Econo-Coat®
Manual Powder Spray Gun Control Unit

Customer Product Manual
Part 1013761E
Issued 11/05

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

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Contact Us

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Econo-Coat Manual Powder Spray Gun Control Unit

Safety

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to all persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

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

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing any moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits while working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Grounding

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

All work conducted inside the spray booth or within 1 m (3 ft) of booth openings is considered within a Class 2, Division 1 or 2 Hazardous location and must comply with NFPA 33, NFPA 70 (NEC articles 500, 502, and 516), and NFPA 77, latest conditions.

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

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

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

Disposal

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

Description

The Econo-Coat manual powder spray gun control unit provides pneumatic and electrostatic controls for the Econo-Coat manual powder spray gun. The control unit provides the voltage output to the powder spray gun and monitors the feedback current to control the electrostatic charging of the powder.

Specifications

NOTE: Because of continuous technological improvements, specifications are subject to change without notice.

Refer to Table 1.

NOTE: Supply 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 dewpoint at the maximum input air pressure. Use a filter system with prefilters and coalescent-type filters capable of removing oil, water, and dirt in the submicron range.

Table 1 Specifications

Air Pressures	
Input	5–7 bar (80–100 psi)
Flow Rate	2 bar (30 psi)
Atomizing	0.7 bar (10 psi)
Fluidizing	0.1–0.3 bar (2–5 psi)
Electrical Requirements	
Input Requirements	85–250 Vac, 1 phase, 50–60 Hz, 40 VA
Voltage Output (To Spray Gun)	0–21 Vdc, 0.60 A
Installation Requirements (per ANSI/ISA S82.01)	
Pollution Degree	2
Installation Category	II

Front Panel

Refer to Table 1 and see Figure 1.

Table 1 Front Panel

Item	Description	Function
1	Power Switch	Turns on or off power to the control unit
2	kV/μA Indicators	Indicates which setpoint (kV or μA) is currently being displayed on the digital display
3	Digital Display	Displays the spray gun's kV or μA set point
4	+/– SET POINT Keys	Increase or decrease the spray gun's kV or μA set point
5	Flow Rate Air Gauge/Regulator	Controls the flow rate air pressure to the powder pump
6	Atomizing Air Gauge/Regulator	Controls the atomizing air pressure to the powder pump
7	SELECT MODE Key	Switches the unit of measure (kV or μA) being displayed on the digital display

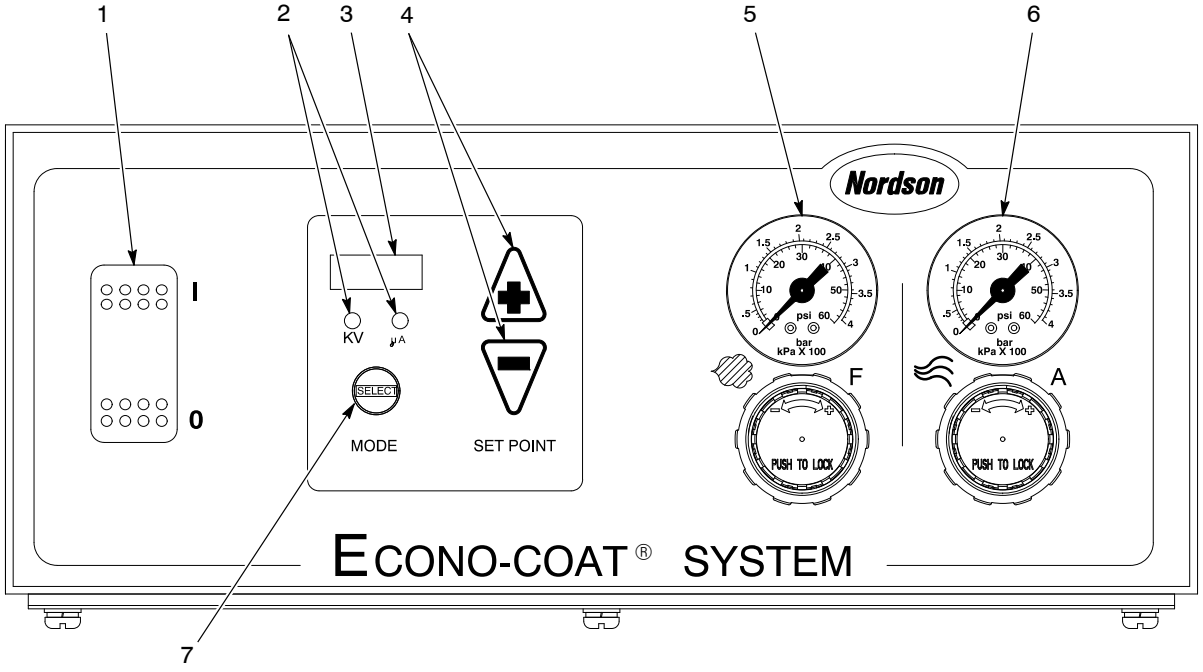


Figure 1 Front Panel

Back Panel

Refer to Table 2 and see Figure 2.

Table 2 Back Panel

Item	Description	Function
1	Fluidizing Air Valve (10 mm)	Regulates the fluidizing air pressure when used with a feed hopper (not used with a vibratory box feeder system)
2	IN Air Connection (10 mm)	Connects the system to an air supply
3	2 Amp, 250 Vac Fuses	Protect the control unit from electrical surges
4	POWER INPUT Cable	Connects the system to a power supply
5	GUN OUTPUT Receptacle	Connects the spray gun to the control unit
6	Gun Air Connection (4 mm)	Supplies air to the gun to keep powder from accumulating on the electrode. **NOTE:** This connection is optional. If it is not used, it will be plugged.
7	Flow Rate Air Connection (8 mm)	Supplies flow rate air to the powder pump
8	Atomizing Air Connection (8 mm)	Supplies atomizing air to the powder pump
9	Ground Stud	Connects the control unit to a true earth ground

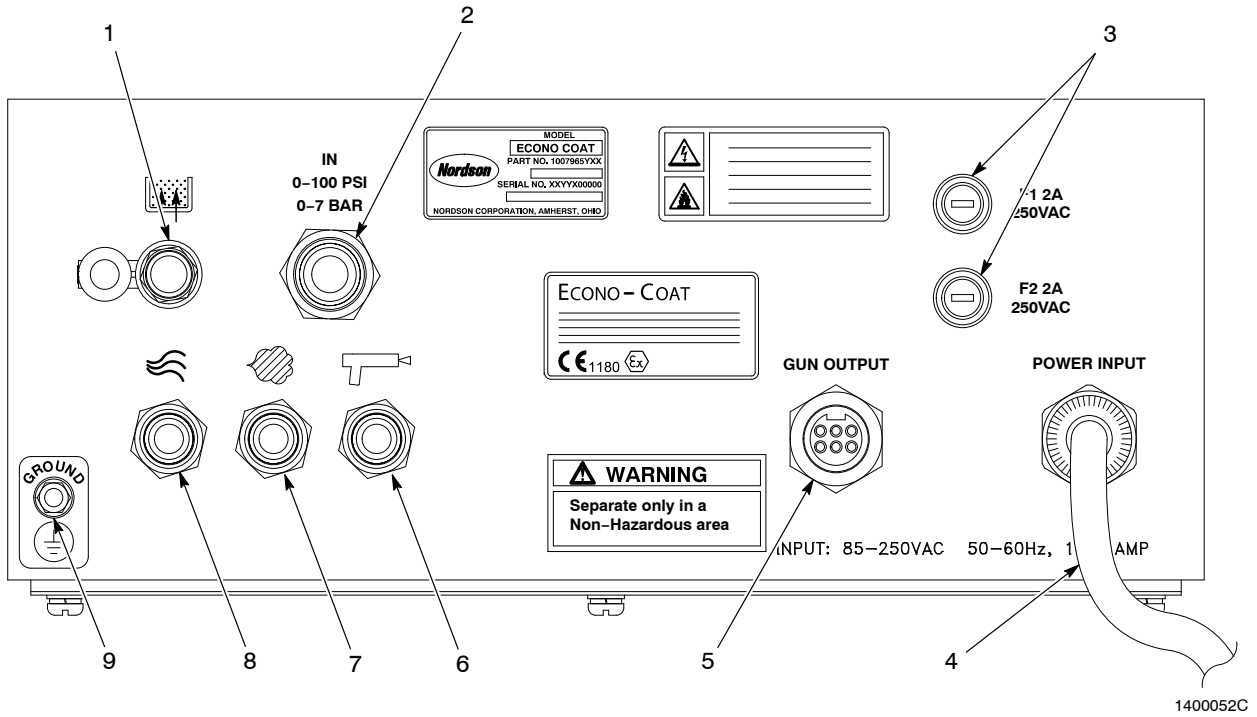


Figure 2 Back Panel

Note: The gun air connection (6) is optional. If it is not used, it will be plugged.

Installation

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

Mounting Brackets

Use the following procedures to mount the control unit using one of the optional mounting brackets listed on pages 28–29. If your control unit is part of a mobile powder spray system, disregard these procedures and refer to the installation instructions provided with the system.

Rail-Mounting Bracket

See Figure 3.

1. Remove the three M5 pan-head screws (6) and washers (7) from the bottom, front edge of the control unit (1).
2. Line up the holes on the bracket (2) with the holes on the control unit.
3. Use the washers and the three longer M5 pan-head screws (6) included with the bracket to secure the bracket to the control unit.

   NOTE: Two pairs of M8 machine screws are included to secure the bracket to the rail. Use the appropriate length screws and discard the other two.

4. Thread the jam nuts (4) onto two of the M8 machine screws (5). Thread the screws through the back of the bracket.
5. Place the controller and bracket on the booth's operator platform railing (3).
6. Tighten the machine screws until the bracket is secured to the rail. Tighten the jam nuts against the bracket to lock the machine screws in place.

