Prodigy® Color-on-Demand® Pump Control Panel

Customer Product Manual
Part 1081747A04

Issued 01/10

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

This document is available on the Internet at http://emanuals.nordson.com/finishing

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NORDSON CORPORATION • AMHERST, OHIO • USA

Table of Contents

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.

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Change Record

Revision	Date	Change
A03	12/09	Removed part number for manifold assembly and added reference to the pump, manifold, and circuit board manual 1081195.
A04	01/10	Replaced solenoid valve 1027412 with part number 1099534.

Prodigy® Color-on-Demand® Pump Control Panel

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.

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.

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 pump panel is the central electrical and pneumatic enclosure for the Color-on-Demand system. The pump panel houses the Prodigy HDLV pumps, pump manifolds and control boards, air filter and pneumatic controls, and DC power supply.

This manual covers the pump manifold and circuit boards and provides panel wiring and pneumatic diagrams and replacement parts.

Refer to the other manuals provided with your system for system installation and operation instructions.

WARNING: Allow only qualified personnel to service this panel. Shut off power at an external disconnect before performing any repairs. Shut off the air supply at the ball valve and relieve the accumulator tank air pressure before disconnecting pneumatic tubing or components.

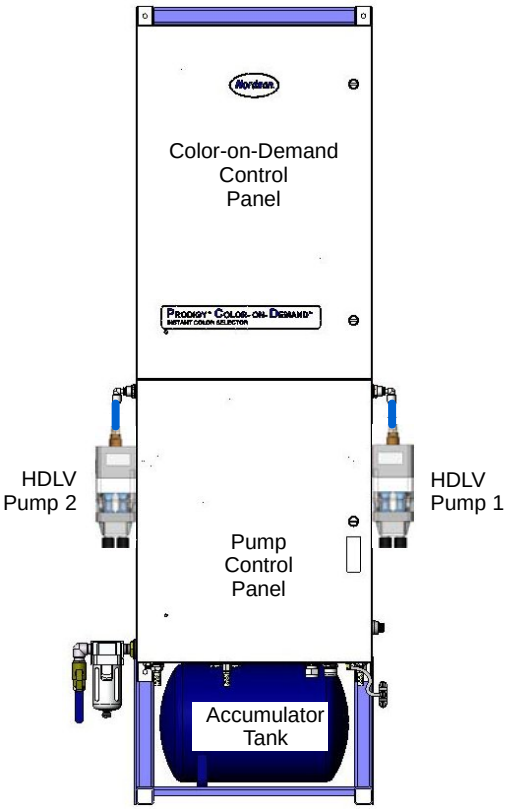


Figure 1 Manual Color-on-Demand System Panels

Panel Components

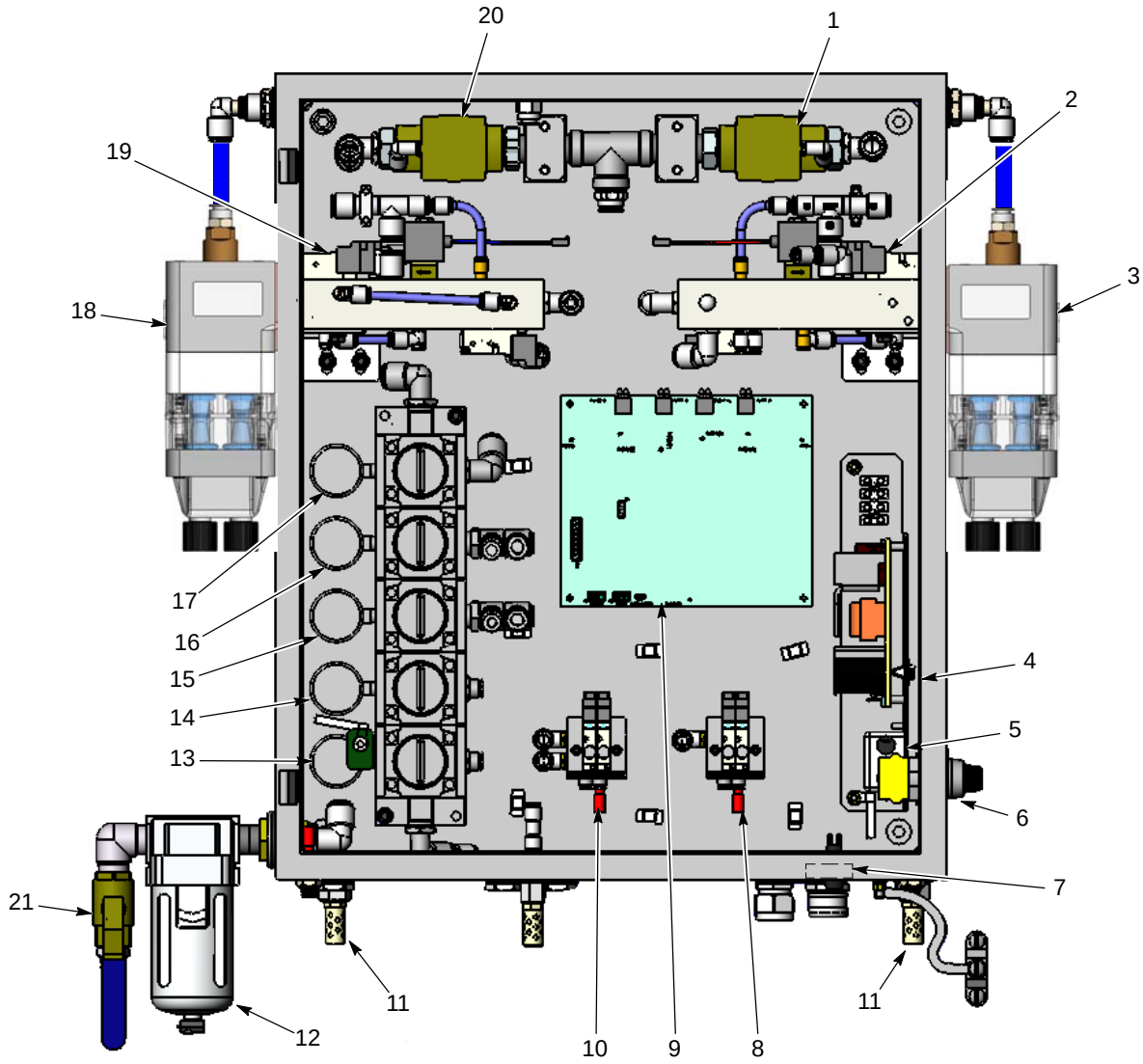


Figure 2 Pump Panel Components (Two-Gun System Panel Shown)

1. Pump 2 purge valve
2. Pump 1 control manifold
3. Pump 1
4. 24 VDC power supply
5. Line filter
6. Power switch and contact block
7. Fuse, time delay, 3.15 A
8. Purge pilot manifold/solenoids
9. Pump control boards
10. Pinch select manifold/solenoids
11. Vacuum generator mufflers
12. Air filter
13. Pinch low air (35 psi)
14. Pinch high air (75 psi)
15. Flow control air (85 psi)
16. Vaccuum air (50 psi)
17. Purge air (85 psi)
18. Pump 2
19. Pump 2 control manifold
20. Pump 1 purge valve
21. Air supply ball valve

NOTE: One pump control board (9) controls one pump. If the system has two pumps, then there are two control boards are stacked on top of each other.

For wiring and pneumatic diagrams, refer to the foldouts in the back of this manual.

For pump repair and parts, refer to manual 1081195.

For Color-on-Demand controller and control panel information, refer to manual 1066483.

HDLV Pump Manifold Components

The Prodigy High-Density powder, Low-Volume air (HDLV) powder feed pump transports precise amounts of powder from a feed source to a powder spray gun. The pump manifold controls the pump air and vacuum flow. The pump control board controls all manifold functions.

Manifold Components

Item	Description	Function
1	Solenoid Valves	Control the air flow to the pump during operation. **NOTE:** Refer to *Solenoid and Control Valve Functions* on page 13 to identify each valve's specific function.
2	Pattern Air Flow Control Valve	Regulates the air pressure to the spray gun's nozzle, which shapes the powder spray pattern.
3	Pump Air Flow Control Valve	Regulates the positive air pressure to the fluidizing tubes, which dispenses the powder out of the tubes.
4	Vacuum Air Solenoid	Turns the airflow through the vacuum generator on or off.
5	Vacuum Generator	Works on the venturi principle to generate the negative air pressure required to draw powder into the fluidizing tubes.

