3707 - 3707/10 - 3907
3907W - 3907/18

Instructions for use

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

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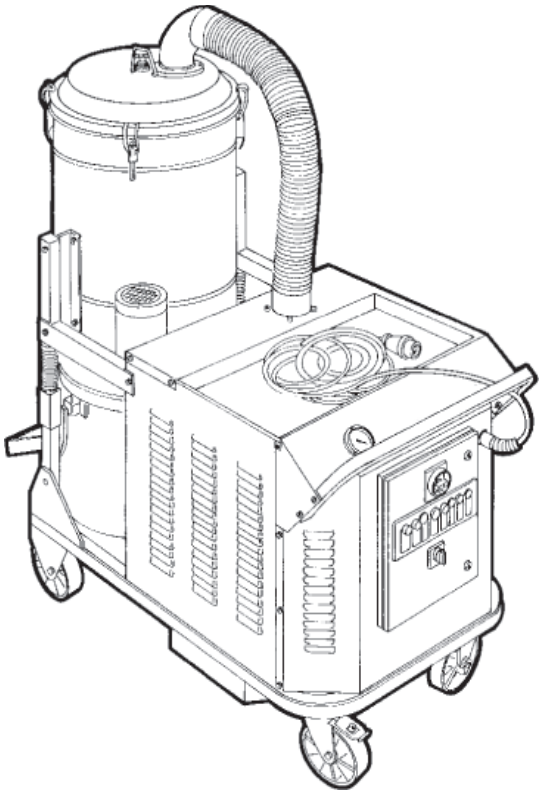
I Italian
GB English
F French
D Deutsch
E Spanish



Nilfisk®

Translation of original instructions

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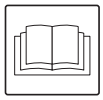
Instructions for use

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

Operator's safety

WARNING!



Before starting the device, it is absolutely essential to read these operating instructions and to keep them ready at 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 device, 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 the device 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 device.

General information for using the vacuum cleaner

Use the vacuum cleaner 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.

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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 was conceived to clean and collect solid non-flammable materials indoor and outdoor.

WARNING!

This vacuum cleaner can only be used to vacuum dry materials.

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

The device has been designed to be used by one operator at a time.
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 device 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.***
- ***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.***
- ***When the air outlet is partially or totally closed.***
- ***When used in narrow areas where there is no fresh air.***
- ***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 aluminium dusts, etc.).***

IMPORTANT: Fraudulent use is not admitted.

General recommendations

WARNING!

If an emergency situation occurs:
- ***filter breakage***
- ***fire outbreak***
- ***short-circuit***
- ***motor block***
- ***electric shock***
- ***etc.***

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 in ATEX variant.

WARNING!

The vacuum cleaners must not be used or stored outdoors in damp places.

These devices cannot be used in corrosive environment.

EC Declaration of conformity

Each vacuum cleaner is provided with the EC Declaration of conformity (fig. 24).

[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.

Variants

ATEX

The manufacturer produces vacuum cleaners suitable to be used in potentially explosive atmospheres. These variants are manufactured according to directives and standards in force. The relevant additional instructions are supplied together with the device.

In the Class M and H version, this vacuum cleaner can also be produced as Variant ATEX.

[NOTE]

ATEX variants
Refer to the manufacturer's sales network for these versions.
For ATEX industrial devices see the instructions for "ATEX" use.

LIQUIDS

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

WARNING!

Version for liquids.
If foam or liquid spills from the machine, switch off immediately and check for the cause.

Versions

WARNING!

Classes of dustiness.
This vacuum cleaner is produced in two versions:
1. ***normal version: not suitable for vacuuming hazardous, combustible/explosive dust;***
2. ***version for dust harmful for the health: classes L - M - H. In this case, the vacuum cleaner is suitable for use with hazardous, noncombustible/ explosive dust in accordance with standard EN 60335-2-69, par. AA. 2. 202 b), c).***
   Check on the data plate and on the label applied to the vacuum cleaner to ascertain the tolerated dust hazardousness class: L (low risk), M (medium risk), H (high risk).

