

**Machine complying with the ATEX 2014/34/EU DIRECTIVE intended for dust vacuuming in potentially explosive atmospheres, classified Z22**



**ZFREVAP PN 560 Z22**



**Operator's and maintenance manual  
Original manual**

**Read this manual carefully before using the vacuum cleaner**

**AZIENDA CON SISTEMA  
DI GESTIONE QUALITÀ  
CERTIFICATO DA DNV  
= ISO 9001 =**



This manual provides all the information needed to use and service your vacuum cleaner. Good operation and durability depend on proper maintenance and careful use.

Before leaving the factory, this particular model has undergone stringent tests to ensure utmost reliability. Always check however to make sure the vacuum cleaner has not been damaged during transport in such a way as to affect operation and safety.

This manual should be considered an integral part of the vacuum cleaner and must be kept together with the unit until this is scrapped. In case of loss of or damage to the manual, ask **DELFIN** for a new copy.

The technical details contained in this manual are the property of **DELFIN** and should be deemed of a confidential nature.

Even partial reproduction of the graphic project, the text and the illustrations is legally forbidden.

Some details shown in the illustrations in this manual may be different from those of your vacuum cleaner. Some component parts may have been removed for greater clarity.

For easier reference, this manual is split into sections, identifiable by specific graphic symbols.

The subjects dealt with in this manual are those expressly required by "**Machine Directive 2006/42/CE**" and the "**ATEX 2014/34/EU Directive**", the technical details shown are those provided by the manufacturer at the time of compilation.

This manual must be kept in a place accessible to all the personnel charged with operating and servicing the vacuum cleaner.

In case of any doubts, always immediately phone the **After-Sales Service**.

The competent Law Court for all disputes is that of TURIN (Italy).

**The manual must be kept with the vacuum cleaner in case of resale!**

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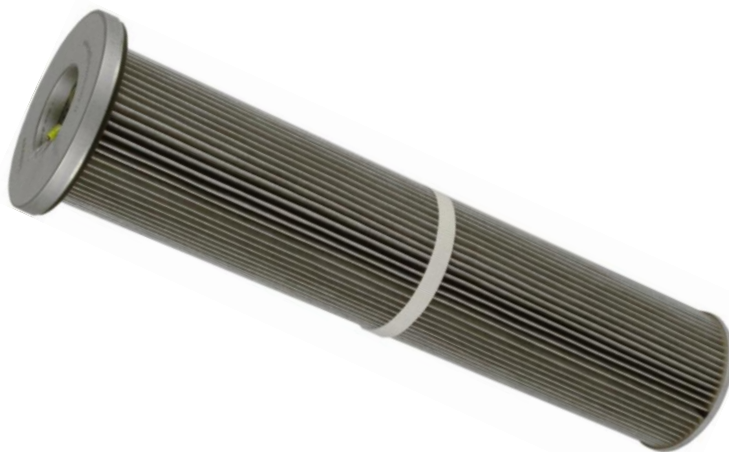
### 1.1 Identification of main parts



- 1) Suction unit
- 2) Cover release fastener
- 3) Filtering chamber
- 4) Accessory basket
- 5) Castors
- 6) Fixed wheels
- 7) Removable vacuumed material container
- 8) Suction pipe coupling point
- 9) Push handle



## 1.2 Accessories provided



**FI.0179.0000 – Ø150 H700 ANTISTATIC CARTRIDGE FILTER  
(ONLY SPARE FILTER)**

**Remark:** these filters must be checked every six months. In case they are worn it will be necessary to replace them with new ones, to be requested as spare parts to **DELFIN S.r.l.**

**DELFIN S.r.l.** will accept no responsibility in case of use of **NON-ORIGINAL** filters.



### 1.3 Identification details of manufacturer

#### **Delfin S.r.l.**





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10036 Settimo Torinese (TO) - Italy  
Tel. 0039.011.800.55.00  
Fax. 0039.011.800.55.06  
[www.delfinvacuums.it](http://www.delfinvacuums.it)  
[delfin@delfinvacuums.it](mailto:delfin@delfinvacuums.it)

### 1.4 Marking plate

In compliance with the **Machine Directive 2006/42/CE** on vacuum cleaners, the machine is fitted with **CE** plates.

When contacting the manufacturer or dealer, always quote the details shown on the vacuum cleaner plate.

	<small>Strada della Merla 49/a I-10036 Settimo Torinese (TO) - ITALY Ph. +39 011 800 55 00 F. +39 011 800 55 06 delfin@delfinvacuums.it www.delfinvacuums.it</small>	
MOD. <input type="text"/>	S/N <input type="text"/>	
DESC. <input type="text"/>	YEAR <input type="text"/>	
50 Hz <input type="text"/>	FILTER <input type="text"/>	
60 Hz <input type="text"/>	<input type="text"/>	
<a href="http://www.delfinvacuums.it">www.delfinvacuums.it</a>	Made in Italy	

	
MOD. <input type="text"/>	S/N <input type="text"/>
 II 3D Ex tD IIIB T135°C X IP55 Dc	<input type="text"/>
 <input type="text"/>	<input type="text"/>



### 1.5 Intended uses

These specific vacuum cleaner models have been designed, built and protected for vacuuming dusts and solid materials only, using special filters.

**Warning!**

***Always use specific filters for the type of dust or materials to be vacuumed.***

Any other use is considered **IMPROPER**.

