

Big Bag Unloader

Customer Product manual
Part Number – 7580188-04
Issued 11/22

For parts ordering, call the Industrial Coating Systems EU
Customer Support Center on 0080070017001
or contact your local Nordson representative.

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NORDSON DEUTSCHLAND GMBH – GERMANY

Change Record

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Table of Contents

Component Overview	4
<u>Section 1 - Safety</u>	
Safety	5
Grounding.....	6
Remaining dangers / risks	8
<u>Section 2 - Operation</u>	
Intended Use	9
Mechanical Operating instructions	9
<u>Section 3 - Parts</u>	
DEMAG Hoist	10
Spreader Beam for BIG-BAGS TTB 1,0/1090 - 1090	11
Powder Discharge Hopper	12
Powder Discharge Hopper - Parts	14
<u>Section 4 - Maintenance</u>	
Maintenance	15
Preventative Maintenance	16
Troubleshooting	16
<u>Section 5 - Controls</u>	
Control Panel.....	17
Control Panel Element Functions.....	18
<u>Section 6 - Bag Change</u>	
Bag Change Procedure – Single Station.....	19
<u>Section 7 - Specifications</u>	
Specifications	22

Component Overview

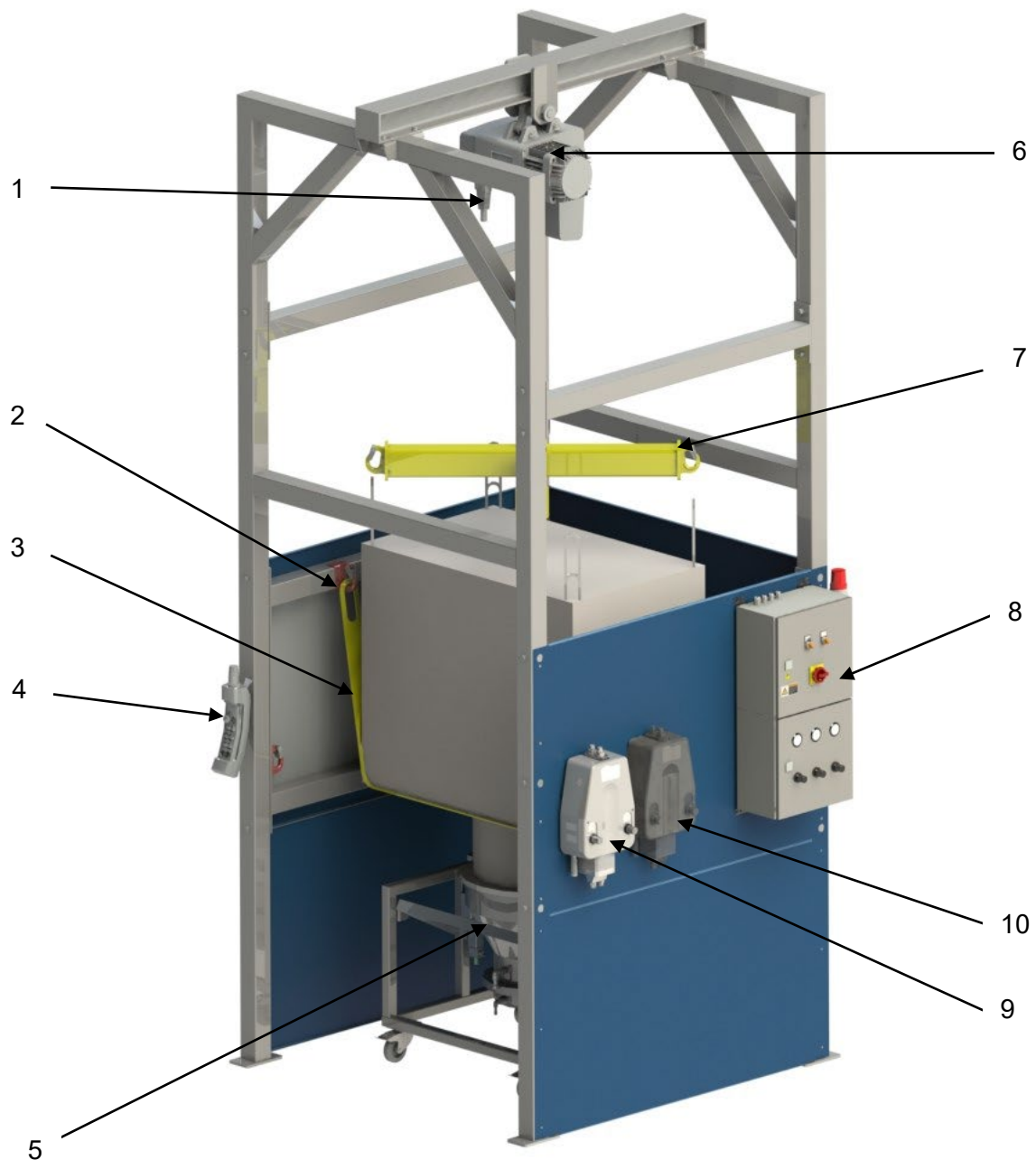


Figure 1 – Identification of major components

1 Weigh Cell	5 Discharge hopper	9 High-Capacity HDLV® Powder Transfer Pump
2 Safety sling hooks	6 Electric hoist	10 Optional additional pump
3 Safety slings	7 Spreader beam	
4 Hoist Control Pendant	8 Control Panel	

Note: See technical manual 1092270A04 for all information on item 9 - High-Capacity HDLV® Powder Transfer Pump. Standard Big Bag Unloader shown with optional additional HDLV Transfer Pump

Section 1

Safety

Introduction

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to all persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

All phases of equipment installation must comply with all federal, state, and local codes.

Personal Safety

To prevent injury, follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing any moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- Obtain and read Safety Data Sheets (SDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.
- The operator should take care to regularly clean any surfaces around the Big Bag Unloader station, especially after changing a bag.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Provide adequate ventilation to prevent dangerous concentrations of volatile materials or vapors. Refer to local codes or your material SDS for guidance.
- Do not disconnect live electrical circuits while working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.



Never intervene in the machine's working areas when the machine is in operation.

Give careful attention to maintenance, cleaning instructions and recommendations for safe work. Machine operators must be made responsible for working safety and the machine must be used for the purposes for which it was manufactured. The employer must make sure that the operating and maintenance manual is read carefully and properly understood by all persons assigned to the task of using the machine.

Temporary personnel must also be specifically instructed regarding correct machine operation and use, giving special attention to the safety devices present on the machine and how they operate.



WARNING: Operating faulty electrical equipment is hazardous and can cause electrocution, fire or explosion. Carry out 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.

Noise emissions

Operation of the BIG BAG UNLOADER produces minimal noise (<80dB), therefore the use of ear protection is not required.