Classification in compliance with standard EN 60335-2-69 - Annex AA

Appliances for dust that is hazardous for the health are classified according to the following dust categories:
- 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) for separating dust with an exposure limit value of over 0.1 mg/m^3, depending on the volume occupied;
- H (high risk) for separating all dusts with an exposure limit value of less than 0.1 mg/m^3, depending on the volume occupied, including carcinogenic and pathogenic dusts.

Dust emissions in the environment

Indicative values of performance:
- normal version (not suitable for vacuuming hazardous dust): retains at least 99% of the vacuumed particles (see EN60335-2-69, Annexe AA);
- version for dust harmful to health (L, M, H classes):
  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).

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Vacuum cleaner description

Description of the vacuum cleaner - Labels

Figure 1

A. Identification plate:
Code of the Model which includes the Category of use (L - M - H), Technical Specifications, Serial Number, CE marking, Year of manufacture
B. Dust container
C. Fastening latches
D. On-off switch
E. Handle
F. Inlet
G. Inlet plug (only for Class M - H vacuum cleaners)
H. Warning label (only for Class L - M - H vacuum cleaners)
I. Attention plate
Draws the operator's attention to the fact that the filter must only be shaken when the machine is off (see par. "Shaking the main filter").
L. Exhaust
M. Panel power plate
Indicates that the panel is powered by the voltage given on the data plate.
N. Attention plate (voltage)

For this reason, only explicitly authorized personnel must be allowed access to the panel.
The electrical components must only be accessed after the power supply has been disconnected by setting main switch "D" to position -0- (off) and after having removed the plug from the current socket.
This vacuum cleaner creates a strong air flow which is drawn in through inlet "F" and blows out through exhaust "L"; after the hose and tools have been fitted, make sure that the motor turns in the right direction.
Before turning on the vacuum cleaner, fit the hose into the inlet and then fit the required tool on to the end part. Refer to the accessory catalogue or the assistance service.
Only use genuine antistatic accessories.
The diameters of the authorized hoses are given in the technical specifications table.
This vacuum cleaner is equipped with an internal deflector which subjects the vacuumed substances to a circular centrifugal movement that makes them drop into the container.
The vacuum cleaner is equipped with a main filter which enables it to be used for the majority of applications.
Different types of main filter are available: standard and class L and M for dusts that are hazardous for the health.
Besides the main filter which retains the more common types of dust, the vacuum cleaner can be fitted with a secondary filter (Hepa H) with a higher filtering capacity for fine dusts and substances that are hazardous for the health.

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Optional kits

Various optional kits are available for converting the vacuum cleaner:

- level gauge for liquids - stopping liquids;
- removable separator;
- clamp and bracket;
- downstream Hepa filter;
- grill and depressor;
- grate;
- cartridge filter;
- electric filter shaker;
- limiting valve.

On request, the vacuum cleaner 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 themselves.

WARNING!
Only use genuine spare parts.

Accessories

Various accessories are available; refer to the Accessories Catalogue.

WARNING!
Only use genuine accessories.

Packing and unpacking

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

Figure 2

Model	A (mm)	B (mm)	C (mm)	Kg
3707	1.700	900	1.950	319
3707/10 **3707/10 L-M-H**	1.700	900	1.950	333
3907 **3907 L-M**	1.700	900	1.950	338
3907W **3907W L-M-H**	1.700	900	1.950	352
3907/18 **3907/18 L-M-H**	1.700	1.700	1.950	380

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 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 (VHW311T version).***
- ***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 vacuum cleaners 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.***

WARNING!

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.***

Extensions

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

WARNING!

Variant ATEX: extensions, plugged-in electrical devices and adapters cannot be used when the vacuum cleaner is used for flammable dusts.

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

Max power (kW)	3	5	15	22
Minimum sect. (mm^2)	2.5	4	10	16

WARNING!

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

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.

WARNING!

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

WARNING!

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

GB

Dry applications

[NOTE]

- *The supplied filters and the bag (if applicable) must be installed correctly.*
- *If the machine is used to clean up liquids, make sure that the liquid level sensor activates and operates in the correct way.*

WARNING!

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

WARNING!

