

**100 Plus® Series II  
Automatic Electrostatic  
Powder Spray Gun**

Part 107 912B

Previous Generation



NORDSON CORPORATION • AMHERST, OHIO • USA

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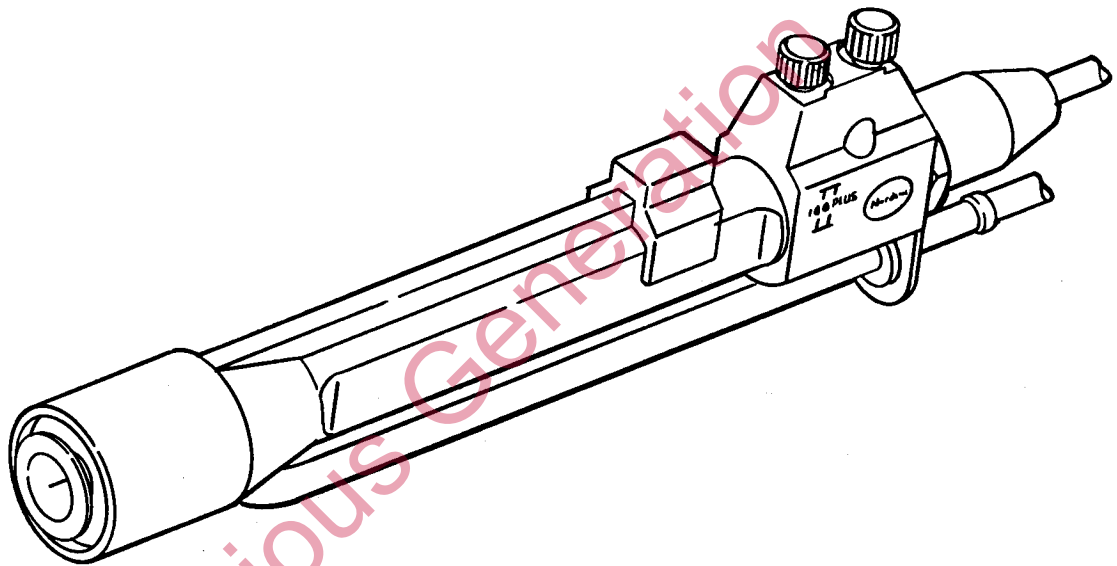
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## SECTION 2

### EQUIPMENT FAMILIARIZATION

The NORDSON® 100 PLUS™ SERIES II Automatic Electrostatic Powder Spray Gun is available in three versions: with a conical nozzle for organic powders, with a conical nozzle for porcelain enamel, and with a flat spray nozzle for organic powders. In addition, various optional nozzles, deflectors, extensions, and other gun parts are available in three different materials to customize a gun for the application.



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Figure 1- 100 PLUS SERIES II Automatic Electrostatic Powder Spray Gun

Electrostatic cables are available in lengths of 4, 8, 12, or 16 meters to connect the gun to a 100 PLUS Electrostatic Power Module. The cables include a replaceable resistor assembly which can also be ordered as a kit.

1/2 inch I.D. (High Flow) and 3/8 inch I.D. (Low Flow) powder feed tubing is available for organic powders. Polyurethane tubing in the same diameters is available for porcelain enamel (Frit) powders.

The basic gun consists of a rugged machined plastic body. Removable parts include the pattern adjuster and sleeve, nozzle parts, and clamping screws and block. No tools are required for normal service and cleaning. The electrostatic cable passes through a center bore in the body and is secured to the body by a threaded brass adapter. Air-entrained powder passes through a feed tube suspended under the body and enters the gun through a replaceable connector on the underside of the nozzle end of the gun.

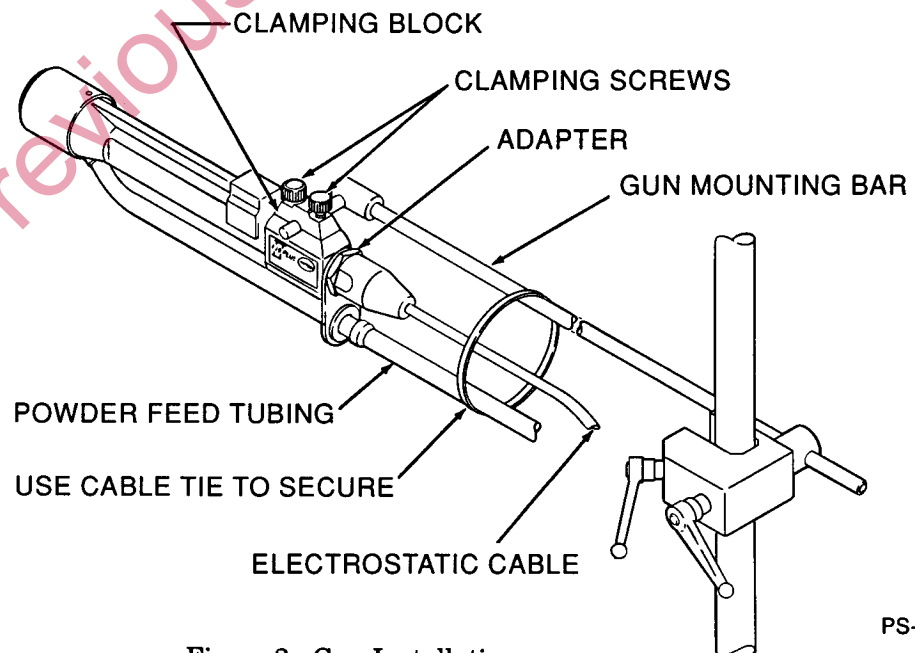
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## SECTION 3 INSTALLATION



**WARNING: The 100 PLUS™ SERIES II Gun can only be used with the electrostatic cables described in this manual and only with a 100 PLUS Electrostatic Power Module. Attempts to modify the gun or cable or to use either with a different power module can cause personal injury and/or property damage.**

1. The electrostatic cables are shipped with a resistor and electrode assembly installed on the gun end of the cable. Insert the electrode end of the cable assembly through the top hole in the powder tube bracket and through the center bore of the gun body. Thread the brass adapter into the body and tighten.
2. Place one hose clamp included with gun over powder feed tubing from the pump and install the feed tubing over the end of the tube protruding from the bracket on the underside of the gun. Tighten the clamp to secure the feed tubing.
3. If using P/N 249 160 mounting bar, remove gun mounting pin from end of bar and replace with knurled mounting pin shipped with gun. Loosen clamping screws and slide gun over mounting pin. Alternately tighten screws, so clamping block does not jam, until gun is secured to mounting pin.



