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## Industrial vacuum cleaners TECNOIL

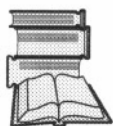


**150 M**

**150 MP**

**151 T3**

Operator's and maintenance  
manual



**Carefully read this manual and its attachments before using the vacuum unit**

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 EEC 98/37" and 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 and its attachments must always accompany the vacuum unit in case of resale.**

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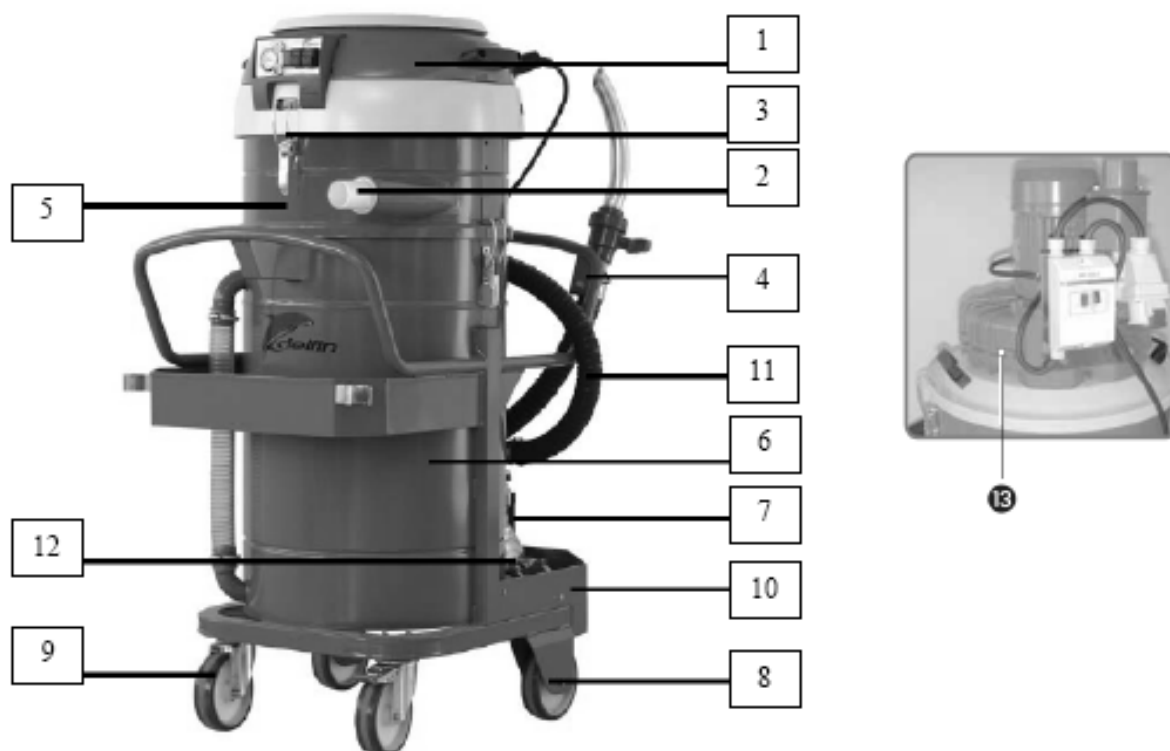
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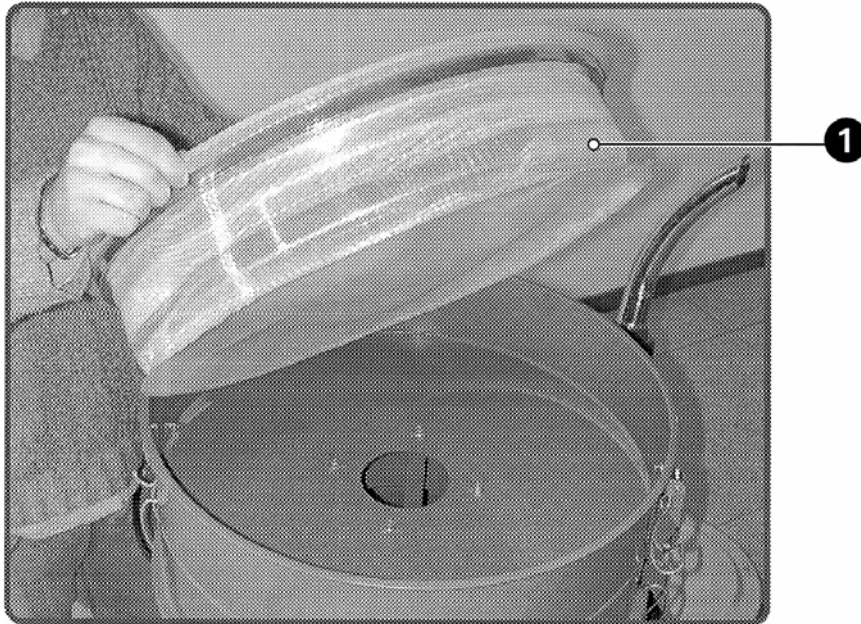
**INFORMATION SECTION**

## 1.1 Identification of main parts



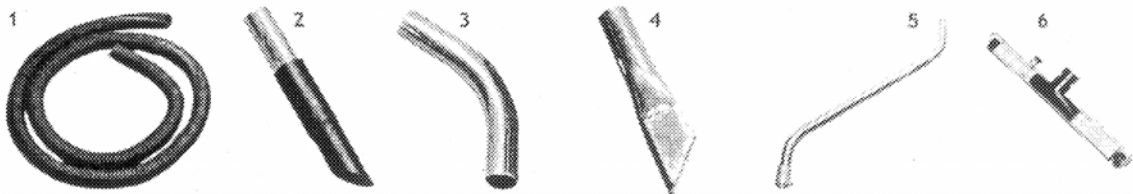
- 1) Head with controls
- 2) Suction pipe coupling point
- 3) Release fastening
- 4) Push handle
- 5) Filter chamber
- 6) Vacuumed liquids container
- 7) Pump operation controls for liquid emptying
- 8) Fixed castors
- 9) Castors
- 10) Frame
- 11) Liquid drain pipe
- 12) Liquid drain self-priming pump
- 13) Head unit for mod. 151 T3

## 1.2 Filters provided



1) PPL Spare filter (Code AR 3811)

### 1.2.1 Optional accessories



Optional accessories	Ø	Code
1) 4 m anti-oil rubber hose with coupling	50	AA 1280
2) Rubber truncated cone with connection	50	AA 1035
3) Curved connection	50	AA 1039
4) Aluminium nozzle	50	AA 1043
5) Aluminium double bend	50	AA 2659
6) 430 mm floor squeegee with wheels	50	AA 1403

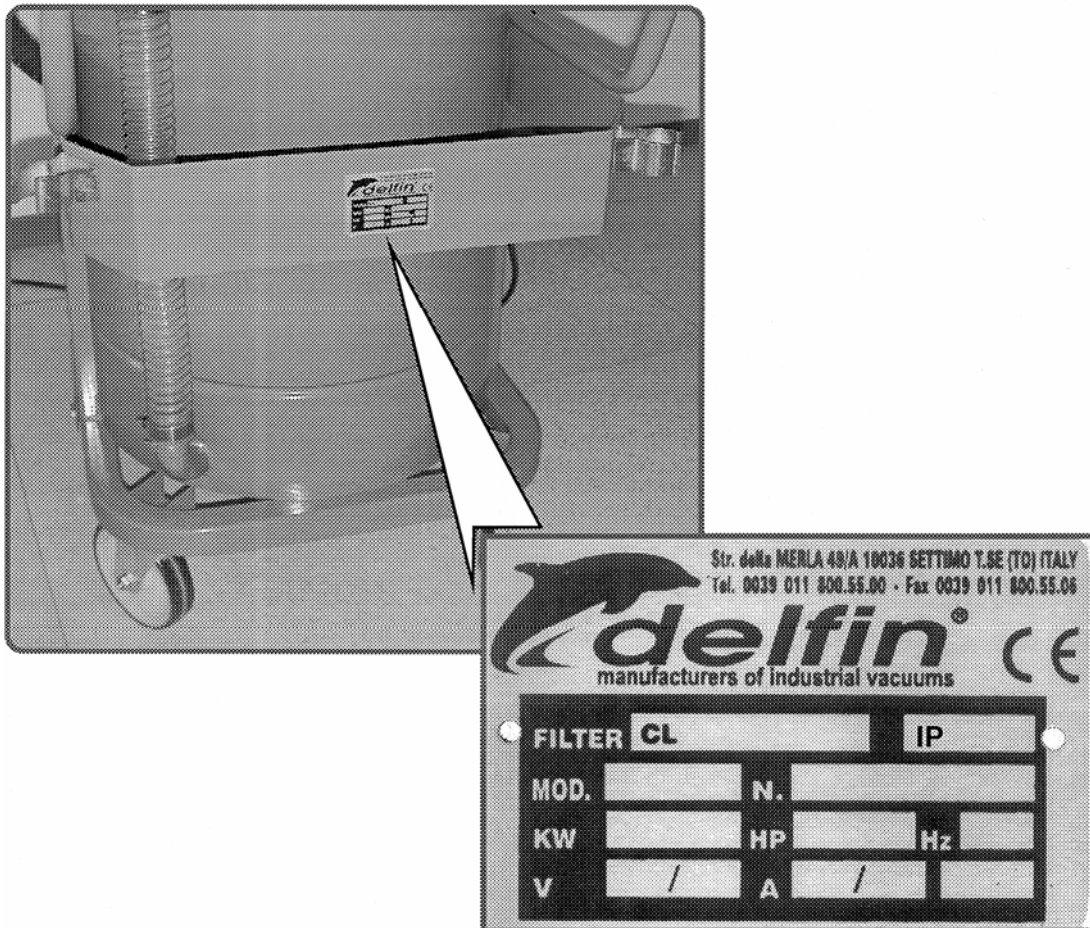
### 1.3 Identification details of manufacturer

**Delfin srl**  
Strada della Merla, 49/a  
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### 1.4 Marking plate

In compliance with the Machine Directive 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.



