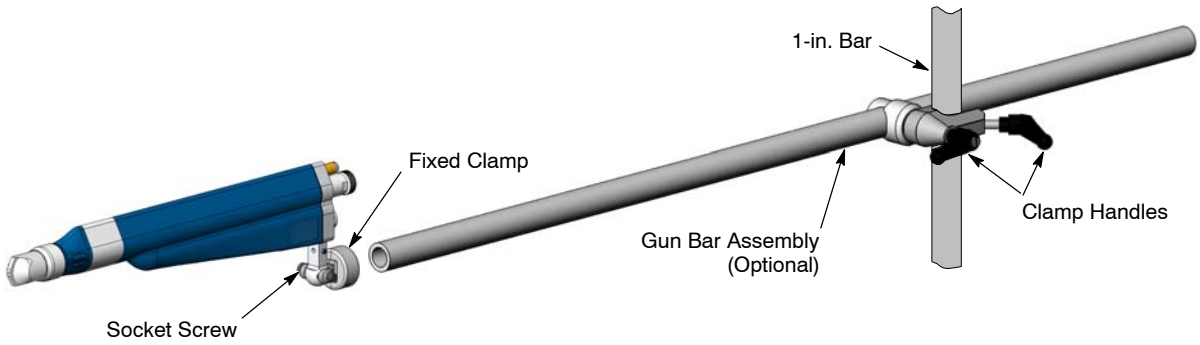


Figure 4 Bar Mount Gun Mounting

Installing the Ion Collector

The ion collector can only be installed on the left side of the gun. Note the current draw while coating parts before you install the ion collector kit.

1. See Figure 5. Install the bracket on the clamp with the lock washer and pan-head screw.
2. Thread the ion collector rod into the left insert in the probe clip.
3. Install the nylon screw into the right insert in the probe clip.
4. Slide the end of the rod into the hole in the bracket while sliding the probe clip on the end of the gun.

Adjusting the Ion Collector Position

1. Note the current draw while coating parts before you install the ion collector kit. Stop the line and turn off the spray guns.
2. Install the ion collectors.
3. Start coating parts again. Slide the collector rod forward until the current draw is 5 to 7 μA higher than without the kit.
4. Cure the coating on the new parts. Compare the surface finish on these parts with the finish on the parts you coated before installing the kit.
5. If you did not obtain the desired improvement in the surface finish, slide the probe forward approximately 25 mm (1–in.) and test again.

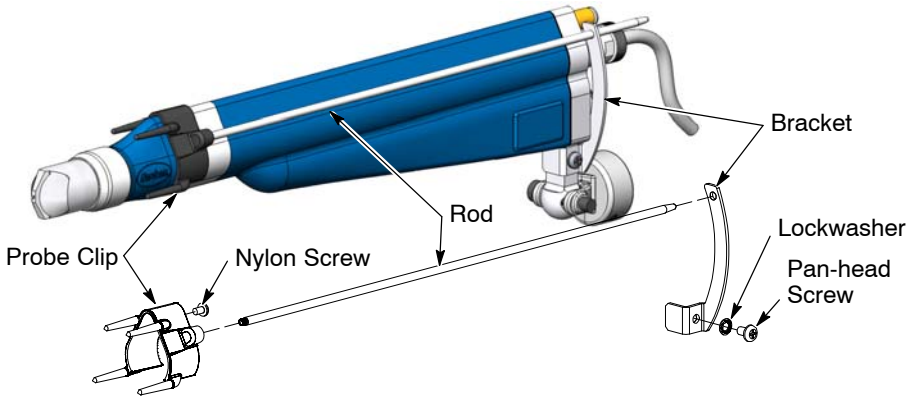


Figure 5 Ion Collector Installed on Gun

Cable and Tubing Connections

1. See Figure 6. Connect the control cable to the gun and the appropriate receptacle on the iControl cabinet. Tighten the cable nuts securely.
2. Connect blue 6-mm pattern air tubing to the gun and the appropriate outlet fitting on the pump panel.

NOTE: Use 8-mm flexible tubing for powder delivery, at least 10 meters long. Cut the end of the tubing square. Refer to page 20 for tubing cutter and tubing part numbers.

3. Install the lock knob on the flexible powder tubing, positioning it about 2 feet from the end of the tubing.
4. Unscrew the nozzle retaining nut and remove the nozzle shipped with the spray gun. Remove the barbed ceramic tube fitting from the nozzle.
5. Slide the 2-ft piece of mesh sleeving through the powder tubing channel from the front of the gun to the rear.
6. Insert the end of the flexible powder tubing into the end of the mesh sleeving at the rear of the gun, then pull the mesh sleeving and tubing through the gun.
7. Push the barbed end of the ceramic tube fitting into the end of the flexible tubing up to the first shoulder.
8. Pull the flexible tubing back through the gun until the ceramic fitting seats in the gun, then install the nozzle over the fitting and thread the nozzle nut onto the gun.
9. At the back of the gun, slide the lock knob up to the lock nut, then thread the lock knob into the lock nut until snug.
10. Route the powder tubing to the pump cabinet and connect it to the appropriate powder pump outlet fitting (rear fitting).
11. Use spiral wrap, Velcro straps, or clamps to dress out the control cables and tubing, prevent kinking, and protect them from damage. **Do not use cable ties to bundle the powder tubing**.