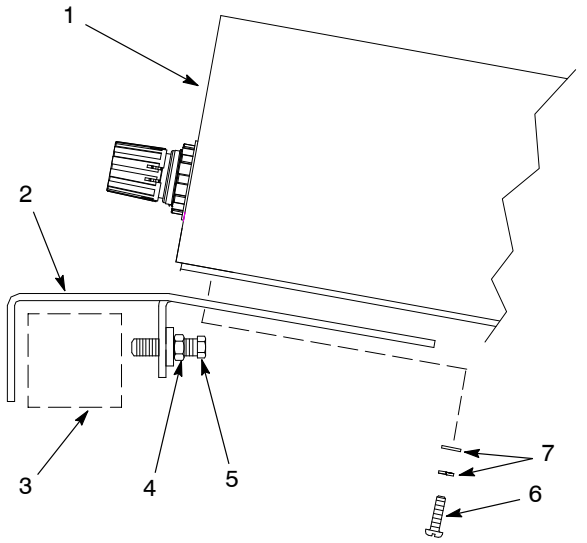


Figure 3 Rail-Mounting Bracket

1. Control unit
2. Rail-mounting bracket
3. Railing
4. Jam nut
5. M8 Machine screw
6. M5 Pan-head screw
7. Lock and flat washers

Wall-Mounting Bracket

See Figure 4.

1. Using the wall-mounting bracket (2) as a template, drill four 9-mm (0.354-in.) holes in the booth wall.

NOTE: The screws' heads must be on the inside of the booth wall.

2. Secure the wall-mounting bracket to the booth wall using the M8 pan-head screws (9), washers (7, 8), and nuts (6) included with the bracket.
3. Remove the five M5 pan-head screws (3) and washers (4, 5) from the bottom, rear of the control unit (1). Discard the screws, but save the washers.
4. Line up the holes on the bracket with the holes on the control unit.
5. Secure the control unit to the bracket using the washers you removed in step 3 and the five M5 pan-head screws included with the bracket.

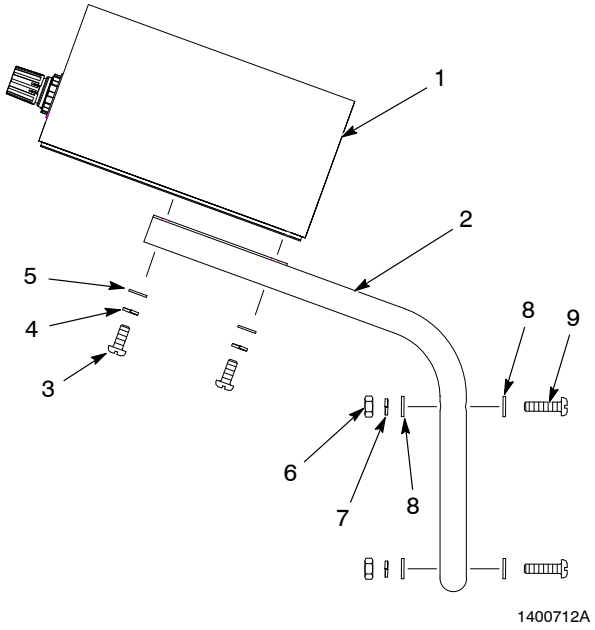


Figure 4 Wall-Mounting Bracket

1. Control unit
2. Wall-mounting bracket
3. M5 Pan-head screws
4. Lock washers
5. Flat washers
6. Hex nuts
7. Lock washers
8. Flat washers
9. M8 Pan-head screws

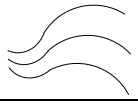
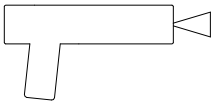
Connections

See Figure 5 and refer to Table 3 for a description of the control unit connections.

NOTE: Refer to the spray gun, pump, and hopper manuals for more detailed installation instructions.

If your control unit is part of a mobile powder spray system, refer to the installation instructions provided with the system. The installation instructions included in this manual are for installing a standalone control unit.

Table 3 Connections

Item	Description	Size	Control Unit Back Panel Connection	Other Equipment Connection
1	Ground Wire with Clamp	—		True Earth Ground
2	Fluidizing Air Tubing (Blue)	10-mm OD		Hopper Fluidizing Air Fitting
3	Atomizing Air Tubing (Blue)	8-mm OD		Powder Pump Connector **A**
4	Flow Rate Air Tubing (Black)	8-mm OD		Powder Pump Connector **F**
5	Feed Hose	12.7-mm ($^1/_2$-in.) ID	(not connected to control unit)	Powder Pump Outlet; Spray Gun Inlet
6	Spray Gun Cable	—	**GUN OUTPUT** (See Note)	Spray Gun Handle (prewired)
7	POWER INPUT Cable	—	**POWER INPUT** (prewired)	Main Power Supply
8	Air Supply Tubing (Blue)	10-mm OD	**IN 0–100 PSI 0–7 BAR**	Main Air Supply
9	Gun Air—Optional (Clear)	4-mm OD		Spray Gun
NOTE: Tighten the gun cable retaining nut to 6 N•m (4.4 ft-lb). An optional 4-meter extension cable is available. Do not add more than two extension cables to the gun cable.				

Power Input Cord

Connect the power input cord to a plug or electrical panel using these guidelines:

Wire Color	Function
Blue	N (neutral)
Brown	L (hot)
Green/Yellow	GND (ground)

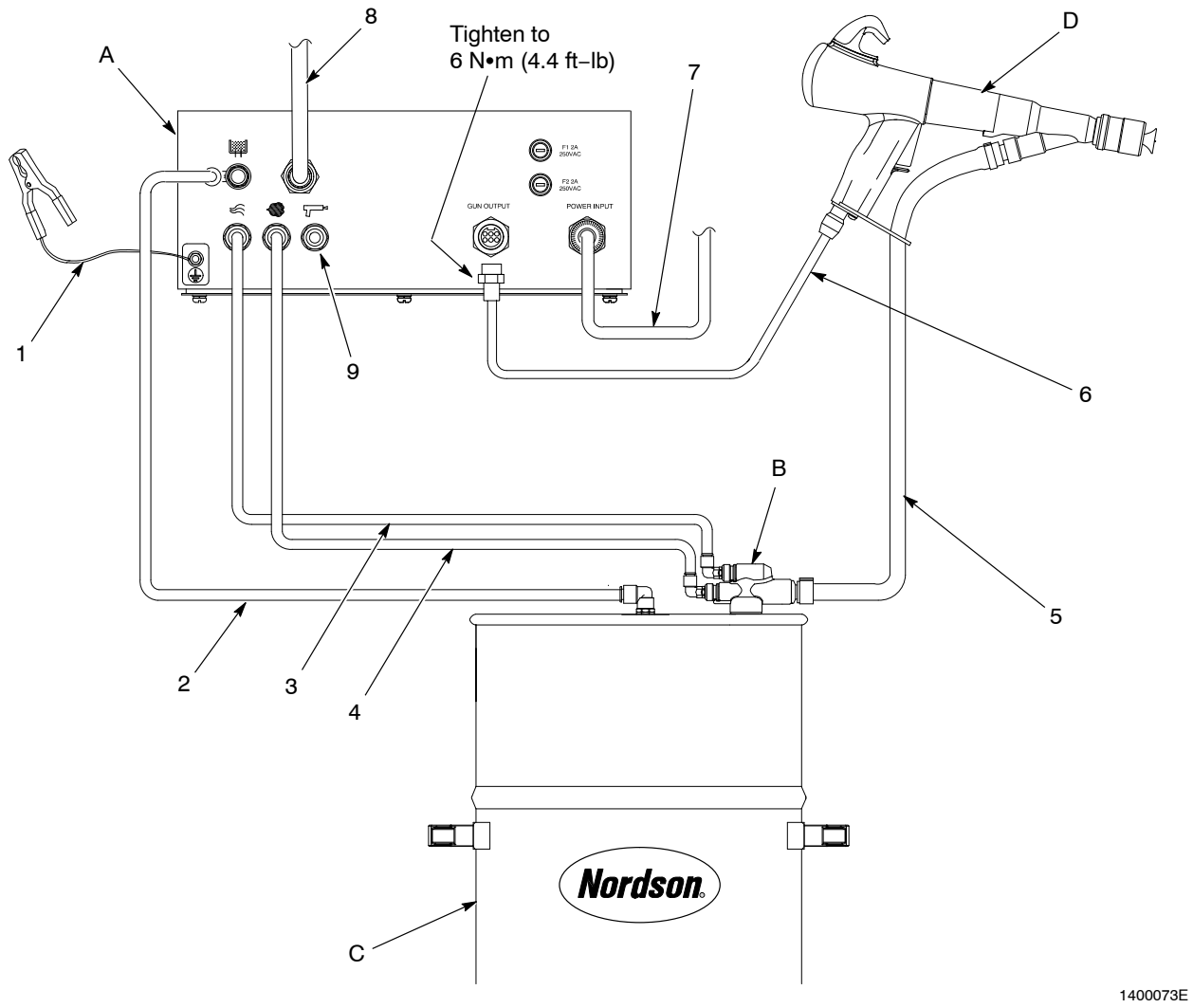


Figure 5 Connections

A. Control unit
B. Powder pump
C. Hopper
D. Spray gun

1. Ground wire with clamp
2. Blue, 10-mm air tubing (fluidizing)
3. Blue, 8-mm air tubing (atomizing)
4. Black, 8-mm air tubing (flow rate)
5. Feed hose
6. Gun cable
7. POWER INPUT cable
8. Blue, 10-mm air tubing (IN)
9. Gun air connection

Note: Typical powder pump and hopper shown. Connections for a vibratory box feeder system are different than those shown. Refer to the *Econo-Coat Mobile Powder Spray System with Box Feeder* instructions for box feeder connections.

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: This apparatus shall be used only in spraying areas according to EN 50177 or under equivalent conditions.

