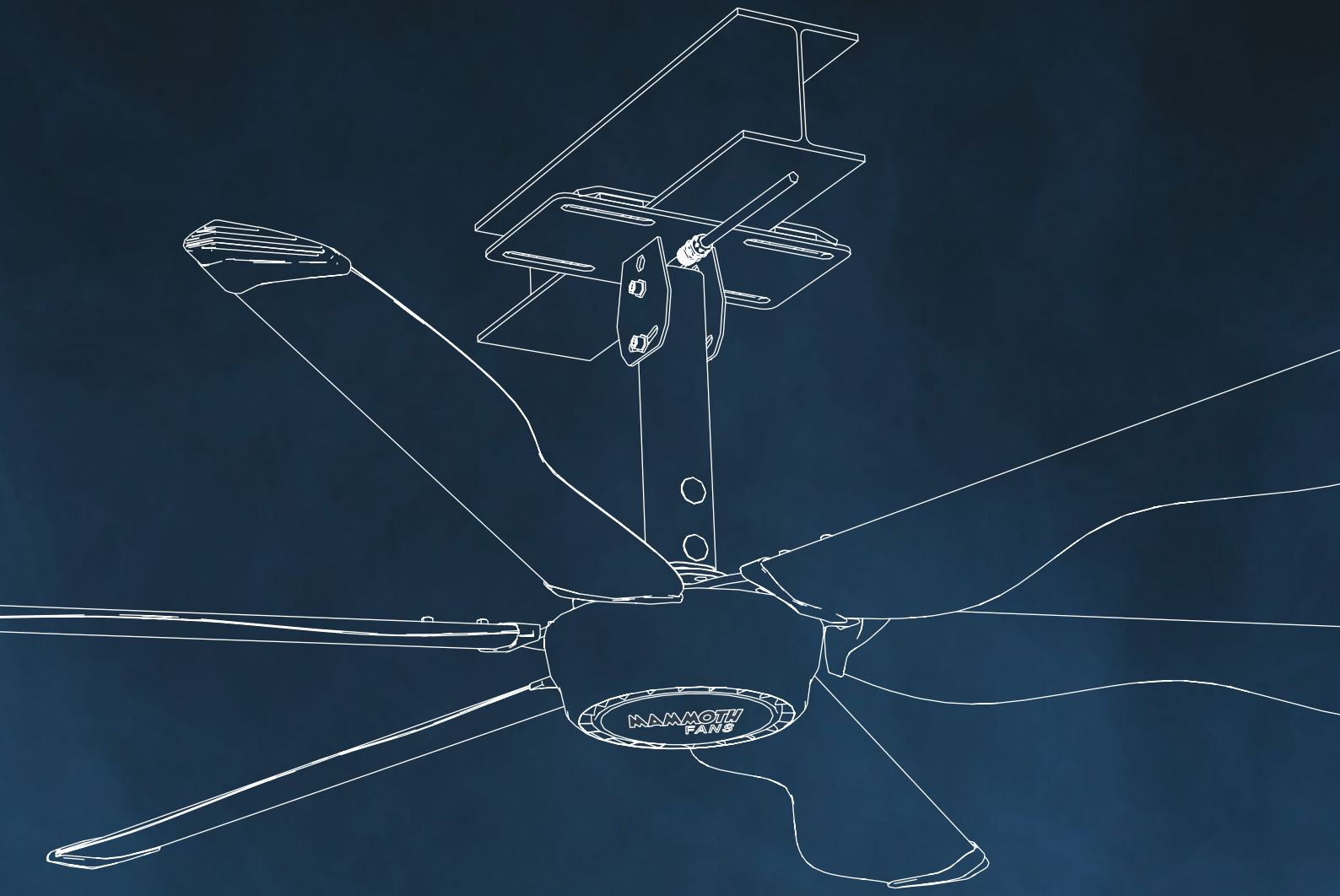
INSTRUCTION MANUAL

MAMMOTH FANS



COMMERCIAL SERIES

SKU

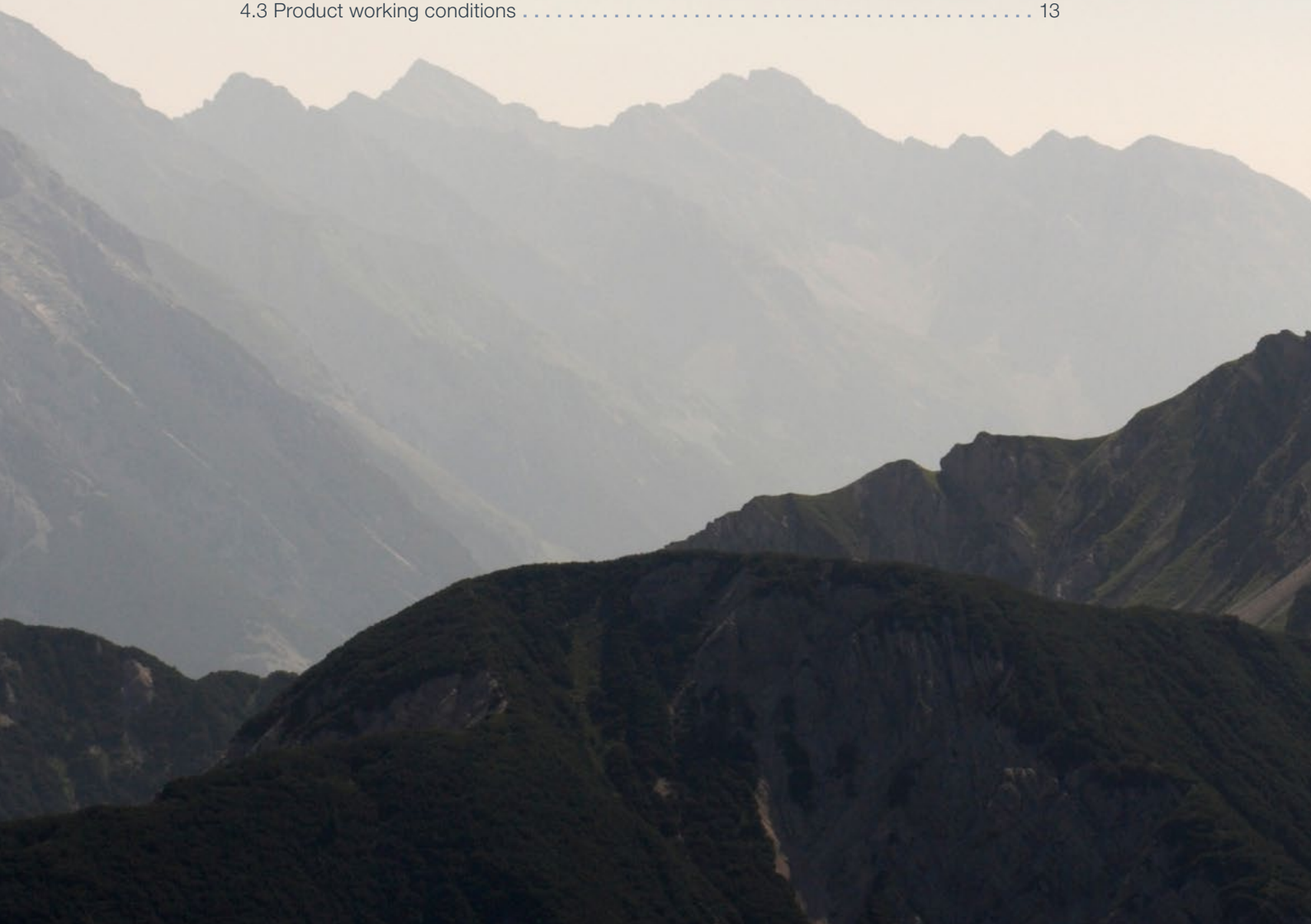
211404 – 211405 – 211406 – 211407 – 211419 – 211420 – 211421 – 211422

INSTALLATION • OPERATION • MAINTENANCE • WARRANTY INFORMATION

⚠ CAUTION

Read instructions carefully for safe installation and fan operation.

CONTENTS



PREFACE

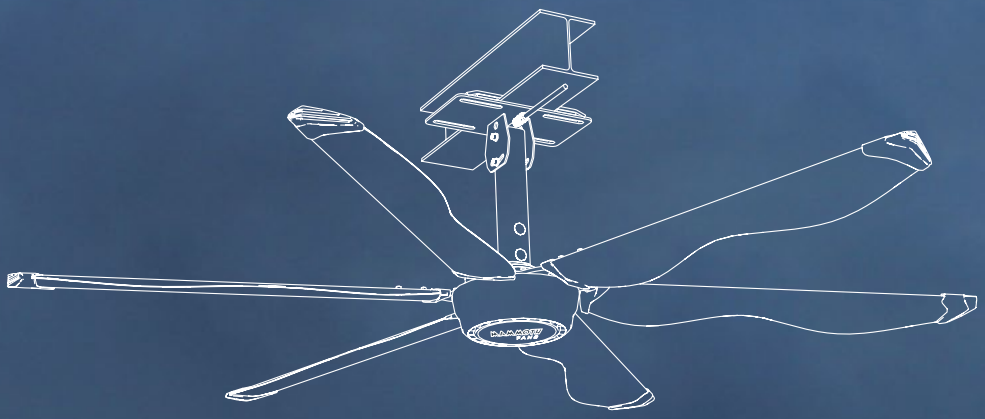
Congratulations on your purchase of a Mammoth Fan. The Mammoth Fans range features world class permanent magnetic synchronous motor (PMSM) technology and precision-led aeronautical design in mammoth proportions.

With energy efficiency, design, ultimate performance and Australian conditions in mind, Mammoth Fans have been designed as the latest in high-volume, low-speed (HVLS) ceiling fans for commercial and industrial spaces.

Their market leading features of supreme efficiency, low noise, minimal maintenance and easy installation are backed by expert advice and a 5-year warranty. Whether it is a public or commercial space such as a bar, restaurant, gym or hotel, Mammoth Fans are the perfect solution for your project.