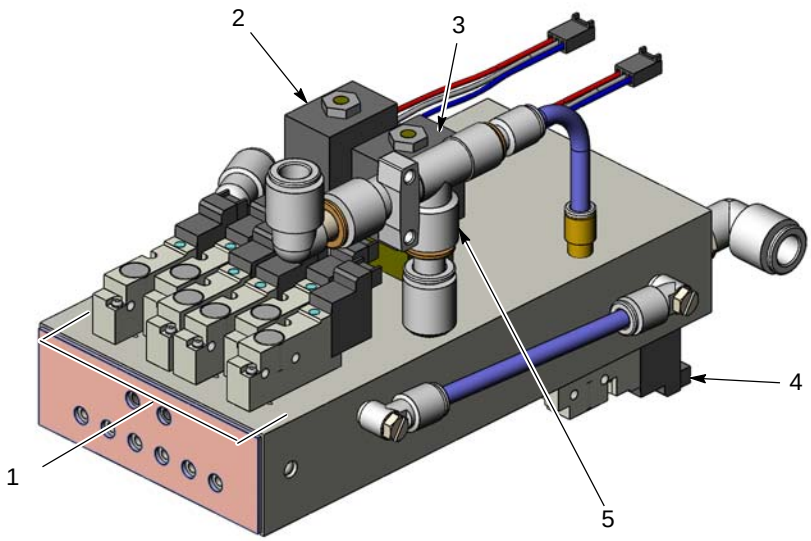


Figure 3 Pump Manifold Components

Manifold Specifications

Output (Maximum)	23.5 kg (52 lb) per hour
Air Consumption	
Conveying Air	21-35 l/min (0.75-1.25 scfm)
Gun Pattern Air	6-57 l/min (0.2-2.0 scfm)
Total Consumption	85-170 l/min (3-6 scfm)
Operating Air Pressures	
Pinch Valves	2.4-2.75 bar (35-40 psi)
Flow Control (to air cap/pump assist)	5.9 bar (85 psi)
Vacuum Generator	3.5 bar (50 psi)

Manifold and Pump Installation

To install a pump and manifold into an existing pump panel:

1. See Figure 4. Make sure that the gaskets on the pump (2) and manifold (5) are not damaged. If the gaskets are damaged, replace them.
2. Set the manifold onto the appropriate mounting bracket (4) against the pump panel wall (3). Secure the manifold with the mounting screws (6), but do not tighten the screws.
3. Secure the pump to the pump panel and manifold using the pump mounting screws (1). Tighten the pump mounting screws securely.
4. Tighten the manifold mounting screws securely.
5. Perform the Calibration procedure on page 9.

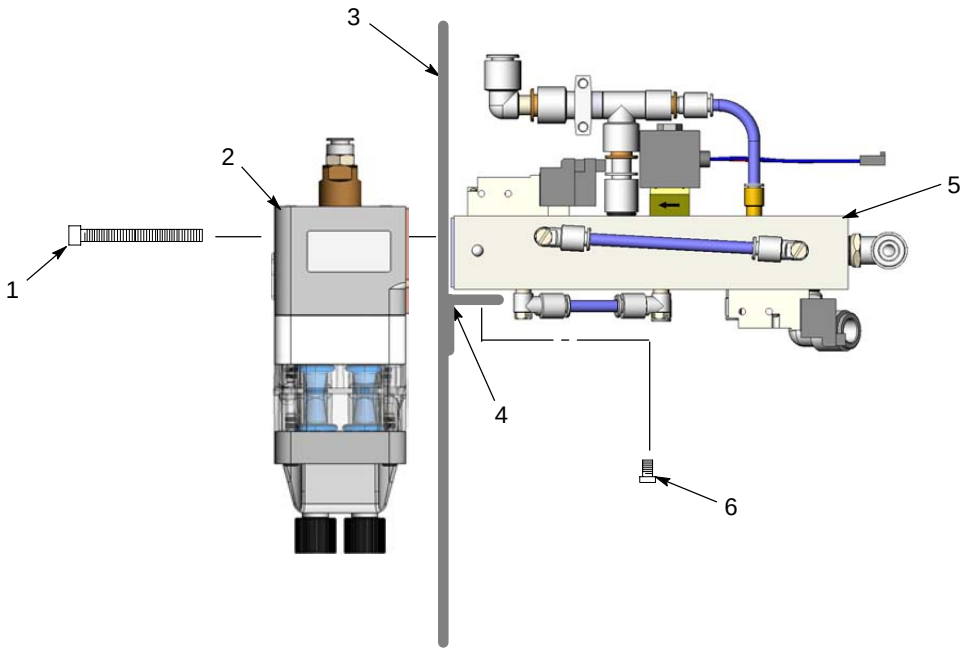


Figure 4 Pump and Manifold Installation

1. Mounting screws (2)
2. Pump
3. Pump panel wall
4. Manifold mounting bracket
5. Manifold
6. Manifold mounting screws (2)

Pump Control Board

CAUTION: The circuit board is an electrostatic sensitive device. To prevent damage to the board while handling it, wear a grounding wrist strap connected to the pump panel or other ground.

Electrical and Pneumatic Connections

See Figure 5 and the following table for the control board connections. Refer to the circuit drawings in the back of this manual and in the Color-on-Demand Controls manual 1066483.

Item	Description
XDCR1	Gun Pattern Air Pressure Transducer In/Out
XDCR2	Pump Flow Air Pressure Transducer In/Out
XDCR3	Not Used
XDCR4	Not Used
J1	Gun Pattern Air Flow Control Valve
J2	Pump Air Flow Control Valve
J3	To Color Control Panel PLC: Dump Output Control (DOC)
J4	To Color Control Panel PLC: Color Valve Back purge (CVB)
J5	JTAG Programming/Debug
P1	Manifold Solenoid I/O Harness
P2	To Color Control Panel PLC: Color Change Status (CCS)
P3	DC Power In
P4	To Color Control Panel PLC: Start Color Change (SCC) Color Change Status (CSS) return P1E (Purge 1 Solenoid) To Pump Control Panel: Purge Pilot Manifold Pinch Select Manifold
P5	CAN Out Connector
P6	CAN In Connector
W1	CAN Network Termination Header

Switches and Indicators

See Figure 5 and the following table for the switches and indicators on the control board.

Item	Description
SW1	Node Address Switch
SW2	Console Address/Gun Type Switch
PB1	Test Mode Switch (used for calibration)
PB2	Reset Switch
DS1	Power Indicator
DS2	Fault Indicator

P1 and P2 Pinouts

Pin	P1 Function	P2 Function
1	+24 Vdc	Not Used
2	+24 Vdc	Not Used
3	+24 Vdc	Not Used
4	+24 Vdc	Not Used
5	+24 Vdc	Not Used
6	+24 Vdc	Not Used
7	+24 Vdc	Not Used
8	Delivery 2 - Solenoid 6	Not Used
9	Pressure 2 - Solenoid 5	Not Used
10	Suction 2 - Solenoid 4	Not Used
11	Suction 1 - Solenoid 3	Not Used
12	Pressure 1 - Solenoid 2	Not Used
13	Delivery 1 - Solenoid 1	Pull up resistor for CCS
14	Vacuum - Solenoid 7	Color Change Status (CCS)

