Vantage® Individual Powder Spray Gun Controller

Customer Product Manual
Part 1044199–05
Issued 08/18

Previous Generation

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

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

NORDSON CORPORATION • AMHERST, OHIO • USA

Table of Contents

Safety **1-1**
Introduction 1-1
Qualified Personnel 1-1
Intended Use 1-1
Regulations and Approvals 1-1
Personal Safety 1-2
Fire Safety 1-2
Grounding 1-3
Action in the Event of a Malfunction 1-3
Disposal 1-3

Description **2-1**
Introduction 2-1
Front Panel Controls and Indicators 2-1
Keypad 2-2
Display 2-3
Operating Modes 2-3
Back Panel 2-4
Specifications 2-5

Installation **3-1**
Mounting 3-1
Power and Ground Connections 3-1
Spray Gun Cable/Adapter Installation 3-2
Sure Coat or
Versa Spray II Automatic Spray Guns 3-2
Tribomatic II Automatic Spray Guns 3-3
Trigger Configuration 3-5
Pneumatic Connections 3-6
PLC Connection 3-7

Operation **4-1**
Startup 4-1
Initial Gun Usage 4-3
Air Pressure Adjustments 4-4
Flow Rate Air Pressure 4-4
Atomizing Air Pressure 4-4
Fluidizing Air Pressure 4-4
Shutdown 4-5
Daily Maintenance 4-5

Troubleshooting **5-1**
Wiring Diagram 5-4

Repair **6-1**
Spray Gun Cable/Adapter Replacement 6-1
Sure Coat or
Versa Spray II Automatic Spray Guns 6-1
Tribomatic II Automatic Spray Guns 6-3
Check Valve Replacement 6-4
Solenoid Replacement 6-5
Gun Board Replacement 6-7
Interface Display Board Replacement 6-8
Regulator and Gauge Replacement 6-10
Fuses 6-12
Rear Panel Fuses 6-12
Power Supply Fuse 6-12
Power Supply Replacement 6-13
Pneumatic Diagram 6-14

Parts **7-1**
Introduction 7-1
Using the Illustrated Parts List 7-1
Vantage Powder Controller 7-2
Front Panel 7-5
Rear Panel 7-9
Spray Gun Cables 7-10

Previous Generation

Contact Us

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address: http://www.nordson.com.

Address all correspondence to:

Nordson Corporation
Attn: Customer Service
300 Nordson Drive
Amherst, OH 44001

Notice

This is a Nordson Corporation publication which is protected by copyright. Original copyright date 2004. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Nordson Corporation. The information contained in this publication is subject to change without notice.

Trademarks

Nordson, the Nordson logo, Sure Coat, Tribomatoc, Vantage, and Versa-Spray are registered trademarks of Nordson Corporation.

© 2018 Nordson Corporation

Change Record

Revision	Date	Change
04	04/15	Removed CE, FM, and DOC from document.
05	07/18	Updated parts list.

Previous Generation

© 2018 Nordson Corporation

Previous Generation

© 2018 Nordson Corporation

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.

Previous Generation

© 2018 Nordson Corporation

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.

Previous Generation

© 2018 Nordson Corporation

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.

Previous Generation

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.

© 2018 Nordson Corporation

Previous Generation

© 2018 Nordson Corporation

Section 2
Description

Introduction

The Vantage powder spray gun controller can be used with one or two Versa-Spray® II, Sure Coat®, or Tribomatic® II automatic spray guns.

The Vantage powder spray gun controller:

- controls flow-rate and atomizing air pressure to the spray gun powder pump
- provides dc power to the spray gun voltage multiplier and controls electrostatic output
- monitors the spray gun voltage and microamperage output

NOTE: The Vantage Modular Gun Control System controls four to eight spray guns. Refer to the *Vantage Modular Gun Control System* manual for more information.

Front Panel Controls and Indicators

See Figure 2-1.

- The keypad and display (1) controls electrostatic output and gun triggering.
- The regulators and gauges control flow-rate (2) and atomizing (3) air pressures.

Previous Generation

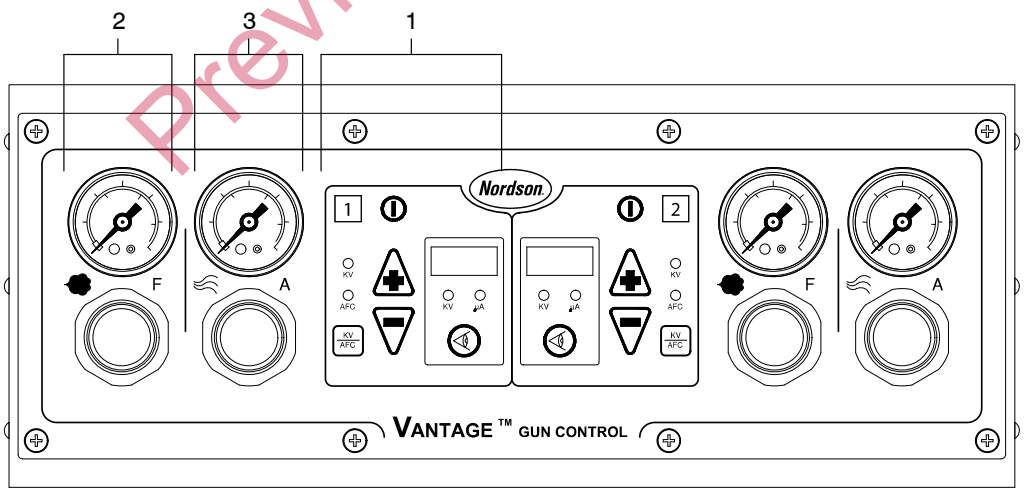


Figure 2-1 Front Panel Controls and Indicators

1. Keypad and display
2. Flow-rate air regulator and gauge
3. Atomizing air regulator and gauge

© 2018 Nordson Corporation

Keypad

Refer to Table 2-1 and Figure 2-2. The keypad controls the electrostatic and diagnostic functions of the controller.

Table 2-1 Keypad Components

Item	Component	Description
1	Trigger key	**Automatic gun, external trigger** (gun is triggered by another controller, such as a PLC): When on, external triggering enabled. When off, external triggering disabled. **Automatic gun, no external trigger:** Turns gun on or off.
2	kV/AFC LEDs	Light to indicate the selected electrostatic mode.
3	kV/AFC key	Toggles between kV mode and AFC mode. In kV mode: Set kV output of spray gun. In AFC mode: Set current output limit.
4	Up arrow key (+) Down arrow key (–)	Use to set output voltage (kV) or output current (µA). Settings are stored in memory in case of power loss. **NOTE:** For Tribomatic guns no electrostatic adjustments are available.
		In AFC Mode: Range is 10–100 µA in 1 µA increments.
		In kV Mode: • Versa Spray gun: 33–100 kV in 1 kV increments. • Sure Coat gun: 25–95 kV in 1 kV increments.
5	Display	Shows electrostatic settings and spray gun output. **NOTE:** For Tribomatic guns displays only feedback current (µA).
6	kV/µA LEDs	Lights to indicate value displayed: kV (voltage) or µA (current).
7	VIEW key	Toggles display between output current (µA) and voltage (kV).

Previous Generation

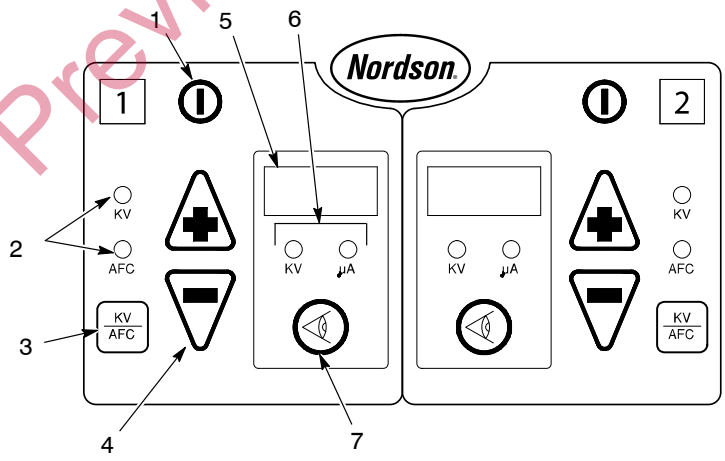


Figure 2-2 Keypad

© 2018 Nordson Corporation

Display

Mode	Description
	Controller is lockedout by remote signal. Guns cannot be triggered locally or remotely. Used for safety purposes to disable gun when cleaning.
	Conveyor interlock activated: Conveyor is stopped, guns are shut off.
	Automatic gun, external trigger: Trigger is disabled. Automatic gun, no external trigger: Gun is off.
	Automatic gun, external trigger: Trigger is enabled. This messge only appears for a few seconds when trigger is enabled. Display is blank when no external trigger signal is present.

Operating Modes

The operating modes for Sure Coat and Versa-Spray guns are kV or AFC. The kV/AFC button on the front display panel toggles between the modes. The kV or AFC LEDs light to indicate the selected mode.

NOTE: If you are using Tribomatic II spray guns only feedback current (µA) is displayed. No electrostatic adjustments are available.

Mode	Description
kV (voltage)	Setting kV output provides maximum transfer efficiency when coating large objects with a gun-to-part distance of 0.2–0.3 m (8–12 in.). The setting is adjustable in 1 kV increments. • For Versa-Spray guns the range is 33–100 kV • For Sure Coat guns the range is 25–95 kV
AFC (current – µA)	Automatic feedback current (AFC) allows the operator to set the maximum current (µA) output from the spray gun to prevent excess charging of the sprayed powder. This provides an optimum combination of kV and electrostatic field strength for coating parts with interior corners and deep recesses at close range. The setting range is 10–100 µA in increments of 1 µA.

Previous Generation

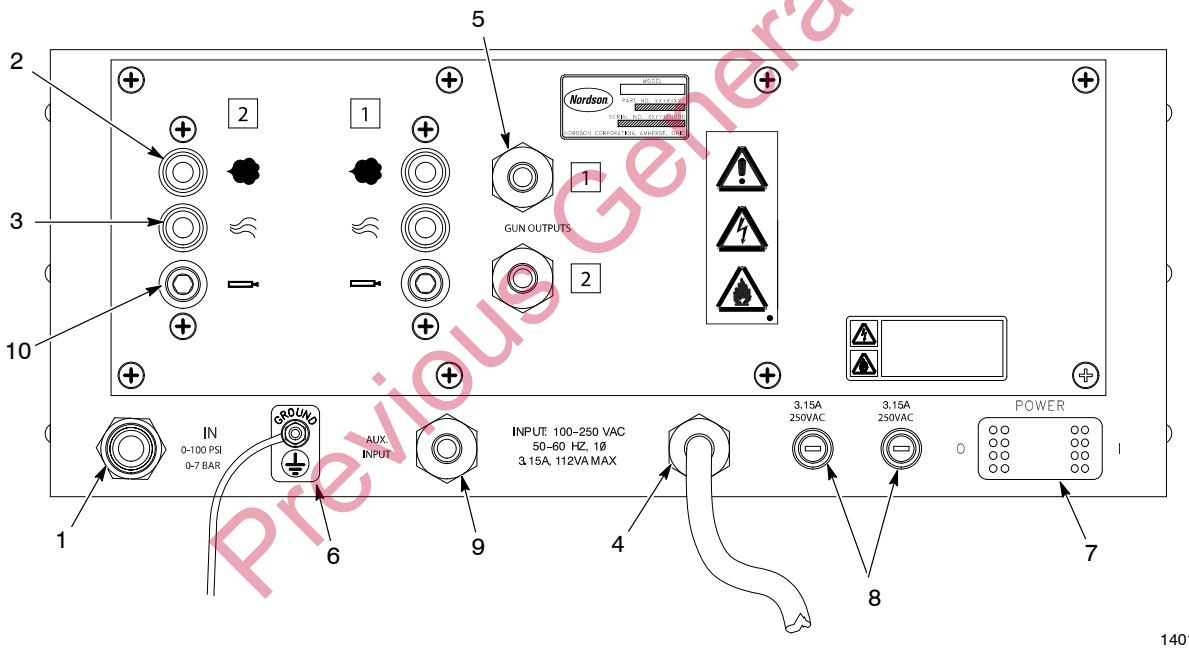
© 2018 Nordson Corporation

Back Panel

Refer to Table 2-2 and Figure 2-3.

Table 2-2 Back Panel

Item	Function
1	Supply air input (10-mm tubing)
2	Flow-rate air output to powder pump (8-mm tubing)
3	Atomizing air output to powder pump (8-mm tubing)
4	Power input cable
5	Gun cable feed through
6	Ground stud, with cable and clamp. Use for standalone controller
7	Power Switch. Turns the controller on and off.
8	Main power fuses
9	AUX INPUT: for control wiring from a PLC or other external device
10	Optional gun air output for Sure Coat guns (6-mm tubing)



1401360A

Figure 2-3 Controller Back Panel

Previous Generation

© 2018 Nordson Corporation

Specifications

Contact your Nordson representative for additional information.

