S2 L/M/H - S3 L/M/H

Instructions for use

MANUALE DI ISTRUZIONI
INSTRUCTIONS MANUAL
MANUEL D'INSTRUCTIONS
BETRIEBSANLEITUNG
MANUAL DE INSTRUCCIONES

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I Italian
GB English
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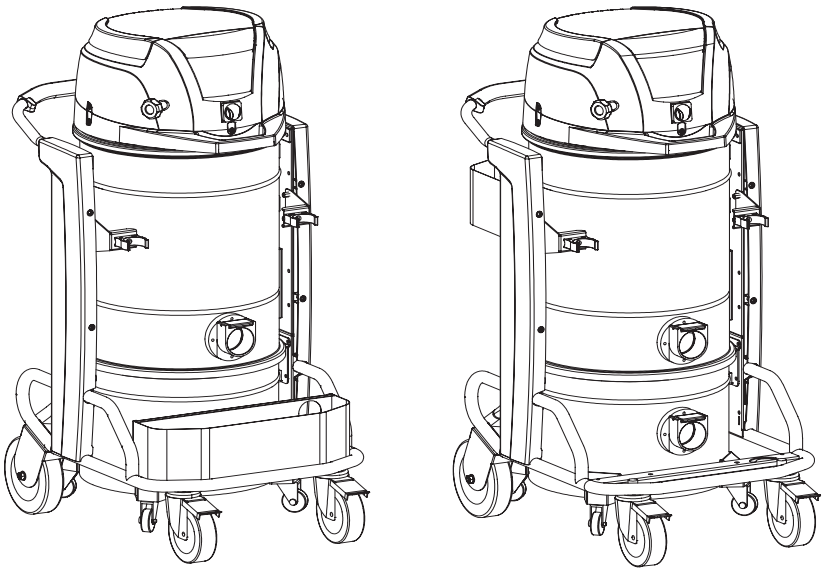

Nilfisk®

Translation of original instructions

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Instructions for use

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

Operator's safety

⚠ WARNING! ⚠

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

The vacuum cleaner 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 vacuum cleaner, 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.

⚠ WARNING! ⚠

The use of vacuum cleaner 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 vacuum cleaner.

General information for using the vacuum cleaner

Use of the vacuum cleaner is governed by 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 vacuum cleaner 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 carry out any operation that could jeopardize the safety of people, property and the environment.
Comply with the safety indications and prescriptions in this instruction manual.

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Proper uses

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

- Always leave enough room around the vacuum cleaner to reach the controls easily.

The vacuum cleaner has been designed to be used by one operator only.
This vacuum cleaner consists of an automated vacuum unit, with a filter upstream and a container for collecting the vacuumed material.

Improper Use

⚠ WARNING! ⚠

The following use of the vacuum cleaner is strictly forbidden:

- ***Outdoors in case of atmospheric precipitation.***
- ***When not placed on horizontal levelled grounds.***
- ***When the filtering unit is not installed.***
- ***When the vacuum inlet and/or hose are turned to parts of the human body.***
- ***Use without the cover on the vacuum unit.***
- ***When the dust bag 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 vacuum cleaner is covered with plastic or fabric sheets.***
- ***Use with the air outlet partially or totally closed.***
- ***When used in narrow areas where there is no fresh air.***
- ***Vacuuming liquids with vacuum cleaners not equipped with specific original stopping systems.***
- ***Vacuuming 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 aluminum dusts, etc.).***

IMPORTANT: Fraudulent use is not admitted.

Versions and variations

Versions

⚠ WARNING! ⚠

Dust classification
This vacuum cleaner is produced in two versions:

- ***Normal version: not suitable for vacuuming hazardous, combustible/explosive dust;***
- ***Version for dust harmful for the health: classes L - M - H. In this case, the vacuum cleaner is suitable for use with hazardous, non-combustible/ non-explosive dust in accordance with standard EN 60335-2-69, Annexe. AA.***

Check the tolerated dust hazardousness class on the data plate and on the label applied to the vacuum cleaner: L (low risk), M (medium risk), H (high risk).

