A300 Ultrasonic Sieve

Customer Product Manual
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NORDSON DEUTSCHLAND GMBH

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.

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Safety

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

CAUTION: 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

WARNING: 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 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) 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.
- Do not use the air blow gun to clean your body. Compressed air can pierce the skin and if directed towards the face it could cause a severe eye injury.

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.

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 EN50050-2, EN50177, EN16985, latest conditions.

- All electrically conductive objects in the spray areas shall be electrically connected to ground with a resistance of not more than 1 ohm when measured with an appropriate instrument.
- Equipment to be grounded includes, but is not limited to, the floor of the spray area, operator working area 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.
- After servicing equipment, reconnect all disconnected equipment, ground cables and wires.

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.

Description

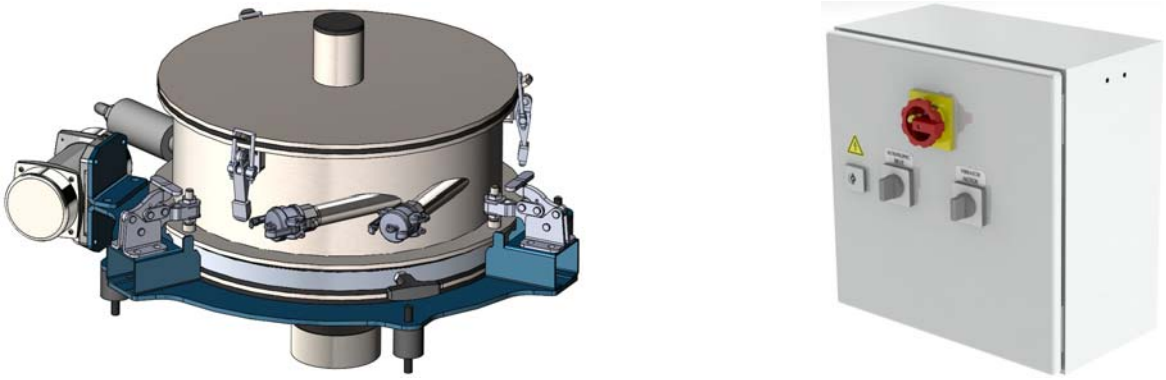

Figure 1 A300 Ultrasonic Sieve Station

This manual covers the A300 Ultrasonic Sieve system. The sieve is used as part of a powder recycling system and accepts both new and reclaimed powder. The sieve uses an electrical vibrator and also an ultrasonic screen to maximise efficiency. This method of sieving separates powder particles by size to prevent contamination and only reuse the highest quality of powder.

NOTE: There is a separate technical manual for the powder feed hopper, this can be found on the Nordson emanuals website. The Ultrasonic controller and probe that connects to the screen also has a separate technical manual. Contact your Nordson representative for more information.