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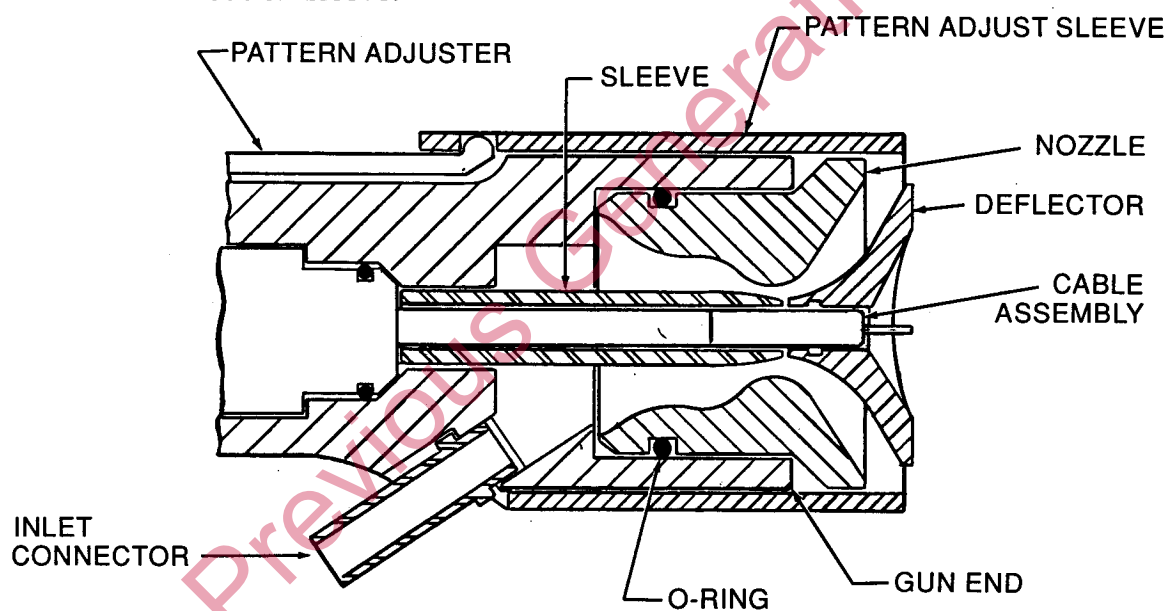
Figure 2- Gun Installation

4. Install the end of the electrostatic cable with the ball contact into the voltage multiplier well of the power module. **Make sure the well is filled with clean insulating oil and the end of the cable is also clean.** Refer to the power module manual for complete instructions.

## NOZZLE INSTALLATION

### CONICAL NOZZLES

1. Install sleeve over end of cable assembly. Be careful not to bend electrode.
2. Check to ensure O-ring is in place on nozzle and press nozzle into end of gun until it bottoms out.
3. Install conical deflector over cable end. Deflector should bottom out on sleeve.



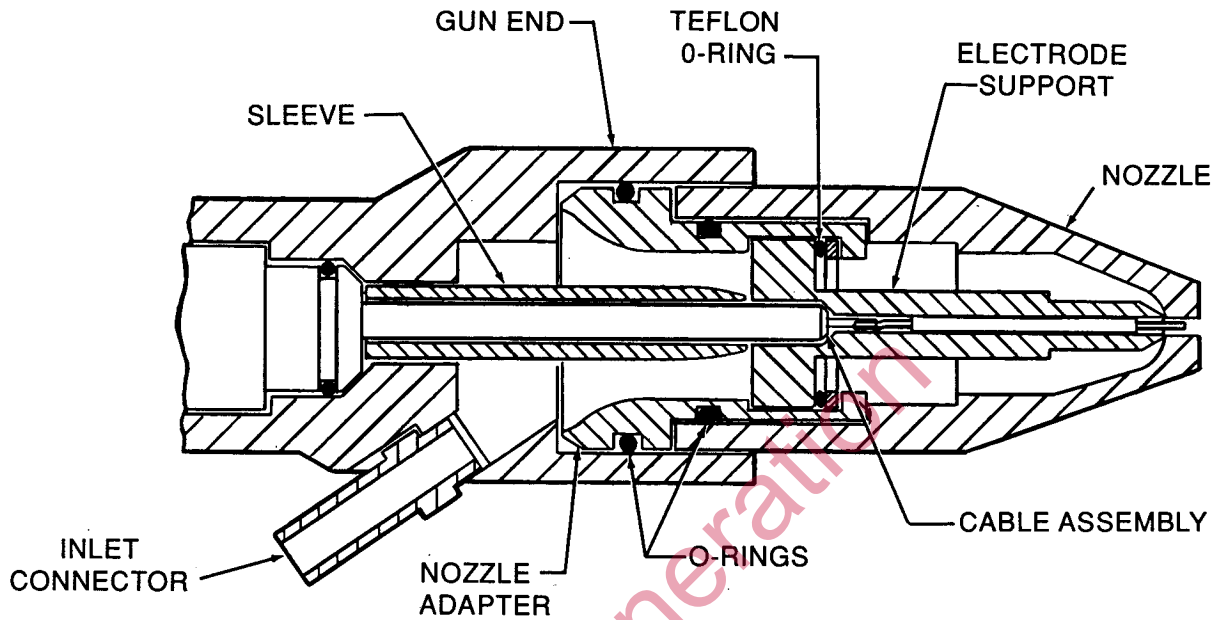
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Figure 3- Conical Nozzle Installation

### FLAT SPRAY NOZZLE

1. Install sleeve over end of cable assembly. Be careful not to bend end of electrode. **DO NOT** use flat spray nozzle without sleeve.

2. Make sure O-rings are in place on nozzle adapter assembly.  
Press adapter assembly into end of gun until it bottoms out.
3. Press flat spray nozzle over adapter assembly.



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Figure 4- Flat Spray Nozzle Installation

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## **SECTION 4**

### **OPERATION**

Refer to the Electrostatic Power Module manual for operating instructions.

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## SECTION 5

### PREVENTIVE MAINTENANCE

#### DAILY

1. Remove gun from mounting bar, disassemble, and blow clean with compressed air, after disconnecting powder feed hose. **Never blow air through powder feed hose back towards pump.** Wipe gun parts with a clean cloth.

**NOTE: If necessary, use a cloth dampened with isopropyl or ethyl alcohol to clean parts. Remove O-rings before cleaning. DO NOT immerse gun in alcohol. DO NOT use other solvents.**

2. Check powder contact parts for wear and replace worn parts. Remove any impact fusion carefully. Never use sharp objects to clean parts as scratches in the surface will allow powder to build up, causing impact fusion and affecting gun operation.
3. Clean powder spray booth with rubber squeegee or other non-conductive, non-sparking device. Operator must wear a dust mask, and booth exhaust fans must be on while cleaning. Check filter cartridges and final filters.
4. Remove powder feed hose from pump and blow out hose with compressed air. Disassemble pump, clean and inspect parts. Replace worn parts as necessary.

**NOTE: When ever blowing out hoses make sure opposite end of hose is directed at collectors inside booth, and that booth exhaust fans are on, to prevent blowing powder into room air.**

5. Clean optical fire detector lenses every four hours. Check operation of safety interlock systems at the beginning of each shift. **DO NOT operate system with fire detection system in bypass mode.**
6. Check all equipment ground connections in the spray area.
7. Check operation of air dryer and filter system. Drain filters as necessary.