When setting a full big-bag on to the BIG BAG UNLOADER, always make sure that all loops of the big-bag are firmly secured to the hooks of the spreader beam and all the loops of the safety slings are firmly secured to the safety hooks on the base before setting the discharge hopper. Always make sure that the sleeve of the big-bag is firmly clamped before you untie it.



CAUTION: The operator who is operating the equipment should be alert to any sound or visual change. If any unusual operation of the equipment is noticed, the equipment must be immediately stopped by activating the emergency stop button and person responsible for the BIG BAG UNLOADER must be noted.

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.

- 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.

Operator Requirements

The equipment must only be operated and maintained by specialized persons, who will give on the basis of their knowledge and their experience in practice, the guarantee for appropriate handling, and who have been taught about possible dangers resulting from the operation of the equipment.

Remaining dangers / risks

Despite all taken precautions remaining dangers exist!



- Danger of injuring by moving components
- Danger of injuring by bursting of compressed air pipes
- Allergies and irritations of inhaling dust/powder particles
- Dangers during work on the pneumatic equipment
- Dangers during work on the electric equipment
- Dangers by reflex actions caused by electrostatic discharges
- Dangers by powder media laying on the ground (danger of slipping)
 - The operator should take care to regularly clean any surfaces around the Big Bag Unloader station, especially after changing a bag.
- Danger of getting trapped by Big Bag slipping/falling down

Disposal

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

Section 2

Intended Use

The BIG BAG UNLOADER must be operated only in a way of proper use, conforming to all order data as per the quotation and our order confirmation. The conforming use of your BIG BAG UNLOADER is manipulation of standard big-bags with 4 lifting loops, a total weight 1000 kg and discharging of powder materials from these big-bags.

Conforming use also means strict observance of all operating and maintenance instructions (Instruction manual) stipulated by the manufacturer or the supplier of your equipment, as well as the consideration of lapses to be expected. Any further use is considered as not conforming. For damages resulting from any non-conforming use, is in no case the manufacturer / supplier responsible.

Mechanical Operating instructions

1. Before hanging the big-bag, remove the stainless steel discharge hopper and safety lift slings then lift the spreader beam with the chain hoist.
2. Using a forklift truck, put the big-bag inside the big-bag station at ground level.
3. Lower the spreader beam to the big-bag and secure all four lifting loops of the big-bag.
4. Slowly lift the big-bag using the chain hoist to a height that enables attachment of the safety lift slings under the big-bag. Make sure that all loops of the safety slings are secured on the safety hooks.
5. Remove the lid from the top plate of the discharge hopper, put the discharge hopper under the big-bag and lift the top plate by pushing the lever handle downwards. Put the discharge sleeve of the big-bag through the opening in the top plate and wrap it around the smaller cylinder of the discharge hopper.
6. Clamp the big-bag sleeve with the top plate by pulling the lever handle upwards. Make sure that the sleeve of the big-bag is firmly clamped and untie it to allow the media to fall from the big-bag into the discharge hopper.
7. The operator should take care to regularly clean any surfaces around the Big Bag Unloader station, especially after changing a bag.

