

Diffuser and Nozzle Extension Installation for Versa-Spray[®] and Versa-Spray[®] II Automatic Guns used with Versa-Spray[®] Control Units

Introduction

This instruction sheet covers the installation of the kits listed below. It also includes a nozzle extension repair procedure, test specifications for the extension resistor, and parts lists for the kits.

Part	Kit	Function
169658	Manifold	Supplies regulated air to up to five automatic guns
169659	Gun diffuser	Injects air into the powder-air mixture to evenly blend it before it reaches the nozzle
183537	Nozzle extension	Prevents powder particles from collecting on the electrode by sending air through the center of the nozzle extension and out around the electrode

Manifold Installation

1. [See Figure 1](#). Mount the manifold (2) so that the air tubing (4) from the manifold to the guns can be bundled with the feed hoses (6) and gun cables (12).
2. Connect switched system air to the manifold regulator (3). Switched air can be obtained from the output side of solenoids 1 or 2 in the booth pneumatic control panel.

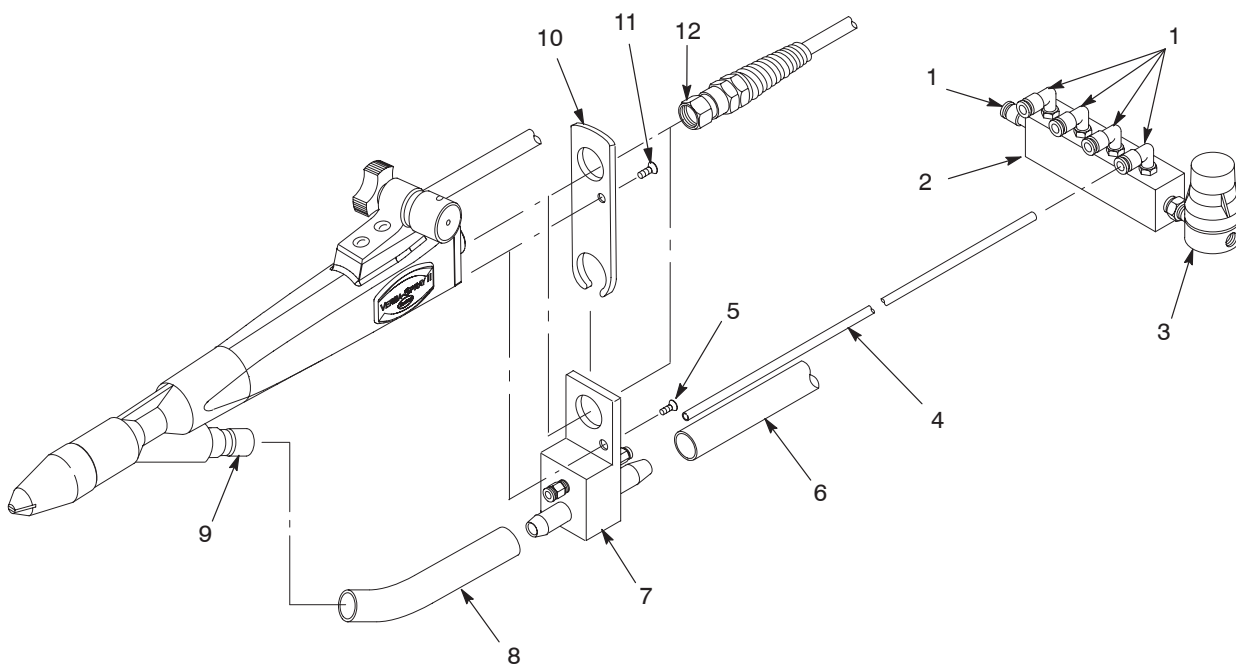
Regulator Specifications	
Input pressure	0-13.5 bar (0-200 psi)
Output pressure	0.7 bar (10 psi)
Input port size	1/4-in. NPT

NOTE: The air supply to the regulator must be interlocked with the spray booth fire detection system.

