

Spectrum[®] HD Feed Center

Customer Product Manual

Part 1611969-02

Issued 09/18

**For parts and technical support, call the Industrial Coating
Systems Customer Support Center at (800) 433-9319 or
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Table of Contents

Safety	1-1
Introduction	1-1
Qualified Personnel	1-1
Intended Use	1-1
Regulations and Approvals	1-1
Personal Safety	1-2
Fire Safety	1-2
Grounding	1-3
Action in the Event of a Malfunction	1-3
Disposal	1-3
 Description	 2-1
Introduction	2-1
Components	2-3
Transfer Pumps	2-4
Spectrum Hopper	2-5
Spray Gun Pump	2-6
Optional Component List	2-7
Sieve Screens	2-7
Electrical and Pneumatic Controls	2-8
Specifications	2-10
Size and Weight	2-10
Air Requirements	2-11
Exhaust Air Flow	2-11
Compressed Air Supply	2-11
Air Pressure	2-11
Electrical Requirements	2-12
 Installation	 3-1
Unpacking	3-1
Preparing for Installation	3-1
Anchor Feed Center	3-2
Anchor Feed Center Controller	3-3
Extraction Duct Connection	3-4
Electrical Connections	3-4
Pneumatic Connections	3-4
Connection Trough	3-5
Reclaim and Fresh Powder Feed Options	3-5

Operation	4-1
Controls (Home Screen)	4-2
Alarm Screen	4-4
Sieve Operation	4-5
Reclaim and Fresh Powder Transfer Pump Operation	4-5
Reclaim Transfer Pump Operation	4-5
Fresh Powder Transfer Pump Operation	4-5
Powder Level Sensor Operation	4-6
Hopper Operation	4-6
Silencing the Low Powder Alarm	4-6
Startup	4-7
Spray Gun Pump Operation	4-7
Color Change Procedure	4-8
Prepare for the Color Change Procedure	4-8
Light Tower Indicator Definitions	4-9
Begin the Color Change Procedure	4-9
Prepare for Hopper Purge	4-10
Move the Reclaim Hose	4-11
Clean the Booth	4-11
Clean the Cyclone Pan	4-12
Return to the Feed Center	4-12
Blow off the Pick-Up Tube Arm	4-13
Move the Fresh Powder Hose	4-13
Clean Critical Points on the Feed Center	4-14
Reassemble the Feed Center Components	4-15
Clean the Cyclone	4-16
Complete the Color Change	4-17
Configuration	4-18
Transfer Pump Configuration	4-18
Hopper Configuration	4-19
Spray Gun Pump Configuration	4-20
Ultrasonic Sieve Configuration	4-21
Manual Operations	4-22
Shutdown	4-23
 Maintenance	 5-1
Daily Maintenance	5-1
 Troubleshooting	 6-1
 Repair	 7-1
Hopper	7-2
Level Sensors	7-2
Sieve Screen	7-2
Dump Valve Sleeve	7-4

Parts	8-1
Introduction	8-1
Using the Illustrated Parts List	8-1
Feed Center Controller	8-2
Hopper	8-4
Special Tools and Kits	8-5
Sieve Screens	8-6
Ultrasonic Probe	8-6
Extension Cable	8-6
Transfer Pump	8-7
Spray Gun Pump	8-8
 Diagrams	 9-1

Section 1

Safety

Introduction

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 Safety Data Sheets (SDS) 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 SDS 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 II, 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.

Section 2

Description

Introduction

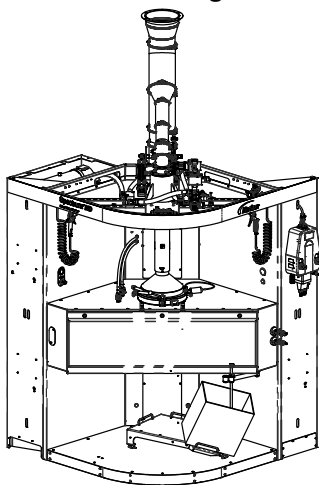
The Nordson Spectrum® HD Feed Center conditions and supplies powder for up to 36 powder spray guns, with a maximum of 32 automatic spray guns and 4 manual spray guns. It contains a fresh powder feed system using the Nordson dense phase technology/high density-low velocity, along with an ultrasonic sieve, level sensors, reclaim circuit, and electrical/pneumatic controls via a touch screen operator interface.

The Spectrum HD provides quick color changes and automatic purge cleaning. The HD hopper receives reclaimed and fresh powder. The powder is then sieved and sent to the spray guns using Encore® HD pumps.

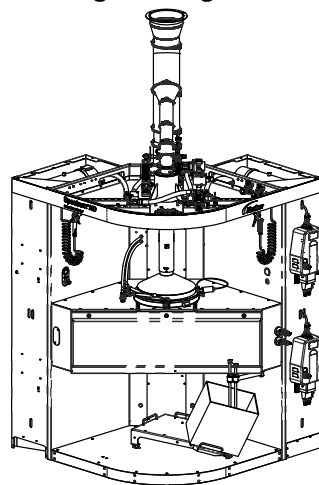
The Spectrum HD is offered in two configurations:

Configuration	Hopper	Hopper Capacity in ³ (cm ³)	Components
Standard	300-mm Hopper	1343 (22000)	Up to 18 pumps/spray guns
Large	425-mm Hopper	2686 (44000)	Up to 36 pumps/spray guns

Standard Configuration



Large Configuration



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Figure 2-1 Spectrum HD Feed Center Configurations

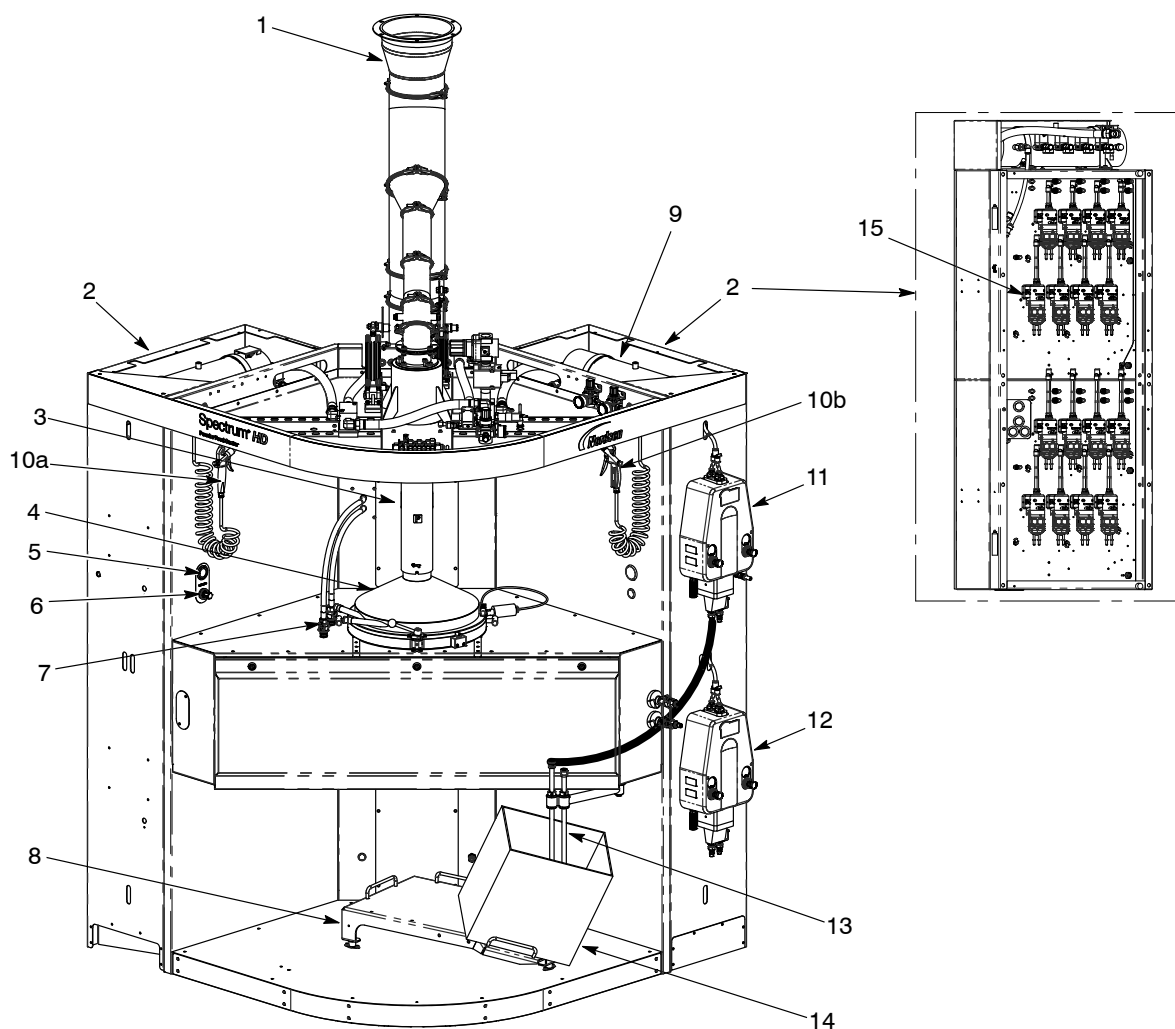
Introduction *(contd)*

The color change operation is automatic and is initiated by the touch screen on the feed center controller. During a color change, the HD hopper cycles through a number of cleaning processes. High-pressure purge air is pulsed through the spray gun pumps, hoses, and spray guns to clean them of powder. This also cleans the sieve section and hopper itself, leaving minimal cleaning for the operator. The reclaim and fresh powder transfer pumps can be purged manually, as required.

The Spectrum HD feed center requires a remote air extraction system that provides a constant airflow through the enclosure, preventing powder escaping into the spray room. The typical extraction system has a dust collector assembly consisting of an exhaust fan, primary cartridge filters, pulse valves and controls, and final filters. A round duct connection is provided at the top of the feed center enclosure.

Components

See Figure 2-2.



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Figure 2-2 Major Components of Spectrum HD (shown with large system configuration)

- | | | |
|--------------------------------|--|---|
| 1. Extraction duct | 7. Waste powder ports | 12. Secondary fresh powder transfer pump (optional on standard) |
| 2. Pump cabinet | 8. Vibratory box feeder (VBF) | 13. Pick-up tubes |
| 3. Stack sleeve | 9. Purge air tank | 14. Bulk powder |
| 4. Spectrum hopper | 10a. Manual air spray gun (hi-flow) | 15. Spray gun pumps |
| 5. Hopper fluidizing gauge | 10b. Manual air spray gun (low-flow) | |
| 6. Hopper fluidizing regulator | 11. Primary fresh powder transfer pump | |

Note: Reclaim transfer pump located near cyclone.

Transfer Pumps

See Figure 2-2.

The Spectrum HD uses the Prodigy® high capacity HDLV pump as a transfer pump for both fresh and reclaimed powder.

The fresh powder transfer pump is mounted to the feed center to deliver fresh powder into the system from a box, drum unloader, or both.

NOTE: Generally, there is one fresh powder transfer pump with the 300-mm hopper, and there are two fresh powder transfer pumps with the 425-mm hopper.

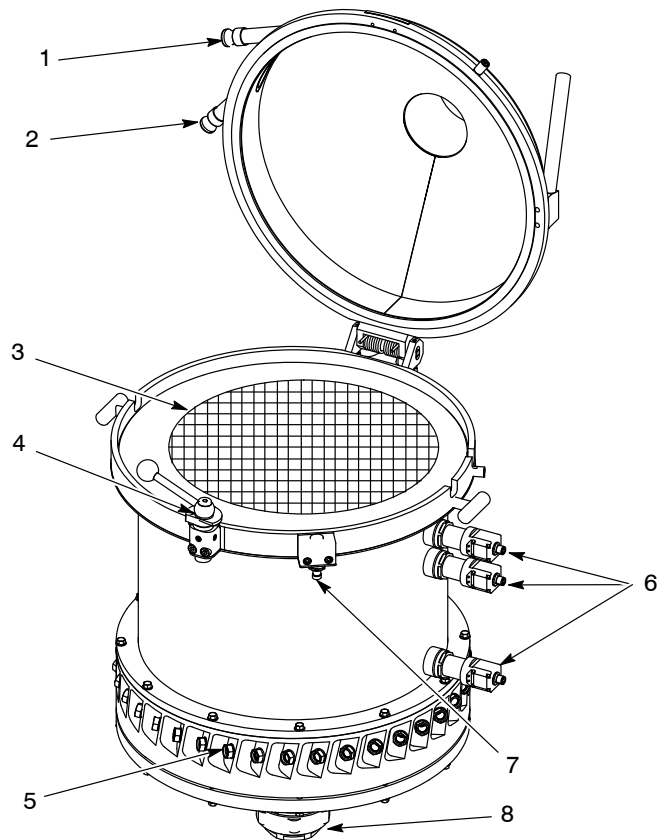
The reclaim transfer pump is mounted near the cyclone to transport over-sprayed powder from the booth recovery system to the feed center.

NOTE: Reclaim transfer pumps are sold separately.

For information related to transfer pumps, see *Prodigy High Capacity HDLV Pump* manual.

Spectrum Hopper

See Figure 2-3. The Spectrum hopper has 8-mm tubing connections.



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Figure 2-3 HD Hopper

- | | | |
|-------------------------|---------------------|---------------|
| 1. Fresh powder inlet | 4. Lid latch | 7. Lid sensor |
| 2. Reclaim powder inlet | 5. Powder tube knob | 8. Dump valve |
| 3. Sieve screen | 6. Level sensors | |

Spray Gun Pump

See Figure 2-4.

Spectrum HD uses the Encore HD pump to draw powder from the feed center and transport precise amounts of powder to the powder spray guns. The spray gun pumps are contained in the feed center pump cabinet.

For more information on the spray gun pump, refer to the *Encore HD Pump* manual.

For more information on the feed center pump cabinet, refer to the *Encore HD Automatic Pump Panel* manual.

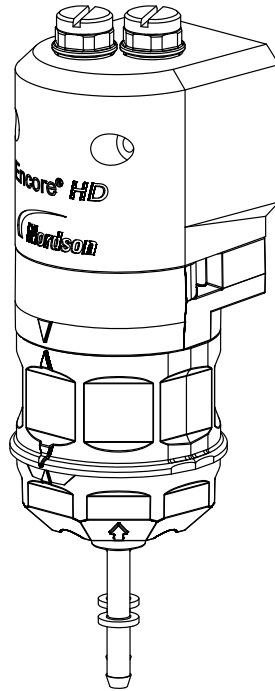


Figure 2-4 Spray Gun Pump

Optional Component List

Optional components include:

- Additional fresh powder transfer pump (300-mm hopper only)
- Spray gun pumps
- Reclaim transfer pump
- Sieve screens

Sieve Screens

See Table 2-1.

The ultrasonic sieve screen conditions the powder received from the transfer pumps before delivery to the spray guns.

The sieve screens are offered in a range of sizes, varying by microns. Refer to the *Parts* section for additional options.

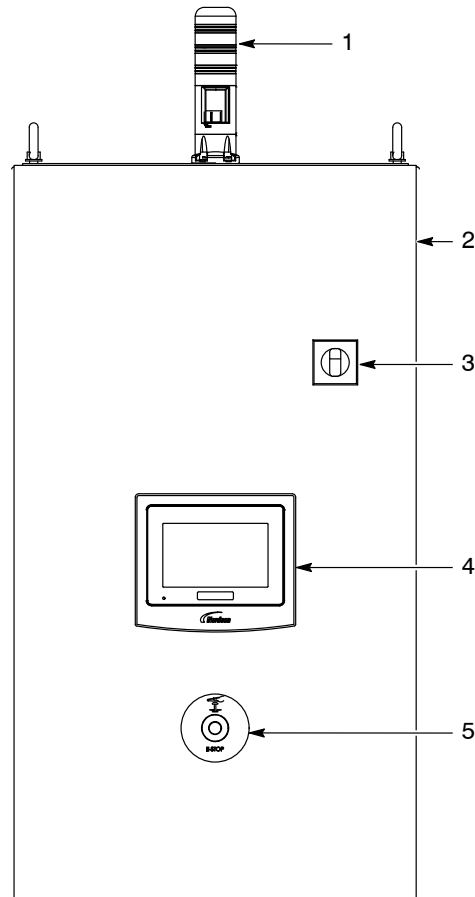
Table 2-1 Sieve Screens

Part Number	Size	Microns	Wire Diameter
768675	300-mm	300	0.065 mm
768676		250	0.100 mm
768677		200	0.090 mm
768678		160	0.100 mm
1610110		300	0.112 mm
1612914		500	0.160 mm
1612915	425-mm	500	0.160 mm
1610111		300	0.112 mm
1610112		300	0.065 mm
1610113		250	0.100 mm
1610114		200	0.090 mm
1610115		160	0.100 mm

Electrical and Pneumatic Controls

See Figure 2-5 and Figure 2-6.

NOTE: For electrical requirements for the Spectrum feed center, refer to page 2-11.

