



Nordson Corporation

# OPERATOR'S CARD

P/N 108684C

## CleanSpray® System Operation

### Introduction

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The individual manuals for the *CleanSpray Gun*, *CleanSpray Controller* and *Model 25B Pump* are included with each component. The following instructions are to be followed when using properly deionized or distilled water as the cleaning fluid. If cleaning material other than deionized or distilled water is used, please consult your local Nordson representative.



**WARNING:** Read and understand the *Safety* section in the *25B Pump* before operating the system. Failure to observe recommended safety procedures may result in personnel injury and/or equipment damage.



**CAUTION:** To prevent damage or excessive wear to the CleanSpray system, use properly deionized or distilled water only.

### Non-Circulating System Installation

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**CAUTION:** Turn OFF the can feed mechanism and star-wheel on the spray machine during installation and set-up of the CleanSpray System.



**CAUTION:** To prevent damage or excessive wear to the CleanSpray system, use properly deionized or distilled water only.

1. See Figure 1. Install model 25B pump (2), filter assembly (3), and filter lubricator kit (1). Refer to the *Model 25B Pump* manual for installation instructions.
2. In the filter assembly, (3), replace the 0.006 in. mesh filter screen with a 0.002 in. mesh filter screen part 161 344.
3. Connect a high pressure fluid hose from the filter assembly (3) outlet to the fluid pressure regulator (4) inlet.

**NOTE:** Use a fluid line rated 500 psi or more and compatible with the cleaning fluid being used. Stainless steel tubing or PTFE-lined hose is recommended.

4. Connect a fluid line from the fluid pressure regulator (4) outlet to a manifold or tee. The manifold or tee supplies cleaning fluid to each spray machine.



**CAUTION:** To prevent damage to equipment, make sure the CleanSpray gun does not interfere with any moving parts of the spray machine.

5. Mount the CleanSpray gun (5) on the lacquer spray gun (7) using the CleanSpray bracket (6). **DO NOT INSTALL THE CLEANSPRAY NOZZLE AT THIS TIME.** Refer to the *CleanSpray Gun* manual for bracket installation instructions.

**NOTE:** The CleanSpray bracket is designed for use with either the A7A, A10A, A14A or A20A spray guns with 2.5-in. extensions.

6. Install the ball valve (10) to the fluid supply hose.
7. Install the T-filter (15).

## Non-Circulating System Installation *(contd)*

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8. Connect the fluid supply hose from the T-filter (15) to the CleanSpray gun (5).
9. Install the CleanSpray controller (8). Refer to the *CleanSpray Controller* manual for installation instructions. The optional remote push-button, part 149 092, is recommended for use during start-up and installation. A permanent remote manual push-button (customer supplied) should also be installed at the spray machine.
10. Ensure that the CleanSpray controller (8) delay, duration, and index functions are set to the desired parameters. Refer to the *CleanSpray Controller* manual for setting index functions.

Recommended settings are

- Duration: 10 msec
  - Delay: 10 msec
  - Index: 10 lacquer sprays
11. Connect wire leads from the CleanSpray and lacquer guns (5, 7) to the CleanSpray controller (8). Refer to the *CleanSpray Controller* manual for electrical installation instructions.
  12. Repeat steps 5 through 10 for the remaining lacquer spray guns.

## Non-Circulating Start-Up

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### **Initial Start-Up**

When initially starting the CleanSpray System, a cleaning flush must be performed to purge the system of contaminants.



**CAUTION:** To prevent damage to the CleanSpray system, use properly deionized or distilled water only.

Perform START-UP steps 1 through 11, using a mixture of deionized or distilled water with butyl cellusolve, then flush again with plain deionized or distilled water.

### **System Start-Up**

1. See Figure 1. Place a waste bucket under the filter drain valve (12).
2. Open the filter drain valve (12).
3. Place the siphon rod (13) into the supply bucket. If bulk-feeding, open the input line to the 25B pump (2).
4. Turn pump air pressure regulator (14) clockwise until the input pressure to the 25B pump (2) is 10–30 psi.
5. Pump fluid through the system into the waste bucket for several minutes.

