

**Manual for Industrial Vacuum Cleaner IVC-45L**



# Manual for Industrial Vacuum Cleaner IVC-45L

## 1. Introduction

### 1.1 Summary

IVC-45L is an industrial vacuum cleaner specially designed for grinding machines. It mainly uses cyclone separator and HEPA-13 as the filtering device. The cyclone separator is responsible for filtering most of the dust particles. A small part of the lightweight dust is filtered by HEPA-13. This is a high-performance dust collection system, designed to meet the OSHA Table 1 requirements for the Respirable Silica Rule.

### 1.2 Liability

We make every effort to make this manual as complete and accurate as possible, and we are not responsible for any errors or loss of information. Xingyi reserves the right to change the instructions in this manual without prior notice.

This manual is protected by copyright law and can not be reproduced or used in any part without the express written consent of Xingyi.

### 1.3 Manual

In addition to general functions, this manual also provides information on the use, repair, maintenance, and safety.

### 1.4 Transportation

Always ensure that the vacuum dust bags have been removed, and other particles before transporting, or lifting. Make sure the vacuum cleaner is securely fastened and remember to lock the wheels to prevent the device from moving during transportation. Ensure that the safety straps or other device used for anchoring during transportation are tightened on non-moving parts such as dust trays or handles on both ends of the dust tray. When lifting the machine, be sure to use the designated lift points on the machine.

### 1.5 Accessories

The product mainly includes the following accessories, please contact the retailer if anything is

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missing.

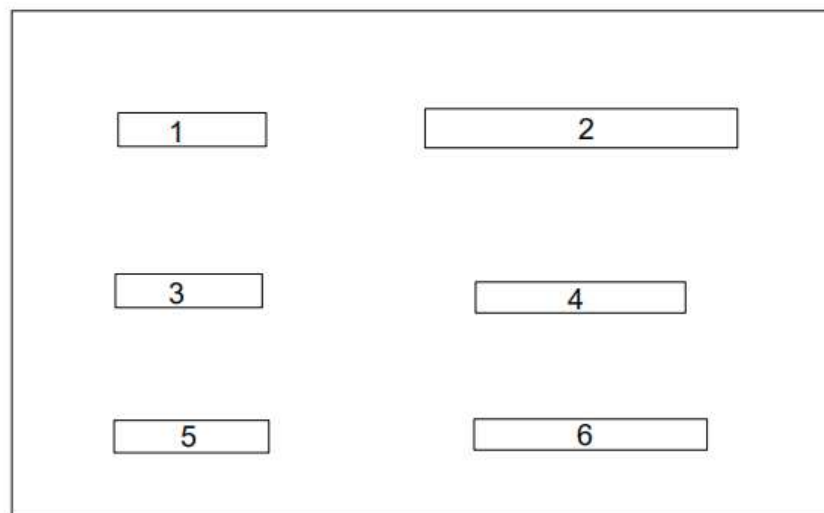
- (1) Vacuum cleaner x 1set
- (2) Manual x 1
- (3) 3" Hose x 1 (80 vacuum hose \* 15 meters)
- (4) Quick connector x 1(set)
- (5) Hose clamps x 2pcs
- (6) Longo Pak x 2 (bags)
- (7) Power plug x 1
- (8) Nylon cable ties x 2 (bag)
- (9) Squeegee x1 (set)

## 1.6 Package Acceptance

Check carefully to see if the package or the vacuum cleaner has been damaged during delivery. If there is any sign of damage, contact your supplier and report it. Check that whether the delivery matches the order. If there are any discrepancies, contact your supplier.

When lifting the machine, be sure to follow the prescribed steps.

## 1.7 Machine nameplate



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- |                      |              |
|----------------------|--------------|
| 1. Model             | 4. Voltage   |
| 2. Manufacturer date | 5. Weight    |
| 3. Power             | 6. Frequency |

## 1.8 Handling and storage

The vacuum cleaner should be stored in a dry place at room temperature when not in use, otherwise it may be damaged by condensation or cold. The size and weight of the cleaner are given in the technical data section of this manual. Note! Improper operation may lead to the vacuum cleaner overturned and damaged, even endanger personal safety. When lifting the machine, be sure to follow the prescribed steps.

## 2. Safety instructions

### 2.1 Overview

This manual records the key information for machine safety operation. Read the manual carefully before your first operation. Any non-standard operation, modification or maintenance without training may cause an unknown impact on the machine, losses, machine problems or injury. All maintenance must be done by qualified professional technician. Any machine parts that need to be changed must be provided by XINGYI.

Notes:

1. Read and understand this manual completely. Different models have different accessories and operation instructions.
2. Operation of this machine only needs one person. Keep children and irrelevant people away.
3. This machine is only suitable for vacuuming during dry grinding.
4. Do not start the machine without dust bag installed.
5. There are two working positions for the filter barrel of this machine. The functions of

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different positions are described in the relevant picture content in this manual.

6. Do not lend or rent the machine without the instruction manual.
7. Dust masks, protective gloves, work clothes, helmet and insulated shoes, and safety glasses are necessary when operating the machine. Refer to OSHA Table 1 for complete requirements.
8. Keep body, jewelry or any loose clothing away from machine moving parts. Otherwise, it may endanger personal safety.
9. Random modification of the machine is not allowed. Only XINGYI accessories can be used for maintenance and adjustment.
10. Do not operate the machine in rainy or wet conditions.
11. Ensure no explosive flammable materials are nearby when operating the machine. Do not operate the machine nearby fuel, grain dust, solvents, dilution agent or other flammable items.

## 2.2 Operational safety guidance

1. Operators should wear dust masks, protective gloves, work clothes, helmet and insulated shoes, and safety glasses are necessary when operating the machine. Refer to OSHA Table 1 for complete requirements.
2. Make sure there is no oil leakage, electrical shorts, water leakage on the machine before use. This machine should be used for its designed purpose only.
3. Before the operation, please check the integrity of the machine to ensure that the machine operation control and the electrical parts are free of moisture.
4. Make sure no obstacles or people are in the working area. Be sure there is enough lighting.
5. Double check before connecting to power, make sure the working voltage, HZ is same with input voltage and HZ, no lack of phase of input power. (If the machine does not work normally, because the input power and working power is not the same, the manufacturer's warranty does not apply).
6. The machine should be connected to an appropriate electrical outlet. Only use power cables that are rated for the required voltage and amps with a grounded connection.

