



Manufacturers of Industrial vacuums

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Machine complying with the ATEX 94/9 CE DIRECTIVE intended for dust vacuuming  
in potentially explosive atmospheres, classified Z22.

## *Operating and maintenance manual*



Industrial Vacuum

**D/G 1 Z22**

**D/G 2 Z22**



**CE**



This manual is supplied with the vacuum as integrating part of the machine.

Carefully read this manual and the documentation enclosed. Understanding and following the herein instructions is essential to correctly operate the vacuum and execute maintenance operations in safety conditions.



## DECLARATION OF CE CONFORMITY

(For the machines which are not included in the Appendix IV, complying with the Italian Law  
Decree D.P.R. no. 459/96)



Manufacturer's name and address:

**DELFIN SRL**

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### WE DECLARE

*under our sole responsibility, that the*

**Model:**

**Matrix:**

**Year of manufacture:**

**Customer:**

*described above, is in conformity with the protection requirements of the following Council Directives: 98/37 EC Directive, 89/336 EC Directive on electro-magnetic compatibility, ATEX 94/9/EC Directive and, more particularly, with the UNI EN 1127-1 and UNI EN 13463-1 Standards.*

*The harmonized standards of reference for design, manufacture and system test of the machine have been specified in the technical documentation filed at the manufacturer's premises.*

*This certification will lose validity in case any change is made on the machine without the manufacturer's authorization.*

*The Manufacturer also declares that the CE marking and the serial number marking II 3 DT 125 °C has been provided on the machine.*

*This operating and maintenance manual is provided as integrating part of the vacuum supplied and the herein instructions must be followed in order to operate safely.*



Antonio Siclari

Settimo Torinese (Turin, Italy), \_\_\_\_\_

\_\_\_\_\_  
(CEO)



The herein manual provides all necessary information for the correct use and maintenance of your DELFIN vacuum cleaner. Its efficiency and life depend on the regular maintenance and care.

Before being shipped from DELFIN's facility, this item successfully passed the Manufacturer's system test, which requires the completion of strict conformity assessment procedures in order to ensure the product's efficiency and reliability. Nevertheless, it is necessary to check the vacuum cleaner's conditions at the time of delivery and make sure that no structural damages, which may affect its efficiency and safety, occurred during transportation.

This manual must be considered as integrating part of the supplied DELFIN vacuum cleaner and should accompany the machine until its disposal.

In case of loss or damage of the Operating and Maintenance Manual, please request another copy to DELFIN S.r.l.

All information reported in the herein manual belongs to DELFIN S.r.l. and must be considered as confidential and protected by copyright. Reproduction, even partial, of the manual's graphics, text and illustration is prohibited by law.

Some of the parts shown in this manual may slightly differ from the ones of your vacuum cleaner, whilst some of the components may not appear in the herein pictures, as omitted for a clearer view.

For easy consultation purposes, this manual is divided into sections. Each section is featured by a symbol.

This "Operating and Maintenance Manual" provides all information expressly required by the Machinery Directive 98/37/EC and the ATEX 94/9 EC Directive. All technical specifications reported herein have been verified by the manufacturer at the issue of this manual. This manual must always be readily available for consultation to the staff operating the DELFIN vacuum and to the operators in-charge of its maintenance. Therefore, it must be kept in a place accessible to all the above mentioned staff.

In case of doubt or concerns please call our Technical Service immediately and ask for assistance. The court of Turin (Italy) will have jurisdiction to settle any dispute may arise.



## TECHNICAL SERVICE

*Our engineers are available to help you in case any problem occurs. Please call:*

**Phone 0039 011 8005500**



**The Operating and Maintenance manual must always be provided with DELFIN machines, even in case of resale.**



**This manual is supplied as integrating part of the vacuum. It is recommended to carefully read the manual's instructions, which must be fully understood and followed in order to operate the machine and execute maintenance operations safely.**



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## 1.1 Product description

The "Industrial Vacuum" product comprises side-channel vacuum pump Suction Unit including an electrical engine which drives one or two cast-die aluminum impellers.

The impellers are splined on the engine drive shaft and are housed inside a safety shield; the unit is provided with no.1 air inflow duct and no.1 air outflow duct.

The Suction Unit is assembled onto a trolley frame and housed by an insulating sheet metal casing. This Suction Unit's duty is to create vacuum inside the "Filtering Chamber", which consists of a sheet metal cylinder housing a filter, which separates and retains the dust albeit allowing clean air outflow. The filtering unit may have different dimensions, types of filter as well as different efficiency depending on the specific use. Generally, the dust suction hose and a filter protection cyclone are placed on the filtering chamber.