Section 3

DEMAG Hoist

The two-speed DEMAG electric chain hoist has 1-ton capacity and is used for lifting/lowering movement of big-bags.

See the DEMAG product manual for more information

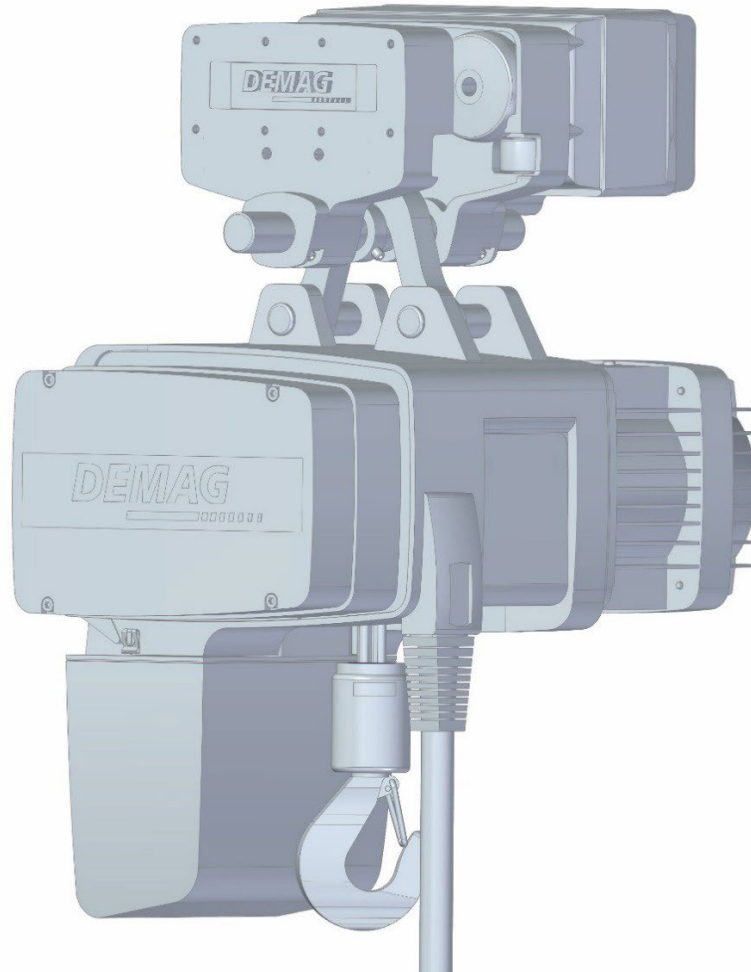


Figure 2 – DEMAG hoist

Spreader Beam for BIG-BAGS TTB 1,0/1090 - 1090

Lifting frame 1000 kg capacity, with safety hooks and latches is used for manipulation of all standard big-bags with 4 lifting loops.



Figure 3 – Spreader Beam

Powder Discharge Hopper

The Stainless steel discharge hopper is mounted on a trolley for easy manipulation. It is used for discharging bulk powder materials from big-bags.

