DEPURECO
INDUSTRIAL VACUUMS

INSTRUCTION AND MAINTENANCE MANUAL

PUMA FIX / PUMA FIX Z22

Original instructions

Depureco Industrial Vacuums Srl
Società soggetta a direzione e coordinamento COFISE spa

PERFORMANCE ON VACUUM SINCE 1972

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1. INFORMATIVE SECTION

This manual forms an integral part of the vacuum cleaner. Read this manual and the other attachments supplied carefully. Knowledge of the instructions here contained is indispensable for the safe use and maintenance of the vacuum cleaner

IMPORTANT - The DEPURECO term and logo in this document refer to and are the property of **DEPURECO INDUSTRIAL VACUUMS S.r.l.**
This document remains the exclusive property of DEPURECO S.r.l. Full or partial reproduction by any means (graphical, electronic, etc.) is prohibited without prior authorisation from the Company Management.

Manuals for the ATEX components mounted on the equipment are provided in the attachment: the user must observe all safety instructions regarding the use of these components. The plug is ATEX type.

1.1 Foreword

Dear Customer
Thank you for preferring DEPURECO and congratulations for choosing a DEPURECO vacuum cleaner of the PUMA FIX /PUMA FIX Z22 series.
We have prepared this manual to enable you to fully appreciate the quality of this machine.
We recommend that you read it in its entirety before you approach its use for the first time.
It contains important information, tips and warnings for the use of the vacuum cleaner that will help you take full advantage of the technical qualities of your machine.

It is recommended that you carefully read the messages, warnings and instructions, preceded by the symbols

For the safety of people

For the integrity of the vacuum cleaner

For the safeguard of the environment

This manual describes the following models:

PUMA FIX 10	**PUMA FIX 10 Z22**	
PUMA FIX 15P	**PUMA FIX 15 Z22**	
PUMA FIX 15S		
PUMA FIX 18P		
PUMA FIX 18S		
PUMA FIX 20	**PUMA FIX 20 Z22**	
PUMA FIX 25	**PUMA FIX 25 Z22**	

The vacuum cleaner is equipped with the following filters:

- **M FILTER**
- **M FILTER WITH TEFLON**
- **PULSE JET M CLASS CARTRIDGE FILTER**
- **M ANTISTATIC FILTER**
- **H ABSOLUTE FILTER**

The vacuums are classified according to the following dust classes:

L	**Low risk – suitable to separate dust with an exposure limit value of > 1 mg/m3 on the basis of the occupied volume**

M	**Medium risk - suitable to separate dust with an exposure limit value of > 0,1 mg/m3 on the basis of the occupied volume**

H	**High risk – suitable to separate all dusts with all exposure limit values on the basis of the occupied volume, including cancerogenic and pathogenic dusts.**

This manual provides all the necessary information for the use and maintenance of the vacuum cleaner.
This specific model has undergone strict testing to ensure maximum reliability. Its operation and durability will depend on proper use and maintenance.
This manual is an integral part of the vacuum cleaner and must accompany it at all times, until its demolition.

In the event it is lost or damaged, you can request another copy from DEPURECO INDUSTRIAL VACUUMS S.r.l. (henceforth shortened to DEPURECO).

The technical information contained in this manual is exclusive property of DEPURECO and must be considered confidential.
Reproduction, even partial, of graphics, text and illustrations is prohibited by law.

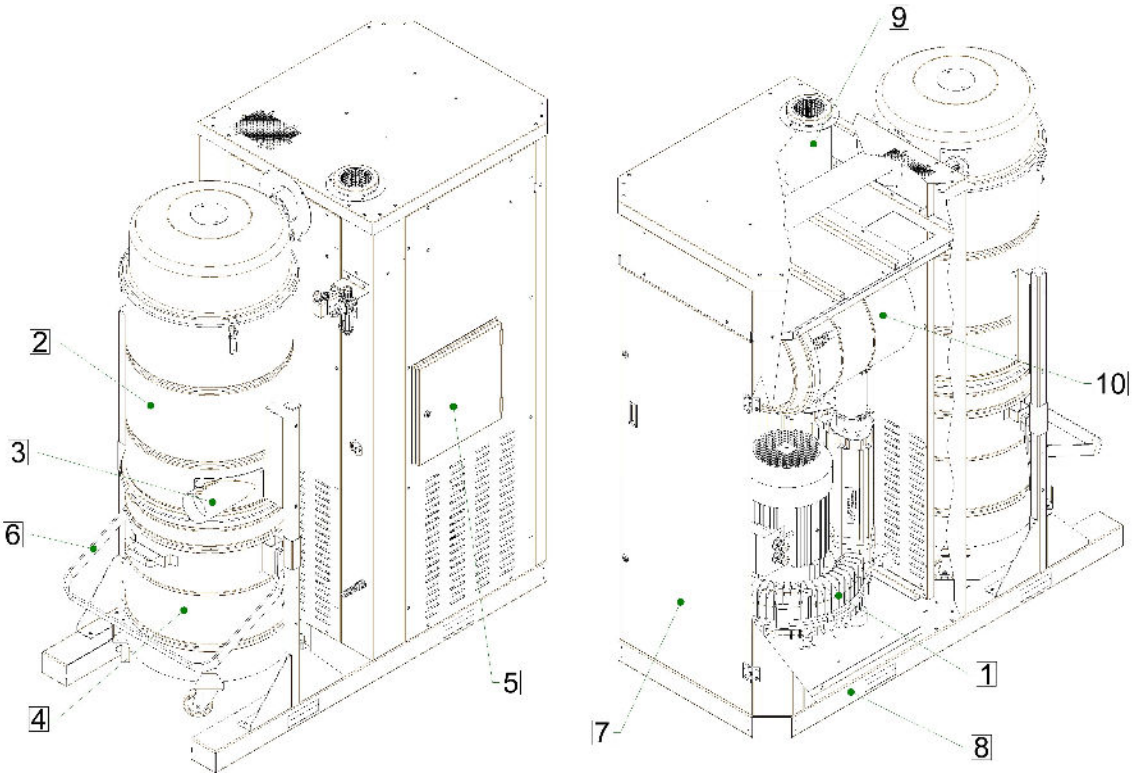
Some details shown in the figures in this manual may differ from those on your vacuum; this is because some components may have been removed to ensure maximum illustration clarity.
This manual has been divided into sections for easy consultation and each section has been identified by a specific graphical symbol.
The topics covered in this manual are those expressly required by Machinery Directive 2006/42/EC and the technical data are taken from the technical file archived at DEPURECO.
With reference to Regulation 1907/2006/EC (REACH), DEPURECO hereby declares that no Substances of *Very High Concern* - (SVHC) included in the Candidate List, are contained in its products.

This manual should be kept in a place accessible to all personnel in charge with operating and performing maintenance on the vacuum cleaner.

In the event of any dispute arising, the Court of Turin (Italy) shall have jurisdiction

This manual forms an integral part of the vacuum cleaner. Read this manual and the other attachments supplied carefully. Knowledge of the instructions here contained is indispensable for the safe use and maintenance of the vacuum cleaner

1.2 Main parts



1. Side channel blower
2. Filter chamber
3. Suction inlet
4. Dust/Debris Bin
5. Electrical panel
6. Bin handle
7. Engine area inspection door
8. Forkable basement
9. Clean air exhaust outlet channel
10. Hepa Filter

1.3 Optional parts

A wide range of optional accessories is available from DEPURECO depending on the intended use of the vacuum.

1.4 Manufacturer's identification data

DEPURECO INDUSTRIAL VACUUMS S.r.l.
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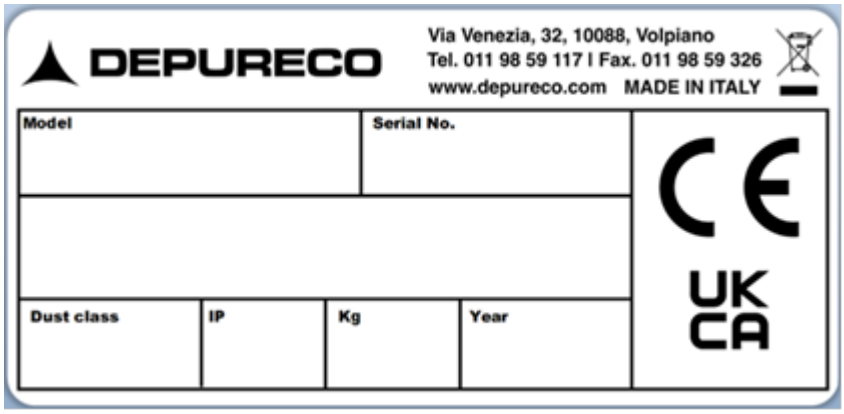
e-mail: **depureco@depureco.com** - website: **www.depureco.com**

1.5 Identification plate

The data on the vacuum identification plate must be referred to in any correspondence with the manufacturer or the dealer.



