Spectrum® VT Feed Center (EU)

Customer Product Manual
Part 7580470_01
Issued 01/18

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CE

Nordson

NORDSON Deutschland GmbH

Contact Us

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EC DECLARATION OF CONFORMITY
ACCORDING TO CE DIRECTIVE 2006/42/ EC ANNEX II A

MANUFACTURER Nordson Deutschland GmbH,
Heinrich-Hertz-Strasse 42, 40699 Erkrath

DESCRIPTION PowderFeedCenter
Family/ Models: Spectrum Feed Center
Venus II
Serial number 7070xxx (see Serial-Plate)
Year of manufacturing (see Serial-Plate)

APPLICABLE DIRECTIVES & STANDARDS USED TO VERIFY COMPLIANCE

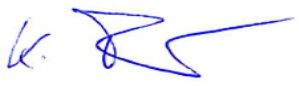
2006/42/EC Machinery
2014/34/EU Explosive Atmosphere
2014/30/EU Electromagnetic Compatibility
2014/68/EU Pressure Equipment
EN 60204-1
EN ISO 12100
EN 1127-1

MARKING OF PRODUCT CE ; Ex

The equipment delivered is generally intended to be part of a powder coating system, and can be operated on its own or in conjunction with other equipment.
In order to be in full compliance with the CE machinery directive and its amendments, the customer is obliged to respect the applicable regulations for his powder coating system upon incorporation of the equipment in the powder coating plant and before starting operation.

We hereby declare that the product specified conforms to the directives and standards described above and that it has been provided with a CE label. Provided the product is installed and operated in line with Nordson's manuals its operation is safe.

Name and address of the responsible person authorized to compile the technical files



Kai Flockenhaus,
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Erkrath, 13th Nov 2017

Table of Contents

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 specification should comply with EN12981

- 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® VT Feed Center conditions and supplies powder for up to 18 powder 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 VT provides quick color changes and automatic purge cleaning. The VT hopper receives reclaimed and fresh powder. The powder is then sieved and sent to the spray guns using the Spectrum Venturi (VT) inline powder feed pumps.

The Spectrum VT 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

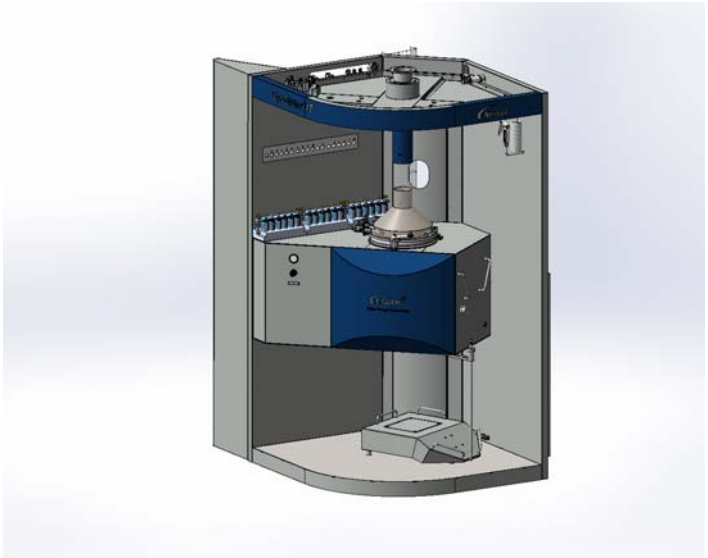

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Figure 2-1 Spectrum VT Feed Center

Introduction *(contd)*

The color change operation is automatic and is initiated by the touch screen control panel. During a color change,the VT hopper cycles through a number of cleaning processes. High-pressure purge air is pulsed through the powder feed 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 VT 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.

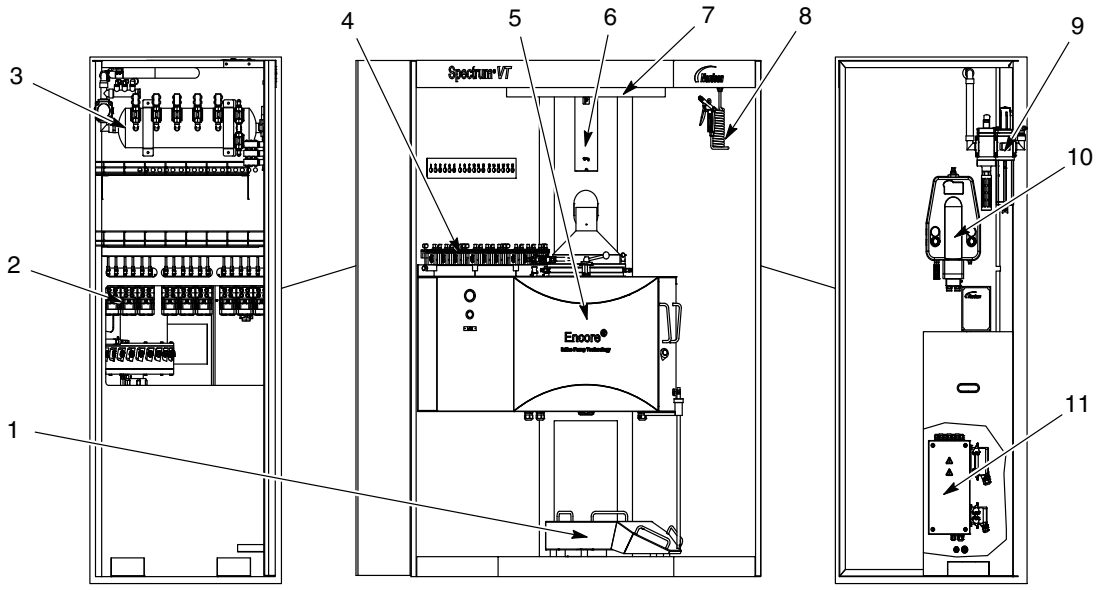

Figure 2-2 Major Components of Spectrum VT

1. Vibrating table
2. Syphon Manifold Block
3. Air purge tank
4. Venturi powder pump
5. Powder hopper & sieve
6. Extract duct
7. Light
8. Air blow gun
9. Air service unit
10. HDLV virgin transfer pump
11. Electrical junction box

Transfer Pumps

The Spectrum VT 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.

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 not included with the feed center, but are included with the cyclone.

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

Spectrum Hopper

See Figure 2-3. The Spectrum hopper has 12-mm tubing connections.

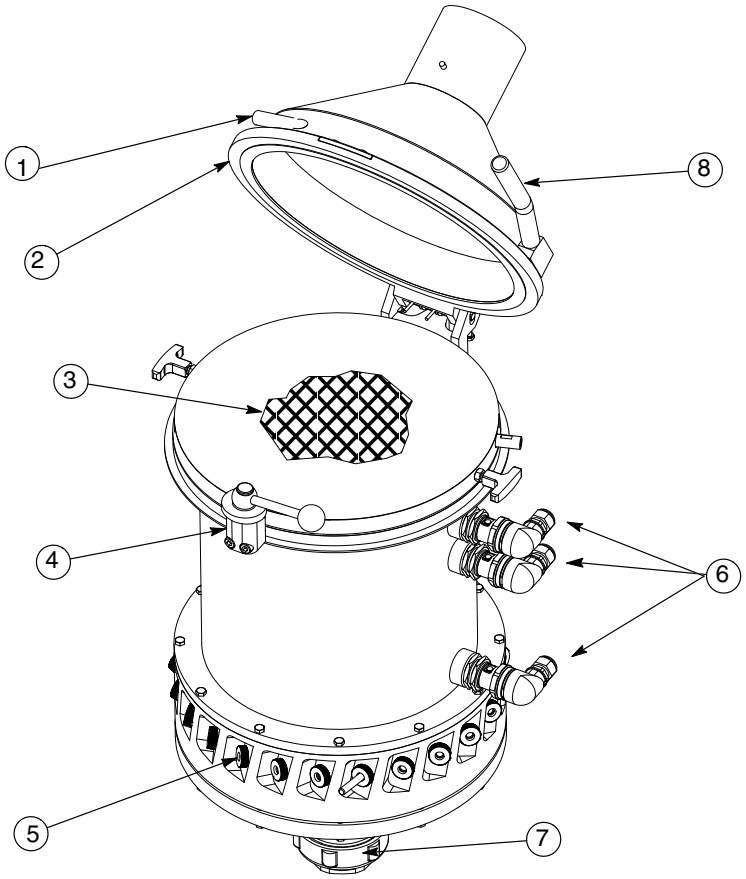

Figure 2-3 VT Hopper

1. Fresh powder inlet
2. Reclaim powder inlet
3. Sieve screen
4. Lid latch
5. Powder tube connector
6. Level sensors
7. Dump valve
8. Lid handle

VT Inline Powder Feed Pump

See Figure 2-4.

Spectrum® VT inline powder pumps are used in powder feed centers to draw powder from a container, atomize the powder stream, and transfer it to powder spray guns. The pumps can be used with 11-mm or 12.7-mm Nordson antistatic powder feed hose.

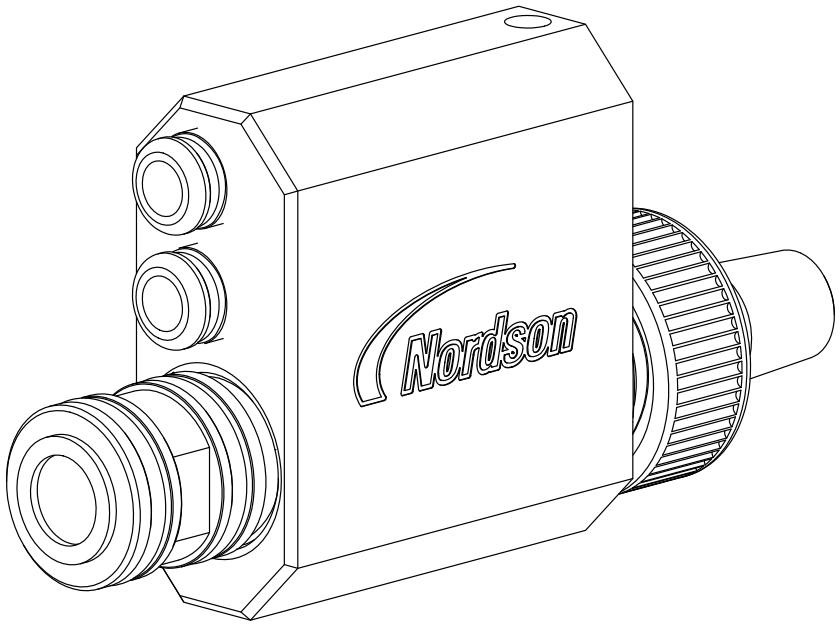

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Figure 2-4 VT Inline Powder Pump

Optional Component List

Optional components include:

- Additional fresh powder transfer pump (300-mm hopper only)
- VT inline powder feed 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.

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

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.

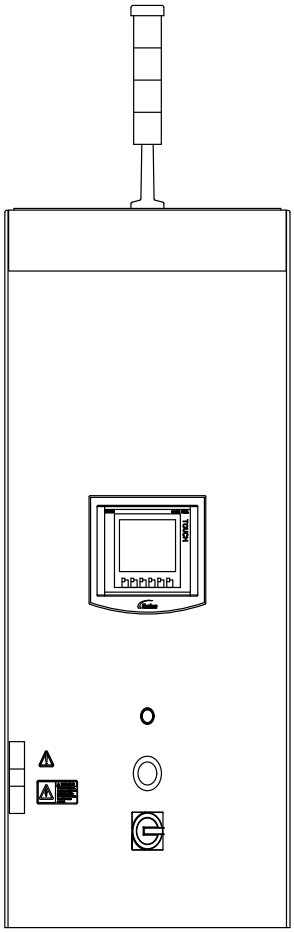


Figure 2-5 Electrical and Pneumatic Controls (1 of 2)

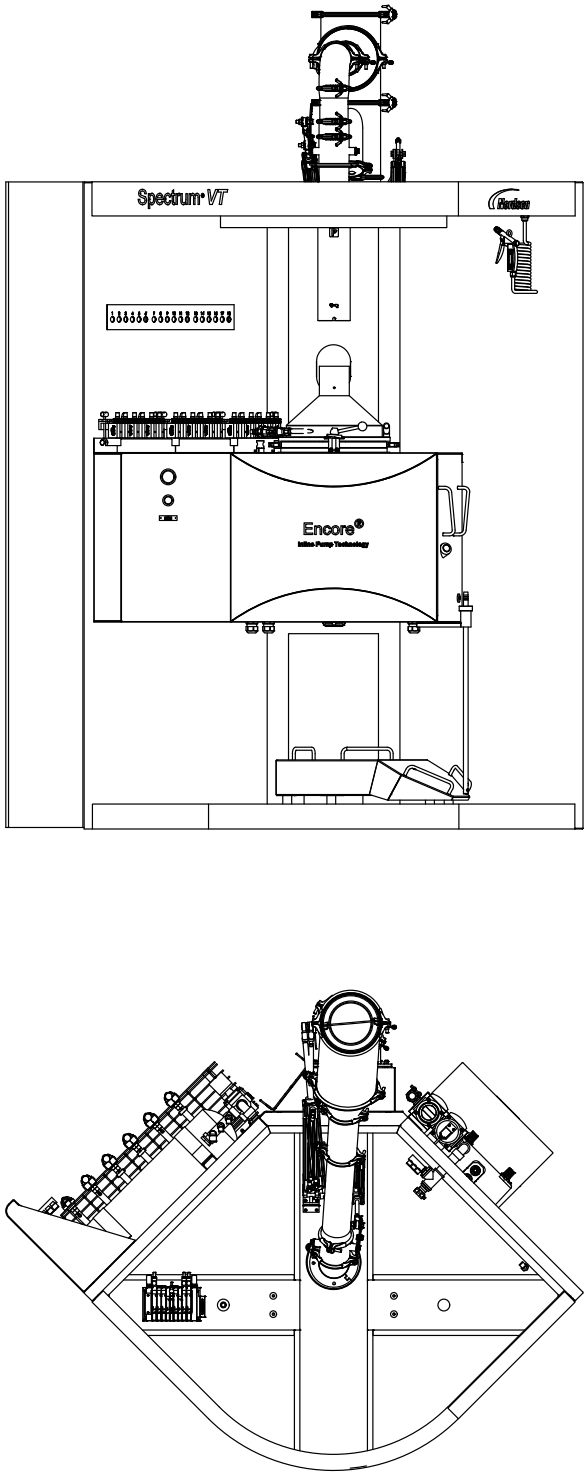


Figure 2-6 Electrical and Pneumatic Controls (2 of 2)

Specifications

Size and Weight

See Figure 2-7 for dimensions.