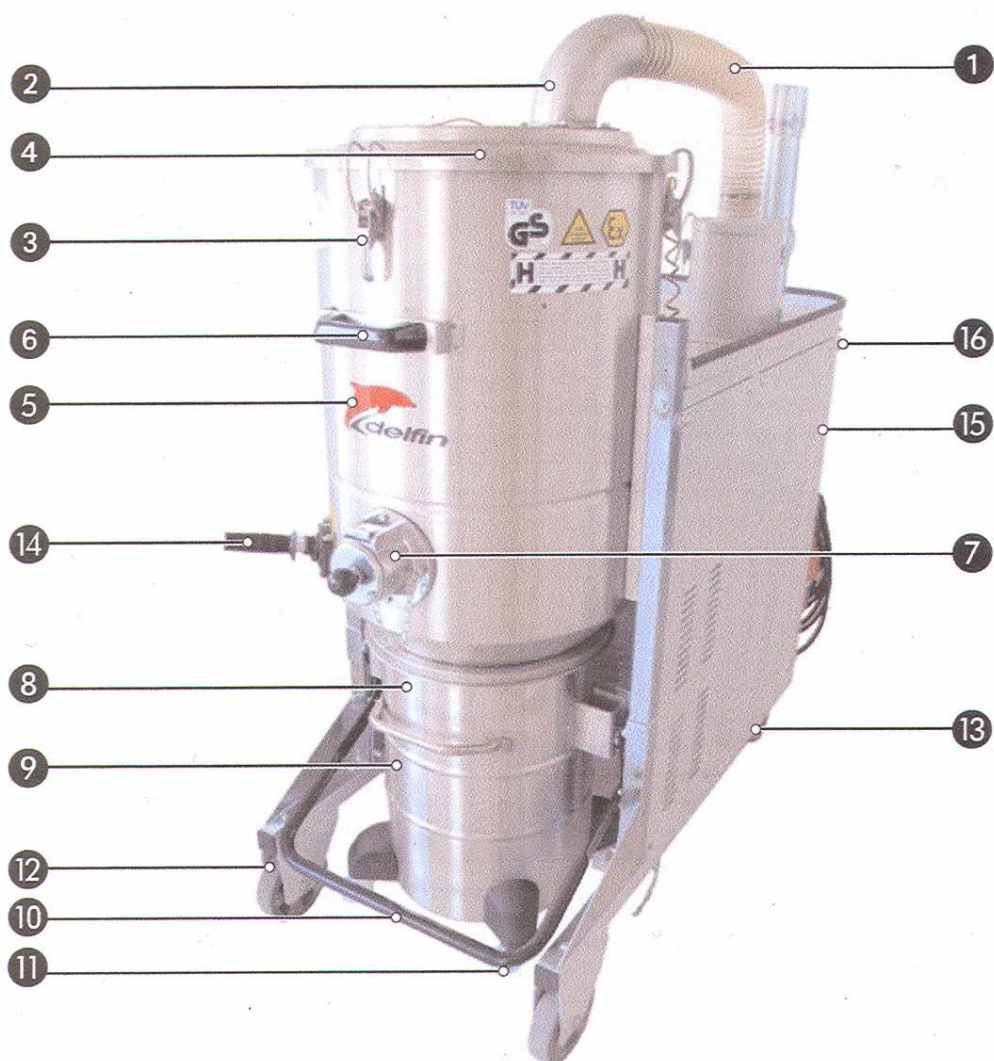
The vacuumed material will deposit into the collection container, which may have different capacity and is provided with wheels for an easy removal from the machine body for emptying.

The machine may also be equipped with a series of accessories for dust or debris vacuuming, in order to meet the specific needs of our Customers.

## 1.2 Main parts

- 1) Flexible hose
- 2) Curved inlet plug
- 3) Spring hook fasteners
- 4) Cover
- 5) Filtering chamber
- 6) Handle
- 7) Suction hose inlet plug
- 8) Level indicator
- 9) Removable collection container
- 10) Collection container's release lever
- 11) Collection container's pivot wheels
- 12) Fixed wheels
- 13) Pivot wheels with brake
- 14) Filter shaking lever
- 15) Turbine's rear casing
- 16) Handle
- 17) Engine
- 18) Anti-static filter







### 1.3 Standard filters

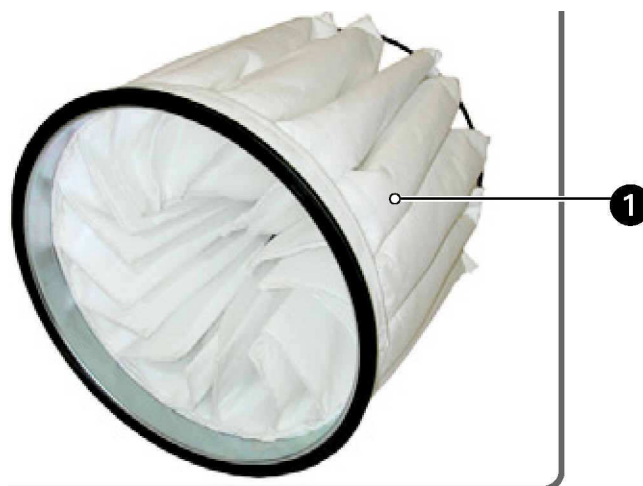
The vacuum is provided with anti-static filters which are already fitted.  
As filters get worn, they must be replaced with new ones having the same characteristics, ordering such filters to Delfin S.r.l. specifying the relevant P/N.

- 1) Anti-static polyester filter  
Cat. G (Main filter)

Spare Part Number

DG/1 **AR3047**

DG/2 **AR3005**



- 2) Anti-static cartridge filter  
Spare Part Number

DG/1 **AR4003/A**

DG/2 **AR4003/A**

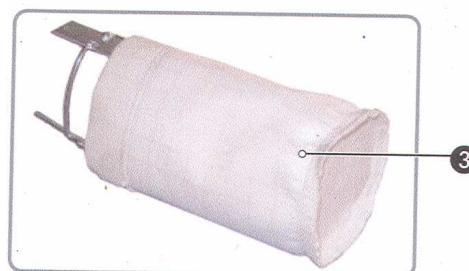


- 3) Anti-static filter on Vacuum/pressure relief valve. This filter prevents dust infiltration into the suction pump throughout the vacuum/pressure relief valve.

Spare Part no.

