

Tribomatic[®] II Purgeable Automatic Powder Spray Gun

Customer Product Manual

Part 1014255A02

Issued 4/03

**For parts and technical support, call the Industrial Coating
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Section 1

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 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.

All work conducted inside the spray booth or within 1 m (3 ft) of booth openings is considered within a Class 2, Division 1 or 2 Hazardous location and must comply with 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.

Section 2

Description

Introduction

The Tribomatic II purgeable automatic powder spray gun uses friction (the tribo effect) to electrostatically charge powder coating particles as they are forced through the gun by compressed air. The spray gun is used with a Tribomatic II controller and powder pump.

See Figure 2-1. The spray gun consists of a charge module (3), diffuser (1), in-line ball mount (2), and various optional sprayheads (4). The charge module and diffuser are threaded into the body so that all parts stay together under purge air pressure.

The gun mount is used with a $\frac{5}{8}$ -in. diameter mounting bar to mount the spray gun to either a gun mover or fixed gun stand. The spray gun uses the same wide variety of optional nozzles and sprayheads available for use with the original Tribomatic automatic spray gun. Options are listed in Table 2-1.

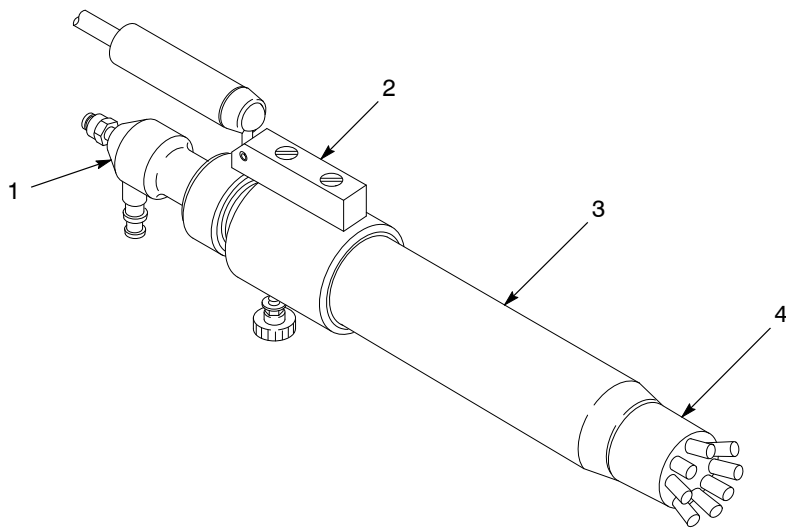


Figure 2-1 Tribomatic II Purgeable Automatic Powder Spray Gun

- | | |
|-----------------------|------------------|
| 1. Diffuser | 3. Charge module |
| 2. In-line ball mount | 4. Sprayhead |

Operation

Flow rate air pumps powder out of the feed hopper and forces it through the feed hose to the diffuser. Diffuser air mixes with the powder and increases its speed. The powder and air mixture then passes between the inner and outer wear sleeves inside the charge module. The collision of the powder particles with the walls of the sleeves electrostatically charges both the powder particles and the sleeves.

The sleeves are grounded through the gun body, ground wire, and control unit. The charge picked up by the sleeves is displayed in microamperes at the control unit. The display indicates how well the powder is charging (the higher the number, the stronger the charge the powder is receiving). The strength of the charge the powder receives depends on many factors, including the powder type and its speed through the spray gun.

Options

The options listed in Table 2-1 are available for use with the Tribomatic II purgeable automatic spray gun. Unless otherwise noted, refer to *Options* section on page 8-1 for part numbers and ordering information.

Table 2-1 Options

Option	Description
Tribomatic sprayheads and nozzles	Refer to the <i>Tribomatic Optional Sprayheads and Nozzles</i> instruction sheet.
Sprayhead repair kit	Use to repair an adjustable eight-nozzle sprayhead.
Gun mounting bar	Use to mount an automatic gun on a 1-in. round or square fixed gun stand or gun mover arm.
Gun holder adapter	Allows old style Tribomatic gun holders to be used with gun mounting bars and the Tribomatic II automatic purgeable spray gun.
Lance extensions	Use to spray powder into recesses. Available in 100-, 150-, or 300-mm lengths.
Versa-Spray nozzles	Must be used with one of the optional lance extensions described above. Refer to the <i>Optional Nozzles for Versa-Spray and Versa-Spray II Guns</i> instruction sheet for descriptions and part numbers.
Powder feed hose, air tubing, spiral-cut tubing, and hose clamps	Available in both metric and English ID and OD sizes and in bulk lengths.

Section 3

Installation



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

Mounting the Spray Gun

1. See Figure 3-1. Install the gun mounting bar assembly (2) on a fixed gun stand or oscillator arm (1).
2. Unscrew the adjuster (4) from the ball mount cap (7). Slide it over the end of the gun mounting bar (3).
3. Loosen the two set screws (6) in the ball mount flange (5). Slide the end of the mounting bar into the flange. Tighten the set screws.
4. Slide the adjuster down the mounting bar. Thread it onto the ball mount cap, but do not tighten the adjuster at this time.
5. Make sure the M6 x 8 set screw (8) is tightened.
6. Rotate the spray gun to the desired position, then tighten the adjuster to lock the spray gun into position.

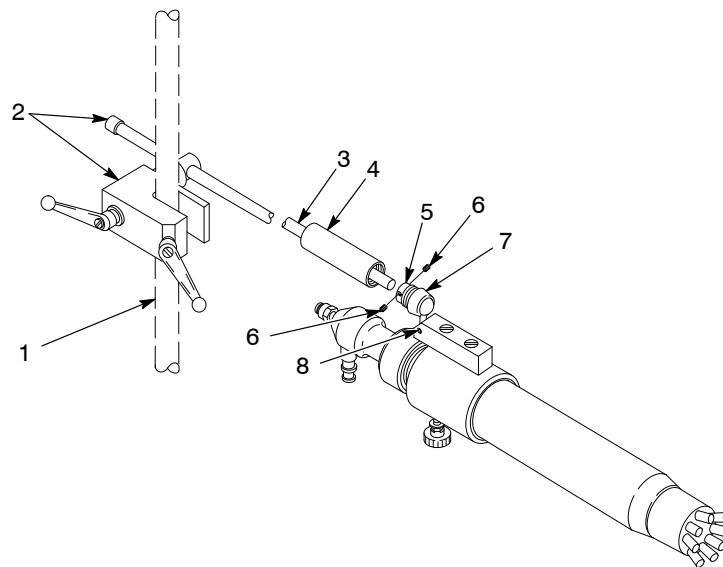


Figure 3-1 Mounting the Spray Gun

- | | | |
|--------------------------------------|----------------------|---------------------|
| 1. Fixed gun stand or oscillator arm | 4. Adjuster | 7. Ball mount cap |
| 2. Gun mounting bar assembly | 5. Ball mount flange | 8. M6 x 8 set screw |
| 3. Gun mounting bar | 6. Set screws | |

Connections



CAUTION: Do not overtighten threaded parts. Overtightening threaded parts will strip the threads.

1. See Figure 3-2. Install 6-mm blue air tubing (9) between the diffuser (1) and the control unit.
2. Connect the powder feed hose (7) to the barbed diffuser fitting, route the hose to the powder pump, and connect it to the pump outlet connector. Use snap clamps to secure the hose to the diffuser and pump adapters. Wrap spiral-cut tubing around the hose where necessary to prevent it from kinking and cutting off the flow of powder.
3. Attach the ground wire (8) to the ground stud (6). Tighten the knurled knob to secure the wire.
4. Route the ground wire to the control unit and connect it to the correct terminal on the rear panel.

