Afterfilter Generation 4

Customer Product Manual Part 768656C Issued 12/08/2009

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





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.

Notice

This is a Nordson Corporation publication which is protected by copyright. Original copyright date 2006. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Nordson Corporation. The information contained in this publication is subject to change without notice.

Trademarks

Nordson and the Nordson logo are registered trademarks of Nordson Corporation.

DECLARATION of CONFORMITY

PRODUCT: Afterfilter Gen 4

Conformity has been verified following the provisions of the following directives :

APPLICABLE DIRECTIVES:

Directive 94/9/EC (ATEX) Directive 98/37/EC (Machinery)

STANDARDS USED TO VERIFY COMPLIANCE:

EN 60204–1:1993 "Safety of machinery – Electrical equipment of manchines". EN 60335: Part 1: 1998 "Safety of household and similar electrical appliances". EN 292: 1991 "Safety of machinery – Basic concepts, general principles for design". EN1127–1:1997 "Explosion prevention and protection. Basic concepts and methodology" EN 13463–1:2001 Part 1 "Non Electrical equipment for potentially explosive atmospheres. Basic method and requirements".

This product has been manufactured according to good engineering practice and conforms to the specified directives and standards described above.

CE 🐼 II 3D T 200C

Unllale

Date: 12th August 2009

Jens Kollosche Operations Manager

I

Table of Contents

Congratulations on the Purchase of Your Nordson Product	0-1
Your Safety is Important to Nordson	0-1 0-1
Nordson International	0-3
	0-3
Distributors in Eastern & Southern Europe	0-3
Outside Europe / Hors d'Europe / Fuera de Europa	0-4
Affica / Mildole East	0-4
Asia / Australia / Latin America	0-4
Japan	0-4
	0-4
Safety	1-1
	1-1
Qualified Personnel	1-1
Intended Use	1-1
Regulations and Approvals	1-2
Personal Safety	1-2
Fire Safety	1-2
Grounding	1-3
Action in the Event of a Malfunction	1-4
Disposal	1-4
Description	0.1
Intended Lice	2-1
	2-1
	2-1
Installation	3-1
Transport	3-1
Unpacking	3-1
Preparing for Installation	3-1
Mechanical Installation	3-2
Fan Motor Electrical Connection	3-3
Cartridge Cleaning and Afterfilter Monitoring System	3-4
Electrical Connections	3-4
Pneumatic Connections	3-6
Commissioning	3-7

Operation	4-1
Start Up Operation of Cartridge Cleaning and	4-1
Afterfilter Monitoring System	4-2
Programming of cartridge cleaning sequence	4-3
Maintenance	5-1
Daily Maintenance	5-1
Empty Powder Hopper	5-1
Filter Differential	5-2
Monthly Maintenance	5-2
Fan and Motor Assembly	5-2
Seals	5-2
Airflow	5-3
Filters	5-3
Fluid Bed	5-3
Transfer Pumps	5-3
Cartridge Replacement	5-3
Cartridge Filter Replacement	5-4
Troubleshooting	6-1
Δlarms	6-3
Main Control Panel Alarm Indicators	6-4
	0 1
Darte	7-1
Introduction	7-1
Lising the Illustrated Parts List	7-1
Powder Honner	7-1
Cartridge Section	7-4
Pulse Manifold Section	7-6
Manifold 7650 m3/h	7-8
Manifold 10000 m3/h	7-9
Manifold 9000 m3/h and12750 m3/h	7-10
Manifold 16000 m3/h	7-11
Manifold 20000 m3/h	7-12
Manifold 24000 m3/h and 28000 m3/h	7-13
Manifold 32000 m3/h	7-14
Fan Section	7-16
Final Filter	7-18
Solenoid Valve Control Unit	7-20
Technical Data	8-1
General Data	8-1
General Specifications	8-1
Electrical Requirements	8-1
Pneumatic Requirements	8-2
Dimensions and Weights for Shipment	8-3
Fan and Pulse Valve Section	8-3
Powder Hopper and Cartridge Section	8-4
Dimensions and Weights installed without Final Filter	8-5
Dimensions and Weights installed with Final Filter	8-6
Ductwork and Chimney Connection Flanges	8-7

Congratulations on the Purchase of Your Nordson Product

Nordson equipment is engineered and manufactured in accordance with strict specifications, using high quality components and state-of-the-art technologies that assure reliable, long-term performance. Your product was thoroughly tested for proper operation prior to shipment.

Before unpacking and installing your new equipment, please read this manual. It is your guide to safe installation, productive operation and effective maintenance. We recommend that you keep the manual available for future reference.

Your Safety is Important to Nordson

Carefully read the *Safety* section. Your product is designed for safe operation when used according to the published instructions. Potential hazards exist when operating instructions are not followed.

Manufacturer of Equipment

Nordson Deutschland GmbH Heinrich-Hertz-Strasse 42 40699 Erkrath Germany

Telephone: Fax: +49 211 9205 0 +49 211 9252 148

For a list of local Nordson organisations, see Nordson International.