DG/1 **AR3000**

D/G2 **AA3000**





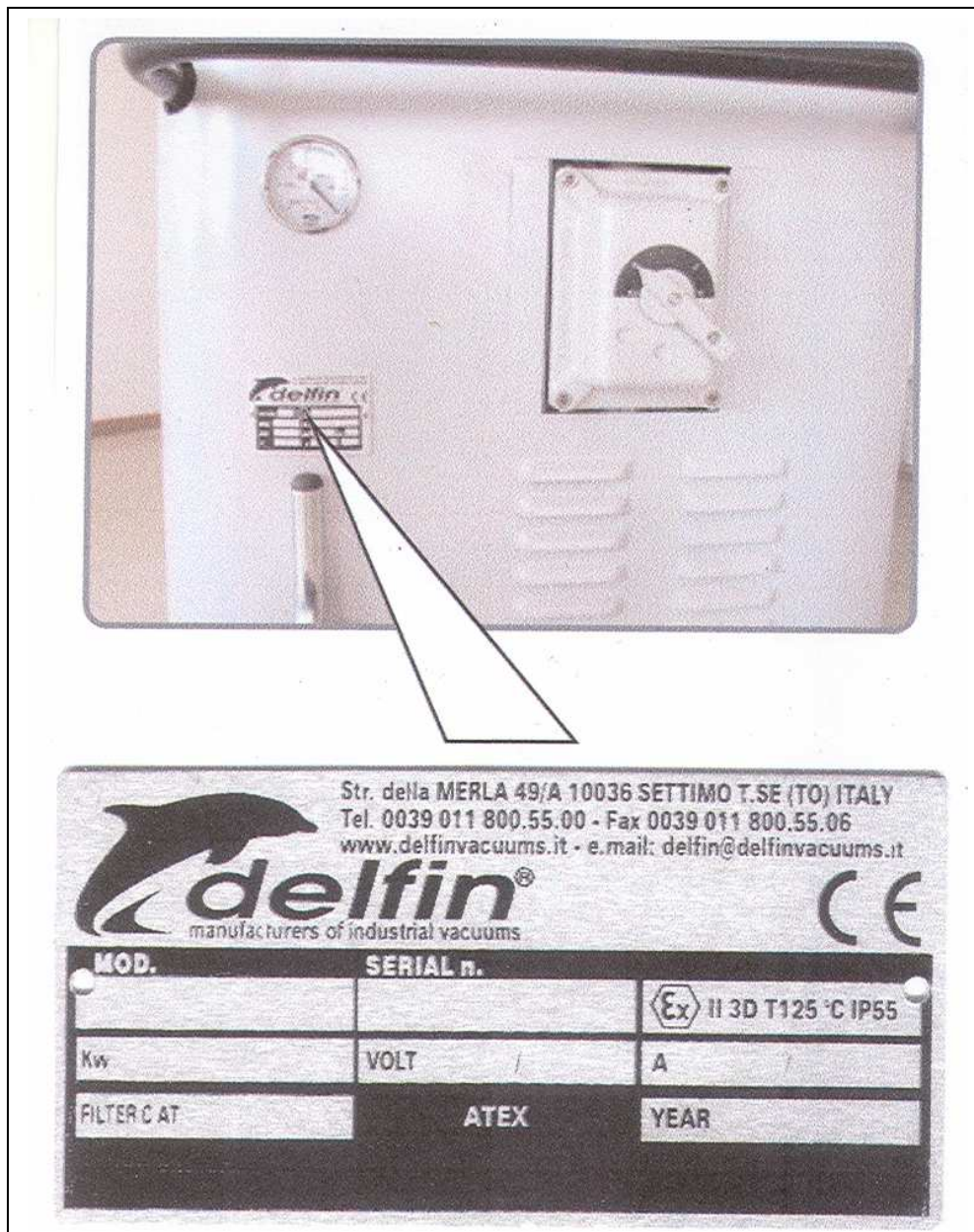
Note: these filters must be checked every six months. In case they are worn it will be necessary to replace them with new ones, to be requested as spare parts to DELFIN S.r.l.  
DELFIN S.r.l. will accept no responsibility in case of use of NON-ORIGINAL filters are .

#### 1.4 Manufacturer's identification data

Delfin srl  
Strada della Merla, 49/a  
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Phone 0039.011.8005500  
Fax 0039.011.8005506 [www.delfinvacuums.it](http://www.delfinvacuums.it)  
[delfin@delfinvacuums.it](mailto:delfin@delfinvacuums.it)

#### 1.5 CE Marking

In compliance with the Machinery Directive on vacuums, CE Marking plates are always applied on Delfin vacuums. Please specify the machine's data reported on such CE marking when contacting the manufacturer or the dealer to discuss any issues relating to Delfin vacuums.





## 1.6 Applications and use

This particular model has been designed, constructed and equipped with safety devices for solid dust and debris' vacuuming applications only. The machine is provided with appropriate specific anti-static filters to operate in explosive atmosphere areas (Z22 CLASSIFICATION AREA, according ATEX 94/9/C Directive).



### **CAUTION!**

**Always use the specific anti-static filters prescribed for the type of dust and/or debris to be vacuumed.**

**This vacuum has been designed for industrial professional use.**

**Any other different use is IMPROPER.**

## 1.7 Environmental conditions

To ensure correct working and efficiency, the vacuum must be sheltered from atmospheric agents (such as rain, hail, snow, fog, dust particles in the air and so on) in an environment with ambient temperature between 5° C and 45° C and Relative Humidity not exceeding 70%. The workplace must be clean and reasonably enlightened.