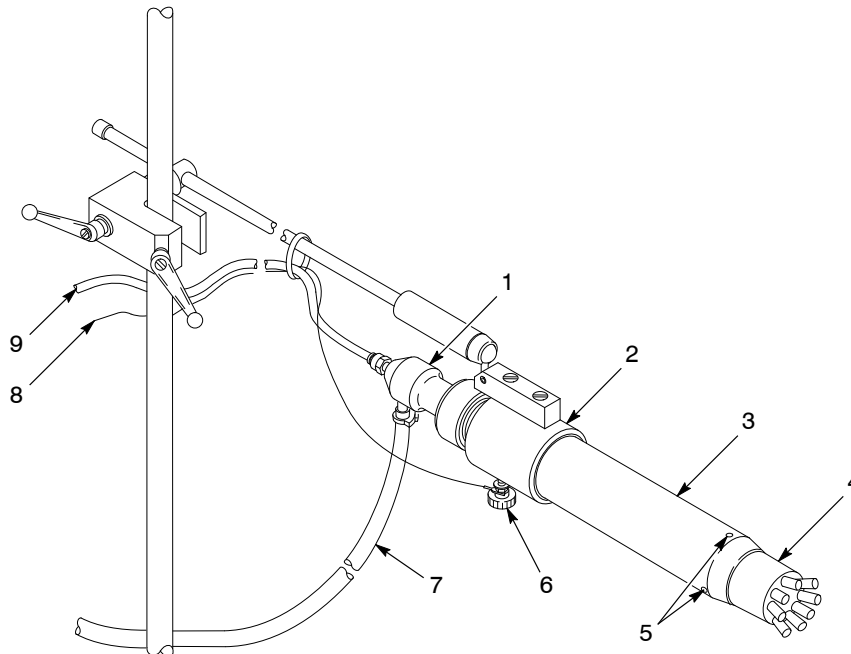


Figure 3-2 Connecting the Feed Hose, Air Tubing, and Ground Wire

- | | | |
|------------------|----------------|-------------------------|
| 1. Diffuser | 4. Sprayhead | 7. Powder feed hose |
| 2. Body | 5. Set screws | 8. Ground wire |
| 3. Charge module | 6. Ground stud | 9. 6-mm Blue air tubing |

Sprayhead Installation

1. See Figure 3-3. Before installing a sprayhead on the spray gun, remove the nozzle cone (1) from the interior of the sprayhead base (2) with a pair of pliers. (The nozzle cone is only used with the original Tribomatic spray gun.)

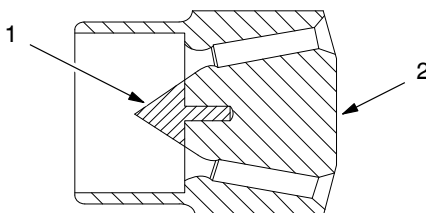


Figure 3-3 Removing the Nozzle Cone

1. Nozzle cone
 2. Sprayhead base
2. See Figure 3-2. Install the sprayhead (4) on the end of the charge module (3) with a slight twisting motion. Tighten the three set screws (5) to secure the sprayhead onto the spray gun.
 3. Adjust the spray gun-to-workpiece distance and position.

Installing Nozzles on Sprayheads

Figure 3-4 illustrates the various ways in which the nozzles can be installed.

Item	Nozzle	Installation
1	Cylindrical	Install on sprayhead tubing ends or on threaded or angled nozzles. The eight-orifice nozzle must be installed on a cylindrical nozzle. Cylindrical nozzles are also used as connectors.
2	Flat	
3	Pinpoint	
4	Eight-Orifice	
5	Threaded	Use to modify standard sprayheads. They are threaded on one end to screw into the sprayhead base.
6	Angled	Install on existing sprayhead nozzles, using cylindrical nozzles as connectors. These nozzles are not threaded.

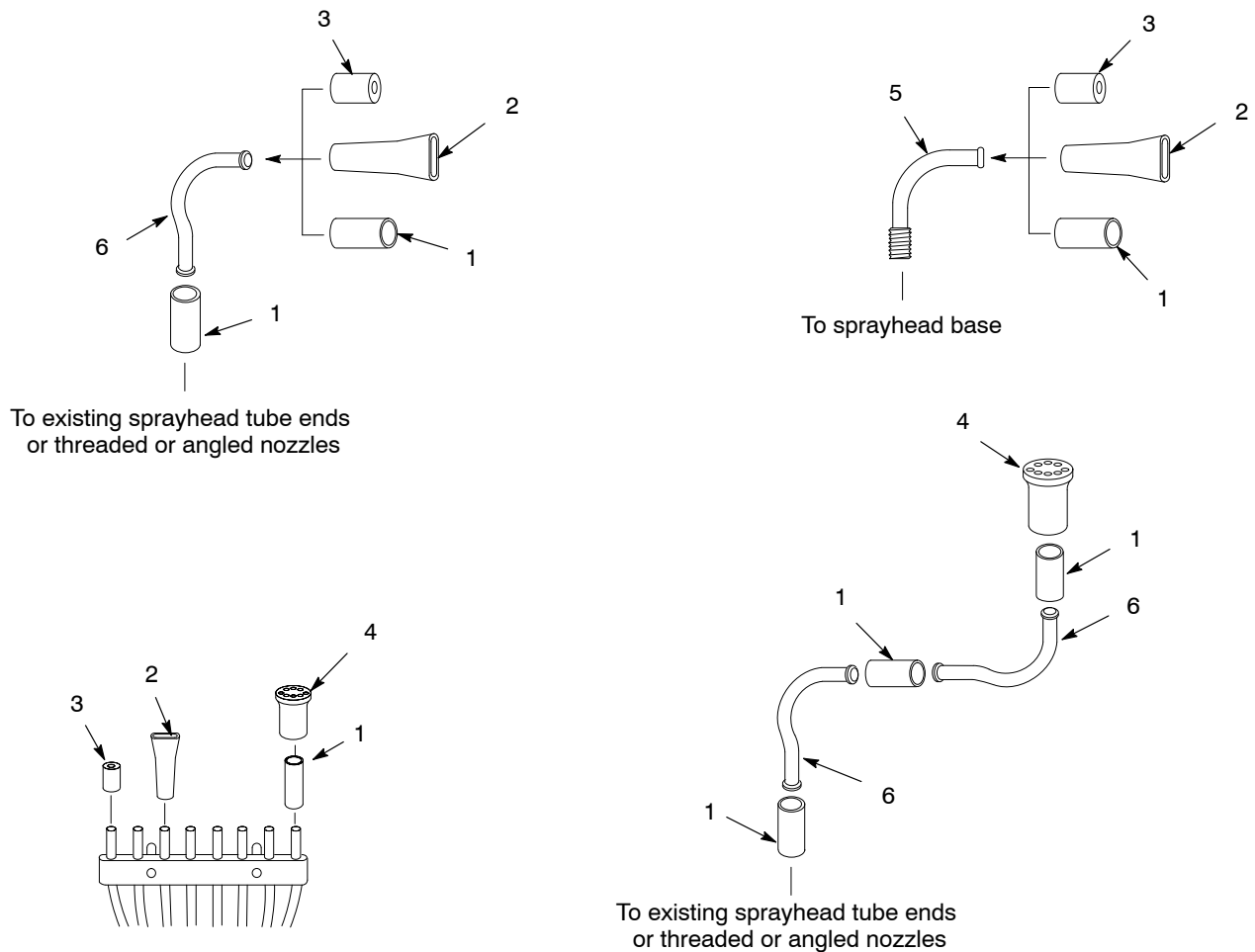


Figure 3-4 Installing Nozzles on Sprayheads

- | | | |
|------------------------|--------------------------|-----------------------------------|
| 1. Cylindrical nozzles | 3. Pinpoint nozzles | 5. Threaded nozzles |
| 2. Flat nozzles | 4. Eight-orifice nozzles | 6. Angled nozzles without threads |

Section 4

Operation



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

Introduction

Each automatic spray gun is controlled by a spray gun control unit that houses electrical controls, a digital display, and regulators and gauges for flow rate and diffuser air. Refer to the control unit manual for operation instructions.

Purging is controlled through either the spray gun control unit or powder feed center. Refer to your controller or feed center manual for more information.



WARNING: All electrically conductive equipment in the spray area must be grounded. Ungrounded or poorly grounded equipment can store an electrostatic charge which can give personnel a severe shock or arc and cause a fire or explosion.

Daily Operation

Table 4-1 Operating Recommendations

Operating Parameter	Recommendation
Air Pressure Settings	<p>Powder volume, velocity, and atomization are controlled by the flow rate and diffuser air pressure settings. As a starting point, set air pressures to</p> <ul style="list-style-type: none"> • Flow rate (ejector) 1.8 bar (26 psi) • Diffuser (atomizing) 2.5 bar (36 psi) <p>Keep the flow rate air pressure as low as possible. Maintain the same ratio of diffuser air-to-flow rate air without reducing the charging level.</p> <p>Reduce the diffuser air pressure if powder is being blown out of recesses. Build coating thicknesses slowly. Reduce air pressures to keep overspray to a minimum.</p>
Part Hangers	<p>Experiment with the part hanger configuration and part density. Reduce the space between parts to keep overspray to a minimum. Keep the air velocity through the booth as close as practical to the minimum required by law without compromising safety.</p>
Sprayheads	<p>Use different sprayheads for different part shapes. Select the appropriate nozzle for the parts being coated.</p> <ul style="list-style-type: none"> • Pinpoint nozzles for penetration • Eight-orifice nozzles for flat surfaces • Cylindrical nozzles for general purpose coating <p>Angle the nozzles to meet and follow the parts as they move through the booth. Typical nozzle-to-part distance is 20–25 cm (8–10 in.). Coat the inside surfaces and recessed areas first, then coat the outside surfaces and open areas.</p>

Maintenance

When used with a powder feed center, the spray gun will be internally purged when you perform the powder feed center color change and maintenance procedures. Refer to your powder feed center manual for more information.