If the wet cleaner variant is used:

- ***Make sure that the liquid level sensor operates correctly before using the vacuum cleaner to clean up liquids.***
- ***If foam forms, immediately stop work and empty the container.***
- ***Warning: 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.***
- ***Warning: the dirty liquid collected by the vacuum must be considered conductive.***

Maintenance and repairs

WARNING!

Disconnect the vacuum cleaner from its power source before cleaning, servicing, replacing parts or converting it to obtain another version/variant, the plug must be removed 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 void the EC declaration of conformity/ incorporation issued with the device.

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Technical data

Parameter	Units	3707	3707/10 3707/10 L, M, H	3907 3907 L, M	3907 W 3907 W L, M, H	3907/18 3907/18 L, M, H
Voltage	V	230/400/50	230/400/50	230/400/50	230/400/50	230/400/50
Power	kW	5.5	7.5	11	11	13
Power (EN 60335-2-69) (*)	kW	—	5	6	6	10
Weight	kg	291	305	411	324	360
Noise level (Lpf) (EN60335-2-69)	dB(A)	78	78	78	78	78
Protection	IP	55	55	55	55	55
Insulation	Class	F	F	F	F	F
Capacity	L	175	175	175	175	175
Inlet	mm	100	100	100	100	100
Vibration, a_h (**)	m/s^2	≤2.5	≤2.5	≤2.5	≤2.5	≤2.5
Max vacuum	mm H_20	3,600	2,500	4,400	3,000	3,000
Max. air flow rate without hose and reductions	L/m'	8,100	13,500	8,400	15,300	18,600
Max. air flow rate (3 m Ø 50 mm hose)	L/m'	—	9,100	8,100	10,500	12,000
Hoses allowed for classes “L” and “standard”	mm	100	100	100	100	100
Hoses allowed for classes “M” and “H”	mm	70	70	70	70	70
Main filter surface (L-M)	m^2	3.5	3.5	3.5	3.5	5
Upstream Hepa filter H surface (cod. 17050)	m^2	12	12	12	12	12
Downstream Hepa filter surface (cod. 17092)	m^2	17	17	17	17	17
Hepa filter efficiency according to MPPS method (EN 1822)	%	99.995 (H14)	99.995 (H14)	99.995 (H14)	99.995 (H14)	99.995 (H14)

(*) 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

Figura 3

Model	3707	3707/10	3907	3907W	3907/18
A (mm)	1.600	1.600	1.600	1.600	1.600
B (mm)	800	800	800	800	800
C (mm)	1.810	1.810	1.810	1.810	1.810
Weight (kg)	291	305	411	324	360

[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%

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Controls, indicators and connections

Figure 4

A. Vacuum gauge
B. Main switch (on “I“ - off “0“)
C. Reverse phase indicator (only for L - M - H versions)
D. Warning light indicating thermic intervention
E. Machine electrically powered indicator
F. Phase inverter
G. Electric filter shaker start button (optional)
H. Stop button
I. Start button
L. Hour counter
M. Visual level gauge
N. Castor brakes
O. Inlet
P. Container release
Q. Filter chamber
R. Dust container
S. Main filter shaker knob

Inspections prior to starting

Figure 5

Inlet (**F**)

Prior to starting, check that:
- The filter is installed;
- All latches are tightly locked;
- The vacuum hose and tools have been correctly fitted into the inlet (**F**);

Do not use the device if the filter is faulty.

Starting

Figure 6

Castor brakes (**E**)
Start switch (**B**)

Lock the castor brakes (**E**) before starting the vacuum cleaner.

- Turn the switch (**B**) to “I” position to start the vacuum cleaner.
- Turn the switch to “0” position to turn the vacuum cleaner off.
- If the vacuum cleaner has been working and then stops and the indicator light (**C** - Fig. 4) comes on, or if the vacuum cleaner motor turns in the wrong direction, turn it off and turn the inverter (**F**)

Emergency stopping

Turn the main switch to “0” position.