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7. Connecting with a grinder to achieve dust-free working conditions.
8. Keep the machine away from drains and furnace mouths or other dangerous goods, otherwise it may cause personal injury or loss of machinery and property.
9. After confirming the working position, lock the wheels.
10. Lift the filter bucket to working position.
11. Do not adjust the lifting support during operation.
12. Observe the value on the pressure sensor after the device has been running for a period of time. If the value is too high (about 15kpa), it indicates that the suction hose is blocked. Please shake the hose to clear it.
13. After the equipment has been running for a period of time, observe the amount of dust in the dust bag and replace as needed.

## 2.3 Electrical Safety guidance

1. All circuit repairs can only be performed by professionals.
2. Note: After the machine is stopped, the line is still powered. Turn off all power before servicing the machine.
3. The machine is equipped with an overload protection device, and it will automatically turn off when the machine is overloaded, to prohibit the machine from running. Continuing to run the machine in an overloaded situation may cause damage to the machine. The manufacturer's warranty will not cover.
4. If the machine current is overloaded, please shut it down immediately.
5. When the cables are energized or loaded, do not connect, or disconnect the plugs.
6. Using a damaged power cord may result in electrical shock. NEVER use a damaged power cord.
7. Wires should be kept away from hot surfaces.
8. All electrical equipment in the machine should always be kept dry. The machine should be stored in a dry place.
9. The machine motor and electric control box should be kept dry (damage caused by water

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inflow can cause the machine to not work properly, the manufacturer warranty will be voided).

10. The machine must be connected to the required wire and voltage; specifications are noted by the manufacturer. (The machine label indicates the power supply specifications).

## **3. Machine Description**

### **3.1 Overview**

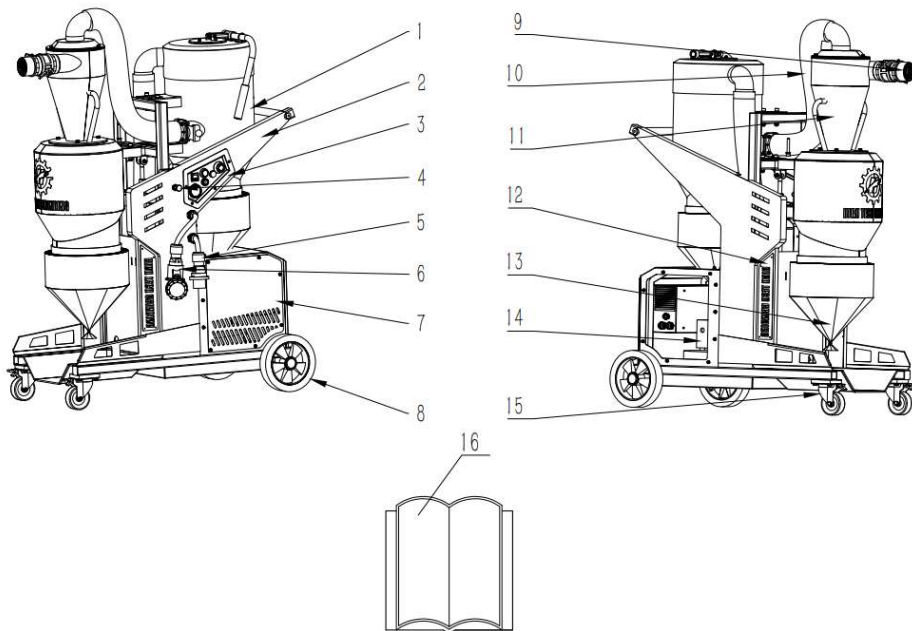
IVC-45L is a vacuum cleaner mainly used for industrial and construction purposes. Its main function is to absorb dry dust particles, such as dust generated in the process of grinding concrete, stone, and wood. The vacuum cleaner has two filtering systems, the cyclone is the main filter, and the HEPA-13 filter barrel is the secondary filtering device. The vacuum cleaner is equipped with a

quick connector, which can be used to securely connect with various grinding machines for dust removal. The primary filtration system in the vacuum cleaner is a cyclone separator, which main function is to filter larger particles of dust, so most of the dust will be filtered here. The remaining small dust particles will be filtered by the secondary filter system HEPA-13 filter barrel. Therefore, the vacuum cleaner has high dust filtering efficiency, high performance, and long service life.

### **3.2 Machine description**

#### **3.2.1 Machine parts**

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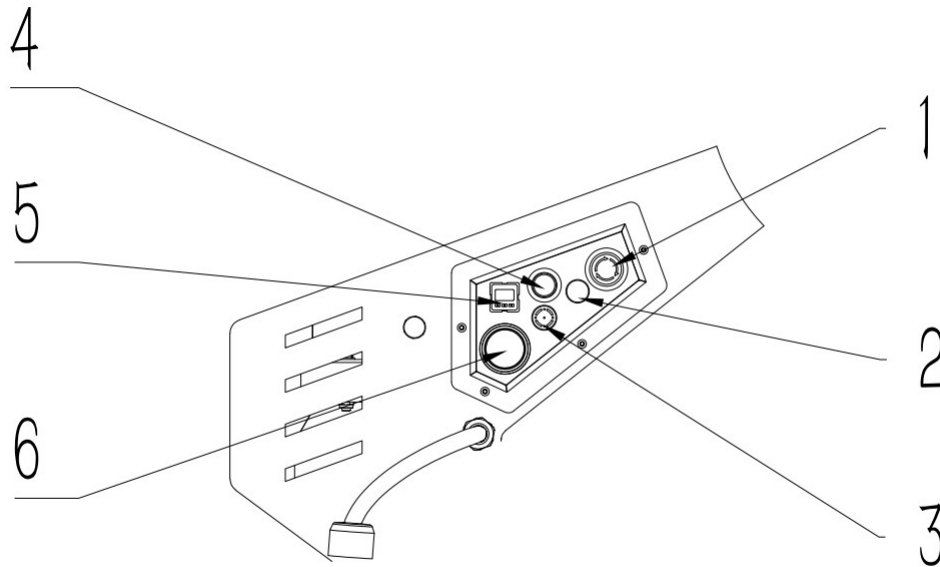
1. Filter barrel assembly
2. Rack components
3. Control panel
4. Index reset pin
5. 4-core male connector
6. 4-core female connector
7. Fan cover assembly
8. Wheel

9. Quick adapter
10. Hose
11. Centrifugal bucket assembly
12. Decorative sheet metal
13. Dust bag
14. Vortex fan
15. Universal wheel
16. User manual



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## 3.2.2 Control Panel Information



1. CFM Control knob: This potentiometer can increase or decrease the working CFM of the machine.

2. Green indicator light: when working, the light will be on

3. Buzzer: Negative pressure 30kpa, sound an alarm

4. Start Switch: To start the device

5. Pressure sensor: Displays the current vacuum pressure in filter bucket. When the value of pressure gauge (not considering the symbol) becomes larger and larger, it means that there is dust clogging in the suction hose or excessive dust accumulation on the filter. Then, shake the vacuum hose to clear it.

