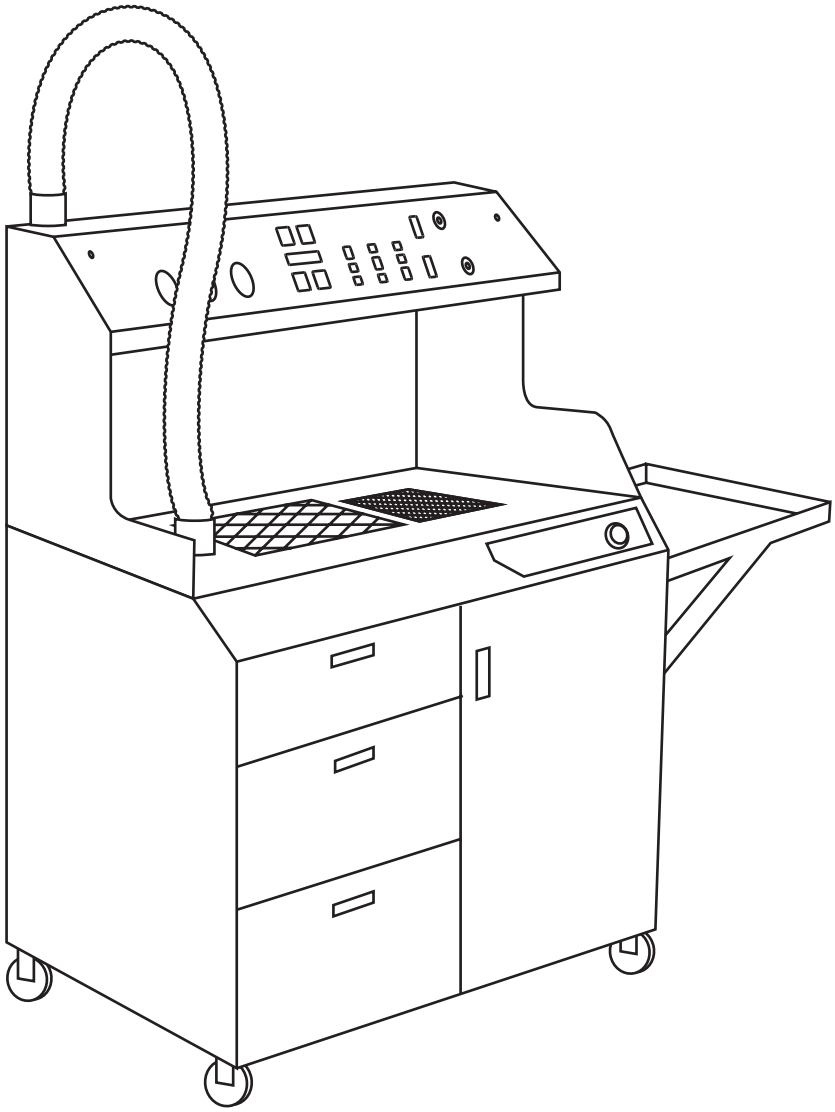
SINTERIT



POWDER HANDLING STATION

USER MANUAL

Read the instruction manual before using the device.

Version 12/2020

Table of Contents

1. Marking text conventions used in the document

Listed below are descriptions of symbols used on the device. They constitute a warning or convey the information to protect the user, other individuals, or surrounding objects and ensure the correct and safe use of the device.

	**WARNING!** An inevitably dangerous situation that can result in serious injury or even death. Initiation, the omission of a specific procedure, or inattention can cause severe physical injury to the user.
	**ATTENTION!** Initiation or omission of a specific procedure can cause physical damage to the equipment or the user.
	**WARNING!** Risk of electric shock which can be fatal or cause severe burns. An inevitably dangerous situation that can result in serious injury or even death, if not mitigated. Before working with any equipment, you should be aware of the dangers associated with the flow of electric current, and become familiar with the standard procedures to prevent accidents.
	**CAUTION!** Beware of moving parts that can crush hands.
	**CAUTION!** Beware of sharp edges which can cause body cuts and injury.
 	**WARNING!** Risk of fire and explosion! Avoid fire! Powder dust is flammable
	**ATTENTION!** Risk of electric shock. A grounding is used in the device. Follow the instructions in the User manual and the markings on the PHS device.
	**STOP!** Action prohibited.

	**ATTENTION!** It is necessary to wear protective gloves, glasses, and a face mask. Mandatory action when working with powder.
	**ATTENTION!** It is necessary to use hearing protection.
	**ATTENTION!** It is necessary to wear antistatic clothes and shoes. Mandatory action when working with powder.
	**IMPORTANT!** Information essential to correctly perform a specific task.
	**IMPORTANT!** You must read the instructions before taking action.

2. Important safeguards and warnings

	**WARNING!** • To ensure the safe use of the Sinterit Powder Handling Station (hereafter PHS), please read and follow the instructions below. • Keep this manual for future use. All warnings and instructions on the product should also be followed. • Unless these messages are heeded, operator injuries could occur. • Unless these messages are heeded, PHS damage could occur.
	**WARNING!** The following indications are, by themselves, not enough to fully protect against all the hazards that could arise during printer operation. These will have to be integrated with common sense and the experience of the operator, both of which are crucial factors for preventing accidents. Each section of this manual lists further specific safety warnings for the various operations.

A. ENVIRONMENT AND PLACE OF INSTALLATION

WARNING!
- The PHS device may only be used with a vacuum cleaner having an explosion-proof certificate (ATEX, INTERTEK).
- Sinterit recommends to use the PHS device solely with a vacuum cleaner delivered by Sinterit or by one of the Company's official distributors and from Sinterit offer.
- Sinterit is neither responsible for the operation of the PHS device nor for any defects or damages if PHS device is used with a vacuum cleaner other than the one recommended by Sinterit. This includes but is not limited to vacuum cleaners that may be provided by distributors or resellers but from outside Sinterit`s offer.
- TO THE EXTENT PERMITTED BY APPLICABLE LAW, SINTERIT DISCLAIMS ALL WARRANTIES AND CONDITIONS, WHETHER EXPRESS, IMPLIED OR STATUTORY, IN CASE OF THE PHS DEVICE BEING USED WITH A VACUUM CLEANER OTHER THAN RECOMMENDED ABOVE.

WARNING!
- The PHS must be protected against atmospheric agents (rain, hail, snow, fog, dust in suspension, etc.)
- An environmental temperature between 10°C and 40°C and relative humidity not above 70%. Optimum operation of the device at a temperature of about 22°C.
- The work environment must be clean, well-enough lit, and devoid of any explosive materials that may create an explosive atmosphere.
- The work environment must be well ventilated, adequately to its size.
- The PHS unit should not be located close to the air conditioner vents.

IMPORTANT!
- The product should be placed on a flat, stable surface with sufficient weight resistance as the device weighs over 150 kg.
- The product will not work properly if it is set at an angle.

STOP!
Do not place or store the PHS:
- outdoors;
- near water, or heat sources;
- in areas with large amounts of dust;
- in places subject to shocks, vibrations, high temperature and/or humidity;
- extreme changes in temperature and humidity;
- near inflammable and volatile substances, concentrated acids or corrosive vapors;
- in places easily accessible to children and animals.

STOP!
- The PHS must not be operated in a corrosive or explosive environment.
- Avoid using the device close to open flames or sources of heat.

B. GENERAL SAFETY RULES

WARNING!
- The device should be installed in accordance with this manual and by trained personnel.
- Only trained and authorized personnel should replace or service the PHS.

WARNING!
- Only adults should use the PHS device.
- When using the machine, mind other people, especially children.

ATTENTION!
It is forbidden to use the device to collect any liquids, from containers, sinks, bathtubs, etc.

ATTENTION!
- Never put your hands between the grid and the Powder Chamber (main and Fine Dust) especially during operation.
- Do not put your hands in the service area of the Powder Chambers where the Powder Feeding Screw is located (if the safety guards are removed, e.g. during service).
- Be careful when installing the Metal container into the Sifting module.
- Be careful when opening and closing Drawers and the door from the Sifting module.

ATTENTION!
When restoring original working conditions, the appointed person should make sure that at the end of the operating procedure, proper PHS operation safety conditions are restored, especially the safety devices and the protective guards.

ATTENTION!
- Never leave various objects on the worktop or over the powder chambers of the PHS.
- Make sure all the guards and protection devices are in place and that all the safety devices are in place and working properly.
- Do not insert any objects in holes not intended for this purpose.
- Do not use the device with blocked holes - remove any solid objects that may restrict airflow.

STOP!
- Climbing on the PHS device is forbidden.
- Sitting/climbing on a Metal shelf (under a sandblaster) is prohibited.

C. PERSONAL PROTECTION

ATTENTION!
- Wear individual protections (Protective gloves, Protective Glasses, Protective Dust Mask).
- Hearing protection is required when working with a PHS device. Staying with the device unprotected for long periods may reduce attention and impair hearing.
- To prevent dust from being inhaled at all times, always wear a dust mask. When entering a PHS room, pay attention to the solid particles that are released during sieving.
- Inhalation of the dust can cause serious lung problems.

ATTENTION!
- The operator must always wear antistatic clothes and shoes.
- The floor in the working area must be antistatic.

STOP!
- Do not wear untied hair, loose or hanging clothes such as ties, scarves, or torn clothes that could become trapped by the PHS device.
- Do not place the Suction hose close to the body, especially to sensitive areas such as eyes, ears, and lips!

D. POWER SUPPLY AND GROUNDING SYSTEM

WARNING!
- Before plugging in, make sure the power voltage and frequency are those shown on the machine plate.
- When an extension cord is used for the power supply of the product, make sure that the total power consumption of all devices connected to it does not exceed the extension cord's limit. Also, make sure that the total current drawn by connected equipment does not exceed the ampere rating for the AC wall outlet.
- The PHS device should be connected to an electrical installation protected with an overcurrent switch with this parameters:
  - Characteristics: type B
  - Rated current value: 10A

WARNING!
- Use only the Power cable supplied with the product.
- Do not use power cables from other devices! Using the power cables from other devices or connecting the power cables supplied with the product to other devices may cause fire or electric shock.
- The device power plug should be suitable for the power outlet.
- The power cable should be placed in such a place that it is not rubbed, cut, pulled, or twisted.
- Pay special attention to the fact that the Power cable is not bent at the points of connection of the device.
- During use, mind the power supply cables and avoid crushing or pulling these.
- Periodically check the mains power cable to ensure it is not damaged.
- In the event of the cable being replaced, make sure it is protected against water spray and check mechanical strength.
- Disconnect the Power cable whenever it is planned to shift/transfer the machine.

	**WARNING!** In the following situations, unplug the product from the power supply and contact with Sinterit Support: • the power cord or plug is damaged; • some liquid got into the product; • the product has been dropped or the case has been damaged; • the product does not operate properly or clear changes in efficiency have been observed.	
	**STOP!** • Never touch electric wires, switches, buttons, etc. with wet hands. • Do not pour the liquid onto the product. • Do not place any containers on the device, in particular those containing water. • Do not touch live parts. • Never pull the machine using the power cable. • When connecting/disconnecting the plug to/from the power socket always hold the cover, not the cable. • In the event of the cable being damaged, the machine must not be used. • Never disassemble, modify or repair the power cable, plug, devices inside the printer, except as described in the product manual. • Do not place objects on the Power cable. • Do not place Power cable in a path where people will have to walk or run.	
	**ATTENTION!** The PHS must be connected to a grounded outlet to prevent electric shock in the event of a fault.	

E. SAFETY REQUIREMENTS DURING USING THE SINTERIT PHS

	**WARNING!** • Before using PHS always make sure the printer is free of all external materials such as debris, oil, equipment, and other objects that could affect the operation and cause injury to persons. • Before each use, check the device for damaged and/or defective parts. • In the case of a defect or malfunction of the device, have it repaired by a qualified person/ company first. • No smoldering or smoking substances (e.g. cigarettes, matches, or hot ashes) may be sucked in. • Do not leave the device switched on unattended!

F. SAFETY DURING REPAIR AND MAINTENANCE

WARNING!
- Only skilled persons should carry out repairs and maintenance.
- Read the operator's and maintenance manual carefully before using the PHS or doing any maintenance jobs.
- During cleaning operations, maintenance jobs, or when changing parts, the Power switch must be off and the machine must be unplugged by removing the Power cable from the socket.
- During maintenance jobs, affix a notice to the appliance indicating „MACHINE BEING SERVICED, DO NOT START".
- Never disassemble, modify or repair the power supply, plug, or devices inside the PHS unit except as described in the product manual.
- Do not adjust controls that are not described in the manual.

WARNING!
- Structural damage and improper alterations or repairs could change the protection capacity of the PHS and therefore cancel the guarantee.
- Any alterations to the appliance can only be made by Sinterit Support.
- Use only with the equipment recommended by the producer. In the event of Customers fitting a tool to the machine not supplied by Sinterit, make sure the safety conditions required by Machine Directive 2006/42/CE are complied with and in any event, Sinterit is unable to accept liability for any problems arising from the use of such tool.
- Use only original spare parts.

STOP!
- Avoid using flammable or toxic solvents such as petrol, benzene, ether, and alcohol for cleaning.
- Do not immerse the device in water for cleaning purposes or use a pressurized water jet to clean it.

G. WORKING WITH POWDERS

WARNING!
- When working with the polyamide powder or other designated printer powder for the Sinterit Lisa PRO printer, always wear Personal Protection dedicated to this device (Protective Glasses, Protective Gloves, Protective Dust Mask).
- When working with a polyamide/rubber powder, avoid inhalation or swallowing and contact with skin and eyes.

WARNING!
First aid when working with PA/FLEXA powder:
- If the PA/FLEXA powder is inhaled, move to a place with fresh air and gargle thoroughly with plenty of water. If coughing develops, contact a physician.
- If you eat a PA/FLEXA powder, rinse your mouth with water and drink 1-3 glasses of water to dilute stomach contents. If necessary, contact your doctor.
- If the PA/FLEXA powder gets in your eyes, rinse them thoroughly with water. In case of persisting eye irritation, contact a physician.
- When the PA/FLEXA powder gets in contact with your skin, wash it with soap and water.

ATTENTION!
- Polyamide powder should be stored in tightly closed containers (e.g Sinterit Metal Container), in a room at room temperature and low humidity.
- The powder should be stored out of reach of children and pets.

STOP!
- Do not attempt to burn/melt polyamide powder. The resulting sparks and hot mass can cause severe burns.
- Keep the polyamide powder away from fire.