WARNING: All conductive equipment in the spray area must be connected to a true earth ground. Failure to observe this warning may result in a severe shock.

Startup

Make sure that the following conditions have been met before operating the control unit:

- All of the *Connections* on page 8 have been completed.
- The air supply system's filters and dryer are working properly.
- The booth exhaust fans are operating.
- The powder recovery system is operating.

See Figure 6.

1. Set all control unit air pressures to zero using the following guidelines:

Item	Description	Direction to Close
4	Flow rate air regulator	Counterclockwise
5	Atomizing air regulator	Counterclockwise
7	Fluidizing air valve	Clockwise

2. Set the supply air pressure to 5–7 bar (80–100 psi).
3. Install the appropriate powder source.
4. Fluidize the powder supply.

Hopper	Turn the fluidizing air valve (7) counterclockwise $^1/_2$ turn. Allow the powder in the hopper to fluidize for at least 5 minutes.
Vibratory Box Feeder	Turn the vibratory box feeder power switch to the on position.

5. Turn the control unit power switch (1) to the on position.

NOTE: The following air pressure settings are average starting points. Experimentation will be necessary to achieve the desired results.

NOTE: The flow rate and atomizing air pressures can only be adjusted while the gun is spraying.

6. Point the spray gun into the booth and hold down the trigger. Set the flow rate (4) and atomizing (5) air pressures to the following specifications:

   Flow Rate Air: 2 bar (30 psi)

   Atomizing Air: 0.7 bar (10 psi)

NOTE: Use the SELECT MODE key (6) to switch the digital display (2) between kV to μA setpoints. The kV and μA setpoints are saved in the control unit's memory if the control unit remains on for longer than 10 minutes.

7. Adjust the kV or μA setpoints as desired using the +/- SET POINT keys (3).

   NOTE: The kV increments in multiples of 1. The μA increments in multiples of 5.

   NOTE: To reset the kV setpoint to 0, press and hold the +/- SET POINT keys at the same time until 0 appears on the display.

8. Pull the spray gun trigger to test the spray pattern. Adjust the kV or μA setpoint and the flow rate and atomizing air pressures to obtain the desired spray pattern.

Shutdown

See Figure 6.

1. Turn off the main air supply and relieve system air pressure.
2. Close the fluidizing air valve (7) and turn the flow rate and atomizing air regulators (4, 5) completely counterclockwise.
3. Stop fluidizing the powder supply.

Hopper	Turn the fluidizing air valve (7) fully clockwise.
Vibratory Box Feeder	Turn the vibratory box feeder power switch to the off position.

4. Turn the power switch (1) to the off position.

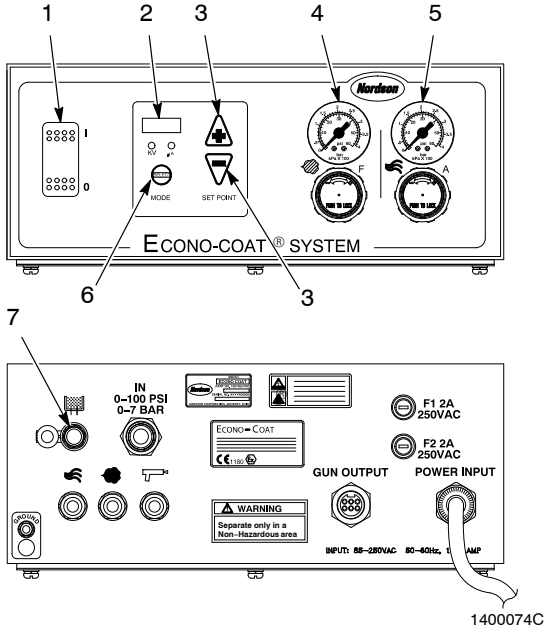


Figure 6 Control Unit Operation

1. Power switch
2. Digital display
3. +/- SET POINT keys
4. Flow rate air regulator
5. Atomizing air regulator
6. SELECT MODE key
7. Fluidizing air valve

Note: The fluidizing air valve (7) is not used with vibratory box feeder systems.

Maintenance

Perform these tasks daily:

- Check all ground connections, including part grounds. Ungrounded or poorly grounded parts will affect transfer efficiency, electrostatic wrap, and the quality of the finish. Ungrounded equipment and parts may accumulate a charge that could arc and cause a fire or explosion.
- Check power and gun cable connections.
- Make sure that the air being supplied to the control unit is clean and dry.
- Wipe powder and dust off the control unit with a clean, dry cloth.

Troubleshooting

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

This section contains troubleshooting procedures. These procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

Problem	Possible Cause	Corrective Action
1. 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.
		Disassemble and clean the pump.
	Poor fluidization of powder in hopper	Increase the fluidizing air pressure.
		Hopper Systems: Remove the powder from the hopper. Clean or replace the fluidizing plate if it is contaminated.
		Box Feeder Systems: Replace the fluidizing disk insert at the end of the pickup tube. Refer to your mobile powder spray system instructions.
	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...

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 trigger switch	Test the continuity of the spray gun cable and trigger switch. If there is no continuity, 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. 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	Malfunctioning solenoid valve	Replace the solenoid valve.
	Malfunctioning trigger switch or cable	Check the resistance of the spray gun's cable. If no short or open circuit is found in the trigger switch, replace the cable. Refer to your spray gun manual for instructions.

Electrical Schematic

See Figure 7.

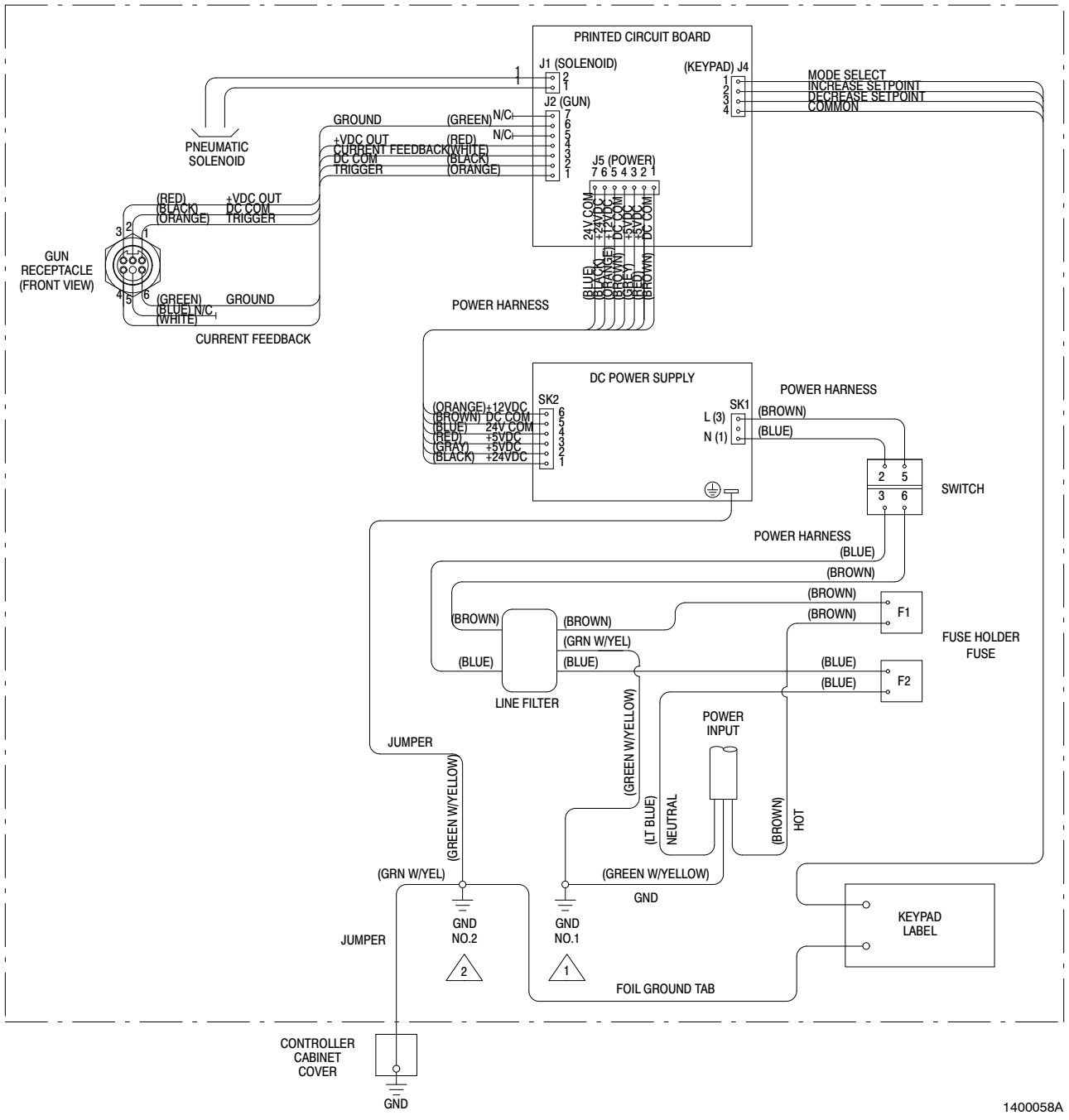


Figure 7 Electrical Schematic

Pneumatic Schematic

New-Style Control Units: See Figure 8.

Old-Style Control Units: See Figure 9.

