

# VHS120

## Instructions for use

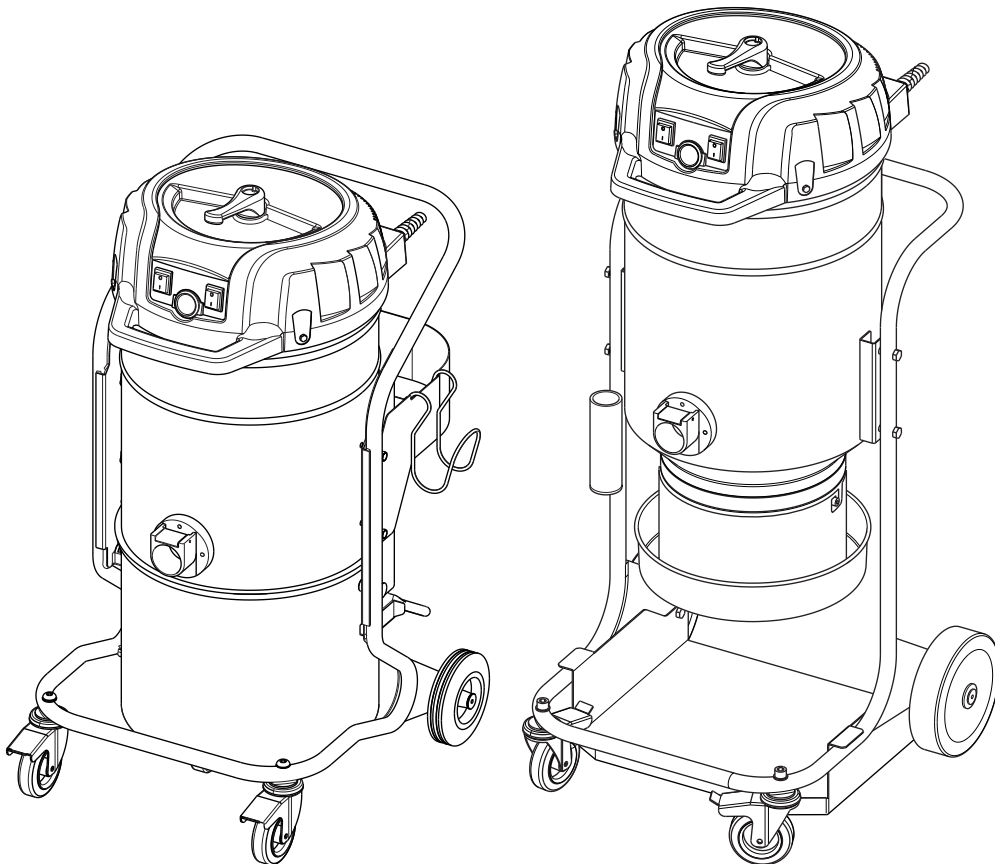
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# Instructions for use

Read the operating instructions and comply with the important safety recommendations identified by the word **CAUTION!**

## Operator's safety



**Before starting the machine, it is absolutely essential to read these operating instructions and to keep them on hand for consultation.**

**The machine can only be used by people who are familiar with the way it works and who have been explicitly authorised and trained for the purpose.**

**Before using the machine, the operators must be informed, instructed and trained on how to work it and for which substances its usage is permitted including the safe method for removing and disposing of the vacuumed material.**



**The use of the machine by people (including children) with limited physical and mental capacities or lacking in experience and knowledge is strictly forbidden, unless they are supervised by a person who is experienced in the use and safe handling of the machine.**

**Children must be supervised to make sure they will not play with the machine.**



**Before using the machine, always check that any hazardous condition has been eliminated and inform the persons in charge about any operational fault.**

**Check that all guards and protections are correctly mounted and that all safety devices are installed and efficient.**

**Repairs must only be carried out when the machine is at a standstill and disconnected from the electricity and air supply mains. Never ever carry out repairs without having first received the necessary authorization.**



**Any changes made by the user without the Manufacturer's explicit authorization shall invalidate the warranty and hold the Manufacturer harmless from any and all liabilities for damages caused by faulty products.**

## General information for using the machine

Use the machine in accordance with the laws in force in the country where it is used.

Besides the operating instructions and the laws in force in the country where the device is used, the technical regulations for ensuring safe and correct operation must also be observed (Legislation concerning environmental and labour safety, i.e. European Union Directive 89/391/EC and successive Directives).

Do not perform any operation that could jeopardize the safety of people, property and the environment.

Comply with the safety indications and prescriptions in this instruction manual.

## Proper uses

This machine is suitable for commercial use, in hotels, schools, hospitals, factories, shops, offices and apartment hotels for example, for hire and in any case for purposes other than normal domestic use.

This machine is suitable for cleaning and vacuuming solid materials in indoor and outdoor environments.

The machine has been designed to be used by one operator at a time.

This machine consists of a vacuum unit, with an upstream filter unit and a container for collecting the vacuumed material.

## Improper Use



**The following use of the device is strictly forbidden:**

- **Outdoors in case of atmospheric precipitation.**
- **When not placed on horizontal level ground.**
- **When the filter unit is not installed.**
- **When the vacuum inlet and/or hose are turned to face parts of the human body.**
- **Use without the cover on the vacuum unit.**
- **When the dust container is not installed.**
- **Use without the guards, protective covers and safety systems installed by the manufacturer.**
- **When the cooling vents are partially or totally clogged.**
- **When the machine is covered with plastic or fabric sheets.**
- **Use with the air outlet partially or totally closed.**



**The following use of the device is strictly forbidden:**

- **When used in narrow areas where there is no fresh air.**
- **When the cable or plug is damaged. If appliance is not working as it should, has been dropped, damaged, left outdoors or dropped into water, return it to an authorized service center.**
- **Vacuating liquids with machine not equipped with specific original stopping systems.**
- **Do not pull or carry by the cord, use the power cord as a handle, do not close a door on cord, or pull cord around sharp edges or corners. Do not run the appliance over the cord. Keep cord away from heated surfaces.**
- **Vacuating the following materials:**
  1. **Burning materials (embers, hot ashes, lit cigarettes, etc.).**
  2. **Naked flames.**
  3. **Combustible gas.**
  4. **Flammable liquids, aggressive fuels (gasoline, solvents, acids, alkaline solutions, etc.).**
  5. **Explosive dust/substances and/or ones liable to ignite in a spontaneous way (such as magnesium or aluminium dusts, etc.).**

**Note: Fraudulent use is not admitted.**

## Versions and variations

### Versions for dust harmful for the health

Vacuum cleaners for dust harmful to health are classified according to different dust classification, in compliance with standard EN 60335-2-69 – Annexe AA:

- **L** (low risk) suitable for separating dust with an exposure limit value of over 1 mg/m<sup>3</sup>, depending on the volume occupied; retains at least 99% of vacuumed particles;
- **M** (medium risk) suitable for separating dust with an exposure limit value not lower than 0.1 mg/m<sup>3</sup>; retains at least 99.9% of vacuumed particles;
- **H** (high risk) for separating all dust with an exposure limit value lower than 0.1 mg/m<sup>3</sup>, depending on the volume occupied, including carcinogenic and pathogenic dusts, such as asbestos; retains at least 99.995% of the vacuumed particles.

[ NOTE ]

- *In the case of dust harmful to health, contact the local health and safety authorities, and observe national regulations in force both during use and disposal.*
- *Radioactive substances are not included in the definition of the type of dust harmful to health described above.*

### HEPA variants

This machine can be equipped with an upstream filter (HEPA). The procedures for servicing and emptying the machine including removing the dust container, must only be performed by authorized personnel wearing protective clothing. Do not use without the complete filter system in place.



**This machine is not suitable for vacuuming hazardous dust.**

- **In the case of dust harmful to health, contact the local health and safety authorities, and observe national regulations in force both during use and disposal.**
- **Radioactive substances are not included in the definition of the type of dust harmful to health described above.**

### General recommendations



**If an emergency situation occurs:**

- **for example, accident - fault - filter breakage - fire - etc.**

**Disconnect the machine from the power supply and ask for assistance from qualified personnel.**

**In case the user comes into contact with the vacuumed product, check the cautions shown on the safety technical sheet of the product, which must be made available from the employer.**

[ NOTE ]

**Check the place of work and substances tolerated for the machine suitable for liquids.**



**The machines must not be used or stored outdoors, or in damp places.**

**Only versions with the level sensor can be used for liquids, if not, they can only be used to vacuum dry materials.**



**Version for liquids.**

**If foam or liquid leaks out of the machine, turn it off immediately and contact qualified personnel for assistance.**

[ NOTE ]

**These devices must not be used in corrosive environment.**



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## Residual Risks



After carefully considering the risks that are present in all machine operating phases, necessary measures were adopted in order to eliminate the risks for the operators, as far as possible, and/or limit or reduce the risks deriving from hazards that cannot be completely eliminated at the source.

During operations and/or maintenance, operators are exposed to certain residual risks which, due to the nature of the operations themselves, cannot be completely eliminated. Therefore the installer is responsible for providing additional information and/or hazard signals based on the location of machine installation and the material that is handled.



### ■ Risks due to electrical hazards during maintenance

 **DANGER** 

*Risk of electrocution if accessing the electrical equipment during maintenance without having deactivated the electrical power supply.*

 **FORBIDDEN** 

*It is forbidden to work on the electric equipment before disconnecting the machine or its parts from the electrical line.*

 **MANDATORY** 

*Have the electrical maintenance operations performed by qualified personnel. Perform the checks on the electric equipment as specified in the manual.*

### ■ Risks to the presence of residual high temperature after stopping the vacuum unit.

During maintenance and cleaning operations, the operator may come into contact while the machine is stopped, with parts of the vacuum unit with surfaces at high temperatures. Specific warning signs placed in strategic points indicate the hazard due to the presence of hot surfaces and the obligation for the user to wear personal protective equipment, in particular protective gloves.

The potentially hot parts (high temperatures) are identified as follows:

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	<b>IT IS MANDATORY TO WEAR GLOVES</b>
	<b>CAUTION DANGEROUS TEMPERATURES</b>

## EC Declaration of conformity

Every machine comes with a EC Declaration of conformity. See fac-simile in fig. 19.

**[ NOTE ]**

*The Declaration of conformity is an important document and should be kept in a safe place to be presented to the Authorities on request.*

# Description of the machine

## Machine Parts and Labels

**Figure 1**

1. Identification plate which includes:  
Model Code, which includes Class (L - M - H), Technical Data (see table on page 6), Serial N<sup>o</sup>., EC Mark, Year of manufacture, Input voltage.
2. Dust container (VHS120 L).  
Longopac<sup>®</sup> bag for collecting vacuumed material (VHS120 M-H).
3. Dust container release lever (VHS120 L).
4. Inlet.
5. Inlet plug (VHS120 M - H).
6. Air outlet.
7. Castor locking lever.
8. Handle.
9. Closing band lever.
10. Safety bolt.
11. Mechanical stop for liquids (VHS120 L).
12. Container for liquids (VHS120 L).
13. Inlet of the container for liquids (VHS120 L).
14. Plug for closing the inlet when the liquid container is installed (VHS120 L).
15. Filtration class label.
16. Warning plate.  
Draws the operator's attention to the fact that the filter must only be shaken when the vacuum cleaner is turned OFF (see also par. "Primary filter shaker").
17. Plug for connecting the vacuum cleaner to an electrical socket.

This machine creates a strong air flow which is drawn in through the inlet and blows out through the outlet.

Before turning on the machine, fit the vacuum hose into the inlet and then fit the required tool on to the end part (refer to the manufacturer's accessory catalogue or Service Centre).

The diameters of the authorized hoses are indicated in the Technical data table.

The machine is equipped with a primary filter which enables it to be used for the majority of applications.

In addition to the primary filter that retains the most common dust, a secondary filter (absolute filter) can be installed.

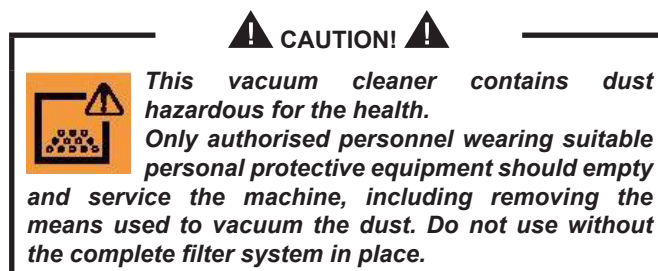
This machine is equipped with an internal baffle plate which subjects the vacuumed substances to a circular centrifugal movement that makes them drop into the container.

