

Big Box Virgin Powder Feed System

Manual P/N 315 852 C
– English –

Keep for Future Reference



NORDSON (UK) LTD. • STOCKPORT



Order number

P/N = Order number for Nordson products

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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 Big Box Virgin Powder Feed System

Model Number(s)

Product Options All

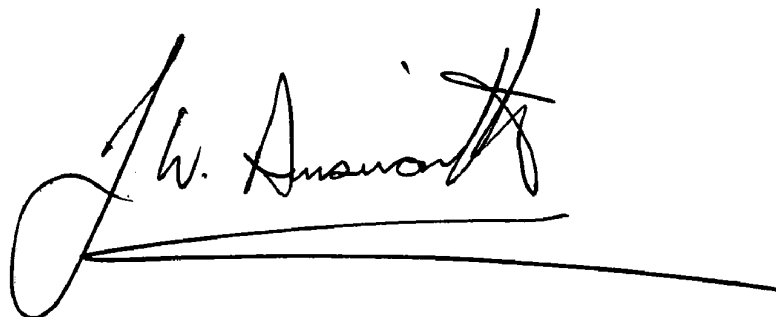
to which this declaration relates, is in conformity with the following standards and other normative documents

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

A handwritten signature in black ink, appearing to read 'J. Ainsworth', with a long horizontal line extending from the end of the signature.

Jim Ainsworth
General Manager

Nordson (U.K.) Ltd., 16 November 1998

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	<i>Hot Melt</i>	45-43-66 0123	45-43-64 1101
	<i>Finishing</i>	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	<i>Erkrath</i>	49-211-92050	49-211-254 658
	<i>Lüneburg</i>	49-4131-8940	49-4131-894 149
	<i>Düsseldorf - Nordson UV</i>	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	<i>Hot Melt</i>	47-23 03 6160	47-22 68 3636
	<i>Finishing</i>	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	<i>Hot Melt</i>	46-40-680 1700	46-40-932 882
	<i>Finishing</i>	46 (0) 303 66950	46 (0) 303 66959
Switzerland		41-61-411 3838	41-61-411 3818
United Kingdom	<i>Hot Melt</i>	44-1844-26 4500	44-1844-21 5358
	<i>Finishing</i>	44-161-495 4200	44-161-428 6716
	<i>Nordson UV</i>	44-1753-558 000	44-1753-558 100

Distributors in Eastern & Southern Europe

DED, Germany	49-211-92050	49-211-254 658
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***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
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Africa / Middle East

DED, Germany	49-211-92050	49-211-254 658
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Asia / Australia / Latin America

Pacific South Division, USA	1-440-988-9411	1-440-985-3710
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Japan

Japan	81-3-5762 2700	81-3-5762 2701
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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 Nordson Big Box Virgin Powder Feed System is designed to automatically transfer powder coatings direct to a feed hopper.