ATTENTION!
Do not dispose of municipal waste! The used polyamide powder should be stored in sealed containers and disposed of by local policy of waste plastic material.

H. SAFETY PLATES (SPECIFICATION TAG AND SYMBOLS)

DO NOT REMOVE THIS LEBEL!			
Manufacurer: SINTERIT SINTERIT Sp.z o.o. ul. Nad Drwiną 10 bud. B3, 30-741 Kraków, Poland www.sinterit.com contact@sinterit.com		*Name:* **POWDER HANDLING STATION**	
		Serial number: *1234597890*	
		Manufactured:	*Made in:* EU, POLAND
IEC Protection Class: Class 1	*Machine type:*	SLS 3D PRINTS POST-PROCESSING STATION	
	Dimensions:	1000 x 700 x 1800 [mm]	39.4 x 27.6 x 70.9 [in]
IP CODE: **IP30**	*Total weight:*	160 [kg]	
	Power consumption:	80-264 [V] AC, 47-63 [Hz], 6.67 [A], 80 [W]	
	Short-circuir current rating	6 [A]	
Warning! Read and undesrtand operator's manual and all other safetry instuctions before using this machine. Failure to follow operating instructions coul result in serious injury.			

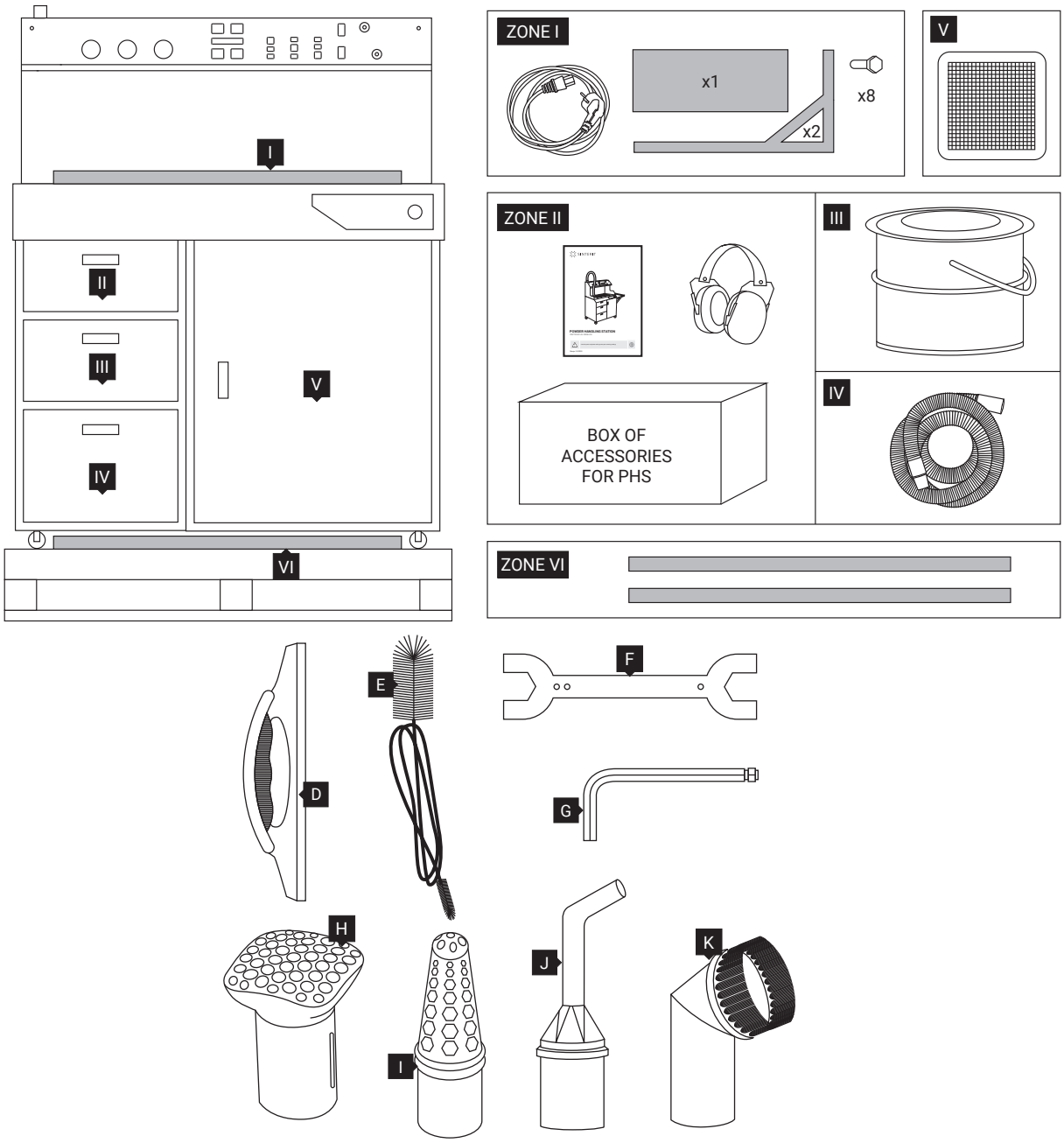
ATTENTION!
- Make sure all the safety messages are legible.
- Clean these with cloth, soap, and water. Do not use solvents, diesel fuel, or petrol.
- Replace the damaged plates with new ones supplied by Sinterit. If a plate is attached to a replaced part, make sure a new plate is affixed to the new part.
- When contacting the manufacturer or dealer, always quote the details shown on the printer plate.

WARNING!
- Removing the safety plates on the printer is strictly forbidden!
- The manufacturer declines all liability about printer safety in the event of failure to comply with the above indications.

I. SCRAPPING

IMPORTANT!
In the case of scrapping, all the parts of the device will have to be disposed of through adequate disposal channels by applicable legislation. Before scrapping, all plastic and rubber parts will have to be separated from the electrical material. Parts made of plastic, aluminum, and steel only may be recycled if collected by special centers.

3. Contents of Powder Handling Station packaging



Zone I: Components of the Metal shelf with screws 13, Power cable.
Zone II: PHS User manual, Anti-noise headphones, Box with additional accessories: D Powder Wiper, E Tube brush, F Service wrench 17/10, G Allen key Hex 5mm, H General-purpose nozzle, I Powder suction nozzle form cake, J Gap nozzle, K PVC brush.
Zone III: Spare Metal container with lid.
Zone IV: Suction hose with Suction Handle 4.
Zone V: Additional Powder Chamber grid (for cleaning small parts).
Zone VI: Components of the Slope ramp A.

4. Sinterit Powder Handling Station

A. DESCRIPTION

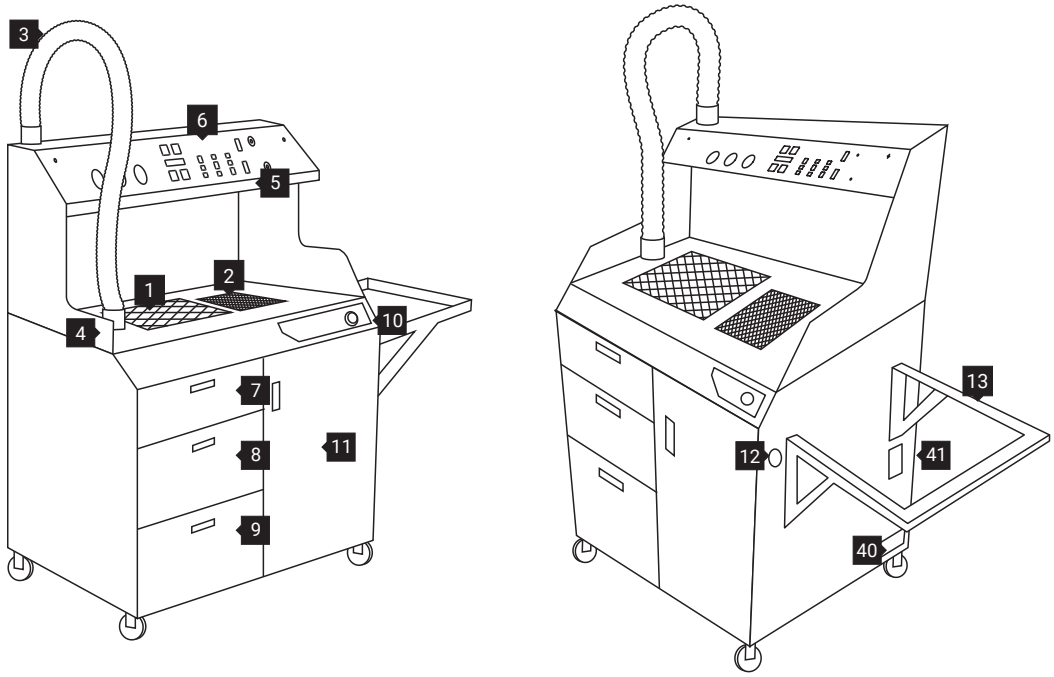


Image 1. General view of the Sinterit PHS.
1.Powder Chamber with grid, 2.Fine Dust Chamber with grid, 3.Suction hose with Suction Handle, 4.Suction Handle socket, 5.LED light, 6.Toolboard, 7.Drawer 1 (for small printout cleaning equipment), 8.Drawer 2 (for IO Box), 9.Drawer 3 (for Spare Metal container and Funnel), 10.Control panel, 11.Sifting module (behind the door), 12.Connector for Antistatic hose, 13.Metal shelf for Sandblaster or Foldable Tray (option), 40.Power socket, 41. Service access to Powder Feeding Screw

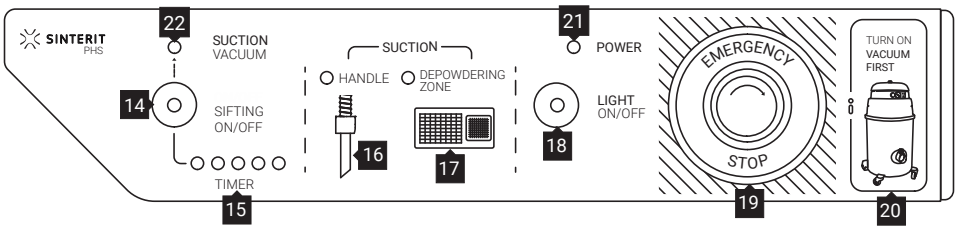


Image 2. View of the Control panel
14.Main switch, 15. Sifting module timer, 16.Suction Handle suction indicator, 17.Fine Dust Chamber suction indicator, 18.LED light switch (on/off), 19.Safety button (E-STOP), 20. Reminder to turn on the vacuum cleaner, 21.Power supply indicator, 22.Vacuum Suction sensor indicator

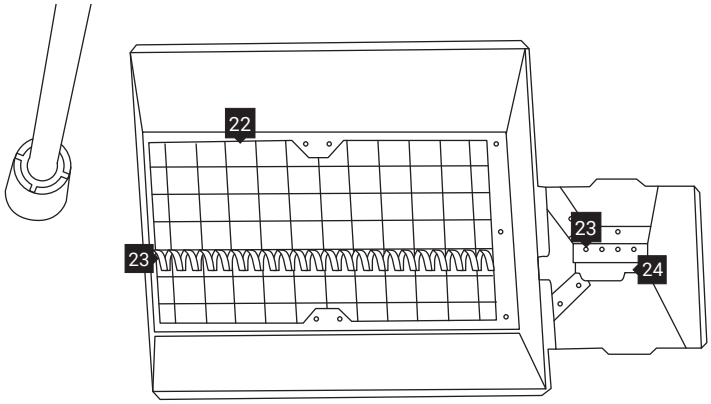


Image 3. View of the inside of Powder Chambers (main and Fine Dust).
22.Powder Feeding Screw guard (mesh) in Powder Chamber, 23.Powder Feeding Screw, 24.Powder Feeding Screw guard in Fine Dust Chamber

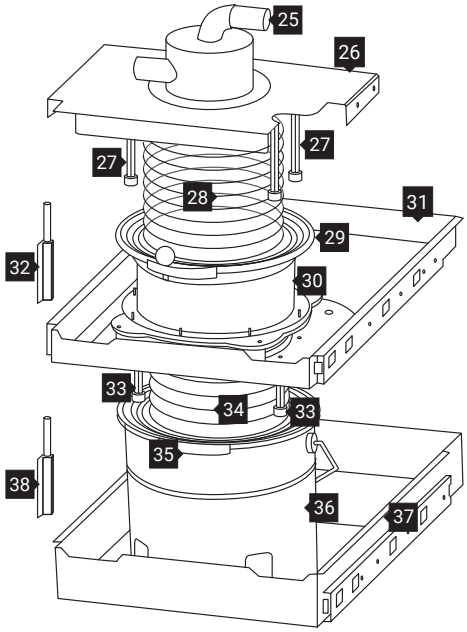


Image 4. Detailed view of the Sifting module
25.Powder separator, 26.Powder separator shelf, 27.Magnetic holder for the Sieve flange, 28.A flexible tube with flange (for Sieve), 29.(Sieve) Clamping ring with a pin, 30.Sieve, 31.Sieve drawer, 32.(Sieve) Drawer Lock, 33.Magnetic holder for the container flange, 34.A flexible tube with flange (for the Metal container), 35.(Metal container) Clamping ring with a pin, 36.Metal container (12L), 37.Metal container drawer, 38.(Metal container) Drawer Lock

B. SPECIFICATION

GENERAL	
Category	SLS 3D Prints Post-processing Station
Type	Industrial
PACKAGING	
Size of package	1200 x 800 x 1800 [mm] (47.2 x 31.5 x 70.9 [in])
Package weight	185 [kg] (408 [lbs])
Space for unpacking	1700 x 4200 x 2000 [mm] (66.9 x 165.4 x 78.7 [in])
Space for installation	1700 x 2200 x 1800 [mm] (66.9 x 86.6 x 70.9 [in])
Package contains	Powder Handling Station + set of accessories + manuals
POWER	
Voltage	80 - 264 [V] AC, 47 - 63 [Hz], 6,67 [A]
Power	80 [W]
TECHNICAL DATA	
Dimensions	1000 x 700 x 1800 [mm] (39.4 x 27.6 x 70.9 [in])
Total weight	160 [kg] (352.7 [lbs])

Noise level without vacuum cleaner	<60 [dB]
Equivalent continuous sound pressure level (8 hours)	73,9 [dB]
Sound pressure level (A)	63,7 [dB]
Peak sound pressure level (C)	81,4 [dB]
Sound power level (A)	79,6 [dB]
Suction inlet	40 [mm]
Capacity of collection unit	12 [L] (3.17 [gal])
SAFETY	
Certificates	CE
IEC Protection Class	Class 1
IP Code	IP 30

5. Initial startup of the Sinterit PHS after delivery

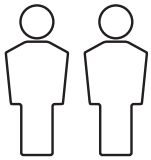
WARNING!
The device weighs above 150 kg. Two adults will be needed to unpack the PHS device properly and safely.