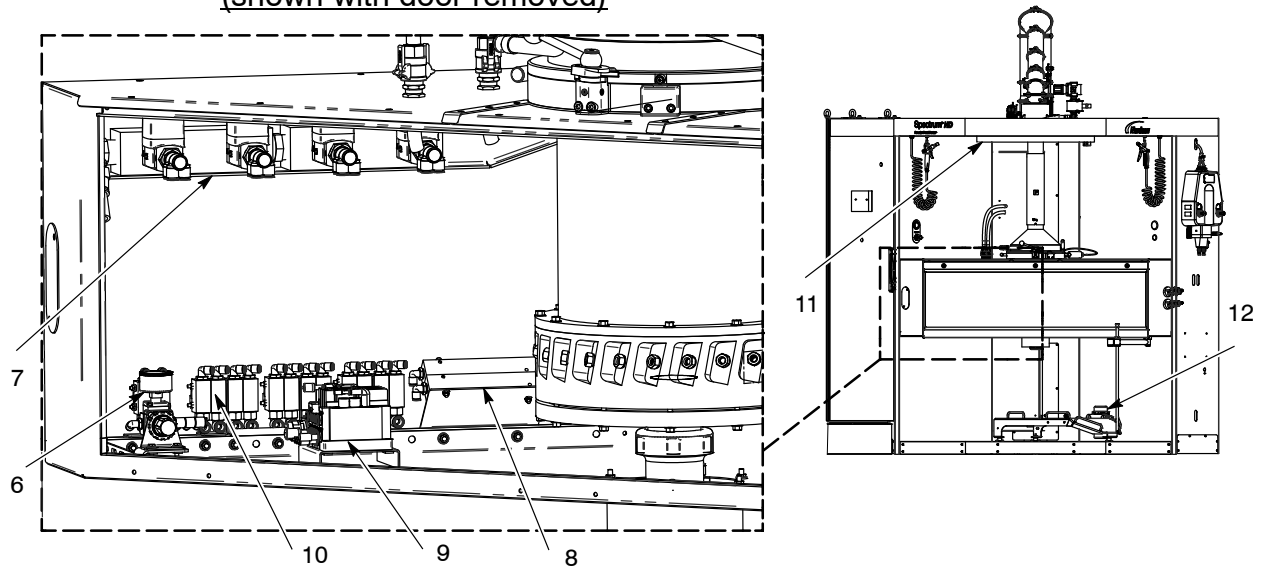


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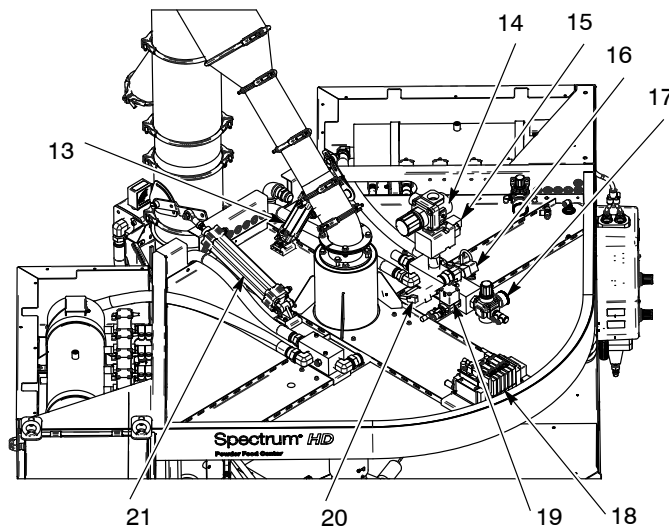
Figure 2-5 Electrical and Pneumatic Controls (1 of 2)

- | | | |
|-----------------------------|---------------------------|-------------------|
| 1. Light tower | 3. Main Disconnect | 5. Emergency stop |
| 2. Electrical control panel | 4. Touch screen interface | |

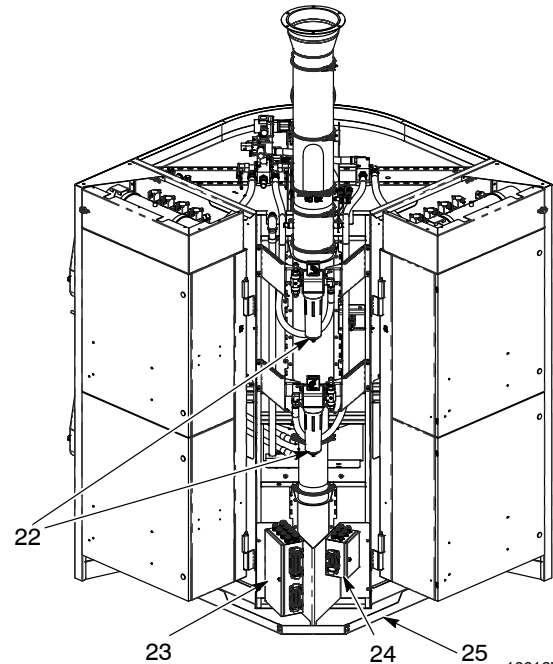
Detail View
(shown with door removed)



Top View



Back View



NS: Not Shown

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Figure 2-6 Electrical and Pneumatic Controls (2 of 2)

- | | | |
|----------------------------------|-------------------------------|--------------------------------|
| 6. Diffuser valve pack regulator | 13. Small pneumatic damper | 20. PS1 switch (87 psi) |
| 7. Diffuser purge manifold | 14. Main air regulator | 21. Large pneumatic damper |
| 8. Electrode air wash | 15. Main air solenoid | 22. Air filters |
| 9. Diffuser valve pack | 16. PS2 switch (30 psi) | 23. DC junction box |
| 10. Shuttle valves | 17. Main valve pack regulator | 24. AC junction box |
| 11. Light | 18. Main valve pack | 25. Cable/wiring/tubing trough |
| 12. Vibratory motor | 19. Pilot valve | |

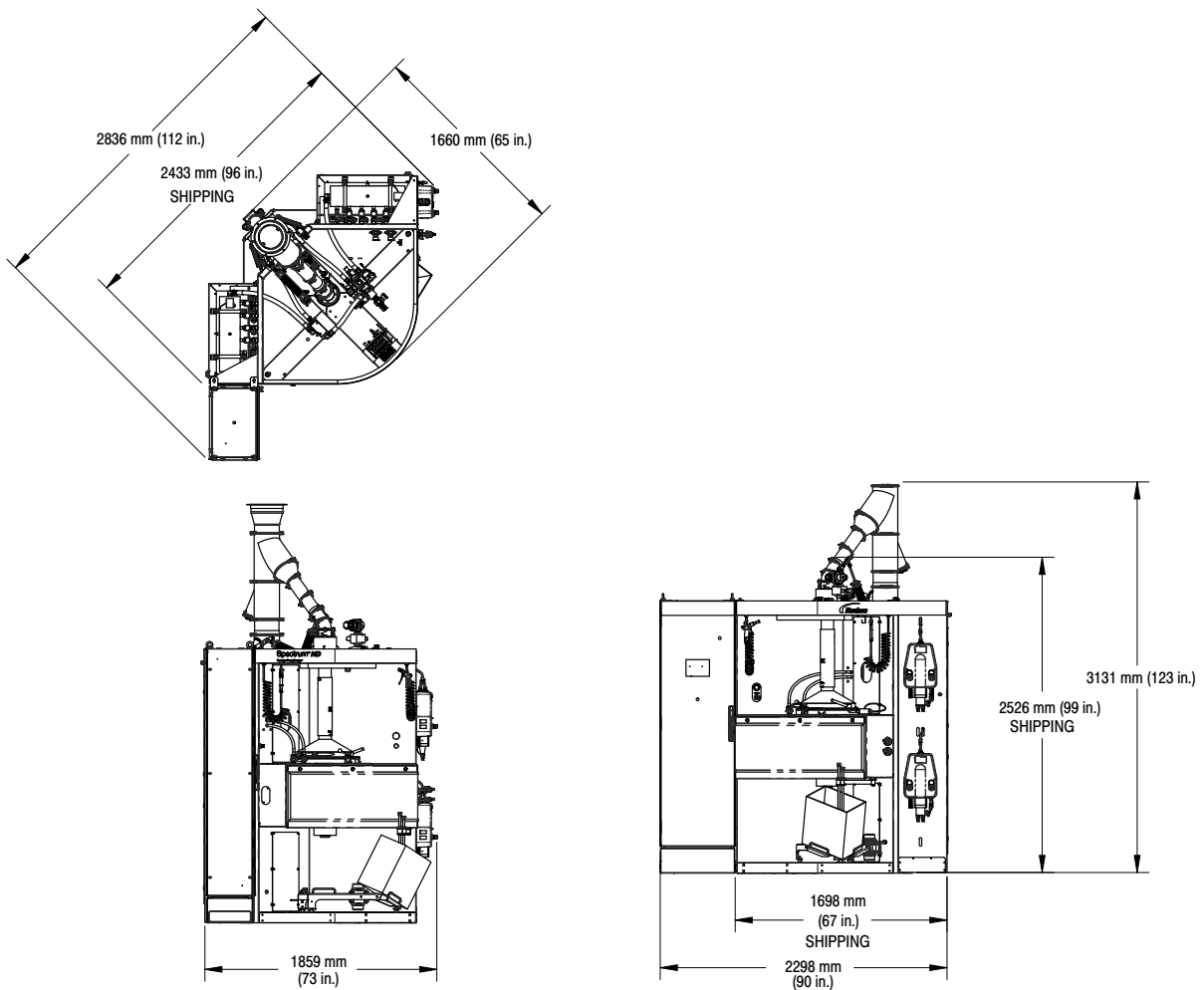
Note: The PS2 switch is on the opposite side of PS1 switch.

Specifications

Size and Weight

See Figure 2-7 for dimensions.

System Component or Configuration	Weight
Standard Configuration (with two 8-pump cabinets)	1550 lb (703 kg)
Large Configuration (with four 8-pump cabinets)	2150 lb (975 kg)
Feed Center Controller	435 lb (197 kg)
NOTE: For the specific weight of your system, contact your Nordson representative.	



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Figure 2-7 Spectrum HD Feed Center Dimensions

Air Requirements

Exhaust Air Flow

During Color Change	2200 cfm (3738 m ³ /hr)
During Operation	600 cfm (1019 m ³ /hr)

Compressed Air Supply

Air input	1-in. NPT
Air consumption at 6.9 bar (100 psi)	Normal Operation: System – 15 SCFM (25.5 m ³ /hr) Per Transfer Pump – 4 SCFM (6.8 m ³ /hr) Per Spray Gun Pump – 4 SCFM (6.8 m ³ /hr)
	Maximum: 220 SCFM (374 m ³ /hr) Note: Maximum reached during color change.

The air must be clean and dry. Use a dedicated, refrigerated or regenerative–desiccant air dryer that can produce a 3 °C (38 °F) or lower dewpoint at 6.9 bar (100 psi), and filter/separators with automatic drains.

Air Pressure

Function	Recommended Pressure
Purge Air	Line Pressure: 6.9 bar (100 psi) See Note B
	7.0 bar (101.5 psi)
Hopper Fluidizing	See Note A
NOTE A: Adjust fluidizing air as needed. Powder should be gently boiling without creating geysers. B: A pressure switch has been implemented to give warning if air drops below 87 psi.	

Electrical Requirements

The feed center and feed center controller support these electrical specifications:

- 208 V, 3 phase, 50/60 Hz, 7.2 A
- 230 V, 3 phase, 50/60 Hz, 6.5 A
- 380 V, 3 phase, 50/60 Hz, 3.9 A
- 415 V, 3 phase, 50/60 Hz, 3.6 A
- 460 V, 3 phase, 50/60 Hz, 3.1 A
- 575 V, 3 phase, 60 Hz, 2.6 A

Section 3

Installation



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

Unpacking



WARNING: Allow only authorized Nordson personnel to complete.

Upon receipt, unpack the Spectrum HD feed center carefully to avoid damage. Immediately report any damage to the shipper and to your Nordson representative. Save packing materials for possible later use, or properly dispose according to local regulations.

Preparing for Installation



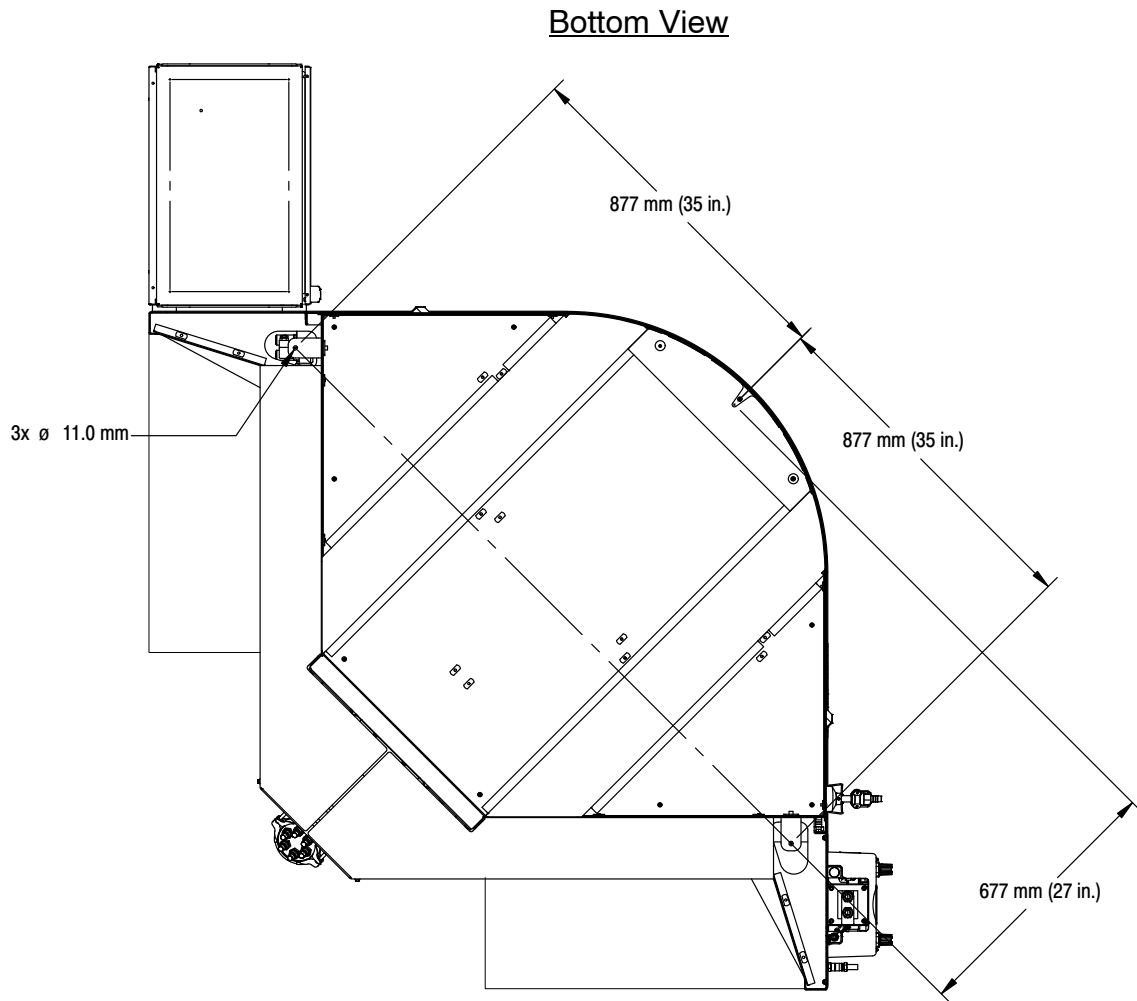
WARNING: Allow only authorized Nordson personnel to complete.

Position the Spectrum HD feed center on a level floor, according to the general layout drawing supplied by Nordson application engineering.

Anchor Feed Center

See Figure 3-1.

Anchor the feed center to the floor using three concrete anchors (not supplied) as required by local codes, using the mounting locations as shown.