**Figure 2**

Vacuum cleaners for dust harmful to health are classified according to different dust classification, in compliance with standard EN 60335-2-69 – Annexe AA:

1. Class **L** label
2. Class **M** label
3. Class **H** label

The class H label reads the following.



## Optional kits

Various optional kits are available for converting the machine.

On request, the machine can be supplied with optional kits already installed. However, they can also be installed at a later date.

Please contact the sales network for further details.

Instructions describing how to fit the optional kits and the relative operation and maintenance manuals are supplied together with the optional kits.



## Accessories

Various accessories are available; refer to the manufacturer's accessory catalogue.



## Packing and unpacking

All the dispatched equipment has been thoroughly checked before being delivered to the haulage contractor.

On arrival, check the machine to see that it has not been damaged during transport. If this is the case, immediately lodge a complaint with the haulage contractor.

Dispose of the packing materials in compliance with the laws in force.



Figure 3

Model	A (mm)	B (mm)	C (mm)	kg (*)
VHS120 LC	700	790	1,500	53
VHS120 MC	700	790	1,500	66
VHS120 HC	700	790	1,500	68

(\*) Weight with packing

### Unpacking, moving, use and storage

To unpack the vacuum unit, remove the retainers with a hammer and a screwdriver.

Also remove the fastening devices placed by the manufacturer when packing, by using suitable tools.

Release the wheel brakes and remove the machine from the supporting platform, by using a ramp that can provide adequate capacity, and by driving the vacuum cleaner by the handle.

Operate on flat, horizontal surfaces.

The load-bearing capacity of the surface the machine is placed on must be suitable for bearing its weight.

If the device is to work in a fixed position, allow wide space around the device in order to ensure freedom of the movement and allow the maintenance staff to operate with ease.



**The manufacturer shall not be liable for any damages caused to the machine during lifting, when the lifting equipment supplied by the manufacturer is not used.**



**When several supporting platforms are provided, the supporting platform to which the machine is anchored must be handled with a forklift truck that can provide adequate capacity. Then unpack the machine by laying it down on a flat and horizontal surface that can provide adequate capacity for the vacuum cleaner weight.**

## GB Setting to work - connection to the power supply



- **Make sure there is no evident sign of damage to the machine before starting work.**
- **Before plugging the machine into the electrical mains, make sure the voltage rating indicated on the data plate corresponds to that of the electrical mains.**
- **Connect the plug into a socket with a correctly installed ground contact/connection. Make sure that the machine is turned off.**



### CAUTION!

- **The plugs and connectors of the connection cables must be protected against splashes of water.**
- **Check that for proper connection to the electrical mains.**
- **Use the machine only when the cables that connect to the electricity mains are in perfect condition (damaged cables could lead to electric shocks!).**
- **Regularly check there are no signs of damage, excessive wear, cracks or ageing on the electric cable.**



### CAUTION!

**When the device is operating, do not:**

- **Crush, pull, damage or tread on the cable that connects to the electrical mains.**
- **Only disconnect the cable from the electrical mains by removing the plug (do not pull the cable).**
- **Only replace the electric power cable with one of the same type as the original: H07 RN-F, The same rule applies if an extension is used.**
- **The cable must be replaced by the manufacturer's Service Centre staff or by equivalent qualified personnel.**

The system safety officers must:

- Prevent any improper use or manoeuvre.
- Make sure that the safety devices are not removed or tampered with.
- Check that all maintenance operations are regularly performed;
- Make sure that no machine part (couplings, holes, etc.) is modified to attach additional devices;
- Make sure that only original Nilfisk spare parts are used.

### NOTE

*The user shall be responsible for ensuring that installation complies with the all relevant local provisions. The equipment must be installed by qualified technicians who have read and understood the instructions herein.*

### Extensions

If an extension cable is used, make sure it is suitable for the power input and protection degree of the machine.

Max power (kW)	3	5	15	22
Minimum section (mm <sup>2</sup> )	2.5	4	10	16
Maximum length (m)	20			
Cable	H07 RN - F			



**CAUTION!**

*Sockets, plugs, cable clamps, connectors and installation of the extension cable must maintain the IP protection degree of the machine, as indicated on the data plate.*

**CAUTION!**

*The machine power socket must be protected by a differential circuit-breaker with surge current limitation, that shuts off the power supply when the current discharged to the ground exceeds 30 mA for 30 msec. or an equivalent protection circuit.*

**CAUTION!**

*Never spray water on the machine: this could be dangerous for persons and could short circuit the power supply.*

## Dry applications

**[ NOTE ]**

*The supplied filters and the bag (if applicable) must be installed correctly.*

**CAUTION!**

*Comply with the safety regulations governing the vacuumed materials.*

## Vacuumping of liquids

**CAUTION!**

*Comply with the safety regulations governing the vacuumed materials.*

**CAUTION!**

- *Make sure the liquid stop device is working correctly before vacuuming liquids.*
- *If foam forms, turn off the machine immediately and empty the container.*
- *Warning: switch off the machine immediately if foam or liquid leaks out.*
- *Regularly clean the liquid level limiting device and check to make sure that there are no signs of damage.*
- *Dirty liquid vacuumed up by the machine must be considered conductive.*

**CAUTION!**

*Do not use the machine if the liquid mechanical stop is not installed!  
If it's used without the float, the machine may be seriously damaged.*

**CAUTION!**

*When vacuuming a mix of water and air, take care to avoid overloading the motor of the vacuum unit.*

The machine vacuums liquids and deposits them into the container.

When the machine vacuums liquids it must be equipped with liquid mechanical stop.

The liquid mechanical stop requires a special container with relevant nozzle.

Before starting the machine, close the inlet on the filtering chamber with the relevant plug and fit the vacuum hose in the inlet on the dust container, then fit the required tool on to the end part of the hose (refer to the manufacturer's accessory catalogue or Service Centre).

The liquid mechanical stop stops the vacuuming operation (the vacuuming units remain activated) when the liquid container is full; it is then necessary to turn off the machine and empty the liquid container.

The machine does not switch off automatically.

## Technical data

Parameter	Units of measurement	VHS120 LC		VHS120 MC-HC	
Voltage	V	110	230	110	230
Power rating	kW	2			
Power rating (EN 60335-2-69)	kW	1.5	1.8	1.5	1.8
Max vacuum	mm H20	2,500			
Maximum air flow rate (3 m Ø 50 mm hose)	L/m'	4,700	5,200	4,700	5,200
Sound pressure level (Lpf) (EN60335-2-69) (*)	dB(A)	74			
Vibration, ah (**)	m/s <sup>2</sup>	≤2.5			
Protection	IP	44			
Insulation	Class	I			
Container capacity	L	37		-	
Longopac® dust bag capacity	L	-		25	
Vacuum inlet (diameter)	mm	50			
Allowed hoses	mm	50			
Primary filter surface (L-M)	m <sup>2</sup>	1.6			
Upstream absolute "H" filter surface	m <sup>2</sup>	1.6			
Absolute filter efficiency according to MPPS method (EN 1822)	%	99.995 (H14)		99.995 (H14)	
Weight	kg	38		53	

(\*) Measurement uncertainty KpA < 1.5 dB (A). Noise emission values obtained according to EN-60335-2-69

(\*\*) Total value of vibration output to the operator arm and hand

## Dimensions

Figure 4

Model	VHS120 LC	VHS120 MC-HC
A (mm)	570	630
B (mm)	560	628
C (mm)	1,015	1,300

[ NOTE ]

- *Storage conditions:*  
 Temperature: -10°C ÷ +40°C  
 Humidity: ≤ 85%
- *Operating conditions:*  
 Maximum altitude: 800 m  
 (Up to 2,000 m with reduced performances)  
 Temperature: -10°C ÷ +40°C  
 Humidity: ≤ 85%

## Controls and indicators

Figure 5

1. **Main motor Start/Stop indicator and button**  
You can start/stop the main motor with this button. If the indicator is lit, the main motor is ON.
2. **Second motor Start/Stop indicator and button**  
You can start/stop the second motor with this button. If the indicator is lit, the second motor is ON.
3. **Vacuum gauge**
4. **Manual filter shaker lever**

## Inspections prior to starting

Figure 6

1. Vacuum inlet

Before starting, check that:

- The filters are installed.
- The closing band is properly tightened.
- The vacuum hose and tools have been correctly fitted into the vacuum inlet (1).
- In case of liquid application, the liquid mechanical stop is properly installed inside the liquid container:
- The bag or safety container is installed, if applicable.



**Do not use the device if the filters are faulty.**

## Starting and stopping



**Before starting the machine, lock the castor brakes**

Figure 5

- Turn the button (1) to "I" position to start the first motor (indicator light on).
- Turn the button (2) to "I" position to start the second motor (indicator light on).
- Turn the button (1) to "0" position to stop the first motor (indicator light off).
- Turn the button (2) to "0" position to stop the second motor (indicator light off).

## Machines equipped with system for vacuuming liquids

- When the container is full, the liquid mechanical stop turns off the vacuuming; the vacuum unit remains on.
- Do not let the vacuuming unit running, after the liquid stop has been activated. Turn it off with the relevant switch.

## Emergency stopping

Turn the buttons (1 and 2 Fig. 5) to "0" position. The vacuum cleaner stops.



**The motors and internal components of the vacuum cleaner will still be electrically powered.**

## Operation

Figure 7

Vacuum gauge (2): green zone (3), red zone (1)

When using the machine, check the flow control:

- when the machine is operating, the pointer of the vacuum gauge must remain in the green zone (3) to ensure that the speed of the intake air does not drop below the safety value of 20 m/sec;
- If the pointer is in the red zone (1) it means that the speed of the air in the vacuum hose is less than 20 m/s, and that the machine is not operating in optimal conditions. Shake or replace the filter.
- during normal operation conditions, close the vacuum hose, the pointer of the vacuum gauge must switch from the green zone (3) to the red zone (1).



**When the machine is operating, always check that the vacuum gauge pointer remains in the green zone (3). Consult the "Troubleshooting" chapter if faults occur.**



**The air speed in the vacuum hose must not be less than 20 m/s. Condition indicated by the vacuum gauge pointer in the green zone (3).**



**All machines can be used only with hoses whose diameters comply with the specifications in the "Technical Data" table.**



**Consult the "Troubleshooting" chapter if faults occur.**

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## At the end of a cleaning session

- Turn off the machine and remove the plug from the socket.
- Wind up the connection cable.
- Empty the container and clean the machine as described in the "Maintenance, cleaning and decontamination" paragraph.
- Wash the container with clean water if aggressive substances have been vacuumed.
- Store the machine in a dry place, out of reach of unauthorised people.
- Lock the castor brakes.
- During transport and when not using the machine, close the vacuum inlet with the relevant plug (if equipped).

# Maintenance, cleaning and decontamination



**Disconnect the machine from its power source before cleaning, servicing, replacing parts or converting it to obtain another version/variant.**

- Carry out only the maintenance operations described in this manual.
- Use only original spare parts.
- Do not modify the machine in any way.

**Failure to comply with these instructions could jeopardize your safety. Moreover, such action would immediately void the EC declaration of conformity/incorporation issued with the machine.**



**For maintenance procedures not described in this manual, please contact the manufacturer's technical support or sales network.**



**To guarantee the safety level of the machine, only original spare parts supplied by the manufacturer should be used.**



**The precautions described below must be taken during all maintenance operations, including cleaning and replacing the primary and absolute filters.**



**This Class H machine can collect dust hazardous for the health. The procedures for servicing and emptying the machine including removing the dust bag, must only be performed by specialised personnel wearing protective clothing. Do not use without the complete filter system in place.**



**In particular, on Class H machines, the filtering efficiency of the machine must be checked at least once a year, or more often if required by national legislation. The test method for checking the filtering efficiency of the machine is indicated in standard EN 60335-2-69, par. 22.AA.201.2.**

**If the test isn't passed, it must be repeated after the class H filter has been changed.**

- To allow the user to carry out the maintenance operations, the machine must be disassembled, cleaned and overhauled as far as is reasonably possible, without causing hazards for the maintenance staff or other people. The suitable precautions include decontamination before disassembling the machine, adequate filtered ventilation of the exhaust air from the room in which it is disassembled, cleaning of the maintenance area, and suitable personal protection.
- The external parts of the machine must be decontaminated by cleaning and vacuuming methods, dedusted or treated with sealant before being taken out of a hazardous zone.
- All parts of the machine must be considered as contaminated when they are removed from the hazardous zone and appropriate actions must be taken to prevent dust from dispersing.
- When maintenance or repair procedure are carried out, all the contaminated elements that cannot be properly cleaned, must be eliminated.
- These elements must be disposed of in sealed bags in accordance with applicable regulations and local laws on the disposal of such material.
- This procedure must also be followed for filter disposal (primary and absolute filters).
- Compartments that are not dust-tight must be opened with suitable tools (screwdrivers, wrenches, etc.) and thoroughly cleaned.
- A check must be carried out by the manufacturer or the personnel of the same at least once a year. For example: Check the air filters to find out whether the air-tightness of the machine has been impaired in any way and make sure that the electric control panel operates correctly.