[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 dust harmful to health described above.*

Variants

LIQUIDS

In the Class **L**, **M** and **H** versions, this vacuum cleaner can also be produced in the variant for vacuuming liquids, with level monitoring function.

CE Declaration of conformity

Every vacuum cleaner comes with a CE Declaration of conformity. See fac-simile in fig. 20.

[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.

Classification in compliance with standard EN 60335-2-69 – Annexe AA

Vacuum cleaners for dust harmful to health are classified according to the following dust classification:

- **L** (low risk) suitable for separating dust with an exposure limit value of over 1 mg/m^3, depending on the volume occupied;
- **M** (medium risk) suitable for separating dust with an exposure limit value of no lower than 0.1 mg/m^3, depending on the volume occupied;
- **H** (high risk) for separating all dust with an exposure limit value lower than 0.1 mg/m^3, depending on the volume occupied, including carcinogenic and pathogenic dusts, such as asbestos.

Dust emissions in the environment

Indicative values of performance:

- standard version (not suitable for vacuuming hazardous dust);
- version for dust harmful to health (Classes **L**, **M**, **H**):
  - **L**: retains at least 99% of the vacuumed particles (see EN60335-2-69, Annexe AA);
  - **M**: retains at least 99.9% of the vacuumed particles (see EN60335-2-69, Annexe AA);
  - **H**: retains at least 99.995% of the vacuumed particles (see EN60335-2-69, Annexe AA);

General recommendations

⚠ WARNING! ⚠

If an emergency situation occurs:

- ***filter breakage***
- ***fire outbreak***
- ***short-circuit***
- ***motor block***
- ***electric shock***

Turn the vacuum cleaner off, unplug it and request assistance from qualified personnel.

[NOTE]

Check the place of work and substances tolerated for the vacuum cleaner suitable for liquids.

⚠ WARNING! ⚠

The vacuum cleaners 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.

⚠ DANGER ! ⚠

Version for liquids.
If foam or liquid leaks out of the vacuum cleaner, turn it off immediately, unplug it and contact qualified personnel for assistance.

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Vacuum cleaner description

Vacuum Cleaner Parts and Labels

Figure 1

1. Identification plate which includes:
Model code, Class (**L** - **M** - **H**), Technical Specifications (see table on page 6), Serial N°., CE Mark, Year of manufacture, Nominal network voltage.
2. Dust container
3. Dust container release lever
4. Inlet
5. Inlet (only for Class **M** - **H** vacuum cleaners).
6. Inlet plug
7. Accessories compartment
8. Warning label for Class**L** -**M** - **H** vacuum cleaners.
9. Outlet
10. Attention 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").
11. Plug for connecting the vacuum cleaner to an electrical socket.

Figure 2

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

The class **L** and **M** labels contain pictograms with the following meanings:

⚠ WARNING! ⚠

This vacuum cleaner contains dust hazardous for the health. Only authorised personnel wearing suitable personal protective equipment should empty and service the vacuum cleaner, including removing the means used to vacuum the dust. Do not use without the complete filter system in place.

The class **H** label contains the above text.

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This vacuum cleaner creates a strong air flow which is drawn in through the inlet (**4** - Fig. 1) and blown out through the outlet (**9** - Fig. 1).
Before turning on the vacuum cleaner, 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 authorised hoses are given in the technical specifications table.
The vacuum cleaner is equipped with a primary filter which enables it to be used for the majority of applications.
Besides the primary filter, which retains the most common types of dust, the vacuum cleaner can be fitted with a secondary filter (absolute **H** class) with a higher filtering capacity for fine dusts and dusts that are hazardous to health.

Optional kits

Please contact the manufacturer's sales network for information on optionals.