ATTENTION!
- Visually check if the package does not have any visible damage to the protective packaging that may arise during transport. If any, contact Sinterit Technical Support immediately (https://www.sinterit.com/support-page).
- The device must be properly installed according to these instructions before use.

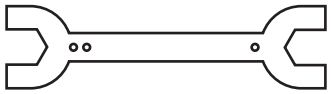
IMPORTANT!
The tools: Powder Tools, IO Box, Powder Funnel, Trowel are not supplied with the PHS. They are included in the accessories of the Sinterit Lisa and Lisa PRO printers.

IMPORTANT!
During installation, watch out for the metal edges of the device. Wear Protective Gloves.

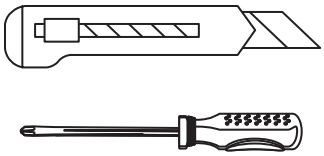
For easy and safe unpacking you will need it:



Two persons



Service wrench 17/10
F (1 point - size 17,
2 points - size 10)



Bookbinding knife,
Phillips screwdriver

The PHS device is delivered on a 1200 x 800 [mm] pallet, protected by a cardboard box filled with foams and foils.

1. Unwrap the security foil from the pallet.
2. Remove the security cardboard and remove the foam fillers and edge protectors.
3. Visually check that the device has not been damaged during transport (visible dents, scratch damage to the casing). If any, stop the installation and contact Sinterit Technical Support (https://www.sinterit.com/support-page).
4. Remove the foil protected elements of the Metal shelf 13 and the PHS User Manual from 2nd Drawer 8.

5. On the pallet, under the PHS device, are two elements of the Slope ramp A. Cut off the clips holding the ramp components

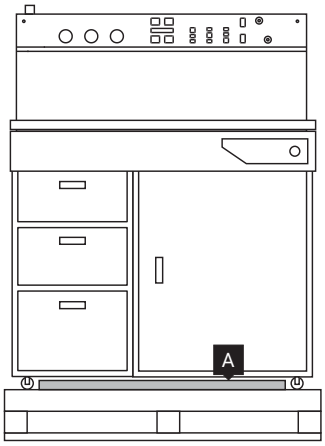


Image. 5. During transport, the Slope ramp is located under the PHS device.

6. Place the Slope ramp A next to the pallet, always on the side of the Sifting module door (image 6).
7. Match both ends of the Slope ramp A with the guide rail on a pallet B. Check the connection to ensure that it does not disconnect during the PHS downhill (image 7).

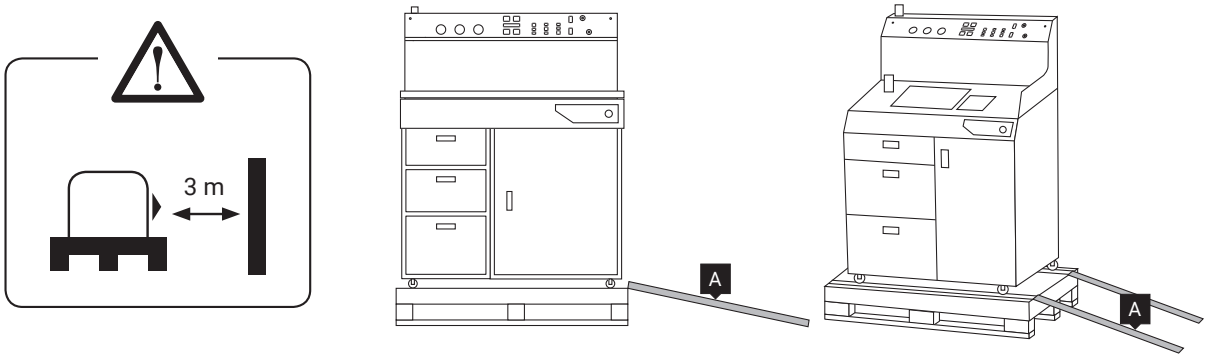


Image. 6: Correct positioning the Slope ramp to the pallet.

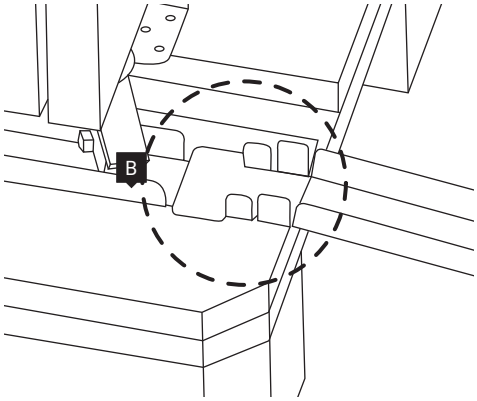


Image 7. Correct mounting of the Slope ramp A to the guide rail on a pallet B (detailed view).

8. Unscrew screws the PHS device from the clamping angles bars to the pallet C. The angles are on both shorter sides of the device. The location of the screws underneath the device is shown by the markers (image 8). To unscrew the screws (two for each angle, size M10x40) use the service wrench F; select the side with 1 point - size 17.

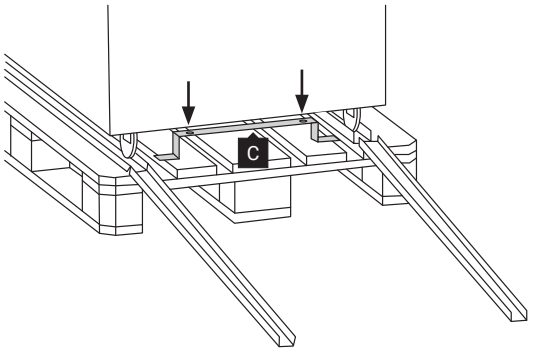


Image 8. Location of the angles that secure the PHS to the pallet.

9. Unscrew screws fixing the angle bar to the pallet from the side of the Slope ramp, see picture opposite. Remove it to allow the device to slide freely off the pallet.

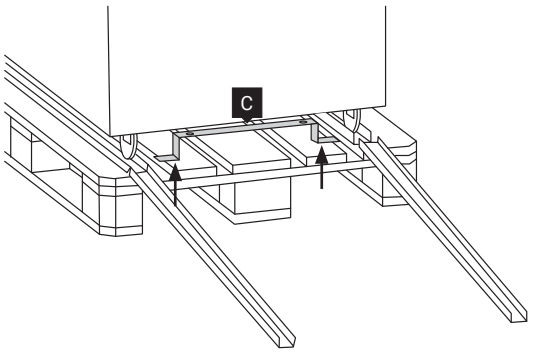


Image 9. Location of the screws securing the angle bar to the pallet.

10. Set all castors correctly and unlock the brakes on the front castors.
11. Carefully, with the help of another person, slide the PHS device off the pallet (image 10). Watch out for the feet when the device sliding off from the Slope ramp!
12. We recommend that you position the device directly at your target workplace.
13. Lock the brakes on the castors of the PHS.

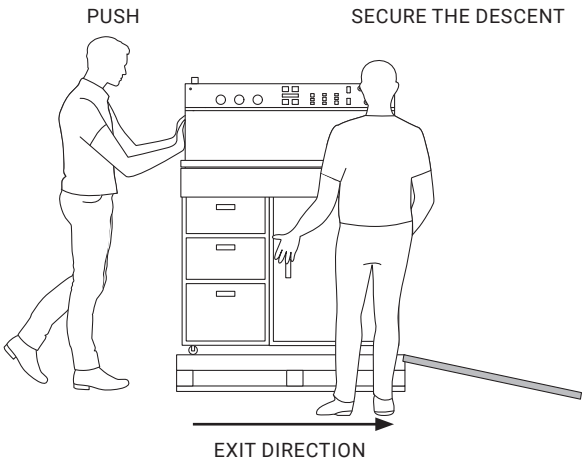


Image 10. The correct way to remove PHS from the transport pallet.

14. Remove the transport safety catches from the Drawers 7, 8, 9. Remove the Suction hose 3 with Clamp 39 from the Drawer 9.
15. Connect Suction hose 3 to the device using the supplied Clamp [39]. Tighten the Clamp using the Service wrench, size 10 (two points) (image 11).
16. Place the Suction Handle in the Suction Handle socket on the PHS worktop 4.

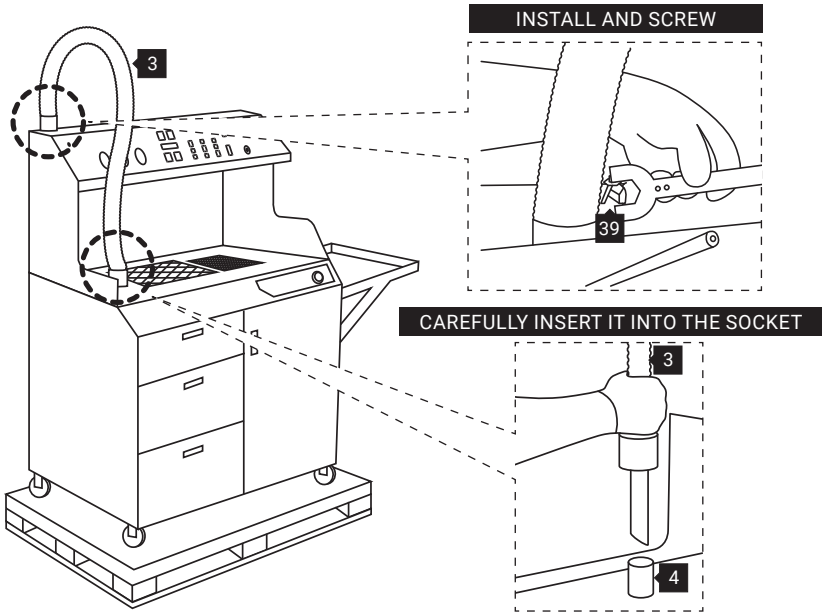


Image 11. Locations of the Suction hose installation to the PHS device.

17. Make sure that the red band on the Suction Handle socket 4 is completely covered by the Suction Handle 3. Only then is the suction system leakproof (image 12).

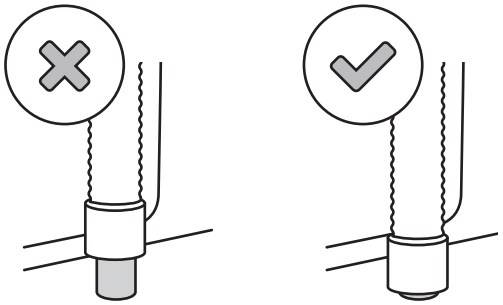


Image 12: Incorrect and correct seating of the Suction Handle in the socket.

18. Peel off the transport safety catches from the grid of the Powder Chamber 1 and the Fine Dust Chamber 2 on the PHS worktop.

19. Place the Powder Tools accessories on the PHS Toolboard 6 (image 13).
20. Remove the Anti-noise headphones and the nozzles for the Suction Handle from the first Drawer 8 and place them on the Toolboard 6 (image 13).

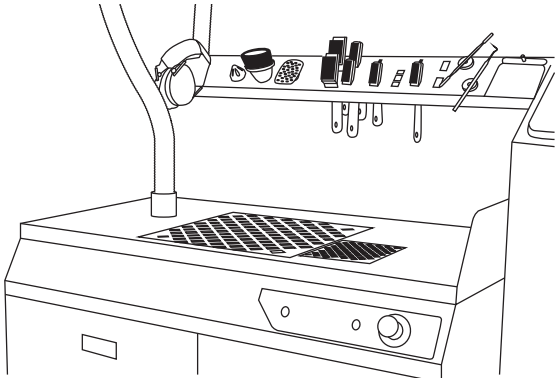


Image 13. The positioning of additional accessories on the Toolboard.

21. Place the Trowel, delivered with the printer, in drawer 1 7.
22. Place the IO Box, delivered with the printer, in drawer 2 8.
23. Place the Powder Funnel in an empty Spare Metal container in drawer 3 9.

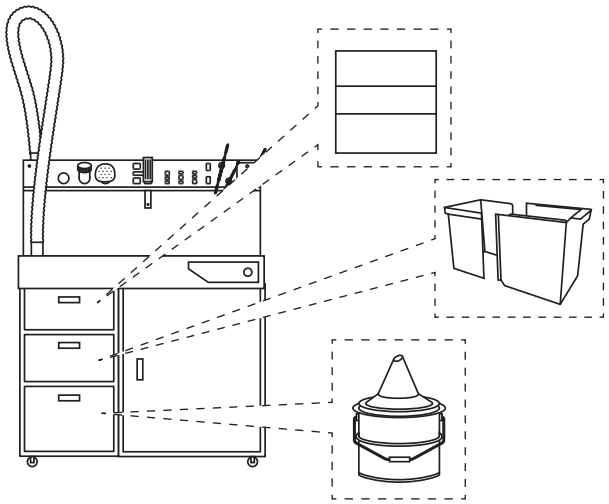


Image 14: Arrangement of accessories in PHS Drawers.

24. Install the Metal shelf for sandblaster or Foldable Tray 13. Adjust the height of your device.

- The markers on the PHS device will help you choose the height and orientation to match the appropriate model of sandblaster from the Sinterit offer.
- There are sets of 3 mounting holes in the Metal shelf, we recommend using the bottom lowest ones (marked) but you can adjust the shelf height for your comfort and use different mounting holes.

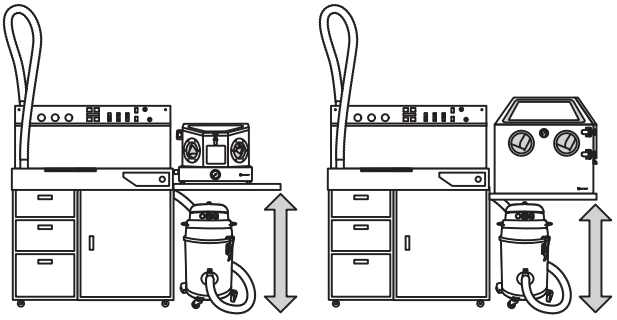
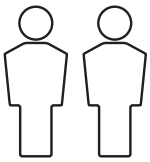
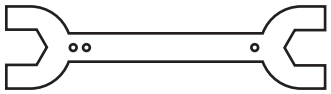


Image 15. Two assembly heights adapted to both Sinterit Sandblaster and Sinterit Sandblaster XL.