## Primary filter cleaning with manual system

According to the quantity of vacuumed material, if the vacuum gauge pointer (2, Fig. 7) goes from the green zone (3, Fig. 7) to the red zone (1, Fig. 7), shake the primary filter by turning the lever (4, Fig. 5) clockwise/counterclockwise for at least 5 complete cycles.



**Stop the machine before using the filter shaker. Do not shake the filter with the machine functioning, as this could damage the filter.**

Wait before restarting the machine, to allow the dust to settle. Replace the filter element if the vacuum gauge pointer stays in the red zone even after the filter has been shaken (see "Main and absolute filter disassembly and replacement").

### [ NOTE ]

If the indicator is still in the red area. The vacuum hose or one of the accessories may be clogged, and not the filter. Clean these parts if this is the case.

## Emptying the container



**Before proceeding with these operations, turn off the machine and remove the plug from the power socket. Check the machine filtration class.**

Before emptying the container it is advisable to clean the filter (see "Cleaning the primary filter" paragraph).

**Figure 1**

- Release the dust container (2) with the lever (3), then remove and empty it.
- Clean the machine as described in the "Maintenance, cleaning and decontamination" paragraph.
- Wash the container with clean water if aggressive substances have been vacuumed.
- Make sure the gasket is in perfect condition and correctly positioned.
- Place the container back in position and secure it again.

**[ NOTE ]**

*After the cleaning session, leave the machine running for at least 60 seconds before turning it off. Avoid switching on/off too frequently.*

## Emptying of the liquid container



**Before proceeding with these operations, turn off the machine and remove the plug from the power socket. Check the machine filtration class.**

Before emptying the container it is advisable to clean the filter (see "Cleaning the primary filter" paragraph).

**Figure 1**

- Release the container (2) with the lever (3) and remove it, then remove the liquid stop device (11) and empty it.
- Clean the machine as described in the "Maintenance, cleaning and decontamination" paragraph.
- Wash the container with clean water if aggressive substances have been vacuumed.
- Make sure the gasket is in perfect condition and correctly positioned.
- Place the container back in position and secure it again.

**[ NOTE ]**

*After the cleaning session, leave the machine running for at least 60 seconds before turning it off. Avoid switching on/off too frequently.*

**[ NOTE ]**

*The filter element will be wet after liquids have been vacuumed. A wet filter element can quickly become clogged if the machine is then used to vacuum dry substances. For this reason, make sure that the filter element is dry or replace it with another one before using the machine for dry materials.*

## Dust Bag

**Figure 8**

The machine can be equipped with dust collection bag. In this case, the machine must be equipped with optional accessories (depressor and grid). If the bag is not installed or is installed incorrectly, this could create health risks for persons exposed.

## Paper Bag and Safe Bag for dust collection

**Figure 9**

The machine can be equipped with dust collection bag. In this case, the machine must be equipped with a specific container and a cap on the side. If the bag is not properly installed, it could create health risks for people exposed.

**[ NOTE ]**

The safe bag system is suitable to collect toxic dust to ensure that the user does not come into contact with the product.

## Longopac® bag for dust collection

**Figure 10**

The machine can be equipped with dust collection bag. In this case, the material is discharged by gravity when the vacuuming stops. The Longopac® bag can be cut, sealed or closed to the size required. If the bag is not properly installed, it could create health risks for people exposed.

## Replacement of dust bags



**Before proceeding with these operations, turn off the machine and remove the plug from the power socket.**



- **These operations can only be carried out by trained and qualified personnel who must wear adequate clothing, in compliance with the laws in force.**
- **Take care not to raise dust when this operation is carried out. Wear a P3 protective mask.**
- **In case of hazardous and/or harmful dust, use only the bags recommended by the manufacturer (see "Recommended spare parts").**
- **The bag must only be disposed of by qualified personnel and in compliance with the laws in force.**

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**Use only original Nilfisk bags.**



**Only use bags suitable for the machine class you are using.**



**Take care not to raise dust during this operation. Wear a P3 mask and other protective clothing plus protective gloves (DPI) suited to the hazardous nature of the dust collected, refer to the laws in force.**

### How to replace the Dust Bag

**Figure 8**

- Close the inlet by using the relevant cap (if equipped).
- Release the dust container.
- Remove the dust bag and close it with a clamp, if necessary.
- Place a new bag, taking care to wrap it around the outer wall of the dust container.
- Set the dust container into the machine again.

### How to replace the Paper Bag

**Figure 9**

- Close the inlet by using the relevant cap (if equipped).
- Release the dust container.
- Remove the bag and close it with the relevant cap (1) as shown in the figure.
- Insert a new bag, making sure the bag inlet is sealed.
- Set the dust container into the machine again.

### How to replace the Safe Bag

**Figure 9**

- Remove and put the vacuum hose in a safe and dust-free place.
- Close the inlet by using the relevant cap (if equipped).
- Release the dust container.
- Close the Safe Bag by pulling the "guillotine" seal (2).
- Close the plastic bag hermetically using the relevant band (3).
- Use the sticky tape (4) to close the bottom of the plastic bag.
- Remove the relevant connection (5) of the bag from the inlet.
- Insert a new safe bag, making sure the vacuum inlet is well connected to the bag attachment, to grant the sealing.
- Wrap the plastic bag around the dust container external wall.
- Place the dust container in the vacuum cleaner.

### How to replace the Longopac® for machines that handle dusts that are hazardous to health.

**Figure 10**

- Prepare the bag holder with the inside part upwards and insert the Longopac® inside the groove on it. Pull off the Longopac® inner end for at least 250 mm, put the strap around the support as shown in the figure, tighten it by leaving free the excess part of the inner end pulled off previously. Properly arrange the excess Longopac® inside the groove (1).
- Pull off the Longopac® (2) outer end, turn it down and close it with the proper band (3).
- Draw near the bag holder to be placed under the hopper cone, insert the pins into the slots and turn the system to lock it at the upper cylinder (4).
- Pull down the bag closed by the band and lay it on the tray. Then, by means of the 2nd supplied belt, fasten the inner end (250 mm-long), which have been previously removed, above the gasket on the hopper (5).

### Main and absolute filter disassembly and replacement



**When the machine is used to vacuum hazardous substances, the filters become contaminated, therefore:**

- **Work with care and avoid spilling the vacuumed dust and/or material;**
- **place the disassembled and/or replaced filter in a sealed plastic bag;**
- **close the bag hermetically;**
- **dispose of the filter in accordance with the laws in force.**



**Filter replacement is a serious matter. The filter must be replaced with one of identical characteristics, filtering surface and category.**

**Otherwise the machine will not operate correctly. Before proceeding with these operations, turn off the machine and remove the plug from the power socket.**



**Before performing these operations, clean the filter as described in the "Maintenance, cleaning and decontamination" paragraph.**



**Take care not to raise dust during this operation. Wear a P3 mask and other protective clothing plus protective gloves (DPI) suited to the hazardous nature of the dust collected, refer to the laws in force.**





**Reassemble with care to avoid trapping your hands between the vacuum unit and the container. Use gloves that provide protection against mechanical risks (EN 388) with a level of protection CAT. II.**



**Do not use the Class H filter again after having removed it from the machine.**

### Primary filter replacement, for machines equipped with manual cleaning system

**Figure 11**

- Shake the primary filter by turning the lever (5) clockwise/counterclockwise for at least 5 complete cycles.
- Release the closing band (7).
- Remove the deck (8) and the cage, but do not lift the primary filter (9).
- Remove and dispose of the filter according to the laws in force.
- Reset the vacuum cleaner by fastening the new filter on the ring (24) with the metal clamp (25).
- Install the deck and the cage in the primary filter by taking care that there is one spoke of the cage every two pockets of the star filter.
- Check the correct position of the filter shaker handle (26).
- Fasten the closing band.

### Primary filter replacement for machines that handle dusts that are hazardous to health.

**Figure 11**

To replace the primary filter safely, follow the instructions according to the type of filter/cleaning system installed on the machine, and proceed as follows:

- Insert the plug (4) in the vacuum inlet.
- Remove the deck (8) and the cage, but do not lift the primary filter (9).
- Insert the belt (10) around the filter chamber.
- Place the bag with the elastic band on the filter chamber (11). Tighten the safety belt (12) on the bag, above the band.
- Tuck in the bag along its length. (13)
- Remove the star filter (14) by grasping the ring with the gasket and lift it until it is completely out of the filter chamber (15).
- Turn the bag on itself to obtain a section of coiled bags to be tightened with two clamps (16). Place the two clamps at a distance of 50 mm between them, then cut in-between (16a) as shown in the figure.
- Dispose of the filter (17) according to the laws in force.
- Loosen the belt (18) and carefully move the bag elastic band (19) towards the filter chamber upper edge.
- Insert the second bag (20) over the first bag (21) and tighten the safety belt (22) on the new bag.
- Through the new bag (20) carefully remove the crop of the first bag (21) from the edge of the filter chamber.
- Bring the crop (21) towards the end of the second bag (20).
- Turn the bag (20) on itself to obtain a section of coiled bags and close of the crop (21) at the bottom of the bag (20) by tightening the clamp (23)
- Loosen and remove the belt, carefully remove the bag from the edge of the filter chamber and dispose of it according to the law in force.

- Reset the vacuum cleaner by fastening the new filter on the ring (24) with the metal clamp (25).
- Install the deck and the cage in the primary filter by taking care that there is one spoke of the cage every two pockets of the star filter.
- Check the correct position of the filter shaker handle (26).
- Fasten the closing band.
- Tighten the safety bolt (6) again.

### Upstream absolute filter replacement

**Figure 12**

- Disconnect the accessory hose from the inlet (1).
- Insert the plug (2) in the inlet.
- Remove the cover (3) from the filter shaker lever and unscrew the nut (4).
- Remove the filter shaker lever (5) from the cage stem.

#### [ NOTE ]

*If the removal of the filter shaker lever is difficult, beat the cage stem slightly from the top using an awl and a hammer as shown in the figure.*



**Do not apply excessive force on the deck cover.**

- Unlock the safety bolt (6), if equipped.
- Release the closing band (7).
- Remove the head (8) from the cage stem (9), but do not lift the primary filter (10).
- Tilt the head (8) and lay it on a suitable surface, in order to not ruin the plastic.
- Unscrew ring (11).
- Remove the disc (12), the iron-rubber washer (13) and the absolute filter (14).
- Place absolute filter (14) in a plastic bag, close the bag hermetically and dispose of the filter in accordance with the laws in force.
- Insert a new absolute filter (14) with the same filtering characteristics as the removed one.
- Install the iron-rubber washer (13) and the disc (12), then tighten the ring nut (11).
- Reinstall the deck (8) by inserting it on the cage stem (9).
- Reinstall the filter shaker lever (5) by inserting it into the cage stem (9) and turning it as shown in the figure (26, Fig. 11).
- Lock the lever with the nut (4), then reinstall the cover (3).
- Fasten the closing band (7).
- Tighten again the safety bolt (6), if equipped.



## Installation, cleaning and replacement of the separator (optional)

Figure 13

[ NOTE ]

Instructions describing how to fit the optional kits and the relative operation and maintenance manuals are supplied together with the optional kits.