The vacuum cleaner is in any case intended for professional industrial use.

### 1.6 Allowed environmental conditions

To ensure the correct operation of the vacuum cleaner, this must be positioned protected against atmospheric agents (rain, hail, snow, fog, dusts in suspension, etc.) with an environmental running temperature between 5°C and 45°C and relative humidity not above 70%.

The work environment must be clean and well-enough lit.

### 1.7 Noise level

Noise tests have been performed in compliance with the **Machines Directive 2006/42/CE**. The phonometric test results on this specific model correspond to the following acoustic pressure values (at 1 meter distance from the vacuum. and at 1,60 mt. height, where there is the most noisy part of the vacuum):

**78 dB (A)**

Hand-arm vibrations given by the vacuum are lower than 2,5 m/s<sup>2</sup>

**Attention!**

***Pursuant to articles L.D. 81/08, workers exposed to sound pressure levels above 85 dB (A) must be protected by special individual protection devices.***

***It is therefore necessary, if such working conditions exist, to provide workers with such approved individual protection devices and to inform them of the risks relating to noise exposure.***

### 1.8 Storage

Remove the filter and clean it, empty the container and store the vacuum cleaner in a place protected against atmospheric agents with a temperature between 0°C and 40°C. Cover with a nylon sheet to prevent accumulation of dust.

### 1.9 Scrapping

In case of scrapping, all the component parts of the vacuum cleaner will have to be disposed of through adequate disposal channels in accordance with applicable legislation.

Before scrapping, all plastic and rubber parts will have to be separated from the electrical material.

Parts made of plastic, aluminium and steel only may be recycled if collected by special centres.



## 1.10 Technical details

## ZFREVAP PN 560 Z22

<b>Power</b>	<i>kW</i>	4
<b>Voltage</b>	<i>Volts</i>	400
<b>Max. vacuums rate</b>	<i>mm H<sub>2</sub>O</i>	364
<b>Max. air flow rate</b>	<i>m<sup>3</sup>/h</i>	2.880
<b>Noise level</b>	<i>dB (A)</i>	78
<b>Filter type</b>	CARTRIDGE "M"	
<b>Filter surface</b>	<i>cm<sup>2</sup></i>	106.000
<b>Capacity</b>	<i>lt</i>	100
<b>Suction inlet</b>	<i>Ø</i>	200
<b>Dimensions</b>	<i>cm.</i>	74 x 86 x 250



### 1.11 Warranty

**DELFIN** guarantees this vacuum cleaner model for a period of 24 months from the date of purchase indicated on the tax document at the time of delivery of the vacuum cleaner by the seller.

The warranty shall be invalidated in the event of the vacuum cleaner having been repaired by unauthorised third parties or of equipment or accessories being used that have not been supplied by **DELFIN** or which have not been recommended or approved by **DELFIN** or whose serial number has been removed or altered during the warranty period.

**DELFIN** undertakes to repair or replace, free of charge, those parts which, during the warranty period show manufacturing faults. Repairs shall be made in the **DELFIN** facilities only or in a **Technical Assistance Centre** indicated by us and machines shall be sent to us carriage free (transport costs to be paid by the user, unless otherwise agreed).

The warranty does not cover any cleaning of working parts.

Faults not directly attributable to materials or manufacture shall be examined only in our facility or in a **Technical Assistance Centre** indicated by us. If claims appear unjustified, all the costs relating to repair and/or replacement of parts shall be charged to the buyer.

The purchase tax document shall be shown to the technical personnel making the repairs and must accompany the vacuum cleaner dispatched for repair.

The warranty does not cover: accidental damage, caused by transport or carelessness or inadequate treatment, or improper use not in compliance with the instructions in the instruction manual, or in any case by occurrences not dependent on normal operation or use of the vacuum cleaner. **DELFIN** declines all responsibility for any damage to persons or things caused by bad or improper use of the vacuum cleaner.

All disputes shall be referred to the Law Court of Turin (Italy).

The manufacturer declines all liability in the following cases:

- **Failure to send the warranty Certificate**
- **Failure to follow the instructions**
- **Use of non-original spare parts**
- **Failure to service the machine properly**



## 2.1 Safety details

The person in charge of safety shall be responsible for informing workers about the risks associated with vacuum cleaner operation.

The obligation also exists of training workers so they are able to protect themselves and others.

Failure to observe basic safety regulations and Warnings could cause accidents during vacuum cleaner operation, maintenance and repair. Accidents can often be avoided by recognising potentially dangerous situations before these occur. Operators should be aware of potential hazards and be trained and skilled enough. They should also have the tools necessary to perform these duties properly.

**DELFIN** shall under no circumstances be deemed liable for accidents or damage caused by use of the vacuum cleaner by personnel not properly trained or who use it in an improper manner, as well as by even partial failure to comply with the safety regulations and intervention procedures indicated in this manual.

The safety Warnings and warning notices are indicated in this manual and on the product.

Unless these hazard messages are heeded, the operator could become involved in accidents with serious consequences for him/herself and for other people.

The safety messages are highlighted by the following symbols:

**Attention!**

***Unless these messages are heeded, operator injuries could occur.***

**Warning!**

***Unless these messages are heeded, vacuum cleaner damage could occur.***

**DELFIN** cannot foresee all possible circumstances capable of representing a potential hazard. The warnings in this manual and on the products should not therefore be deemed exhaustive. In the event of tools, procedures, work or machining methods being used that are not explicitly recommended by **DELFIN**, make sure no hazards exist for operators and others.