6. Timer: shows the cumulative running time of the device.

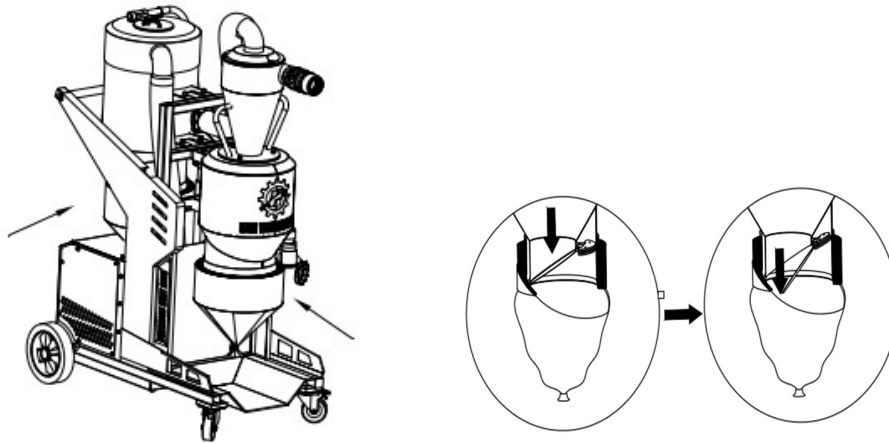
## 3.2.3 Cyclone pre-separator bucket

The cyclone pre-separator is a cyclone type structure. Its working principle is that the tangential introduction of the air flow causes a rotary motion, so that the solid particles or droplets with large inertial centrifugal force are thrown to the outer wall surface and separated, which has a high efficiency. The cyclone barrel is also equipped with a quick connector, which can be connected securely and quickly to the grinder or other equipment.

Most of the dust is separated in the cyclone pre-separator, and the separated dust mainly falls on

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the inside of the bottom of the cyclone barrel. There is a locked rotating mechanism and a dust bag located under the cyclone pre-separation barrel. When the dust in the barrel accumulates to a certain amount, due to gravity, the locked rotating mechanism will be unlocked, and the dust will fall into the dust bag.



## 3.2.4 Filter barrel

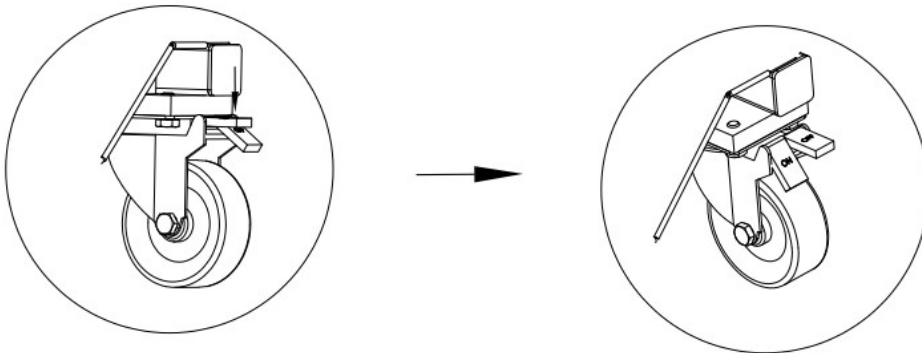
The filter element barrel is mainly composed of a filter element device. Due to the absorption effect of the filter element, the dust in the air will be absorbed on the surface of the filter element when passing through the filter element device or fall on the lock mechanism of filter barrel due to gravity.

Due to the absorption effect of the filter element, it will absorb too much dust and affect the efficiency of filtration. Therefore, a cleaning device (filter shaker) is installed on the filter barrel. The dust cleaning device can clean the dust on the filter element and improve the filtering efficiency. Operation mode of cleaning device is detailed in this manual.

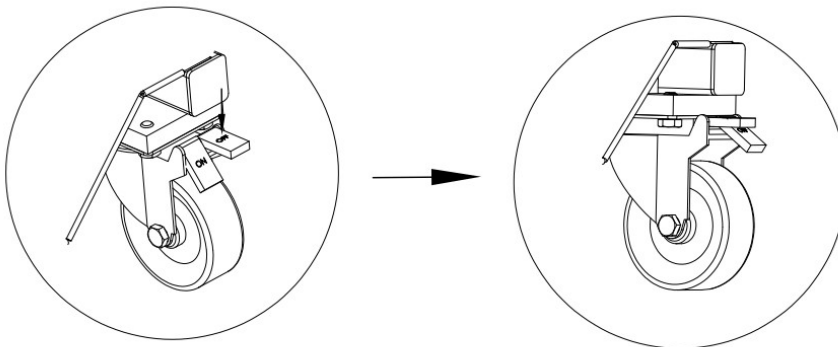
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## 3.3 Wheel brake

To lock the rear wheels, press the brake pad "ON" to lock the wheels.



If you want to unlock the locking rear wheel, press the brake pad "OFF" to unlock it.



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## 4. The Machine Operation

### 4.1 Overview

The following sections describe the vacuum cleaner at different locations during operation, the main operation, and how to install the longpac dust bag.

