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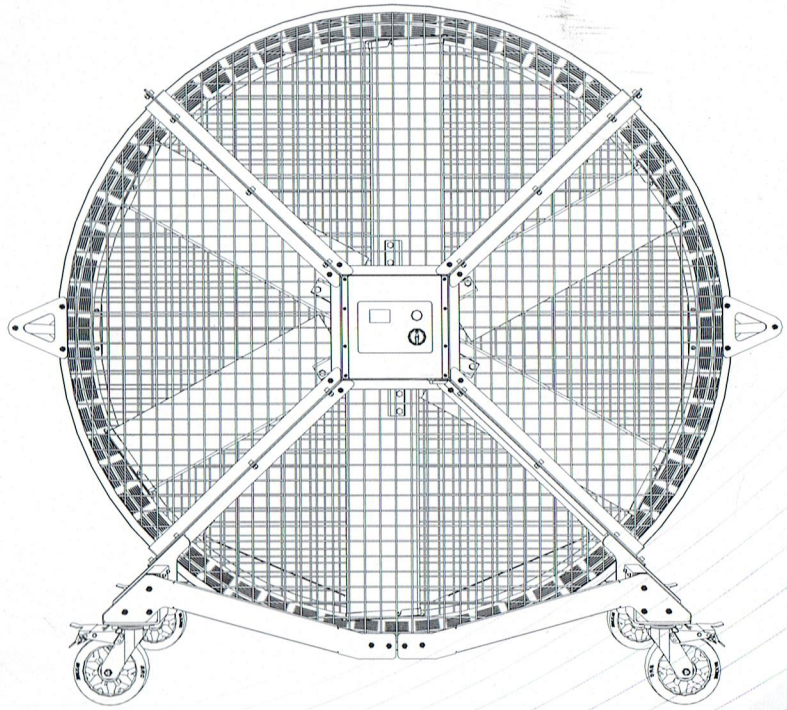


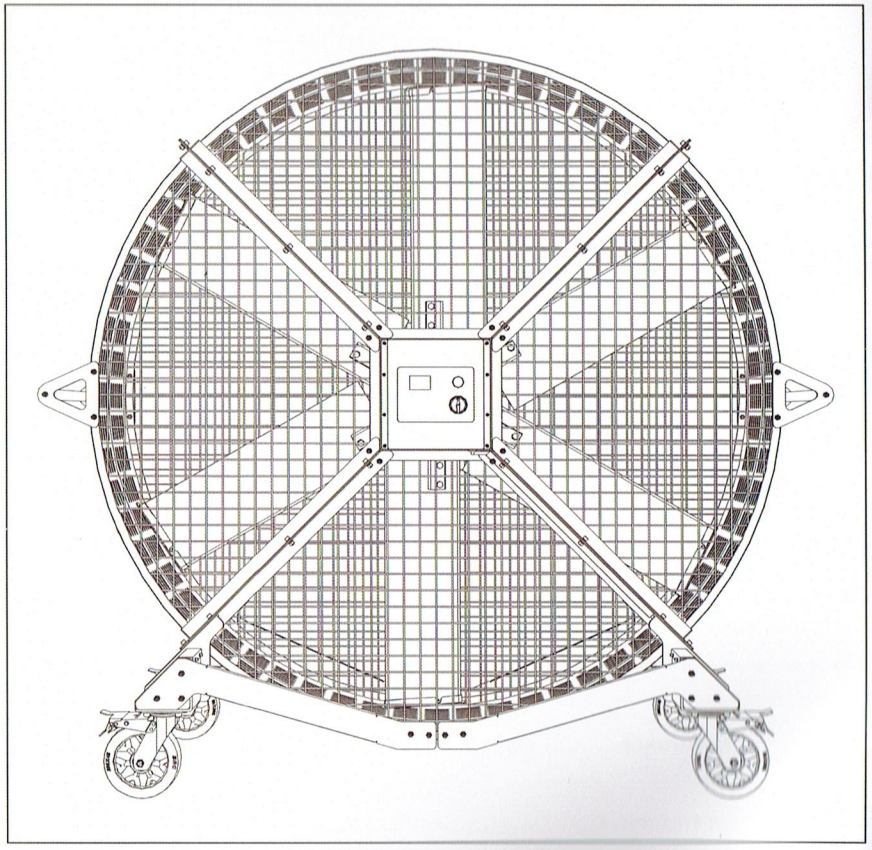
HVLS MOBILE DRUM 79

Quick installation guide

CONTENTS

Preface

Thanks for purchasing IWATA HVLS MOBILE DRUM 79.Based on permanent-magnet brushless tech., sophisticated design and intelligent control tech,IWATA HVLS MOBILE DRUM 79 has features of free-maintenance,quiet and energy efficiency. The fans can circulate the airlfow in the space efficiently, then improve the comfortable feeling greatly. The product combined a series of advanced technologies, such as aerodynamics, industry design, dynamics, pulse width modulation(PWM) control technology, mechanics, computer software, simulation technology.The product is widely used in commercial space, industrial space, stadiums, airports, office space, auditorium, restaurant and other large & high occasions.