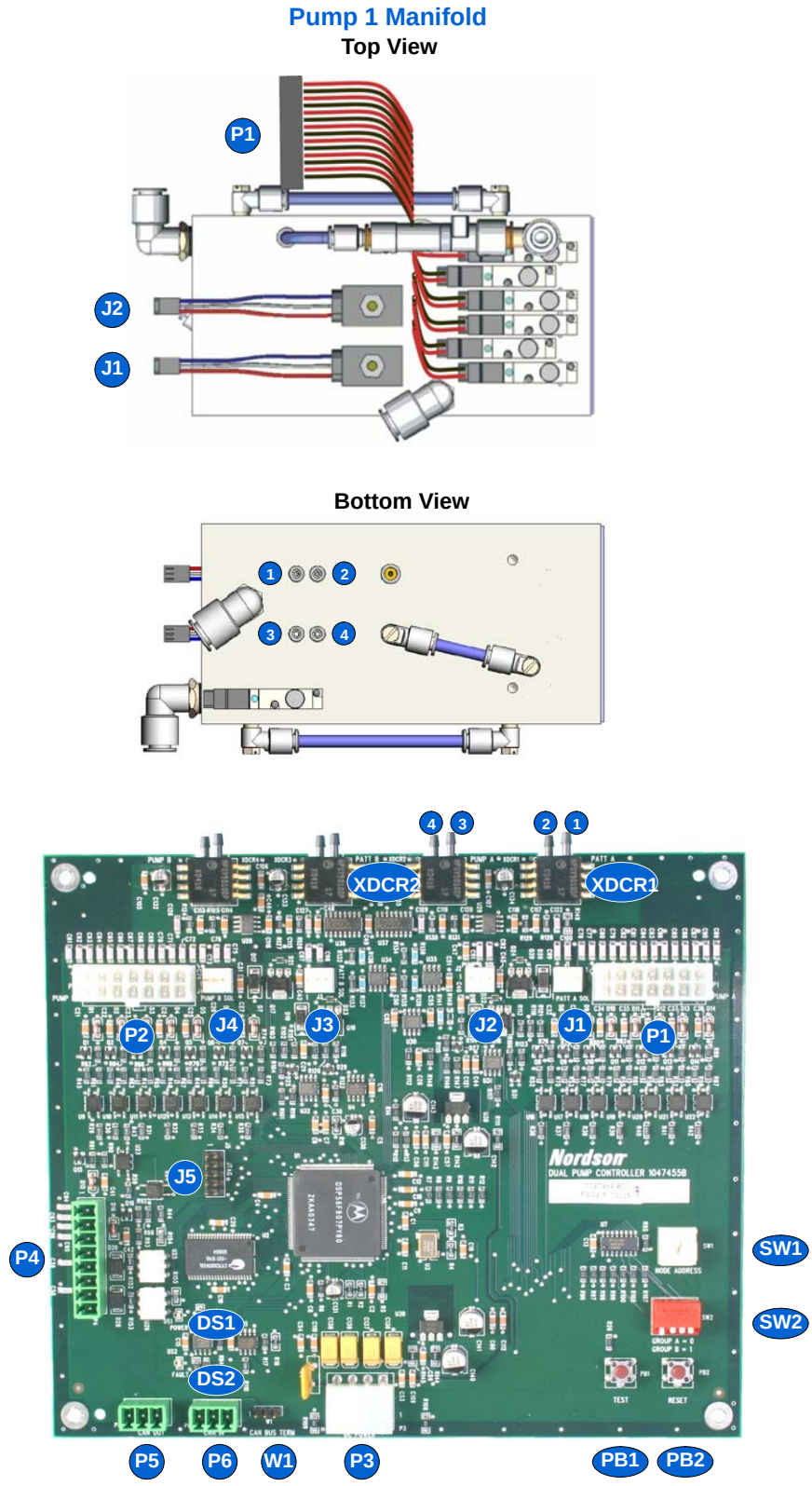


Figure 5 Control Board and Manifold Connections

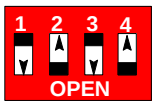
Note: The control board is shipped with air tubing labeled from 4-1 installed in the XDCR fittings. Connect the tubing to the appropriate fittings on the manifolds as illustrated.

Control Board Configuration

See Figure 6. Make sure that SW1 and SW2 are set as illustrated for the Color-on-Demand system.

SW1 Position 1

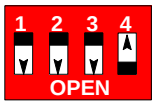
For Color-on-Demand System:



SW2

1 OPEN
2 CLOSED
3 OPEN
4 CLOSED

For Standard Manual Gun System:



SW2

1 OPEN
2 OPEN
3 OPEN
4 CLOSED

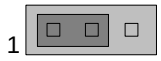
Figure 6 SW1 and SW2 Settings

Network Termination

See Figure 7. The control board is shipped with a jumper across pins 2 and 3 of the CAN BUS TERM terminals. Move the jumper to pins 1 and 2.

W1
CAN BUS TERM

As Shipped Position
(for Prodigy Standard 2-Gun System)



W1
CAN BUS TERM

Position for Prodigy Color-on-Demand 1 or 2 Gun System

Figure 7 CAN BUS TERM Jumper Settings

Calibration Procedure

If you replace a control board or manifold, use this procedure to calibrate the system.

1. Turn off the Prodigy Manual Gun Controller.
2. Press and hold the Nordson key, then turn on power to the Prodigy Manual Gun Controller. The Configuration screen appears.

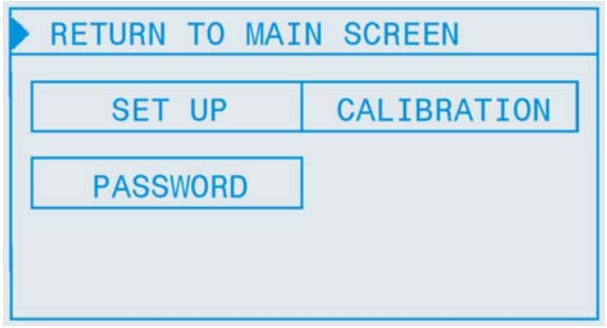


Figure 8 Configuration Screen

3. Using the arrow keys or rotary dial, point to the CALIBRATION selection. Press the ↵ key. The Calibration screen appears.

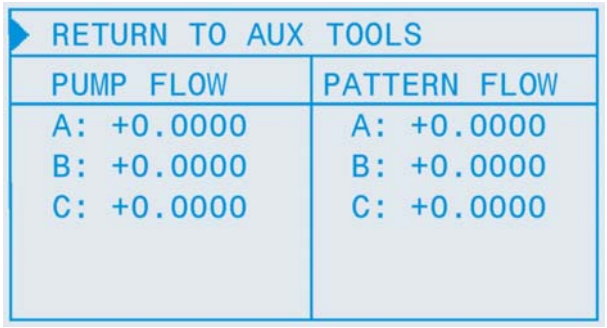


Figure 9 Calibration Screen

NOTE: Use the arrow keys or rotary dial to move the cursor to the appropriate setting, then press the ↵ key to select it. Use the arrow keys or rotary dial to change that value, then press the ↵ key to accept the new value and select a new setting.

4. Enter the PUMP FLOW and PATTERN FLOW A, B, and C calibration numbers from the sticker on the pump control manifold.

Air and Powder Tubing Connections

See Figure 10 for the air and powder tubing connections for the pump and manifold.

NOTE: Only the XDCR1 and XDCR2 transducers on the control board are used for this application.

Item	Tubing	Function	Item	Tubing	Function
A	10 mm Blue	From Purge Air Source (Line Air Pressure)	G	10 mm Blue	Pump Assist/Pattern Air Flow Control 5.9 bar (85 psi)
B	8 mm Clear	Powder Delivery to Spray Gun	H	6 mm Blue	Spray Gun Pattern Air Flow Control (to gun)
C	8 mm Clear	Powder Suction from Feed Source	1 - 2	4 mm Clear	Pump 1 Pattern Air Pressure Transducer
D	8 mm Clear	Pinch Valve Air Pressure 2.0-2.75 bar (30-40 psi)			
E	10 mm Blue	Vacuum Air Generator Supply 3.45 bar (50 psi)	3 - 4	4 mm Clear	Pump 1 Flow Air Pressure Transducer
F	10 mm Blue	Vacuum Generator Vent			