## 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.



### **Important!**

**Always use filters dedicated to the type of liquids 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, well-enough lit and devoid of explosive atmosphere.

## 1.7 Noise level

Noise level readings were taken in accordance with the provisions of UNI 7712 standards. Sound tests performed on this specific vacuum cleaner model show an acoustic pressure of

**76 dB (A)**



### **Important!**

**Pursuant to articles L.D. 277/91, workers exposed to sound pressure levels above 85 dBA 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

		<b>Tecnoil 150 M</b>	<b>Tecnoil 150 MP</b>	<b>Tecnoil 151 T3</b>
<b>Voltage</b>	<b>V</b>	230/50	230/50	230/400/50
<b>Power</b>	<b>kW - Hp</b>	3,45 – 4,7	3,45 – 4,7	3 – 4
<b>Vacuum</b>	<b>mm H<sub>2</sub>O</b>	2,500	2,500	3000
<b>Max. air flow</b>	<b>M<sup>3</sup>/h</b>	540	540	300
<b>Filter surface</b>	<b>cm<sup>2</sup></b>	8,000	8,000	8,000
<b>Liquid capacity</b>	<b>Litres</b>	140	140	140
<b>Solid capacity</b>	<b>Litres</b>	40	40	40
<b>Vacuuming diameter Ø</b>	<b>mm</b>	50	50	50
<b>Noise level</b>	<b>dB(A)</b>	76	76	76
<b>Pump flow</b>	<b>Litres/min.</b>	-----	150	150
<b>Dimensions</b>	<b>cm</b>	60x 77	60x 95	60x95
<b>Height</b>	<b>cm</b>	134	134	158
<b>Weight</b>	<b>Kg</b>	100	120	130

## 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



## ***SAFETY SECTION***

## 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 precautions 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 precautions 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:



**Important!** \_\_\_\_\_

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



**Warning!** \_\_\_\_\_

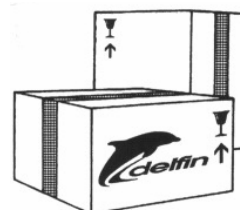
**Unless these messages are heeded, vacuum cleaner damage could occur.**

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 precautions



### Important!

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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 precautions for the various operations.

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

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The employer must inform and train the user according to the provisions of applicable laws.

Before using the machine, prepare and train yourself by reading this manual carefully. Use of the machine by untrained and unauthorised persons is forbidden.

Using the machine to vacuum toxic substances is forbidden unless this has been equipped with special filters required for the specific type of dusts. Such filters must be explicitly requested by you.

Do not vacuum flammable materials or substances or which could cause explosions (fuels, solvents, etc.). To vacuum such materials, the machine must be built with Anti-explosion Motor and Electric System and this must be requested by you explicitly.

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

Use of the machine without the supplied filters is not recommended.

If the filters are correctly fitted, the machine will not eject any objects.

If the machine is used to vacuum toxic-harmful substances, the container must be emptied and the filters cleaned using adequate individual protection devices, selected according to the type of substances to be vacuumed.

Never rest miscellaneous materials on the horizontal protection guard.

The machine casing containing moving parts must not be removed by the user.

When using the machine, mind other people, especially children.

Use the machine cautiously on slopes and ramps. Do not change direction on gradients.

Make sure the parked machine remains stable by operating the braked wheel.

During cleaning operations, maintenance jobs or when changing parts, the starter switch must be off and the machine must be disconnected from the power mains by removing the cable from the socket.

Only skilled persons should carry out repairs.

During use, mind the power supply cables and avoid crushing or pulling these.

Periodically check the mains power cable to ensure this is not damaged.

In the event of the cable being damaged, the machine must not be used.

In the event of the cable, plugs or couplings being replaced, make sure these are protected against water spray and check mechanical strength.

Never pull the machine by means of the power cable and the vacuum pipe.

Motor brushes and burnt-out fuses must be replaced by DELFIN or authorised dealers. Always use original spare parts.

The user is responsible for disposing of vacuumed substances in accordance with applicable laws.

After 10 years of use, we recommend sending the machine for a complete overhaul to DELFIN srl.

The machine is supplied with: instruction manual, Exploded Spare Parts drawing, Test Sheet, Warranty Slip, Approval Certificate.

In the event of Customers fitting a tool to the machine not supplied by DELFIN, make sure the safety conditions required by Machine Directive 98/37 EEC are complied with and in any event, DELFIN is unable to accept liability for any problems arising from use of such tool.

The vacuum cleaner must not be operated in a corrosive or explosive environment.

Always make sure the vacuum cleaner is free of all foreign materials such as debris, oil, equipment and other objects that could affect operation and cause injury to persons.

Avoid using flammable or toxic solvents such as petrol, benzene, ether and alcohol for cleaning.

Avoid prolonged contact with solvents and inhaling their vapours. Avoid use close to open flames or sources of heat.

Never use the vacuum cleaner without the filter.

Do not vacuum lit cigarette ends. The filter could be damaged.

Do not vacuum petrol or flammable liquids in general.

Make sure all the guards and protection devices are in place and that all the safety devices are in place and working properly.

Do not wear loose or hanging clothing such as ties, scarves or torn garments that could become trapped and be sucked up by the cleaner.

Do not open the vacuum container with the machine running.

The manual should always be kept handy for reference so the operating cycle can be checked every time there are doubts.

In the event of this manual being lost or damaged, ask DELFIN for a new copy.

Structural damage and improper alterations or repairs could change the protection capacity of the vacuum cleaner and therefore cancel this certification.

Any alterations to the appliance must only be made by Delfin engineers.

During maintenance jobs, affix a notice to the appliance indicating "MACHINE BEING SERVICED, DO NOT START".

Climbing on the cleaner is forbidden.

Never touch electric wires, switches, buttons, etc. with wet hands.

Before connecting to the power mains, make sure the power voltage and frequency are those shown on the machine plate.

Make power connections to a mains supply with efficient earth system.

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

When restoring original working conditions, the appointed personnel should make sure that at the end of the operating procedure, proper vacuum cleaner operation safety conditions are restored, especially the safety devices and the protective guards.

Only adult persons should use the vacuum cleaner.

During vacuuming operations, always brake the vacuum cleaner using the special revolving wheel lock.

## 2.3 Safety plates and symbols

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



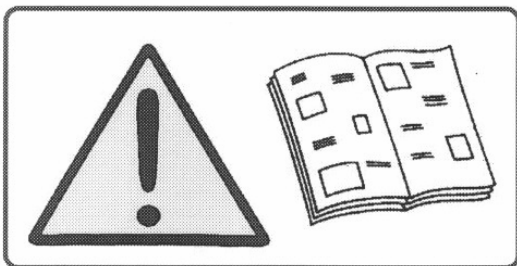
**Important!** \_\_\_\_\_

**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.**

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**Important!**

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

**IMPORTANT**

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



## 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 547/55, 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.



### **Important!**

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**Removing the safety plates on the vacuum cleaner is strictly forbidden.**

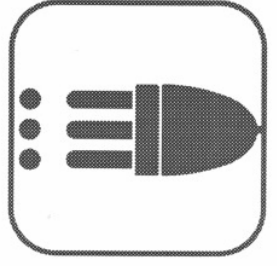
**The manufacturer declines all liability in relation to vacuum cleaner safety in the event of failure to comply with the above indications.**

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## 2.5 Applied directives

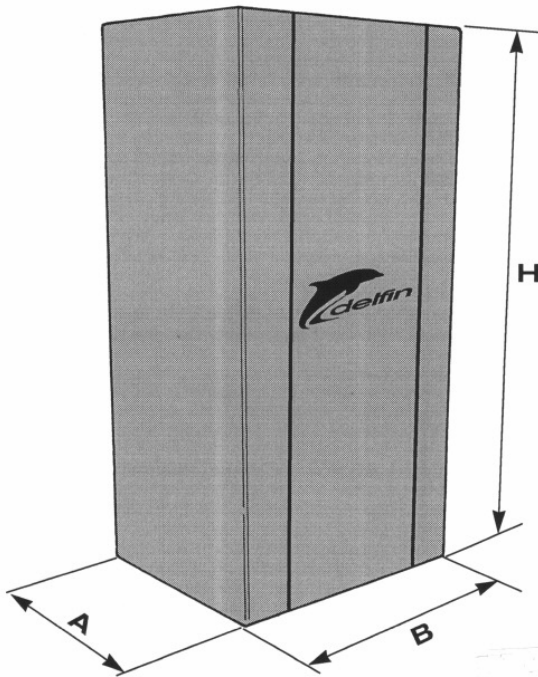
The following directives apply to the vacuum cleaner described in this manual:

- **98/37 EEC Machine directive**
- **89/336 EEC Electromagnetic compatibility directive**
- **73/23 EEC Low-voltage directive**



## ***INSTALLATION SECTION***

### 3.1 Handling



	A (cm)	B (cm)	H (cm)	Weight (with packaging)
<b>150 M</b>	60	77	134	100
<b>150 MP</b>	60	95	134	120
<b>151 T3</b>	60	95	158	130

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



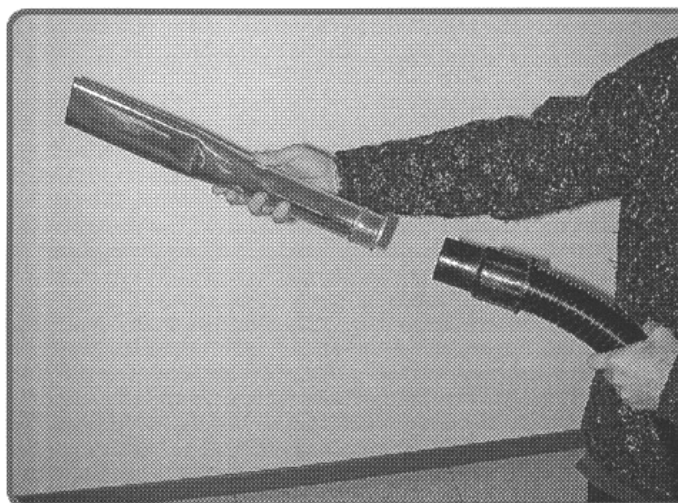
#### Caution!