**The projection screw (5) positioned on the filter holder ring supplied with the kit must be removed; failure to do this could cause the filter to break.**

[ NOTE ]

*If there is only a dust deposit on the separator (4) allow the dust to drop through the central hole.*

The separator (4) should first be disassembled in order to be perfectly cleaned:

- Release the closing hooks (1) of the cover (2) and remove the cover.
- Remove the filter.
- Unscrew the two screws (3) and remove it from the container.
- Replace the part if it is excessively worn.
- Reinstall the separator (4).
- Lock it and fix it by means of the two screws (3).
- Fit the filter back in place, close the cover (2) and lock it by means of the two the closing hooks (1).

## Tightness inspection

### Hoses check

Figure 14

Make sure that connecting hoses (1) are in a good condition and correctly fixed.

If the hoses are damaged, broken or badly connected to the unions, they must be replaced.

When sticky materials are treated, check for possible clogging along the hose, in the inlet and on the baffle plate inside the filtering chamber.

To clean, scrape the inlet (2) from the outside to remove deposits.

### Filtering chamber gasket check for machines equipped with dust container

Figure 15

If the gasket (1) between the container and the filtering chamber (3) fails to guarantee tightness:

- Loosen the four screws (2) that lock the filtering chamber (3) against the machine structure.
- Allow the filtering chamber (3) to lower down and tighten the screws (2) once it has reached the tightness position.

If an optimal seal is not yet obtained or if there are tears, cracks, etc., the gasket must be replaced.

## Filtering chamber gasket check for machines equipped with Longopac® system

Figure 16

Ensure that the Longopac® bag is tight with the gasket (2). Also check the seal of the gasket positioned on the discharge clapet (1).

The gasket must be replaced if it is torn, cut, etc...

## Disposal

Figure 17

The crossed-out wheeled bin symbol on the equipment indicates that used electrical and electronic equipment must be collected and disposed of separately from household waste. The correct disposal of the equipment will help prevent potential negative consequences for the environment and human health.

Electrical and electronic household equipment must be disposed of at the separate collection points in the residence area. Please note that commercial electrical and electronic equipment should be disposed of separately from the municipal waste stream. We will be pleased to inform you about suitable disposal options.

## Wiring diagrams









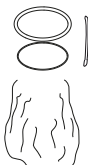



Figure 18

Name	Code	Description	Q.ty
Q1..2	4083901850	Switch 2P 20A	1

# Recommended spare parts

The following is a list of spare parts that should be kept ready at hand in order to speed up maintenance operations.

Refer to the manufacturer's spare parts catalogue when ordering spare parts.

	Name	Model	
		Standard	Filter "M"
	Standard filter	4081701390	4081701391
	Oversize star filter with sealed seams	4081701393	
	Filter ring gasket	Z8 17025	
	Filter chamber gasket	4081100183	
	Filter clamp	4084001291	
	Absolute filter	4081701384	
	Dust bag (5 bags)	4084001003	
	Safe bag	4084001013	
	Kit for safe replacement of the filter	4089100953	
	Longopac®	4084000956	
	230V 1000W Motor	4085400024	
	110V 1000W Motor	4085400026	
	Brushes (carbon) for 230V 1000W motors (2 brushes)	40000885	
	Brushes (carbon) for 120V 1000W motors (2 brushes)	40000886	

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# Troubleshooting

Problem	Cause	Remedy
The vacuum cleaner does not start	Lack of power supply	Check for power at the socket. Check the condition of the socket and the cable. Ask for assistance to be performed by a qualified manufacturer's technician.
The vacuum cleaner revolutions increase	Clogged primary filter	Use the filter shaker (models with manual filter shaker). Replace it if this is not sufficient.
	Clogged vacuum hose	Check the vacuum hose and clean it.
The vacuum unit produces a more acute noise	The liquid mechanical stop has activated (VHS120 L version).	Emptying of the liquid container.
Dust leaks from the vacuum cleaner	The filter is torn	Replace it with another of identical type.
	Inadequate filter	Replace it with another of a suitable category and check.
Noisy motors	Motor brushes (carbon) worn or broken	Remove and replace the (carbon) motor brushes.
Electrostatic current on the vacuum cleaner	Missing or inefficient grounding	Check all ground connections. In particular on the vacuum inlet fitting; replace the hose with an antistatic hose.

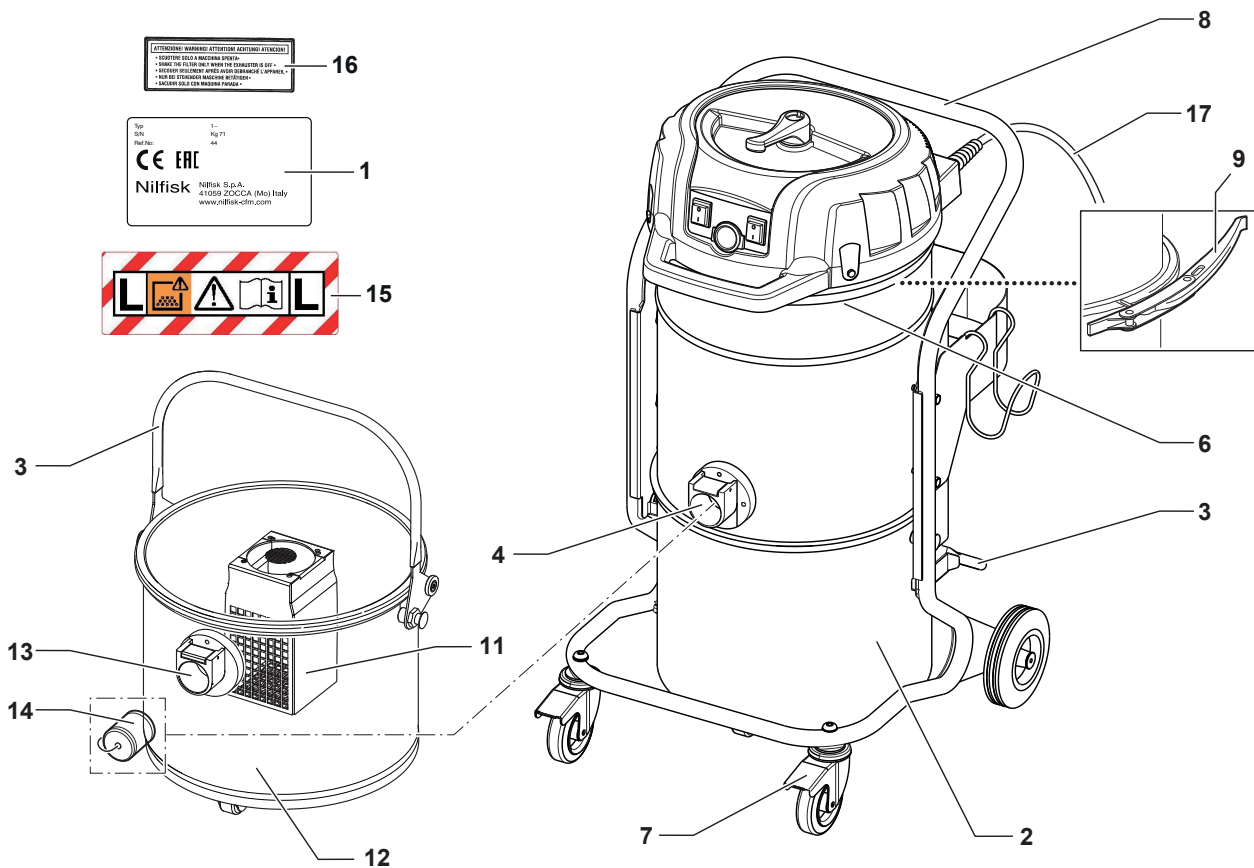
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### VHS120 LC

**ATTENZIONE: INFORMAZIONI IMPORTANTI SULLA SICUREZZA**  
 - INDICARE SOLO IL MODELLO ESATTO.  
 - LEGGERE TUTTE LE INFORMAZIONI SULLE CARATTERISTICHE E SULLI LIMITI D'USO.  
 - LEGGERE IL MANUALE D'ISTRUZIONI E LE AVVERTENZE.  
 - USARE SOLO CON IL MODELLO ESATTO.

Tip.	1
SN	Rg 71
Mod. No.	44

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**Nilfisk** Nilfisk S.p.A.  
 41059 ZOCCA (Mo) Italy  
 www.nilfisk-cfm.com

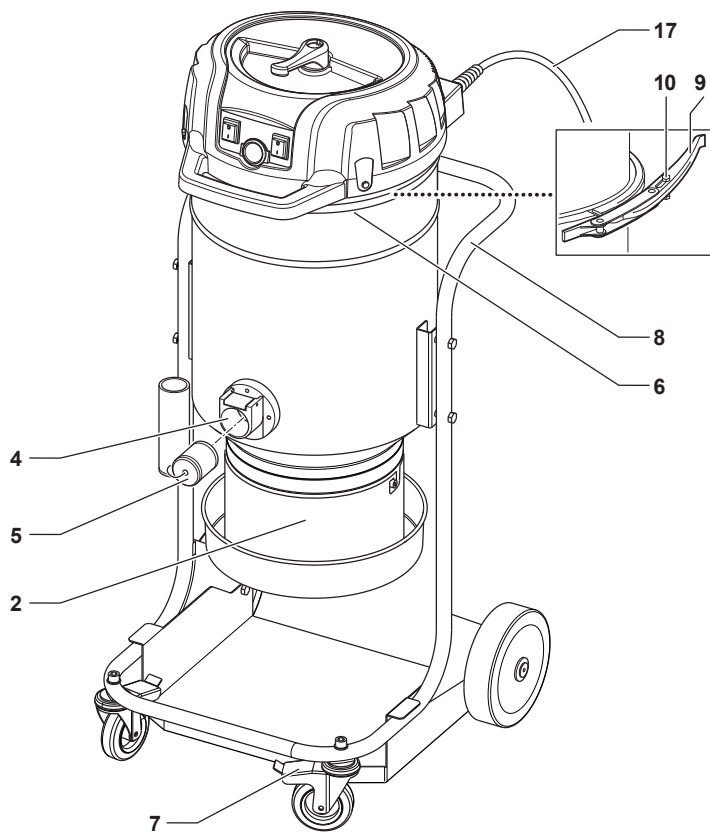
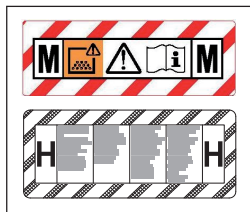