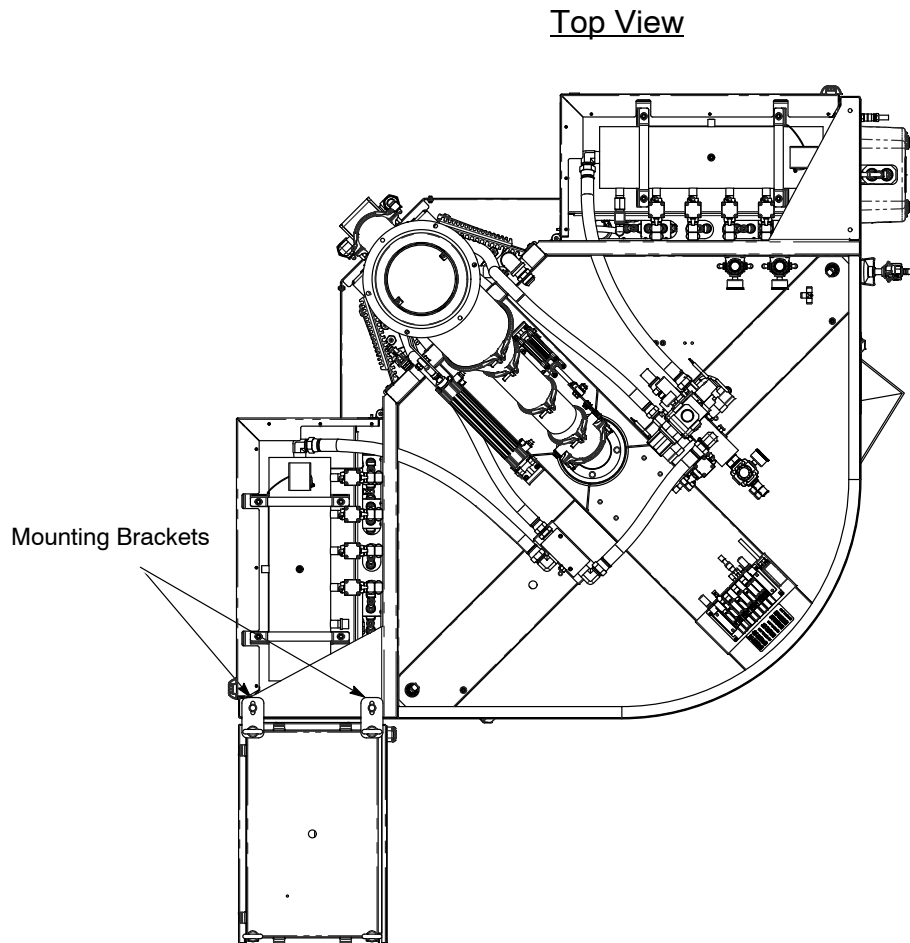
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Figure 3-1 Feed Center Mounting Locations

Anchor Feed Center Controller

See Figure 3-1.

Install mounting bracket underneath lifting eyelet on the top of the feed center to the connection point on the feed center controller using provided hardware.



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Figure 3-1 Mounting Feed Center Controller

Extraction Duct Connection

Install ductwork subassembly provided on top side of the feed center.

Connect ductwork from the afterfilter/fan section to the Spectrum HD feed center with a properly sized transition duct. A 10-in. duct is supplied with the unit.

Electrical Connections



CAUTION: Equipment damage may occur if the electrical panel is connected to any line voltage other than that stated on the identification plate.



WARNING: Power to the Spectrum HD feed center must be supplied from a locking disconnect switch or breaker. Failure to observe this warning may result in a severe shock during installation or repair.

Make sure that all electrical cables are correctly rated and suitable for the ambient temperature of the installation area. Provide adequate fuse/circuit protection from the power supply. Refer to the foldout wiring diagrams and schematics at the end of this manual for more information.

Pneumatic Connections

For the connection size, location and volume required please refer to *Air Requirements* on page 2-11 and pneumatic drawing or contact your Nordson representative.

Clean, dry, compressed air should be supplied from a refrigerated or desiccant air dryer and filter/separators. Refer to *Specifications* beginning on page 2-10 for compressed air specifications.

Connection Trough

Install cable, tubing, and wiring trough as shown in Figure 3-2.

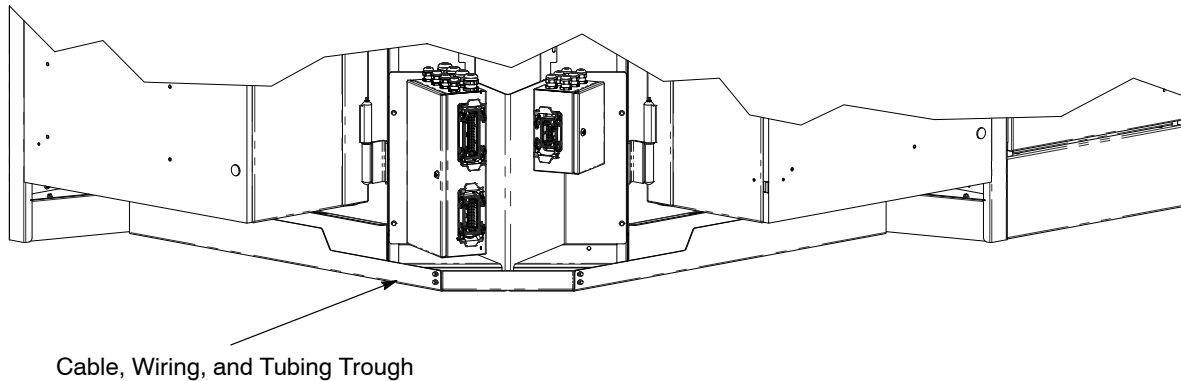


Figure 3-2 Installing Trough

Reclaim and Fresh Powder Feed Options

Reclaim Powder Systems: The reclaim transfer pump is mounted on the cyclone stand. When the reclaim transfer pump is turned on, air flows from the feed center control manifold through 8-mm tubing to the pump operating air regulator.

Fresh Powder Feed System: A typical bulk feed system includes a fresh powder transfer pump, as well a process valve to control system operation. The process valve is typically connected directly to the air drop inside the feed center electrical/pneumatic cabinet.

NOTE: For information related to transfer pumps, see *Prodigy High Capacity HDLV Pump* manual.

Section 4

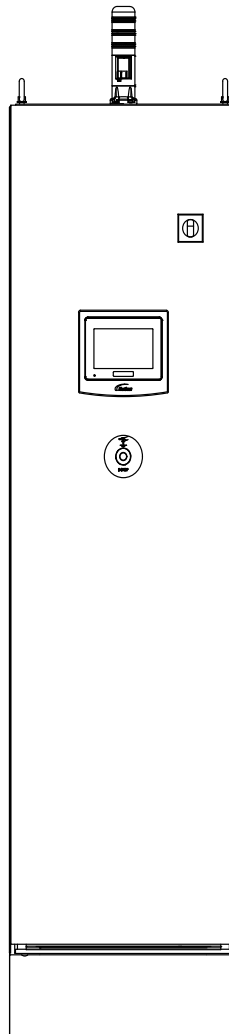
Operation



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

See Figure 4-1.

The Spectrum HD feed center has standalone controls.



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Figure 4-1 Spectrum HD Feed Center Controller

Controls (Home Screen)

See Figure 4-2 and Table 4-1.

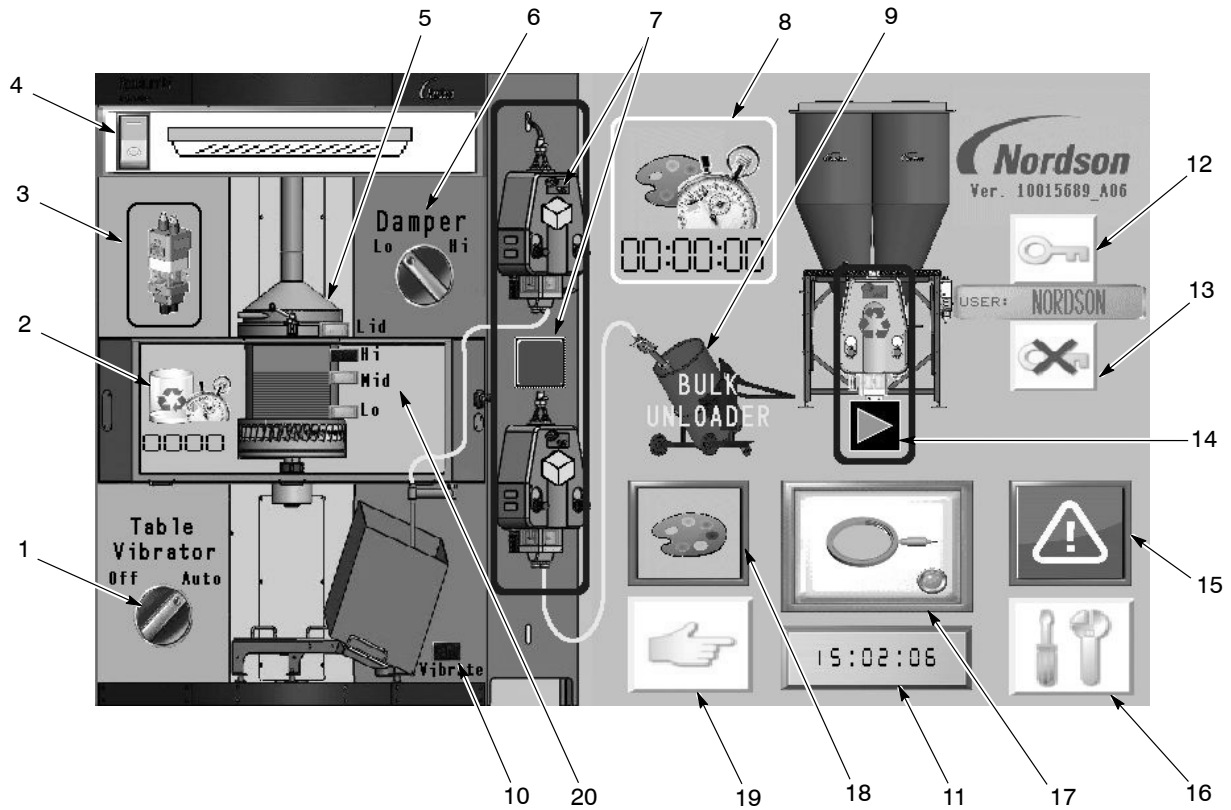


Figure 4-2 Home Operation Screen

Table 4-1 Home Screen Icons

Number	Icon	Description
1	Table Vibrator (Off/Auto)	Press to turn the Table Vibrator <i>Off</i> when using Nordson drum unloader or other bulk feed systems. Use <i>Auto</i> when using the integrated VBF.
2	Spray-to-Waste Timer	Indicates timed spray-to-waste was selected after a color change.
3	Spray Gun Pumps	Indicates HDLV spray gun pumps have been selected in the system configuration; select to modify system configuration.
4	Feed Center Light (On/Off)	Select to turn feed center light <i>On</i> or <i>Off</i> .
5	Hopper Lid	Indicates whether hopper lid is open or closed.
6	Main Damper Position	Press to select low air draw or high air draw during normal powder spray operation.
7	Fresh Powder Transfer Pump	Select to turn fresh powder transfer pump <i>On</i> or <i>Off</i> .
8	Color Change Duration Timer	Displays the duration of the last color change process. Press to clear or reset timer.
9	Bulk Fresh Powder	Indicates the bulk fresh powder transfer pump or the secondary fresh powder transfer pump has been enabled in the configuration.
10	Vibratory Table Status	Indicates whether vibratory table is <i>On</i> or <i>Off</i> .
11	Digital Clock	Current time display. Press to modify time.
12	Security Log-on	Press to log on to the system. Allows users to make system adjustments depending on security level.
13	Security Log-off	Press to log off of the system. System will automatically log off after 30 minutes.
14	Reclaim Powder Transfer Pump	Press to turn the reclaim transfer pump <i>On</i> or <i>Off</i> .
15	Alarms	Press to view alarms screen.
16	Configuration	Press to view configuration screens.
17	Ultrasonic Sieve	Indicates status of ultrasonic sieve. While pressed, ultrasonic sieve will turn on for testing.
18	Color Change	Press to begin color change process.
19	Manual Control	Press to view the manual function control screens.
20	Powder Level Sensors	Indicates powder level in the hopper. Normal operating level is at or just below the <i>Mid Level</i> sensor.

Alarm Screen

See Figure 4-3.

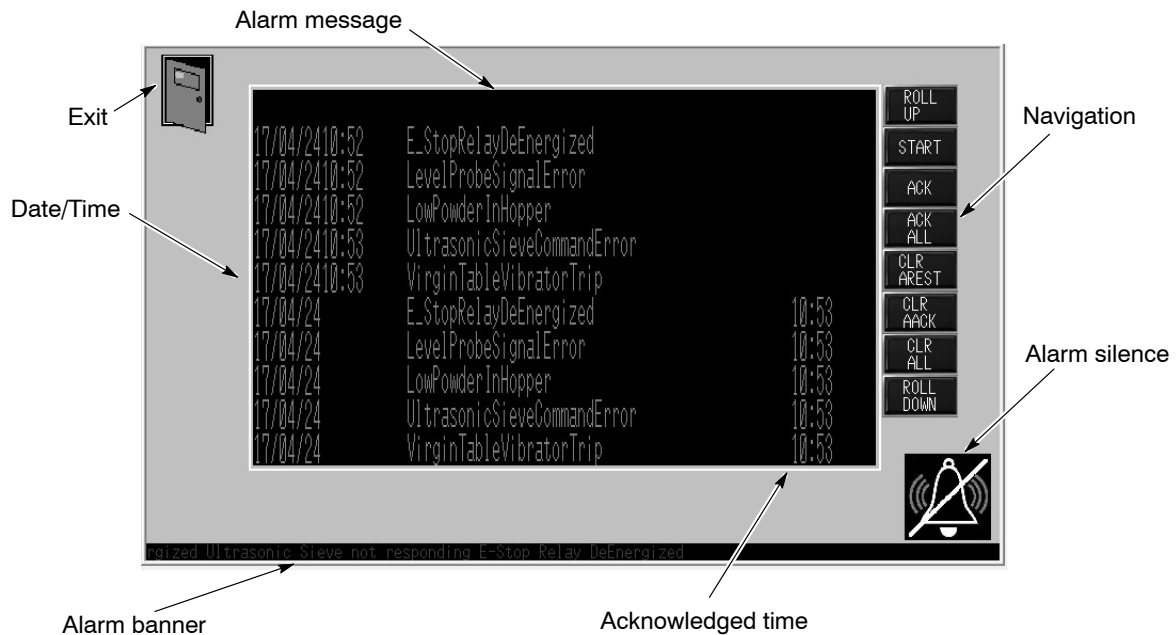


Figure 4-3 Alarm Screen

Alarm Message	Alarm Description	Alarm Banner
E_StopRelayDeEnergized	E-Stop on the door of the enclosure for the feed center has been pressed. Determine reason and then reset by twisting and releasing.	E-Stop Relay DeEnergized
LevelProbeSignalError	One or more of the powder level sensors in the hopper are not functioning properly. Check sensor connections, mounting, and sensing face.	Level Probe Signaling Error
LowPowderInHopper	Low powder sensor level is not sensing powder. Check source of powder (bulk unloader or box) to verify transfer pumps are functioning properly.	Low Powder in Hopper
UltrasonicSieveCommandError	Ultrasonic controller is not functioning properly, so powder will not sieve through screen. Transfer of powder is halted.	Ultrasonic Sieve Not Responding
VirginTableVibratorTrip	Table vibrator motor starter has sensed an overload condition and will not operate.	Table Vibrator Failure

Sieve Operation

Powder is supplied to the feed center by HDLV reclaim and fresh powder transfer pumps. The powder is sieved before flowing into the feed hopper. The sieve is turned on and off automatically when transfer pumps are on or off.

Reclaim and Fresh Powder Transfer Pump Operation

The operation of the reclaim and fresh powder transfer pumps are controlled by separate icons on the control screen.

Reclaim Transfer Pump Operation

The reclaim transfer pump operates continuously as long as it is turned on (in turn, activating the sieve operation), and the powder level is below the “high level” sensor. The reclaim transfer pump automatically turns on after 60 seconds following a color change (unless it is manually turned off).

Fresh Powder Transfer Pump Operation

The fresh powder transfer pump operation is controlled by the level sensor. If the powder level in the feed hopper falls below the level sensor, a delay timer is initiated. When the delay timer runs out, the fresh powder transfer pump starts. The pump runs until the powder in the feed hopper reaches the level sensor, then it turns off.

NOTE: If a fresh powder transfer pump becomes clogged during operation, purging the pump may clear it. A color change will be required to purge the fresh powder transfer pumps.

Powder Level Sensor Operation

Hopper Operation

When the level of powder falls below the level sensor, a delay timer (field-adjustable) is started. When the delay timer runs out, the fresh powder transfer pump is activated to refill the hopper. When the level sensor detects powder, the fresh powder transfer pump is turned off. IF the level sensor detects no powder for more than three minutes (field-adjustable), the low powder alarm turns on.

The sensing distance can be changed by adjusting the potentiometer on the sensor.

Sensor LEDs:

- Green – indicates DC power
- Yellow – turns on when the sensor detects powder

Silencing the Low Powder Alarm

1. Select the “alarm” icon.
2. Select the “alarm silence” icon on the touch screen.



Figure 4-4 “Low Powder Alarm” Icons

Startup

1. Ensure the system is safe to start.
2. Turn on the system components in the following sequence:
 - a. Booth Control Panel
 - b. After-Filter Control Panel
 - c. Spectrum HD Feed Center
3. Ensure the emergency stop buttons are pulled out on the booth, feed center, and after-filter panels.
4. Make sure compressed air is being supplied to the feed center at above 6.9 bar (100 psi) and that air pressures are adjusted properly.

Spray Gun Pump Operation



WARNING: All conductive equipment in the spray area must be connected to a true earth ground. Ungrounded, or poorly grounded equipment, can become electrically charged and cause a severe shock or create sparks hot enough to cause a fire or explosion.

Operating air pressures are determined by system variables, including powder feed hose type and size, spray gun type, powder type, conveyor speed, and desired film build.

For more information on the spray gun pump, refer to the *Encore HD Pump* manual.

Color Change Procedure



CAUTION: For all blow-off procedures, use the grounded blow-off spray gun and hose assembly provided by Nordson.

NOTE: The software screen shots show the color change procedure using a powder box. Any differences in procedure for a drum unloader will be noted in the text of that particular step.