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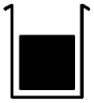
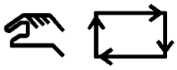
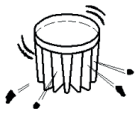
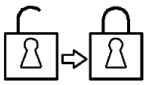
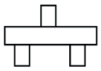
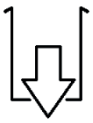
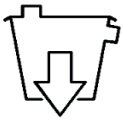
List of control symbols and indicator lights on the electrical panel

	Agitator-mixer
	Hopper Load
	Container/outlet/bag full
	Container/outlet/bag
	Inlets too simultaneous
	Clogged absolute filter
	Clogged primary filter
	Low compressed air pressure
	Manual-Automatic
	Run-Suction
	Product outlet full
	Voltage presence
	Circuit breaker protection

	Filter Cleaning
RESET	Reset
	Safety devices reset
	Exchanger
	Container outlet
	Silo-hopper outlet
	Separator full
	Phase sequence
	Silo-hopper full
	Silo-hopper
	Overtemperature
	Start
	Stop

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List of Acronyms used in the wiring diagram

ACRONYM	COMPONENT
A1	infiniclean sequencer timer
AL1	feeder, rectifier
B1,2,3,…	inlet microswitches, hopper sensor
CL1,2,3,…	level sensor
CN1,2,3,…	client go-ahead
E1,2,3,…	cartridge kit solenoid valve, infiniclean solenoid valve
F1,2,3,…	fuse holder
FC1,2,3,…	limit switch
H1,2,3,…	lamp, indicator, flashing light
HA1,2,3,…	siren, buzzer
J1,2,3,…	soft start
K1,2,3,…	auxiliary circuit relay, sensor interface relay
KL1,2,3,…	remote control reversal line electromagnetic switch
KM1,2,3,…	blower, filter shaker, rotocell, motor electromagnetic switch
KRS1,2,3,…	safety relay
KT1,2,3,…	star/delta timer, inlet timer, auxiliary circuit timer
M1,2,3,…	terminal board
MD1,2,3,…	Logo expansion
P1,2,3,…	Logo controller
PA,PA1,PA2,…	stop button
PAE,PAE1,PAE2,…	external stop button
PM,PM1,PM2,…	start button
PME,PME1,PME2,…	external start button
PR1,2,3,…	pressure switch, reset button
PS1,2,3,…	filter cleaning button
PT100	PT100 thermal probe
Q1,2,3,….	main switch, phase inverter, filter shaker circuit breaker, rotocell, motor
QF1,2,3,…	magnetothermic switch
R1	rupture disc signal
S1,2,3,…	AUT-MAN selector, auxiliary circuit selector, pump drive selector
SF1	phase sequence relay
SPE1,2,3,…	emergency push-button
T1,2,3,…	temperature regulator
TR1	transformer
TS2	cartridge kit sequencer timer
VS1	Logo display, PLC
XC1,2,3,…	connector
Y1,2,3,…	solenoid valve

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Operating the vacuum

Figure 7

1. Red Zone
2. Green Zone

Check the flow rate:

- When the vacuum cleaner is operating, the pointer of the vacuum gauge (**A**) must remain in the green zone (OK) to ensure that the speed of the intaken air does not drop below the safety value of 20 m/s.
- If the pointer is in the red zone (STOP), it means that the speed of the air in the hose is below 20 m/s and that the vacuum cleaner is not working in safety conditions. Clean or replace the filters.
- When the hose is blocked, the pointer of the vacuum gauge must switch from the green zone (OK) to the red zone (STOP).

WARNING!

If the vacuum cleaner is Class M or H, only use hoses with diameters that comply with the indications in the "Technical Specifications" Table in order to prevent the air speed from dropping below 20 m/s

WARNING!

When the vacuum cleaner is operating, always check to make sure that the vacuum gauge pointer remains in the green zone (OK).
Consult the "Troubleshooting" chapter if faults occur.

Shaking the main filter

Figures 7-8

Depending on the quantity of dust cleaned up, shake the main filter by means of the knob (**J**) when the vacuum gauge pointer (**A**) switches from the green zone (OK) to the red zone (STOP).

WARNING!

Stop the machine before shaking the filter.
Do not shake the filter whilst the machine is on as this could damage the filter itself.

Wait before restarting the vacuum cleaner, to allow the dust to settle.
Replace the filter element if the pointer still remains in the red zone (STOP) even after the filter has been shaken (consult the "Main filter replacement" section).

Emptying the container

WARNING!