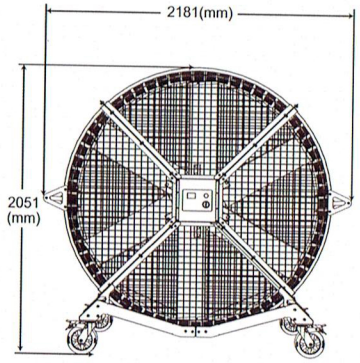
1.Product introduction

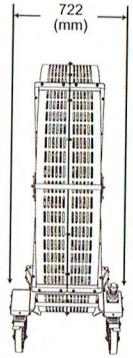
IWATA HVLS MOBILE DRUM 79

IWATA HVLS MOBILE DRUM 79 has a diameter of up to 2.0 meters. The full metal frame and four omni-directional wheels that can adapt to any terrain and can be used in gym, basketball halls, logistics storage and many other places. The whole fan has a patented design and adopts the latest wing-shaped fan blades to output large and stable air volume. In the scorching sun, choosing IWATA can provide you with perfect cooling experience.

1.1 Technical Specification

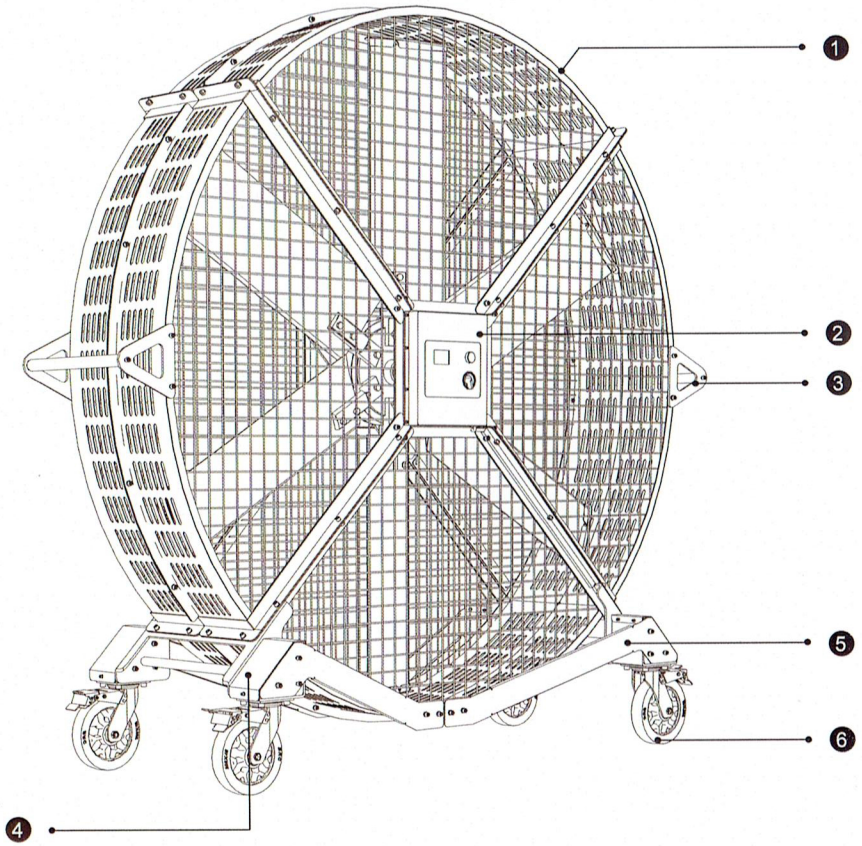
Model	HVLS MOBILE DRUM 79
Dimensions(WxHxD)	2181mm x 2051mm x 722mm
Max RPM	270RPM
Wind speed range	0-36m(wind speed 7m/s-1.5m/s)
Air volume	1208m³/min
Motor Power	0.55KW
Inner Power	220V1P
Full-load current	1.7A
Motor protection level	IP55
Weight	275kg





Note:
1.Weight:the weight doesn't include wheels,chassis, connection parts etc.
2.Size:the above-mentioned product size is standard.
3.Input power:220V±10%
4.Driving Motor: PMSM Gearless Motor.