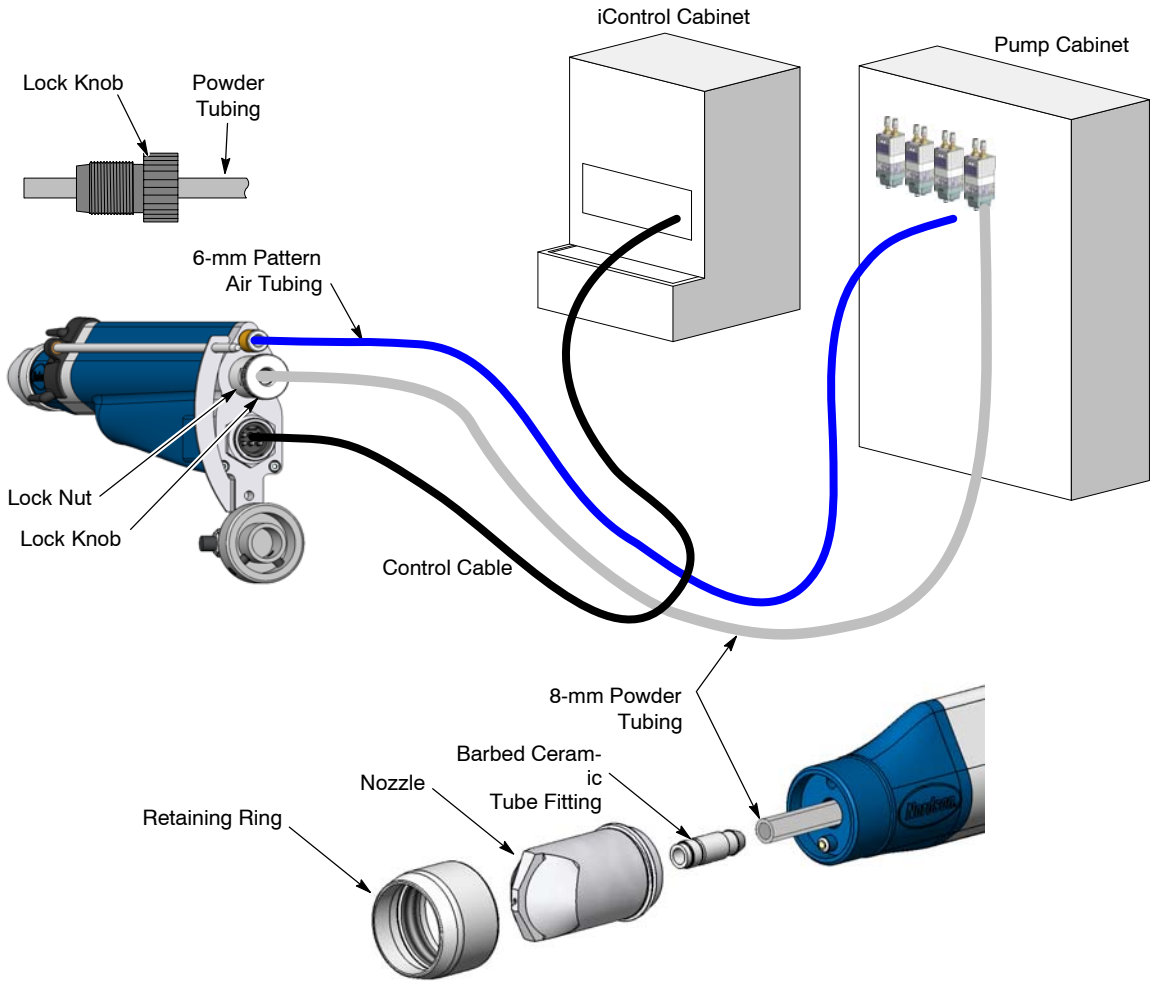


Figure 6 Tubing and Cable Connections

Operation

All automatic gun functions are set and controlled by the Prodigy iControl Integrated Control System. Refer to the iControl Operator Interface manual for instructions on making spray settings.

WARNING: This equipment can be dangerous unless it is used in accordance with the rules laid down in this manual.

Maintenance

Daily: Blow off the gun exterior and wipe it clean with a soft cloth. Inspect the nozzle and electrode for damage or wear. Replace any worn parts.

Periodically: Check the resistance of the voltage multiplier and resistor with a 500-volt megohm meter as described in *Continuity and Resistance Checks* on page 12. Replace any components that do not meet the specifications.

As Required: Disassemble the nozzle and clean the internal parts. Replace any worn parts. Refer to *Nozzle Disassembly and Cleaning* on the following page for instructions.

Nozzle Disassembly and Cleaning

Requirements: Nozzle Tool 1073682

1. Hold the nozzle firmly in one hand. Thread the tool onto the threaded end of the insert until it bottoms out on the electrode ring.

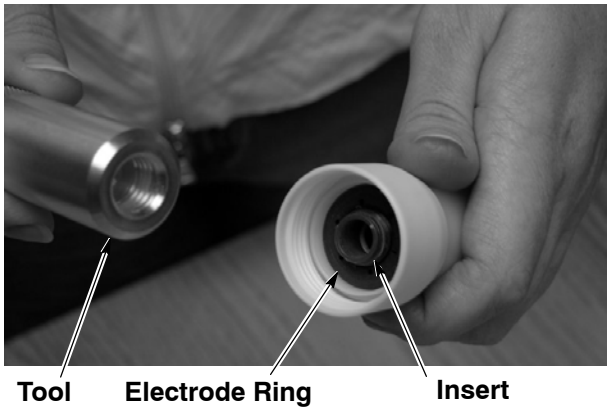


Figure 7 Nozzle Disassembly Step 1 (Shown with Nut Installed)

2. Turn the tool clockwise while pulling on it until the electrode ring/insert assembly comes out of the nozzle.

NOTE: If the electrode is pulled out of the nozzle shell, be careful to not lose it. The dual slot nozzle has the electrode glued in.

Figure 8 Nozzle Disassembly Step 2A

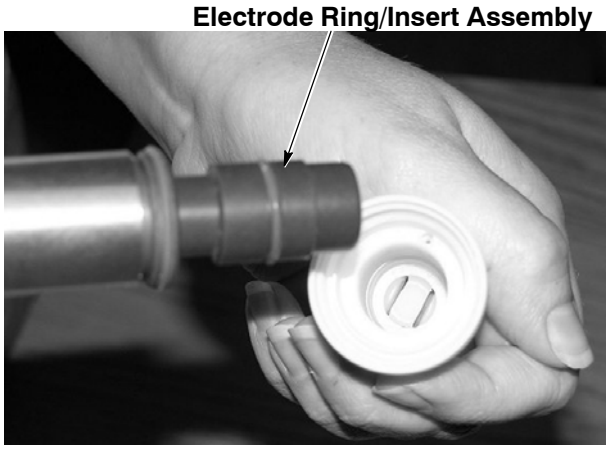


Figure 9 Nozzle Disassembly Step 2B (New Style Assembly Shown)

3. Unscrew the tool from the electrode ring/insert assembly and blow off the assembly with compressed air.

Figure 10 Nozzle Disassembly Step 2B (New Style Nozzle Shown)

4. Place the nozzle and nozzle nut in an ultrasonic cleaner to remove any impact fusion, then blow them off with compressed air. If desired, remove the nozzle nut from the nozzle by sliding the nut forward then turning it clockwise to unscrew it.
5. Blow off the insert and filter. If the filter is clogged with powder, remove it and replace it with a new one. When removing the new style filter from the insert, be careful not to scratch the inside surface of the insert.

To re-assemble the nozzle:

1. Make sure the electrode ring is threaded all the way onto the insert.
2. Thread the tool onto the threaded end of the insert.
3. Turn the tool counterclockwise to remove it from the insert. Check the nozzle. The electrode ring should be approximately $^1/_4$ inch inside the nozzle lip.

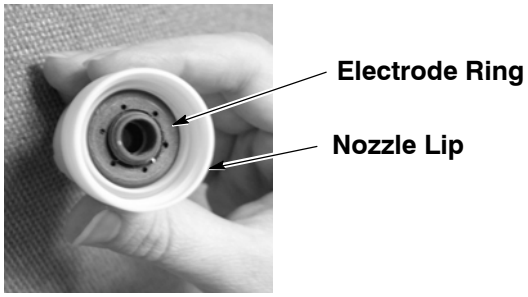


Figure 11 Nozzle Re-assembly

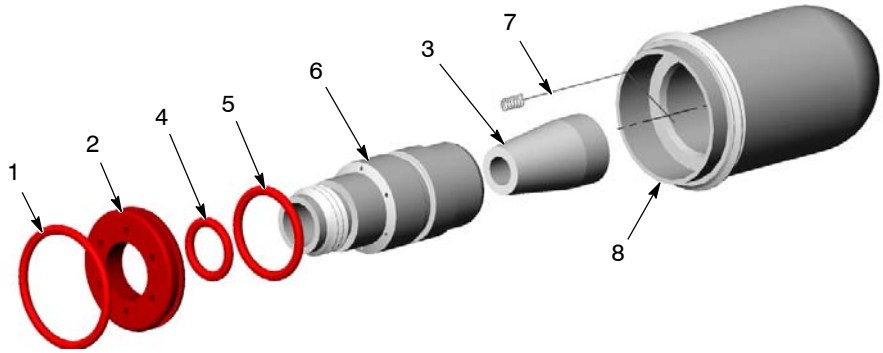


Figure 12 Internal Components of Nozzle Assemblies

1. O-ring
2. Electrode ring
3. Filter
4. O-ring
5. O-ring
6. Insert
7. Electrode
8. Nozzle shell

Note: All internal components, except the electrodes, are the same for all nozzles. For flat-spray, cross, and pinpoint nozzles, the electrode is glued into the nozzle shell with epoxy and cannot be replaced separately.