Nordson International

http://www.nordson.com/Directory

Europe

Country		Phone	Fax
Austria		43-1-707 5521	43-1-707 5517
Belgium		31-13-511 8700	31-13-511 3995
Czech Repub	lic	4205-4159 2411	4205-4124 4971
Denmark	Hot Melt	45-43-66 0123	45-43-64 1101
	Finishing	45-43-200 300	45-43-430 359
Finland		358-9-530 8080	358-9-530 80850
France		33-1-6412 1400	33-1-6412 1401
Germany	Erkrath	49-211-92050	49-211-254 658
	Lüneburg	49-4131-8940	49-4131-894 149
	Nordson UV	49-211-9205528	49-211-9252148
	EFD	49-6238 920972	49-6238 920973
Italy		39-02-904 691	39-02-9078 2485
Netherlands		31-13-511 8700	31-13-511 3995
Norway	Hot Melt	47-23 03 6160	47-23 68 3636
Poland		48-22-836 4495	48-22-836 7042
Portugal		351-22-961 9400	351-22-961 9409
Russia		7-812-718 62 63	7-812-718 62 63
Slovak Reput	olic	4205-4159 2411	4205-4124 4971
Spain		34-96-313 2090	34-96-313 2244
Sweden		46-40-680 1700	46-40-932 882
Switzerland		41-61-411 3838	41-61-411 3818
United	Hot Melt	44-1844-26 4500	44-1844-21 5358
Kingdom	Finishing	44-161-495 4200	44-161-428 6716
	Nordson UV	44-1753-558 000	44-1753-558 100

Distributors in Eastern & Southern Europe

DED, Germany	49-211-92050	49-211-254 658
--------------	--------------	----------------

Outside Europe / Hors d'Europe / Fuera de Europa

- For your nearest Nordson office outside Europe, contact the Nordson offices below for detailed information.
- Pour toutes informations sur représentations de Nordson dans votre pays, veuillez contacter l'un de bureaux ci-dessous.
- Para obtener la dirección de la oficina correspondiente, por favor diríjase a unas de las oficinas principales que siguen abajo.

Contact Nordson Phone Fax	
---------------------------	--

Africa / Middle East

Asia / Australia / Latin America

Pacific South Division,	1-440-685-4797	-
USA		

Japan

Japan	81-3-5762 2700	81-3-5762 2701
-------	----------------	----------------

North America

Canada		1-905-475 6730	1-905-475 8821
USA Hot Melt		1-770-497 3400	1-770-497 3500
Finishing		1-880-433 9319	1-888-229 4580
	Nordson UV	1-440-985 4592	1-440-985 4593

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.

Section 2 Description

Intended Use

The Nordson Afterfilter range is intended for use in a powder spray and recovery system to ensure containment of powder within the spray booth, and to allow recycled air emissions conforming to regulatory standards in all applicable regions.

The afterfilter has an optional air discharge tube (chimney) for discharging away from the workplace external to the building or, on request, is suitable for recycling the air within the workplace, where absolute filters are fitted.

The afterfilter conforms to EU Directive ATEX 94/9 CE group II, category 3, for installation in zone 22.

Features

Each afterfilter is composed from seven sections, as shown in Fig 2–1, with additional equipment for fire detection and explosion suppression.

The powder hopper section (1) consists of hoppers and fluid beds, which allows the collected powder to be pumped in to a waste container for disposal. Each powder hopper is fitted with inspection hatches to allow monitoring of powder levels inside the unit.

The cartridge section (2) contains the cartridge filters that separate the powder from the air extracted from the booth. The quantity of cartridges varies according to the volume of each afterfilter across the range, from 7,650 m3/h to 32,000 m3/h.

There are seven standard afterfilter models in the afterfilter range, fitted with six, nine, twelve, fifteen, eighteen, twenty four and twenty eight cartridges respectively.

The pulse manifold section (3) contains a reservoir of compressed air necessary for the reverse jet cartridge cleaning valves. The sequence and timing of the cleaning system is controlled by the cartridge cleaning and afterfilter monitoring control panel (4) mounted on the side of the unit. This control panel also monitors motor temperature, airflow, and pressure drop across the cartridge and absolute filters.

Features (contd.)

At regular intervals, the powder that has accumulated on the filter cartridges receives a reverse jet of air to dislodge the powder back in to the powder hopper below, keeping the cartridge filters clean.

The fan section (5) houses the fan(s) with volume rating corresponding to the filter model. The fan(s) are fit for usage under the classification of dangerous areas and substances in accordance with directive ATEX 94/9/CE.

In accordance with European directives concerning noise levels, the fan section is also fitted with soundproofing.

The final filters (6) are necessary if recycling air back to the factory environment and act as a secondary filter for increased safety. There are local laws and regional regulations in certain countries which require the air to be extracted through the factory roof to atmosphere by installing a chimney instead of absolute filters.

An airflow damper and regulator (7) is fitted in the ductwork to allow the airspeed to be moderated manually.

Each installation of the afterfilter should be protected by a fire detection and explosion suppression system (8) that prevents a spark from the booth entering the unit. The system is comprised of

- Fire / spark detection sensors installed in the painting booth to monitor the spraying environment.
- Rapid acting extinguishant that is triggered automatically when the sensors detect a fire / spark in the booth.
- Nozzles to introduce the extinguishant in to the ductwork from the booth.



Figure 2-1 Main Afterfilter components

- 1 Powder hopper
- 2 Cartridge section
- 3 Pulse manifold section
- 4 Cartridge cleaning and afterfilter monitoring control panel
- 5 Fan section
- 6 Final filters
- 7 Airflow damper and regulator
- 8 Fire detection and explosion suppression system

Section 3 Installation



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



WARNING: Risk of electrical shock. Disconnect and lock out input power to equipment before servicing. Failure to observe this warning may result in personal injury or death

Transport

Transport the unit so as to avoid damage. Use suitable packaging materials. Protect the unit from humidity, large temperature fluctuations (condensation), dust and vibrations.

Unpacking

Unpack the unit carefully to avoid damage. Inspect for any damage caused during transport. Save packing materials for possible later use, or otherwise dispose of properly according to local regulations.

Preparing for Installation

Only one power supply cable is necessary for the control panel.

Ensure that all cables are rated suitable for use with the fan motor, that they are suitable for the ambient temperature of the installation area and also provide adequate fuse / circuit protection from the power supply.

The afterfilter must be positioned according to the general layout drawing supplied by Nordson.

