Monocoat Booth

Manual On/Off-Line Booth

Manual P/N 768 621 B
– English –

NORDSON (UK) LTD. • STOCKPORT •

CE

Order number
P/N = Order number for Nordson products

Declaration of Conformity
98/37/EC
73/23/EEC

We,

Nordson (U.K.) Limited

of

Ashurst Drive, Cheadle Heath, Stockport, Cheshire, SK3 0RY, United Kingdom

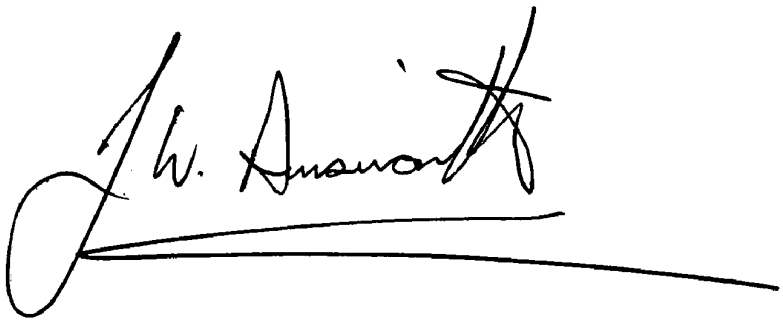
declare that under our sole responsibility for supply/manufacture of the product(s)

Product Name	MCB 03,04,06 and 08 Powder Spray Booth
Model Number(s)	765802, 803, 804, 805, 806, 807, 813, 814, 815, 816, 817, 836, 836
Product Options	All

to which this declaration relates, is in conformity with the following standards and other normative documents

Safety	BS EN 60204–1:1993 "Safety of Machinery – Electrical equipment of machines" EN 60335:Part 1:1988 "Safety of household and similar electrical appliances" BS EN 292:1991 "Safety of machinery – Basic concepts, general principles for design"

following the provisions of 98/37/EC and 73/23/EEC Directives



Jim Ainsworth
General Manager

Nordson (U.K.) Ltd., 8th March 2001

NB ref EN45014 (BS7514)

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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 (U.K.) Ltd.
Ashurst Drive
Cheadle Heath
Stockport
England
SK3 0RY

Telephone: 0044 (0) 161–495–4200
Fax: 0044 (0) 161–428–6716

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

Nordson International

Europe

Country		Phone	Fax
Austria		43-1-707 5521	43-1-707 5517
Belgium		31-13-511 8700	31-13-511 3995
Czech Republic		4205-4159 2411	4205-4124 4971
Denmark	*Hot Melt*	45-43-66 0123	45-43-64 1101
	Finishing	45-43-66 1133	45-43-66 1123
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
	Düsseldorf - Nordson UV	49-211-3613 169	49-211-3613 527
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	47-22 68 3636
	Finishing	47-22-65 6100	47-22-65 8858
Poland		48-22-836 4495	48-22-836 7042
Portugal		351-22-961 9400	351-22-961 9409
Russia		7-812-11 86 263	7-812-11 86 263
Slovak Republic		4205-4159 2411	4205-4124 4971
Spain		34-96-313 2090	34-96-313 2244
Sweden	*Hot Melt*	46-40-680 1700	46-40-932 882
	Finishing	46 (0) 303 66950	46 (0) 303 66959
Switzerland		41-61-411 3838	41-61-411 3818
United Kingdom	*Hot Melt*	44-1844-26 4500	44-1844-21 5358
	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			
DED, Germany		49-211-92050	49-211-254 658
Asia / Australia / Latin America			
Pacific South Division, USA		1-440-988-9411	1-440-985-3710
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	1-440-988 9411	1-440-985 1417
	Nordson UV	1-440-985 4592	1-440-985 4593

Section 1

Safety

Section 1
Safety

1. 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.

2. 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.

3. 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

4. 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.

5. 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.
- While operating manual electrostatic spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- 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.

6. Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment in the spray area. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one mega–ohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.
- 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.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- 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.

7. 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.

8. Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Section 2

Description

Section 2
Description

1. Intended Use

The Monocoat Booth range is intended for the collection and containment of sprayed powder coating materials.