1.6 Atex Marking

CE: CE mark referring to ATEX Directive 2014/34/EU (Dir. 94/9/EC until 19/04/2016)

Ex : hexagon EX: compliance with ATEX Directive 2014/34/EU (Dir. 94/9/EC until 19/04/2016)

II: Equipment group (I: electrical equipment for mining, II: electrical equipment for surface)

1/3D: Category 1/3D, i.e., suitable for use in ZONE 22 and with ZONE 20 inside
1/2D: Category 1/2D, i.e., suitable for use in ZONE 21 and with ZONE 20 inside

IIIC: Dust group (all dust, including conductive dust)
T140 :Maximum surface temperature

Da/Dc: EPL Da/Dc, i.e., equipment suitable for use in ZONE 22 and with a ZONE 20 inside
Da/Db: EPL Da/Db, i.e. equipment suitable for use in ZONE 21 and with an internal ZONE 20

Tamb: -15°C ≤ Tamb ≤ +40°C

1.7 Permitted Uses

These vacuum cleaners are designed and built according to the 2014/34/EU (ATEX) Directive for an exclusive professional industrial use; either way, for any non-domestic use,

This vacuum cleaner is suitable for the cleaning and the collection of solid materials, only in covered areas.

This vacuum cleaner is designed to collect combustible dust and/or dry particles in Zone 22 classified atmospheres with the following limitations:
Minimum Ignition Energy (MIE) of the dust >3mJ
Kst-Value of the dust <300 bas m/s (St1, St2)

The vacuum cleaner was conceived to be used by only one operator.

In accordance with the Directive 1999/92/EC, whenever in the presence of combustible dust and/or flammable gas, it's the responsibility of the employer to carry out the classification of the Zone and to choose a device in the appropriate category (According to the definition given in the 2014/34/EU Directive.

Any other use is considered **IMPROPER**.

1.8 Authorised environmental conditions

To ensure the correct operation, the vacuum cleaner must be kept away from atmospheric agents (rain, hail, snow, fog, dust in suspension, etc.) in an area with a room temperature range between 5° and 45°C and a relative humidity no higher than 70%.
The work environment must be clean and suitably lit.

1.9 Noise Level

The phonometric tests performed on this specific vacuum cleaner model demonstrate a sound pressure level of:

PUMA FIX 10 **PUMA FIX 15** **PUMA FIX 18**	**74 dB(A)**

WARNING!
Workers exposed to sound pressure levels higher than 85 dB(A) must be protected by suitable personal protection device (PPE) such as certified ear muffs.

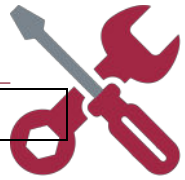
Under these conditions, workers must be provided with adequate training and information on risks arising from noise exposure.

1.10 Technical data

(*) weight without packaging - packaging weight = 25 Kg
(**) machine dimensions without packaging

PUMA FIX

	U.M.	PUMA 10	PUMA 15P	PUMA 15S	PUMA 18P	PUMA 18S	PUMA 20	PUMA 25
Weight*	[Kg]	395	430	410	455	435	450	470
Overall dimensions**	[mm]	850X1700X1920						
Voltage/ Frequency	[V]- [Hz]	400 - 50/60						
Power	[kW -HP]	7,5 - 10	11 - 15	11 - 15	12,5 - 18	12,5-18	15-20	18,5-25
Max. Vacuum	[mBar]	360	350	480	420	600	450	440
Max. Air flow	[m³/h]	730	950	550	1120	720	950	1380
M Filter surface	[m²]	4,5						
SP Cartridge surface (if present)	[m²]	12						
H Filter surface (if present)	[m²]	11						
Noise level	[dB-A]	74						



Bin capacity	[L]	175

PUMA FIX ATEX

	U.M.	**PUMA 10**	**PUMA 15**	**/**	**/**	**/**	**PUMA 20**	**PUMA 25**
Weight*	[Kg]	395	370	/	/	/	390	470
Overall dimensions**	[mm]	850X1700X1920						
Voltage/ Frequency	[V]- [Hz]	400 - 50/60						
Power	[kW -HP]	7,5 - 10	11 - 15	/	/	/	15-20	18,5-25
Max. Vacuum	[mBar]	310	390	/	/	/	420	350
Max. Air flow	[m³/h]	700	920	/	/	/	920	1350
M Filter surface	[m²]	4,5						
SP Cartridge surface (if present)	[m²]	12						
H Filter surface (if present)	[m²]	11						
Noise level	[dB-A]	74						
Bin capacity	[L]	175						

1.11 Warranty

DEPURECO guarantees this model of vacuum cleaner for a period of 12 months from the date of purchase, indicated on the receipt at the time of delivery of the product.

The guarantee is null and void in the event that the vacuum is repaired by unauthorised third parties or by using equipment, accessories or components not supplied or not authorised by DEPURECO, or if the serial number is removed (during the guarantee period).

For the duration of the guarantee, DEPURECO undertakes to repair or replace free of charge parts and components which prove to have manufacturing defects.
Repairs will be exclusively executed at a DEPURECO site or in a DEPURECO approved Assistance Centre and the machine must be sent free of charge (freight cost at user's charge unless otherwise agreed).

The guarantee does not cover cleaning of working parts.
The purchase invoice must be shown to the authorised technical personnel carrying out the repair and must accompany the vacuum during its shipment.

Defects that are not evidently due to materials or manufacturing will be examined solely at our premises or at a Technical Service Centre of our choosing.
Should the complaint be unjustified, all repair and/or replacement expenses shall be charged to the purchaser.

In any case, the following items are not covered by the guarantee: accidental damage due to transport, negligence, abnormal use, improper use, non-compliance with the instructions contained in this booklet or arising from phenomena that do not depend on normal use/operation of the vacuum.

DEPURECO shall not be held liable for any injuries to persons or damage to objects caused by misuse or improper use of the vacuum.

In the event of any dispute arising, the Court of Turin (Italy) shall have jurisdiction.

To use the warranty visit **www.depureco.com** or photocopy the form available on the last page of this manual, fill it in all its parts (in capital letters would be recommended), and send it via fax to Depureco at the number **+ 39 011 98 59 117**

In the event of doubts, avoid interpreting the information! Call your reseller immediately!

2. SAFETY SECTION

2.1 Safety Information

As per Italian Legislative Decree 81/08 and subsequent modifications, the Safety Manager must train and inform workers about the risks involved with using the vacuum cleaner so that they may be able to avoid injury to themselves and others.

The use of device by people (including children) with limited physical and mental capacities or lacking in experience and knowledge is strictly forbidden, unless they are supervised by a person who is experienced in the use and safe handling of the device.
Children must be supervised to make sure they will not play with the device.

Failure to comply norms, laws or basic safety precautions, may cause accidents during operation, maintenance and repair of the vacuum cleaner. Accidents can frequently be avoided by recognising potentially hazardous situations before they occur. Adequate training is crucial to this end.

DEPURECO shall not be held liable for accidents or damage due to the improper use of the vacuum by untrained personnel or to failure to comply, even partially, with the occupational safety standards and intervention procedures contained in this manual.

Safety warnings and precautions are indicated in this manual as well as on the product itself.
Operators must pay special attention to these hazard warnings to prevent accidents with serious consequences for themselves and other people.

The safety warnings are indicated by the following symbols:

DEPURECO designs and manufactures its equipment and accessories with care, identifying and compensating possible risks related to their use. In the event of equipment, procedures, work methods or techniques not expressly provided for by DEPURECO being used, it is crucial to ensure beforehand that there are no dangers for oneself and the others. Nevertheless, DEPURECO shall not be held liable.

Use exclusively Depureco original spare parts.
Depureco disclaims any liability in case spare parts other than original have been used.

2.2 Safety recommendations

WARNING!
The following information is essential in view of preventing all hazards that may occur while the vacuum cleaner is running. However, they cannot replace the expertise and common sense of operators as an overall framework for the prevention of accidents.

Structural damage, alterations or improper repairs can modify the protective capacity of the vacuum, thereby nullifying this certification and releasing DEPURECO from any liability.

Each section lists further safety measures specific to the various functions.