6. Close the filter drain valve (12).
7. Turn the timer (9) ON.
8. Turn the CleanSpray controller (8) ON.



**WARNING:** Injection. Do not point this device at yourself or other personnel. Failure to observe this warning may result in serious injury or death.

9. Use the CleanSpray controller's (8) remote push button to fire the CleanSpray gun (5) several times into an empty container until it is completely purged of air.
10. Install the CleanSpray nozzle (11) to the CleanSpray gun (5).
11. Carefully fire the CleanSpray gun (5) several times into an empty container until the gun is completely purged of air.
12. Adjust the CleanSpray gun bracket (6) until the CleanSpray nozzle (11) is approximately 1 in. (25.4 mm) away from the lacquer gun (7) spray nozzle. Aim the cleaning spray towards the exhaust duct/chute. The cleaning spray should hit approximately .040 in. (1mm) back from the tip of the nozzle.
13. Repeat steps 7 through 12 for each CleanSpray gun (5).

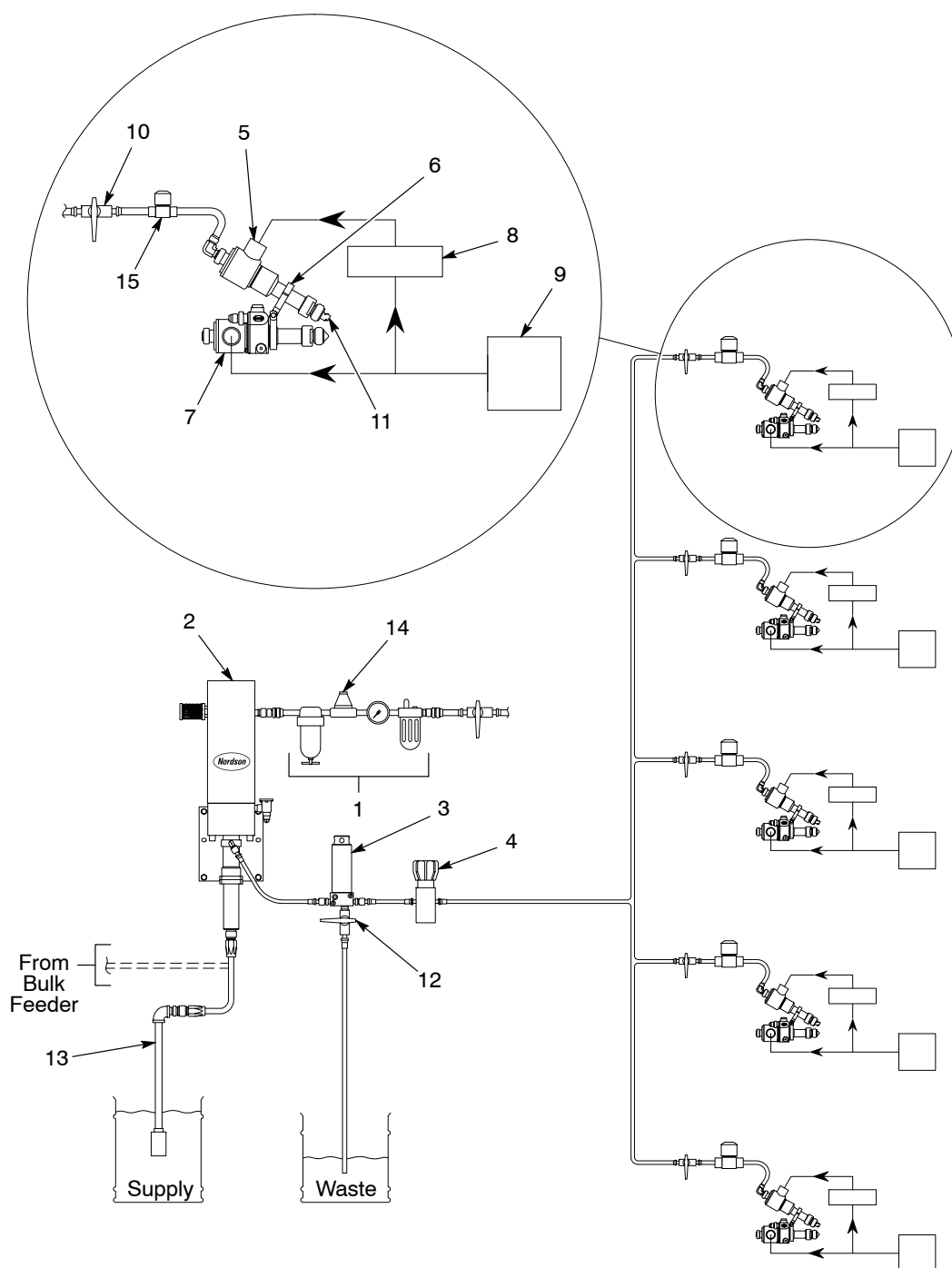


Figure 1 Typical Non-Circulating System Configuration

- |                             |                           |                            |
|-----------------------------|---------------------------|----------------------------|
| 1. Filter/lubricator kit    | 6. CleanSpray gun bracket | 11. CleanSpray nozzle      |
| 2. 25B pump                 | 7. Lacquer spray gun      | 12. Drain valve            |
| 3. Filter assembly          | 8. CleanSpray controller  | 13. Siphon rod             |
| 4. Fluid pressure regulator | 9. Timer                  | 14. Air pressure regulator |
| 5. CleanSpray gun           | 10. Ball valve            | 15. T-Filter               |

# Circulating System Installation

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**CAUTION:** Turn OFF the can feed mechanism and star-wheel on the spray machine during installation and set-up of the CleanSpray System.



**CAUTION:** To prevent damage or excessive wear to the CleanSpray system, use properly deionized or distilled water only.

1. See Figure 2. Install model 25B pump (2), filter assembly (19), and filter lubricator kit (18). Refer to the *Model 25B Pump* manual for installation instructions.
2. In the filter assembly (19) replace the 0.006 in. mesh filter screen, part 161 344.