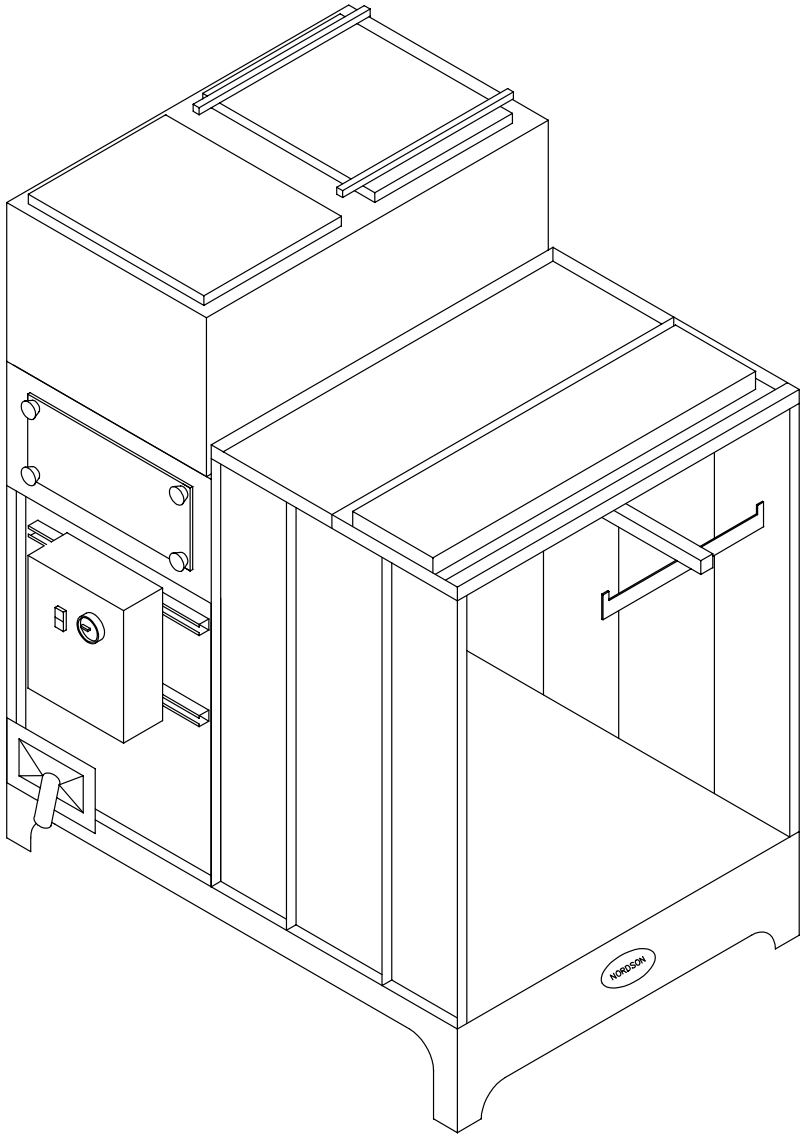


Fig. 2-1 Typical MCB Booth

2. Features

The Monocoat Booth forms part of a family of powder booths based on proven Nordson Booth technology. The booth system offers levels of safety not found in other systems, the explosion hazard in the recovery is removed by design, eliminating the need for explosion relief ductwork.

With no ducts being required, it is not necessary to modify the building structure to pass ducts to the outside air. This also provides a compact design that occupies least floor space.

The recovery system is an integral part of the spray booth and is dedicated to one colour or spray to waste.

Installation of the booth is simple, for booths not assembled on delivery, the booth is quickly assembled and on connection of one electric and one pneumatic supply the booth is ready for use. Spray equipment can be preinstalled on the booth.

The booth is constructed from either powder coated or stainless steel panels which form the booth walls and roof with a floor made of stainless steel. All the former items are mounted on a baseframe and are bolted together to form a smooth easy-to-clean interior.

The recovery section is at the rear of the booth and this contains the filters. The high efficiency filters extract greater than 99.98% of particles over 4 microns.

Powder laden air is drawn through the filters by a fan, suitably sized for the openings on the booth, located above the filter cartridges. The fan works in clean air and therefore has reduced maintenance and improved reliability. After the fan is a final filter that allows the return of the air back into the shop. This final filter protects against contamination in case of a cartridge leak.

Filter cartridges are sequentially cleaned by a pulse of compressed air. The cleaning equipment is sited between the fan and the cartridges. Use of high speed, direct operating, diaphragm valves fitted with nozzles creates a shock wave that dislodges powder from the filter media. This contamination process ensures constant booth performance. Powder dislodged from the cartridges will fall onto the booth base.

The interior of the booth is illuminated by incorporation of a twin fluorescent light, mounted outside the spray booth above a sealed glazed panel.

A control panel is supplied contains all the devices required to start, stop and protect the booth circuits. Interlocks with the fan operation are provided to prevent power being applied to the application equipment in case of fan failure.

The booths are supplied as manual off line booths, equipped with a short track in the booth roof that allows work to be placed on a loading bar and then pushed into the booth for spraying.

Section 3

Installation

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.

1. Transport

Transport the unit so as to avoid damage. Do not throw the unit. Use suitable packaging materials and sturdy cartons. See *Specifications* section for dimensions and weights.

The booth will normally be shipped partly/fully assembled via truck. The user is cautioned to use care in unloading components and assemblies to avoid damage to the equipment.

It will be necessary to use fork trucks to unload the booth from the vehicle.

Protect the unit from exposure to humidity, dust and vibrations.

2. Unpacking

Carefully unpack the unit to avoid damaging it. Check for damage caused during transport.

Remove the equipment to an indoor storage area or next to the installation site.

Save packing materials for possible later use. Otherwise recycle or dispose of properly according to local regulations.

3. Removing

Switch off the mains supply, then disconnect all services from the unit.

4. Storage

Pack the unit in suitable packing materials and sturdy cartons. Protect from humidity, dust and large temperature fluctuations (condensation).

Equipment stored outside and/or not protected from inclement weather, can cause damage and may void the warranty.

5. Disposal

Dispose of properly according to local regulations.

6. Setting up the Unit

WARNING: Allow only qualified personnel to perform the installation. Observe safety instructions.

NOTE: Booths are generally delivered preassembled, where this is not practical due to shipping requirements or at the customers request that booth be supplied 'flat pack' for onsite assembly.

NOTE: Installation of a booth should not be undertaken without the presence of a Nordson representative or a suitably qualified person.

Site Preparation

1. Choose a level site on which to install the booth.
2. Seal concrete floors with a suitable material to avoid dust. Other floor surfaces should be of a type that is easy to keep clean.
3. Make sure that the area is free from draughts.
4. Where the booth is conveyorised, locate on the floor the centre line of the conveyor using plumb-bobs from the existing conveyor or by using the layout and conveyor drawings. Snap a chalk line on the floor to mark the centre line.

Booth Base

1. Position and align the booth, if necessary align the base with the conveyor using markers.
2. Level the base frame using a spirit level by adjusting the jacking bolts at each corner. Raise each corner by the minimum amount required to get the booth level. The booth is considered level when the side-to-side and end-to-end height difference is to ± 5 mm or better.

Assembling Flat Pack Booths

Where a booth has been supplied in Flat Pack, assemble each panel according to the booth assembly drawing. Ensure that where panels meet a smooth interior surface is maintained. On completion of assembly, seal all internal joins using an acrylic sealant. DO NOT use a silicone sealant. Clean excess sealant from each join to leave a smooth surface.

7. Electrical

WARNING: Allow only qualified personnel to perform electrical connections. Observe the safety instructions.

A single supply cable is required to the control panel. The supply should be fed from a suitable disconnect device. Introduce the cable into the panel using an IP6X cable gland.

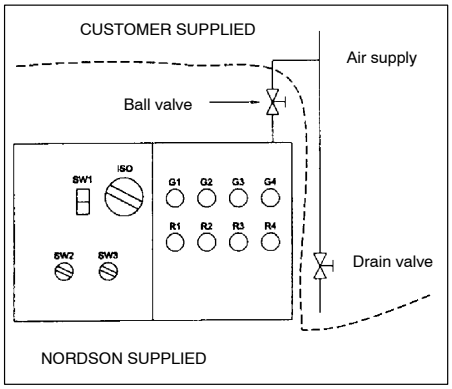
Ensure that all the electrical wires are suitably sized for the fan motor loading and adequate fuse/circuit protection is provided at the source of supply.