Hazardous Location Rating	North America: Class II Division 2
	European Union: Ordinary non-hazardous location
Enclosure Rating	IP54
Installation Requirements (per ANSI/ISA S82.02.01)	
Pollution degree	2
Installation category	2
Electrical	
Input	100–250 Vac, 1 phase, 50–60 Hz, 112VA maximum
Output	6–21 Vdc to the spray gun
Short circuit output current	50 mA
Maximum output current	600 mA
Maximum Input Air Pressure	7.2 bar (105 psi)
Typical Operating Air Pressures	
Flow rate air	2.0 bar (30 psi)
Atomizing air	1 bar (15 psi)
Operating Temperature	Ambient; 45 °C maximum
Air Supply Quality	Air must be clean and dry. Use a regenerative desiccant or refrigerated air dryer capable of producing a 3.4 °C (38 °F) or lower dew point at the controller's maximum input pressure. Use a filter system with prefilters and coalescent-type filters capable of removing oil, water, and dirt in the submicron range. Moist or contaminated air can cause powder to cake in the feed hopper; stick to the feed hose walls; clog the pump venturi throats and spray gun passages; and cause grounding or arcing inside the spray gun.
Weight	21.6 kg (28.3 lb)

Previous Generation

© 2018 Nordson Corporation

Previous Generation

© 2018 Nordson Corporation

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

A single controller cabinet may be set on a table or other clean flat surface.

The cabinet is fitted with optional mounting ears for mounting in a customer-supplied 19-in rack.

Use caution if placing other equipment on the mounting surface so that the controller does not get damaged.

Power and Ground Connections

WARNING: Do not skip step 1. Failure to install the locking disconnect switch or breaker may result in a severe shock during installation or repair.

WARNING: Shut off and lock out system power during installation. Failure to observe this warning may result in severe shock.

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.

CAUTION: Equipment damage may occur if the controller is connected to any line voltage other than that stated on the identification plate.

Previous Generation

© 2018 Nordson Corporation

Power and Ground Connections *(contd)*

1. Install a locking disconnect switch or breaker (15 amp maximum) in the service line ahead of the controller. Use the switch to shut off and lock out system power during installation or repair.
2. Make sure that the input voltage is 100–250 Vac nominal, 1 phase, 50–60 Hz.
3. Wire the power cord (3) to the external disconnect switch or breaker as shown in Table 3-1.

Table 3-1 Power Cord Wiring

Wire	Function
Brown	L1 (hot)
Blue	L2 (neutral)
Green/yellow	Ground

WARNING: Properly ground the controller with the furnished ground cable and clamp or equipment damage will result.

4. Connect the ground wire furnished with the controller to the ground stud (4) on the enclosure back panel and secure the clamp to a true earth ground.
5. Remove the eight screws (1) to remove the rear panel (2) from the controller.

Spray Gun Cable/Adapter Installation

The Versa-Spray and Sure Coat spray gun cables or Tribomatic gun adapters are shipped loose and must be connected to the gun driver board inside the controller.

Sure Coat or Versa-Spray II Automatic Spray Gun Cables

See Figure 3-1.

1. Loosen the retaining nut (5) on the gun cable strain reliefs.
2. Remove and discard the tube plugs from the strain reliefs.
3. Feed the 8-pin connector (7) ends of the spray gun cables (6) through the strain reliefs and pull approximately 350 mm (14 in.) of gun cable through to reach the gun board (8).
4. Connect the eight-pin connector to the circuit board. The top spray gun cable should connect in the right-hand (odd) connector (J3); the bottom spray gun cable should connect in the left-hand (even) connector (J4).

Previous Generation

© 2018 Nordson Corporation

5. Tighten the strain relief retaining nuts to secure the cables and seal the enclosure.
6. Secure the gun cables to the tab on the assembly tray with a tie wrap.
7. Install the rear panel (2) with the eight screws (1).
8. Connect the other ends of the cables to the appropriate spray guns.

Tribomatic II Automatic Spray Gun Adapters

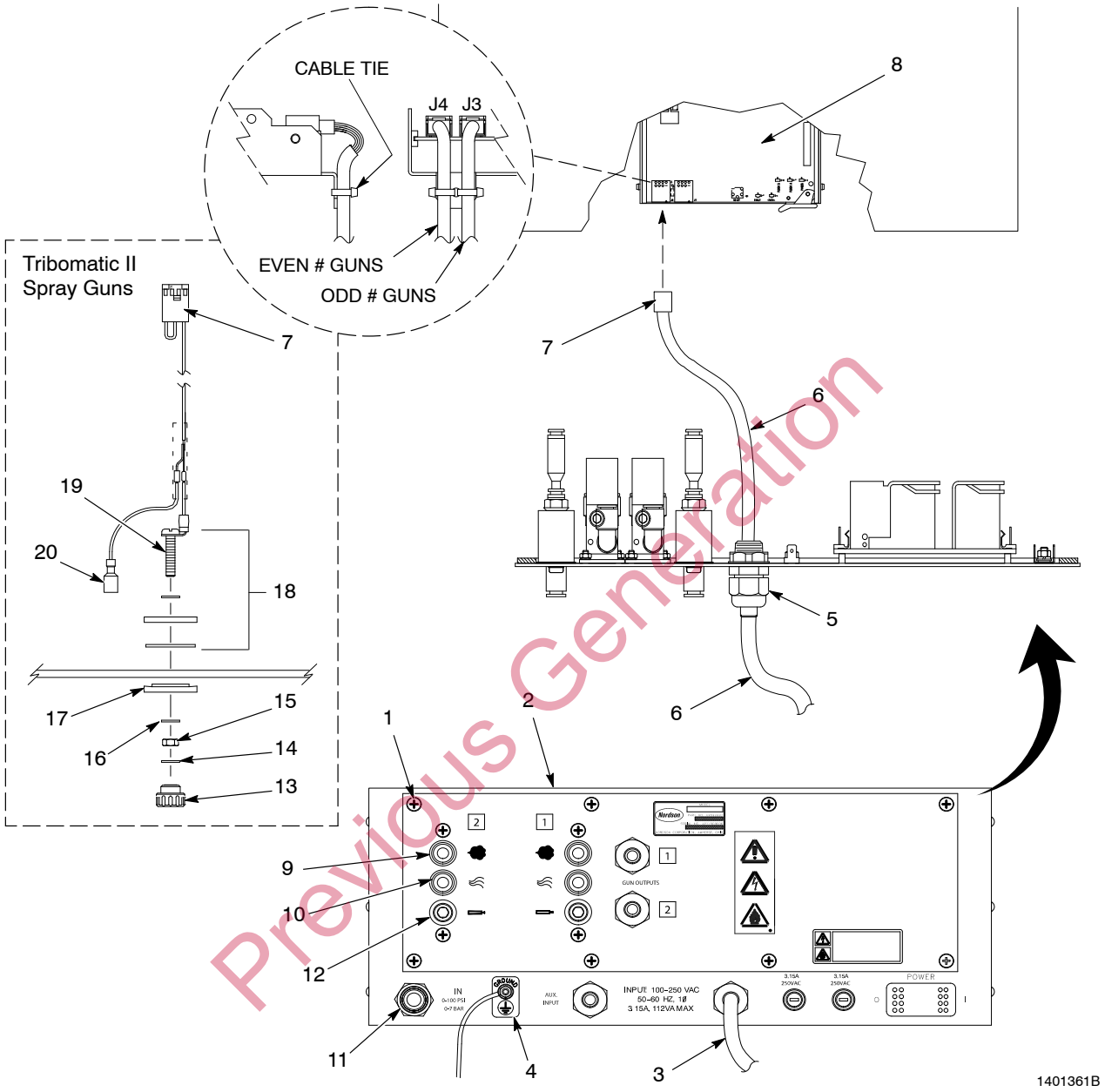
See Figure 3-1.

1. Remove the gun cable strain reliefs.
2. The Tribomatic II adapter is shipped completely assembled. To install the adapter remove the knob (13), washer (14), hex nut (15), lock washer (16), and shoulder washer (17) from the assembly and set aside.
3. Attach the 8-pin connector (7) end of the adapter to the circuit board. Gun 1 should connect in the right-hand connector, gun 2 should connect in the left-hand connector.
4. Mate the adapter's plastic gasket and rubber seal assembly (18) to the opening where the strain reliefs were, and secure the assembly with the parts removed in Step 2.
5. Secure the adapters to the tab on the assembly tray with a tie wrap.
6. Connect the pushon terminal (20) to the ground terminal on the rear panel.
7. Repeat steps 1 through 7 for the second spray gun.
8. Install the rear panel (2) with the eight screws (1).
9. Remove the adapter knobs, connect the Tribomatic II spray gun cable terminals to the adapter studs, then install and tighten the knobs.

Previous Generation

© 2018 Nordson Corporation

Spray Gun Cable/Adapter Installation *(contd)*



Previous Generation

Figure 3-1 Electrical and Pneumatic Connections for Sure Coat or Versa-Spray II Spray Guns

1. Screws
2. Rear panel
3. Power cord
4. Ground stud
5. Retaining nut
6. Spray gun cable
7. Eight–pin connector
8. Gun board
9. Flow rate connection
10. Atomizing air connection
11. Supply air (IN) connection
12. Gun air connection (Sure Coat spray guns)
13. Knob
14. Washer
15. Hex nut
16. Lock washer
17. Shoulder washer
18. Plastic washer and rubber gasket assembly
19. Slotted screw
20. Push on terminal

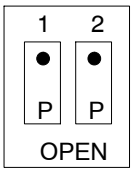
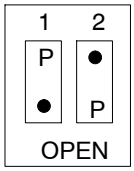
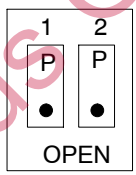
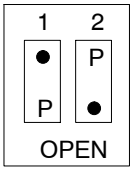
© 2018 Nordson Corporation

Trigger Configuration

NOTE: If your controller will be connected to an external PLC or other controlling device, refer to *PLC Connection* on page 3-6.

Set switch SW-2 on the interface display board for the desired trigger configuration. Refer to Table 3-2.

Table 3-2 Trigger Configuration Switch Settings

Configuration (See Notes)	SW2 Switch Position (P=Pushed In)	Notes
Trigger Key Disabled		Not Used
Automatic Gun No External Trigger (Factory Setting)		The spray gun is turned on/off with the trigger key on front panel.
Automatic Gun External Trigger		The trigger key on the front panel enables (ON) or disables (OFF) the trigger. Set to OFF to prevent the gun from being turned on remotely. If the display is blank then the external trigger is enabled but no trigger signal is present (the gun is off).
Trigger Key Disabled		Not Used

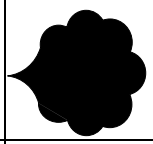
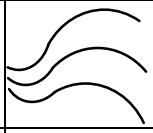
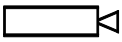
NOTE: On power up, the display shows the software versions for both printed circuit boards in the controller, gun driver board first, then display board. If the version numbers do not display, open the enclosure and check the green LED on the display board. If it is blinking, make sure the gun board is fully plugged into the display board. The gun board may come loose during cable installation.

Previous Generation

© 2018 Nordson Corporation

Pneumatic Connections

Refer to *Specifications* on page 2-5 for air quality and pressure specifications. See Figure 3-1.

Air Type	Tubing size	From	To
Input	10-mm	air supply shut-off valve in the supply line	IN connector (11) on the rear panel
Output			
Flow rate	8-mm (Black)	 Flow rate connection (9) on back panel	"F" connection on powder pump
Atomizing	8-mm (Blue)	 Atomizing connection (10) on back panel	"A" connection on powder pump
Gun	4 mm	 Gun air (12)	Spray gun (Sure Coat spray guns)
NOTE: Install a manually operated shut-off valve in the supply line to the controller.			

External Control Connections

See Figure 3-2.

Use this procedure to connect the Vantage controller external trigger, lockout, and conveyor interlock functions to a PLC or other external control device, such as a relay, switch, or sinking input.

1. Remove the eight screws and the rear panel (1) from the controller.
2. Loosen the retaining nut (2) on the AUX. INPUT strain relief (3).
3. Remove and discard the tube plug from the strain relief.
4. Feed the auxiliary controller cord (customer-supplied, 5 lead cable) through the strain relief and pull enough cable through to reach the front panel (5).
5. Pull the green 5-pin connector plug (5) off the receptacle and connect the cable leads as shown in Figure 3-2. The following table describes the connections.

   NOTE: The controller is shipped with jumpers between pins J1-5 and J1-3 (lockout disable) and pins J1-4 and J1-3 (conveyor interlock disable). If you are not using these connections, such as in a standalone configuration, leave the jumpers in place.

Previous Generation

© 2018 Nordson Corporation

Connection	Description	Between pins...
External Trigger	Short to common to turn the spray guns on.	J1-1 and J1-3 (TRIG A, left-hand gun) J1-2 and J1-3 (TRIG B, right-hand gun)
Lockout	When the circuit is open the controller will turn off power and air to the spray guns.	J1-5 and J1-3 **NOTE:** Jump pins 5 and 3 to disable the lockout.
Conveyor Interlock	This circuit should be shorted to common when the conveyor is running. When the conveyor stops the circuit should open, which will turn off the spray guns.	J1-4 and J1-3 **NOTE:** Jump pins 4 and 3 to disable the conveyor interlock.

6. Tighten the strain relief retaining nut to secure the cable and seal the enclosure.
7. If you are using the external trigger connection, set switch SW2 for external trigger. Refer to Table 3-2.
8. Install the rear panel with the eight screws.