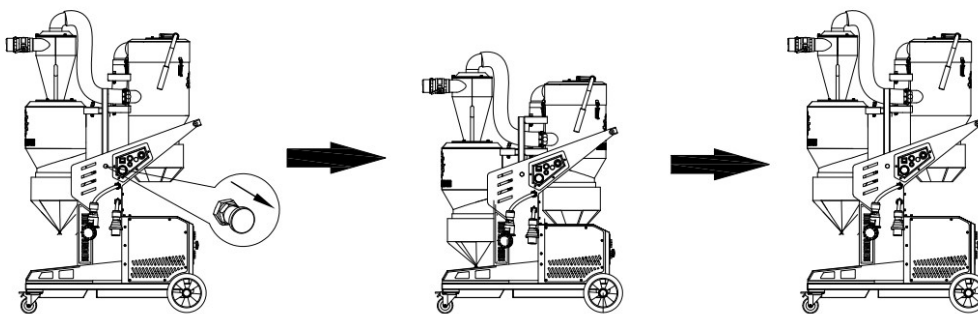
**Note:**

1. Vacuum cleaners can only be used or repaired by personnel who have received the necessary theoretical and practical training and have carefully read the user manual.
2. Wear protective equipment such as protective gloves, protective masks, overalls, helmets, insulated shoes, and safety glasses when operating the vacuum cleaner.
3. The vacuum cleaner can only be used and moved on a horizontal surface. There is a risk of injury when the wheels roll, so always use caution.
4. Check the minimum recommended cable area before using the extension cable. You can find the recommended cable area on the technical data.

### 4.2 Machine position Description

#### 4.2.1 Machine working position

To use the vacuum cleaner, pull out the spring pin from the locking device on the frame, lift the machine to the highest position, and then insert the spring pin inside the corresponding hole.

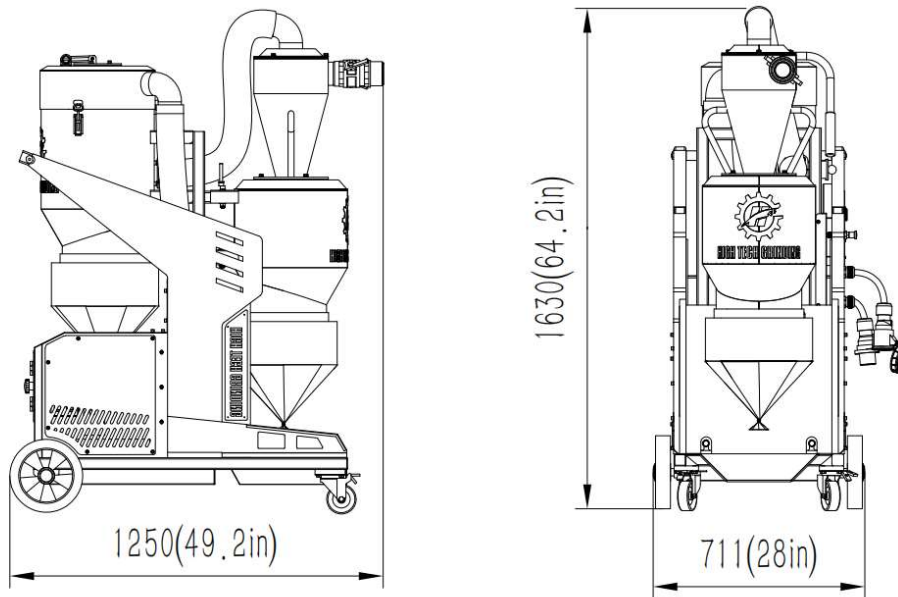


#### 4.2.2 Machine transportation position

When the machine is not in use, first gently lift the machine to pull out the spring latch, then press the machine down to the lowest position, the spring latch will lock into the control panel rack, keeping the machine from floating.

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The package size is as follows.



## 4.2.3 Notes

1. Improper operation may lead to the vacuum cleaner being overturned and damaged or endanger personal safety.
2. When the spring bolt is pulled out (inserted in), it may get stuck. At this time, you only need to press the machine down and then you can pull out the spring pin.
3. Be careful when the vacuum cleaner is adjusted to the position of transportation and there is a risk of pinching injury.
4. Dust inhalation is harmful. Always wear a dust mask when changing the bag to limit exposure to respirable silica dust.

## 4.3 Connection of hose and vacuum cleaner

The IVC-45L is equipped with an 80mm connector, which can quickly and securely connect the grinder to the vacuum cleaner.

## 4.4 Start and stop the vacuum cleaner

1. Connect the vacuum cleaner to power supply. Use cables suitable for vacuum cleaners (see technical data for minimum cable requirements).

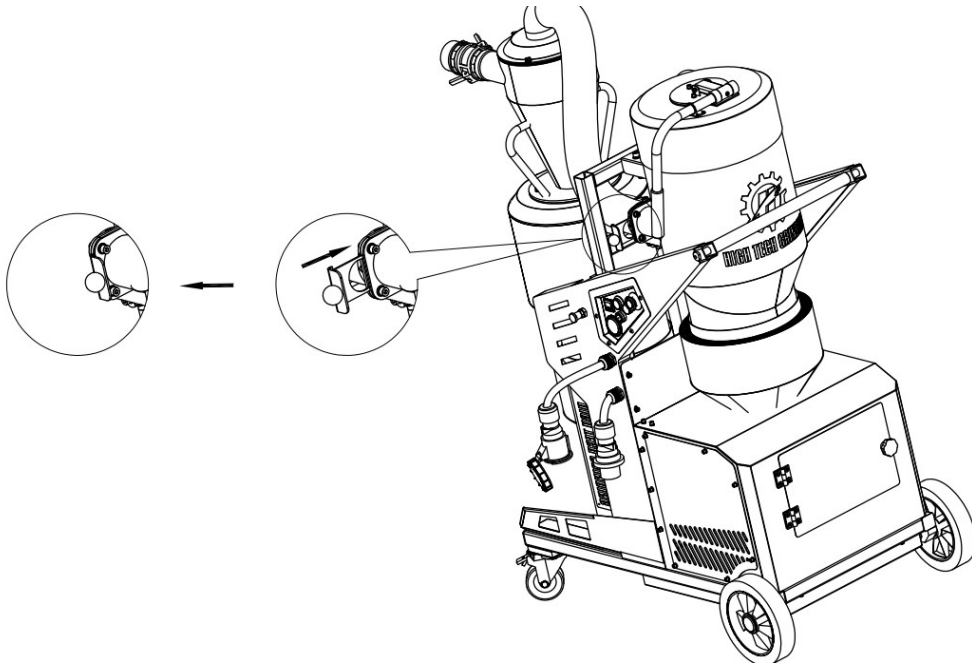
Start the vacuum cleaner: Rotate the start switch clockwise.