**Only ever use original DELFIN spare parts.**

**DELFIN** declines all liability in the event of non-original spare parts being used.



## 2.2 Safety warnings

### **Attention!**

*The following indications are, by themselves, not enough to fully protect against all the hazards that could arise during vacuum cleaner operation. These will have to be integrated with common sense and the experience of the operator, both of which are crucial factors for preventing accidents. Each section of this manual lists further specific safety warnings for the various operations.*

*Maintenance jobs must always be performed with the power plug detached from the power point.*

In compliance with the applicable laws and regulations in force, the employer must ensure that the workers and staff using the equipment are properly trained and informed.

Before operating this equipment, carefully read the herein manual as a preliminary personal training step. Untrained or unauthorized people must be forbidden to operate this machine.

Connect the grounding clamp with a conductive surface connected with the earth.

Do not modify the setting of the vacuum/pressure relief valve.

All maintenance operations must be executed in non-classified atmosphere.

Do not vacuum incandescent or burning material.

The operator must always wear antistatic cloths and shoes.

The opening of the dust collection container must be executed in non-classified atmosphere area, after having disconnected and unplugged the machine and only after 10 minutes from unplugging.

It is prohibited to vacuum toxic substances unless the machine is provided with the necessary specific filters for the type of dust to be vacuumed. Such specific filters must be expressly required by the Customer for supply.

Do not vacuum flammable or explosive substances (fuels, solvents etc.).

Do not vacuum sources of ignition.

Do not vacuum corrosive substances unless the machine is equipped with suitable containers (**AISI 304 Stainless steel**).

Do not vacuum sources of ignition.

If the filters are correctly fitted, the machine will not release any collected substance into the environment.

In case the machine is used to vacuum toxic-harmful substances, the emptying of the collection container as well as the filter cleaning operations must be execute using the appropriate safety devices required to protect the operator from the collected substances.



Do not lay any object or material on the horizontal guards.

The machine case containing mobile parts must not be removed by the operator.

Mind other people, especially children, when operating the vacuum.

Handle the machine carefully, specially on slopes or ramps.

Do not turnaround the machine on slopes.

Set on the wheel brake to ensure that the machine position is stable.

Cleaning, maintenance and part replacement operations must always be executed after having switched off and unplugged the machine.

Repair operations must be executed by qualified personnel only.

Be careful not to damage or squash the supply cable (cord) when operating the machine.

Check the supply cable on regular basis. Do not use the machine if the cable is damaged.

In case of cable, tap or connector replacement, ensure protection against water and check mechanical strength.

Do not drag the machine pulling the supply cable and the suction hose.

The final user must provide for the collected substances waste disposal in compliance with the applicable laws and regulations in force.

Machine overhaul is recommended after 10 years of life. The overhaul should be performed by **DELFIN Srl**, the manufacturer.

The machine is delivered to the final user with the following documentation: instructions manual spare part list, declaration of conformity, warranty certificate, homologation certificate, electrical and pneumatic technical files.

The manufacturer will not be liable for any damage which may occur in connection with the use or service of vacuum supplied in case it is utilized with tools or accessories that have not been provided by **DELFIN Srl**. Without prejudice for the above, it is recommended to keep the machine construction complying with the safety standards prescribed by the **2006/42/CE Machine Directive** and **Atex 2014/34/EU Directive**.

Keep the vacuum clean and free of any contamination material such as dust, debris or oil. Moreover, keep it away from tools or other objects which may affect the machine efficiency and cause damage and/or injury.

Do not use flammable or toxic solvents, such as gasoline, benzene, ether and alcohol for cleaning.

Avoid long-time exposure to solvents and inhalation of solvent vapours. Do not use solvents in presence of heat or fire sources.



Never use the vacuum without filter.

Do not suck lighted cigarettes, cigarette stubs or incandescent materials. Do not collect gasoline, fuel or other flammable liquids.

Ensure that all shields and protections are put in place and that all safety devices are available and efficient.

Do not wear loose clothes or accessories such as ties, scarves or torn clothes which may be caught or sucked by the vacuum.

Do not open the collection container when the vacuum is working.

The “**Operating and maintenance manual**” must always be readily available for consultation, in order to be able to ascertain the correct working procedures in case of doubts. Should this manual get lost or damaged, please ask **DELFIN Srl.** for another copy.

Structural damages, modifications, improper changes or repair may affect the vacuum safety and therefore annul the herein certification. Any modification required should be authorized and executed by **DELFIN** engineers only.

During maintenance operations it will be necessary to affix a warning sign on the vacuum with the following indication: “**MAINTENANCE, DO NOT START THE MACHINE**”.

Do not get on the vacuum.

Do not touch wires, switches and switch-buttons with wet hands.

Before plugging the vacuum, ensure that power supply voltage and frequency meet the specifications required and reported on the machine plate.

Connect the machine to an electrical system outlet with efficient earth.

In case it is necessary to use an extension, check that the extension is in perfect conditions, **CE** marked and that the extension cable cross section area is suitable for the vacuum electrical input.

To recover the vacuum original working conditions after maintenance, the operators must check that the machine protections, particularly safety devices and guards, have been put back in place ensuring safety working conditions.