Perform the following procedure periodically.



WARNING: Make sure the spray gun is grounded before cleaning it with compressed air or spraying powder. Without a ground connection the spray gun will become electrostatically charged. Personnel touching the spray gun could receive a shock.

1. Remove the powder feed hose from the pump and the air tubing from the pump and diffuser. Use compressed air from an OSHA-approved air gun to clean the hose, diffuser, and charge module.

NOTE: Never blow powder through the feed hose back into the pump. Turn on the booth exhaust fan, disconnect the hose from the pump, and blow out the hose from the pump end into the booth.



CAUTION: Never use a knife or other sharp object to clean plastic parts. Powder will build up on scratches on the powder contact surfaces. The powder particles can fuse on impact and clog the spray gun.

2. Remove the diffuser from the gun body. Disassemble the diffuser and clean the parts with compressed air and a clean, soft cloth. Check the powder contact parts for wear and replace worn parts.
3. Blow out the charge module and sprayheads. Disassemble and clean the charge module. Check the powder contact parts for wear and replace worn parts.



WARNING: All electrically conductive equipment in the spray area must be grounded. Ungrounded or poorly grounded equipment can store an electrostatic charge which can give personnel a severe shock or arc and cause a fire or explosion.

4. Make sure all conductive equipment in the spray area, including the spray guns, are connected to a true earth ground. The resistance from part to ground, through the hangers and conveyor, must not exceed one megohm. For best results, the resistance should be less than 500 Ω .

Section 5

Troubleshooting



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 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.

Problem	Possible Cause	Corrective Action
1. Powder does not flow when control unit turned on	No supply air or pressure set too low Flow rate air pressure too low Blockage in system Control unit malfunction; solenoid valve is not opening	Make sure the control unit is getting air. Check the supply air pressure. Increase the flow rate air pressure. Shut down and clean the system starting with the pump. Check the air dryer for proper operation. Drain the air filters and inspect the filter elements. Make sure the powder supply in the feed hopper is dry. Repair or replace the control unit.
2. Powder puffing from spray gun	Blockage in system Pump venturi throat worn Diffuser (atomizing) air pressure too high or incorrect ratio of diffuser to flow rate air pressure Powder feed hose ID too large or hose too short	Shut down the system. Clean the system starting with the pump. Replace the venturi throat. Decrease the diffuser air pressure or increase the flow rate air pressure. Change to a smaller ID hose or change the hose length. Best results are obtained when a hose is 4–6 m (13–20 ft) long.
<i>Continued...</i>		

Problem	Possible Cause	Corrective Action
3. Poor powder charging—no electrostatic wrap or adhesion	<p>Flow rate air pressure too high or diffuser air pressure too low</p> <p>Parts not properly grounded</p> <p>Too much moisture in compressed air supply</p> <p>Inner and outer wear sleeves worn</p> <p>Too many fine particles in powder supply</p> <p>Powder not suitable for tribo-charging</p>	<p>Decrease the flow rate air pressure or increase the diffuser air pressure.</p> <p>Check the conveyor and hangers with a standard ohmmeter for coating buildup that could affect the ground. Resistance between the parts and the ground must not exceed 1 megohm. For best results, resistance should not exceed 500 ohms.</p> <p>Check the air dryer for proper operation. Use a refrigerated or regenerative desiccant air dryer that can produce a 3.4 °C (38 °F) or lower dew point at 7 bar (100 psi). Drain the air filter and check the filter element.</p> <p>Disassemble the spray gun and reverse the inner and outer wear sleeves. Replace the wear sleeves if necessary.</p> <p>Replace the powder supply with virgin powder. Consult your powder manufacturer.</p> <p>Consult your powder manufacturer.</p>
4. Inadequate powder flow	<p>Flow rate air pressure too low</p> <p>Wet powder clogging system</p>	<p>Increase the flow rate air pressure.</p> <p>Check the air filters, dryer, and powder supply. Service the filters and/or the dryer and change the powder supply.</p>

Section 6

Repair



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

Service Kits

See Figure 6-1. Two major service kits are available:

Item	Service Kit	Kit Contents
A	Charge module	Parts included in the wear sleeve replacement kit, plus the inlet and outlet wear sleeves and distributors. Refer to page 7-6 in the <i>Parts</i> section.
B	Wear sleeve	Parts subject to the most wear: inner and outer wear sleeves, spacing ring, and positioning ring. Refer to page 7-8 in the <i>Parts</i> section.

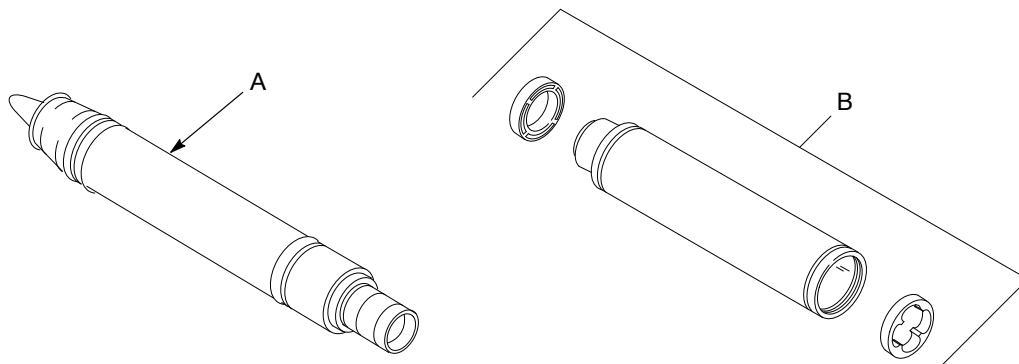


Figure 6-1 Service Kits

A. Charge module service kit

B. Wear sleeve service kit

Charge Module Cutaway Drawing

Figure 6-2 shows how the parts of the charge module fit together. Refer to this drawing when assembling the charge module.

NOTE: The numeric callouts in this section match the item numbers in the spray gun's main parts list. Refer to the *Parts* section for a complete parts list and ordering information.

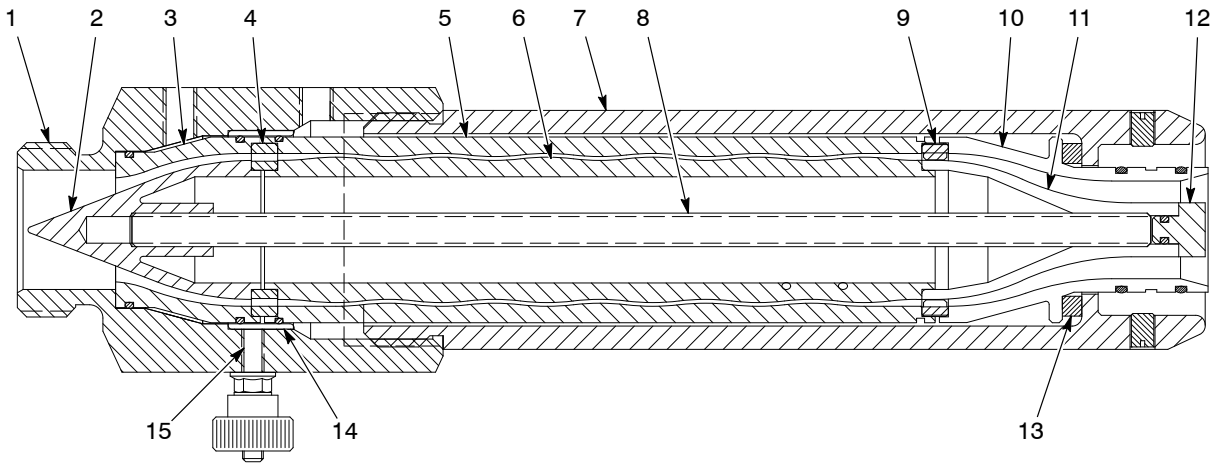


Figure 6-2 Charge Module

- | | | |
|-------------------------------------|-------------------------------------|--|
| 1. Body | 6. Inner wear sleeve ^{1,2} | 11. Outlet distributor ¹ |
| 2. Inlet distributor ¹ | 7. Extension | 12. Outlet distributor plug ¹ |
| 3. Inlet wear sleeve ¹ | 8. Threaded rod ¹ | 13. Spring ¹ |
| 4. Positioning ring ^{1,2} | 9. Spacing ring ^{1,2} | 14. Grounding ring |
| 5. Outer wear sleeve ^{1,2} | 10. Outlet wear sleeve ¹ | 15. Ground stud |

Note: 1—provided with charge module service kit.