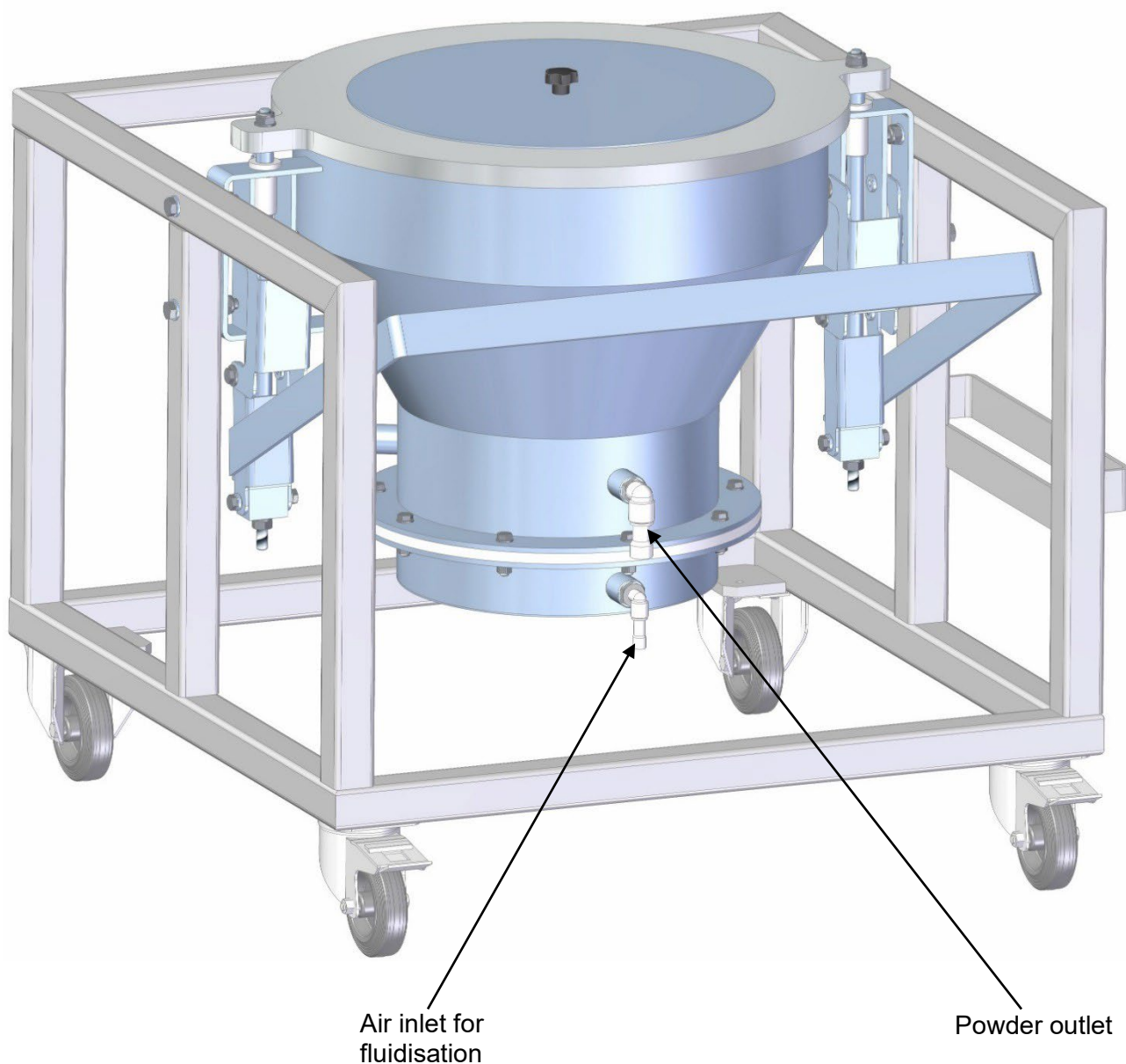


Figure 4 – Powder Discharge Hopper connections

Each time the hopper is used, check the clamping system for the big-bag and adjust if needed.



Figure 5 – Powder Discharge Hopper details

If the top plate (5.1) is not seated/sealed properly, check the sealing (5.2) if it's properly attached and replace it if it's worn or damaged.

In case of hard operation/movement of lever handle (5.3), check slider bushings (5.4), lifting rods (5.5) and pins (5.6) for damage or wear and replace them accordingly.

Clamping force of the clamping system can be adjusted with adjustment nuts (5.7) on lower ends of lifting rods. Daily visually check the components for any damage and maintain cleanliness of the equipment.