To ensure easy maintenance, a minimum operating and access zone should be left vacant around the machine wherever possible, see Figure 3-1.



Figure 3-1 Afterfilter operating and access zone.

The area around the afterfilter, shown in Figure 3-1 is classified as zone 22.

All equipment / electrical and mechanical components sited within this area must be suitable for use in zone 22 (group II, category 3D).

Mechanical Installation

Position powder hopper of afterfilter and level using jacking bolts

Using a fork lift truck or crane, lift cartridge section, pulse manifold section, and finally fan section on to the powder hopper assembly.

Secure each section using nuts and bolts on the mating flanges.

Use acrylic sealant (non-silicon) on the mating flanges to each section.

Fan Motor Electrical Connection

The fan motor must be connected to the power supply in accordance with local safety legislation and wiring conventions.

If installing in areas classified as being at risk from explosion due to the presence of combustible powders, the fan motor must be installed in accordance with the relevant plant design directives (EN 50281–1–2 or equivalent national legislation).

Ensure that the power supply voltage corresponds to the motor plate voltage.

Ensure that the electrical connections in the terminal box of the fan motor correspond to the star delta convention, see Figure 3-2.





Ensure that the power supply cable is installed in the terminal box using a suitable gland for the local regulations.

Cartridge Cleaning and Afterfilter Monitoring System

The control panel for the cartridge cleaning and afterfilter monitoring system is located on the side of the afterfilter and must be installed in accordance with the relevant plant design directives (For example: EN 50381-1-2) or equivalent national legislations / standards.

Electrical Connections

The electrical connections are shown in Fig 3-3.



Figure 3-3 Electrical connections for cartridge cleaning and afterfilter monitoring system

- 1 24V AC power supply (terminal XT 1, XT 2)
- 2 Differential manometer connections for cartridge filters (terminal XT 3)
- 3 Differential manometer connections for absolute filters (terminal XT 6)
- 4 Fan motor thermal sensor alarm connection 1 (terminal XT 7)
- 5 Fan motor thermal sensor alarm connection 2 (terminal XT 10)
- 6 Fan airflow sensor alarm connection 1 (terminal XT 11)
- 7 Fan airflow sensor alarm connection 2 (terminal XT 14)
- 8 24V AC power supply from main control panel

The connections between the pilot valves and the manifolds are shown in figure 3-4.



Figure 3-4 Manifold connections to pilot valves

Pneumatic Connections

The pneumatic connections are shown in Fig 3-5.



Figure 3-5 Cartridge cleaning and afterfilter monitoring system pneumatic connections.

- 1 Differential manometer connections for absolute filter
- 2 Differential manometer connections for cartridge filter
- 3 Differential manometer for cartridge filter
- 4 Differential manometer for absolute filter
- 5 Pilot valve control box

Commissioning

To commission the afterfilter for the first time use the following procedure.

- 1. Close the fan damper to leave a minimal gap.
- 2. Isolate the system and check all electrical components.
- 3. Check motor overload is set at, or preferably below, the maximum current rating of the motor.
- 4. Switch off the fan breaker in the control panel and check operation of the contactor having re-connected the power supply.
- 5. Switch on the fan breaker and check the fan rotation. The rotation can be observed from the pulse manifold section when the access doors are open. Correct fan rotation should be anti clockwise when viewed from the impellor intake (pulse manifold section).
- 6. Start the fan and open the damper until the desired face air velocity in the booth is reached. The velocity is different on each application and so consult your Nordson representative. New cartridges will allow more air to pass through them until a cake of powder starts to build up on the surface. After two weeks of operation re-check the face air velocity in the booth and open the damper more to compensate if required.
- 7. Turn afterfilter off at the control panel. Ensure that the interlocked application equipment does not function whilst the afterfilter is turned off.
- 8. Turn afterfilter back on. Check for air leaks from the manifold in the pulse manifold section.
- 9. Check air supply pressure to the manifold in the pulse manifold section.



WARNING: The regulated air supply used for reverse jet pulse cleaning of the cartridges must be set to a maximum pressure of 4 Bar and should not be changed under any circumstances.

Section 4 Operation



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



WARNING: Risk of electrical shock. Disconnect and lock out input power to equipment before servicing. Failure to observe this warning may result in personal injury or death

Start Up

- 1. Ensure air supply is switched on, with a pressure of 6 bar (90 95 psi).
- 2. Turn on afterfilter unit at control panel.

Operation of Cartridge Cleaning and Afterfilter Monitoring System

Each filter cartridge is individually reverse jet cleaned individually by operation of a pulse cleaning valve in cyclic sequence. Refer to Fig 4-1 for the functions of each button on the controller.



Figure 4-1 Cartridge cleaning and afterfilter monitoring system control panel

- 1 Differential pressure across the cartridges in mm of water gauge
- 2 Valve number
- Manual mode 3
- 4 Power indicator
- 5 Pulse increase P+

- 6 Pulse decrease P-
- 7 Pulse PSEL
- 8 Pulse PMEM / MAN
 - 9 Analogue output
 - 10 Differential air input
- 11 Airflow sensor
- 12 Power input
- 13 On / off switch
- 14 Fuse
- 15 Pulse valve outputs

The operation and rest times of each pulse cleaning valve can be programmed and are independent of each other.

There are two types of pulse cleaning program: automatic, and manual.

Under normal operating conditions the unit is in automatic mode and the cleaning frequency depends on the pressure differential measured by the sensor. Once a certain level is reached the cartridge filters will be automatically cleaned.

Refer to Fig 4-1

In the automatic operating mode, if the differential pressure exceeds the maximum programmed pressure for a given length of time (Tmin) (parameter P4 delays the wash) the system starts to pulse clean each cartridge in sequence until it drops below the programmed level.