Note: 2—provided with wear sleeve service kit.

Cleaning

Before disassembling the spray gun, perform the following steps.

1. Shut off the flow rate and diffuser air.
2. Disconnect the powder feed hose from the pump and the diffuser air tubing from the diffuser.
3. Leave the ground wire attached to the spray gun. Make sure the booth exhaust fan is running.
4. Blow out the feed hose, diffuser, and charge module.
5. Remove the diffuser from the gun body and blow out the charge module again.
6. Remove the sprayhead.

Charge Module Replacement

Removing the Charge Module

1. See Figure 6-3. Unscrew the extension (3) from the body (1), and slide the extension off the inner/outer wear sleeve assembly (2). The outlet wear sleeve assembly (4) will remain inside the extension.
2. Pull the inner/outer wear sleeve assembly from the body. The inlet wear sleeve assembly will stay in the body.

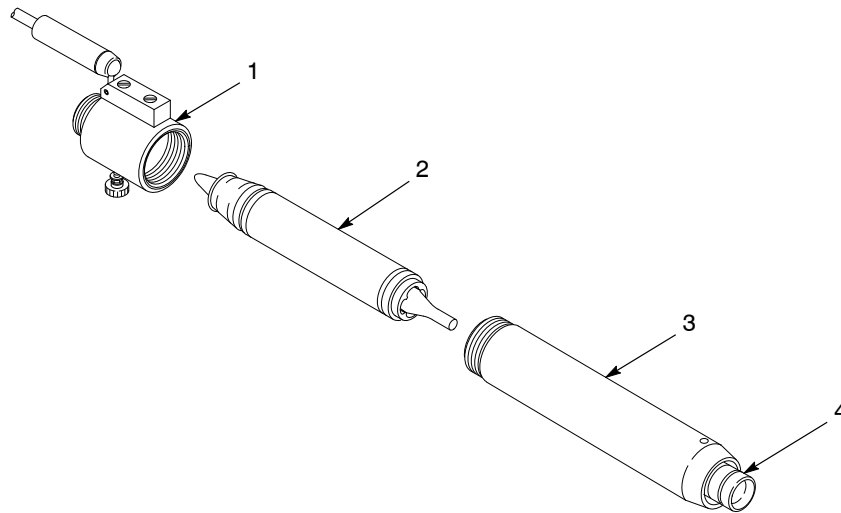


Figure 6-3 Removing the Charge Module—Steps 1 and 2

- | | | |
|-------------------------------------|--------------|--------------------------------|
| 1. Body | 3. Extension | 4. Outlet wear sleeve assembly |
| 2. Inner/outer wear sleeve assembly | | |

3. See Figure 6-4. Push the inlet wear sleeve assembly (1) out of the body (3) with a wooden dowel or piece of $\frac{3}{4}$ -in. OD schedule 40 PVC pipe.
4. Remove the outlet wear sleeve assembly (2) from the extension (4). Clean the body and extension with a clean, lint-free cloth.

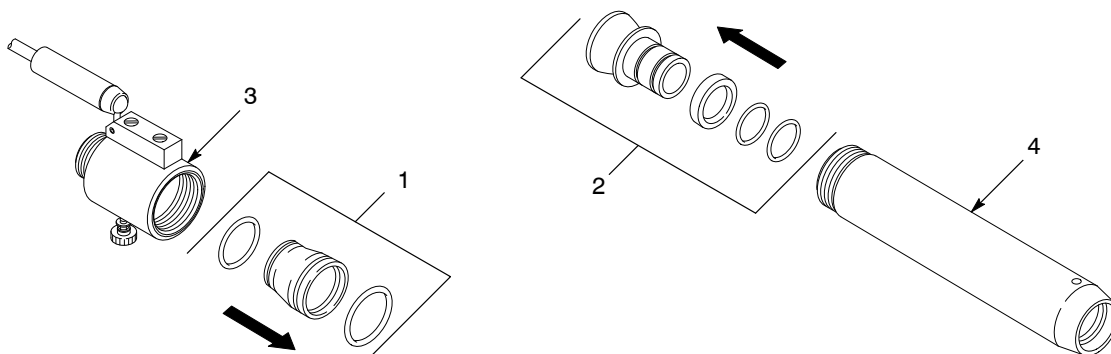


Figure 6-4 Removing the Charge Module—Steps 3 and 4

- | | | |
|--------------------------------|---------|--------------|
| 1. Inlet wear sleeve assembly | 3. Body | 4. Extension |
| 2. Outlet wear sleeve assembly | | |

Installing the Charge Module

1. See Figure 6-5. Install the inlet wear sleeve assembly (1) from the service kit in the body (3).
2. Install the outlet wear sleeve assembly (2) from the service kit in the extension (4).

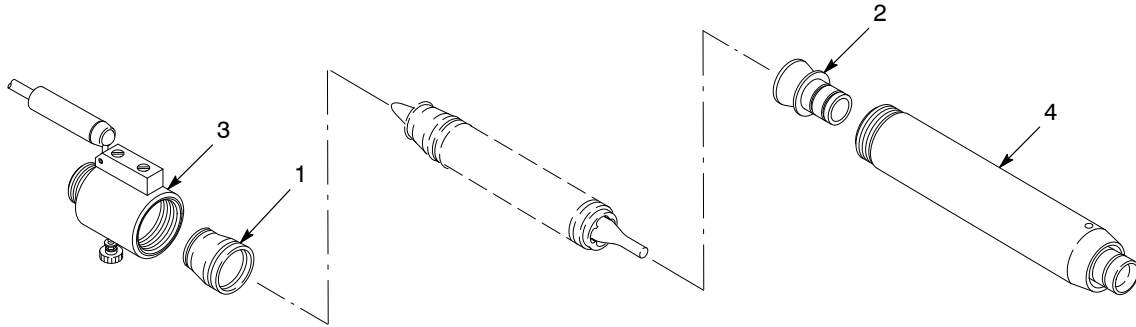


Figure 6-5 Installing the Charge Module—Steps 1 and 2

- | | | |
|--------------------------------|---------|--------------|
| 1. Inlet wear sleeve assembly | 3. Body | 4. Extension |
| 2. Outlet wear sleeve assembly | | |

3. See Figure 6-6. Insert the inner/outer wear sleeve assembly (2) into the body (1) with the inlet distributor (cone-shaped end) first. Make sure the positioning ring (3) fits into the groove in the ID of the inlet wear sleeve.



CAUTION: Do not overtighten threaded parts. Overtightening parts will result in stripped threads.

4. Make sure the spacing ring (4) is in place in the end of the outer wear sleeve. Slide the extension (5) over the inner/outer wear sleeve assembly and hand-tighten the extension into the body.
5. Install the sprayhead and diffuser. Connect the powder feed hose and diffuser air tubing.

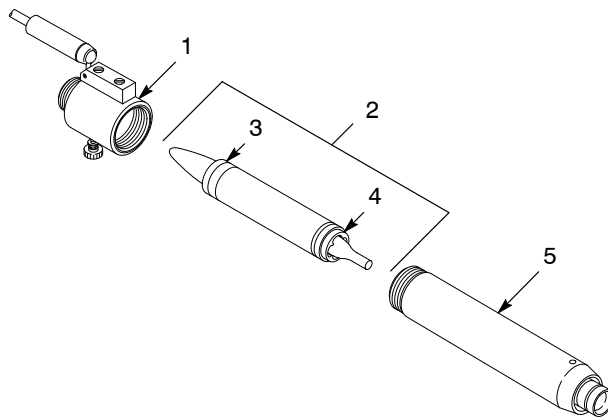


Figure 6-6 Installing the Charge Module—Steps 3 and 4

- | | | |
|-------------------------------------|---------------------|--------------|
| 1. Body | 3. Positioning ring | 5. Extension |
| 2. Inner/outer wear sleeve assembly | 4. Spacing ring | |

Inner/Outer Wear Sleeve Replacement

Removing the Inner/Outer Wear Sleeves

1. Perform steps 1 and 2 of the *Removing the Charge Module* procedure on page 6-3.
2. See Figure 6-7. Hold the outer wear sleeve (3) in your hand and push on the outlet distributor (2) to push the inner wear sleeve (1) out of the outer wear sleeve. Discard the outer wear sleeve and spacing ring (4).