For easy installation of the Metal shelf to PHS you will need:



Two persons



Service wrench 17/10 F
(1 point - size 17, 2 points - size 10)

25.a. Screw on the first Metal shelf element. One person holds the element at the right height while the other screw two screws into the dedicated positions. Check the stability of the connection (image 16a).
25.b. Screw on the second part of the Metal shelf, just like the first. Check the stability of the connection (image 16b).
25.c. Screw on the platform connecting the two Metal shelf elements. One person is holding the platform while the other is tightening 4 screws. Check the stability of the connection (image 16c).

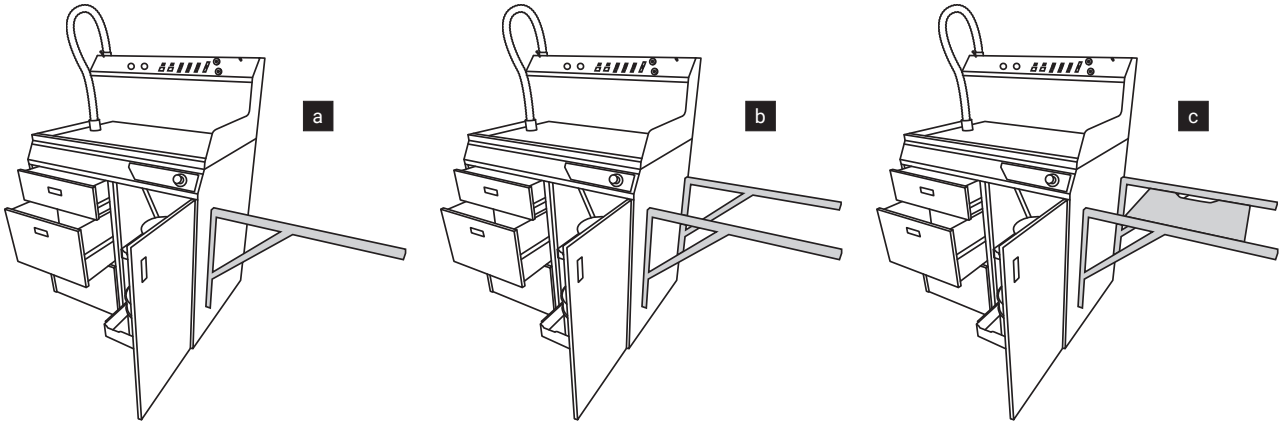


Image 16. Steps in the installation of the Metal shelf for the Sandblaster.

25. Connect the grounding of the vacuum cleaner correctly (see Sinterit ATEX Vacuum Cleaner user manual).
26. Connect the Sinterit ATEX Vacuum Cleaner, using the supplied Antistatic hose, to the Connector for Antistatic hose in the PHS 12 (image 17).
27. Connect the power supply to the vacuum cleaner

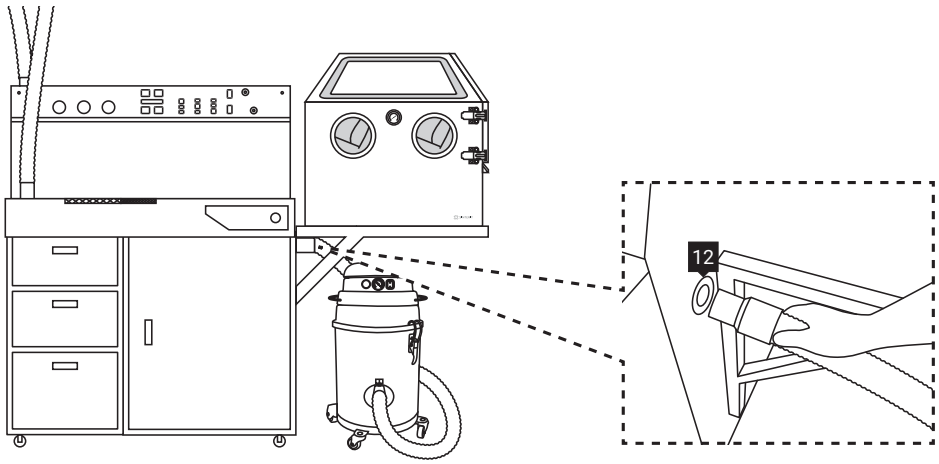


Image 17. Connection of the Sinterit ATEX Vacuum Cleaner to the PHS.

28. Remove the Power cable from the Drawer 9 and plug it into the Power socket 40 of the PHS

WARNING!
Connecting the Power cable to an outlet that does not have a suitable protective grounding connection may result in an electric shock.

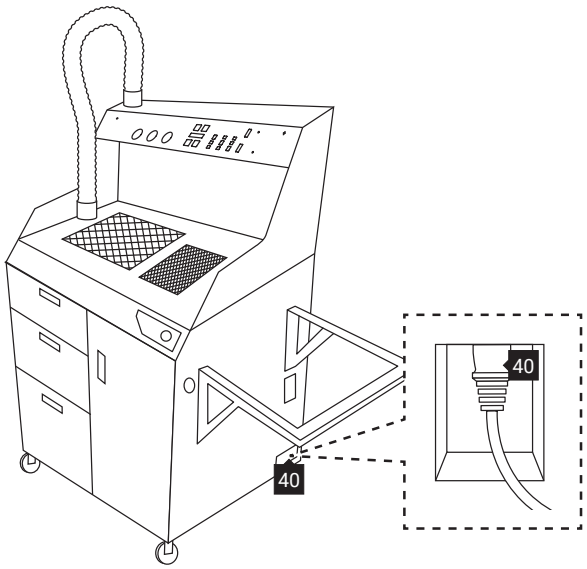


Image 18. Connecting the Power cable to the PHS device.

29. Connect the PHS to the power supply. Look for the warnings in chapter 3, point D „Power supply and grounding system".
30. Unlock the Safety button on the Control panel 19. To unlock it, turn the black collar a quarter turn clockwise so that the button „pops off" (image 19).

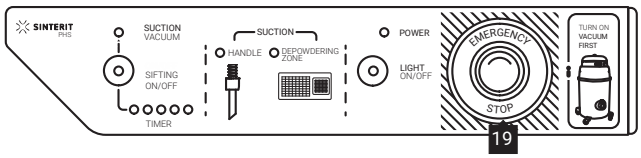


Image 19. Unlocking the Safety button (E-STOP) on the Control panel.

The device is ready to use.

6. Powder transfer in the PHS device

Sinterit Powder Handling Station was created to keep all SLS printing processes in one place. Now it is easier than ever to control the entire printing process for one person.

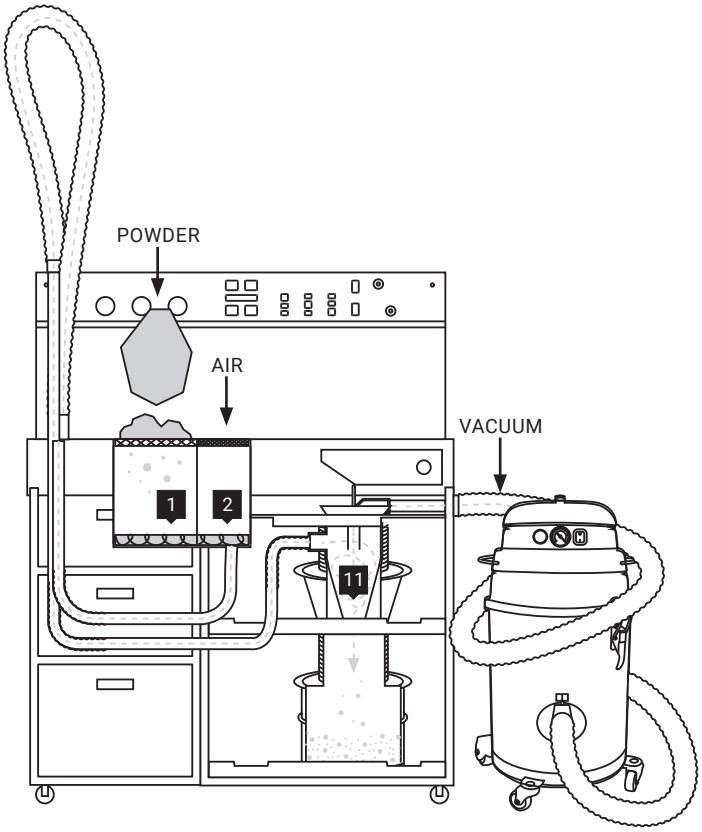
The Sinterit Powder Handling Station is a device for fast, effective, and ergonomic powder management from Sinterit printers. The device allows removing the printout and powder from the printer, cleaning the printout, sifting and mixing the powder so that it is ready for the next loading of the printer for printing.

The device can work only with the Sinterit ATEX Vacuum Cleaner, creating a set with it.

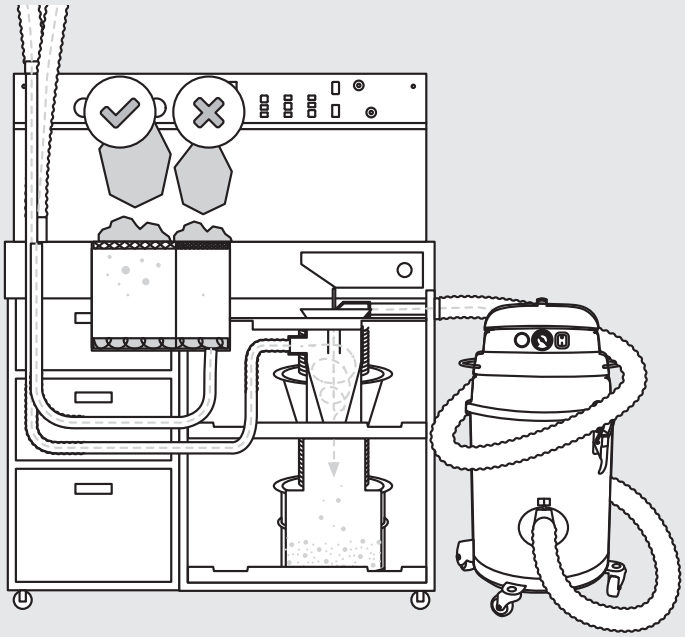
The Sinterit ATEX Vacuum Cleaner is the only source of vacuum which is needed for efficient powder circulation in the PHS machine. The user needs to follow the recommendations below, only then the process is fast and effective and powder losses are minimal.

Description of powder cycle in the PHS device
Below the Worktop there are two chambers with a Powder Feeding Screw mechanism (mechanically transporting the powder) and a vacuum source (transporting the powder pneumatically). The larger chamber 1, under the large grid, is the Powder Chamber, in which there is only the Powder Feeding Screw mechanism. The second, smaller chamber, under the small grid, is the Fine Dust Chamber 2, in which the powder is sucked in, mixed with air, and sent by the internal pipe system to the Sifting module 11].

POWDER CYCLE IN PHS = POWDER + AIR + VACUUM

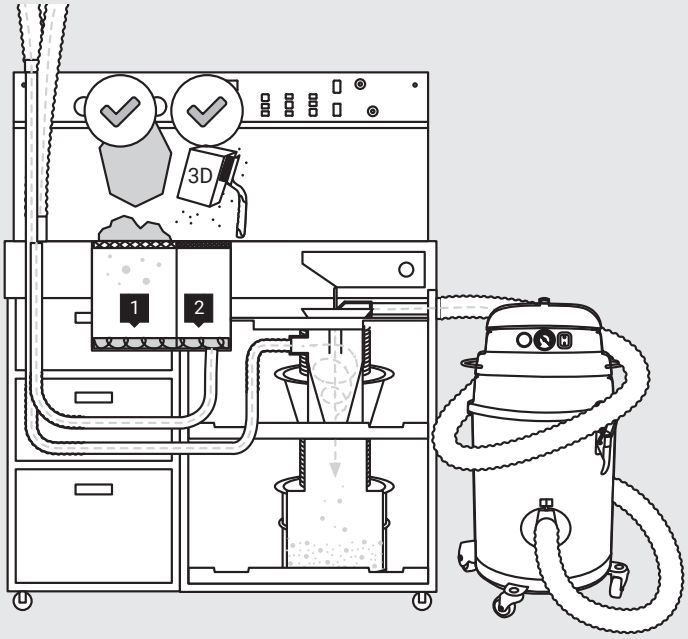


IMPORTANT!
For proper powder circulation in the PHS device, extra air is needed, which is taken from above the Fine Dust Chamber 2. Therefore, when sucking in the powder, do not cover the chamber with anything! When the chamber is blocked, the powder is sucked directly into the vacuum cleaner.



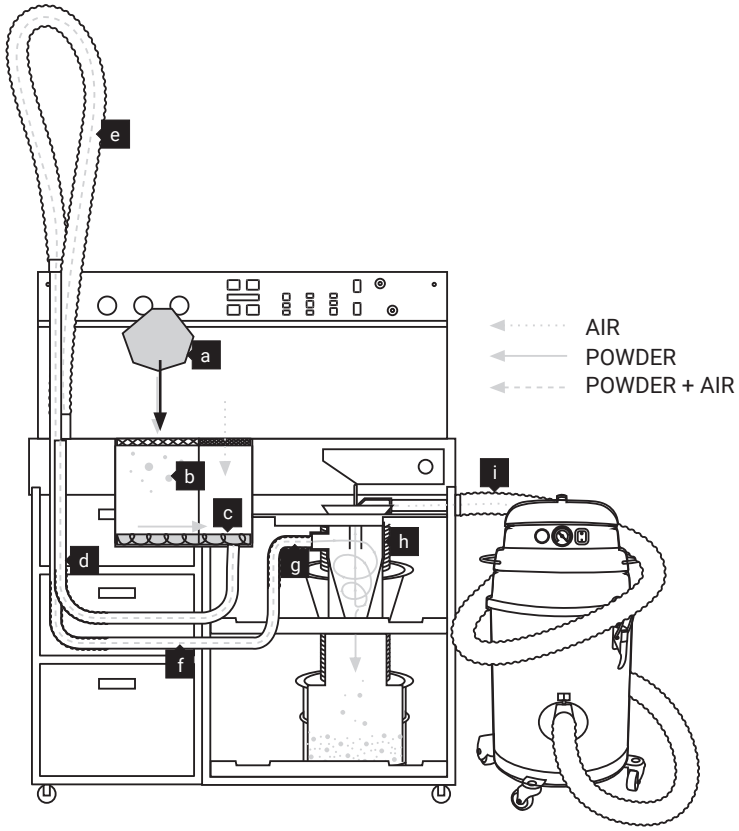
DO NOT COVER THE FINE DUST CHAMBER WHILE THE PHS DEVICE IS WORKING!