NOTE: The fan motor is designed to be switched “direct-on-line” (refer to the electrical circuit schematic supplied with the unit, for power requirements before installation).

On starting the fan motor, check for correct rotation, normally clockwise looking at the motor from the impeller end, (air is pushed out of the exhaust on the fan scroll). Do this by starting and immediately stopping the fan motor. Proper fan rotation is extremely important. With the fan running in the wrong direction, it will deliver approximately 40% of its rated air volume. Correct by reversing any two leads on the load side of the fan motor starter.

Check operation of solenoid valves. The valves should open and close sequentially to the preset dwell between each pulse.

8. Pneumatic



Before connecting to an air supply ensure that the available air is of the correct quality. (Refer to *Specifications* Section). Nordson can advise on suitable air-conditioning equipment to provide air of a suitable quality.

The pneumatic connection (BSP thread) is made next to the air reservoir or into the Nordson control panel and is provided with a ball valve for system isolation. Ensure that when bringing in the air connection there is a drain leg for the collection of any materials or oil that may be in the air lines before the connection is made to the control panel.

Air pressure of approximately 6.5 bar is required for fast efficient operation. We suggest a regulated supply be used (with a pressure gauge next to reservoir or in the control panel) to ensure that these condition are fulfilled. Failure to do so could result in poor cleaning of the cartridge media with the net result of reduced operation efficiency - if this is the case contact Nordson for further advice.

Before operating the spray booth, ensure that the air supply has reached a suitable quality and that air has been drawn off the system through the drain leg. This will ensure that any materials left in the line during installation do not enter the spray booth.

Section 4

Operation

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.

1. Initial Startup

1. Close the fan damper to leave a 25 mm gap.
2. Check all electrical and pneumatic connections.
3. Check that the overload setting for the motor is set to a value appropriate for the motor in use.
4. Start the fan and check operation of the fan contactor. Check the fan for correct direction of rotation.
5. Start the fan and using an airflow meter adjust the fan damper to give the designed face velocity. Note that opening the damper too much may cause damage to the cartridges.
6. Check operation of the airflow switch. This is used to interlock the application equipment supply and should only be on when the fan is running.
7. Set all regulators to zero, ensure that the service air line has been drained before opening the valve to the control panel. Check for air leaks, remedy as necessary.
8. Set the pulse air pressure to 2.5 bar.
9. Check operation of the booth light.

2. Using New Cartridges

WARNING: The following steps describe procedures for seasoning of new cartridge filters. These steps must be followed whenever 'new' cartridges are installed. Failure to properly season cartridges can result in early clogging of filter media and loss of use.

This procedure can take several hours to complete.

Ensure that the face velocity (approx. 0.5 m/s) of the booth is correct. Note the value, if necessary adjust the fan damper to give the required value.

Set the pulse valve pressure to 2.5 bar.

Spray powder into the booth, note that as the powder is sucked onto the cartridges, the face velocity of the booth will decrease. When the face velocity has dropped to 3/4 of its initial value, turn on the cartridge pulsing.

Continue to spray powder into the booth until the value has decreased to 3/4 of the initial value.

Raise the pulse valve pressure to 6.5 bar.

CAUTION: Check the face velocity at regular intervals, ensure that the face velocity does not drop below safe working levels.

During the first 200 hours of operation the powder level on the cartridges will stabilise. During this time periodically check the face velocity and if necessary open the fan damper to allow a larger airflow. Do not over open the damper as this may cause damage to the cartridges.

3. Cartridge Cleaning

The cartridges are cleaned by a pulse of air. Diaphragm valves are located above the cartridges and are sequentially opened, providing a pulse of air into each cartridge.

The sequencing PCA is factory set, as a guideline, the interval between cartridges should be not less than the time that it takes to replenish the plenum chamber. This can be checked by observing the pressure gauge for the plenum chamber.

The duration of the pulse should be adjusted to give a short sharp bang as the valve is opened. Excessive duration will only cause the plenum to leak air while the valve is open.

The plenum chamber is fitted with a pop-off valve. When the pressure in the plenum has been set, adjust the pop-off valve such that it just remains closed at normal working pressure and that it exhausts if there is any pressure increase. This can be achieved by turning off the cartridge pulsing, allowing the air pressure to reach its normal level in the plenum. Adjust the pop-off valve until it just exhausts, then turn back the adjuster about one half turn, the pop-off valve should not operate during normal operation.

4. Daily Startup & Shutdown

1. Turn on the supply to the control panel.
2. Turn on the Panel Isolator.
3. Start the fan.
4. If a powder re-cycle system is fitted, turn on the controls and ensure correct operation especially that the fluidising air to the hopper has been turned on and adjusted to allow the powder to bubble gently.
5. Turn on the lights.
6. Operate the powder spray equipment in accordance with the manufacturers instructions.

WARNING: It is advised that appropriate respiratory protection is worn at all times when working with powder materials.

7. Operate the cartridge pulsing at regular intervals to keep the cartridges clean.
8. Before closing down the booth, or at regular intervals clean the booth as detailed in the *Maintenance Section*.

WARNING: Always ensure when cleaning the booth or application equipment that the fan is running and appropriate Personal Protective Equipment is worn.

9. Shutdown the booth by reversing the above sequence.
10. To empty the booth hopper to a waste bucket, connect the output of the transfer pump located at the base of the hopper to the waste bucket. Connect the vent from the hopper back into the booth using the spiggot supplied. Operate the empty switch until the bucket is full. Dispose of the waste material according to local regulations.

Section 5

Maintenance

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 (including finishing powders) may be hazardous to health. Ask the powder manufacturer for a Material Safety Data Sheet (MSDS) for information. Use appropriate respiratory protection.

1. Daily Maintenance

- Visually check the complete system for leaks, rectify.
- Check the operation of any powder transfer systems.
- Every four (4) hours, with the fan operating, clean the booth interior with a rubber squeegee, or other nonsparking cleaning device, pulling the powder into the hopper section of the booth.
- Every four (4) hours check the collector bin levels - if the bin is above half full, empty it.
- Every four (4) hours or less check the feeder hopper for powder level. Before adding powder use the vacuum cleaner to prevent powder dust from getting out into the room.
- Every four (4) hours check the powder pump and gun, clean according to the product manual.
- Every four (4) hours clean U.V. detector lenses if fitted.
- Every four (4) hours run the cartridge cleaning sequencer for at least ten (10) minutes, longer if necessary, to maintain air flow.