Troubleshooting

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

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 or the Nordson Finishing Customer Support Center at (800) 433–9319 for help.

Problem	Possible Cause	Corrective Action
1. Unsteady or inadequate powder flow	Fault in pump, pump manifold, or pump control card	Refer to HDLV pump manual for troubleshooting.
	Blockage in gun powder tube or in 8-mm powder tubing	Purge gun and powder tubing. Replace powder tube or tubing if necessary.
	Damp or contaminated powder supply, powder supply not properly fluidized	Check powder supply, make sure powder is being fluidized properly.
2. Uneven pattern	Insufficient pattern air flow	Increase pattern air flow.
	Blocked nozzle	Clean or replace nozzle.
	Worn powder tube	Purge gun, disconnect powder tubing and examine powder tube ID.
3. Loss of wrap, poor transfer efficiency	Low electrostatic voltage	Increase electrostatic voltage.
	Poorly grounded parts	Check the conveyor chain, rollers, and part hangers for powder buildup. The resistance between the parts and ground must be 1 megohm or less. For best results, 500 ohms or less is recommended.
	Poor connection in high voltage path inside spray gun	Perform the *Multiplier and Resistor Assembly Resistance Tests* on page 12.
	Fault in gun control card	Refer to the iControl control system manual for troubleshooting.
4. No kV output	Damaged control cable	Perform the cable continuity tests on page 14. If an open or short is found, replace the cable.
	Fault in gun control card	Refer to the iControl control system manual for troubleshooting.
	Faulty voltage multiplier or poor connection in high voltage path	Perform the resistance checks on page 12. Check all high voltage path connections. See Figure 2.
5. No powder output	Blockage in powder tubing	Check powder tubing.
	Fault in gun control card	Refer to the Prodigy iControl hardware manual for troubleshooting.
	Fault in pump control card or pump	Refer to HDLV pump manuals for troubleshooting.

Continuity and Resistance Tests

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

WARNING: Turn off the electrostatic voltage and ground the spray gun electrode before performing the following tasks. Failure to observe this warning could result in a severe shock.

Resistance Tests

Use a 500 volt megohm meter to make these tests.

Multiplier/Resistor Test – All Versions

1. See Figure 13. Remove the retaining nut (1) and nozzle (2).
2. Disconnect the control cable.
3. Short together receptacle pins 2, 3, and 4 and connect them to the positive megohm meter probe.

CAUTION: You must short multiplier receptacle pins 2, 3, and 4 together before performing this test to avoid damaging the multiplier.

4. Connect the negative megohm meter probe to the adapter spring plunger.

The megohm meter reading should be 400–510 megohms.

If the reading is out of this range, test the components of the high voltage path separately as described in the following tests. Replace any components that test out of range.

If the reading is infinite, there is no continuity through the high voltage path. Check the high voltage path connections (see Figure 2). If you have a tube-mount gun, test the electrode cable for continuity.

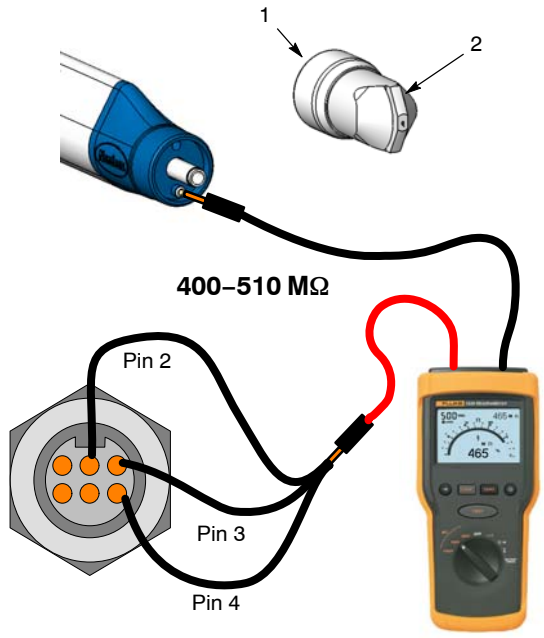


Figure 13 Multiplier/Resistor Test

Resistor Test – All Versions

Remove the resistor as described in *Resistor Replacement* on page 15.

Resistor reading should be 153–187 megohms.

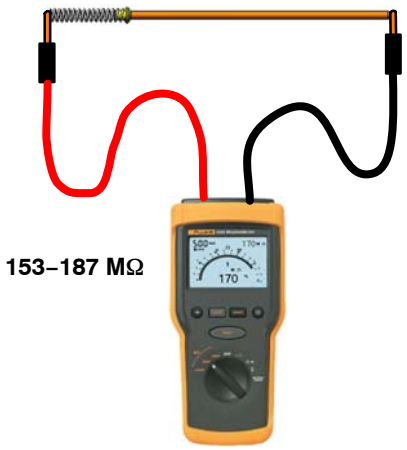


Figure 14 Resistor Test

Multiplier and Contact Test

Remove the multiplier as described in *Multiplier Replacement* on page 16.

Connect the optional shorting plug (refer to *Options* for the part number) to the multiplier receptacle or short together the three receptacle pins.

CAUTION: Before performing this test, the multiplier receptacle pins must be shorted together to avoid damaging the multiplier.

The resistance of the multiplier/contact assembly should be 150–220 megohms. If the reading is out of this range, test the contact tip and multiplier separately.

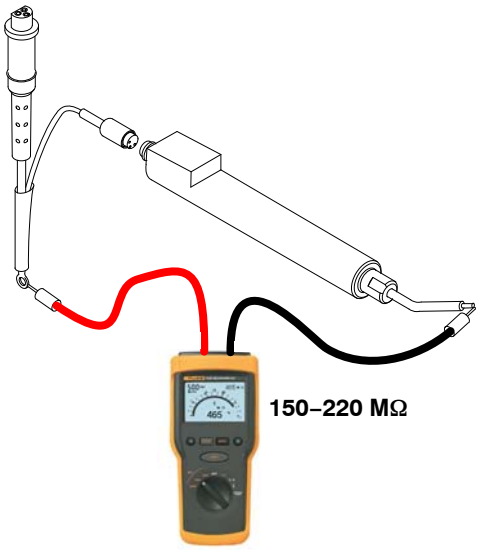


Figure 15 Multiplier/Contact Test

Multiplier Test

Connect the optional shorting plug (refer to Options for part number) to the multiplier receptacle or short together the three receptacle pins.

CAUTION: Before performing this test, the multiplier receptacle pins must be shorted together to avoid damaging the multiplier.

Test from the shorting plug or shorted pins to the brass contact inside the multiplier well. Resistance should read 140–200 megohms.

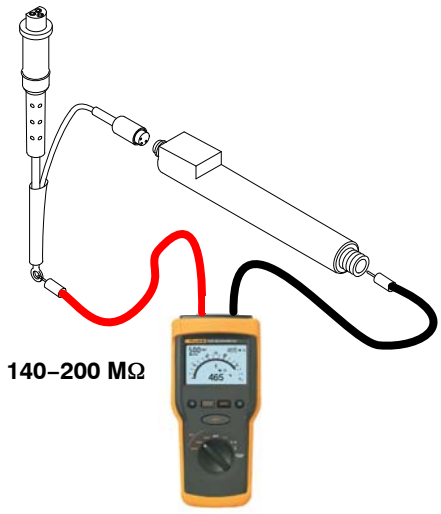


Figure 16 Multiplier Test

Contact Test

Contact resistance should be 15–24 megohms.