NOTE: Images for color change procedures may be shown with Spectrum VT feed center, but do not affect the steps.

Prepare for the Color Change Procedure

1. Close the booth doors.
2. Operator can press the *Clean Cycle* button (if equipped) to initiate the blow-off of the automatic spray guns. This does not start the color change procedure.



Figure 4-5 Clean Cycle Button

Light Tower Indicator Definitions

NOTE: The light tower on the top of the feed center provides illuminated and audible status indication.

Light Color	Definition
Green	System and exhauster fan <i>On</i>
Yellow – Solid	Active step in color change
Yellow – Slow Flash	(1-second pause) – Completed step in color change
Yellow – Fast Flash	(1/2-second pause) – Running fault related to low powder, vibratory table, ultrasonic sieve, or main air low pressure
Red	System and exhauster fan <i>Off</i> – major fault

Begin the Color Change Procedure

See Figure 4-6.

1. Select the *Color Change* icon.
2. Select the check mark to confirm beginning the color change procedure.

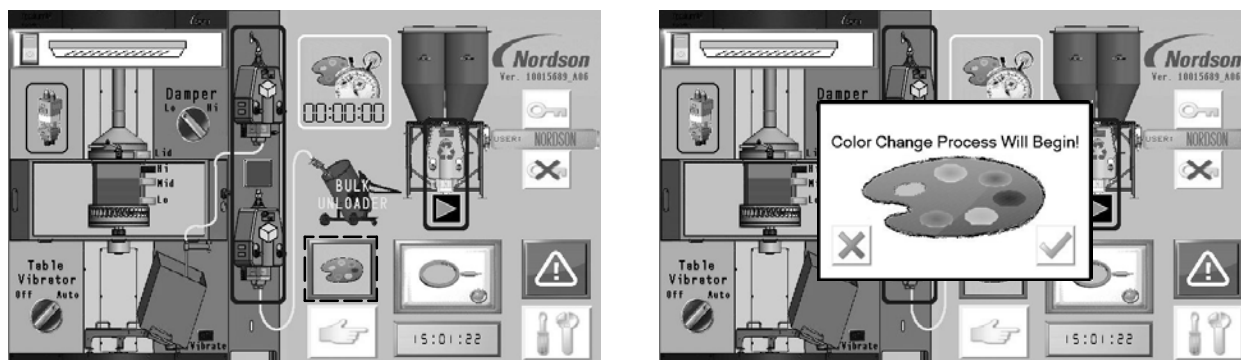


Figure 4-6 Begin the Color Change Procedure

Prepare for Hopper Purge

See Figure 4-7.

The system will begin to purge the automatic spray guns.

1. Remove the pick-up tube from the box and blow it off.
2. Place the pick-up tube in the holder.
3. Move the powder box onto the vibratory table beneath the hopper.
4. Select the check mark when the spray guns are purged and the previous steps are completed.

NOTE: Long pick-up tubes are used in conjunction with a Nordson drum unloader or other third party bulk unloading systems. Short pick-up tubes are intended for use with boxes of powder or other user supplied bins on the integrated vibratory table. For a drum unloader, remove both pick-up tubes, blow them off, and secure them in their respective holders. Then, a customer-supplied bin should be placed on the vibratory table beneath the hopper.

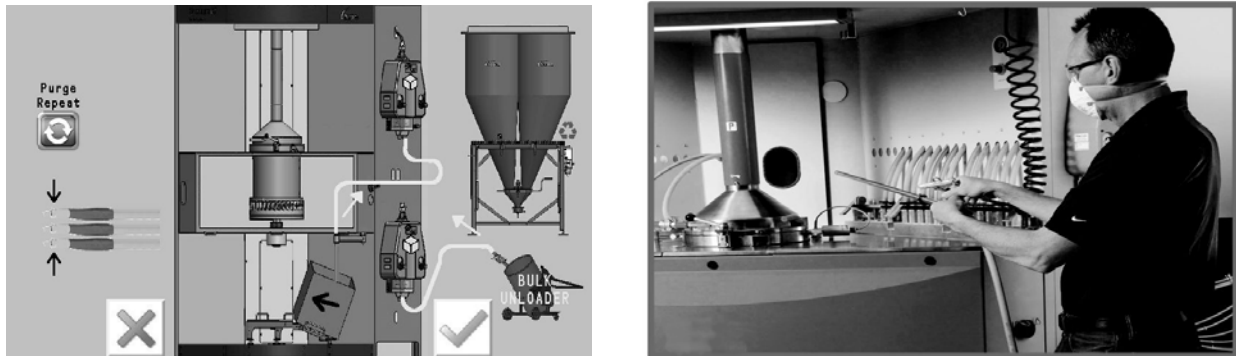


Figure 4-7 Prepare for Hopper Purge

Move the Reclaim Hose

See Figure 4-8.

1. Move the reclaim (green) hose from the hopper to either waste port.
2. Select the check mark when the hose is moved.

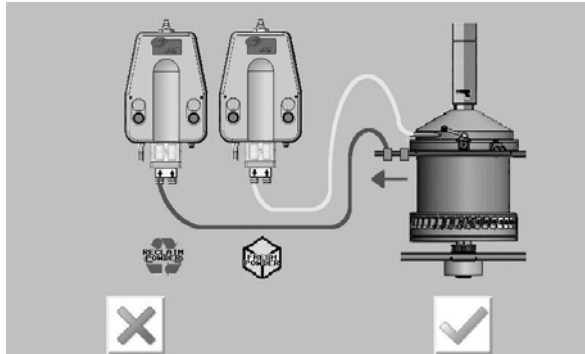


Figure 4-8 Move the Reclaim Hose

Clean the Booth

See Figure 4-9.

A countdown timer will begin to indicate when the hopper is empty of all powder.

1. Blow off the door sills at the entry of the booth, then enter the booth and blow off the interior beginning with the ceiling and ending with the floor.
2. Blow off the AeroDecks™.
3. Blow off the extraction door.

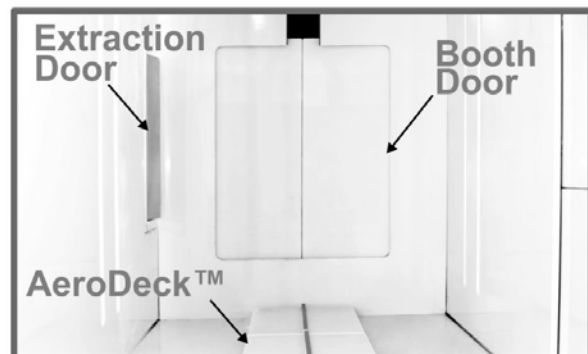
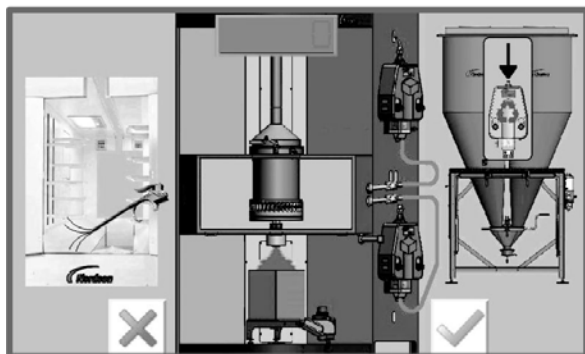


Figure 4-9 Clean the Booth

Clean the Cyclone Pan

See Figure 4-10.

1. Open the transfer pan and blow it clean while the fresh powder and reclaim transfer pumps are purging.
2. Blow clean the bottom flange of the cyclone.
3. Lock the transfer pan in the *Open* position.
4. Blow off the manual spray gun sleeve and nozzle.
5. Select the check mark when these steps are completed.

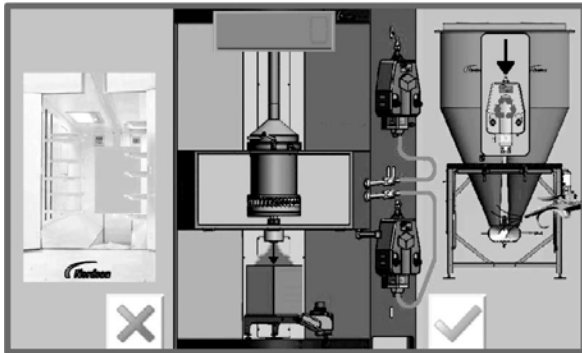


Figure 4-10 Clean the Cyclone Pan

Return to the Feed Center

See Figure 4-11.

1. Remove the box/bin.
2. Turn the stack sleeve to *Color Change* mode.
3. Select the check mark when these steps are completed.

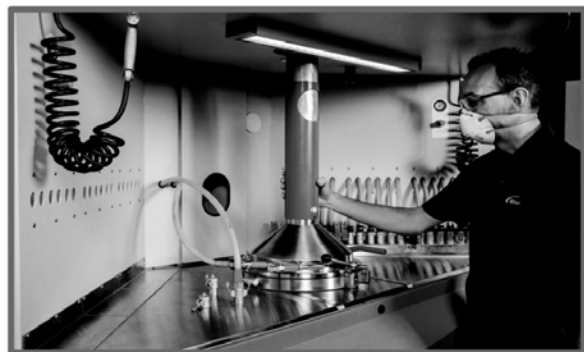
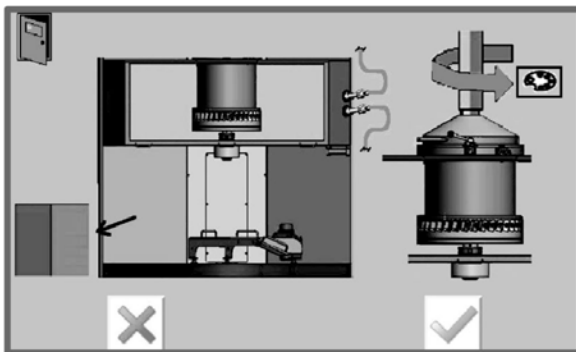


Figure 4-11 Return to the Feed Center

Blow off the Pick-Up Tube Arm

See Figure 4-12.

The hopper and fresh powder transfer pump will begin to purge.

1. Blow off the pick-up tube arm.
2. Select the check mark when the purge is complete and the box or bin is removed.

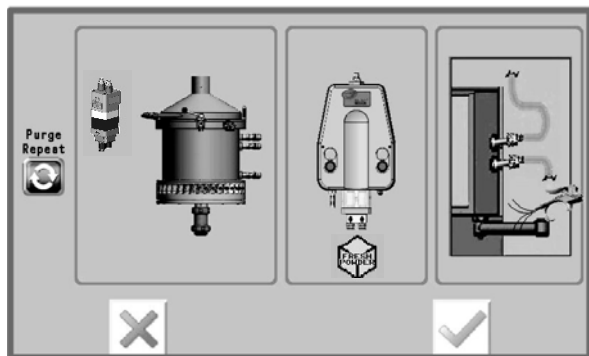


Figure 4-12 Blow off the Pick-Up Tube Arm

Move the Fresh Powder Hose

See Figure 4-13.

1. Move the fresh powder hose (yellow) from the hopper to the waste port. Both the reclaim (green) and fresh powder (yellow) hoses should be on the waste ports.
2. Lift the stack sleeve and lock it in place so it is in the *Up* position.
3. Select the check mark when these steps are completed.

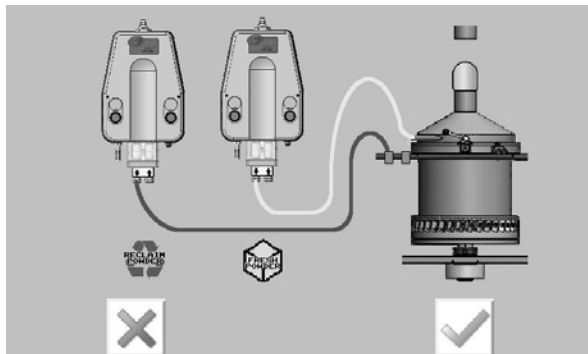


Figure 4-13 Move the Fresh Powder Hose

Clean Critical Points on the Feed Center

See Figure 4-14.

NOTE: If *Reclaim to Waste* timer mode is selected, then the reclaim (green) hose will not be moved to the hopper until the timer times out and the operator is notified.

1. Lift the hopper lid.
2. Remove, blow off, and hang the sieve.
3. Remove and blow off the stack sleeve.
4. Blow off all critical points (noted in Figure 4-14).
5. Select the check mark when these steps are completed.

NOTE: Be sure to blow off all visible powder, including the vibratory table, the inlets on the hopper, and behind the hopper lid.

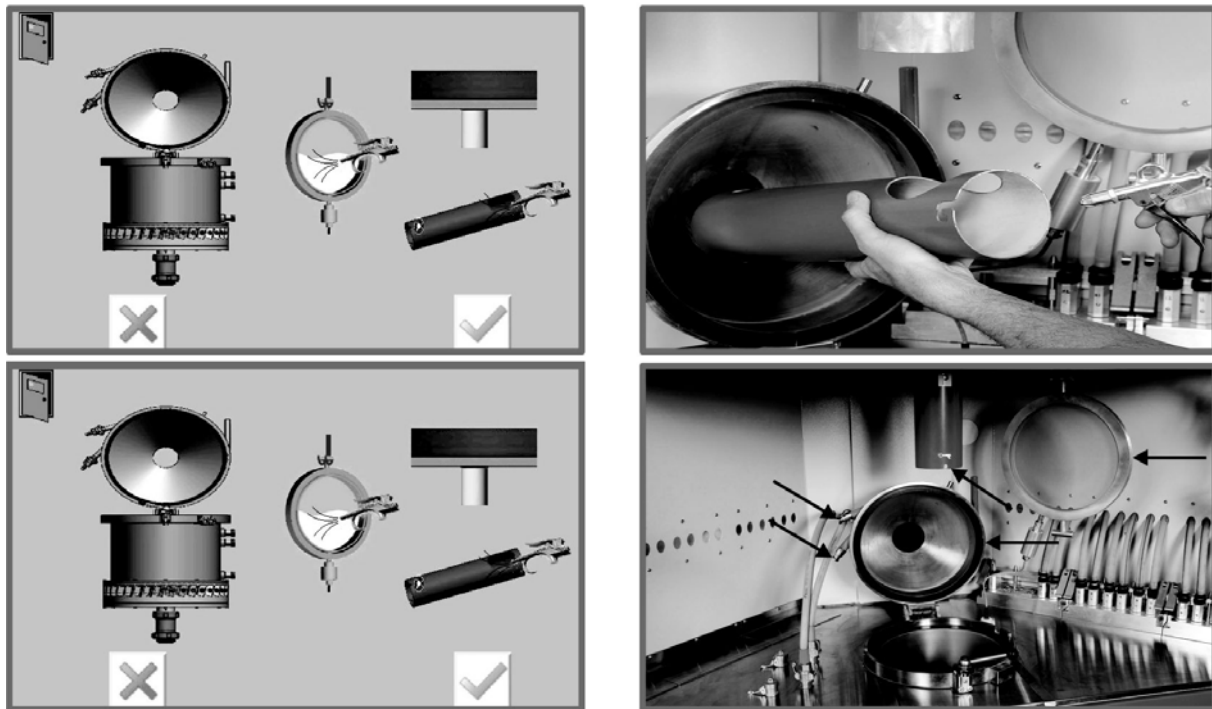


Figure 4-14 Clean Critical Points on the Feed Center

Reassemble the Feed Center Components

See Figure 4-15.

1. Move the reclaim (green) and fresh powder (yellow) hoses back to the hopper.
2. Replace the stack sleeve and lock it in the *Paint Mode* position.
3. Replace the sieve.
4. Close the hopper lid.
5. Select the check mark when these steps are completed.

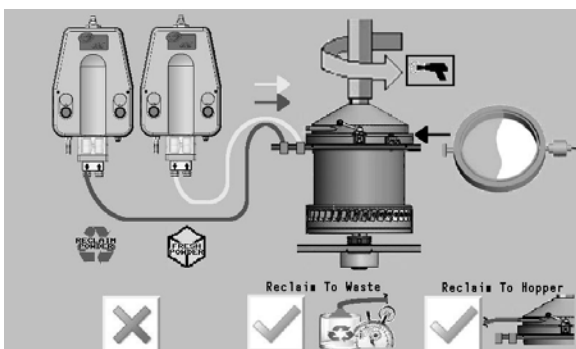


Figure 4-15 Reassemble the Feed Center Components

Clean the Cyclone

See Figure 4-16.

1. Open the cleaning duct slide gate.
2. Blow off the lower section of the cyclone.
3. Blow off the upper section of the cyclone.
4. Swing the lower section of the cyclone down and latch it closed.
5. Swing the transfer pan down and latch it closed.
6. Close the cleaning duct slide gate.
7. Open the booth doors at the entry of the booth.
8. Select the check mark when these steps are completed.

NOTE: The slide gate is located behind the cyclone.