Powder Discharge Hopper - Parts

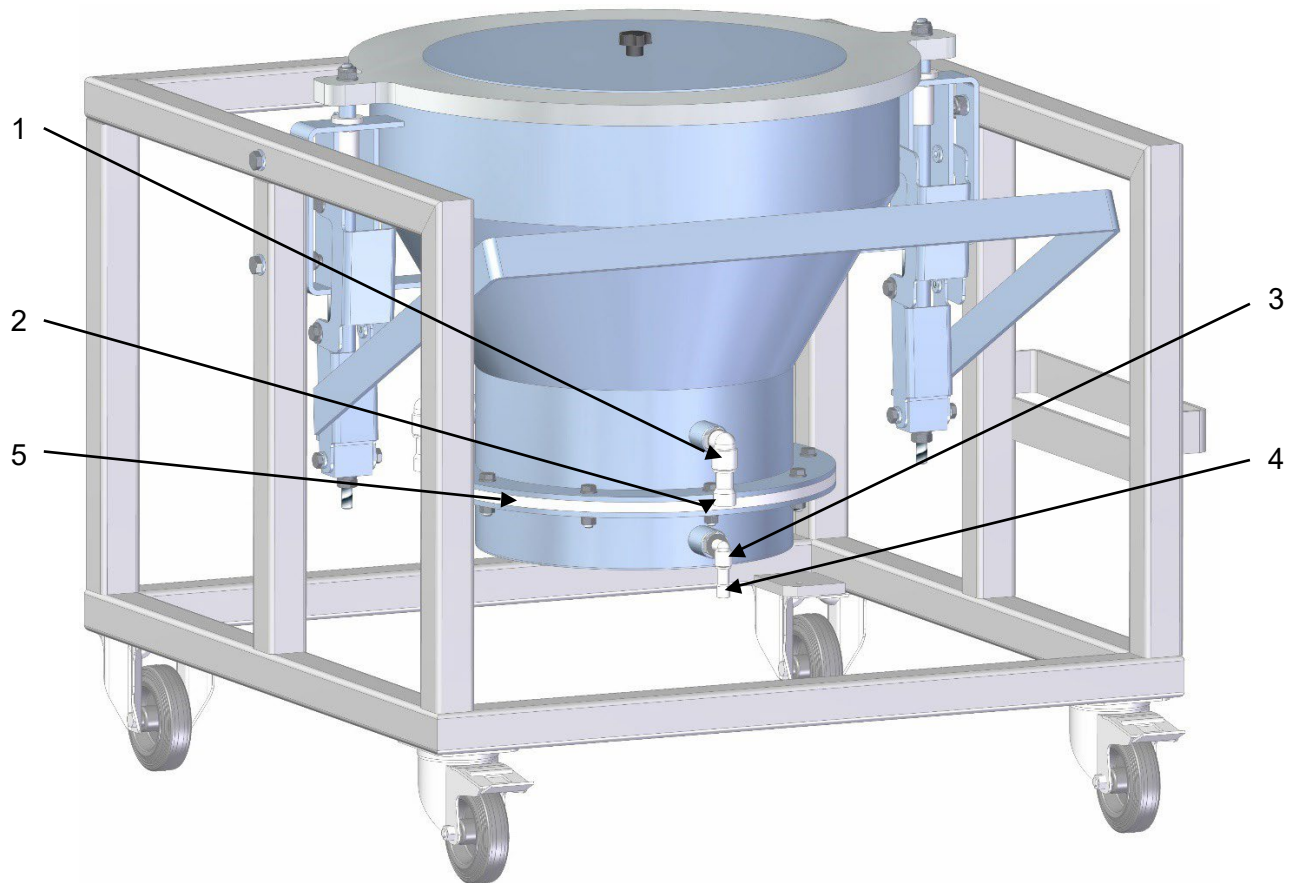


Figure 6 – Powder Discharge Hopper components

Item	Part No.	Description	Type	Supplier	Qty
1	-	One-touch Fitting, Ø16	KQ2L16-04AS	SMC	3
2	-	Plug Ø16	KQ2P-16	SMC	3
3	-	One-touch Fitting, Ø10	KQ2L10-04AS	SMC	2
4	-	Plug Ø10	KQ2P-10	SMC	2
5	7035203	FLUIDBED, ROUND, BIGBAG HOPPER, DIA380		Nordson	1
NS	7035205	WEIGH CELL		Nordson	1
NS	7035206	BIG BAG ADAPTER FLANGE ID 380 to ID 300	-	Nordson	1

Note: The Weigh Cell location can be seen in Figure 1 – Item 6

Section 4

Maintenance



ALL REPAIR WORK ON THE MACHINE MUST BE PERFORMED BY A QUALIFIED TECHNICIAN.
FOR ALL OTHER BREAKDOWNS CALL A SERVICE FROM NORDSON.

Right sizes and shapes of all the parts and their relations are very important so please never try to change any parts which are not of the original size and type!

If you cannot remedy your problems please refer to our service department!
If any of the motors stop working, first check the fuses in the electric cabinet!

The operator should take care to regularly clean any surfaces around the Big Bag Unloader station.

For maintenance works, the equipment should be accessible from all sides!

Basically your equipment needs nearly no maintenance. But you should carry out checks at regular intervals, particularly of the wear of all components under load.

Always completely follow the instruction manual and maintain equipment at recommended intervals!



When performing electrical maintenance or repair, ensure that the main power switch is off and secured with a padlock. Electrical work should only be done by a qualified electrician!

FOR ALL OTHER BREAKDOWNS CALL YOUR NORDSON REPRESENTATIVE

Enclosure Structure

The base of the BIG BAG UNLOADER requires no special maintenance.



Daily visually check the wiring and electrical box with power switch for any damage and maintain its cleanliness.

In case of any visible damage, immediately stop working with the equipment, disconnect the power supply and inform the responsible head of maintenance.

Daily, visually check the frame structure for any damage and maintain cleanliness of the structure.

