

**INDUSTRIAL VACUUMS****USER AND  
MAINTENANCE  
BOOK**

## 01. INTRODUCTION

The herein manual provides all necessary information for the correct use and maintenance of your **Huuvan HV110-MCS** vacuum cleaner. Its efficiency and life depend on the regular maintenance and care.

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

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

In case of loss or damage of the Operating and Maintenance Manual, please request another copy.

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

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

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

This "Operating and Maintenance Manual" provides all information expressly required by the "Machine Directive 2006/42/CE" and the "ATEX 2014/34/UE Directive". All technical specifications reported herein have been verified by the manufacturer at the issue of this manual. This manual must always be readily available for consultation to the staff operating the HV110-MCS vacuum and to the operators' in-charge of its maintenance. Therefore, it must be kept in a place accessible to all the above mentioned staff/users.

In case of doubt or concerns please call our Technical Service immediately and ask for assistance.

### **TECHNICAL SERVICE**

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

*Please call 0845 33 77 695*

***The Operating and Maintenance manual must always be provided with Huuvan vacuum cleaners, even in the case of resale!***

***This manual is supplied as integrating part of the vacuum.***

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

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**1.1 IDENTIFICATION OF MAIN PARTS**

- 1) Release fastening
- 2) Motor head
- 3) Push handle
- 4) Suction point
- 5) Removable vacuumed material container
- 6) Castors
- 7) Filter chamber
- 8) Fixed wheels
- 9) Filter shaking lever

## 1.2 ACCESSORIES PROVIDED



**RPFI.0154.0000 - 16 POCKETS POLYESTER "C" ANT. FILTER Ø420  
H400  
(ONLY SPARE PART)**

*Remark: these filters must be checked every six months. If they have become worn, it will be necessary to replace them with new ones, which can be requested as spare parts from Huuvan.*

*Huuvan will accept no responsibility when the use of NON-ORIGINAL filters are used.*

## 1.3 IDENTIFICATION DETAILS OF MANUFACTURERS

**HUUVAN – Industrial Vacuum Cleaners**

**Crescent Industrial Ltd**

**Berrington House**

**Berrington Road**

**Leamington Spa**

**CV31 1NB**

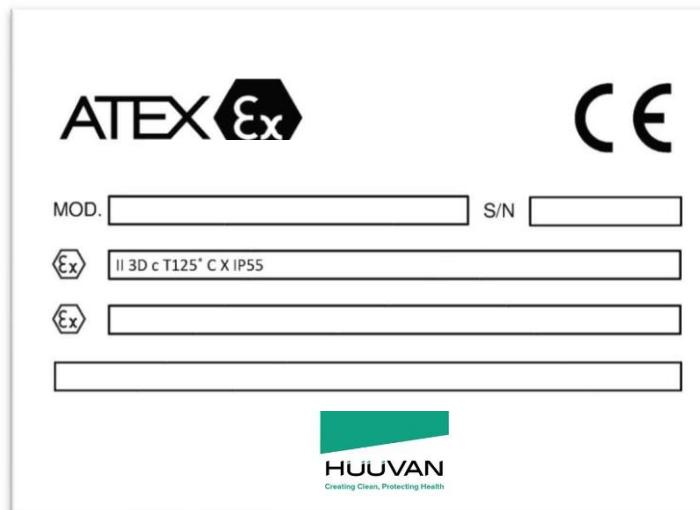
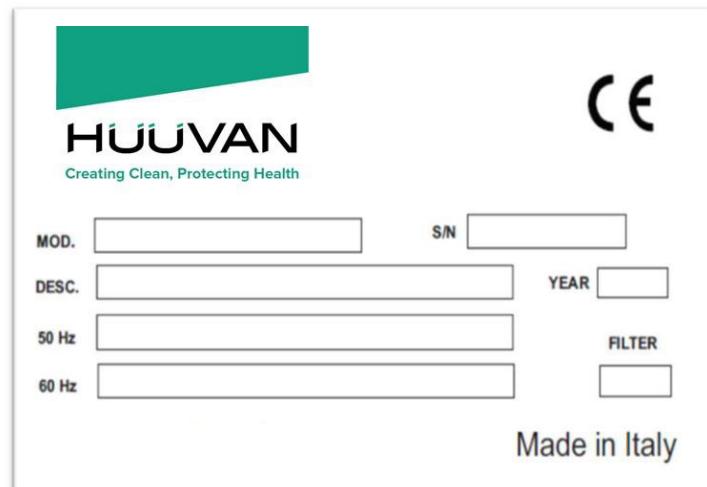
**info@c-ind.co.uk**

**www.crescentindustrial.co.uk**

## 1.4 MARKING PLATE

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

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



## 1.5 INTENDED USES

This particular model has been designed, constructed and equipped with safety devices for solid dust and debris vacuuming applications only. The machine is provided with appropriate specific anti-static filters to operate in explosive atmosphere areas (Zone 22 CLASSIFIED AREA, according ATEX 2014/34/EU Directive).