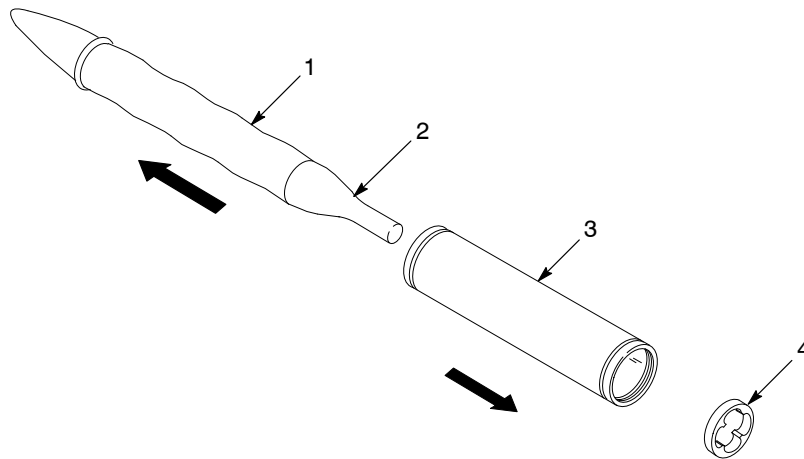


Figure 6-7 Disassembling the Inner/Outer Wear Sleeves

- | | | |
|-----------------------|----------------------|-----------------|
| 1. Inner wear sleeve | 3. Outer wear sleeve | 4. Spacing ring |
| 2. Outlet distributor | | |

3. See Figure 6-8. Unscrew the inlet distributor (1) from the threaded rod (2) and remove the inlet and outlet (5) distributors and threaded rod from the inner wear sleeve (4). Discard the inner wear sleeve and positioning ring (3).

Installing the Inner/Outer Wear Sleeves

1. See Figure 6-8. Slide the new positioning ring (3) onto one end of the new inner wear sleeve (4).

NOTE: The spacing and positioning rings, as well as the inner and outer wear sleeves, are reversible.

2. Screw the inlet distributor (1) onto one end of the threaded rod (2). Insert the threaded rod into the positioning ring end of the inner wear sleeve. Screw the outlet distributor (5) onto the threaded rod and tighten it securely by hand.

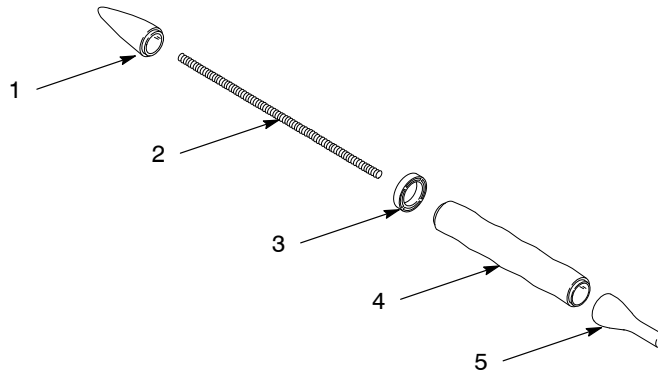


Figure 6-8 Inner Wear Sleeve Assembly

- | | | |
|----------------------|----------------------|-----------------------|
| 1. Inlet distributor | 3. Positioning ring | 5. Outlet distributor |
| 2. Threaded rod | 4. Inner wear sleeve | |

3. See Figure 6-9. Push the inner wear sleeve assembly (1) into the outer wear sleeve (3) until the positioning ring (2) seats properly into the outer wear sleeve.
4. Install the new spacing ring (4) over the inner wear sleeve assembly. Seat it in the end of the outer wear sleeve.
5. Perform the *Installing the Charge Module* procedure on page 6-4.

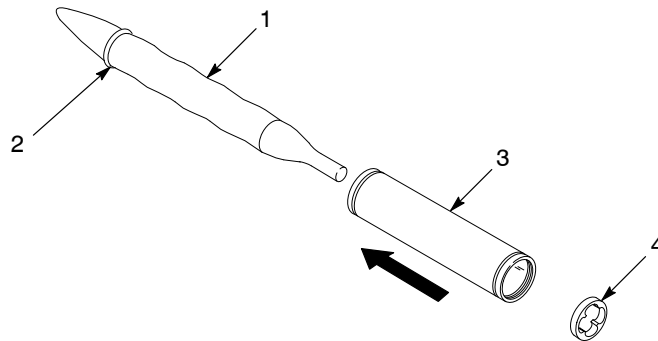


Figure 6-9 Assembling the Inner/Outer Wear Sleeves

- | | | |
|----------------------|----------------------|-----------------|
| 1. Inner wear sleeve | 3. Outer wear sleeve | 4. Spacing ring |
| 2. Positioning ring | | |

Section 7

Parts

Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (—) is used when the part number applies to all parts in the illustration.

The number in the Part column is the Nordson Corporation part number. A series of dashes in this column (- - - - -) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

Item	Part	Description	Quantity	Note
—	0000000	Assembly	1	
1	000000	• Subassembly	2	A
2	000000	• • Part	1	

Spray Gun Parts

See Figure 7-1.

Item	Part	Description	Quantity	Note
—	1013922	MODULE, Tribomatic II, purge, packaged	1	
1	1013886	• DIFFUSER SERVICE KIT, Tribomatic II, purge	1	A
2	183539	• MOUNT, VS2, in-line ball	1	B
3	1013959	• BODY SERVICE KIT, Tribomatic II	1	C
4	1013889	• • BODY, Tribomatic, purge	1	
5	631230	• • RING, ground	1	
6	630088	• • STUD, ground, with nut	1	
7	630073	• • KNOB, charge tube ground stud	1	
8	631207	• CHARGE MODULE SERVICE KIT	1	D
9	1013982	• EXTENSION, Tribomatic II, purge, threaded	1	
10	982455	• SCREW, set, M6 x 1.0 x 8, nylon, black	3	

NOTE A: Refer to *Diffuser Service Kit* on page 7-4 for the parts included in this assembly.
 B: Refer to *In-Line Ball Mount Service Kit* on page 7-5 for the parts included in this assembly.
 C: Limited service part. You must provide your gun part number and serial number when ordering this service kit.
 D: Refer to *Charge Module Service Kit* on page 7-6 for the parts included in this assembly.

