Afterfilter
Generation 5

Customer Product Manual
P/N 7146911_07
Issued 03/24

For parts and technical support, call your nearest Finishing Customer Support Centre.
Find your nearest centre at www.nordson.com/directory
This document is available on the Internet at http://emanuals.nordson.com/finishing

CE

Nordson

NORDSON GmbH • ERKRATH • GERMANY

Contact Us

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address:
http://www.nordson.com.

Address all correspondence to:

Nordson GmbH
Heinrich Hertz Strasse 42
40699 Erkrath,
Germany

Part 7146911–07

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

DESCRIPTION: Afterfilter / Dust Collector

FAMILY/MODELS: Generation 5 (2014)

APPLICABLE DIRECTIVES: 2006/42/EG (Machinery) and following amendments
2014/34/EU Guideline for equipment and protective systems
Intended for use in potentially explosive atmospheres

2014/30/EU Electromagnetic Compatibility Directive
2014/35/EU Low Voltage Directive
2014/68/EU Pressure Equipment Directive

STANDARDS USED TO VERIFY COMPLIANCE: EN 60204-1 Safety of Machinery-Electrical equipment
EN ISO 12100 Safety of machinery-Design

MARKING OF PRODUCT: CE

MARKING/USE OF COMPONENTS IN ATEX ZONES: Ex ***II 3 D minimum IP54***

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.
Any ignition, explosion or flame from outside (e.g. entry through duct inlet into raw gas opening) shall be avoided or prevented with an additional flame suppression system by customer.

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 the Nordson manuals, its operation is safe.

Kai Flockenhaus
Manager Procurement & Process,
ICS Europe (Industrial Coating Systems)
Nordson Deutschland GmbH,
40699 Erkrath
Date: 10/03/2017

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 Material Safety Data Sheets (MSDS) 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 MSDS 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 2, 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.

Additional Recommendations

This manual contains specific precautionary statements relative to worker safety in the appropriate sections. To avoid dangerous situations, the following advice is given:

- The afterfilter has been built in accordance with state−of−the−art standards and recognised safety rules. Nevertheless, if not handled carefully, it may put people at risk and also cause damage.
- The afterfilter must only be used in technically perfect condition, in accordance with its designated use and the instructions set out in the operation manual. Any functional disorders, especially those affecting safety, should be rectified immediately.
- Ensure proper training is given to operators before start−up.
- The afterfilter is designed exclusively for use in accordance with the scope of delivery, the drawing(s) and the specification sheet.
- The afterfilter is not designed for applications with combustible materials involving a potential powder explosion risk (e.g. buffing lint, paper, wood powder, aluminium and magnesium).
- Do not put lit cigarettes or any other burning object into the hood or ducting of any powder collection system.
- Regular maintenance is important for good performance of the afterfilter.
- A prudent user of the equipment should consult and comply with all relevant Fire Codes and/or other appropriate codes when determining the location and operation of powder collection equipment.
- A hand operated supply disconnecting device is necessary for each incoming electrical supply, in accordance with EN 60204−1.
- To prevent accidents, access to the fan impeller must not be possible during operation. Refer to EN 294.
- Disconnect all power before servicing. All electrical work must be carried out by a qualified electrician, according to local codes.
- All exposed conductive parts of the electrical equipment and the afterfilter should be connected to the protective bonding circuit (refer to EN 60204−1).
- Ensure the compressed is fully isolated and depressurised before any service work is carried out.
- The afterfilter cannot be used in a potentially explosive atmosphere (according ATEX directive 94/9/EC), unless stated otherwise on the collector nameplate and the scope of delivery.
- The user of the afterfilter is responsible for disposal of any powder collected by the process, according to local regulations.
- Do not lift the collector when fully assembled.

Section 2
Description

Product Information

Figure 2 Typical Afterfilter Generation 5

Figure 2-1 Typical Gen 5 Afterfilter - 20,000 m3/hour & 24,000 m3/hour shown here

The afterfilter is used for the collection of airborne powder and particulate. Whether in answer to the problem of air pollution, or as part of a manufacturing process, the afterfilter provides highly efficient, continuous, on-line powder collection.

The filter cartridges are the heart of the afterfilter. These filter cartridges help ensure that only cleaned air is returned to the plant environment.

Technical and field support is available from your local Nordson Representative to answer your questions.

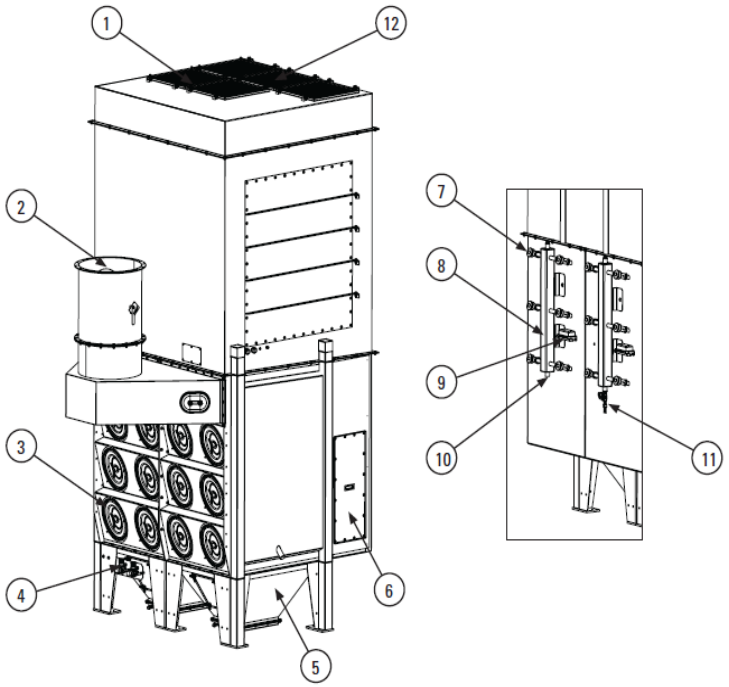


Figure 2-2 Afterfilter

1. Cleaned air outlet
2. Contaminated air inlet
3. Filter cartridge access covers
4. 12 pneumatic valves (control transfer pump + fluid bed)
5. Hopper
6. Clean air chamber access cover
7. Diaphragm valves
8. Manifolds
9. Pilot valve boxes
10. Compressed air connections
11. Solenoid valve
12. Fleece filter

Function

During operation, contaminated air enters the afterfilter through the dirty air inlet and passes through the filter cartridges.

Powder is collected on the outside surface of the filter cartridges. The filtered air flows through the centre of the filter cartridges into the clean air chamber, where it exits through the cleaned air outlet and can be re-circulated into the environment.

To ensure the optimal performance of your afterfilter it is necessary that the filter cartridges are cleaned automatically and sequentially.

During the filter cleaning sequence, the timer energises a solenoid valve, causing the corresponding diaphragm valve to send a pulse of compressed air through the filter cartridges (from the inside, outwards), removing the collected powder from the outside surfaces of the filter cartridges. The powder falls through the hopper to the fluid bed system and from there into a waste container.