Instructions for installing the optionals are included in the conversion kit.

⚠ WARNING! ⚠

Use only supplied and authorized genuine spare parts.

Accessories

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

⚠ WARNING! ⚠

Use only genuine accessories supplied and authorized by the manufacturer.

Packing and unpacking

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

Figure 3

Model	S2 L - M - H (40 L)	S3 L - M - H BDC1330 (50 L)	S3 L - M - H E-VAC2000 BDC1330 (100 L)
A (mm)	700	700	700
B (mm)	860	860	860
C (mm)	1350	1750	1750
Weight with packing (kg)	80	86	89

Unpacking, moving, use and storage

Operate on flat, horizontal surfaces.

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

Setting to work - connection to the power supply

⚠ WARNING! ⚠

- ***Make sure there is no evident sign of damage to the vacuum cleaner before starting work.***
- ***Before plugging the vacuum cleaner into the electrical mains, make sure that the voltage rating indicated on the data plate corresponds to that of the electrical mains.***
- ***Plug the vacuum cleaner into a socket with a correctly installed ground contact/connection.***
- ***Make sure that the vacuum cleaner is turned off.***
- ***The plugs and connectors of the connection cables must be protected against splashed water.***
- ***Make sure that connections to the electrical mains and plug are correct.***
- ***Use the vacuum cleaners only when the cables that connect to the electrical mains are in perfect condition (damaged cables could lead to electric shocks!).***
- ***Regularly check that the electric cable does not show signs of damage, excessive wear, cracks or ageing.***

⚠ WARNING! ⚠

When the vacuum cleaner 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.***

Extensions

If an extension cable is used, make sure it is fit for the power draw and protection degree of the vacuum cleaner.

Minimum section of extension cables: 2.5 mm^2
Maximum length = 20 m
Cable = H07 RN - F

⚠ WARNING! ⚠

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

⚠ WARNING! ⚠

Never spray water on the vacuum cleaner: this could be dangerous for persons exposed and could short circuit the power supply.

⚠ WARNING! ⚠

The vacuum cleaner's 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.

Wet and dry applications

[NOTE]

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

⚠ WARNING! ⚠

Comply with the safety regulations governing the materials for which the vacuum cleaner is used.

⚠ WARNING! ⚠

If the version for liquids is used:

- ***Make sure the liquid level sensor is working correctly before vacuuming liquids.***
- ***If foam forms, turn off the vacuum cleaner immediately and empty the container.***
- ***N.B.: Switch off the vacuum cleaner 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.***
- ***N.B.: dirty liquid vacuumed up by the vacuum cleaner must be considered conductive.***

⚠ WARNING! ⚠

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

Maintenance and repairs

⚠ WARNING! ⚠

Disconnect the vacuum cleaner from its power source before cleaning, servicing, replacing parts or converting it to another version/variant, the plug must be disconnected from the socket.

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

Failure to comply with these instructions could jeopardize your safety. Moreover, such action would immediately make the EC declaration of conformity issued with the vacuum cleaner void.

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Technical specifications		EU		UK			
Parameter	**Units**	**S2**	**S3 E-VAC2000 BDC1330**	**S2**		**S3**	
Dust classes		**L - M - H**		**L - M - H**			
Voltage (50 - 60 Hz)	V	230		110	230	110	230
Power rating	kW	2	3	2	2	3	3
Power rating (EN 60335-2-69)	kW	1.8	2.6	1,5	1,8	2,2	2,6
Max vacuum	hPa (2)	211	211	165	211	165	211
Maximum air flow rate(without hose and reductions)	L/min'	5500	8100	4980	5500	7080	8100
Maximum air flow rate (with hose, length: 3 m, diameter: 50 mm)	L/min'	4720	6500	4470	4720	5950	6500
Noise level (Lpf) (EN60335-2-69)	dB(A)	70	71	70		71	
Protection	IP	44		44			
Insulation	Class	I		I			
Inlet (diameter)	mm	70		70			
Hoses allowed for classes "**L**" and "standard" (diameter)	mm	70		70			
Hoses allowed for classes "**M**" and "**H**" (diameter)	mm	50		50			
Primary filter surface for classes "**L**" and "**M**"	m^2	1.95	1.95	1.95		1.95	
Upstream absolute "**H**" filter surface	m^2	3.5	3.5	3.5		3.5	
Absolute filter efficiency (EN 1822)	%	99.995 (H14)	99.995 (H14)	99.995 (H14)		99.995 (H14)	

