Prodigy® Color-on-Demand® System
Generation III
Customer Product Manual
Part 1084829A02
Issued 10/10

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

NORDSON CORPORATION • AMHERST, OHIO • USA
# Table of Contents

**Introduction** ......................... 1  
System Manuals .......................... 1  
Single Gun System ...................... 1  
Dual Gun System .......................... 1  
**System Components** .................. 2  
Installation ................................ 3  
Specifications .......................... 3  
System Pump Stand Installation ........ 3  
Controller Installation ................ 4  
Pump Stand Mounting .................... 4  
Wall or Panel Mounting .................. 4  
Rail Mounting ........................... 4  
Grounding ............................... 4  
Connection Diagram (Rear View of System) .................. 5  
System Power, Ground, and Gun Controller Connections ............... 6  
System Air Supply and Gun Air Connections .................. 7  
Color-On-Demand Controller and Foot Switch Connections ............... 8  
Ethernet Cable Termination ............. 9  
Delivery Tubing Installation ........... 12  
Suction and Dump Tubing Installation .... 13  
Remote Color Selection and Color Change Start Option .............. 14

---

**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  
555 Jackson Street  
Amherst, OH 44001

**Notice**  
This is a Nordson Corporation publication which is protected by copyright. Original copyright date 2008. 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**  
Prodigy, Color-on-Demand, Nordson, and the Nordson logo are registered trademarks of Nordson Corporation.
Introduction

This manual covers system installation. For detailed information on system operation, maintenance, troubleshooting, and repair, refer to the following manuals.

**System Manuals**

<table>
<thead>
<tr>
<th>Manual Part Number</th>
<th>Title/Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1081751</td>
<td>Color-on-Demand System Operator Card: Operation and color changing</td>
</tr>
<tr>
<td>1066483</td>
<td>Color-on-Demand Controller: Controller setup, system testing, controller and panel parts, wiring and pneumatic diagrams, schematics</td>
</tr>
<tr>
<td>1081747</td>
<td>Color-on-Demand Pump Control Panel: Pump manifold/circuit board configuration, troubleshooting, panel parts, wiring and pneumatic diagrams, schematics</td>
</tr>
<tr>
<td>1066584</td>
<td>Color-on-Demand Manifold and Dump Valve: Repair and parts</td>
</tr>
<tr>
<td>1077434</td>
<td>Manual Spray Gun: Installation, troubleshooting, repair, parts</td>
</tr>
<tr>
<td>1102106</td>
<td>Manual Spray System: controller, gun pump panel, system</td>
</tr>
<tr>
<td>1081071</td>
<td>Manual Gun System Troubleshooting: Basic gun and pump troubleshooting</td>
</tr>
<tr>
<td>1081195</td>
<td>HDLV Pump and controls: Troubleshooting, repair, and parts</td>
</tr>
</tbody>
</table>

**Single Gun System**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1084743</td>
<td>SYSTEM, Color-on-Demand, manual, single, Prodigy Generation III</td>
</tr>
<tr>
<td>1054451</td>
<td>• KIT, controller, manual, Prodigy</td>
</tr>
<tr>
<td>1084554</td>
<td>• KIT, controller interface, Prodigy color change</td>
</tr>
<tr>
<td>1077058</td>
<td>• GUN, manual, 95 kV, Generation II, Prodigy</td>
</tr>
<tr>
<td></td>
<td>• CONTROLLER, single pump, Prodigy wall mount</td>
</tr>
<tr>
<td>1080507</td>
<td>• KIT, ship-with, Prodigy II, wall mount system</td>
</tr>
<tr>
<td>1067148</td>
<td>• KIT, ship-with, Color-on-Demand, Prodigy</td>
</tr>
</tbody>
</table>