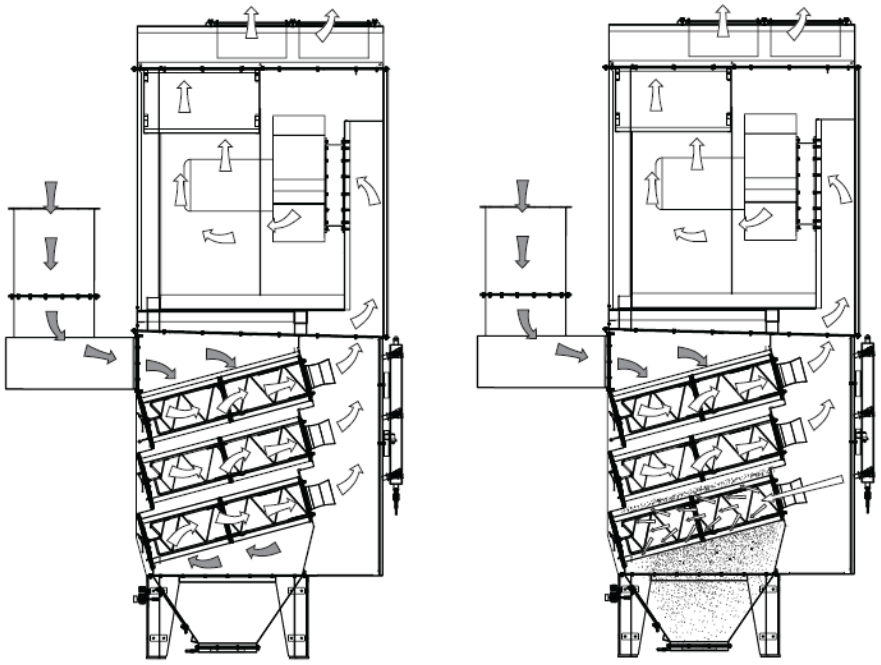


Figure 2-3 Principle of operation

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.

Pre–Installation

Location

The afterfilter should be located with consideration for:

- Shortest runs of inlet and outlet ductwork.
- Radius bends on elbows as large as possible.
- Easy access to electrical and compressed air connections.
- Convenient maintenance.

When calculating for foundations or supporting structure consider the following factors:

- The weight of the afterfilter.

NOTE: Consult the technical specification sheet and drawings for the afterfilter weight and dimensions.

- The material being collected.
- All auxiliary equipment.
- Live loads.
- Snow and wind loads on outside installations.

Required tools and equipment

- Fork lift
- Slings/clevis pins and adequate lifting equipment
- Standard tools (e.g. screwdrivers, wrenches, etc.)
- Drill
- Sealant

Delivery and Inspection

NOTE: The afterfilter is normally shipped by truck in separate sections that are not completely assembled and should be checked for any damage that may have occurred during shipping. Compare the parts received against the packing list. If there is damage or parts missing, notify the delivery company and your local Nordson representative.

GEN5 2-8, 3-12, 3-16 and 3-18 collectors:

- Combined hopper/support and filter section
- Fan section
- Inlet section

GEN5 3-24 and 4-32 collectors:

- Hopper/support section
- Filter section
- Fan section
- Inlet section

Parts shipped loose with the delivery (depending on your order):

- Transition pieces
- Spare parts
- Anchor bolts
- Hardware/Sealant
- Controller (3-24 and 4-32)
- Damper pack

Installation

Unloading and Transport to Location

NOTE: Before unloading, remove packing, strapping and cover plates on inlet and outlet.

WARNING: A forklift is recommended for the unloading, transport and installation of the afterfilter.

Installation and assembly

WARNING: Anchor the afterfilter to the foundations.

Field Joining Installation

NOTE: Refer to Figure 3.

The afterfilter requires field joining.

A detailed drawing of how to join your afterfilter has been shipped with your afterfilter. Most of the joining hardware is on the inside of the collector. A stepladder will be helpful in assembling the flanges near the top of the collector. Both the dirty air and the clean air chambers will have to be accessed during joining.

- A forklift is required.
- Read all instructions for assembly.
- Follow all safety precautions when installing the afterfilter.

DFO 2–8, DFO 3–12, DFO 3–16 and DFO 3–18 Assembly

WARNING: Do not lift the collector when fully assembled.

NOTE: Refer to Figure 3.

1. Remove protective shipping cover from each module.
2. Using lifting brackets inside the inlet aperture, use forklift to lift combined hopper/support and filter section into required position.
3. Anchor to foundations.
4. Apply sealant to top flange of filter section, each side of hole pattern.
5. Remove cover plates from lifting slots and, using forklift, lift fan section into position for joining. Align bolt holes in the flanges with drift pins. Bolt joint together with bolts, washers and nuts. Replace lifting slot cover plates.
6. Apply sealant to inlet mounting surface, along inside of hole pattern.
7. Position inlet section and align holes. Fasten using bolts and flat washers.
8. Wearing protective rubber gloves, remove any excess sealant. Dispose of excess sealant properly.

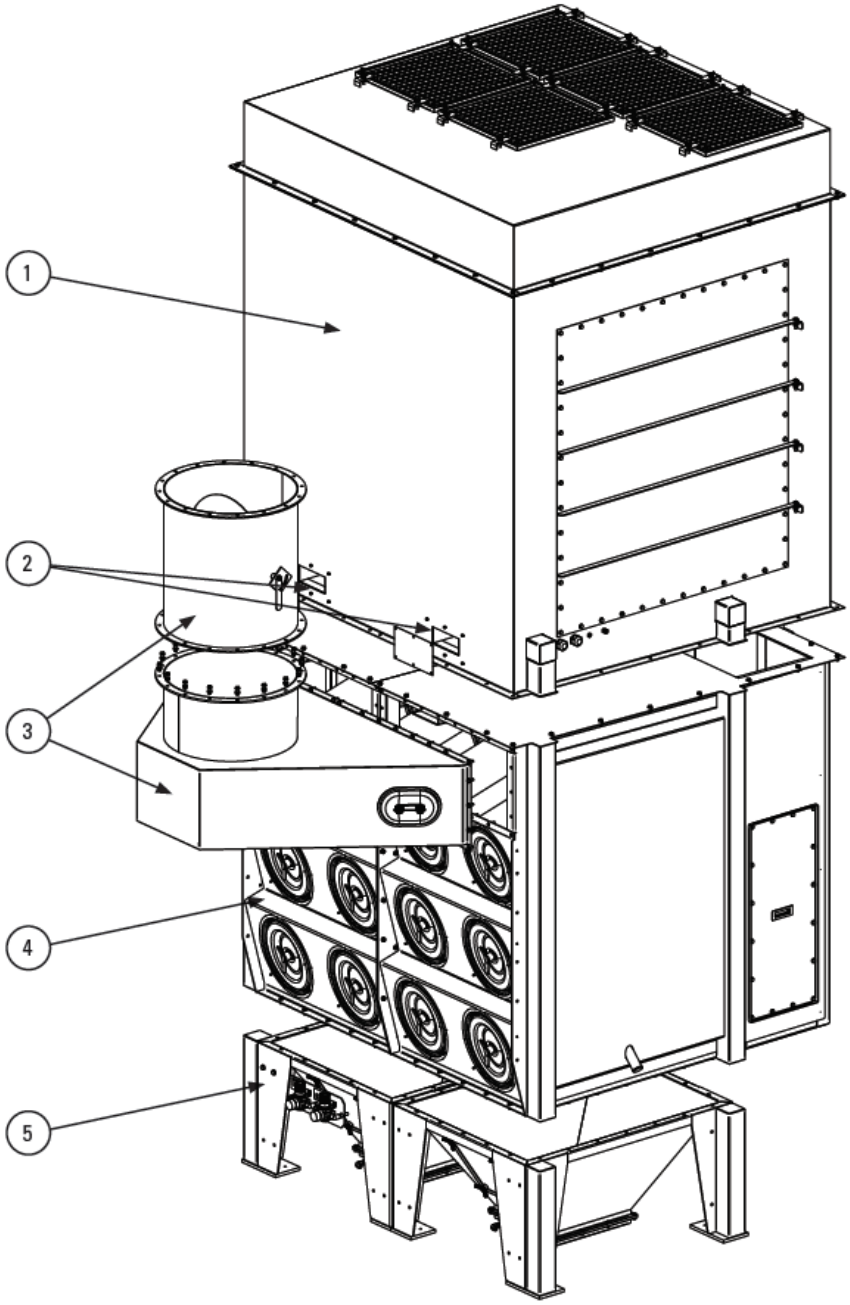


Figure 3 Field joining installation

1 Fan section
2 Slots for forklift
3 Inlet section
4 Filter section
5 Hopper / support section

GEN5 3–24 and 4–32 Assembly

WARNING: Do not lift the collector when fully assembled.