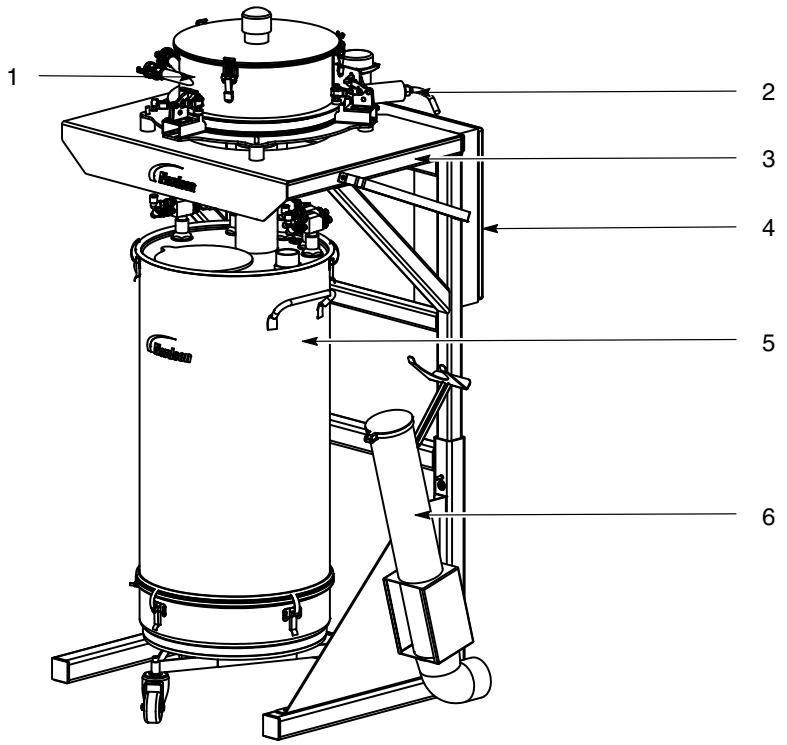

Figure 2 A300 Ultrasonic Sieve Identification Layout

Item	Component	Function
1	A300 Sieve	Sieves and blends reclaimed powder with new powder
2	Ultrasonic Probe	Provides ultrasonic frequency to the sieve screen for optimum sieving
3	Sieve Deck & Frame	Ensures all required equipment to be mounted in its optimum position
4	Control Panel	Controls the electrical and pneumatic supplies as required
5	Powder Feed Hopper	Provides the powder feed to the application guns
6	HDLV Lance Purge Mount (HDLV Systems only)	Allows the pick-up tube lance to be purge cleaned into the extract