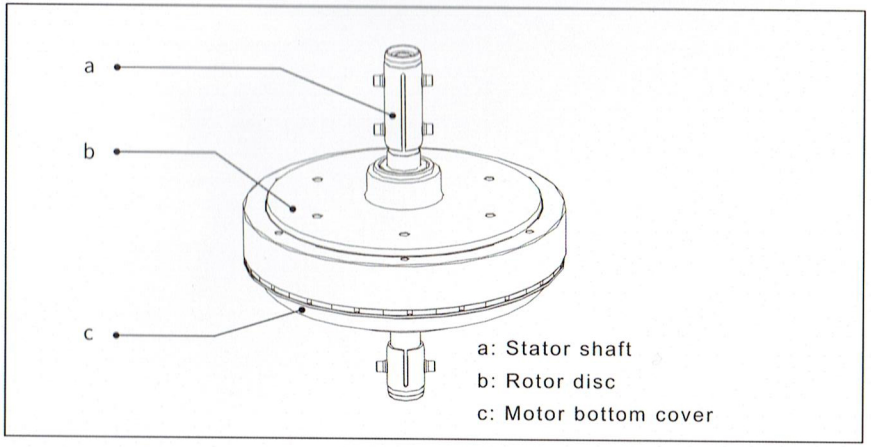
2.Product Drawing



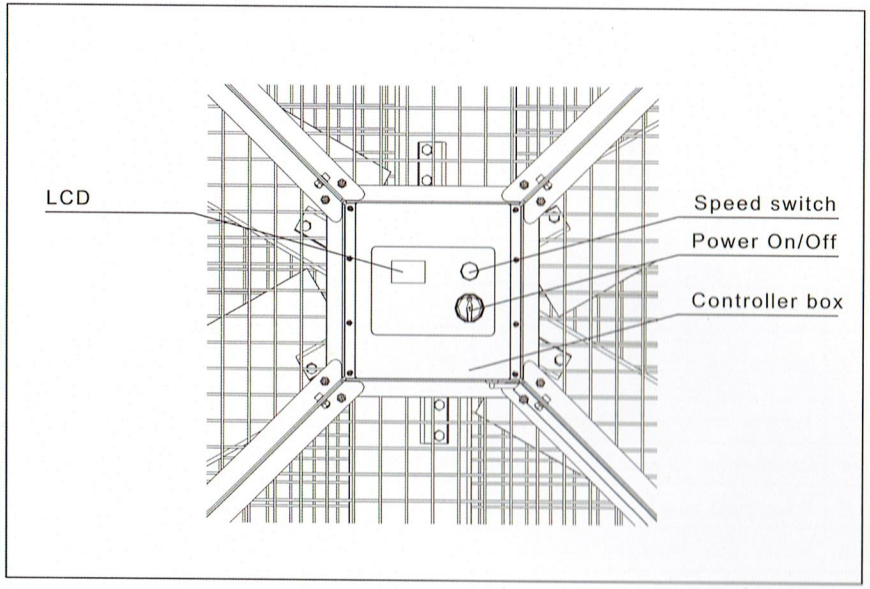
1. Metal cover
2. Fan controller
3. Armrest
4. Caster cover
5. Base bracket
6. Movable casters

2.1 Standard Parts Structure Diagram

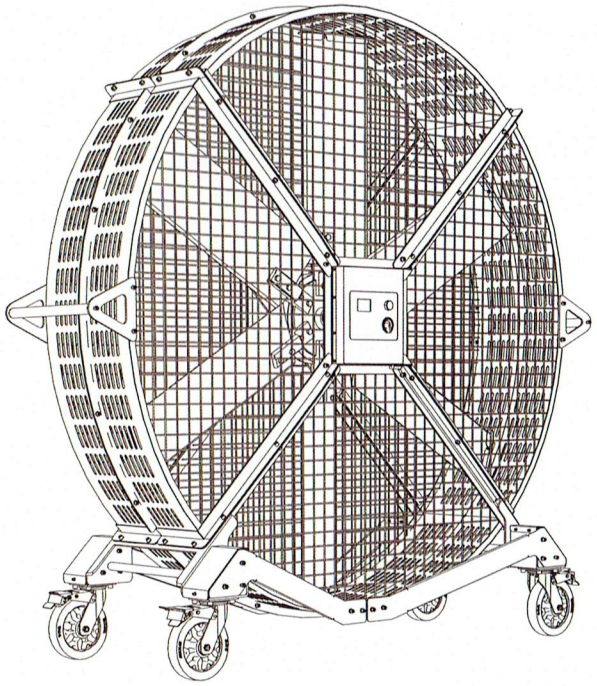
① Motor structure



② Introduction to control panel



2.2 Packing List



Packing Specification

Packing List			
No.	Item	No.	Item
1	Motor	7	Base bracket * 4 pieces
2	Manual Book	8	Wires (industrial plug) * 1 piece
3	Armrest component * 2 groups	9	Installation tools bag * 1 pack
4	Caster cover * 3 pieces	10	Fasteners bag * 1 package
5	Power base board assembly * 1 piece		
6	Mobile caster assembly *4 pieces		

3.Installation Procedure

① Preparation before installation

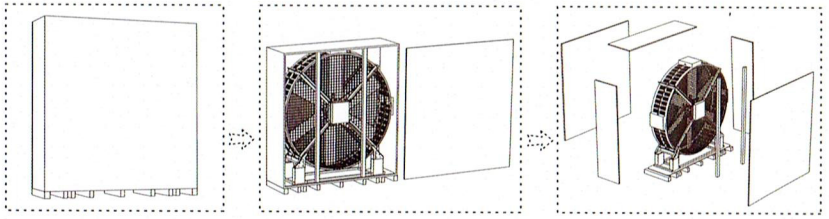
Note: The fan should be handled with care when unloading. Please make sure the staff safe, and the location of the fan should not affect the on-site production and passage; all fasteners must be tightened during the assembly process, and checked and confirmed after assembly;

Note: During the assembly process of the fan accessories, non-related personnel should not approach, the installer should pay attention to safety protection, and strictly following the instructions to avoid accidents;

Wooden box contains:
Mobile caster assembly*4,base bracket*4,caster cover*3,power seat board assembly*1, armrest assembly*2, wire(industrial plug)*1, fasteners bag*1, installation tools bag*1
Fasteners bag:
Hexagon socket bolts M5*16 (12 pieces), flat washer φ8 (12 pieces), spring washer φ8 (12 pieces), hexagon socket bolts M8*16 (12 pieces), hexagon socket bolts M8*18 (8 pieces), inner Hexagon bolts M8*20 (12 pieces), outer hexagon bolts M8*25 (12 pieces), flat washers φ8 (44 pieces), spring washers φ8 (44 pieces), and spare fasteners (spare bolts, flat washers, and Spring pad)
Installation tools bag:
Hexagonal wrenches 4mm (length 143mm)*2, hexagonal wrenches 6mm (length 185mm)*2, open ratchet wrenches 13mm (length 170mm-180mm)*2, Phillips screwdriver Φ5*80 (rod diameter 5mm, rod length about 80mm) * 2