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2. Stop the vacuum cleaner: Rotate the start switch counterclockwise.

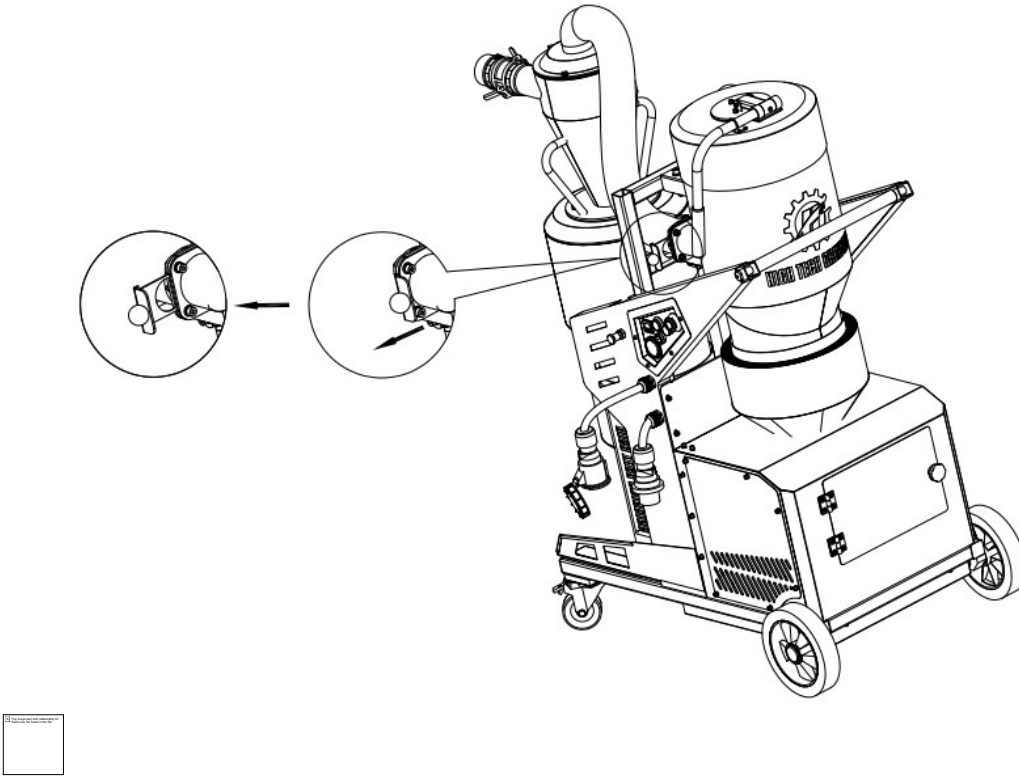
## 4.5 Sliding Valve

The sliding valve is installed between the cyclone separation barrel and the filter element barrel. When the sliding valve is opened, the air filtered through the cyclone separation barrel will be filtered through the filter element barrel for a second time.



When the sliding valve is closed (push the valve up), the cyclone separator bucket stops vacuuming, and then the filter element bucket is in an appropriate vacuum state.

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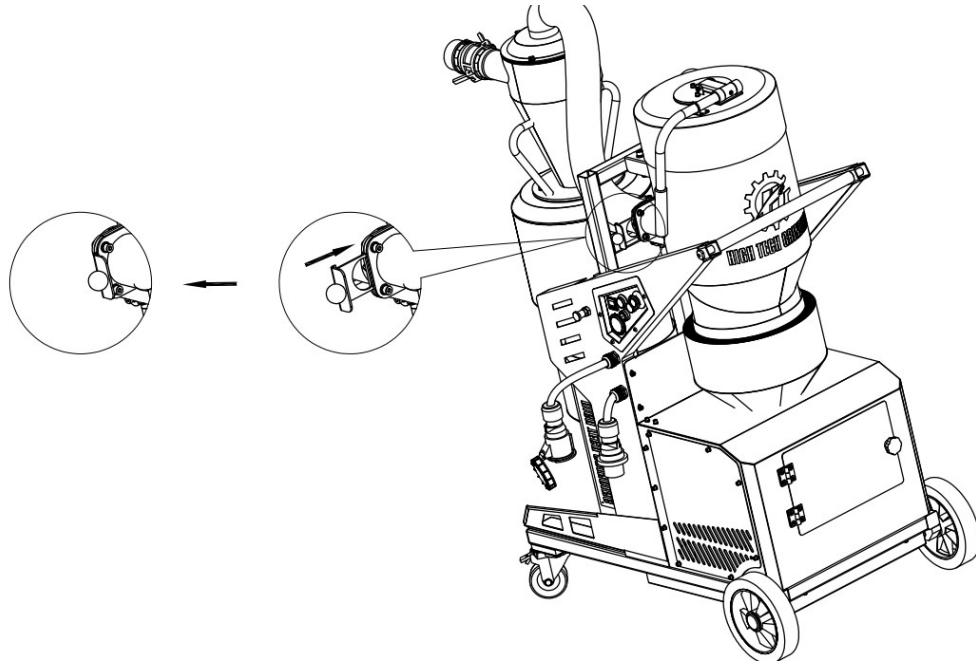
## 4.6 Manual cleaning device

The manual cleaning device (shaker) is mainly used to clean the filter element with the sliding valve. To ensure the effective cleaning of the filter element, all gaskets on the vacuum cleaner should be checked first to ensure its seal.