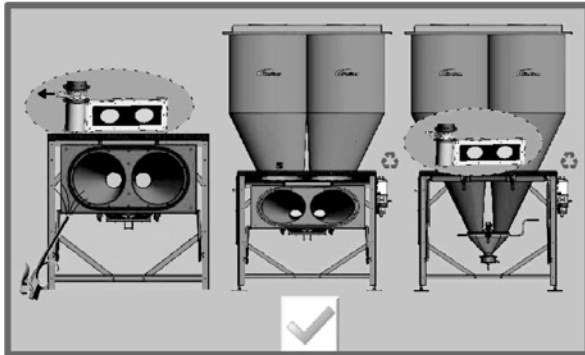


Figure 4-16 Clean the Cyclone

Complete the Color Change

See Figure 4-17.

1. Load a new box of powder into the *Feed Position* on the vibratory table.
2. Select the red *Transfer Pump* icon to fill the hopper with the new powder color.
3. Once the screen shows the hopper is full, begin spraying the new powder color.

NOTE: Within 60 seconds, the reclaim transfer pump will automatically be turned on. It can be turned off, but to begin again, it will have to be turned on manually.

NOTE: If the timed reclaim-to-waste option was configured, a pop-up will appear to signify completion.

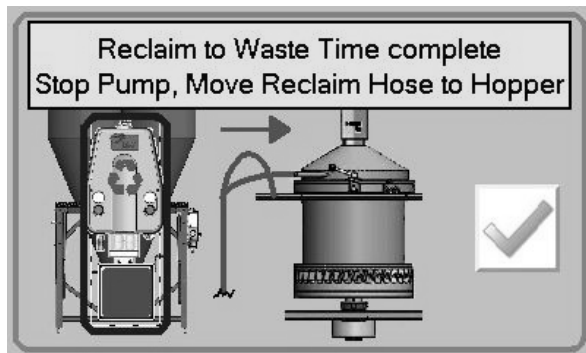


Figure 4-17 Complete the Color Change

Configuration

NOTE: Password is required to change values for the configuration screens.

Select the tools icon to advance to the *Configuration Screen*.

See the following Figures for configuration definitions

Transfer Pump Configuration

See Figure 4-18 and Table 4-2.

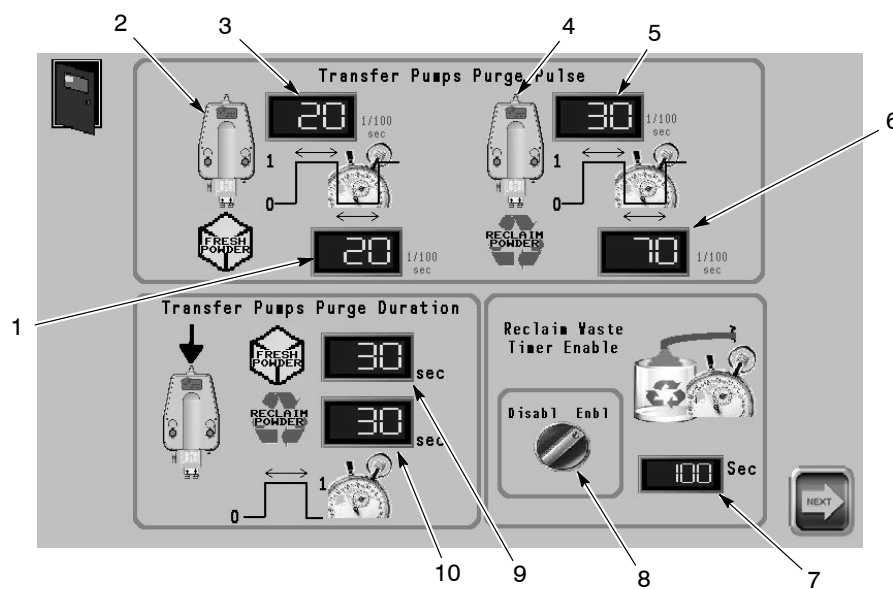


Figure 4-18 Transfer Pump Configuration

Table 4-2 Transfer Configuration

Callout	Description
1	OFF time of the fresh powder pump purge pulse
2	Fresh powder transfer pump
3	ON time of the fresh powder transfer pump purge pulse
4	Reclaim transfer pump
5	ON time of the reclaim transfer pump purge pulse
6	OFF time of the reclaim transfer pump purge pulse
7	Reclaim to waste timer – operator notified when reclaim spray to waste has beet met
8	Reclaim waste – Enable/Disable
9	Fresh powder transfer pump purge duration time
10	Reclaim transfer pump purge duration time

Hopper Configuration

See Figure 4-19 and Table 4-3.

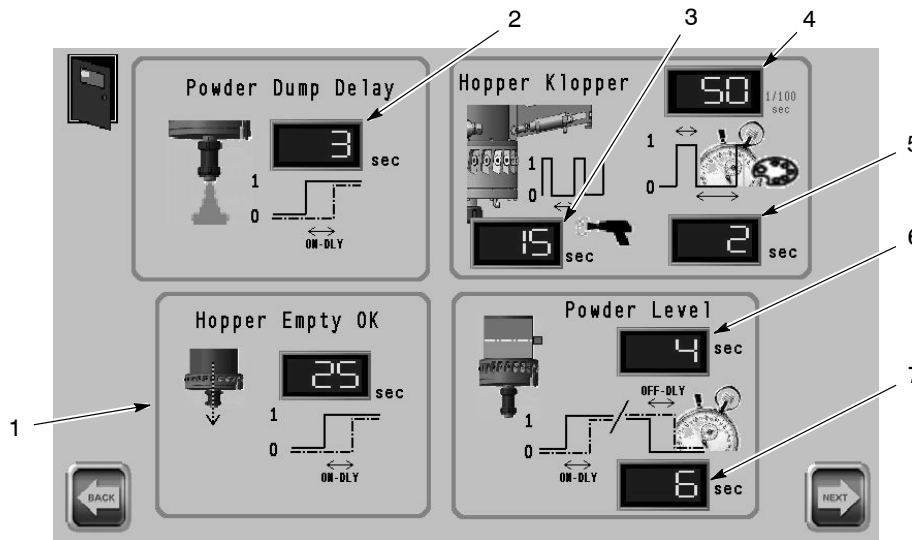


Figure 4-19 Hopper Configuration

Table 4-3 Hopper Configuration

Callout	Description
1	Hopper empty countdown timer – starts when low level powder sensor detects no powder during color change
2	Hopper empty delay time to open dump valve when hopper clean/empty mode is activated
3	Hopper cylinder OFF time (disengaged) during normal operation
4	Hopper cylinder ON time (engaged) during normal operation
5	Hopper cylinder OFF time (disengaged) during color change mode
6	Level control fresh powder transfer OFF delay
7	Level control fresh powder transfer ON delay

Spray Gun Pump Configuration

See Figure 4-20 and Table 4-4.

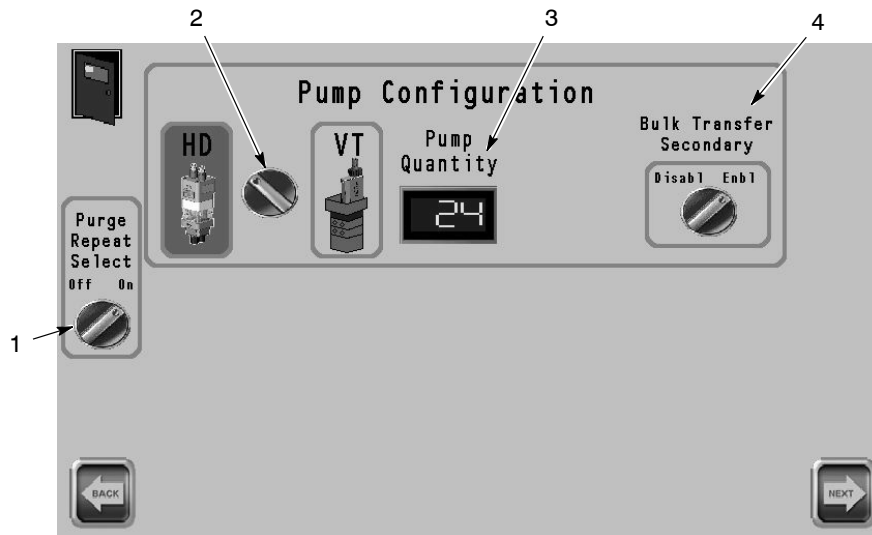


Figure 4-20 Spray Gun Pump Configuration

Table 4-4 Spray Gun Pump Configuration

Callout	Description
1	Enable/Disable ability to repeat spray gun and hopper purge during color change
2	Pump type selector: VT for venturi pumps HD for high density pumps
3	Number of spray gun pumps in the feed center
4	Switch to enable if the system is using a secondary fresh powder transfer pump

Ultrasonic Sieve Configuration

See Figure 4-21 and Table 4-5.

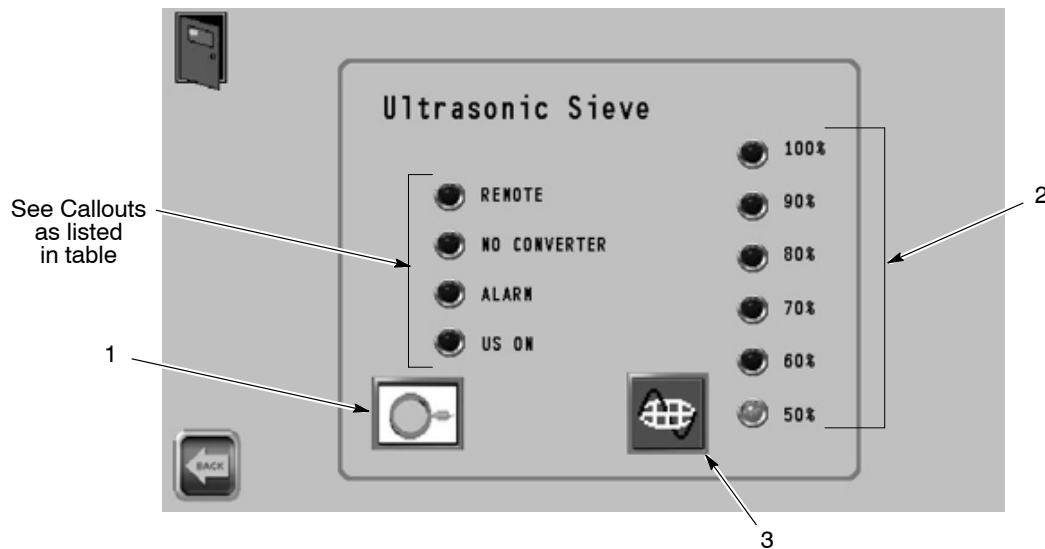


Figure 4-21 Ultrasonic Sieve Configuration

Table 4-5 Ultrasonic Sieve Configuration

Callout	Description
REMOTE	Indicator turns green when controlled from remote PLC
NO CONVERTER	Indicator turns green when sieve cable is not connected
ALARM	Indicator turns green if fault is detected
US ON	Indicator turns green when ultrasonic sieve is in operation
1	Momentarily activates ultrasonic sieve when pressed
2	Selected ultrasonic sieve oscillation amplitude
3	Button to change ultrasonic sieve oscillation amplitude

Manual Operations

See Figures 4-22 and 4-23.

The *Manual Controls* and *Input Monitor* screens allow for manual operation of the feed center functions. These operations are only active when these screens are open.



Figure 4-22 Manual Controls Screen

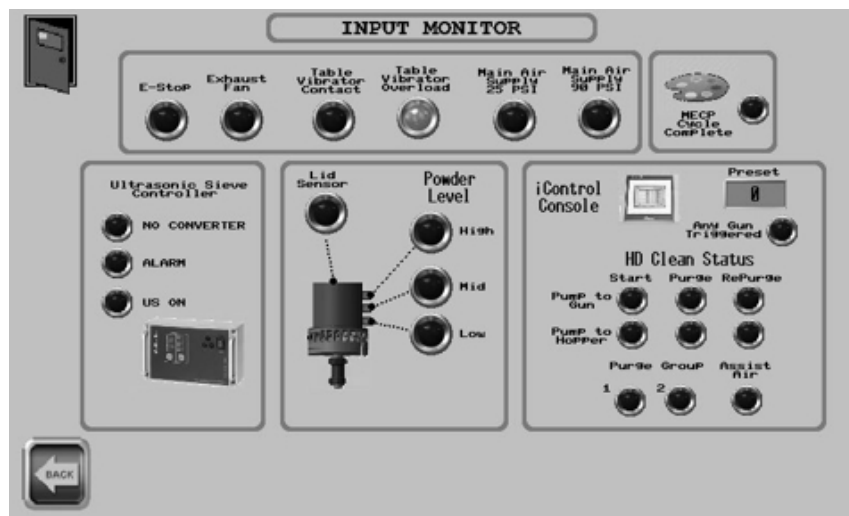


Figure 4-23 Input Monitor Screen

Shutdown

1. Move the system offline, if applicable.
2. Clean the system by performing the color change process, but do not install a new powder source or turn *On* the pumps, sieve, or vibratory table.
3. If the powder feed center will be shut down for maintenance, repair, or an extended period of time, perform the following steps:
 - a. Press the *Stop* button on the system control panel.
 - b. Turn the electrical disconnect switch on the powder feed center control panel to the *Off* position.

Section 5

Maintenance



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



WARNING: Before performing the following tasks, turn off the system controller and disconnect system power. Relieve system air pressure and disconnect the system from its input air supply. Failure to observe this warning may result in personal injury.

NOTE: Maintenance procedures given in this manual are for the feed center only. Refer to the individual component manuals for maintenance procedures for all other system equipment.

Daily Maintenance

NOTE: Depending on application requirements, these procedures may need to be performed more or less often.

Component	Maintenance Procedure
System	Perform at least one color change a day, even if not changing colors. This can be performed at the end of the production day.
Sieve	Disassemble and clean the sieve and screen. Inspect the sieve screen and replace it if powder is fused to it or it is damaged.
Cables, Tubing, and Feed Hoses	Check all external cables, powder hoses, and air tubing for damage. Repair or replace as necessary.
Transfer Pumps	Purge the pumps. Inspect the pinch valve body for signs of powder leakage. If powder is present in the pinch valve section, replace the pinch valves. Refer to the <i>Prodigy High Capacity HDLV Pump</i> for more information.
Spray Gun Pumps	Purge the pump when performing either a color change or system shutdown. Refer to the <i>Encore HD Pump</i> manual for additional maintenance information.
Compressed Air Supply	Check the compressed air dryers and filters. Drain filters if needed. Perform maintenance as necessary.
Enclosure	Clean the interior and exterior of the feed center. Check all equipment ground connections.
Hopper	Empty hopper before end of day or at end of production.
Hopper level sensors	Periodically clean sensor face and threads with brush.
Spray Guns	Purge before end of day or at end of production.

Section 6

Troubleshooting



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

These troubleshooting procedures cover only the most common problems. If you cannot solve a problem with the information given here, contact your local Nordson representative for help.

For troubleshooting related to:

- Transfer pump – refer to the *Prodigy High Capacity HDLV Pump* manual.
- Spray gun pumps – refer to the *Encore HD Pump* manual.
- Sieve screens – refer to the sieve screen vendor manual.