Previous Generation

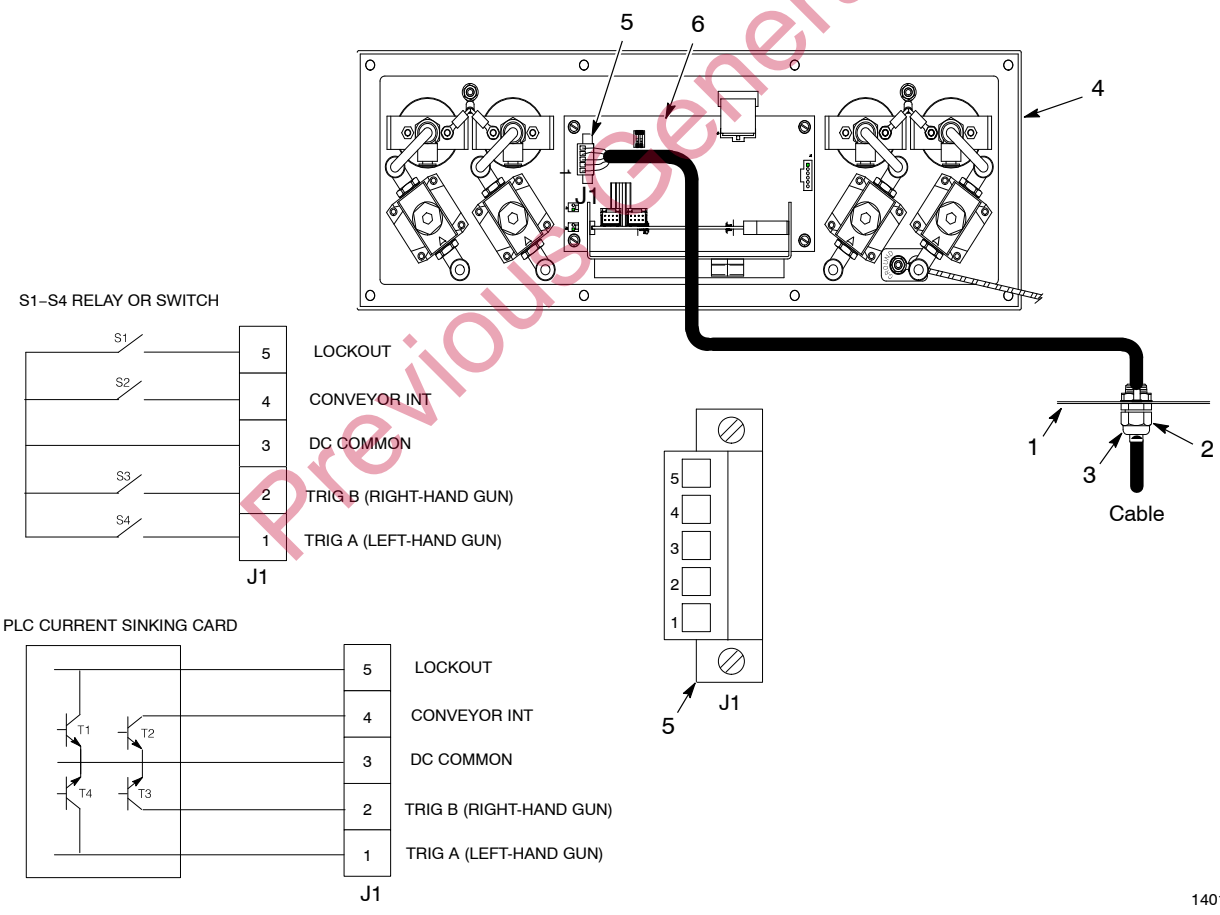


Figure 3-2 PLC Connection

1. Rear panel
2. Retaining nut
3. AUX. INPUT strain relief
4. Front panel
5. Five-pin connector
6. Interface card

© 2018 Nordson Corporation

Previous Generation

© 2018 Nordson Corporation

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.

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

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.

This section explains basic operation procedures for the Vantage powder controller. Before operating a powder spray system, read all system component manuals.

Startup

1. Make sure that the following conditions are met before starting up the control unit. Refer to the system component manuals for startup instructions.
   - The booth exhaust fans are turned on.
   - The powder recovery system is operating.
   - The powder in the feed hopper is thoroughly fluidized.
   - The gun cable, powder feed hose, and air tubing are correctly connected to the spray gun, powder pump, and controller.
2. Power on the controller with the rocker switch on the back of the unit. This causes all LEDs on the front panel to light up.

   NOTE: On power up, the display shows the software versions for the two printed circuit boards in the controller. If the version numbers do not display, open the enclosure and check the green LED on the display board. If it is blinking, make sure the gun board is plugged into the display board. The gun board may come loose during cable installation.
3. If you are starting up a spray gun for the first time, perform the *Initial Gun Usage* procedures on page 4-3.
4. See Figure 4-1. For Versa-Spray and Sure Coat guns, select an operating mode (kV or AFC) by pressing the kV/AFC button (6). The selected mode LED (1) will light.

Previous Generation

© 2018 Nordson Corporation

Startup *(contd)*

5. Set flow-rate (8) and atomizing air pressures (7):

   Flow-rate air: 2 bar (30 psi)
   Atomizing air: 1 bar (15 psi)

   NOTE: These pressures are average starting points. Pressures vary according to required film build, line speed, and part configuration. Refer to *Air Pressure Adjustments* on page 4-4 for guidelines on adjusting the pressures to obtain the desired results.

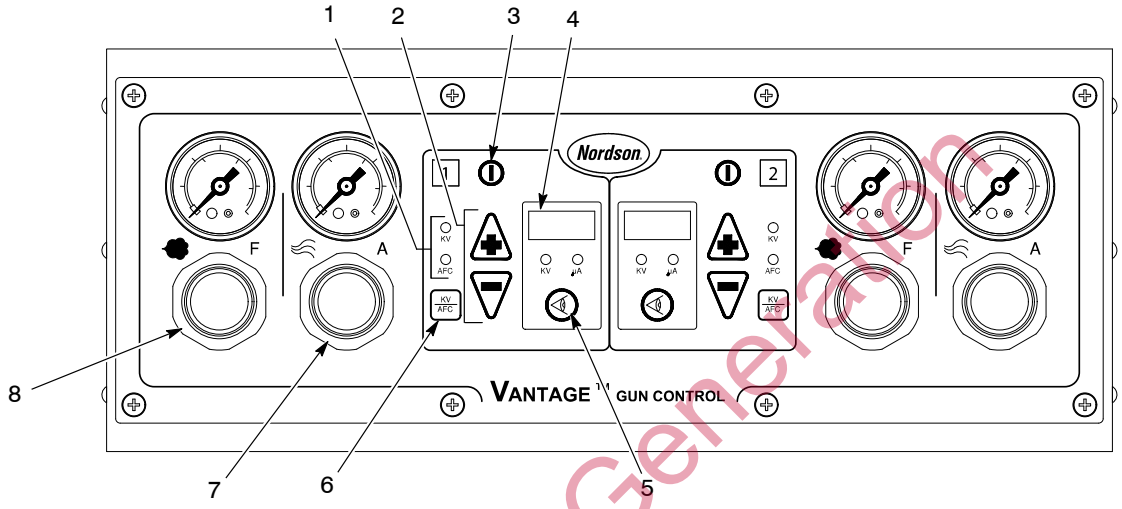


Figure 4-1 Front Panel Controls and Indicators

1. kV/AFC indicators
2. Up/Down arrow keys
3. Trigger key
4. Display
5. VIEW key
6. kV/AFC key
7. Atomizing air control
8. Flow-rate air control

6. Trigger the spray gun to test the spray pattern:
   - Press the trigger key or trigger the guns remotely.
7. Adjust the following settings to obtain the desired spray pattern and desired powder coverage and coating thickness:
   - flow-rate and atomizing air pressures
   - spray gun nozzle
   - for Versa-Spray and Sure Coat guns, kV or µA settings

Previous Generation

© 2018 Nordson Corporation

Spray Gun	kV		AFC	
	Minimum	Maximum	Minimum	Maximum
Versa-Spray	33	100	10	100
Sure Coat	25	95	10	100

NOTE: If you are using Tribomatic II spray guns only the output current (µA) is displayed. No electrostatic adjustments are available.

Obtaining a high-quality finish and maximum transfer efficiency (percentage of powder sprayed that adheres to the part) requires experimentation and experience. Settings for electrostatic voltage and air pressure affect overall coating performance. In most applications, the settings should produce a soft spray pattern that directs as much of the powder as possible onto the part with a minimum of overspray. These settings allow the maximum amount of charged powder to be attracted to the grounded part.

Lowering the voltage is a common method for trying to improve coverage of deep recesses and interior corners of parts. However, lowering the voltage may also reduce the overall transfer efficiency. Powder velocity, direction, and pattern shape can be just as important as electrostatic voltage in coating these areas.

Refer to *Air Pressure Adjustments* on page 4-4 for guidelines on flow-rate and atomizing air pressure settings.

Initial Gun Usage

Perform these procedures only when you connect a new spray gun to the controller.

1. Turn on the controller.
2. For Versa-Spray and Sure Coat guns, make sure the control unit is in kV mode, AFC off, with kV set to maximum.

   NOTE: Versa-Spray gun: 100 kV maximum; Sure Coat gun: 95 kV maximum

   NOTE: If you are using Tribomatic II spray guns only the output current (µA) displays. No electrostatic adjustments are available.

3. See Figure 4-1. Press the VIEW key (5) to display µA.
4. Trigger the spray gun, and adjust the flow-rate and the atomizing air pressure to obtain the desired spray pattern.

   NOTE: Make sure the controller is set up for proper trigger signal configuration. Refer to *Trigger Configuration* on page 3-5 for more information.

5. Record the µA output with no parts in front of the spray gun.

   Monitor the µA output daily, under the same conditions. For Versa-Spray and Sure Coat guns, a significant increase in µA output indicates a probable short in the gun resistor. A significant decrease indicates a failing resistor or voltage multiplier. For Tribomatic guns, a significant decrease in µA output indicates charge module wear.

Previous Generation

© 2018 Nordson Corporation

Air Pressure Adjustments

Refer to the feed hopper manual for the recommended fluidizing air pressure.

Flow-Rate Air Pressure

Flow-rate air transports a powder and air mixture from the feed hopper to the spray gun. Increasing the flow-rate air pressure increases the amount of powder sprayed from the spray gun and may increase the thickness of the powder deposited on the part.

If the flow-rate pressure is set too low, an inadequate film build or uneven powder output may result. If the flow-rate pressure is too high, too much powder could be output at too high a velocity. This could cause excessive film build or overspray, which reduces transfer efficiency and wastes powder. Excessive flow-rate pressure may also accelerate the build-up of impact-fused powder (impact fusion) in the spray gun or pump, or cause premature wear of the spray gun and pump parts in contact with the powder.

Keeping the amount of overspray to a minimum reduces the amount of powder to be recovered and recycled. This minimizes wear and tear on the system components such as pumps, spray guns, and filters. Maintenance costs are also kept down.

Atomizing Air Pressure

Atomizing air is added to the powder and air stream to increase the powder velocity in the feed hose and break up clumps of powder. Higher atomizing air pressures are needed at lower powder flow rates to keep the powder particles suspended in the air stream. Higher powder velocities may cause the spray pattern to change.

If the atomizing air pressure is set too low, the result may be uneven powder output or puffing and surging from the spray gun. If set too high, atomizing air pressure can increase the powder velocity and cause excessive overspray, impact fusion, and premature wear of the pump and spray gun parts.

NOTE: Set the atomizing air at least to 0.3 bar (5 psi). If the air pressure is too low, powder may flow back from the powder pump and get inside the control unit, damaging the air valves and regulators.

Fluidizing Air Pressure

When properly fluidized, small air bubbles should rise gently and uniformly to the surface of the powder, making it look like it is boiling. In this state, the powder feels and acts similar to a liquid, enabling easy transport by the powder pump from the hopper to the spray gun.

If the fluidizing pressure is set too low, a heavy inconsistent powder may flow. If the fluidizing pressure is too high, the powder boils violently, and the flow is uneven with possible air pockets in the powder stream.

Previous Generation

© 2018 Nordson Corporation

Shutdown

1. Turn off the controller.
2. Ground the spray gun electrode to discharge any residual voltage.
3. Perform the *Daily Maintenance* procedure.

Daily Maintenance

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

1. Compare the spray gun's µA output in kV mode with no parts in front of the spray gun with the output and kV setting recorded during the *Initial Gun Usage* procedure on page 4-3. Significant differences may mean that the gun electrode assembly or multiplier is shorted or failing. Refer to the *Troubleshooting* section for more information.

WARNING: Check all ground connections thoroughly. Ungrounded equipment and parts may accumulate a charge that could arc and cause a fire or explosion. Failure to observe this warning could cause serious injury or equipment and property damage.

2. Check all ground connections, including part grounds. Ungrounded or poorly grounded parts affect transfer efficiency, electrostatic wrap, and the quality of the finish.
3. Check power and gun cable connections.
4. Make sure that the compressed air supply is clean and dry.
5. Wipe powder and dust off the controller enclosure with a clean, dry cloth.
6. Disassemble the spray guns and powder pumps and clean them. Refer to the spray gun and pump manuals for instructions.

Previous Generation

© 2018 Nordson Corporation

Previous Generation

© 2018 Nordson Corporation

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.