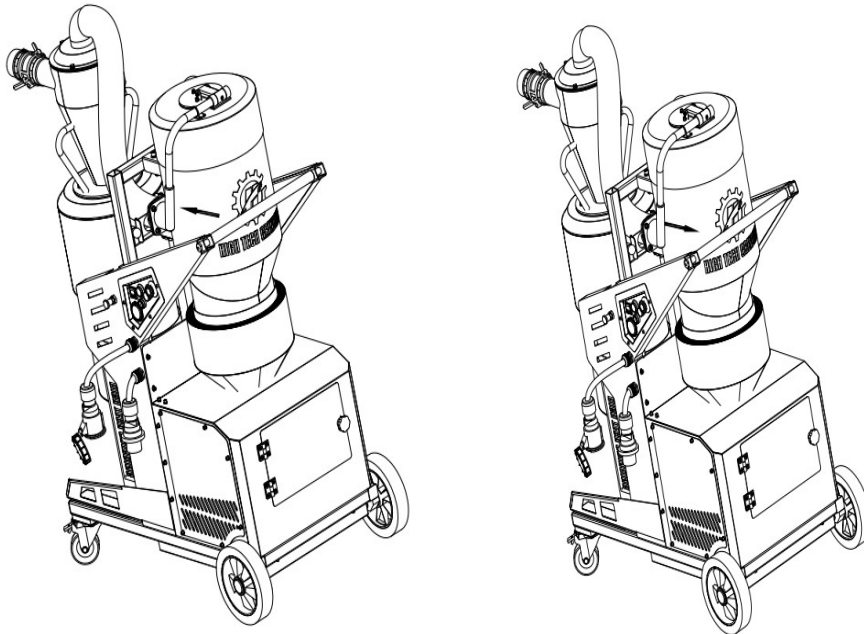
After the vacuum cleaner has been working for a period of time, the ability of the filter element to absorb dust is reduced, and a manual dust removal device can be used to clean the filter element. The sliding valve is mainly used to close the air circulation between the cyclone separation barrel and the filter element barrel, so that the inside of the filter element barrel forms an appropriate vacuum state to achieve a more effective cleaning.

1. Insert the slide valve to the end position and wait for about 5 seconds.

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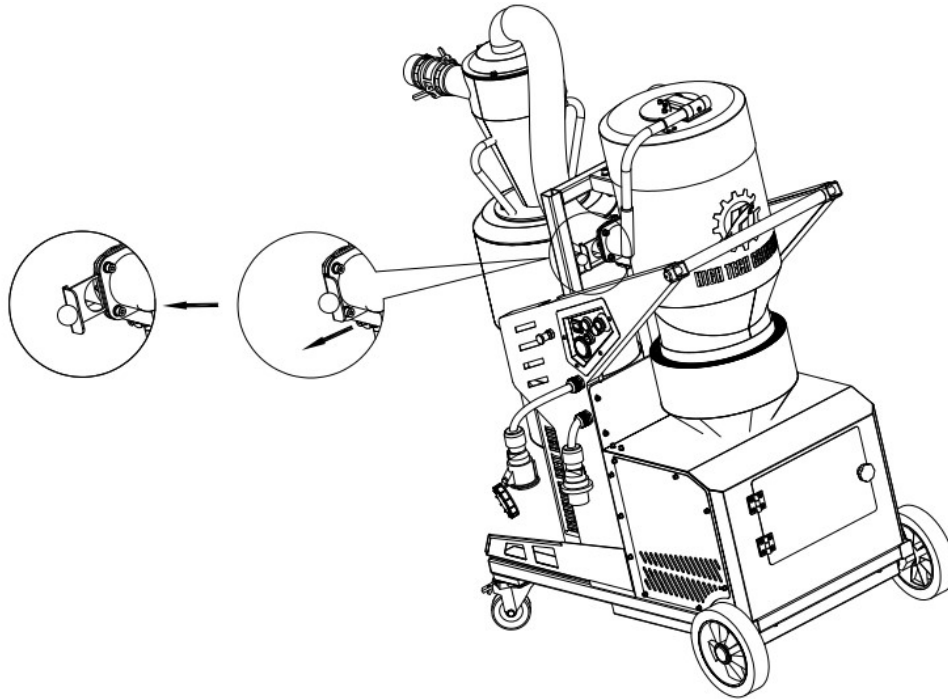
2. Press the handle up quickly to open the valve cover and release the handle after about 2 seconds.



3. Wait 3-5 seconds, and then repeat "Step 2" at least four to five times.
4. After cleaning, return the sliding valve to the normal working condition



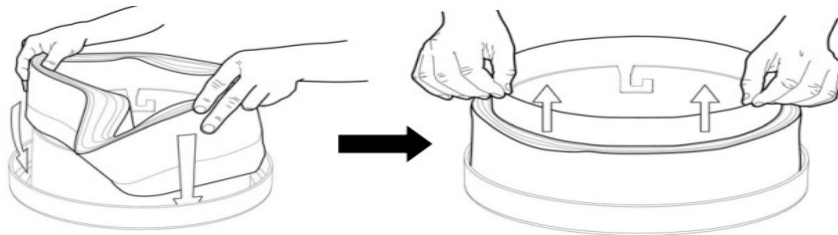
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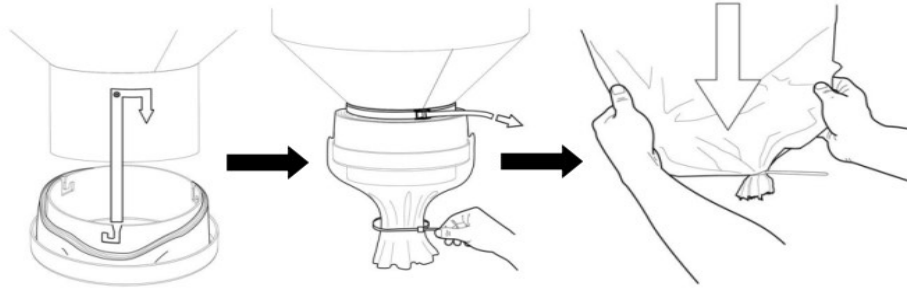
Note: The interval of manual cleaning depends on the actual amount of dust but should be done at least once every 20-30 minutes.