Diffuser Installation

1. See Figure 1. Disconnect the cable (12) from the multiplier.
2. Disconnect the powder feed hose (6) from the gun. Remove the hose from the hose bracket (10).
3. Remove the screw (11) and hose bracket.
4. Install the diffuser (7) on the end of the gun and secure it with the screw provided (5).
5. Install a piece of feed hose (8), 210-mm (8.25-in.) long, between the diffuser and the hose adapter (9).
6. Connect the powder feed hose (6) to the diffuser and the cable (12) to the multiplier.
7. Install 6-mm air tubing (4) between the diffuser and one of the manifold output fittings (1).

NOTE: Air tubing and feed hose must be ordered separately. Refer to *Powder Feed and Air Tubing* for the part numbers.



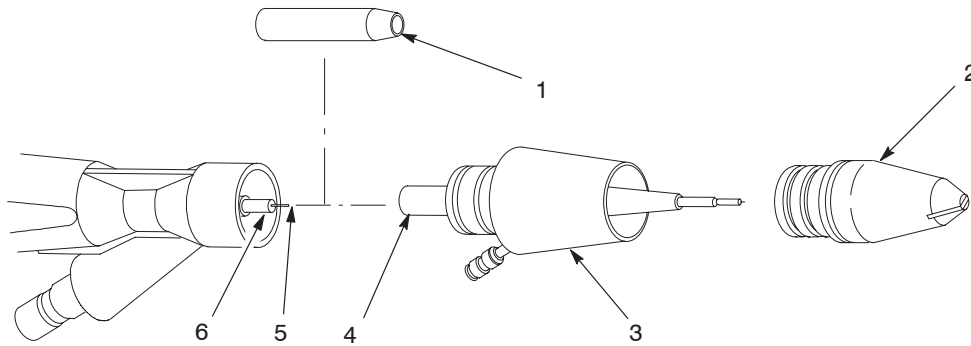
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Figure 1 Diffuser Installation

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|--------------------|--------------|------------------|
| 1. Output fittings | 5. Screw | 9. Hose adapter |
| 2. Manifold | 6. Feed hose | 10. Hose bracket |
| 3. Regulator | 7. Diffuser | 11. Screw |
| 4. 6-mm Air tubing | 8. Feed hose | 12. Cable |

Nozzle Extension Installation

1. See Figure 2. Remove the nozzle (2) and wear sleeve (1) from the gun.
2. Install the nozzle extension (3) onto the gun. The resistor probe (6) fits into the nozzle extension wear sleeve (4). Be careful not to damage the electrode (5).
3. Install the nozzle into the nozzle extension.

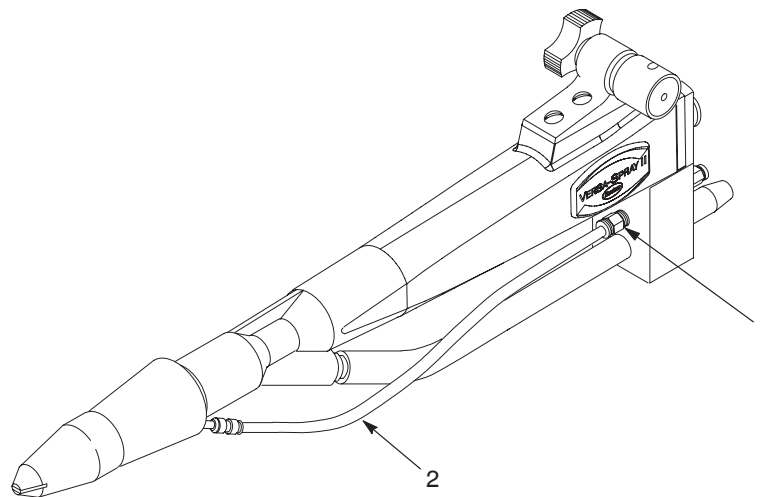


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Figure 2 Nozzle Extension Installation

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|----------------------|---------------------------------|-------------------|
| 1. Wear sleeve | 3. Nozzle extension | 5. Electrode |
| 2. Flat-spray nozzle | 4. Nozzle extension wear sleeve | 6. Resistor probe |

4. See Figure 3. Remove the plug from the diffuser and install the 6-mm tube connector (1) in the open port.
5. Install the 260-mm (10.25-in.) length of 6-mm air tubing (2), included in the kit, between the diffuser and the nozzle extension.