Problem	Possible Cause	Corrective Action
1. Powder not contained within feed center enclosure, afterfilter fan not running	E-Stop button pressed	Reset the E-Stop.
	Final filters clogged	Check the final filters. The fan is shut off automatically if the pressure across the filters reaches 3 in. w.c. If the filters are clogged check the cartridge filter media and gaskets for leaks. Replace damaged cartridge filters. Replace the final filters.
	Fan start/stop button or wiring defective	Check the fan motor control circuits (main system electrical panel).
	Fan motor overload tripped	Overload occurs when the motor operates at a greater amperage than designed for. Make sure the overload is set to the proper limit. Make sure nothing is stopping the motor and fan from turning.
	Fan motor fuse failure	Check the fuses. Failure of one of three fuses in a 3-phase motor circuit can cause the overload to trip. Check the motor and electrical connections. Reset the overload.
	Fan motor failure	Check the motor and electrical circuits. Replace the fuses. Replace the motor.
<i>Continued...</i>		

Problem	Possible Cause	Corrective Action
2. Powder escaping from enclosure openings	Afterfilter cartridge filters clogged; pulsing not cleaning filters Pulse pressure too low Pulse valve failed Cartridge filters leaking Cross drafts interfering with exhaust fan draw Fan rotation backward Access panels not sealed	Check the pulse air pressure. Check the cartridge filter pulse sequence. If the Off duration is too short the pulse manifold may not build up enough pressure to blow off the cartridge filters. If the On duration is too short not enough air is released to blow off the filters. If the On duration is too long the pulse manifold may not be able to build up enough air pressure. Replace the cartridge filters if pulsing does not correct the problem. Increase the pulse pressure to the recommended level. Replace the pulse valve. Check the cartridge filter gaskets and media for damage. Replace filters as necessary. Check for cross drafts at the enclosure opening. Eliminate or divert drafts. Reverse the motor rotation. Tighten all access panels. Check and replace the panel gaskets as necessary.
3. Hopper level sensors giving a false positive reading	Level sensors not threaded properly	Ensure level sensors are 1 or 2 threads into the hopper.
4. No feed hopper fluidizing air	Afterfilter fan not running, interlock valve closed Fan interlock circuit or solenoid valve circuit defective Fluidizing air regulator defective	Start the afterfilter exhaust fan. Check feed center E-stop. Check valve connections. Check the fan interlock wiring between the feed center panel and main system panel. Check the wiring from the feed center panel to the solenoid valve assembly on top of the feed center air drop. Check the fluidizing air regulator.
<i>Continued...</i>		

Problem	Possible Cause	Corrective Action
5. Powder in feed hopper not fluidizing, or clouds of powder erupting from surface	Fluidizing air pressure too low or too high	Increase the fluidizing air pressure until the powder is gently boiling. Decrease the pressure if clouds of powder are erupting from the surface.
	Moist or oil-contaminated powder	Check the air supply for water or oil. Check the filters, separators, and air dryer. Replace the powder in the feed source if it is contaminated. Refer to the next possible cause.
	Fluidizing plate gasket leaking, or fluidizing plate plugged, cracked, or installed incorrectly	Check for air leaks around the fluidizing plate gasket. If leaks are found, replace the gasket Inspect the fluidizing plate for stains, discoloration, polished surfaces, or cracks. Replace it if it is contaminated, plugged, or damaged. The plate should be installed with the smooth surface up (in contact with the powder).
	Incorrect ratio of reclaimed to fresh powder	Increase or decrease the transfer rate. The powder supply should be no more than three parts reclaim-to-one part fresh powder.
	Uneven distribution of powder in feed source	Check the powder and the fluidizing plate for contamination as previously described.
6. Large dump valve on bottom of hopper leaking air/powder	Flange failure of rubber pinch valve bladder	Replace valve bladder.
7. Large dump valve on bottom of hopper not closing fully	SMC valve pack regulator on roof of unit may be set to low.	Verify the regulator is set to 0.3 bar (4.4 psi).
8. Hopper not cleaning completely	Low system air pressure during color change.	Recommended operating pressure for feed center is 100 psi consistently throughout color change (never less than 87 psi). Lower system air pressure will require additional time/pulses to clean the hopper. Use operator interface to increase number of pulses to the hopper. Note: Hopper cleaning consistency will also vary based on the number of spray guns in the system. Lower gun counts may also require additional cleaning time.
9. Contaminants in feed hopper powder	Sieve screen torn	Replace the screen.
	Sieve screen not thoroughly cleaned before installation	Remove and clean the sieve screen.
<i>Continued...</i>		

Problem	Possible Cause	Corrective Action
10. Damage to sieve screens	Ultrasonic sieve uses very fine wire on the sieve screens. Mishandling during cleaning or replacement can damage sieve screen.	Use care when handling and cleaning sieve screens.
11. Powder build up on sieve screen	Screen not cleaned frequently enough	Clean the sieve mesh at more frequent intervals.
12. Sieve screen backing up with certain powders	Incorrect amplitude valve setting in controller Loose transducer to controller (if sieve not operating)	Default valve for sieve screen amplitude is set to 50% from factory. Use the controller operator interface to increase amplitude. Check transducer connection. Transducer should be torqued to 160 in-lbs (15–20 N•m).
13. Excessive sieve noise	Knobs or clamps not tightened; screen gasket damaged	Make sure the clamps are tight. Check the screen gasket and replace it if damaged.
14. Problems related to the sieve		See the supplier sieve manual.
15. Reclaim or Fresh powder transfer pump turned on, but pump does not run	E–Stop button pressed Afterfilter exhaust fan not running, or fan interlock circuit defective Sieve motor not running Reclaim or Fresh Powder wiring circuit is defective No air supply to solenoid valve assembly, or solenoid valve not opening Problem with transfer pump controls or pump. Level sensor failed or wiring defective	Reset the E–Stop button. Turn on the exhaust fan. Check the fan interlock wiring between the feed center panel and the main system panel. Reclaim or fresh powder transfer pumps will not run unless the sieve is on. Turn on the sieve. Check the wiring. Repair or replace as needed. Check the air supply to the solenoid valve assembly on the side of feed center. Check the solenoid valve and wiring. Replace the valve or repair the wiring as needed. Refer to Section 2 for the solenoid valve location. Check the transfer pump and controls. Refer to <i>Prodigy High Capacity HDLV Pump</i> manual. Check level sensor and wiring. Repair or replace as needed.
16. Reclaim or Fresh powder transfer pump cannot be purged	Reclaim or Fresh powder transfer pump not turned on	Turn the Reclaim or Fresh powder transfer pump switch to the On position.

Continued...

Problem	Possible Cause	Corrective Action
17. Reclaim or Fresh powder transfer pump turned off but continues to run	Solenoid valve in manual override	Check the solenoid valve assembly. Make sure the manual operator on the valve is not in override position.
	Solenoid valve failed open	Replace the valve.
18. Fresh powder transfer pump is turned on but pump not running	Level sensor on feed hopper is detecting powder in hopper	The pump will not turn on until the powder level falls below the level sensor and the delay timer runs out.
	Refer to Problem 15. for other causes	
19. Fresh powder transfer pump does not stop automatically	No powder supply at bulk feed system	Check the fresh powder supply.
	Feed hopper level sensor not adjusted properly	Level sensor stops pump when it detects powder. Sensor indicating light should be yellow when powder is detected. Adjust the level sensor if it is not detecting powder. Refer to level sensor documentation.
	Level sensor failed or wiring defective	Check level sensor and wiring. Repair or replace as needed.
20. Reclaim and/or Fresh powder transfer pump purge cycle does not start	Reclaim and Fresh powder transfer pumps not turned on	Pumps must be on before purge can start. Turn on pump to be purged.
	Screen or wiring defective	No signal from screen to controller. Turning the switch to Pump Purge position should turn on signal. Check wiring, repair or replace as needed.
	Purge solenoid valves or wiring defective	Check wiring from feed center control panel to solenoid valve assembly on top of feed center. Check solenoid valve operation. Check air supply to solenoid valve assembly. Repair or replace as needed.
	Purge air pilot valve or pilot air tubing defective	Check pilot air tubing. Make sure air signal is reaching pilot valve. Check pilot valve operation. Check air supply to pilot valve. Repair or replace as needed.
21. Hopper level sensors giving false positive readings	Level sensors may not be installed far enough into the hopper body.	Sensor should protrude through the hopper wall 1–2 threads. Screw in sensor further to correct.
<i>Continued...</i>		

Problem	Possible Cause	Corrective Action
22. Feed center low powder level alarm on	Alarm delay timer has run out, level sensor not detecting powder	Alarm timer starts when the transfer pump turns on. If the timer runs out and the level sensor has still not detected powder then the alarm is turned on. The timer default is 3 minutes.
	Problem with powder supply or Fresh powder transfer pump	Refer to <i>Problems</i> related to powder, sieve, or .
23. Color change does not start	E-Stop button pressed	Reset E-Stop button.
	Afterfilter exhaust fan not running, or fan interlock circuit defective	Turn on exhaust fan. Check fan interlock wiring between feed center panel and main system panel.
	PLC not initiating color change sequence.	Check PLC operation. Contact your Nordson representative or technical support center for help.
	Parts still in booth	Control system tracks parts through booth and will delay color change start until parts clear booth. Booth length is configurable through Control Configuration. Refer to Control Operator Interface manual for more information.
	Control gun positioners not in manual or auto mode	Set the gun positioners to either manual or auto mode.
	Control gun positioner #1 controller did not receive Color Change start signal from feed center	The feed center passes signals for color change to the gun positioner #1 electrical panel which then communicates with the Control system. Check the wiring and connections between the feed center control panel and the gun positioner #1 panel.
	Reciprocator not in auto mode	Reciprocator must be in auto mode for color change cycle to start. Set the reciprocator to auto mode.
Continued...		

Problem	Possible Cause	Corrective Action
24. Color change cycle started, gun positioner stopped at forward limit switch	Oscillator not at bottom of stroke	Oscillator must be at bottom of stroke for spray guns to be in position for gun blowoff. Blowoff will not start until bottom of stroke sensor is on and remains on. Check oscillator position.
	ColorMax not selected on Control gun positioner configuration screen Oscillator not stopped	Check gun positioner configuration. Oscillator gets stop command from gun positioner #1 control panel. Check wiring and connections between gun positioner control panel and main system panel.
	Reciprocator not at Park position	USA only -- Oscillator bottom of stroke sensor not sending signal to main system panel. Sensor detects rotating lever arm. Make sure sensor is positioned to detect arm and check wiring and connections to sensor. Reciprocator must be at Park position for spray guns to be in position for gun blowoff. Blowoff will not start until Park position is achieved. Check reciprocator position. Make sure Park position is configured within stroke range. Refer to Control Operator Interface manual for reciprocator configuration settings.
25. Color change cycle started, blowoff air does not turn on	No air supply to solenoid valve or pilot valve, failed valve, or bad electrical connection	Solenoid valve (typically located in the main system panel) is activated by signal from the gun positioner control panel. Solenoid valve sends air signal to large pilot valve that provides air to the blowoff nozzles. Make sure main system panel air supply is on. Check solenoid valve output. If solenoid coil is energized but no air flows from valve, replace valve. Check air tubing to pilot valve. Check pilot valve operation. Check the wiring and connections between the gun positioner panel and main system panel.
Continued...		

Problem	Possible Cause	Corrective Action
26. Air from feed center for bulk unloader turns on and off	The optional air quick connect for bulk unloaders on the front of the feed center near the fresh powder transfer pumps is designed primarily for use with the Nordson drum unloader. Its purpose is to control the vibratory motor on the drum unloader and it cycles on and off with the fresh powder transfer pump(s).	Use Nordson drum unloader.
27. Fresh powder backfeeding through one pump and sent into waste duct	Improper location of fresh powder suction lance when equipped with two lances	When equipped with two fresh powder transfer pumps, both suction lances must be installed in a fresh powder source when pumps are operating.
28. Air from spray gun pumps bleeding back into hopper at incorrect times	Insufficient pinch valve pressure	If experiencing this issue on a system with a large number of spray guns, increase the high pinch valve pressure regulator inside the pump cabinet to 40 psi (2.8 bar).

Section 7

Repair



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

For repair procedures related to the transfer pump, refer to the *Prodigy High Capacity HDLV Pump* manual.

For repair procedures related to:

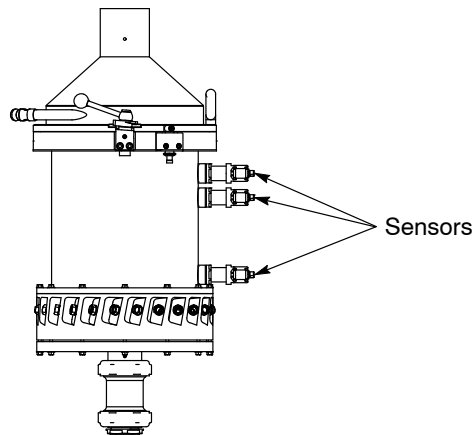
- Transfer pump – refer to the *Prodigy High Capacity HDLV Pump* manual.
- Spray gun pumps – refer to the *Encore HD Pump* manual.
- Pump cabinet – refer to the *Encore HD Automatic Pump Panel* manual.

Hopper

Level Sensors

See Figure 7-24.

1. Remove the cable from the sensor.
2. Remove the damaged sensor.
3. Thread in the new sensor, ensuring there are 1 or 2 threads into the hopper.
4. Re-install the cable to the sensor.
5. Place hand in front of sensor to ensure the controller screen reads the sensor.



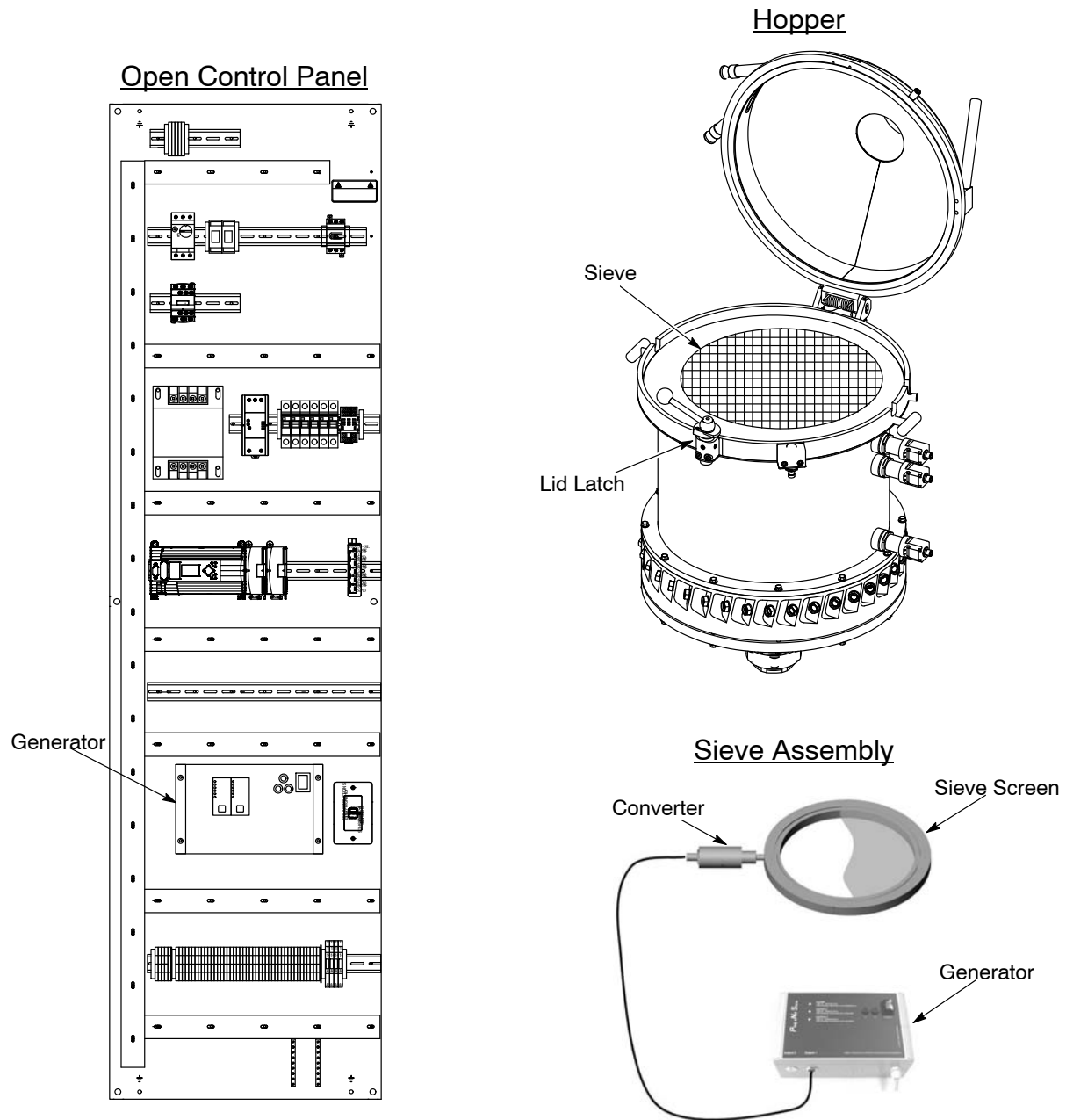
PD19386

Figure 7-24 Level Sensors

Sieve Screen

See Figure 7-25.

1. Open the control panel and shut off the generator.
2. Disengage the lid latch and open the lid.
3. Remove the damaged sieve from the hopper.
4. Disconnect the converter.
5. Connect the converter to the new sieve screen.
6. Place the sieve screen back in the hopper.
7. Close and lock lid by engaging the lid latch.



10015179/10014043

Figure 7-25 Replacing Sieve Screen

Dump Valve Sleeve



WARNING: Before performing procedure, shut down power and air to the system.

Tools Required:

- Wrench
- Liquid soap solution for lubrication

NOTE: Do not use a petroleum product such as WD-40™

- Special Tool

NOTE: A special tool is required for this procedure. The tool must be ordered in addition to the sleeve. See the *Parts* section for more information.

1. Remove the front door of the feed center using the hinges.
2. Remove the plastic lock nut (1).
3. Remove the metal cover (2) by taking off the six nuts (7).
4. Disconnect the air supply tube (9).
5. Use the special tool to remove the upper pinch valve nut (8) to allow the assembly to drop.
6. Place the valve body (5) on a solid surface.
7. Remove the lower pinch valve nut (3) and outlet adapter (4).
8. Remove the damaged sleeve (6).
9. Lubricate the flange OD on one end of the new sleeve with liquid soap solution.
10. Starting with the lubricated end, push the sleeve at an angle into the valve body until the top flange is seated.
11. Using the same liquid soap solution, lubricate both flange ends of the valve nuts (3 and 8).
12. Continue to install valve nuts, air supply tube, metal cover, and front door.