NOTE: Refer to Figure 3.

1. Remove protective shipping cover from each module.
2. Using forklift, lift hopper/support section into required position.
3. Anchor to foundations.
4. Remove lifting brackets and apply sealant to top flange of hopper/support section, each side of the hole pattern.
5. Using lifting brackets inside inlet aperture, use forklift to lift filter section into position for joining. Align bolt holes in flanges with drift pins. Bolt joint together with bolts, washers and nuts.
6. Apply sealant to top flange of filter section, each side of hole pattern.
7. Remove cover plates from lifting slots and, using forklift, lift the fan section into position for joining. Align bolt holes in flanges with drift pins. Bolt joint together with bolts, washers and nuts. Replace lifting slot cover plates.
8. Apply sealant to inlet mounting surface, along inside of hole pattern.
9. Position inlet section and align holes. Fasten using bolts and flat washers.
10. Wearing protective rubber gloves, remove any excess sealant. Dispose of excess sealant properly.

Controller

On 2-8, 3-12, 3-16 and 3-18 collectors the controller is supplied fully fitted to the filter section. On 3-24 and 4-32 collectors to controller is supplied separately.

NOTE: For controller connections and set-up, refer to separate manual supplied with the afterfilter.

Electrical Connection

NOTE: Please check the order-specific electrical drawings.

Amperage and voltage information is shown on the nameplate of the fan motor.

Connect the fan motor to the controller according to the wiring diagram.

Connect the main power to the controller according the wiring diagram included in the controller.

NOTE: Check rotation of fan impeller (refer to direction of arrow on fan housing). If fan is running the wrong way, it will deliver only approximately 40% of its rated air volume. To reverse fan rotation, isolate all electrical input power and interchange any two wires (3 phase only) on output side of motor starter.

Compressed Air Connection

- Compressed air pressure must be between 6 and 7 bar.
- Ensure all compressed air components are adequately sized to meet maximum system requirements of 45 N/liters per pulse at max. 7 bar supply pressure (design pressure).
- It is a requirement that adequate precaution is taken to avoid exceeding this pressure. A relief/safety valve will be required if connected supply can exceed this pressure. A label is attached to each manifold indicating manifold design details.
- Compressed air supply should be both oil and moisture free.
- Piping should be installed to provide a fall in direction of air flow to assist in drainage of accumulated moisture. A moisture separator should be provided at lowest point of installation.
- Purge compressed air supply lines to remove debris before connecting to compressed air manifold.
- Connect compressed air supply line to compressed air connection at bottom of manifold.
- Connect compressed air supply line to air connections on fluid bed system.
- Use thread-sealing tape or pipe sealant on all compressed air connections.
- A compressed air shut-off valve, filter/water separator with automatic condensate drain and pressure regulator with gauge must be installed in compressed air supply line. For convenience, locate these components in immediate vicinity of afterfilter.

Solenoid Valves

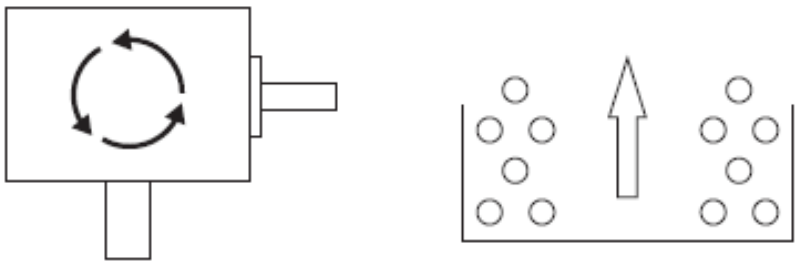
Each afterfilter comes equipped with 24V DC / 20W solenoid valves that control the diaphragm valves.

The solenoid valves are installed in groups of 4, 6, 8 or 9 in an enclosure (pilot valve box), which comes fully assembled and mounted close by the manifold at the rear of the afterfilter.

In each enclosure the common is pre-wired. The remaining terminal of each solenoid and the common must be connected electrically to the controller. A wiring diagram is supplied with the collector. The use of multicore cable with a wire section of min. 0.5 mm^2 and max. 1.5 mm^2 is recommended.

NOTE: If not connected properly, filter cartridge life and cleaning efficiency will be affected.

The fluid bed and transfer pump are supplied with compressed air from the manifold. Each filter comes equipped with 24V DC solenoid valve mounted on bottom outlet of the manifold, which opens during filter operation. If the controller is mounted on the Afterfilter, this solenoid valve is pre-qired. With two regulators, the pressure for the fluid bed and the transfer pump can be adjusted.



Start–up Check List

NOTE: Follow all steps before first start-up or when afterfilter has not been used for a long period. For daily use, follow steps 1, 2, 3, 5, 6 and 8.

1. Check outlet of fan is free of debris before starting.
2. Ensure powder disposal system is properly installed under hopper.
3. Turn on hopper disposal system (where necessary). The system must always be operating when the afterfilter is operating.
4. Check airflow damper is 50% closed.
5. Check access covers are closed.
6. Switch main power on.
7. Check airflow with pilot tube and micro-manometer in ductwork and adjust damper to desired airflow.

NOTE: Too much airflow can cause electrical failure of fan motor or dramatically reduce life of filter cartridges.

8. Turn on compressed air supply. Adjust pressure to 6.5 bar with compressed air regulator.

WARNING: Do not increase compressed air pressure beyond 7 bar.

The cleaning cycle only starts when necessary. For customized settings refer to the controller manual.

Section 4
Maintenance

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

To maintain optimum performance of the afterfilter follow the schedule in Table 1.

Table 1 - Maintenance Schedule

Location	Task	OP/TT	Interval (h)	Description	Tool
Waste Bucket	Inspect level of waste powder and dispose	op	8	Waste container is full up to the maximum. Follow local disposal regulations.	Visual inspection
Metric Venturi Transfer Pump	Check if transfer pump is functioning	op	8	Powder Transport to waste Bucket. Venturi Transfer pump supply air 1.2 Bar No restriction/blockage in the Powder delivery hose.	
Prodigy HDLV High Capacity - Transfer Pump	Check if transfer pump is functioning	op	8	Powder Transport to waste Bucket Prodigy HDLV High Capacity Pump supply air 4,8 bar. No restriction/blockage in the Powder delivery hose.	
Compressed air supply	Check air supply setting on inlet manometer	op	8	The air supply pressure should be between 6,0-7,0 bar	Visual inspection
Afterfilter Control Display	Check the LED bar-graph indication of differential pressure below < 150 Pa	op	24	Differential pressure between 100- 150 Pa - System is working fine. Differential pressure reached its value of 150 Pa - order New Cartridges	Visual inspection
Metric Venturi Transfer Pump	Inspect the injector, venturi, wear tube and pick up tube	op	160	Replace if worn and check for impacted powder. The tip of the injector must be clean and undamaged. Any obstruction or damage to the injector will produce an off-centre air stream that wears a non-uniform pattern in the throat and reduces its usable life.	Visual inspection
Prodigy HDLV High Capacity - Transfer Pump	Inspect clear block for signs of powder leakage	op	600	No powder is around the pinch valves	
Metric Venturi Transfer Pump	Replace the wear parts	op	600	No wear or powder impact fusion in pump body (clean if needed). Replace the venturi throat and wear tube.	Visual inspection Venturi throats Wear tube
Inlet Inspection hatch	Open inspection hatch and clean area	TT	600	No waste / material inside	