## 1.8 Noise level

Noise tests have been performed in compliance with the UNI 7712 Standard. The phonometric test results on this specific model correspond to the following acoustic pressure values:

78 dB (A) I



### **CAUTION!**

**Complying with the articles of the Italian Law Decree 277/91, all workers exposed to noise pressure exceeding 85 dBA must protect themselves wearing their personal safety devices. As such, if the vacuum has to be operated in the above specified conditions, the employer must provide the staff with the homologated acoustic devices prescribed for their personal safety and also inform the operators about the risks arising from their exposure to noise.**

## 1.9 Storage

Remove the filter and clean it, empty the collection container and store the vacuum in a suitable place, sheltered from atmospheric agents and ambient temperature between 0° C and 40° C. Cover the vacuum with a nylon sheet in order to preserve it from dust deposit.

## 1.10 Waste disposal

Any vacuum/vacuum component's waste disposal must be executed applying to authorized waste disposal agencies complying with the applicable law and regulations in force. Before proceeding with waste disposal it is necessary to separate plastic or rubber parts from the electrical components.

The parts made out of plastic material, aluminium or steel can be recycled if collected separately and delivered to waste & recycling providers.



## 1.11 Technical specifications

		D/G 1	D/G 2
Tension (voltage)	Volts/Hz	400/690/50-60	400/690/50-60
Power	kW	4	5,5
Depression	mm H2O	2600	2900
Air flow	m3/h	325	525
Filtering area	cm2	20.000	30.000
Filter load	m3/m2/h	162	175
Tank capacity	Liters	100	100
Noise level	dB(A)	74	74
Inlet plug	Ø mm	80	80
Insulation	Class	F	F
Overall dimensions	cm	64 x 115	64 x 115
Height	cm	150	170
Rear wheels	Ø mm	150	150
Front wheels	Ø mm	150	150
Brake		serial	serial
Motion		manual	manual
Removable container		serial	serial





## 1.1.2 Warranty

Delfin S.r.l. warrants this vacuum model for a period of 24 months from the date of purchase, as indicated on the fiscal document issued by the dealer upon delivery to the final customer.

This warranty will be void in case the vacuum is repaired by any unauthorised person or if it is misused, employing tools and accessories that are not supplied or recommended by Delfin S.r.l., or in case the CE marking plate with the machine's serial number has been removed or altered during the warranty period.

Delfin S.r.l. will be bound to repair or replace all parts which may result defective in construction and/or material. Repair or replacement will be free of charge. Repair will only be executed at the manufacturer's premises or executed by a Delfin recommended Technical Service Centre. Transport charges to return the vacuum to the Manufacturer shall be bound by the purchaser, unless otherwise agreed.

Warranty does not cover the cleaning of working parts, whether required.

Any faults which are not clearly attributable to the vacuum's material or construction will only be examined and discussed at the manufacturer's premises or at any Technical Service Centre recommended by the manufacturer. In case the claim is unjustified, all repair and/or replacement costs and expenses shall be paid by the purchaser.

The purchase fiscal document must be submitted to the Manufacturer's personnel in charge of repair operations. It can also be sent to the Manufacturer along with the vacuum at the time of shipping.

Warranty will not cover the following: accidental damages, transport damages, damages due to negligence or incorrect handling, misuse or incorrect use due to failure to follow the warnings and instructions prescribed in this manual, as well as any problems which are not due to the vacuum's normal use and service. Delfin S.r.l. will not be responsible for any damage or injury to third parties, which may occur due to misuse or incorrect use of the vacuum.

Should any dispute arise in connection with the above, the Court of Turin, Italy, will have jurisdiction to settle any such dispute.

The manufacturer will accept no liability in case any of the following circumstances occur;

- Failure to submit the herein Warranty Certificate.
- Failure to follow the instructions prescribed in this manual.
- Use of non original spare parts.
- No maintenance or improper maintenance.



# S A F E T Y





## 2.1 Information on safety

The person responsible of safety must inform the workers about the risks they are exposed in connection with the vacuum service and use. Moreover, the workers must be properly trained in order to be able to protect themselves as well as others from injury.

Failure to observe the safety regulations or warnings may cause damages and injury when operating the vacuum or executing maintenance and repair operation. Accidents and injury may be avoided identifying any dangerous conditions and preventing their occurrence. The operator must be careful and properly trained to be competent and able to correctly execute the work assigned.

Delfin s.r.l. shall not be responsible for any damage and/or injury which may be due to the vacuum's misuse or operating performed by inadequately trained staff or due to failure to follow, even partially, the safety warnings and instructions reported in the herein manual.

The safety instructions and warnings are prescribed in this manual and reported on the warning plates applied to Delfin vacuums. Failure to respect the aforesaid safety warnings may cause injury to the operator and to other people as well.

The safety warnings are highlighted by the following signs:



**CAUTION!**

**Failure to observe these warnings may cause injury to the operator.**



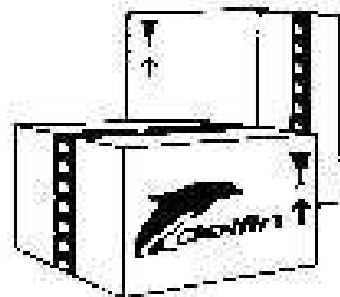
**WARNING!**

**Failure to observe these warnings may cause damages to the vacuum.**

The manufacturer cannot foresee any possible dangerous condition. Therefore, the warnings reported in this manual and on the machine are not exhaustive. Whenever using tools, working procedures or methods which have not been expressly recommended by Delfin S.r.l. it is necessary to make sure that such tools, working procedures or methods are not harmful or dangerous for the operator and/or for other people.