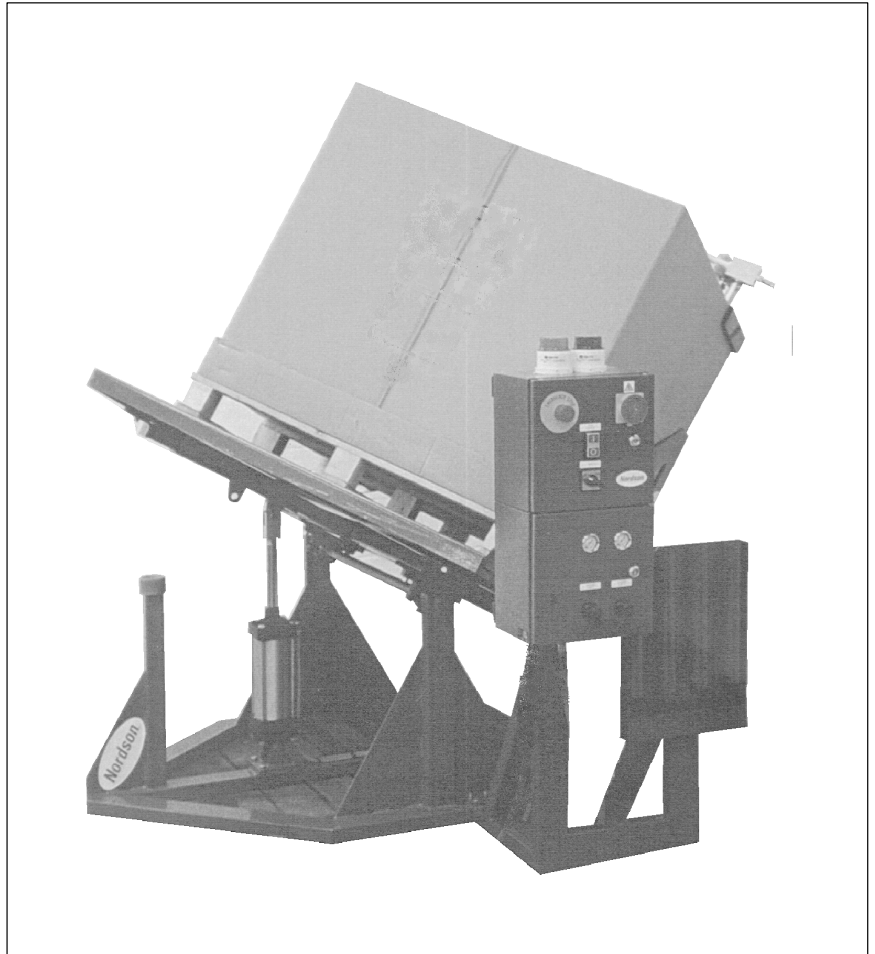


Fig. 2-1

2. *Unintended Use*

Other uses of this equipment not described above are considered unintended uses and are not according to the governing regulations.

3. *Residual Risks*

Nordson is not aware of any specific residual risks concerning this equipment, however the user should pay attention to the general safety section and the specific safety warnings contained in this manual.

4. *Features*

The Nordson Big Box Virgin Powder Feed System uses Nordson Transfer Powder Pump(s) to transfer organic or inorganic powder coating materials from a large palletised box to a feed hopper.

The box rests upon a tiltable platform, maximising powder utilisation.

Stainless steel lances fitted with a Transfer Pump are fitted to the box using a special clip.

The system comes complete with a dedicated control panel. Supplies of air and electricity are fed to the panel and then distributed to the various parts of the Nordson Big Box Virgin Powder Feed System.

The control panel controls the operation of the tilt platform, vibrator, low level alarm and Transfer Pump(s).

A level probe is supplied for fitting into the receiving hopper to sense the powder level, allowing the level to be kept constant.

The Nordson Big Box Virgin Powder Feed System comes in one, two or three pump(s) variants.

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 weight.

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.

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 electrical connections from the unit.

4. Storage

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

5. Disposal

Dispose of properly according to local regulations.

6. *Setting Up The Unit*

1. Fit the level probe as per Nordson Manual 768614 (Powder Level Sensor).
2. Fit the control panel to either the left or right of the main platform.
3. Connect the electric supply to the terminals inside the control cabinet. Ensure that a suitable cable and isolator/protection are fitted.
4. Connect the pneumatic supply.

NOTE: The air must be clean and dry at 6.5 bar maximum, filtered to 5u and 2 C dewpoint, oil free.

7. *Initial Startup*

1. Press START button (I).
2. Press and hold the LOAD button until the platform reaches the horizontal position.
3. Turn off the unit, by pressing the START button (O).
4. Remove the box lid.
5. Place the clip on the top edge of the box.
6. Place the powder lance(s) through the holes in the clip, and pierce the plastic bag.

NOTE: Be careful not to force the lances into the powder, as this may cause blockages.

7. Use a fork lift truck to load the box onto the platform.
8. Fit the red air hose to the Transfer Pump(s) using the male and female quick-(dis)connect air fittings.
9. Connect the Transfer Hose(s) onto the Transfer Pump(s) and ensure the other end is connected to the receiving hopper.
10. Connect all the earthing clips, One to each lance and one to the main frame of the platform.
11. Press START button (I).
12. Ensure that the Level Probe has been set up according to the information in the product manual.

The system is now operational.

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. Introduction

Depending on the amount of powder used, the system will run fully automatically.

When the system is running low on powder the amber strobe light on top of the control box will illuminate and (if fitted) the remote siren will sound. This indicates two possible conditions:

- If the lances in the box are still submerged in powder, there may be a blockage in the pump(s). Turn the unit off and clean out according to the Transfer Pump product manual.
- If the lances are not submerged in the powder, the unit requires tilting.

2. Tilting the Platform

1. To do this operation, firmly press and hold the TILT button on the panel until the platform is at its full angle.
2. Reset the siren and light alarm indications by pressing the RESET button. Normal operation resumes.

When the amber light and siren comes on for a second time, this indicates the box requires changing.

3. *Changing the Box*

1. With the power on press and hold the LOAD button, until the platform returns to the horizontal.
2. Turn off the unit, by pressing the START stop button (O).
3. Disconnect the Transfer Hose(s) from the Transfer Pump(s).
4. Disconnect the air feeds on the Transfer Pump(s).
5. Disconnect all the earthing clips.
6. Remove the empty box from the platform.
7. Remove the lance(s) complete with the Transfer Pump(s) from the clip.
8. Remove the clip from the box.