## 4.7 Dust Collecting System

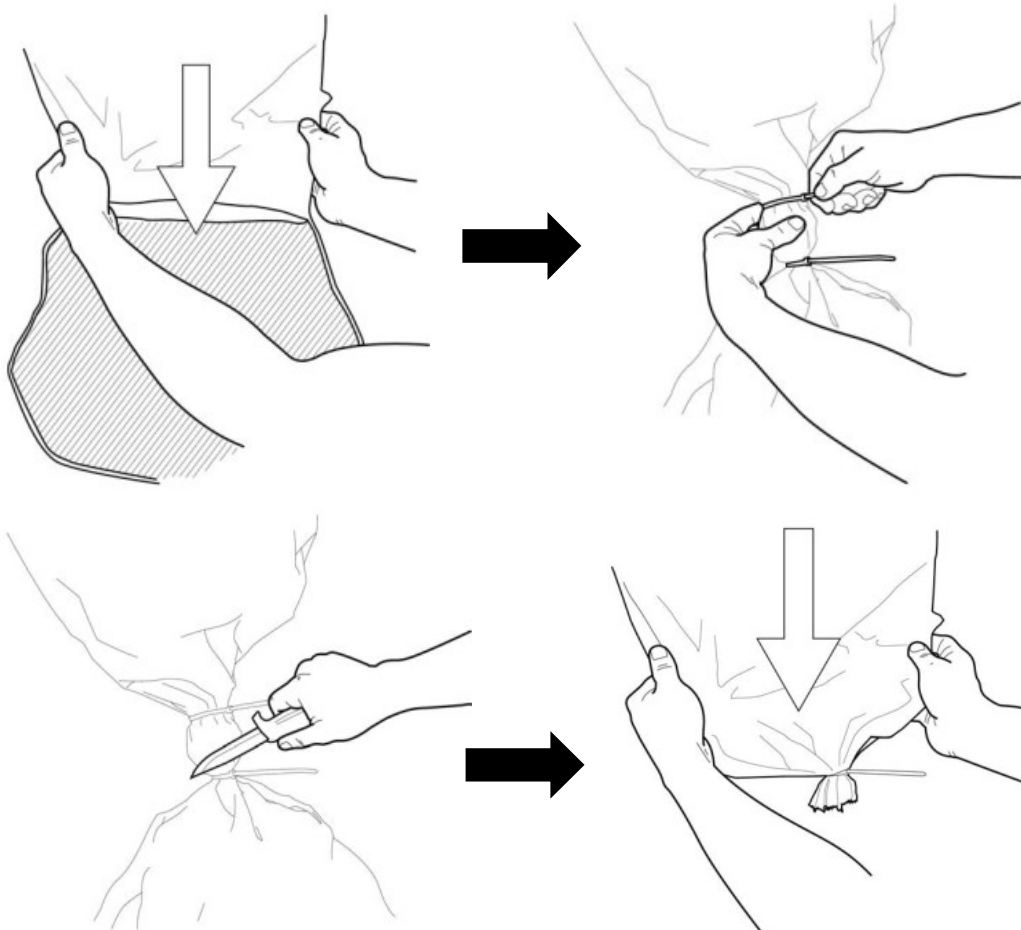
The vacuum cleaner is equipped with a set of collecting device, which is mainly composed of a dust bag hanging barrel and continuous bag system. Install the dust bag on the hanging barrel, and then install the barrel under the cyclone separation barrel and the filter barrel respectively. Before the vacuum cleaner is ready for work, pull the dust bag from the hanging barrel and tie it with a cable tie to prepare for dust collection.



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After the vacuum cleaner has been running for a period of time, the dust in the dust bag has reached a certain amount, remove the dust bag and prepare for the next dust bag.



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## 5. Maintenance

### 5.1 Overview

It is recommended that the vacuum cleaner be checked regularly to extend the service life.

**Note:**

During the maintenance and repair process, the power supply of the vacuum cleaner must be disconnected. Wear protective equipment such as safety shoes, protective gloves, protective masks, and safety glasses.

### 5.2 Daily Inspection

Check that the accessories connected to the vacuum cleaner are intact, without any cracks, etc. In addition, make sure that the air can flow without obstruction. If necessary, the hose can be replaced.

Check the dust cleaning device: check the suction pipes in the barrel for any damage, and for any impurities or debris; Check the sealing ring and the sealing strip are intact and replace them if necessary. Check the cartridge barrel cover is sealed on the surface of the cartridge barrel.

Check the cyclone separator: lower the vacuum cleaner to transport position, disassemble locking buckle and take off cyclone barrel cover. Use a flashlight to illuminate the cyclone separator. The surface of separator should be dull. If there is a light spot on the surface, the separator is blocked and needs to be cleaned.

Check the filter barrel: lower the vacuum cleaner to the lowest transport position, disassemble locking buckle and remove the filter barrel cover. Take out the filter to see if it is covered with dust, if it is, put it in a plastic bag for cleaning.

Check the internal hose: check that the internal hose is intact and replace the hose if necessary.

Check draught fan: remove the fan cover, check whether the fan is blocked by dust, and clean it if necessary. While the machine is running, listen carefully for any harsh sound coming from inside the fan cover.

Check the tightness of the accessories: check all bolts and screws for tightness every six months.

**Note:**

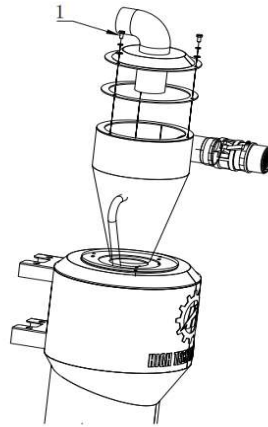
Turn off the start switch and disconnect the power before checking. When lowering the vacuum cleaner to the transport position, wear protective gloves to avoid the risk of pinching. When carrying out the inspection, wear a protective mask to avoid inhalation of dust.

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## 5.3 Cleaning

### 5.3.1、 Clean cyclone separator

Press the emergency stop button and disconnect the power. After stopping the machine, lower the cyclone barrel to the transport position and loosen the three bolts on the cyclone barrel, (Figure 1).



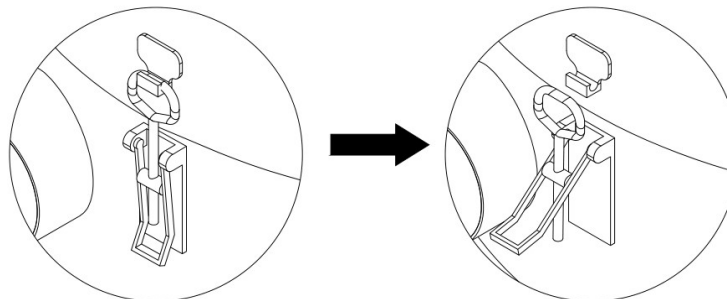
Remove the cover from the integrated bucket, remove the suction hose from the cyclone, illuminate it with a flashlight, check if the inside is blocked, and clean the inside of the cyclone if necessary.