3. Connect an air supply line to the air input (11).

**NOTE:** Use a fluid line rated for 500 psi or more and compatible with the cleaning fluid being used. Stainless steel tubing or PTFE-lined hose is recommended.

4. Connect a high pressure fluid hose from the filter assembly (19) outlet to the fluid pressure regulator (4) inlet.
5. Connect a supply line (12) from the fluid pressure regulator (4) outlet to a manifold or tee. The manifold or tee supplies cleaning fluid to each spray machine.
6. Install the restrictor into the fixed orifice circulation valve (13). Refer to *Fixed Orifice Regulator* instruction sheet.



**CAUTION:** To prevent damage to equipment, make sure the CleanSpray gun does not interfere with any moving parts of the spray machine.

7. Mount the CleanSpray gun (5) onto the lacquer spray gun (9) using the CleanSpray bracket (6). DO NOT INSTALL CLEANSpray NOZZLE AT THIS TIME. Refer to the *CleanSpray Gun* manual for bracket installation instructions.

**NOTE:** The CleanSpray bracket is designed for use with either the A7A, A10A, A14A or A20A spray guns with 2.5-in. extensions.

8. Install the ball valve (10) to the supply line (12).
9. Install the F-filter (17).
10. Connect the fluid supply line from the T-filter (17) to the CleanSpray gun (5).
11. Install the CleanSpray controller (7). Refer to the *CleanSpray Controller* manual for installation instructions. The optional remote push-button, part 149092, is recommended for use during start-up and installation. A permanent remote manual push-button (customer supplied) should also be installed at the spray machine.
12. Ensure that the CleanSpray controller (7) delay, duration, and index functions are set to the desired parameters. Refer to the *CleanSpray Controller* manual for setting index functions. Recommended settings are
  - Duration: 10 msec
  - Delay: 10 msec
  - Index: 10 lacquer sprays
13. Connect the wire leads from the CleanSpray and lacquer guns (5, 9) to the CleanSpray controller (7). Refer to the *CleanSpray Controller* manual for electrical installation instructions.
14. Repeat steps 4 through 9 for the remaining lacquer spray guns.
15. Connect a return supply line (15) from the last gun to the fixed orifice circulation valve (13).