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## SECTION 6

### TROUBLESHOOTING



**WARNING-** Before attempting to do any work on the gun (or any other component of the system), turn main power off at a switch or breaker ahead of the power module or master control module. Ground end of gun before removing gun from mounting bar.

| <b>PROBLEM:</b>                                     | <b>PROBABLE CAUSE:</b>   | <b>SUGGESTED CORRECTION:</b>  |
|---|--|---|
| Uneven pattern, unsteady or inadequate powder flow. | 1. Blockage in gun, feed hose, or pump.                          | 1. Remove feed hose from pump and blow out with compressed air. If necessary, disassemble gun and pump and clean.   |
|   | 2. Deflector or nozzle worn, or impact fusion affecting pattern. | 2. Remove deflector and/or nozzle, clean, and inspect. Replace worn parts. If parts are wearing excessively or impact fusion is a problem, reduce air pressure. |
|   | 3. Damp powder.  | 3. Check the powder supply, air filters and dryer. Replace powder supply if necessary.  |
|   | 4. Low atomizing or flow rate air pressure.                      | 4. Increase atomizing and/or flow rate air pressure.  |
|   | 5. Improper fluidization of powder in hopper.                    | 5. Increase fluidizing air pressure, remove powder from hopper and clean fluidizing plate, if necessary.  |

| <b>PROBLEM:</b>                | <b>PROBABLE CAUSE:</b>                      | <b>SUGGESTED CORRECTION</b>   |
|--------------------------------|---|---|
| Voids in powder pattern.       | 1. Worn nozzle or deflector.                | 1. Disassemble gun and inspect parts, replace if necessary.   |
|                                | 2. Plugged gun orifices.                    | 2. Disassemble gun and clean.   |
| <b>PROBLEM:</b>                | <b>PROBABLE CAUSE:</b>                      | <b>SUGGESTED CORRECTION</b>   |
| Loss of wrap, poor efficiency. | 1. Output voltage insufficient.             | 1. Increase output voltage. Refer to power module manual.   |
|                                | 2. Electrostatic cable or resistor failure. | 2. Check cable and resistor with megohm meter. Refer to values in Section 7, Disassembly and Repair.  |
|                                | 3. Poorly grounded workpieces.              | 3. Stop conveyor and check chain, rollers and hangers for powder buildup. Clean and check for 1 megohm or less resistance between workpiece and ground. |

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## SECTION 7

### DISASSEMBLY AND REPAIR

#### DISASSEMBLY - GUN



**WARNING:** Before attempting any of the procedures following, shut off all electrical power at a disconnect switch or breaker ahead of the electrostatic power module or master control module. Ground electrode before removing gun from mounting bar.

1. Remove gun from mounting bar. Disconnect powder feed hose.
2. Unscrew electrostatic cable from gun body. If using a conical nozzle, remove deflector before pulling cable assembly out of gun. Be careful not to lose sleeve.
3. Remove nozzle assembly from gun.
  - a. **Flat Spray Nozzles:** Remove nozzle from gun, rotating nozzle while pulling it out of body. Remove adapter assembly from gun, using same method to remove as nozzle. Be careful not to damage electrode support or lose sleeve. Remove powder inlet connector.
  - b. **Conical Nozzles:** Remove deflector from cable end, if cable still attached to gun. Remove sleeve from cable, if loose. Unsnap pattern adjuster from gun body and lift up until pattern adjust sleeve can be pulled from end of gun. Remove nozzle from gun. Remove powder inlet connector.

#### INSPECTION AND REPAIR - GUN

1. Clean parts with compressed air and clean cloth. DO NOT use knife or other sharp object to scrape off impact fusion as powder will quickly build up on surface scratches and rough areas in contact with the powder stream.

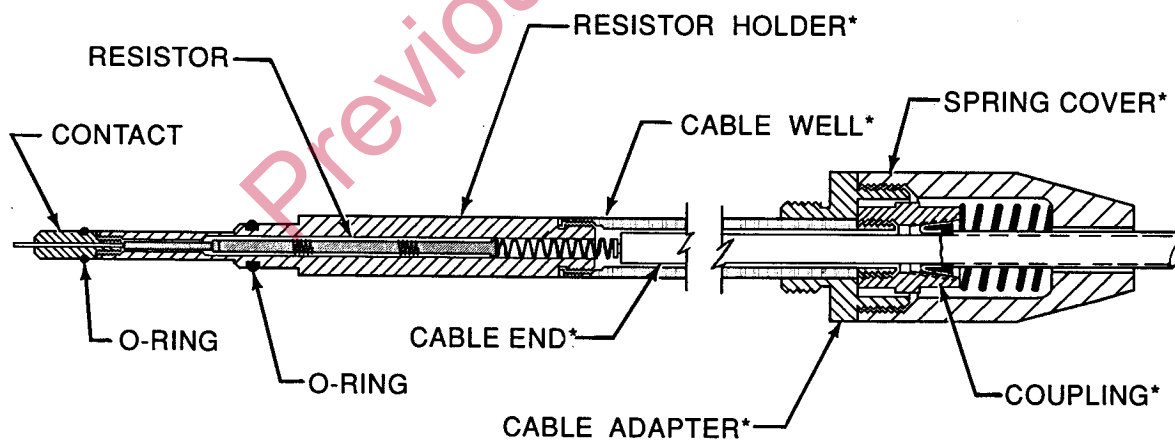
**NOTE: If necessary to use a solvent when cleaning disassembled gun parts, remove O-rings, dampen a clean cloth with isopropyl or ethyl alcohol and wipe parts clean. DO NOT use other solvents, or immerse assembled gun in alcohol.**

2. Inspect O-rings and replace if damaged.
3. Replace worn gun parts as necessary.
4. Remove cable from multiplier well. Check cable resistance with megohm meter. 8, 12, and 16 meter cable assemblies should read 332 MΩ to 456 MΩ measured at 500 volts, from electrode to ball contact. 4 meter cable should read 243 MΩ to 321 MΩ measured at 500 volts.

### ASSEMBLY - GUN

1. Reverse disassembly procedure to assemble gun. Use caution when inserting cable assembly into gun body to prevent damaging electrode.

### CABLE RESISTOR REPLACEMENT



\*PARTS NOT SOLD SEPARATELY

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Figure 5- Cutaway of Resistor Kit Installed on Cable



**WARNING: Before attempting any of the following procedures, shut off all electrical power at a disconnect switch or breaker ahead of the electrostatic power module or master control module. Ground electrode before removing gun from mounting bar.**

1. Place one wrench on the flats on the spring cover and another wrench on the flats of the cable adapter. Unscrew cable adapter from the spring cover.
2. Remove cable adapter from cable end, place coupling in a soft-jawed vise, contact upwards, and unscrew cable well from coupling. Discard cable well, resistor, resistor holder and contact.
3. Remove plastic shipping cap from both ends of new resistor kit. Unscrew the resistor holder from cable well.



**WARNING: All air must be displaced by dielectric grease in the cable well, resistor holder, and contact when this replacement resistor kit is installed. Air pockets in these areas allow internal arcing and carbon tracking, leading to degrading performance and increased fire hazard.**

4. Make sure that the cable end is clean and dry. Insert the end of the cable into the cable well and slide the well over the cable until the well bottoms out on the coupling. Thread the well into coupling, finger tight.
5. Thread new resistor holder and cable adapter back into the cable well. Wipe off excess grease.
6. Slide spring and spring cover up over coupling. Apply 1-2 drops of thread-locking compound to metal adapter threads. Thread cable adapter into spring cover until adapter bottoms out.
7. Re-install cable assembly into gun, thread adapter into gun body and hand-tighten.
8. If using a conical nozzle, install sleeve and deflector over resistor holder and contact. If using a flat spray nozzle, install sleeve over resistor holder and contact, install adapter assembly on end of gun, and install nozzle over adapter. Refer to Section 3, Installation, Figures 3 and 4.