**Dual Gun System**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1084744</td>
<td>SYSTEM, Color-on-Demand, manual, dual, Prodigy Generation III</td>
</tr>
<tr>
<td>1054451</td>
<td>• KIT, controller, manual, Prodigy</td>
</tr>
<tr>
<td>1084554</td>
<td>• KIT, controller interface, Prodigy color change</td>
</tr>
<tr>
<td>1077058</td>
<td>• GUN, manual, 95 kV, Prodigy</td>
</tr>
<tr>
<td></td>
<td>• CONTROLLER, dual pump, Prodigy wall mount</td>
</tr>
<tr>
<td>1080507</td>
<td>• KIT, ship-with, Prodigy wall mount</td>
</tr>
<tr>
<td>1067148</td>
<td>• KIT, ship-with, Color-on-Demand, Prodigy</td>
</tr>
</tbody>
</table>
System Components
The Prodigy Color-on-Demand system has been carefully tested, inspected, and packaged prior to shipping. Upon receipt, inspect the shipping materials and components for visible damage. Report any visible damage immediately to the shipper and to your Nordson representative.

The Prodigy Color-on-Demand System consists of the components shown in Figure 1.

The system pump stand is shipped bolted to a pallet. The spray guns, controllers, and installation kits are shipped on another pallet.

![System Components Diagram]

Figure 1   System Components
Installation

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

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>100–240 V, 50/60 Hz, 275 VA max. 1 PH</td>
</tr>
<tr>
<td>Air Input Max</td>
<td>6.2–7.6 bar (90–110 psi)</td>
</tr>
<tr>
<td>Weight *</td>
<td>125 kg (275 lbs)</td>
</tr>
<tr>
<td>Remote Control Input</td>
<td>24 V, 25 mA max</td>
</tr>
</tbody>
</table>

* Weight of stand with control panels, color change manifolds, cover, and accumulator tank mounted.

**System Pump Stand Installation**

The System Pump Stand must be located as close to the powder feed hoppers as possible, since the maximum suction tubing length is 3 meters (9 ft, 9 inches) from the manifold inlet ports to the pump adapters on the feed hoppers.

**WARNING:** The stand weighs 125 kg (275 lbs). Use approved lifting equipment to remove the stand from the shipping pallet and move it to its installation location.

Unbolt the stand from the shipping pallet and secure two nylon lifting straps to the horizontal bar at the top of the stand. Secure the straps to the forks of a forklift or a crane hook. Lift the stand off the pallet and move it to the chosen location.

Bolt the stand securely to the floor with the lag bolts included in the installation kits.

Figure 2 Packaged System Pump Stand
Controller Installation

Install the Manual Gun Controller and Color-On-Demand Controller on a wall, panel, or platform rail before making any connections. Both controllers must be accessible to the operator at all times.

Both controllers are shipped with the same mounting hardware.

**NOTE:** Both Gun 1 controller and Gun 2 controller must be set for the “Gun No: 1” network address. Refer to the Prodigy Manual Spray Gun Controller manual for more information.

Pump Stand Mounting

The panel stand is shipped with a controller support arm. It can be bolted to the side of the stand with the included M8 x 30 bolts and washers. Use the U-brackets and M6 fasteners to mount the controllers to the arm; color controller above and gun controller below.

Wall or Panel Mounting

Use the U-bracket and 6M fasteners to mount the controllers to a wall or panel.

Rail Mounting

Use the Rail Mount hardware to mount the controllers to a platform rail. The bracket will fit any 2 inch wide rail or bar.

Grounding

Connect the ground strap to the controller ground stud and clamp it to a true earth ground.

---

**Figure 3** Controller Mounting
Figure 4  System Diagram (Rear View of System)
System Power, Ground, and Gun Controller Connections

INPUT POWER
100–240 VAC 50/60 Hz 1φ 275 VA MAX
15 Amp Breaker Max
Brown: L1 (hot)
Blue: L2 (neutral)
Green/Yellow: GND

Figure 5  System Power, Ground, and Gun Controller Connections

Optional Gun Cable Extensions
4 meter: 1073027
6 meter: 1083912

Part 1084829A02 © 2010 Nordson Corporation
System Air Supply and Gun Air Connections

Air Supply
6.2–7.6 bar (90–110 psi)
(12-mm Tubing x 1/2-in. NPT fitting provided)

Figure 6  System Air Supply and Gun Air Connections
Color-On-Demand Controller and Foot Switch Connections

1. Connect the power cables to the Color-on-Demand controllers.

2. Cut one of the RJ45 jacks off the 100 ft. long Ethernet cable included in the ship-with kit, leaving a jack on the other end.