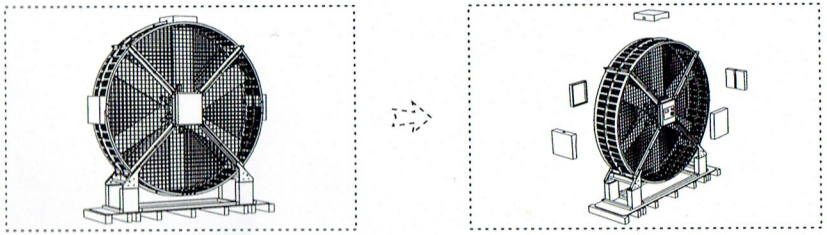
② Remove the wooden box of the fan motor

Step1: Remove the side cover of the wooden box, confirm that the fan motor is intact, and fasten it on the wooden box base (do not remove the self-tapping screws for fixing the fan and the wooden box base during the installation process), then remove the remaining four planks (the remaining three sides and top);

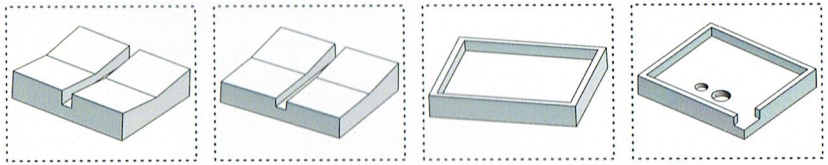


Note: During the process of removing the four-sided boards, it is recommended that someone support the fan motor to prevent the fan from overturning; rough operations are prohibited to avoid damage to the fan;

Step 2: Remove the side protective cover (polyethylene foam cotton), the top protective cover (polyethylene foam cotton), and the waterproof plastic bag;



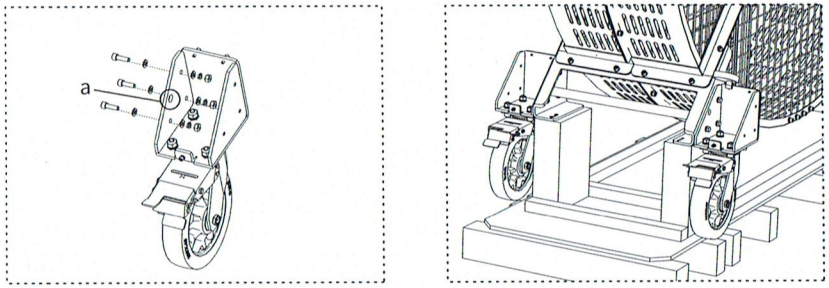
Step 3: Remove the protective cover of the control panel (polyethylene foamed cotton) and frame cover (polyethylene foamed cotton);



Top protective cover | Side protection cover | frame cover | Control panel protection cover

3 Install the caster assembly

As shown in the figure, install 4 sets casters to the fan, and each caster is fixed with three sets of outer hexagonal bolts (M8*25+flat washer+spring washer);
Tools: open ratchet wrench 13mm, install the spring washer with bolts firstly, then install the flat pad.

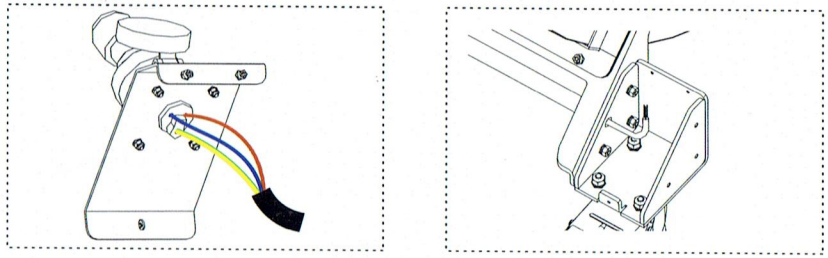


Note: When installing the casters, the large round hole at a is facing the motor.

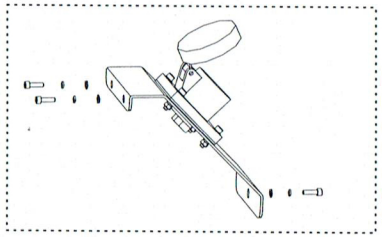
4 Install power supply assembly

Install power supply assembly

1. First find the side of the fan motor with the power cable (as below), and pass the power cable out of the large round hole on the fan motor and caster assembly. The power base assembly will be installed here.

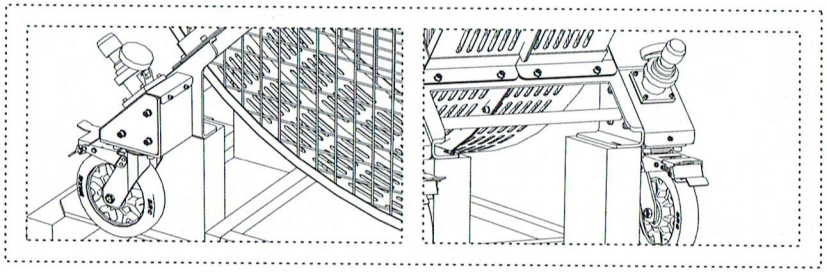


2. Separate the power cables of the motor according to the colors and connect them to the back of the power supply base assembly, as shown in the pic.;
Tool: Phillips screwdriver φ5mm*80.



Note:
Please connect as shown in the figure. The ground wire end has a symbol ⏚. Be sure to connect the "yellow-green wire" and make sure that it is connected correctly;
After the cable is installed, please pull it slightly to verify that it is tight.