### **REPLACING CONTACT ONLY**

Unscrew damaged contact from end of cable assembly, apply dielectric grease to threads of new contact and into threaded bore. Screw new contact into threaded bore.

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## SECTION 8

### PARTS LISTS

#### INTRODUCTION

This section includes exploded illustrations of the different gun versions, the resistor replacement kit and the electrostatic cables, and optional parts, followed by indented parts lists for each. To order replacement parts correctly, please read the explanations following.

In general, the assemblies and parts installed at the time of manufacture are listed and identified in the following list(s). Repair kits (when available) and optional parts are listed at the end of this section. Parts which lose their identities by being welded or riveted, or joined in such a manner as to prohibit disassembly are not listed. Items made from raw stock or bulk items, such as wire, are not normally listed. Parts available in bulk quantities are listed using the bulk stock part number and the notation "ASR" in the quantity column. Quantities of these parts should be ordered "as required" by the application.

The number in the **REF.** column indicates the number assigned to the part in the illustration preceding the list. A dash or the code NS (Not Shown) is used for parts that are not included in the illustration.

A letter in the **NOTE** column refers to a note below the parts list which gives additional information concerning that part. **Special attention should be given to noted parts.**

The six digit number in the **PART NO.** column is the Nordson Corporation part number assigned to that part. A series of dashes in this column means that the part cannot be ordered separately; it can only be obtained as part of the assembly or subassembly it is a component of.

The **DESCRIPTION** column gives the Nordson Corporation name of the part, together with its dimensions and other physical properties where appropriate, and is the name that should be used when ordering replacement parts. Parts indented by a " • " are components of the assemblies and/or subassemblies listed above it.

For example:

| REF. | NOTE | PART NO. | DESCRIPTION           |
|------|------|----------|-----------------------|
| 1    |      | 000 000  | Handgun, Complete     |
| 2    |      | 000 000  | • Diffuser            |
| 3    |      | 000 000  | • • Connector, Tubing |

If you order item 1, items 2 & 3 will be included.

If you order item 2, item 3 will be included.

If you order item 3, you will receive item 3 only.

The number in the **QTY.** column is the quantity required per unit or assembly. When the quantity required can only be determined by the specific application, a dash will appear in the column. An "ASR" in the column means that the quantity required per application should be ordered.

#### Application Notes: High Wear Parts

The standard nozzles, deflectors, sleeves and inlet connectors included with the organic powder versions of the Series II Guns are manufactured from glass-filled Teflon® (Teflon G.F.), a general purpose material which performs satisfactorily with most organic powders. If wear rates higher than normal are experienced on any or all of these parts, try replacing them with parts manufactured from Tivar®. If impact fusion is a problem, try using parts manufactured from Teflon. Refer to the miscellaneous optional parts lists on page 28.