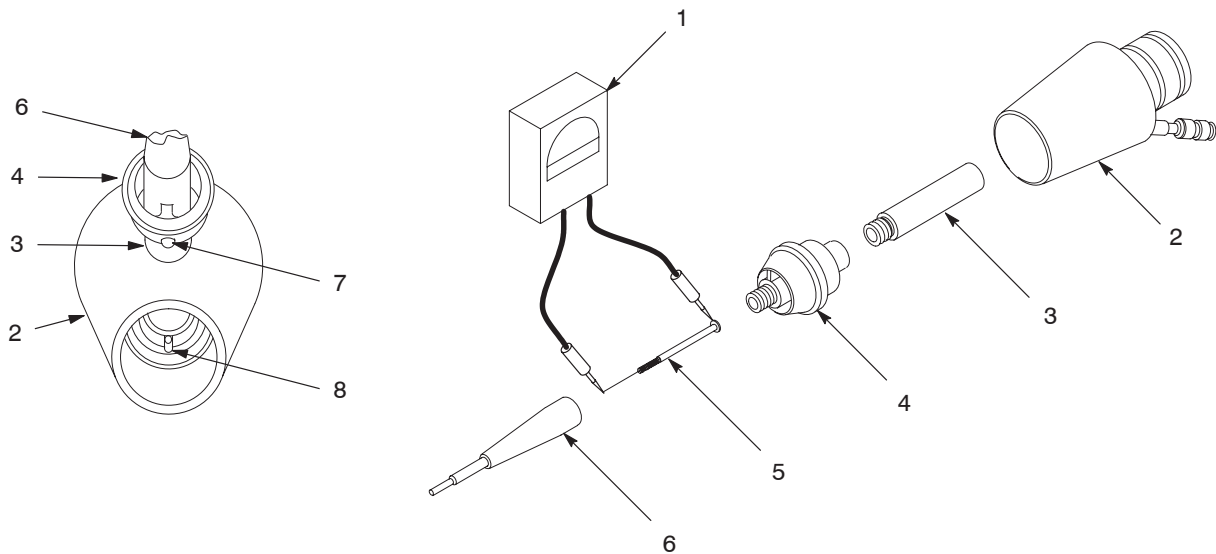
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Figure 3 Air Tubing Connection

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|------------------------|--------------------|
| 1. 6-mm Tube connector | 2. 6-mm Air tubing |
|------------------------|--------------------|

Nozzle Extension Repair

1. See Figure 4. Push on the wear sleeve (3) to get the wear sleeve/spider/resistor holder assembly (3, 4, 5, 6) out of the nozzle adapter (2).
2. Unscrew the wear sleeve (3) and resistor holder (6) from the spider (4).
3. Remove the resistor (5) from the resistor holder.
4. Test the resistor resistance with a megohmmeter. The megohmmeter should read between 18 and 22 megohms at 500 volts. If the reading is out of this range, replace the resistor.
5. Replace any worn or damaged parts.
6. Install the resistor in the resistor holder.
7. Install the wear sleeve and resistor holder onto the spider.
8. Align the small pin (7) on the spider with the slot (8) in the nozzle adapter. Press the spider/resistor holder assembly (3, 4, 5, 6) back into the nozzle adapter.



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Figure 4 Nozzle Extension Repair

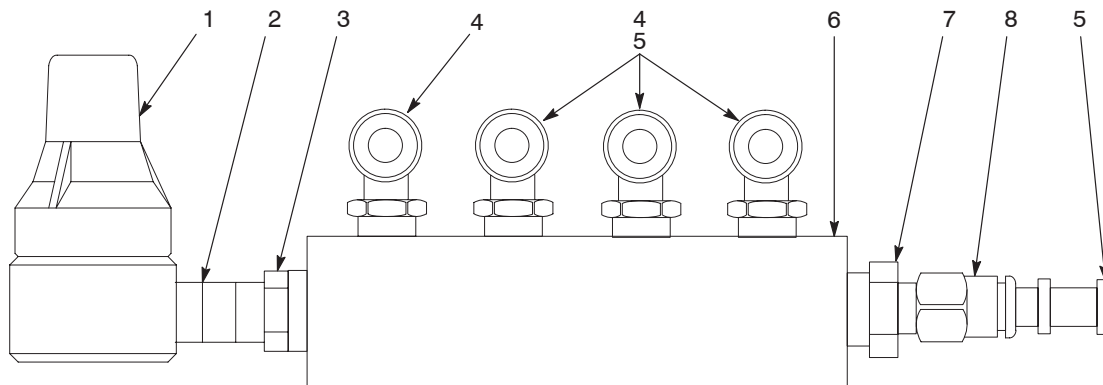
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|-------------------|--------------------|---------|
| 1. Megohmmeter | 4. Spider | 7. Pin |
| 2. Nozzle adapter | 5. Resistor | 8. Slot |
| 3. Wear sleeve | 6. Resistor holder | |

Parts Lists

Manifold

See Figure 5.