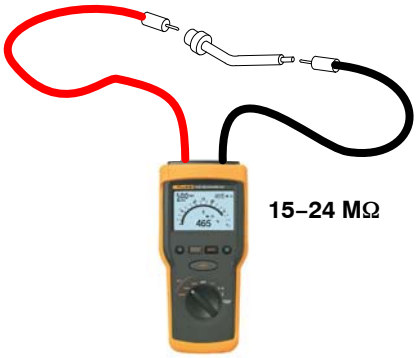


Figure 17 Contact Test

Control Cable Continuity Test

Disconnect the control cable at both ends. Use Figure 18 and a standard ohmmeter to check the control cable from pin to pin.

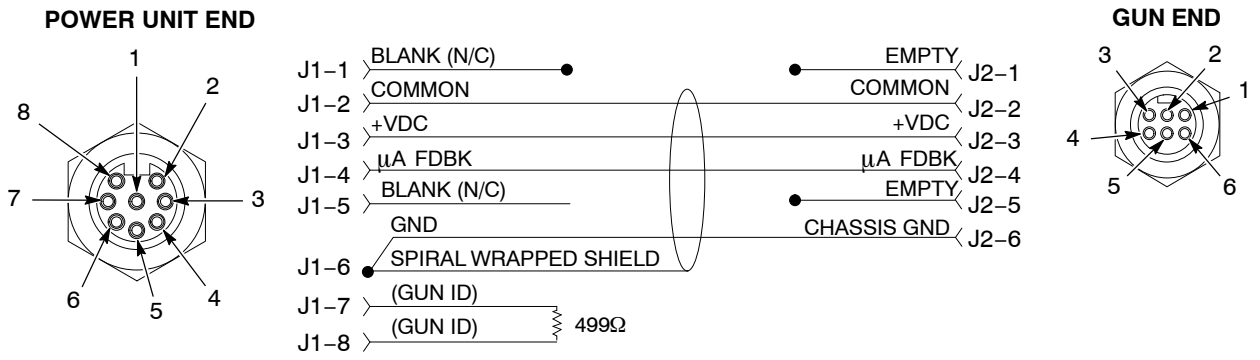


Figure 18 Control Cable Continuity Tests

Repair

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

WARNING: Turn off the electrostatic voltage and ground the spray gun electrode before performing the following tasks. Failure to observe this warning could result in a severe shock.

Nozzle Replacement

1. See Figure 19. Remove the retaining nut (1) and nozzle (2).

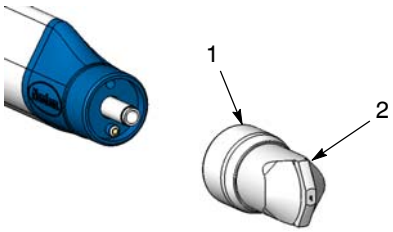


Figure 19 Removing Nozzle

2. See Figure 20. Unscrew the nozzle (2) from the retaining nut (1).

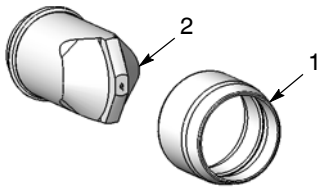


Figure 20 Nozzle and Retaining Nut

3. Screw a new nozzle into the retaining nut, then screw the retaining nut back onto the adapter.

Resistor Replacement

Resistor Removal

1. Disconnect the air tubing and control cable.
2. See Figure 19. Remove the nozzle.
3. See Figure 21. Pull the barbed ceramic tube fitting (3A) out of the gun and disconnect the flexible powder tubing from the tube fitting.

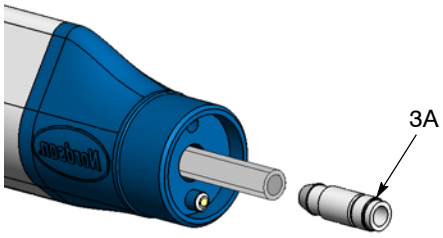


Figure 21 Removing Barbed Tube Fitting

4. See Figure 22. Unscrew the lock knob (20) and pull the powder tubing out of the lock nut (18).

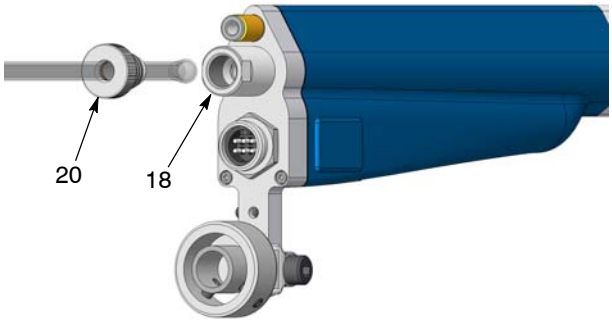


Figure 22 Disconnecting Powder Tubing

5. Remove the spray gun from the gun mount and move it to a clean work area.
6. See Figure 23. Remove the two screws (22) with a 2.5 mm hex wrench, then unscrew the lock nut (18).

Figure 23 Removing Heat Sink Screws and Lock Nut

7. See Figure 24. Pull the heat sink (16) away from the housing (11) just enough to disconnect the air tubing (4) from the connector (14).

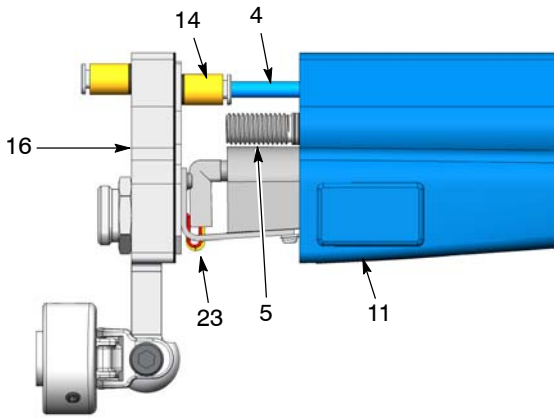


Figure 24 Pulling the Heat Sink away from the Housing

8. See Figure 25. Pull the adapter (3) away from the body tube (9) far enough to access the sleeve (8) and resistor guide (6).
9. Remove the contact (8A), then slide the sleeve off the resistor guide and resistor (7). Pull the resistor out of the resistor guide.

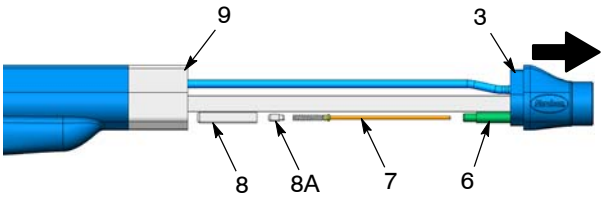


Figure 25 Removing the Resistor

Resistor Installation

1. See Figure 25. Inject 0.6 cc of dielectric grease into the resistor guide (6).
2. Install the contact (8A) into the new resistor spring.
3. Insert the new resistor into the resistor guide, rotating the resistor while pushing it in until it bottoms out. Rotating the resistor helps release trapped air pockets from the grease. Clean off any excess grease.
4. Install the sleeve (8) over the contact and resistor spring and onto the resistor guide, then push together the adapter (3), body tube (9), and housing (11), guiding the sleeve into the contact guide (Figure 29).