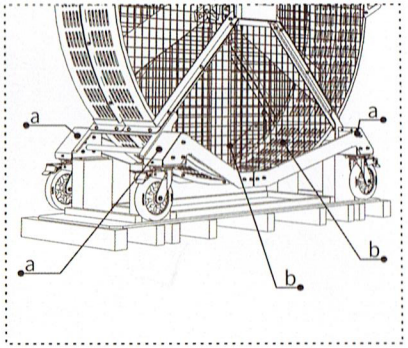
3. Install the power base plate assembly to the casters and fix it with three sets of hexagonal socket bolts (M5*16+flat washer+spring washer).
Tools: 4mm hex wrench, first install the bolt on the spring washer, and then install the flat washer.

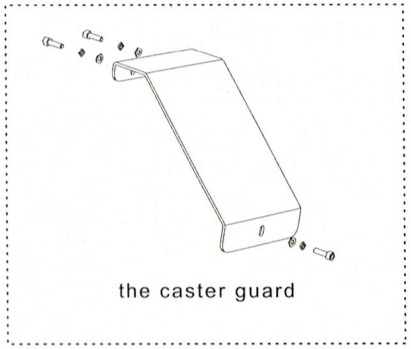


5 Install the caster guard and the base bracket

Install the caster guard and the base bracket

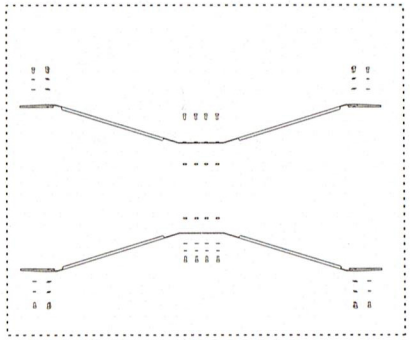
1. Install the caster covers of the remaining three casters (figure a), and each caster cover is fixed with three sets of hexagon socket bolts (M5*16+flat washer+spring washer).
Tools: 4mm hex wrench, first install the bolt on the spring washer, and then install the flat washer.

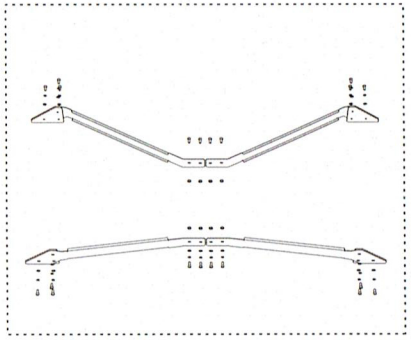




the caster guard

2. Install 4 base brackets (figure b), each base bracket is fixed with three sets of hexagonal bolts (M8*16+flat washer + spring washer) near the casters, and each base bracket that near the central axis uses two sets hexagon socket bolts (M8*18+flat washer+spring washer) to be fixed.
Tools: 6mm hexagon wrench, first install the bolt on the spring washer, and then install the flat washer.





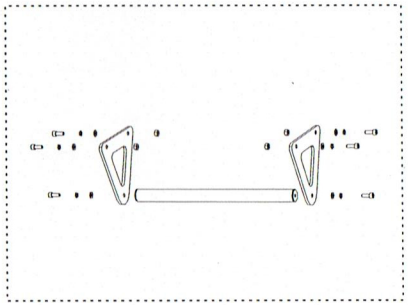
the base bracket

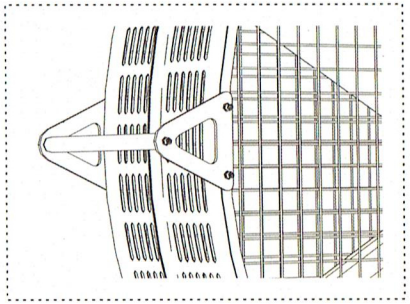
Note: The four base brackets are the same in pairs. Pay attention to the direction when assembling. The left and right on the two sides of the motor are assembled symmetrically.

6 Install armrests

Install armrests

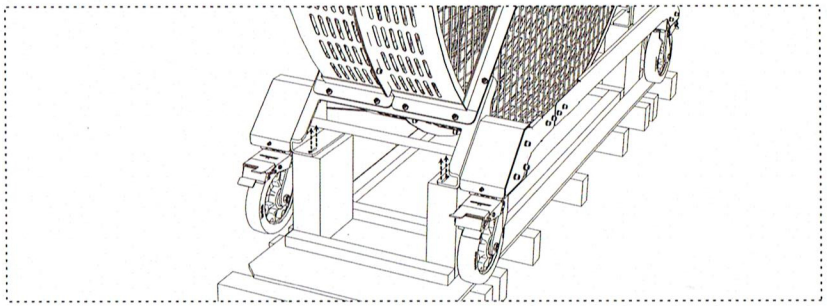
Armrest components*2, armrest fixing plates*2 + armrest rod *1 as a set, each group is fixed with six sets of hexagonal socket bolts (M8*20+flat washer+spring washer).
Tools: 6mm hexagon wrench, first install the bolt on the spring washer, and then install the flat washer.





7 Complete installation

Remove the self-tapping screws used to fix the fan and the wooden box base (as shown in the figure), take out the base support frame and slowly and steadily push the fan machine out of the bottom of the wooden box.
Tool: Phillips screwdriver φ5mm*80.

