



# HVLS Ceiling Fan

## OPERATION INSTRUCTIONS

For after-sales service:

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Before operating this series unit, please read this manual carefully.

## Features and Uses

1. The rare earth NdFeB permanent magnet synchronous external rotor motor directly drive the fan blade.
2. The blade is made of high-strength aluminum alloy material, with high lift-resistance ratio aviation airfoil design.
3. The installation hanger adopts adjustable structure and automatically adjusts the perpendicularity.
4. Suitable for houses, classrooms, offices, shops, hospitals, supermarkets ,hotels and many other public places for ventilation and improving environment.

## Operating Instructions

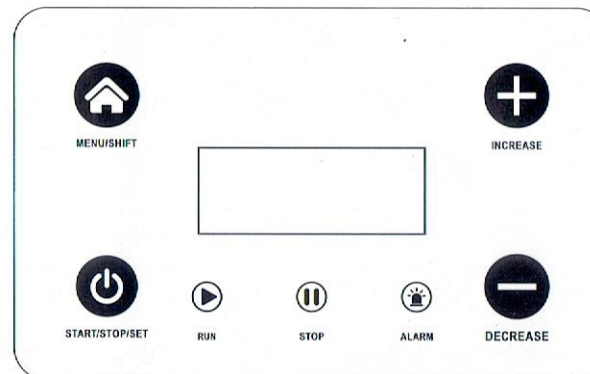
1. Please refer to the installation and operation specification before installation. Check the spare parts carefully to prevent bumping or damage during transportation.
2. The ceiling fan should be used at the voltage and frequency specified in the nameplate and should not be used in excessively wet or corrosive environment.
3. The ceiling fan is controlled by the inverter. Press the "START/ STOP" button, the "RUN" indicator lights up and the ceiling fan runs.
4. The air volume can be adjusted by the key of "INCREASE" and "DECREASE".
5. When turning off the ceiling fan, please press the "START/ STOP" button. The "STOP" indicator lights up and the ceiling fan stops running.








## Specification

Item Model	Speed rpm	Air volume m³/min	Frequency (Hz)	Power W	Noise dB(A)	Wind coverage area m²	Best Use Area m² Wind speed ≥ 1m/s	FAN BODY (Motor+Blade+ Connecting square tube) weight (Kg)
HVLS-14X	70	6750	28	340	39	465	185	41
Remarks	1. The data comes from the laboratory test report, and the data will be different in different test environments and conditions. 2. The above technical parameters are subject to change without prior notice.							

## Button icon/indicator icon

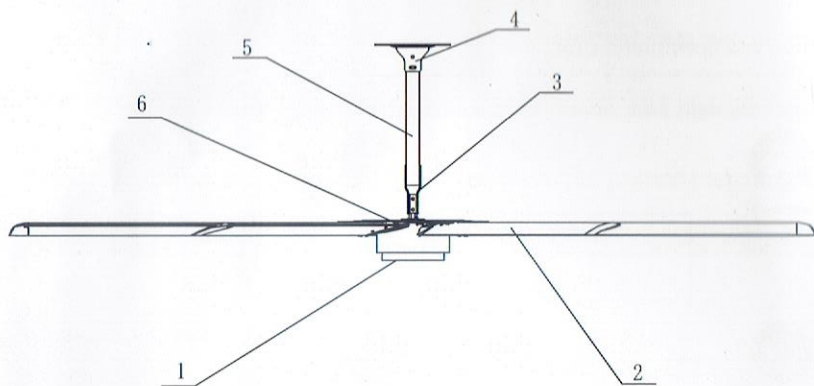
### Definition and operation instructions



Button icon/indicator icon	Definition and operation instructions
 MENU/SHIFT	"MENU/SHIFT" button Click to view parameter function. Press as 2 seconds to enter the I-level menu; Press SHIFT button for the other level menu. Click to return to the upper level menu.
 START/STOP/SET	"START/STOP/SET" button Click as Run/Stop/Set; Or input password 1/2/3 to click for confirmation.
 INCREASE	" INCREASE" button Click to increase speeds; Single click or hold down to add parameter values.
 DECREASE	"DECREASE" button Click to reduce speeds;Single click or hold down to reduce parameter values.
 RUN	"RUN" indicator light Light on when running and light off when stopping.
 STOP	"STOP" indicator light Light on when stopping and light off when running.
 ALARM	"ALARM" indicator light Light on in faulty state and light off in non-faulty state.