System Component or Configuration	Weight
Standard Configuration	1150 lb (523 kg)

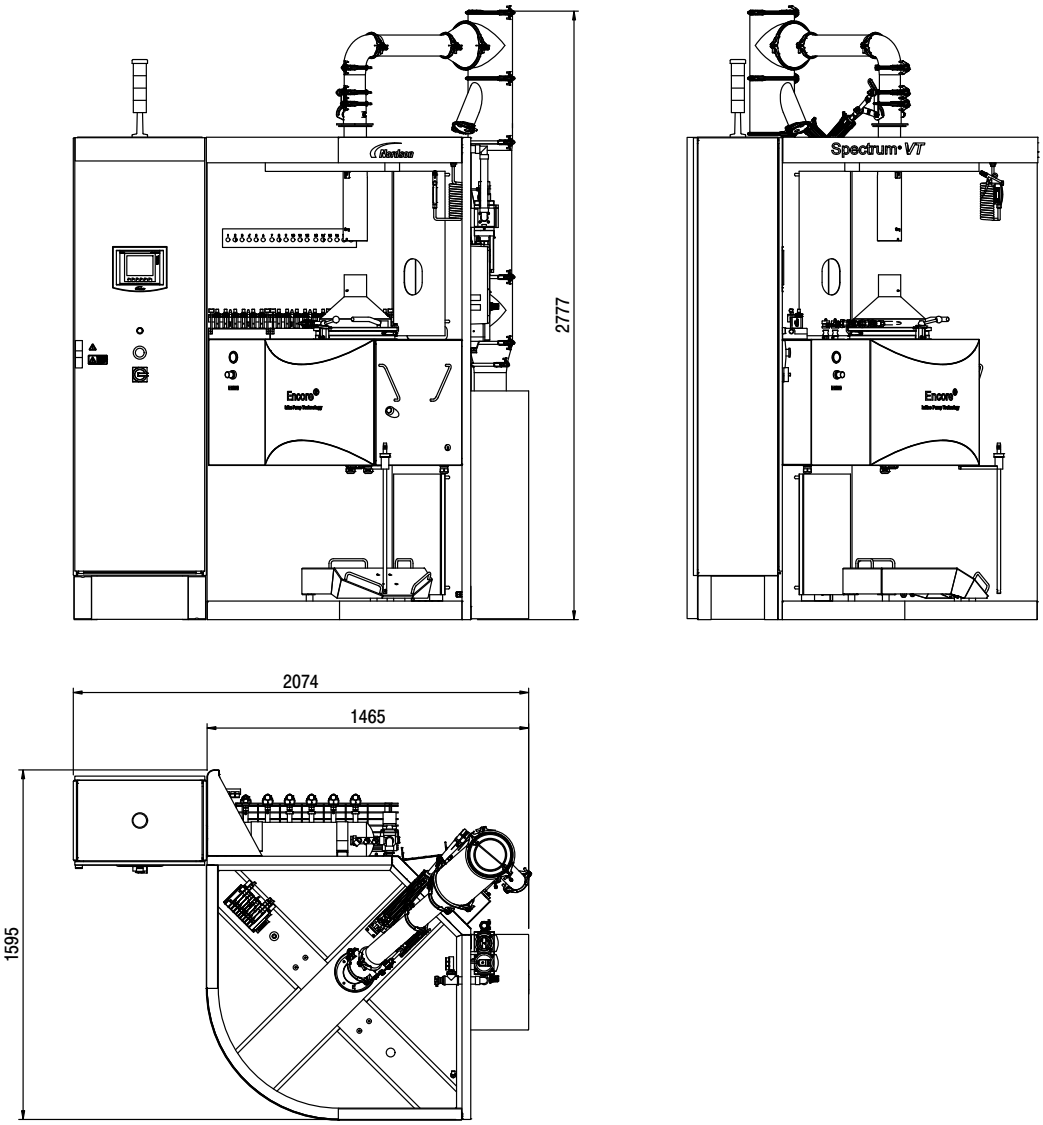


Figure 2-7 Spectrum VT Feed Center Dimensions

Electrical Requirements

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

- 230 V, 3 phase, 50/60 Hz, 6.5 A

Air Requirements

Exhaust Air Flow

During Color Change	2200 cfm
During Operation	600 cfm

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 Pump - 4 SCFM (6.8 m^3/hr)
	Maximum: 200 SCFM (339.8 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.	

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 VT 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 VT 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,

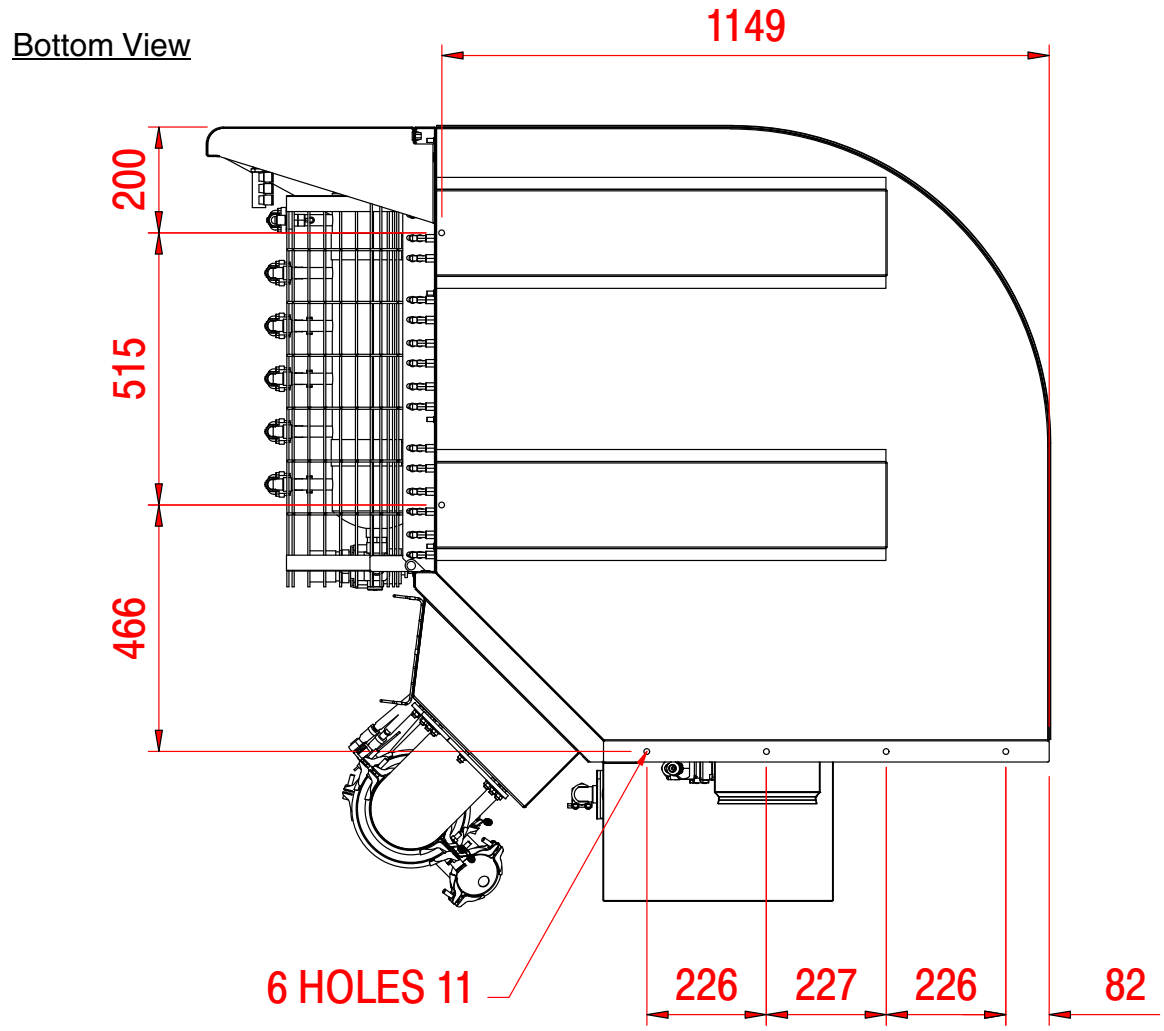


Figure 3-1 Mounting Feed Center Controller

Anchor Feed Center Controller

See Figure 3-2.

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.

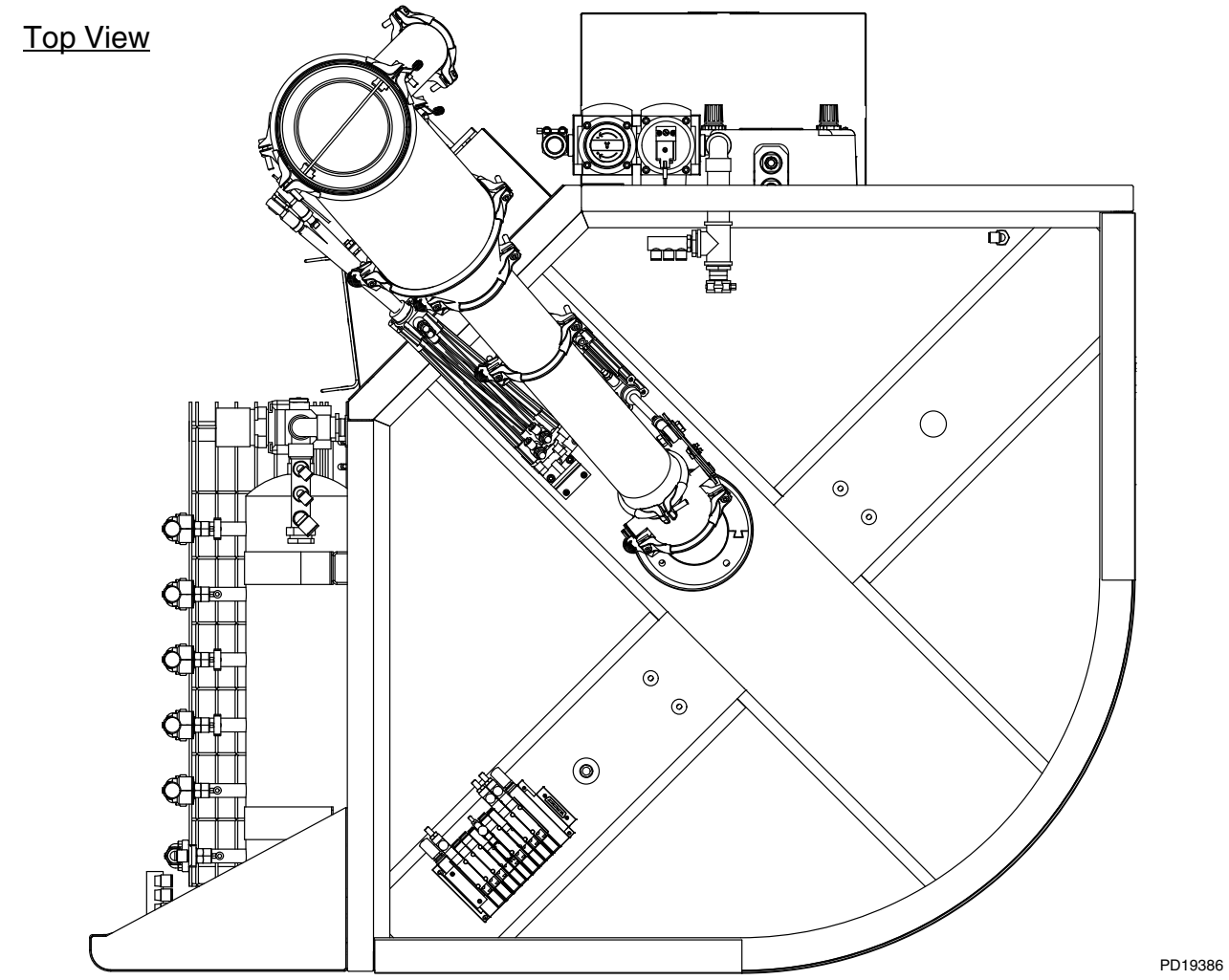


Figure 3-2 Mounting Feed Centre Controller

Extraction Duct Connection

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

Connect ductwork from the afterfilter/fan section to the Spectrum VT 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 VT 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.

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 VT feed center has standalone controls.

Figure 4-1 Spectrum VT Feed Centre Controller

Controls (Home Screen)

See Figure 4-2 and Table .