Continue as described in Initial Startup from paragraph 4.

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

1. Clean and check Transfer pump(s) and lance(s). Refer to Transfer Pump product manual.
2. Ensure the unit and its surrounding area is clean. Vacuum any spilt powder.

2. Weekly Maintenance

1. Clean Pivot bearings.

3. Yearly Maintenance

1. Check condition of all air hoses and replace if necessary.
2. Grease pivot bearings.
3. Check cylinder seals and replace if necessary.

NOTE: The unit should be tested for electrical safety, at intervals of not more than 12 months, according to the Electricity at Work Act 1989 or similar for non-UK countries.

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. Introduction

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.

Problem	Possible Cause	Corrective Action
No powder is transferred at all	<p>Check powder is present in the box</p> <p>Air supply to Pump(s) is not present</p> <p>Blockage in pump or syphon rod</p> <p>Transfer Pump Venturi is worn</p>	<p>Replace box</p> <p>Check main air supply</p> <p>Check Transfer Pump regulators are turned on</p> <p>Check hopper requires powder, refer to Level Control manual</p> <p>Turn unit off, strip and clean</p> <p>Refer to Transfer Pump manual</p>
Powder is transferring erratically	<p>Transfer Pump Venturi is worn</p> <p>Vibrator is inoperative</p> <p>Air pressure is too low</p>	<p>Refer to Transfer Pump manual</p> <p>Check power supply</p> <p>Contact Nordson</p> <p>Check air line pressure</p> <p>Increase regulator pressure</p>
Beacon is illuminating when powder is being transferred	<p>Check "T1" timer is set correctly</p>	<p>Contact Nordson</p>

Section 7

Parts

Section 7

Parts

1. 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 six-digit 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
—	000 000	Assembly	1	A
1	000 000	• Subassembly	2	
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