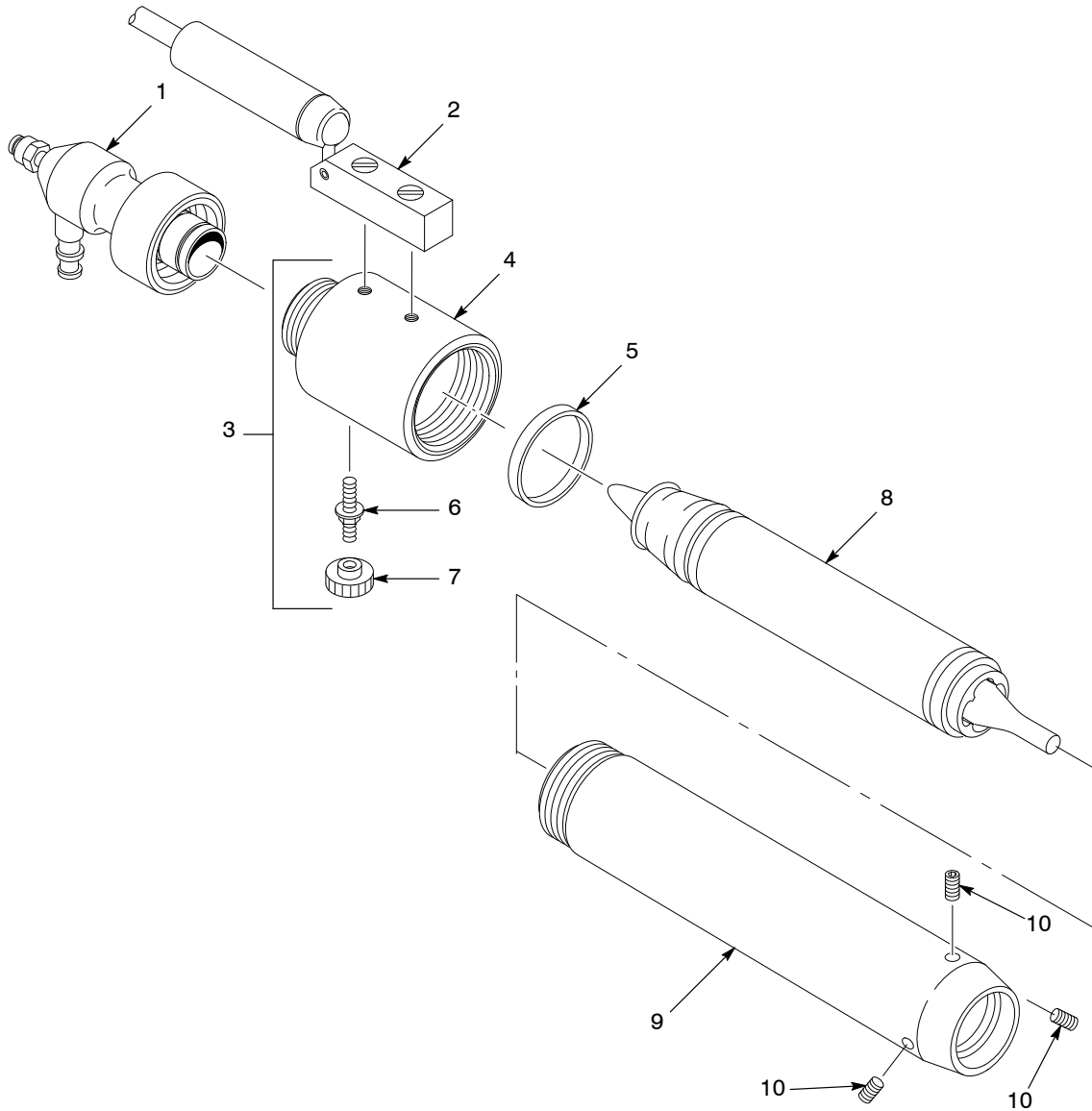


Figure 7-1 Spray Gun Parts

Diffuser Service Kit

See Figure 7-2.

Item	Part	Description	Quantity	Note
—	1013886	KIT, service, diffuser, Tribomatic, purge	1	
—	-----	• DIFFUSER, Tribomatic, purge	1	
1	972080	• • CONNECTOR, male, 1/4-in. tube x 1/8-in. NPTF	1	
2	940224	• • O-RING, silicone, 1.000 x 1.125 x 0.063 in.	2	
3	939247	• CLAMP, hose, snap-it	1	
NS	247006	• CLAMP, hose, 0.673–0.795-in. OD	1	
NS: Not Shown				

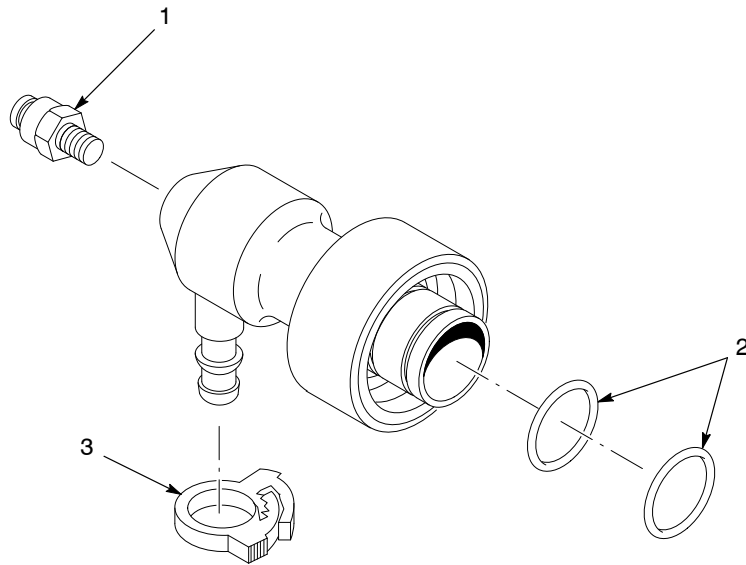


Figure 7-2 Diffuser Service Kit

In-Line Ball Mount Service Kit

See Figure 7-3.

Item	Part	Description	Quantity	Note
—	183539	KIT, VS2, in-line ball mount	1	
—	-----	• MOUNT, VS2, in-line ball	1	
1	941143	• • O-RING, silicone, 0.625 x 0.813 x 0.094 in.	1	
2	183547	• • ADJUSTER, hand, ball mount	1	
3	183546	• • FLANGE, bar, ball mount	1	
4	982067	• • SCREW, set, cup, M5 x 5, black	2	
5	941176	• • O-RING, silicone, 0.813 x 1.000 x 0.094 in.	1	
6	183818	• • BALL, pivot, VS2 gun mount	1	
7	183549	• • CAP, ball mount	1	
8	982595	• • SCREW, set, cone, M6 x 8, stainless steel	1	
9	183548	• • PLATE, adapting, ball mount	1	
10	982186	• SCREW, flat head, slotted, M8 x 20, zinc	2	
11	129592	KNOB, clamping, M6 x 12	1	A

NOTE A: The optional clamping knob replaces the set screw (item 8).

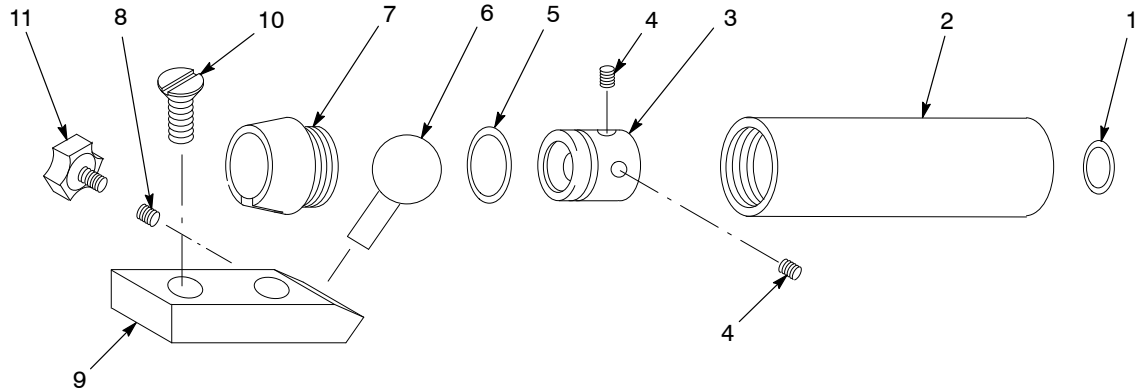


Figure 7-3 In-Line Ball Mount Service Kit

Charge Module Service Kit

See Figure 7-4.

Item	Part	Description	Quantity	Note
—	631207	CHARGE MODULE SERVICE KIT	1	
1	631232	• SLEEVE, wear, inlet, assembly, PTFE	1	
2	940243	• • O-RING, silicone, 1.125 x 1.250 x 0.063 in.	1	
3	-----	• • SLEEVE, wear, inlet, PTFE	1	
4	940284	• • O-RING, silicone, 1.375 x 1.500 x 0.063 in.	1	
5	631234	• DISTRIBUTOR, inlet	1	
6	631211	• STUD, M8 x 9.65-in. long, nylon	1	
7	631210	• RING, positioning	1	A, B
8	631216	• SLEEVE, wear, inner, PTFE	1	B
9	631224	• DISTRIBUTOR, outlet	1	
10	631236	• • DISTRIBUTOR, outlet, PTFE	1	
11	940066	• • O-RING, silicone, 0.125 x 0.250 x 0.063 in.	1	
12	631237	• • PLUG, distributor, outlet, Tivar	1	
13	631212	• SLEEVE, wear, outer, PTFE	1	B
14	940284	• • O-RING, silicone, 1.375 x 1.500 x 0.063 in.	2	B
15	631220	• RING, spacing	1	A, B
16	631221	• SLEEVE, wear, outlet, assembly	1	
17	-----	• • SLEEVE, wear, outlet	1	
18	631222	• • SPRING, silicone, 1.25 x 1.50 in.	1	
19	940224	• • O-RING, silicone, 1.000 x 1.125 x 0.063 in.	2	
NOTE A: These parts are available in the positioning and spacing ring service kit, part 631209. Refer to page 7-8.				
B: These parts are available in the inner/outer wear sleeve service kit, part 631208. Refer to page 7-8.				