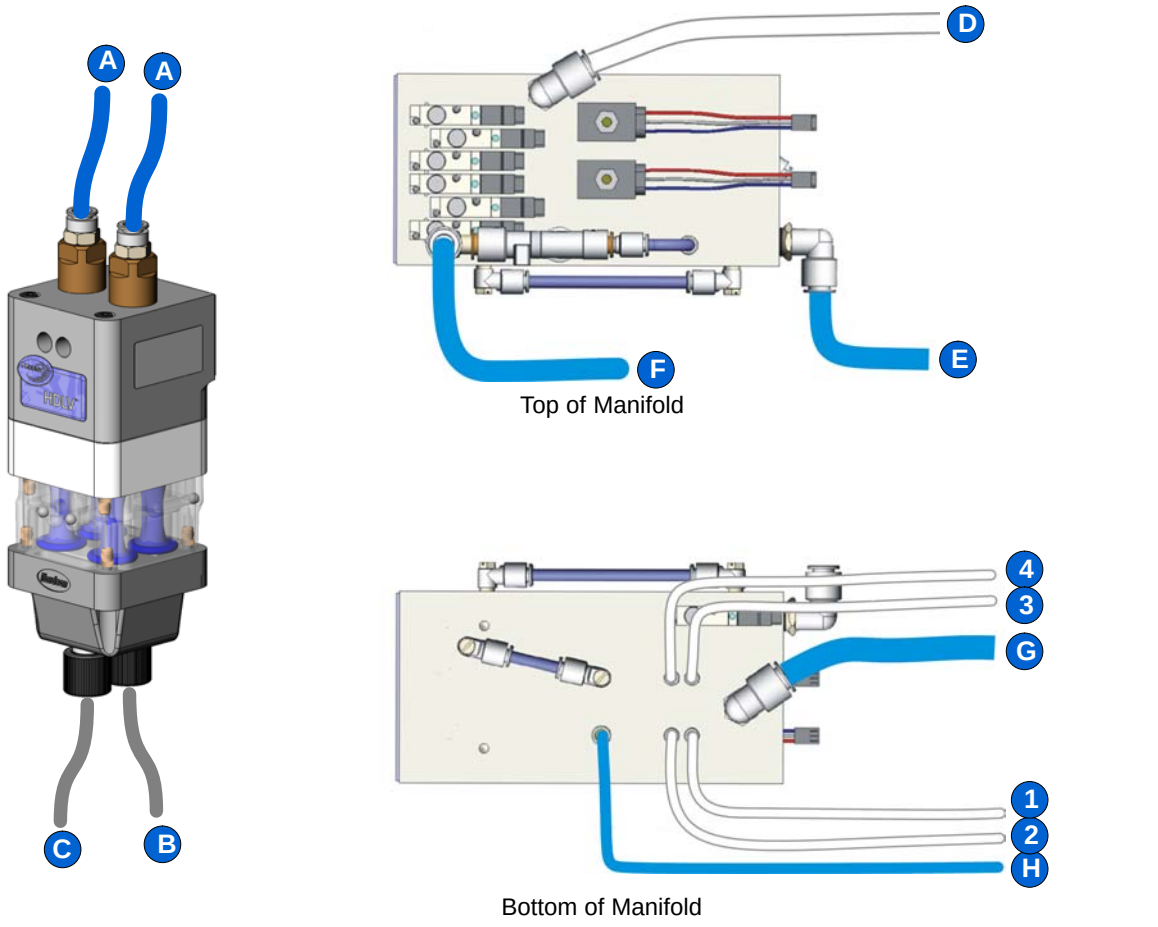


Figure 10 Powder and Air Tubing Connections

Operation

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

CAUTION: Do not adjust the regulators inside the pump cabinet. The regulators are factory set and should not be adjusted without guidance from your Nordson representative.

Powder flow rate and pattern air flow is controlled by the gun controller operator interface settings. Refer to the *Operation* section of the *Prodigy Manual Gun Controller* manual for specific instructions.

The powder flow rate is controlled by specifying a setpoint from 0-100, equivalent to a percent of flow, which corresponds to a predefined pump cycle rate. Increasing the flow rate setting increases the cycle rate; decreasing the flow rate setting decreases the cycle rate.

Spray gun pattern air flow (in either scfm or m^3/hr) is regulated by the pattern air flow control valve on the pump manifold.

The color change cycle, which purges the pump, gun, delivery tubing, and suction lines of powder and loads a new color powder, is controlled by the Purge screen settings on the gun controller.

The color change system is controlled by the color control panel PLC and solenoid valves, and the pump control boards.

Colors are selected and color changes are initiated by the operator, using the color controller touch screen and the foot switch, or by a remote signal from a customer process controller.

NOTE: When the fluidizing tubes become clogged with powder, the powder delivery rate will decrease. The gun controller will generate a fault to indicate this condition and notify you that it is time to replace the fluidizing tubes.

Troubleshooting

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

Problem	Possible Cause	Corrective Action
1. Reduced powder output (pinch valves are opening and closing)	Blockage in the powder tubing to the spray gun	Check the tubing for blockages. Purge the pump and spray gun.
	Defective pump air flow control valve	Clean the pump air flow control valve. Refer to *Flow Control Valve Cleaning* on page 14 for instructions. If the problem persists, replace the pump air flow control valve. Refer to *Flow Control Valve Replacement* on page 15 for instructions.
	Defective pump check valve	Replace the check valves.
2. Reduced powder output (pinch valves are not opening and closing)	Defective pinch valve	Replace the pinch valves and filter discs.
	Defective solenoid valve	Replace the solenoid valve. Refer to *Solenoid and Flow Control Valve Functions* on page 13 to determine which solenoid valve controls the affected pinch valve.
	Defective pump check valve	Replace the check valves.
3. Reduced powder input (loss of suction from feed source)	Blockage in the powder tubing from the feed source	Check the tubing for blockages. Purge the pump and spray gun.
	Loss of vacuum at the vacuum generator	Check the vacuum generator for contamination. Check the pump panel exhaust muffler. If the exhaust muffler appears to be plugged, replace it.
	Defective pump air flow control valve	Clean the pump air flow control valve. Refer to *Flow Control Valve Cleaning* on page 14 for instructions. If the problem persists, replace the pump air flow control valve. Refer to *Flow Control Valve Replacement* on page 15 for instructions.
4. Spray gun fan pattern changes	Defective pattern air flow control valve	Clean the pattern air flow control valve. Refer to *Flow Control Valve Cleaning* on page 14 for instructions. If the problem persists, replace the pattern air flow control valve. Refer to *Flow Control Valve Replacement* on page 15 for instructions.

Solenoid and Flow Control Valve Functions

Figure 11 identifies the solenoid and flow control valve functions and the corresponding ports on the pump and manifold.

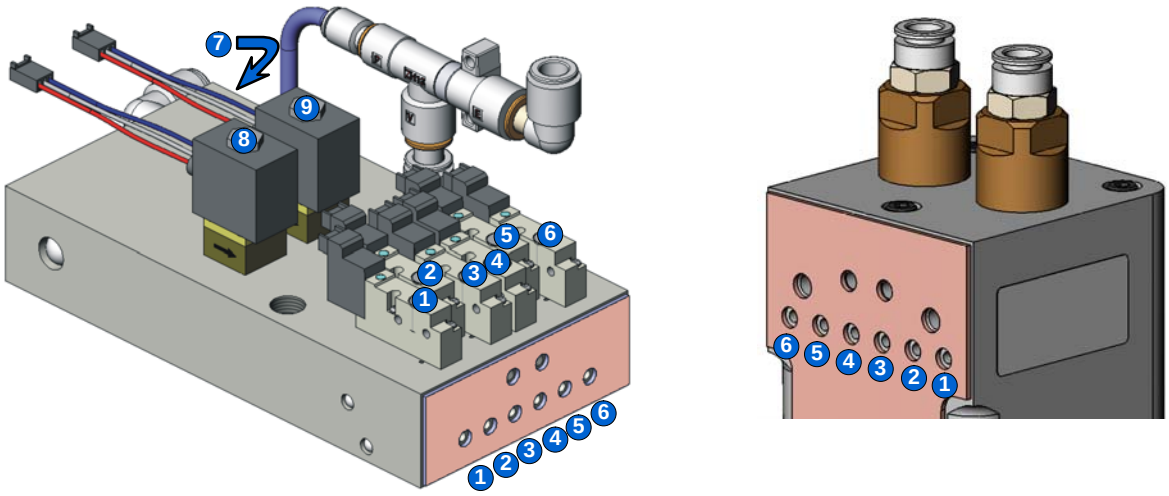


Figure 11 Solenoid and Flow Control Valve Functions

Item	Function	Item	Function
1	Left Side Delivery Pinch Valve	6	Right Side Delivery Pinch Valve
2	Left Side Fluidizing Tube	7	Vacuum Air (on bottom of manifold)
3	Left Side Suction Pinch Valve	8	Pump Air Flow Control
4	Right Side Suction Pinch Valve	9	Pattern Air Flow Control
5	Right Side Fluidizing Tube		

Repair

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

To reduce downtime, keep a spare manifold in stock to install in place of one being repaired. Refer to *Manifold Parts* on page NO TAG for ordering information.

Repair of the manifold is limited to

- cleaning or replacing the flow control valves
- replacing the solenoid valves

Field replacement of other parts is not possible, due to the need to calibrate the manifold at the factory using equipment not available in the field.