A minimum amount of powder above the Fine Dust Chamber is allowed, e.g. for final cleaning of prints



ABOVE THE FINE DUST CHAMBER IT IS ALLOWED TO CLEAN THE PRINTS TAKEN OUT OF THE CAKE.

DETAILED DESCRIPTION OF THE POWDER CYCLE IN THE PHS MACHINE.



a. The powder from the printer is pressed through the Powder Chamber grid.
b. Powder from the Powder Chamber is transported to the Fine Dust Chamber by the Powder Feeding Screw. The Powder Feeding Screw works pulsating (working time and break time are programmed).
c. In the Fine Dust Chamber, the powder is mixed with air and sucked in by the vacuum cleaner to the internal pipe. It is further called a mixture (powder+air).
d. In the internal pipe, the mixture is transported.
e. The mixture runs through the Suction hose (if the Suction hose is removed from the socket, the vacuum supply to the chambers is interrupted and the Powder Feeding Screw stops - the powder is not transported from them to the internal pipe).
f., g. The mixture from the Suction hose is transported further by the internal pipe to the Sifting module.
h. The mixture of powder and air is sifted in the Sifting module. A Powder separator in the Sifting module separates the powder and air. The air is sucked to the vacuum cleaner through an Antistatic hose connected to the PHS and the powder lands on a Vibrating Sieve and then is stored in a Metal container at the bottom of the module.
i. In case of covering/clogging of the Fine Dust Chamber (and lack of air access), the whole powder is sucked into the vacuum cleaner container.

IMPORTANT!
Separation of the mixture is not 100% effective and a fine amount of powder can go into the vacuum cleaner, therefore it is necessary to use a vacuum cleaner with an explosion-proof certificate (ATEX, INTERTEK).

7. Powder recovery process from Sinterit printers



ATTENTION!
- When working with powder, wear individual protection (Protective Gloves, antistatic shoes, face protection: Protective Glasses, Protective Dust Mask).
- When working with a PHS device, hearing protection is required.
- To prevent dust from being inhaled at all times, always wear respiratory protection (dust mask).


1. Unlock the Safety button on the Control panel 19. To unlock it, turn the black collar a quarter turn clockwise so that the button „pops off” (image 20).
2. Press on the LED light switch on the Control panel (LIGHT ON/OFF) 18 (image 20).

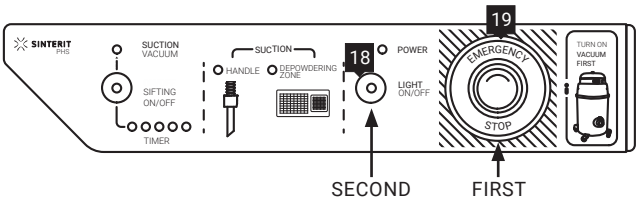


Image 20. Switching on the PHS device.

3. Adjust the Powder Chamber grid 1 to the printout size. If the printout is small or has a lot of small elements, use an Additional Powder Chamber grid with a smaller mesh (it is located with a dedicated place in the door of the Sifting module - image 21).

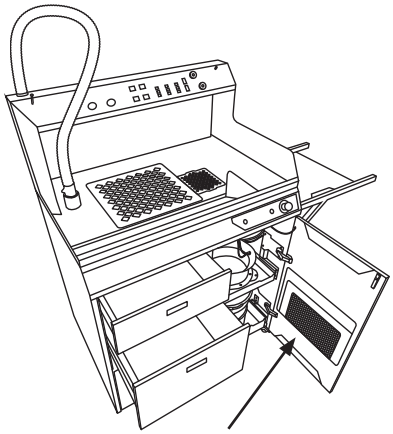


Image 21. Dedicated space for an Additional Powder Chamber grid with a smaller mesh.

4. Remove the IO Box from Drawer 2 8 and carry out the process of extracting the printout from the printer. The complete process of extracting the printout from the Lisa/Lisa PRO printer is described in the manual of the aforementioned printer.
5. Check that the Suction Handle 3 is correctly seated in the socket 4. If it is not fully seated, the Powder Feeding Screw mechanism will not work (image 12).

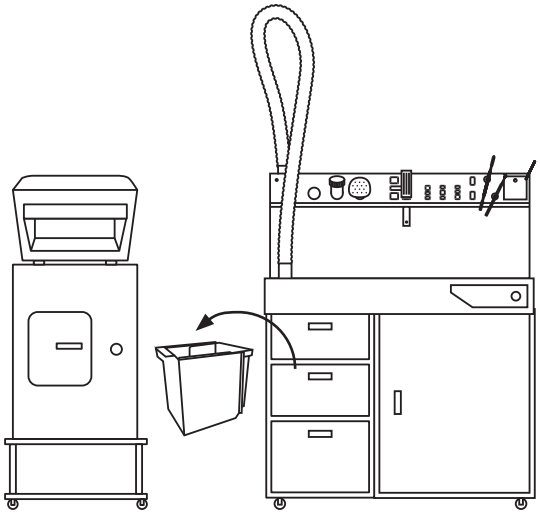


Image 22. Clean the Sinetrit printers using the IO Box.

6. Switch on the vacuum cleaner (from „0" to „1"). The Vacuum Suction sensor indicator 22 should light up (image 23).
7. Press the ON/OFF Sifting button (main button) 14 to turn on the Sifting Module 11 and the Powder Feeding Screw 23 (image 23)
8. On the Control panel, in the SUCTION section, the LED above the DEPOWDERING ZONE 17 should be activated (image 23).

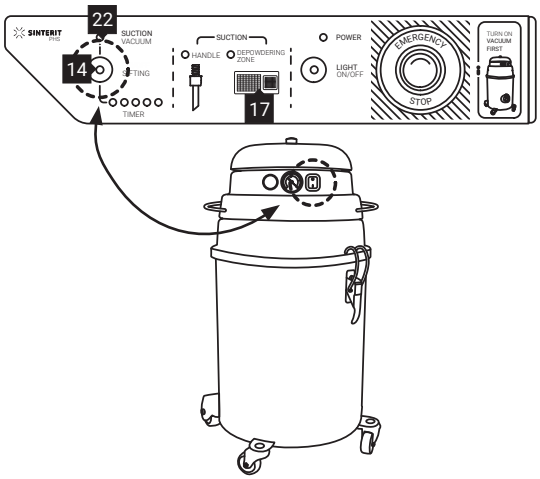


Image 23. Switch on the vacuum cleaner and the Sifting module.

9. When the PHS device works with Lisa/Lisa PRO printers, we recommend choosing the SINTERIT ATEX VACUUM CLEANER option on the printer screen. This is the fastest way to clean the printer from powder (image 24).
10. Gently pour the contents of the Print Bed from the IO Box onto the Powder Chamber grid 1 (image 25).
11. Clean the IO Box using a brush and put it back in Drawer 2 8.

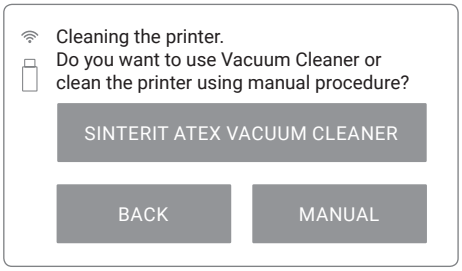


Image 24. When cleaning the printer, we recommend selecting the Sinterit ATEX Vacuum Cleaner path on the printer screen.

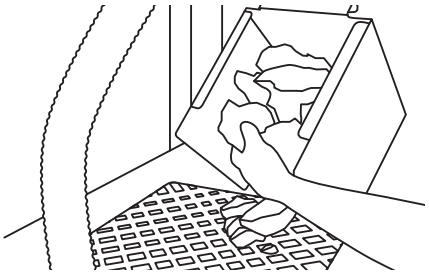


Image 25. Pouring the contents of the IO Box onto the Powder Chamber grid.

12. Starting with the external layers of the cake, crush it and push the powder through the grid. Watch out for prints inside the cake body (image 26).

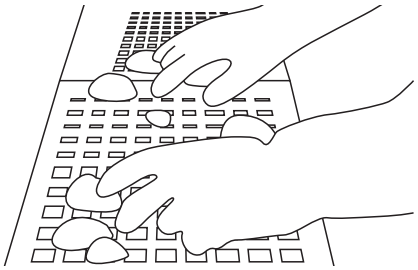


Image 26. Pushing the powder through the Powder Chamber grid.

13. In the end, check the amount of powder in the Powder Chamber. You can lift the grid and, with a Powder Wiper, clean the walls of the chamber from the powder deposited (image 27).

    Do not remove the Powder Feeding Screw guard 22 inside the chamber!

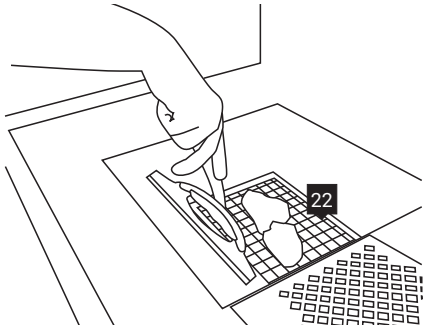


Image 27. Cleaning the Powder Chamber walls from embedded powder.

14. The overflow of powder (or when the powder is solidified and does not sieve) and collected on the Powder Feeding Screw guard 22 can be pressed into the chamber with the Trowel (image 28). Only the powder below the guard will be transported and sucked in.
15. Remember to put the grid back on the Powder Chamber 1.

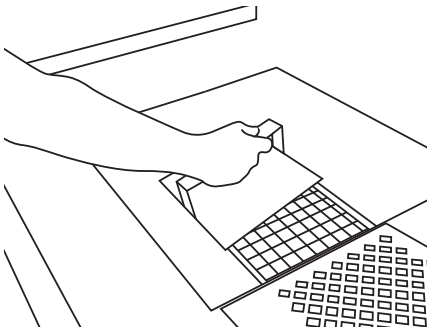


Image. 28. Use the Trowel to push the powder through the Powder Feeding Screw guard.

16. The extracted prints should be cleaned above the Fine Dust Chamber grid 1 with brushes, stainless steel probes, and spatulas, and placed on the Worktop (or on the Foldable Tray on the right - if there is no sandblaster placed there) (image 29).

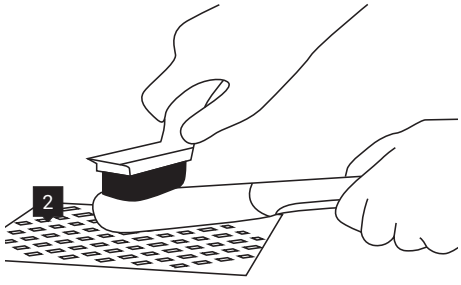


Image 29. Thorough cleaning of prints above the Fine Dust Chamber.

17. Powder located in Overflow Bin from the printer should be poured on the Powder Chamber grid 1.

ATTENTION!
Do not pour the powder from Overflow Bin into the Fine Dusting Powder Chamber 2! When the machine is in operation, this chamber must always have access to air for the entire system to function properly. It is allowed to clean the prints above it.

18. Collect all remaining powder from the Worktop with a spatula or Powder Wiper and transfer it to the Powder Chamber grid 1. Make sure that the powder is not on the grid of the Fine Dust Chamber 2.
19. To remove the remaining powder from the printer's Print Chamber, use a Suction hose 3.

19.a. Remove the Suction Handle from the socket 16. The Powder Feeding Screw 23 should be stopped and the LED above HANDLE 16 on the Control panel should light up.

19.b. Select the nozzle for the type of task (image 30). We recommend a PVC Brush K to clean the Printing Chamber. Do not use the Suction hose without the nozzle attached! - This may cause damage/scratches on the cleaned surfaces

- H General purpose nozzle,
- I Powder suction nozzle,
- J Gap nozzle,
- K PVC brush.

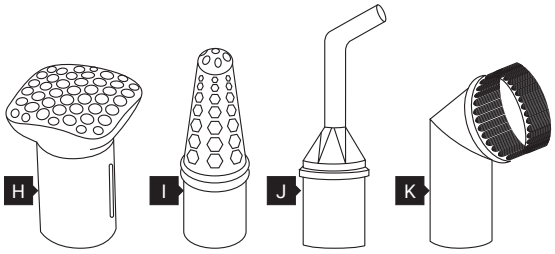


Image 30. Insert a suitable nozzle into the Suction Handle according to the task.

20. Holding the Suction hose above the surface of the powder, remove it from the Print Chamber and the housing of the printer (image 31).
21. The Suction hose can also collect all remaining powder from the PHS Worktop if any (image 32).

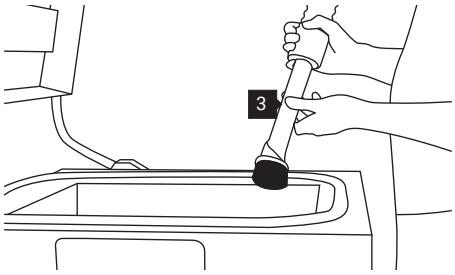


Image 31. Clean the Print Chamber of the printer from the remaining powder.

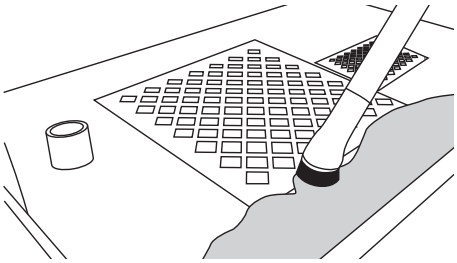


Image 32. Clean the PHS Worktop from any remaining powder.

22. When the cleaning is finished, disconnect and put the nozzle in Toolboard also insert the Suction handle 3 into the socket 4. After this operation, the Powder Feeding Screw 23 will be restarted and the powder that has been in the chamber will be transported to the Sifting module 11.
23. The Sifting module 11 will work when a vacuum is detected in the system. When the vacuum cleaner is switched off by the user, the Sifting module 11 and the Sifting module timer 15 will continue to operate for about 20 minutes (LEDs show the remaining time - image 33).