The vacuum must be operated by adults only.

Before executing vacuuming operations, always set on the vacuum wheel brake provided to ensure that the vacuum position is stable.

The supply cable tap must be correctly plug in the current outlet in NON CLASSIFIED atmosphere, or rather in a safety place.



### 2.3 Safety plates and symbols

Plates are affixed to the vacuum cleaner showing safety symbols and/or messages.

**Attention!**

**Make sure all the safety messages are legible.**

**Clean these with a cloth, soap and water. Do not use solvents, diesel fuel or petrol.**

**Replace the damaged plates with new ones supplied by DELFIN.**

**If a plate is affixed to a replaced part, make sure a new plate is affixed to the new part.**

**Attention!**

**Read the operator's and maintenance manual carefully before using the cleaner or doing any maintenance jobs.**

**ATTENZIONE! WARNING! ATTENTION ! ACHTUNG! ; ATENCIÓN! ATTENTIE!**

- SCUOTERE IL FILTRO SOLO A MACCHINA SPENTA
- ONLY SHAKE THE FILTER WHEN THE MACHINE IS TURNED OFF
- NE SECOUER LE FILTRE QU'APRES AVOIR ETEINT LA MACHINE
- RÜTTELN SIE DEN FILTER NUR BEI AUSGESCHALTETER MASCHINE
- SACUDIR EL FILTRO SÓLO CON LA MÁQUINA APAGADA
- FILTER SCHUDDEN BIJUITESCHAKELDE MACHINE

**IMPORTANT**

**DO NOT BREATHE IN INFLAMMABLE AND/OR  
EXPLOSIVE LIQUIDS**

**Caution!**

**Do not vacuum incandescent material.**

**Warning!**

**Risk of crushing upper limbs while fitting and locking the material container on the vacuum cleaner.**

**Never place hands between the material container and vacuum cleaner while locking.**

**Do not place hands on sides of container near the guide pins while locking.**

**Perform the container locking operation by means of the levers located on the side, USING BOTH HANDS!**

**Caution!**

**Do not vacuum sources of ignition.**



*Specific sign of conformity with the ATEX 2014/34/EU DIRECTIVE.*

<b>M</b>	CAUTION: this machine contains harmful vacuumed dust. Emptying operations, including the removal of the collection container after due waiting time must only be executed by qualified operators wearing the appropriate safety devices. Do not use the vacuum without filtering systems.	<b>M</b>
This plate is applied to the vacuum when the machine is equipped with a C CLASS anti-static filter (max. efficiency: 1 micron)		

<b>H</b>	CAUTION: this machine contains harmful vacuumed dust. Emptying operations, including the removal of the collection container after due waiting time must only be executed by qualified operators wearing the appropriate safety devices. Do not use the vacuum without filtering systems.	<b>H</b>
This plate is applied to the vacuum when the machine is equipped with a C CLASS anti-static filter and the absolute (HEPA) filter (99,995%. efficiency, on 0,18 micron)		





## 2.4 Outstanding risks

Careful analysis of risks performed by the manufacturer and stored in the technical file has made it possible to eliminate most of the risks associated with vacuum cleaner operation.

The manufacturer advises carefully following the instructions, procedures and advice contained in this manual as well as applicable safety regulations, including the use of the envisaged protection devices, both those integrated in the cleaner and individual.

Outstanding risks associated with the vacuum cleaner could be:

### ***Electrical maintenance risks caused by the need to work under power.***

Pursuant to **Presidential Decree 81/08**, only trained personnel should work on the machine with the power supply connected and this must have double earth insulation.

### ***Risk of improper use in the presence of explosive and flammable substances.***

The vacuum cleaner must not be used in environments containing substances in the form of liquids that could vaporise at room temperature and flammable dusts and gas.

### ***Risks of operation in humid environments.***

Keep to the limits shown in this manual at chap. 1.6 Allowed environmental conditions.

### ***Risk of erroneous interpretation of the safety pictograms.***

Having identified the various outstanding risks, the manufacturer has affixed to the cleaner a number of hazard labels in compliance with regulations relating to the graphic symbols to be used. The user must immediately replace any safety plates that become illegible due to wear or damage.

### ***Attention!***

***Removing the safety plates on the vacuum cleaner is strictly forbidden. The manufacturer declines all liability in relation to vacuum cleaner safety in the event of failure to comply with the above indications.***

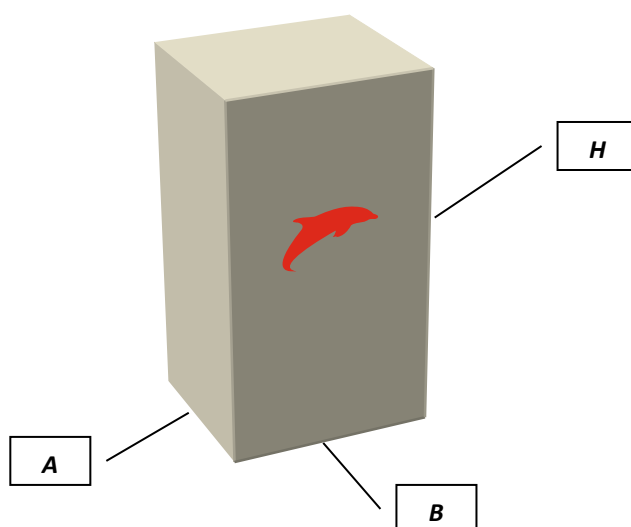
## 2.5 Applied directives

The following directives apply to the vacuum cleaner described in this manual:

- ***2006/42/CE Machine Directive***
- ***2014/30/EU Electromagnetic compatibility directive***
- ***2014/34/EU ATEX Directive***



### 3.1 Handling



	<b>A (cm)</b>	<b>B (cm)</b>	<b>H (cm)</b>	<b>Weight (package included) Kg</b>
<b>ZFREVP PN 560 Z22</b>	80	160	200	200

The machine is supplied in a strong cardboard box secured with straps.