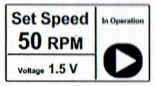
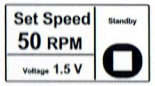
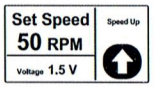
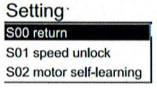
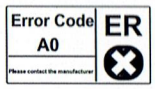
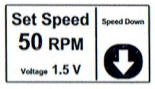


Push the fan to a suitable place, unscrew the protective cover of the industrial socket, insert the industrial plug into the industrial socket, and then fasten the plastic nut on the industrial plug to the thread of the industrial socket to ensure that the industrial plug does not fall off when the fan operating,the plug at the other end of the power cord is plugged into the 220V power supply at the customer site, and the Power on-off on the control panel is turned on, and the fan can operate normally.

4. The control panel and display system

Display status Confirm

After the controller is powered on and the switch points to ON, the machine is powered on, and the LCD displays: speed set, operating current, input voltage, operating status, the specific interface information is as follows:

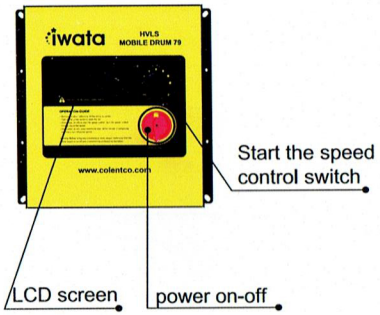
Run interface	Standby interface	Speed up interface
		
Setting interface	**Failure interface**	**Slowdown interface**
		

User setting interface description

In the standby state,press (above 2S) "Knob Setting" to enter the " Setting Interface", and the setting interface functions are as follows:

FUNCTION CODE	NAME	FUNCTION
S00	Return	You can use this function to return to the main interface/if you don't use this function to return back, it will automatically return to the main interface after 10S.
S01	Speed unlock/speed lock	After locking: the adjusting knob will not change the speed in case of accidental touch, and the speed can be unlocked by selecting this function again.
S02	Motor self-learning	The motor operation control effect is better after self-learning
S03	Operation direction switch	If the motor is running in the wrong direction, you can switch the motor through this function.

5. Instructions of safe operation



1. Please read the precautions in details before operation;

2. After confirming that the wiring is correct, turn the "knob master switch" to ON, and the fan is powered on;

3. Short press (In 2S) to start the speed control , turn the speed control knob to adjust the speed;

4. Short press (in 2S) "Speed control" to stop, when the fan is completely stationary, the main switch of the power on-off points to OFF.

Function description:

1. LCD screen: Without operation in 1 minute, the LCD screen changes from bright to dark to off, and then turn bright is when operating.
2. Power on-off: When the switch points to OFF, the motor is powered off; when the switch points to ON, the motor is powered on.
3. Speed control switch: multi-function knob, see the following table for specific functions:

Function	Adjust the speed	Run, stop button	Fault reset
Definition	Turn the "start speed switch" clockwise to increase, and turn counterclockwise to decrease. The faster the adjustment knob speed, the larger the speed adjustment range.	Short press "speed control" to start and stop, and cycle in turn.	When there is a fault,short press the "start speed control switch" to reset the fault, if the fault cannot be reset, please contact us .
Note: Short press : duration is less than 2s, long press : duration is more than 2s.			

Notice: Before operating the fan, please read the product instruction carefully, and clear the obstacles in the operating area to ensure that the fan runs with sufficient safety clearance.

Warning: Before doing any fan maintenance, first make sure to turn off the power supply and operate by professionals to avoid being injured by the power supply!

STOP

1. STOP device, turn the control switch from RUN position to STOP;
2. Power outage is prohibited during the fan normal operation.

RUN

1. Confirm there is no obstruction and potential danger in the fan operation space;
2. Confirm the input power supply is correct and meet the product's requirement;
3. Confirm the speed knob at the minimum position;
4. Turn on the fan, turn the control switch from STOP position to RUN position;
5. After the fan starts, adjust speed knob to get the appropriate speed and best effect.

6. Safety Instructions

» In the installation, adjustment and the cleaning processes,please don't bend the fan blades, or it will damage the equipment or affect using effects.

» Please make sure the fan's input voltage and supply voltage are the same before cut-in the power.

» Please don't proceed examine and repair works while power on so as to prevent electric shock.

» Please don't secretly alter the structure and installation site of the fan.

» Please don't open the electrical control box while power on so as to prevent electric shock.

» Please don't operate the damaged devices, or it will bring serious consequences of personal injury.

» Strictly prohibit the structural changes or parameter changes of the electrical control box, or it will cause equipment damage or personal injury and death accident duo to the improper set.

» In the electrical control box there includes high-voltage storage capacitor. When you operate the fan control device, please wait for 3 minutes to let the voltage release out (notes: the displayer blackness is not the mark that the voltage has reached the safety level) to prevent electric shock.

» Strictly prohibit the operation when the safety space of the fun is insufficient.

» Strictly prohibit the operation during the reverse back process of the fun's operating space, and make sure whether there are obstacles before starting.

CAUTION

» The installation and layout of the circuit wiring must be performed by professional qualified staff.

» Please use the specified device component appointed by our company.

» While the fan is running, please don't cut off the power, otherwise it will cause damage to the fan. It should cut off the power when the fan is drop-dead halt.

» When the fan is in the corotation (inversion) state, please don't switch the button to the opposite direction directly or it will cause the mechanical failure.