Prodigy HDLV High Capacity - Transfer Pump	Replacement of wear parts	TT	2000	Replace fluidising tubes and all pinch valves at the same time	Insertion Tool (Part of the Pinch Valve Kit)
Solenoid valves Diaphragm valves	Inspect the valves	TT	4000	No air leakage	Visual inspection
Filter section	Replace venturi	TT	4000	No wear	
Fan section	Inspect the After-filter noise	TT	4000	No loud noises from the fan allowed	Acoustic inspection
Afterfilter Control Display	Check control the settings for puls-ing	TT	4000	Differential Pressure Mode. Default Setting Auto Mode: interval time to 10 seconds / Set pulse time to 100 ms	Visual inspection
Fan section	Lubricate the Motor bearings	TT	4000		Lubricant
Doors	Inspect Gaskets and replace if necessary	TT	4000	No cracks, tears or holes	Visual inspection
Fluid bed system	Check fluidisation air value and powder fluidisa-tion	TT	4000	Open inspection door. Fluidisation value 1,5bar	
Ductwork	Inspect the con-necting ducts	TT	4000	No powder or air leakage	Visual inspection
Upper Chamber	Inspect upper chamber	TT	4000	Not excessive amount of powder is allowed inside the air chamber. Only fine powder.	Visual inspection
Assembly	Inspect the After-filter body and its support	TT	4000	Check for damages, strength, welding cracks and corrosion	Visual inspection
Emission Sensor	Inspect if emmis-sion sensor is working	TT	4000	Calibrate as per manual	Visual inspection
Upper Chamber	Replace the fleece or final filters	TT	4000	No excessive powder ingress in the filter media	
Grounding Points	Inspect all equipment ground connections	TT	4000	Resistance < 1 Ohm	Multimeter (Example: BEHA ProInstall100; SN4225110)
Filter section	Replace the Filter cartridges	TT	6000	Differential pressure reached its max value or least 6000h	
Microfilter for dif-ferential pressure	Replace the mi-crofilter	TT	6000	No powder or blockage	
Control Panel	Perform testing procedure	TT	8000	The control panel has to be tested at least every 12 Months, according to EN60204.	Visual inspection

OP=Operator, TT=Trained Technician, NT= Nordson Technician. Operating Hours: Shift = 8h, Day = 24h, Week = 160h, Month = 600h, Quarter-Year = 2000h, Year = 8000h

WARNING: Disconnect electrical power before servicing. Shut off and bleed compressed air supply before servicing any compressed air components. No welding should be performed inside without fire protection. Avoid contact or exposure to powder during servicing or maintenance.

Replacing Filter Cartridges

NOTE: All filter cartridges should be changed at the same time. Refer to Figure 5−1. Always replace the filter fleece on top of the Afterfilter, at the same time as replacing the cartridge filters.

WARNING: Powder laden cartridges may be heavy and difficult to handle. Appropriate means of access should be provided to replace filter cartridges safely.

NOTE: Filter cartridges cannot be washed and re−used. Do not drop filter cartridges. Replace only with genuine original filter cartridges.

1. Remove access cover by unlatching the quick −release handle and unhooking eye−bolt from yoke end hook.
2. Rotate filter cartridge to break seal between filter cartridges and sealing surface. This action will also remove any accumulation of powder on top of filter cartridges.
3. Slide filter cartridges out of access port along suspension yoke.
4. Clean sealing surfaces with a damp cloth.
5. Slide new filter cartridge onto suspension yoke with gasket end facing inwards, towards clean air chamber.
6. Replace access cover by hooking eye−bolt onto yoke end hook and firmly latching quick−release handle on cover. To prevent leakage, make sure handle is securely latched.

NOTE: Check access covers are seated and seal properly. Seals must be compressed to ensure an air tight seal. If gasket is damaged the cover must be replaced.

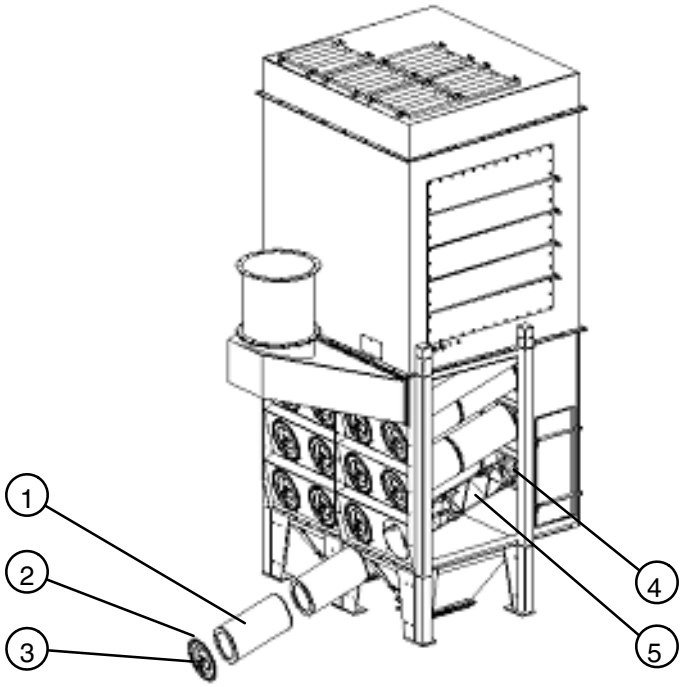


Figure **5-1** **Replacing the filter cartridges**

1. Filter cartridges
2. Access cover
3. Quick-release handle
4. Yoke
5. Cartridge sealing surface

Diaphragm Valve – Type AD1000698 (Power Pulse)

Valve Disassemble

NOTE: Disassemble in an orderly fashion. Pay particular attention to Figure 5–1.

1. Using screwdriver or Torx T30, unscrew the 3 screws to remove bonnet from valve.
2. Remove piston assembly with help of screwdriver.
3. If necessary, unscrew clamps.
4. If necessary, remove pipes and pipe o–rings from body with suitable device.
5. Parts now accessible for cleaning or replacement.

Valve Reassemble

NOTE: Reassemble in reverse order of disassembly, paying particular attention to Figure 5–1. Lubricate all gaskets/o–rings with high quality silicone-**free** grease.

1. If valve has been removed, replace pipe o–rings, replace valve on pipe and replace clamps. Tighten clamp screws.

NOTE: Torque 10 Nm (+–2) for 3/4” (diameter) pipe. Torque 16 Nm (+–2) for 1” (diameter) pipe.

2. Replace piston assembly.
3. Replace bonnet and tighten screws using screwdriver or Torx T30.

NOTE: Torque 7 Nm (+–1).

4. After maintenance operate valve a few times to ensure proper operation.

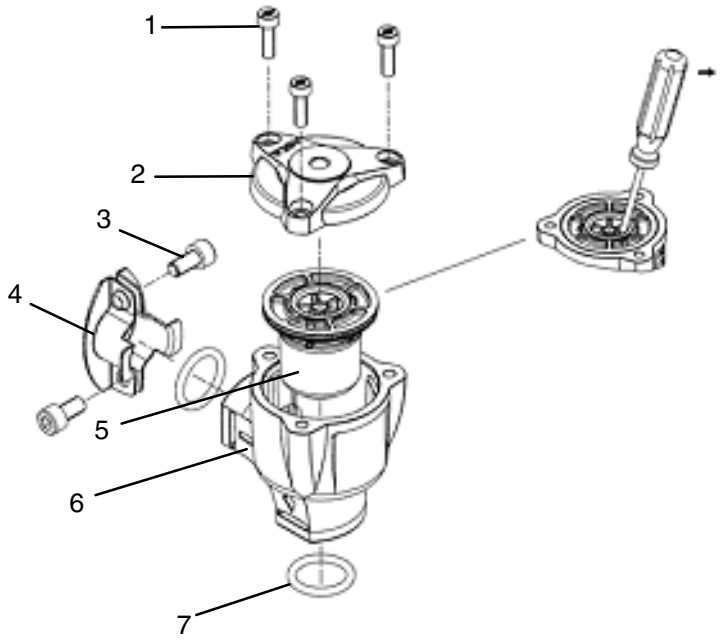


Figure **5-2** **Diaphragm valve - type AD1000698 (power pulse)**

1. Bonnet screw
2. Bonnet
3. Clamp screw
4. Clamp
5. Piston sub-assembly
6. Valve body
7. O-ring

Valve Replacement & Alignment

NOTE: Power off the system and depressurise the manifold prior to work.