Model	**Units**	**S2**	**S3 E-VAC2000 BDC1330**	
Container capacity	L	40	50	100
Dust bag capacity (versions **M** - **H**)	L	32	32	
"**L** version" mass (1)	kg	62	68	71
"**M**" version mass (1)	kg	64	70	73
"**H** version" mass (1)	kg	67	73	76

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Dimensions

Figure 4

Model	**S2 L - M - H (40 L)**	**S3 L - M - H BDC1330 (50 L)**	**S3 L - M - H E-VAC2000 BDC1330 (100 L)**
A (mm)	800	800	800
B (mm)	600	600	600
C (mm)	1230	1300	1580

(1) Net weight (2) hPa = mbar

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

Controls and indicators

Figure 5

1. Start/stop switch
2-way selector:
position “0” - The vacuum cleaner is turned OFF.
position “I” - The vacuum cleaner is turned ON.
2. Main motor Start/Stop indicator and button
If the indicator is lit, the main motor is ON.
You can start/stop the main motor with this button.
3. Second motor Start/Stop indicator and button
If the indicator is lit, the second motor is ON.
You can start/stop the second motor with this button.
4. Third motor (S3) Start/Stop indicator and button
If the indicator is lit, the third motor is ON.
You can start/stop the third motor with this button.
5. Stop button
This button stops all the motors simultaneously when pressed (but doesn’t turn the power of the vacuum cleaner off).
6. Low compressor pressure alarm indicator
If lit, this indicates an anomaly in the pressure of the compressor (if installed).
7. Max. vacuumed level indicator
If lit, this indicates the maximum level of the vacuumed material has been reached in the container, if the level control for liquids or solids is installed.
8. Voltage plate indicator
Indicates the vacuum cleaner is powered.
9. Primary filter indicator
Green - Indicates the primary filter is functioning properly.
Red - Indicates the primary filter is blocked.
10. Absolute filter indicator (if installed)
Red - Indicates the absolute filter is blocked.
11. Manual filter shaker knob (models with manual filter shaker)

Figure 6

1. Dust container release lever
2. Castor lever
3. Closing band lever
4. Safety bolt (**H** class)
5. Electric power cable
6. Handle
7. Inlet plug

Figure 7

1. Inlet

Inspections prior to starting

Prior to starting, check that:
- the filters are installed;
- all the levers are locked in place;
- the vacuum hose and tools have been correctly fitted to the inlet (**1** - Fig.7);
- the bag is installed, if applicable.

⚠ WARNING! ⚠

Do not use the vacuum cleaner if the filter is faulty.

Starting and stopping

Figure 8

⚠ WARNING! ⚠

Lock the castor brakes (1) before starting the vacuum cleaner.

- Turn switch (**2**) to position “I” to start the vacuum cleaner.

When the switch is in position “I” the motors start in sequence and the state of the same is shown by indicators (**2** - **3** - **4** - Fig. 5).
- Turn the switch to position “0” to stop the vacuum cleaner.

Vacuum cleaner operation

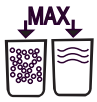
⚠ WARNING! ⚠

The air speed in the suction tube must not be less than 20 m/s.
This state is shown by the green indicator of the primary filter.