**Use original DELFIN spare parts only.**

Delfin S.r.l. will accept no claims and liability in case non-original spare parts are used.





## 2.2 Safety warnings



### CAUTION!

The instructions prescribed herein cannot preserve you from any danger in connection with the vacuum's use and service. To prevent injury, it is necessary to operate with care and competence, relying on experience.

In addition to the following instructions, specific safety warnings for the different operations are reported in each section.

Maintenance operations must always be executed after unplugging the machine.

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.

Do not use the vacuum on NON-CONDUCTIVE floors.

Do not manumit 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 anti-static cloths and shoes.

The floor of the area to be vacuumed must be anti-static.

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 liquids or gas (fuels, solvents etc.).

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

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 collection container's emptying as well as the filter's cleaning operations must be executed 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's 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's 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 S.r.l., 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.

DELFIN supplies are covered by insurance policy for Manufacturer's liability on all products (*"Responsabilità civile verso i terzi -prodotti"*, in compliance with the Italian law).

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 S.r.l. Without prejudice for the above, it is recommended to keep the machine construction complying with the safety standards prescribed by the EC 98/37 Machine 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's 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 vapors. 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.

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 s.r.l. for another copy.

Structural damages, modifications, improper changes or repair may affect the vacuum's 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's 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's cross section area is suitable for the vacuum's electrical input.

To recover the vacuum's original working conditions after maintenance, the operators must check that the machine's 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's wheel brake provided to ensure that the vacuum's position is stable.

## 2.3 Safety warnings and signs

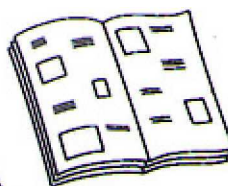
Plates with safety warnings and/or signs are applied on the vacuum.



### CAUTION!

Ensure that all safety warning plates are readable.

Wipe the plates with a damp cloth using water and detergents. Do not use any solvents, NAFTA or gasoline. Damaged plates must be replaced with new ones, available upon request to Delfin S.r.l. In case of safety warning plates applied on vacuum components to be replaced, ensure that warning plates will be applied on the new replaced parts as well.



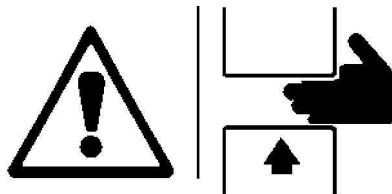
**Caution!**  
Carefully read the “Operating and Maintenance Manual” before using the vacuum or executing maintenance operations.



Specific sign of conformity with the ATEX 94/9/EC  
DIRECTIVE.



Caution!  
Do not vacuum incandescent material.



Caution!  
Be careful not to get your hands squashed when positioning and securing the vacuum's collection container.

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

<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 HEPA filter (99,999%. efficiency)		



## 2.4 Residual risks

Accurate risk analysis carried out by the manufacturer and filed in the technical documentation of reference, brought to the elimination of the majority of risks in connection with the use of the Delfin vacuum.

The manufacturer recommends all users to strictly follow the herein instructions, procedures and warnings and to comply with all applicable laws and safety regulations, including utilization of the safety devices prescribed, whether installed on the vacuum or to be used or worn by the operator for personal safety.

The residual risks in connection with the Delfin vacuum are the following:

### **Risks arising from the need to operate with Low voltage.**

Complying with the Italian law decree DPR 547/55, Low voltage operations can only be executed by qualified and trained personnel, after providing efficient double earth insulation.

### **Risks arising from improper machine utilization in presence of flammable or explosive substances.**

The vacuum must not be used in workplaces or environment with dangerous substances such as flammable dust and/or gas and/or liquids, which may evaporate at ambient temperature and therefore contaminate the environment.

### **Risks arising from the vacuum's storage and use in a wet/damp environment.**

In order not to compromise the vacuum's efficiency, it is necessary to respect the storage and operating limits prescribed in the herein section 1.6, Environmental conditions.

### **Risks arising from misinterpretation of the safety warnings and signs.**

With regard to the residual risks and the risk identification, the Manufacturer installs safety markings on the machines, complying with the laws ruling the signs and symbols to be used. The user must immediately replace the safety warning signs as they become unreadable or damaged.

### **Caution!**

**It is absolutely prohibited to remove the safety warning plates from the vacuum.**

**The manufacturer declines any responsibility on the vacuum's safety in case of failure to respect this warning.**



## 2.5 Applicable Directives

The vacuum described in the herein manual complies with the following directives:

- EC 98/37 Machinery Directive
- EC 89/336 Electromagnetic Compatibility (EMC) Directive
- EC 94/9 ATEX Directive.