**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.

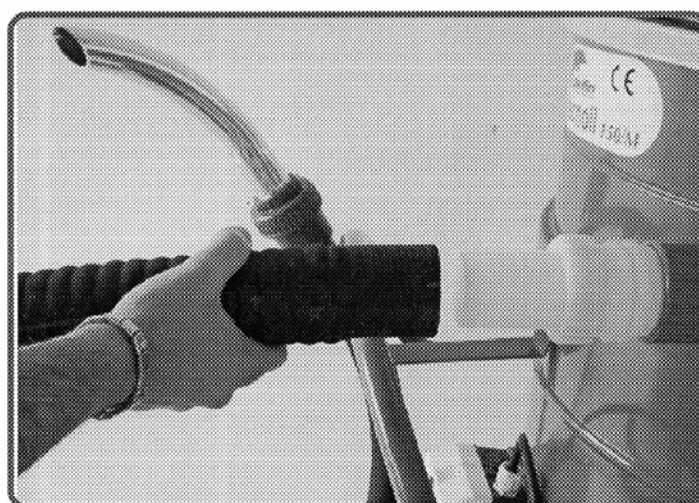
The vacuum cleaner already features a suction filter.

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

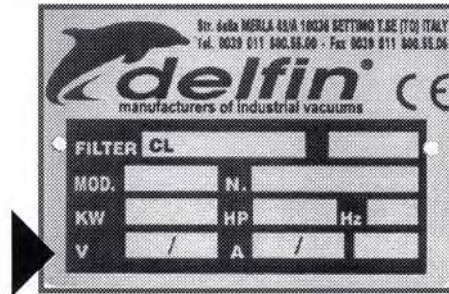


Contact your dealer for information relating to the different types of OPTIONAL accessories available for this specific vacuum cleaner model.

Fit the supplied pipe in the connector.



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

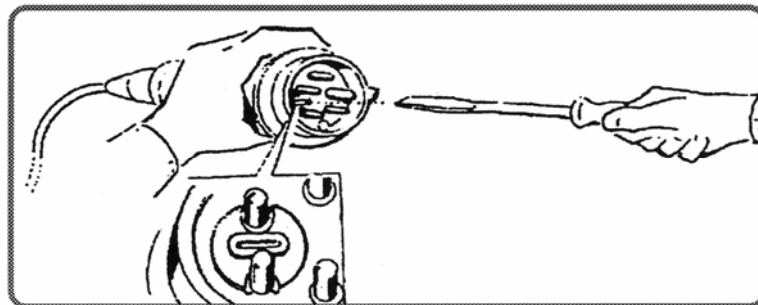


**Important!**

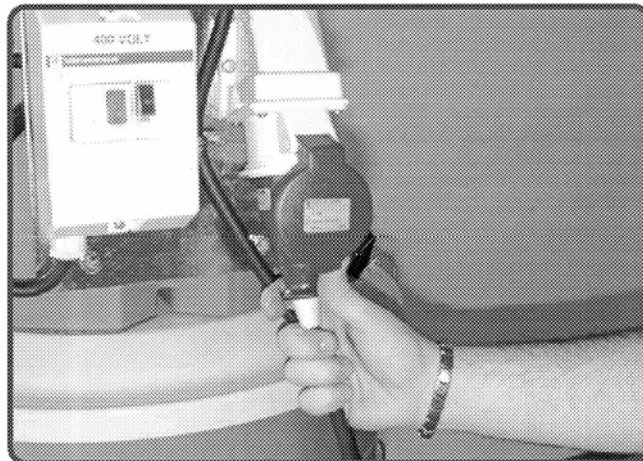
**Do not fit the plug in the power socket with wet hands.**

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

If, when the vacuum unit is switched on, the inlet blows air out instead of sucking it in, switch off the machine, disconnect the plug from the power socket and reverse the direction of rotation of the motor using a screwdriver directly on the plug as shown in the illustration.



In the case of model 151 T3, the power cable must be fitted in the socket located on the head.





## OPERATION SECTION



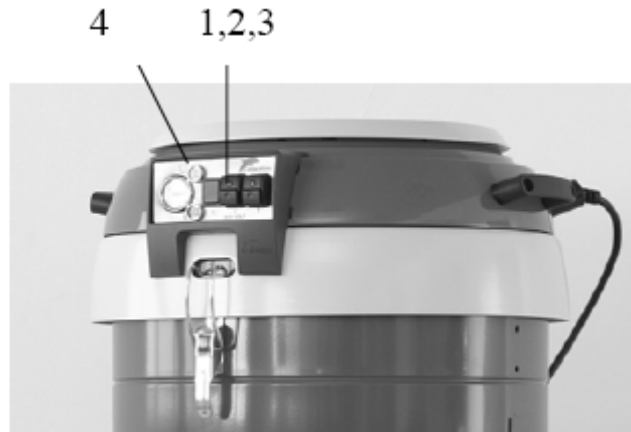
**Important!** \_\_\_\_\_

**The vacuum cleaner must not be used by unauthorised personnel and by anyone who has not read the operator's and maintenance manual.**

**The operators and maintenance technicians who perform authorised jobs on the cleaner must be adequately informed about the use of individual protection devices such as shoes, gloves and mask, which make it possible to eliminate all risks associated with the performance of the various jobs.**

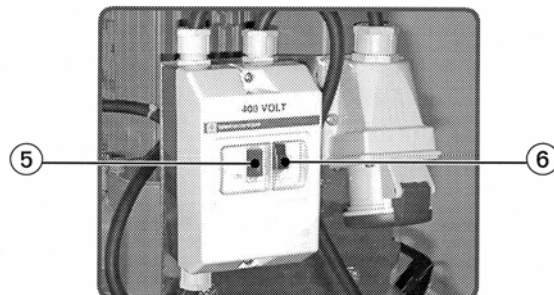
## 4.1 Description of controls

### 4.1.1 Model 150 M / 150 MP



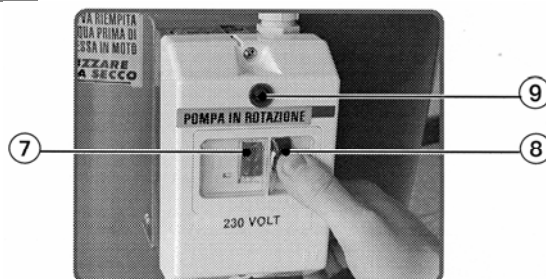
- 1) START/STOP switch motor 1
- 2) START/STOP switch motor 2
- 3) START/STOP switch motor 3
- 4) POWER ON green light indicator

### 4.1.2 Model 151 T3



- 5) Motor STOP button
- 6) Motor START button

### 4.1.3 Model 150MP / 151 T3



- 7) Emptying pump STOP button
- 8) Emptying pump START button
- 9) Pump working green indicator light

## 4.2 Work cycle



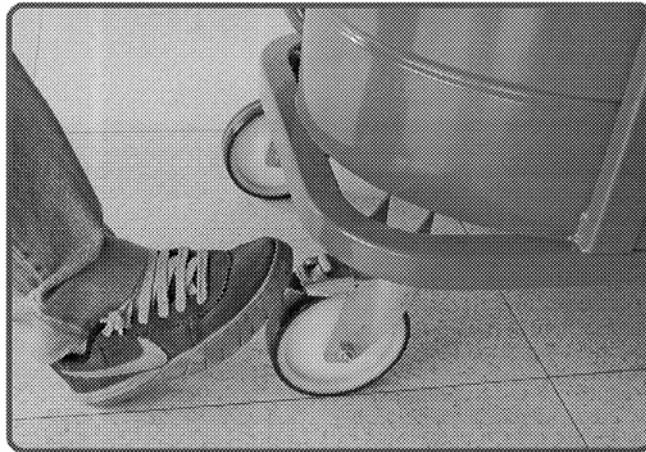
### Important!

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

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- Make sure the power plug is correctly fitted in the power socket.
- Make sure the flexible hose is properly fitted and locked in the vacuum pipe union.
- Make sure the power cable and any extension used are integral and in perfect condition.
- Block the vacuum cleaner by means of the retainer provided.



- Grip one end of the flexible hose complete with selected accessory.
- Press the **START** button and start vacuuming.
- To stop the vacuum unit, press the **STOP** button.