These troubleshooting procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact the Nordson Finishing Customer Support Center at (800) 433-9319 or your local Nordson representative for help.

Problem	Possible Cause	Corrective Action
1. **Uneven spray pattern; unsteady or inadequate powder flow**	Blockage in spray gun, feed hose, or pump	Disconnect the feed hose from the pump and blow out the feed hose. Disassemble and clean the pump and spray gun. Replace the feed hose if it is clogged with fused powder.
	Poor fluidization of powder in hopper	Increase the fluidizing air pressure. Remove the powder from the hopper. Clean or replace the fluidizing plate if it is contaminated.
	Moisture in powder	Check the powder supply, air filters, and dryer. Replace the powder supply if it is contaminated.
	Worn nozzle	Remove, clean, and inspect the nozzle. Replace the nozzle if necessary. If excessive wear or impact fusion is present, reduce the flow rate and atomizing air pressures.
	Low atomizing or flow rate air pressure	Increase the atomizing and/or flow rate air pressures.
		Continued...

Previous Generation

© 2018 Nordson Corporation

Problem	Possible Cause	Corrective Action
2. Loss of wrap; poor transfer efficiency	Low electrostatic voltage	Increase the electrostatic voltage.
	Poor electrode connection	Check the resistance of the gun electrode assembly. Refer to your spray gun manual for instructions.
	Poorly grounded parts	Check the part hangers for powder buildup. The resistance between the parts and the ground must be 1 megohm or less. For best results, the resistance should be 500 ohms or less.
3. No kV output from the spray gun	Damaged spray gun cable	Test the continuity of the spray gun cable. If an open or short circuit is found, replace the cable. Refer to your spray gun manual for instructions.
	Malfunctioning voltage multiplier	Check the resistance of the spray gun's voltage multiplier. Refer to your spray gun manual for instructions.
	Poor electrode connection	Check the resistance of the spray gun's electrode assembly as described in your spray gun manual.
	Malfunctioning power supply	Unplug the gun end of the cable from the voltage multiplier. refer to to your spray gun manual and with the trigger switch actuated, check for 21 Vdc between pins 2 and 3 of the gun end of the gun cable. If the reading is not 21 Vdc, contact your Nordson representative.
4. No kV output and no powder output	No trigger signal	Make sure the system is triggered on.
	Defective power supply	Check for +24 volts at connector. replace the power supply if necessary.
	Shorted solenoid valve	Replace the solenoid valve.

Continued...

Previous Generation

© 2018 Nordson Corporation

Problem	Possible Cause	Corrective Action
5. No kV output, no powder output, and no display	Controller not turned on	Power on the controller with the rocker switch on the back panel.
	Blown fuse	Check fuses on rear panel and replace if necessary. Check fuse on power supply and replace if necessary.
	Defective switch	Replace the switch.
	Defective power supply	Replace the power supply.
6. kV output and no powder output	Malfunctioning solenoid valve	Replace the solenoid valve.
	Air to controller turned off	Check air gauges. Adjust air pressure as necessary.
	Air tubing to the pump disconnected or kinked	Check the air tubing to and from the controller.

Previous Generation

© 2018 Nordson Corporation

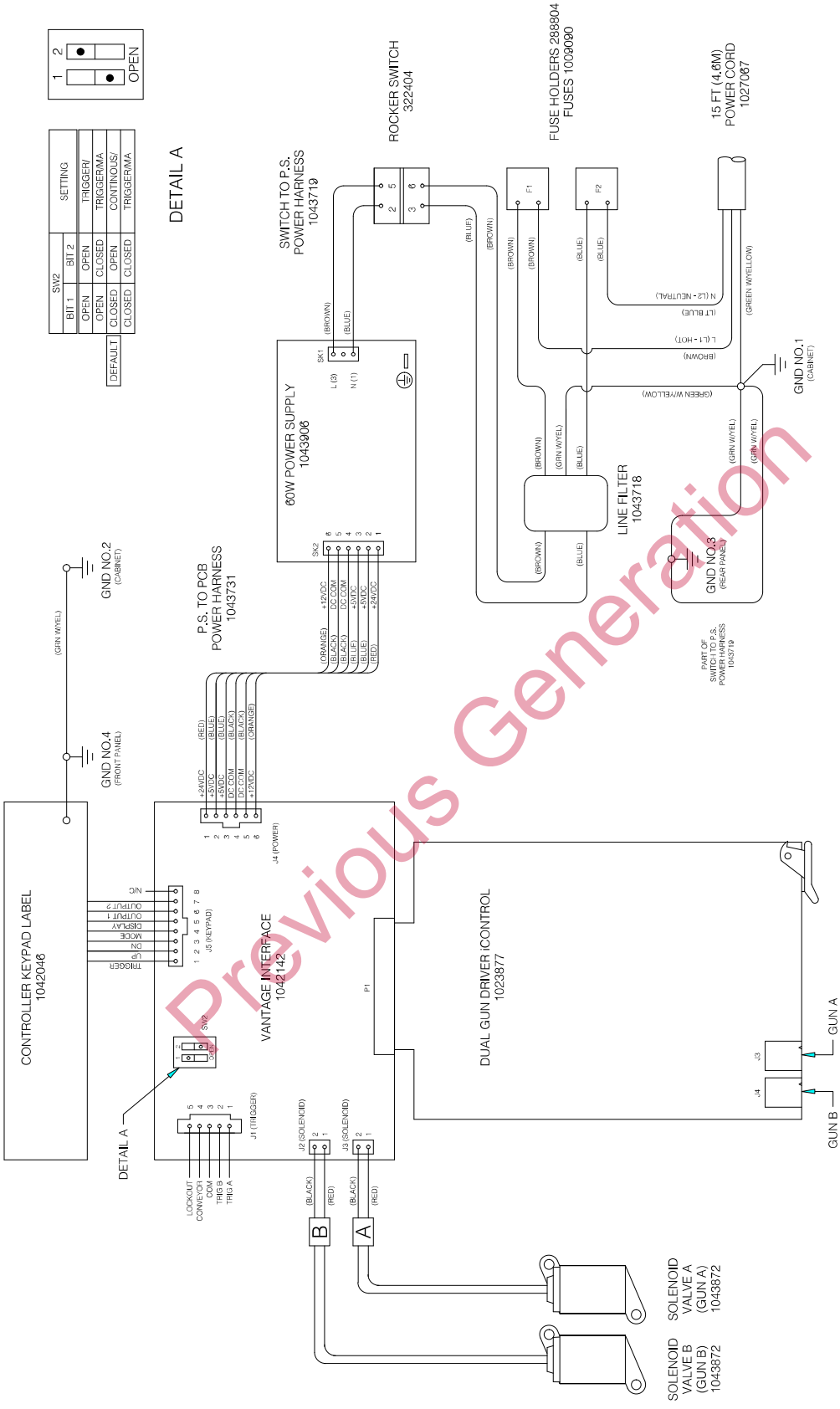


Figure 5-1 Wiring Diagram

Previous Generation

© 2018 Nordson Corporation

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.

WARNING: Disconnect and lock out electrical power before performing the following tasks. Failure to observe this warning could result in personal injury or death.

Previous Generation

Spray Gun Cable/Adapter Replacement

See Figure 6-1.

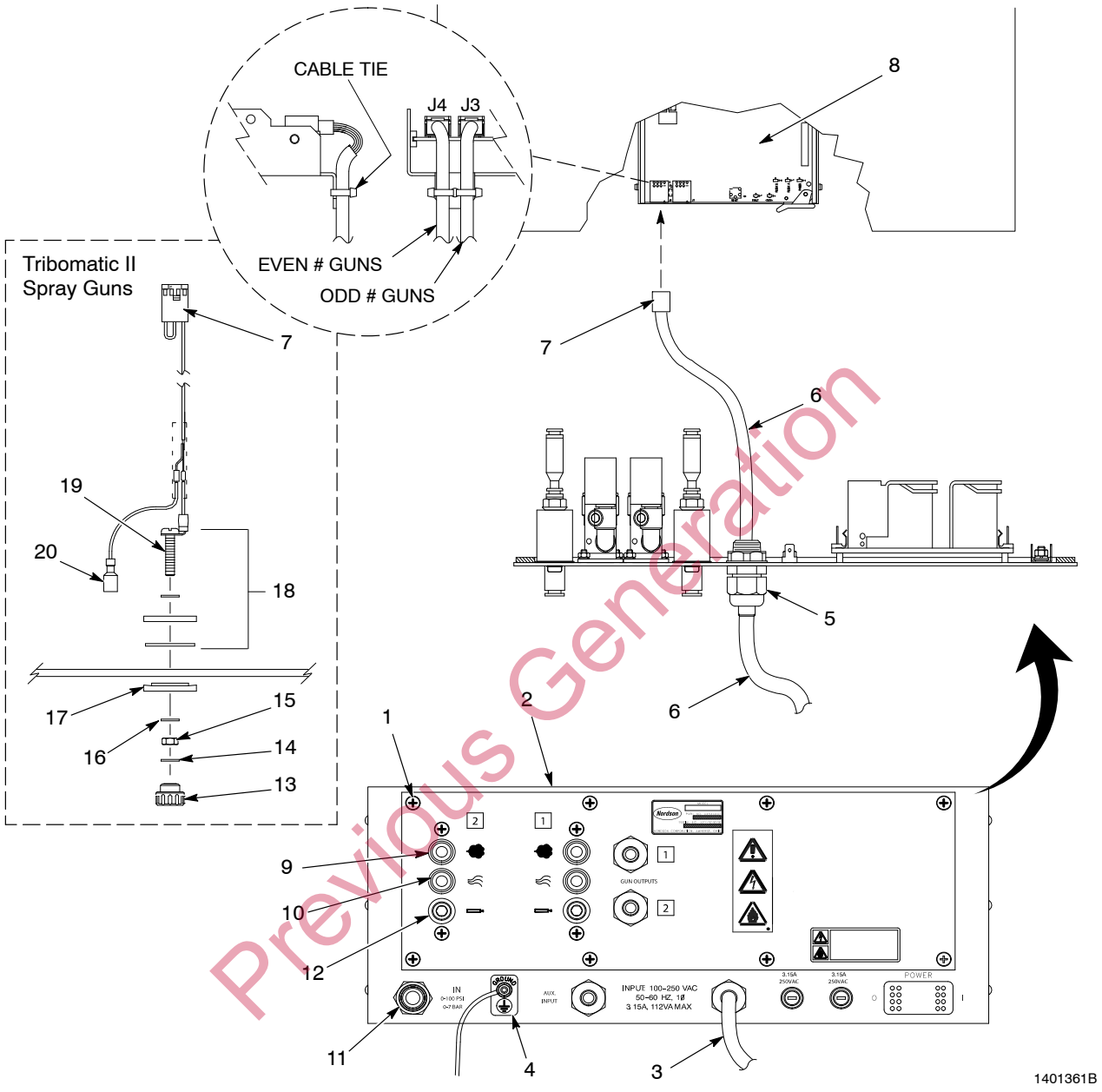
NOTE: Refer to *Spray Gun Cables* on page Foldout 19 to order the appropriate cable or adapter for your system.

Sure Coat or Versa-Spray II Automatic Spray Gun Cables

1. Disconnect the cable from the spray gun.
2. Remove the eight screws (1) to remove the rear panel (2) from the controller and pull the panel back from the cabinet.
3. Disconnect the correct eight-pin cable connector (7) from the gun board (8).
4. Loosen the retaining nut (5) on the correct gun cable strain relief.
5. Pull the gun cable out through the strain relief.
6. Feed a new cable through the strain relief and pull approximately 350-mm (14-in.) of cable through to reach the gun board.
7. Connect the 8-pin connector to the gun board. The top spray gun cable should connect in the right-hand (odd) connector (J3), the bottom spray gun cable should connect in the left-hand (even) connector (J4).
8. Tighten the strain relief retaining nut to secure the cable and seal the enclosure.
9. Install the rear panel with the eight screws.
10. Connect the other end of the cable to the spray gun.

© 2018 Nordson Corporation

Sure Coat or Versa-Spray II Automatic Spray Gun Cables (contd)



Previous Generation

Figure 6-1 Electrical and Pneumatic Connections with Sure Coat or Versa-Spray II Spray Guns—Back Panel

1. Screws
2. Rear panel
3. Power cord
4. Ground stud
5. Retaining nut
6. Spray gun cable
7. Eight−pin connector
8. Gun board
9. Flow rate connection
10. Atomizing air connection
11. Supply air (IN) connection
12. Gun air connection (Sure Coat spray guns)
13. Knob
14. Washer
15. Hex nut
16. Lock washer
17. Shoulder washer
18. Plastic washer and rubber gasket assembly
19. Slotted screw
20. Push on terminal

© 2018 Nordson Corporation

Tribomatic II Automatic Spray Gun Adapter

1. Disconnect the spray gun from the adapter stud.
2. Remove the eight screws (1) to remove the rear panel (2) from the controller and pull the panel back from the cabinet.
3. Disconnect the pushon terminal (20) from the ground terminal on the rear panel.
4. Disconnect the eight-pin cable connector (7) from the gun board (8).
5. Remove the knob (13), washer (14), hex nut (15), lock washer (16), and shoulder washer (17) from the rear panel.
6. Remove the adapter from the enclosure.
7. Plug new adapter connector into the gun board connector. The top spray gun adapter should connect to the right-hand (odd) connector (J3), the bottom spray gun adapter should connect to the left-hand (even) connector (J4).
8. Mate the adapter's plastic gasket and rubber seal assembly (18) to the rear panel opening and secure the assembly with the parts removed in step 5.
9. Connect the pushon terminal to the ground terminal on the rear panel.
10. Install the rear panel with the eight screws.
11. Connect the Tribomatic II spray gun to the adapter stud.