In case of any visible damage, immediately stop working with the equipment, disconnect the power supply and inform the responsible head of maintenance.
In case of structural damage, immediately inform the manufacturer.

Preventative Maintenance

No.	Component	Operation	Method	Frequency		
				□	≥	≅
1	Enclosure Structure					
a	Frame structure	Check for damage, cracks	Visual inspection	X		
b	Electrical wiring	Check for damage	Visual inspection	X		
c	Electric box	Check for damage	Visual inspection	X		
d	Safety lift slings	Check for wear or damage, replace if necessary	Visual inspection	X		
2	Two-speed electric chain hoist					
See the manufacturer's user manual for details.						
3	Spreader beam for Big-Bags					
See the manufacturer's user manual for details.						
4	Stainless steel discharge hopper					
a	Seals	Check for wear or damage, replace if necessary	Visual inspection		X	
b	Lifting rods	Check for wear or damage, replace if necessary	Visual inspection Manual by hand		X	
c	Extension springs	Check for wear or damage, replace if necessary	Visual inspection		X	
d	Fittings	Check for damage, cracks, leaks	Visual inspection			X
e	Silencers	Clean with compressed air	Manual by hand			X

Troubleshooting

Fault		Possible Cause		Remedy
1.	Electric chain hoist is not working	a	Power cable is not connected to power supply	Connect the power cable to power supply
		b	Power switch is in OFF position	Turn the power switch to ON position
		c	Check the enclosed manufacturer's user manual for other possibilities.	
2.	Clamping mechanism on the discharge hopper doesn't stay in clamped position	a	Seals are not seated correctly	Make sure the sealing is correctly seated on the hopper
		b	Clamping force is not adjusted correctly	Adjust the clamping force with the adjustment nuts on lower ends of lifting rods (see chapter 6.4).
3.	Powder media is being accumulated on the top plate or leaking from the side	a	Seals are not seated correctly	Make sure the sealing is correctly seated on the hopper
		b	Seals are worn or damaged	Replace the sealing