**Warning!**

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

Any other use is considered **IMPROPER**.

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

## 1.6 ALLOWED ENVIRONMENTAL CONDITIONS

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

## 1.7 NOISE LEVEL

Noise level readings were taken in accordance with the provisions of Machine Directive 2006/42/CE standards. Sound tests performed on this specific vacuum cleaner model have been taken from a distance of 1 meter and from a height of 1,60 meters, showing an acoustic pressure no higher than:

**80 dB (A)**

The vibrations transmitted by the machine are lower than 2,5 m/s<sup>2</sup>.

**Attention!**

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

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

## 1.8 STORAGE

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

## 1.9 SCRAPPING

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

Before scrapping, all plastic and rubber parts will have to be separated from the electrical material. Parts made of plastic, aluminium and steel only may be recycled if collected by special centres.

**1.10 TECHNICAL DETAILS****HV110-MCS****Power****kW**

1,1

**Voltage****Volts**

115

**Max. vacuums rate****mm H<sub>2</sub>O**

2.285

**Max. air flow rate****m<sup>3</sup>/h**

200

**Noise level****dB(A)**

80

**Filter type**

Polyester antistatic cat M

**Filter surface****cm<sup>2</sup>**

20.000

**Container Capacity****l**

40

**Suction inlet****Ø**

50

**Dimensions****cm**

55 x 63 x H115

## 1.11 WARRANTY

Huuvan 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 Huuvan or which have not been recommended or approved by Huuvan or whose serial number has been removed or altered during the warranty period.

Huuvan undertakes to repair or replace, free of charge, those parts which, during the warranty period show manufacturing faults. Repairs shall be made in the Huuvan 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). Initial assessments for an engineer to visit site to analyse the machines is also available.

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. Huuvan declines all responsibility for any damage to persons or things caused by bad or improper use of the vacuum cleaner.

The manufacturer declines all liability in the following cases:

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

## 2.1 SAFETY DETAILS

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

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

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

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

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

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

The safety messages are highlighted by the following symbols:

**Attention!**

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

**Warning!**

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

Huuvan 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 Huuvan, make sure no hazards exist for operators and others that could be affected.

**Only ever use original DU-PUY spare parts.**

DU-PUY declines all liability in the event of non-original spare parts being

## **2.2 SAFETY PRECAUTIONS**

**Warning!**

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

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

**Maintenance operations must always be executed after unplugging the machine.**

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

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

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

Do not manumit the vacuum/pressure relief valve.

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

Do not vacuum incandescent or burning material.

The operator must always wear antistatic clothes and shoes. The floor of the area to be vacuumed must be antistatic.

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

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

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

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

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

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

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

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

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

Handle the machine carefully, especially on slopes or ramps.

Do not turnaround the machine on slopes.

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

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

Repair operations must be executed by qualified personnel only.

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

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

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

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

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

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

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

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

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

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

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

Never use the vacuum without filter.

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

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

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

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

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

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

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

Do not get on the vacuum.

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

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

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

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

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

The vacuum must only be operated by adults.

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

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

## 2.3 SAFETY PLATES AND SYMBOLS

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

**Caution!**

**Ensure that all safety warning plates are readable.**

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

**Caution!**

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

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

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

**IMPORTANT**

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

**Caution!**

**Be careful not to get your hands squashed when positioning and securing the vacuum collection container.**

**Caution!**

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

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

**Caution!**

**Do not vacuum incandescent material.**

**Caution!**

**Do not vacuum sources of ignition**



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

**M**

CAUTION: this machine contains harmful vacuumed dust. Emptying operations, including the removal of the collection container after due waiting time must only be executed by qualified operators wearing the appropriate safety devices.  
Do not use the vacuum without filtering systems.

**M**

This plate is applied to the vacuum when the machine is equipped with a C CLASS anti-static filter (max. efficiency: 1 micron)



CAUTION: this machine contains harmful vacuumed dust. Emptying operations, including the removal of the collection container after due waiting time must only be executed by qualified operators wearing the appropriate safety devices.  
Do not use the vacuum without filtering systems.

**H**

This plate is applied to the vacuum when the machine is equipped with a C CLASS anti-static filter and the absolute (HEPA) filter (99,995%. efficiency)



## 2.4 OUTSTANDING RISKS

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

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

The residual risks in connection with the Huuvan HV110-MCS vacuum are the following:

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

Complying with the Italian D.Lgs.81/08, Low voltage operations can only be executed by qualified and trained personnel, after providing efficient double earth insulation.