Preparation

NOTE: Tag all air tubing and wiring harnesses before disconnecting them from the manifold.

1. On the color change controller, go to the Purge screen, touch CLEAN and START to perform a system purge.

WARNING: Shut off and lock out system electrical power and relieve system air pressure before performing the following tasks. Failure to relieve air pressure may result in personal injury.

2. Shut off system power and air pressure. Relieve the air pressure in the accumulator tank.
3. Tag the pump manifold air tubing, then disconnect the tubing from the manifold.

CAUTION: The circuit board is an electrostatic sensitive device (ESD). To prevent damage to the board while handling it, wear a grounding wrist strap connected to the pump panel or other ground.

4. Tag and disconnect the flow control valve and solenoid valve wiring harnesses from the circuit board below the manifold.
5. Remove the pump from the pump panel.
6. Remove the two screws securing the manifold to the mounting bracket. Take the manifold assembly to a clean work surface.

Flow Control Valve Cleaning

A dirty air supply can cause the flow control valves to malfunction. Follow these instructions to disassemble and clean the flow control valves.

1. See Figure 12. Remove the nut (1) and coil (2) from the flow control valve.
2. Remove the two long screws (10) to remove the flow control valve from the manifold.

CAUTION: The valve parts are very small. Be careful not to lose any parts. Do not mix the springs from one valve with those from another. The valves are individually calibrated with the springs installed.

3. Remove the two short screws (3), then remove the valve stem (4) from the valve body (7).
4. Remove the valve cartridge (6) and spring (5) from the stem.
5. Clean the cartridge seat and seals, and the orifice (9) in the valve body. Use low-pressure, compressed air. Do not use sharp metal tools to clean the cartridge or valve body.
6. Install the spring and then the cartridge in the stem, with the plastic seat on the end facing out.
7. Make sure the O-rings furnished with the valve are in place on the bottom of the valve body.
8. Secure the valve body to the manifold with the long screws, making sure the arrow on the valve body points toward the solenoid valves.
9. Install the coil on the stem, with the coil wiring pointing away from the solenoid valves. Secure the coil with the nut.

Flow Control Valve Replacement

If cleaning the flow control valve does not correct the flow problem, replace the flow control valve.

See Figure 12. Remove the valve by removing the nut (1), coil (2), and long screws (10).

Before installing a new valve, remove the protective cover from the bottom of the valve body (7). Be careful not to lose the O-rings (8) under the cover.

Solenoid Valve Replacement

See Figure 12. To remove the solenoid valves, remove the two screws (11) in the valve body and lift the solenoid valve (12) off the manifold.

Make sure the gasket furnished with the new solenoid valve are in place before installing it on the manifold.

Manifold Installation

Refer to *Installation* on page 6 for instructions for installing the manifold and pump into the pump panel.

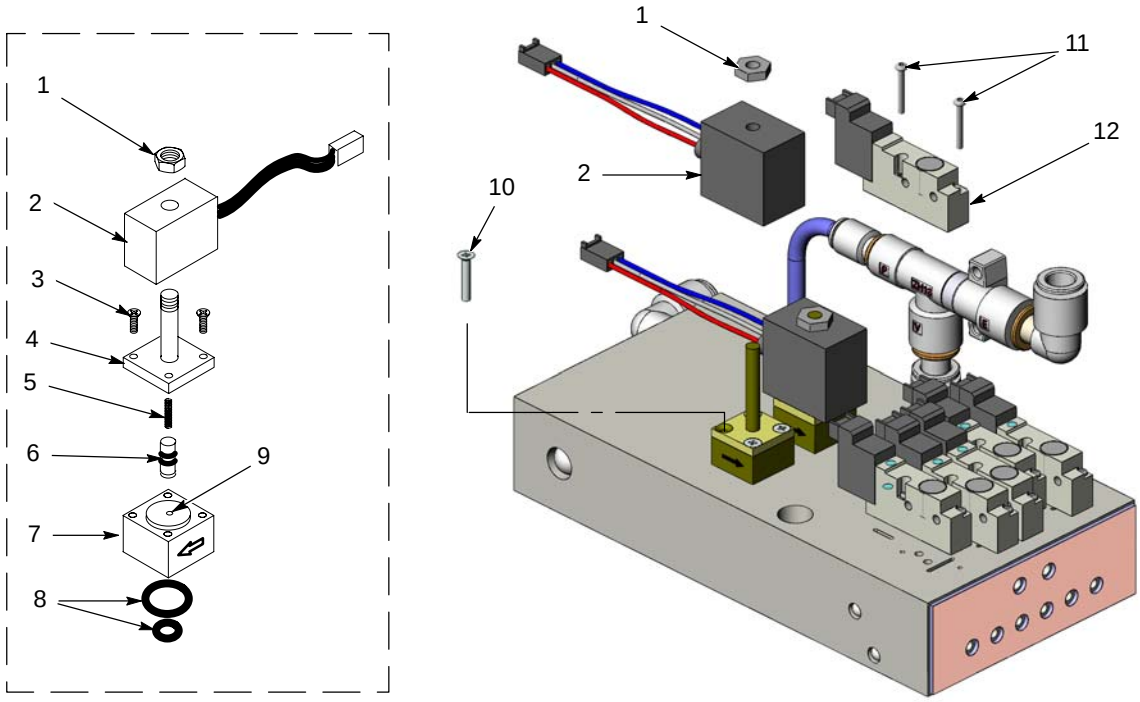


Figure 12 Manifold Repair

1. Nut
2. Coil
3. Short screws (2)
4. Valve stem
5. Spring
6. Cartridge
7. Valve body
8. O-rings (2)
9. Orifice
10. Long screws (2)
11. Screws (2)
12. Solenoid valve

Parts

To order parts, call the Nordson Finishing Customer Support Center at (800) 433-9319 or your local Nordson representative.

Pump Panel Replacement Parts

See Figure 13.

Item	Part	Description	Quantity	Note
1	303132	VALVE, $^3/_4$ in. I/O, air operated	AR	A
2	- - - - - -	MANIFOLD ASSEMBLY, HDLV pump control	AR	B, E
3	1081194	PUMP ASSEMBLY, HDLV	AR	A
4	1043906	POWER SUPPLY, 24, 5, 12 VDC, 60 W	1	
5	334805	FILTER, line, RFI, power, 10A	1	
6	334806	SWITCH, round, 2 position, 90 degree	1	
7	288806	CONTACT BLOCK, 2 N.O. contacts	1	
8	1009090	FUSE, time delay, 215 series, 3.15 A, 5 x 20 mm	2	
9	1099534	VALVE, solenoid, 3 port, 24 V, with adapter	AR	A, F
10	1092274	KIT, PCA replacement, Prodigy pump control	1	A, C
11	1062366	FILTER, air, $^1/_2$ in. NPT	1	
11A	1064136	• FILTER ELEMENT, air, 5 micron, AF40	1	
12	901151	VALVE, ball, $^1/_2$ in. NPT	1	
13	1034396	MUFFLER, exhaust, $^1/_4$ in. NPT male	AR	A
14	1064135	REGULATOR, manifold, modular style	5	D
15	1065536	GAUGE, air, 0-100 psi, 0-0.7 MPA, 1/8 RPT	5	

NOTE A: Quantities for AR items vary depending on number of guns in system.

B: When replacing manifold, perform calibration procedure as described in Manual Gun Controller manual.

C: Board is shipped with 4-mm air tubing already installed in pressure transducer fittings. When replacing board, set switch settings as shown on page 9 instead of those shipped with instruction sheet shipped with board. You must also perform calibration procedure as described in Manual Gun Controller manual.

D: Regulators must be set to the pressure specified in Figure 2.

E: For manifold assembly part numbers refer to manual 1081195.

F: If using an old harness with 3 positions, use the supplied adapter. If using a new harness with 2 positions, then the supplied adapter can be discarded.