Transport the package using a fork-lift truck of adequate lifting capacity and make sure it is stable and that weight is properly distributed on the forks.

Before starting to move, make sure the transit area is free and that there are no moving objects on the packaging.

During movement, keep the load low for greater stability and safety.

When starting up the vacuum cleaner, move this by means of the wheels supplied.

The appliance must never be moved using fork-lift trucks or other equipment that lifts it off the floor.

If for any reason the need arises to lift and transport the vacuum cleaner, this operation must be performed under the responsibility of the user. The user is therefore invited to secure the load as he best thinks fit to ensure the operation is performed in total safety.



### 3.2 Installation

**Warning!**

**Before installing the vacuum cleaner, carefully make a sight check to pinpoint any damage suffered during transport.**

In the event of any component parts being damaged, do not proceed with installation. Notify the manufacturer and reach an agreement on how to proceed.

The vacuum cleaner already features a suction filter.

Fit the accessory required for the type of vacuuming operation on the opposite end of the hose.

**Note:** No standard accessories (reducers, hoses, nozzles) are included with the vacuum; accessories must be specified and ordered separately.

Contact your dealer for information relating to the different types of **optional accessories** available for this specific vacuum cleaner model.


Fit the supplied pipe on the connector.





Fit the supplied connector on the pipe union

Make sure the power supply corresponds to the voltage and frequency indicated on the vacuum cleaner plate.

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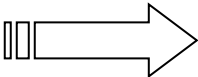
CE

MOD.  S/N

DESC.  YEAR

50 Hz  FILTER


60 Hz




www.delfinvacuums.it Made in Italy



MOD.  S/N

 II 3D Ex tD IIIB T135°C X IP55 Dc



**Warning!**

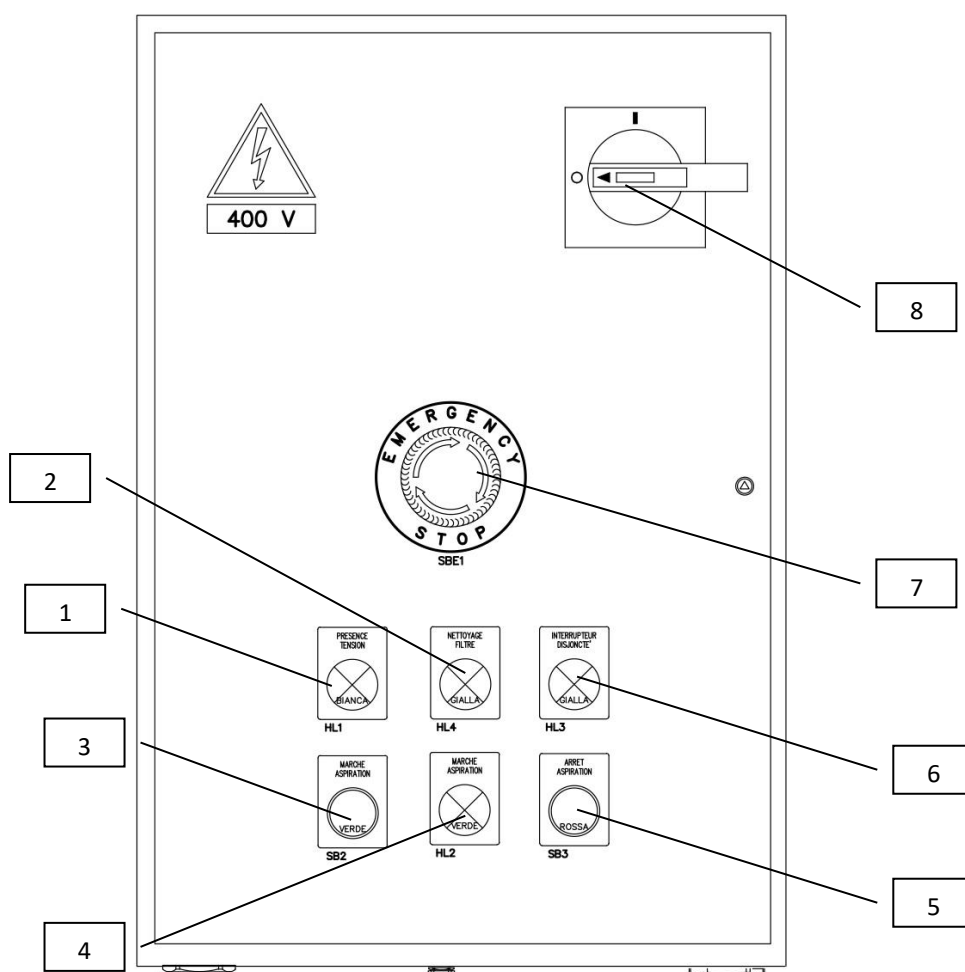
**Do not fit the plug in the power socket with wet hands.**

In the event of an extension being used, make sure this is in perfect condition, in compliance with **CE** standards and with cable cross section suitable for the power input of the vacuum cleaner.