WARNING!
Setting to work – connection to the power supply

- Make sure there is no evident sign of damage to the vacuum cleaner before starting work.
- **Before plugging the vacuum cleaner into the electrical mains, make sure the voltage rating indicated on the data plate corresponds to that of the electrical mains.**
- Plug the vacuum cleaner into a socket with a correctly installed ground contact/connection. Make sure that the vacuum cleaner is turned off.
- The plugs and connectors of the connection cables must be protected against splashes of water.
- Check that the vacuum cleaner is properly connected to the electrical mains.
- **Ensure that the grounding clamp is properly connected, to a point for which continuity with the grounding system is guaranteed.**
  - Use the vacuum cleaner only when the cables that connect to the electrical mains are in perfect condition (damaged cables could lead to electric shocks!).
  - Regularly check there are no signs of damage, excessive wear, cracks or ageing on the electric cable.

WARNING!
When the vacuum cleaner is operating, do not:

- Crush, pull, damage or tread on the cable that connects to the electrical mains.
- Only disconnect the cable from the electrical mains by removing the plug (do not pull the cable).
- Only replace the electric power cable with one of the same type as the original: H07 RN - F. The same rule applies if an extension is used.
- The cable must be replaced by the manufacturer's Service Centre staff or by equivalent qualified personnel.

CAUTION!

It is absolutely forbidden;

- For underage and non-trained people to use this vacuum cleaner.
- To connect the vacuum cleaner to mains without suitable earthing.
- To operate the vacuum cleaner outdoors in the presence of atmospheric precipitations.
- To operate the vacuum cleaner without locking the swivelling wheel through the special brake located on it.
- To operate the vacuum cleaner on uneven ground or in non-horizontal positions.
- To operate the vacuum cleaner in corrosive environments.
- To use flexible hoses which are not wholly antistatic (superficial antistatic properties are not accepted). The use of original DEPURECO accessories is recommended. Verify electric continuity with an ohmmeter:
    1. Between the inlet and the ending part of the vacuum's accessories: The resistance measured must be inferior to 100MΩ (108 Ω)
    2. Between the bin and the plug (ground pin) with an electric device, or between the bin and the earthing cable (supplied) with compressed air powered devices. The resistance measured must be less than 10 Ω
- To operate the vacuum cleaner in working environments not classified according to the directions given on the device's plate.
- To vacuum the following materials:
    1. Flaming materials (embers, hot ashes, lit cigarettes etc…)
    2. Open flames
    3. Combustible gases
    4. Flammable, combustible or aggressive liquids (gasoline, solvents, acids, alkaline solutions etc…)
    5. Dusts/Substances and/or spontaneously combusting explosive mixtures of them (magnesium or aluminium dusts etc…)
- To tamper with or modify the return valve set up by the manufacturer
- The use of the JETCLEAN system in the presence of potentially explosive clouds in the atmosphere.
- To carry out maintenance on the vacuum cleaner in ATEX classified areas
- To carry out maintenance on the vacuum cleaner without first having switched the device off and disconnected the plug from the socket.
- To keep foreign materials such as debris, oil, tools or other objects in the bin which could disrupt the functioning and cause harm to people.
- To use flammable or toxic solvents such as gasoline, benzene, ether or alcohol for cleaning.
- To operate the vacuum cleaner without the filtering unit provided for by the manufacturer.

- To operate the vacuum cleaner without safety devices.
- To wear loose or flowing apparel such as ties, scarves, or torn clothing that could get caught on the vacuum cleaner or vacuumed by the device.
- To open the waste bin while the vacuum cleaner is working.
- To open the waste bin in an area which has been classified potentially explosive.

- To use extension leads, plug-in connection devices and adapters.
- To climb on the vacuum cleaner.
- To touch electrical wires, switches, buttons, etc. with wet hands.
- To touch some components which could reach high temperatures (such as the motor's terminal box and the motor housing in particular) while operating the vacuum cleaner.

WARNING!
This vacuum cleaner could contain dust that may be hazardous to your health.
The emptying out and maintenance procedures, including removing the dust containers, must be carried out exclusively by specialized personnel wearing suitable safety clothing.
Never switch the machine on in the absence of a complete filtering system.

This manual should always be available for reference on the planned operating cycle and whenever you have any doubts.
If it is lost or damaged, a replacement copy should be requested to DEPURECO.

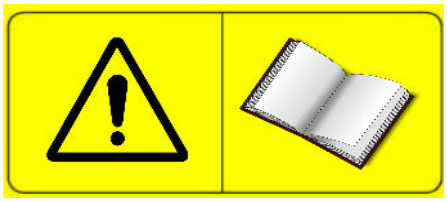
2.3 Safety plates and symbols

Plates with safety symbols and/or messages are applied to the vacuum and its packaging.
These pages show their precise location and the nature of the hazard.

Warning!
Ensure that all safety messages are perfectly legible.
Clean them using a cloth with water and soap. Do not use solvents, naphtha or petrol.
Request replacements for damaged plates from DEPURECO.
If a plate is located on a component that is being replaced, make sure to fit the old plate to the new component.

Warning!
Crushing hazard for the upper limbs during insertion and locking of the dirt container under the vacuum cleaner.
Never place your hands between the vacuum and the dirt container while inserting and locking the later under the vacuum cleaner.
Lock the container by means of the special lever, using BOTH HANDS

Warning!
Read carefully this use and maintenance manual before using the vacuum cleaner or carrying out maintenance operations on it



Read carefully the instructions on the packaging before handling the vacuum cleaner

2.4 Residual risks

DEPURECO recommends complying with the instructions, procedures and recommendations in this manual and with the safety standards in force. DEPURECO also recommends using suitable personal protective equipment as well as the protection devices integrated in the vacuum.

The residual risks analysed on the vacuum and/or its components could be:

Electrical risks during maintenance due to the requirement to work on live parts
Pursuant to Italian Legislative Decree 81/08 – articles 80 to 87 – it is prohibited to operate on live parts, notwithstanding the exceptions set forth by said Legislative Decree.

Risks associated with incorrect use in presence of explosive and inflammable liquid substances
The vacuum must not be used in environments containing liquid substances or liquids that can evaporate at room temperature, inflammable powders and gas.

Risks related to operation in humid environments
Respect the limitations indicated in this manual, in section 1.5 “Authorised environmental conditions”.

Risk of incorrect interpretation of the safety pictograms
With reference to risk analysis and identification, DEPURECO has installed hazard labels on the vacuum, in compliance with the standards concerning graphical symbols.
The user must immediately replace any safety plate rendered illegible due to wear or damage.

Warning!
The removal of safety plates from the vacuum and/or its components and packaging is strictly prohibited.
DEPURECO shall not be held liable for the vacuum's safety in the event of failure to comply with this prohibition.

2.5 Applied Directives

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

- **2006/42/EC Machinery Directive**
- **2014/30/EU Electromagnetic compatibility directive**
- **2011/65/EU - ROHS - Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment**
- **2014/35/UE – Low tension directive**
- **2014/34/UE – ATEX Directive**

The reference standards, including their binding requirements, are managed within the DEPURECO Quality Management System and archived by DEPURECO.

2.6 ATEX Safety Instructions

Hexagon Ex - ATEX Directive 2014/34/EU

In this manual, the Ex hexagon is placed alongside the main safety instructions on explosion risk.

All personnel involved in installation, operation and maintenance of the equipment and its components should receive technical training corresponding to the tasks to be performed, particularly for working in areas with a potentially explosive atmosphere.
Any changes made to this equipment may invalidate its safety requirements.
Always follow the manufacturer's instructions.

Equipment having the marking II 1/3 D Ex htc IIIC T140°C Da/Dc may contain a ZONE 20 inside and may be used in ZONE 22
Equipment having the marking II 1/2 D Ex h tb IIIC T140°C Da/Db may contain a ZONE 20 inside and may be used in ZONE 21 and ZONE 22
Zones are defined as follows.

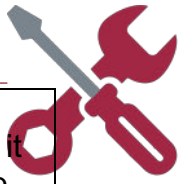
ZONE 20: area where an explosive atmosphere in the form of a combustible dust cloud in the air is present permanently or for long periods or often.
ZONE 21: an area in which an explosive atmosphere in the form of a combustible dust cloud in the air is likely to be formed occasionally during normal activities.
ZONE 22: an area where during normal activities the formation of an explosive atmosphere in the form of a combustible dust cloud is not likely and, if it occurs, is only of short duration.
It is prohibited to use the equipment where there are areas classified for the presence of gas as ZONE 0, 1 or 2.

The equipment is suitable for operating only with dust free of ignition sources.