Resistor Installation *(contd)*

5. See Figure 24. Connect the air tubing (4) to the connector (14), then push the heat sink (16) back up against the housing while fitting the powder tubing channel (5) through the heat sink. Make sure the harness wires (23) are not pinched between the housing (11) and the heat sink.
6. See Figure 23. Screw the lock nut (18) onto the powder tubing channel and tighten it securely. Do not overtighten it or you will strip the plastic threads on the powder tubing channel.
7. Install the two socket-head screws (22) in the heat sink and tighten them securely.
8. Perform the *Multiplier and Resistor Resistance Test* on page 12 to make sure the high voltage path is continuous and all connections are sound. If you do not get the proper reading, check all connections in the high voltage path (see Figure 2).
9. Insert the 2-ft mesh sleeving through the powder tubing channel.
10. Install the lock knob (20) over the end of the flexible powder tubing. Insert the end of the flexible powder tubing into the mesh sleeving and pull the powder tubing through the gun to the front.
11. See Figure 21. Install the barbed ceramic tube fitting (3A) into the end of the flexible tubing, then pull the tubing back until the ceramic fitting seats into the gun.
12. See Figure 22. Thread the lock knob (20) into the lock nut (18) and tighten snugly.
13. See Figure 19. Install the nozzle (2) over the ceramic fitting and tighten the retaining nut (1).
14. Install the gun on its gun mount.
15. Reconnect the air tubing and control cable.

Multiplier Replacement

Multiplier Removal

1. Perform Steps 1–7 of the *Resistor Removal* procedure.
2. See Figure 26. Pull the heat sink/multiplier assembly (13, 16) out of the housing.

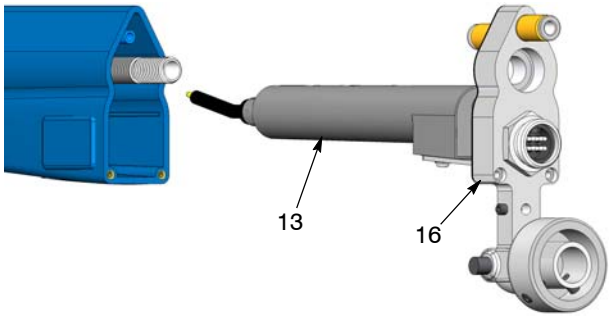


Figure 26 Removing the Multiplier from the Housing

3. Remove the contact guide (10) from the housing.
4. See Figure 27. Unscrew the multiplier nut (12). Remove the multiplier contact (12A) from the nut. Replace the multiplier contact it if it is damaged.

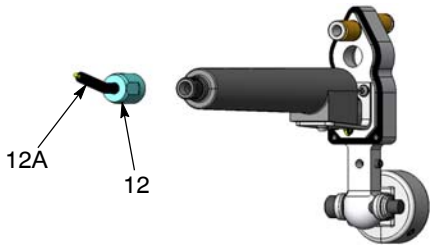


Figure 27 Removing the Multiplier from the Housing

5. See Figure 28. Remove the screw (26) and lockwasher (25), then remove the multiplier (13) from the bracket (24C).
6. Disconnect the harness plug (23) from the multiplier.

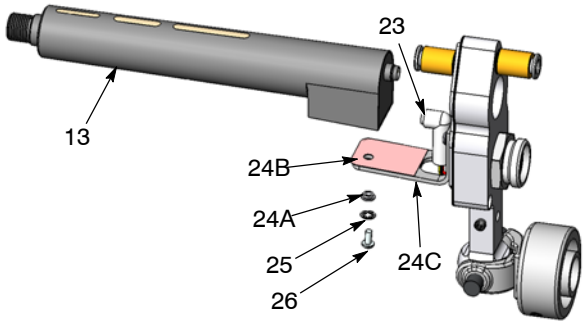


Figure 28 Replacing the Multiplier

7. Make sure the thermally conductive pad (24B) and nylon shoulder washer (24A) are intact. If not, install a new heat sink bracket kit, which includes a new bracket (24C), pad, and washer.

Multiplier Installation

1. See Figure 28. Connect the harness plug (23) to the multiplier (13).
2. Make sure the nylon shoulder washer (24A) is correctly installed into the bracket (24C). Install the multiplier on the bracket, tucking the harness wiring into the slot in the bracket.
3. Secure the multiplier to the bracket with the screw (26) and lockwasher (25).
4. See Figure 27. Install the contact (12A) in the multiplier well and secure it with the multiplier nut (12).
5. See Figure 29. Inject dielectric grease into the bottom bore of the contact guide, then slide the contact guide onto the powder tube channel and into the housing until it seats on the sleeve.
6. Install the heat sink/multiplier assembly into the housing, make sure the tip of the multiplier contact (12A) slides into the contact guide (10).
7. Perform steps 5–12 of *Resistor Installation*.

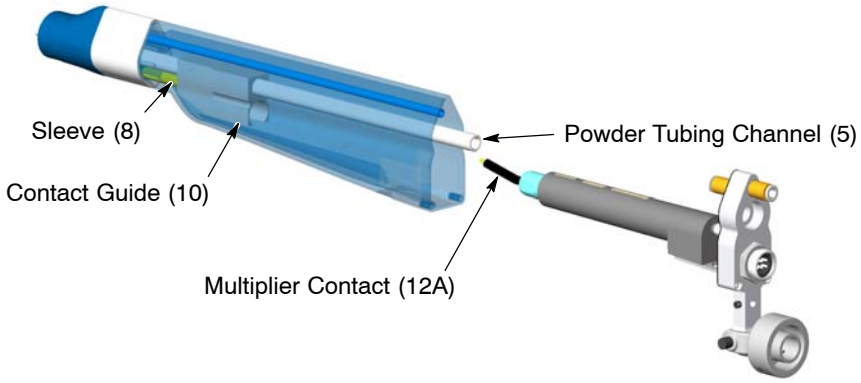


Figure 29 Multiplier Installation: Step 5

Parts

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

Spray Gun Parts List

See Figure 30.

Item	Part	Description	Quantity	Note
—	1101744	GUN, PE auto, 95 kV, Prodigy, bar mount	1	
1	1047536	• NUT, retaining	1	
2	1073706	• KIT, nozzle, flat spray, dual slot, converging angle, 1 mm	1	E
3	1054529	• KIT, adapter, Prodigy, spring, auto	1	
3A	1093411	• TUBE, barbed, ceramic, PE gun, Prodigy	1	
4	900742	• TUBING, polyurethane, 6/4 mm, blue	1.1 ft	A
5	1093410	• CHANNEL, powder tube, PE gun, Prodigy auto	1	
6	1047933	• GUIDE, resistor	1	
7	1053912	• KIT, resistor, cable, series	1	B
8	1070028	• SLEEVE, Prodigy	1	
8A	1070029	• CONTACT, Prodigy	1	
9	1070027	• TUBE, body, short, Prodigy, auto	1	

Continued...