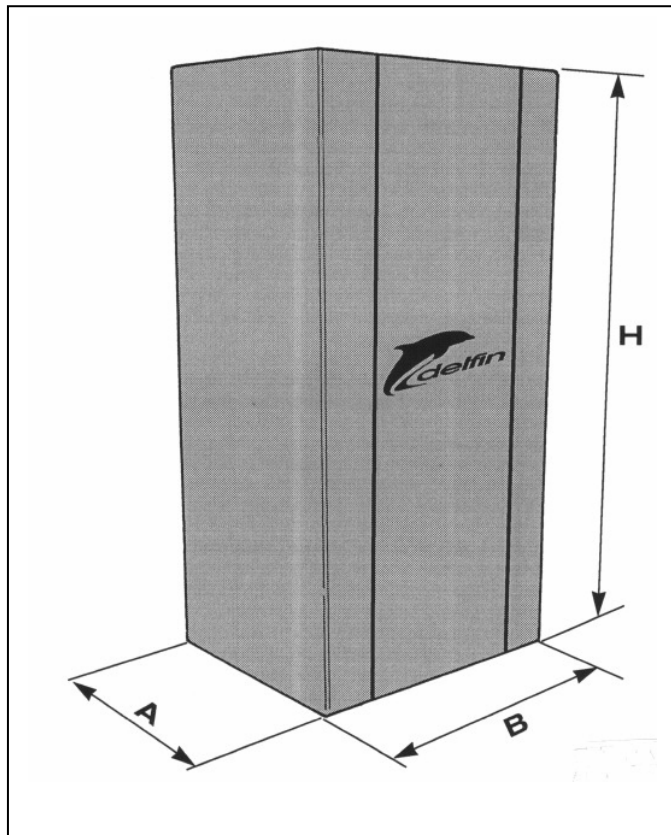
All transport and handling operations described in this chapter must be executed in NON-CLASSIFIED atmosphere, which means in non-explosive atmosphere area.



# T R A N S P O R T A T A N D H A N D L I N G



### 3.1 Transportation and overall dimensions



**D/G 1**

**D/G 2**

A (cm)	B (cm)	H (cm)	Weight
73	147	140	125
73	147	160	155

The machine is delivered in a robust carton box package, secured with straps.

Handling must be executed throughout a forklift having appropriate carrying capacity, after checking the package's positioning and stability on the forks.

Before executing handling operations, ensure that the forklift's working area is clear and that no objects are laying on the package.

During handling operations, keep the forklift position low for major stability and safety.

Once in use, the vacuum should be handled normally, riding it on its own wheels.

It is expressly prohibited to lift the vacuum using hoisters or forklifts or other equipment.

In case it is necessary to lift the vacuum for any reason, the final user shall be responsible for this operation as the manufacturer will accept no liabilities in connection thereto. It is recommended to properly handle and secure the package during such eventual lifting operations, to ensure safe handling and transport.



### 3.2 Unpacking and handling

Remove the carton protective package and unlock the vacuum removing the securing straps.



#### **WARNING!**

**Before proceeding with installation it is necessary to visually inspect the vacuum first, checking for any damages which may have occurred during transportation.**

In case damages or faults are detected on one or more components, it will be necessary to suspend installation and notify the manufacturer about the failure. Remedy and actions to be taken shall be agreed with the manufacturer.

The vacuum filter is already placed inside the machine.

Shift the vacuum using the handle, as shown in the picture below.



#### **CAUTION!**

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

**The vacuum's 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.**



All transport and handling operations described in this chapter must be executed in NON-CLASSIFIED atmosphere, which means in a non-explosive atmosphere area.

# I N S T A L L A T I O N



#### 4.1 Suction pipe fitting

Fit the required vacuum accessory to the flexible hose's open end.



Note: the flexible hose together with nozzles and other accessories are included in the STANDARD kit.

Please contact your dealer for further information concerning the different types of OPTIONAL accessories available for this particular vacuum model.

Remove the cap, Insert the flexible hose into the vacuum's inlet plug.





## 4.2 Electrical connection

Ensure that power supply meets the voltage and frequency specifications as indicated on the vacuum's marking plate and control panel.

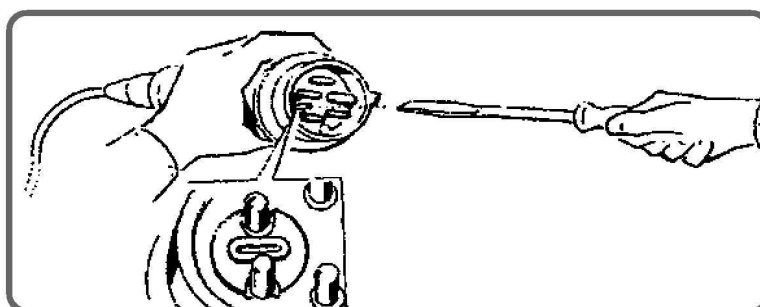


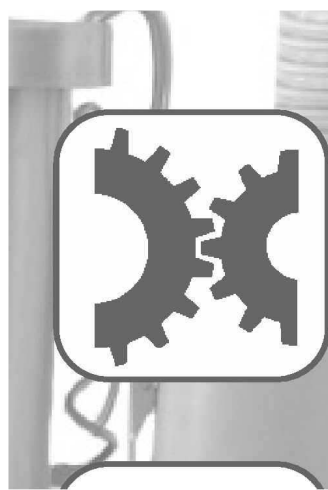
### Caution!

Do not plug the vacuum's tap with wet hands.

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

If, after turning on the vacuum, the hose blows air instead of vacuuming, it is necessary to disconnect the vacuum, unplug it and invert the vacuum's engine rotation direction using a screw driver to work on the vacuum's tap as shown in the picture





**CAUTION!**

The vacuum must not be used by unauthorised staff.

Authorised staff should read this manual before operating the vacuum.

Operating and maintenance authorised staff must be properly trained on the function and use of the safety devices to be worn for personal safety such as safety shoes, gloves, mask and goggles, which eliminate the risks in connection with the operations to be performed.