Item	Part	Description	Quantity	Note
—	169658	MANIFOLD, VS2 gun diffuser	1	
1	249467	• REGULATOR, in-line air	1	
2	973117	• NIPPLE, steel, schedule 40, $\frac{1}{4}$ -in. NPT x 1.50 in.	1	
3	973370	• BUSHING, reduction, $\frac{3}{8}$ -in. x $\frac{1}{4}$ -in.	1	
4	972142	• ELBOW, male, 6-mm tube x $\frac{1}{4}$ -in. BSPT	4	
5	183804	• PLUG, 6-mm tube	4	
6	248105	• MANIFOLD, air	1	
7	973373	• BUSHING, pipe, hydraulic, $\frac{3}{8}$ x $\frac{1}{8}$ -in.	1	
8	972141	• CONNECTOR, male, 6-mm tube x $\frac{1}{8}$ -in. BSPT	1	



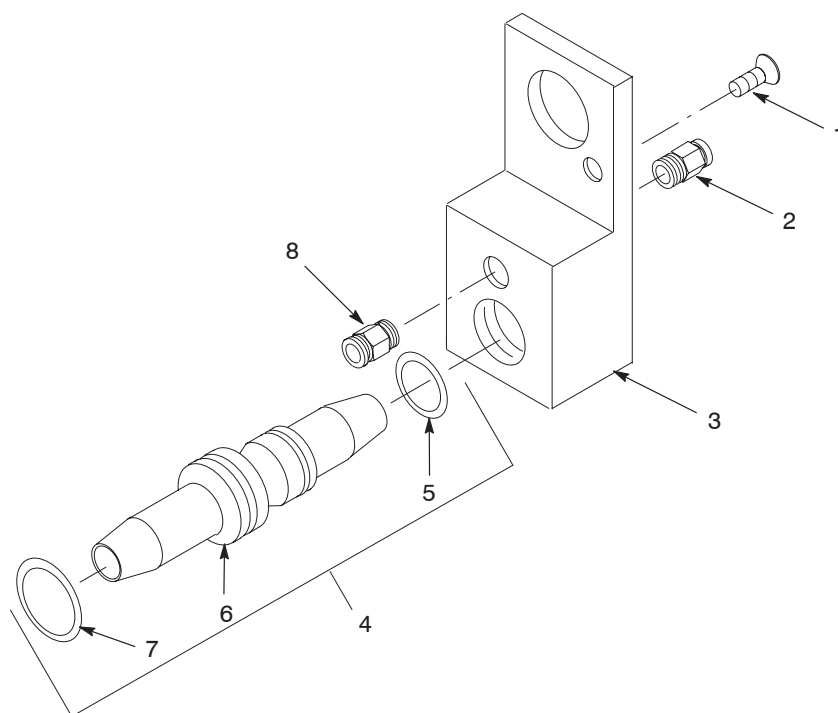
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Figure 5 Manifold Parts

Diffuser Kit

See Figure 6. Use this kit with the manifold listed on the previous page.