Item	Part	Description	Quantity	Note
10	1070040	• GUIDE, contact, Prodigy bar mount	1	
11	1047501	• HOUSING, 95 kV, Prodigy, auto	1	
12	327706	• NUT, Sure Coat multiplier, outlet	1	
12A	1006352	• CONTACT, multiplier, packaged	1	
13	288552	• POWER SUPPLY, 95 kV, negative	1	
14	972399	• CONNECTOR, male, w/hex, 6 mm tube x $^1/_8$ in. unithread	2	
15	1047510	• GASKET, heatsink	1	
16	1070026	• HEATSINK, Prodigy auto gun, ball mount	1	
17	945127	• O-RING, Viton, 13.4 x 2.1 mm	1	
18	1047932	• NUT, lock, Prodigy, auto	1	
19	1047796	• GRIP RING, 8mm TE	1	C
20	1047934	• KNOB, lock, powder tube	1	
21	940117	• O-RING, silicone, 0.312 x 0.438 x 0.063 in.	1	
22	1054073	• SCREW, socket head, M3 x 20 mm, steel, zinc	2	
23	1050007	• HARNESS, gun, Prodigy, auto	1	
24	1054590	• KIT, heat sink, Prodigy, auto	1	D
25	983520	• WASHER, lock, internal, M3, steel, zinc	3	
26	1054074	• SCREW, pan head, rec, 4–40, 0.25 in. zinc	1	
27	982341	• SCREW, pan head, recessed, M3 x 10, zinc	2	
28	982501	• SCREW, socket, M8 x 40, black	1	
29	327730	• CLAMP, pivot	1	
30	982067	• SCREW, set, cup, M5 x 5 black	3	
31	327721	• CLAMP, fixed	1	
32	1101291	• BRACKET, ion collector rod, bar mount, Prodigy	1	
33	983127	• WASHER, lock, internal, M5, zinc	1	
34	326507	• SCREW, pan head, cross-recessed, M5 x 8	1	
35	1101290	• ROD, bar mount ion collector, Prodigy	1	
36	1101268	• CLIP, ion collector, 4-probe, Prodigy, packaged	1	
37	1101304	• • SCREW, pan, recessed, M4 x 6, nylon, black	1	
NS	1093531	• SLEEVING, mesh, tube insertion tool	2 ft	
NS	1073682	• TOOL, insertion/extractor, nozzle	1	

NOTE A: Bulk part number, order in increments of 1 foot, cut to required length.

B: Kit includes one applicator with 3-cc of dielectric grease.

C: Also available in packages of 10. Order part 1053911.

D: Kit includes heat sink bracket, thermally conductive pad, and M4 nylon shoulder washer.

E: Optional nozzles available. Refer to pages 23 and 25.

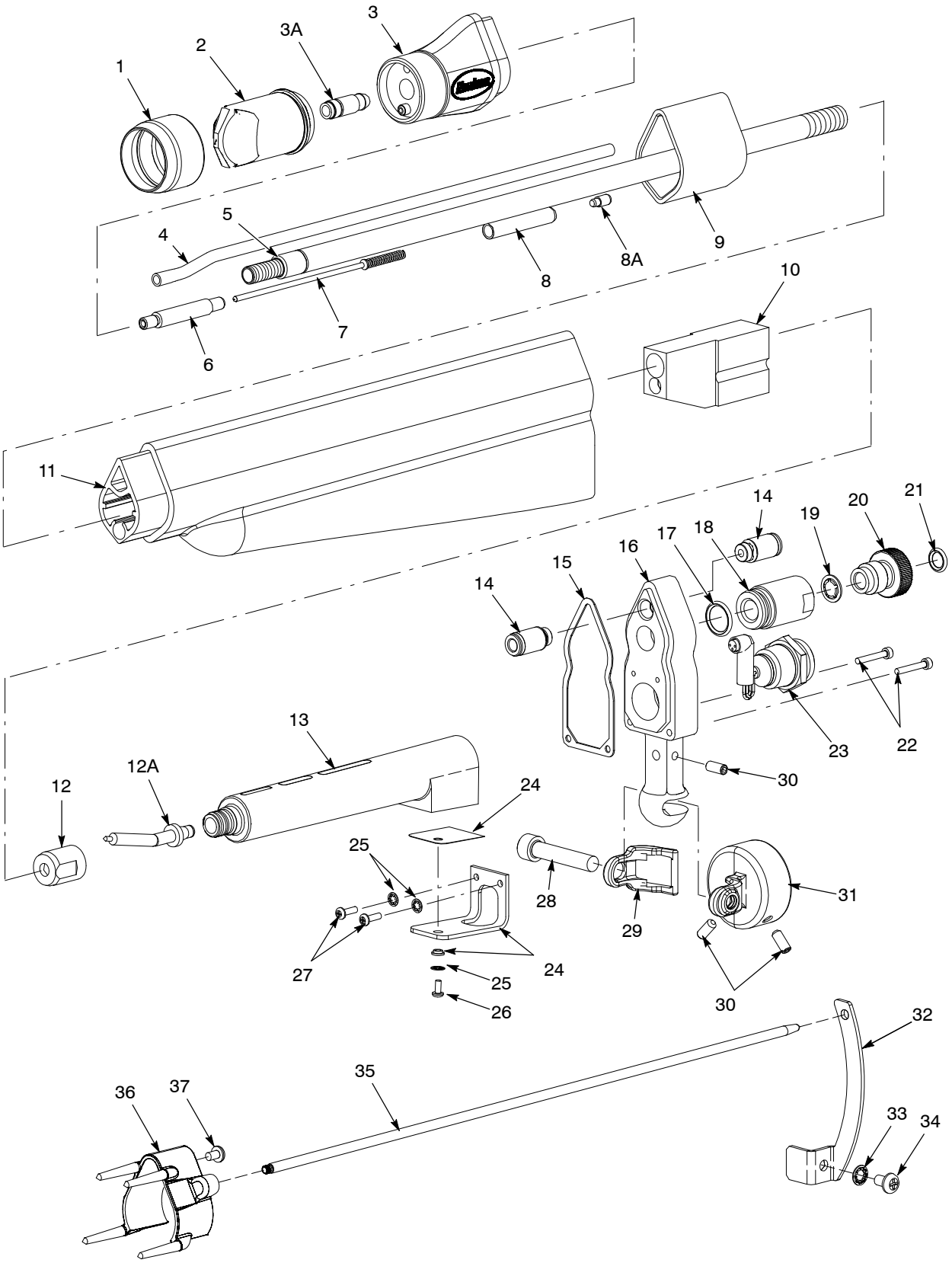


Figure 30 Spray Gun Parts

Service Kits

Part	Description	Note
1053911	KIT, grip ring, 8 mm TE, 10-pack	
1054599	KIT, cable, Prodigy, auto	A
1054590	KIT, heat sink, Prodigy, auto	A
1054529	KIT, adapter, Prodigy, spring, auto	A
1101301	KIT, ion collector retrofit, bar mount, Prodigy	B

NOTE A: Refer to the spray gun parts list and notes for contents.
B: Refer to page 21 for kit parts.

Options

Miscellaneous Options

Part	Description	Note
1073682	KIT, tool, insertion/extraction, nozzle	
1050040	CABLE, Prodigy, auto, 8 meter	
1050043	CABLE, Prodigy, auto, 12 meter	
1069306	CABLE, Prodigy, auto,16 meter	
302112	POWER SUPPLY, 95 kV, positive	
245733	APPLICATOR, dielectric grease	A
161411	PLUG, shorting, IPS	B

NOTE A: Carton of 12 3-cc dielectric grease applicators.
B: Use for testing voltage multiplier/resistor/electrode resistance.

Figure 31 Optional Shorting Plug and Ion Collector Rod

Powder and Air Tubing

Powder and air tubing are not supplied with the spray gun.