### Caution!

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**Before switching the vacuum cleaner back on, make sure the motors have come to a complete halt.**

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- After finishing work, disconnect the vacuum cleaner from the power socket.



To move the vacuum cleaner, use the large handle .

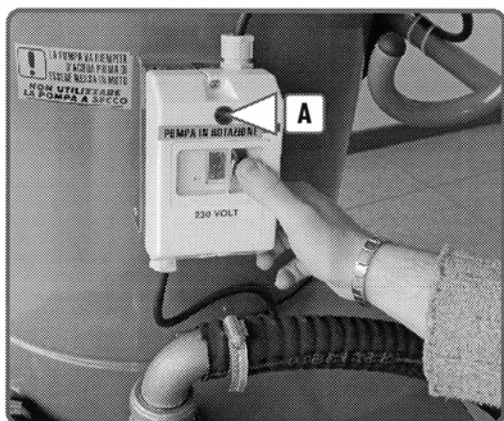


**Caution!** \_\_\_\_\_

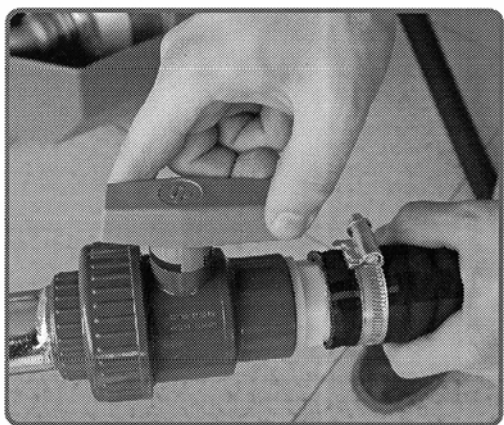
**During vacuuming, avoid rolling up or bending the flexible hose.**

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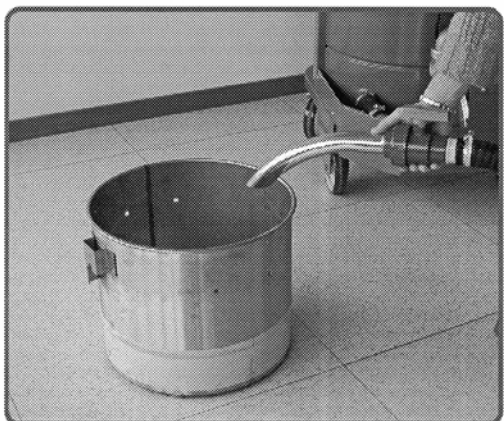
### 4.3 Emptying the container



Start the pump by pressing the START button.  
A green indicator light (A) will come on to indicate the pump is working



Open the liquid exit valve



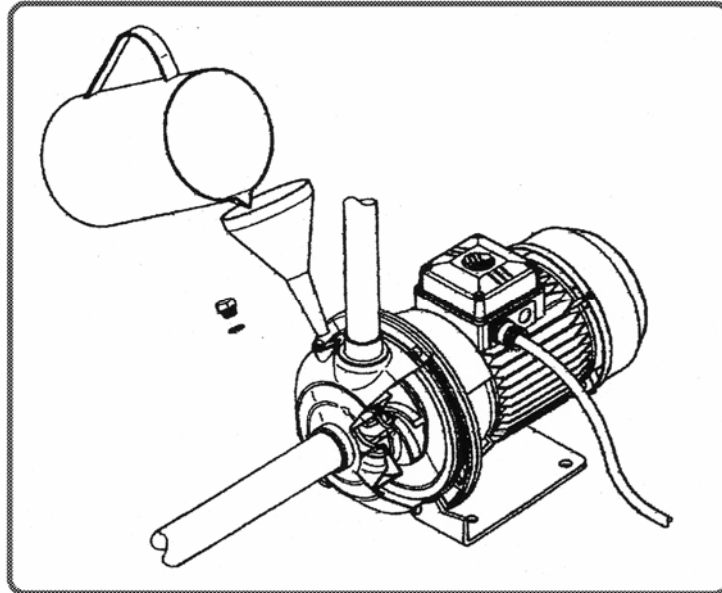
Drain the liquid into special containers for disposal.



**Caution!** \_\_\_\_\_

**The pump must be filled with water before being started. If this runs dry for even a short time, the mechanical seals would be seriously damaged.**

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Fill the vacuum pipe and pump body with water through the side supply inlet filling cap. Perform this operation carefully to prevent any air bubbles remaining inside the vacuum pipe and pump body. With three-phase motor, also check the direction of rotation, which must be that indicated by the arrow on the pump body, by quickly running the motor. If the motor turns in the wrong direction, switch over two power phase wires. In case of having to check the free rotation of the shaft, use a screwdriver through the hole in the centre of the motor fan cover.



**Caution!** \_\_\_\_\_

**Ice could damage the pump if this were left full of water and switched off in a below-zero environment.**

**The noise made by the electric pump when properly installed and used as indicated on the plate does not exceed 70 dB(A).**

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# **MAINTENANCE SECTION**

 **Caution!** \_\_\_\_\_

**Special maintenance jobs on the vacuum cleaner must only be done by the manufacturer's skilled technicians.**

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## 5.1 Informative notes

This section describes the control and special maintenance operations crucial for keeping the vacuum cleaner in perfect working condition.

Any other jobs which might be necessary to eliminate operating faults must be expressly authorised by the manufacturer.

In such cases, always notify the identification details of the cleaner.

In the case of major repairs, it is best to contact an authorised dealer, whose skilled personnel, backed by all the technological experience relating to the original factory construction methods, are always available and ready to promptly intervene.

## 5.2 General safety precautions

Maintenance jobs must always be performed by skilled technicians, trained to carry out their specific jobs. In the case of this machine, these are:

- *Mechanical maintenance*
- *Electrical maintenance*

The Safety Manager has the precise duty of determining the professional capacities and skills of such persons.

Before doing any maintenance job, the safety manager must:

- Make sure there are no unauthorised persons in the work area.
- Make sure the necessary tools are on hand and that these are in good condition.
- Make sure that lighting is adequate and, if necessary, provide 24-V portable lamps.
- Make sure the maintenance engineer is equipped with all approved individual protection devices needed for the specific operation (gloves, eyewear, shoes, etc.).
- Make sure the maintenance engineer has carefully read the instructions contained in this manual and knows how the vacuum cleaner works.

Before carrying out a maintenance job, the maintenance engineer must:

- Disconnect the plug from the power socket.

Work done on motors or other electrical component parts must only be performed by a specifically trained electrician, authorised by the Safety Manager.

Always use tools that are in perfect condition and specifically made for the operation to be done. The use of unsuitable tools or tools not in good condition could cause serious damage.

### 5.3 Maintenance operations



#### **Important!**

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**All the described operations must be done with the plug disconnected from the power socket.**

**Before starting any maintenance or cleaning job, always wear adequate protective clothing, eyewear and/or gloves according to the type of job to be done.**

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For smooth vacuum cleaner operation, a number of controls are best made periodically:

- Check to see whether the filter is worn or has become too permeable.
- Make sure the sealing gaskets of the motor head base, of the filter-holder ring and of the container are working efficiently.
- The electrical parts (plugs, switches, cables, etc.) must not be faulty.
- The screws and nuts must always be tight.
- Make sure the container is not overfull. This should be emptied when the vacuumed material has reached 3/4 of maximum capacity.
- Check the integrity of the flexible vacuum hose and accessories to be used.
- If the flexible hose is perforated, the power of the cleaner will be reduced and dust and liquids will leak into the environment.



#### **Caution!**

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**All maintenance and repair jobs must be performed directly by DELFIN or its authorised dealers.**

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#### 5.4 Removal of filter / removal of solid impurities

To replace the filters, proceed as follows:

- Switch off the vacuum unit by pressing the motor **STOP** buttons.
- Disconnect the vacuum cleaner plug from the power socket.

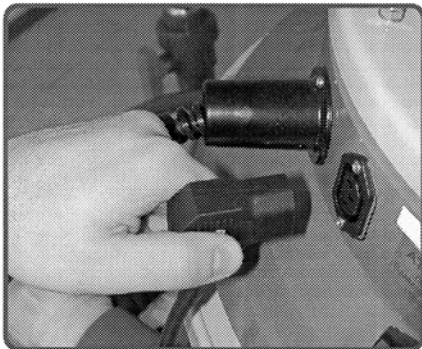


**Important!**\_\_\_\_\_

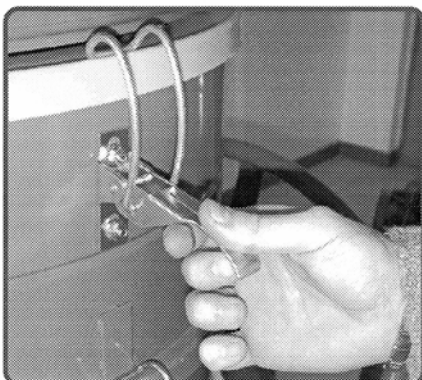
**Wear individual protection devices.**\_\_\_\_\_



Block the vacuum cleaner by means of the stop.



Disconnect the power cable from the head.



Release the stops that hold the head.



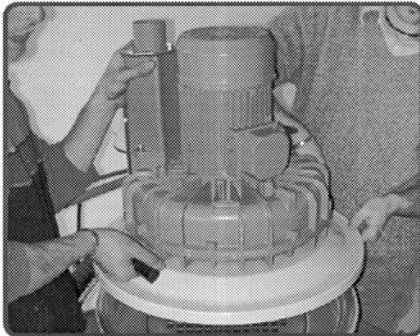
Lift the head by means of the handles provided and rest this on a flat surface.