IMPORTANT!
Turning off the vacuum cleaner will stop the Powder Feeding Screw 23. If there is still powder in the chamber, it will not be sent to the Sifting module 11 due to the inactive Powder Feeding Screw.

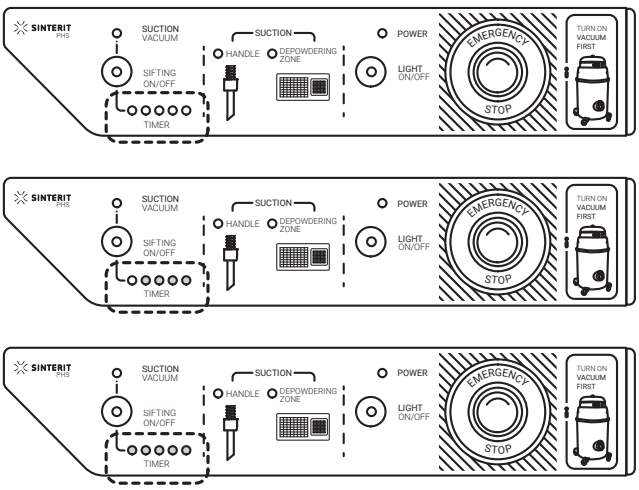


Image 33. The LEDs on the Control panel show the remaining time of powder sifting after switching off the vacuum cleaner.

24. If the whole powder has been sifted (you cannot see it in the Powder Chamber and on the Sieve), you can turn off the Sifting module 11 faster by pressing the SIFTING ON/OFF button 14 on the Control panel.
- If the powder is still in the Powder Feeding Screw 23, you should turn on the vacuum cleaner and wait for emptying the Powder Chamber by the Powder Feeding Screw 23 and then switch off the vacuum cleaner.
- If the time has ended and the powder is still in the Powder Feeding Screw 23, you can turn the sifting on again by pressing the SIFTING ON/OFF button.
- Opening the Sifting module door switches off the mechanism 23, and the Sifting module 11 stops working. Closing the door does not automatically turn on the Sifting module again (the SIFTING ON/OFF button must be turned on again if necessary).

25. For checking whether the whole powder has been sifted:

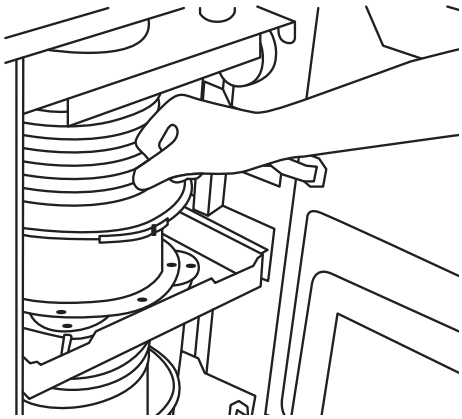
25.a. Open the door of the Sifting module 11 and tapping the flexible tube of the sieve 28 so that the powder from the walls falls on the Vibrating Sieve 30 (image 34a).

25.b. Remove the sieve locking pin and unfasten the clamping ring 29 (image 34b).

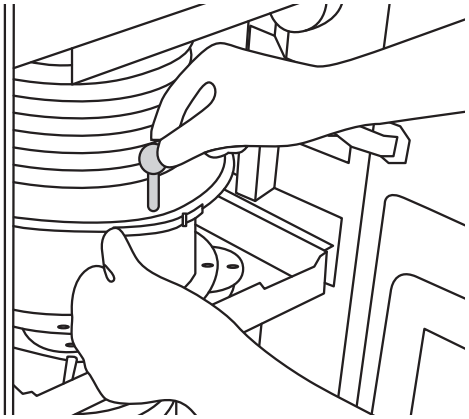
25.c. Lift and attach the Flexible tube with the flange 28 to the magnetic holders of the sieve flange 27. Put a clamping ring on the flange so that it does not fall on the sieve 30 (image 34c).

25.d. Check whether there is still any powder in the sieve (image 34d).

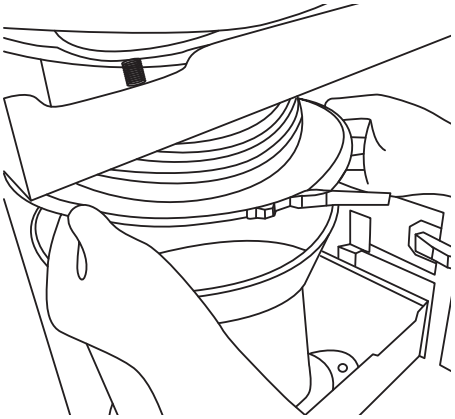
25.e. If the powder is still in the sieve 30, lower the Flexible tube with the sieve flange 28, put on the clamping ring 29, lock it with a locking pin and close the door. Switch on the sifting with the SIFTING ON/OFF button.



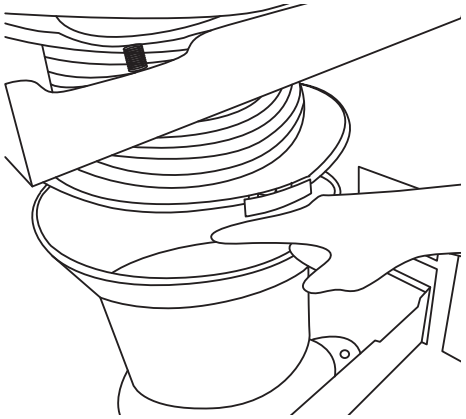
a. Tapping the sieve flexible tube to remove from the powder.



b. Remove the pin and unfasten the clamping ring.



c. Attach the flange of the sieve to the magnetic holders.



d. Check if there is powder in the sieve.

8. Powder emptying and cleaning process of the PHS device

1. After the sifting process is complete, open the door of the Sifting module and tapping the flexible tube of the Metal container 34.
2. Remove the locking pin and unfasten the Clamping ring on the Metal container 35 (image 35).
3. Lift and attach the Flexible tube with the flange 34 to the magnetic holders of the Metal container flange 33 (image 35). Put a clamping ring on the flange so that it does not fall on the Metal container 36.

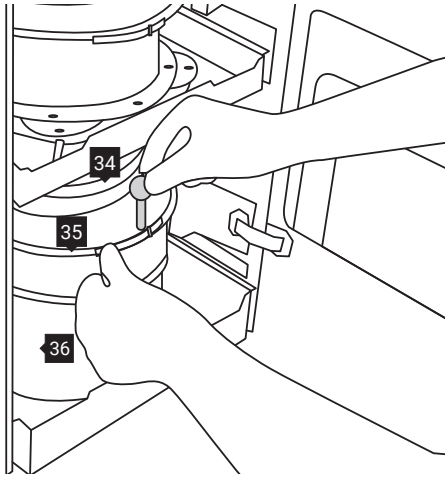


Image 35. Remove the pin and unfasten the clamping ring on the Metal container.

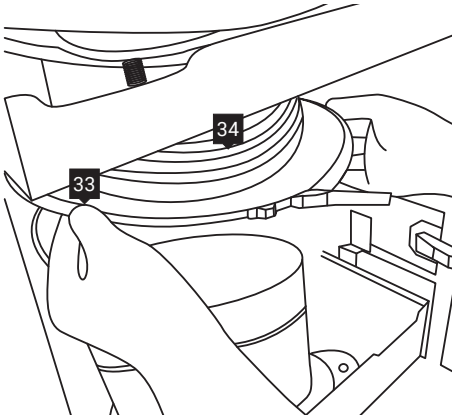


Image 36. Attach the flange of the Metal container to the magnetic holders.

4. Release the Drawer lock 38 and pull out the drawer with the Metal container 37 (image 37).
5. Remove the Metal container 36 with sifted powder from the pull-out drawer 37 (image 38).

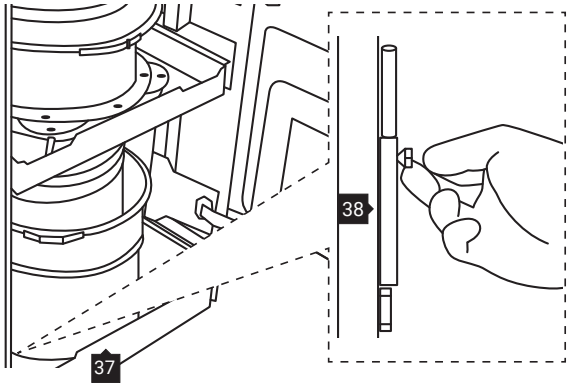


Image 37. Unlocking the drawer of the Metal container.

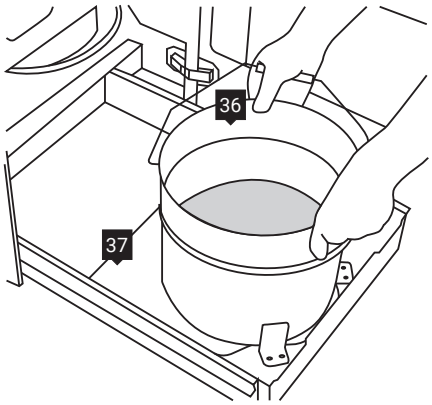


Image 38. Removing the Metal container with sifted powder from a drawer.

6. Slide the drawer 37 with the new, empty container back into place (make sure the handle of the container is correctly positioned) and lock the drawer with the drawer lock 38.
7. Lower the Flexible tube with the container flange 34, put on the clamping ring 35, lock it with a locking pin.
8. Close the door of the Sifting module.
9. The device is ready for reuse.

10. When you finished work, and if you do not plan to continue using the PHS device, press the E-STOP Safety button 19, to turn PHS OFF. To make sure that the device has a power cut-off when you are not planning to use it for a longer period of time unplug power cable from the socket (image 39).

Image 39. Press the E-STOP button when you no longer plan to use PHS.

9. POWDER REFRESHMENT PROCESS

NEW PRINTING POWDER =
ADDING FRESH POWDER TO THE USED ONE + MIXING

A. STEP ONE - ADDING FRESH POWDER TO THE USED POWDER FROM PRINTER

Method 1

1. Prepare a portion of Fresh Powder according to the information provided on the printer screen or in the Sinterit Studio report.
2. When the sifting process is finished, remove the Metal container 36 from the PHS device with the used, sifted powder (remember to insert a new, empty container).
3. Add Fresh Powder to the Used Powder in the Metal container. Close tightly using the lid and clamping ring.
4. Shake the container for at minimum 15 seconds so that both powders are pre-mixed. We will have a Pre-Print Ready Powder, which should be mixed in the PHS.
5. Before opening the container, wait a while for the powder to settle.

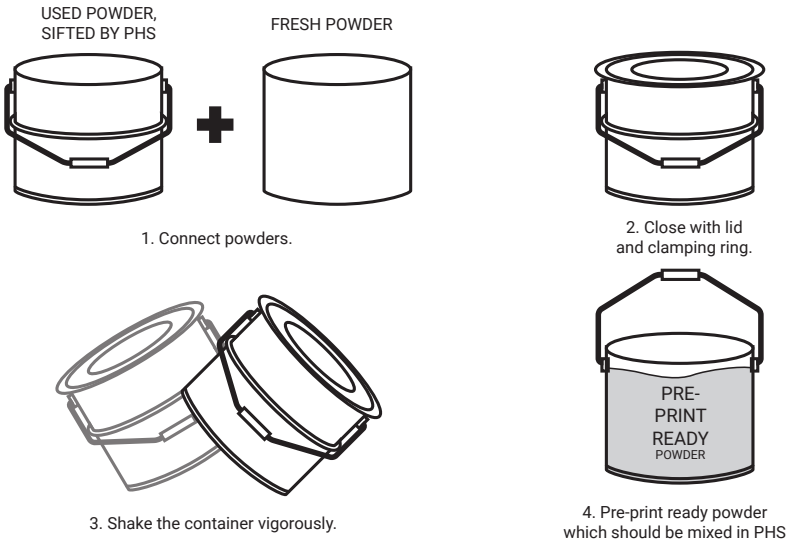


Image 40. Connecting the powders together - method 1 (recommended).

Method 2

1. Prepare a portion of Fresh Powder according to the information provided on the printer screen or in the Sinterit Studio report.
2. Add Fresh Powder to that used from the printer (Used Powder) when it is on the Powder Chamber grid 1 (during the process of taking out the printout and cleaning the printer).
3. When the sifting process is completed, a new and used powder (Fresh Powder + Used Powder) is pre-mixed in the Metal container 36.
4. Remove the Metal container with powder from the Metal container drawer 37 and replace it with the spare empty Metal container from Drawer 3.
5. Connect a spare Metal container to the rest of the Sifting module 11.

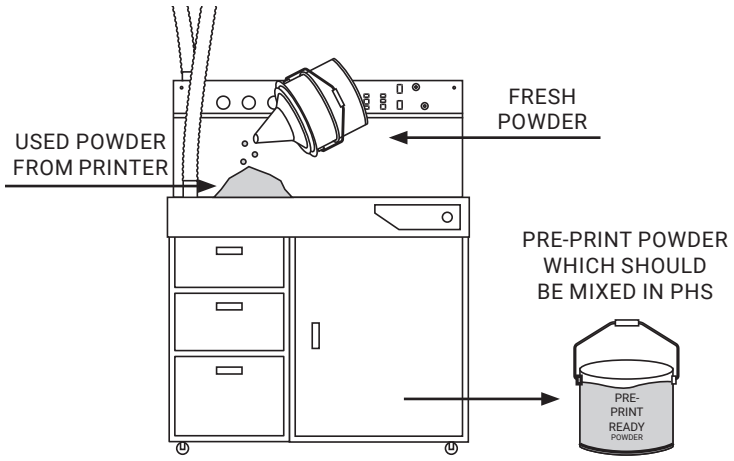
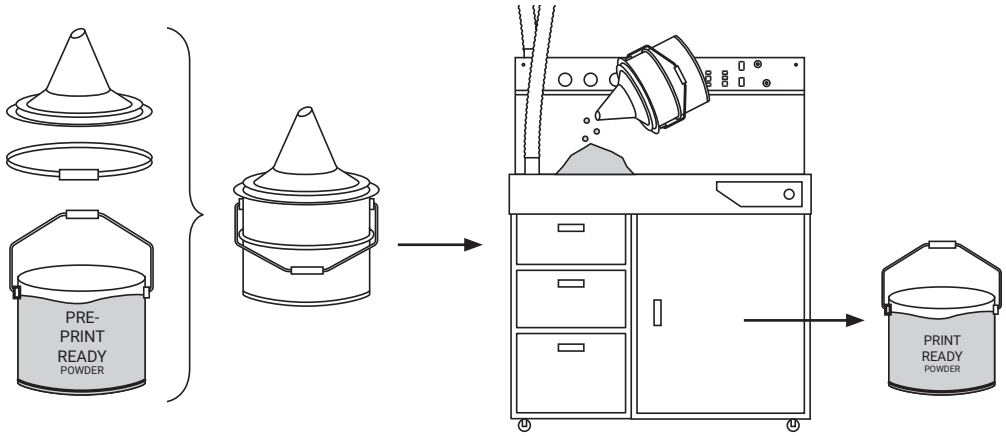


Image 41. Connecting the powders together - method 2.