7. Troubleshooting

Common causes for the malfunctioning operation:

» The external power supply of the control box is not valid;

» Open the master switch, and then turn on the three gears control switch, if the fan can still not work, please check whether the speed knob is of the MIN state. Otherwise, please contact with technical department

» Non-professional staffs do not open the electrical control box! For repair or adjustment,please follow the instruction of technical department;

» If you find the equipment is damaged or has abnormal sound, please stop running as soon as possible, cut off power supply, and contact our service department;

» Notes: Equipment damages due to the improper use are not covered by the warranty. Personal injuries and equipment damages for your failure to comply with the contents of this manual, the Company will not bear any responsibilities.

7.1 Explanation of error codes

KD(Dec.)	Item	Fault Type	KD(Dec.)	Fault name	Fault type
E.SC1(1)	System failure during acceleration	Fault	E.LD1(79)	Load protection 1	Fault
E.SC2(2)	System failure during deceleration	Fault	E.LD2(80)	Load protection 2	Fault
E.SC3(3)	System failure in constant speed	Fault	E.CPU(81)	CPU timeout failure	Fault
E.SC4(4)	Shutdown system failure	Fault	E.LOC(85)	Chip lock	Fault
E.OC1(5)	Overcurrent during acceleration	Fault	E.EEP(86)	Parameter storage failure	Fault
E.OC2(6)	Overcurrent during deceleration	Fault	E.PLL(87)	PLL failure	Fault
E.OC3(7)	Overcurrent at constant speed	Fault	E.BUS1(91)	Expansion card A disconnected	Fault
E.OU1(9)	Overpressure	Fault	E.BUS2(92)	Expansion card B disconnected	Fault
E.OU2(10)	Overvoltage during deceleration	Fault	E.BUS3(93)	CAN expansion card failure	Fault
E.OU3(11)	Overvoltage at constant speed	Fault	E.BUS4(94)	Other expansion card failure	Fault
E.LU(13)	Undervoltage during operation	Fault	E.BUS5(95)	Other expansion card failure	Fault
E.OL1(14)	Motor overload	Fault	E.BUS6(96)	Other expansion cards are disconnected	Fault
E.OL2(15)	Inverter overload 1	Fault	E.CP1(97)	Monitor comparison output 1 failure	Fault
E.OL3(16)	Inverter overload 2 continuous CBC	Fault	E.CP2(98)	Monitor comparison output 2 failure	Fault
E.OL4(17)	Inverter overload 3	Fault	E.DAT(99)	Parameter setting error	Fault
E.ILF(18)	Input phase loss	Fault	E.FA1(110)	Reserved for external expansion 1	Fault
E.OLF(19)	Three-phase output phase loss	Fault	E.FA2(111)	Reserved for external expansion 2	Fault
E.OLF1(20)	U-phase output phase loss	Fault	E.FA3(112)	Reserved for external expansion 3	Fault
E.OLF2(21)	V phase output phase loss	Fault	E.FA4(113)	Reserved for external expansion 4	Fault
E.OLF3(22)	W phase output phase loss	Fault	E.FA5(114)	Reserved for external expansion 5	Fault
E.OH1(30)	Rectifier module over temperature	Fault	E.FA6(115)	Reserved for external expansion 6	Fault
E.OH2(31)	IGBT module over temperature	Fault	E.FA7(116)	Reserved for external expansion 7	Fault
E.OH3(32)	Motor over temperature	Fault	E.FA8(117)	Reserved for external expansion 8	Fault
E.EF(33)	External fault	Fault	The following are warning codes		
E.CE(34)	Modbus communication failure	Fault			
E.HAL1(35)	U phase zero drift	Fault	A.LU1(128)	Shutdown undervoltage	Warning
E.HAL2(36)	V phase zero drift	Fault	A.OU(129)	Shutdown overvoltage	Warning
E.HAL(37)	Three-phase current sum is not 0 fault	Fault	A.ILF(130)	Input phase loss	Warning
E.HAL3(38)	W phase zero drift	Fault	A.PID(131)	PID feedback disconnection	Warning
E.SGxx(40)	Short to ground	Fault	A.EEP(132)	Parameter storage warning	Warning
E.FSG(41)	Fan short circuit	Fault	A.DEF(133)	Speed deviation is too large	Warning
E.PID(42)	PID feedback disconnection	Fault	A.SPD(134)	Fast warning	Warning
E.COP(43)	Parameter copy failure	Fault	A.GPS1(135)	GPS lock	Warning
E.PG1(44)	PG parameter setting error	Fault	A.GPS2(136)	GPS disconnection	Warning
E.PG2(44)	Encoder Z pulse fault	Fault	A.CE(137)	External warning	Warning
E.PG3(44)	Resolver check error	Fault	A.LD1(138)	Load protection 1	Warning
E.PG4(44)	Resolver disconnection	Fault	A.LD2(139)	Load protection 2	Warning
E.PG5(44)	ABZ encoder disconnection	Fault	A.BUS(140)	Expansion card disconnection warning	Warning
E.PG6(44)	Spindle encoder disconnection	Fault	A.OH1(141)	Module over-temperature warning	Warning
E.PG7(44)	Spindle encoder Z pulse error fault	Fault	A.OH3(142)	Motor over temperature warning	Warning
E.PG8(44)	Encoder Z pulse logic failure	Fault	A.RUN1(143)	Run command conflict	Warning
E.PG9(44)	Spindle encoder Z pulse logic failure	Fault	A.RUN2(158)	Jog terminal start protection	Warning
E.PG10(44)	Encoder Z pulse disconnection	Fault	A.RUN3(159)	Terminal start protection	Warning
E.BRU(50)	Braking unit failure	Fault	A.PA2(144)	External keyboard disconnection warning	Warning
E.TExx(52)	Motor parameter self-learning fault	Fault	A.COP(145)	Parameter copy warning	Warning
E.IAE1(71)	Motor angle learning failure 1	Fault	A.CP1(146)	Monitor comparison output 1 warning	Warning
E.IAE2(72)	Motor angle learning failure 2	Fault	A.CP2(147)	Monitor comparison output 2 warning	Warning
E.IAE3(73)	Motor angle learning failure 3	Fault	A.FA1(150)	Reserved for external expansion 1	Warning
E.PST1(74)	Synchronous machine out of step fault 1	Fault	A.FA2(151)	Reserved for external expansion 2	Warning
E.PST2(75)	Synchronous machine out of step fault 2	Fault	A.FA3(152)	Reserved for external expansion 3	Warning
E.PST3(76)	Synchronous machine out of step fault 3	Fault	A.FA4(153)	Reserved for external expansion 4	Warning
E.DEF(77)	Speed deviation is too large	Fault	A.FA5(154)	Reserved for external expansion 5	Warning
E.SPD(78)	Rapid failure	Fault	A.FA6(155)	Reserved for external expansion6	Warning