When using the vacuum cleaner, check:
- the state of the max. vacuumed material level indicator (**7** - Fig. 5) if the level check is installed.
- The state of the primary filter (**9** - Fig. 5) and the absolute filter (if installed) (**10** - Fig. 5).
- The state of the low compressor pressure indicator (**6** - Fig. 5) (if installed).

⚠ WARNING! ⚠

If one of the indicators is lit, follow the instructions.

Symbol	Indicator signal	Indicator colour	Vacuum cleaner state and procedure
	Low compressor pressure (6 - Fig. 5)	Red	Suction stopped. Check the compressor is functioning properly (if installed).
	Max. vacuumed material level (7 - Fig. 5)	Red	Suction stopped. Empty the container (see relevant paragraph).
	Primary filter (9 - Fig. 5)	Red	Suction on. Use the primary filter shaker after stopping the vacuum cleaner (on models with a manual filter shaker).
	Absolute filter (class H models) (10 - Fig. 5)	Red	Suction on. Change absolute filter (see relevant paragraph).

⚠ WARNING! ⚠

If the vacuum cleaner belongs to the M or H class, use only hoses with diameters that comply with the indications in the Technical data table.

⚠ WARNING! ⚠

Consult the “Troubleshooting” chapter if faults occur.

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Primary filter shaker

Automatic primary filter shaker
On models with an automatic primary filter shaker, the filter shaker will be automatically activated at the start and end of the operating cycle, respectively after starting the vacuum cleaner and after all the motors have stopped (**1** - Fig. 5). Diagram A (see bottom of page - work phase sequence).

Manual primary filter shaker

Figure 9

In relation to the quantity of material vacuumed and if indicator (**9** - Fig. 5) is red, turn the vacuum cleaner off and use knob (**1** - Fig. 9) of the manual filter shaker.

⚠ WARNING! ⚠

Stop the vacuum cleaner before using the filter shaker. Do not shake the filter while the vacuum cleaner is on, as this could damage the filter.

Wait before restarting the vacuum cleaner, to allow the dust to settle. Replace the filter element if the indicator remains red (**9** - Fig. 5) even after the filter has been shaken (consult the "Primary filter replacement" paragraph).

Emergency stopping

Press Stop button (**5** - Fig. 5). The vacuum cleaner stops.

⚠ WARNING! ⚠

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

To start the vacuum cleaner again, press the buttons of each single motor or turn main switch(**1** - Fig. 5) to "0" and then to "I" again.

Emptying the dust container

⚠ WARNING! ⚠

- ***Before proceeding with these operations, turn the vacuum cleaner off and disconnect the plug from the power socket.***
- ***Check the class of the vacuum cleaner.***

Before emptying the container it is advisable to clean the filter (see "Primary filter shaker").

- Standard and **L** version not suitable for vacuuming hazardous dust
  - Release dust container (**1**, Fig. 10), with lever (**2**), then remove and empty it.
  - Make sure the seal is in perfect condition and correctly positioned.
  - Place the container back in position and secure it again.

Plastic bag

You can use the plastic bags supplied by our sales network (Fig. 10A).

Versions for dusts harmful to health

- Classes **L**, **M**, **H** suitable for vacuuming hazardous and/or carcinogenic dust (class **H**).

Endless Bag

Classe **M** and **H** Vacuum cleaners are supplied with the Longopac endless bag (Fig.11).
If the bag is installed incorrectly, this could create health risks for persons exposed.

Dust Bag

Vacuum cleaners can be supplied with the dust bag - code 81584000 (Fig. 12).
If the bag isn't installed or is installed incorrectly, this could create health risks for persons exposed.

Safe Bag

Vacuum cleaners can be supplied with the dust bag - code 4084001244 (Fig. 13). If the bag isn't installed or is installed incorrectly, this could create health risks for persons exposed.