# WORKING PROCEDURES



## 5.1 Functional description of controls



### 1) Main switch O / 1

*When the main switch is turned to " 1 " position, voltage feed is provided to the vacuum. Feed is cut out when the main switch is turned to the "O" position  
After turning the main switch to the "O" position it is possible to execute maintenance operations inside the electrical control box.*

### 2) Vacuum gauge (depression gauge)

*The vacuum gauge indicates the depression values in mmH<sub>2</sub>O (waterlift) inside the filtering chamber. The vacuum perfectly works within values in a range between 2500 -+ 3000 mmH<sub>2</sub>O.*



## 5.2 Working procedures



**Caution!** Operations permitted in Z22 class areas, with potentially explosive atmosphere.



**Caution!**

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

- Ensure that the supply cable tap is correctly plug in the current outlet having the voltage required and indicated on the vacuum's control box 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's end with the fitted accessory required.
- Turn on the main switch to the "1" position



**Caution!**

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

- Turn the main switch to the "O" position to disconnect the vacuum.



**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, as shown in the picture.



**CAUTION!**

The vacuum can be shifted manually on flat grounds only.

The vacuum's 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.



### 5.3 Collection container release and withdrawal



#### 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!

Turn the main switch to the "O" position

Wait at least five minutes to allow that the dust deposits at the bottom, then lift the handle (A).



Withdraw the collection container using the handle (B).



Cover the container with the provided cover (C).



As shown in the picture, withdraw the debris collection bag and dispose it complying with the applicable laws in force in the Country of use of the vacuum.



**CAUTION!**  
Use the dust mask to execute this operation safely



## 5.4 Filter shake system

Filter shake operation must be executed only after the machine has been switched off and after the engine has stopped completely.

Fit the provided cap into the suction plug.



Filter shake device should always be activated before using the vacuum and after long periods of uninterrupted working.



**Warning!**

**Do not tangle or ply the flexible hose during vacuuming operations.**

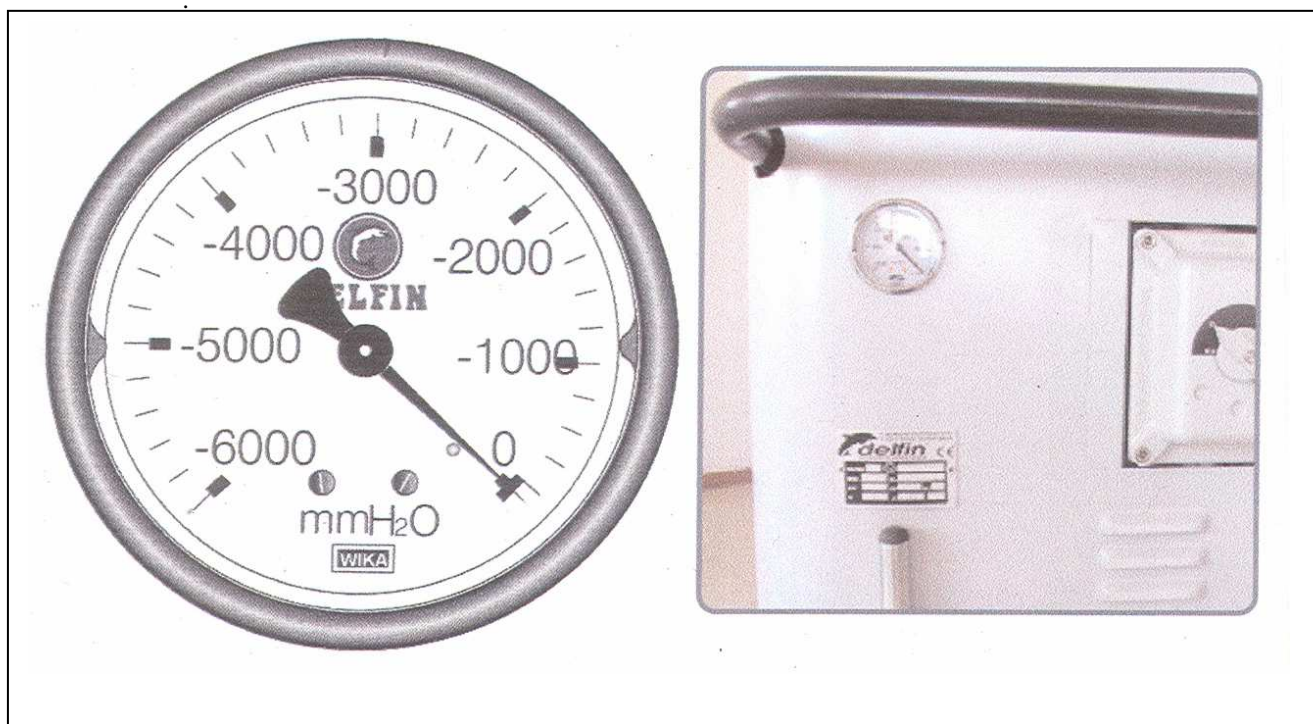


## 5.5 Vacuum gauge function

On the front side of the vacuum there is a vacuum gauge indicating suction pressure level inside the vacuum. If the suction inlet is free and the vacuum gauge pointer indicates irregular suction pressure, it is necessary to shake the filter.

If the optional automatic filter shake system is available, press the blue led switch and keep it pressed for a few seconds to start filter shake functions.

If suction pressure value is still excessive, it is necessary to clean or replace the main filter or the safety filter.



### MAXIMUM SUCTION PRESSURE LIMIT

<u>D/G 1</u>	2600 mmH2O
D/G 2	2900 mmH2O

#### Warning!



Do not use the vacuum with clogged filters.