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

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

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

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

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

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

***Caution!***

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

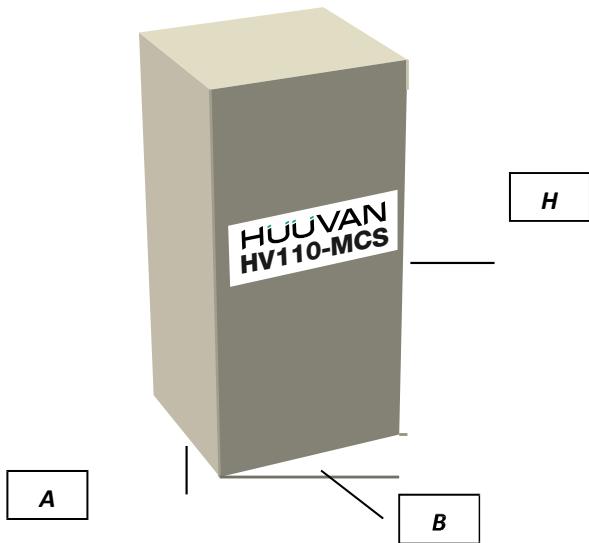
***The manufacturer declines any responsibility on the vacuum safety in case of failure to respect this warning.***

## 2.5 APPLIED DIRECTIVES

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

- **2006/42/CE Machine Directive**
- **2014/30/EU Electromagnetic Compatibility (EMC) Directive**
- **2014/34/UE ATEX Directive**

### 3.1 HANDLING



	<i>A (cm)</i>	<i>B (cm)</i>	<i>H (cm)</i>	<i>Weight (package included) Kg</i>
<b>HV110-MCS</b>	85	73	145	65

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

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

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

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

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

Huuvan strongly discourages lifting the vacuum using hoisters or forklifts or other equipment.

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

## 3.2 INSTALLATION

**Warning!**

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

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

The vacuum filter is already placed inside the machine.

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



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

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

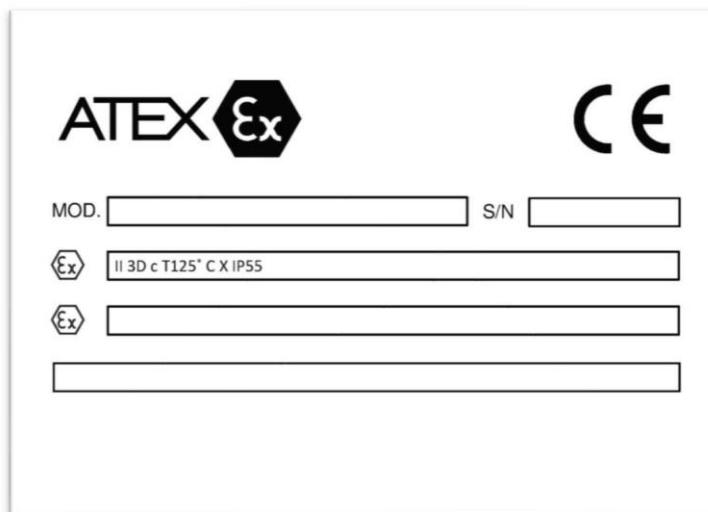
Fit the supplied connector on the pipe union.



Fit the supplied pipe on the pipe union.



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

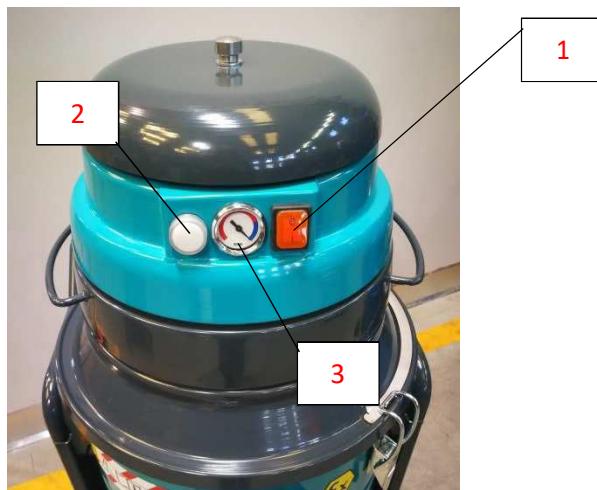


**Warning!**

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

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

#### 4.1 DESCRIPTION OF CONTROLS



- 1) **START/STOP** button
- 2) Blocked filter indicator
- 3) Vacuum meter

## 4.2 WORK CYCLE

**Caution!**

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

**Caution!**

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

**Caution!**

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

- Ensure that the supply cable tap is correctly plug in the current outlet having the voltage required and indicated on the vacuum control panel.
- Ensure that the flexible hose is duly fitted and locked in the specific suction plug.
- Ensure that the supply cable (cord) and the eventual extension are in perfect conditions.
- Set on the wheels brake to ensure that the machine is stable.
- Grip one end of the flexible hose complete with selected accessory.
- Press the **Start** button and start vacuuming.
- To stop the vacuum cleaner, press the **Stop** button

**Warning!**

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

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

**Caution!**

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

- Once work cycle has been completed, disconnect and unplug the machine.
- To move the vacuum cleaner, use the large handle.