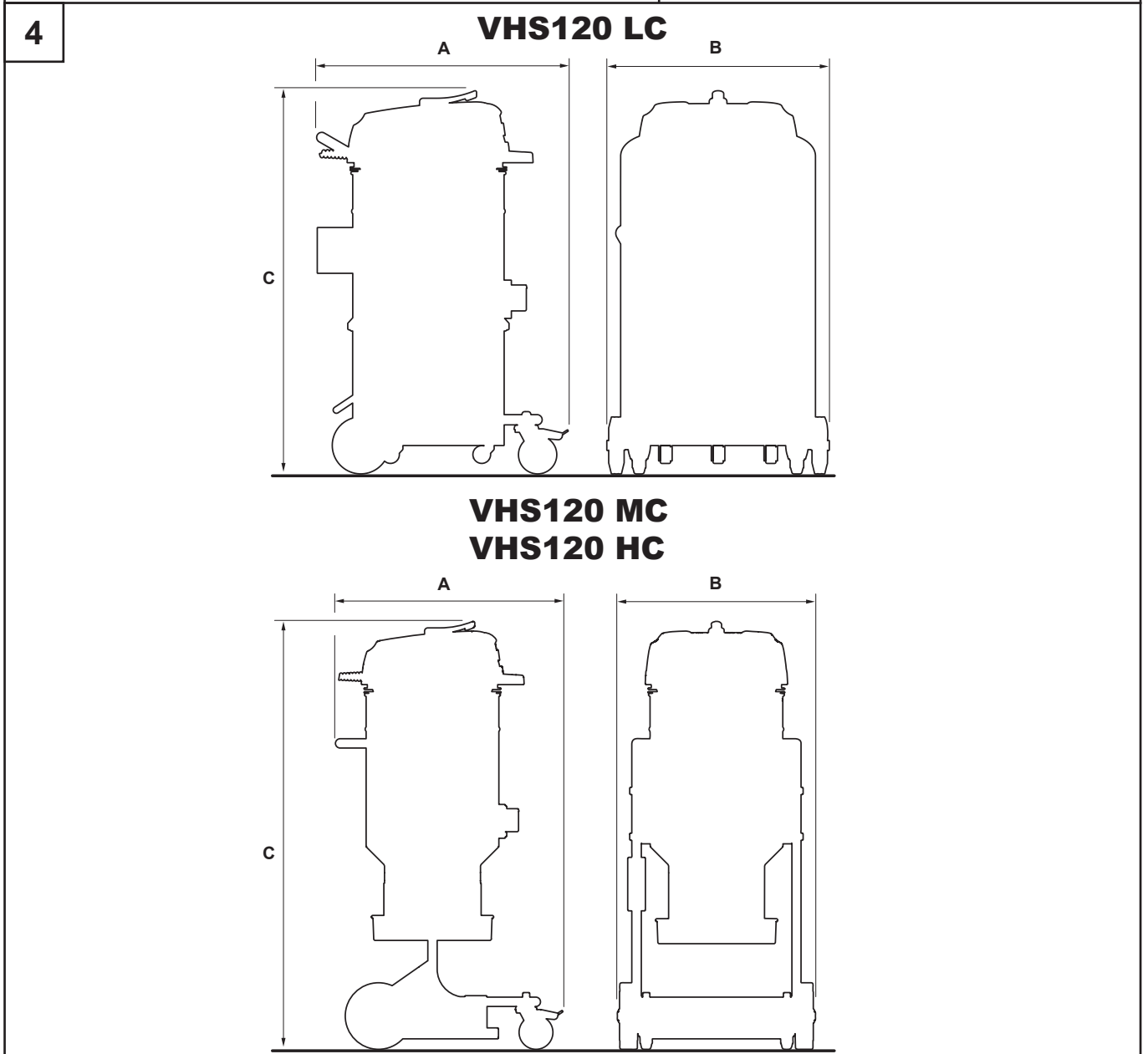
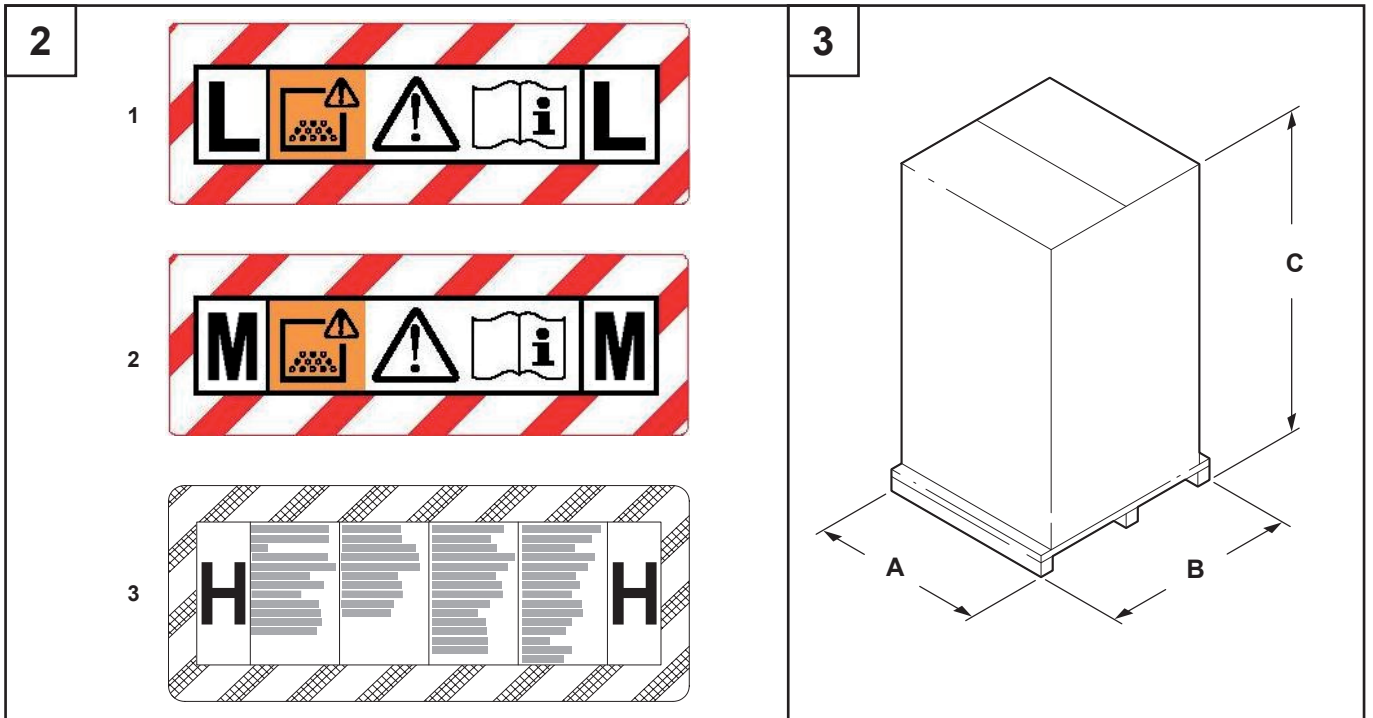
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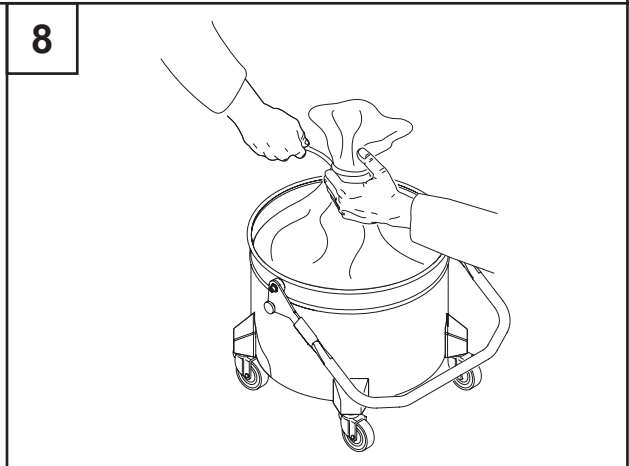
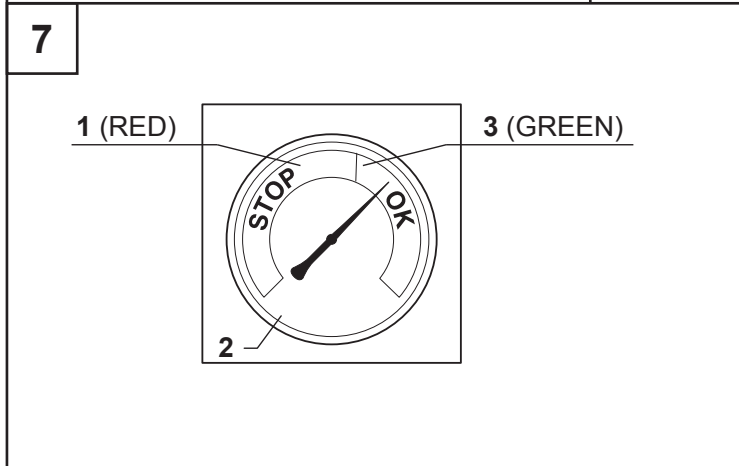
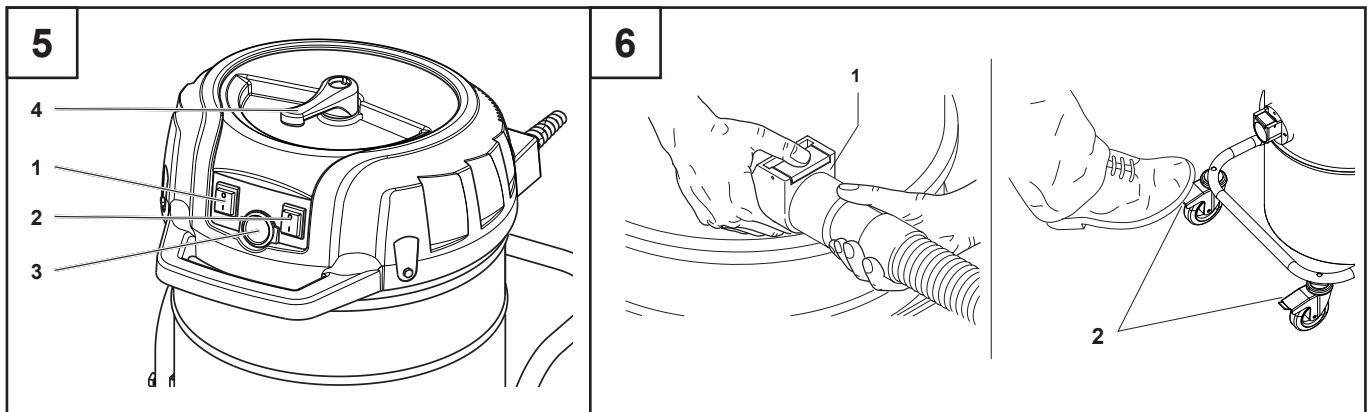
Tip.	1	12 A
SN	3000 99	Rg 71
Mod. No.	3000 103	44

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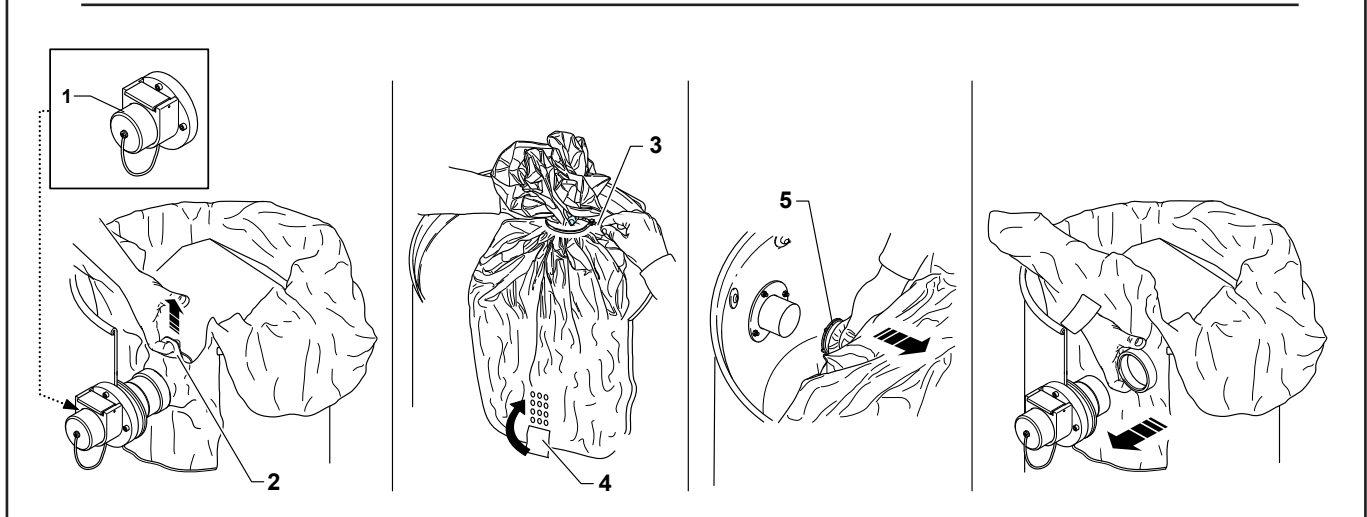
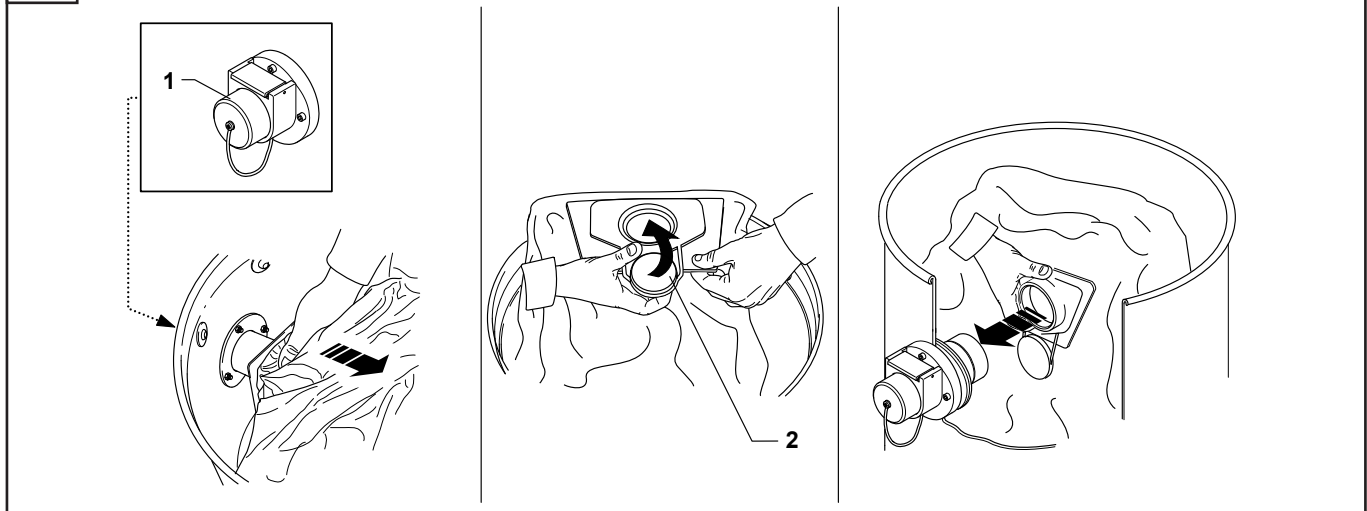
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 - LEGGERE IL MANUALE D'ISTRUZIONI E LE AVVERTENZE.  
 - USARE SOLO CON IL MODELLO ESATTO.