2. Routine Maintenance

- Check the hopper for foreign materials, empty and clean if necessary.

Fan Assembly

- Changes in vibration and noise levels are easily identified as an indication to possible problems.
- Current readings taken at regular intervals over the equipment lifetime forms a reliable indicator and record of its condition and performance.
- A fan has inherent vibration, the wiring of ALL connections must be checked for integrity and tightness once a year.

Seals

- Any sign of leakage of powder around a seal means either the seal is not sound or the covers are not properly fastened. Check weekly and any time traces of powder are noticed.

Cartridges

- Record the air flow at regular intervals; thus charted, any degradation of system performance due to cartridge blocking will become immediately apparent.
- Signs of powder leakage may be due to the cartridge seal leaking. Tighten up the crank after ensuring seal integrity.
- Cartridges and final filters cannot be manually cleaned but must be replaced.
- On units with final filters, powder leakage may not be noticed, but if adequate records have been kept, the faults will be apparent.

Fluid Beds

- These will be damaged if they are stood on or allowed to become damp. They must be replaced; SMOOTH SIDE UP.

Transfer Pumps

- Within the pump is a venturi which by the very nature of powder will wear. The diminishing efficiency will be noticed by the loss in returned powder. Remove pumps from the collectors. Remove the discharge hose and blow through with a safety compressed air gun. Disassemble the pump and clean all parts with an air gun and a soft clean cloth. Replace worn or damaged parts.

For further information on servicing Transfer Pumps refer to the product manual.

Final Filters

- This is an added feature to protect against powder escaping to the immediate area in case of a cartridge leak.

Compressed Air

- Open the drop leg. Using a clean white cloth check for water, oil or other contaminants. Correct as necessary.

NOTE: The air drier, if fitted, should remain on at all times to prevent moisture from accumulating in the system components.

Grounding

- Continually check for grounding of parts to hangers. Clean/strip hangers regularly.

Electrical Safety

The unit should be tested for electrical safety, at intervals of not more than 12 months, according to the Electricity at Work regulations 1989 (as revised) or similar for non-UK installations.

Nordson will be pleased to advise on action necessary in case of any mishap, fault, or any other enquiry relating to the equipment.

3. Cartridge Replacement

Nordson will be pleased to advise on action necessary in case of any mishap, fault or any other enquiry relating to the equipment.

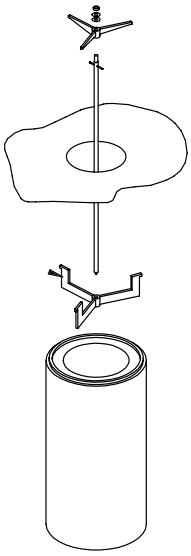
WARNING: Ensure Personal Protective Equipment is worn while carrying out this procedure.

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

WARNING: Ensure that all services are turned off and locked out after cleaning the booth.

WARNING: A powder laden cartridge filter can be heavy. It may be necessary for two persons to be available to remove the cartridge filter.

- Clean the internal walls of the feed centre to avoid unnecessary contact with the powder.
- Relieve all air pressure in the system. This can be done by turning off the air supply and operating the pulsing. Or by releasing the pressure safety valve attached to the air manifold.
- Lock out and disconnect services to the Feed Centre.
- Each cartridge is held in place by a nut. Remove the cartridge by unscrewing the nut. Remove the cartridge through the access doors on the side.



3. Cartridge Replacement (contd.)

- Inspect the cartridges for damage. Do not fit damaged cartridges.

NOTE: Do not use any cartridge filters other than those approved by Nordson. The use of the filters not specially designed to Nordson standards could seriously affect the operation and performance of your Feed Centre.

- Ensure before re–fitting cartridges that each cartridge has a rod, centre bracket, holding bracket and nut.

- Replace the cartridge as before. Do not overtighten. The seal should compress by half its thickness.

4. Final Filter Replacement

The final filters are located in the exhaust air flow of the cartridge booth. Release the filter by removing the fixing bolts/straps.

Unpack the new filter, inspect for damage before fitting.

Fit the new final filter, and secure using the bolts/straps.

Dispose of the old filter according to local regulations.

5. Fluid Bed Replacement

Replacement of a fluidising bed will be a rare and unusual occurrence either resulting from physical equipment damage or contamination of the air or powder.

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

1. With the exhaust fan running, thoroughly clean the booth and remove all powder from the hopper.

2. Remove transfer pumps etc. from the plenum chamber located under the hopper.

3. Remove the plenum chamber, by unbolting all the fixings. To remove the plenum it may be necessary to use a larger screwdriver to lever the plenum from the hopper.

4. Discard the damaged fluidising plate.

5. Check the fitting of the new fluidising plate. Check the alignment of the fixing holes, if necessary drill holes to suit.

NOTE: The fluidising plate is fitted smooth side uppermost.

6. The fluidising plate is sealed using an acrylic sealant. On the plenum make a small bead of sealant around the inside of the fixing holes. Place the fluidplate smooth side uppermost on the plenum. Make a second small bead of sealant again around the inside of the fixing holes on the upper side of the fluid plate. DO NOT use a silicone sealant.

7. Offer the plenum up to the bottom of the hopper and secure with the fixing bolts. Tighten the bolts firmly but do not overtighten as this may damage the fluidplate. Remove any excess sealant.

8. Refit the transfer pumps etc.

6. Blow Down Valve Assembly Replacement

CAUTION: Before removing blow down valves ensure that the air supply and electrical supply have been turned off and locked out.

1. Turn off the air supply.
2. Operate the cartridge sequencing for one minute or until at least two valves have opened.
3. Check on the pulsing air pressure gauge that all the air has been exhausted from the blow down plenum.
4. Turn off the electrical supply.
5. Remove the access panel at the rear of the booth.
6. Manually release the pressure relief valve to ensure all air has been evacuated from the plenum.
7. Remove the electrical connector from the pulse valve to be replaced.
8. Remove the pulse valve and nipple.
9. Remove the nipple from the pulse valve. It may be necessary to use a bench and vice for this operation.
10. If the valve has not been operating for any reason then it is normally caused by material being present inside the valve.