Previous Generation

© 2018 Nordson Corporation

Check Valve Replacement

See Figure 6-2.

1. Remove the eight screws (1) securing the rear panel (2) to the cabinet.
2. Lay the rear panel flat. The two manifolds (3) and six check valves (4) are located on the left-hand side of the rear panel.
3. Disconnect and mark the air tubing (5) from the check valve you are replacing.
4. Pull the check valve from the manifold fitting.
5. Push the new check valve into the manifold fitting.
6. Reconnect the air tubing to the check valve.
7. Repeat this procedure for any other check valves that need to be replaced.
8. Install the rear panel with the eight screws.

Previous Generation

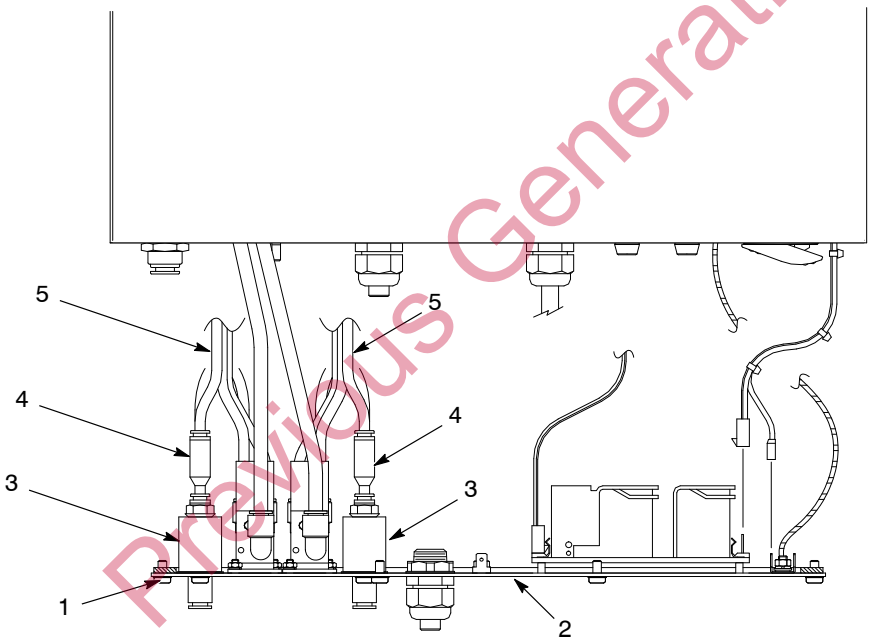


Figure 6-2 Check Valve Replacement

1. Screws
2. Rear panel
3. Manifolds
4. Check valves
5. Air tubing

© 2018 Nordson Corporation

Solenoid Replacement

1. See Figure 6-3. Remove the eight screws (1) securing the rear panel (2) to the cabinet.
2. Lay the rear panel flat. The two solenoids (3) are located between the manifolds (4) on the left-hand side of the rear panel.
3. Remove the tubing (5) connecting the gun air line to the solenoid.
4. Follow the solenoid wire (6) back into the controller cabinet and snip the tie (7) that holds the two wires together.
5. Disconnect the appropriate wire from the interface board (8) mounted on the front panel.
6. Remove the two nuts and two washers (9) securing the solenoid to the rear panel.
7. Remove the elbow (10) and the connector (11) from the old solenoid and install them on the new solenoid.
8. Install the new solenoid on the rear panel with the nuts and washers.
9. Connect the solenoid wire to the interface board mounted to the front panel.
10. Repeat this procedure for the second solenoid if necessary.
11. Install a tie around the solenoid wires in the cabinet.
12. Install the rear panel with the eight screws.

Previous Generation

© 2018 Nordson Corporation

Solenoid Replacement *(contd)*

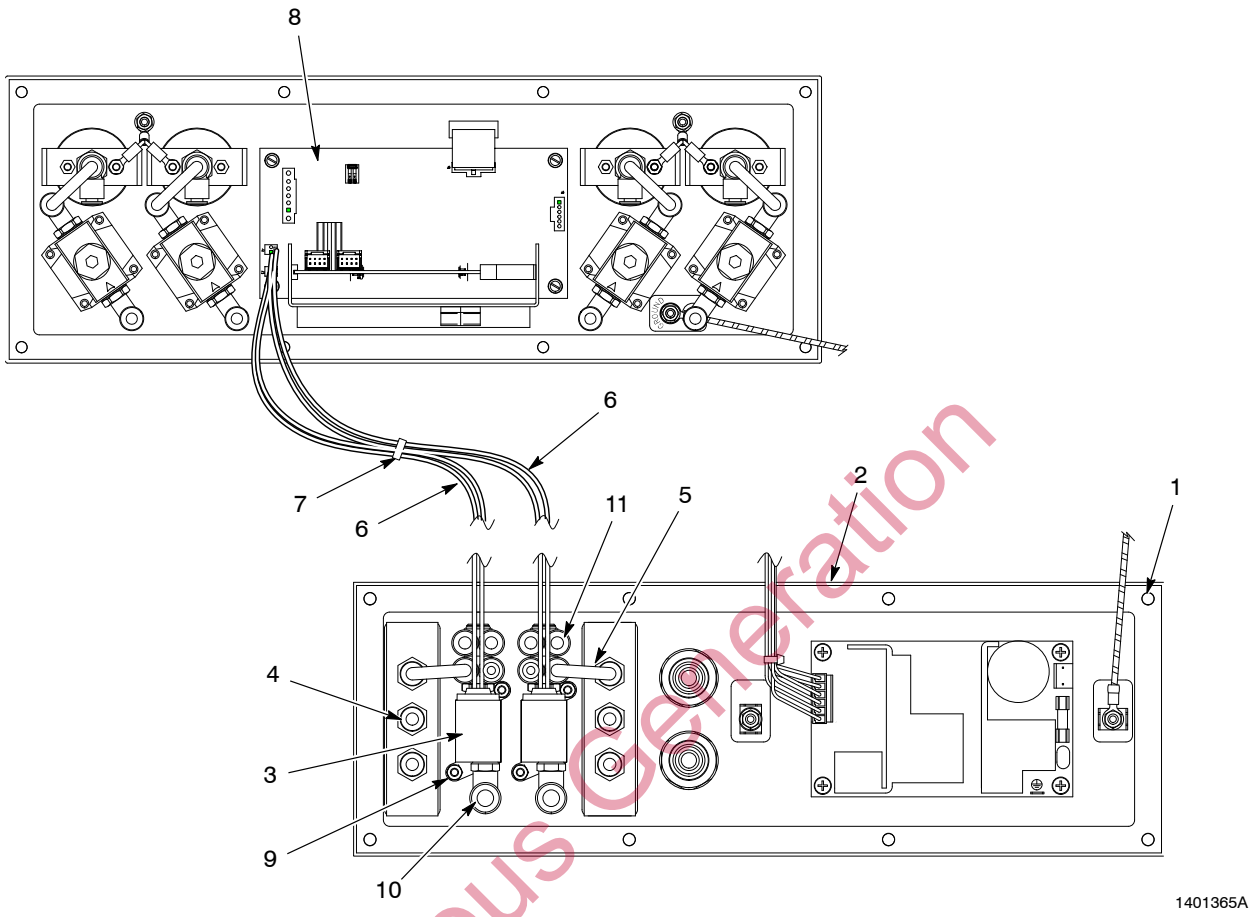


Figure 6-3 Solenoid Replacement

1. Screws
2. Rear panel
3. Solenoids
4. Manifolds
5. Air tubing
6. Solenoid wire
7. Tie
8. Interface board
9. Nuts and washers
10. Elbows
11. Connectors

Previous Generation

© 2018 Nordson Corporation

Gun Board Replacement

NOTE: When you are replacing the gun board, the new gun board must be revision D or higher.

1. See Figure 6-4. Remove the eight screws (1) securing the rear panel (2) to the cabinet. Lay the rear panel flat.
2. Disconnect the one or two gun cables (3) from the end of the gun board (4).
3. Open the latch (5) on the right hand corner and pull the gun board from the cabinet.
4. Install the new gun board into the cabinet and lock it it place by closing the latch.
5. Connect the eight-pin connectors (6) on the gun cables to the new gun board. Gun 1 should connect in the right-hand connector, gun 2 should connect in the left-hand connector.
6. Install the rear panel with the eight screws.

Previous Generation

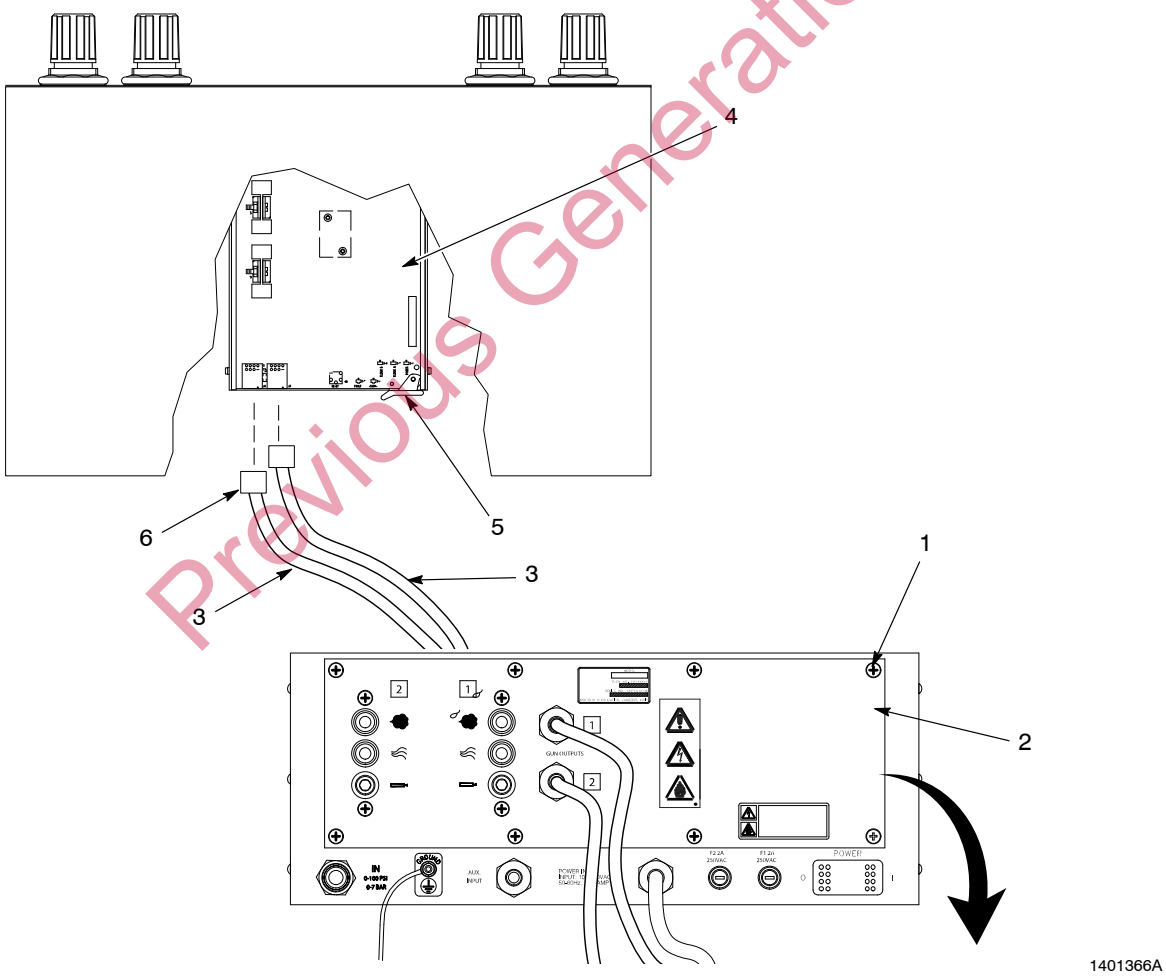


Figure 6-4 Gun Board Replacement

1. Screws
2. Rear panel
3. Spray gun cables
4. Gun board
5. Gun board latch
6. Eight-pin connector

© 2018 Nordson Corporation

Interface Display Board Replacement

1. See Figure 6-5. Remove the eight screws (1) securing the front panel (2) to the cabinet. Carefully pull the front panel from the cabinet so you do not disconnect any cables or tubing or damage the front display.
2. Remove the gun board (6) as described in *Gun Board Replacement* on page 6-7.

   NOTE: Skip step 1 in *Gun Board Replacement*. You do not need to remove the rear panel.
3. Disconnect the keypad ribbon connector (3) from connect J5 on the interface board (4).
4. Remove the J1 connector and install it on the new interface display board.
5. Remove the solenoid connector (J2 and J3) and install them on the new interface display board.
6. Remove the four screws (5) securing the board to the front panel.
7. Remove the board from the front panel.
8. Install the new board on the front panel with the four screws.
9. Connect the keypad ribbon connector to connector J5.
10. Install the gun board.
11. Install the front panel with the eight screws.

