



Nordson Corporation

OPERATOR'S CARD

P/N 1015049B

Colormax™ Powder Coating System Color Change Process

Safety



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

Introduction

Types of Color Changes

There are two basic types of color changes:

Color Change Type	Definition
Similar Shade	When changing from either <ul style="list-style-type: none">• a light powder to another light powder, or• a dark powder to another dark powder
Different Shade	When changing from either <ul style="list-style-type: none">• a light powder to a dark powder, or• a dark powder to a light powder

The color change process varies slightly depending on which type of color change you are performing. The time it takes to perform a different shade color change will depend on how many spray guns are in your system.

Conditions for an Effective Color Change

In order for the color change process to be effective, the following conditions must be met:

- Keep spare sieve screens, Sure Max reclaim receiver filters, and powder supply containers on hand to allow quick replacement during color change and thorough cleaning while the system is coating parts.
- Operate the system in spray-to-reclaim mode during normal operation.
- Keep the area around the booth clean to avoid cross-contamination of powder.
- Condition the booth interior at least once each week.

Color Change Menu Navigation

Figure 1 illustrates how to access the menus necessary to perform a color change.

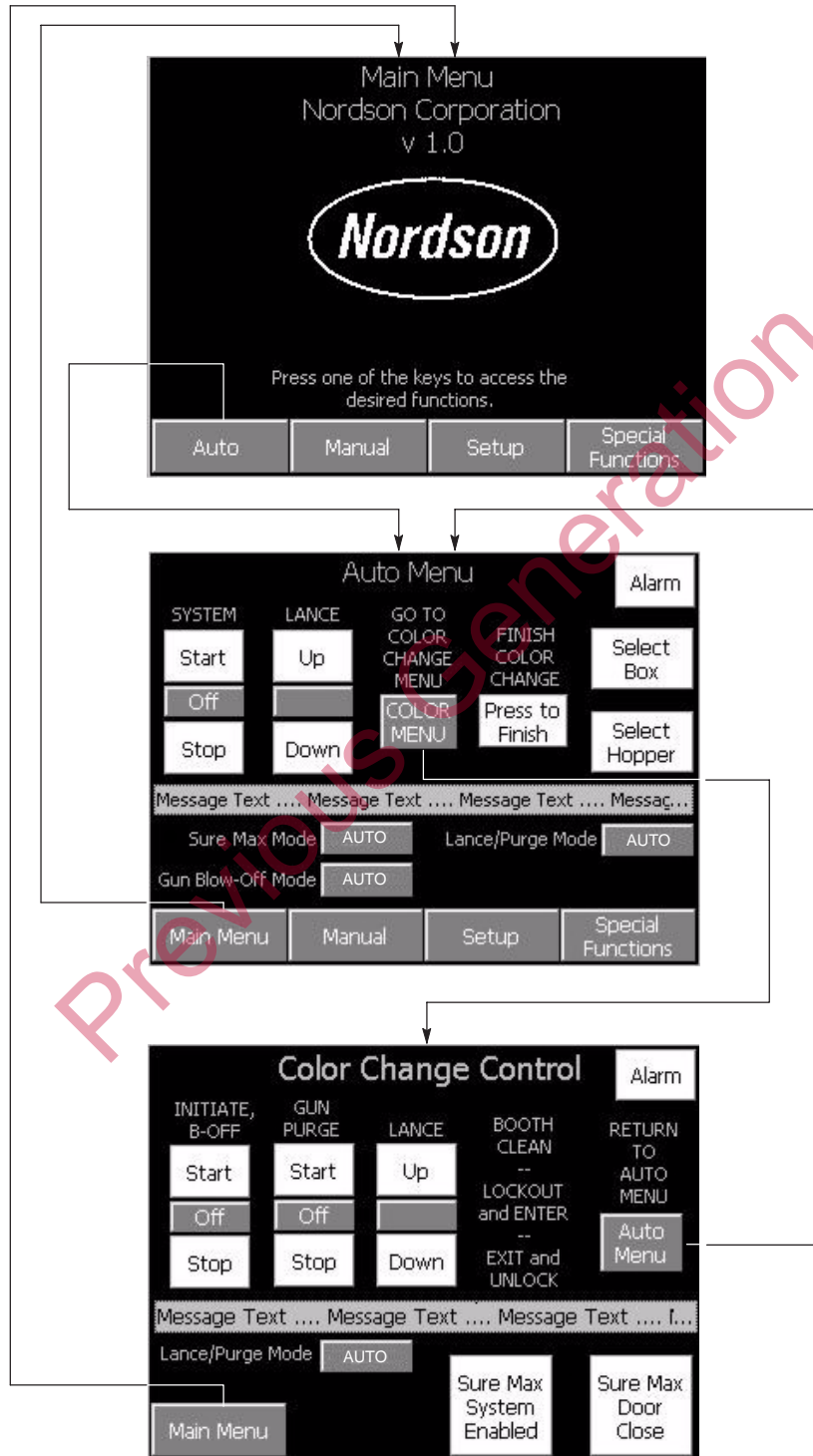


Figure 1 Color Change Menu Navigation

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Color Change

To perform a color change in the shortest time possible, two operators must be present. A single operator could perform the entire process, but it would take longer. The operators are responsible for cleaning the following items:

- **Operator A:** Interior of the booth canopy and cyclones
- **Operator B:** Powder feed center

The two operators' tasks should be performed at the same time. Unless otherwise noted, do not move on to the next procedure until both operators' tasks have been completed.

Use the following procedures to perform a color change in the Colormax booth. Perform all of the applicable steps in each procedure.

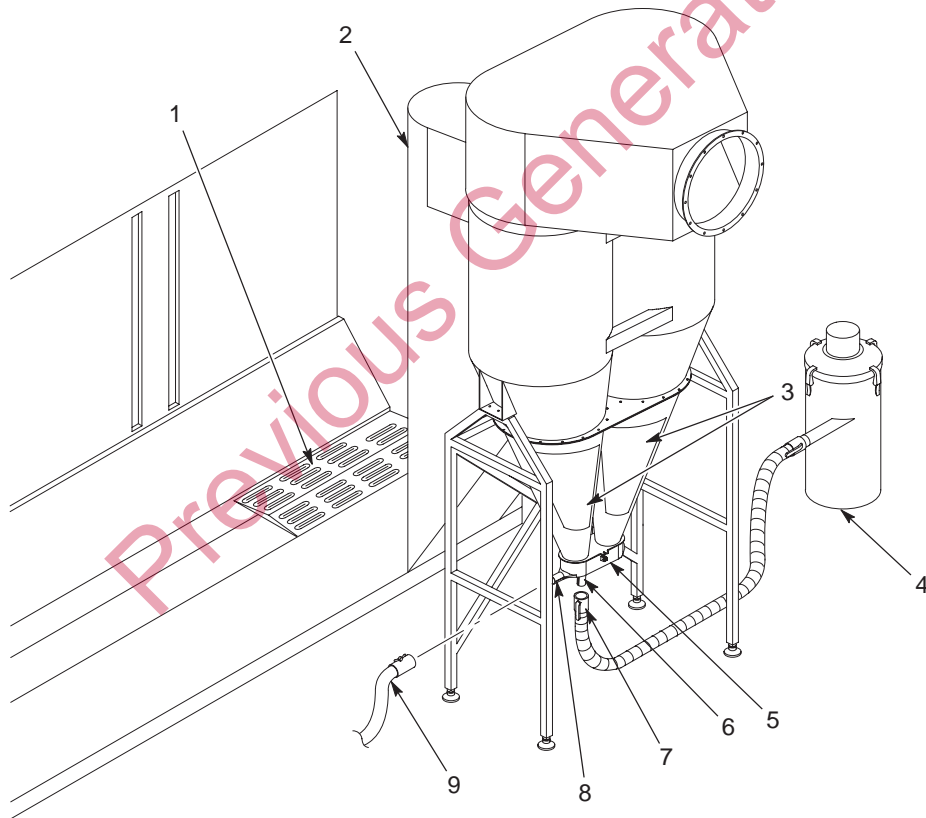
NOTE: When a procedure affects both operators, it is shown straddling both operator's columns in the following table.