See Figure 2

Powder Flow Process Diagram

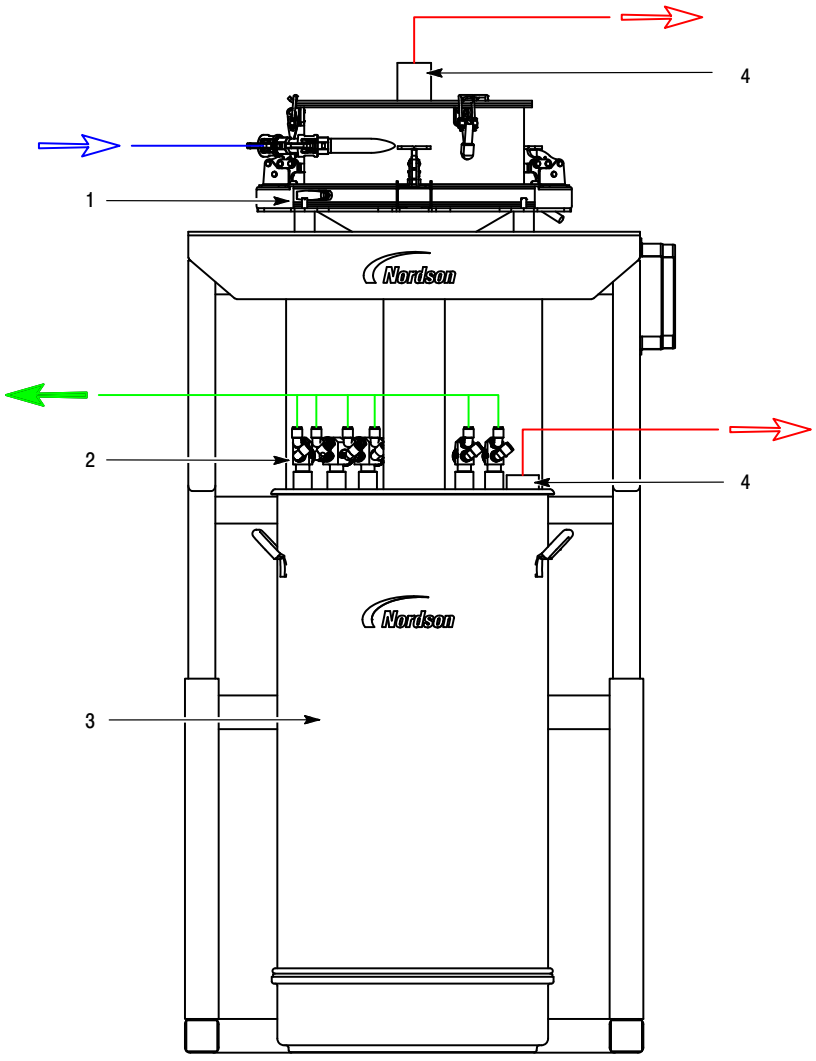

Figure 3 Powder Flow Diagram

Powder Flow Process Description

The Powder Flow Diagram shows how the A300 ultrasonic sieving system is connected and operates for optimum powder application and recovery.

The powder hopper (3) is filled to the correct level with fresh powder. The powder feed pumps (2 - green) draw powder from the hopper and transfer it to the powder application guns. Residual powder is extracted from the booth and returned back to the A300 sieve (1 - blue). Using ultrasonic technology, the system can sieve higher volumes of powder at smaller micron sizes. Fresh powder can also be applied above the sieve screen so it is evenly mixed with the reclaimed powder. After passing through the sieve, powder falls down the chute and into the powder hopper (3), ready to be used for production. The sieve and hopper are fitted with vents (4 - red) that must be connected to the designated spigot on the system and clear at all times to avoid overpressure and maintain good operation.

Installation

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

NOTE: Pneumatic (including pressure and quality) and electrical supplies must be in accordance with the system drawings supplied by Nordson.

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.

Storage

Use suitable packaging materials. Protect the unit from humidity, large temperature fluctuations (condensation), dust and vibrations.

Preparing for Installation

NOTE: The A300 Ultrasonic Sieve is delivered assembled. Installation should not be undertaken without the presence of a Nordson representative or a suitably qualified person.

1. Position in the desired location and secure the sieve support frame to the factory floor.
2. Connect the electrical & pneumatic supplies according to the schematics and also connect the vent hoses according to the system layout drawing.
3. Run and check that all functions are working correctly before adding powder to the hopper.

Operation

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

NOTE: Ensure that the Ground clamp (item 10 on page 14) is connected prior to running the system.

Daily Operation

Ensure the powder level in the hopper is at the desired level (typically not more than ½ full as this will rise during fluidisation/operation).

Turn on the electrical and pneumatic supplies to the sieve station.

NOTE: The sieve station could be activated with the main booth system.

Start the booth system and ensure that the recovery system from the booth is turned on.

System Setup

The system will be setup by the Nordson engineer during installation and commissioning. There is a delay timer on the relay inside the control panel. This will be set according to the requirements of the particular installation. Typically this will be factory set to 50%, however, if you require further information on this, contact your Nordson representative.

For more information on the Ultrasonic Sieve controls, refer to the associated Artech Ultrasonic Systems technical manual. This can be obtained from your Nordson representative.

Maintenance

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.

CAUTION: It is important to follow the specific maintenance instructions of each product.

Daily Maintenance

Equipment	Procedure
Sieve - vent hoses	Check and ensure that the vent hoses are clear. (Sieve and Hopper vents)
Sieve - screen	Disassemble the sieve, clean the screen using a vacuum cleaner or by blowing compressed air across the screen, not directly at it. Check screen for damage, replace if necessary.
Ground Wire (see item 10 on page 14)	The operator must ensure this is connected prior to running the system

Weekly Maintenance

Equipment	Procedure
Sieve - gaskets	Clean and check the condition of the gaskets. Replace if necessary.
Hopper	With the hopper empty, using a vacuum cleaner, clean the fluid tile in the base and inspect for signs of damage. Do not blow compressed air directly at the tile. Replace if necessary.

Monthly Maintenance

Equipment	Procedure
Sieve - electrical supply	Check electrical cables and connections are in good condition. Using qualified personnel, repair/replace if necessary.
Sieve - pneumatic supply	Check pneumatic tubing and connections are in good condition. Using qualified personnel, repair/replace if necessary.
Hopper	Check the condition of the seals in the lid and base. Replace if necessary.