Section 5

Control Panel

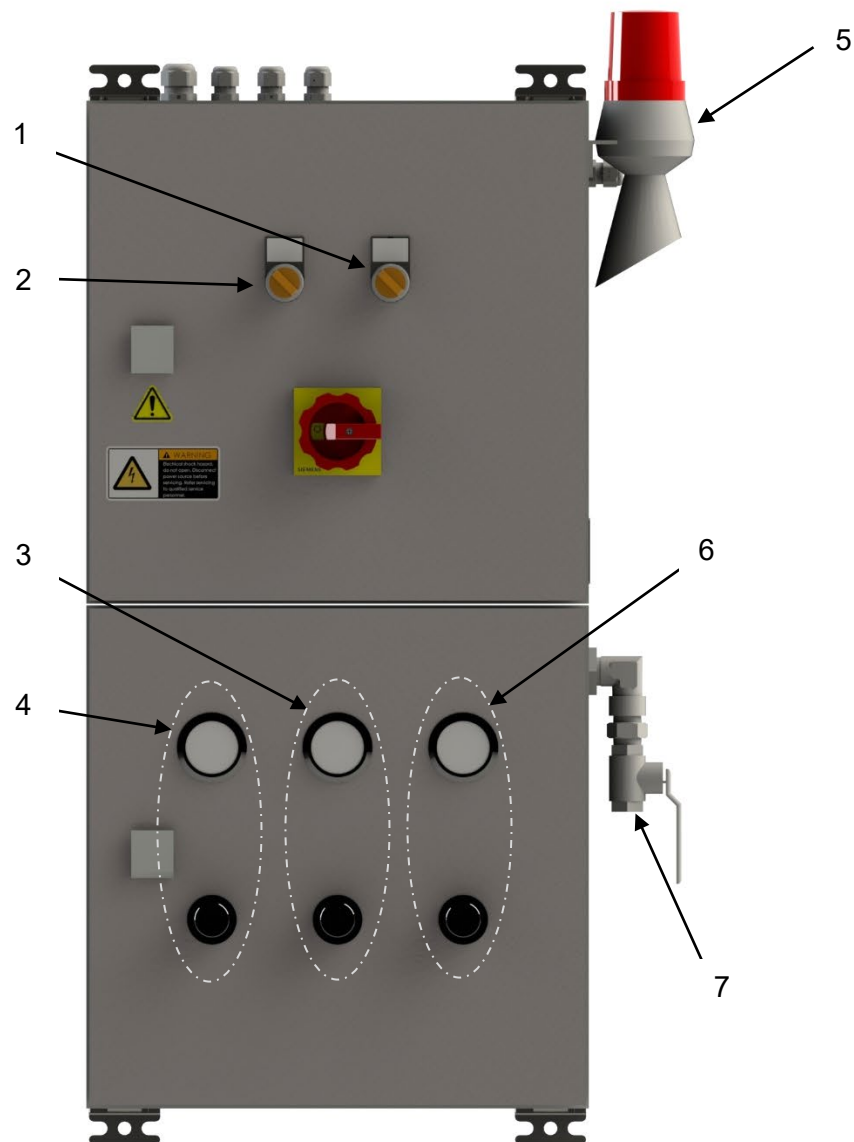


Figure 7 – Control Panel Elements

Item	Description
1	Control switch for optional additional transfer pump
2	Control switch for transfer pump 1
3	Pneumatic control for transfer pump 1 (4.8 bar min – 6.2 bar Max.)
4	Pneumatic control for fluidizing air of the big bag hopper (1 bar – 1.5 bar Max.)
5	Audible alarm for low powder level in the bag
6	Pneumatic control for optional transfer pump 2 (4.8 bar min – 6.2 bar Max.)
7	Pneumatic supply ball valve, 1/2" BSP

Control Panel Element Functions

1. 3 position selector switch to control the optional additional transfer pump - Auto/Manual/Off.
Auto means the Big Bag station will feed the powder hopper for the guns when it receives the signal from its level sensor.
Manual means virgin feed transfer pump will always be on.
Off means the virgin feed transfer pump will always be off.
2. 3 position selector switch to control the pump in Auto/Manual/Off.
Auto means the Big Bag station will feed the powder hopper for the guns when it receives the signal from its level sensor.
Manual means virgin feed transfer pump will always be on.
Off means the virgin feed transfer pump will always be off.
3. Regulator and gauge for the pneumatic control of the powder transfer pump. 4.8 Min. – 6.2 bar Max.
4. This controls the fluidizing air to the hopper that is under the big bag. Set to 1 – 1.5 bar Max.
5. The system is fitted with a weigh cell. If this detects that the powder level in the bag is low, the audible alarm will sound.
6. Regulator and gauge for the pneumatic control of the optional additional powder transfer pump. 4.8 Min. – 6.2 bar Max.
7. Shut off ball valve for the pneumatic supply.

Section 6

Bag Change Procedure – Single Station

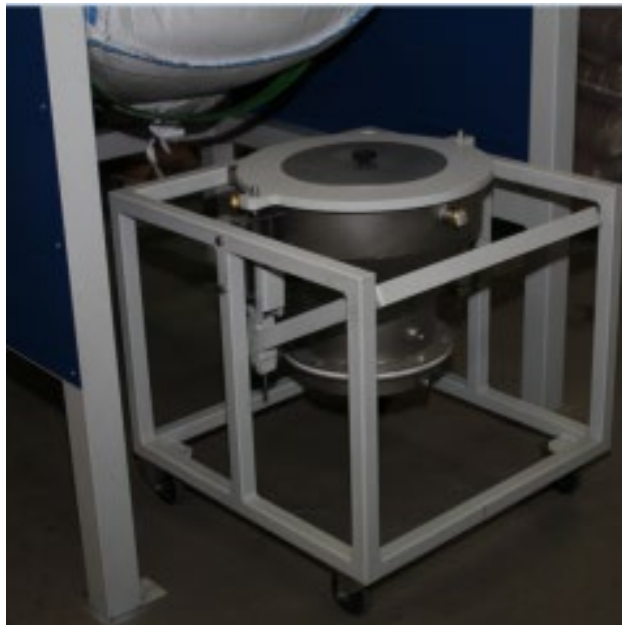


1. Initial set-up or after removing empty bag
2. Take Hopper trolley out of Station for easy access (only for station without z-axis drive-in units)
3. Deliver and place new full bag inside the station, directly under the yellow Spreader Beam
4. Using the hoist control pendant, lower the Spreader Beam enough to allow the hooks of the bag to be attached
5. Bring the BigBag into position, inside of the BigBag station
6. Drive down Gripper frame with hoist pendant
7. Connect 4 eyes of the BigBag with the Gripper hooks
8. Lift BigBag with control pendant
9. Remove transportation pallet
10. Connect safety belts with station frame on other side **without** stepping underneath the hanging load.