A service kit is available for the valve. Consult your Nordson representative for further details.

11. The valve can be disassembled by removing the fixing screws holding the two halves together. Remove any foreign material that may be present. Reassemble the valve.
12. Fit the short threaded end of the nipple into the valve. Use PTFE tape to ensure a good seal.

6. Blow Down Valve Assembly Replacement
(contd.)

13. Fit the locknut onto the long threaded end of the nipple, tape the thread. Fit the nipple into the manifold.

NOTE: The nozzle on the valve should be centered in two axis above the centre of the cartridge to ensure correct cleaning of the cartridge.

14. Screw the nipple in until the nozzle is centred. Screw up and tighten the locknut.

15. Refit the electrical connector to the pulse valve.

16. Turn on the electrical supply and operate the pulsing ensure that each valve operates.

17. Refit the access cover.

18. Turn on the air supply.

Section 6

Troubleshooting

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.

1. Important Hints for Troubleshooting

The following tables provide general information for the troubleshooting of basic problems. Sometimes more detailed information, circuit diagrams of 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, any parts that fail must be replaced by approved parts available from Nordson.

Problem	Possible Cause	Corrective Action
Fan will not start	Power off	Switch on power
	Overload operated	Re-set overload
	Breaker tripped	Investigate cause. Re-set breaker
	Wiring fault	Repair or replace
	Motor failure	Investigate cause. Replace
	Contactor fault	Repair or replace. Check push button wiring

Problem	Possible Cause	Corrective Action
Loss of extract throughput	Damper closed	Re-set and lock
	Cartridges not clean	Run cleaning sequence for thirty (30) minutes
	Low pulse pressure	Set pressure at 6.5 bar (95 psi)
	Cleaning valve fault	Repair or replace
	Sequence card fault	Try using a spare output
		Replace sequence card
Powder escaping	Door seal	Tighten star knobs
		Replace door seal
	Cartridge leak	Check cartridge seal
		Tighten crank handle
		Replace cartridge
	Powder pump not correctly fitted to spigot	Refit, check condition of O-ring. Replace O-ring if necessary
	Powder hose leak	Replace damaged hose and clips
Powder not transferring to hopper	Transfer pumps not operating	Check pump air supply
		Check pump blockage
	Transfer pump venturi worn	Replace venturi
	Hose fault	Check hose for leakage or blockage
	Fluidising faults	Check fluidising air supply
		Check condition of fluid bed

Section 7

Parts

Section 7
Parts

1. Introduction

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use the 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.

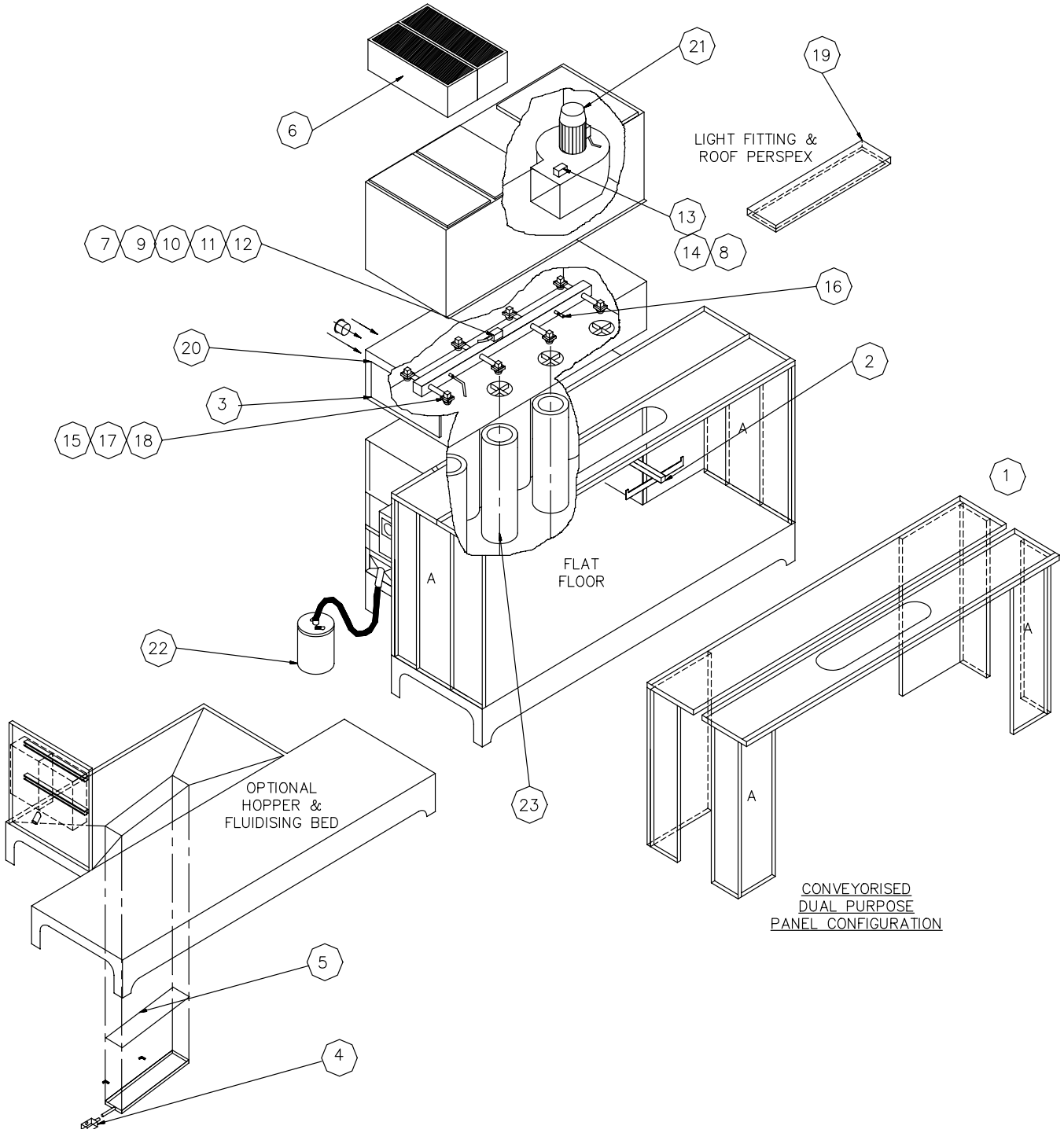
Item	Part	Description	Quantity	Note
—	000 0000	Assembly	1	
1	000 000	• Subassembly	2	A
2	000 000	• • Part	1	

- 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.