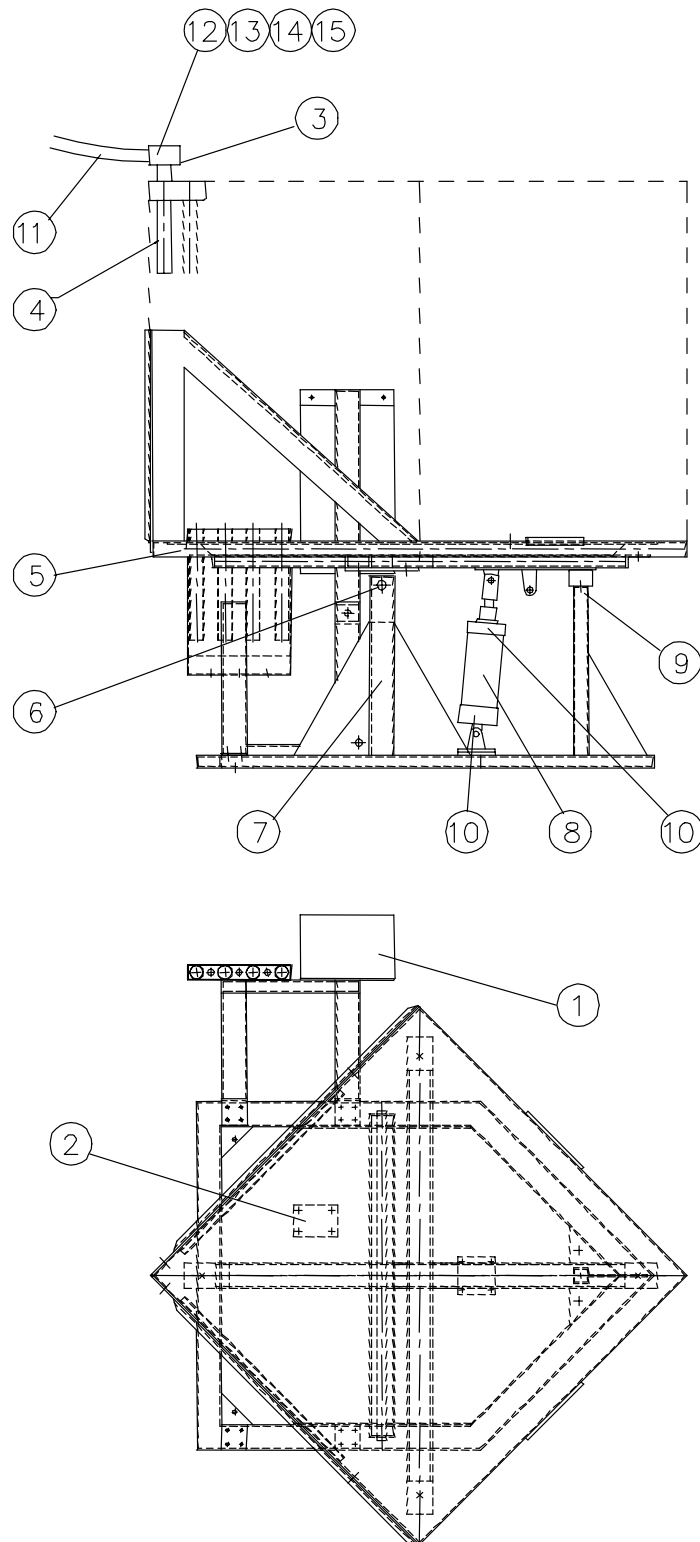


Fig. 7-1

Item	Part	Description	Quantity
1	767803	Control Panel, Big Box	1
2	765765	Electric Vibrator, 3 Phase, 380 V	1
3	244721	Transfer Pump	1, 2 or 3
4	765505	Lance Guide St/St	1, 2 or 3
5	767807	Anti Vibration Mount	4
6	767806	Pivot Bearing	2
7	767808	Fabrication, Big Box	1
8	767805	Cylinder, 173 mm Stroke	1
9	765629	Foot	1
10	768006	Flow Regulator 3/8 BSP	2
11	768253	Rubber Air Hose	3m / pump
12	768217	Fittings, Hose Ends	2 / pump
13	768224	Q D Female	1 / pump
14	768225	Q D Male	1 / pump
15	768200	1/4" BSP Connector	1 / pump
NS	768252	8 mm Poly Hose	10 m
NS	768900	Level Probe	1
NS	769150	Earthing Braid	1 m
NS	769151	Crimps	4
NS	769 138	P-Clip, Type NX3	10
NS	769 152	Screw M8x35 Csk Hd	4
NS	769 687	Screw M12x15 Hex Hd	4
NS	769 688	Screw M12x20 Csk Hd	4
NS	769 141	Wire 1.0 mm ² Gn/Ye	6
NS	767 809	Lance Guide	1
NS	765 628	Clip Earth	2 / pump
NS: Not Shown			

3. Control Panel Parts

Item	Part	Description	Quantity
-	-	Isolator 25A (P1-25/V/SVB/N)	1
-	-	Interlock Extension (ZVV-TO)	4
-	-	Shaft Extension (ZAV-TO)	4
-	-	Contactor (DIL 00M-240)	1
-	-	MCB & Overload (PKZM1-6)	1
-	-	E-Stop Pushbutton (RPV)	1
-	-	Stop/Start Pushbutton (QDDL11/10)	1
-	-	Lamp Unit (EF3)	2
-	-	Fixing Bracket (BE3)	5
-	-	Contact Block N/O (EK10)	4
-	-	Contact Block N/C (EK01)	4
-	-	Bulb (FL007)	2
-	-	Illuminated PB Blue (RLT-BL)	1
-	-	Pushbutton Black (RD-01)	2
-	-	Overload Aux Contact (NHI-10 PKZM1)	1
-	-	Circuit Breaker (FAZNS6)	1
-	-	E-Stop Legend Plate (ZB2 BY9330)	1
-	-	Connector 8 way Insert Socket (RS531611)	1
-	-	Connector Chassis Mount Shell (RS531863)	1
-	-	Contacts (RS531633)	1
-	-	Relay, 240 VAC, 2 pole c/o (RS353916)	2
-	-	Relay Base (RS353966)	2
-	-	Terminal (SAK4)	3
-	-	Terminal (SAK2.5)	11
-	-	Terminal Earth (EK4)	5
-	765 129	Timer	1
-	769 060	Beacon Amber	1
-	768 415	Solenoid 3/2	1
-	768 414	Solenoid 5/3	1
-	768 005	Regulator	1
-	768 001	Gauge 0-10 bar	1
-	768 132	Valve, Ball, 1/2"	1

Section 8

Specifications

Section 8 Specifications

1. *Electrical*

Panel Requirements

Voltage	380 / 415 VAC
Power	250 W
Frequency	50 Hz
Current	0.5 A

2. *Mechanically*

Big Box Fabrication

Size of Platform	1200 mm x1200 mm
Max Height (excluding Lances)	1350 mm
Max Width	2000 mm
Max Length	1800 mm
Max Capacity of Box	750 kg