### 5.3.2 Clean the filters

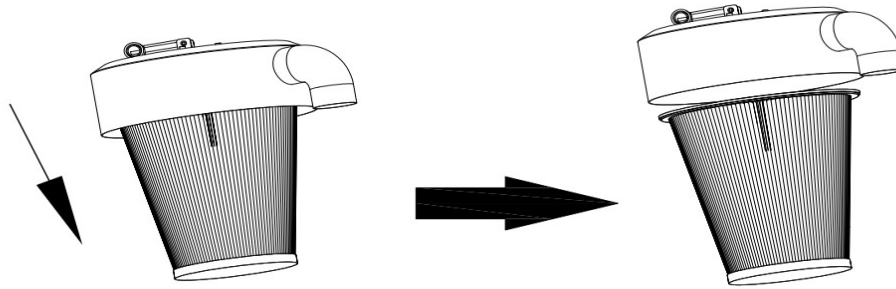
Enter the manual cleaning mode, and after repeated many times, the filter element can be cleaned.

To clean the filter element thoroughly, remove the filter element for cleaning.

Rotate the start switch to the off position and unplug power supply to stop the machine. Adjust the device to transportation position. Loosen the three tower buttons on the filter cover and turn the filter counterclockwise to remove it.



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## 5.4 Overloading Protection

The electric control box is equipped with a thermal relay. When the current exceeds the set value, it will enter overload protection status. In this case, just open the electric control box and press the reset button to solve it.

## 5.5 Maintenance items

Any repairs must be performed by Xingyi Service Center training service personnel and use original Xingyi accessories. If your machine needs repair, please contact your retailer.

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## 6、Frequently Asked Questions and Solutions

This chapter describes some of the possible failures and how to handle them. If you still can not resolve or have an error, please contact your nearest retailer.

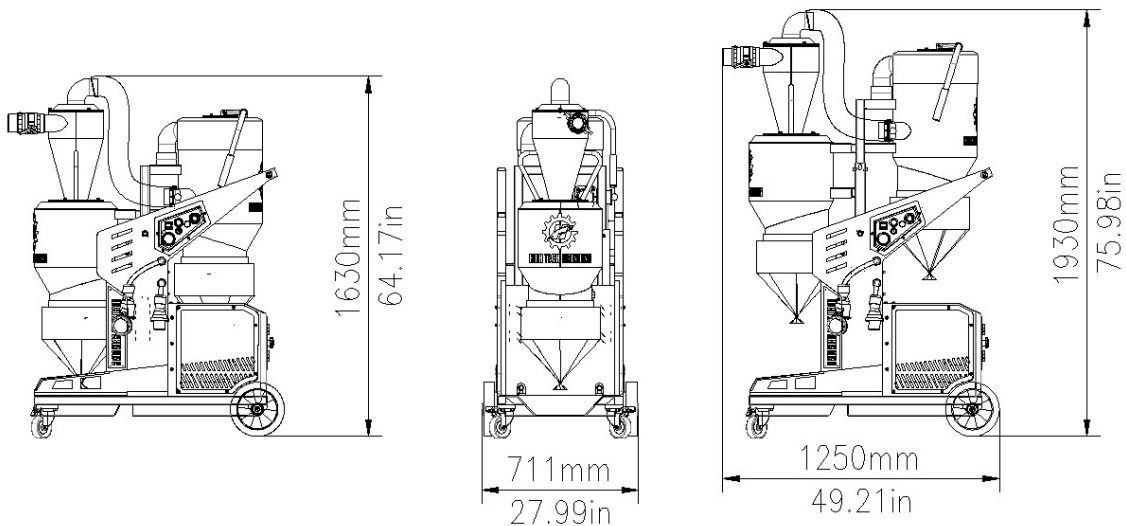
Problem	Possible reason	Solution
Machine can not start	The machine does not receive or output power	Connect the power cable to machine and start up
	Motor protecting has tripped	For the operation steps,see 5.5 Overloading Protection
	Cable damages	Contact a licensed electrician
	Control circuit damage	Contact a licensed electrician or Xingyi Service center
The vacuum cleaner stops after starting	Some objects obstruct airflow	Clean hoses , filters etc.
	Relay overload protection	For the operation steps,see 5.5 Overloading Protection
The machine emits a low buzz when turned on and off	Phase lost input, currently only two phase inputs. Turn off the machine to avoid burning the motor.	Contact a licensed electrician or check the input power has three -phase input.
	Dust in the motor impeller	Contact a licensed electrician
	Motor burned up.	Contact a licensed electrician or Xingyi Service center
The machine is blowing, not sucking.	Phase relay failure	Contact a licensed electrician to adjust the position of L1 and L3 wires on the power plug and replace the phase relay if necessary.
Poor suction performance	Maybe that the vacuum system is not sealed.	Check and repair the seal.
	Cyclone separator or filter clogged	Use a compressed air or brush to clean the cyclone and filter.
	Hose blockage	Shake suction pipe wavily
The machine is blowing dust	Incorrect installation of the filter	Install the filter correctly
	Filter has been dislocated	Reinstall the filter
	The filter is broken	Replace with new filter
Cyclone separation bucket does not work	The dust is too light and too thin	
	Cyclone blockage	Clean the cyclone( see above).

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## Technical Data

Tables and pictures show the technical data and dimensions of the vacuum cleaner

IVC-45L	
Power (KW)	5.5
Rated Voltage (V)	480V/240V (3P)
Rated Current (A)	13.3/25
Max.Suction (Kpa)	30
Max. Airflow ( $m^3/h$ )	600
Recommended minimum cable size ( $mm^2$ )	3*4+1*2.5
Overall Filter Area ( $m^2$ )	2.8
Filter Degree	HEPA 13
Weight (kg)	223.5
Size, (L x W x H) (mm)	1250*711*1930
Lifting Size (mm)	1250*711*1630



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## **8. Warranty**

This warranty covers only manufacturing defects. Xingyi does not assume damage in the transport, unpacking or operation. The manufacturer is not responsible for any damage or defects caused by improper use, corrosion or modifications of the electrical system, or use beyond the noted specifications. The manufacturer shall not be responsible for any indirect damage or expense under any circumstances. For complete information on the manufacturer's warranty period, please refer to the current warranty terms of Xingyi. Local retailer may has special warranty terms. If you have any questions about the warranty terms, please contact your retailer.