#### Warning!



If, after filter cleaning, the vacuum gauge pointer still indicates excessive suction pressure the suction flexible hose or the accessory applied thereon may be obstructed. As the case may be, check the hose and the accessory and clean them removing any obstruction.





# M A I N T E N A N C E

Caution!



All maintenance operations must be executed in NON-CLASSIFIED atmosphere, which means in a non-explosive atmosphere area.



**WARNING!**

The vacuum's extraordinary maintenance shall only be executed by the manufacturer's technical engineers.



## 6.1 Information and warnings

Ordinary maintenance and checking operations required to ensure the vacuum's 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's 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's construction technology, will always be available to timely and properly provide service and assistance.

## 6.2 General safety rules

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 manual's instructions and perfectly knows the vacuum's working system.



### Caution!

**Before starting any maintenance operation, the maintenance engineer must unplug the machine and execute such operation in non-classified atmosphere, which means in an area with non potentially explosive atmosphere.**

Any operation on the vacuum's 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.



### 6.3 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's 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's 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.
  - Check that the safety filter is not too dirty or clogged.
  - Clean the deflector inside the suction hose on regular basis to prevent dust accumulation inside the suction unit.
  - 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 6.4.

#### Every 24 months

- It is necessary to replace the bearing of the suction unit to ensure the endurance of the pump's efficiency.



#### WARNING!

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



#### 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.



#### WARNING!

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



## 6.4 Filter replacement

### 6.4.1 Main filter replacement

For filter replacement proceed as follows:

- Disconnect the vacuum turning the switch to the “0” position
- Unplug the vacuum.



#### **CAUTION!**

**Always wear your personal safety devices.**

- Release the snap fasteners (A) of the filtering chamber.

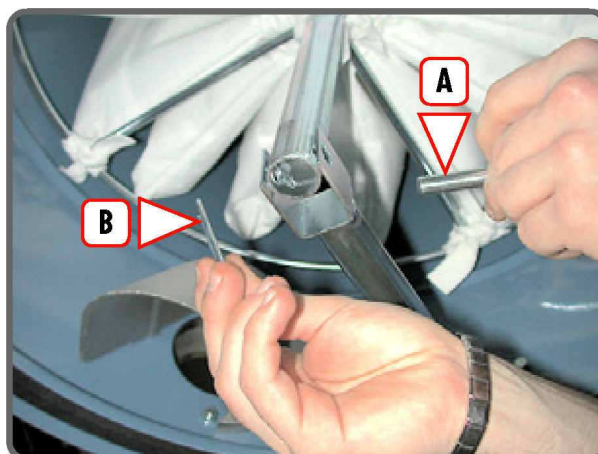




- Lift the cover.



- Operating from the vacuum's bottom, remove the pin (A) and the split pin (B) securing the filter to the shake lever.



- Lift the filter and the holding ring.





Loosen the strip and remove the holding ring with the sheath.



Untie the knots, remove the pocket filter and replace it with a new one. Reassemble the unit and finally lock the cover.



**CAUTION!**

The debris and dust deposited on the filter and the filter as well must be disposed complying with the laws and regulations in force in the Country where the vacuum is used.



### 6.4.2 Cartridge filter cleaning and replacement

To clean and replace the cartridge filter proceed as follows:

- switch off the vacuum turning the main switch to the "0" position.
- unplug the vacuum.



**Caution!**

**Always wear your personal safety devices.**



Release and lift the container's cover and withdraw the cartridge.

Use another vacuum to clean the cartridge and remove the dust on the whole surface.

Once completed the cleaning operations, reassemble the cartridge executing the above procedure in reverse.



**Warning!**

**Do not use compressed air jets which may damage the filter cloth.**



## 6.5 Vacuum / pressure relief valve

The vacuum/pressure relief valve is provided in series within this model and is calibrated by the manufacturer. This valve is necessary to ensure efficiency in all time consuming and continuing working conditions as the vacuum may work for long time with clogged filters and obstructed hose.

Reaching the suction pressure value, the valve opens allowing air inflow inside the turbine and therefore ensuring cooling.

**DO NOT MANUMIT the vacuum/pressure relief valve.**

**The Manufacturer will accept no responsibility on the machine's efficiency in case of manumission of the vacuum/pressure relief valve and, as a consequence, the warranty will be void.**



Anti-static filter

The valve is protected by an anti-static filter which must be cleaned every six months.





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Spare parts may be requested completing and sending us the here enclosed order form by fax, mail, or writing to our e-mail address as follows:



FAX

0039.01 1.8005506



E-mail

delfin@delfinvacuums.it



MAIL

Strada della Merla, 49/a  
10036 Settimo Torinese (TO) Italy

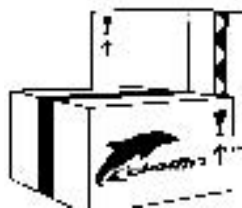


## Recommended Spare Parts

Description	DG/1	DG/2
Anti-static polyester filter G	AR3047	AR3005
Filter holding ring sheath Ø 500	AR2013	AR2013
Filter holding ring Ø 500	AR2018	AR2018
Collection container/chamber Ø 500 sheath	AR2059	AR2059
Anti-static filter for Vacuum/pressure relief valve	AR3000	AR3000
Anti-static cartridge filter	AR4003/ A	AR4003/ A



To:



**FAX**

**Delfin S.r.l.**  
**Strada della Merla, 49/a 10036**  
**Settimo Torinese (TO) Italy**  
**Ph. 0039.011.8005500**  
**Fax 0039.011.8005506**

**DATE:**    /    /   

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## -----Spare Part Order Form-----

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