Item	Part	Description	Quantity	Note
—	169659	KIT, VS2 diffuser, IPS auto gun	1	
—	-----	• DIFFUSER, plugged, assembly	1	
1	982142	• • SCREW, flat head, M3 x 10	1	
2	972141	• • CONNECTOR, male, 6-mm tube x 1/8-in. BSPT	1	
3	169655	• • BRACKET, VS2 gun diffuser	1	
4	169661	• • KIT, connector, VS2 gun diffuser	1	
5	940163	• • • O-RING, silicone, 0.625 x 0.750 x 0.063 in.	1	
6	-----	• • • CONNECTOR, VS2 gun diffuser	1	
7	940182	• • • O-RING, silicone, 0.750 x 0.875 x 0.063 in.	1	
8	973402	• • PLUG, 1/8-in. NPT	1	



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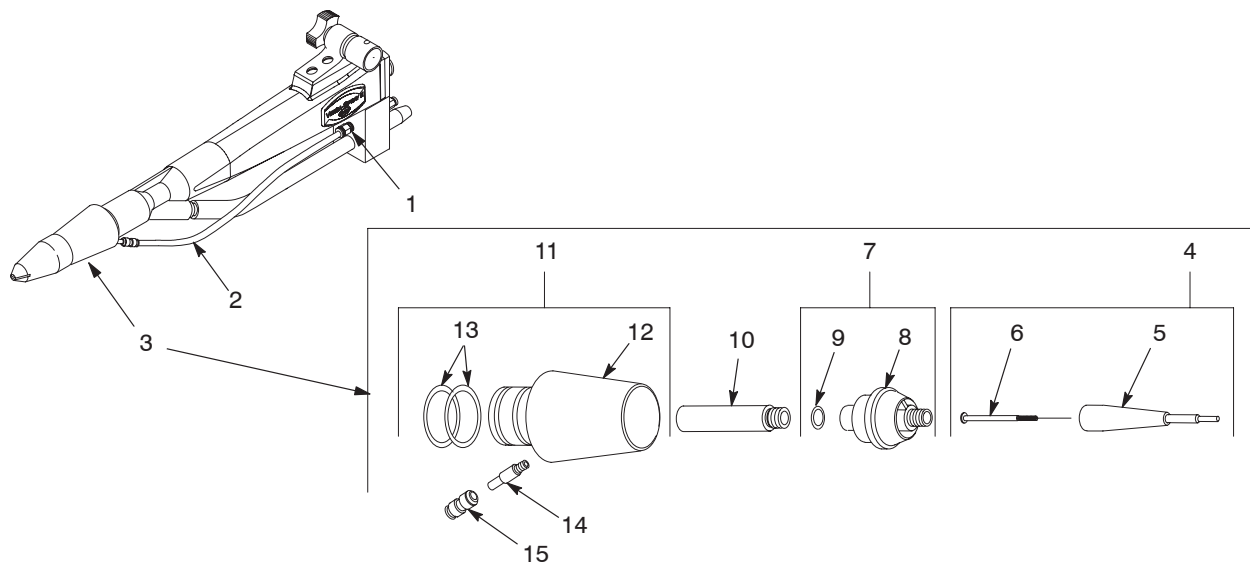
Figure 6 Diffuser Parts

Nozzle Extension Kit

See Figure 7.

Item	Part	Description	Quantity	Note
—	183537	KIT, VS2 extension, auto gun	1	
1	972141	• CONNECTOR, male, 6-mm tube x 1/8-in BSPT	1	
2	900742	• TUBING, polyurethane, 6 mm, blue	AR	A
3	183334	• KIT, extension, nozzle	1	
4	183645	• • SERVICE KIT, resistor, with holder, VS2	1	
5	179182	• • • HOLDER, resistor	1	
6	183646	• • • SERVICE KIT, resistor, nozzle extension, VS2	1	
7	182255	• • KIT, spider, with O-ring	1	
8	-----	• • • SPIDER, air inlet, VS2	1	
9	940104	• • • O-RING, silicone, 0.250 x 0.375 x 0.063 in.	1	
10	173179	• • SLEEVE, wear, VS2	1	
11	182254	• • KIT, adapter, nozzle, VS2, with O-ring	1	
12	-----	• • • ADAPTER, nozzle, VS2	1	
13	941181	• • • O-RING, silicone, 0.875 x 1.063 x 0.094 in.	2	
14	173177	• • FITTING, M6, straight	1	
15	971790	• • UNION, straight, 6 mm, plastic	1	

NOTE A: Bulk part number. Order in increments of one foot.
AR: As Required



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Figure 7 Nozzle Extension Kit

Powder Feed and Air Tubing

These are bulk part numbers. Order them in increments of one foot.

Part	Description	Note
900550	POWDER TUBING, 1/2-in. ID	
900742	AIR TUBING, polyurethane, 6 mm	

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