## Installation Diagram



1. Permanent magnet synchronous external rotor motor 2. Blade  
3. Motor mounting parts 4. Mounting bracket 5. Connecting square tube  
6. Blade flange

## Installation dimensions and wiring

### 1. Ceiling fan

The ceiling fan is installed in hoisting mode as shown in Figure 2-1, Figure 2-2, and Table 2-1.

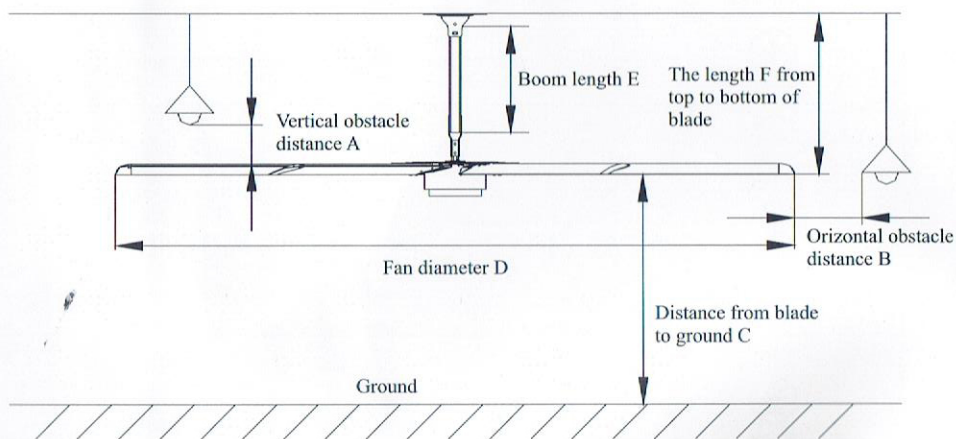


Figure 2-1 Single ceiling fan

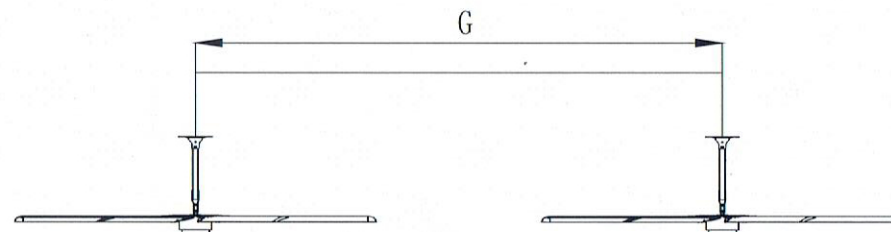


Figure 2-2 Two ceiling fans

Model	Vertical obstacle distance A	Horizontal obstacle distance B	Distance from blade to ground C		Fan diameter D	Boom length E	The length F from top to bottom of blade	Installation spacing G
			Minimum height	Optimum height				
HVLS-14X	$\geq 300\text{mm}$		3m	3~4m	4200mm	Hoist length is 500mm and customized according to site requirements	660mm	5~12m

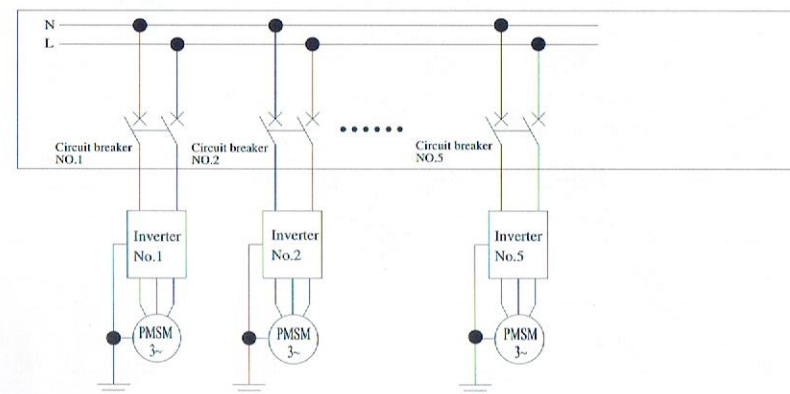
Table 2-1

### 2. Wiring

Power input cable (single-phase power supply as example)