Combustible dusts with the following characteristics can be handled:

Auto - flammability in MIT cloud	°C	> 215
Auto - flammability in layer LIT	°C	> 215
Minimum Ignition Energy (MIE)	mJ	≥ 3

Extraction of chemically unstable dust is prohibited

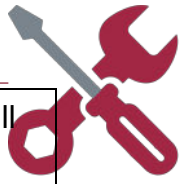


It is the responsibility of the user to ensure that the equipment is used in a manner consistent with its intended use, particularly that it is used in ZONES classified as compatible with those for which the equipment is declared suitable by the manufacturer.
The equipment is designed to work at standard environmental conditions:
- Temperature -15°C ≤ Tamb ≤ +40°C.
- Atmospheric pressure +0.8/1.1 bar
The treated product shall have temperature not exceeding 40°C.

Any electrical or mechanical components to be installed on the equipment must be certified of a category suitable for use:
- category 3D (ZONE 22)
- category 2D (ZONE 21)
- category 1D (ZONE 20)

For maintenance or cleaning operations, the user must ensure that the equipment used (vacuum cleaners, portable lamps, etc.) is of a category suitable for the environment:
- category 3D (ZONE 22)
- category 2D (ZONE 21)
- category 1D (ZONE 20)

INSTALLATION - START-UP
Before installation and start-up, provide visual inspection for possible transport damage.
Instruments used for installation must comply with EN 1127-1 in relation to the area of use.
As a preliminary operation carry out grounding and verification of its proper operation. Grounding is provided with visual indication by symbol in European Standard.
In Start-up phases carry out the following checks:
- verify the correct grounding of the equipment and the condition of equipotentiality between the various parts of the equipment, especially the moving parts;
- carry out blank test with acoustic check (abnormal noise): in case of problems stop the equipment and check the assembly of the moving parts;
- electrical wiring must be carried out by qualified personnel and according to the instructions in the wiring diagram.
During testing and handover of the equipment, adequate training of the operator performing installation, start-up and normal operation of the equipment must be done.



The user must ensure that the plant within which the equipment will be installed has been adequately secured, from an explosion risk point of view, before it is started up, and also that the "Explosion Protection Document" has been prepared as required by the ATEX Directive 1999/92/EC (Ministerial Decree 81-2008).

THE INTRODUCTION (SUCTION) OF IGNITION SOURCES FROM OUTSIDE IS PROHIBITED, including those due to self-ignition of dust or by embers combustion.

In the case of extraction of dusts that may give rise to self-ignition phenomena, the collection bin must be emptied immediately after each activity.

This precaution should also be taken in the case of aspiration of dust of different types whose mixture may give rise to exothermic reactions.

A periodic check of the equipotentiality condition, especially after maintenance operations, between the different metal parts of the equipment, especially the moving parts and the handle baskets, must be carried out.

Installation, assembly and disassembly operations must be carried out on machinery that is switched off and in the absence of a potentially explosive atmosphere.

The installer must check that the process specifications correspond to the equipment characteristics on the nameplate (e.g., with reference to the maximum surface temperature).
In case of material with incompatible product characteristics, use of the equipment is prohibited.

Manuals for the ATEX components mounted on the equipment are provided in the attachment: the user must observe all safety instructions regarding the use of these components.

Cleaning of equipment to prevent the formation of combustible dust layers must be carried out by the user.
Do not use compressed air for cleaning from dust layers, but appropriate vacuum systems suitable for handling potentially explosive dust (ATEX-certified vacuum cleaners).

A specially trained operator must be present at all times during the operation of the equipment and must take immediate action by stopping the equipment using the emergency button (where provided) or the emergency disconnect switch in case of malfunctions, e.g., abnormal noise (component rupture), clogging of the inlet and vent piping, rupture of the filter sleeves, suction of foreign bodies presence or ignition sources.

When installing and maintaining electrical parts (e.g., cables, cable glands and terminals) always follow the instructions in EN 60079-14.
When opening junction boxes (for inspections), check that the gaskets are correctly present when closing them again.

The plug is not an ATEX type (or is not supplied): the user must connect the plug to an outlet located in a SAFE PLACE, or must arrange to install an ATEX plug.

Hoses, suction nozzles and filter sleeves are of the antistatic type declared by their respective manufacturers.

It is forbidden to use other types of components.

Protection against atmospheric shock must be present in the establishment where the equipment is used.

No ignition sources should be present in the immediate vicinity of the device, for example:
- flames;
- embers;
- hot surfaces;
- sparks (e.g., caused by metal cutting);
- stray currents and cathodic protection systems;
- electrical or mechanical equipment that is not ATEX certified;
- electrostatic charges carried by operators or mobile equipment;
- radio frequency (RF) and electromagnetic waves (104Hz to 3*1011Hz);
- electromagnetic waves (3x1011Hz to 3x1015Hz);
- ionizing radiation;
- ultrasound.

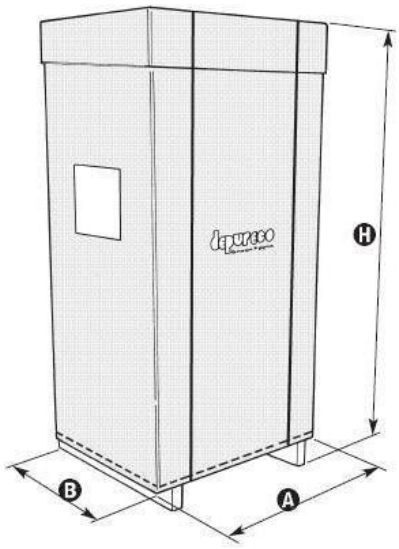
3. HANDLING, UNPACKING AND INSTALLATION SECTION

3.1 Handling

Warning!
The instructions for transporting and unpacking the vacuum correctly are shown
on the packaging as well.

The following instructions also indicate the operations to be undertaken should the vacuum need to be re-packed or unpacked after subsequent transportation.

Dimensions of the packed vacuum cleaner:



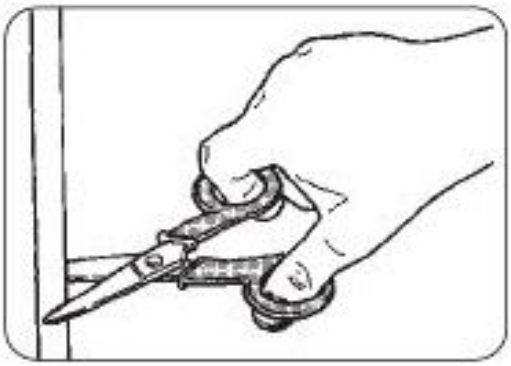
	U.M	A	B	H
PUMA FIX	[cm]	188	85	192
PUMA FIX ATEX	[cm]	188	85	192

The vacuum cleaner must be lifted and handled exclusively using a forklift having suitable load bearing capacity.

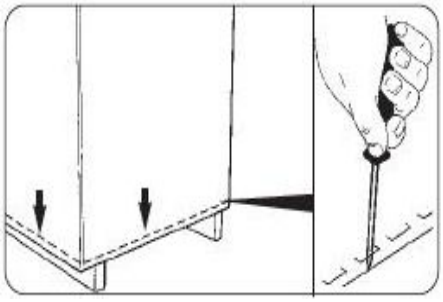
When using a forklift, lift the load 200 mm off the ground and swing backwards.
Always keep the height of the working environment in mind when lifting loads.
Before starting any movement, ensure that the area is cleared and that there are no moving objects on the packaging. For lifting and handling, apply operating safety laws and normal instructions for fork-lift truck driving.

3.2 Unpacking

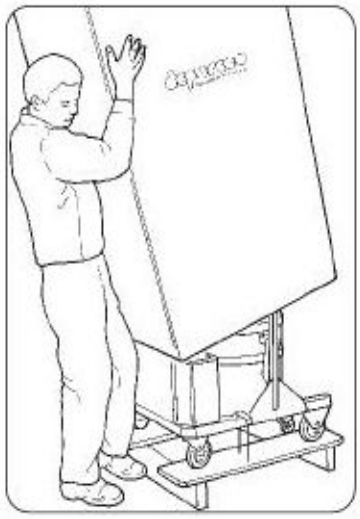
- Cut and unwind the two packaging fixing belts



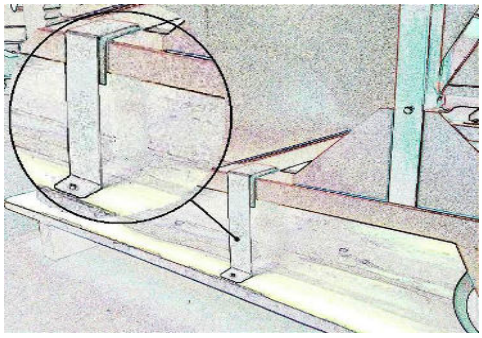
- remove the staples that fix the carton packaging to the pallet with the aid of a screwdriver



- remove the carton completely



- loosen and remove the fastening screws and brackets from both sides



The cardboard packaging can be recycled. To protect the environment, make sure to dispose it off in specialised collection centres.