Turn off the machine and remove the plug from the power socket before proceeding with this operation. Check the Class of the vacuum cleaner.

Before emptying the container it is a advisable to clean the filter (see "Shaking the main filter" sect.).

Normal version, not suitable for treating hazardous dust

Figure 9

- Release the container (**I**), then remove and empty it.
- Make sure that the seal is in perfect condition and correctly positioned.
- Place the container back in position and use the lever to secure it again.

Plastic bag for collect dust:

Figure 9

A plastic bag (our code Z8 40100) can be used to collect dust.
In this case, the machine must be equipped with optional accessories (grill and depressor).

Versions for dusts that are hazardous for the health:
Classes L - M - H, suitable for vacuuming hazardous and/or carcinogenic dust (H class).

WARNING!

- ***In compliance with current laws, these operations can only be carried out by trained and specialized personnel who must wear adequate clothing.***
- ***Take care not to raise the dust during this operation. Wear a P3 protective mask.***
- ***A plastic bag can be used (our code Z8 40100) if dust that is dangerous and/or hazardous for the health must be removed.***
- ***The container and/or liner must only be disposed of by trained personnel and in compliance with the current laws in force.***

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How to replace the safety drum:

Figure 10

- Place the hose in a safe, dustfree place;
- Release the container (**I**);
- Close the safety drum with the supplied cover and remove it from the container (**I**). Fit an empty drum in its place.
- Start the motor again to prevent dust from being blown about.
- Make sure that the seal is in perfect condition and correctly positioned.
- Switch off the motor, fit an empty drum in place and fasten it in position.

Use as a wet cleaner

Make sure that the vacuum cleaner is equipped with a float (liquid level sensor) and is suitable for use as a wet cleaner.
Do not clean up flammable liquids.
If foam forms, stop work immediately and empty the container.
The filter element will be wet after liquids have been cleaned up.
A wet filter element can quickly become clogged if the vacuum cleaner is then used to clean up dry substances.
For this reason, make sure that the filter element is dry or replace it with another one before using the vacuum cleaner to clean up dry materials.

At the end of a cleaning session

Figure 11

1. Turn off the vacuum cleaner and remove the plug from the socket.
2. Coil the connection flex.
3. Empty the container as described in the “Emptying the container” section.
   Clean the vacuum cleaner as described in the “Maintenance, cleaning and decontamination” section.
4. Wash the container with clean water if aggressive substances have been cleaned up.
5. Store the vacuum in a dry place, out of the reach of unauthorized people.
6. Shut the inlet with the appropriate plug (**A**) when the vacuum cleaner is transported or not being used (particularly in the case of versions M - H and Asbestos).

GB

Maintenance, cleaning and decontamination

WARNING!

The precautions described below must be taken during all the maintenance operations, including cleaning and replacing of the filter.

- ***To allow the user to carry out the maintenance operations, the vacuum cleaner 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 device, 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 class H and class M appliances 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 appliance 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 servicing work or repairs are carried out, all the contaminated elements that cannot be cleaned well must be eliminated.
  These elements must be disposed of in sealed bags conforming to the 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 (main, Hepa and downstream filters).

Compartments that are not dust-tight must be opened with suitable tools (screwdrivers, wrenches, etc.) and thoroughly cleaned.

- ***Carry out a technical inspection at least once a year, for example: check the filters to find out whether the air-tightness of the vacuum cleaner has been impaired in any way and make sure that the electric control panel operates correctly. This inspection must be carried out by the manufacturer or by a competent person.***

WARNING!

Only use genuine spare parts.

How to disassemble and replace the main and Hepa filters

WARNING!

When the vacuum cleaner is used to clean up hazardous substances, the filters become contaminated, thus:

- ***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 current laws.***

WARNING!

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

Main filter replacement

WARNING!

Check the Class of the vacuum cleaner (L - M - H). 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 relative laws in force.

Before proceeding with this operation, turn off the machine and remove the plug from the power socket.

Disassembly

Figure 12

- Remove the hose (**A**) from the lower outlet.
- Release stop (**B**) and unscrew filter shaker knob (**C**).
- Release the two fastening latches (**D**) and remove lid (**E**).
- Lift filter (**F**), unscrew clamp (**G**) and remove ring (**H**).
- Unscrew cage (**I**) and turn the filter upside down.
- Cut the plastic clamps (**L**) and detach the cage from the filter.