1. Loosen the 4 socked head cap screws on the clamps, circled in red below. See Fig. 5–3.
2. Push the valve on to the inlet and outlet pipes ensuring the alignment is correct. See Fig. 5–4
3. Tighten the screws while holding/pushing the valve in position, starting with the outlet pipe.
4. Now tighten the screws in the same way, to hold the inlet pipe.

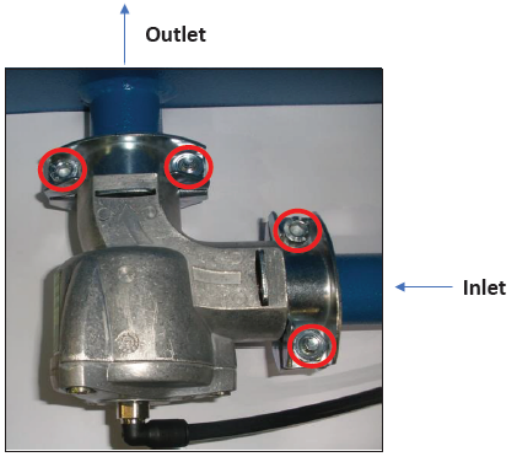


Figure **5-3** **Valve Securing Screws**

NOTE: Correct alignment of the pipes into the valve is very important. See figure 2

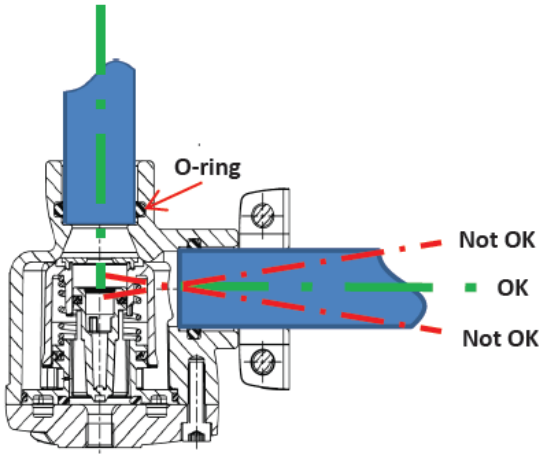


Figure **5-4** **Valve Alignment**

A good seal is achieved by the correct alignment and the O-ring sealing on the pipes (1”=Ø33,2 to 34,2 mm)

Motor Bearing Lubrication

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

It is not permitted to disassemble the fan/motor assembly. This must be an ATEX qualified technician. Please contact your local Nordson representative for more information.

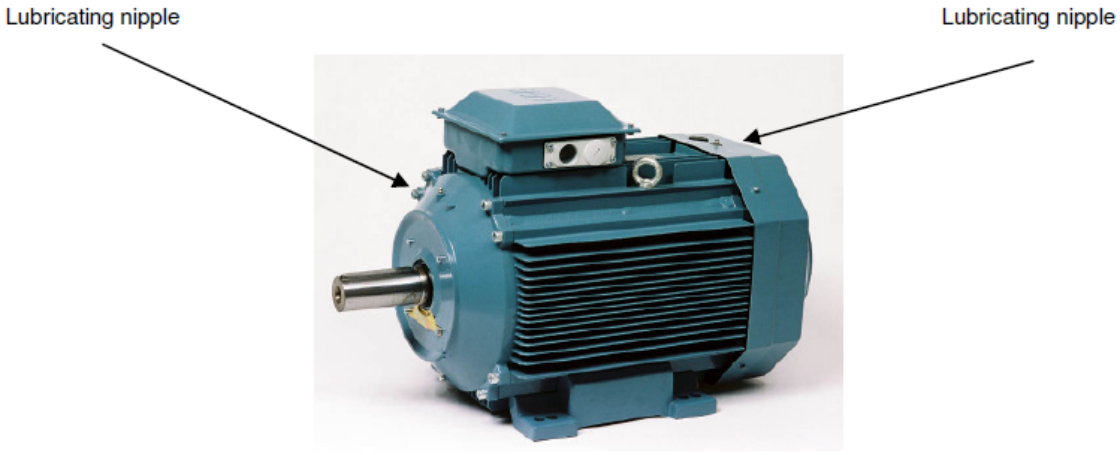


Figure **5-5** **Typical Motor Lubrication Points**

The motor bearings must be lubricated every 4000 hours of operation

Grease: ESSO-Unirex N3

Amount: 20g

Section 5
Troubleshooting

NOTE: Consult controller manual, if necessary.

WARNING: Disconnect power and compressed air supply before any work is carried out.

Table 2 - fault location

Symptom	Possible cause	Action
1 Fan does not start.	1.1 Not wired correctly. 1.2 Incorrect motor wire size.	1.1 Check and correct motor wiring for supply voltage (refer to wiring diagram). 1.2 Rewire using correct wire size as specified by national and local codes.
2 Fan starts but does not keep running.	2.1 Incorrect overload protection installed. 2.2 Access covers open or not closed tight. 2.3 Hopper discharge open. 2.4 Damper valve not adjusted correctly. 2.5 Electrical circuit fuses.	2.1 Check for proper motor overload protection. Replace with correct value as necessary. 2.2 Close and tighten access covers. 2.3 Install powder disposal system under hopper and seal securely. 2.4 Check airflow in ducting. Adjust damper valve until correct airflow is achieved. Do not attempt to run without inlet ducting attached. 2.5 Check supply circuit has sufficient power to run all equipment.
3 Excessive fan noise/vibration Rectify at once!	3.1 Powder deposit on impeller. 3.2 Worn impeller.	3.1 Clean impeller. 3.2 Replace impeller.
4 Powder emission.	4.1 Filter cartridges not installed correctly. 4.2 Filter cartridge damage, dents in end caps or holes in pleated media. 4.3 Access covers not airtight.	4.1 Check filter cartridge gaskets are firmly pressed against sealing surface (the access cover quick-release handle should be securely latched). 4.2 Replace filter cartridges as necessary (refer to chapter diaphragm valve). 4.3 Tighten access covers securely and check sealing.

5 Insufficient air flow.	5.1 Fan rotating wrong way. 5.2 Access covers open or not closed tight. 5.3 Cleaned air outlet restricted. 5.4 Filter cartridges plugged: a Lack of compressed air b Pulse cleaning not energised. c Hopper full of powder. d Filter cartridges need replacing. 5.5 Solenoid/diaphragm valves not functioning: a Solenoid/diaphragm valves leaking. b Controller PCB failed or out of adjustment.	5.1 Check fan rotation (refer to rotation arrow on fan casing). 5.2 Check access covers are closed and tightened securely. 5.3 Check outlet area for obstructions. Remove material or debris blocking outlet. 5.4 a Check compressed air supply for minimum 6 bar. Increase pressure to maximum 7 bar. b Refer to fault finding in controller manual. c Refer to fault finding symptom 6. d Replace filter cartridges (refer to chapter diaphragm valve). 5.5 a Check for debris obstruction and valve wear or diaphragm failure. Replace damaged solenoid/diaphragm valves or parts. b Refer to controller manual.
6 Powder not transferring from hopper to waste container.	6.1 Transfer hose blocked. 6.2 Fluid bed not fluidising powder. 6.3 Transfer pump leaking air. 6.4 Transfer pump blocked. 6.5 Waste container full.	6.1 Check hose and remove any obstructions. 6.2 Check air connections to fluid bed pan. Check air supply is clean, dry and free from oil. 6.3 Check o-ring inside transfer pump for damage and replace if necessary. Check air supply to transfer pump is securely fitted. 6.4 Check pump internally for obstructions. 6.5 Empty waste container according to local disposal regulations.
7 Excessive noise from diaphragm valve.	7.1 Diaphragm valve failure.	7.1 Check for debris, obstruction, and valve wear or diaphragm failure. Replace damaged valve or parts.