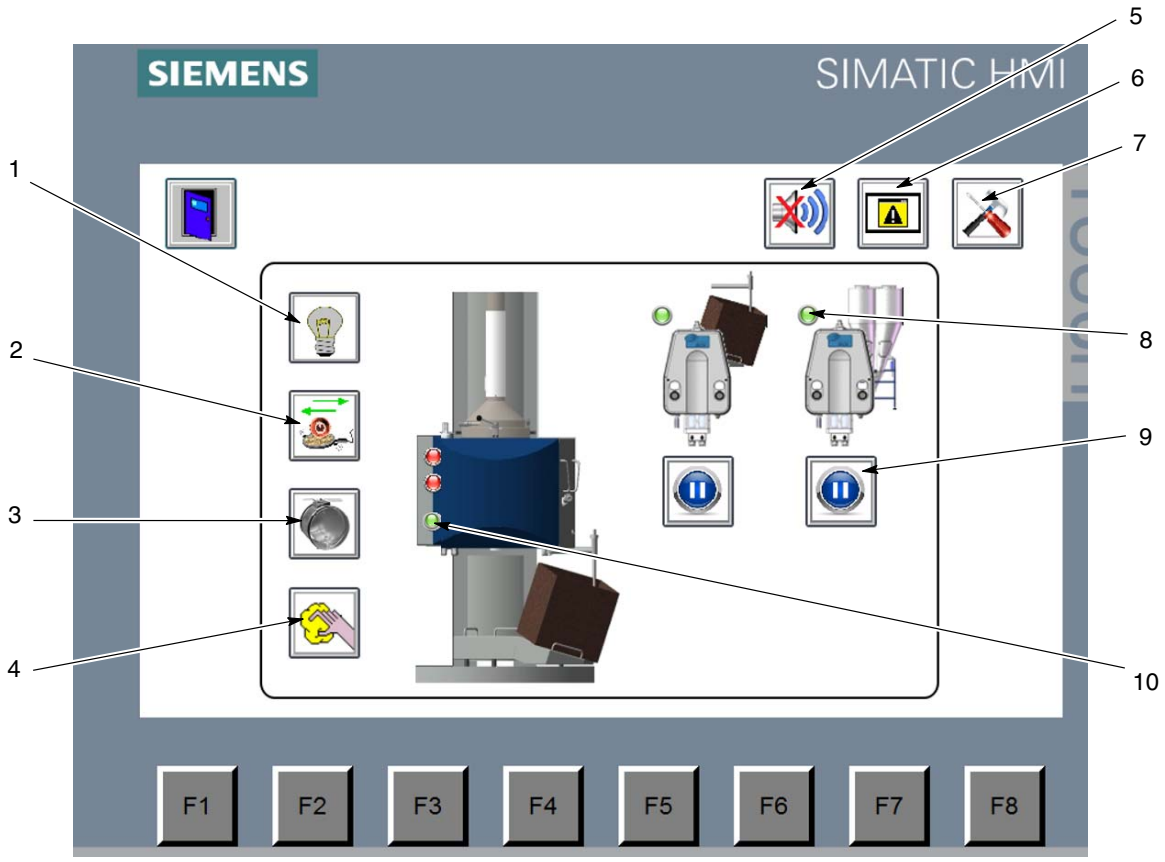


Figure 4-2 Main Operation Screen

Number	Icon	Description
1	Feed centre lights	Turn lights on and off.
2	Sieve auto/manual	Switch between automatic and manual sieving.
3	Main duct damper Open/Close	Additional extract while operator works in the enclosure. Ensure it is not activated if not required.
4	Colour change	Press this when you are ready to perform a colour change
5	Alarm silence	Mutes the audible alarm
6	Alarm list	Displays alarm log
7	Feed centre settings	System parameters typically set during commissioning.
8	Indicator lights	Green light indicates the pump is running.
9	HDLV pumps On/Off	Switches transfer pumps on and off
10	Powder level probe display	Green light indicates powder is at level, red is calling for powder

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 of powder reaches the level sensor, a delay timer (field-adjustable) is started. When the delay timer runs out, the fresh powder transfer pump is deactivated. When the level sensor detects powder, the fresh powder transfer pump is turned off. When the low level probe becomes uncovered, the low powder alarm turns on.

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

Sensor LED:

- Yellow - turns on when the sensor detects powder

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 VT 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.

VT Inline Powder Feed 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.

The following air flows are average starting points. Adjust air flows to achieve the desired powder delivery volume and density.

Air Type	Air Flow
Atomizing Air	1.7 m^3/hr (1.0 cfm)
Flow Rate Air	2.5 m^3/hr (1.5 cfm)

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.

Step 1 - Approve colour change

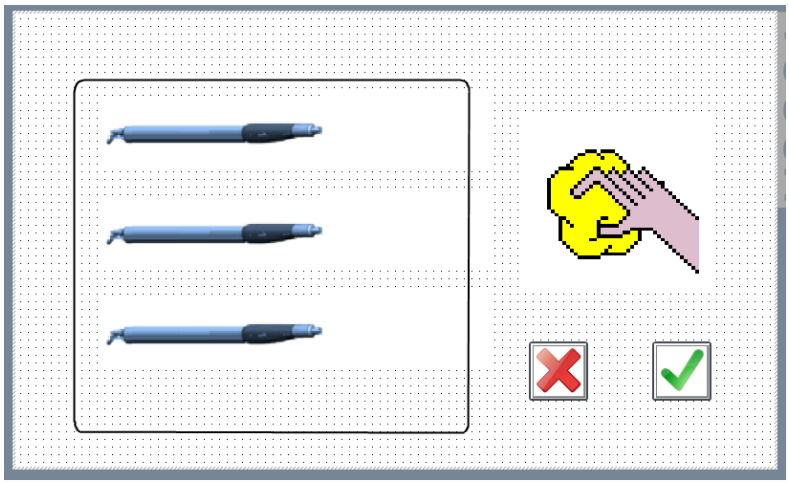


Figure 4-3 Colour change step 1

Here, the operator can choose to carry on with the colour change procedure by touching the green tick or cancel by touching the red X. This will return to the main screen.

NOTE: The operator can cancel the procedure at any time by touching the red X and return to the main screen. Therefore, this will not be mentioned again in the following colour change steps.

Step 2 - Place box underneath - hopper and guns are purging

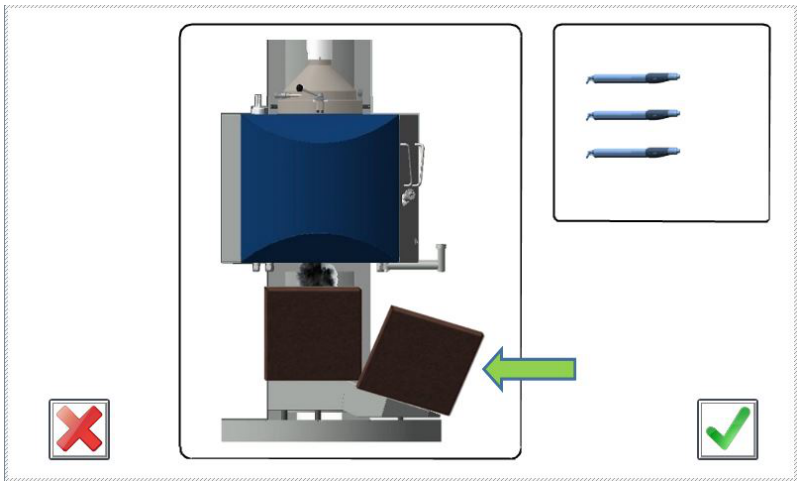


Figure 4-4 Colour change step 2

Once the operator has placed the box under the hopper, touch the green tick on the screen to release the powder out of the hopper and go to the next step.

Step 3 - Drain the hopper

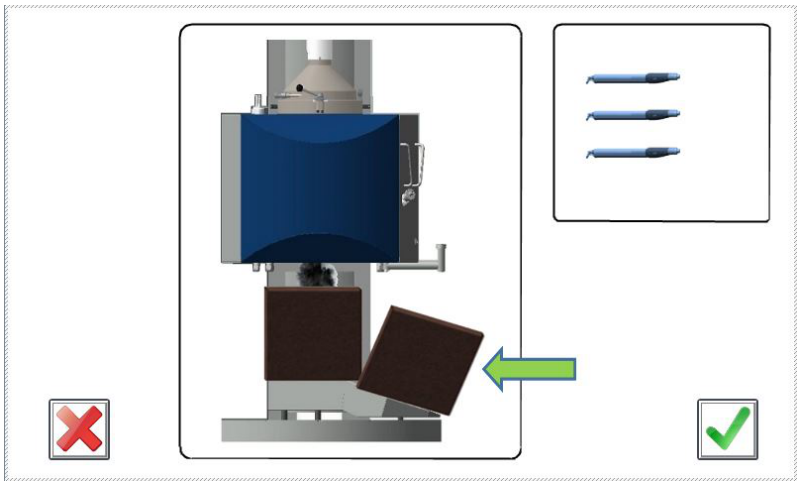


Figure 4-5 Colour change step 3

As soon as the low level probe is uncovered, a timer starts to count down for the preset time that was entered during configuration. Once the timer has finished, the green tick will appear on the screen to enable the operator to move to the next step.

Step 4 - Connect only the recover hose to the purge position

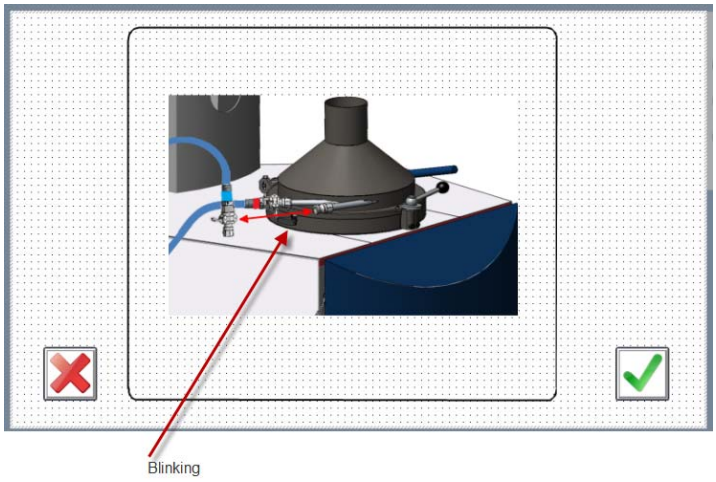


Figure 4-6 Colour change step 4

Step 5 - Hopper purge

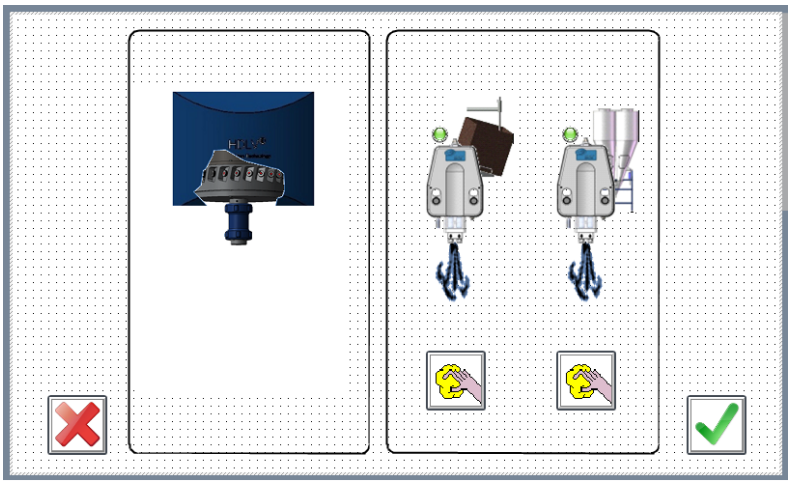


Figure 4-7 Colour change step 5

NOTE: While cleaning the inside of the hopper, avoid opening the cyclone hopper or anything else that may affect the extraction. Otherwise the cleaning result may be compromised.

The operator can now start the cleaning cycle of the HDLV transfer pumps by touching the associated *clean* button. During the cleaning process, the pump outlet icon will be displayed as above.

Once the preset number of purges has completed, the green tick will appear to enable the operator to proceed to the next step.

Step 6 - Manual cleaning

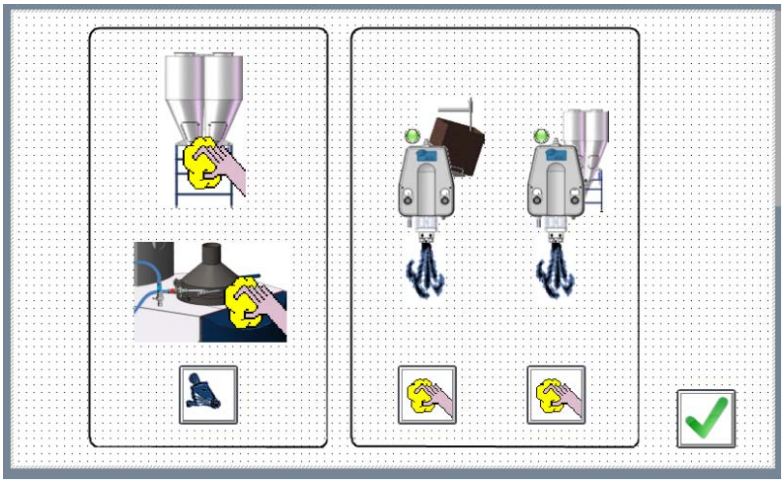


Figure 4-8 Colour change step 6

Cleaning of the pump can be activated or deactivated by touching the *clean* button for the associated pump.

After cleaning, the hoses need to be reconnected to their operating positions, then the virgin feed pump can refil the hopper. Once complete, the green tick will appear to enable the operator to return to the main screen. Normal production can start again.