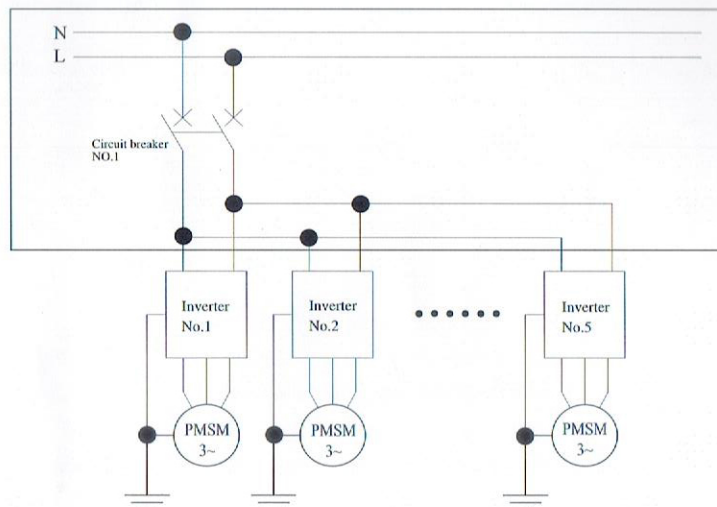
The power distribution terminal for the customer is in the table. 3m power cable of the control box is provided as standard. If the required power cable length exceeds 3m, route cables accordingly.

1) Distributed wiring diagram, power cable and circuit breaker specifications.



Model		HVLS-14X				
Description	Quantity	1	2	3	4	5
Cross-sectional area of main power cable (mm <sup>2</sup> )		0.75	1	1.5	2	2.5
Circuit breaker Specification (A)		6				
Cross-sectional area of incoming power cord of control box (mm <sup>2</sup> )		0.75				

## 2) Centralized wiring diagram, power cable and circuit breaker specifications



Model		HVLS-14X				
Description	Quantity	1	2	3	4	5
Cross-sectional area of main power cable (mm <sup>2</sup> )		0.75	1	1.5	2	2.5
Circuit breaker Specification (A)		6	10	16	20	25
Cross-sectional area of incoming power cord of control box (mm <sup>2</sup> )		0.75				

## Product advantage

### 1. Permanent magnet synchronous external rotor motor

Features: High efficiency and energy saving (85% efficiency), small size and light weight;



### 2. Blade

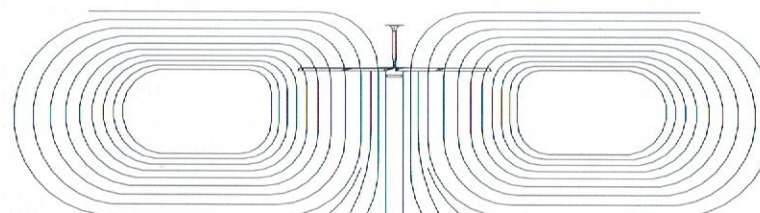
Features: Aviation blade design and high-density aluminum alloy material as high strength, impact resistance, long service life, product air volume, high wind pressure, uniform air volume, high efficiency and energy saving.



### 3. Product performance

Omnidirectional natural wind covers super large area. Soft, comfortable and cool wind makes people feel temperature drop scale from 2°C ~ to 6°C. Using together with central air-conditioner, effect of this fan will be much better. High efficiency and energy saving are achieved.