Part	Description	Note
1081783	TUBING, powder, 8 mm x 6 mm, 100 ft.	
1080388	TUBING, powder, 8 mm x 6 mm, 500 ft.	
1078006	ADAPTER, tube, barb, powder, Prodigy pump, generation II	
900742	TUBING, polyurethane, 6/4 mm, blue (Air)	
1062178	TUBING CUTTER, 12 mm or less	

Ion Collector Retrofit Kit

Item	Part	Description	Quantity	Note
–	1101301	KIT, ion collector retrofit, bar mount, Prodigy	1	
1	1101291	• BRACKET, ion collector rod, bar mount, Prodigy	1	
2	983127	• WASHER, lock, internal, M5, zinc	1	
3	326507	• SCREW, pan head, cross-recessed, M5 x 8	1	
4	1101290	• ROD, bar mount ion collector, Prodigy	1	
5	1101268	• CLIP, ion collector, 4-probe, Prodigy, packaged	1	
6	1101304	• • SCREW, pan, recessed, M4 x 6, nylon, black	1	

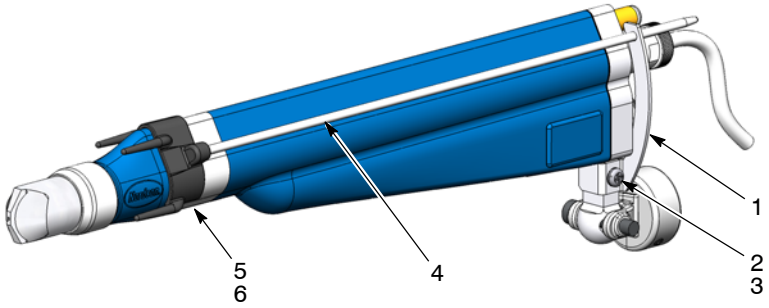


Figure 32 Optional Ion Collector for Bar-Mount Gun

Optional 3 Foot Gun Bar Assembly

See Figure 33 for both gun bar assemblies.

Item	Part	Description	Quantity	Note
—	341726	3-ft GUN BAR, aluminum, 1.25-in. OD, assembly	1	
1	248669	• BODY, adjustable mounting	1	
2	327733	• SLEEVE, locking, 1.25 in. diameter	1	
3	- - - - - -	• CAP, plug	1	
4	327732	• BODY, locking, 1.25 in. diameter	1	
5	327703	• ROD, adjusting, aluminum, 1.25 in. OD x 3 ft	1	
6	248957	• HANDLE, adjustment, $^3/_8$–6 x 1.77 in.	1	
7	983061	• WASHER, flat, 0.406 x 0.812 x 0.065 in., zinc	1	
8	249074	• HANDLE, adjustment, $^3/_8$–16 x 2.75 in.	1	

Optional 4 Foot Gun Bar Assembly

Item	Part	Description	Quantity	Note
—	341727	4-ft GUN BAR, aluminum, 1.25 in. OD, assembly	1	
1	248669	• BODY, adjustable mounting	1	
2	327733	• SLEEVE, locking, 1.25 in. diameter	1	
3	- - - - - -	• CAP, plug	1	
4	327732	• BODY, locking, 1.25 in. diameter	1	
5	327704	• ROD, adjusting, aluminum, 1.25 in. OD x 4 ft	1	
6	248957	• HANDLE, adjustment, $^3/_8$–16 x 1.77 in.	1	
7	983061	• WASHER, flat, 0.406 x 0.812 x 0.065 in., zinc	1	
8	249074	• HANDLE, adjustment, $^3/_8$–16 x 2.75 in.	1	

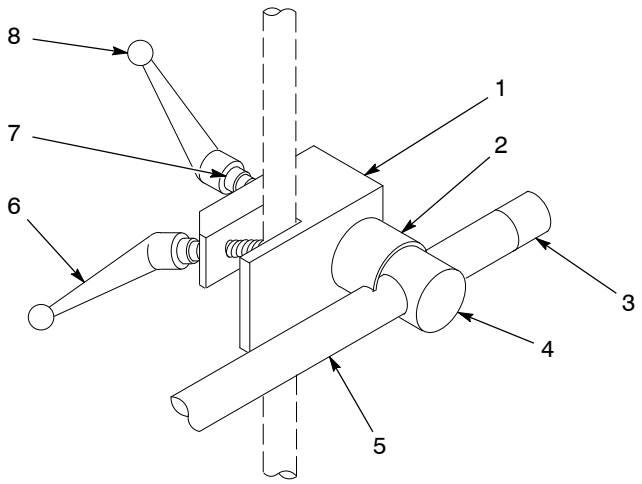


Figure 33 Optional Gun Bar Assemblies

Nozzles

Conical Nozzles

Refer to Figure 35 for replaceable nozzle components.

Part	Description	Effective Pattern Size	Usage	Note
Plastic Nozzles for Organic and PE Powders				
1062223	KIT, nozzle, 70 degree, conical	4–6 inches (101–152 mm)	General use on manual or automatic guns	A
1062160	• NOZZLE, 70 degree, conical (shell)			B
1062166	KIT, nozzle, 100 degree, conical	6–8 inches (152–230 mm)	General use on manual or automatic guns	A
1062161	• NOZZLE, 100 degree, conical (shell)			B
1073819	KIT, nozzle, conical, 40 degree, conical	2–4 inches (51–102 mm)	Manual coating and touch-up	A
1073818	• NOZZLE, 40 degree, conical (shell)			B
Ceramic Nozzles for PE Powders Only				
1601098	KIT, nozzle, 70 degree, conical, TP/PE	4–6 inches (101–152 mm)	General use on manual or automatic guns	A
1601106	• NOZZLE, 70 degree, conical, TP/PE (shell)			B
1601099	KIT, nozzle, 100 degree, conical, TP/PE	6–8 inches (152–230 mm)	General use on manual or automatic guns	A
1601107	• NOZZLE, 100 degree, conical, TP/PE (shell)			B
1601097	KIT, nozzle, conical, 40 degree, conical, TP/PE	2–4 inches (51–102 mm)	Manual coating and touch-up	A
1601105	• NOZZLE, 40 degree, conical, TP/PE (shell)			B
NOTE A: Complete nozzle assembly. B: Nozzle shell only. Does not include internal components.				

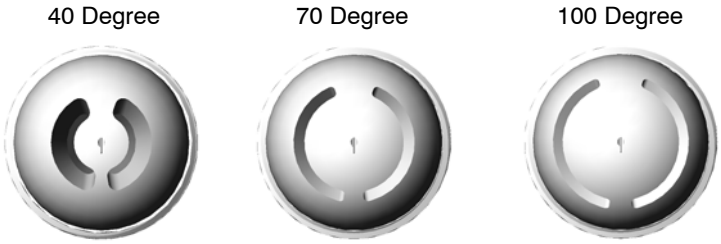


Figure 34 Conical Nozzles

Conical Nozzle Components

Refer to Miscellaneous Options on page 20 for the nozzle tool used to assemble and disassemble nozzles.

Item	Part	Description	Quantity	Note
1	940203	O-RING, silicone, 0.875 x 1.00 x 0.063 in.	1	
2	1047537	ELECTRODE ring	1	
3	940126	O-RING, silicone, 0.375 x 0.50 x 0.063 in.	1	
4	940163	O-RING, silicone, 0.625 x 0.75 x 0.063 in.	1	
5	1073625	INSERT, metric, conical/flat nozzles	1	
6	1073624	CONE, porous, nozzle	1	A
7	1062177	ELECTRODE, spring contact, 0.094 dia, Prodigy	1	
NOTE A: Also available in quantities of 10. Order kit 1073707.				