2. Parts List



Item	Part	Description	Quantity	Note
–	765 802	MCB–03 Booth, Powder Coated Canopy, Flat Floor	1	
–	765 803	MCB–03 Booth, Stainless Steel Canopy, Flat Floor	1	
–	765 812	MCB–03 Booth, Powder Coated Canopy, Fluid Bed	1	
–	765 813	MCB–03 Booth, Stainless Steel Canopy, Fluid Bed	1	
–	765 804	MCB–04 Booth, Powder Coated Canopy, Flat Floor	1	
–	765 805	MCB–04 Booth, Stainless Steel Canopy, Flat Floor	1	
–	765 814	MCB–04 Booth, Powder Coated Canopy, Fluid Bed	1	
–	765 815	MCB–04 Booth, Stainless Steel Canopy, Fluid Bed	1	
–	765 806	MCB–06 Booth, Powder Coated Canopy, Flat Floor	1	
–	765 807	MCB–06 Booth, Stainless Steel Canopy, Flat Floor	1	
–	765 816	MCB–06 Booth, Powder Coated Canopy, Fluid Bed	1	
–	765 817	MCB–06 Booth, Stainless Steel Canopy, Fluid Bed	1	
–	765 808	MCB–08 Booth, Powder Coated Canopy, Flat Floor	1	
–	765 809	MCB–08 Booth, Stainless Steel Canopy, Flat Floor	1	
–	765 835	MCB–08 Booth, Powder Coated Canopy, Fluid Bed	1	
–	765 836	MCB–08 Booth, Stainless Steel Canopy, Fluid Bed	1	
1	765 818	• Fab., MCB–03 Booth, Powder Coated, Flat Floor	1	
	765 819	• Fab., MCB–03 Booth, Stainless Steel, Flat Floor	1	
	765 824	• Fab., MCB–03 Booth, Powder Coated, Fluid Bed	1	
	765 825	• Fab., MCB–03 Booth, Stainless Steel, Fluid Bed	1	
	765 820	• Fab., MCB–04 Booth, Powder Coated, Flat Floor	1	
	765 821	• Fab., MCB–04 Booth, Stainless Steel, Flat Floor	1	
	765 827	• Fab., MCB–04 Booth, Powder Coated, Fluid Bed	1	
	765 828	• Fab., MCB–04 Booth, Stainless Steel, Fluid Bed	1	
	765 822	• Fab., MCB–06 Booth, Powder Coated, Flat Floor	1	
	765 823	• Fab., MCB–06,Booth, Stainless Steel, Flat Floor	1	
	765 828	• Fab., MCB–06 Booth, Powder Coated, Fluid Bed	1	
	765 829	• Fab., MCB–06 Booth, Stainless Steel, Fluid Bed	1	
	765 810	• Fab., MCB–08 Booth, Powder Coated, Flat Floor	1	
	765 811	• Fab., MCB–08 Booth, Stainless Steel, Flat Floor	1	
	765 837	• Fab., MCB–08 Booth, Powder Coated, Fluid Bed	1	
	765 838	• Fab., MCB–08 Booth, Stainless Steel, Fluid Bed	1	
2	450 270	• Bar, load, MCB booth	1	

Continued on next page

2. Parts List (contd.)

Item	Part	Description	Quantity	Note
3	767 211	• Seal, side, knock–on, MTR	AR	
4	244 721	• Pump, transfer	1	A
5	767 027	• Fluid bed, 900*200mm	1	A
6	767 046	• Filter, final, (MCB–03)	1	
	767 022	• Filter, final, (MCB–04)	2	
	767 023	• Filter, final, (MCB–06)	2	
	767 023	• Filter, final, (MCB–08)	2	
	767 022	• Filter, final, (MCB–08)	1	
7	769 117	• Cable, SY, 11 core + E, 0.75 mm^2/mtr	AR	
8	769 112	• Cable, SY, 3 core + E, 1.5 mm^2/mtr	AR	
9	769 107	• Cable, 3183Y, 3 core, 0.75 mm^2, BK,/MT	AR	
10	769 132	• Gland, cable, 4-7 mm OD, M20 thread	AR	
11	769 000	• Enclosure, terminal, 8 way, plastic	1	
12	769 048	• Terminal block, 10A, 12 way	1	
13	769 133	• Gland, cable, 8-13 mm OD, M20 thread	4	
14	769 055	• Switch, airflow	1	
15	165 726	• Nozzle, blow down, cartridge clean	AR	
	768 135	• Valve, safety relief	1	
	768 100	• Barell nipple, 150 mm long	3	
	768 406	• Valve, pulse, 2/2, 1” BSP, 24 VDC	AR	
16	767 300	• Assembly, booth light	1	
	767 303	• Panel, perspex, light	1	
	767 304	• Seal, light panel	3m	
17	769 511	• Knob, star, M8	AR	
18	766 201	• Fan assy, 2000 (MCB–03)	1	
	766 202	• Fan assy, 3000 (MCB–04)	1	
	766 203	• Fan assy, 4000 (MCB–06)	1	
	766 205	• Fan assy, 6000 (MCB–08)	1	
19	766 606	• Bucket, waste, assy.	1	A

NOTE A: Only Fitted to booths containing Fluid Beds
AR: As Required
NS: Not Shown

Item	Part	Description	Quantity	Note
20	180 772	• Filter, cartridge,32” long	AR	
	174 722	• Bracket, Centering, Filter	AR	
	174 720	• Support, Filter, Mount	AR	
	176 278	• Rod, Filter Mount, 32”	AR	
NS	768 234	• Fitting, stud, 1/4BSPM-6 mm (PI)	AR	
NS	768 211	• Fitting, elbow, 1/4BSPM-6 mm (PI)	AR	
NS	768 213	• Fitting, elbow, 1/4BSPM-8 mm (PI)	AR	
NS	768 204	• Fitting, bulkhead, 8 mm-8 mm (PI)	AR	
NS	768 251	• Tubing, poly, 6 mm OD, blue,/MTR	10	
NS	768 252	• Tubing, poly, 8 mm OD, blue,/MTR	2	

AR: As Required
NS: Not Shown

Section 8

Specifications

Section 8
Specifications

1. Electrical

	MCB 03	MCB 04	MCB 06	MCB 08
Voltage (Volt)	380/415	380/415	380/415	380/415
Frequency (Hz)	50	50	50	50
Power (kW)	3.5	4.5	6	8

NOTE: Electrical and Pneumatic Schematic drawings can be found inside the control panel.