# Circulating System Start-Up

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## Initial Start-up

When initially starting the CleanSpray System, you must perform a cleaning flush to purge the system of contaminants.



**CAUTION:** To prevent damage or excessive wear to the CleanSpray system, use properly deionized or distilled water only.

Perform START-UP steps 1 through 12, using a mixture of deionized or distilled water with butyl cellulose, then flush again with plain deionized or distilled water.

## System Start-up

1. See Figure 2. Place a waste bucket under the fixed orifice regulator drain (3).
2. Open the fixed orifice circulation valve (13) to the ORIFICE BY-PASS position.
3. Place the pump siphon rod (1) into the supply bucket. If bulk-feeding, open the input line to the 25B pump (2).
4. Open the ball valves (10) to cleaning guns.
5. Turn the pump air pressure regulator (15) clockwise until input pressure to the pump is 10–30 psi.

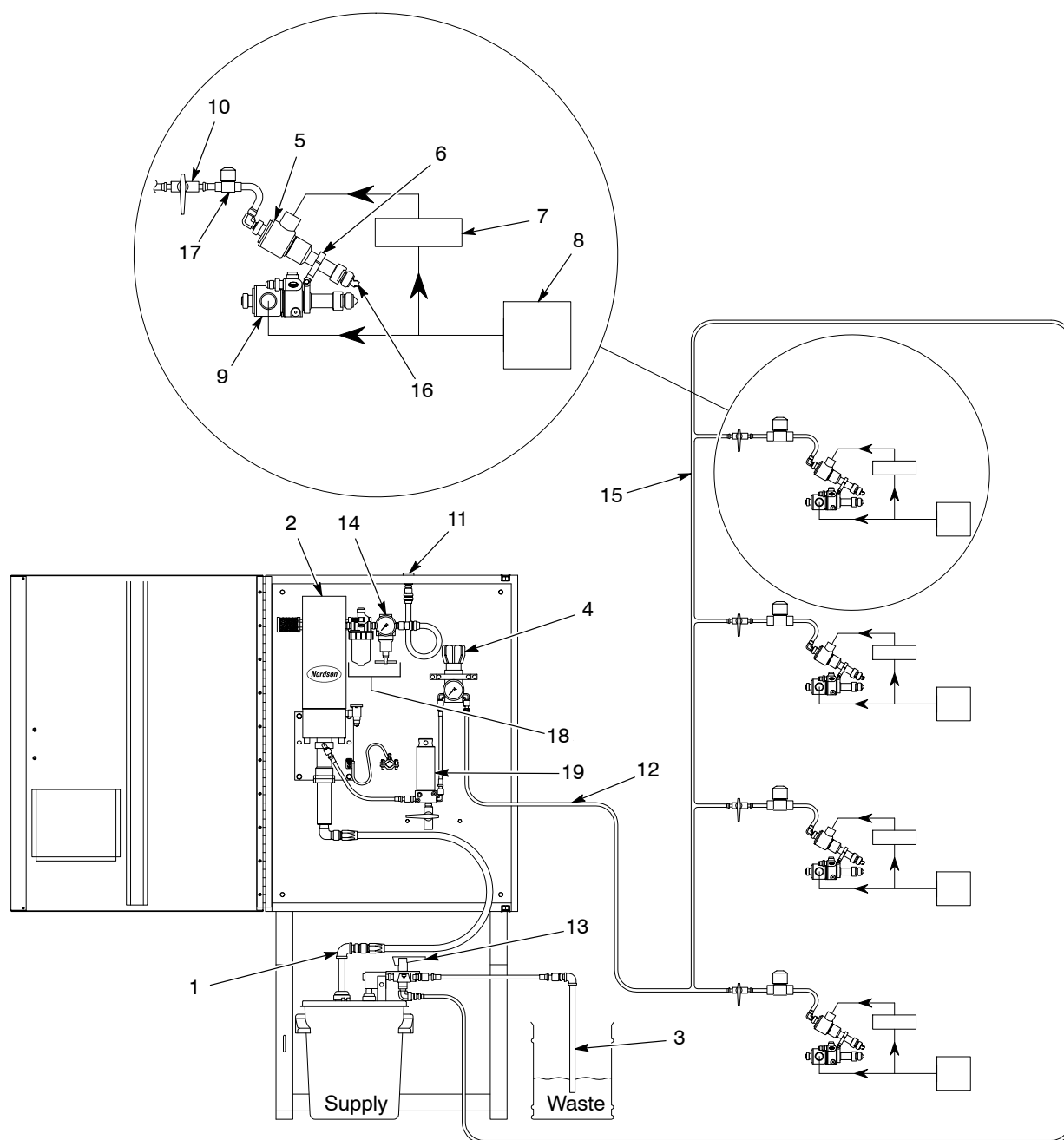
6. Pump fluid through the system into the waste bucket for several minutes.
7. Turn the fixed orifice circulation valve (13) to the TO ORIFICE position.
8. Turn the timer (8) ON.
9. Turn the CleanSpray controller (7) ON.