B. STEP TWO - MIXING OF POWDER (HOMOGENISATION)

To ensure that both types of powders mix thoroughly (both in the first and second method), we recommend sieving them 2-3 times to obtain a homogeneous blend.

1. Take out from Drawer 3 and place the Funnel on the Metal container. Remember to put a clamping ring between the Funnel and the Metal Container.
2. Turn on the vacuum cleaner (from „0" to „1"). Vacuum Suction sensor indicator 22 should light up.
3. Press the ON/OFF Sifting button 14 to turn on the Sifting Module 11 and the Powder Feeding Screw 23.
4. On the Control panel, in the SUCTION section, the LED above the DEPOWDERING ZONE 17 should be activated.
5. Gently pour the entire content of the Metal container onto the Powder Chamber grid 1. Remember not to pour the powder on the grid of the Fine Dust Chamber 2 - there must be access to the air!
6. After emptying the Powder Chamber and sifting the powder, remove the Metal container from the Sifting module and put a new one in its place.
7. To ensure homogeneous mixing of the powders, repeat steps 1-6 at least once more.
8. The newly created powder (Print Ready Powder) is mixed and ready to use in the Sinterit Lisa/Lisa PRO printer.



1. CONNECT METAL CONTAINER WITH POWDER TO THE FUNNEL

2. POUR THE POWDER INTO CHAMBER TO MIX IT BY THE PHS SYSTEM

Image. 42. Process of mixing of both powders (Pre-Print Ready) - powder homogenization.

10. Maintenance work

WARNING!
Before starting any repair or maintenance work, please read the safety information in section 2.F. „Safety during repair and maintenance”.

ATTENTION!
- When working with powder, wear individual protection (Protective Gloves, antistatic shoes, face protection: Protective Glasses, Protective Dust Mask).
- When working with a PHS device, hearing protection is required.
- To prevent dust from being inhaled at all times, always wear respiratory protection (dust mask).

A. CHECKING THE CONDITION OF THE SIEVE AND REMOVING DIRT FROM IT

1. Start working only with the vacuum cleaner switched off.
2. Open the door of the Sifting module 11 and tapping the flexible tube of the sieve 28 so that the powder from the walls falls on the Vibrating Sieve 30 (image 43).
3. Remove the sieve locking pin and unfasten the clamping ring 29 (image 44)

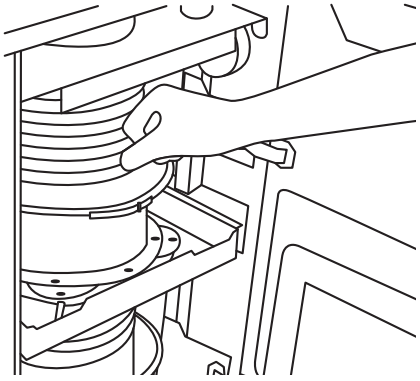


Image. 43. Tapping the flexible tube to remove from the powder.

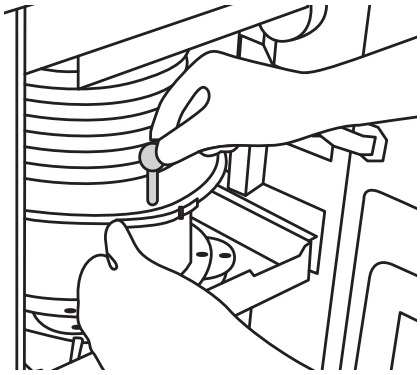


Image. 44. Remove the pin and unfasten the clamping ring.

4. Lift and attach the sieve Flexible tube with the flange 28 to the magnetic holders of the Sieve flange 27. Put a clamping ring on the flange so that it does not fall on the sieve 30 (image 45).
5. Release the drawer locks of the sieve 32 and Metal container 38.

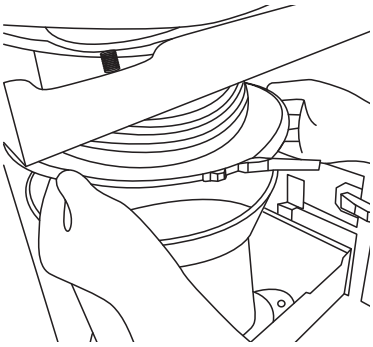


Image 45. Attach the flange of the sieve to the magnetic holders.

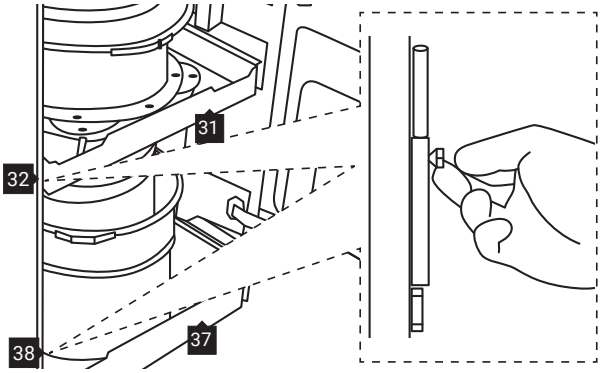


Image 46. Unlock the locks of drawers: the sieve and the Metal container.

6. Pull out the Sifting module 11 - both drawers 31 and 37 at the same time (image 47).
7. Remove the Antistatic hose from the connector for the Antistatic hose in PHS 12 (image 48).

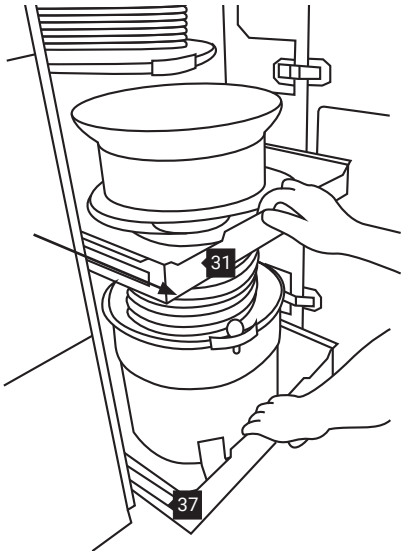


Image 47. Pull out both drawers with the Sifting module.

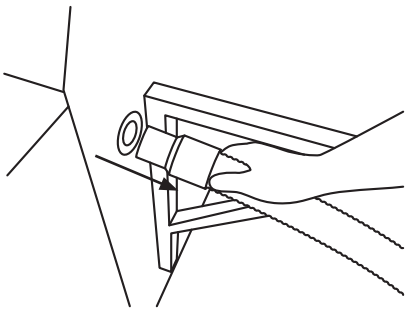


Image 48. Remove the Antistatic hose from the PHS connector for the Antistatic hose.

8. Connect a PVC brush to the pulled end of the Antistatic hose.
9. Check that the grounding of your ATEX Vacuum Cleaner is properly installed.
10. Turn on the vacuum cleaner and clean the sieve 30 (image 49) and the sieve drawer. Treat the contents of the vacuum cleaner as waste for disposal.

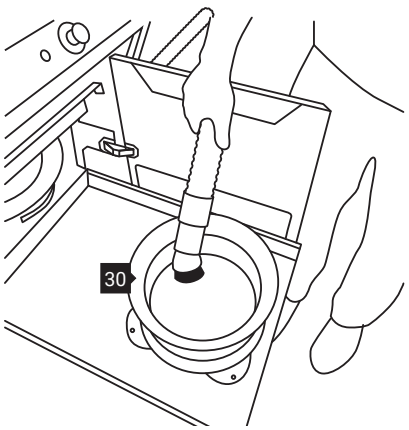


Image 49. Clean the sieve from residual powder.

11. When you have finished vacuuming, turn off the vacuum cleaner and remove the PVC brush from the Antistatic hose.
12. Connect the Antistatic hose back to the connector for the Antistatic hose in the PHS 12 (image 50).

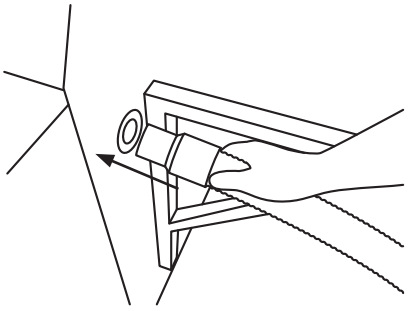


Image 50. Insert the Antistatic hose into the PHS.

13. Slide the Sifting module back into the device and lock both drawers 31, 37 (image 51).
14. Lower the Flexible tube with the sieve flange 28 and connect with sieve 30, put on the clamping ring 29, and lock it with a locking pin.
15. Close the door of the Sifting module.

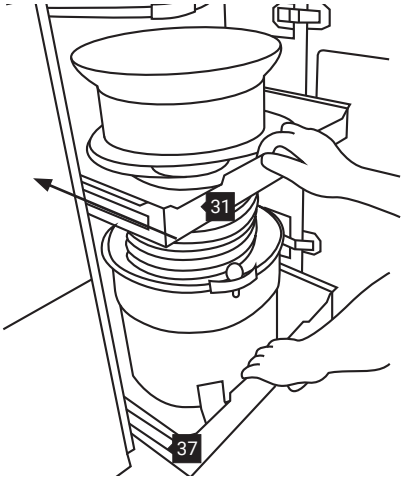


Image 51. Insert both drawers with the Sifting module to the PHS inside.

B. CLEANING THE POWDER FEEDING SCREW

For these activities you will need:
Allen key 5 mm G (from the box with additional accessories)

1. Operate only when the power is off! Also, switch on the E-STOP button 19 on the Control Panel to cut off power from the internal components of the machine.
2. Remove both grids from the Chambers 1, 2. Pull out first the grid of the Powder Chamber and then, by lifting in the dedicated place, the grid from the Fine Dust Chamber (image 52).

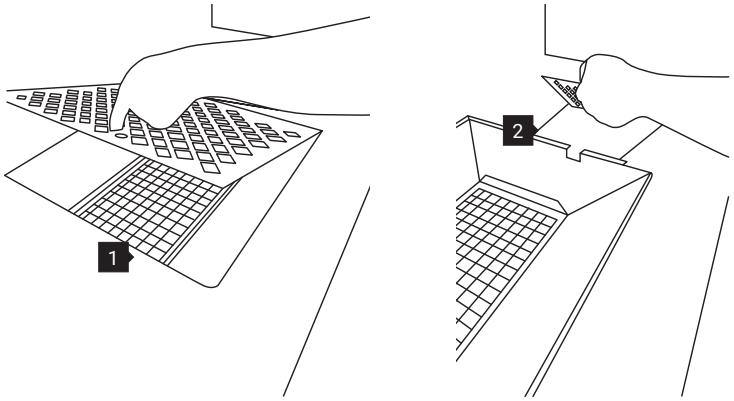


Image 52. Lifting of grids from PHS Powder Chambers.

3. Using an Allen key 5 mm, unscrew the four screws of the Powder Feeding Screw guard in the Powder Chamber 22 and put it aside (image 53).
4. Use an Allen key to unscrew the one screw of the Powder Feeding Screw guard in the Fine Dust Chamber 24 and put it aside (image 53).

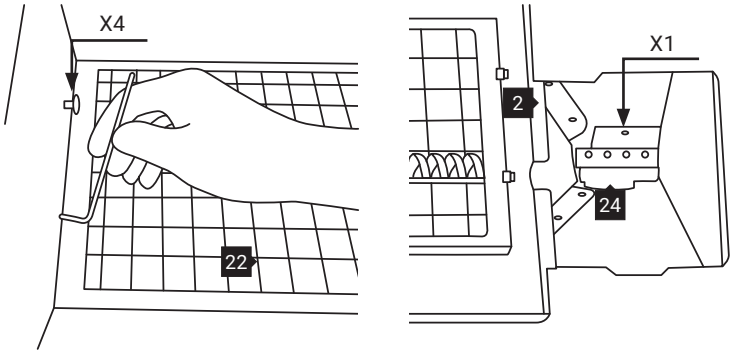


Image 53. Unscrewing the Powder Feeding Screw guards in the chambers.

5. Remove the Antistatic hose from the connector for the Antistatic hose in PHS 12 (image 48).
6. Connect a PVC brush to the pulled end of the Antistatic hose.
7. Check that the grounding of your ATEX Vacuum Cleaner is properly installed.
8. Turn on the vacuum cleaner and clean the Powder Feeding Screw 23 and both chambers inside 1, 2. Treat the contents of the vacuum cleaner as waste for disposal (image 54).

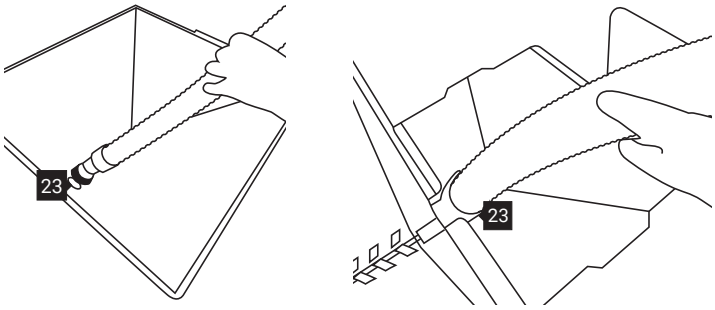
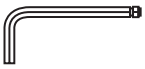


Image 54. Cleaning the Powder Feeding Screw with a vacuum cleaner.

9. After the work is finished, install the Powder Feeding guards back in the Chambers 22, 24.
10. Re-install both grids on the Chambers 1, 2.
11. Connect the Antistatic hose back to the connector for the Antistatic hose in the PHS 12.
12. Reconnect the power supply to the PHS.

C. CLEANING THE INTERIOR OF THE PHS DEVICE

For these activities you will need:
Allen key 5 mm G (from the box with additional accessories)



1. Operate only when the power is off! Also, switch on the E-STOP button 19 on the Control Panel to cut off power from the internal components of the machine.
2. Using an Allen key 5 mm, unscrew the back service panels. Each panel holds 2 screws (image 55) on top. Put the panels in a safe place.