AR: As Required

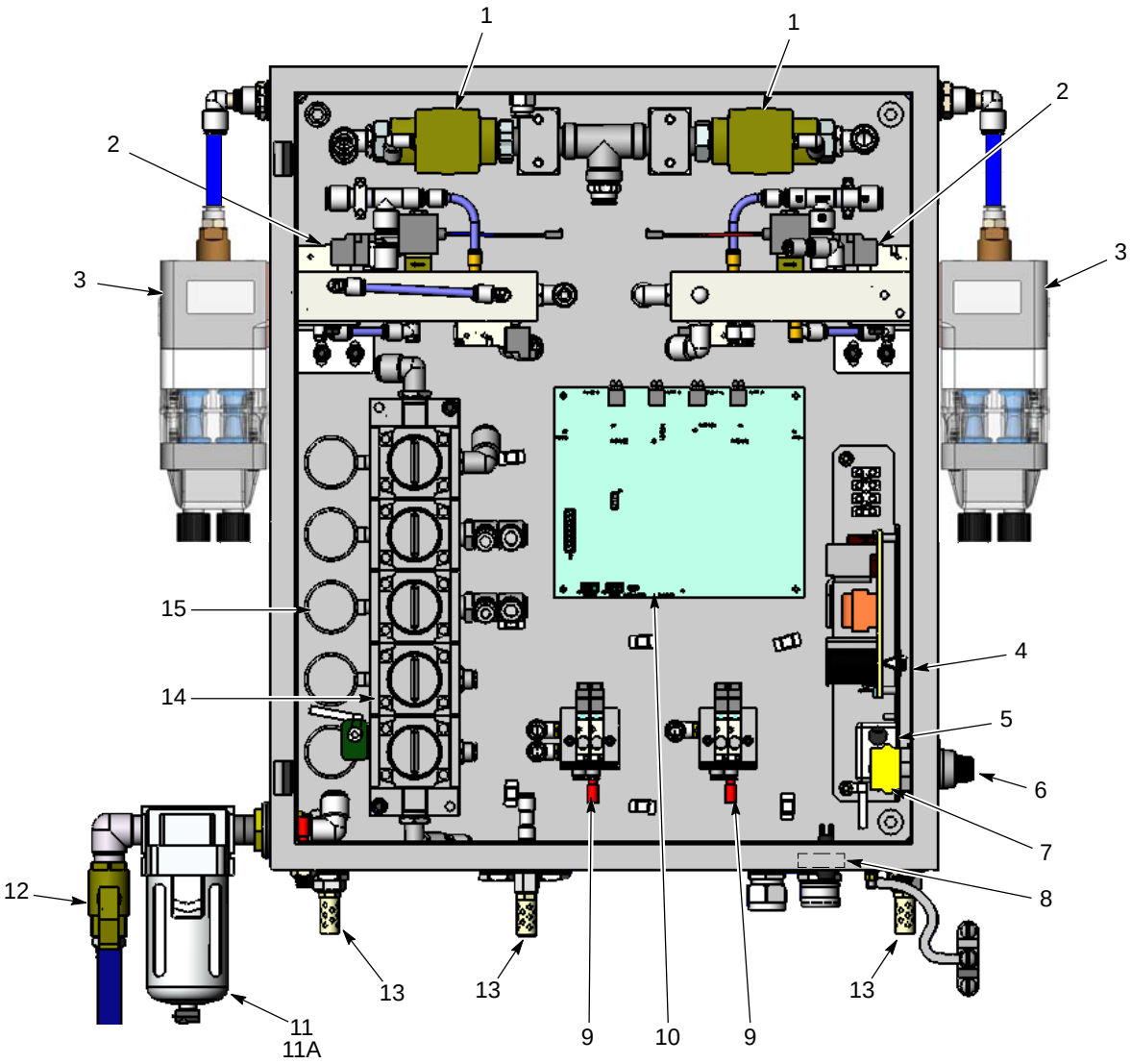


Figure 13 Pump Panel Components (Two-Gun Panel Shown)

Manifold Air and Powder Tubing Part Numbers

See Figure 14.

Item	Part	Description	Item	Part	Description
A	900740	10 mm Blue polyurethane	F	900740	10 mm Blue polyurethane
B	173101	8 mm Clear polyethylene	G	900740	10 mm Blue polyurethane
C	173101	8 mm Clear polyethylene	H	900742	6 mm Blue polyurethane
D	173101	8 mm Clear polyethylene	1 - 8	900617	4 mm Clear polyurethane
E	900740	10 mm Blue polyurethane			

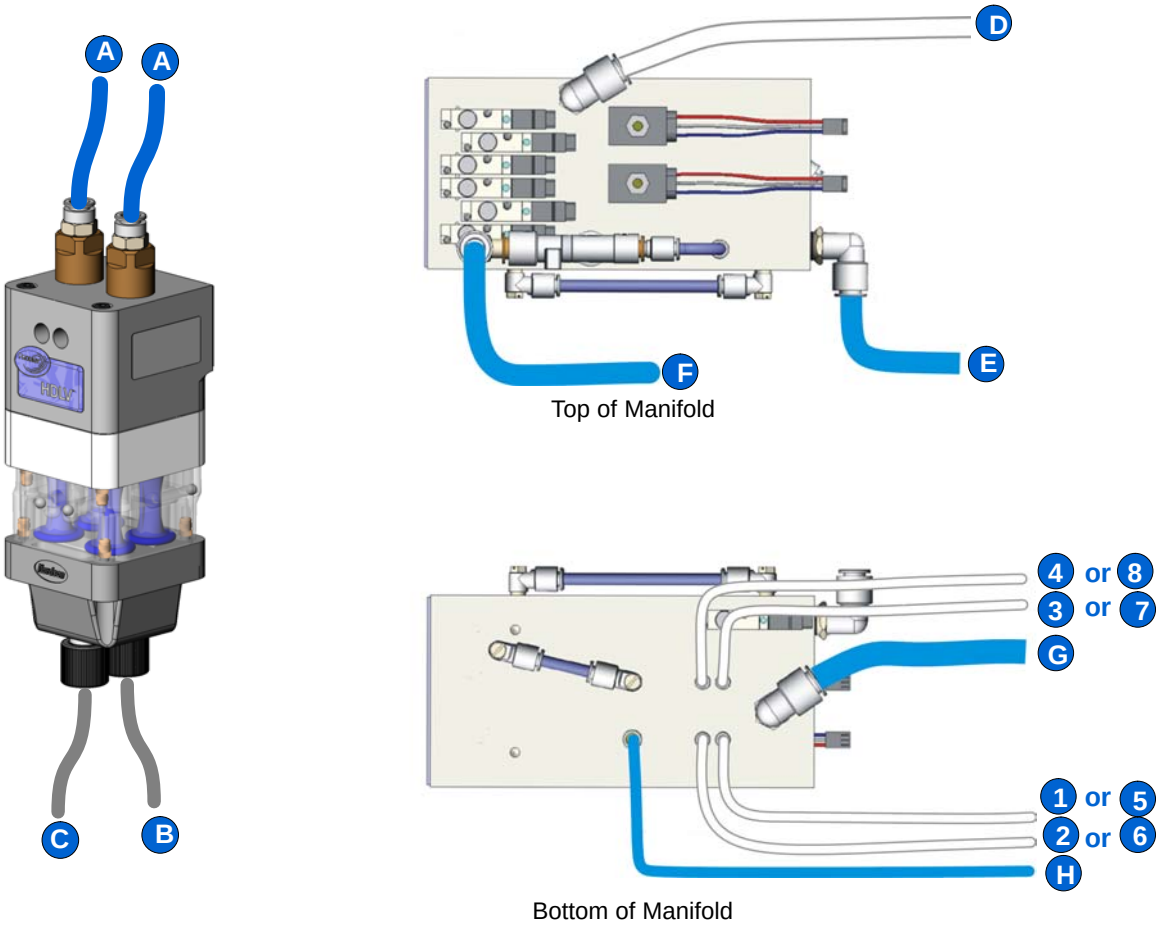


Figure 14 Air and Powder Tubing Part Numbers

PUMP CONTROL HARNESSES					
PIN NO.	WIRE COLOR	FUNCTION	PIN NO.	WIRE COLOR	FUNCTION
1	RED	SOLENOID COMMON (+24 VDC)	8	BLACK	DELIVERY PINCH VALVE, SOLENOID 6
2	RED	SOLENOID COMMON (+24 VDC)	9	BLACK	PRESSURE SOURCE, SOLENOID 5
3	RED	SOLENOID COMMON (+24 VDC)	10	BLACK	SUCTION PINCH VALVE, SOLENOID 4
4	RED	SOLENOID COMMON (+24 VDC)	11	BLACK	SUCTION PINCH VALVE, SOLENOID 3
5	RED	SOLENOID COMMON (+24 VDC)	12	BLACK	PRESSURE SOURCE, SOLENOID 2
6	RED	SOLENOID COMMON (+24 VDC)	13	BLACK	DELIVERY PINCH VALVE, SOLENOID 1
7	RED	SOLENOID COMMON (+24 VDC)	14	BLACK	VACUUM, SOLENOID 7