Omnidirectional natural wind



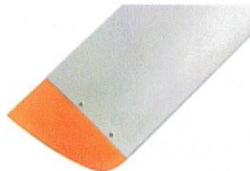
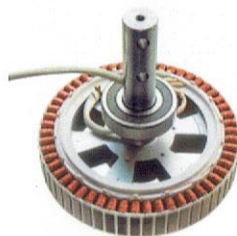
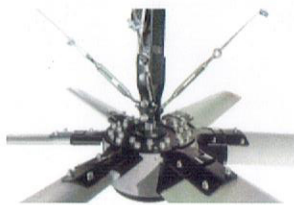


#### 4. Inverter

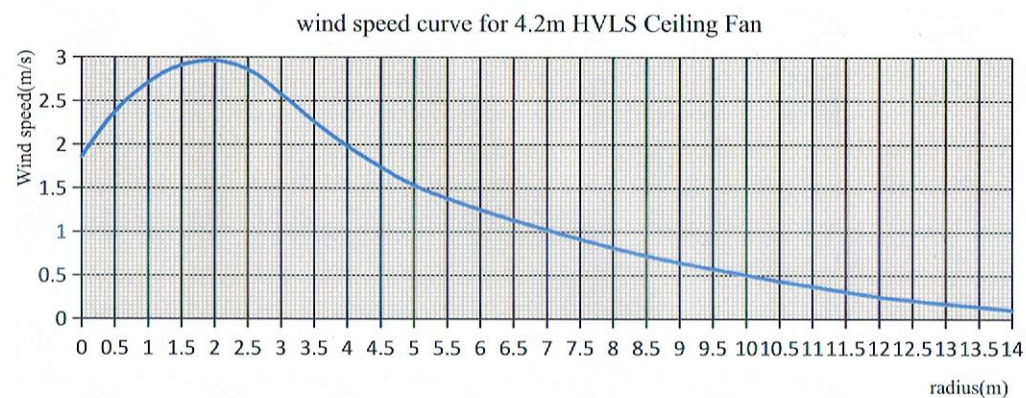
Developed in cooperation with professional manufacturer of inverter with over-current protection, over-voltage / under-voltage protection, overload protection, and effective matching with fans. Start, accelerate, decelerate, stop softly without impact, it can effectively reduce vibration and noise.

#### 5. Features:

- 1). Steel beam locking safety structure protection.
- 2.) Hanger safety steel cable protection.
- 3). Safety design of step type reverse buckle inside motor.
- 4). Permanent magnet self-locking safety protection.
- 5). Reinforced blade mounting bracket.
- 6). Blade safety link mechanism protection.
- 7). Control system overload protection.
- 8). High strength fasteners as Grade 12.9.



#### Wind speed curve for optimal use area



## Common Faults Handling

### (1) Abnormal sound of the motor

- 1). The magnetic steel inside the motor is loose or broken, leading to internal friction.

### (2) Shaking blade

- 1). In long-term operation, when there is a sudden power failure and the fan is turned on immediately, shaking blade is likely to occur in this case. Please wait for the motor to stop completely, then restart.
- 2). Check whether the safety wire rope is loose. If it is loose, tighten the wire rope again.

### (3) Fault and Diagnosis

Common fault code	Fault type	Possible cause	Countermeasures
Err02	Accelerate running overcurrent	1. The output loop is grounded or short-circuited 2. The acceleration time is set too short 3. Start the rotating motor	1. Check whether the motor is short-circuited 2. Increase acceleration time 3. Start the motor after it stops
Err03	Decelerating overcurrent	1. The output loop is grounded or short-circuited 2. Slow down time is set too short	1. Check whether the motor is short-circuited 2. Increase deceleration time
Err05	Accelerated running overvoltage	1. The input voltage is abnormal 2. After the instantaneous power failure, the motor in the rotation is restarted	1. Check the input power supply 2. Avoid shutdown and restart
Err07	Constant speed running over-voltage	1. The input voltage changes abnormally	1. Check the input power supply
Err11	Motor overloading	1. The motor is blocked	1. Check electrical and mechanical conditions
Err12	Input phase loss	1. The input voltage changes abnormally	1. Check and exclude peripheral wiring problems
Err13	Output phase loss	1. Faulty motor 2. The cable from the drive to the motor exist anomaly 3. The inverter three-phase output is unbalanced when the motor is running	1. Check whether the motor is disconnected 2. Rectify peripheral faults 3. Check the three-phase winding of the motor
E014	Module overheating	1. The air duct is blocked or the fan is damaged 2. The ambient temperature is too high.	1. Dredge the air duct or replace the fan module 2. Lower the ambient temperature