If, when the vacuum cleaner is switched on, the inlet blows air out instead of sucking it in, the machine will have to be switched off, the plug detached from the power socket and the direction of rotation of the motor changed by modifying the plug using a screwdriver.



#### 4.1 Description of controls



**1) WHITE LIGHT INDICATOR - POWER ON**

**2) YELLOW LIGHT - FILTER CLEANING**

**3) START SUCTION GREEN BUTTON**

**4) GREEN LIGHT - SUCTION ON**

**5) RED BUTTON – STOP SUCTION**

**6) THERMAL RELEASE - YELLOW LIGHT**

**7) EMERGENCY STOP BUTTON**

**8) DISCONNECTOR**



## 4.2 Work cycle

**Warning!**

**Before fitting the plug, make sure the power voltage corresponds to that on the CE marking plate.**

**Caution!**

**Operations permitted within Z22 class areas, with potentially explosive atmosphere.**

**Caution!**

**The operator using the vacuum must always wear anti-static cloths and antistatic shoes.  
The working environment and the floor must comply with antistatic standards.**

- Ensure that the supply cable tap is correctly plug in the current outlet having the voltage required and indicated on the vacuum control panel.
- Ensure that the flexible hose is duly fitted and locked in the specific suction plug.
- Ensure that the supply cable (cord) and the eventual extension are in perfect conditions.
- Set on the wheels brake to ensure that the machine is stable.



- Hold the flexible hose end with the fitted accessory required.
- Turn on the main switch to the “ON” position.
- To stop the vacuum cleaner, turn the main switch to the “OFF” position

**Caution!**

**Do not vacuum flammable or incandescent substances.**



**Warning!**

***Before turning the vacuum on again, make sure the engines have stopped completely.***

- Once work cycle has been completed, disconnect and unplug the machine.
- Shift the vacuum using the provided handle.



**Caution!**

***The vacuum can be shifted manually on flat grounds only.***

***The vacuum heavy weight may not allow the operator to shift it safely on slopes as it would be difficult to handle and control the machine avoiding dangerous collision which may cause damages and injury.***



#### 4.3 Releasing and removing the removable container

Press the **Stop** button to disconnect the vacuum.

**Caution!**

**Collection container release and withdrawal must only be executed in non-classified atmosphere, which means in an area with non potentially explosive atmosphere.**

**Caution!**

**Press the Stop button.**

Wait at least five minutes to allow that the dust deposits at the bottom and then release the lever to unlock the collection container, as shown in the picture below. Withdraw the collection container using the handle



Empty the contents of the container into a special waste disposal container in accordance with laws applicable in the country where the vacuum cleaner is used.

**Warning!**

**While performing these operations, it is best to wear a dust protection mask.**

To prevent having to use a dust protection mask and for greater convenience, before starting vacuuming operations, it is best to fit a nylon bag inside the container and to fasten this in place with the special accessory available on request.

**Warning!**

**Perform the container release operation by means of the levers located on the sides or on the handle with BOTH HANDS!**

**Danger of crushing upper limbs when fitting and locking the container on the vacuum cleaner.**

**Caution!**

**Never put your hands between the collection container and the vacuum when positioning and securing the collection container.**

**Never put your hands on the collection container edges nearby the check pins when executing the aforesaid operation, which must be performed throughout the coupling side levers and using BOTH YOUR HANDS to control them.**