Previous Generation

© 2018 Nordson Corporation

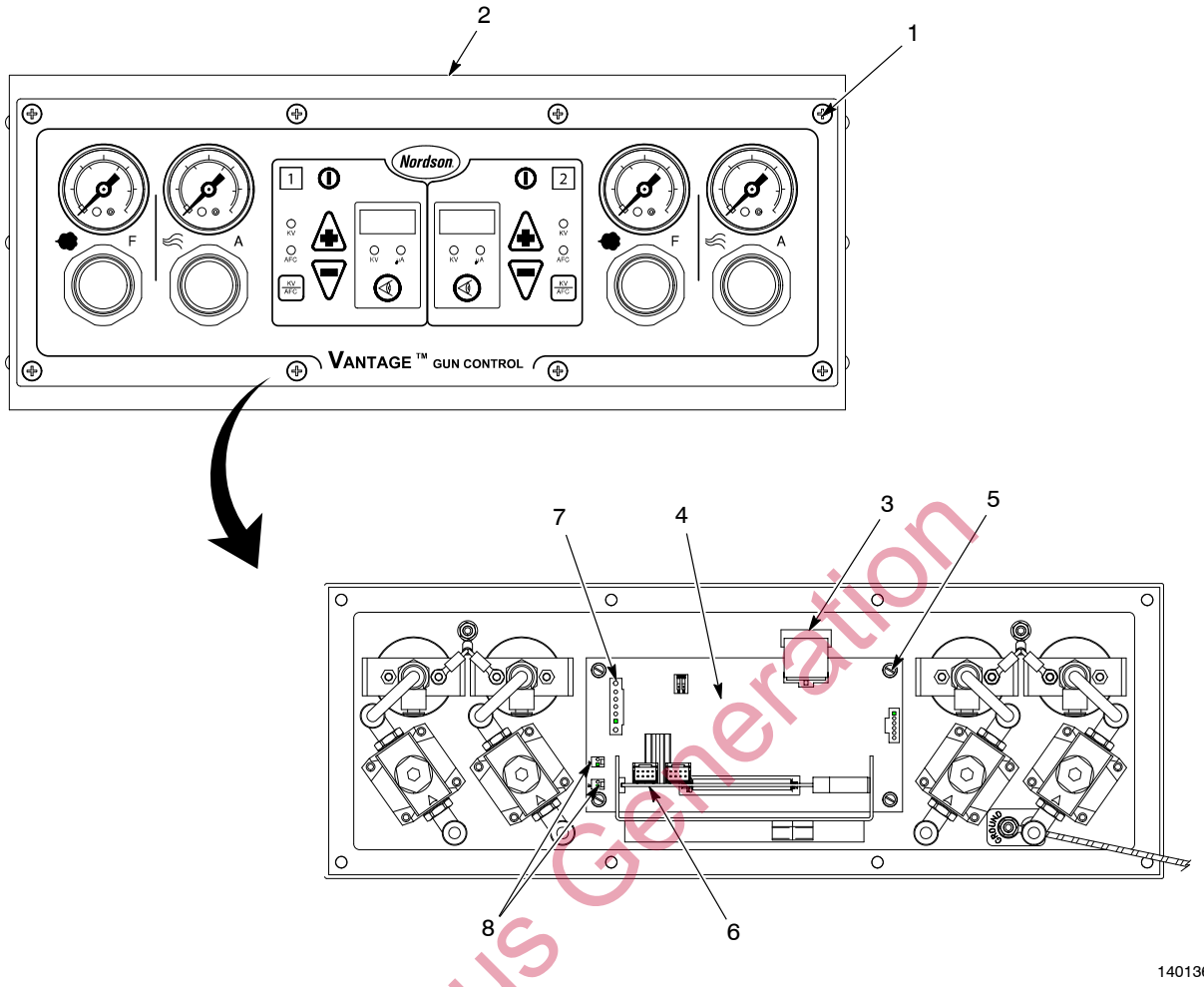


Figure 6-5 Interface Display Board Replacement

1. Screws
2. Front panel
3. Keypad ribbon connector
4. Interface board
5. Screws
6. Gun board
7. J1 connector
8. Solenoid connectors (J2 and J3)

Previous Generation

© 2018 Nordson Corporation

Regulator and Gauge Replacement

1. See Figure 6-6. Remove the eight screws (1) securing the front panel (2) to the cabinet. Carefully pull the front panel from the cabinet so you do not disconnect any cables or tubing or damage the front display.
2. Tag and disconnect the air tubing (3) from the regulators (4) and gauges (5).

NOTE: See Figure 6-9 for tube labeling and routing.

3. Remove the regulators and gauges from the panel.

Regulators (4)

a. Holding onto the regulator, loosen and remove the nut (6) on the front side of the panel.

b. Pull the regulator and gasket (7) out of the front panel.

c. Remove the two elbows (13) from the regulator and install them on the new regulator.

Gauges (5)

a. Remove the connector (8) and coupling (9) from the gauge (5). Install the fitting and coupling on the new gauge.

b. Hold onto the gauge and remove the two nuts (11) securing the gauge bracket (10) to the panel and gauge.

NOTE: A ground harness (12) is attached to one of the nuts.

c. Pull the gauge and gasket from the front of the panel.

4. Install the new regulators and gauges onto the front panel by reversing the above steps.
5. Connect all tubing as shown in Figure 6-9.
6. Install the front panel with the eight screws.

Previous Generation

© 2018 Nordson Corporation

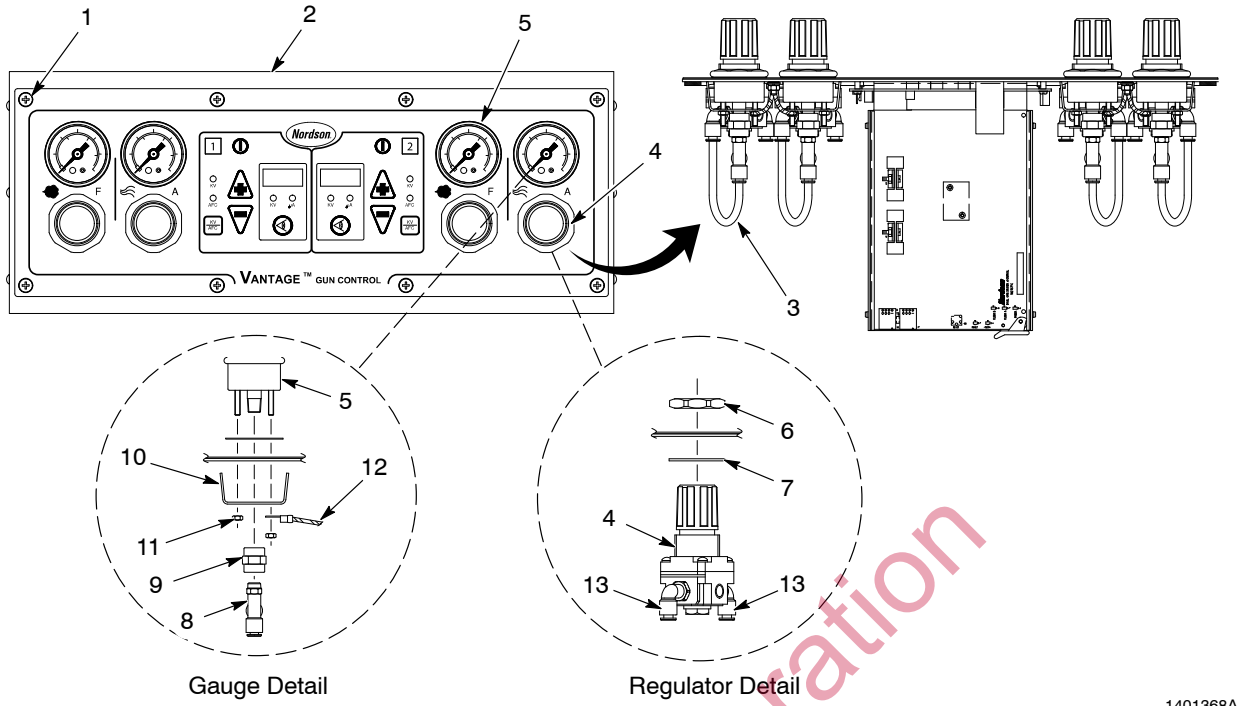


Figure 6-6 Regulator and Gauge Replacement

1. Screws
2. Front panel
3. Air tubing
4. Regulators
5. Gauges
6. Nut
7. Gasket
8. Connector
9. Coupling
10. Bracket
11. Nuts
12. Ground harness
13. Elbows

Previous Generation

© 2018 Nordson Corporation

Fuses

WARNING: Disconnect and lock out electrical power before performing the following tasks. Failure to observe this warning could result in personal injury or death.

See Figure 6-7.

There are three fuses located in the controller, two on the rear panel and one on the power supply module.

Rear Panel Fuses

1. Use a flat screw driver to turn the fuse holder (3) counterclockwise.
2. Pull the fuse holder out of the cabinet to expose the fuse.
3. Remove the fuse and replace it with a new one.
4. Push in the fuse holder and secure in place by turning it clockwise with a flat screwdriver.

Power Supply Fuse

1. Remove the eight screws (1) securing the rear panel (2) to the cabinet.
2. Lay the rear panel flat. The power supply (4) is located on the right hand side.
3. Remove the fuse (5) from the power supply and replace it with a new one.
4. Install the rear panel with the eight screws.

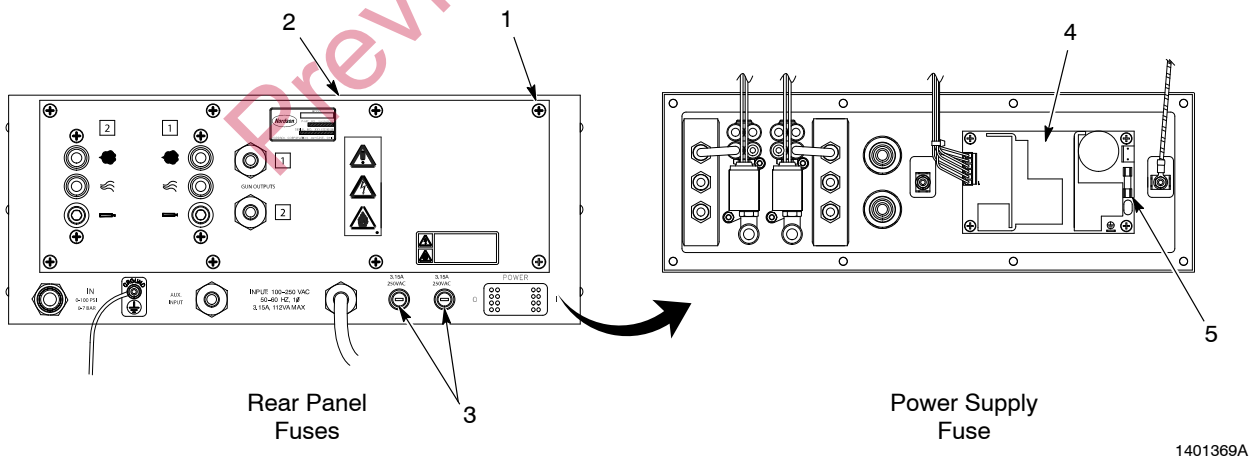


Figure 6-7 Fuse Replacement

1. Screws
2. Rear panel
3. Fuse holders
4. Power supply
5. Fuse

Previous Generation

© 2018 Nordson Corporation

Power Supply Replacement

See Figure 6-8.

1. Remove the eight screws (1) securing the rear panel (2) to the cabinet.
2. Lay the rear panel flat. The power supply (3) is located on the right hand side.
3. Unplug the three-pin ac input connector (4) and the six-pin dc output connector (5) from the power supply.
4. Remove the four screws (6) that secure the power supply to the rear panel. Remove the power supply.
5. Place the new power supply onto the rear panel and secure it in place with the four screws.
6. Connect the dc output and ac input connectors to the power supply.
7. Install the rear panel with the eight screws.