Note: The numbers in brackets in the code column are fault codes or warning codes (Dec. Represents Decimal base 10).

8.Customer service

After-sales service is very important for the stability of the equipment operation, because of this, we offer customers high quality products and perfect after-sales service, at present, we had set up sales andafter-sales service centers in five major areas across the country to ensure that we can provide users with thoughtful,fast, high quality and comprehensive after-sales service, make users feel relieved, without worry.

Product technical support

Combined with fan equipment installation,commission,and operation process,we provide users with free training about the product basic knowledge, use, maintenance technology and equipment related qualifications and certificates,to ensure long term stable operation of equipment.

Support can be got through the following ways:

1. Contact our company after-sales department to get support.
2. Contact sales engineers to download the latest product technical specification.
3. Our company adhering to the customer first and provide the best service for you.

9.Fan working condition

In order to take full advantage of the product's performance and extend its life, the installation environment if of very important. Please install the fan in the environment as requested in the following table:

Environment	Conditions
Installation site	Indoors
Ambient temperature	-15~+55℃ To improve the reliability, please don't use the product in the places where temperature changes rapidly. Avoid freezing the product.
Humidity	Below 95%RH
Surrounding	Places with no corrosive gas and flammable gas

10.Quality assurance

Details of the warranty of quality

Quality assurance is for the whole machine .The quality guarantee period is from the date of acceptance bycustomers. Failure occurs during the quality guarantee period, such as products, our company provide freeconsultation, maintenance services (including vulnerability free replacement of spare parts), quick response,professional troubleshooting.

The damages caused following reasons are not in warranty scope:

- Improper use,maintenance and safekeeping;
- Buyer and user themselves dismount or remove the product;
- Force majeure factors(lighting,earthquake,typhoon,etc.).

11.Product Warranty

Product warranty period: 24months for complete machine after delivery.For failures within the warranty period, please do not try to solve by your own, the company can send you a free onsite service professional. But the following occasions are the paid services:

- Failures caused by incorrect use.
- Failures caused by your transform of our products without our permission.
- Failures caused by natural disasters and fires.
- Over the warranty period
- Other failures caused by non-corporate responsibilities.

The abovementioned services are only available in mainland China; the Suzhou Company will not accept fault diagnosis in foreign countries such. If customers wish to provide after-sales service abroad, it must be conclude and sign a Foreign Service contract.

Our products are manufactured under strict quality control, and each set of the products have passed the rigorous testing process before delivery.

When the product is used in the occasions that may cause major accident or loss due to the improper operation,please configure the relevant security measures.

Maintenance cycle

Time	9 steps deep-clean (Whole fan)	18 steps safety inspections (whole fan)	Replacement of safety fastening system for fan blades	Replacement of Mechanical Safety Balanced Cable System	Replacement of radiator fans in control box	Replacement of Inverter
1st year	●	●	–	–	–	–
2nd year	●	●	–	–	–	–
3rd year	●	●	●	●	●	–
4th year	●	●	–	–	–	–
5th year	●	●	–	–	–	–
6th year	●	●	●	●	●	–
7th year	●	●	–	–	–	–
8th year	●	●	–	–	–	–
9th year	●	●	●	●	●	–
10th year	●	●	–	–	–	–

● Service item – Non-service item

In order to meet your maintenance needs, our maintenance service consists of three powerful components:

· Repair maintenance · · Preventive maintenance· · Improved maintenance·

This manual focuses on preventive maintenance, which is the key to achieving optimal performance and long-term operational benefits.

Preventive maintenance can help you avoid unexpected interruptions, provide emergency on-site service, detect failures and unnecessary energy consumption, thereby reducing overall costs.

It protects and extends the life of your purchased product.

Items	18 Steps safety inspections (whole fan)	
1.Motor balance	7.Blade Strut	13.Operating current
2.Smooth operation	8.Blades	14.Circuit breaker
3.Motor bearing	9.Fan tail	15.Switch
4.Fasteners	10.Circuit	16.Speed control
5.Casters	11.Wiring	17.Radiator fan
6.Frame	12.Inverter parameters	18.Other anomalies

THANKS FOR KEEPING!