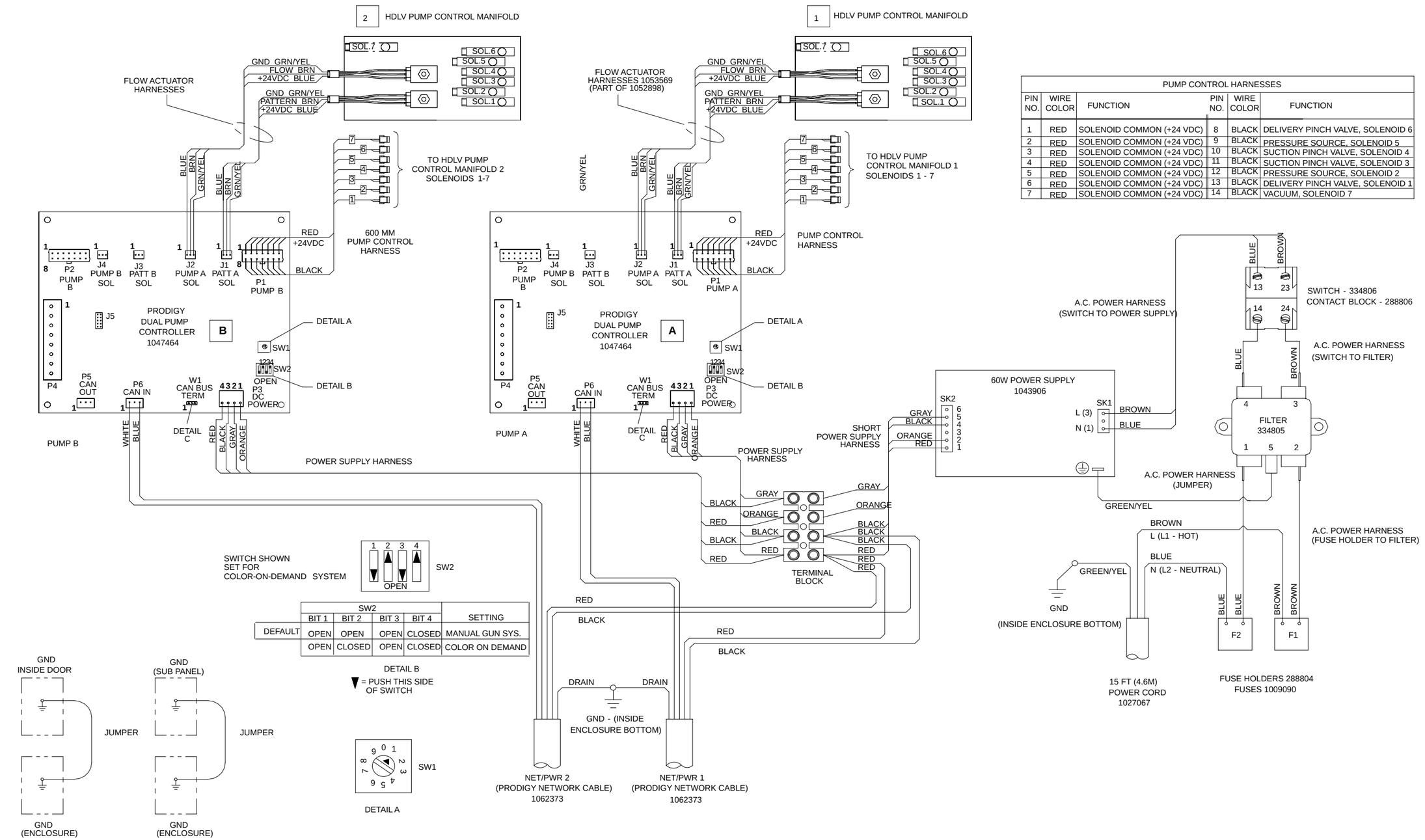
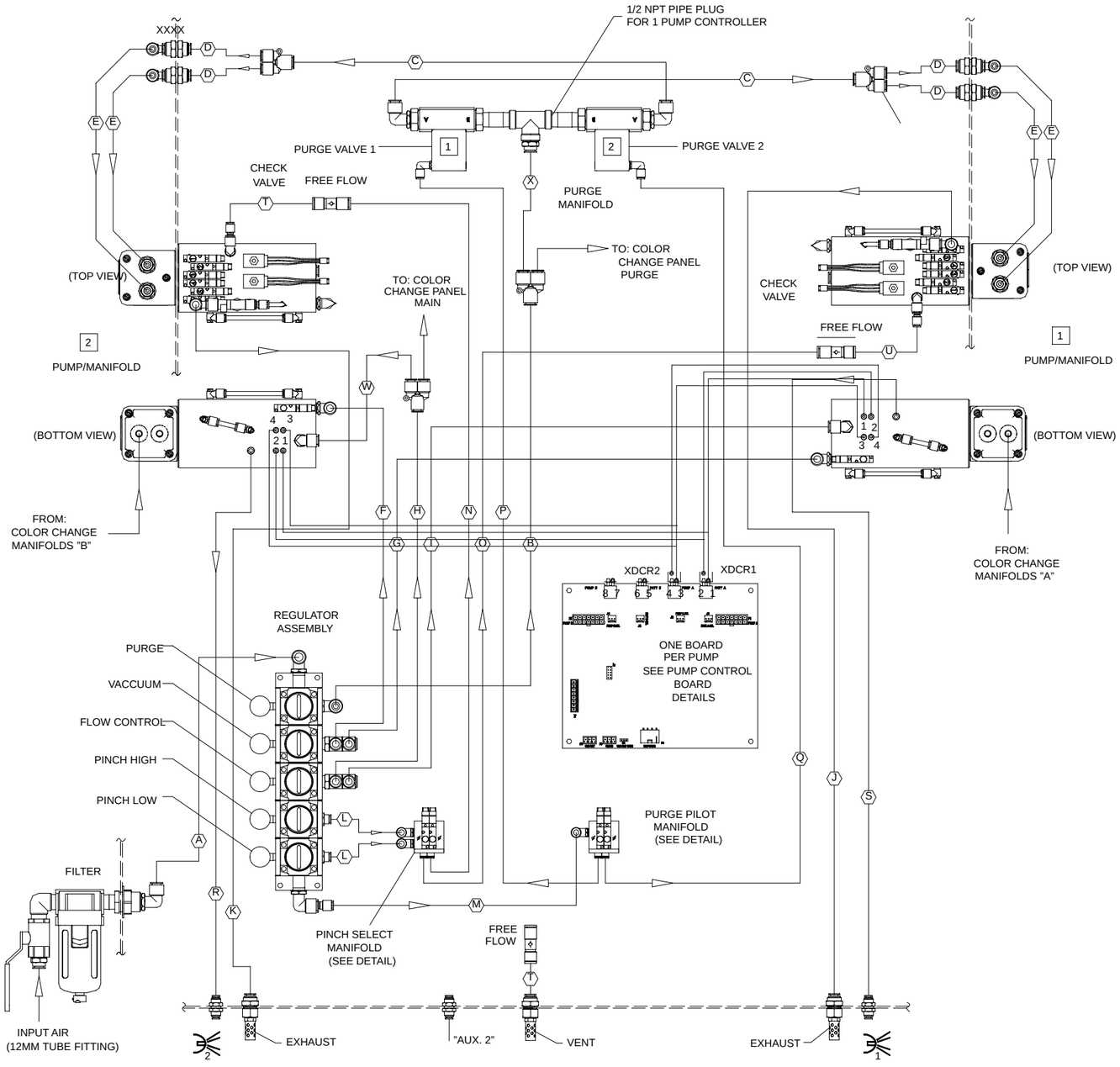
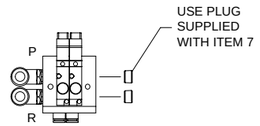
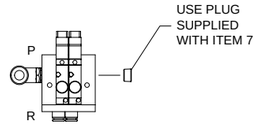