**Caution!**

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

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

**Warning!**

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

#### 4.3 RELEASING AND REMOVING THE REMOVABLE CONTAINER

Stop the vacuum motors by turning the main switch on the “**0**” position.

**Warning!**

*Disconnect the plug from the power socket.*

**Caution!**

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

- Lift the container release lever of the vacuum cleaner



- Remove the container.



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

**Warning!**

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

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

**Warning!**

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

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

#### 4.4 USING THE FILTER SHAKING SYSTEM

This operation must only be performed with the machine switched off once the motor has come to a complete halt. The filter shaking system is best operated every time before use and after prolonged operation.

For greater convenience, the most frequently used accessories can be placed in the special accessory basket (1).

**Warning!**

*During vacuuming, avoid rolling up or twisting the flexible hose*

On the front of the vacuum cleaner is a vacuum meter indicating the degree of vacuum inside the vacuum cleaner. If, with the vacuum cleaner working and the vacuum inlet free, the vacuum meter lever indicates an irregular depression level, the filter will have to be shaken by means of the special lever. If the indicator light remains on, clean and replace the filter.

**Warning!**

*Never use the machine with the filter blocked.*

**Warning!**

*If the arrow of the vacuum meter stays in the red area even after cleaning the filter, the hose or suction accessory could be blocked. In this case, clean and remove the blockage.*

## 5.1 INFORMATIVE NOTES

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

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

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

## 5.2 GENERAL SAFETY PRECAUTIONS

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

- Mechanical maintenance
- Electrical maintenance

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

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

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

Before starting any maintenance operation, the maintenance engineer must:

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

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

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

## 5.3 MAINTENANCE OPERATIONS

### ***Caution!***

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

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

#### ***Every day***

- Check that the collection container is not full; it is recommended to empty the collection container when the collected material fills ¾ of its maximum capacity.
- Check the conditions of the suction flexible hose and of the accessories to be used. Any hole, crack or fissure in the flexible hose will reduce suction power and disperse the vacuumed dust into the environment.

#### ***Every week***

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

#### ***Every 6 months***

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

**Warning!**

*To ensure the vacuum efficiency and safety, HUUUVAN recommends a site visit by a Huuvan engineer or an overhaul at the Manufacturer's technical service workshop every 24 months.*

**Warning!**

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

**Warning!**

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

## 5.4 REPLACING THE FILTERS

To replace the filters, proceed as follows:

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

***Important!***

***Wear individual protection devices.***

- Release the two retainers that hold the motor head in place. Lift the motor head and rest this on a flat surface being careful not to damage the power cable.
- Turn the two side levers that lock the removable container fully forward



- Remove the container.



- Remove pin (A) and split-pin (B) that lock the filter on the shaking lever from under the vacuum cleaner.



- Lift the complete support filter.



- Loosen the clamp and remove the support ring with seal.



- Remove the knots and take out the pocket filter. Fit the new filter and put everything back in place, locking the cap.

**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 TROUBLESHOOTING

<i>Fault found</i>	<i>Possible fault</i>	<i>Recommended remedy</i>
<i>The cleaner fails to start</i>	No power	Check the power mains supply Check the integrity of the plug and power cable
	Thermal magnetic switch tripped	Reset the thermal magnetic switch
<i>Dust is leaking out</i>	Perforated vacuum pipe	Replace the pipe
	Filter unsuitable for type of job	Fit a suitable filter for the type of material to be vacuumed
<i>The vacuum cleaner does not work as it should</i>	Pipe perforated or blocked	Check the pipe and, if necessary, replace it
	Container full	Empty container
	Filter blocked	Clean the filter and if necessary change it.
	Seals worn	Check the seals and, if necessary, replace it
	Air leak	Check for any air leaks out of closing fasteners, tightening screws, container or filter chamber
<i>Motor very noisy.</i>	<i>Contact Huuvan Customer Support: 0845 33 77 695</i>	

**Warning!**

*For any other problems, contact the Huuvan after-sales helpline.*



**We supply a full range of cleaning equipment for rental or purchase.**

**For more information, or a cleaning solution to suit your business, please get in touch –**

For a more comprehensive product range, please visit our website.

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