NOTE: For more information on maintenance of the powder hopper, see the relevant technical manual on the Nordson emanuals website. The Ultrasonic Screen, Probe and Controller have a separate technical manual. Contact your Nordson representative to obtain these.

NOTE: The vibrator motor, part number 769097, is a maintenance free unit and is fitted with long life maintenance free bearings.

Sieve Gasket Replacement

CAUTION: Prior to using the solvent or adhesive, read the Safety Data Sheet for information about precautionary measures and safety recommendations.

Materials Required

- TERASON 2444 adhesive or equivalent
- TERASON VR20 solvent or equivalent
- Nordson Gasket Set (see parts list)

Tools Required

- Scraper (for removing old gasket)
- Utility knife (for cutting gasket)
- Wire brush (to clean and prepare surface)
- Brush (to apply the adhesive)

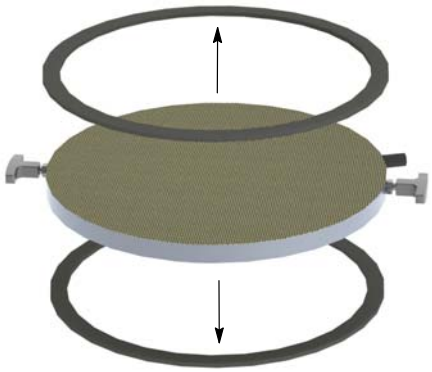

Figure 4 **Removing Old Gaskets**

Step 1

Remove the old gasket from the sieve screen using the scraper

Step 2

Using the wire brush, clean any remaining gasket/adhesive from the surface. Then clean the surface using solvent and wipe clean. Surfaces must be clean, dry and free from all traces of grease, oil and dust.

Step 3

Figure 5 **Applying Adhesive**

When the surface for the gaskets is prepared, apply adhesive from the tube onto the screen, around the sieve mesh frame and only within the area where the gasket is to be fixed. Use the brush to evenly spread the adhesive as shown below. The width of the adhesive applied should be the complete width of the gasket only, ensuring the final result is the complete face of the gasket makes contact with adhesive.

Step 4

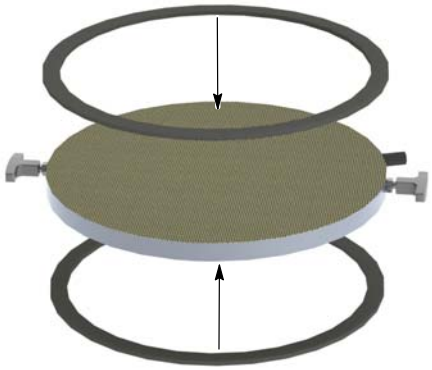

Figure 6 **Applying New Gaskets**

When applying the new gasket(s), start at one position and press onto the adhesive. Follow the contour of the circumference, gently pressing the gasket onto the adhesive, until the complete loop is neatly in position.

NOTE: Avoid stretching the gasket as it's applied. This could cause a kink at the final section to be applied.

Inspection can be made after a minimum of 60 minutes. Inspect to ensure the entire gasket is adhered to the surface. If necessary, apply the same adhesive to any areas that have not adhered sufficiently.

NOTE: The adhesive is workable for up to 15 minutes before it sets. Ensure the gaskets are fully in place before reaching the 15 minutes.

Troubleshooting

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

NOTE: 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, damaged gaskets and fasteners etc., should be noted during visual inspections and corrected immediately. These troubleshooting procedures cover only the most common problems. If you cannot solve a problem, contact your Nordson representative.