Assembly

- Fit the filter catch and retention ring of the old filter on to the new one.
- Insert cage (**I**) and fix it to the filter by means of plastic clamps (**L**) on the bottom of the filter itself.
- Fit the filter into filtering chamber then mount lid (**E**) and lock it in place with the two fastening latches (**D**).
- Fit the filter shaker knob and lock it in the lowered position by means of the stop so that the filter is kept stretched.
- Fit the suction hose on the lower outlet.
- Dispose of the filter in accordance with the laws in force.

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.

Replacing the upstream Hepa filter

Figure 13

- Unscrew knob (**A**);
- Remove cover (**B**);
- Release knob filter (**C**), cover the filter (**D**) with a plastic bag and remove everything;
- Seal the bag, fit the new filter and hermetically close the cover.

[NOTE]

Standard EN 60335-2-69 prescribes inspections at regular intervals or after all repairs or modifications.

Inspecting and cleaning the motor cooling fan

Periodically clean the motor cooling fan to prevent the electric motor from overheating, particularly if the appliance is used in a dusty place.

Seal inspection

Checking the condition of the hoses

Figure 14

Make sure that connecting hose hoses (**A**), (**B**) and (**C**) 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 hose (**C**), in outlet and on the baffle in the filtering chamber.
Scrape outside the outlet and remove the deposited waste as indicated in figure.

Checking the lid seal

Figure 15

If seal (**A**) under lid (**D**) has become slack, unscrew screws “B” that lock fastening latches (**C**) in place and allow them to slide downwards until lid (**D**) closes perfectly.
Now tighten locking screws “B” (Fig. 15).
Replace seal “A” (Fig. 15) if an optimum seal cannot be obtained.

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Checking the tightness of filter chamber

Figura 16

If seal (**A**) between the container and filter chamber (**C**) fails to guarantee tightness:
- loosen the four screws (**B**) that lock filter chamber (**C**) against vacuum structure.
- Allow filter chamber (**C**) to lower down and relock screws (**B**) once it has reached the retention position.

The seal must be replaced if it is torn, cut, etc.
Replace seal (**A**) if the degree of tightness is still not optimum.

Cleaning and replacing the separator

Figure 17

[NOTE]

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

Separator (**D**) should first be disassembled in order to be perfectly cleaned:
- release latches (**A**) that fasten lid (**B**) and remove the lid.
- Remove the filter.
- Unscrew the two screws (**C**) and remove separator from the container.
- Replace the part if excessively worn.
- Assemble separator (**D**).
- Lock it in position by screwing the two screws (**C**). Refit the filter and close cover (**B**), locking it in place with the two fastening latches (**A**).

Disposal of the machine

Dispose of the machine in compliance with the current laws in force.

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) (Applicable in the European Union and other European countries with separate collection systems)
This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Wiring diagrams

Basic machine

Figure 18

Item	Code	Description	Q.ty
H1	Z8 39111 + Z8 39113 + Z8 39114	White indicator	1
H2	Z8 39112 + Z8 39113 + Z8 39114	Red indicator	1
KM1	Z8 39281	Contactor kW 4 24VAC 1NO	1
	Z8 391005	Contactor kW 5,5 24 VAC 1NO	1
	Z8 39102 + Z8 39366	Contactor kW 11 24 VAC	1
KM2	Z8 391006	Contactor kW 3 24 VAC 1NC	1
	Z8 391007 + Z8 39367	Contactor kW 7,5 24 VAC	1
KM3	4083901387	Contactor kW 4 24 VAC 1NC	1
	Z8 391008	Contactor kW 5,5 24 VAC 1NC	1
	Z8 39102 + Z8 39367	Contactor kW 11 24 VAC	1
KT1	Z8 39119	Timer S/T 0 - 60 SEC	1
PA	Z8 39109 + Z8 39110	Red button	1
PM	Z8 39107 + Z8 39108	Green button	1
Q1	Z8 39556	32A Main switch	1
Q2	Z8 39557	Full inverter 32 A	1
Q3	Z8 39014 + Z8 39726	Circuit breaker 11 - 16 A	1
	Z8 39535 + Z8 39726	Circuit breaker 14 - 20 A	1
	Z8 39675 + Z8 39684	Circuit breaker 25 - 32 A	1
TR1	Z8 391051	Transformer 63 VA 400-230/24V	1
M1	Z8 39120	Terminal line 6 mmq S	11
	Z8 39121	Ground terminal 6mmq S	3
	Z8 39244	Fuse box terminal 1.5mmq S	2