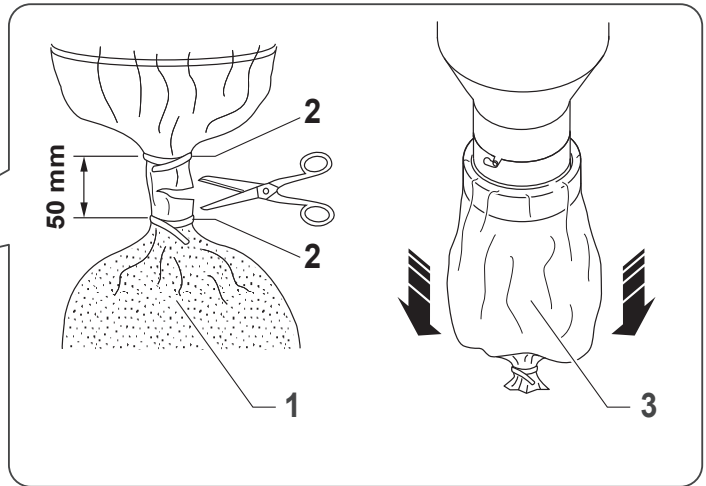
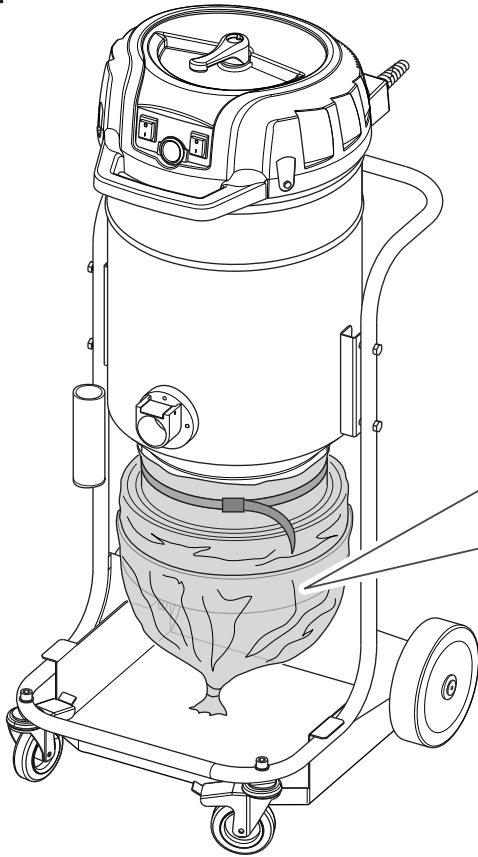


**9** **VHS120 LC**



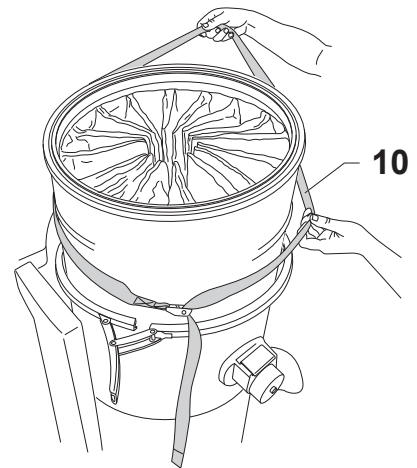
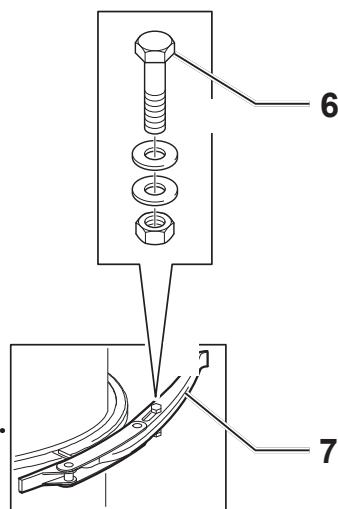
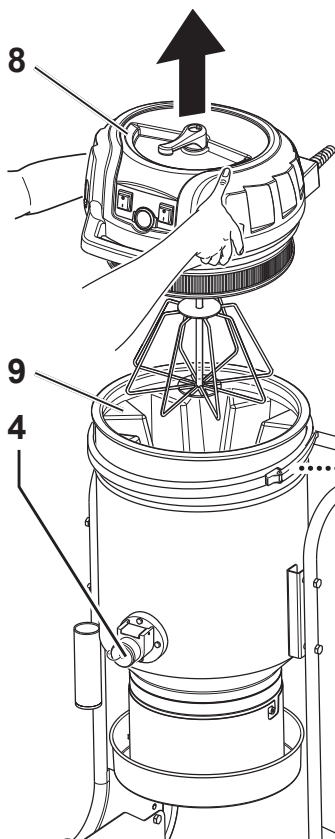
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**VHS120 MC  
VHS120 HC**



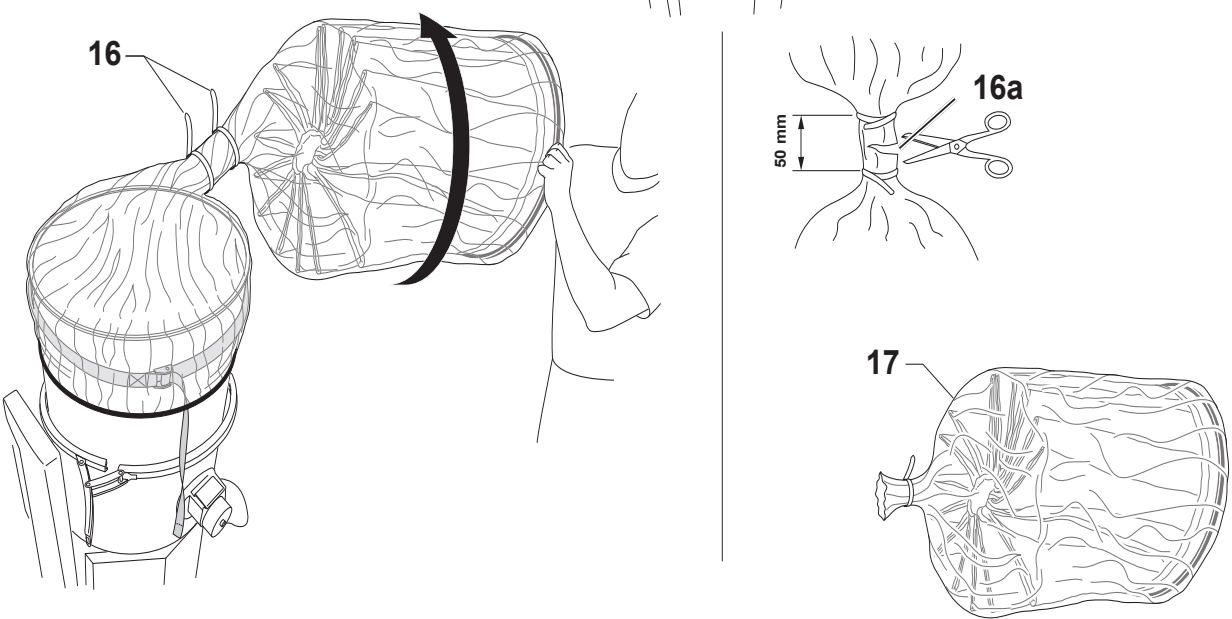
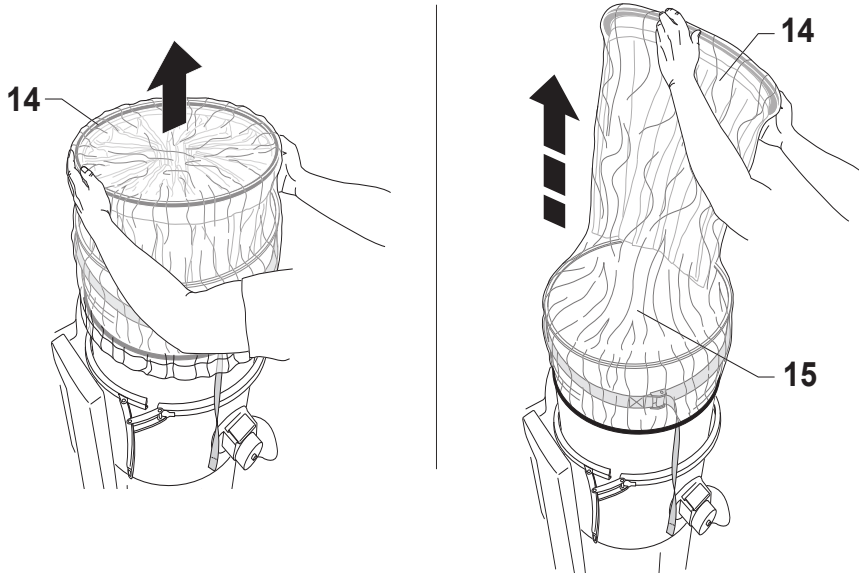
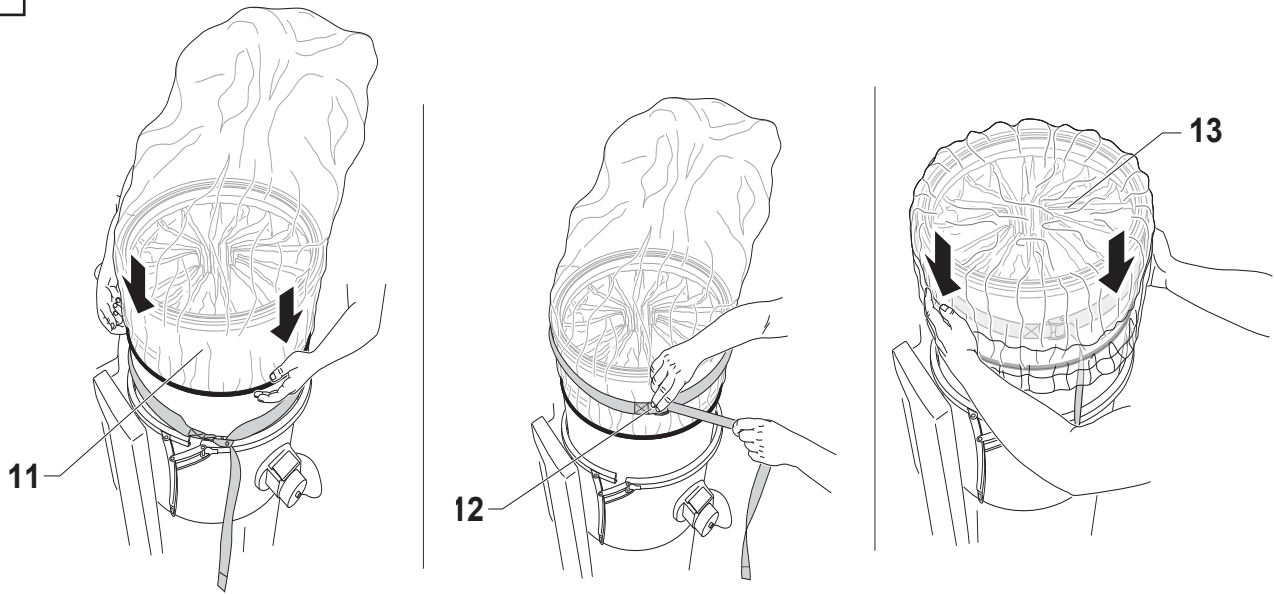
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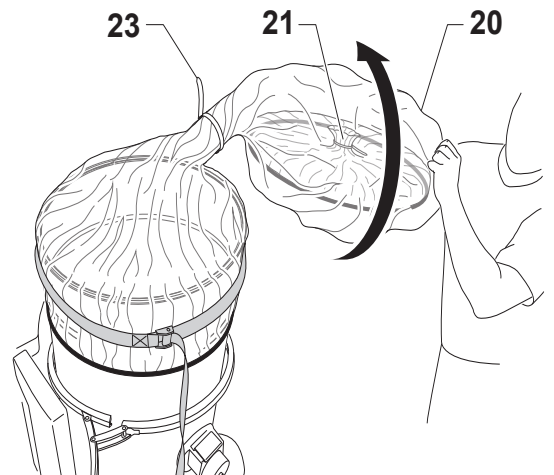
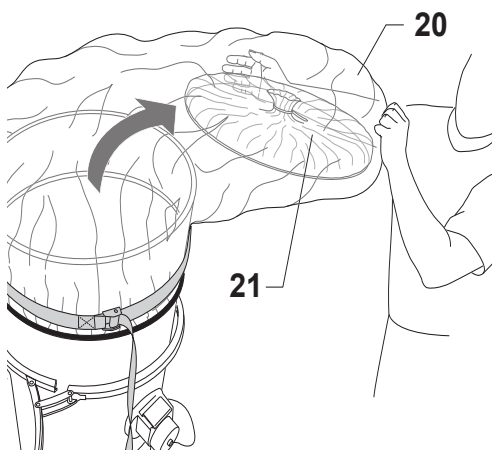
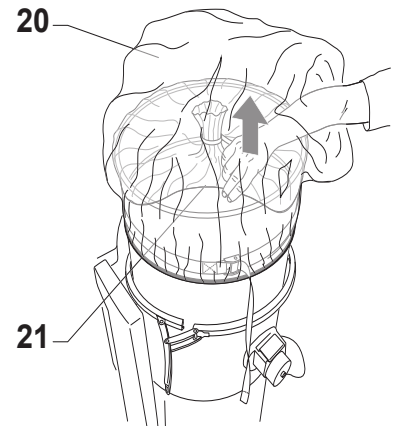
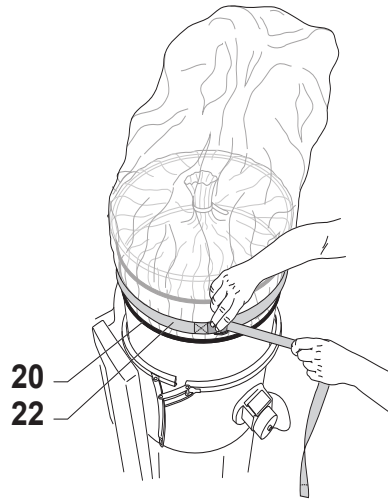
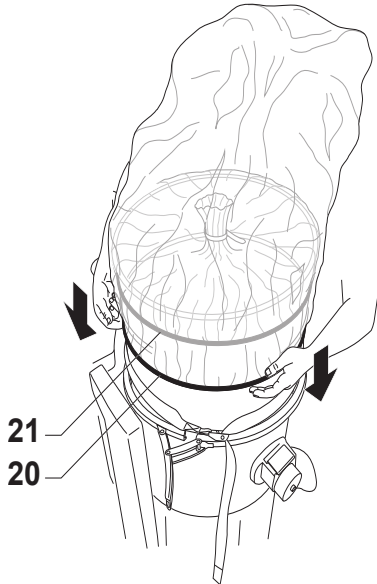
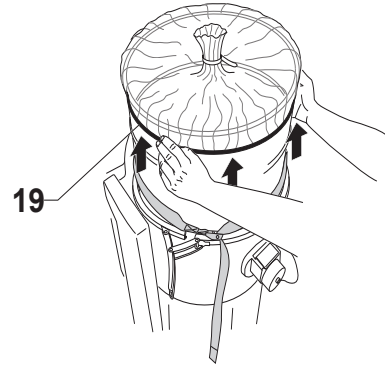
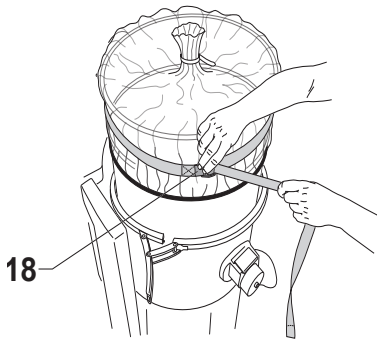