Factory Settings

Only allow authorised Nordson personnel to adjust settings

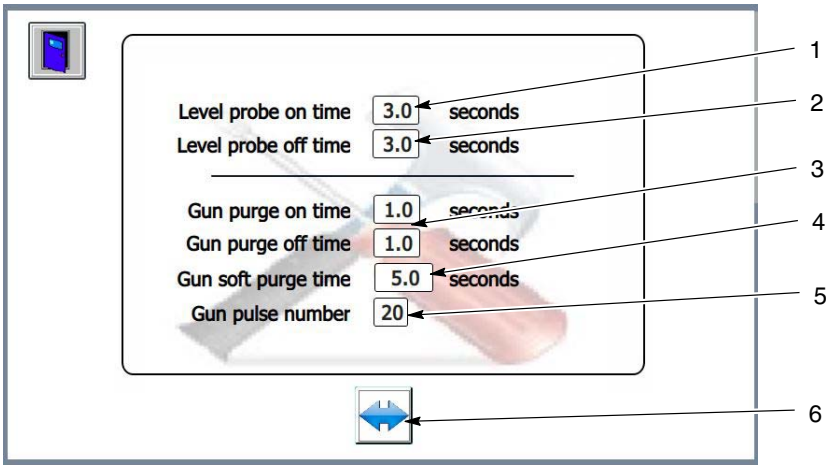


Figure 4-9 Feed centre settings - Level probe timers and Gun Purge

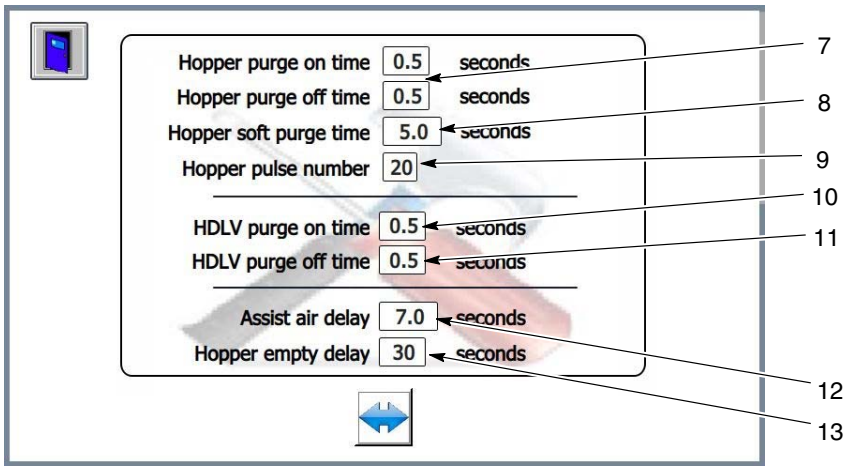


Figure 4-10 Feed centre settings - Hopper and Pump Purge

Number	Description
1	Level probe on time
2	Level probe off time
3	Pulse and pause time of the gun purge operation
4	The time for soft purging to the gun
5	The number of pulses to the guns. Green light indicates that the pump is running.
6	Next screen
7	Pulse and pause time of the hopper purge operation
8	The time for soft purging of the guns
9	The number of pulses to the hopper
10	Purge on time for HDLV pumps
11	Purge pause time for the HDLV pumps
12	Delay the assist air when emptying the hopper
13	Time the hopper will be emptying until the next step

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 perfoming 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 *Prodigy High Capacity HDLV Pump* for more information.
VT Inline Pump	Purge the pump when performing either a color change or system shutdown. Refer to the *VT Inline Powder Pump* section on page 5-2 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.
Siphon Block	Visually inspect clear pinch valve blocks for any signs of powder.
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.

VT Inline Powder Feed Pump

CAUTION: Always blow out the powder feed hose from the pump end. Make sure that the booth exhaust fan is operating.

CAUTION: Do not scrape impact-fused powder off the pump parts with any sharp or hard tools. Powder will build up in any scratches on the powder contact surfaces, causing impact fusion and pump clogging.

Daily	Purge the pump when performing either a color change or system shutdown.
Periodically	Periodically disassemble the pump and clean its parts following these guidelines: • Use low-pressure compressed air and lint-free cloths. • Inspect all parts and replace any that are worn or damaged. • Clean the parts with an ultrasonic cleaner and an emulsion cleaning solution as described in the *Recommended Cleaning Procedure*.

Recommended Cleaning Procedure

Nordson Corporation recommends using an ultrasonic cleaning machine and Oakite® BetaSolv emulsion cleaner to clean powder pumps.

1. Fill an ultrasonic cleaner with BetaSolv or an equivalent emulsion cleaning solution at room temperature. Do not heat the cleaning solution.
2. Disassemble the pump and remove the O-rings. Blow off the pump parts.

NOTE: Do not allow the O-rings to come in contact with the cleaning solution. Do not immerse the check valves in the solution.

3. Place the pump parts in the ultrasonic cleaner and run the cleaner until all parts are clean and free of impact fusion.
4. Rinse all parts in clean water and dry before re-assembling the pump. Inspect the O-rings and replace any that are damaged.

NOTE: The tip of the injector must be clean and undamaged. The injector directs the air flow directly into the center of the venturi throat. Any obstruction or damage to the injector will produce an off-center air stream that wears a non-uniform pattern in the throat and reduces its usable life.

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.
- 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.
		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 fuse failure	Check the motor and electrical circuits. Replace the fuses.
	Fan motor failure	Replace the motor.

Continued...

Problem	Possible Cause	Corrective Action
2. Powder escaping from enclosure openings	Afterfilter cartridge filters clogged; pulsing not cleaning filters	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.
	Pulse pressure too low	Increase the pulse pressure to the recommended level.
	Pulse valve failed	Replace the pulse valve.
	Cartridge filters leaking	Check the cartridge filter gaskets and media for damage. Replace filters as necessary.
	Cross drafts interfering with exhaust fan draw	Check for cross drafts at the enclosure opening. Eliminate or divert drafts.
	Fan rotation backward	Reverse the motor rotation.
	Access panels not sealed	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	Start the afterfilter exhaust fan.
		Check feed center E-stop.
		Check valve connections.
	Fan interlock circuit or solenoid valve circuit defective	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.
	Fluidizing air regulator defective	Check the fluidizing air regulator.

Continued...

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.

Continued...

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	Default valve for sieve screen amplitude is set to 50% from factory. Use the controller operator interface to increase amplitude.
	Loose transducer to controller (if sieve not operating)	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	Reset the E-Stop button.
	Afterfilter exhaust fan not running, or fan interlock circuit defective	Turn on the exhaust fan. Check the fan interlock wiring between the feed center panel and the main system panel.
	Sieve motor not running	Reclaim or fresh powder transfer pumps will not run unless the sieve is on. Turn on the sieve.
	Reclaim or Fresh Powder wiring circuit is defective	Check the wiring. Repair or replace as needed.
	No air supply to solenoid valve assembly, or solenoid valve not opening	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.
	Problem with transfer pump controls or pump.	Check the transfer pump and controls. Refer to *Prodigy High Capacity HDLV Pump* manual.
	Level sensor failed or wiring defective	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.

Continued...

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 *Problems* related to powder, sieve/hopper or HDLV Transfer Pump
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	Check gun positioner configuration.
	Oscillator not stopped	Oscillator gets stop command from gun positioner #1 control panel. Check wiring and connections between gun positioner control panel and main system panel. 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 not at Park position	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.

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 he *Prodigy High Capacity HDLV Pump* manual.

VT Inline Powder Feed Pump

Pump Removal

See Figure 7-1.

1. Shut off the spray guns.
2. Release the clamp handles (8) by lifting them upward.
3. Disconnect the hose from the throat holder (5).
4. Remove the clamp bar (4).
5. Wiggle and pull the pump (6) to remove it from the manifold block (7).

   NOTE: When disconnecting before a purge, the powder port must be cleaned before replacing the pump.

Pump Installation

NOTE: For best results, the powder feed hose should be no longer than 10.7 m (35 ft) and rise vertically over its length no more than 3.7 m (12 ft).

See Figure 7-1.

1. Align the pump ports.
2. Push the pump (6) into the manifold block (7) until the pump body bottoms out against the manifold block.
3. Connect the hose to the pump (6).
4. Align the clamp bar (4) with the locating pins and secure on the manifold block (7).

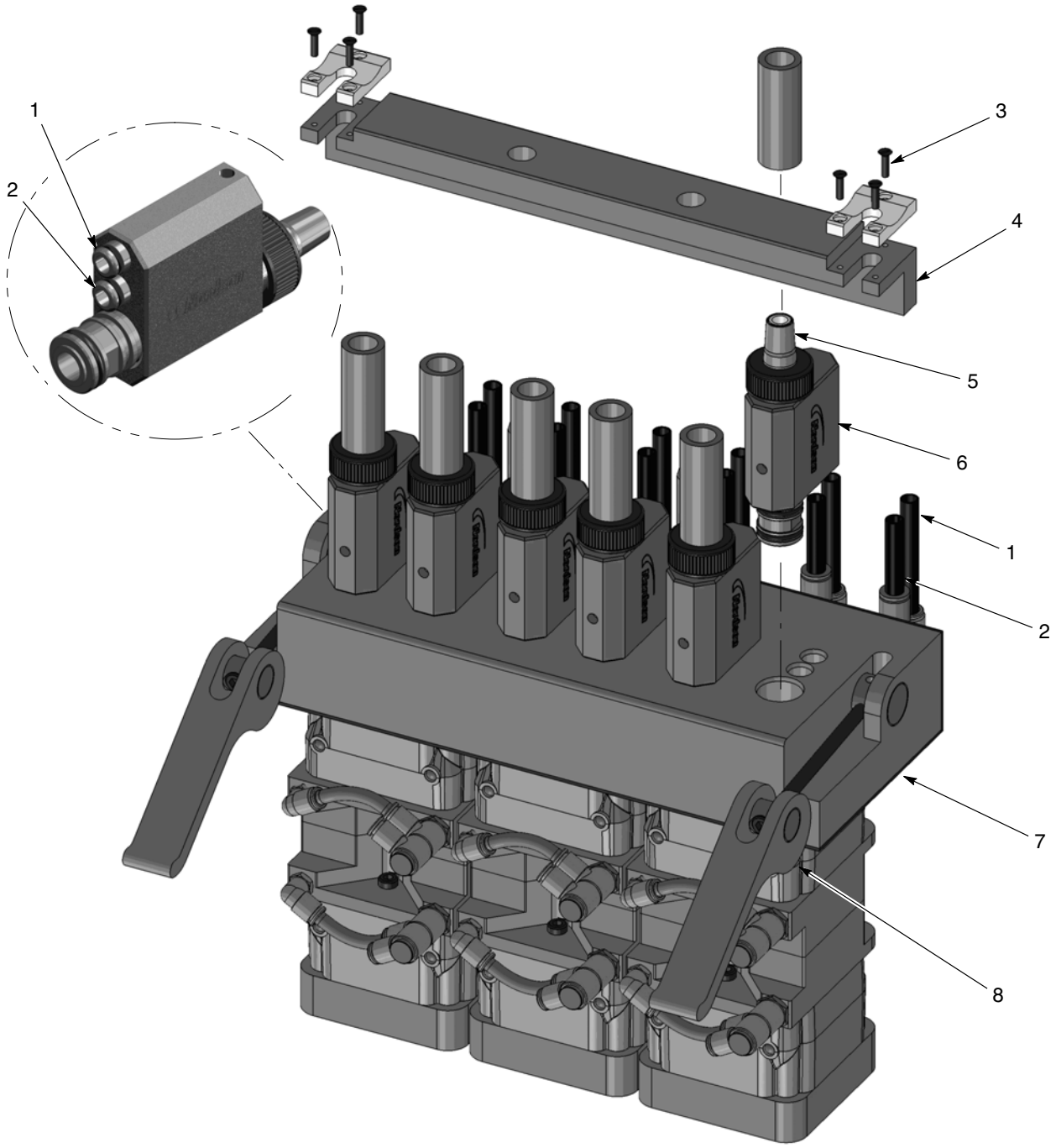


Figure 7-1 Removing and Installing Inline Powder Pumps

1. Atomizing air fitting
2. Flow rate air fitting
3. Wear piece
4. Clamp bar
5. Throat holder
6. Inline powder pump
7. Manifold block
8. Clamp handle

Venturi Throat Replacement

See Figure 7-2.

1. Unscrew and remove the nut (5).
2. With a slight twisting motion, pull the throat holder (4) and throat (2) out of the pump body (1). Inspect the holder and the two conductive silicone O-rings (3) installed on it for wear or damage. Replace any worn or damaged parts.
3. Install the new throat (2) into the throat holder (4), then push the throat holder into the pump body (1) with a slight twisting motion.
4. Install the nut (5) over the throat holder (4) and thread it onto the pump body (1). Tighten the nut hand-tight.

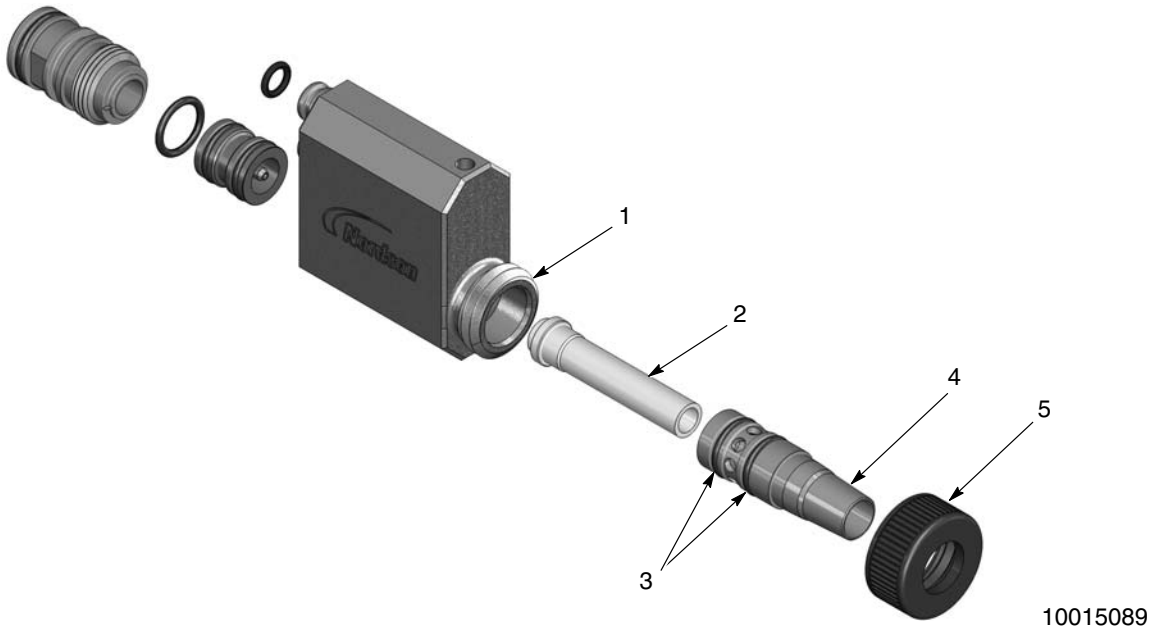


Figure 7-2 Throat Removal and Installation

1. Pump body
2. Venturi throat
3. O-rings (0.489 ID x 0.070 W)
4. Throat holder
5. Nut

Note: All O-rings are conductive silicone. Do not replace with non-conductive O-rings.

Injector Replacement

Tools Required:

- Wrench
- Extraction Tool

NOTE: These tools are optional and must be ordered separately. Refer to the *Parts* section for part numbers.

See Figure 7-3.