- ▲ – Lubricate
△ – Use special tool

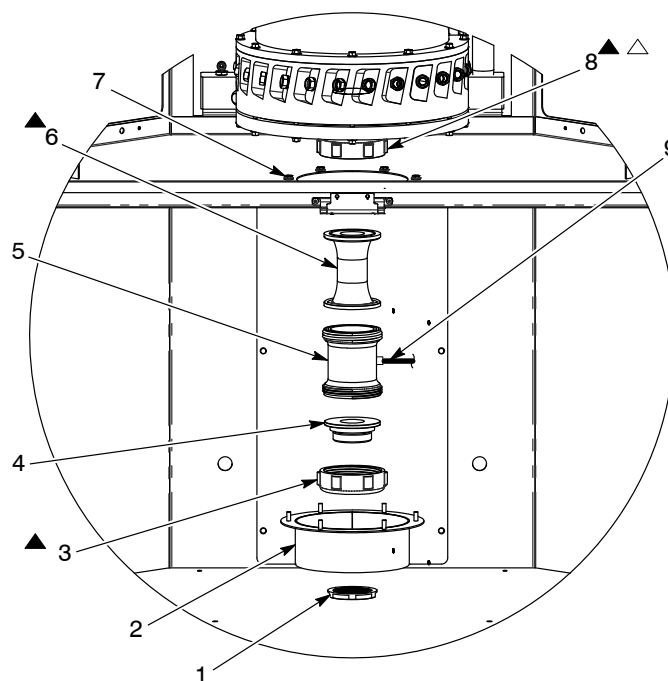


Figure 7-26 Dump Valve Sleeve Replacement

- | | | |
|--------------------------|---------------------|--------------------------|
| 1. Plastic lock nut | 4. Outlet adapter | 7. Nut |
| 2. Metal cover | 5. Pinch valve body | 8. Upper pinch valve nut |
| 3. Lower pinch valve nut | 6. Sleeve | 9. Air supply tube |

Section 8

Parts

Introduction

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

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	

Feed Center Controller

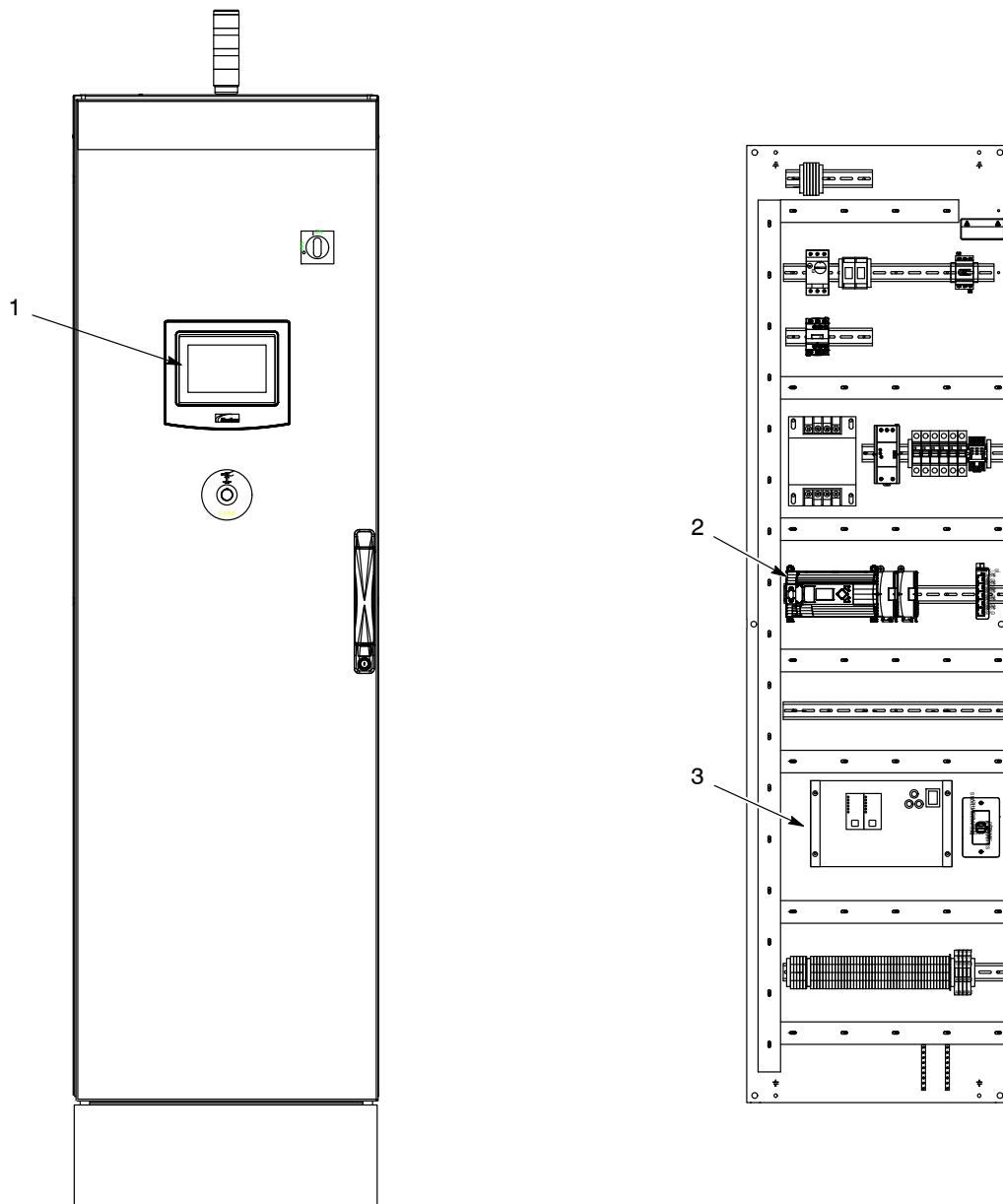


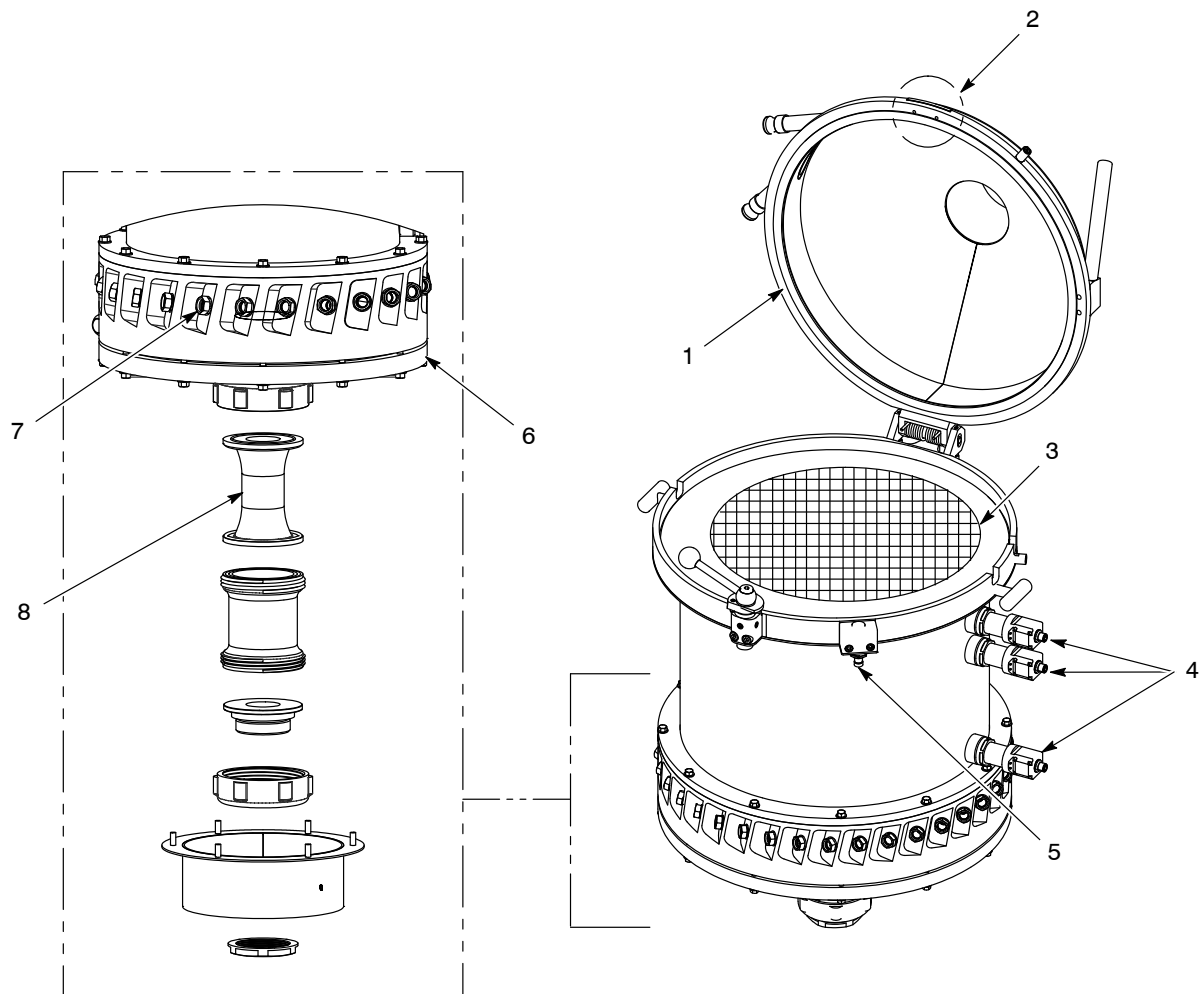
Figure 8-1 Feed Center Controller

10015179

See Figure 8-1.

Item	Part	Description	Quantity	Note
1	1609325	DISPLAY, programmed, Spectrum PFC	1	
2	1610136	PLC, programmed, Spectrum PFC	1	
3	1611541	CONTROLLER, ultrasonic generator, 50W, US	1	
NS	1608989	CABLE, feed center #52, FCDC2, 3 m, plug-n-spray	1	
NS	1608988	CABLE, feed center #51, FCDC1, 3 m, plug-n-spray	1	
NS	1608987	CABLE, feed center #50, FCAC1, 3 m, plug-n-spray	1	
NS: Not Shown				

Hopper



10014043

Figure 8-2 Controller

See Figure 8-2.

Item	Part	Description	Quantity	Note
1	1609233	GASKET, sieve, upper, 300 mm, Spectrum PFC	1	
1	1610405	GASKET, sieve, upper, 300 mm, Spectrum PFC	1	
2	1606614	PLATE, wear, latch, hopper, 300 mm	1	
2	1610420	PLATE, wear, latch, hopper, 425 mm	1	
3	-----	SCREEN, sieve	1	B
4	1610617	SENSOR, cap, PNP, NO/NC, M30, RNG, 10 mm, 4P	3	
5	1609372	SENSOR, proximity, PNP, N.O., M18, range 8 mm	1	
6	1610608	PLATE, fluidizing, 300 mm	1	
6	1610336	PLATE, fluidizing, 425 mm	1	
7	1610428	KNOB, lock, powder tube, 8 mm	AR	
8	1606646	VALVE, pinch, replacement sleeve	1	A
NS	1609234	GASKET, sieve, lower, 300 mm, Spectrum PFC	1	
NS	1610406	GASKET, sieve, lower, 425 mm, Spectrum PFC	1	
NS	1606619	PLUG, pump, hopper, 8 mm, HD	AR	
NOTE A: Special tool kit (1610701) is required when replacing sleeve.				
B: Refer to <i>Sieve Screen</i> table for sizes and part numbers.				
AR: As Required				
NS: Not Shown				

Special Tools and Kits

Part	Description	Note
1610618	KIT, replacement, O-ring, fluidizing plate, hopper, 300	A
1610619	KIT, replacement, O-ring, fluidizing plate, hopper, 425	A
1610711	KIT, replacement, O-ring, knob, hopper, 300	
1610713	KIT, replacement, O-ring, knob, hopper, 425	
1610701	KIT, tool, fluidizing plate, hopper, Spectrum	
1606645	• FIXED PIN SPANNER	
-----	• REMOVAL TOOL, fluidizing plate, hopper	
1610714	• WRENCH, valve, pinch, 1.5 in.	
NOTE A: Special tool kit (1610701) is required when replacing fluidizing O-rings.		

Sieve Screens

Table 8-1 Sieve Screens

Part Number	Size	Microns	Wire Diameter
768675	300-mm	300	0.065 mm
768676		250	0.100 mm
768677		200	0.090 mm
768678		160	0.100 mm
1610110		300	0.112 mm
1612914		500	0.160 mm
1612915	425-mm	500	0.160 mm
1610111		300	0.112 mm
1610112		300	0.065 mm
1610113		250	0.100 mm
1610114		200	0.090 mm
1610115		200	0.100 mm

Ultrasonic Probe

Part	Description	Note
768680	PROBE, ultrasonic, sieve, A300	

Extension Cable

Part	Description	Note
768682	EXTENSION CABLE, A300, sieve, 5 m	

Transfer Pump

This section contains recommended spare parts for the transfer. For more information related to transfer pumps, refer to the *Prodigy High Capacity HDLV Pump* manual.



Pinch Valve
(for food contact)
Kit 1097919
(Includes
4 pinch valves,
2 filter discs,
2 O-rings,
and 1 insertion tool)



Non-conductive Pinch Valve
Kit 1092273
(Includes
4 pinch valves,
2 filter discs,
2 O-rings,
and 1 insertion tool)



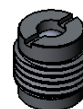
Standard Fluidizing Tube Kit
1104542
(Includes 2 fluidizing tubes
and 4 O-rings)



Upper Y Manifold
Kit 1057269
(Includes
1 manifold
and 2 O-rings)



Lower Y-Block with
grounded tubing
barbed fittings
Part 1610762
(Quantity of 1)

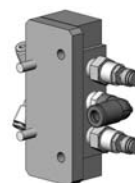


Check Valve Service
Kit 1078161
(Quantity of 2)

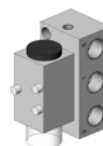


Check Valve Upgrade
Kit 1080160
(Includes
2 connectors,
2 check valves,
2 plugs,
6 O-rings)

Use to upgrade older
pumps to new style
check valves



Timing Valve Kit
1611821
(Quantity of 1)



Miniature Valve
Part 1054519
(Quantity of 1)



Generation II Pinch
Valve Upgrade Kit
Part 1092271
(Converts
1081246 to 1092240
1087221 to 1092242)

Figure 8-3 Recommended Transfer Pump Spare Parts

Spray Gun Pump

This section contains recommended spare parts for the spray gun pump. For more information related to spray gun pumps, refer to the *Encore HD Pump* manual.