**WARNING:** Injection. Do not point this device at yourself or other personnel. Failure to observe this warning may result in serious injury or death.

10. Use the CleanSpray controller's (7) remote push button to fire the CleanSpray gun (5) several times into an empty container until it is completely purged of air.
11. Install the CleanSpray nozzle (16) to the CleanSpray gun (5).
12. Carefully fire the CleanSpray gun (5) several times into an empty container until the gun is completely purged of air.
13. Adjust the CleanSpray gun bracket (6) until the CleanSpray nozzle (16) is approximately 1 in. (25.4 mm) away from the lacquer gun (9) spray nozzle. Aim the cleaning spray towards the exhaust duct/chute. The cleaning spray should hit approximately .040 in. (1mm) back from the tip of the nozzle.
14. Repeat steps 8 through 13 for each CleanSpray gun (5).

## Circulating System Start-Up *(contd)*



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Figure 2 Typical circulating system configuration

- |                             |                                     |                            |
|-----------------------------|-------------------------------------|----------------------------|
| 1. Siphon rod               | 8. Timer                            | 14. Air pressure regulator |
| 2. 25B pump                 | 9. Lacquer spray gun                | 15. Return line            |
| 3. Drain                    | 10. Ball valve                      | 16. CleanSpray nozzle      |
| 4. Fluid pressure regulator | 11. Air input                       | 17. T-filter               |
| 5. CleanSpray gun           | 12. Supply line                     | 18. Filter lubricator kit  |
| 6. CleanSpray gun bracket   | 13. Fixed orifice circulation valve | 19. Filter assembly        |
| 7. CleanSpray controller    |                                     |                            |

## Operating Parameters

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<b>Cleaning Fluid</b>	Distilled or deionized water (for water-base can lacquer)
<b>Pressure</b>	Input air pressure to pump: 50 psi Input fluid pressure to regulator: 800 psi Output fluid pressure from regulator: 300 psi
<b>CleanSpray Timing</b>	Duration: 10 msec Delay: 10 msec
<b>Can Index</b>	10 lacquer sprays

## Shutdown Procedures

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### ***Short Term Non-Circulating or Circulating Systems***

1. See Figures 1 or 2. Turn the CleanSpray controller (8) OFF.
2. Turn the timer (9) OFF.
3. Turn the pump air pressure regulator (15) counter-clockwise until input pressure to 25B pump (2) is 0 psi.
4. If using a bulk-feed, close the input line to the 25B pump (2).

**NOTE:** Properly deionized or distilled water may be left in the system for up to four days.

### ***Long Term Non-Circulating Systems***

If the system is shut down for longer than four days, thoroughly flush it (refer to *System Start-up*, page 2, steps 1 through 8) and add new deionized or distilled water before operating.

### ***Long Term Circulating Systems***

If the system is shut down for longer than four days, thoroughly flush it (refer to *System Start-up*, page 5, steps 1 through 9) and add new deionized or distilled water before operating.

## Daily Maintenance

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1. Ensure operating pressure is at the desired setting.



**CAUTION:** To prevent damage to the CleanSpray system, use properly deionized or distilled water only.

2. Inspect the cleaning water supply to ensure that it is clean and not contaminated. Add water as needed. **Do not allow the supply container to run dry.**
3. Make sure that nozzles are spraying properly. Clean if necessary.

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