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Electric filter shaker

Figure19

Item	Code	Description	Q.ty
H1	Z8 39111 + Z8 39113 + Z8 39114	White indicator	1
H2	Z8 39112 + Z8 39113 + Z8 39114	Red indicator	1
KM1	Z8 39281 + Z8 39731	Contactor kW 4 24VAC 1NO	1
	Z8 391005 + Z8 39731	Contactor kW 5,5 24 VAC 1NO	1
	Z8 39102 + Z8 39366 + Z8 39367	Contactor kW 11 24 VAC	1
KM2	Z8 391006	Contactor kW 3 24 VAC 1NC	1
	Z8 391007 + Z8 39367	Contactor kW 7,5 24 VAC	1
KM3	4083901387	Contactor kW 4 24 VAC 1NC	1
	Z8 391008	Contactor kW 5,5 24 VAC 1NC	1
	Z8 39102 + Z8 39367	Contactor kW 11 24 VAC	1
KM4	Z8 391006	Contactor kW 3 24 VAC 1NC	1
KT1	Z8 39119	Timer S/T 0 - 60 SEC	1
PA	Z8 39109 + Z8 39110	Red button	1
PM	Z8 39107 + Z8 39108	Green button	1
PS1	Z8 39312 + Z8 39108	Yellow button	1
Q1	Z8 39556	32A Main switch	1
Q2	Z8 39557	Full inverter 32 A	1
Q3	Z8 39014 + Z8 39726	Circuit breaker 11 - 16 A	1
	Z8 39535 + Z8 39726	Circuit breaker 14 - 20 A	1
	Z8 39675 + Z8 39684	Circuit breaker 25 - 32 A	1
Q4	Z8 39746 + Z8 39726	Circuit breaker 0,7 - 1 A	1
	Z8 39882 + Z8 39726	Circuit breaker 1,1 - 1,6 A	1
TR1	Z8 391051	Transformer63 VA 400-230/24V	1
M1	Z8 39120	Terminal line 6 mmq S	14
	Z8 39121	Ground terminal 6mmq S	4
	Z8 39244	Fuse box terminal 1.5mmq S	2

Phase sequence

Figura 21

Item	Code	Description	Q.ty
H1	Z8 39111 + Z8 39113 + Z8 39114	White indicator	1
H2	Z8 39112 + Z8 39113 + Z8 39114	Red indicator	1
H3	Z8 39314 + Z8 39113 + Z8 39114	Yellow indicator	1
KM1	Z8 39281	Contactor kW 4 24VAC 1NO	1
	Z8 391005	Contactor kW 5,5 24 VAC 1NO	1
	Z8 39102 + Z8 39366	Contactor kW 11 24 VAC	1
KM2	Z8 391006	Contactor kW 3 24 VAC 1NC	1
	Z8 391007 + Z8 39367	Contactor kW 7,5 24 VAC	1
KM3	4083901387	Contactor kW 4 24 VAC 1NC	1
	Z8 391008	Contactor kW 5,5 24 VAC 1NC	1
	Z8 39102 + Z8 39367	Contactor kW 11 24 VAC	1
KT1	Z8 39119	Timer S/T 0 - 60 SEC	1
PA	Z8 39109 + Z8 39110	Red button	1
PM	Z8 39107 + Z8 39108	Green button	1
Q1	Z8 39556	32A Main switch	1
Q2	Z8 39557	Full inverter 32 A	1
Q3	Z8 39014 + Z8 39726	Circuit breaker 11 - 16 A	1
	Z8 39535 + Z8 39726	Circuit breaker 14 - 20 A	1
	Z8 39675 + Z8 39684	Circuit breaker 25 - 32 A	1
SF1	Z8 391120	Phase sequence relay 180-600 V E	1
TR1	Z8 391051	Transformer 63 VA 400-230/24V	1
M1	Z8 39120	Terminal line 6 mmq S	11
	Z8 39121	Ground terminal 6mmq S	3
	Z8 39244	Fuse box terminal 1.5mmq S	2