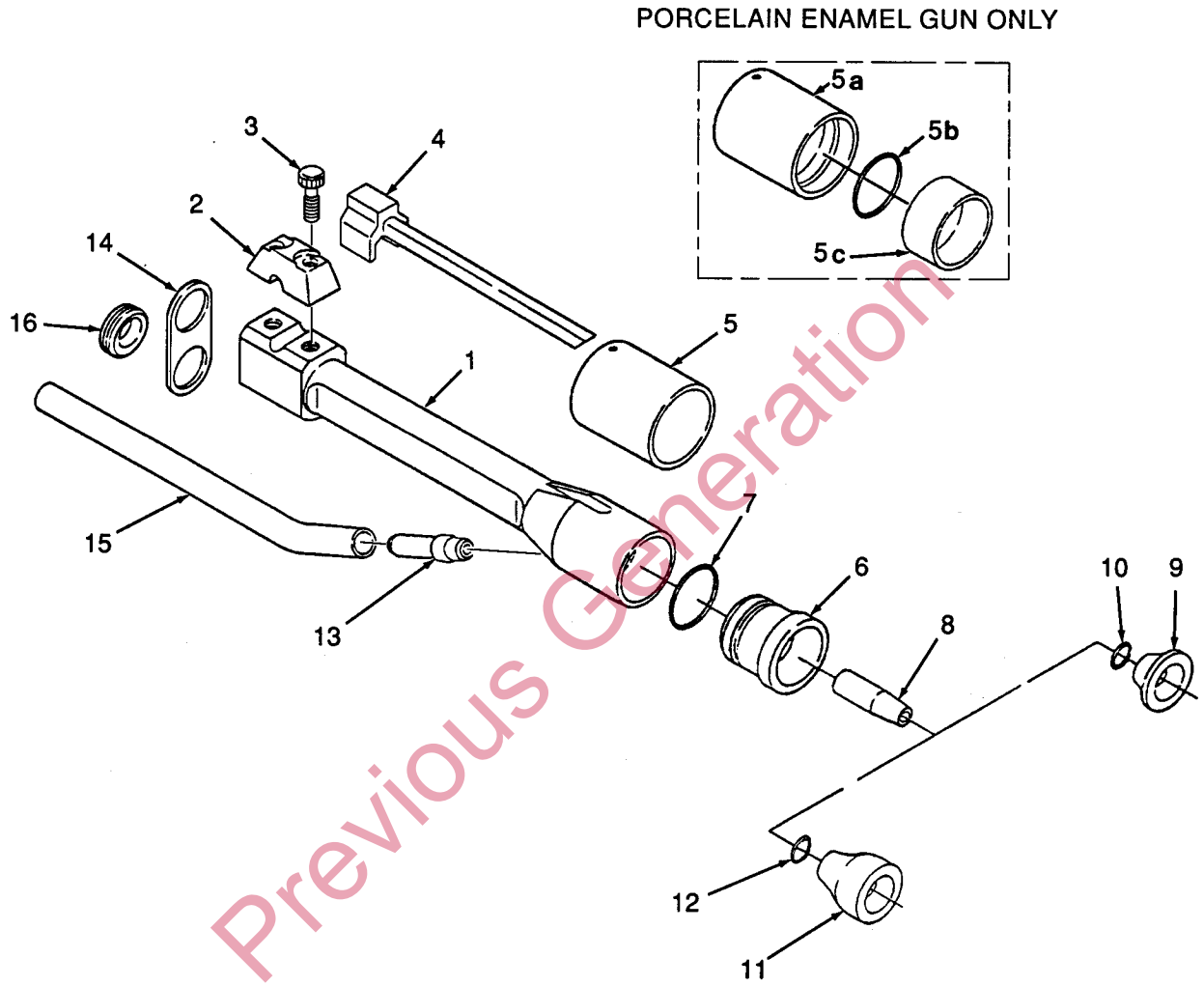


Figure 6- 100 PLUS SERIES II Guns W/ Conical Nozzles

100 PLUS Series II Gun with Conical Nozzle for Organic Powders  
 Refer to Figure 6

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                 | QTY. |
|------|------|----------|---|------|
| -    | A    | 112 708  | Gun, 100 PLUS™ Series II                    | 1    |
| 1    |      | --- ---  | • Body, Gun                                 | 1    |
| 2    |      | 249 201  | • Clamp, Mounting Block                     | 1    |
| 3    |      | 249 199  | • Screw, Clamping                           | 2    |
| 4    |      | 114 030  | • Adjuster, Powder Pattern                  | 1    |
| 5    |      | 112 808  | • Sleeve, Adjuster                          | 1    |
| NS   |      | 245 408  | • Nozzle, Powder Gun                        | 1    |
| 6    |      | 246 181  | • • Nozzle, Powder Gun (Teflon G.F.)        | 1    |
| 7    |      | 942 161  | • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8   | 1    |
| 8    |      | 245 742  | • Sleeve (Teflon G.F.)                      | 1    |
| 9    |      | 245 855  | • Deflector Assy., 38 mm Dia. (Teflon G.F.) | 1    |
| 10   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16            | 1    |
| 11   |      | 246 320  | • Deflector Assy., Barrel (Teflon G.F.)     | 1    |
| 12   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16            | 1    |
| 13   |      | 246 865  | • Connector, Powder Inlet (Teflon G.F.)     | 1    |
| 14   |      | 112 722  | • Bracket, Hose                             | 1    |
| 15   |      | 246 867  | • Tube, Powder Inlet                        | 1    |
| 16   |      | 246 864  | • Grommet, Rubber, .56 ID X .81 OD          | 1    |
| NS   |      | 900 517  | • Tubing, Spiral Cut, 4 In. (102mm) Long    | 4    |
| NS   |      | 939 247  | • Clamp, Hose                               | 2    |
| NS   | B    | 115 762  | • Pin, Mount , Gun                          | 1    |

Note (A) - The parts listed here are standard parts. For a complete listing of optional parts, refer to the optional parts lists in this section.

Note (B) - Mounting pin is shipped loose with gun. Remove pin furnished with P/N 249 160 Gun Mounting Bar and replace with P/N 115 762 Pin.

100 PLUS Series II Gun with Conical Nozzle for Porcelain Enamel Powders  
Refer to Figure 6

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                | QTY. |
|------|------|----------|--|------|
| -    | A    | 112 789  | Gun, 100 PLUS™ Series II, Porcelain Enamel | 1    |
| 1    |      | ---      | • Body, Gun                                | 1    |
| 2    |      | 249 201  | • Clamp, Mounting Block                    | 1    |
| 3    |      | 249 199  | • Screw, Clamping                          | 2    |
| 4    |      | 114 030  | • Adjuster, Powder Pattern                 | 1    |
| 5    |      | 113 931  | • Sleeve, Adjuster                         | 1    |
| 5a   |      | 112 806  | • • Sleeve                                 | 1    |
| 5b   |      | 246 578  | • • Insert, Pyrex                          | 1    |
| 5c   |      | 940 331  | • • O-Ring, Silicone, 2 X 2 11/64          | 1    |
| NS   |      | 245 521  | • Nozzle, Powder Gun, Ceramic              | 1    |
| 6    |      | 246 180  | • • Nozzle, Porcelain Enamel               | 1    |
| 7    |      | 942 161  | • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8  | 1    |
| 8    |      | 101 128  | • Sleeve, Ceramic                          | 1    |
| 9    |      | 245 523  | • Deflector, 38 mm Dia., Ceramic           | 1    |
| 10   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 1    |
| 11   |      | 246 823  | • Deflector, Barrel, w/o O-Ring, Ceramic   | 1    |
| 12   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 1    |
| 13   |      | 245 434  | • Connector, Ceramic Pwdr, Inlet           | 1    |
| 14   |      | 112 722  | • Bracket, Hose                            | 1    |
| NS   |      | 900 517  | • Tubing, Spiral Cut, 4 In.(102mm) Long    | 4    |
| NS   |      | 939 247  | • Clamp, Hose                              | 2    |
| NS   | B    | 115 762  | • Pin, Mount, Gun                          | 1    |

Note (A) - The parts listed here are standard parts. For a complete listing of optional parts, refer to the optional parts lists in this section.

Note (B) - Mounting pin is shipped loose with gun. Remove pin furnished with P/N 249 160 Gun Mounting Bar and replace with P/N 115 762 Pin.

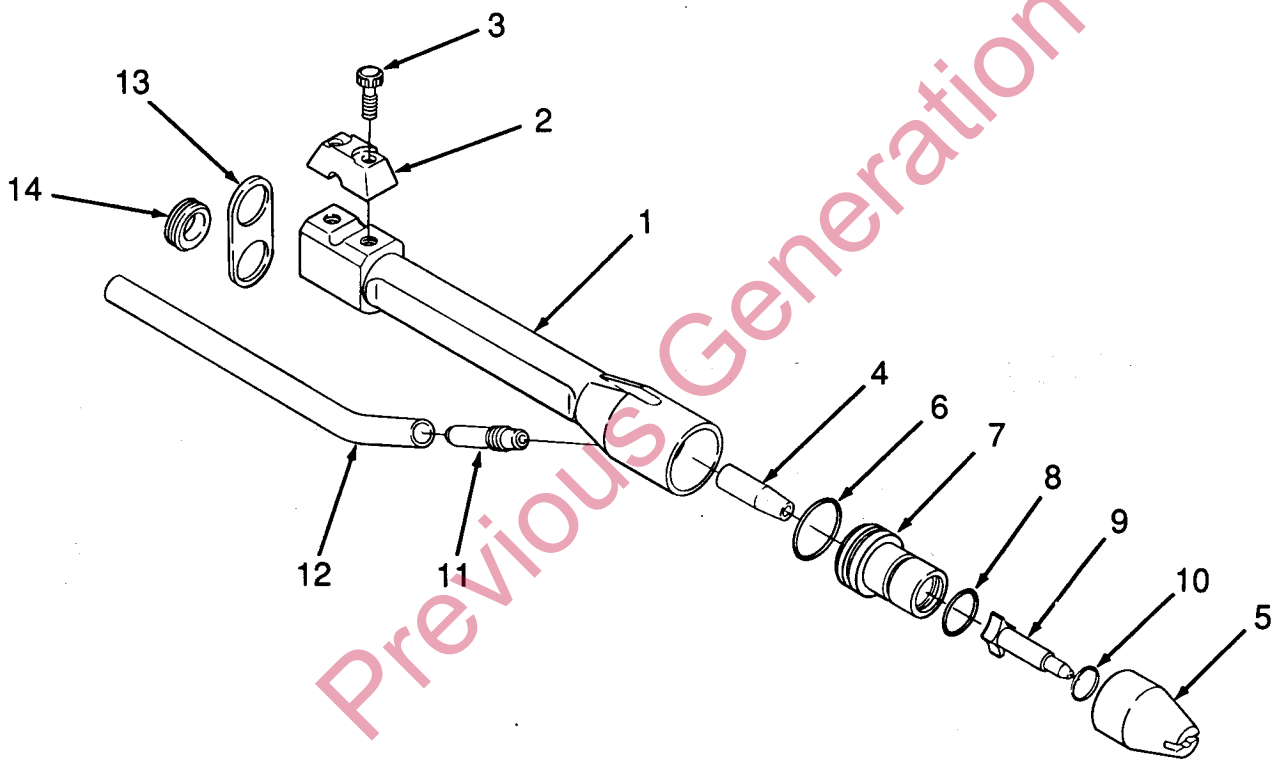


Figure 7- 100 PLUS SERIES II Gun W/ Flat Spray Nozzle

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100 PLUS SERIES II Gun with Flat Spray Nozzle for Organic Powders  
Refer to Figure 7