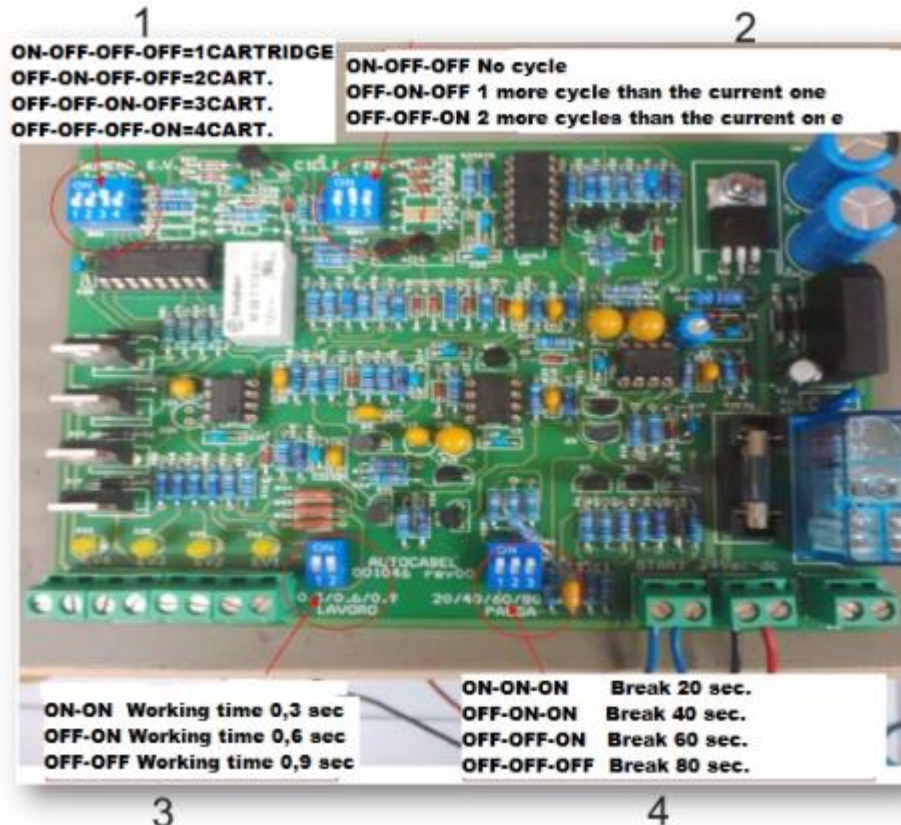


#### 4.4 Pneumatic filter cleaning system

This specific model is provided with a pneumatic filter cleaning system.

To set the timer that adjusts the blowing frequency into the cartridges, please see the following instruction.

##### Sequencing card setting



##### **Position 1**

It is necessary to set component 1 depending on the number of cartridges of the vacuum cleaner: depending on the number of cartridges (1EV,2EV,3EV,4EV) place the sliders on the corresponding position indicated on the left.

For example: in the vacuum cleaner there are 2 cartridge filters, the sliders must be placed on OFF, ON, OFF, OFF.

##### **Position 2**

In order to set the number of additional filter cleaning cycles (after having press STOP button), set the sliders of the component 2 referring on what is indicated on the corresponding position.

For example: if an additional filter cleaning cycle is necessary, place the sliders on OFF, ON, OFF

##### **Position 3**

In order to set the duration of the compressed air injection, act on component 3 sliders.

For example: If it is necessary to set the duration of the compressed air injection on 0,6 seconds, the sliders must be placed on OFF, ON.



#### **Position 4**

In order to set the duration between one compressed air injection and the other, set the sliders of component 4.

For example: if you want a compressed air injection every 40 seconds, place the sliders on OFF, ON, ON.

#### **Standard settings**

**Position 1 :** depending on filter number (change it only if the number of cartridges changes.)

**Position 2 :** 1 cycle (OFF-ON-OFF)

**Position 3:** 0,3 sec. (ON-ON)

**Position 4:** 60 sec. (OFF-OFF-ON)

**WARNING:** Do not modify settings when the vacuum cleaner is connected to power.



### **5.1 Informative notes**

Ordinary maintenance and checking operations required to ensure the vacuum efficiency are described in this section.

Any intervention, other than ordinary maintenance operations described herein, which may be necessary to eliminate faults or failure must be expressly authorized by the manufacturer, to whom the user must apply always specifying the vacuum identification data.

In case of problems requiring a broaden repair operation, it is recommended to take the vacuum to the authorized dealer whose qualified personnel, relying on expertise and knowledge of the OEM construction technology, will always be available to timely and properly provide service and assistance.

### **5.2 General safety warnings**

Maintenance operations must only be executed by qualified and trained engineers operating in the specific fields required for this machine, as follows:

- Mechanical maintenance
- Electrical maintenance

The person responsible of safety must verify the professional skills and competence of the aforesaid engineers in-charge of maintenance.

Before authorizing any maintenance operations to start, the person responsible of safety must:

- Clear the workplace from unauthorized people;
- Ensure that all necessary tools are in good conditions and readily available to the maintenance operator;
- Check that lighting is appropriate and, if necessary, provide for supplementary portable 24 Volt lamps;
- Ensure that the maintenance operator is provided with all homologated personal safety devices required to safely execute the scheduled operation/s (gloves, goggles, safety shoes and so on);
- Ensure that the maintenance operator has carefully read the herein instruction manual and perfectly knows the vacuum working system.

Before starting any maintenance operation, the maintenance engineer must:

- Unplug the machine;
- Execute such operation in **NON CLASSIFIED** atmosphere, which means in an area with non potentially explosive atmosphere.

Any operation on the vacuum engine or other electrical components shall only be executed by the electrical maintenance engineer, who must be trained for this task and shall also be authorized by the person responsible of safety.

Always use the specially provided tools for the operation to be executed and check that such tools are in perfect conditions. Using unsuitable or inefficient or defective tools may cause serious damages and injury.



### 5.3 Maintenance operations

**Caution!**

**All the operations described here following must be executed after unplugging the machine. Before starting any maintenance or cleaning operation, wear the appropriate personal safety devices such as goggles, gloves and dust mask suitable to protect the operator from breathing particles of the substance to be vacuumed and to safely perform the work required.**

To ensure the vacuum efficiency, it is recommended to check the machine on regular basis as follows:

**Every day**

- Check that the collection container is not full; it is recommended to empty the collection container when the collected material fills  $\frac{3}{4}$  of its maximum capacity.
- Check the conditions of the suction flexible hose and of the accessories to be used . Any hole, crack or fissure in the flexible hose will reduce suction power and disperse the vacuumed dust into the environment.

**Every week**

- Clean the vacuum regularly, removing dust deposits. The thickness of the deposited dust must not exceed 2mm.
- Remove any layers of dust on the wheels.