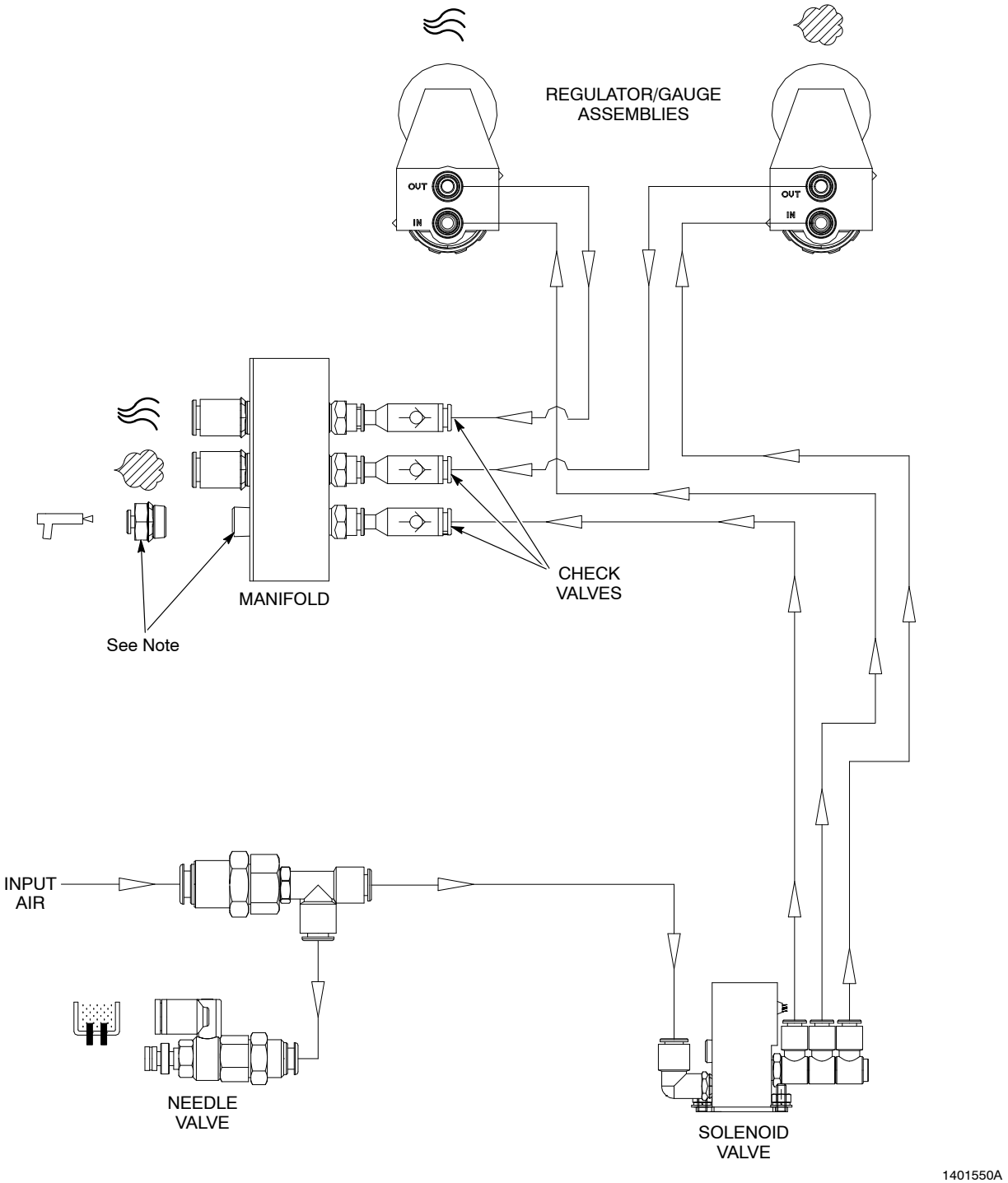


Figure 8 Pneumatic Schematic — New-Style Control Units

Note: If a Sure Coat gun is used with this control unit, order a 4-mm air fitting, part 1063325, to install in place of the manifold's gun air pipe plug, part 1043873.

Pneumatic Schematic *(contd)*

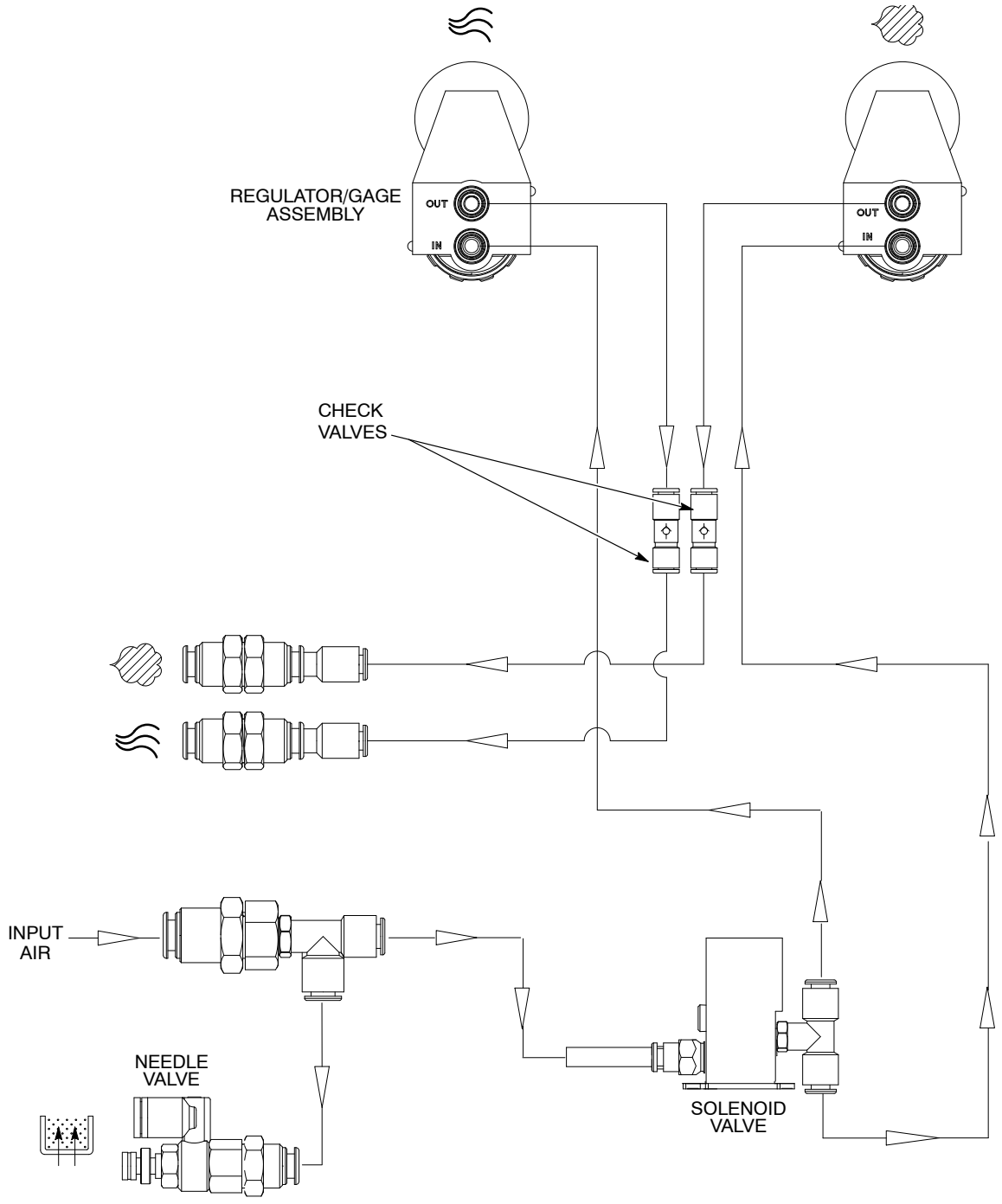


Figure 9 Pneumatic Schematic — Old-Style Control Units with Solenoid Valve Retrofit Kit

Repair

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

WARNING: Turn off the control unit and disconnect the system from its input power source before performing any of the following tasks. Failure to observe this warning may result in a severe shock.

WARNING: Relieve system air pressure and disconnect the system from its input air supply before performing any of the following tasks. Failure to observe this warning may result in personal injury.

Regulator Assembly Replacement

See Figure 10.

1. Turn off the control unit and disconnect it from its input power source.
2. Relieve supply air pressure and disconnect the control unit from its input air supply.
3. Remove the control unit's cover.
4. Disconnect the air tubing (1) from the regulator assembly (2).
5. Unscrew the mounting nut (4). Remove the regulator assembly and seal (3) from inside of the control unit.
6. Install the new regulator assembly and seal by performing steps 3–5 in reverse. See the *Pneumatic Schematic* on page 15 for air tubing connections.