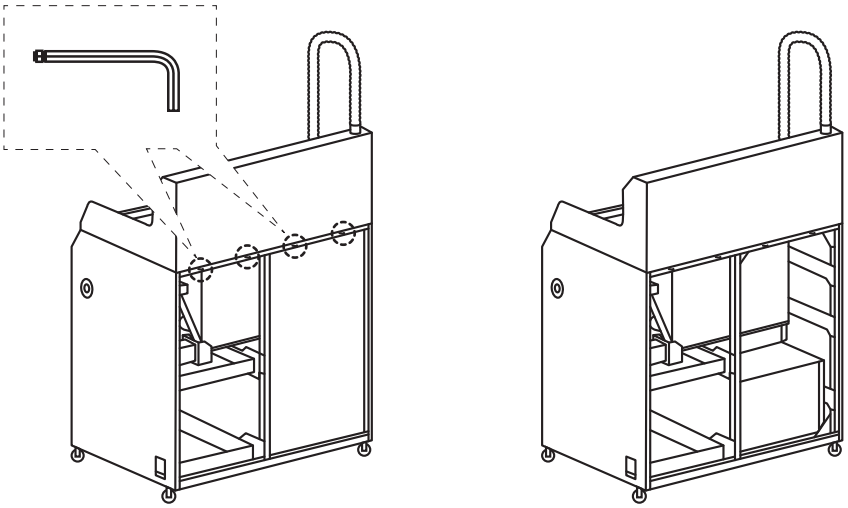


Image 55. Location of the screws holding the back service panels.

3. Remove the Antistatic hose from the connector for the Antistatic hose in PHS 12 (image 48).
4. Connect a PVC brush to the pulled end of the Antistatic hose.
5. Check that the grounding of your ATEX Vacuum Cleaner is properly installed.
6. Turn on the vacuum cleaner and clean the interior of the device. When vacuuming, pay attention to the electrical installation and grounding. Treat the contents of the vacuum cleaner as waste for disposal.
7. When you have finished vacuuming, turn off the vacuum cleaner and remove the PVC brush from the Antistatic hose.
8. Connect the Antistatic hose back to the connector for the Antistatic hose in the PHS 12.
9. Mount the back service panels and screw them back in place with screws.
10. Reconnect the power supply to the PHS.

D. REPLACEMENT OF THE FUSE

For these activities you will need:
Allen key 5 mm G (from the box with additional accessories)

1. Operate only when the power is off! Also, switch on the E-STOP button 19 on the Control Panel to cut off power from the internal components of the machine.
2. Using an Allen key 5 mm, unscrew the left-back service panel. Put the panel in a safe place (image 56).

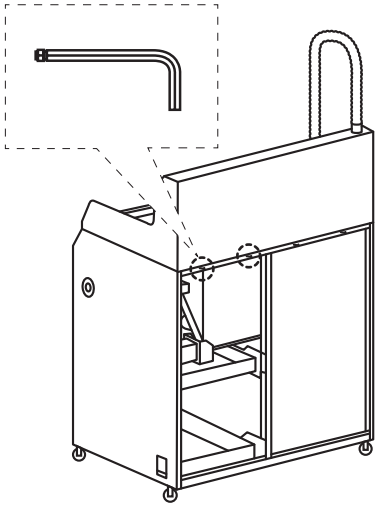


Image 56. Unscrew the top two screws holding the left-back service panel.

3. Find the Fuse socket (image 57).
4. Remove the Fuse housing together with the used Fuse (image 58).
5. Replace the used 6A Fuse with a new one (image 58).
6. Dispose of the used fuse by your local waste management policy.

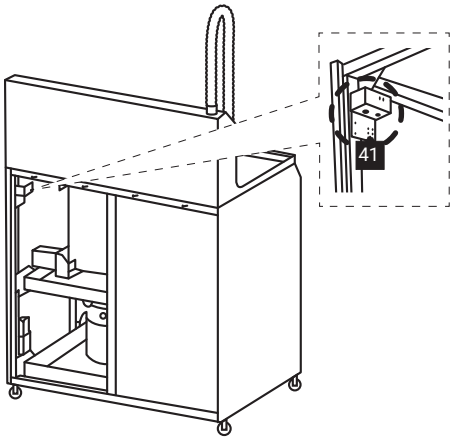


Image 57. Location of the Fuse.

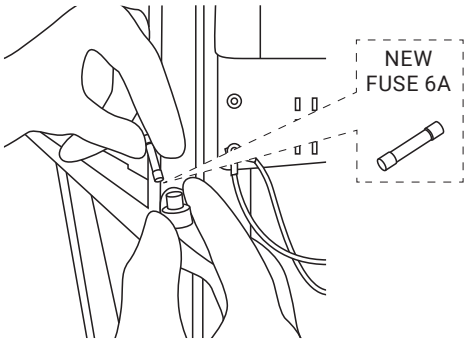


Image 58. Replacing the Fuse with a new one.

7. Reinstall the Fuse housing in the PHS.
8. Mount the left-back service panel and secure it with screws.
9. Reconnect the power supply to the PHS.

11. General legal information

Where this manual refers to Sinterit or the Company, this means Sinterit sp. z o.o. with its legal seat in Krakow, registered by the District Court for Kraków-Śródmieście in Krakow, XI Commercial Division of the National Court Register under number: 535095, NIP (tax number): 6793106416, with the share capital for a date of publication of this manual of PLN 102,050 (say: one hundred and two thousand and fifty).

This document contains material protected under copyright and industrial property laws. This means that the document may not be, including but not limited to, reproduced or modified without the consent of Sinterit.

This manual serves to assist in the correct use of the device, perform basic maintenance, and, if necessary, to solve simple problems, allowing to maintain the device in a good condition.

This manual contains content exclusively for the provision of information and the use by individuals professionally trained and engaged in the operation and maintenance of the equipment described below.

The information contained in this document is intended for use only with the product made by Sinterit and called Sinterit Powder Handling Station (PHS).

Due to the constant development of Sinterit's products the information contained in this manual, specifications, and markings are subject to change without notice.

12. Disclaimer

Sinterit is not responsible for any use of this information in relation to other products.

Although every effort has been taken to provide accurate information about the product, Sinterit assumes no responsibility for any incorrect information or omission. Sinterit reserves the right to correct any errors and disclaims any liability in situations resulting from these errors.

Further limitations or exclusions of Sinterit`s liability may result from the applicable laws or agreements entered into with the buyer of the products.

13. Trademarks

Sinterit logo is a registered trademark of the Company.

14. Terms of warranty

The terms of the warranty are set forth in the agreement between the buyer and the Company.

In case of a purchase made in the Sinterit online shop, the terms of the guarantee are specified in the Terms and Conditions, subject to the acceptance of the Customer before placing an order.
In case of purchases made outside the Sinterit online store, the warranty terms may be specified in the offer, or in another form chosen by the Company to provide the customer with relevant information before making a purchase decision.
Unless otherwise stated in the documents referred above or specifically agreed, the Sinterit's warranty does not cover, including but not limited to:

- damages, abnormalities or malfunction caused by a client or any third party;
- damages, abnormalities or malfunction caused by inappropriate use, effects of force, insufficient or inappropriate maintenance, abnormal operating conditions, incorrect installation or inadequate servicing;
- damages, abnormalities or malfunction caused by dismantling, alterations, tuning or other changes of the product by a client or any third party made without the written consent of Sinterit;
- damages, abnormalities or malfunction caused by or related to use of consumables other than those being supplied by Sinterit;
- damages, abnormalities or malfunction caused by or related to use of product against its intended use, instructions/ manuals or safety regulations;
- damages, abnormalities or malfunctions Sinterit is not liable for, according to the applicable law,
- damages exceeding the price paid by the client;
- costs incurred by the client in connection with the conclusion of the product sale agreement as well as storage or insurance of products;
- damages of property caused by the defect of the product;
- loss of profits;
- incidental, indirect, special, consequential or punitive damages.

The warranty does not cover any cleaning of working parts.

The abovementioned exclusions of warranty apply as well to any other liability of Sinterit, to the widest extent permitted by the applicable law.

Terms of liability of sellers other than Sinterit such as distributors or resellers shall be regulated by them in separate documents.

15. Technical support

The latest information, technical support, and versions of the manual are available by contacting us through:
- e-mail: www.sinterit.com/support-page
- telefon: +48 570 702 886

The list of distributors and technical support in specific countries can be found at www.sinterit.com/contact.

16. Residual risk

Even when the product is used as intended and prescribed, it is still impossible to eliminate certain residual risk factors. The following hazards may arise in use and the operator should pay special attention or use additional equipment to avoid the following:

A. Exposure to loss of stability and product overturning may cause bludgeoning or crushing - do not place any load on the area dedicated for additional accessories (except those accessories), pay attention when transporting, installing, operating, or maintaining the product,

B. Exposure to protruding blunt elements may cause bruises and/or stumbling and falling down - pay attention when transporting, installing, operating, or maintaining the product,

C. Exposure to electric shock may cause severe health injuries (in case of using a power supply not specified by the manufacturer*, without internal grounding, and/or connecting the power supply to a socket without an appropriate connection for the protective grounding) - use only dedicated power supply, provided by the manufacturer,

D. Exposure to sharp edges may cause cuts - wear protection gear,

E. Exposure to sharp edges of used tools (metal brushes, probes, spatulas) may cause piercing damage - wear protection glasses and/or protective gear,

F. Exposure to negative pressure through suction nozzles may cause hair or clothing to be sucked into the machine - secure long hair and/or wear protection hat,

G. Exposure to rotating parts may cause hair or clothing to be caught and pulled into the machine - secure long hair and/or wear protection hat,

H. Exposure to noise may cause hearing injury - wear ear protection and/or limit exposure,

I. Exposure to powders may cause discomfort and/or skin irritations - read the safety data sheet, wear protective gear and/or limit exposure,

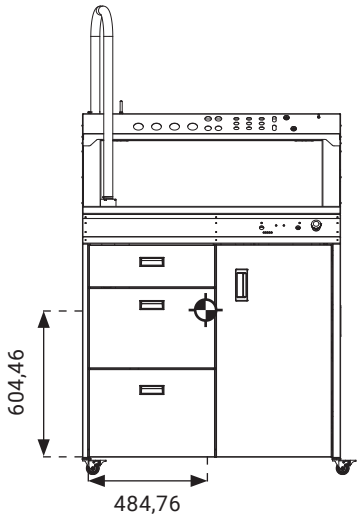
J. Inhalation of powders may cause respiratory irritation - read the safety data sheet, wear a protection mask and/or limit exposure,

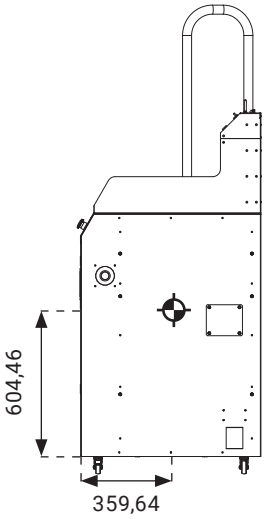
K. Clogged transportation auger - ensure no object (other than the powder) fell through the protective grill, use only dedicated tools, and pay attention when using them

** The manufacturer is not responsible for any internal and/or external defect of the power supply used by the user if it does not come directly from the manufacturer or designated party.*

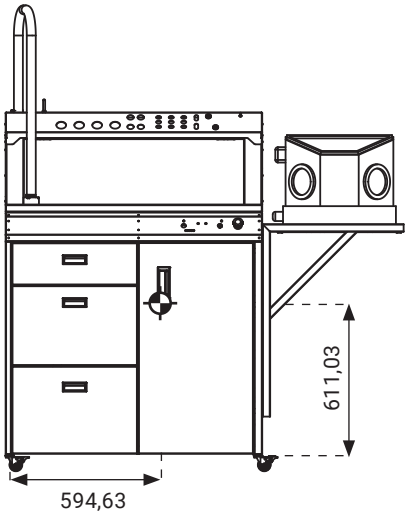
17. Location of machines center of gravity

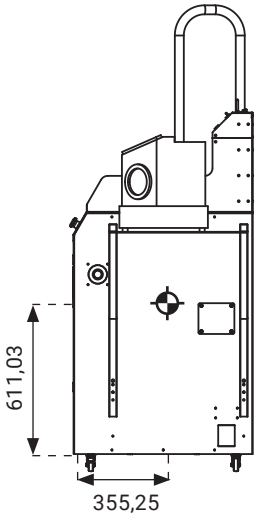
A. PHS DEVICE ITSELF



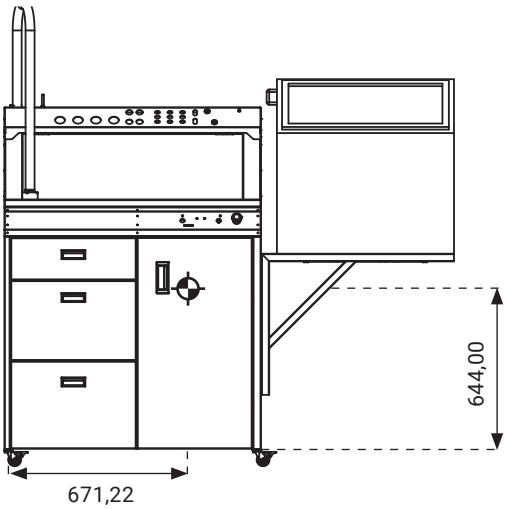


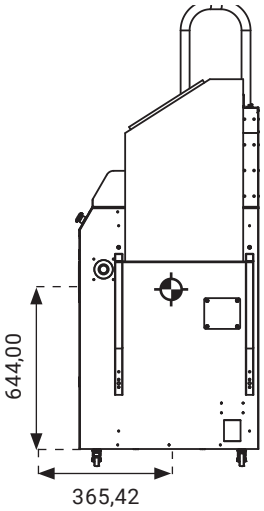
B. PHS DEVICE WITH SINTERIT SANDBLASTER

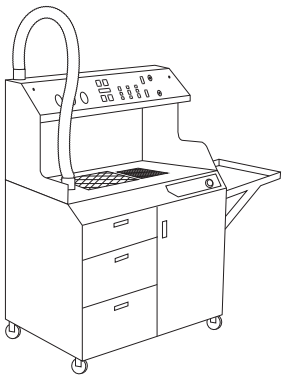




C. PHS DEVICE WITH SINTERIT SANDBLASTER XL







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