Warning!
Keep the pallet.
In the event of subsequent transport, the vacuum must be secured to the pallet using the same fastening system.

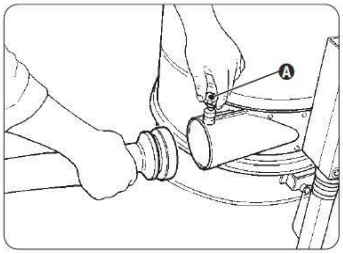
3.3 Installation

Caution!
Before installing the vacuum, it is important to carry out a thorough preventive visual inspection to identify any damage which may have occurred during transport.

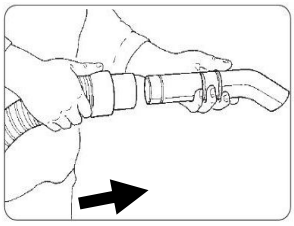
In the event of one or more components being damaged, do not continue with installation, inform DEPURECO about the anomaly and agree upon action to be taken.

The vacuum cleaner is already fitted with an appropriate filter intended exclusively to vacuum dry dust or debris

- Raise the knob (A) and insert the hose with its end into the suction inlet

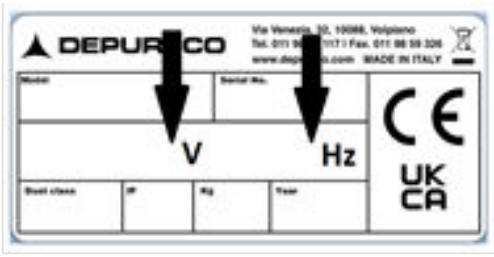


- insert the desired accessory according to the type of extraction on the opposite side of the hose



Note: the flexible tube and the relevant end-pieces and accessories are not included with the STANDARD model. Contact your dealer (or DEPURECO) for information regarding the various types of OPTIONALS that can be used on this specific model.

The following operation must be carried out by a qualified electrician.
Ensure that the power supply line corresponds to the voltage and frequency indicated on the identification plate and that it is efficiently earthed.



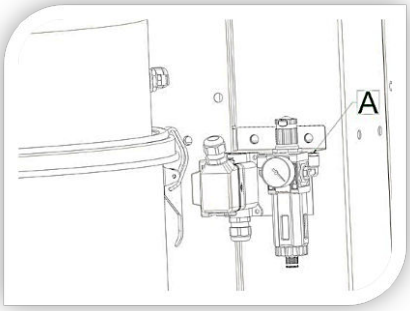
The vacuum cleaner's electrical current supply socket must be protected by a CE-marked circuit breaker. Insert the plug (standard supply) into the socket.

Warning!
Do not insert the plug in the power supply socket with wet hands.
Do not use extension leads.

Connection to the pneumatic supply –
(only for the vacuum cleaners equipped with the reverse air jet cleaning system)

- Connect to the fitting (A) shown in the figure. The required air supply is max. 6 bar

- To ensure proper operation, the air fed into the vacuum cleaner, must be dehumidified.

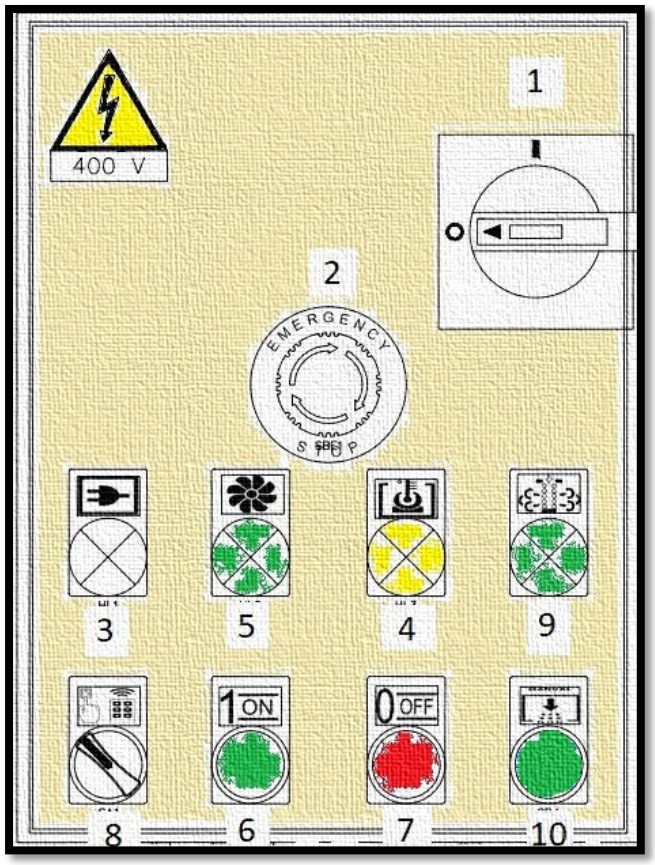


4. OPERATION SECTION

4.1 Operating cycle

5 Ensure that the power cord is intact and in perfect state.

Warning!
Before inserting the plug, ensure that the voltage of the power supply line corresponds to the one indicated on the vacuum's identification plate.

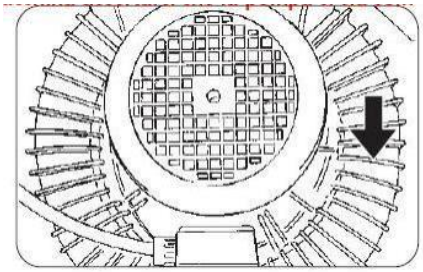


Comandi

1. I/O disconnector
2. Emergency stop function
3. White light: voltage presence
4. Yellow indicator light: thermal shutdown
5. Green indicator light: vacuum cleaner running
6. Green button: vacuum cleaner start-up
7. Red button: suction stop
8. Remote control selector
9. Green light: filter cleaning in progress
10. Button : start manual pneumatic cleaning

- Make sure the power plug is properly inserted into the power outlet.

- Make sure that the vacuum arm or hose is properly inserted and locked into the vacuum nozzle.
- Ensure that the debris collection container is properly in place and locked under the vacuum cleaner chamber.
- Turn the switch from O to I [1].
- Check that the white voltage presence light [3] is on
- Press the green button [6] to start suction
- Check that the direction of fan rotation is as indicated by the arrow in the figure



- Press the red button [7] to stop the vacuum cleaner
- Press the red mushroom [2] in case of EMERGENCY

Caution!
If the yellow light (4) SAFETY THERMAL SHOCK is on, the fan will stop suction, then turn the switch (1) to "0" to cut off power to the electrical panel. Turning on this light indicates that fan overheating has occurred.
To resume normal operation, see sect. 5.6.

Warning.
Before turning on the vacuum cleaner again, make sure that the fan has stopped completely.

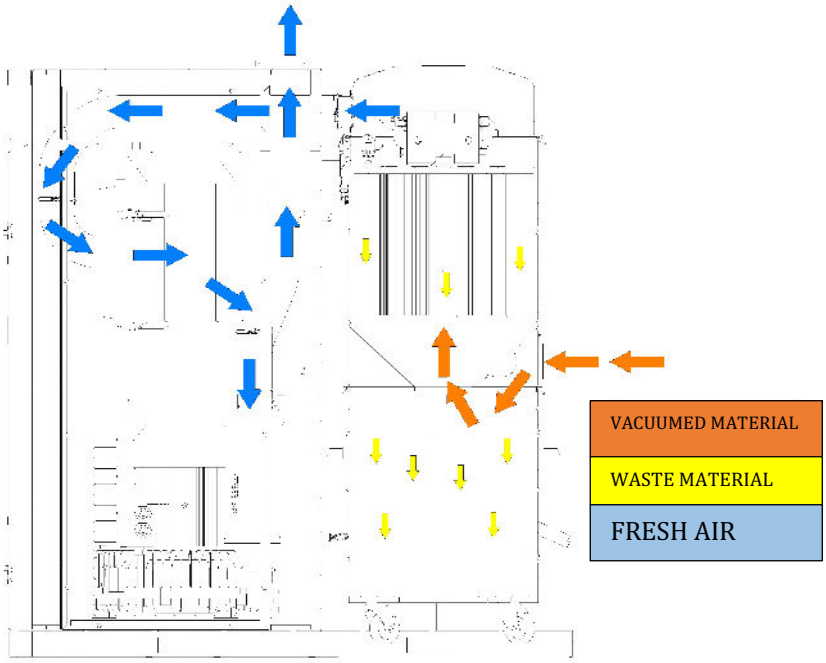
Caution.
Do not move the vacuum cleaner while it is in operation.
To move the vacuum cleaner, use a forklift by forking the base (detail #8, ch. 1.2).