1. Unscrew the injector adapter (4) from the pump body (2) with a wrench.
2. Insert the extraction tool (1) into the injector (3) and rotate it clockwise to hook the injector spider as shown. Turn the extraction tool clockwise while pulling on it to remove the injector from the pump body (2).
3. Inspect the injector (3), injector adapter (4), and all four O-rings (5, 6) for wear or damage. Replace any damaged or worn parts.
4. Install two O-rings (6) onto the injector (3), then press the injector into the pump body (2), making sure the injector nozzle is pointing toward the output end of the body. The extraction tool (1) can be used to seat the injector fully into the bottom of the pump body core.
5. Inspect the loose O-ring (6) and make sure it is not damaged or twisted. Insert it into the pump body (2) and seat it against the injector (3). The end of the extraction tool (1) can be used to make sure it is seated correctly.
6. Make sure the larger O-ring (5) is installed on the injector adapter (4). Screw the injector adapter into the pump body (2) and tighten it snugly with a wrench.

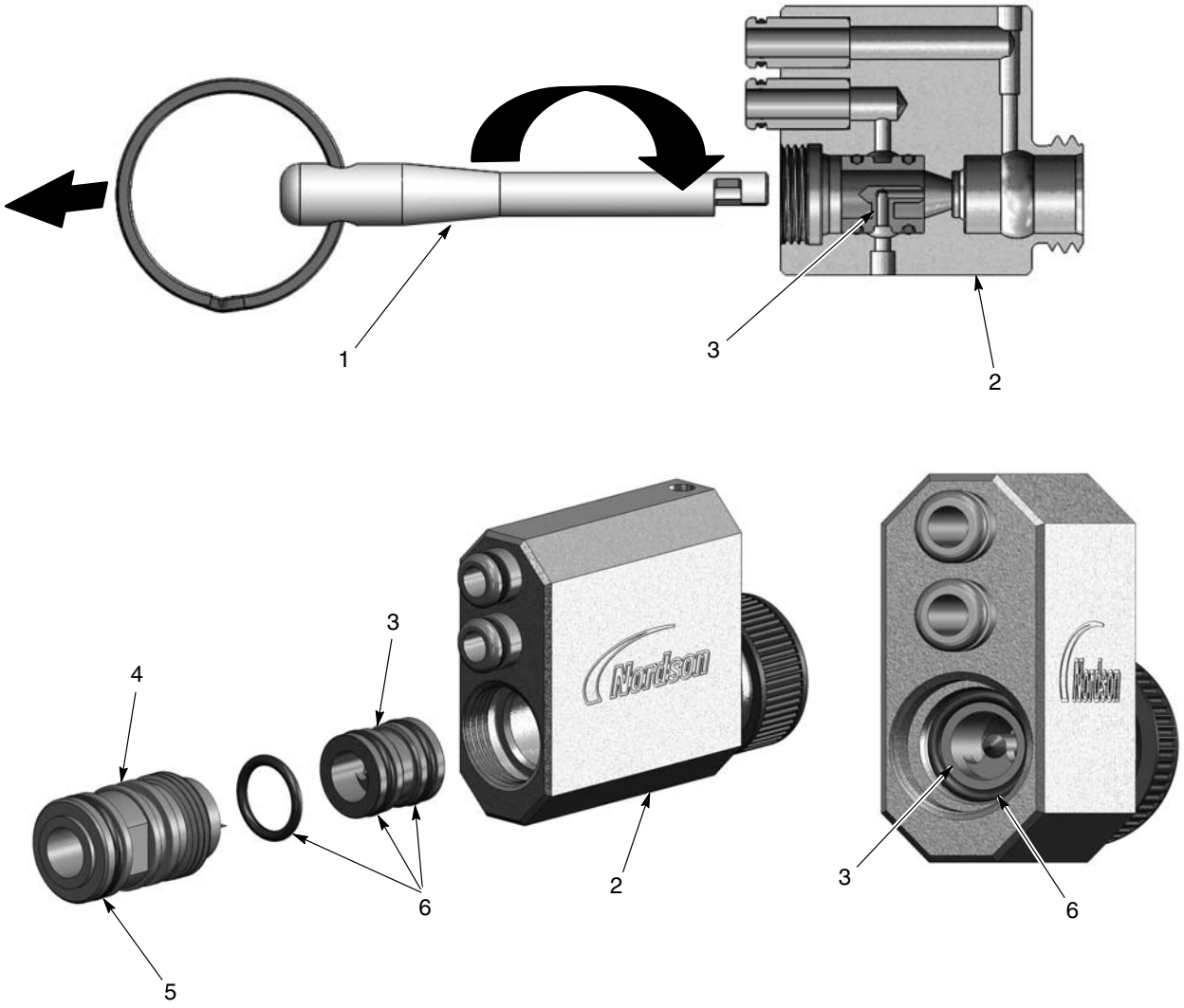


Figure 7-3 Injector Removal and Installation

1. Injector tool
2. Pump body
3. Injector
4. Injector adapter
5. O-ring (0.627 ID x 0.080 W)
6. O-ring (0.489 ID x 0.070 W)

Note: All O-rings are conductive silicone. Do not replace with non-conductive O-rings.

Siphon Block

Disassembly

Tools Required:

- 4-mm Allen wrench
- 8-mm Allen wrench
- 10-mm Allen wrench
- Large flat-head screw driver

1. See Figure 7-4. Unscrew the socket head cap screw (1) to remove the siphon block (2) from the pump manifold (3). Retain socket head cap screw for reassembly.

   NOTE: The siphon block (2) can be removed from the pump manifold (3) while the assembly is still attached to the feed center.

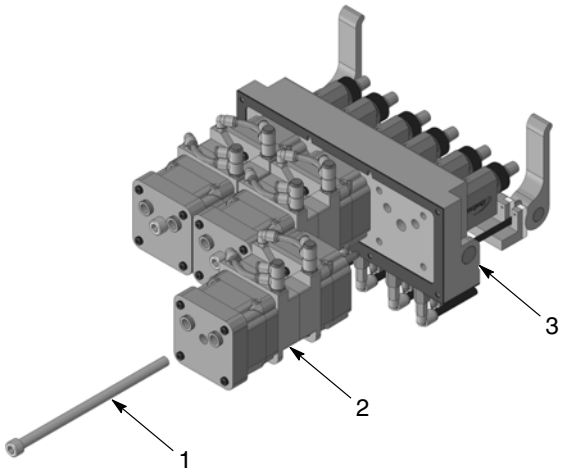


Figure 7-4 Removing the Siphon Block from the Manifold

2. See Figure 7-5. Remove the four cap screws (4) from the bottom of the siphon block (5).

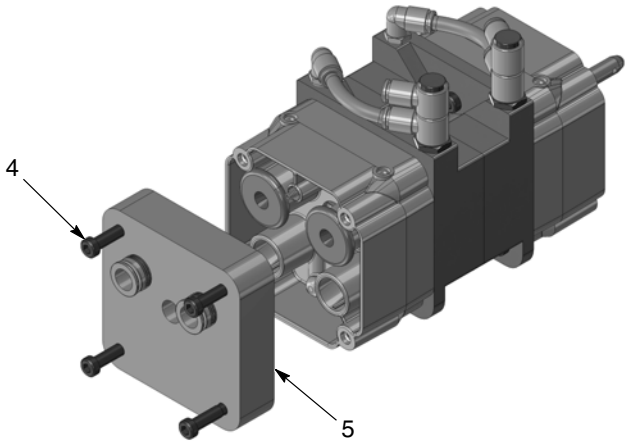


Figure 7-5 Removing Bottom Siphon Block Plate

3. See Figure 7-6. Remove three cap screws (6) from each middle siphon block (8) to remove the middle siphon blocks from the pinch valve blocks (7).

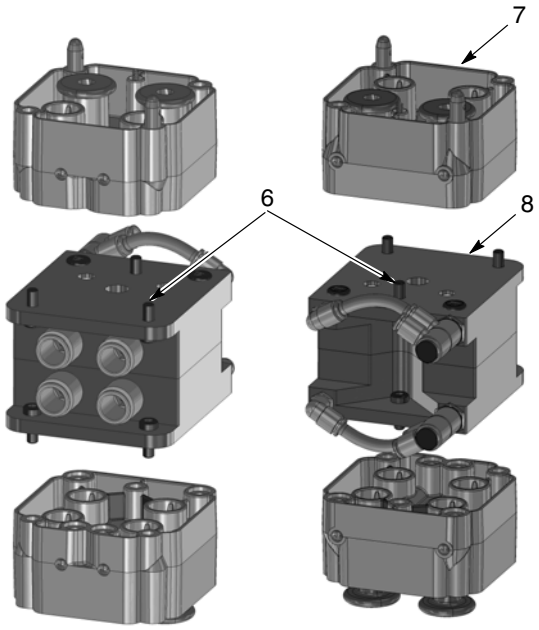


Figure 7-6 Separating Siphon Block Components

Disassembly *(contd)*

4. See Figure 7-7. Remove three cap screws (6) from each middle siphon block (8) to separate the two blocks from each other.

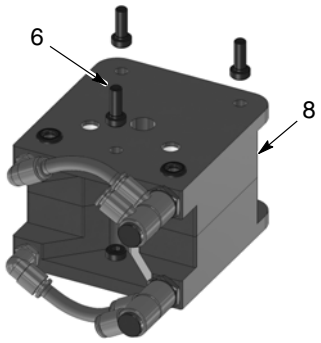


Figure 7-7 Separating Middle Siphon Blocks

5. See Figure 7-8. Wiggle the screw driver back and forth to remove the fluid tubes (9).

   NOTE: Observe the orientation of the fluid tube during disassembly. The longer end of the fluid tube must be inserted into the middle block (8).

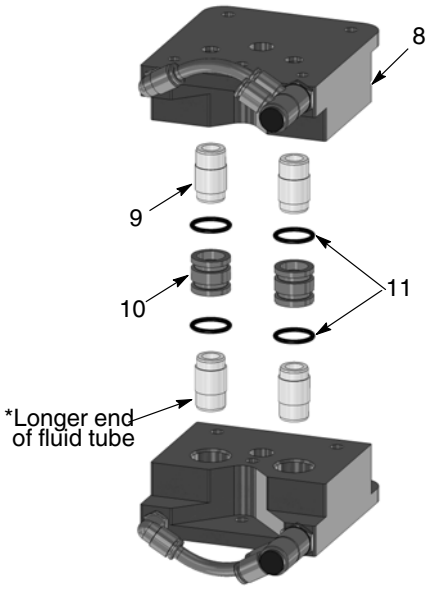


Figure 7-8 Middle Siphon Block Components

6. See Figure 7-9. Remove two fittings (14) from each middle block (8).
7. Remove two check valves (14) from each middle block (8). Use a finger to remove the two O-rings (12) from each middle block.

   NOTE: Figure 7-9 only shows two of the four fittings and check valves to be removed.

   NOTE: See Figure 7-10. Note the difference between a middle block populated for one pump versus a middle block populated for two pumps.

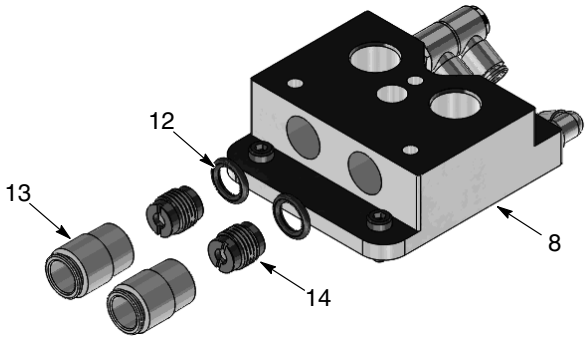
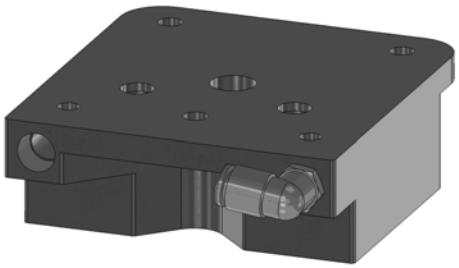


Figure 7-9 Middle Block Disassembly

Single-Pump Configuration



Dual-Pump Configuration

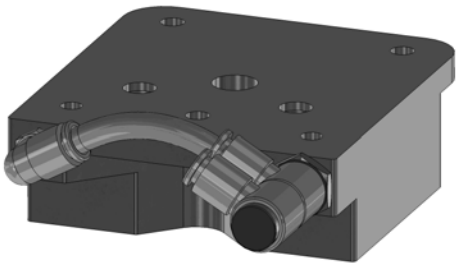


Figure 7-10 Block Configurations

Reassembly

1. See Figure 7-9. Using a finger, securely seat two O-rings (12) in each middle block (8).
2. Using a large flat head screwdriver, insert two check valves (14) into each middle block (8).
3. Using a 10-mm Allen wrench, insert two fittings (13) into each middle block (8).
4. See Figure 7-8. To connect the two middle blocks (8), insert two fluid tubes (9) into each middle block. Secure two O-rings (11) on each bushing (10). Apply light pressure to secure the two middle blocks together.

   NOTE: The orientation of the fluid tubes is critical. The longer end of the fluid tube must be inserted into the middle blocks.
5. See Figure 7-7. Using a 4-mm Allen wrench, insert three cap screws (6) into the tapped side of the middle block (8) to secure them together.
6. See Figure 7-6. Using a 4-mm Allen wrench, insert a total of six cap screws (6) into each middle siphon block (8) to connect the middle blocks to the pinch valve blocks (7).
7. See Figure 7-5. Using a 4-mm Allen wrench, insert four cap screws (4) into the bottom siphon block (5) to connect the bottom block to the pinch valve blocks and middle blocks.
8. See Figure 7-4. Using an 8-mm Allen wrench, insert the socket head cap screw (1) into the bottom of the siphon block assembly (2) to secure it to the pump manifold (3).

Pinch Valve Replacement

NOTE: The figures in the *Pinch Valve Replacement* procedure may look different than the Spectrum VT pinch valve blocks.

CAUTION: Before placing the pinch valve body in a vise, pad the jaws. Tighten the vise only enogh to hold the pinch valve block firmly. Failure to observe may result in damage to the pinch valve block.

See Figure 7-11.

- The word *Up* is written on the top flanges of the pinch valves.
- The side of the pinch valve block has four air passages sealed with O-rings.