## Cautions

1. Do not throw anything and jump under the ceiling fan. Users with lower ceiling should pay more attention.
2. Do not allow to hold up any objects under the rotating ceiling fan to prevent them from contacting the ceiling fan and causing mechanical injury
3. Do not cut off the ceiling fan directly when turning it off. In case of sudden overload protection, press STOP to shut it down and restart it.
4. In case of abnormal noises, smoke, or blades not rotating when using ceiling fans, please contact qualified full-time personnel for inspection and maintenance.
5. Except for the scope of maintenance permitted in this specification, non-professional personnel shall not disassemble, repair or modify the fan on their own, and all disassembly. All repair or modification personnel must hold an electrician's certificate and an aerial work certificate to operate
6. Turn off the ceiling fan immediately when running with strong wind to avoid danger or accident.
7. It is strictly prohibited to touch any wiring terminal of the product or disassemble parts of the product under the energized state, otherwise it may be dangerous!

## Maintenance

1. Regularly check running state of ceiling fan and check if the fan runs abnormally or emit abnormal noise.
2. Regularly check working status of the control box whether there is failure.
3. Check whether the blade is horizontal or shaking.
4. Check whether the fastening bolts are loose.
5. Check the building structure where ceiling fans are installed.
6. Check the tension of protective rope.
7. Check if power wire is damage.
8. The fan must be cleaned periodically to keep clean and attractive.
9. When cleaning fan, the power supply should be cut off first. Arrange professional aerial workers with soft sweep, soft cloth or a little cleaning liquid wipe (do not use gasoline or other corrosive liquid such as paint parts) to clean and dry with cloth.
10. Be careful not to let water flow into the motor or contact other electrical components with water when cleaning; Do not collide with the blade or change the angle of the blade.
11. Please clean the air inlet and outlet on both sides of the inverter regularly, which is conducive to the heat dissipation of the inverter.





# HVLS Ceiling Fan

## INSTALLATION INSTRUCTIONS

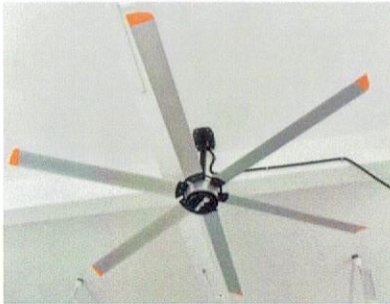
Before installing this series unit, please read this manual carefully

#### 1. Determined installation scheme

1) Wear labor safety protection equipment (safety helmet, safety belt for high-altitude operation and professional insulating shoes). The installation personnel must have the qualification of high-altitude operation and electrician certification.



2) Estimate that the structure has sufficient bearing strength and can be installed safely and firmly. Measure the installation height and evaluate the safety distance (refer to operation instructions) between the blades and building and lamps after the installation. Adequate lifting platform space is reserved below the ceiling fan for easy maintenance and overhaul.



3) Determine the installation position of the control box, evaluate the safety of the high-altitude wiring passing through, and measure the total wiring length.



#### 4) Isolate the installation area.



#### 2. Ground auxiliary work

1) Open the box and check the quantity and integrity of all the parts according to the packing list





2) Prepare the tools required for aerial work, and confirm that the equipment is in normal condition.



3) Insert the power cable into the plastic-coated metal hose using a cable threading tool. Ensure that both ends of the power cable expose enough length of the plastic-coated metal hose for connecting cables. Finally, use a multimeter to measure both ends of the power cable and check whether the cables are broken.



4) Install the motor mounting plate on the motor shaft.