#### 5.4.1 Head lifting model 151 T3

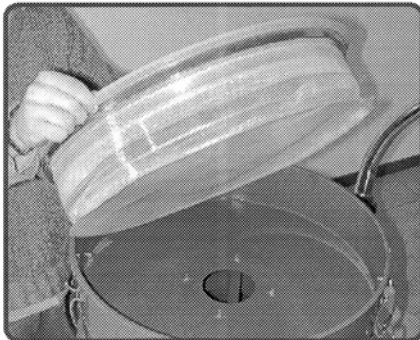


**Caution!**

**Two people will be needed to lift the head.**



Lift the head by means of the handles provided and rest this on a flat surface.



Replace any impurities on the filter and if necessary replace it.  
During this operation, the operator must wear protective gloves to prevent the hands coming into direct contact with solids.

After the operation, fit the filter back on, close and lock the head. Fit the motor power cable.



**Important!**

**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.**



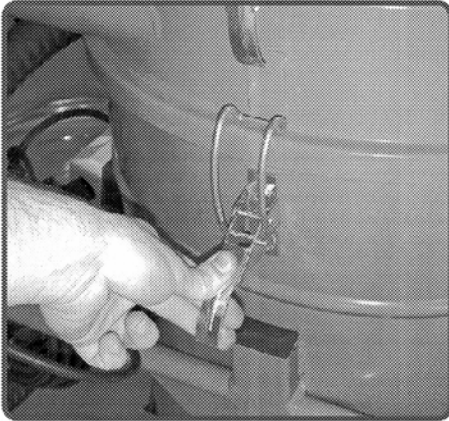
## 5.5 Cleaning the drum



**Caution!**

**Always wear individual protection devices.**

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After removing the head and the filter, the drum can be cleaned.  
Release the special retainers



Raise the float unit and proceed to clean the inside of the drum.

5.6 Troubleshooting

5.6.1 Vacuum unit

Fault found	Possible fault	Recommended remedy
<b>The cleaner fails to start.</b>	No power.	Check the power mains supply. Check the integrity of the plug and power cable.
	Overload switch tripped	Reset the overload switch
<b>Leaking liquids</b>	Vacuum/drain pipe perforated.	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>The vacuum cleaner does not work as it should.</b>	Pipe perforated or blocked.	Check the pipe and, if necessary, replace.
	Container full	Empty container.
	Filter blocked.	Replace filter.
	Seals worn.	Clean the filter and if necessary change it.
	Air leak.	Check for any air leaks out of closing fasteners, tightening screws, container or filter chamber.
<b>Motor very noisy.</b>	Contact DELFIN after-sales.	

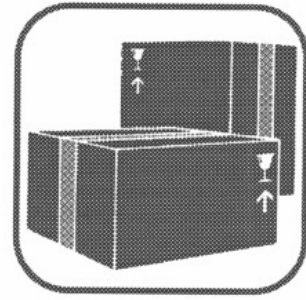


**Caution!**

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

### 5.6.2 Pump

Fault found	Possible fault	Recommended remedy
<b>Pump not operating motor fails to start</b>	No power	Power the machine
	Automatic switch tripped or fuse burnt out	Reset the switch or replace the fuses with other suitable ones.
	Overload switch tripped	Resets automatically after cooling in single-phase version
	Faulty condenser	Change the condenser
<b>Pump not operating motor starts</b>	Liquid level dropped and bottom valve no longer under water	Be careful, the mechanical seal could be damaged
	Pump not filled with liquid or darined due to leaks	Be careful, the mechanical seal could be damaged
<b>Pump operates at reduced flow rate</b>	Difference in pumping level above pump capacity or flow resistance too high during suction	Replace the suction pipe with one of bigger diameter. Reduce elbow bends to a minimum. Eliminate deposits.
	Pump or pipe blockages	Clean or remove blockages
	Wrong direction of rotation (three-phase version only)	
<b>Pump stops after short periods</b>	Overload switch tripped	Pump not turning freely. Viscous liquid.



*Spare parts orders can be sent by fax, by photocopying the attached form, via e-mail or ordinary mail.*



**Fax**                      **0039.011.8005506**



**E-Mail**                      **[delfin@delfinvacuums.it](mailto:delfin@delfinvacuums.it)**



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

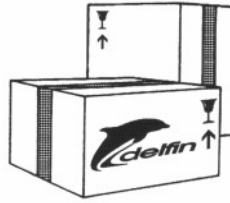
**SPARE PARTS SECTION**

**Recommended spare parts**

DESCRIPTION	CODE	NOTES
Filter PPL.H = 70 TC 150	<b>AR 3811</b>	
Sylicon filter holder seal Ø 500	<b>AR 2585</b>	



**Delfin srl**  
 Strada della Merla, 49/a  
 10036 Settimo Torinese (TO) – Italy  
 Tel. 0039.011.8005500  
 Fax 0039.011.8005506



**FAX**

DATE .../.../.....

Page \_\_\_ of \_\_\_

IMPORTANT: Type or complete in block capitals

**Spare parts order form**

SENT BY \_\_\_\_\_ TEL \_\_\_\_\_

<b>DESTINATION OF SPARES</b>	ADDRESS.....
	LOCALITY.....PROV.....
	NATIONALITY.....TEL.....