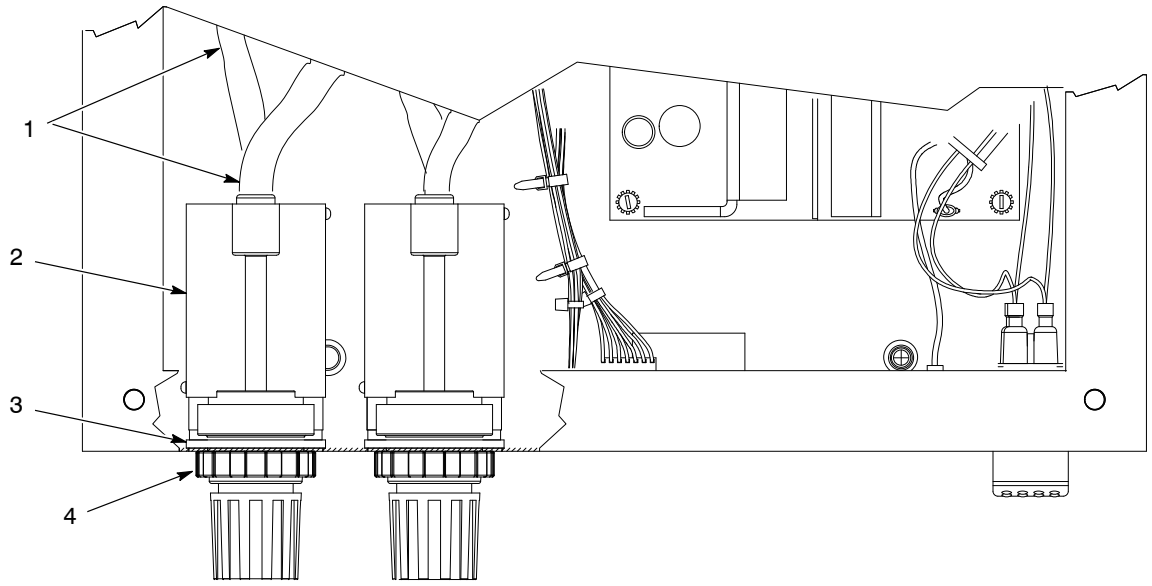


Figure 10 Regulator Assembly Replacement

1. Air tubing
2. Regulator assembly
3. Regulator seal
4. Mounting nut

Solenoid Valve Replacement

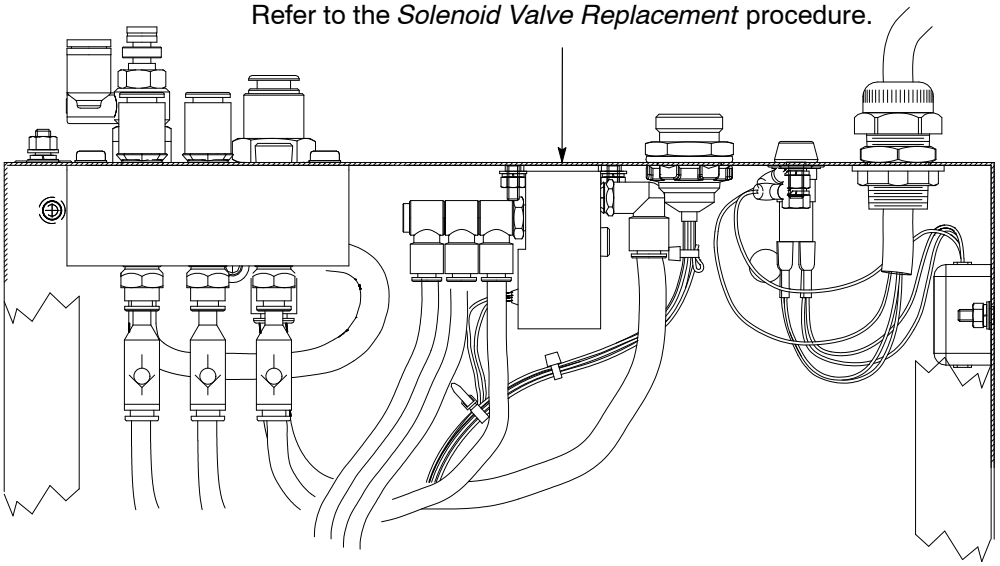
Determining Solenoid Valve Type

Two types of solenoid valves have been used in the control unit. Use Figure 11 to determine which solenoid valve you have and which replacement procedure to follow.

Solenoid Valve Replacement: Refer to page 19.

Solenoid Valve Retrofit: Refer to page 20.

New-Style Control Units
Refer to the *Solenoid Valve Replacement* procedure.



Old-Style Control Units
Refer to the *Solenoid Valve Retrofit* procedure.

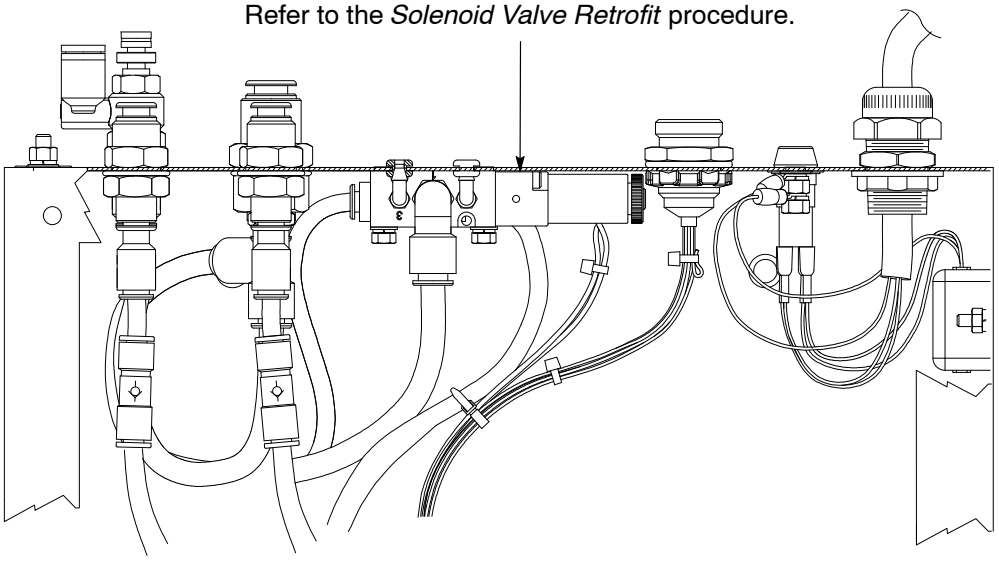


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Figure 11 Determining Solenoid Valve Type

Solenoid Valve Replacement

1. Turn off the control unit and disconnect it from its input power source.
2. Relieve supply air pressure and disconnect the control unit from its input air supply.
3. Remove the control unit's cover.
4. See Figure 12. Disconnect the air tubing from the single and triple elbows (2, 6).
5. Disconnect the solenoid wiring harness (1) from the printed circuit board.

CAUTION: Be careful not to cut any wires when you cut off the cable straps.

6. Carefully cut the four cable ties securing the solenoid wiring harness to the gun input and power supply wiring harnesses.
7. Remove the solenoid valve assembly (4) from the control unit by removing the hex nuts and washers (3).
8. Remove the pipe plug (5) and single and triple elbows from the old solenoid valve assembly and clean their threads. Wrap the threads in PTFE tape and install the pipe plug and elbows onto the new solenoid valve assembly.
9. Install the new solenoid valve assembly by performing this procedure in reverse.

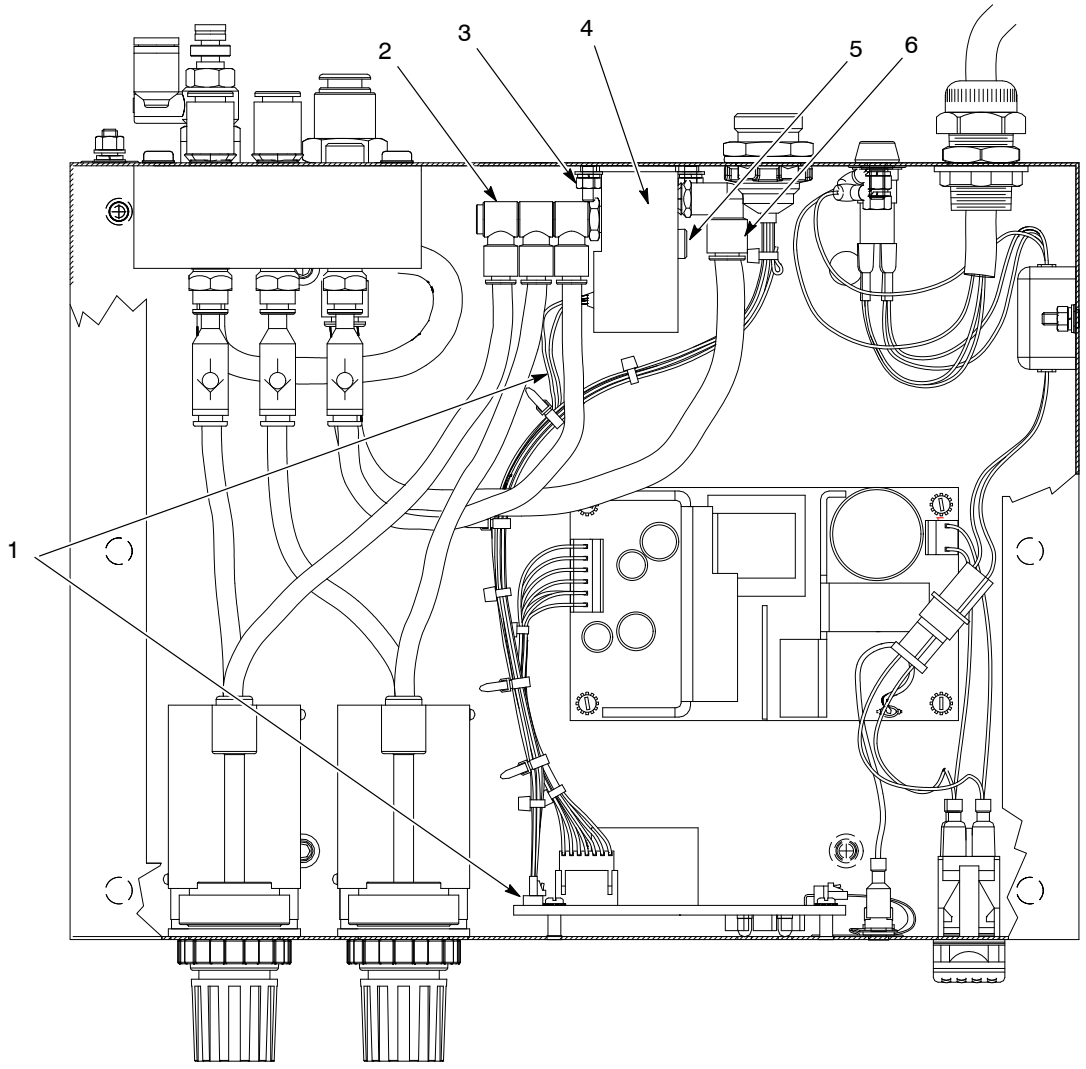

Figure 12 Solenoid Valve Replacement

1. Solenoid wiring harness
2. Triple elbow
3. Hex nuts and washers
4. Solenoid valve
5. Pipe plug
6. Single elbow

Solenoid Valve Retrofit

Removing the Old Solenoid Valve

1. See Figure 13. Turn off the control unit and disconnect it from its input power source.
2. Relieve supply air pressure and disconnect the control unit from its input air supply.
3. Remove the control unit's cover.
4. Disconnect the air tubing between the solenoid elbow (4) and main tee (2). Discard this tubing.
5. Disconnect the two air tubes from the solenoid tee (3).
6. Disconnect the solenoid wiring harness (1) from the printed circuit board.