Problem	Possible Cause	Corrective Action
1. Vibrator not running	No Power	Check the power supply and electrical connections
	Recovery system not operating	Check the recovery system is switched on. The vibrator power is typically interlocked with the recovery system.
	Vibrator failure	Replace the vibrator
2. Ultrasonic probe not running	No Power	Check the power supply and electrical connections
	Recovery system not operating	Check the recovery system is switched on. The vibrator power is typically interlocked with the recovery system.
	Probe or Controller failure	Contact your Nordson representative. There is an additional technical manual for the Ultrasonic Controller & Probe.
3. Powder Builds up on sieve screen	Screen not being cleaned as frequently as necessary.	Clean more often and regularly.
	Too much powder being fed to the sieve.	Reduce the powder transfer rate to the original installation settings. Contact your Nordson representative
	Damp powder being fed to the sieve	Check the compressed air supply for moisture. Check the air dryer is operating correctly. Ensure powder is stored in a suitable environment.
4. Powder in hopper contaminated	Screen damaged	Inspect the screen and replace if necessary
	Screen not thoroughly cleaned	Make sure the screen is cleaned thoroughly and installed correctly.
5. Excessive noise during operation	Latches are loose or not functioning correctly.	Make sure all clamps are tight and securely fastened. Adjust or replace as necessary.
	Anti-vibration mounts are loose, worn or damaged	Tighten or replace the anti-vibration mounts
6. Powder leaks from lid or base	Gaskets worn or damaged	Replace as necessary
	Draw latches loose or damaged	Inspect the latches and replace as necessary

Parts

To order parts, call the Nordson Industrial Coating Systems Customer Support Center at (800) 433-9319 or contact your local Nordson representative.

See Figure 7 - page 14

Item	Part	Description	Quantity	Note
—	7035297	SIEVE, A300 ASSEMBLY	1	
1	7035299	KIT,GASKETS,A300 SIEVE - STAND ALONE	1	A
2	.	CONNECTOR,A300 SIEVE,POWDER FEED	1	
3	768675	SCREEN,A300 SIEVE,300 MICRON ULTRASONIC	1	B
3	768676	SCREEN,A300 SIEVE,250 MICRON ULTRASONIC	1	B
3	768677	SCREEN,A300 SIEVE,200 MICRON ULTRASONIC	1	B
3	768678	SCREEN,A300 SIEVE,160 MICRON ULTRASONIC	1	B
3	7035201	SCREEN,A300 SIEVE,125 MICRON ULTRASONIC	1	B
4	.	CLAMP,A300 SIEVE,BASE	3	
5	1018596	ISOLATOR,VIBRATION,32MM DIA X 8MM STUDS	4	
6	.	LATCH,A300 SIEVE,BODY/LID	3	
NS	768679	CONTROLLER,SIEVE A300	1	
7	768681	CONNECT ROD M10*25,A300 PROBE TO SCREEN	1	
8	768680	PROBE,ULTRASONIC,SIEVE A300	1	
NS	768682	EXTENTION CABLE,A300 SIEVE,5M	1	
9	769097	VIBRATOR,ATEX,240 VAC,CAPACITOR INLINE	1	
10	134575	WIRE, GROUND	1	
3	R768675	SCREEN,A300 SIEVE,300 MICRON ULTRASONIC,RECONDITIONED	1	C
3	R768676	SCREEN,A300 SIEVE,250 MICRON ULTRASONIC,RECONDITIONED	1	C
3	R768677	SCREEN,A300 SIEVE,200 MICRON ULTRASONIC,RECONDITIONED	1	C
3	R768678	SCREEN,A300 SIEVE,160 MICRON ULTRASONIC,RECONDITIONED	1	C

NOTE A: This kit contains all gaskets required for the A300 Sieve

B: Check the micron size that you are using and require, prior to ordering

C: These are reconditioned Sieve Screens. When ordered, you will receive the screen in the normal delivery time and collection of your old screen will be arranged. Nordson must receive the old screen back in order to receive the special price.