By pressing the button Pulse PMEN / MAN (8) for more than 3 seconds, the manual cleaning mode is activated. The manual cleaning mode is independent of the pressure differential. and is indicated by the yellow LED (3).

To return to automatic mode, press the Pulse PMEM / <code>MAN</code> button again for another 3 seconds.

During normal operation the differential pressure across the cartridges (1) is shown in mm of water gauge.

Should there be an interruption in the power supply, or the sequence is interrupted, the cleaning will restart from the last activated valve when the power is reconnected.

At the beginning of each pulse cycle, missing or defective pulse valves are detected and memorised. If the valve should fail three times in a row it will be systematically skipped each time until reset.

Programming of cartridge cleaning sequence

Refer to Fig 4-1.

To enter programming mode, press buttons Pulse PSEL (7) and Pulse Decrease P- (6) simultaneously for 3 seconds.

In programming mode the valve number display (2) indicates the number of the parameter being programmed, whilst the pressure differential display (1) indicates its value.

The button Pulse PSEL (7) is used to scroll through the programmable parameters numbered P1 to P8 on the display (2). Refer to Table 4–2 for parameter values.

The buttons Pulse Increase P+ (5) and Pulse Decrease P-(6) increase or decrease the values associated with the parameters shown on the display (1).

Once changes have been made to each operating parameter the data must be memorised to the EEPROM. To do so press the button Pulse PMEM / MAN (8) for 3 seconds to confirm and exit programming mode.



CAUTION: Programming mode is automatically exited after 20 seconds of inactivity, without saving changes.

Refer to Table 4-1 for program parameter default values.

Program Parameters			
Para	meter	Default Value	Value Entered
P1 PMAX	Maximum differential pressure that is reached to energize the alarm relay	1.2	
P2 TMAX	Value in seconds that delays activation of the PMAX alarm relay	0.03	
P3 PMIN	Minimum pressure differential value for cleaning to start	0.7	
P4 TMIN	Value in seconds that delays the activation of the PMIN cleaning to start	0.02	
P5 Seconds	Valve rest time	0.08	
P6 Seconds	Valve operation time	0.3	
P7 NUMVAL	Number of cleaning valves		
P8 TPOST	Time of last wash	0.0	

Table 4-1 Program Parameters

Section 5 Maintenance



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



WARNING: Breathing in certain airborne dusts may be hazardous to health. Ask the powder manufacturer for a material safety data sheet (MSDS) for further information. Use appropriate respiratory protection.

Daily Maintenance

Empty Powder Hopper

- Check for excessive amounts of powder inside the powder hopper by opening the inspection doors (see Fig 5-2 for location of cartridge section inspection doors).
- Empty the powder hopper by activating the empty switch on the control panel. The waste powder will then be emptied to the waste container.
- The powder in the waste container cannot be reused for powder coating and so must be disposed of according to the local regulations governing the disposal of special waste.
- If difficulties are experienced with emptying the powder hopper check the condition of the transfer pump, and the incoming air supply.

Filter Differential

• See Fig 5-1. Check the value of the cartridge filter pressure differential (1) in the cartridge cleaning and afterfilter monitoring panel. This value should be a maximum of 150mm on most systems. Consult with your Nordson representative if this value is higher.



Figure 5-1 Cartridge filter pressure display.

Monthly Maintenance

Carry out the following maintenance checks monthly.

Fan and Motor Assembly

- Check for changes in vibration and noise levels as an indication of possible problems.
- Take current readings over one of the electrical phases with a clamp on ammeter and record. Changes over time can indicate a deterioration in condition and performance of the unit.
- Check the integrity and tightness of all wiring connections due to the inherent vibration of the unit.

Seals

• Check seals in powder hopper and cartridge section for signs of leakage. Any sign of powder leakage indicates the seal is not sound or the access doors are not tightly fastened.

Airflow	
•	Check and record the airflow at the ductwork inlet, using a calibrated gauge. Changes over time can indicate a deterioration in condition and performance of the unit.
Filters	
•	Check for signs of powder in the clean sections (pulse manifold section and fan section) of the afterfilter. Evidence of powder leakage may be due to a cartridge seal leaking. Tighten up the crank after insuring seal integrity. Replace the cartridge if necessary. See cartridge replacement procedure
•	Check the filters for evidence of powder inside. Cartridges and final filters cannot be manually cleaned but must be replaced if passing powder. See cartridge replacement procedure.
Fluid Bed	
•	Use a clean white cloth to check for water, oil or other contaminates in the air supply to the fluid bed.
•	If air supply contamination is found empty hopper and replace fluid beds.
Transfer Pumps	

- Disassemble each transfer pump and check for obstructions and venturi wear. Replace worn or damaged parts.
- Check transfer hose for obstructions.

Cartridge Replacement



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



WARNING: Ensure that personal protective equipment is worn whilst carrying out this procedure.



WARNING: Ensure that afterfilter is turned off and powder isolated before carrying out this procedure.



CAUTION: Powder laden cartridges can be heavy. Lift with care and follow standard health and safety procedures.

The following steps cover the removal of cartridge filters and their replacement with new filters.

Cartridge Filter Replacement

To replace the cartridge filters:

Gain Access

Refer to Figure 5-2.

- 1. Open the inspection doors to the pulse manifold section (1).
- 2. Open the inspection doors to the cartridge section (2)



Figure 5-2 Cartridge filter replacement access areas

Remove Cartridge

Refer to Figure 5-3.

- 1. Unscrew and remove the cartridge locking nuts (3)
- 2. Remove the filter (4) from the cartridge section.
- 3. Remove the filter mount rod (5) from the cartridge filter.
- 4. Safely dispose of the old cartridge filter according to local regulations.
- 5. Retain all other equipment other than the cartridge for re-use when installing new filters.