CAUTION: Be careful not to cut any wires when you cut off the cable straps.

7. Carefully cut the four cable ties securing the solenoid wiring harness to the gun input and power supply wiring harnesses.
8. Remove the solenoid valve assembly (5) from the control unit by removing the hex nuts and washers (6).

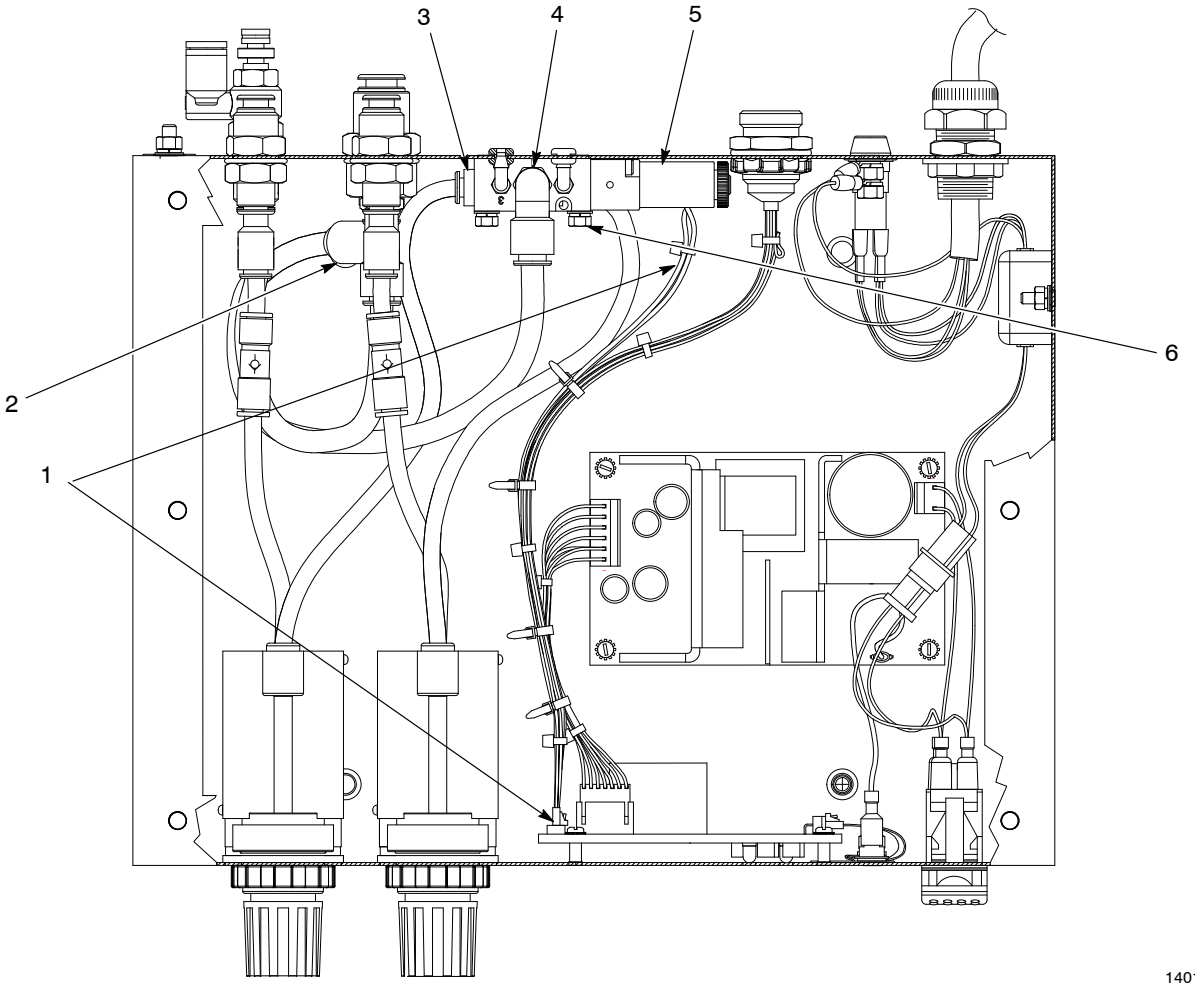

Figure 13 Solenoid Valve Retrofit — Removing the Old Solenoid

1. Solenoid wiring harness
2. Main tee
3. Solenoid tee
4. Solenoid elbow
5. Solenoid valve
6. Hex nuts and washers

Installing the Retrofit Solenoid Valve

1. See Figure 14. Disconnect the air tubing from the straight end (4) of the main tee. Connect this tubing to the branch (6) of the main tee.
2. Push the straight tube (8) on the new, retrofit solenoid valve (3) into the straight end of the main tee (4).
3. Connect the regulator air tubes to the retrofit solenoid's tee (2).
4. Connect the solenoid wiring harness (1) to the printed circuit board. Use cable ties to secure the three wiring harnesses together.
5. Push the two nylon pins (7) (shipped with the retrofit solenoid kit) into the air vent grommets.
6. Install the control unit's cover.

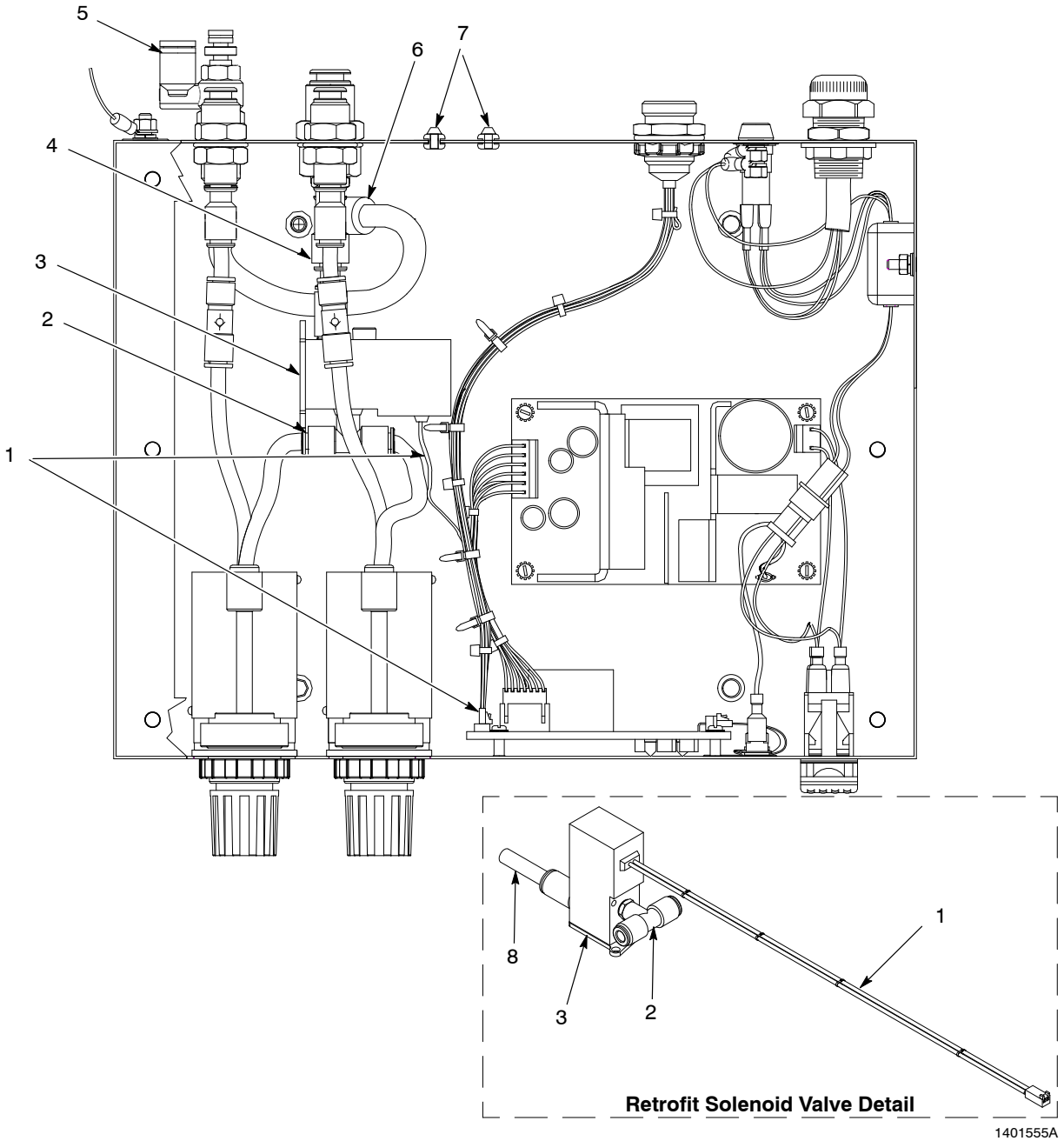

Figure 14 Solenoid Valve Retrofit — Installing the New Solenoid

1. Solenoid wiring harness
2. Solenoid tee
3. Solenoid valve
4. Main tee — straight end
5. Needle valve
6. Main tee — branch
7. Nylon pins
8. Straight tube

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Parts

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	

External Control Unit Parts

See Figure 15.