2. Weights

	MCB 03	MCB 04	MCB 06	MCB 08
Weight (kgs)	475	550	700	850

The dimensions above do not include the load bar, or the control panel.

3. Noise

Measured at a distance of 1m from the surface of the unit and at a height of 1.6 m.

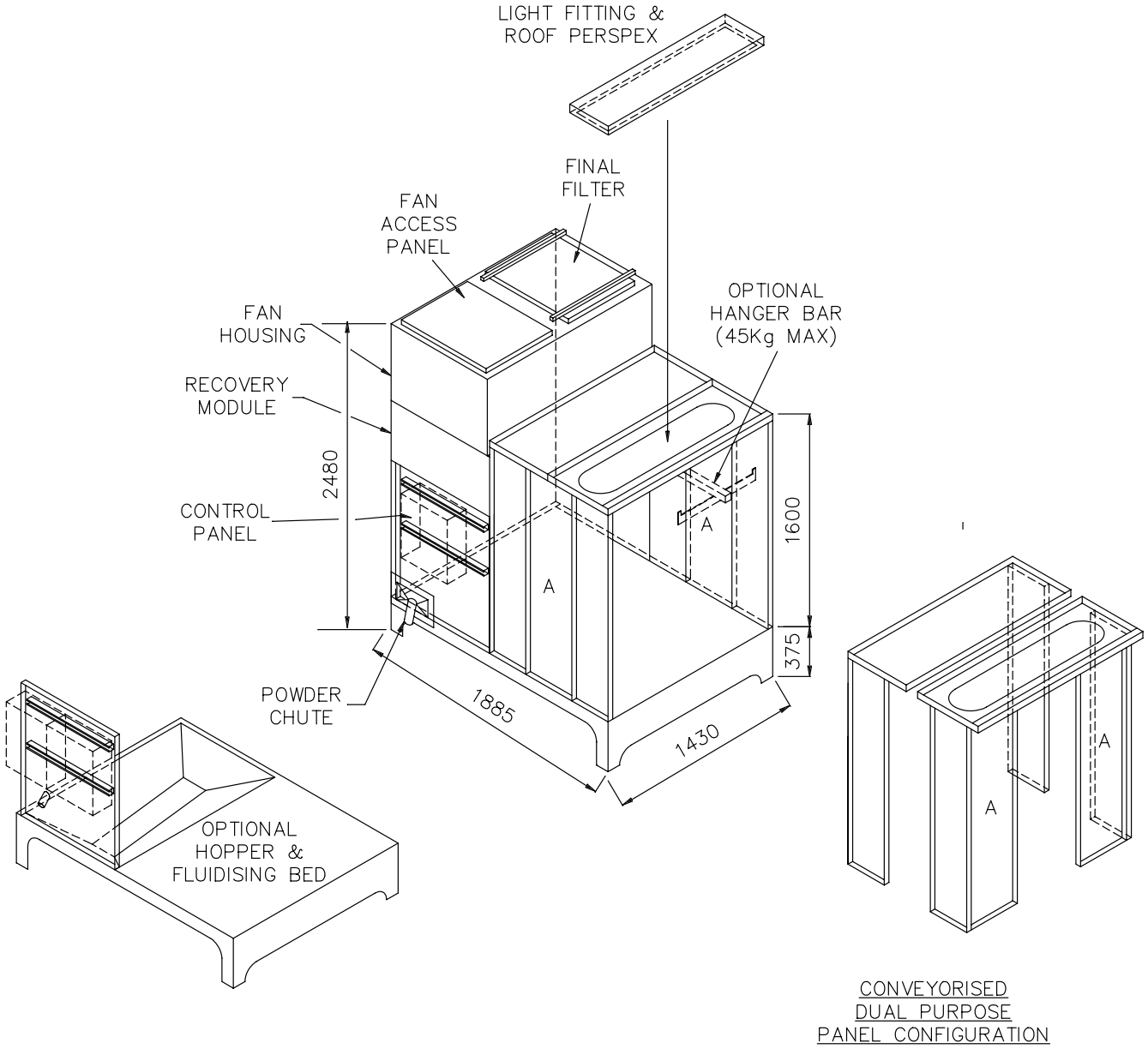
4. Pneumatic Supply

The air supply for the powder spray booth shall be either