Procedure	Tasks	
	Operator A See Figure 2	Operator B See Figure 3
1	Close the booth doors and, if applicable, move the booth offline.	
2	<p>From the Auto Menu, touch the COLOR MENU button to access the Color Change Control menu. Touch the INITIATE, B-OFF Start button. The system automatically performs the following tasks:</p> <p>NOTE: Perform procedure 3 while the system is performing these tasks.</p> <p>NOTE: The INITIATE, B-OFF Stop button interrupts the gun blow-off cycle.</p> <ul style="list-style-type: none"> • Oscillators (if used) stop and the spray guns move in to the fully extended position. • Feed center's sieve, fluidizing air, and vibrating table stop, and the lance assembly raises. • In/out gun positioners retract (one at a time) and powder is blown off the spray guns. <p>When the gun blow-off cycle is complete, the COLOR CHANGE CYCLE DONE indicator flashes.</p>	
3	<ol style="list-style-type: none"> 1. Disengage the coupling connecting the reclaim conveyor line (9) to the reclaim port (8). 2. Open the transfer pan (5) and blow out all powder remaining in the pan. 3. Send three cleaning sponges through the reclaim conveyor line. <p>NOTE: Do not close the transfer pan at this time.</p>	<ol style="list-style-type: none"> 1. Unclamp the underpan (3) and turn it counterclockwise until the chute is directly over the chute on the back wall of the powder feed center. <p>NOTE: If you are using the optional fluidizing hopper, disconnect the air tubing before removing the hopper from the feed center.</p> <ol style="list-style-type: none"> 2. Remove the powder source from the feed center.

Continued...

Color Change *(contd)*

Procedure	Tasks	
	Operator A See Figure 2	Operator B See Figure 3
4	<p>Touch the GUN PURGE Start button. The system automatically performs the following tasks:</p> <p>NOTE: Perform procedure 5 while the system is performing these tasks.</p> <p>NOTE: The GUN PURGE Stop button interrupts the gun purge cycle.</p> <ul style="list-style-type: none"> • Lance assembly lowers onto the purge manifold. • Purge manifold sends pulses of air through the lances, pumps, feed hoses, and spray guns. • Lance assembly raises and the sieve restarts. <p>When the gun purge cycle is complete, the COLOR CHANGE CYCLE DONE indicator flashes.</p>	
		<i>Continued...</i>



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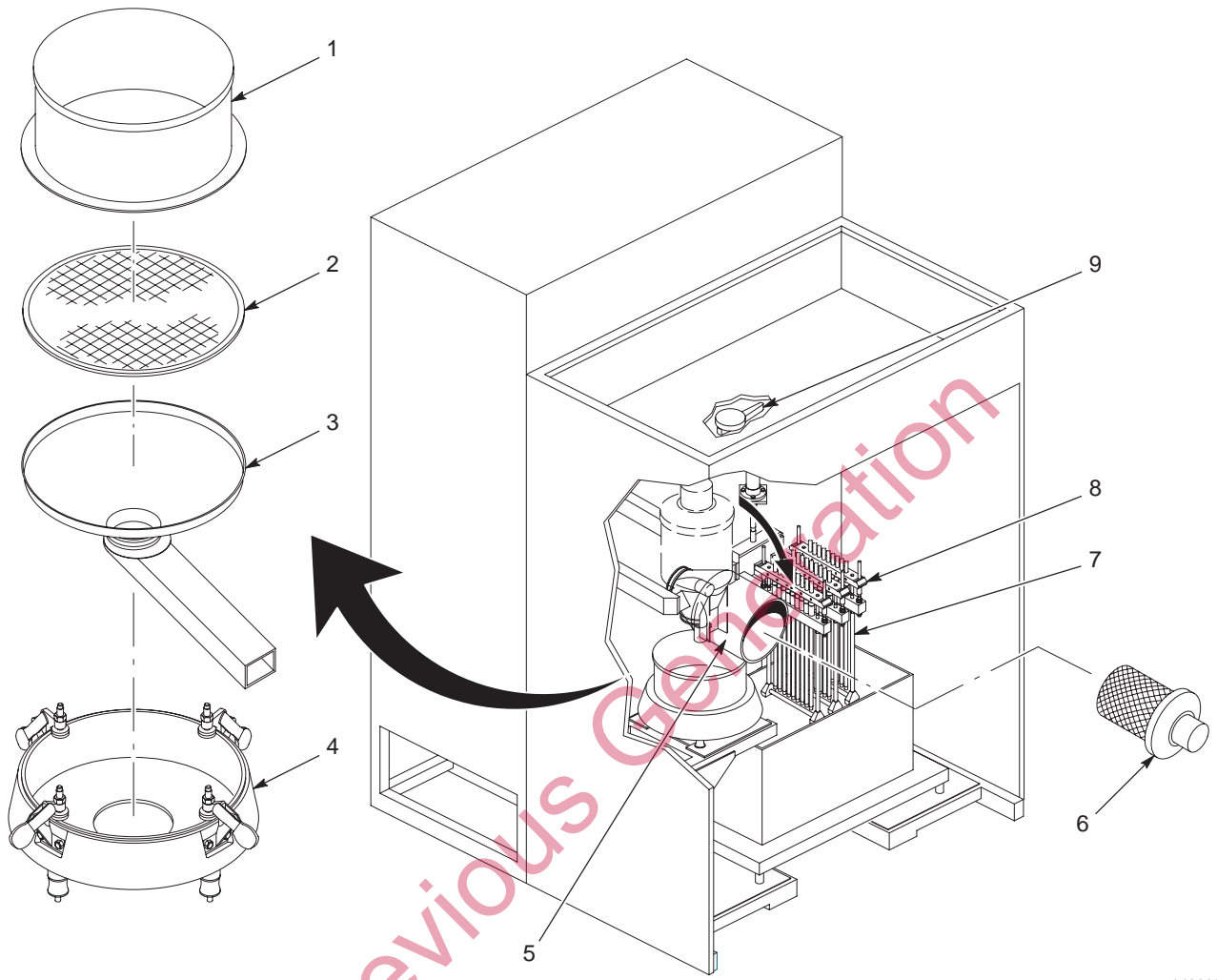
Figure 2 Operator A Color Change Tasks