Pneumatical Requirements

Table 2 - 16.000 - 20.000 Afterfilter					
	Air pressure	**Air supply**	**Air consumption**	**Interval**	**Impulse**
Hopper	1bar	12mm	10m3/h	-	-
Transfer pump	2bar	10mm	10m3/h	-	-
Cartridge pulsing	7bar	1”	17m3/h	10s	100ms

Table 3 - 24.000 - 32.000 Afterfilter					
	Air pressure	**Air supply**	**Air consumption**	**Interval**	**Impulse**
Hopper	1bar	12mm	20m3/h	-	-
Transfer pump	2bar	10mm	20m3/h	-	-
Cartridge pulsing	7bar	1”	17m3/h	10s	100ms

Section 6
Parts

Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

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	•	2	A
2	000000	• • Part	1	

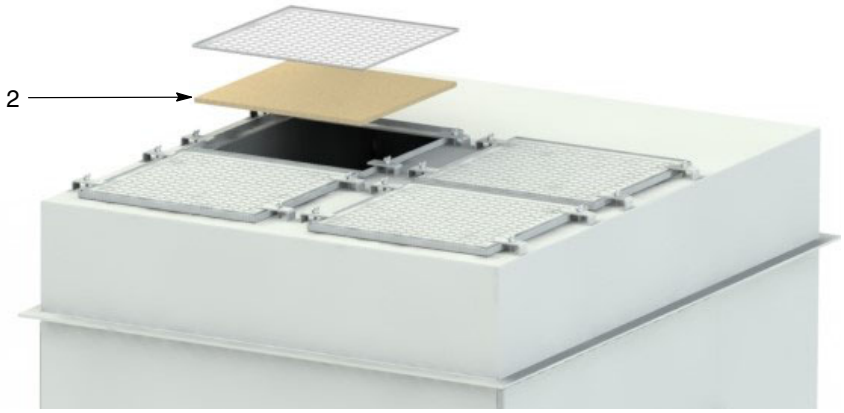
(**W**) Wear parts are considered to be items that can deteriorate over time and should expect to be replaced during normal maintenance.

(**S**) Strategic parts are those which may not require replacing as part of the standard maintenance schedule, but if damaged, could impede the functionality of the system

Item	Part	Description	Quantity	Strategic / Wear	Note
1	7034112	FINAL FILTER - 592*592*292	-		
		7,650 m3/hour unit	2	W	
		10,000 m3/hour unit	2	W	
		12,000 m3/hour unit	2	W	
		16,000 m3/hour unit	3	W	
		20,000 m3/hour unit	4	W	
		24,000 m3/hour unit	5	W	
		28,000 m3/hour unit	6	W	
		32,000 m3/hour unit	6	W	
NS	7034113	FINAL FILTER - 287*592*292	-		
		12,000 m3/hour unit	1	W	
		16,000 m3/hour unit	1	W	
		32,000 m3/hour unit	1	W	
NS	7034115	FINAL FILTER,592x592x292,HIGH VOLUME	-		A
		7,650 m3/hour unit	2	W	
		10,000 m3/hour unit	2	W	
		12,000 m3/hour unit	2	W	
		16,000 m3/hour unit	3	W	
		20,000 m3/hour unit	4	W	
		24,000 m3/hour unit	5	W	
		28,000 m3/hour unit	6	W	
		32,000 m3/hour unit	6	W	
NS	7035365	FINAL FILTER,287*592*292,HIGH VOLUME	-		A
		12,000 m3/hour unit	1	W	
		16,000 m3/hour unit	1	W	
		32,000 m3/hour unit	1	W	
NS	7034122	SOUND PROOF FOAM,1MX1.5M,GEN5 A/F	AR	S	

NOTE A: This is a special filter and not necessarily a direct replacement. Please contact your Nordson representative before ordering.

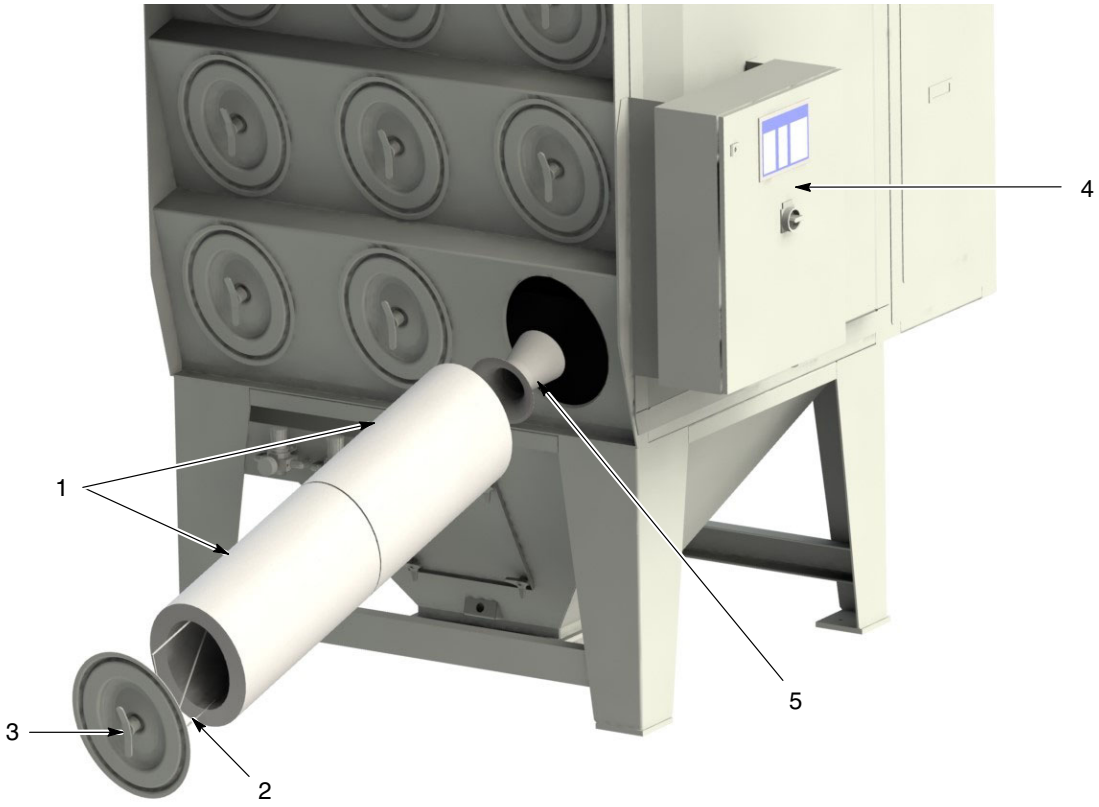
NOTE - It is recommended to replace all filters every 6,000 hours or less.



Item	Part	Description	Quantity	Strategic / Wear	Note
2	7034133	FILTER MEDIA,GEN5_AF,592 X 592 (FLEECE)	-		A
		7,650 m3/hour unit	2	W	
		10,000 m3/hour unit	2	W	
		12,000 m3/hour unit	2	W	
		16,000 m3/hour unit	3	W	
		20,000 m3/hour unit	4	W	
		24,000 m3/hour unit	5	W	
		28,000 m3/hour unit	6	W	
		32,000 m3/hour unit	6	W	
NS	7034134	FILTER MEDIA,GEN5_AF,592 X 287 (FLEECE)	-		A
		12,000 m3/hour unit	1	W	
		16,000 m3/hour unit	1	W	
		32,000 m3/hour unit	1	W	
NS	7034122	SOUND PROOF FOAM,1MX1.5M,GEN5 A/F	AR	S	

NOTE A: Fleece material final filter without mounting frame. (units from 2007 onwards). If you also require the mounting frame assembly for the fleece, order the relevant size kit: 7034131 - FILTER GRID ASSY KIT,GEN5_AF,**592** x **592** or 7034132 - FILTER GRID ASSY KIT,GEN5_AF,**592** x **287**

NOTE - It is recommended to replace all filters every 6,000 hours or less.