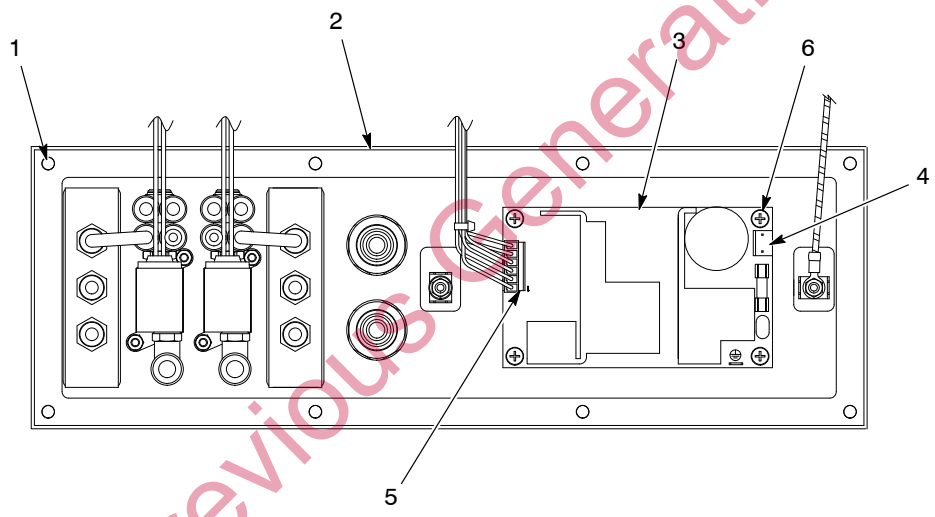


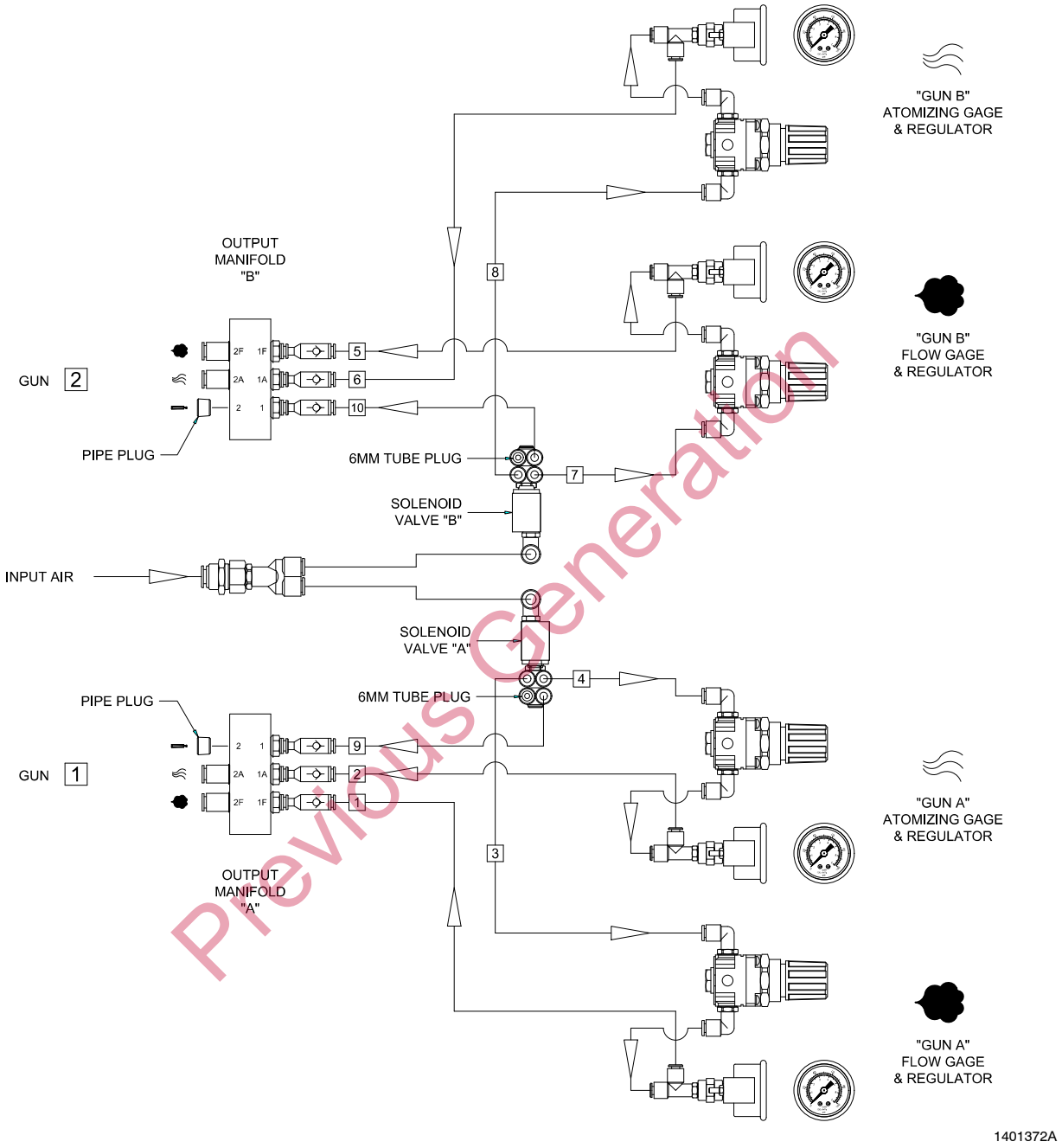
Figure 6-8 Power Supply Replacement

1. Screws
2. Rear panel
3. Power supply
4. Three-pin ac input connector
5. Six-pin dc output connector
6. Screws

Previous Generation

© 2018 Nordson Corporation

Pneumatic Diagram



Previous Generation

Figure 6-9 Pneumatic Diagram

© 2018 Nordson Corporation

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	

Vantage Powder Controller

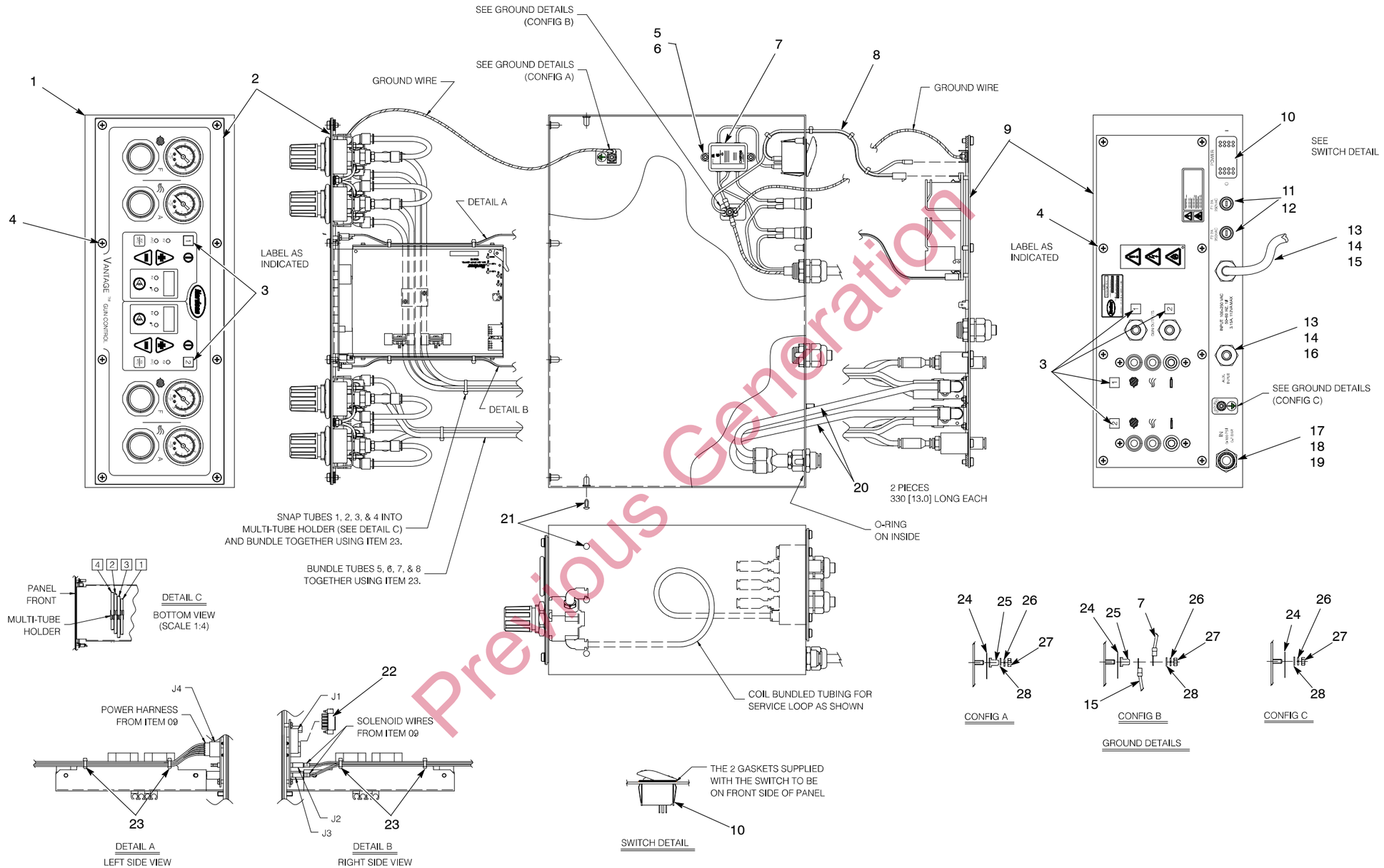
See Figure 7-1.

Item	Part	Description	Quantity	Note
—	1043820	CONTROLLER, 2 gun, individual, Vantage auto		
—	1612244	CONTROLLER, 2 gun, individual, Vantage auto, China		
1	- - - - - -	• ENCLOSURE, controller, 2 gun, Vantage, auto	1	
2	- - - - - -	• PANEL, front controller, assembly, Vantage auto	1	A
3	334818	• LABELS, numbers, repeat, 1–16	1	
4	1045837	• SCREW, pan, recess, M5 x 12, with integral lock washer	16	
5	984715	• NUT, hex, M4, steel, zinc	2	
6	983403	• LOCK WASHER, M split, M4, steel, zinc	2	
7	1043718	• FILTER, line, with connector, Vantage, individual	1	
8	- - - - - -	• HARNESS, power, switch to power supply, Vantage individual	1	
9	- - - - - -	• PANEL, rear, controller assembly, Vantage auto	1	B
10	322404	• SWITCH, rocker, DPST, dust-tight	1	
11	1009090	• FUSE, time delay, 215 series, 3.15A, 5 x 20 mm	2	
12	288804	• FUSE, holder, panel mount 5 x 20	2	
13	972808	• CONNECTORS, strain relief, $^1/_2$-in. NPT	2	
14	984192	• NUT lock, $^1/_2$-in. NPT, nylon	2	
15	1027067	• CORD, power, 4.6 meters, (15 feet)	1	
16	972930	• PLUG, push in, 8 mm T, plastic	1	
17	1005068	• UNION, F bulkhead, 10-mm tube x $^1/_4$-in. RPT	1	
18	941131	• O-RING, silicone, 0.563 x 0.750 x 0.094-in.	1	
19	972289	• CONNECTOR, Y branch, 8-meter tube x $^1/_4$-in. NPT	1	
20	900619	• TUBE, polyurethane, 8-mm OD, black	2.17 ft	
21	1044028	• CAP, tapped, hole, 5 mm, nylon	6	
22	- - - - - -	• CONNECTOR, MC 1.5, plug, 5 position, 3.81 mm, screw, flat	1	
23	939110	• STRAP, cable	8	
24	240674	• TAG, ground	3	
25	933469	• QUICK CONNECT, dual tab 0.250 x 0.032 in.	2	
26	983401	• WASHER, lock, m, split, M5, steel, zinc	3	
27	984702	• NUT, hex, M5, brass	3	
28	983021	• WASHER, flat, e, 0.203 x 0.406 x 0.040 in., brass	3	
NS	982286	• SCREW, flat, slotted, M5 x 10, zinc	6	
NS	- - - - - -	• BRACKET, rack mount, individual controller, Vantage	2	
NS	240976	• CLAMP, ground, with wire	1	

NOTE A: Refer to *Front Panel* on page Foldout 17 for an exploded parts list.
B: Refer to *Rear Panel* on page Foldout 19 for an exploded parts list.
NS: Not Shown

Previous Generation

© 2018 Nordson Corporation



1401375A

Figure 7-1 Vantage Individual Powder Controller

Previous Generation

© 2018 Nordson Corporation

Front Panel

See Figure 7-2.

Item	Part	Description	Quantity	Note
—	- - - - - -	FRONT PANEL, controller, assembly, Vantage Automatic	1	
1	- - - - - -	• PANEL, front, controller, Vantage, automatic, with overlay	1	
2	1023877	• PCA, dual gun driver, iControl	1	A
3	334801	• GUIDE, PCB card, 7 in.	2	
4	- - - - - -	• HOLDER, multi-tube, 6-mm tube x 12 position	.5	
5	1043857	• GAGE, 0–7 bar (0–100 psi) kpa, 1-1/2 in.	4	
6	1045838	• GASKET, gage, diameter 41 mm, EPDM	4	
7	973572	• COUPLING, pipe, hydraulic, $^1/_8$ in., steel, zinc	4	
8	972840	• CONNECTOR, male, run tee, 6-mm tube x $^1/_8$-in. universal	4	
9	1100310	• REGULATOR, $^1/_4$-in. NPT, 7–125 psi	4	
10	141603	• SEAL, panel, regulator	4	
11	972142	• CONNECTOR, male, elbow, 6-mm tube x 1/4 universal	8	
12	1042142	• PCA, Vantage, interface	1	
13	982091	• SCREW, pan, slotted, M3 x 6, zinc	4	
14	900742	• TUBING, polyurethane, 6/4 mm, blue	1 ft	
15	- - - - - -	• GASKET, front panel, Vantage automatic	1	
16	240674	• TAG, ground	1	
17	983021	• WASHER, flat, e, 0.203 x 0.406 x 0.040 in., brass	3	
18	983401	• LOCK WASHER, m, split, M5, steel, zinc	3	
19	983702	• NUT, hex, M5, brass	3	
20	- - - - - -	• HARNESS, gage ground	2	
21	- - - - - -	• WIRE, ground assembly, 350 mm	1	
22	983400	• LOCK WASHER, M, split, M3, steel. zinc	4	

NOTE A: When replacing the gun board, part 1023877, the new gun board must be revision D or higher.