- | | | |
|-------------------------|-------------------|--------------------------|
| 1. AeroDeck | 4. Scrap receiver | 7. Scrap conveyor line |
| 2. Vertical inlet duct | 5. Transfer pan | 8. Reclaim port |
| 3. Cyclone access doors | 6. Scrap port | 9. Reclaim conveyor line |

Procedure	Tasks	
	Operator A See Figure 2	Operator B See Figure 3
5	Blow off all door seams from the outside of the booth.	Blow powder off the lance assembly.
6	<ol style="list-style-type: none"> 1. Turn the LOCKOUT keyswitch on the system control panel to the LOCKED position. This locks out in/out gun positioner and oscillator operation. 2. While on the outside of the booth, go to the cyclone end of the booth and blow powder off the AeroDeck (1). 3. Enter the booth and close all the doors. 4. Working from the operator opening end of the booth toward the cyclones, blow off the ceiling, walls, and doors. 5. Blow off the AeroDeck, lift it from its operating position, and set it aside. 6. Open the access doors to the cyclone vertical inlet duct (2) and blow out the interior of the vertical inlet duct. 7. Close the vertical inlet duct access doors. 8. Set the AeroDeck in its operating position and exit the booth. 	<ol style="list-style-type: none"> 1. Touch the Sure Max System Enabled button. This causes the following things to happen: <ul style="list-style-type: none"> • The sieve and Sure Max powder transfer system are disabled and the Sure Max System Disabled button appears. • The reclaim receiver discharge door opens. • The reclaim filter is pulsed 3 times (10 seconds total). 2. Disconnect the amplifier hose and pulse air tubing from the top of the reclaim filter assembly (6). 3. Disengage the coupling connecting the reclaim conveyor line to the reclaim receiver (5). 4. Rotate the reclaim receiver so that it is at a 45° angle. 5. Remove the reclaim filter assembly. Remove the filter element and place it in its dedicated plastic container. 6. Remove the three cleaning sponges from the reclaim receiver and place them in their dedicated plastic container. 7. Rotate the reclaim receiver so that the small opening is facing the operator, then blow as much powder out of the receiver as possible. Rotate the reclaim receiver so that the large opening is facing the operator, then blow out any powder remaining in the receiver.

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Color Change *(contd)*



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Figure 3 Operator B Color Change Tasks

- | | | |
|-------------------|----------------------------|---------------------------|
| 1. Sieve deck | 4. Sieve | 7. Lance assembly |
| 2. Sieve screen | 5. Reclaim receiver | 8. Feed hose manifold |
| 3. Sieve underpan | 6. Reclaim filter assembly | 9. Vacuum diverter handle |