1. Airborne dust is drawn in by a suction arm or nozzle that ensures its uniform distribution within the chamber

2. Inside the filter chamber, the vacuumed air abruptly reduces its velocity, assuming a spiral motion that causes the coarser particles to precipitate while the lighter particles follow the airflow reaching the filter elements.

3. The air flow is distributed over the surface of all filter elements (star filter in the standard "PSC" version or cartridges in the "SP" version) passing through them from the outside to the inside. Next, the filtered air is directed to the outlet duct located on the top (lid) of the filter chamber

4. Extracted dust and particles settle on the outer surface of the filter elements, improving their filtering action but progressively increasing their pressure drop. Since the pressure drop must be reduced, the filter elements are regularly subjected to one or more cleaning cycles each time suction stops.



5. In the standard version, with the counter-current cleaning system (SP), the vacuum cleaner must be connected to compressed air with a maximum pressure of 6 bar at the filter regulator (see section 3.3 of this manual).

The filter cartridges will be cleaned automatically during the vacuum cycle. Depending on the models, it is possible to manually operate the cleaning system directly from the special button located on the electrical panel. This operation can also be carried out when the vacuum cleaner is not running, but always in the presence of voltage.

6. Cleaning, in the "PSC" version, takes place by means of a piston that energetically shakes the star filter inside the chamber. The material, detaching itself from the filter elements, falls by gravity into the bin below

WARNING

If the vacuum cleaner is not working properly, after cleaning the filter, the filter may be clogged and need to be replaced.

On the shoulder of the vacuum cleaner there is a vacuum gauge that indicates the degree of depression inside the vacuum cleaner. The vacuum gauge informs the operator about the conditions of the filter: an increase in depression indicates an increase in the clogging of the filter, which results in a lower vacuuming power. When the filter is clogged, the vacuum gauge shows the value reported in the following table. In this case, stop the machine and shake the filter.

Model	Clogged filter value	
PUMA 10 Z22	-0.22 bar	-22 kPa
PUMA 15 Z22	-0.22 bar	-22 kPa
PUMA 18 Z22	-0.22 bar	-22 kPa
PUMA 30 P Z22	-0.22 bar	-22 kPa
PUMA 30 S Z22	-0.22 bar	-22 kPa

WARNING

If dust is escaping from the clean air exhaust outlet (detail #9, ch. 1.2), the filter may have broken. In this case, the vacuum cleaner should be stopped immediately and checked.

Warning.
Avoid coiling or bending the hose during the vacuuming operation.

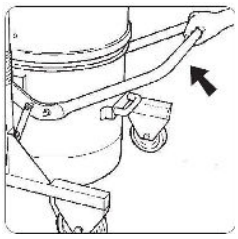
4.2 Emptying the bin

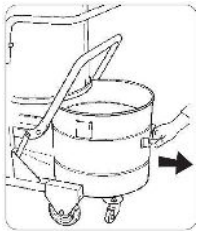
Warning! Wear PPE (gloves, dust, mask, goggles, etc.) during this operation.

Depending on the type and quantity of material being vacuumed, it is necessary to periodically check the bin to avoid filling it excessively.

Proceed as follows to empty the container:

- Switch the machine off by switching the main switch (**1**) to OFF
- block the vacuum cleaner by means of the brake located on the swivelling wheel
- unlock the container by lifting the special handle.

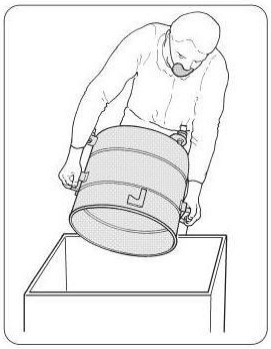




- remove the bin by using the handles
- empty the bin in a dedicated container and dispose of the it in compliance with the standards for the country of use.

In the case the chosen collecting container is a plastic bag proceed as flows for its replacement:

- After having removed the bag, tie it, dispose of it and insert a new bag in the bin.

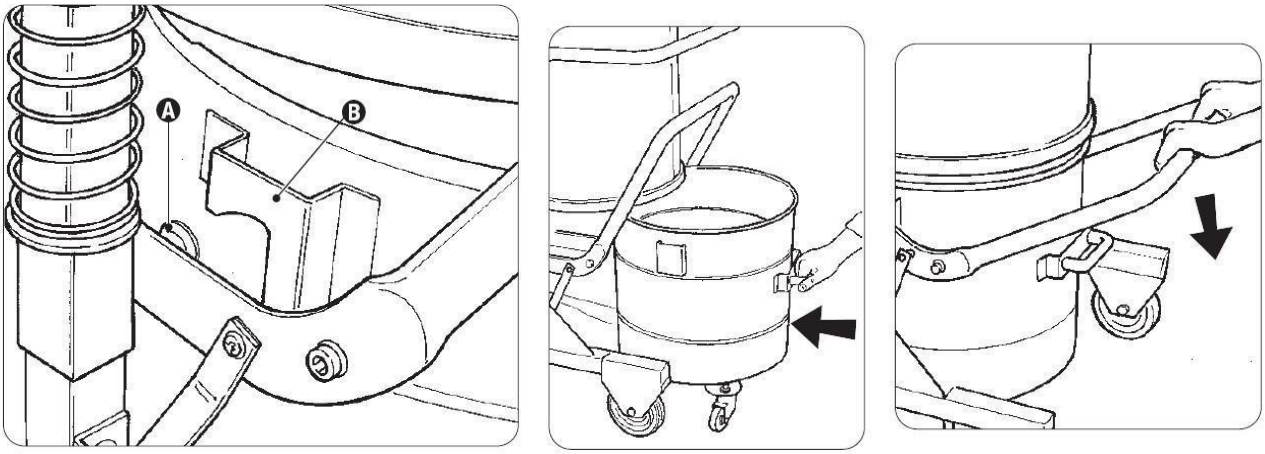


Warning!
If the bin or the bag weigh more than 15 Kg, at least two people are needed to
empty it.
Disposal must be done in compliance with the existing laws for the country of use
of the vacuum cleaner.
For Italy - Legislative decree 152/2006 and subsequent modifications.

4.3 Inserting and locking the bin

Follow the steps below to insert and lock the container:

- place the bin under the vacuum and push the bin lever completely, using two hands.



-

The pins (A) must be aligned with the slots (B)

Warning!
Crushing hazard for the upper limbs during insertion and locking of the dirt container under the vacuum cleaner.
Never place your hands between the vacuum and the dirt container while inserting and locking the later under the vacuum cleaner.

4.4 Storage – Decommissioning

Remove the filter and clean it; empty the refuse collection container and store the vacuum in a place protected against weather agents with the temperature ranging between 5 and 45 °C and cover it with a nylon tarp to protect it against dust.

5. MAINTENANCE SECTION

Warning!
Special vacuum maintenance must be carried out solely by specialised technicians authorised by the DEPURECO dealer.

5.1 Informative notes

This section describes the checks and routine maintenance operations required to ensure proper vacuum operation.

Maximum reliability and minimum maintenance costs are the result of a planned maintenance and inspection schedule carefully followed throughout the entire lifespan of the vacuum.
Observe the set maintenance intervals and schedule the interventions according to specific requirements in relation with the vacuum production cycle.

Always use perfectly working tools specifically intended for the operation to be carried out; the use of inadequate or inefficient tools can cause severe damages.

Any other intervention required to remove faults or malfunctions must be expressly authorised by the manufacturer.
In these cases, always communicate the vacuum identification data - see para. 1.4 of this manual.

For significant repairs, refer to the authorised dealer, whose specialised personnel has the technological expertise and is always available for prompt interventions.

CAUTION.
Periodically it is necessary to open and clean the pump housing, preferably by means of a vacuum system or by using a wet rag.
It is preferable, when possible, to do this by transferring the vacuum cleaner to a safe area

Disassembly, cleaning, and maintenance of the vacuum cleaner should be carried out by the user, whenever possible, without leading to hazards to maintenance personnel and third parties. Suitable precautionary measures include decontamination before disassembly, measures for filtered forced ventilation of the room where the unit is disassembled, cleaning of the maintenance area, and suitable personal protective equipment.

The manufacturer or qualified person should perform, at least once a quarter (or more frequently depending on the work cycle and conditions of use), an inspection to the filters checking that they are not damaged, also check the proper functioning of the control devices.