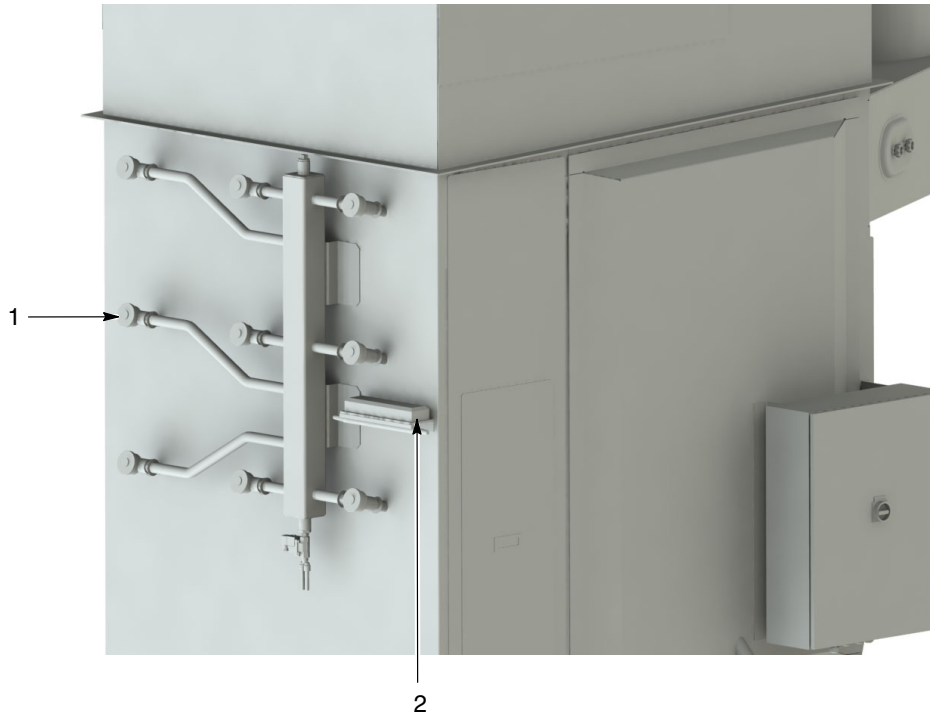


Item	Part	Description	Quantity	Strategic / Wear	Note
1	737810	FILTER CARTRIDGE, GEN5 A/F, OVAL	-		A
		7,650 m3/hour unit	8	W	
		10,000 m3/hour unit	12	W	
		12,000 m3/hour unit	12	W	
		16,000 m3/hour unit	16	W	
		20,000 m3/hour unit	18	W	
		24,000 m3/hour unit	24	W	
		28,000 m3/hour unit	32	W	
		32,000 m3/hour unit	32	W	
NS	737811	FILTER CARTRIDGE,W/O MESH,GEN5 A/F,OVAL	As per Item 1	W	A,B
NS	7034130	FILTER, GEN5 A/F,MONITORING PROTECTION	1	S	
2	7034140	FILTER MOUNT, YOKE,GEN5_AF,2014	As per Item 1	S	
3	7034135	FILTER,OVAL COVER,GEN5_AF,W/GASKETS 2014	As per Item 1	S	A
NS	7034120	GASKET, INSIDE ACCESS COVER, GEN5 A/F	As per Item 1	W	A
NS	7034121	GASKET, OUTSIDE ACCESS COVER, GEN5 A/F	As per Item 1	W	A
4	-	TCB - AFTERFILTER CONTROL PANEL	-		C
	7034116	• TCB,DISPLAY,CONTROLLER,GEN5 A/F	1	S	
	7034117	• TCB, I/O MODULE,GEN5 A/F	1	S	
5	7034123	VENTURI,CARTRIDGE CLEANING,GEN5 A/F	As per Item 1	S	

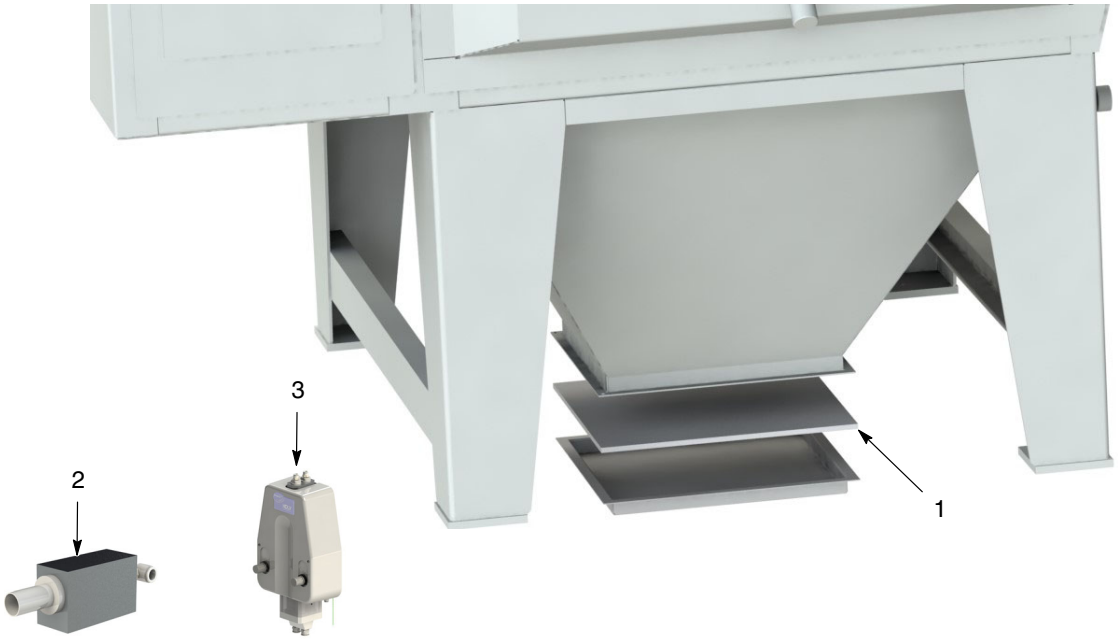
NOTE A: Recommended spares for up to 6,000 hours operation

B: This optional filter has no external mesh. Contact your Nordson representative before ordering

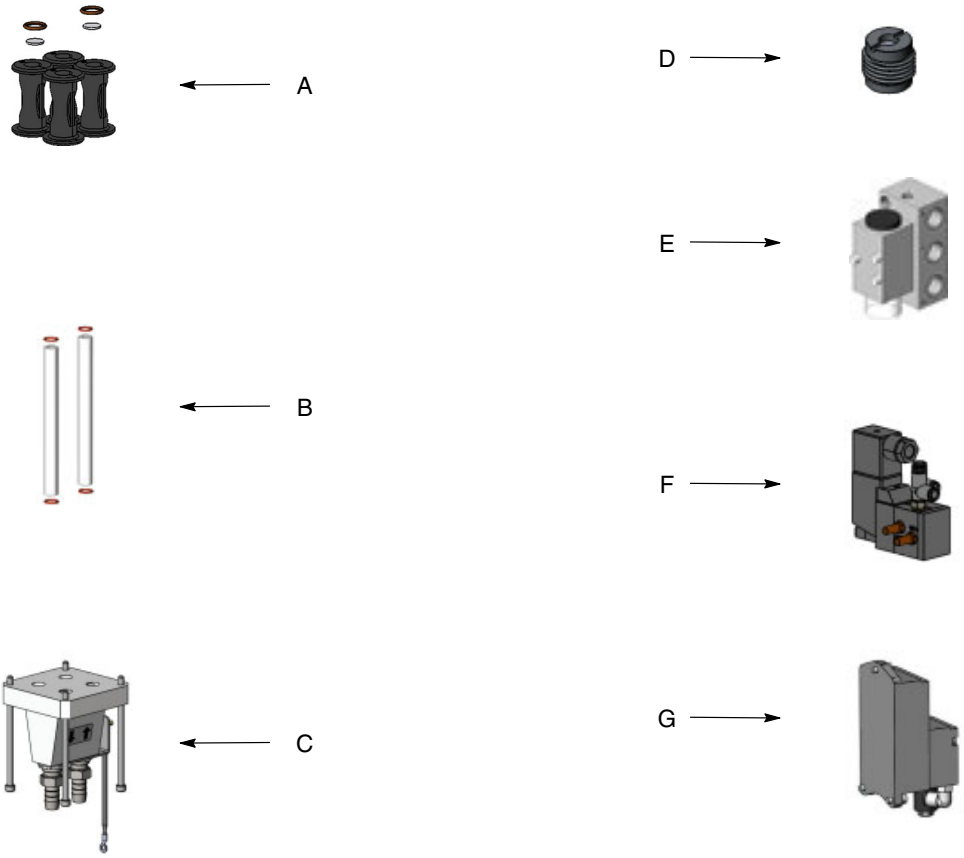
C: Refer to technical manual 7146919_05 at https://emanuals.nordson.com/finishinga