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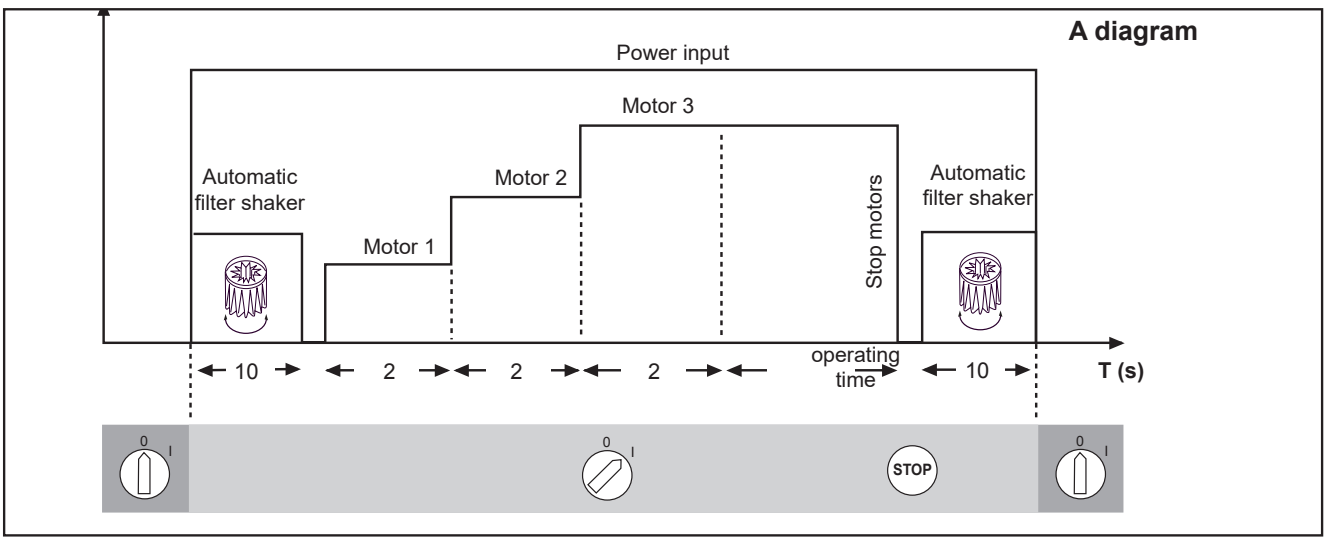

How to change the bag

WARNING!

- ***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 during these operations. Wear a P3 protective mask.***
- ***In case of dangerous and/or toxic dust, you must use the supplied safety bag for these certified vacuum cleaners.***
- ***The bag must only be disposed of by qualified personnel and in compliance with the laws in force.***

WARNING!

Installing the wrong paper bag for the class of dust to be vacuumed or incorrect installation, can create a health risk for the persons exposed.

Endless Bag replacement for class M and H vacuum cleaners

Figure 11

WARNING!

Take care not to raise dust when this operation is carried out. 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.

- 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 25 cm, 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 outer end, turn it down and close it with the proper band (**2-3**).
- 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 the inner end 250mm long, removed earlier, above the gasket on the hopper (**5**).
- When the bag is full (Longopac®) close the upper end with two clamps by fastening them at 50 mm one from the other, then with a pair of scissors cut the bag between the two clamps.

How to replace the Dust Bag

Figure 12

- Close the inlet by using the relevant cap (**1**).
- Release the dust container.
- Remove the Dust Bag and close it with the relevant cap as shown in figure 11.
- Insert a new bag, making sure the bag inlet is sealed.
- Replace the dust container in the vacuum cleaner.

WARNING!

Only use suitable bags for the vacuum cleaner class you are using.

How to replace the Safe Bag

Figure 13

- Remove and put the vacuum hose in a safe and dust-free place.
- Close the inlet by using the relevant cap (**1**).
- Release the dust container.
- Close the Safe Bag by pulling the “guillotine” (**2**) seal.
- 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 bag inlet is sealed.
- Wrap the plastic bag around the dust container external wall.
- Replace the dust container in the vacuum cleaner.