Procedure	Tasks	
	Operator A See Figure 2	Operator B See Figure 3
7	<ol style="list-style-type: none"> 1. Remove the plug from the scrap port (6), blow off the plug, and set it aside. 2. Blow out any powder remaining in the transfer pan (5), being careful not to get any powder into the reclaim conveyor line (9). 3. Install the plug into the reclaim port (8). 4. Open the cyclone access doors (3). 5. Blow off all interior surfaces of the cyclones. 6. Depending on whether the system will be operating in either spray-to-reclaim or spray-to-waste mode, follow one of these procedures: <ul style="list-style-type: none"> Spray-to-Reclaim Mode Operation: <ol style="list-style-type: none"> a. Close and latch the cyclone access doors (3). b. Close and latch the transfer pan (5). c. Install the scrap conveyor line (7) onto the scrap port (6). Spray-to-Waste Mode Operation: Leave the cyclone access doors (3) and transfer pan (5) open. 	<p>NOTE: Each color must have a dedicated reclaim filter element. Using a filter element for multiple colors will result in cross contamination.</p> <ol style="list-style-type: none"> 1. Install the appropriate color-specific reclaim filter element and install the reclaim filter assembly (6) into the reclaim receiver (5). 2. Rotate the reclaim receiver so that it is in the upright position. 3. Connect the amplifier hose, pulse air tubing, and reclaim conveyor line to the reclaim receiver. 4. Touch the Sure Max Door Close button to close the reclaim receiver discharge door. <p>NOTE: If your system has the optional Vibrasonic sieve screen, unplug the Vibrasonic transducer cable from its support bracket and use caution when cleaning around the screen's Vibrasonic transducer.</p> <ol style="list-style-type: none"> 5. Remove the sieve deck (1) and screen (2). <ul style="list-style-type: none"> • Similar Shade Color Change: Blow off the sieve screen. • Different Shade Color Change: Set the sieve screen aside and clean it later. Install a clean sieve screen. 6. Blow off the sieve deck and underpan (3). Turn the underpan clockwise until the chute is directed toward the lance assembly (7). 7. Install the appropriate sieve screen and the sieve deck, and connect the Vibrasonic transducer cable (if applicable). 8. Touch the Sure Max Disabled button to enable the Sure Max powder transfer system. Turn the vacuum diverter handle to the fully counterclockwise position. <ul style="list-style-type: none"> • Similar Shade Color Change: Install the powder source into the feed center and connect the fluidizing air tubing (if applicable). • Different Shade Color Change: Do not install a new powder source until the end of procedure 8.

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Color Change *(contd)*

Procedure	Tasks	
	Operator A See Figure 2	Operator B See Figure 3
<p>NOTE: Perform procedure 8 only if you are performing a different shade color change. If you are performing a similar shade color change, proceed to procedure 9.</p>		
8	Remove the powder feed hose from each spray gun and install the other feed hose.	<ol style="list-style-type: none"> 1. Remove the feed hose manifold (8) from the lance assembly (7). 2. Blow down into the powder pumps on the lance assembly to clear away any remaining powder. 3. Install the other feed hose manifold. 4. Install the new powder source into the feed center and connect the fluidizing air tubing (if applicable).
9	<ol style="list-style-type: none"> 1. Turn the LOCKOUT keyswitch on the system control panel to the NORMAL position. 2. Touch the Auto Menu button to return to the Auto Menu. 3. Touch the FINISH COLOR CHANGE Press to Finish button. The spray guns move back into the booth and begin oscillating (if applicable). 4. Touch either the Select Box or Select Hopper button to lower the lance assembly to the appropriate location. 5. If you want to operate the booth in spray-to-reclaim mode, touch the Spray to Waste button. The button's text changes to Spray to Reclaim to indicate the currently selected operating mode. <p>After a few minutes, the powder in the feed source will fluidize and the system will be ready for operation.</p> <p>NOTE: Spray approximately 0.5 kg (one lb) of powder to waste before performing procedure 10. The amount of time that it takes to spray 0.5 kg (one lb) of powder will vary depending on the components in your system. Spraying the powder to waste seasons the ducts and cyclones to allow for more effective powder reclaim.</p>	
10	<p>Spray-to-Reclaim Mode Operation Only:</p> <ol style="list-style-type: none"> 1. Disconnect the scrap conveyor line (7) from the scrap port (6). 2. Remove the plug from the reclaim port (8) and set it aside. 3. Install the plug into the scrap port. 4. Install the reclaim conveyor line (9) and coupling onto the reclaim port. 	<p>Spray-to-Reclaim Mode Operation Only:</p> <p>Turn the vacuum diverter handle (9) to the fully clockwise position.</p>

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