When maintenance or repair work is carried out, all contaminated items that cannot be satisfactorily cleaned shall be placed in impermeable bags and disposed of in accordance with applicable laws.

5.2 General safety regulations

Warning!
All the operations described above must be carried out with the plug disconnected from the socket.

Before starting any maintenance or cleaning operation, wear suitable PPE (protective clothing, goggles and/or gloves, etc.) according to the work to be done.

Place a sign on the vacuum with the message:

"MACHINE UNDER MAINTENANCE
DO NOT START"

Before returning to use, the whole system must be checked according starting procedures.
Run a few trial operating cycles after every maintenance operation to ensure proper machine operation.
Failure to observe these precautions can cause serious injury to personnel.

Maintenance operations must be carried out by trained technicians specialised in the following sectors:

• Mechanical maintenance
• Electrical maintenance

It is the Safety Manager's duty to ensure the professionalism and skills of these technicians.

Before starting any maintenance operation, the Safety Manager must:

- Ensure that the necessary tools are in good conditions and readily available to the maintenance technician.
- Ensure the maintenance technician is equipped with the personal protection equipment required for the specific operation (gloves, goggles, shoes, mask, etc.)
- Make sure the maintenance technician has carefully read the instructions contained in this manual and has perfectly acquired knowledge on the operation of the vacuum and its components.

- Ensure that there is enough light and, if necessary, provide 24 Volt torches.

Before starting any maintenance operation, the Maintenance technician must:

cut off all power supplies and set the vacuum cleaner in safety lock condition

Warning!
If absolutely necessary operating with the power turned on, pursuant to Italian Legislative Decree 81/08, the maintenance technician must maintain a safe distance, prepare reachable emergency stop buttons and never place hands in the discharge container.

At the end of the procedure and before returning to use, the maintenance technician must check that guards are functioning correctly and the protection devices are intact.
Operations on the motors or on other electrical components must only be carried out by the specially trained electrical maintenance technician authorised by the Safety Manager.

Warning!
After any maintenance intervention, the Health and Safety Manager is required to check the safety conditions of the vacuum cleaner and of its safety devices.

Before every work shift

- Check that the power cord and the plug are not damaged: replace them immediately if there are any signs of wear, using a cord of the same type (information c/o DEPURECO). This operation is the sole responsibility of an electrician.
- Check the integrity of the safety symbols (pictograms) applied to the vacuum cleaner.
- Verify the efficiency of the filters by checking the vacuum gauge.
- Check the integrity of the hose and of the accessories to be used.

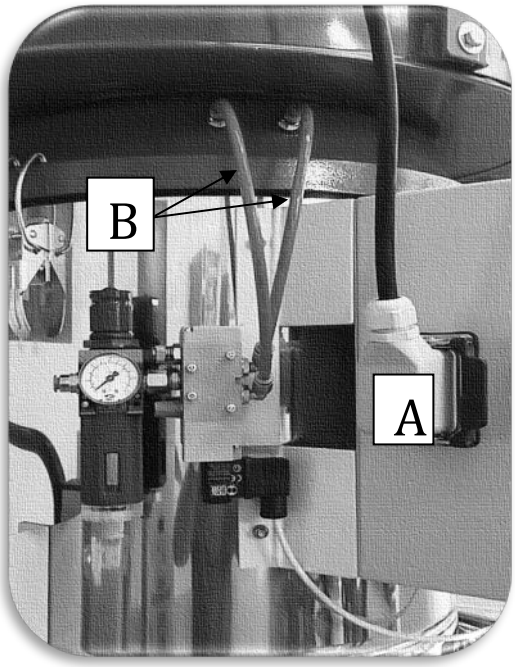
Warning!
The flexible hose, if perforated, reduces the suction power and releases dust into the surrounding environment.

5.3 Replacing the filter

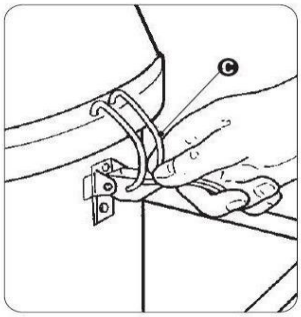
Warning!
Wear appropriate PPE (dust mask, latex gloves, goggles, etc.).

To replace the filter:

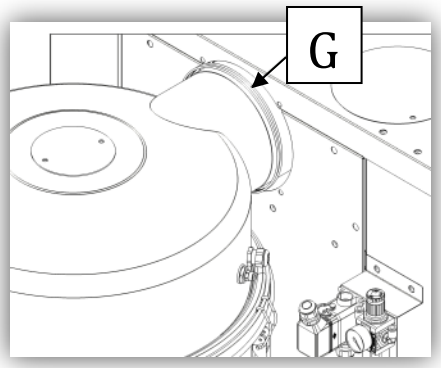
- Switch the vacuum off by positioning the main switch (**1**) on **OFF**
- Disconnect the vacuum cleaner from the power socket and the compressed air supply
- Disconnect the 2 hoses (B) of compressed air from the head
- On models equipped with "SP" cleaning: Disconnect the connector (A) and the compressed air tube (B) from the head



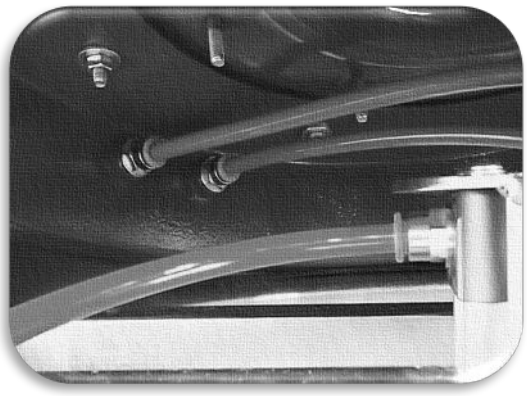
- Unlock the three hooks (C) closing the hood from both sides.



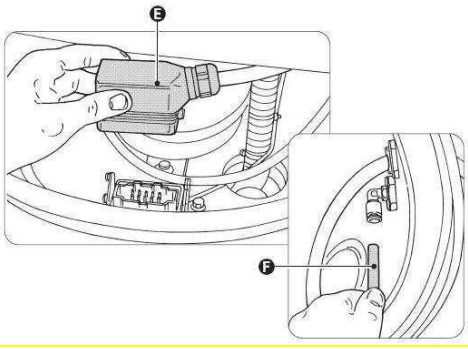
- Disconnect the suction pipe (G) by unscrewing the clamp with appropriate hexagonal wrench



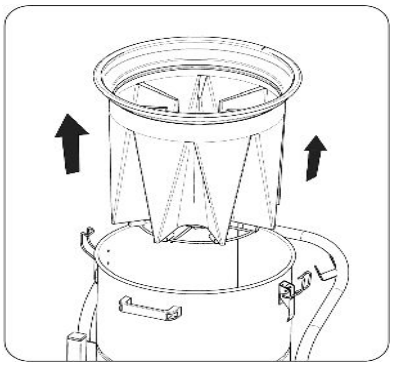
- Getting help from a second person, lift the head slightly taking care to disconnect the 2 compressed air hoses (D). Remove the head and place it on a workbench.



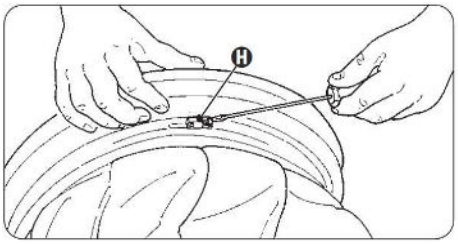
- In models equipped with "SP" cleaning: with the help of a second person, lift the head slightly and, inside, disconnect the connector (E) and disconnect the pneumatic supply tube (F) from the appropriate fitting. Remove the head and place it on a workbench.