Type	Dimensions	Qty
Hex Bolt	M10×55	2
Hexagon Lock Nut	M10	2
Flat Washer	Φ10	4
Spring washer	Φ10	2

3. Installation of lifting bracket group

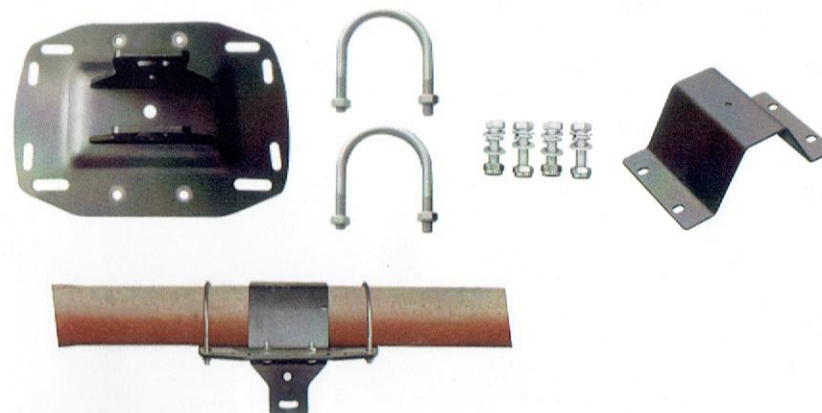
1) Install the ceiling fan mounting support

1.1) Cement floor/cement beam structure



Type	Dimensions	Qty
Expansion bolt	M12X80	5

1.2) Pipe beam structure



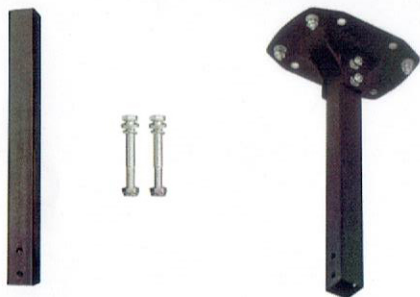
Type	Dimensions	Qty
U-type expansion bolts		2
Hex Bolt	M8X30	4
Hexagon Lock Nut	M8	4
Flat Washer	Φ8	8
Spring washer	Φ8	4

### 1.3) Steel beam structure



Type	Dimensions	Qty
Hex Bolt	M10×50	4
Hexagon Lock Nut	M10	4
Flat Washer	Φ10	8
Spring washer	Φ10	4

### 2) Install the connecting square tube



Type	Dimensions	Qty
Hex Bolt	M10×80	2
Hexagon Lock Nut	M10	2
Flat Washer	Φ10	4
Spring washer	Φ10	2

### 4. Installation of motor

1) Place the motor equipped with the motor mounting plate on the high-altitude working platform, align the mounting hole of the motor mounting plate with the mounting hole of the square tube, and fix it by bolts.



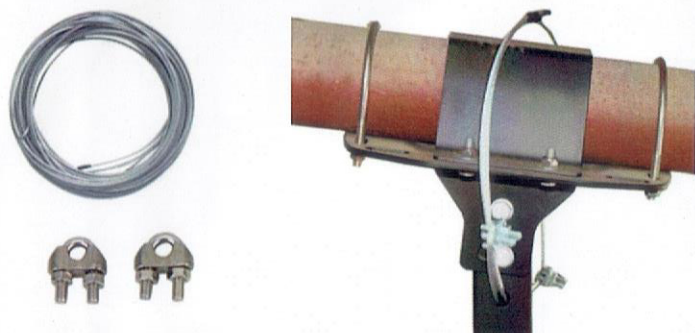
Type	Dimensions	Qty
Hex Bolt	M10×80	2
Hexagon Lock Nut	M10	2
Flat Washer	Φ10	4
Spring washer	Φ10	2

2) Measure the verticality of the connecting square tube and the levelness of the motor using a level, and tighten the bolts and locknut.





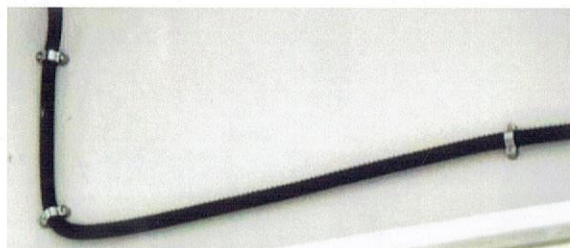
3) According to the installation structure, cut a wire rope of appropriate length, pass the wire rope through the connecting square tube, bypass the beam, and tighten both ends of the wire rope with the wire rope tie for safety protection.