Item	Part	Description	Quantity	Note
—	1007965	CONTROLLER, manual, Econo-Coat, short power cord	1	A
—	1027063	CONTROLLER, manual, Econo-Coat, long power cord	1	B
1	1017673	• NEEDLE VALVE, straight, $^1/_4$-in. RPT x 10-mm tube	1	C
NS	148256	• PLUG, 10-mm tubing	1	D
2	1005067	• CONNECTOR, bulkhead, 8-mm tube x $^1/_4$-in. RPT	1	
3	941131	• O-RING, silicone, 0.563 x 0.750 x 0.94 in.	2	
4	1005068	• CONNECTOR, bulkhead, 10-mm tube x $^1/_4$-in. RPT	1	
5	131477	• FUSE, 2.00, fast-acting, 250 V, 5 x 20	2	
6	288804	• FUSE HOLDER, panel mount, 5 x 20	2	
7	984192	• NUT, lock, $^1/_2$-in. NPT, nylon	1	
8	972808	• CONNECTOR, strain relief, $^1/_2$-in. NPT	1	
9	1010223	• CORD, power, short, controller to J-box	1	A
9	1027067	• CORD, power, long, 15 ft (4.6 m)	1	B
10	- - - - - -	• CABINET, controller	1	
11	- - - - - -	• RECEPTACLE, handgun output	1	
12	939122	• SEAL, conduit fitting, $^1/_2$ in.	1	
13	984526	• NUT, lock, $^1/_2$-in. conduit	1	
14	1043873	• PLUG, pipe, socket, standard, $^1/_4$ RPT, steel, zinc	1	E
15	972282	• CONNECTOR, male, with internal hex, 8-mm tube x $^1/_4$ universal	2	
16	240674	• TAG, ground	4	
17	- - - - - -	• WASHER, lock, m, split, M5, steel, zinc	13	
18	- - - - - -	• NUT, hex, M5, brass	5	
19	- - - - - -	• WASHER, flat, m, regular, M5, stainless steel	15	
20	134575	• WIRE, ground	1	
21	322404	• SWITCH, rocker, DPST, dust tight	1	
22	288821	• REGULATOR, assembly, 0–60 psi, 0–4 bar	2	
23	- - - - - -	• LABEL, controller keypad, Econo-Coat	1	
24	- - - - - -	• SCREW, pan head, slotted, M5 x 10, steel, zinc	8	
25	- - - - - -	• COVER, controller cabinet	1	
26	1005671	• GASKET, cover, controller cabinet	1	

NOTE A: This control unit, part 1007965, has a short power cord that wires into a junction box/power switch in box feeder systems.

B: This control unit, part 1027063, has a 15-ft power cord that can be wired either to a plug or directly to a power source.

C: If the fitting on your control unit's needle valve is 8-mm, order the 10-mm needle valve, part 1017673, and a 10-mm to 8-mm reducer fitting, part 1045098.

D: This plug is installed in the needle valve (item 1) outlet when the control unit does not need to regulate fluidizing air.

E: If you use this control unit with a Sure Coat manual powder spray gun, order a 4-mm fitting, part 1063325, to use in place of this pipe plug.

NS: Not Shown

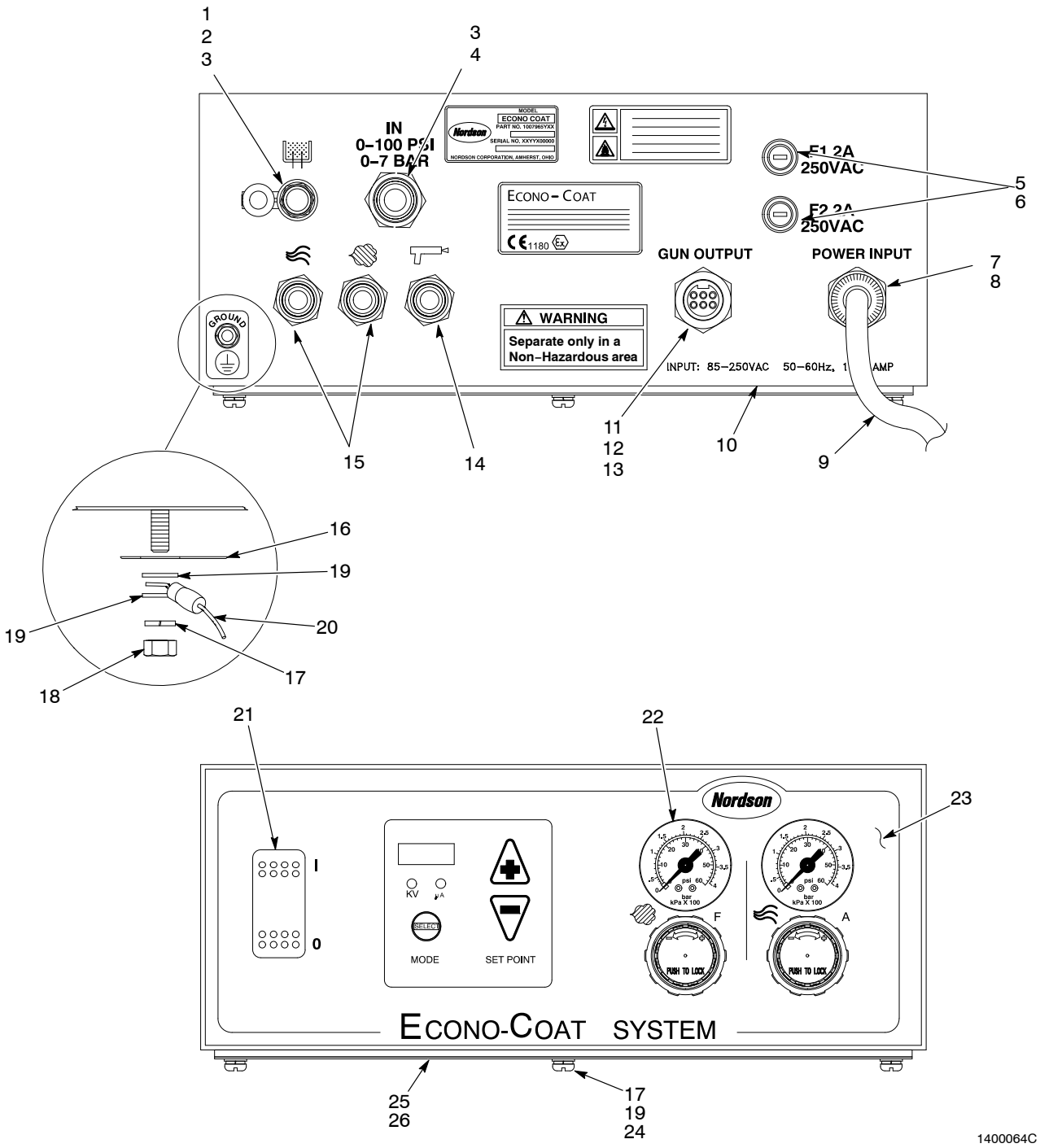

Figure 15 External Control Unit Parts

Note: The ground assembly shown in Detail A is also on the inside of the control unit cabinet cover.

Internal Control Unit Parts

See Figure 17.

Item	Part	Description	Quantity	Note
27	335441	• FILTER, line, with connector	1	
28	- - - - - -	• NUT, hex, M4, steel, zinc	4	
29	- - - - - -	• WASHER, lock, m, split, M4, steel, zinc	4	
30	- - - - - -	• WASHER, flat, M4, narrow, steel, zinc	4	
31	- - - - - -	• SCREW, pan head, slotted, M3 x 8, zinc	8	
32	- - - - - -	• WASHER, lock, m, external, M3, steel, zinc	8	
33	288803	• POWER SUPPLY, 24, 5, 12 Vdc, 40 W	1	
34	1006024	• HARNESS, power, switch to power supply	1	
35	1006023	• HARNESS, power, filter to switch	1	
36	130630	• JUMPER, ground, cabinet	1	
37	320231	• PRINTED CIRCUIT BOARD, gun control, Econo-Coat	1	
38	141603	• SEAL, panel, regulator	2	
39	1006025	• HARNESS, power, power supply to PCB	1	
40	900742	• TUBING, polyurethane, 6-mm OD, blue	AR	
41	900619	• TUBING, polyurethane, 8-mm OD, black	AR	
42	971100	• CONNECTOR, male, 6-mm tube x $^1/_4$ universal	3	
43	972931	• TEE, male run, 8-mm tube x $^1/_4$-in. universal	1	
44	1061418	• ELBOW, male, universal, triple	1	
45	1043925	• PLUG, pipe, socket, standard, $^1/_8$ RPT, steel, zinc	1	
46	972276	• ELBOW, male, 8-mm tube x $^1/_8$-in. universal	1	
47	1005679	• VALVE, solenoid, 3 way, 24 Vdc, 2 W, retrofit	1	F
48	933469	• LUG, 90, double, 0.250, 0.438 in.	1	
49	163443	• JUMPER, ground, cabinet, lid, 15 in.	1	
50	1045839	• VALVE, check, adapter, 6-mm tube x $^1/_8$-in. universal	3	
51	939110	• STRAP, cable, 0.875-in. dia	4	
NS	- - - - - -	• SCREW, pan head, slotted, M6 x 12, zinc	4	G
NS	- - - - - -	• WASHER, lock, M, internal, M6, steel, zinc	4	G

NOTE F: See Figure 16. The solenoid valve comes with a tee, reducer fitting, and stem attached. If you have a new-style control unit, you will discard the attached fittings.

G: Use these screws and washers to secure the control unit to a dolly.

AR: As Required

NS: Not Shown

Solenoid Valve Retrofit Kit

See Figure 16.