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Electric filter shaker + Phase sequence
Figure 20

Item	Code	Description	Q.ty
H1	Z8 39111 + Z8 39113 + Z8 39114	White indicator	1
H2	Z8 39112 + Z8 39113 + Z8 39114	Red indicator	1
H3	Z8 39314 + Z8 39113 + Z8 39114	Yellow indicator	1
KM1	Z8 39281 + Z8 39731	Contactor kW 4 24VAC 1NO	1
	Z8 391005 + Z8 39731	Contactor kW 5,5 24 VAC 1NO	1
	Z8 39102 + Z8 39366 + Z8 39367	Contactor kW 11 24 VAC	1
KM2	Z8 391006	Contactor kW 3 24 VAC 1NC	1
	Z8 391007 + Z8 39367	Contactor kW 7,5 24 VAC	1
KM3	4083901387	Contactor kW 4 24 VAC 1NC	1
	Z8 391008	Contactor kW 5,5 24 VAC 1NC	1
	Z8 39102 + Z8 39367	Contactor kW 11 24 VAC	1
KM4	Z8 391006	Contactor kW 3 24 VAC 1NC	1
KT1	Z8 39119	Timer S/T 0 - 60 SEC	1
PA	Z8 39109 + Z8 39110	Red button	1
PM	Z8 39107 + Z8 39108	Green button	1
PS1	Z8 39312 + Z8 39108	Yellow button	1
Q1	Z8 39556	32A Main switch	1
Q2	Z8 39557	Full inverter 32 A	1
Q3	Z8 39014 + Z8 39726	Circuit breaker 11 - 16 A	1
	Z8 39535 + Z8 39726	Circuit breaker 14 - 20 A	1
	Z8 39675 + Z8 39684	Circuit breaker 25 - 32 A	1
Q4	Z8 39746 + Z8 39726	Circuit breaker 0,7 - 1 A	1
	Z8 39882 + Z8 39726	Circuit breaker 1,1 - 1,6 A	1
SF1	Z8 391120	Phase sequence relay 180-600 V E	1
TR1	Z8 391051	Transformer 63 VA 400-230/24V	1
M1	Z8 39120	Terminal line 6 mmq S	14
	Z8 39121	Ground terminal 6mmq S	4
	Z8 39244	Fuse box terminal 1.5mmq S	2

Cartridge kit
Figure 22

Item	Code	Description	Q.ty
TS2	Z8 391107	Timer	1

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Recommended spare parts

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

List of recommended spare parts

Figure 23

Pos.	Description	Mod.	Dimensions	Code No.
1	Star filter “L”		Ø 560	Z8 17081
2	Star filter “M”		Ø 560	Z8 17246
3	Filter ring		Ø 560	Z8 15005
4	Filter ring seal		Ø 560	Z8 17027
5	Filter clamp		Ø 560	Z8 18081
6	Upstream Hepa filter “H”		Ø 400x400	Z8 17264
7	Downstream Hepa filter		475x610x292	Z8 17093
8	Container / Lid		Ø 460	Z8 40275

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Troubleshooting

Fault	Causes	Remedies
The vacuum suddenly stops	Clogged main filter	Shake the filter. Replace it if this is not sufficient
	Clogged suction hose	Check the suction hose and clean it
	Motor protector tripper	Check the setting. Check the power draw of the motor. Contact an authorized after-sales service centre if necessary
Dust leaks from the vacuum	The filter is torn	Change it with another of identical category
	Inadequate filter	Change it with another of a suitable category and check
The vacuum blows instead of sucking	Incorrect connection to the electricity main	Remove the plug and invert two of the live wires
Electrostatic current on the vacuum	Non existent or inefficient earthing	Check all earth connections. Particularly check the suction inlet Lastly, the hose must be strictly antistatic