**MODEL**                      **PART NO.**                      **TAB.**                      **PART CODE**

DESCRIPTION \_\_\_\_\_ Qty

**MODEL**                      **PART NO.**                      **TAB.**                      **PART CODE**

DESCRIPTION \_\_\_\_\_ Qty

**MODEL**                      **PART NO.**                      **TAB.**                      **PART CODE**

DESCRIPTION \_\_\_\_\_ Qty

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DESCRIPTION \_\_\_\_\_ Qty

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DESCRIPTION \_\_\_\_\_ Qty

**MODEL**                      **PART NO.**                      **TAB.**                      **PART CODE**

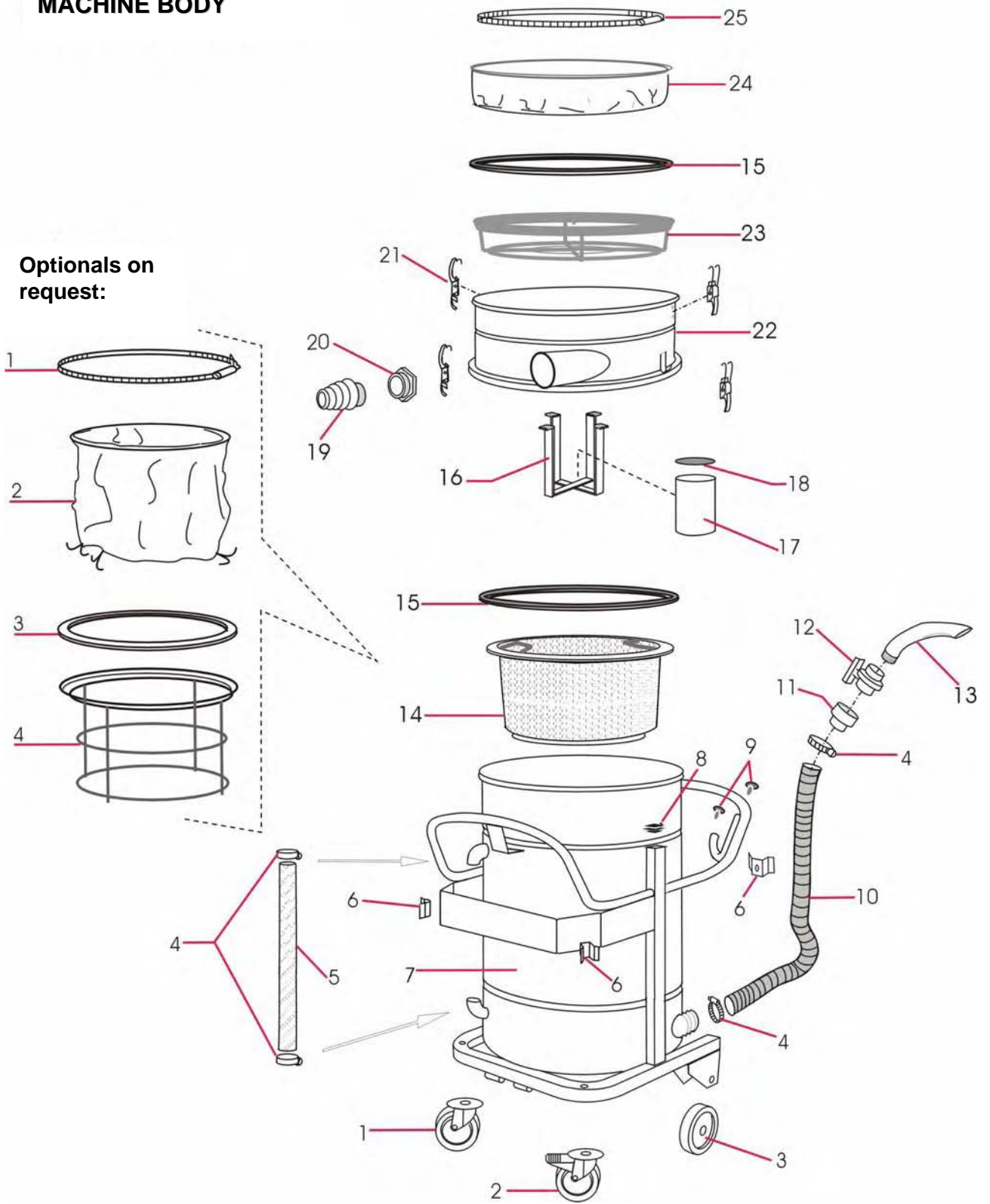
DESCRIPTION \_\_\_\_\_ Qty

**MACHINE BODY MOD. TECNOIL 150 M-TABLE**

REF.	CODE	Q.TY	DESCRIPTION
1	AR3449	1	PU castor Ø150
2	AR3450	1	PU castor with brake Ø150
3	AR2288	2	Fixed PU wheel Ø150
4	AR2519	6	Clamp Ø40/60
5	AA1108	1	PU pipe Ø38 L=50 cm. (level indicator)
6	AR3165	3	Spring for chromed curve
7	AR3830	1	Tecnoil 150 machine body
8	AR3833	2	Tecnoil 150 end piece 50x25
9	AR3115	2	Cable hanger head cover
10	AA1015	1	Antioil pipe Ø40 80 cm
11	AR3157	1	Straight nylon hose connection 1" ¼ Ø40
12	AR3156	1	Ball cock PVC 1" ¼ Ø40
13	AR2540	1	Curved oil drainage pipe 1" ¼
14	AR2549	1	Tecnoil sieve grid
15	AR2585	2	Oil-proof gasket in silicone Ø500
16	AR3834	1	Tecnoil floating guide 150
17	AR3588	1	MTL floating device
18	AR2553	1	Floating device gasket
19	AR2552	1	Straight hose connection 2" F/50
20	AR2551	1	Double PVC screw 2"
21	AR2002	4	Fasteners
22	AR3835	1	Filter holder band/Tecnoil floating device 150
23	AR3812	1	Filter stretcher cage H=70 Tecnoil 150
24	AR3811	1	PPL filter H=70 Tecnoil 150
25	AR2018	1	Filter retainer clamp Ø500
<b>Optionals on request:</b>			
1	AR2018	1	Filter retainer clamp Ø500
2	AR2548	1	Polypropylene filter
3	AR2585	1	Oil-proof gasket in silicone Ø500
4	AR2547	1	Polypropylene filter cage

**MOD. TECNOIL 150 M  
MACHINE BODY**

**Optionals on request:**





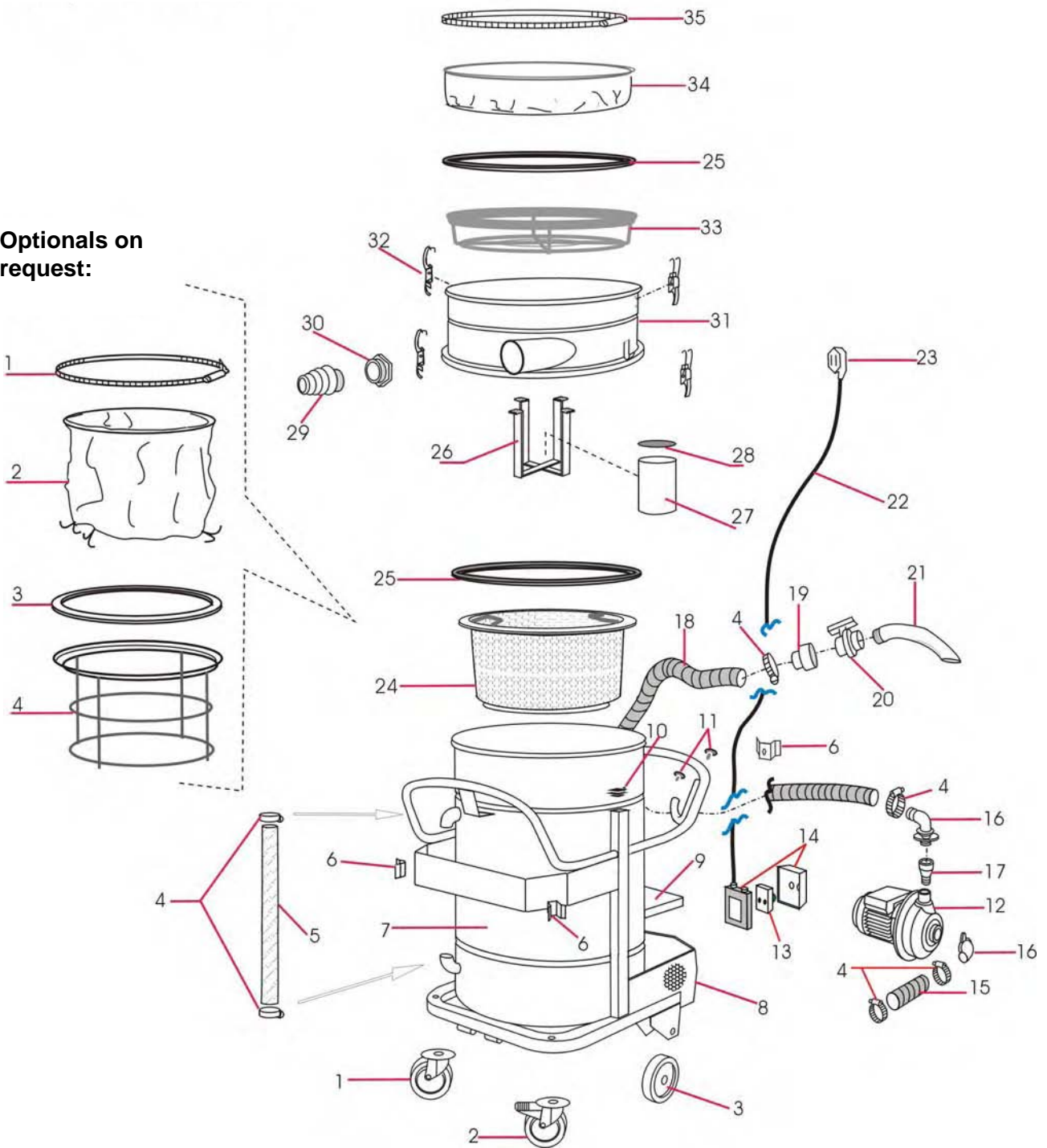


**MACHINE BODY MOD. TECNOIL 150 MP-TABLE**

REF.	CODE	Q.TY	DESCRIPTION
1	AR3449	1	PU castor Ø150
2	AR3450	1	PU castor with brake Ø150
3	AR2288	2	Fixed PU wheel Ø150
4	AR2036	6	Clamp Ø40/60
5	AA1108	1	PU pipe Ø38 L=50 cm. (level indicator)
6	AR3165	3	Spring for chromed curve
7	AR3830	1	Tecnoil 150 machine body
8	AR3831	1	Tecnoil 150 pump guard 150
9	AR3832	1	Tecnoil 150 pump guard cover
10	AR3833	2	Tecnoil 150 end piece 50x25
11	AR3115	2	Cable hanger head cover
12	AR2545	1	Pump CO 350/09K 1.2 KW 230V
13	AR2102/C	1	Cutout switch for pump 4-6.3 A
14	AR3164	1	Switch box for pump with indicator
15	AA1015	1	Antioil pipe Ø40 15 cm
16	AR2566	2	Curved hose connector 1" ½ Ø40
17	AR2567	1	Extension pipe coupling 1" ¼ - 1" ½
18	AA1015	1	Anti-oil pipe Ø40 m 2
19	AR3157	1	Straight nylon hose connection 1" ¼ Ø40
20	AR3156	1	Ball cock PVC 1" ¼ Ø40
21	AR2540	1	Curved oil drainage pipe 1" ¼
22	AR2544	1	Power cable 3G2.5 2 m
23	AR2543	1	Safety plug
24	AR2549	1	Tecnoil sieve grid
25	AR2585	2	Oil-proof gasket in silicone Ø500
26	AR3834	1	Tecnoil floating guide 150
27	AR3588	1	MTL floating device
28	AR2553	1	Floating device gasket
29	AR2552	1	Straight hose connection 2" F/50
30	AR2551	1	Double PVC screw 2"
31	AR3835	1	Filter holder band/Tecnoil floating device 150
32	AR2002	4	Fasteners
33	AR3812	1	Filter stretcher cage H=70 Tecnoil 150
34	AR3811	1	PPL filter H=70 Tecnoil 150
35	AR2018	1	Filter retainer clamp Ø500
<b>Optionals on request:</b>			
1	AR2018	1	Filter retainer clamp Ø500
2	AR2548	1	Polypropylene filter
3	AR2585	1	Oil-proof gasket in silicone Ø500
4	AR2547	1	Polypropylene filter cage

**MOD. TECNOIL 150 MP  
MACHINE BODY**

Optionals on request:

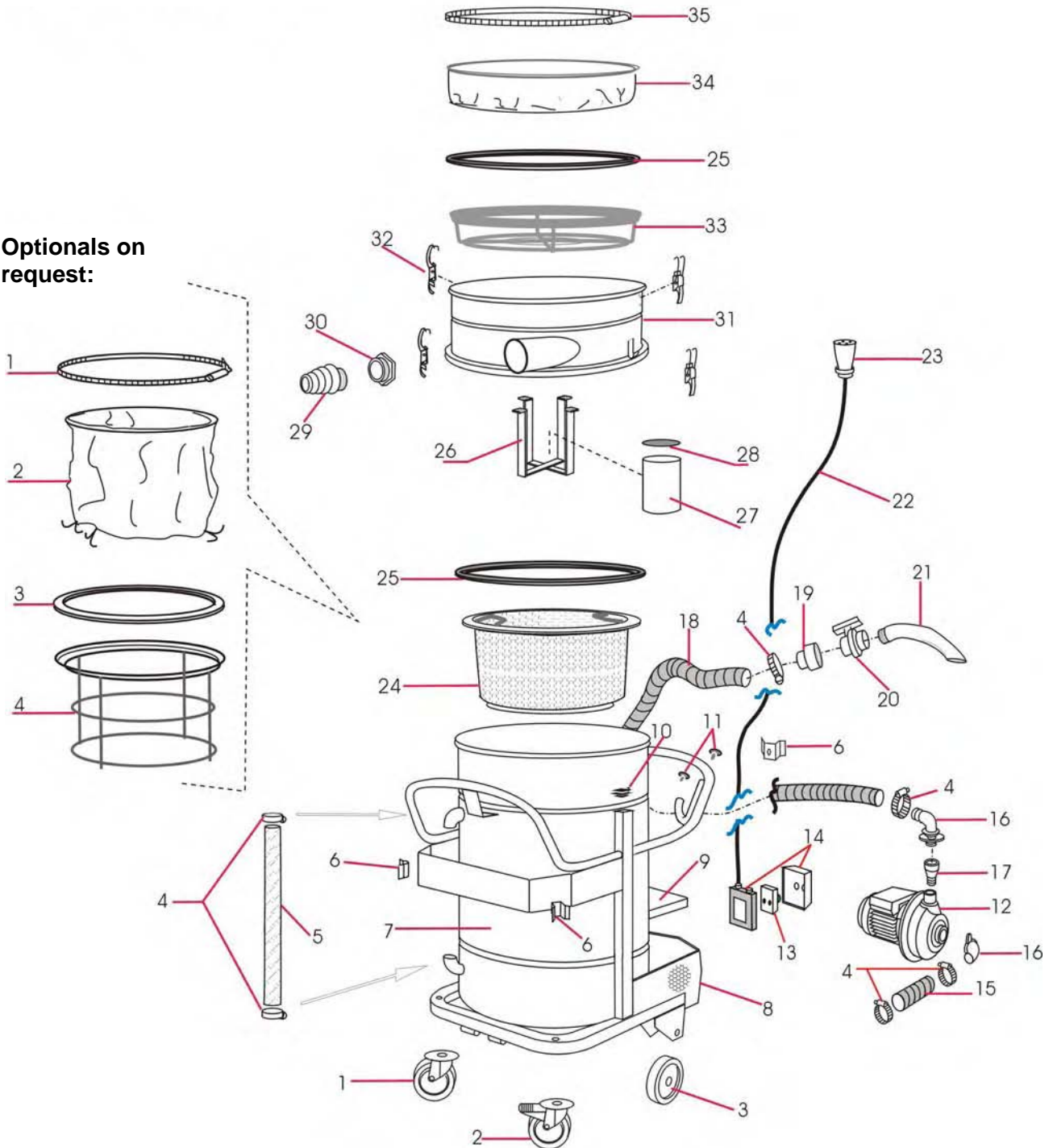


**MACHINE BODY MOD. TECNOIL 151 T3 –TABLE**

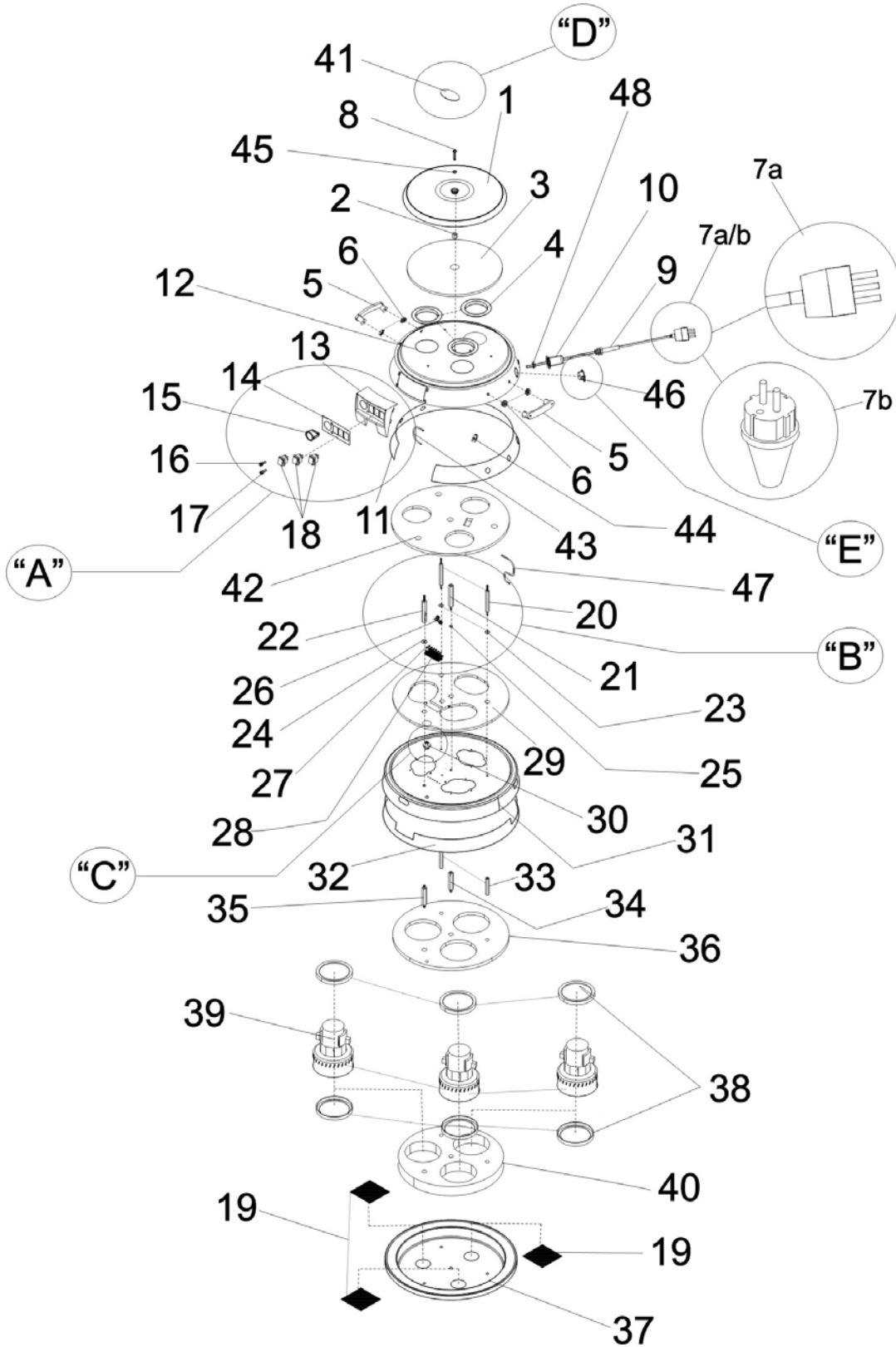
REF.	CODE	Q.TY	DESCRIPTION
1	AR3449	1	PU castor Ø150
2	AR3450	1	PU castor with brake Ø150
3	AR2288	2	Fixed PU wheel Ø150
4	AR2519	6	Clamp Ø40/60
5	AA1108	1	PU pipe Ø38 L=50 cm. (level indicator)
6	AR3165	3	Spring for chromed curve
7	AR3830	1	Tecnoil 150 machine body
8	AR3831	1	Tecnoil 150 pump guard 150
9	AR3832	1	Tecnoil 150 pump guard cover
10	AR3833	2	Tecnoil 150 end piece 50x25
11	AR3115	2	Cable hanger head cover
12	AR2539	1	Pump CO 350/09K 1.2 KW 230/415 V
13	AR2102	1	Cutout switch for pump 1.6-2.5 A
14	AR3164	1	Switch box for pump with indicator
15	AA1015	1	Antioil pipe Ø40 15 cm
16	AR2566	2	Curved hose connector 1" ½ Ø40
17	AR2567	1	Extension pipe coupling 1" ¼ - 1" ½
18	AA1015	1	Anti-oil pipe Ø40 m 2
19	AR3157	1	Straight nylon hose connection 1" ¼ Ø40
20	AR3156	1	Ball cock PVC 1" ¼ Ø40
21	AR2540	1	Curved oil drainage pipe 1" ¼
22	AR2546	1	Power cable 4G1.5 2 m
23	AR2533	1	Plug 16A-4-pole, phase change
24	AR2549	1	Tecnoil sieve grid
25	AR2585	2	Oil-proof gasket in silicone Ø500
26	AR3834	1	Tecnoil floating guide 150
27	AR3588	1	MTL floating device
28	AR2553	1	Floating device gasket
29	AR2552	1	Straight hose connection 2" F/50
30	AR2551	1	Double PVC screw 2"
31	AR3835	1	Filter holder band/Tecnoil floating device 150
32	AR2002	4	Fasteners
33	AR3812	1	Filter stretcher cage H=70 Tecnoil 150
34	AR3811	1	PPL filter H=70 Tecnoil 150
35	AR2018	1	Filter retainer clamp Ø500
<b>Optionals on request:</b>			
1	AR2018	1	Filter retainer clamp Ø500
2	AR2548	1	Polypropylene filter
3	AR2585	1	Oil-proof gasket in silicone Ø500
4	AR2547	1	Polypropylene filter cage