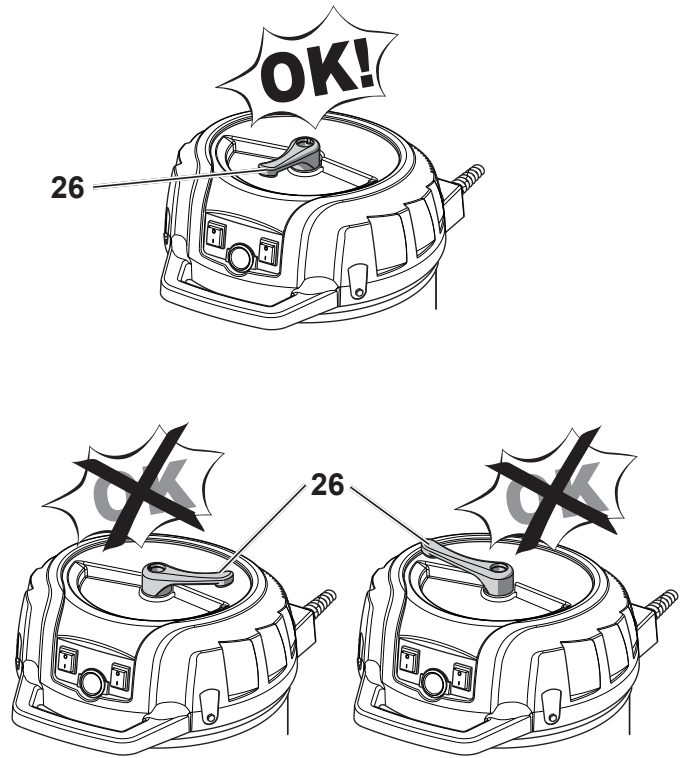
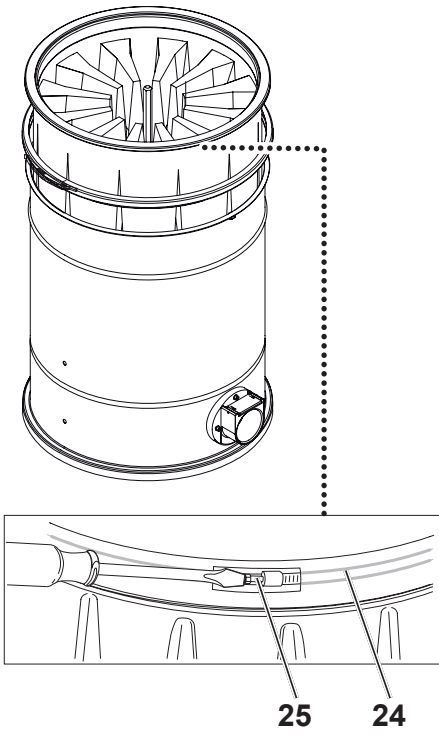
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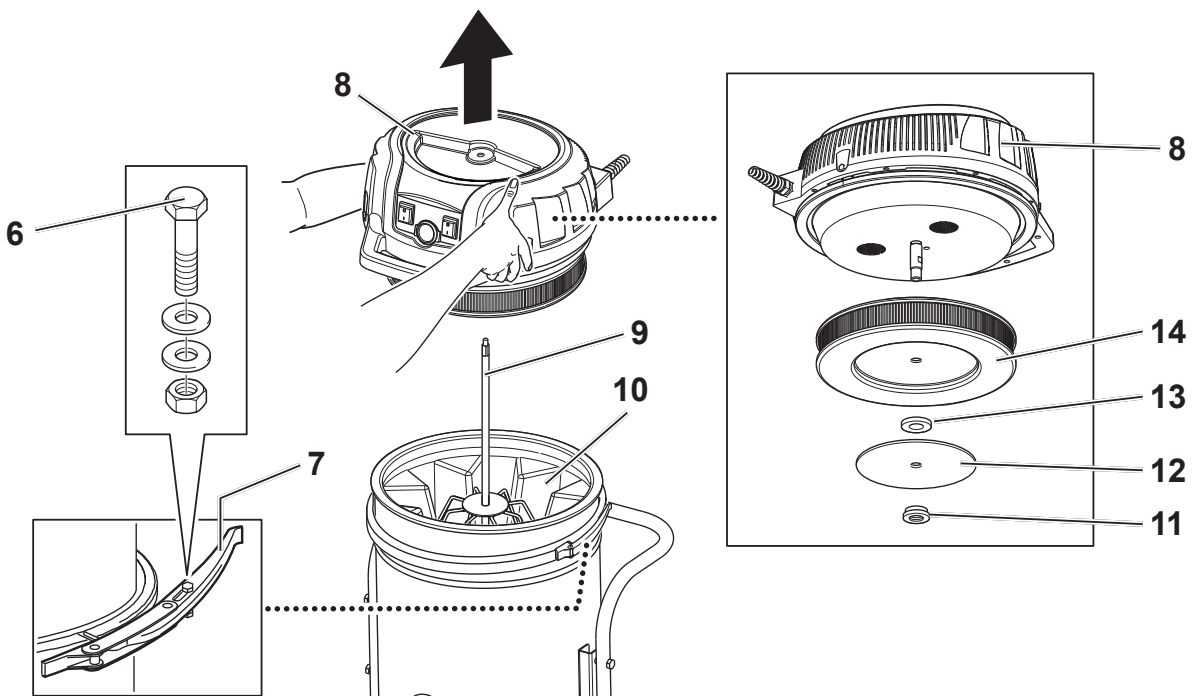
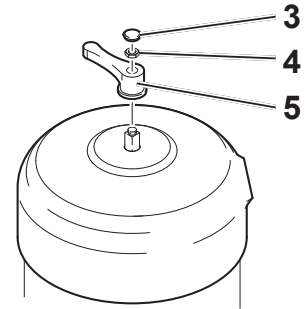
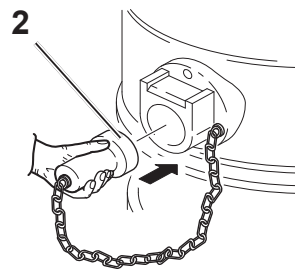
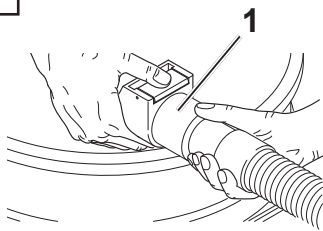
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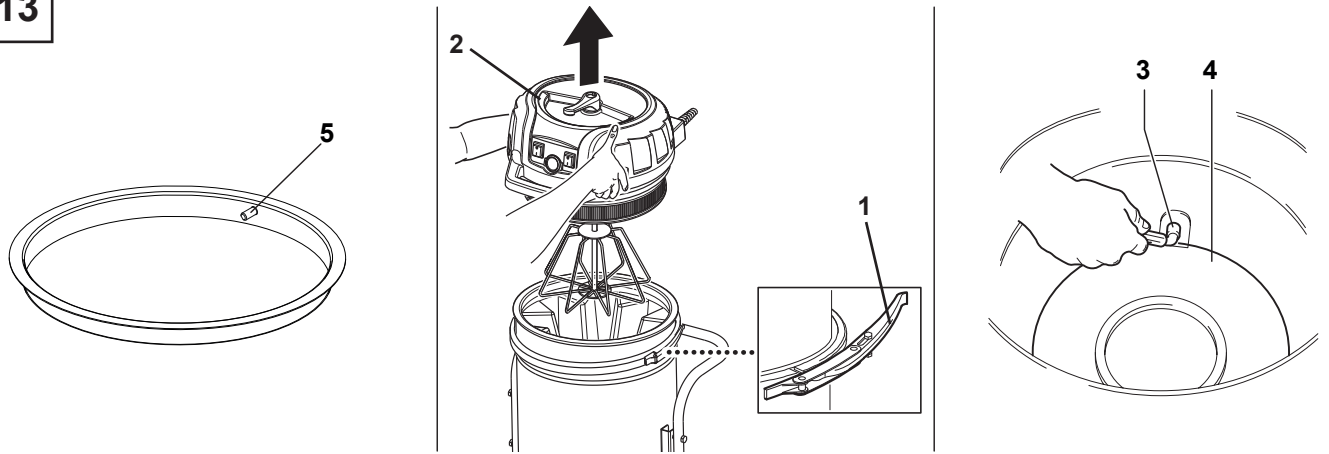
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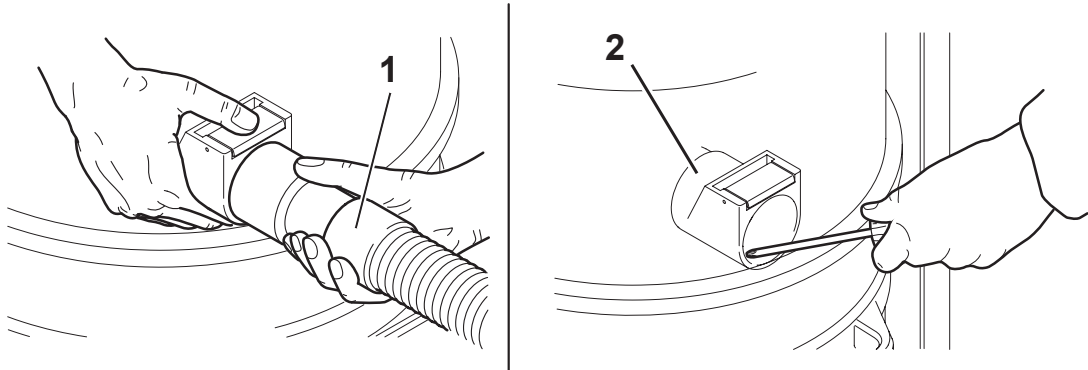
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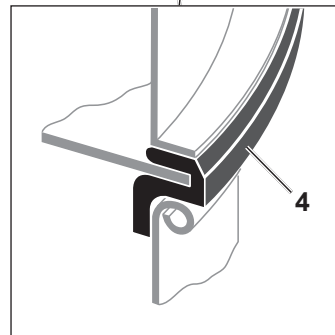
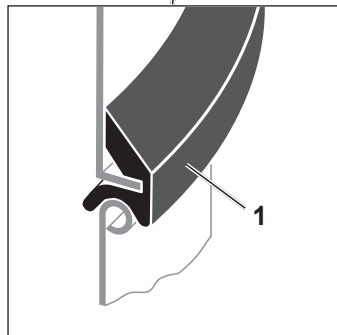
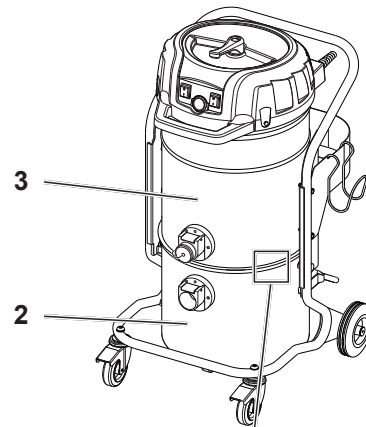
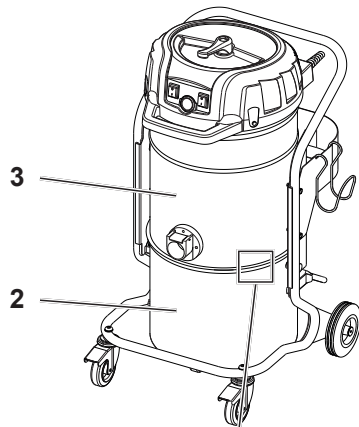