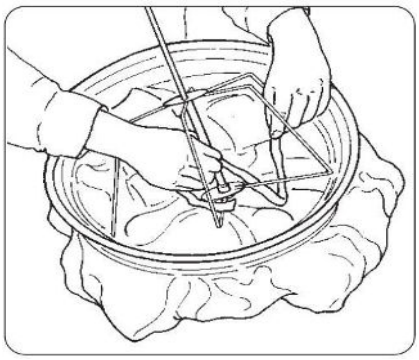
- Remove the filter (complete with support and piston) and place it gently on a workbench



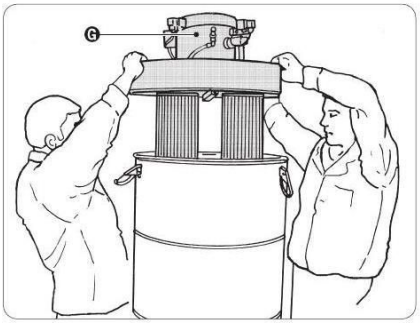
- Loosen the retaining clamp (H), detach the filter from its holdero



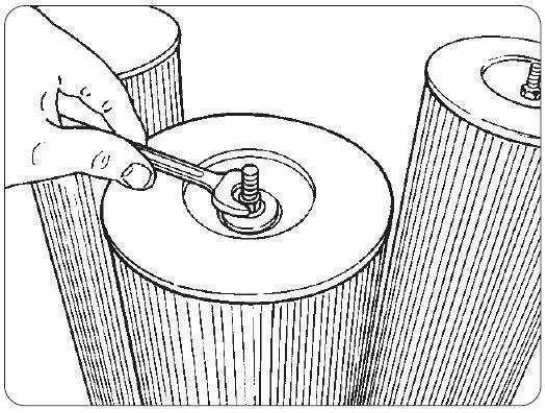
- Slide off the filter and unfasten the ribbons holding it to the cage.



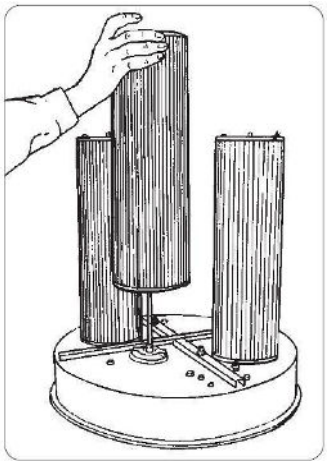
- On models equipped with "SP" cleaning: with the help of a second person, lift the filter cartridge support assembly (G) and place it upside down on a workbench



- Unscrew and remove the retaining nuts of the individual cartridges



- Slide out and replace the filter cartridges with new ones



When replacing the filter, make sure that the equipotential bonding braid is properly connected

remove the cartridges, put them in a plastic bag, seal it and **dispose it of according to the applicable legislation on** the type of material collected.

TO REASSEMBLE THE FILTERS OPERATE THE ABOVE STEPS BACKWARDS

EXCLUSIVELY USE FILTERS MANUFACTURED BY DEPURECO

5.4 Troubleshooting

ANOMALY	POSSIBLE CAUSE	RECOMMENDED SOLUTION
The vacuum cleaner will not start	- No power supply	- Verify the presence of voltage in the soket - Verify the integrity of the plug and the power cable - Contact DEPURECO's technical assistance service
The vacuum gauge indicates an irregular vacuum value	- Clogged filter	- Shake the filte. - Replace it should the cleaning not be enough .
	- Clogged hose	- Check the hose and clean it
Dust comes out of the vacuum cleaner	- Perforated filter	- Replace the filter
	- Filter not suitable for the vacuumed material	- Install a filter which is suitable for the vacuumed material
Excessively noisy motor	- Faulty pump	- Contact DEPURECO's technical assistance

5.5 Scrapping

This product falls under the scope of Directive 2012/19/EU on the management of waste electrical and electronic equipment (RAEE). The equipment should not be disposed of with household waste as it is composed of different materials that can be recycled at the appropriate facilities. Inquire through the municipal authority regarding the location of ecological platforms suitable to receive the product for disposal and its subsequent proper recycling. Please also note that upon purchase of equivalent equipment, the distributor is required to take back the product for disposal free of charge. The product is not potentially hazardous to human health and the environment, as it does not contain harmful substances such as Directive 011/65/EU (RoHS), but if abandoned in the environment it will negatively impact the ecosystem. Please read the instructions carefully before using the device for the first time. Absolutely do not use the product for any other use than that for which it was intended, as there is a danger of electric shock if used improperly.

The crossed-out bin symbol on the label on the appliance indicates that this product complies with the regulations on waste electrical and electronic equipment. Abandoning the equipment in the environment or disposing of it improperly is punishable by law.

REGISTRATION IN THE RAEE REGISTER N. IT18090000010711

If in doubt, do not interpret! Phone your dealer immediately!

DEPURECO
INDUSTRIAL VACUUMS

MAINTENANCE LOG:

INTERVENTION 1: **DATE:**

TECHNICAL ASSISTANCE:

TYPE OF INTERVENTION:

INTERVENTION 2: **DATE:**

TECHNICAL ASSISTANCE:

TYPE OF INTERVENTION:

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Fax +39 **011 98.59.326**

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Registro Imprese di Torino · **R.E.A.** TO-1149668
Capitale Sociale: € 25.000 i.v.

DEPURECO
INDUSTRIAL VACUUMS

INTERVENTION 3: **DATE:**

TECHNICAL ASSISTANCE:

TYPE OF INTERVENTION:

INTERVENTION 4: **DATE:**

TECHNICAL ASSISTANCE:

TYPE OF INTERVENTION:

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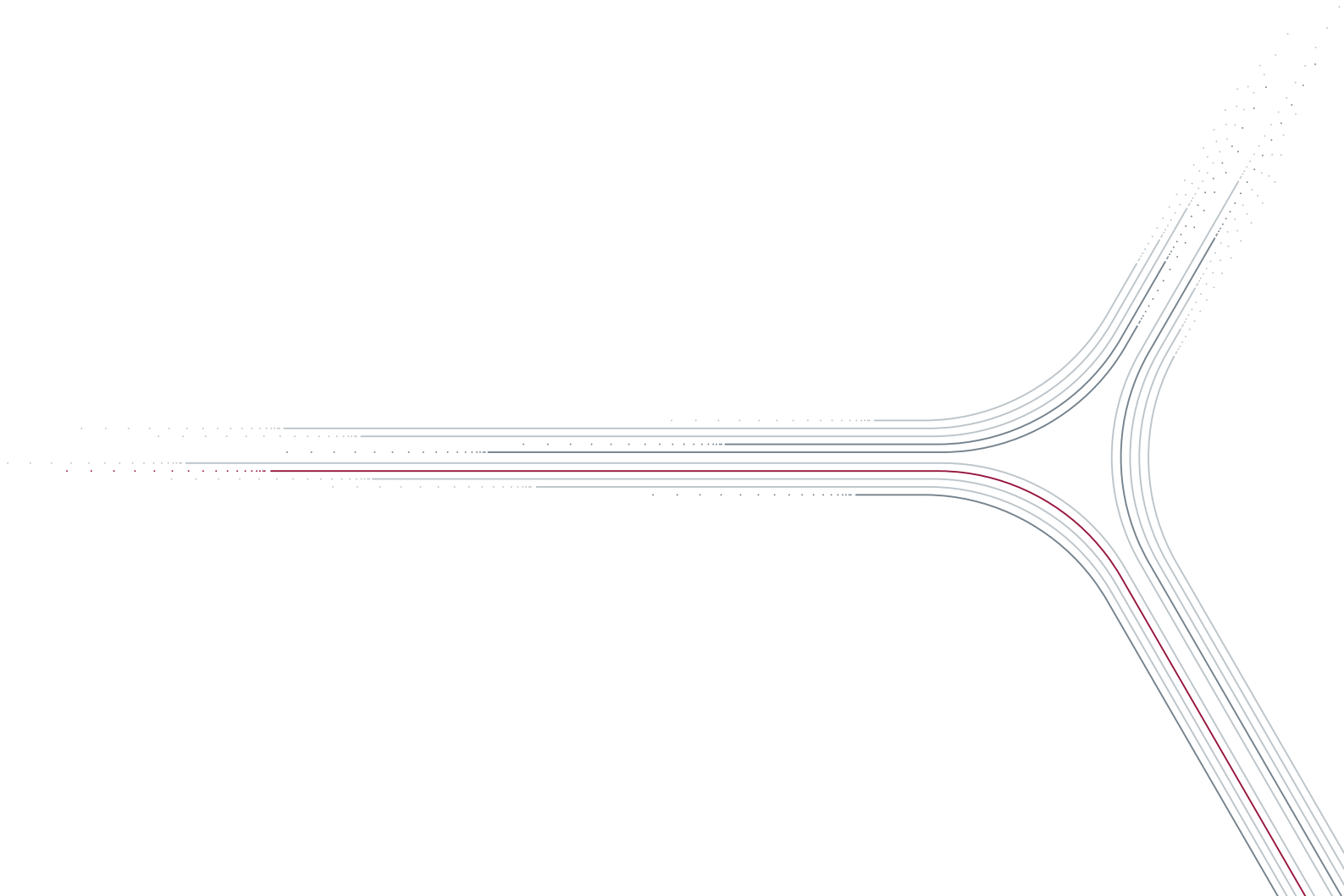

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