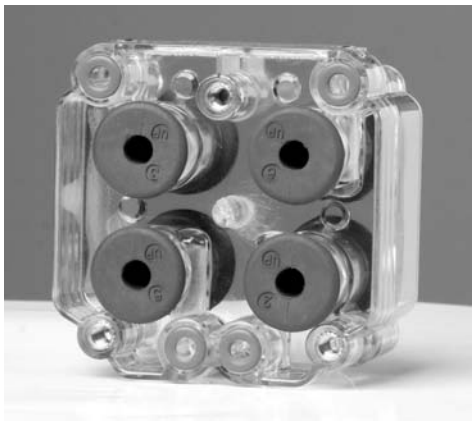


Figure 7-11 Top of Pinch Valve

Pinch Valve Removal

See Figure 7-12.

1. Place the pinch valve body in a padded vise.
2. Grasp the bottom flange of a pinch valve with one hand and pull it away from the valve body.
3. Use scissors to remove the flange, then pull the rest of the pinch valve out of the top of the valve body.

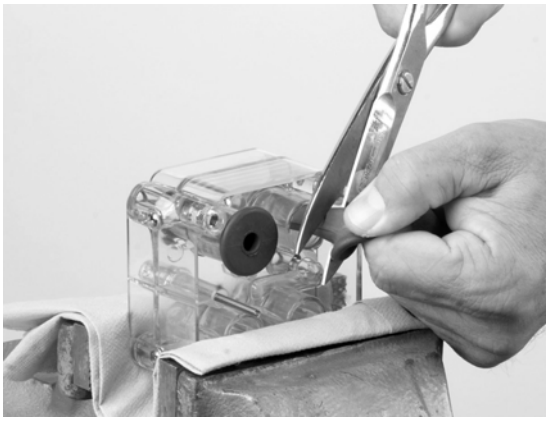


Figure 7-12 Pinch Valve Removal

Pinch Valve Installation

See Figure 7-13.

1. Insert the pump pinch valve tool through one of the valve chambers, then insert the *Up* flange of the pinch valve into the bottom end of the pump pinch valve tool.

   NOTE: Align the pinch valve ribs with the square grooves in the valve chamber.

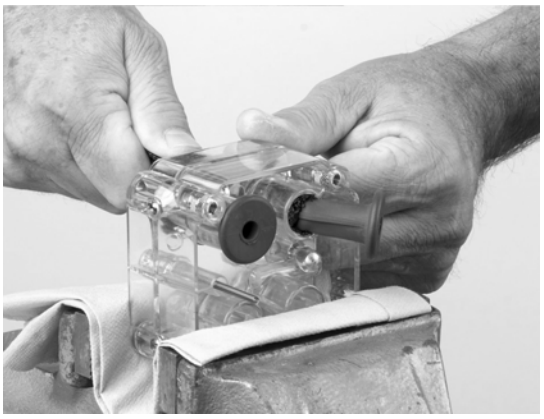
Inserting Pinch Valve into Pump Pinch Valve Tool

Figure 7-13 Pinch Valve Installation (1 of 4)

See Figure 7-14.

2. Pinch the flat *Up* flange of the pinch valve, then feed one end of the flange into the valve chamber.
3. Pull on the pump pinch valve tool until the end of the pinch valve is inside the valve body.

Pinching Flat Pinch Valve *Up* Flange

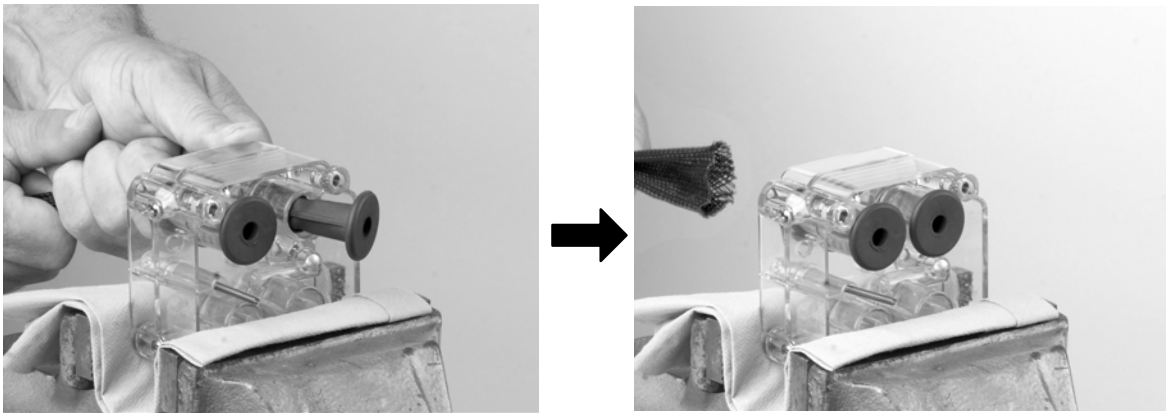


Pulling Pinch Valve into Valve Body

Figure 7-14 Pinch Valve Installation (2 of 4)

See Figure 7-15.

4. Continue pulling on the pump pinch valve tool until the pinch valve pops through the valve body and the tool comes loose.



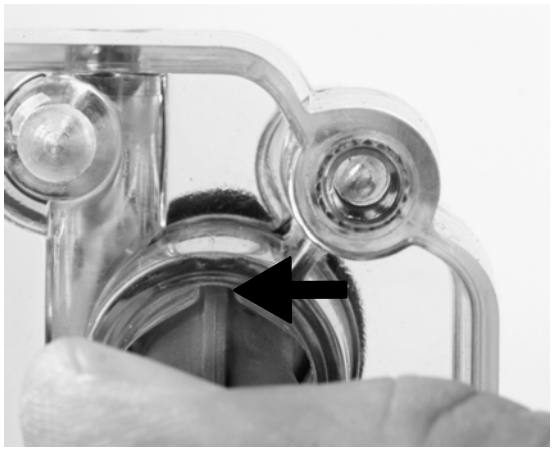
Pulling Pinch Valve through Valve Body

Figure 7-15 Pinch Valve Installation (3 of 4)

Pinch Valve Installation *(contd)*

See Figure 7-16.

5. Pull the pinch valve bottom flange away to check the alignment of the valve ribs with the square grooves in the valve body. Pull and twist the pinch valve to align the ribs with the grooves as necessary.



Checking Rib and Groove Alignment

Figure 7-16 Pinch Valve Installation (4 of 4)

Blanking Plate Procedure

See Figure 7-17.

The pump manifold must be configured according to the number of pumps being utilized. If the manifold is populated for less than six pumps, blanking plates must be used in order to block powder from contaminating unoccupied pump ports.

NOTE: The blanking plate placement is specified by the application engineer. If the blanking plates are installed incorrectly, the purge sequence will not function properly.

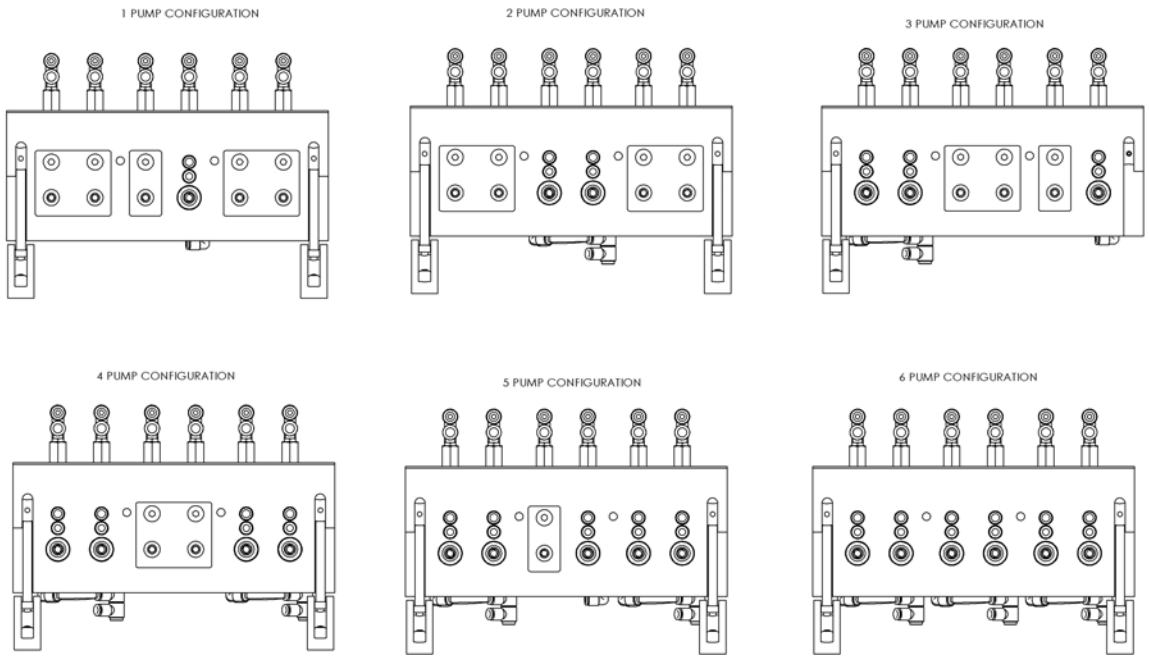


Figure 7-17 Pump and Blanking Plate Configurations

Blanking Plate Installation

See Figure 7-18.

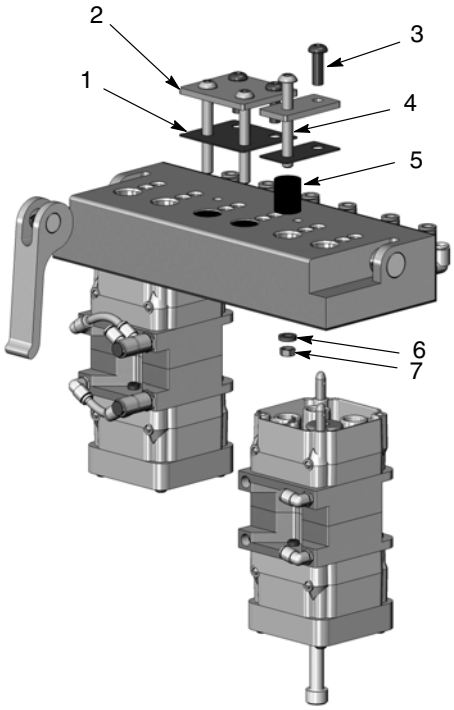
NOTE: Clean the blanking plate (2) with isopropyl alcohol before applying the gasket (1). The gasket alignment is not symmetrical.

1. Insert the bushing (5) into the pump port.
2. Align the appropriate blanking plate (2) with the ports on the pump manifold.

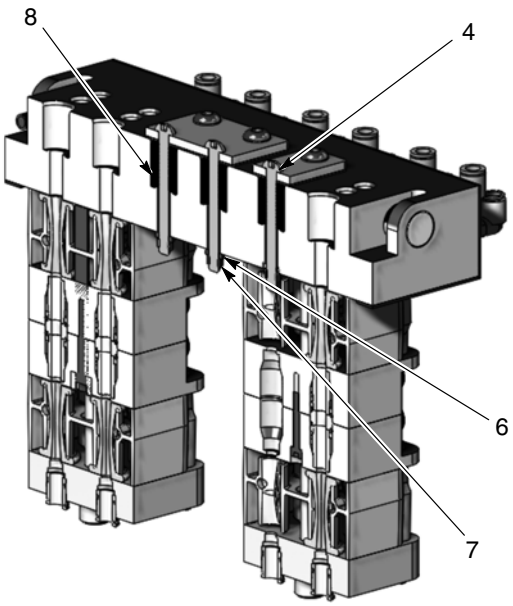
   NOTE: There is a 1-pump and a 2-pump blanking plate depending on the configuration of the assembly.

3. Insert the 65-mm button head cap screw (4) through the top of the blanking plate.
4. From the bottom side of the pump manifold, the washer (6) slides onto the 65-mm button head cap screw (4) and then the nut (7).
5. Using a 5-mm Allen wrench, insert the 25-mm button head cap screw (3) into the threaded pump port.

NOTE: The manifold seal (8), Nordson part 1608597, comes pre-installed. If there is a need to replace the seal, apply adhesive to a syringe or Q-tip and securely set the seal in the manifold port.



Installing Blanking Plate



Siphon Block Pump Manifold Section View

Figure 7-18 Blanking Plate Installation

Adjusting the Clamp Handle

See Figure 7-20.

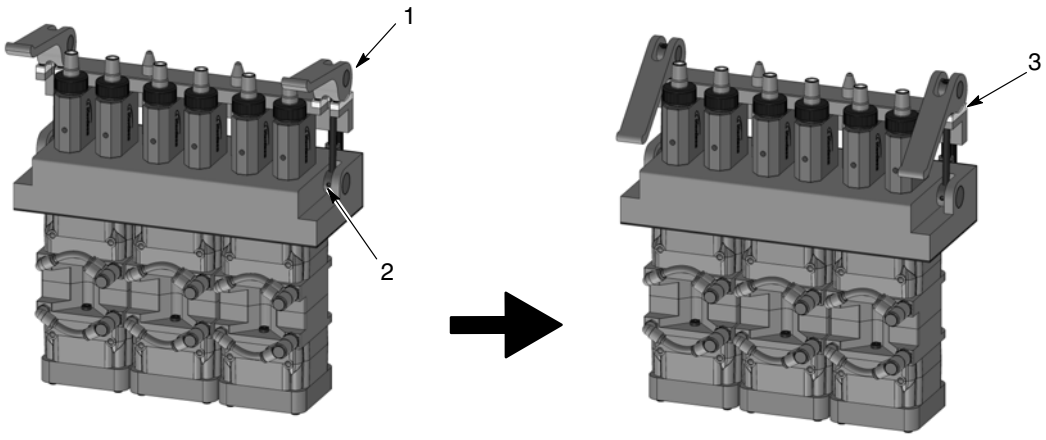


Figure 7-19 Clamp Handles

Hopper

Level Sensors

See Figure 7-20.

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.