AR: As Required

NS: Not Shown

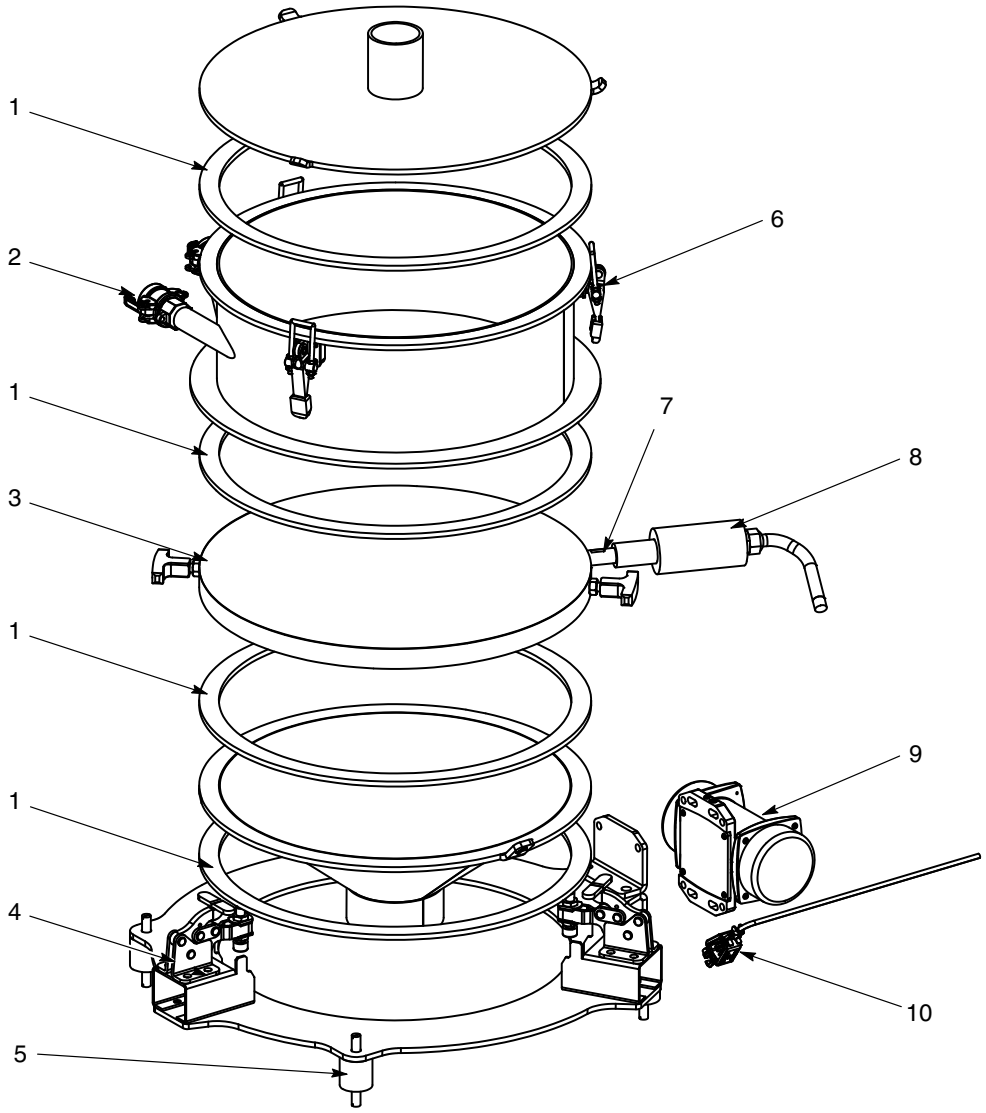

Figure 7 Spare Parts Identification Images

NOTE: Ensure the Ground (10) is connected prior to operation

Specifications

Description	Values
Factory ambient temperature	5°C - 35°C
Electrical connection & rating	50Hz - single phase 220v (N+E) / 0.5KW
Pneumatic connection	10mm
Maximum air pressure	6 bar
Minimum air pressure	4 bar
Air quality	2°C or less dewpoint - oil free - filtered to 5µ or less
Noise	80 dB Maximum