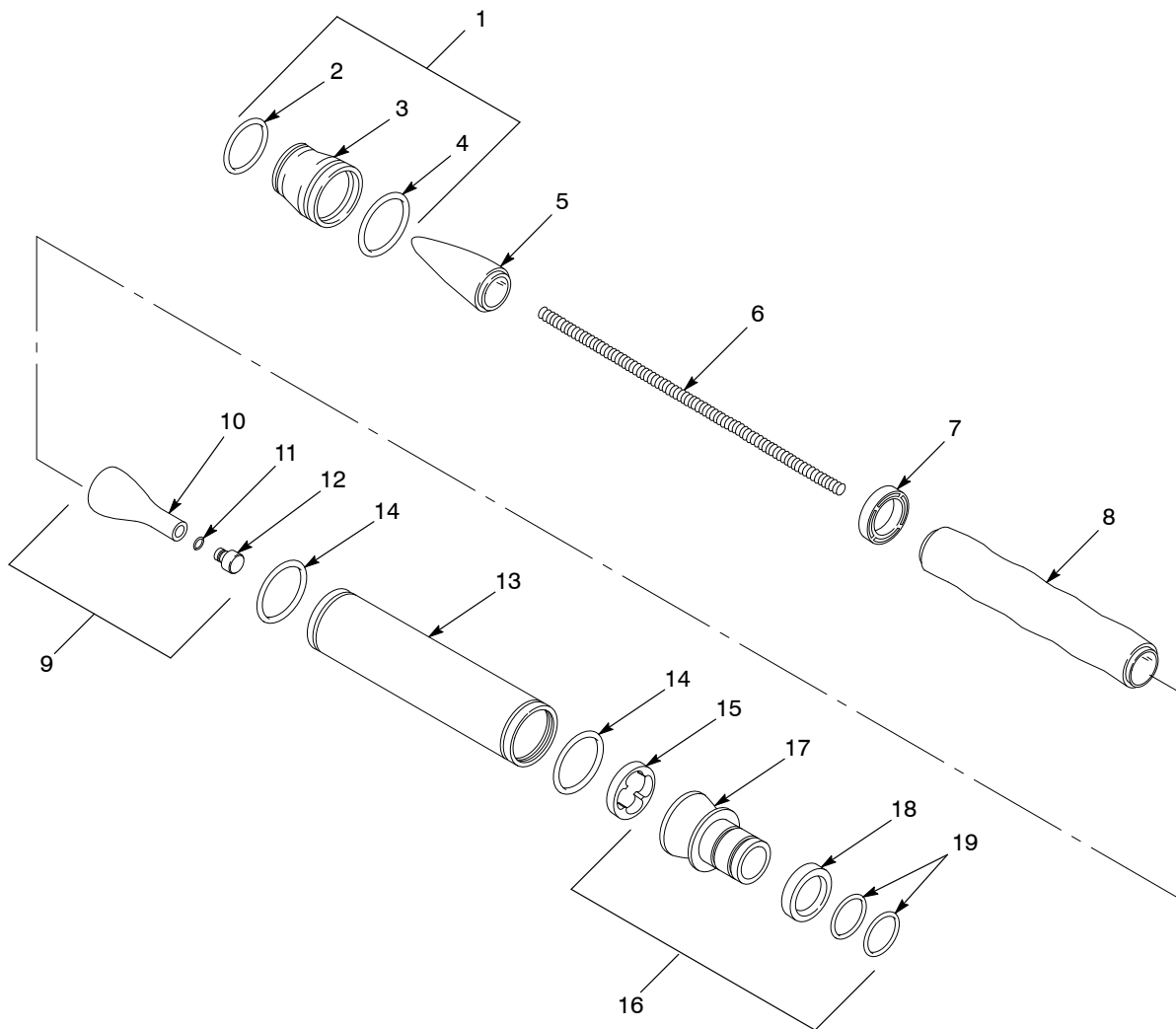


Figure 7-4 Charge Module Service Kit

Inner/Outer Wear Sleeve Service Kit

See Figure 7-5. Item numbers are identical to those in Figure 7-4.

Item	Part	Description	Quantity	Note
—	631208	SERVICE KIT, inner and outer wear sleeves, PTFE	1	
7	631210	• RING, positioning	1	A
8	631216	• SLEEVE, wear, inner, PTFE	1	
13	631212	• SLEEVE, wear, outer, PTFE	1	
14	940284	• • O-RING, silicone, 1.375 x 1.500 x 0.063 in.	2	
15	631220	• RING, spacing	1	A

NOTE A: These parts are also available as a set in the positioning and spacing ring service kit, part 631209.

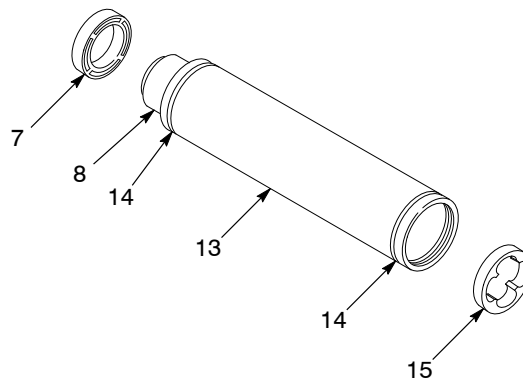


Figure 7-5 Inner/Outer Wear Sleeve Service Kit

Positioning and Spacing Ring Service Kit

See Figure 7-6. Item numbers are identical to those in Figure 7-4.

Item	Part	Description	Quantity	Note
—	631209	SERVICE KIT, positioning and spacing rings	1	
7	631210	• RING, positioning	1	
15	631220	• RING, spacing	1	

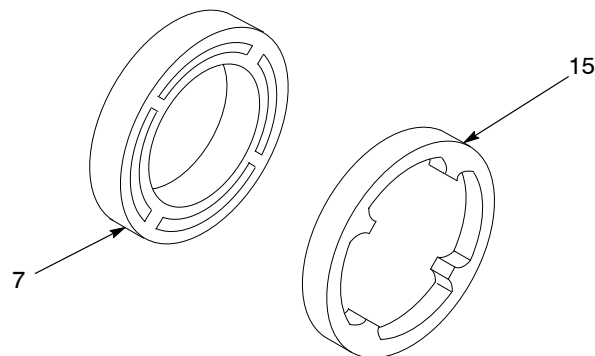


Figure 7-6 Positioning and Spacing Ring Service Kit

Section 8

Options

Versa-Spray Nozzles

Nordson Versa-Spray gun nozzles can be used on Tribomatic II automatic powder spray guns. They must be installed on one of the optional lance extensions listed in this section. For more information, contact your Nordson Corporation representative, or refer to the *Optional Nozzles for Versa-Spray and Versa-Spray II Guns* instruction sheet, part 1037936.

Tribomatic Sprayheads and Nozzles

Refer to *Tribomatic Optional Sprayheads and Nozzles* instruction sheet for ordering information.

Gun Mounting Bar

See Figure 8-1. This mounting bar clamps onto a oscillator, reciprocator, or fixed gun stand arm. The bar is 90-cm (36-in.) long. The length and angle of the bar can be adjusted. The mounting bar clamp is designed for 1-in. round or square tubing.

Part	Description	Quantity
133403	BAR, gun, Versa-Spray	1

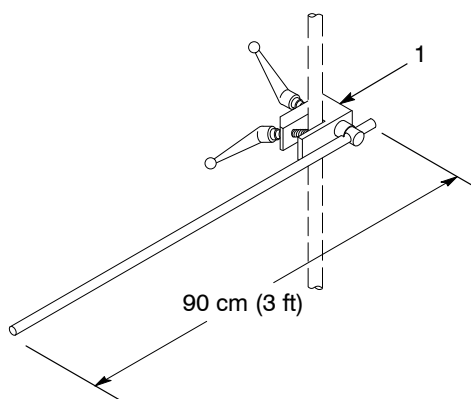


Figure 8-1 Gun Mounting Bar

Shur-Lok Gun Mount

See Figure 8-2. The Shur-Lok spray gun mount can be used as an alternative to the in-line ball mount. The Shur-Lok mount uses the same size mounting rod as the in-line ball mount.

Item	Part	Description	Quantity	Note
—	133409	MOUNT, gun, with pivot	1	
1	982067	• SCREW, set, cup, M5 x 5, black	2	
2	983527	• WASER, flat, 0.344 x 1.125 x 0.063 in.	1	
3	133415	• KNOB, gun mount	1	
4	981708	• SCREW, oval, slot, M8 x 20, black	2	

NS: Not Shown

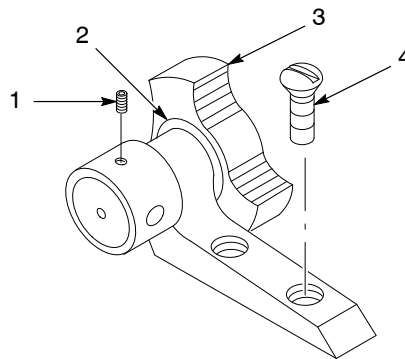


Figure 8-2 Shur-Lok Gun Mount

Gun Holder Adapter Kit

See Figure 8-3. This kit allows you to use old style Tribomatic gun holders with the Tribomatic II charge module. Cut the ground wire to length, crimp ring-tong terminals to the ends of the wire, and attach the wire to the ground clips.