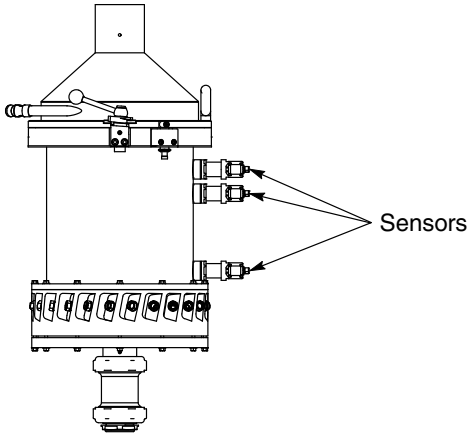


Figure 7-20 Level Sensors

Sieve Screen

See Figure 7-21.

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.

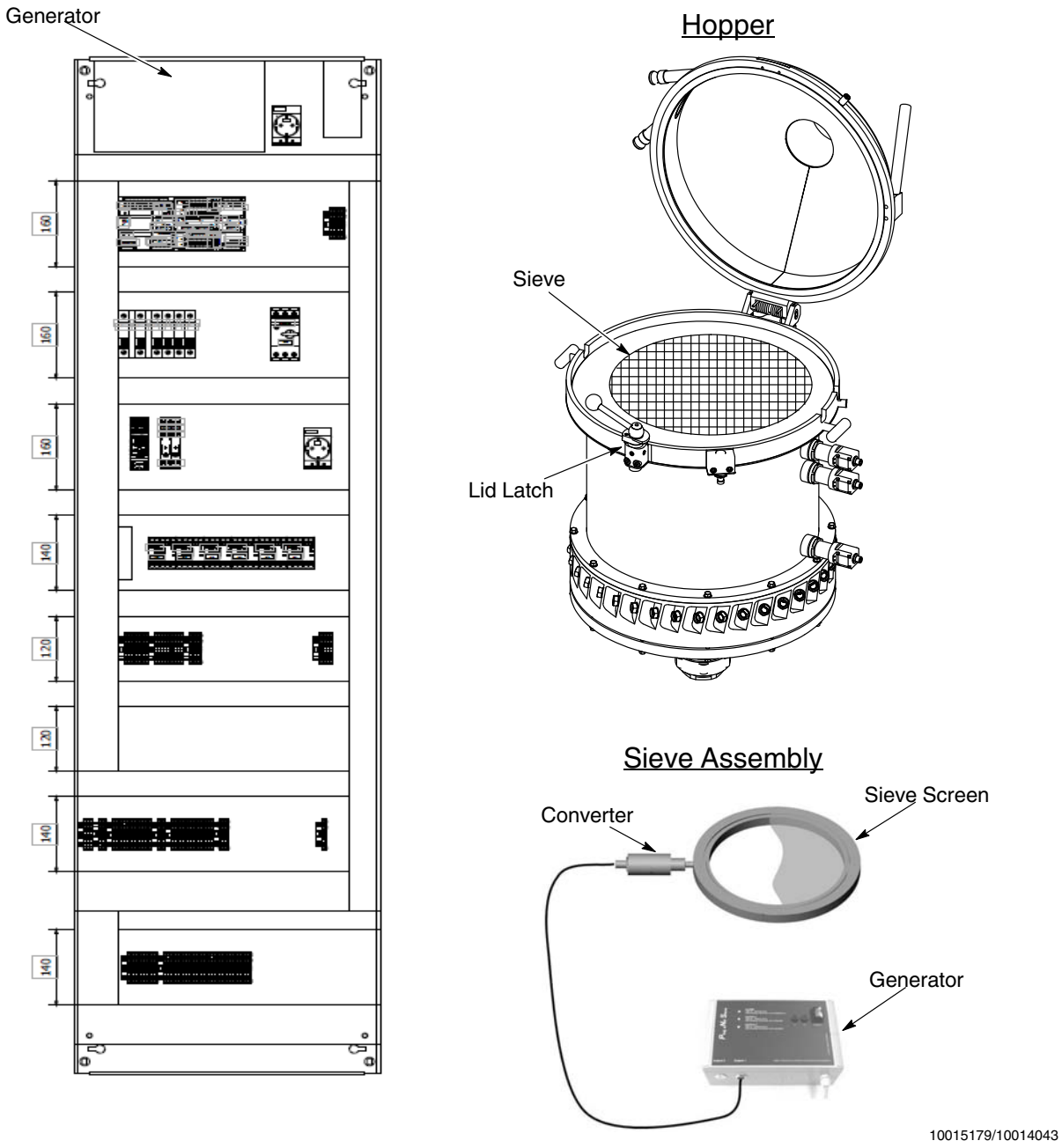


Figure 7-21 Replacing Sieve Screen

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

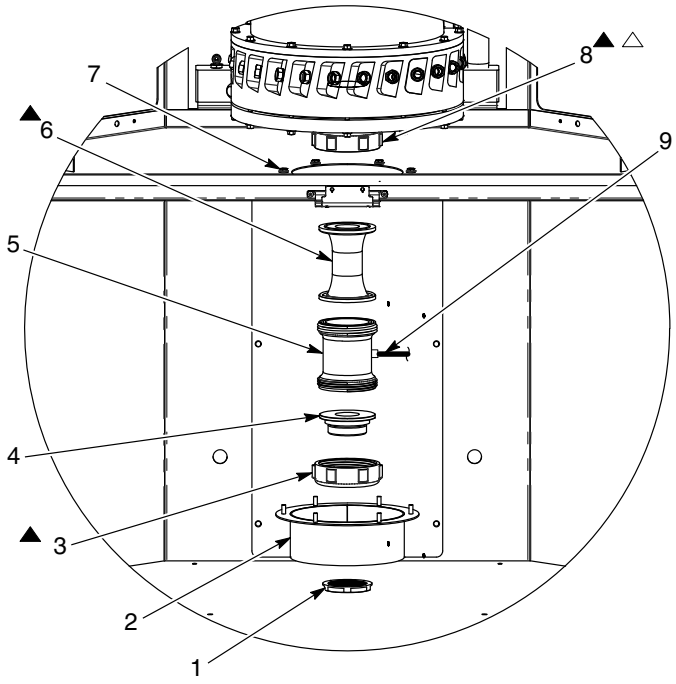


Figure 7-22 Dump Valve Sleeve Replacement

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

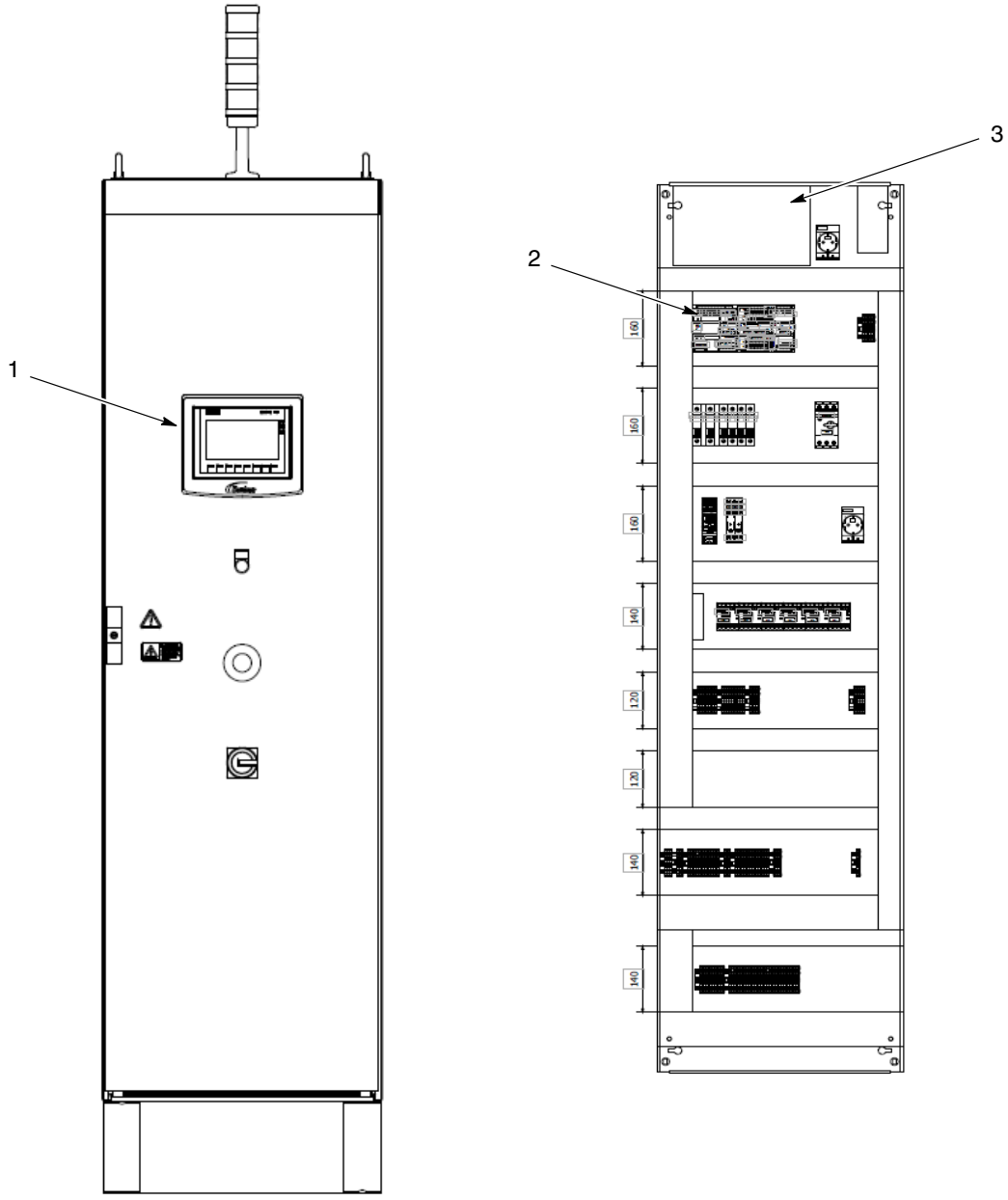


Figure 8-1 Feed Center Controller

See Figure 8-1.

Item	Part	Description	Quantity	Note
1	TBC	DISPLAY, programmed, Spectrum PFC	1	
2	TBC	PLC, programmed, Spectrum PFC	1	
3	768679	CONTROLLER,SIEVE A300	1	
NS	768681	CONNECT ROD M10*25,A300 PROBE TO SCREEN	1	
NS	768682	EXTENTION CABLE,A300 SIEVE,5M	1	
NS: Not Shown				

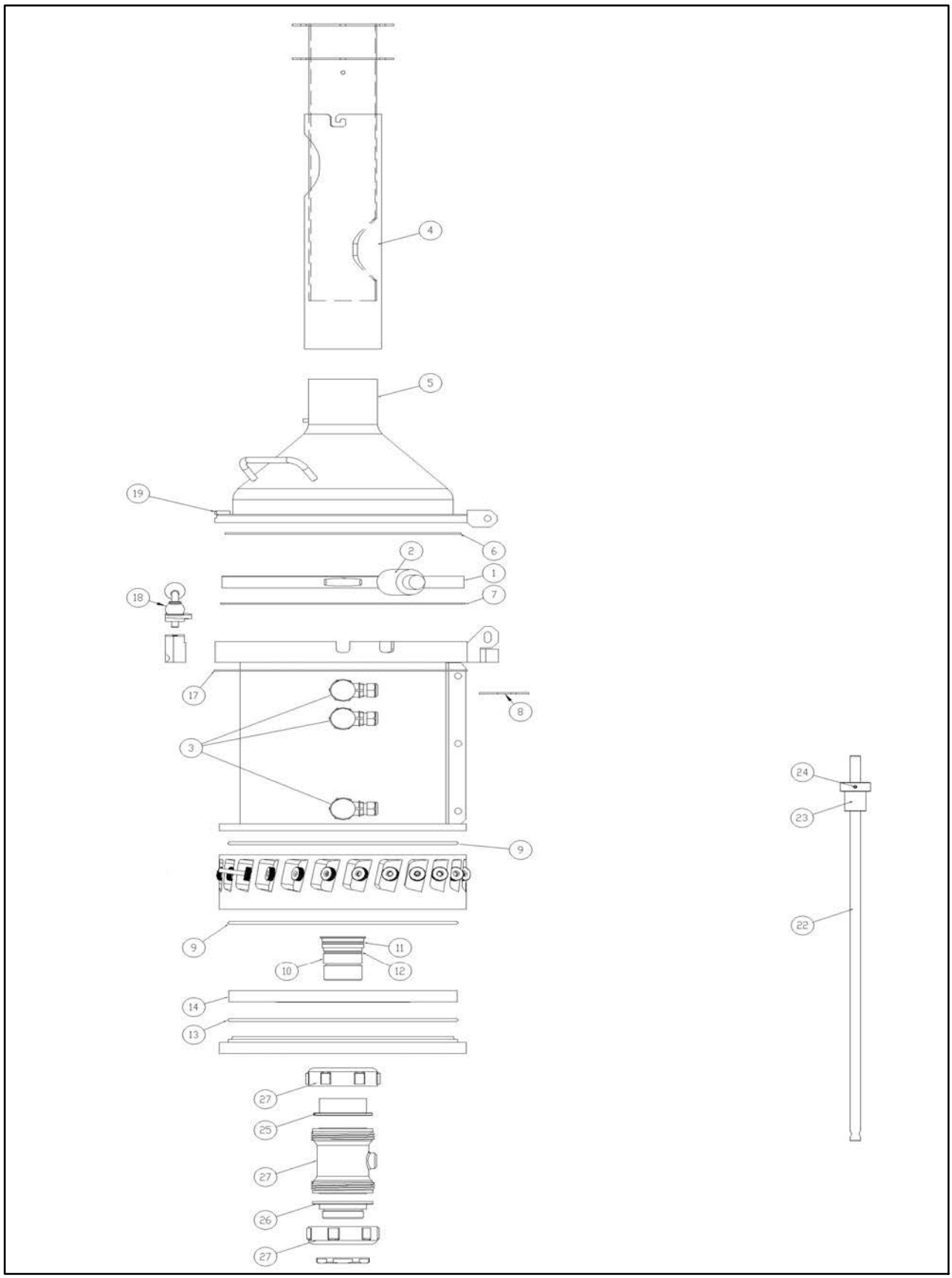


Figure 8-2 Hopper

See Figure 8-2.