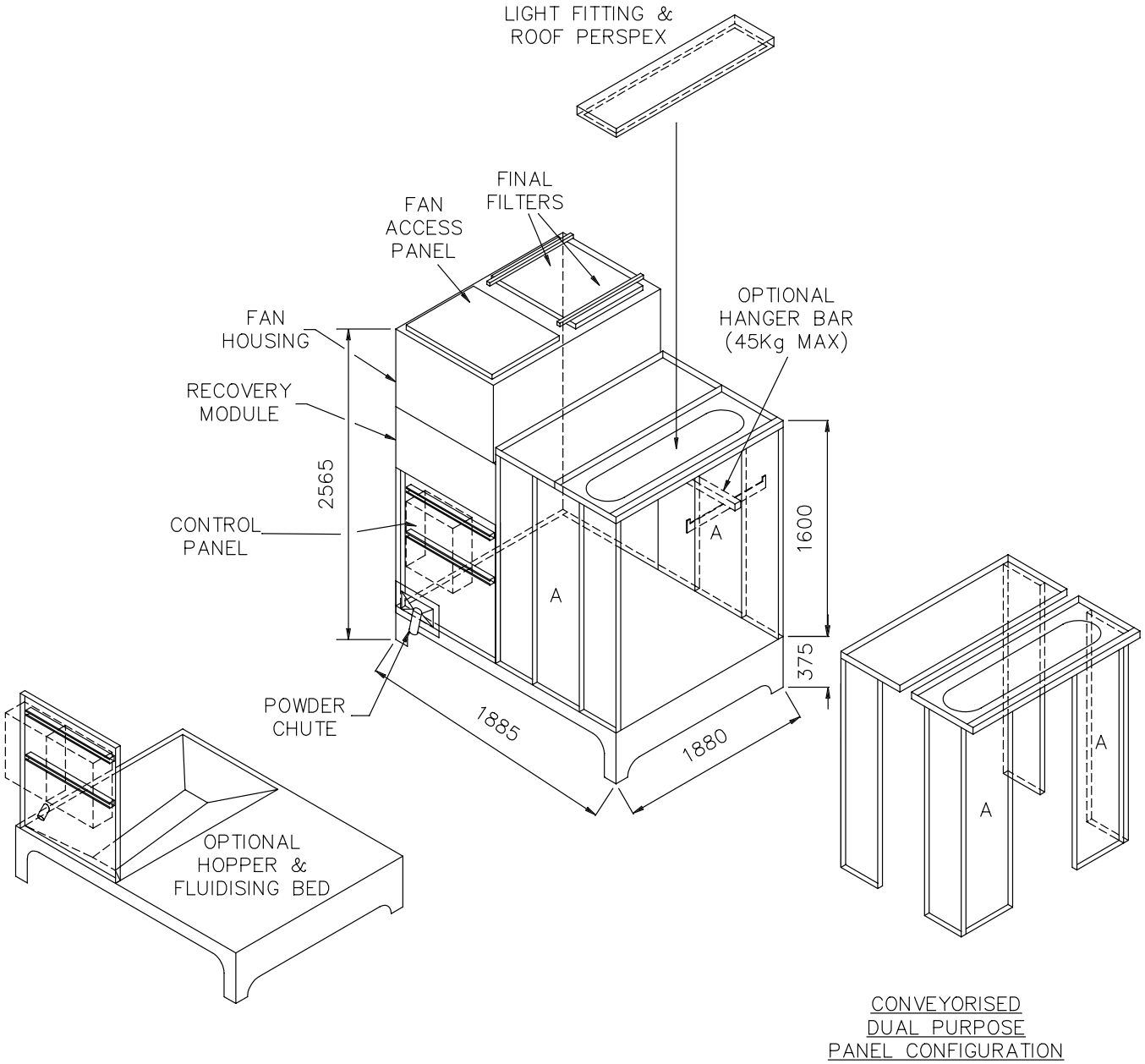
- 2 °C dewpoint, oil free or
- Clean and dry filtered to 5µ.

At a minimum supply pressure of 6.5 bar

5. MCB–03 Booth Dimensions



6. MCB–04 Booth Dimensions



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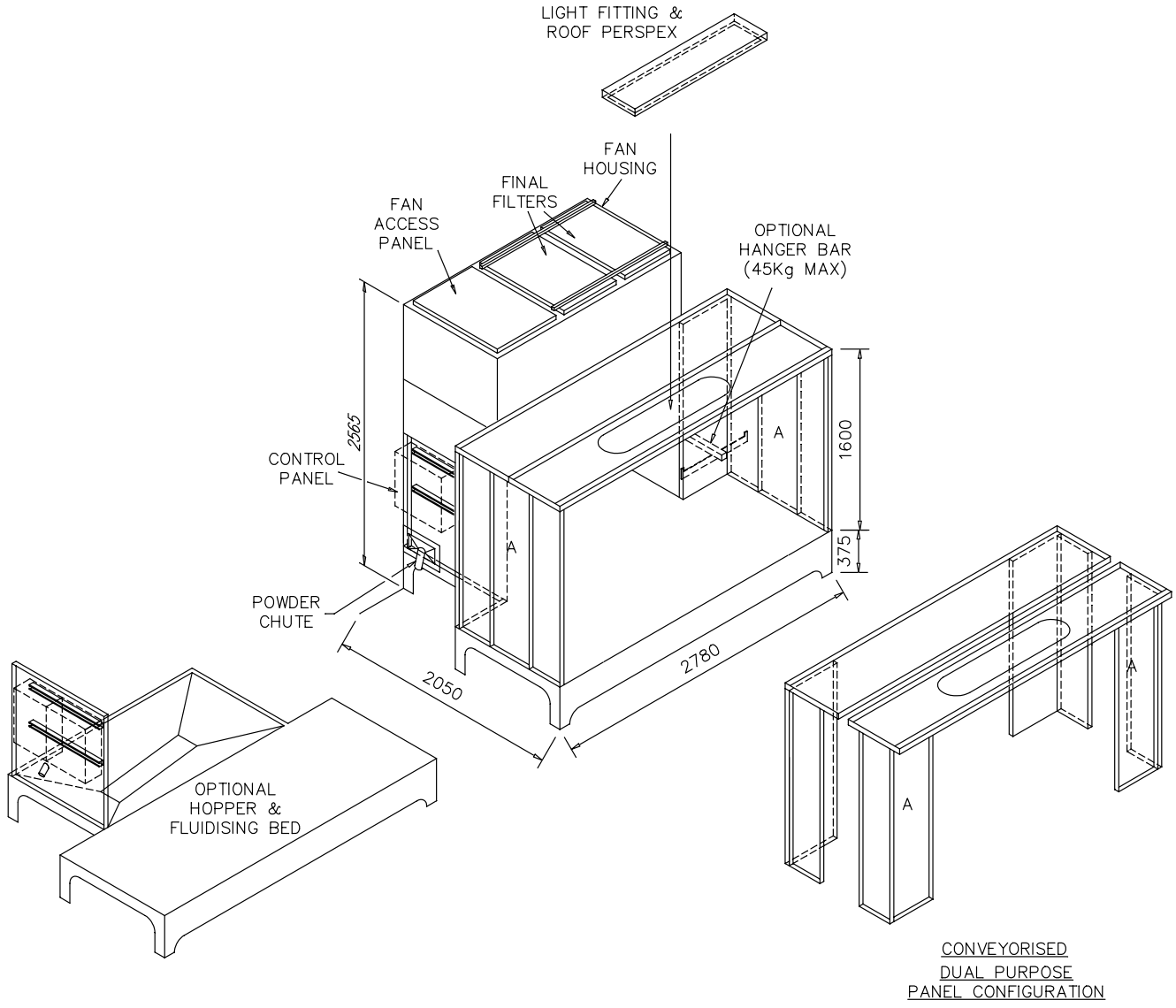
7. MCB–06 Booth Dimensions



8. MCB–08 Booth Dimensions