WARNING: The adjusting rod must be grounded to prevent electrical shock. Dangerous electrostatic charges can accumulate on ungrounded conductive parts in the spray booth.

Item	Part	Description	Quantity	Note
—	631451	ADAPTER KIT, holder to gun bar	1	
1	631450	• ADAPTER, gun holder to gun bar	1	
2	248964	• ROD, adjusting, 3 ft	1	
3	931191	• WIRE, vinyl, 14 AWG, green with yellow	AR	
4	939458	• CLIP, ground	2	
5	933054	• TERMINAL, ring-tong, insulated, 16-14, 10	2	
6	133404	• CAP, plug, rubber	1	

AR: As Required

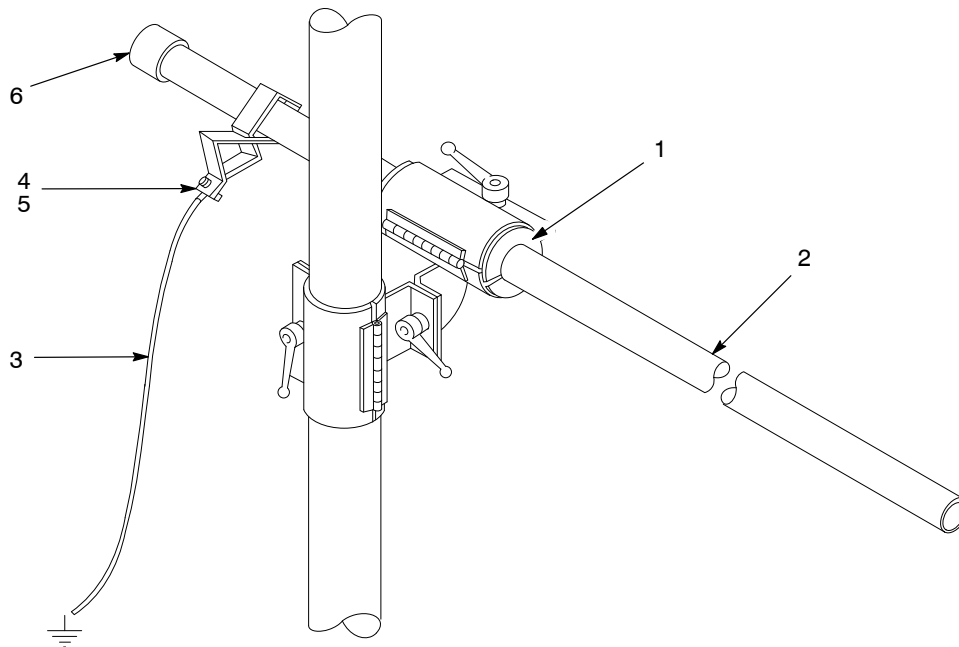


Figure 8-3 Gun Holder Adapter Kit

Lance Extensions

See Figure 8-4. Lance extensions are used to spray powder into recesses. Versa-Spray electrostatic gun nozzles can be installed on a lance extension.

Item	Part	Description	Quantity	Note
—	631385	100-mm EXTENSION, lance	1	
—	631386	150-mm EXTENSION, lance	1	
—	631387	300-mm EXTENSION, lance	1	
1	631395	• 100-mm ADAPTER	1	
1	631396	• 150-mm ADAPTER	1	
1	631397	• 300-mm ADAPTER	1	
2	941181	• O-RING, silicone, 0.875 x 1.063 x 0.094 in.	2	
3	145558	• NOZZLE, 32 mm, with O-rings	1	
4	941205	• O-RING, silicone, 1.000 x 1.188 x 0.094 in.	1	
5	144759	• ADJUSTER, pattern, 32 mm	1	
6	631390	• SUPPORT, deflector	1	A
—	631392	• DEFLECTOR ASSEMBLY, 26 mm, Tivar, holes, with O-ring	1	
7	940084	• • O-RING, silicone, 0.187 x 0.312 x 0.063 in.	1	
8	-----	• • DEFLECTOR, 26 mm, holes	1	
—	631394	• DISTRIBUTOR ASSEMBLY, cone, with O-ring	1	B
9	940066	• • O-RING, silicone, 0.125 x 0.250 x 0.063 in.	1	
10	-----	• • DISTRIBUTOR, cone	1	

NOTE A: A Tivar deflector with no holes is available. Order part 133734.

B: This part replaces the plug in the end of the outlet distributor.

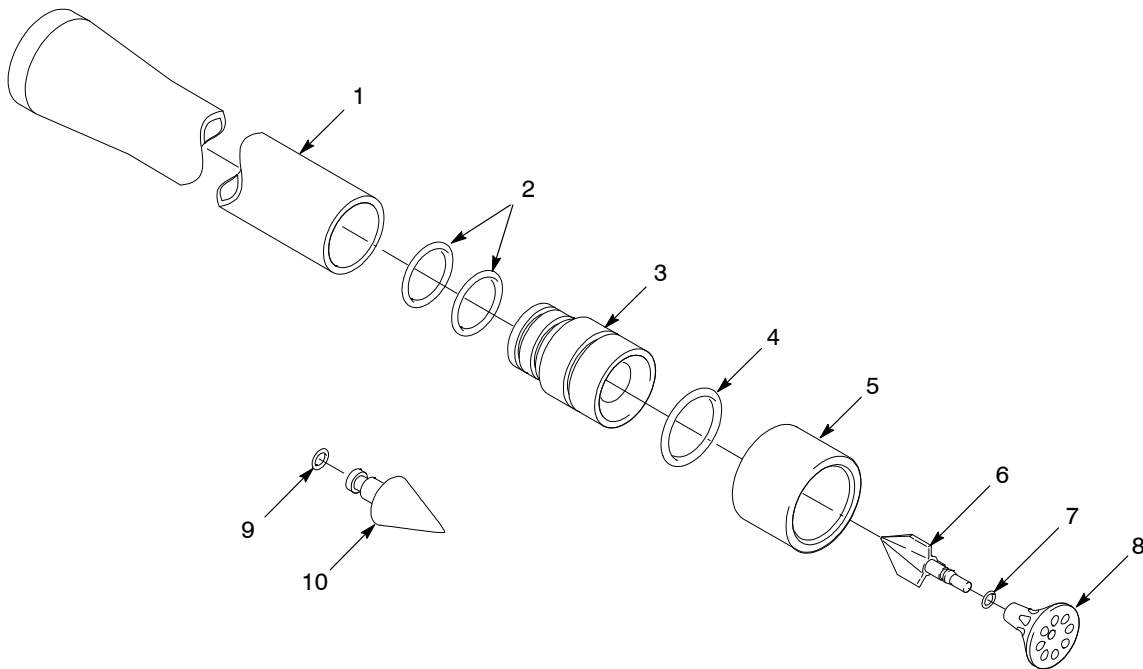


Figure 8-4 Lance Extensions

Powder Feed Hose and Air Tubing

Part	Description	Note
Powder Feed Hose		
630061	12 mm (PVC)	A
630237	10 mm (PVC)	A
900549	LOW-FLOW, $\frac{3}{8}$ in. (black rubber)	B
900550	HIGH-FLOW, $\frac{1}{2}$ in. (black rubber)	B
900649	$\frac{3}{8}$ -in. ID (blue rubber)	B
900648	11-mm (0.44-in.) ID (blue rubber)	B
900650	$\frac{1}{2}$ -in. ID (blue rubber)	B
Air Tubing		
900509	BLACK POLYETHYLENE, $\frac{1}{4}$ -in. OD	B
900730	BLUE POLYURETHANE, $\frac{1}{4}$ -in. OD	B
900741	BLACK POLYURETHANE, 6-mm OD	B
900742	BLUE POLYURETHANE, 6-mm OD	B
630597	BLUE PVC, 6-mm OD	A
630598	BLACK PVC, 6-mm OD	A
NOTE A: Order in one-meter increments from Nordson Corporation, European Distribution Center.		
B: Order in one-foot increments from Nordson Corporation, Amherst, Ohio.		

Miscellaneous Options

Part	Description	Note
939247	CLAMP, hose, 0.781–0.875 in.	
247006	CLAMP, hose, 0.673–0.795 in.	
900517	TUBING, spiral-cut, 0.62-in. ID	A
931191	WIRE, vinyl, 14-gauge, green with yellow	A
NOTE A: Order in 1-ft increments.		