Item	Part	Description	Quantity	Strategic / Wear	Note
1	7034110	VALVE, 1” POWERPULSE, GEN5 A/F	9	S	
NS	7034111	KIT, SERVICE, 1” POWERPULSE VALVE, GEN5	-	W	A
2	7034107	ENCLOSURE,9_SOL.VALVE,24VDC,IP65	1	S	
NS	7034102	KIT, SOLENOID COIL, GEN5 A/F	9	S	
NS	7034103	COIL, PILOT VALVE, GEN5 A/F	9	S	
NOTE A: Service kit for PN 7034110					

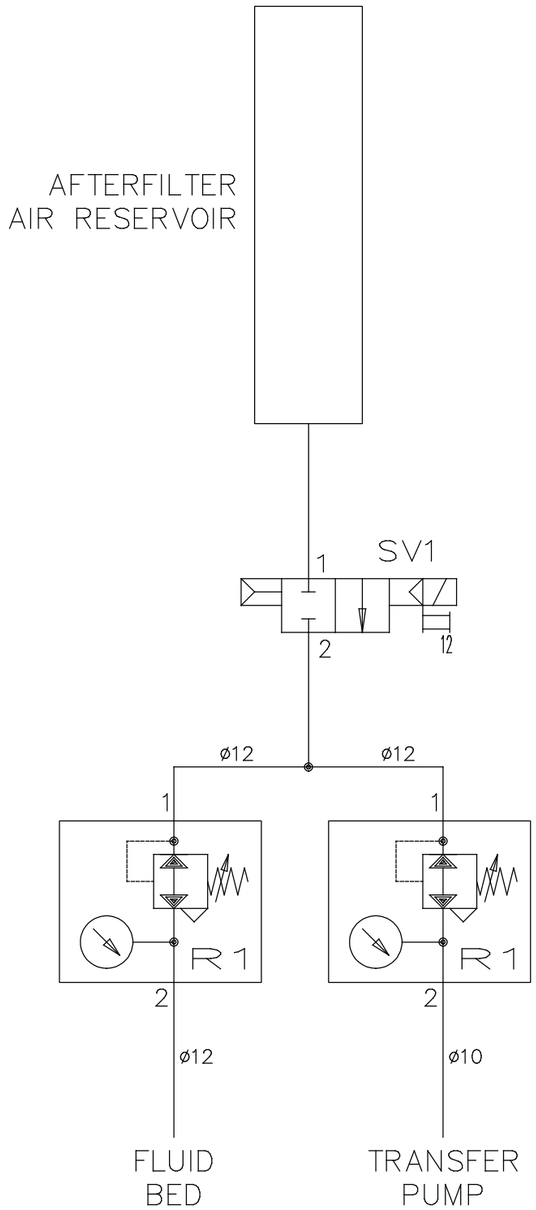


Item	Part	Description	Quantity	Strategic / Wear	Note
1	736850	FLUID BED,HDPE-50 MY,500*500*10MM THK	1	S	
2	165633	PUMP,TRANSFER,10MM IN,19MM OUT	-	S	A
	307437	• THROAT,W/O-RING,TRANSFER PUMP	1	W	
	118832	• TUBE,WEAR,HOLDER, HI FLOW	1	W	
	942106	• O RING,SLCNE,COND,.75 X 1.00	3	W	
	307435	• HOLDER,THROAT,TRANSFER PUMP	1	S	
	244643	• NOZZLE,AIR,.100DIA,POWDER	1	S	
3	-	This is an optional HDLV Transfer Pump If this is fitted to your system, see page 6-7 for recommended spare parts, or refer to the online technical manual at *https://emanuals.nordson.com/finishing/files/Powder/1619979.pdf*			
NS	7035200	DRUM,WASTE PDR,METAL,60 L	1	S	
NS	7035476	VENT HOSE 50MMX3M,SPIRAL,WASTE BUCKET	1	S	
NS	970966	CLAMP, HOSE	2	S	
NS	900725	TUBING,POLYURETHANE,.735	AR	S	
NOTE A: Refer to technical manual at https://emanuals.nordson.com/finishing/files/Powder/106702c.pdf					



Item	Part	Description	Strategic / Wear
A	1092273	KIT,PINCH VALVE,BLK,HDLV HI-CAP,4-PACK (includes insertion tool)	W
B	1104542	KIT,HDLV HI-CAP FLUID TUBE BLUE,2-PACK	W
C	1610762	KIT,LOWER Y W/BARB,HI CAP HDLV GEN II	W
D	1078161	KIT,SERVICE,CHECK VALVE,PUMP,PRODIGY	S
E	1054519	VALVE,MINIATURE,DBL AIR PILOTED,5 PORT	S
F	1620576	KIT,REPAIR,SOL,HDLV,ELECT	S
G	1620577	KIT,REPAIR,GEN,HDLV,ELECT	S
NS	941113	O RING,SLCNE, .438X .625X.094	W
NS	941215	O RING,SLCNE,1.250X1.063X.094	W
NS	941143	O RING,SLCNE, .625X .813X.094	W
NS	941231	O RING,SLCNE,1.188X1.375X.094	W
NS	1053292	O RING,SLCNE, .219 X .406 X .094	W
NS	768178	TUBING,PWDR,ANTISTATIC 12.7MM (.5 IN) ID	W

NOTE: It is recommended to keep 1 off of each of the above parts in stock, for each of the pumps on your system.



ITEM	P.No	DESCRIPTION	MFG.	DF03–18 QTY	DF03–24 DF04–32 QTY
	197634	REDUCTION NIPPLE 1"–1/2"	FESTO	1	1
	3580	DOUBLE NIPPLE 1/2"–1/2"	FESTO	1	1
	34583	PLUG SOCKET	FESTO	1	1
SV1	161728	SOLENOID VALVE	FESTO	1	1
	170152	SOLENOID COIL	FESTO	1	1
	153147	PUSH–IN FITTING "Y" 1/2"–12	FESTO	1	1
	159670	TUBE, PUN12x2–BL	FESTO	5m	10m
	153054	PUSH–IN FITTING "L" 1/2"–12	FESTO	3	3
	190661	PUSH–IN FITTING "L" 1/2"–10	FESTO	1	1
R1,2	162586	PRESSURE REGULATOR	FESTO	2	2
	162804	MOUNTING BRACKET	FESTO	2	2
	159668	TUBE, PUN10x1.5–BL	FESTO	2m	4m
	153151	PUSH–IN FITTING "Y" D10	FESTO	0	1
	153152	PUSH–IN FITTING "Y" D12	FESTO	0	1

NR.	ÄNDERUNG	DATUM	GEZ.	GEPR.

BEZEICHNUNG:

AFTERFILTER FLUID BED
PNEUMATICS

GRÖßE A4	GEZ.: R.VINE	DATUM: 06:05:14	
	GEPRÜFT:	MAßSTAB:	
KUNDE: STANDARD			
ZCHNGS. NR. DAF–PN–C01		Rev.	