Install New Cartridge

Refer to Figure 5-3

 Clean the mating surface of the cartridge to the cartridge support plate (6) thoroughly.



Figure 5-3 Cartridge replacement procedure

- 2. Inspect new cartridge for damage with respect to :
 - Cuts in rubber gasket.
 - Bent or dented end caps.
 - Tears or holes in the pleated filter media.
 - Dented inner screen.
 - Dented outer screen.

Do not install damaged cartridges. In the event of damage contact your Nordson representative.

- 3. Position filter mount rod into cartridge filter by inserting through centering hole located at the bottom of the filter.
- 4. Pull the filter up into position beneath the cartridge supporting plate. Place the centering bracket (7) down over the threaded portion of the filter mount rod with the long, slotted end going into the filter. Ensure that the threaded portion of the filter mount rod sticks out of the top of the centering bracket.
- 5. Place the 5/8" flat washer (8) and the 5/8" lock washer (9) over the threaded portion of the filter rod mount that is exposed over the top of the centering bracket.
- 6. Thread cartridge locking nut onto filter rod mount and align the teeth of the centering bracket with the locating slots in the cartridge support plate.
- 7. Once aligned, tighten cartridge locking nuts to assure gasket compression and secured filter fitting.



CAUTION: Damage to filter or centring bracket can be caused by overtightening

8. Using a feeler gauge, check for a consistent seal between the cartridge gasket and the cartridge support plate. Refer to Figure 5–4 for correct distance between the top of the cartridge and the cartridge support plate.





9. New cartridges will allow more air to pass through them until a cake of powder starts to build up on the surface. To compensate for this close the damper on the afterfilter slightly until the booth face air velocity is reached again. After two weeks of operation re-check the face air velocity in the booth and open the damper more to compensate if required.

Section 6 Troubleshooting



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

This section contains troubleshooting procedures. These procedures cover only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local Nordson representative for help.

The following tables provide general information for the troubleshooting of basic problems. Sometimes more detailed information, circuit diagrams or measuring devices are also needed for troubleshooting.

It must be noted that a fault can occur for several reasons. It is advisable to check all possible causes for a given fault. Obvious causes of malfunction such as broken wires, missing fasteners etc., should be noted during visual inspections and corrected immediately.

The unit does not contain any user serviceable parts; approved parts from Nordson must replace any parts that fail.

Refer to table 6-1 for general troubleshooting guide.

	Problem	Possible Cause	Corrective Action
1.	Reduced suction in the booth	Variation in power supply	Check rotation direction of fan
		Ductwork obstructed	Check cyclone inlet and ductwork for obstructions
		Cartridges not cleaning correctly	Check cartridge cleaning system for correct operation of valves
2.	No suction in the booth	Unit is turned off	Reset and start up the unit at the control panel
		Loss of incoming power supply	Check power supply
		Ductwork obstructed	Check cyclone inlet and ductwork for obstructions
3.	Powder escaping from the afterfilter	Cartridge leak	Check cartridge mount seals, tighten
			Check cartridge for punctures or damage and replace if necessary
4.	Powder not transferring from hopper to waste container	Transfer hose blocked	Check hose and remove any obstructions
		Fluid bed not fludising powder	Check air connections to fluid bed pan
			Check air supply is clean and dry, free from oil
		Transfer pump leaking air	Check o-ring inside the transfer pump for damage and replace if necessary
			Check air supply to transfer pump is securely fitted
		Transfer pump blocked	Check pump internally for obstructions
		Waste bin container	Empty waste container according to local disposal regulations

Table 6-1 General Troubleshooting

Alarms

The afterfilter is fitted with sensors that detect fault conditions, managed by the cartridge cleaning and afterfilter monitoring panel or by the main control panel. The location of the sensors are shown in Figures 6-1, and 6-2.



Figure 6-1 Layout of alarm sensors

- 1 Fan motor thermal sensor
- 2 Fan airflow sensor
- 3 Cartridge filter pressure differential sensor
- 4 Absolute filter pressure differential sensor
- 5 Cyclic sequencer control panel
- 6 Main control panel

Main Control Panel Alarm Indicators

Three alarm indicators are situated at the main control panel as shown in Figure 6-2 and Table 6-2.



Figure 6-2 Alarm indicators layout

- 1 Filter differential alarm
- 2 Fan motor thermal alarm
- 3 Fan airflow alarm
- 4 Cartridge cleaning and afterfilter monitoring control panel
- 5 Main control panel

Table 6-2	Alarm	Troubleshooting
-----------	-------	-----------------

	Problem	Possible Cause	Corrective Action
1.	Differential Pressure Alarm	Cartridge filters blocked or obstructed.	Check for obstructions.
			Activate pulse cleaning device at control panel.
		Absolute filters blocked or obstructed.	Check for obstructions in the fan section.
2.	Fan Temperature Alarm	Fan is overheating.	
3.	Fan Airflow Alarm	Indicates loss of airflow.	Check power supply to fan.