11. Remove top Hopper lid and put to parking position on trolley



12. Place Hopper trolley in correct position underneath the BigBag



13. Unlock the safety pin before opening the Hopper lid clamp by pushing handle down



Connect the BigBag sleeve to the hopper through the lid ring

14. Close the hopper lid clamp

15. Open Bag sleeve by releasing the tie to bring powder into the hopper



16. Lift or adjust BigBag to proper height above hopper to achieve a straight Bag outlet sleeve

17. Tighten the safety belts to new position

18. Connect the earthing clip to the dedicated lug, located on the BigBag as shown below, or as advised by the Bag supplier



19. Start fluidizing and powder feeding process



Section 7

Specifications

Electrical requirements

400VAC – 3phase – 50Hz, 1kW

Pneumatic requirements

Dry, clean air at 6 bar dynamic (minimum at all times)
7 bar Maximum, filtered to 5 μ or smaller, dried to 3.4°C
dew point or lower, oil & water free

Important note: See section 5, Figure 7 (page 17) for
specific pneumatic minimum and
maximum limits.

Air Consumption

Typical 13 m³h (8 cfm)
Maximum 27 m³h (16 cfm)

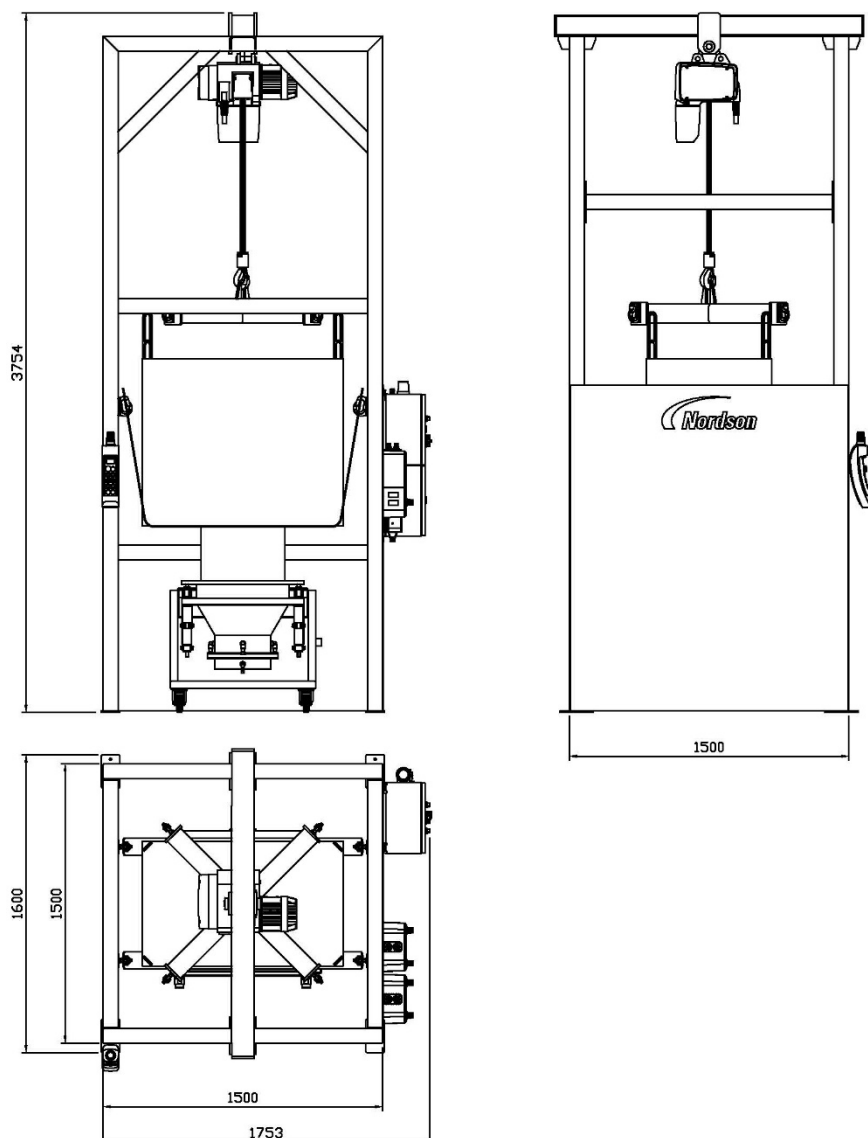
Approximate weight (without bag)

800kg

BIG BAG Capacity

1000Kg Maximum

Dimensions





EC DECLARATION OF CONFORMITY

ACCORDING TO CE DIRECTIVE 2006/42/ EC ANNEX II A

DESCRIPTION: Big Bag Unloader (max. load 1000kg)

FAMILY/MODELS: p/n7035202 All variants and models

**APPLICABLE DIRECTIVES & STANDARDS USED
TO VERIFY COMPLIANCE:**

Directive 2006/42/EG (Machinery)
EN 60204-1: 2006 "Safety of Machinery - Electrical
equipment of machines"
EN ISO 12 100 "Safety of machinery - Basic concepts,
general principles for design"

MARKING OF PRODUCT: 

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

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

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



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Date: 08/02/17