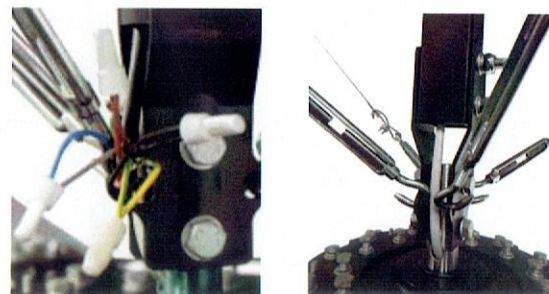
Type	Dimensions	Qty
Wire rope rolling head	M5	2

#### 5. Wiring and installation of inverter

1) Fix the plastic-coated metal hose with wire clamps. The two ends of the hose are fixed with two wire clamps respectively, and the middle is fixed with a wire clamp every 1.5 meters; Clamps are firmly installed, which can not be disassembled by hand or prised loose and can not be arranged on the temporary member.



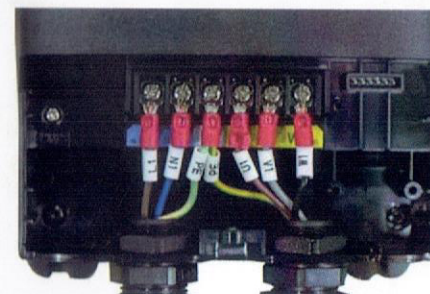
2) Pass the sheath wire through the connecting square tube and connect it with the electronic wire of the same color of the motor and fix it with the closed circuit terminal. After connecting the power cable and the motor cable, bind them with cable ties and insert them into the connecting square tube to keep their appearance neat.



3) The inverter is installed in a suitable position for convenient operation, at least 1.5 meters above the ground, firmly installed and must meet the requirements of safe electricity consumption.



4) Connect the power cord and motor line to the inverter terminal according to the number tube instruction.



## 6. No-load test run of the motor

1) After checking that all the connections are correct, switch on the inverter and check the parameter settings of the inverter.



Inverter power switch

2) Switch on the motor, check if it is running normally and no abnormal noise.

3) After passing the no-load operation inspection, turn off the power supply.

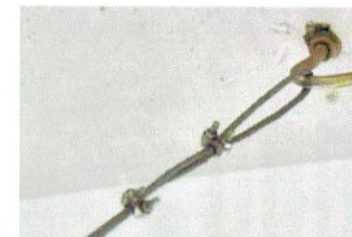
## 7. Installation of protective wire rope

1) According to the installation structure, measure the length of the cable-stayed protective wire rope, and cut four pieces cable-stayed protective wire ropes. One end of the protective wire rope is tied into a safety lock with wire rope rolling head, and the other end is reserved for the pull codes. (To ensure safety, the length of the connecting square tube must be 1 meter or more, and the ceiling fan must be fitted with wire rope.)

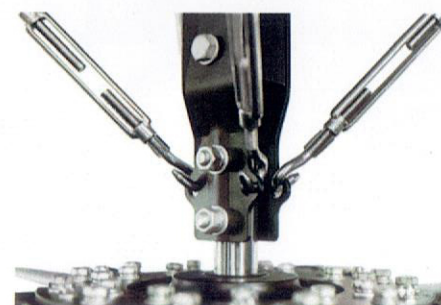


Type	Dimensions	Qty
Wire rope rolling head	M5	16
Wire rope tightener	M8	4
Bolt with hook	M12X50	4

2) Fix the 4 protective rope end with safety lock on the 4 supporting points, and the other end is hooked on the mounting hole of the motor through wire rope tightener.