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                   | QTY. |
|------|------|----------|---|------|
| -    | A    | 112 706  | Gun, 100 PLUS™ Series II, Flat Spray          | 1    |
| 1    |      | ---      | • Body, Gun                                   | 1    |
| 2    |      | 249 201  | • Clamp, Mounting Block                       | 1    |
| 3    |      | 249 199  | • Screw, Clamping                             | 2    |
| 4    |      | 245 742  | • Sleeve (Teflon G.F.)                        | 1    |
| NS   |      | 247 848  | • Nozzle, Flat Spray, w/Adapter               | 1    |
| 5    |      | 247 785  | • • Nozzle, Flat Spray, Lance (Teflon G.F.)   | 1    |
| NS   |      | 247 847  | • • Adapter, Nozzle, w/ Support               | 1    |
| 6    |      | 942 161  | • • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8   | 1    |
| 7    |      | 247 845  | • • • Adapter, Nozzle                         | 1    |
| 8    |      | 940 212  | • • • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16 | 1    |
| 9    |      | 245 964  | • • • Support, Electrode, w/Resistor          | 1    |
| 10   |      | 940 192  | • • • • O-Ring, Teflon®, 13/16 X 15/16 X 1/16 | 1    |
| 11   |      | 246 865  | • Connector, Powder Inlet (Teflon G.F.)       | 1    |
| 12   |      | 246 867  | • Tube, Powder Inlet                          | 1    |
| 13   |      | 112 722  | • Bracket, Hose                               | 1    |
| 14   |      | 246 864  | • Grommet, Rubber, .56 ID X .81 OD            | 1    |
| NS   |      | 900 517  | • Tubing, Spiral Cut, 4 In.(102mm) Long       | 4    |
| NS   |      | 939 247  | • Clamp, Hose                                 | 2    |
| NS   | B    | 115 762  | • Pin, Mount, Gun                             | 1    |

Note (A) - The parts listed here are standard parts. For a complete listing of optional parts, refer to the optional parts lists in this section.

Note (B) - Mounting pin is shipped loose with gun. Remove pin furnished with P/N 249 160 Gun Mounting Bar and replace with P/N 115 762 Pin.

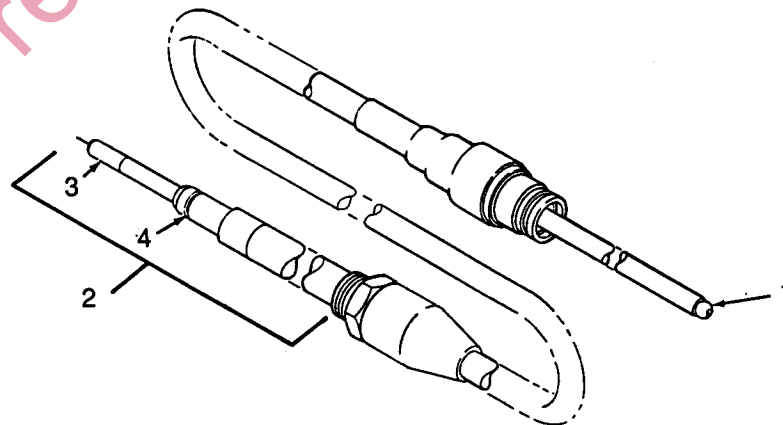


Figure 8- Electrostatic Cables and Resistor Replacement Kit

Electrostatic Cables and Resistor Replacement Kit  
 Refer to Figure 8

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                              | QTY. |
|------|------|----------|--|------|
| -    |      | 112 711  | Cable, 4 Meter, 100 PLUS Series II       | 1    |
| -    |      | 112 712  | Cable, 8 Meter, 100 PLUS Series II       | 1    |
| -    |      | 112 713  | Cable, 12 Meter, 100 PLUS Series II      | 1    |
| -    |      | 112 714  | Cable, 16 Meter, 100 PLUS Series II      | 1    |
| 1    |      | 248 762  | • Contact                                | 1    |
| -    |      | 940 066  | •• O-Ring, Silicone, 1/8 I.D. X 1/4 O.D. | 1    |
| 2    |      | 112 843  | Kit, Cable Well, Resistor                | 1    |
| 3    |      | 100 903  | • Contact, Cable                         | 1    |
| 4    |      | 940 117  | • O-Ring, Silicone, 5/16 X 7/16 X 1/16   | 1    |

OPTIONAL EQUIPMENT FOR 100 PLUS™ SERIES II GUNS

The following illustrations and parts lists show optional equipment available for 100 PLUS Series II Powder Spray Guns. This equipment must be ordered separately.

**Flat Spray Nozzle with Adapter**

This nozzle can be ordered as a replacement part for the flat spray gun shown in Figure 7, or to convert the organic powder gun with conical nozzle, P/N 112 708, shown in Figure 6, into a flat spray gun.

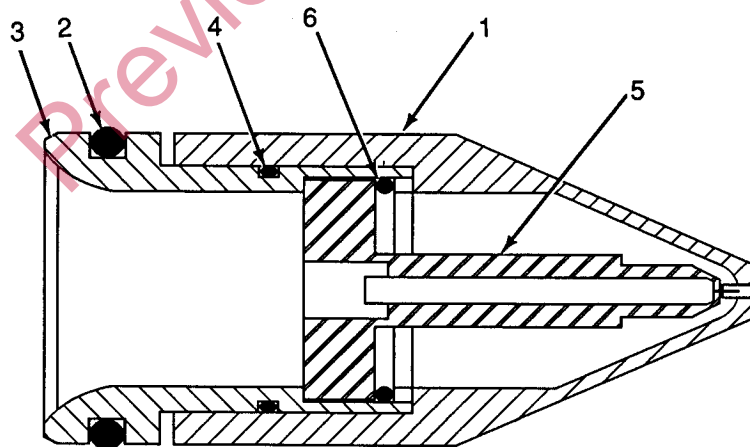


Figure 9- Optional Flat Spray Nozzle and Adapter

Flat Spray Nozzle and Adapter  
Refer to Figure 9

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                 | QTY. |
|------|------|----------|---|------|
| -    |      | 247 848  | Nozzle, Flat Spray, w/Adapter               | 1    |
| 1    |      | 247 785  | • Nozzle, Flat Spray, Lance (Teflon G.F.)   | 1    |
| NS   |      | 247 847  | • Adapter, Nozzle, w/ Support               | 1    |
| 2    |      | 942 161  | • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8   | 1    |
| 3    |      | 247 845  | • • Adapter, Nozzle                         | 1    |
| 4    |      | 940 212  | • • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16 | 1    |
| 5    |      | 245 964  | • • Support, Electrode, w/Resistor          | 1    |
| 6    |      | 940 192  | • • • O-Ring, Teflon®, 13/16 X 15/16 X 1/16 | 1    |

**Optional Pin Point Nozzle for Organic Powders**

This nozzle can be used with the P/N 112 708 gun shown in Figure 6 or the P/N 112 706 gun shown in Figure 7.