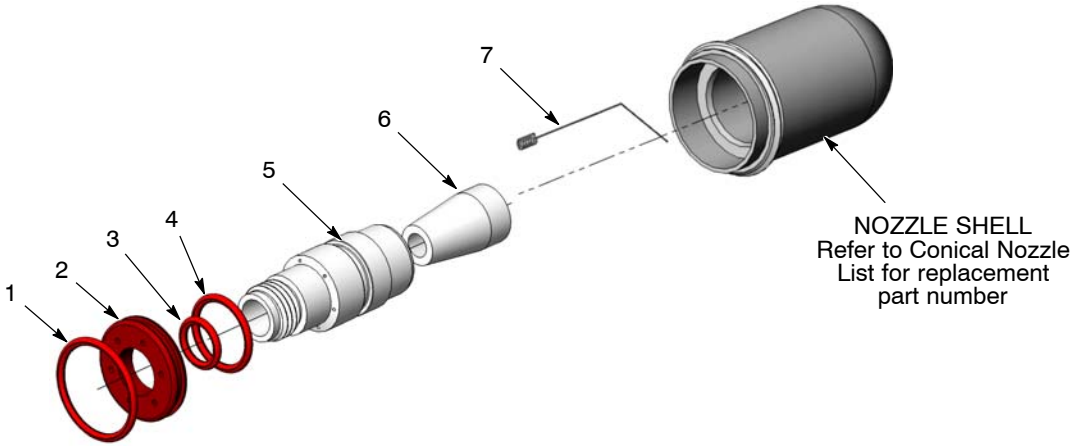


Figure 35 Conical Nozzle Components

Flat Spray and Cross Nozzles

Refer to Figure 37 for replaceable nozzle components.

Part	Description	Effective Pattern Size	Usage	Note
Plastic Nozzles for Organic and Porcelain Enamel Powders				
1073706	KIT, nozzle, flat spray, dual slot, 1 mm	8–10 inches (203–254 mm)	General use on manual or automatic guns	A
1073726	• KIT, nozzle, dual slot, shell w/electrode			B
1077584	NOZZLE assembly, cross, Prodigy, 4 slot, 60 degree	3–5 inches (76–127 mm)	Manual coating and touch-up	A
1077893	• NOZZLE, shell w/electrode, cross, Prodigy, 4-slot, 60 degree			B
1077585	NOZZLE assembly, cross, Prodigy, 4 slot, 90 degree	2–4 inches (51–102 mm)	Manual coating and touch-up	A
1077894	• NOZZLE, shell w/electrode, cross, Prodigy, 4-slot, 90 degree			B
1077586	NOZZLE assembly, cross, Prodigy, 6 slot, 60-degree	2–3 inches (51–76 mm)	Manual coating – deep recesses	A
1077895	• NOZZLE, shell w/electrode, cross, Prodigy, 6slot, 60-degree			B
Ceramic Nozzles for Porcelain Enamel Powders Only				
1601096	KIT, nozzle, flat spray, dual slot, TP/PE	8–10 inches (203–254 mm)	General use on manual or automatic guns	A
1601104	• KIT, nozzle, dual slot, shell w/electrode, TP/PE			B

NOTE A: Complete nozzle assembly.
B: Nozzle shell with electrode only, does not include internal components.

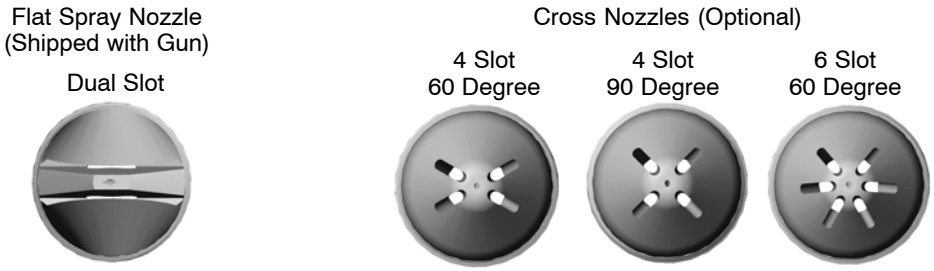


Figure 36 Flat Spray and Cross Nozzles

Flat Spray and Cross Nozzle Components

Refer to Miscellaneous Options on page 20 for the nozzle tool used to assemble and disassemble nozzles.

Item	Part	Description	Quantity	Note
–	—	• NOZZLE ASSEMBLIES	1	A
1	940203	• O-RING, silicone, 0.875 x 1.00 x 0.063 in.	1	
2	1047537	• ELECTRODE ring	1	
3	940126	• O-RING, silicone, 0.375 x 0.50 x 0.063 in.	1	
4	940163	• O-RING, silicone, 0.625 x 0.75 x 0.063 in.	1	
5	1073625	• INSERT, metric, conical/flat nozzles	1	
6	1073624	• CONE, porous, nozzle	1	B
7	—	• NOZZLE shell with electrode	1	A
NOTE A: Refer to Nozzle parts list on previous page for part numbers. B: Also available in quantities of 10. Order kit 1073707.				

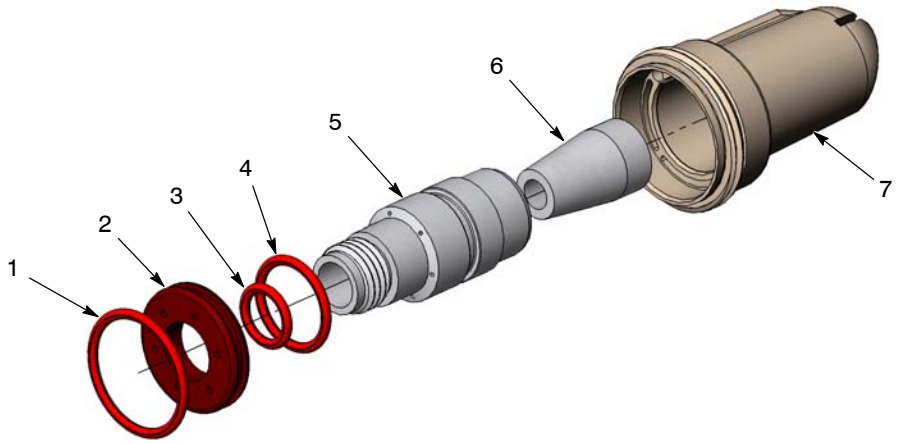


Figure 37 Flat Spray and Cross Nozzle Components

DECLARATION of CONFORMITY

Nordson Corporation
declare under our sole responsibility that the products

Prodigy Porcelain Enamel Automatic Powder Spray Applicator used with Prodigy iControl.

Prodigy Porcelain Enamel Manual Powder Spray Applicator used with the Prodigy Manual Gun Controller.

to which this declaration relates complies with the following Directives:

- Machinery Directive 89/37/EEC
- EMC Directive 2004/108/EEC
- Low Voltage Directive 2006/95/EC

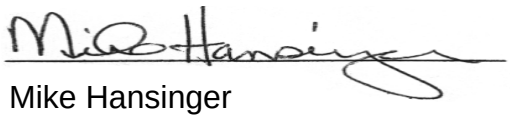
The conformity is under observance of the following standards or standards documents:

EN12100 EN1953 IEC60417	EN60079-0 EN50050 - Manual EN50177 - Automatic EN61241-1	EN61000-6-3 EN61000-6-2 EN55011 FM7260

Type of protection:
- 2 mJ, Type A, Ambient Temperature: 0 °C + 40 °C

- Porcelain Enamel powders are not flammable. The application of these powders does not create a potentially explosives atmosphere. These applicators do not fall under the ATEX Directive. The energy level of these applicators is at a safe level and is not a shock or fire hazard. Some of the standards listed are standards under the ATEX Directive. The equipment has been designed to meet these standards.

Quality Certificate
DNV=ISO9001



Date: 28 January 2009

Mike Hansinger
Manager Engineering Development
Industrial Coatings

Nordson