**Every 6 months**

- Check that the head basement sheath, the filter holding ring sheath and the collection container sheath are hermetic.
- The electrical units (plugs, switches, cables and so on) must have no faults or defects.
- Screws and nuts must always be tightened.
- Clean the deflector inside the suction hose on regular basis to prevent dust accumulation inside the suction unit.
- Remove the side carters protecting the turbine and vacuum any dust deposit within the suction unit.
- Check the filter conditions.
- The filter must not be too breathable.
- There must be no cuts and holes and the sewing must not be worn. Check that the filter holding ring is tightened. In the event any of the aforesaid circumstances occur, replace the filter as indicated in section 5.4.



**Warning!**

*To ensure the vacuum efficiency and safety, DELFIN S.r.l. recommends an overhaul at the Manufacturer's technical service workshop every 24 months.*

**Warning!**

*In case of dust outflow from the engine, turn off the vacuum immediately and call the authorised service centre applying for assistance.*

**Warning!**

*Any maintenance and repair operation not included in the above mentioned ones must be executed by the Manufacturers technical service workshop or by DELFIN authorised service centres.*



#### 5.4 Replacing the filters

For filter replacement proceed as follows:

- Disconnect the vacuum pressing the **Stop** button;
- Unplug the vacuum.

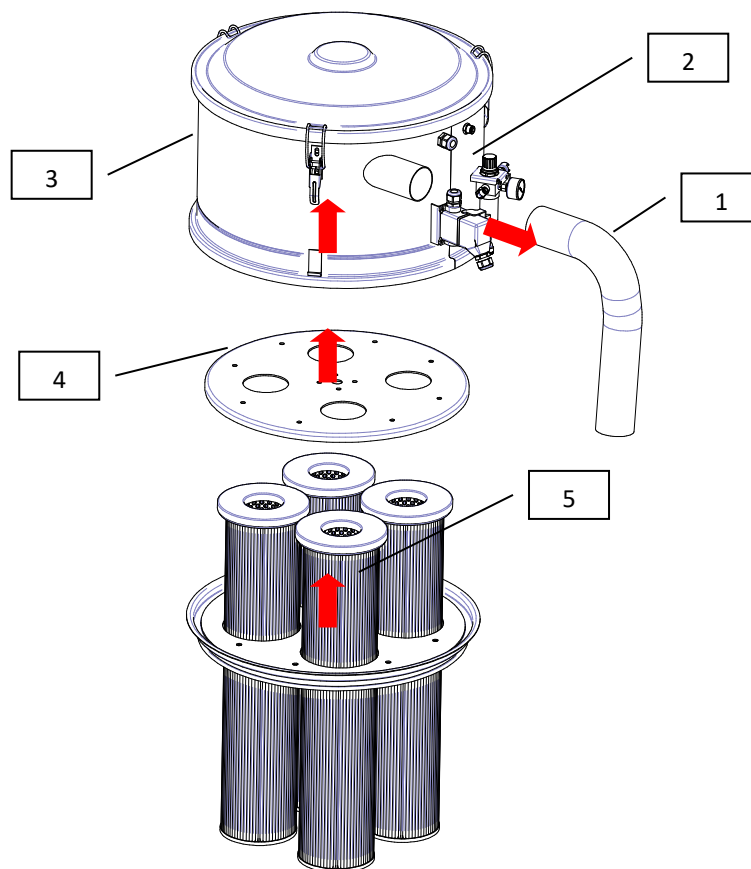
**Caution!**  
**Always wear your personal safety devices.**

- Block the vacuum cleaner by means of the brake.
- Release the stops that hold the head.





- Block the vacuum cleaner by means of the stop.
- Disconnect the connection hose from the heightening ring.
- Disconnect the compressed air supply hose and the “HARTING” connector.
- Lift the heightening ring.
- Unscrew the cartridges’ fastening disk and remove it.
- Lift and extract the cartridges one by one, then replace the old cartridge with a new one.
- To mount it, just follow the previous steps reversing from 5 to 1.



**Warning!**

***All the material trapped by the filter and the filter itself must be disposed of through authorised channels in the country where the vacuum cleaner is used.***

**5.5 Troubleshooting**

<b><i>Fault found</i></b>	<b><i>Possible fault</i></b>	<b><i>Recommended remedy</i></b>
<b><i>The cleaner fails to start</i></b>	No power	Check the power mains supply Check the integrity of the plug and power cable
<b><i>Dust is leaking out</i></b>	Perforated vacuum pipe	Replace the pipe
	Perforated filter	Replace the filter
	Filter unsuitable for type of job	Fit a suitable filter for the type of material to be vacuumed
<b><i>The vacuum cleaner does not work as it should</i></b>	Pipe perforated or blocked	Check the pipe and, if necessary, replace it
	Container full	Empty container
	Filter blocked	Clean the filter and if necessary change it.
	Seals worn	Check the seals and, if necessary, replace it
	Air leak	Check for any air leaks out of closing fasteners, tightening screws, container or filter chamber
<b><i>Motor very noisy.</i></b>	<b><i>Contact DELFIN after-sales</i></b>	

**Warning!**  
**For any other problems, contact the DELFIN after-sales service.**



**6.1 Recommended spare parts**

<i>Code</i>	<i>Description</i>
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<b><i>GI.0051.0000</i></b>	D. 560 FILTER GASKET
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<b><i>FI.0179.0000</i></b>	Ø150 H700 ANTISTATIC CARTRIDGE FILTER
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