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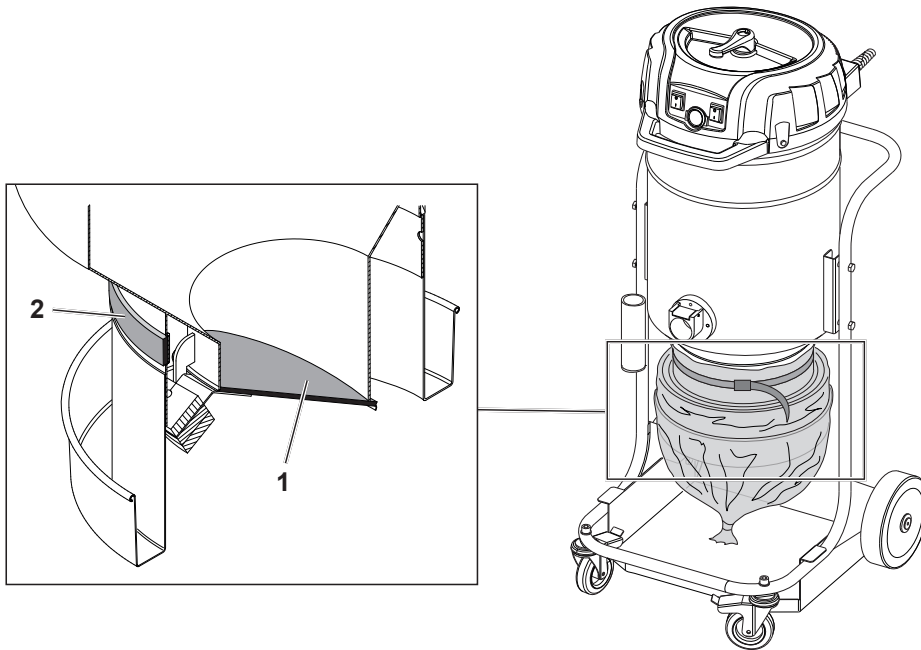
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VHS120 LC



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**VHS120 MC  
VHS120 HC**

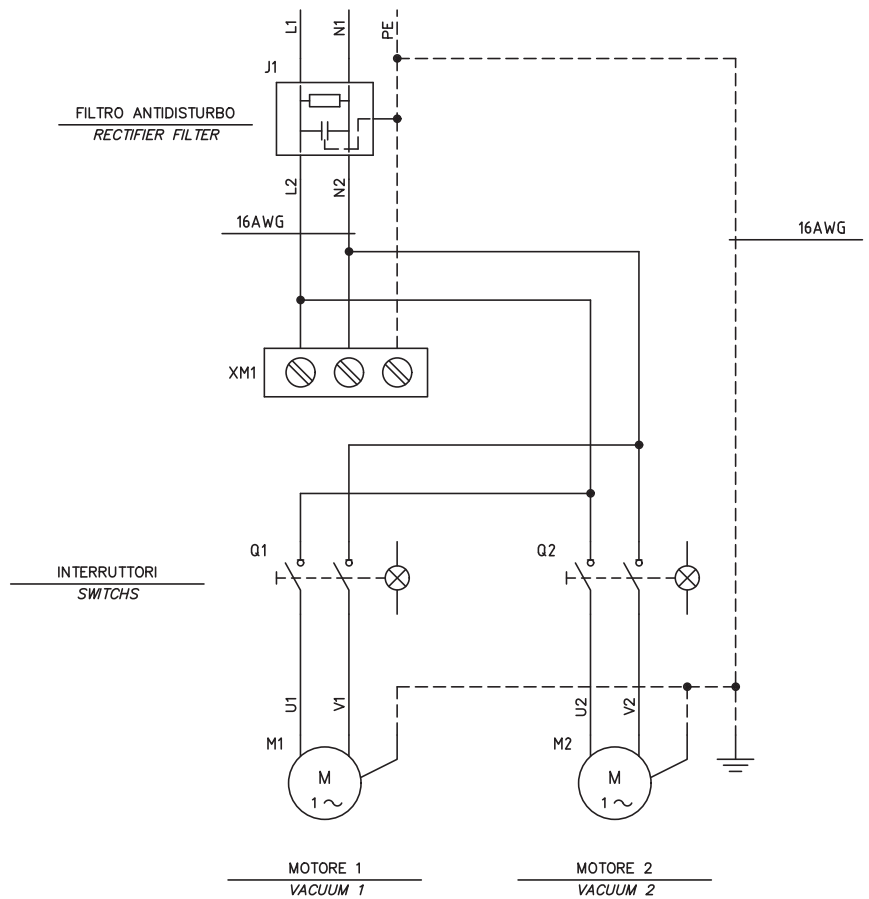


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18

ALIMENTAZIONE  
POWER SUPPLY





CE01 04/2016

Dichiarazione "CE" di conformità - Allegato II 1A - 2006/42/EC
Declaration of Conformity - Enclosure II 1A - 2006/42/EC
Eg - Konformitetsklæring - Anhang II 1A - 2006/42/EC
Déclaration de Conformité Ce - Annexe II 1A - 2006/42/EC
Declaración de Conformidad Ce - Anexo II 1A - 2006/42/EC
Prohlášení o Shodě se Směrnicí Evropského Společenství - Příloha II 1A - 2006/42/EC
Prohlášení o Shodě so Směrnicami Európskeho Spoločenstva - Príloha II 1A - 2006/42/EC
Izjava o Ustreznosti s Smernicami Evropske Skupnosti - Ohišje II 1A - 2006/42/EC
Verklaring van Overeenkomstigheid - Bijlage II 1A - 2006/42/EC
Eu Konformitetsklæring - Annex II 1A - 2006/42/EC
Ek Atbildst íbas Certifikáts - Aptvaras II 1A - 2006/42/EC
El Vastavuse Deklaratsioon - Korpuses II 1A - 2006/42/EC
Eu Vastavustunnustamisavaldus - Aitatus II 1A - 2006/42/EC
Atitikimo Europos Bendrijos EC Direktyvoms Deklaracija - Lžogojums II 1A - 2006/42/EC
Konformitā Ec - Eghluga II 1A - 2006/42/EC
Deklarācija Ģipodro Soci Ec - Zāl Āzrābi II 1A - 2006/42/EC
Declaração de Conformidade Ec - Anexo II 1A - 2006/42/EC
Eg Konformitetsklæring - Bilaga II 1A - 2006/42/EC
Ek Szabványossági Nyilatkozat - Melléklet II 1A - 2006/42/EC
Eġ-Owensstemmelserklæring - Bilag II 1A - 2006/42/EC
Δήλωση συμμόρφωσης Ek - Τηρήφορ II 1A - 2006/42/EC
Декларация о соответствии - Приложение II 1A - 2006/42/EC
AT Üygunluk Beyanı - Birlikte veril. II 1A - 2006/42/EC

Nilfisk s.p.a.

Dichiaro sotto la propria responsabilità che la macchina
We declare under our own responsibility that the machine
Wir erklären unter eigener Verantwortung, dass die Maschine
Nous déclarons sous notre seule responsabilité que la machine
Declaramos bajo nuestra responsabilidad que la máquina
Prohláujeme na naši vlastní odpovědnost, že stroj
Pretstavjamo pod lastno odgovornost, že stroj
Wij verklaaren onder onze verantwoordelijkheid dat de machine
Vi erklærer hermed under fuldt ansvar at maskinen
Aplicandim uz mūsu atbildību, ka mašīna
Ne kinnitame ja kanname enda vastutusse, et masin
Mēs paziņojam, saskaņā ar mūsu pašu atbildību, ka mašīna
Niddikjarav tahtir-responsabilitá tagna III-magna
Declarujemy pod własną odpowiedzialnością, że maszyna
Declaramos sob nossa responsabilidade que a máquina
Härmed förklarar vi och påtar oss ansvaret för att den maskin
Felelősségünk tudatában kijelentjük hogy gép
Vi erklærer under vores eget ansvar, at maskinen
Δηλώνουμε με δική μας ευθύνη ότι το μηχάνημα
Мы заявляем, под нашей собственной ОТВЕТСТВЕННОСТЬ, что бы машина
Sorumluluğu bide olmak kaydıyla makinemin sağda listelenen



Nilfisk S.p.A. a socio unico

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Nilfisk S.p.A.
Il Direttore Generale
The General Manager
Zocca, \_\_\_\_\_