WARNING!

Only use suitable bags for the vacuum cleaner class you are using.

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Liquids vacuuming

⚠ WARNING! ⚠

Make sure that the vacuum cleaner is equipped with a liquid level sensor and is suitable for vacuum liquids.

- The filter element will be wet after liquids have been vacuumed.

A wet filter element can quickly become clogged if the vacuum cleaner 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 vacuum cleaner for dry materials.

At the end of a cleaning session

- Turn the vacuum cleaner off with switch (**1** - Fig.5) and disconnect the plug from the socket.
- Wind the connection cable up and hang it in the relevant compartment (Fig. 13).
- Empty the container as described in the “Emptying the container” paragraph.
- Clean the vacuum cleaner as described in the paragraph “Maintenance, cleaning and decontamination”.
- Wash the container with clean water if aggressive substances have been vacuumed.
- Store the vacuum cleaner in a dry place, out of reach of unauthorized persons.
- Close the inlet with the appropriate plug (**1**, Fig. 13A) when the vacuum cleaner is transported or is not being used (particularly in the case of **M**, **H**) versions).

Maintenance, cleaning and decontamination

⚠ WARNING! ⚠

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

⚠ WARNING! ⚠

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

⚠ WARNING! ⚠

The maintenance, cleaning and decontamination operations must only be performed with the vacuum cleaner turned off with switch (1 - Fig.5) and the plug disconnected from the power socket.
It is absolutely forbidden to perform maintenance with the plug connected to the socket.
Danger of electric shock!

- If the user is performing the maintenance operations, the vacuum cleaner must be disassembled, cleaned and overhauled as far as reasonably possible without hazards for the maintenance personnel or other people. The suitable precautions include decontamination before disassembling the vacuum cleaner, adequate filtered ventilation of the exhaust air from the room in which it is disassembled, cleaning the maintenance area and suitable personal protection.

- The external parts of class **M** and class **H** vacuum cleaners 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 vacuum cleaner must be considered contaminated when they are removed from the hazardous zone and appropriate actions must be taken to prevent the dispersion of dust.
  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 conform to applicable regulations and in accordance with the local laws governing the disposal of such material.
  This procedure must also be followed when the filters are eliminated (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 vacuum cleaner has been impaired in any way and make sure the electric control panel operates correctly.

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⚠ WARNING! ⚠

In particular, on Class H vacuum cleaners, the filtering efficiency of the vacuum cleaner 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 vacuum cleaner 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.

⚠ WARNING! ⚠

This vacuum cleaner can vacuum dust hazardous for the health. The procedures for servicing and emptying the vacuum cleaner including removing the dust container, must only be performed by specialised personnel wearing protective clothing. Do not use without the complete filter system in place.

Primary and absolute filter disassembly and replacement

⚠ WARNING! ⚠

When the vacuum cleaner 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.***

⚠ WARNING! ⚠

Filter replacement is a serious matter. The filter must be replaced with one of identical characteristics, filtering surface and category.
Otherwise the vacuum cleaner will not operate correctly.

Primary filter replacement

Figure 14

1. Vacuuming unit
2. Locking lever
3. Filter cage
4. Primary filter
5. Filter shaker housing

⚠ WARNING! ⚠

Check the vacuum cleaner class (L, M, H).

⚠ WARNING! ⚠

Take care not to raise dust when this operation is carried out. 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.
Before proceeding with these operations, turn the vacuum cleaner off and disconnect the plug from the power socket.

- Use lever (**2**) to release vacuum unit (**1**) then pull it up and out of the vacuum cleaner.
- Remove the filter cage from the vacuum cleaner.
- Remove the old filter by releasing the fixing clips.
- Fit the new filter and secure it in the cage with special clamps.
- Dispose of the old filter according to the laws in force.

Replacing a primary filter with automatic filter shaker

⚠ WARNING! ⚠

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.