Figure 15 Pump Control Panel Wiring Diagram

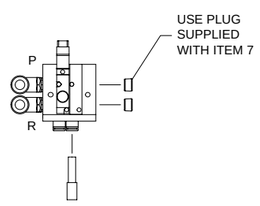




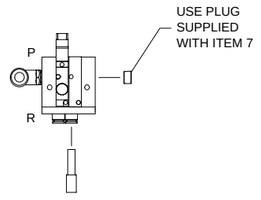
PINCH SELECT MANIFOLD DETAIL
(CONFIGURATION FOR 2 PUMP CONTROLLER)



PURGE PILOT MANIFOLD DETAIL
(CONFIGURATION FOR 2 PUMP CONTROLLER)

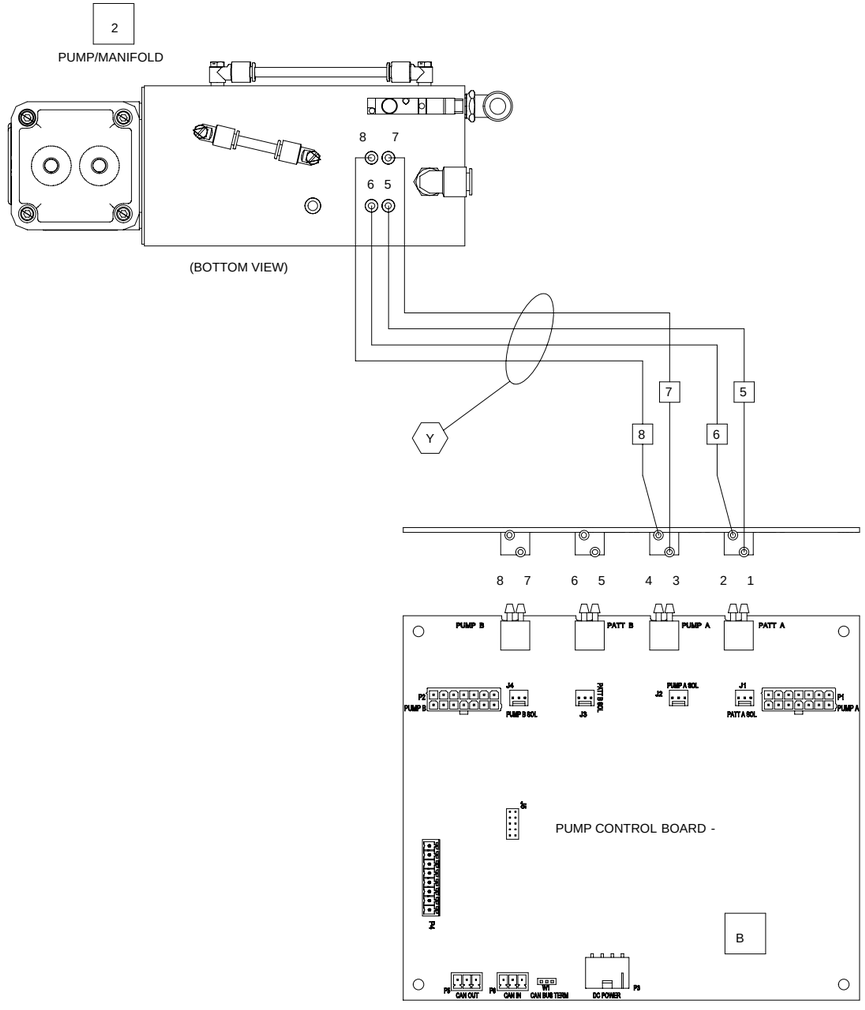


PINCH SELECT MANIFOLD DETAIL
(CONFIGURATION FOR 1 PUMP CONTROLLER)



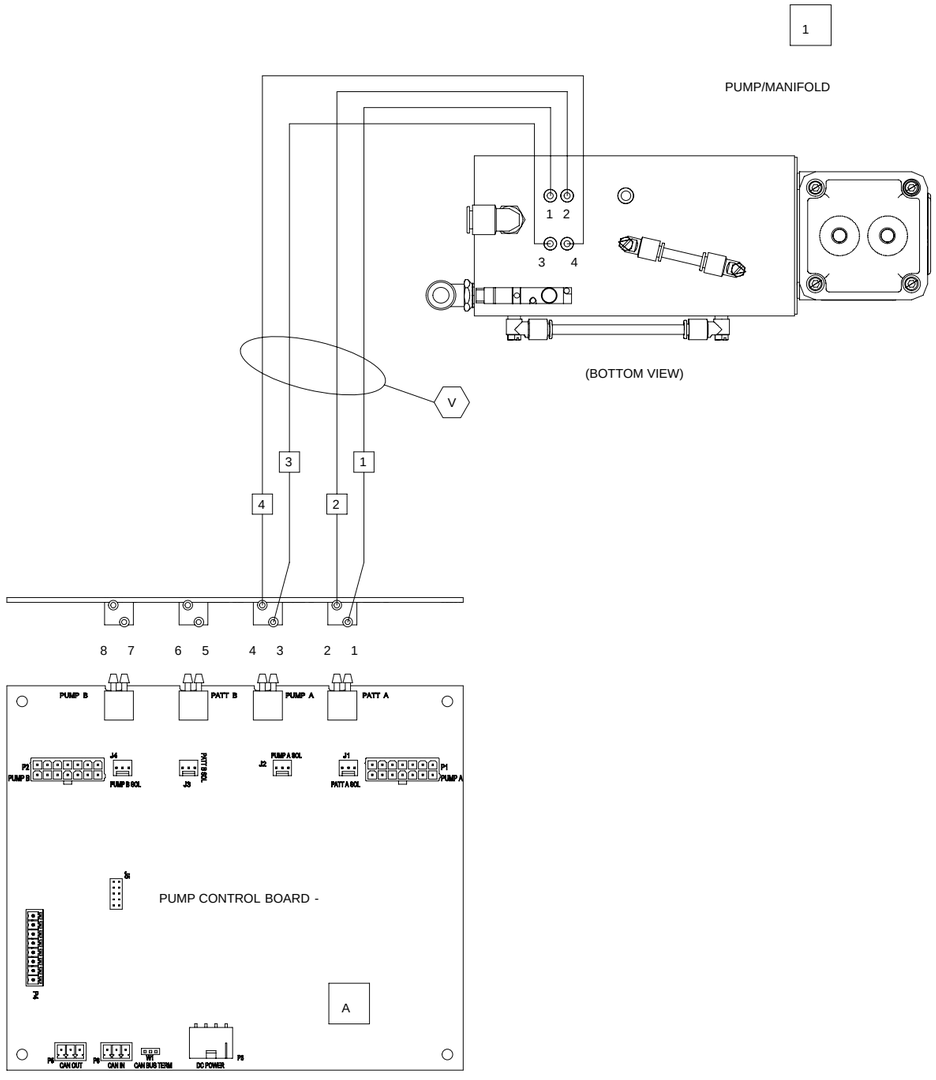
PURGE PILOT MANIFOLD DETAIL
(CONFIGURATION FOR 1 PUMP CONTROLLER)

Figure 16 Pump Control Panel Pneumatic Diagram (Sheet 1 of 2)



PUMP CONTROL

BOARD "B" DETAIL



PUMP CONTROL

BOARD "A" DETAIL

Figure 17 Pump Control Panel Pneumatic Diagram (Sheet 2 of 2)

DECLARATION of CONFORMITY

PRODUCT:

Prodigy Color on Demand, HDLV Manual Pump Cabinet and Controls
One or two gun, manual pump system for use with a Manual Applicator and Controller.

APPLICABLE DIRECTIVES:

98/37/EEC	(Machinery)
2006/95/EC	(Low–Voltage Directive)
2004/108/EEC	(Elecromagnetic Compatibility Directive)

STANDARDS USED TO VERIFY COMPLIANCE:

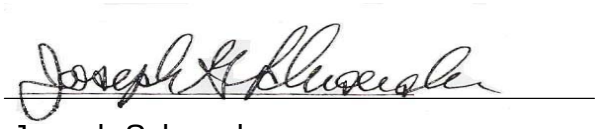
IEC60417	EN61000–6–2
EN12100	EN55011
EN60204	EN61000–6–3
NFPA79	

PRINCIPLES:

This product has been manufactured according to good engineering practice.
The product specified conforms to the directive and standards described above.

Quality Certificate:

DNV ISO9001:2000



Date: 15 October 2007

Joseph Schroeder
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Finishing Product Development Group

Nordson

Nordson Corporation • Westlake, Ohio

DOC14019A02