Section 7 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.

ltem	Part	Description	Quantity	Note
—	0000000	Assembly	1	
1	000000	Subassembly	2	А
2	000000	• • Part	1	

Powder Hopper

ltem	Part	Description	Quantity	Note
1	736850	Fluid bed, HDPE-50 My, 500*500*10mm Thk	1	A
	736850	Fluid bed, HDPE-50 My, 500*500*10mm Thk	2	В
	736851	Fluid bed, HDPE-50 My, 500*1000*10mm Thk	2	С
2		Fitting, elbow, 1/4"	1	A, NS
		Fitting, elbow, 1/4"	2	B, NS
3		Fitting, T, 1/4"	1	A, NS
		Fitting, T, 1/4"	2	B, NS
4		Tubing, 12mm Dia	1	A, NS
		Tubing, 12mm Dia	2	B, NS
5	165633	Pump, transfer	1	A
	165633	Pump, transfer	2	В
6	900725	Hose, transfer	1	A
	900725	Hose, transfer	2	В
7	7033003	Drum, waste PWD, H/Density Poly, 60 Ltr	1	
8		Drum Spigot	2	NS
9		• Cap	2	NS
10	736853	Hose, clear PU, 50mm Dia, per meter	2	
11		Clamp, 50mm Dia	2	NS
NOTE A: 76	50 m3/h, 9000r	n3/h, 10000 m3/h and 12750 m3/h versions		•
B: 16	000 m3/h, 2000	00 m3/h, 24000 m3/h, and 28000 m3/h versions		
C: 32	000 m3/h versi	on		
NOTE: NS in	ndicates a nor	n saleable part		

See Figure 7-1.







Figure 7-1 Special Powder Hopper for the 9000m3/h Afterfilter

Cartridge Section

ltem	Part	Description	Quantity	Note
1		Plate, serial number	1	NS
2	767211	Seal, meter	AR	
3	736854	Filter, cartridge	6	А
	736854	Filter, cartridge	12	В
	736854	Filter, cartridge	9	С
	736854	Filter, cartridge	12	D
	736854	Filter, cartridge	15	E
	736854	Filter, cartridge	18	F
	736854	Filter, cartridge	24	G
	736854	Filter, cartridge	28	Н
4		Centering star	6	A, NS
		Centering star	12	B, NS
		Centering star	9	C, NS
		Centering star	12	D, NS
		Centering star	15	E, NS
		Centering star	18	F, NS
		Centering star	24	G, NS
		Centering star	28	H, NS
5		Rod, filter tension	6	A, NS
		Rod, filter tension	12	B, NS
		Rod, filter tension	9	C, NS
		Rod, filter tension	12	D, NS
		Rod, filter tension	15	E, NS
		Rod, filter tension	18	F, NS
		Rod, filter tension	24	G, NS
		Rod, filter tension	28	H, NS
NOTE A: 76	650 m3/h versior	n		
B: 90	000 m3/h versior	n		
C: 10	0000 m3/h versio	on		
D: 12	2750 m3/h versio	on		
E: 16	6000 m3/h versio	on		
F: 20	0000 m3/h versio	on		
G: 24	1000 m3/h 2800)0 m3/h version		
ы. <u>-</u> н. за	2000 m3/h versi			
	irod			
An. As nequ	lieu			
NOTE: NS i	ndicates a nor	n saleable part		

See Figure 7-2.



Figure 7-2 Cartridge Section

Pulse Manifold Section

See Figure 7-3.

ltem	Part	Description	Quantity	Note
1	767211	Seal, meter	AR	
2		Manifold, cartridge cleaning, 3 valve	2	A, NS
		Manifold, cartridge cleaning, 4 valve	3	B, NS
		Manifold, cartridge cleaning, 3 valve	3	C, NS
		Manifold, cartridge cleaning, 4 Valve	3	D, NS
		Manifold, cartridge cleaning, 5 Valve	3	E, NS
		Manifold, cartridge cleaning, 6 Valve	3	F, NS
		Manifold, cartridge cleaning, 6 valve	4	G, NS
		Manifold, cartridge cleaning, 7 Valve	4	H, NS
NOTE A: 76	50 m3/h versior	1		
B: 90	00 m3/h versior	1		
C: 10	0000 m3/h versio	on		
D: 12	750 m3/h versio	on		
E: 16	000 m3/h versio	on		
F: 20	000 m3/h versio	on		
G: 24	000 m3/h, 2800	0 m3/h version		
H: 32	2000 m3/h versio	on		
AR: As Requi	ired			
NOTE: NS in	ndicates a nor	n saleable part		



Figure 7-3 Pulse Valve Section

Manifold 7650 m3/h

See Figure 7-4.

ltem	Part	Description	Quantity	Note
1		Manifold, 3 valve	2	NS
2	768135	Valve, Safety	2	
3		Blank, manifold	2	NS
4	736856	Membrane, pilot valve	6	
5	736857	Valve, pilot, pneumatic	6	
6	736858	Nozzle, blow down, 1"	6	
NOTE: NS ir	ndicates a nor	n saleable part		



Figure 7-4 Manifold 7650 m3/h

Manifold 10000 m3/h

ltem	Part	Description	Quantity	Note
1		Manifold, 3 valve	3	NS
2	768135	Valve, Safety	3	
3		Blank, manifold	3	NS
4	736856	Membrane, pilot valve	9	
5	736857	Valve, pilot, pneumatic	9	
6	736858	Nozzle, blow down, 1"	9	
NOTE: NS ir	ndicates a nor	saleable part		



Figure 7-5 Manifold 10000 m3/h

Manifold 9000 m3/h and 12750 m3/h

See Figure 7-6.

ltem	Part	Description	Quantity	Note
1		Manifold, 4 valve	3	NS
2	768135	Valve, Safety	3	
3		Blank, manifold	3	NS
4	736856	Membrane, pilot valve	12	
5	736857	Valve, pilot, pneumatic	12	
6	736858	Nozzle, blow down, 1"	12	
NOTE: NS i	ndicates a nor	n saleable part	·	



Figure 7-6 Manifold 9000 m3/h and 12750 m3/h

Manifold 16000 m3/h

See Figure 7-7.

ltem	Part	Description	Quantity	Note
1		Manifold, 5 valve	3	NS
2	768135	Valve, Safety	3	
3		Blank, manifold	3	NS
4	736856	Membrane, pilot valve	15	
5	736857	Valve, pilot, pneumatic	15	
6	736858	Nozzle, blow down, 1"	15	
NOTE: NS indicates a non saleable part				