- After replacing the filter in the cage (**3**), install it in the container again.
- Reassemble vacuum unit (**1**) making sure filter cage (**3**) fits into shaped housing (**5**) of the filter shaker.
- Turn the power switch on and the vacuum unit will self-centre automatically.
- Use locking lever (**2**) to lock the vacuum unit in place.

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Replacing a primary filter with manual filter shaker

Figure 15

1. Manual filter shaker knob
2. Vacuuming unit
3. Locking lever
4. Filter cage
5. Filter shaker housing

⚠ WARNING! ⚠

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.

- After having replaced and fitted the filter in the cage, insert filter shaker cage (**4**) in the shaped seat (**5**) of the filter shaker.
- Position the manual filter shaker knob (**1**) in the middle.
- Reassemble vacuum unit (**2**) complete with cage and filter, in the vacuum container.
- Check the filter shaker works properly and if necessary adjust the position of the filter cage by turning the vacuum unit.
- Use locking lever (**3**) to lock the vacuum unit in place.

If necessary contact the manufacturer's Service Centre.

HEPA filter replacement

Version for dust harmful for the health: Class H

⚠ WARNING! ⚠

Take care not to raise dust when this operation is carried out. 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.

⚠ WARNING! ⚠

Do not use the Class H filter again after having removed it from the vacuum cleaner.

Figure 16

1. Vacuuming unit
2. Locking lever
3. Safety bolt
4. Absolute filter lock ring
5. Absolute filter disc
6. Absolute filter

⚠ WARNING! ⚠

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.

Before proceeding with these operations, turn the vacuum cleaner off and disconnect the plug from the power socket.

- Unlock the safety bolt (**3**).
- Use lever (**2**) to release vacuum unit (**1**) then pull it up and out of the vacuum cleaner.
- Unscrew ring (**4**).
- Pull out disc (**5**) and absolute filter (**6**).
- Place absolute filter (**6**) in a plastic bag, close the bag hermetically and dispose of the filter in accordance with the laws in force.
- Insert a new filter (**6**) with the same filtering characteristics as the removed one.
- Lock the absolute filter with disc (**5**) and tighten ring (**4**).
- Replace vacuum unit (**1**).
- Fix the vacuum unit in place with lever (**2**) and lock safety bolt (**3**) again.

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Tightness inspection

Hoses check

Make sure the connecting hoses (Fig. 17) 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.
Scrape inlet (**2**, Fig. 17) from the outside and remove the deposited waste as indicated in figure 17.

Filtering chamber tightness check

If the gasket (**1**, Fig. 19) between the container (**4**) and the filtering chamber (3) fails to guarantee tightness:

- Loosen the four screws (**2**) that lock the filtering chamber (**3**) against the vacuum cleaner 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 cannot be obtained and the gasket is torn or cracked, etc. it must be replaced.

Disposing of the vacuum cleaner

Figure 19

Dispose of the vacuum cleaner in compliance with the laws in force.

- **Proper disposal (electric and electronic waste). (Applicable in the European Union and in countries providing a separate collection system)**

The above symbol (Fig. 19), which is present on the product or in its documentation, indicates that the product cannot be disposed of together with other domestic waste at the end of its life cycle.
To prevent damage to the environment or health caused by improper waste disposal, please separate this product from other waste and recycle it responsibly in order to support the sustainable reutilisation of material resources.
This product can not be disposed of together with other commercial waste.

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.

	Description	Model		
		L	M	H
	Star filter kit	40000338	40000492	
	Filter ring seal	Z8 17026		
	Filter chamber gasket	40000762		
	Filter clamp	Z8 18079		
	Absolute filter	-	-	4081700936
	Longopac	-	4084000956	
	Dust Bag (5 bags)	81584000		
	Safe Bag (1 bag)	4084001244		
	230V 1000W Motor	40000937		
	110V 1000W Motor	40000938		
	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.
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	Non existent 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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