Item	Part	Description	Quantity	Notes
1	768675	SCREEN,A300 SIEVE,300 MICRON ULTRASONIC		A
1	768676	SCREEN,A300 SIEVE,250 MICRON ULTRASONIC		A
1	768677	SCREEN,A300 SIEVE,200 MICRON ULTRASONIC		A
1	768678	SCREEN,A300 SIEVE,160 MICRON ULTRASONIC		A
2	768680	PROBE,ULTRASONIC,SIEVE A300	1	
3	7032221	PROBE, LEVEL SENSOR, 24VDC ATEX, PNP, 90 DEGREE	1	
4	1606639	SIEVE CONNECTION	1	
NS	768681	CONNECT ROD M10*25,A300 PROBE TO SCREEN	1	
5	1606698	LID ASSY, HOPPER	1	
6	1609233	GASKET,SIEVE,UPPER,300MM,SPECTRUM PFC	1	
7	1609234	GASKET,SIEVE,LOWER,300MM,SPECTRUM PFC	1	
8	1606627	GASKET,LOWER HINGE	1	
9	1606672	O-RING,SILICON,-382	1	
10	1606626	RETAINER,FLUID PLATE	1	
11	1606671	O-RING,SILICON,-140	1	
12	327986	O-RING,SILICON,-137	1	
13	1606669	O-RING,SILICON,-381	1	
14	1606621	PLATE,FLUIDISING,HOPPER	1	
17	1606617	GASKET,HOPPER	1	
18	1606615	CLAMP,CAM,BALL,LEVER	1	
19	1606614	PLATE,WEAR,LATCH	1	
22	1606649	TUBE,PICK-UP,ENCORE TRANSFER	1	
23	1606647	COLLAR,TRANSFER PICK-UP TUBE	1	
24	1606692	SCR,SET,M5x16,CUP,SS	1	
25	1606623	ADAPTER,PINCH VALVE	1	
26	1606625	ADAPTER,PINCH VALVE,OUTLET	1	
27	1611391	VALVE,PINCH,1.5",EPDM	1	
NS	1611392	VALVE,PINCH,REPLACEMENT SLEEVE,EPDM	1	
NS	1610429	KNOB,LOCK,POWDER TUBE,12MM	AR	
NS	1610346	PLUG,PUMP,HOPPER,12MM,VT	AR	
NS	7035232	PVC, RING, 300DIA, SPECTRUM HD/VT	AR	B
NS	1076854	KIT,SERVICE,220V,VIB MOTOR W/CAP	1	C
NS	1018596	ISOLATOR,VIBRATION,32MM DIA X 8MM STUDS	4	C

NS: Not Shown

NOTE A: Select the screen micron size you require. Refer to *Sieve Screen* table for sizes and part numbers

B: Please contact your local Nordson representative before installing this item

C: Components of the vibrating table for powder box

AR: As Required

NS: Not Shown

Powder Tubing

Part	Description	Note
1063654	TUBE,POLYETHYLENE,16MM O.D	AR
768176	TUBING,PWDR,ANTISTATIC 11MM (.43 IN) ID	AR
768178	TUBING,PWDR,ANTISTATIC 12.7MM (.5 IN) ID	AR
900613	TUBING,POLTHN,12MMODX9.5MMBLU	AR
AR: As Required		

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

Transfer Pump

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

Pinch Valve
Kit 1092272
(Includes
4 pinch valves,
2 filter discs,
2 O-rings,
and 1 insertion tool)

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

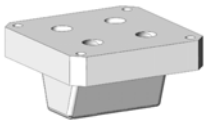
Non-conductive Pinch Valve
Kit 1092273
(Includes
4 pinch valves,
2 filter discs,
2 O-rings,
and 1 insertion tool)

Standard Fluidizing Tube Kit
1057266
(Includes 2 fluidizing tubes
and 4 O-rings)

Instructions on page LEERER MERKER

For Powders with High Proportion of Fines, order Kit 1104542

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

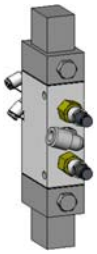


Lower Y Body
Part 1053976
(Quantity of 1)

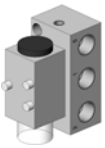
Check Valve Service
Kit 1078161
(Quantity of 2)

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
Part 1054592
(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

VT Inline Pump

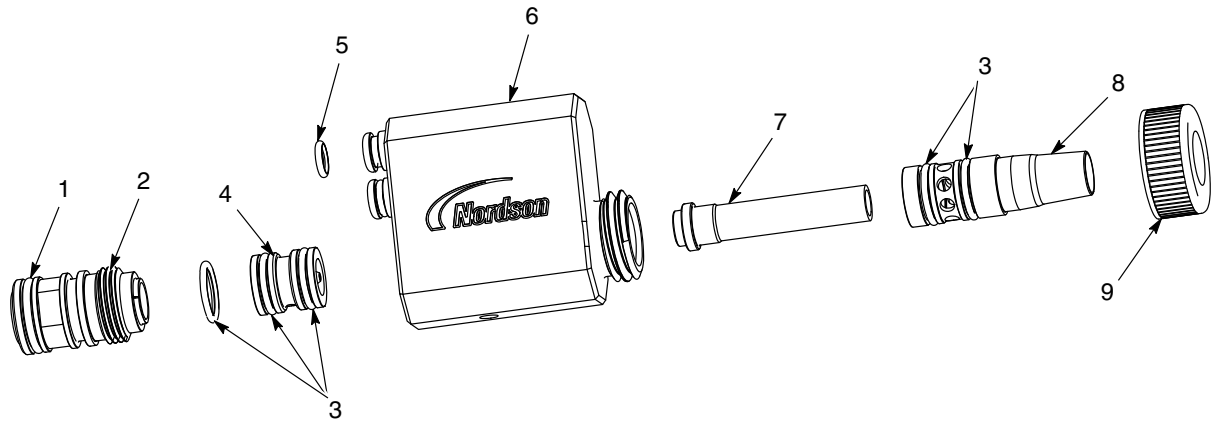


Figure 8-4 Spectrum VT Pump Assembly

See Figure 8-4.

Item	Part	Description	Quantity	Note
—	1609159	PUMP ASSEMBLY, inline, Spectrum VT		
—	-------	• PUMP ASSEMBLY, inline, Spectrum VT	1	
1	1088590	• • O-RING, silicone, conductive, .627 x .080	1	
2	1608596	• • ADAPTER, threaded, inline pump	1	
3	940147	• • O-RING, silicone, conductive, .500 x .625	5	
4	1600594	• • INJECTOR, machined, inline pump, Encore, SS	1	
5	1608598	• • O-RING, silicone, 7 mm ID, 1.5 mm W, A70 durometer	2	
6	1608595	• • BODY, pump, inline Spectrum VT	1	
7	1095899	• • THROAT, pump, Encore Gen II, Tivar	1	
8	1095898	• • HOLDER, pump, throat, Encore Gen II	1	
9	1095914	• • NUT, pump, Encore Gen II	1	

Options

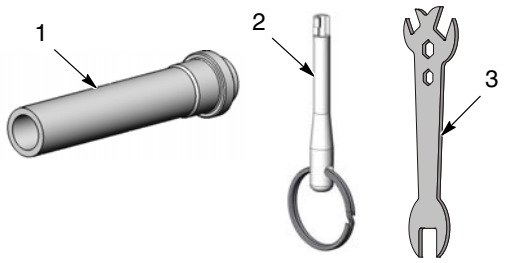


Figure 8-5 Options

See Figure 8-5.

Item	Part	Description	Quantity	Note
1	1095910	THROAT, pump, Encore Gen II, PTFE	1	
2	152999	WRENCH	1	
3	1097913	TOOL, extraction, inline pump, Encore	1	

Pump Manifold Siphon Block

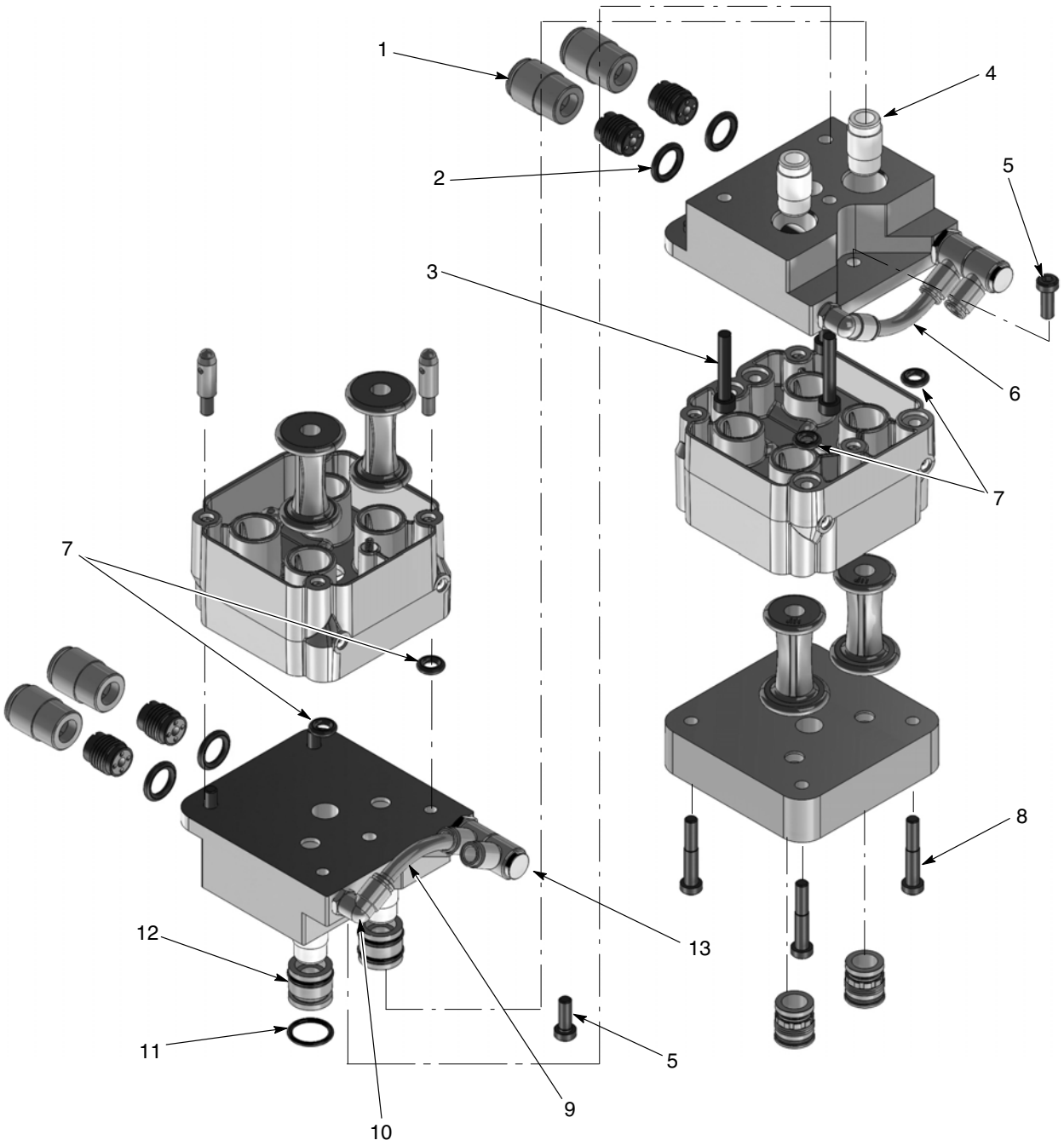


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Figure 8-6 Dual Pump Siphon Block

VT Siphon Pump Upgrade Kit

See Figure 8-6.

Item	Part	Description	Quantity	Note
—	1609212	SIPHON PUMP UPGRADE KIT, Spectrum VT	1	
4	1608575	• TUBE, fluid, filter, pump, Spectrum VT	2	
12	1608576	• BUSHING, chamber, siphon block, Spectrum VT	1	
11	1609132	• O-RING, -906 silicon	2	
13	1609131	• ELBOW, male, 6 mmx1/8 port, double universal	2	
2	941113	• O-RING, silicon, .438x.625x0.94 (-111)	2	
1	1609130	• TUBE FITTING, male, 12 mm, R 3/8	2	
9	900742	• TUBING, polyurethane, 6/4 mm, blue	67 mm	
6	900741	• TUBING, polyurethane, 6/4 mm, black	67 mm	
NS	1609186	• TOOL, pump manifold, Spectrum VT	1	
NS: Not Shown				

VT Siphon Pump Pinch Valve Kit

See Figure 8-6.

Item	Part	Description	Quantity	Note
—	1609213	SIPHON PUMP, pinch valve, kit, Spectrum VT	1	
NS	1057294	• TOOL, installation, pump pinch valve	1	
NS: Not Shown				

VT Siphon Pump Check Valve Kit

See Figure 8-6.

Item	Part	Description	Quantity	Note
—	1609214	SIPHON PUMP, check valve, kit, Spectrum VT	1	
2	941113	• O-RING, silicon, .428x.625x.094 (-111)	2	
NS	1609186	• TOOL, pump manifold, Spectrum VT	1	
NS: Not Shown				

VT Siphon Pump Fluid Tube Kit

See Figure 8-6.

Item	Part	Description	Quantity	Note
—	1609215	SIPHON PUMP, fluid tube, kit, Spectrum VT	1	
4	1608575	• TUBE, fluid, filter, pump, Spectrum VT	2	

VT 1-Pump Siphon Block Assembly Package

Item	Part	Description	Quantity	Note
—	1609156	SIPHON BLOCK, 1 pump, Spectrum VT, assembly, packaged	1	
2	-------	• SIPHON BLOCK, 1-pump assembly	1	
3	-------	• CAP SCREW, socket head, M10x1.5, 180-mm, steel, zinc	1	

VT 2-Pump Siphon Block Assembly Package

Item	Part	Description	Quantity	Note
—	1609157	SIPHON BLOCK, 2 pump, Spectrum VT, assembly, packaged	1	
1	-------	• SIPHON BLOCK, 2-pump assembly	1	
3	-------	• CAP SCREW, socket head, M10x1.5, 180-mm, steel, zinc	1	

Section 9
Diagrams

Description	Part Number
Spectrum VT Control Panel	AH 217125
Spectrum VT PFC Pneumatic Schematic	45.20-00.00.C