Figure 7-7 Manifold 16000 m3/h

Manifold 20000 m3/h

See Figure 7-8.

ltem	Part	Description	Quantity	Note
1		Manifold, 6 valve	3	NS
2	768135	Valve, Safety	3	
3		Blank, manifold	3	NS
4	736856	Membrane, pilot valve	18	
5	736857	Valve, pilot, pneumatic	18	
6	736858	Nozzle, blow down, 1"	18	
NOTE: NS indicates a non saleable part				



Figure 7-8 Manifold 20000 m3/h

Manifold 24000 m3/h and 28000 m3/h

See Figure 7-9.

ltem	Part	Description	Quantity	Note
1		Manifold, 6 valve	4	NS
2	768135	Valve, Safety	4	
3		Blank, manifold	4	NS
4	736856	Membrane, pilot valve	24	
5	736857	Valve, pilot, pneumatic	24	
6	736858	Nozzle, blow down, 1"	24	
NOTE: NS indicates a non saleable part				



Figure 7-9 Manifold 24000 m3/h and 28000 m3h

Manifold 32000 m3/h

See Figure 7-10.	See	Figure	7-10.
------------------	-----	--------	-------

ltem	Part	Description	Quantity	Note
1		Manifold, 7 valve	4	NS
2	768135	Valve, Safety	4	
3		Blank, manifold	4	NS
4	736856	Membrane, pilot valve	28	
5	736857	Valve, pilot, pneumatic	28	
6	736858	Nozzle, blow down, 1"	28	
NOTE: NS indicates a non saleable part				



Figure 7-10 Manifold 32000 m3/h

Fan Section

See	Figure	7-11.

ltem	Part	Description	Quantity	Note	
1		Connector, sound absorber	AR	NS	
2		Foam, sound insulating	AR	NS	
3	767209	Seal, end, knock-on, meter	3		
4		Mount, anti vibration	4	NS	
5		Fan, 7650 m3/h, 18.5 kW	1	A, NS	
		Fan, 9000 m3/h, 15 kW (50Hz)	1	B, NS	
		Fan, 9000 m3/h, 15 kW (60Hz)	1	B, NS	
		Fan, 10000 m3/h, 18.5 kW	1	C, NS	
		Fan, 12750 m3/h, 30 kW	1	D, NS	
		Fan, 16000 m3/h, 30 kW	1	E, NS	
		Fan, 20000 m3/h, 37 kW	1	F, NS	
		Fan, 24000 m3/h, 22 kW	2	G, NS	
		Fan, 28000 m3/h, 30 kW	2	H, NS	
		Fan, 32000 m3/h, 30 kW	2	I, NS	
6		Spacer ring, fan assembly 7650 m3/h	1	A, NS	
		Spacer ring, fan assembly 9000 m3/h	1	B, NS	
		Spacer ring, fan assembly 10000 m3/h	1	C, NS	
		Spacer ring, fan assembly 12750 m3/h	1	D, NS	
		Spacer ring, fan assembly 16000 m3/h	1	E, NS	
		Spacer ring, fan assembly 20000 m3/h	1	F, NS	
		Spacer ring, fan assembly 24000 m3/h	1	G, NS	
		Spacer ring, fan assembly 28000 m3/h	1	H,NS	
		Spacer ring, fan assembly 32000 m3/h		I,NS	
7	736860	Sensor, fan airflow	1		
NOTE A: 76	50 m3/h versio	n			
B: 90	00 m3/h versio	n			
C: 10	000 m3/h versi	on			
D: 12	750 m3/h versi	on			
E: 16000 m3/h version					
F: 20000 m3/h version					
G: 24000 m3/h version					
H: 28000 m3/h version					
I: 32000 m3/h version					
AR: As Requi	red				
NOTE: NS	naicates a nor	n saleable part			



Figure 7-11 Fan Section

Final Filter

See Figure 7-12.

Description	Quantity	Note		
Final Filter, 595 x 595 x 290	2	A		
Final Filter, 595 x 595 x 290	3	В		
Final Filter, 595 x 595 x 290	3	С		
Final Filter, 595 x 595 x 290	4	D		
Final Filter, 595 x 595 x 290	5	E		
Final Filter, 595 x 595 x 290	6	F		
Final Filter, 595 x 595 x 290	7	G		
Final Filter, 595 x 595 x 290	8	Н		
Final Filter, 595 x 595 x 290	10	I		
Plate, absolute filter	1	NS		
on				
on				
sion				
sion				
E: 16000 m3/h version				
F: 20000 m3/h version				
sion				
sion				
sion				
	Description Final Filter, 595 x 595 x 290 Plate, absolute filter on sion sion sion sion sion sion	Description Cularity Final Filter, 595 x 595 x 290 2 Final Filter, 595 x 595 x 290 3 Final Filter, 595 x 595 x 290 4 Final Filter, 595 x 595 x 290 5 Final Filter, 595 x 595 x 290 6 Final Filter, 595 x 595 x 290 6 Final Filter, 595 x 595 x 290 7 Final Filter, 595 x 595 x 290 7 Final Filter, 595 x 595 x 290 7 Final Filter, 595 x 595 x 290 8 Final Filter, 595 x 595 x 290 10 Plate, absolute filter 1 on 5 sion 5 sion 5 sion 5		



Figure 7-12 Final Filter

Solenoid Valve Control Unit

See figure 7-13.