3. Remove the back from the controller and plug the Ethernet cable into the socket as shown.

4. Pull the cut end of the cable through the provided 1/2 in. conduit connector and conduit to the color panel and route it inside the panel.

5. Connect the cable leads to the termination module as shown on page 9.

6. Connect the conduit to the controller and panel.

7. If you are going to use the footswitches, remove the bottom covers and install the provided connectors. Connect 6-mm tubing from the FOOTSWITCH A & B fitting to the IN fitting on the switch, and from the OUT fitting to the SWA RTN or SWB RTN ports on the tubing manifolds.

Figure 7  Color-on-Demand Controller and Foot Switch Connections
**Ethernet Cable Termination**

Follow these steps to complete the ethernet cable termination.

1. Cut the RJ45 jack from one end of the Ethernet cable.

2. Route the cut end of the Ethernet cable into the color panel.

3. Trim back the cable jacket about eight inches.

4. Cut the foil, clear wrapper, and pull string on the cable.

5. Trim back the four twisted pair wires to approximately 2.25 inches.

6. See Figure 8. Arrange the twisted pair wires in the module according to the T568-B wiring scheme, with the ends at least 1/4 in. through the terminals. Retain the twists in the wires as close to the terminals as possible. Use a 110 punch-down tool to attach the wires.

7. Trim the ends of the wires as close to the termination module as possible.

8. Install the retention caps on the termination module.

9. Crimp a ground lug to the shield wire.

10. Assemble the ethernet termination case as shown. For rear-connect modules, snap the termination module into the bezel, then install the bezel into the adapter.
Use Type T568B cables.
Use T568-B wiring scheme.

**Side-Connect Module (No Longer Used)**
(Top-Down View)

**Rear-Connect Module**
(End View)

---

**Figure 8  Ethernet Cable Connection to Termination Module**
11. See Figure 9. Install the termination modules under the top side of the enclosure.

12. Connect the 1 meter (3 ft.) long crossover cables from the termination modules to the PLCs.

13. Attach the termination module ground wires to the cabinet ground stud.
Delivery Tubing Installation

Connect 8-mm clear delivery tubing from the pump outlets to the spray guns. Observe tubing length guidelines, coil excess tubing in loops of at least 1 meter (3 ft) diameter, and lay coil flat on floor.

Flexible 6 x 8 mm Delivery Tubing:
- 9 m (30 ft) min
- 23 m (75 ft) max
- Recommended 20 m (65.5 ft)

Coil Excess Tubing And Lay Flat
Use Tubing Cutter
To Cut Tube Ends Square Before Installing

1 m (3 ft)
Minimum Loop Diameter

Figure 10  Delivery Tubing Installation
Suction and Dump Tubing Installation

12 mm Dump Tubing (Route to Booth)

Color Change Manifold

8-mm OD Clear Tubing
3 m (9 ft, 9 in.) maximum

Optional 1078006 Adapter for Flexible Tubing

Pickup Tube Adapters

Vent Hoppers into Booth

Color 2 Powder Feed Hopper (Not included with system)

Color 1 Powder Feed Hopper (Not included with system)

Standard 8-mm Poly Tubing

Flexible 8-mm Tubing

8-mm OD Clear Tubing
3 m (9 ft, 9 in.) maximum

Optional 1078006 Adapter for Flexible Tubing

Figure 11  Suction and Dump Tubing Installation
Remote Color Selection and Color Change Start Option

Bits 1–5: Binary color selection, colors 1–28
Bit 1 = Least Significant Bit
Bit 5 = Most Significant Bit
RS2: Remote Start signal
24 V, 25 mA, sourcing (high true)
Set the color selection bits first, then strobe the Remote Start bit.

**Figure 12  Remote Color Selection and Color Change Start Connections**