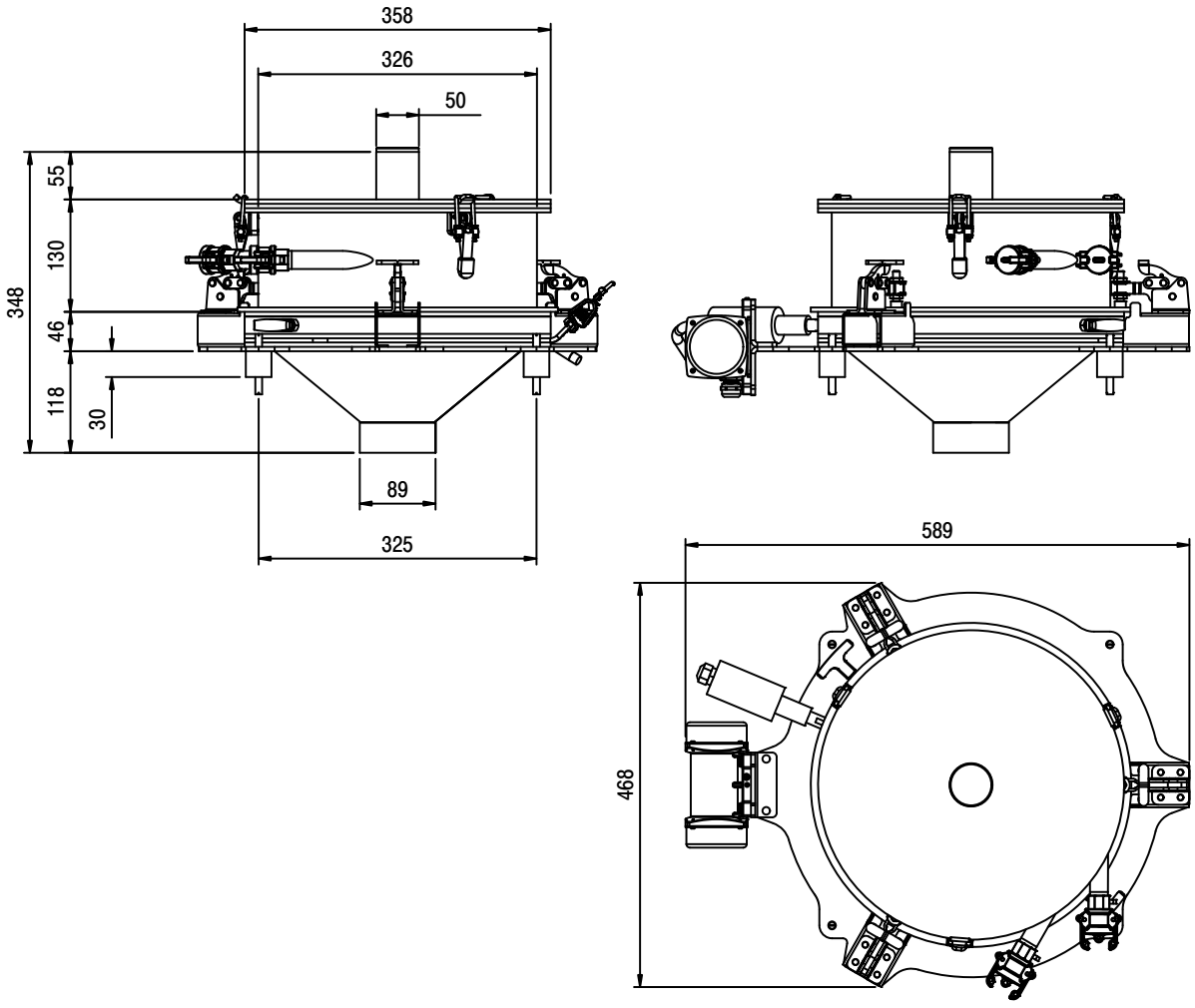

Figure 8 A300 Ultrasonic Sieve Dimensions

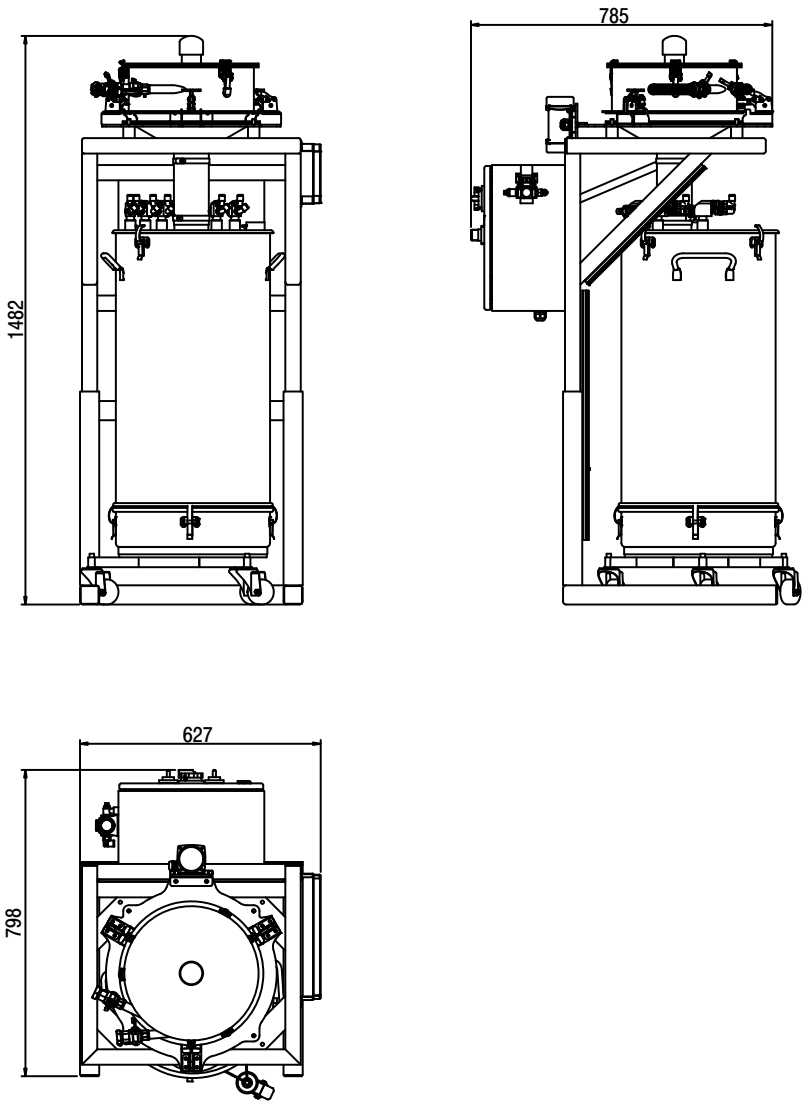

Figure 9 A300 Ultrasonic Sieve Station Dimensions

NOTE: Dimensions of the sieve stand can vary for different systems. For exact dimensions of the unit supplied, please contact your Nordson representative.

EC DECLARATION OF CONFORMITY

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

DESCRIPTION:	**A300 Ultrasonic Sieve Station for powder application**
FAMILY/MODELS:	**A300 Ultrasonic Sieve** All variants and models (Stand, Hopper)

APPLICABLE DIRECTIVES & STANDARDS USED TO VERIFY COMPLIANCE:

Directive 2006/42/EG (Machinery)
2014/34/EU Explosive Atmosphere
EN 60204-1: 2005 “Safety of Machinery - Electrical equipment of machines”
EN ISO 12100 “Safety of machinery - Basic concepts, general principles for design”

MARKING OF PRODUCT: CE

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

Kai Flockenhaus
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Date: 25/09/19