ltem	Part	Description	Quantity	Note	
1	736862	Sequence controller, cyclic, 6 valve	1	A	
	736863	Sequence controller, cyclic, 12 valve	1	В	
	736864	Sequence controller, cyclic, 16 valve	1	С	
	736865	Sequence controller, cyclic, 20 valve	1	D	
	736866	Sequence controller, cyclic, 24 valve	1	D	
	736867	Sequence controller, cyclic, 32 valve	1	E	
2	736868	Valve, pulse pilot, 6 port 24v DC	1		
	736869	Valve, pulse pilot, 9 port 24v DC	1		
	736870	Valve, pulse pilot, 12 port 24v DC	2		
3	736871	Manometer, differential 1.4 – 5.5" WG	1		
NOTE A: 76	50 m3/h, versio	n	·		
B: 90	00m3/h version	+ 12750 m3/h version			
C: 16	C: 16000 m3/h version				
D: 20	000 m3/h, 2400	00 m3/h and 28000m3/h versions			
E: 32	000 m3/h versio	on			



Figure 7-13 Solenoid Valve Control Unit

Section 8 Technical Data

General Data

General Specifications

Afterfilter part number	Airflow rating (m3/h)	Fan rating (kW)	Number of cartridges	Total filtration area	Speed of filtration m ³ / m ² / 1'	Absolute filter quantity (optional)
N/A	7650	18.5	6 (3x2)	100.2	1.27	2
N/A	9000 + 10000	15	12 (4x3)	200.4	0.74	4
N/A	12750	30	12 (4x3)	200.4	1.06	4
N/A	16000	30	15 (5x3)	250.5	1.06	6
N/A	20000	37	18 (6x3)	300.6	1.11	6
N/A	24000	22 x 2	24 (6x4)	400.8	0.99	8
N/A	28000	30 x 2	24 (6x4)	400.8	1.16	8
N/A	32000	30 x 2	28 (7x4)	467.6	1.14	10

Surface area of each cartridge 16.7 m²

Electrical Requirements

380/415V, 3-phase + Neutral 50Hz, star/delta, IP55

Kw rating is dependent upon model, see General Specifications.

Pneumatic Requirements

Dry clean air at 6 bar pressure, (filtered at 5μ , or dried at 2 degrees C condensation temperature, free from oil).

Compressed air supply tube diameter from users system to Nordson Afterfilter $1/2"\,\text{BSP}$

Height from ground approximately 2000mm.

Afterfilter part number	Airflow rating (m3/h)	Compressed air consumption (m3/h)
N/A	7650	60
N/A	9000+10000	65
N/A	12750	73.5
N/A	16000	78
N/A	20000	84
N/A	24000	90
N/A	28000	95
N/A	32000	98

Dimensions and Weights for Shipment

Fan and Pulse Valve Section

Afterfilter part	Airflow rating (m3/h)		Weight (Kg)		
number		А	В	С	
N/A	7650	1900	1775	1250	1085
N/A	10000	1900	1775	1775	1225
N/A	9000 +12750	1900	2300	1775	1571
N/A	16000	1900	2875	1775	1666
N/A	20000	1900	3350	1775	1995
N/A	24000	1900	3350	2300	2310
N/A	28000	1900	3350	2300	2450
N/A	32000	1900	3875	2300	2625

See Figure 8-1.





Figure 8-1 Fan Section

Powder Hopper and Cartridge Section

See Figure 8-2.

Afterfilter part	Airflow rating (m3/h)		Weight (Kg)		
number		D	E	F	
N/A	7650	1675	1150	2200	465
N/A	9000	2200	1675	2550	760
N/A	12750	2200	1675	2200	674
N/A	16000	2725	1675	2200	714
N/A	20000	3250	1675	2200	855
N/A	24000	3250	2200	2200	990
N/A	28000	3250	2200	2200	1050
N/A	32000	3775	2200	2200	1125





Figure 8-2 Hopper Section

Dimensions and Weights installed without Final Filter

A /1. //1	A		Dime			
Afterfilter part	Airflow rating (m3/h)	Dimensions				Weight (Kg)
number	(110,11)	Α	В	С	D	(149)
NI/A	7650	4250	1675	1150	2290	1550
<u> </u>	7050	4250	2200	1675	2260	2300
<u>Ν/Α</u> Ν/Δ	12750	4350	2200	1675	2350	2300
N/A	16000	4250	2725	1675	2350	2380
N/A	20000	4250	3250	1675	2420	2850
N/A	24000	4250	3250	2200	3000	3300
N/A	28000	4250	3250	2200	3027	3500
N/A	32000	4250	3775	2200	3127	3750

в

See Figure 8-3.

Figure 8-3 Dimensions and weights without final filter

D

Dimensions and Weights installed with Final Filter

Afterfilter part number	Airflow rating (m3/h)		Weight (Kg)			
		Α	В	С	D	
N/A	7650	4400	1675	1150	2280	1580
N/A	9000	4700	2200	1675	2350	2385
N/A	12750	4400	2200	1675	2350	2305
N/A	16000	4400	2725	1675	2350	2470
N/A	20000	4400	3250	1675	2420	2940
N/A	24000	4400	3250	2200	3000	3420
N/A	28000	4400	3250	2200	3027	3620
N/A	32000	4400	3775	2200	3127	3900



Figure 8-4 Dimensions and weights with final filter

Ductwork and Chimney Connection Flanges

See Figure 8-5 and Figure 8-6.	
--------------------------------	--

Afterfilter part number	Airflow rating (m3/h)	A (mm)	B (mm)	C (mm)	D (mm)	Number of holes
N/A	7650	350	380	410	2925	6
N/A	9000 + 10000	400	433	460	2925	9
N/A	12750	450	400	515	2925	10
N/A	16000	500	533	555	2925	10
N/A	20000	600	635	670	2925	12
N/A	24000	700	690	730	2925	12
N/A	28000	700	750	800	2925	16
N/A	32000	700	750	800	2925	116



Figure 8-5 Ductwork connection flange



Figure 8-6 Optional chimney connection plate