Part	Description
1005679	VALVE, solenoid, 3-way, 24 Vdc, 2 W, retrofit

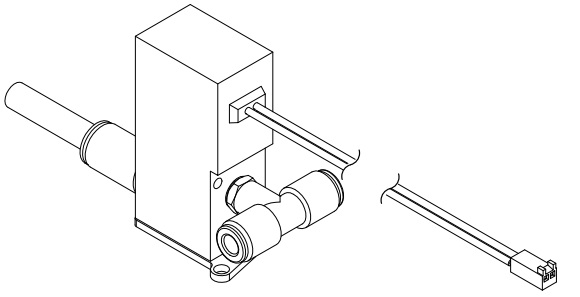

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Figure 16 Solenoid Valve Retrofit Kit

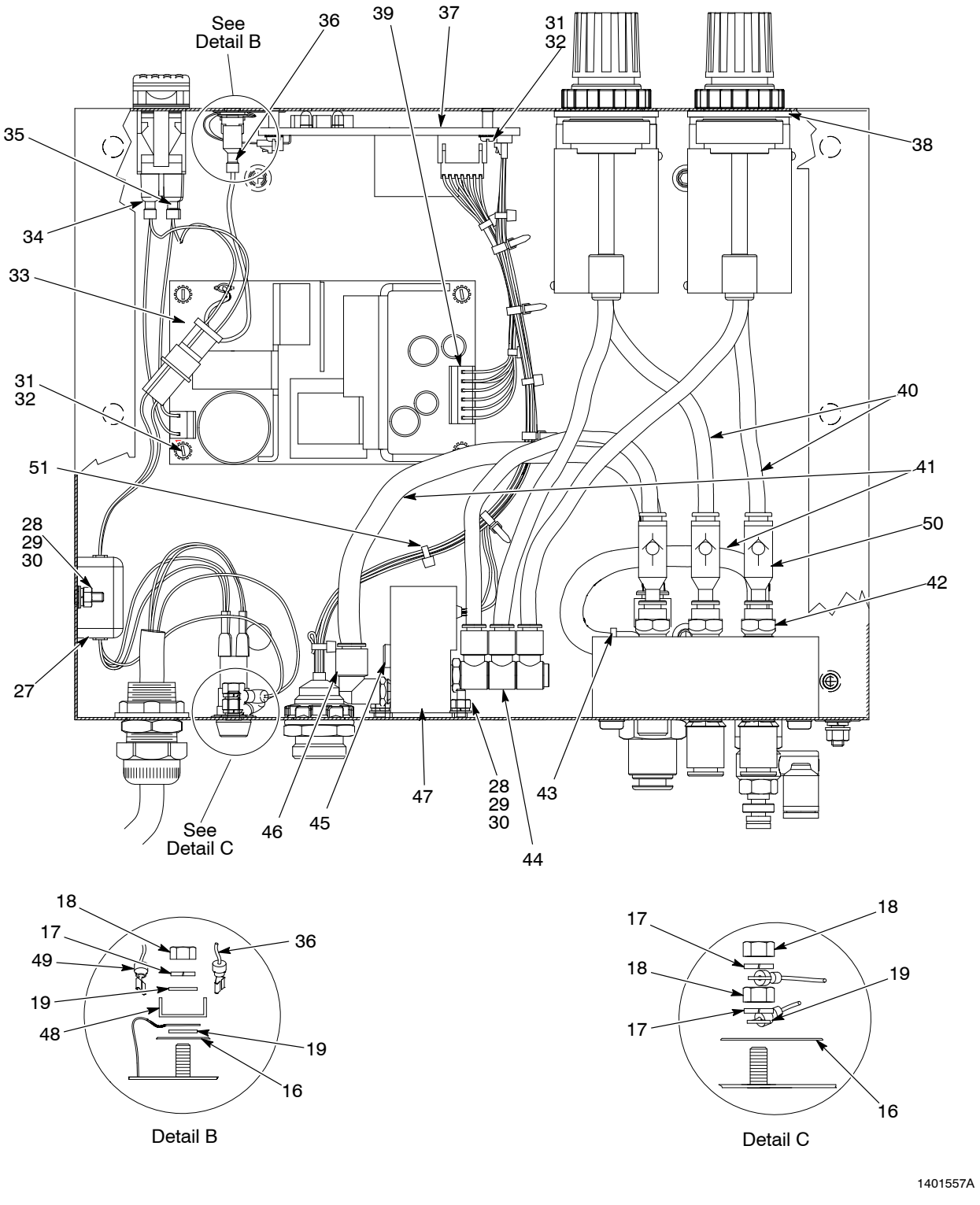

Figure 17 Internal Control Unit Parts

Optional Mounting Brackets

Rail-Mounting Bracket

See Figure 18.

Use this bracket to mount the control unit to the spray booth's operator platform railing.

Item	Part	Description	Quantity	Note
—	1023687	KIT, railmount bracket, Econo-Coat	1	
1	- - - - - -	• BRACKET, railmount, Econo-Coat	1	
2	125112	• NUT, hex, jam, M8, steel, zinc	2	
3	982417	• SCREW, machine, hex, M8 x 25, zinc	2	A
3	345492	• SCREW, machine, hex, M8 x 55, zinc	2	A
4	982214	• SCREW, pan head, slotted, M5 x 20, zinc	3	B
NOTE A: One pair of these screws will not be used. Two pairs are included to accommodate different rail sizes. B: These screws replace three of the screws in the control unit's access cover.				

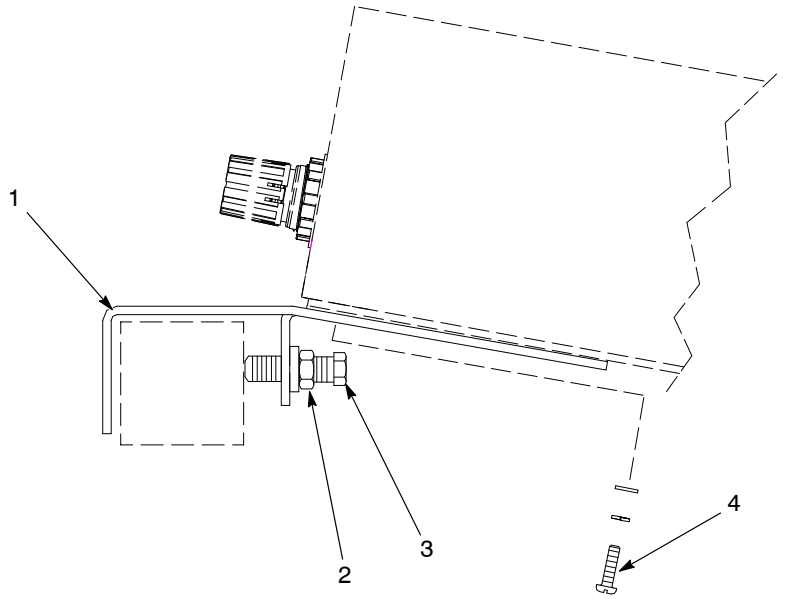

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Figure 18 Rail-Mounting Bracket

Wall-Mounting Bracket

See Figure 19.

Use this bracket to mount the control unit to the spray booth wall.

Item	Part	Description	Quantity	Note
—	1021035	KIT, wallmount bracket, Econo-Coat	1	
1	126336	• SCREW, pan head, slotted, M5 x 12	5	A
2	- - - - - -	• BRACKET, wallmount, Econo-Coat	1	
3	984707	• NUT, hex, M8, steel, zinc	4	
4	983404	• WASHER, lock, M, split, M8, steel, zinc	4	
5	983013	• WASHER, flat, regular, 8, steel, zinc	8	
6	982563	• SCREW, pan head, slotted, M8 x 40	4	
NOTE A: Use these screws in place of the M5 x 10 screws that are installed in the control unit.				

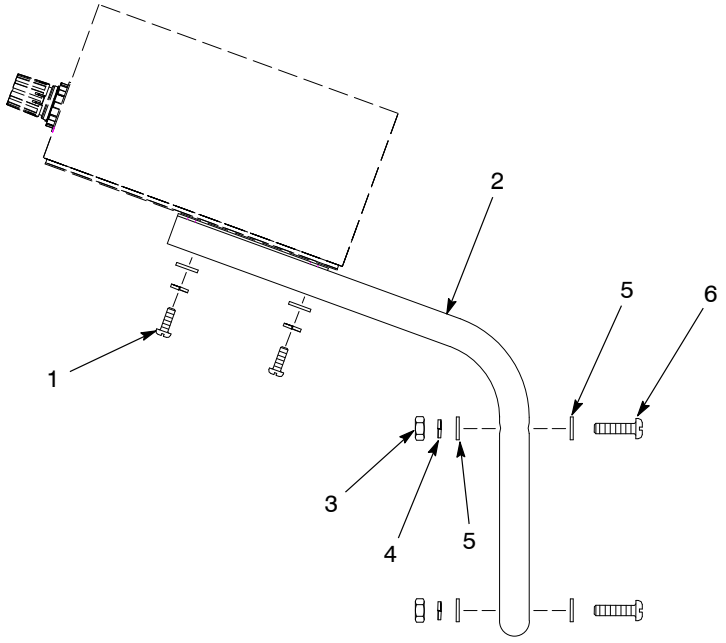

Figure 19 Wall-Mounting Bracket

Powder Tubing, Air Tubing, and Fittings

Order tubing in increments of one foot.

Part	Description	Note
900740	AIR TUBING, 10-mm OD, black, polyurethane	
900618	AIR TUBING, 8-mm OD, blue, polyurethane	
900619	AIR TUBING, 8-mm OD, black, polyurethane	
900650	POWDER TUBING, 12.7-mm ($^1/_2$-in.) ID blue	
900648	POWDER TUBING, 11-mm ID, blue	A
900649	POWDER TUBING, 9.5-mm ($^3/_8$-in.) ID, blue	A
1045098	REDUCER, 10-mm stem x 8-mm tube	B
1063325	CONNECTOR, orifice, 4 mm x $^1/_4$ universal, 0.3 mm	C

NOTE A: These optional powder feed hose sizes may improve powder flow and pattern, depending on your application.

B: Order this reducer fitting if you need to reduce the 10-mm fluidizing air needle valve to 8-mm.

C: If a Sure Coat gun is used with this control unit, order this 4-mm connector to install in place of the manifold's gun air pipe plug, part 1043873.