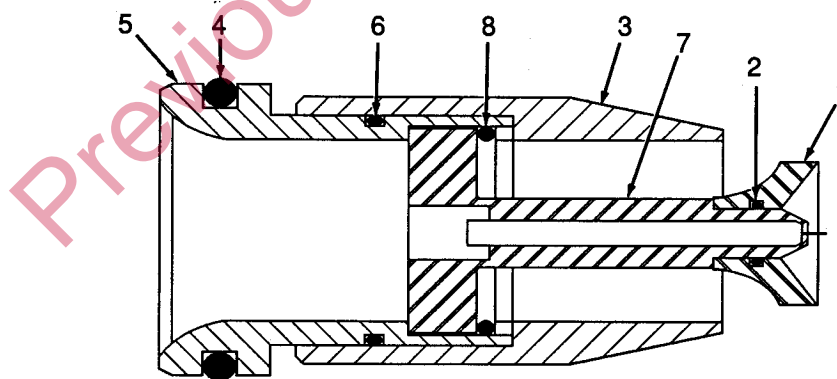


Figure 10- Pin Point Nozzle for Organic Powders

Pin Point Nozzle and Adapter  
Refer to Figure 10

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                 | QTY. |
|------|------|----------|---|------|
| -    |      | 248 114  | Nozzle, Pin Point, w/Adapter                | 1    |
| 1    |      | 245 854  | • Deflector, 16 mm Dia., w/O-Ring           | 1    |
| 2    |      | 945 016  | • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8   | 1    |
| 3    |      | 247 370  | • Cap, End                                  | 1    |
| NS   |      | 247 847  | • Adapter, Nozzle, w/Support                | 1    |
| 4    |      | 942 161  | • • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8   | 1    |
| 5    |      | 247 845  | • • Adapter, Nozzle                         | 1    |
| 6    |      | 940 212  | • • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16 | 1    |
| 7    |      | 245 964  | • • Support, Electrode, w/Resistor          | 1    |
| 8    |      | 940 192  | • • • O-Ring, Teflon®, 13/16 X 15/16 X 1/16 | 1    |

Optional Lance Extensions for Organic Powders

The following illustration and three parts lists show 150, 300, and 600 millimeter(6, 12 and 24 inch) lance extensions available for use with organic powders.

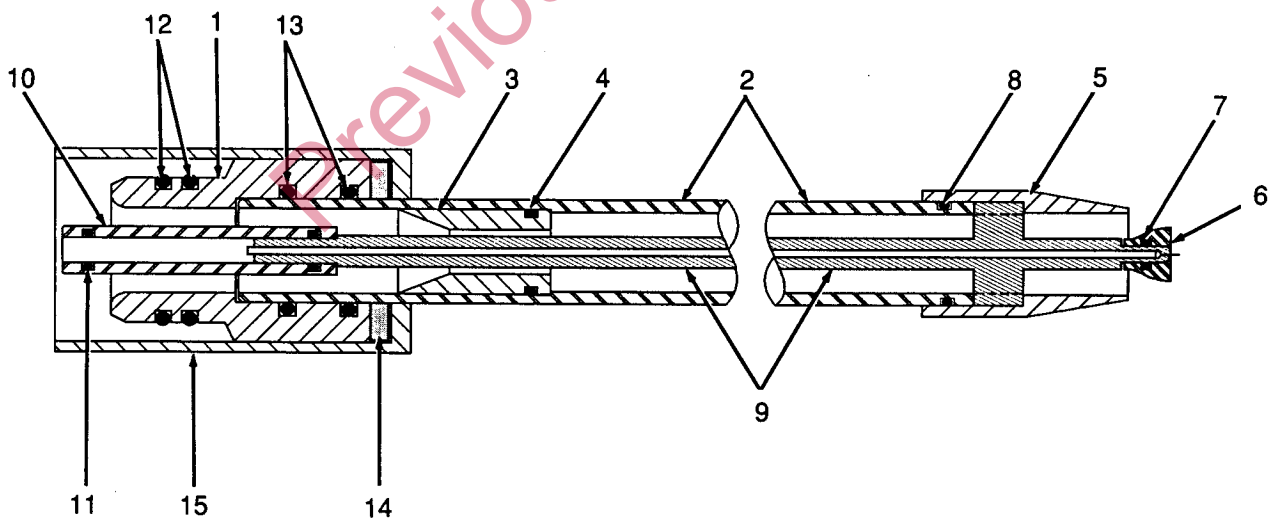


Figure 11- Exploded View of Optional Lance Extension

## 150 mm LANCE EXTENSION

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                | QTY. |
|------|------|----------|--|------|
| -    | AB   | 247 371  | Extension, Lance, 150 mm(6 Inches)         | 1    |
| 1    |      | 247 362  | • Adapter, Extension                       | 1    |
| NS   |      | 247 803  | • Tube, Extension, w/Venturi, 150 mm       | 1    |
| 2    |      | 247 364  | • • Tube, Extension, 150 mm                | 1    |
| 3    |      | 247 802  | • • Sleeve, Venturi, w/O-Ring              | 1    |
| 4    |      | 941 153  | • • • O-Ring, Silicone, 11/16 X 7/8 X 3/32 | 1    |
| 5    |      | 247 370  | • Cap, End                                 | 1    |
| 6    |      | 246 320  | • Deflector, Barrel                        | 1    |
| 7    |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 1    |
| 8    |      | 940 212  | • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16  | 2    |
| 9    |      | 247 374  | • Electrode, 150 mm                        | 1    |
| 10   |      | 247 359  | • Sleeve                                   | 1    |
| 11   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 3    |
| 12   |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8    | 2    |
| 13   |      | 942 143  | • O-Ring, Silicone, 1 X 1 1/4 X 1/8        | 1    |
| 14   |      | 245 878  | • Gasket                                   | 1    |
| 15   |      | 247 361  | • Retainer Extension                       | 1    |

Note (A) - 247 848 Nozzle, Flat Spray, can be used with this extension.  
Note (B) - 248 114 Nozzle, Pin Point, can be used with this extension.

## 300 mm LANCE EXTENSION

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                | QTY. |
|------|------|----------|--|------|
| -    | AB   | 247 372  | Extension, Lance, 300 mm (12 Inches)       | 1    |
| 1    |      | 247 362  | • Adapter, Extension                       | 1    |
| NS   |      | 247 804  | • Tube, Extension, w/Venturi, 300 mm       | 1    |
| 2    |      | 247 365  | • • Tube, Extension, 300 mm                | 1    |
| 3    |      | 247 802  | • • Sleeve, Venturi, w/O-Ring              | 1    |
| 4    |      | 941 153  | • • • O-Ring, Silicone, 11/16 X 7/8 X 3/32 | 1    |
| 5    |      | 247 370  | • Cap, End                                 | 1    |
| 6    |      | 246 320  | • Deflector, Barrel                        | 1    |
| 7    |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 1    |
| 8    |      | 940 212  | • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16  | 2    |
| 9    |      | 247 375  | • Electrode, 300 mm                        | 1    |
| 10   |      | 247 359  | • Sleeve                                   | 1    |
| 11   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 3    |
| 12   |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8    | 2    |
| 13   |      | 942 143  | • O-Ring, Silicone, 1 X 1 1/4 X 1/8        | 1    |
| 14   |      | 245 878  | • Gasket                                   | 1    |
| 15   |      | 247 361  | • Retainer Extension                       | 1    |

Note (A) - 247 848 Nozzle, Flat Spray, can be used with this extension.  
Note (B) - 248 114 Nozzle, Pin Point, can be used with this extension.