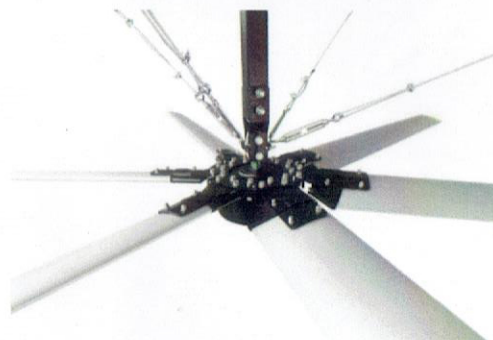


3) Keep the motor horizontal by adjusting wire rope tightener



## 8. Installation of blade and blade holders

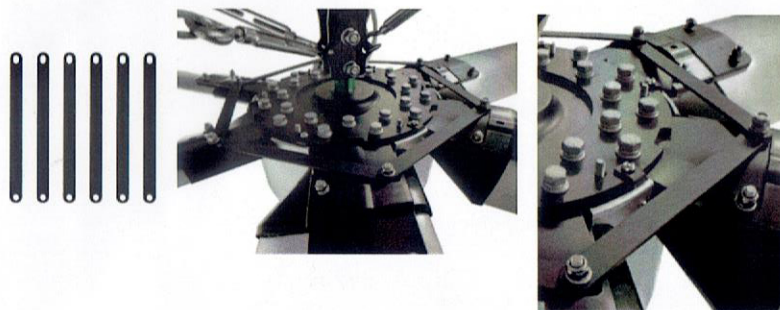
1) Place the blades on the lifting operation platform, align the blades with the installation position of the blades on the upper end cover of the motor, fix them with bolts, and install the six blades in turn.



Type	Dimensions	Qty
Hex Bolt	M8×25	6
Hex Bolt	M8×20	12
Flat Washer	Φ8	18
Spring washer	Φ8	18



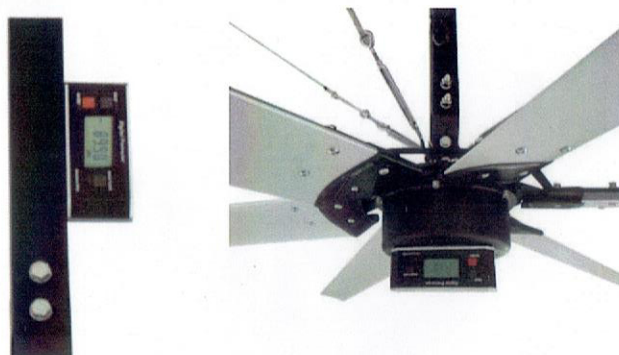
- 2) Tighten other bolts after the blade is installed.
- 3) Install six connecting rods in turn on the installation holes reserved for the blades, and pay attention to the correct positions of the connecting rods above and below the connection points, as shown in the following figure.



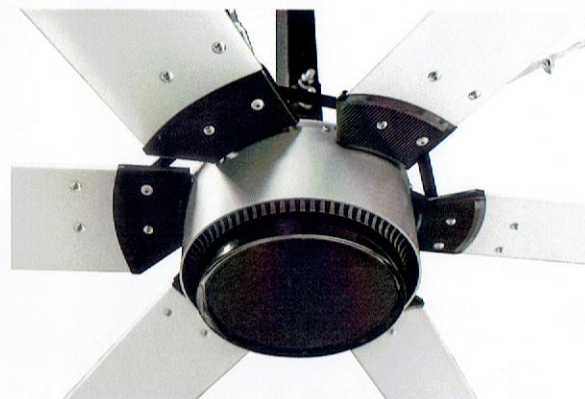
Type	Dimensions	Qty
hexagonal large flat head screw	M6×40	6
flat washer	Φ6	6
Spring washer	Φ6	6
Hexagon Lock Nut	M6	6

#### 9. Checking after completed installation

- 1) Check the square tube verticality and the motor horizontal.



- 2) Lower the lifting operation platform and manually rotate the blade under the ceiling fan to ensure smooth rotation without mechanical collision.
- 3) Install the motor decoration cover.



Type	Dimensions	Qty
Eleven-slot head screw	M5X12	6

- 4) Check all fasteners and make sure that they are securely installed. Use a marker to mark all bolts and lock nuts. Take pictures of bolts and lock nuts at key positions for archiving.



#### 10. Trial operation

1) Switch on the inverter ,run the ceiling fan by adjusting to the highest speed.. Check the output current of the inverter and confirm that the motor is not overloaded and the ceiling fan is operating normally.



2) Repeat start and stop three times and run the fan continuously for more than half an hour. Ensure that the ceiling fan starts, runs and stops properly.