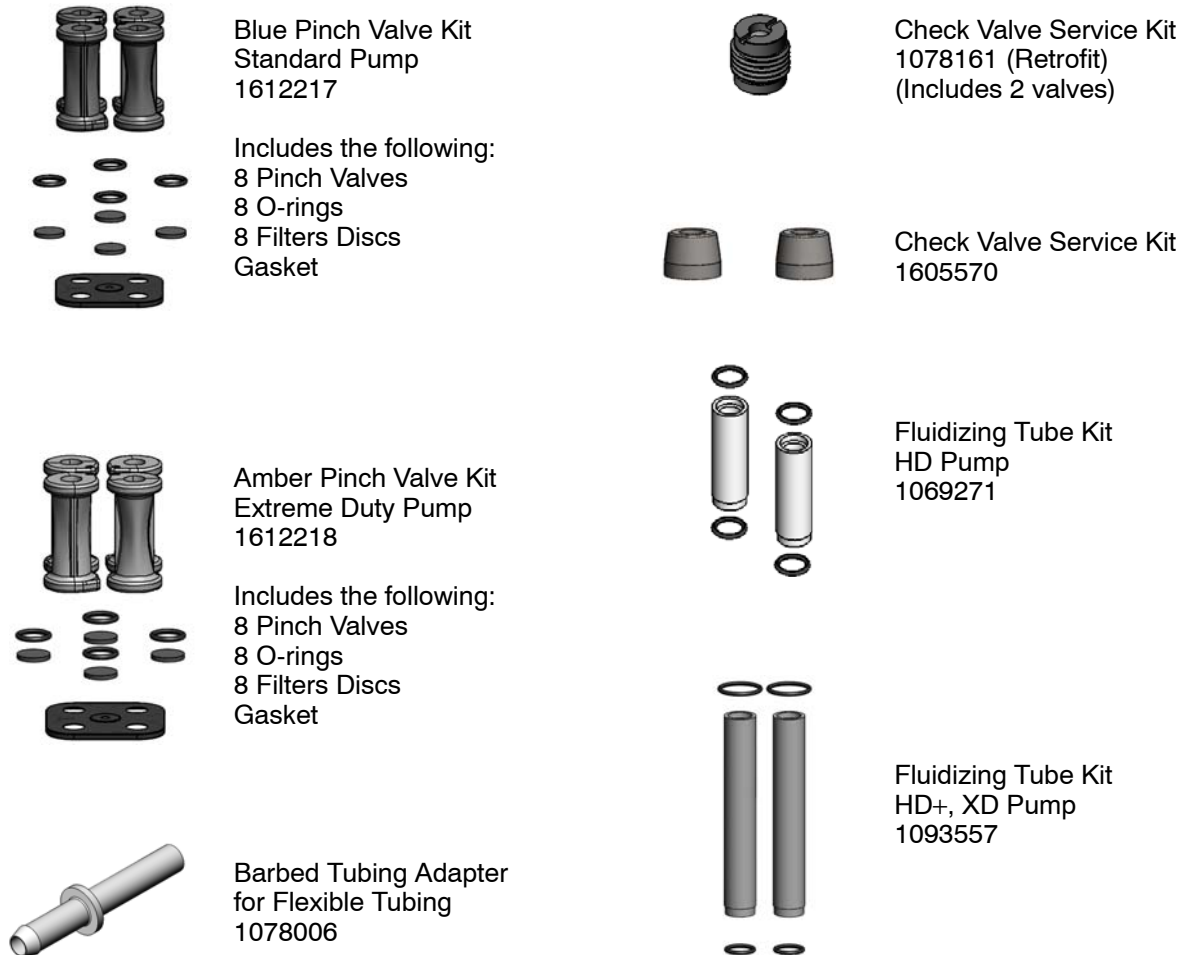
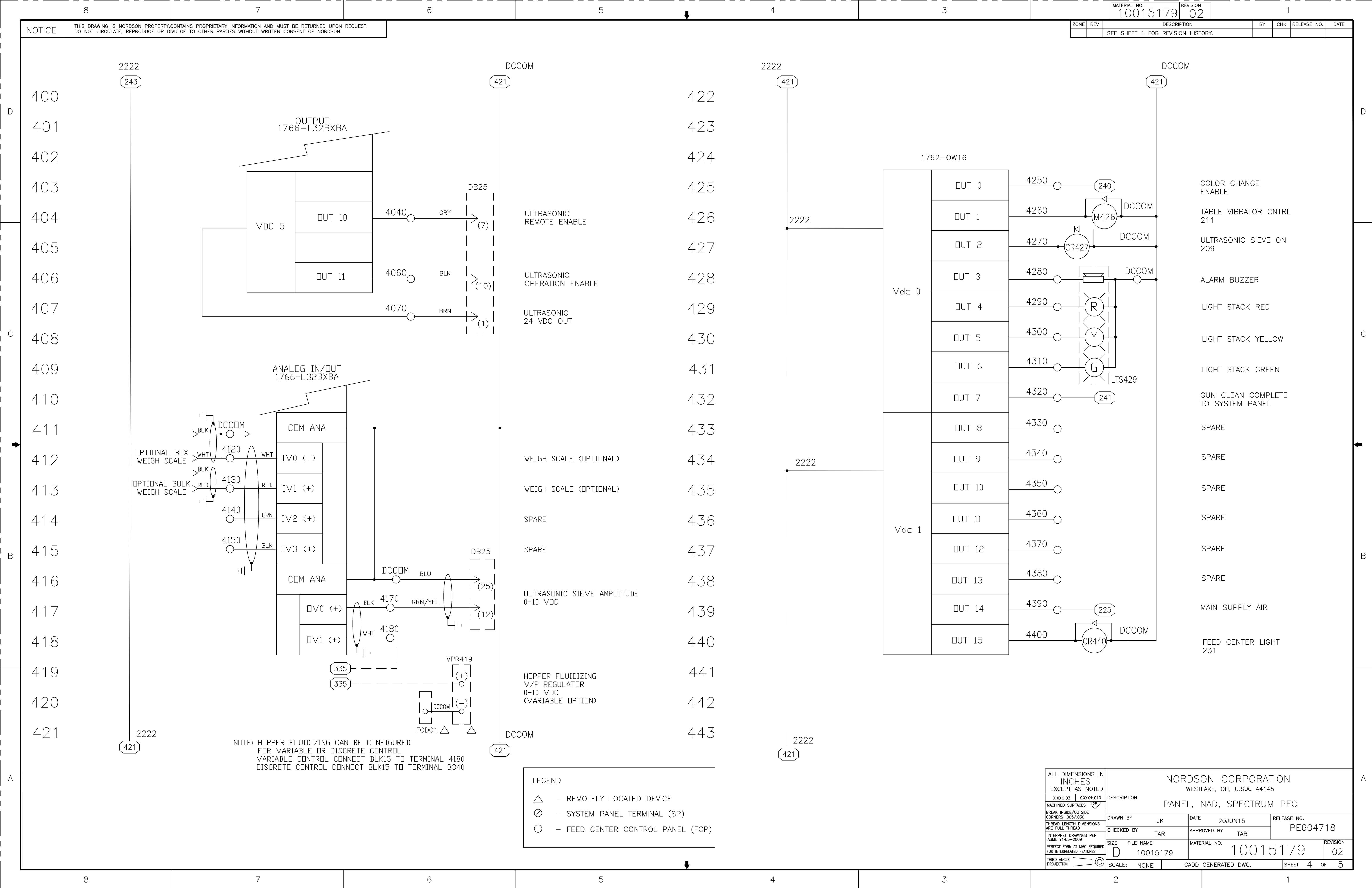


Figure 8-4 Recommended Spray Gun Pump Spare Parts

Section 9

Diagrams

Description	Part Number
Spectrum PFC NAD Panel	10015179
Spectrum HD PFC Pneumatic Schematic	10015943



87654321

NOTICE

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MATERIAL NO.10015179

REVISION02

1

ZONE

REV

DESCRIPTION

BY

CHK

RELEASE NO.

DATE

SEE SHEET 1 FOR REVISION HISTORY.

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421

2222

421

1762-OW16

Vdc 0

OUT 0

OUT 1

OUT 2

OUT 3

OUT 4

OUT 5

OUT 6

OUT 7

Vdc 1

OUT 8

OUT 9

OUT 10

OUT 11

OUT 12

OUT 13

OUT 14

OUT 15

4250

4260

4270

4280

4290

4300

4310

4320

4330

4340

4350

4360

4370

4380

4390

4400

240

M426

CR427

LTS429

241

225

CR440

DCCOM

DCCOM

DCCOM

DCCOM

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COLOR CHANGE
ENABLE

TABLE VIBRATOR CNTRL
211

ULTRASONIC SIEVE ON
209

ALARM BUZZER

LIGHT STACK RED

LIGHT STACK YELLOW

LIGHT STACK GREEN

GUN CLEAN COMPLETE
TO SYSTEM PANEL

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

MAIN SUPPLY AIR

FEED CENTER LIGHT
231

NOTE: HOPPER FLUIDIZING CAN BE CONFIGURED
FOR VARIABLE OR DISCRETE CONTROL.
VARIABLE CONTROL CONNECT BLK15 TO TERMINAL 3340
DISCRETE CONTROL CONNECT BLK15 TO TERMINAL 3340

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RELEASE NO.

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1762-OW16

Vdc 0

OUT 0

OUT 1

OUT 2

OUT 3

OUT 4

OUT 5

OUT 6

OUT 7

Vdc 1

OUT 8

OUT 9

OUT 10

OUT 11

OUT 12

OUT 13

OUT 14

OUT 15

4250

4260

4270

4280

4290

4300

4310

4320

4330

4340

4350

4360

4370

4380

4390

4400

240

M426

CR427

LTS429

241

225

CR440

DCCOM

DCCOM

DCCOM

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DCCOM

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COLOR CHANGE
ENABLE

TABLE VIBRATOR CNTRL
211

ULTRASONIC SIEVE ON
209

ALARM BUZZER

LIGHT STACK RED

LIGHT STACK YELLOW

LIGHT STACK GREEN

GUN CLEAN COMPLETE
TO SYSTEM PANEL

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

MAIN SUPPLY AIR

FEED CENTER LIGHT
231

NOTE: HOPPER FLUIDIZING CAN BE CONFIGURED
FOR VARIABLE OR DISCRETE CONTROL.
VARIABLE CONTROL CONNECT BLK15 TO TERMINAL 3340
DISCRETE CONTROL CONNECT BLK15 TO TERMINAL 3340

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MATERIAL NO.10015179

REVISION02

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ZONE

REV

DESCRIPTION

BY

CHK

RELEASE NO.

DATE

SEE SHEET 1 FOR REVISION HISTORY.

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2222

421

1762-OW16

Vdc 0

OUT 0

OUT 1

OUT 2

OUT 3

OUT 4

OUT 5

OUT 6

OUT 7

Vdc 1

OUT 8

OUT 9

OUT 10

OUT 11

OUT 12

OUT 13

OUT 14

OUT 15

4250

4260

4270

4280

4290

4300

4310

4320

4330

4340

4350

4360

4370

4380

4390

4400

240

M426

CR427

LTS429

241

225

CR440

DCCOM

DCCOM

DCCOM

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COLOR CHANGE
ENABLE

TABLE VIBRATOR CNTRL
211

ULTRASONIC SIEVE ON
209

ALARM BUZZER

LIGHT STACK RED

LIGHT STACK YELLOW

LIGHT STACK GREEN

GUN CLEAN COMPLETE
TO SYSTEM PANEL

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

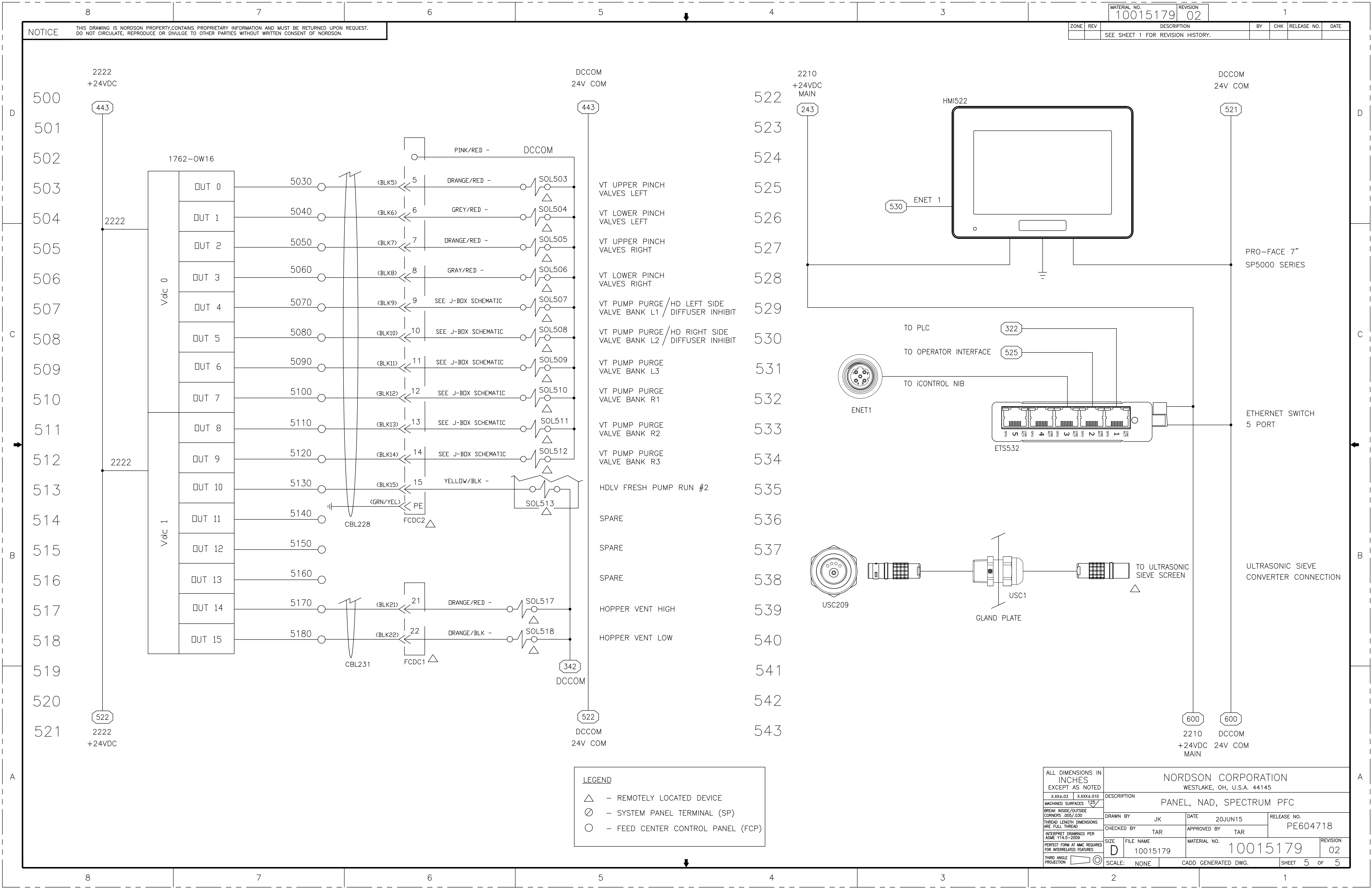
SPARE

SPARE

MAIN SUPPLY AIR

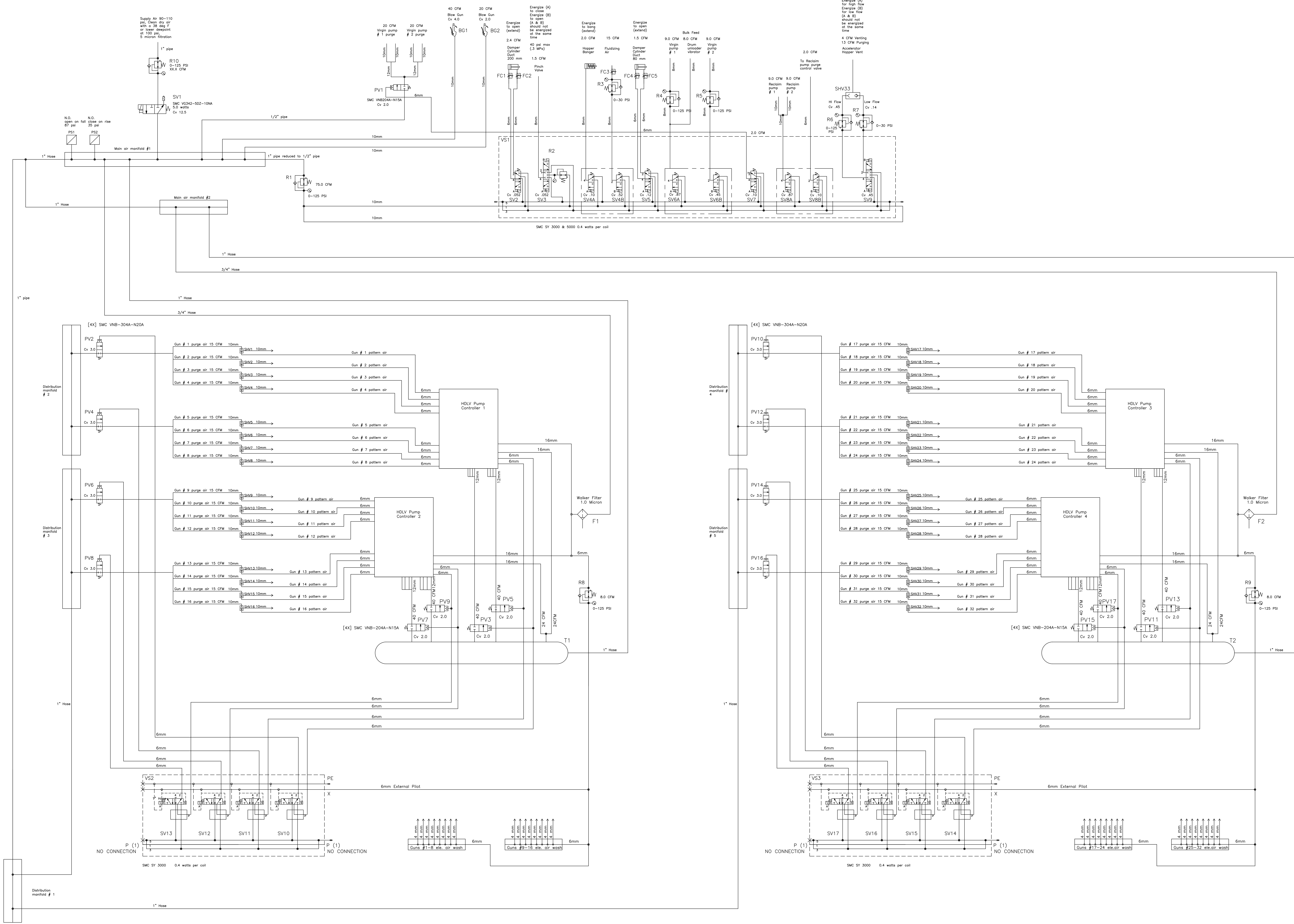
FEED CENTER LIGHT
231

NOTE: HOPPER FLUIDIZING CAN BE CONFIGURED
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VARIABLE CONTROL CONNECT BLK15 TO TERMINAL 3340
DISCRETE CONTROL CONNECT BLK15 TO TERMINAL 3340



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ZONE	REV	DESCRIPTION	BY	CHK	RELEASE NO.	DATE
00	ISSUED		TAL	JK	PE605196	05JAN16
01	RELEASED FOR PRODUCTION.		TAL	JK	PE605196	31JUL17



ALL DIMENSIONS IN INCHES EXCEPT AS NOTED		NORDSON CORPORATION WESTLAKE, OH, U.S.A. 44145	
DESCRIPTION SCHEMATIC,PNEU,PFC,SPECTRUM HD		RELEASE NO. PE605196	
DRAWN BY TAL		DATE 05JAN16	
CHECKED BY JK		APPROVED BY JK	
SIZE E		MATERIAL NO. 10015943	
FILE NAME 10015943		REVISION 01	
SCALE: FULL		CADD GENERATED DWG.	
SHEET 1		OF 1	