600 mm LANCE EXTENSION

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                | QTY. |
|------|------|----------|--|------|
| -    | AB   | 247 373  | Extension, Lance, 600 mm (24 Inches)       | 1    |
| 1    |      | 247 362  | • Adapter, Extension                       | 1    |
| NS   |      | 247 805  | • Tube, Extension, w/Venturi, 600 mm       | 1    |
| 2    |      | 247 366  | • • Tube, Extension, 600 mm                | 1    |
| 3    |      | 247 802  | • • Sleeve, Venturi, w/O-Ring              | 1    |
| 4    |      | 941 153  | • • • O-Ring, Silicone, 11/16 X 7/8 X 3/32 | 1    |
| 5    |      | 247 370  | • Cap, End                                 | 1    |
| 6    |      | 246 320  | • Deflector, Barrel                        | 1    |
| 7    |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 1    |
| 8    |      | 940 212  | • O-Ring, Silicone, 15/16 X 1 1/16 X 1/16  | 2    |
| 9    |      | 247 376  | • Electrode, 600 mm                        | 1    |
| 10   |      | 247 359  | • Sleeve                                   | 1    |
| 11   |      | 945 016  | • • O-Ring, Silicone, 1/4 X 1/16           | 3    |
| 12   |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8    | 2    |
| 13   |      | 942 143  | • O-Ring, Silicone, 1 X 1 1/4 X 1/8        | 1    |
| 14   |      | 245 878  | • Gasket                                   | 1    |
| 15   |      | 247 361  | • Retainer, Extension                      | 1    |

Note (A) - 247 848 Nozzle, Flat Spray, can be used with this extension.  
Note (B) - 248 114 Nozzle, Pin Point, can be used with this extension.

Miscellaneous Deflectors, Nozzles, Sleeves, & Connectors

The following parts can be used with the P/N 112 708 Organic Powder Spray Gun with Conical Nozzle.

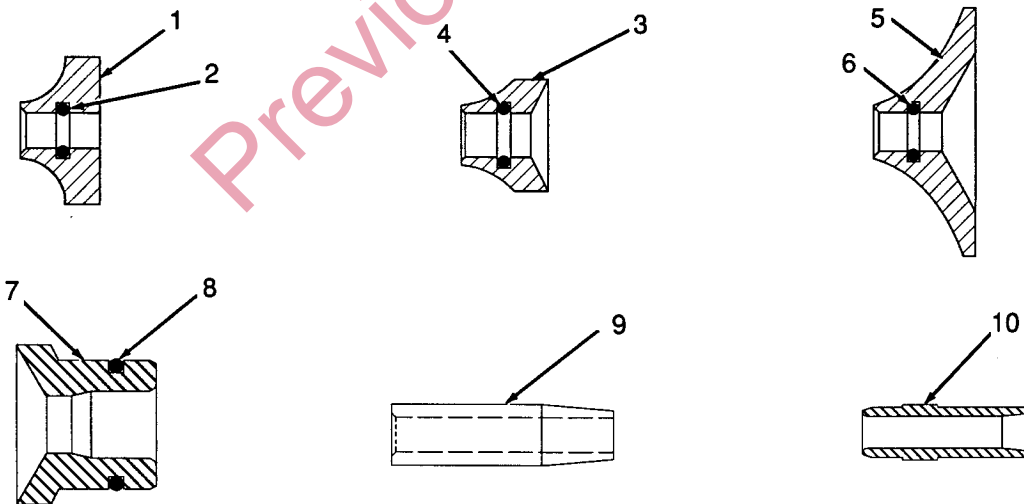


Figure 12- Miscellaneous Optional Parts

MISCELLANEOUS OPTIONAL PARTS  
Refer to Figure 12

Note: Names of parts included in an assembly are indented after each assembly or subassembly.

| REF. | NOTE | PART NO. | DESCRIPTION                                  | QTY |
|------|------|----------|--|-----|
| 1    |      | 246 191  | Deflector, w/O-Ring, 21 mm Dia., Teflon G.F. | 1   |
| 2    |      | 945 016  | • O-Ring, Silicone, 1/4 X 5/64               | 1   |
| 3    |      | 245 854  | Deflector, w/O-Ring, 16 mm Dia., Teflon G.F. | 1   |
| 4    |      | 945 016  | • O-Ring, Silicone, 1/4 X 5/64               | 1   |
| 5    |      | 246 187  | Deflector, w/O-Ring, 38 mm Dia., Teflon      | 1   |
| 6    |      | 945 016  | • O-Ring, Silicone, 1/4 X 5/64               | 1   |
| 5    |      | 246 923  | Deflector, w/O-Ring, 38 mm Dia., Tivar       | 1   |
| 6    |      | 945 016  | • O-Ring, Silicone, 1/4 X 5/64               | 1   |
| 7    |      | 246 922  | Nozzle, w/O-Ring, Tivar                      | 1   |
| 8    |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8      | 1   |
| 7    |      | 246 182  | Nozzle, w/O-Ring, Teflon                     | 1   |
| 8    |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8      | 1   |
| 9    |      | 246 184  | Sleeve, Teflon                               | 1   |
| 9    |      | 246 915  | Sleeve, Tivar                                | 1   |
| 10   |      | 246 185  | Connector, Powder Inlet, Teflon, Barbed      | 1   |
| 10   |      | 246 920  | Connector, Powder Inlet, Tivar               | 1   |
| 10   |      | 246 921  | Connector, Powder Inlet, Tivar, Barbed       | 1   |
| 10   |      | 246 266  | Connector, Powder Inlet, Teflon, Low Flow    | 1   |

FLAT FAN NOZZLE - PORCELAIN ENAMEL POWDERS

| REF. | NOTE | PART NO. | DESCRIPTION                             | QTY. |
|------|------|----------|---|------|
| -    |      | 248 282  | Nozzle, Flat Fan, Frit, w/O-Ring        | 1    |
| -    |      | 942 161  | • O-Ring, Silicone, 1 1/4 X 1 3/8 X 1/8 | 1    |

BULK POWDER FEED TUBING

| REF. | NOTE | PART NO. | DESCRIPTION                             | QTY. |
|------|------|----------|---|------|
| -    | A    | 900 550  | Tubing, Powder, High Flow               | ASR  |
| -    | A    | 900 549  | Tubing, Powder, Low Flow                | ASR  |
| -    | AB   | 900 724  | Tubing, Powder, Polyurethane, High Flow | ASR  |
| -    | AB   | 900 723  | Tubing, Powder, Polyurethane, Low Flow  | ASR  |

Note (A) - Order in increments of one meter as required for the application.  
Note (B) - Use with porcelain enamel (Frit) powders.

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Previous Generation

Previous Generation