This page intentionally left blank.

Previous Generation

© 2018 Nordson Corporation

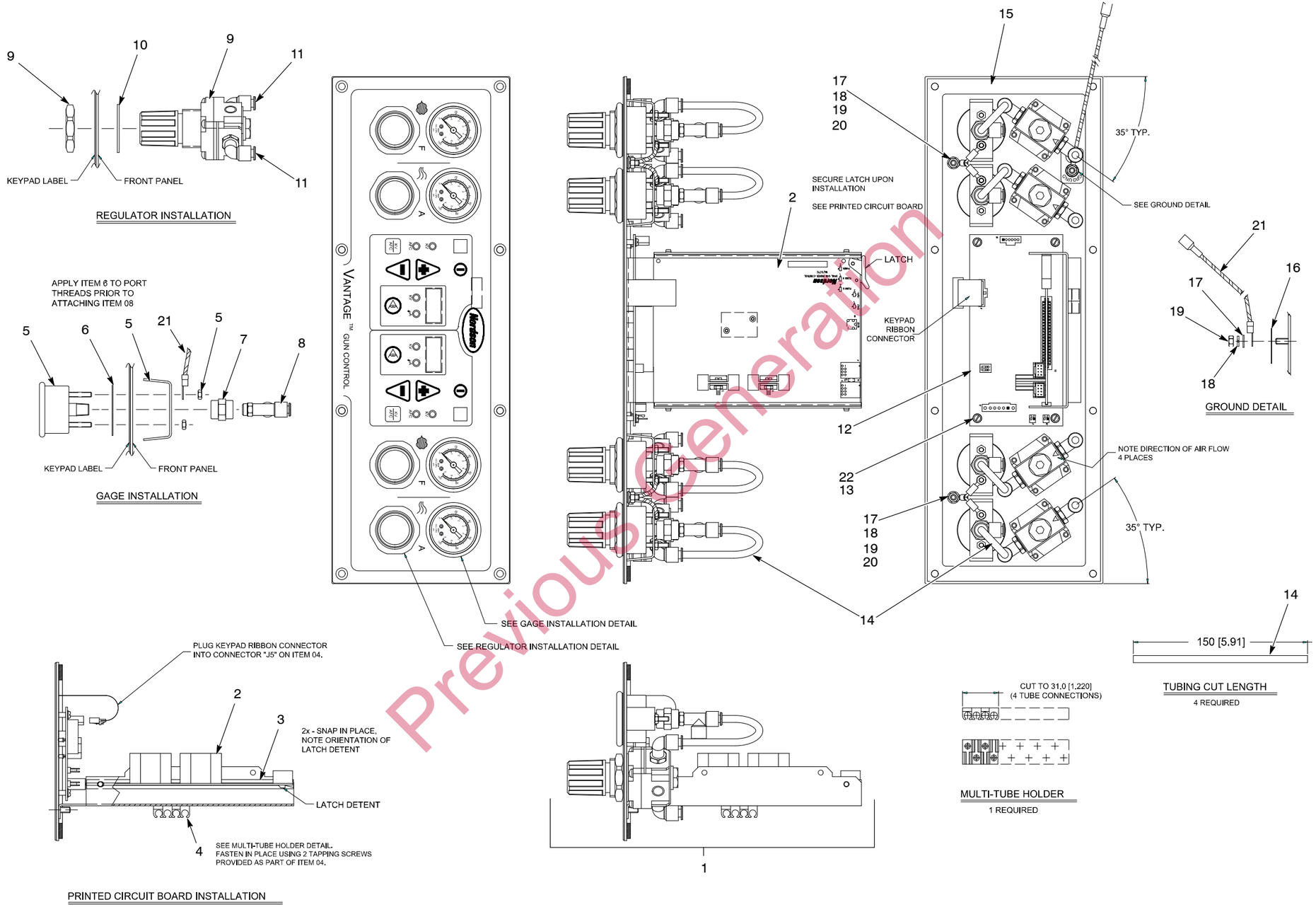


Figure 7-2 Front Panel

Previous Generation

© 2018 Nordson Corporation

Rear Panel

See Figure 7-3.

Item	Part	Description	Quantity	Note
—	- - - - - -	REAR PANEL, controller assembly, Vantage automatic	1	
1	1045839	• VALVE, check, adapter, 6-mm tube x 6-mm tube	6	
2	971100	• CONNECTOR, male, 6-mm tube x 1/4-in. universal	6	
3	1042039	• MANIFOLD, pneumatic, output	2	
4	972282	• CONNECTOR, male with internal hex, 8-mm tube x 1/4-in. universal	4	
5	1045837	• SCREW, pan, recessed, M5 x 12, with integral lock washer,	4	
6	1042060	• GASKET, manifold, pneumatic output	2	
7	- - - - - -	• PLUG, pipe, socket, standard, 1/4-in. RPT, steel, zinc	2	
8	900742	• TUBING, polyurethane, 6/4 mm, blue	16.1 ft	A
9	183804	• PLUG, blanking, 6-mm tube	2	
10	- - - - - -	• HARNESS, power, power supply to PCB, Vantage automatic	1	
11	- - - - - -	• GASKET, rear panel, Vantage automatic	1	
12	939009	• MARKERS, wire,1–99, A–Z	1	
13	982824	• SCREW, pan, recessed, M3 x 8, with integral lock washer	4	
14	984715	• NUT, hex, M4, steel, zinc	4	
15	983403	• LOCK WASHER, M, split, M4, steel, zinc	4	
16	984192	• NUT, lock, 1/2-in. NPT, nylon	2	
17	1043906	• POWER SUPPLY, 24, 5, 12 Vdc, 60 watt	1	
18	- - - - - -	• PANEL, rear, controller, Vantage, automatic	1	
19	972930	• PLUG, pushin, 8-mm tube, plastic	2	
20	972808	• CONNECTOR, strain relief, 1/2-in. NPT	2	
21	240674	• TAG, ground	2	
22	983021	• WASHER, flat, e, 0.203 x 0.406 x 0.040 in., brass	2	
23	984702	• NUT, hex, M5, brass	2	
24	983401	• LOCK WASHER, m, split, M5, steel, zinc	2	
25	933469	• QUICK CONNECT, dual tab 0.250 x 0.032 in.	2	
26	1046757	• WIRE, ground assembly, 350 mm	1	
27	- - - - - -	• PLUG, pipe, socket, standard, 1/8-in. RPT, steel, zinc	2	
28	972276	• CONNECTOR, male, elbow, 8-mm tube x 1/8-in. universal	2	
29	- - - - - -	• FITTING, double branch, 6-mm tube x 1/8-in. RPT	2	
30	1043872	• VALVE, 3 port, direct active, 24 volt, 1/8-in. RPT with connector	2	
31	939110	• STRAP, cable, 0.875-in. diameter	9	

NOTE A: Order in one foot increments.

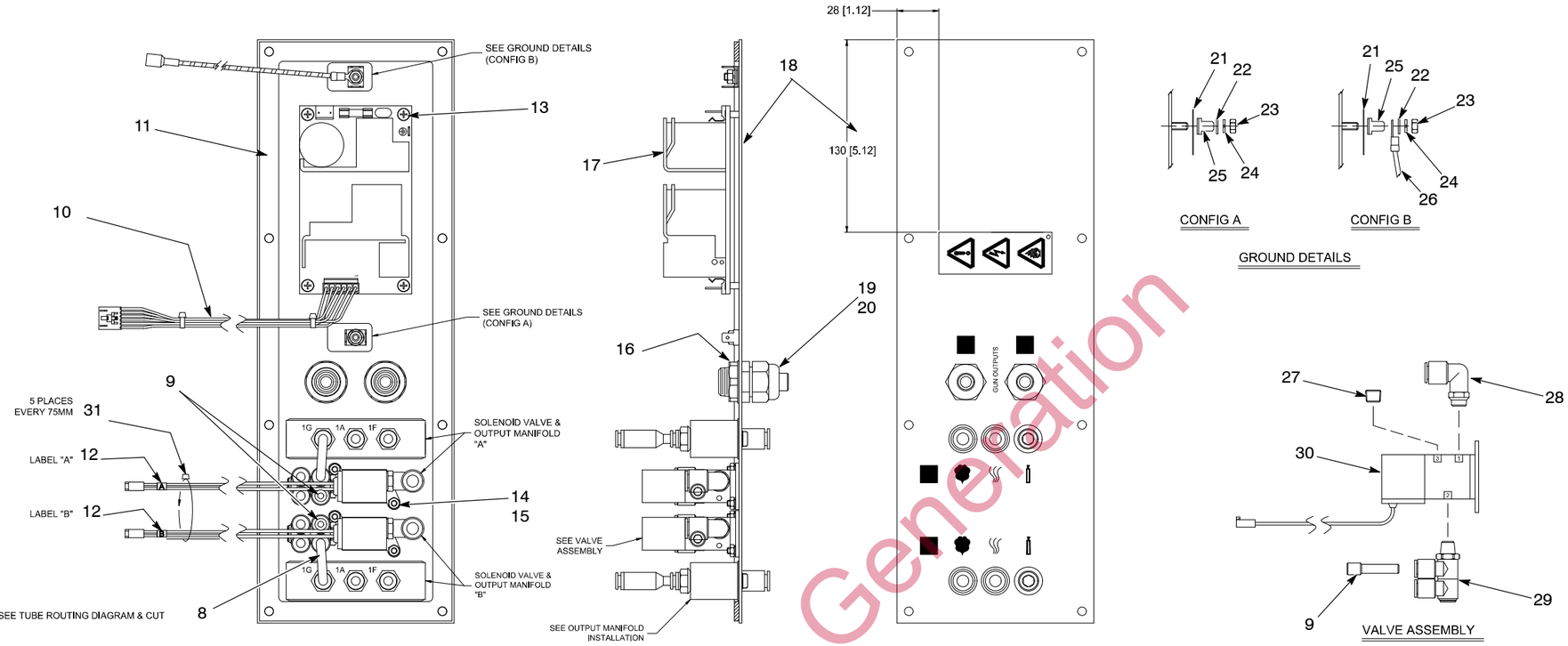
Spray Gun Cables

Part	Description	Note
1043723	VERSA-SPRAY CABLE, 100kV, 12M, Vantage, automatic	
1054175	VERSA-SPRAY CABLE, 100 kV, 16M, Vantage, automatic	
1048653	SURE COAT CABLE, 12M, Vantage, automatic	
1054176	SURE COAT CABLE, 16M, Vantage, automatic	
1054613	ADAPTER, Tribomatic, Vantage, automatic	
1054615	CONNECTOR, Versa-Spray adapter, Vantage, automatic	A

NOTE A: Use this connector with older style Versa-Spray II cables.

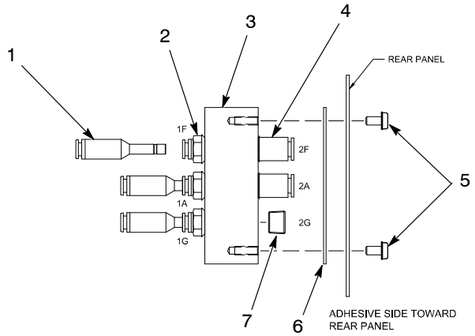
Previous Generation

© 2018 Nordson Corporation



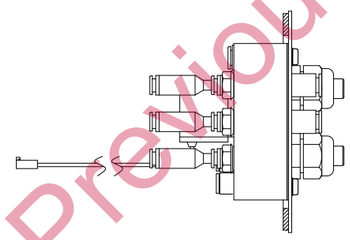
GROUND DETAILS

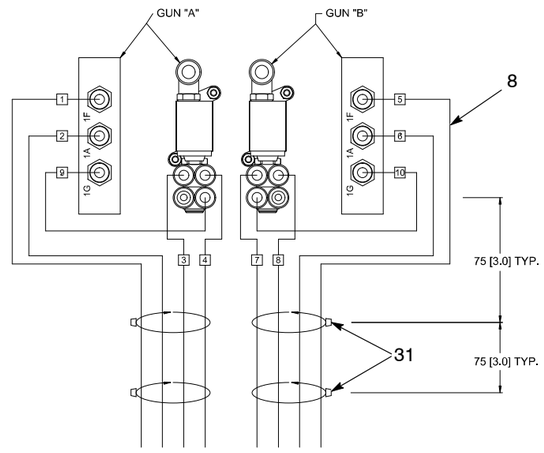
VALVE ASSEMBLY



OUTPUT MANIFOLD INSTALLATION

SIDE VIEW
2 PLACES

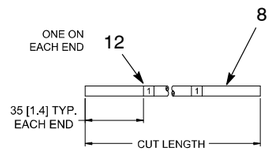




TUBE ROUTING DIAGRAM

SEE CUT LENGTH CHART

SIDE VIEW
2 PLACES



TUBING CUT LENGTH CHART

TUBE LABEL	CUT LENGTH
1	690 [27.2]
2	690 [27.2]
3	690 [27.2]
4	650 [25.2]
5	430 [16.9]
6	450 [17.7]
7	460 [18.1]
8	450 [17.7]
9	205 [8.1]
10	205 [8.1]

1401374A

Figure 7-3 Rear Panel

Previous Generation

© 2018 Nordson Corporation