**MOD. TECNOIL 151 T3  
MACHINE BODY**

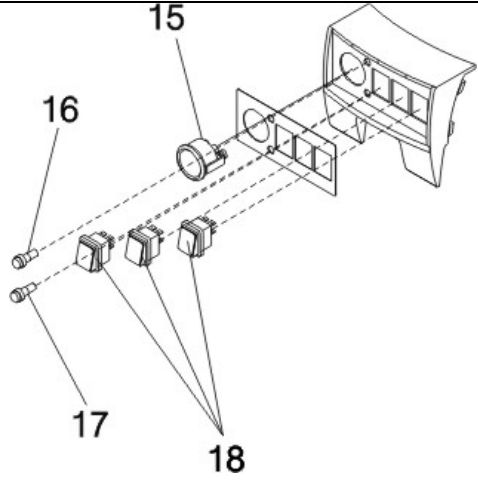
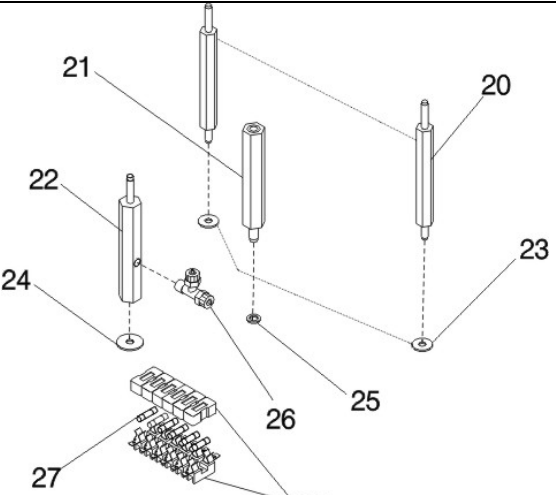
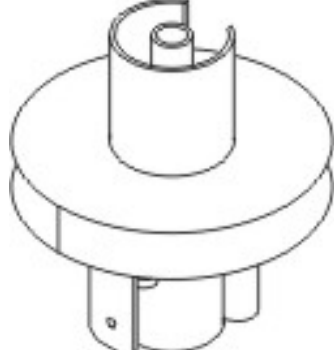

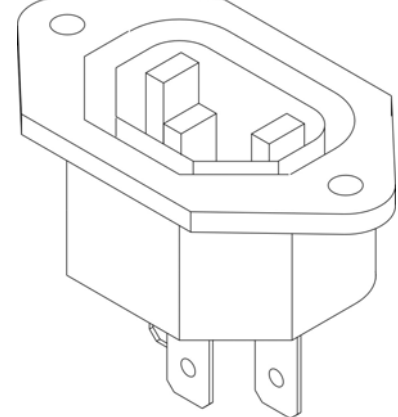
Optionals on request:



3 MOTORS HEAD – TECNOIL 150 M – TECNOIL 150 MP



**3 MOTORS HEAD – TECNOIL 150 M – TECNOIL 150 MP**

	
<p><b>“A”</b></p>	<p><b>“B”</b></p>
	
<p><b>“C” (article n°30)</b></p>	<p><b>“D” (article n°41)</b></p>
	
<p><b>“E” (article n°46)</b></p>	

### 3 MOTORS HEAD – TECNOIL 150 M – TECNOIL 150 MP

REF.	CODE	Q.TY	DESCRIPTION
1	AR4082	1	Head cover
2	AR4059	1	Space H=18mm ch.=17mm
3	AR4060	1	Adhesive sound-dampening Ø380mm - head cover
4	AR4085	3	Cooling ring
5	AR4083	2	Plastic handle
6	AR4084	4	Plastic handle matcher
7a	AR2029IT	10mt	3x2.5 Power supply cable with Italian plug
7b	AR2029	10mt	3x2.5 Power supply cable with schuko plug
8	AR4164	1	M8x35 Button head screw
9	AR2028	1	Cable fastener
10	AR3372	1	Cable fastener bush
11	AR4073	1	Mousse sound-dampening filter – head cover 1655x58x3mm
12	AR4058	1	Head cover
13	AR4086	1	Controls panel mask
14	AR4087	1	Control panel label
15	AR3524	1	Vacuum Meter Ø40 AIR-MTL
16	AR3517	1	Power supply green light MTL
17	AR3518	1	Clogged filter red light MTL
18	AR4088	3	Red light switch
19	AR2098	3	Flange mesh
20	AR4063	2	Upper spacer M/M L=100mm ch.13mm
21	AR4064	1	Upper spacer F/FM L=99mm ch. 17mm
22	AR4065	1	Air upper spacer F/M L=100mm ch. 17mm
23	AR4090	2	Washer sp. 15/10 Ø6.5x18mm
24	AR4091	1	Washer sp. 20/10 Ø10x20mm
25	AR4092	1	Washer sp. 15/10 Ø8x16mm
26	AR4093	1	2 branch air plug AIREX 1/8 – 6/4
27	AR2496	6	10A fuses
28	AR2497	6	Fuse carrier with lid



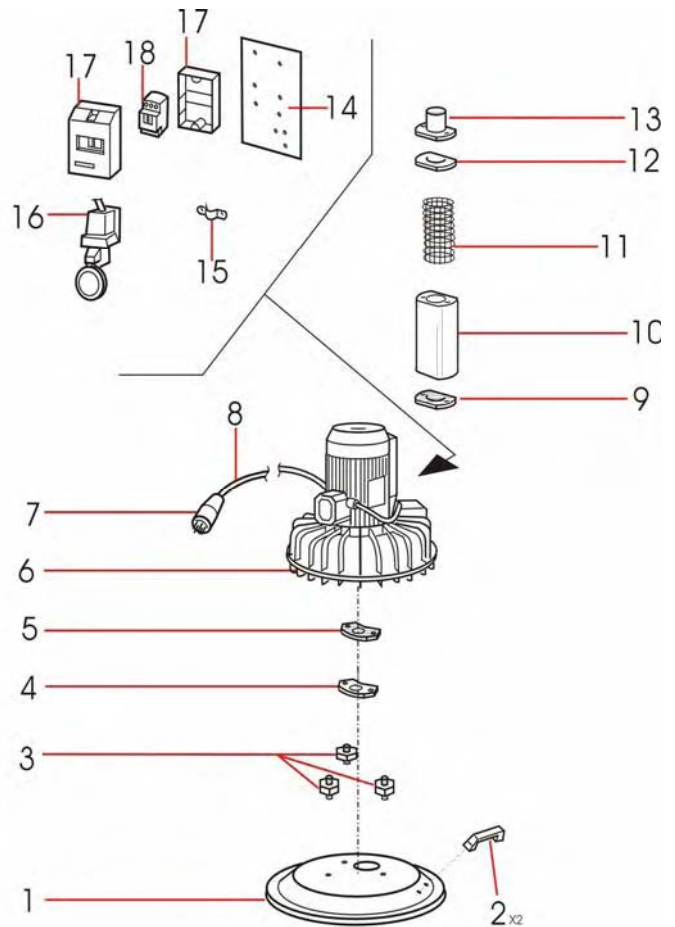


### 3 MOTORS HEAD – TECNOIL 150 M – TECNOIL 150 MP

REF.	CODE	Q.TY	DESCRIPTION
29	AR4066	1	Motor retention upper soundproofing Ø 464 mm.
30	AR4095	1	Air pressure switch
31	AR4067	1	1phase head motor retention - 3 holes
32	AR4094	1	Motor retention soundproofing 1433mm. x H 66 mm.
33	AR3536	2	Base spacer F/F L=79mm M6 ch.13mm MTL
34	AR3537	1	Absolute filter spacer M/F L=79mm ch. 17mm
35	AR3538	1	Spacer FM/FM L=79mm ch.17mm M10- 1/8
36	AR4069	1	Motor retention soundproofing Ø 464 mm.
37	AR4070	1	1phase head base - 3 holes
38	AR2037	6	Motor damper
39	AA2475	3	By-pass motor 1150W
40	AR4071	1	Base soundproofing Ø 420 mm.
41	AR3512	1	Delfin logo label
42	AR4073	1	Soundproof head cover 1655mm. x H 58mm.
43	AR4163	0,30	CRISTALL hose D4x6mm
44	AR3544	1	Cable fastener SBMMM932
45	AR4092	1	Washer sp.15/10 Ø8x16mm
46	AR2564	1	Safety plug
47	AR4163	0,08	CRISTALL hose D4x6mm
48	AR2028	1	Polyamide cable fastener PG 13.5" ch.22 h5

## PARTS LIST

Table – Head model 151/T3



Ref.	Q.ty	Code	Description
1	1	AR2554	Lid for Tecnoil turbine T3
2	2	AR2023	Bridge handle
3	3	AR2555	Galvanised spacer M/M 8MA
4	1	AR2556	PLT gasket h=5mm
5	1	AR2099	Flange mesh
6	1	AA1102	Suction unit 3kW – V230/400/50
7	1	AR2533	16A plug, 4 poles, phase switch
8	1	AR2143	Power supply cable 4G1.5 10m
9	1	AR3122	Cork seal
10	1	AR2568	Esam silencer sleeve
11	1	AR2098	Flange mesh
12	1	AR2099	Flange gasket
13	1	AR2138	Straight flange Ø60
14	1	AR2557	Plate for overload switch and plug
15	1	AR2027	Cable retainer
16	1	AR2558	16A mobile plug
17	1	AR2542	GV2 box
18	1	AR2171	6 – 10 A overload switch



Distributor:

A large, empty rectangular box with rounded corners, intended for the distributor's name and contact information.