The Mammoth Fan you have purchased is a sophisticated electrical device and all care must be taken to ensure the fan is kept clean and regularly maintained. Any issues arising from misuse or neglect are not covered by the warranty.

1 PRODUCT SERIES INTRODUCTION



The Mammoth Commercial Series is a brand new fan series developed using PMSM (permanent magnet synchronous motor) technology. The product combines a series of cutting-edge technologies such as aerodynamics, transmission dynamics, pulse width modulation control technology, mechanical mechanics, simulation technology, communication control, industrial design, etc. and is manufactured by advanced precision processing equipment.

It can promote the circulation of airflow in the space with extremely high efficiency, greatly improve environmental comfort, and is perfect for public and commercial places such as bars, restaurants, gyms, hotels, and other occasions.

1.1 TECHNICAL INFORMATION

SKU#	211404 / 211405	211406 / 211407	211419 / 211420	211421 / 211422
Diameter	2.5m (8ft)	3.0m (10ft)	3.6m (12ft)	4.2m (14ft)
Rated voltage	220-240V - 50Hz	220-240V - 50Hz	220-240V - 50Hz	220-240V - 50Hz
Rated power	260W / 0.26kW	300W / 0.3kW	330W / 0.33kW	350W / 0.35kW
Full load current	0.8A	1.1A	1.3A	1.5A
Max. speed	130RPM	110RPM	95RPM	72RPM
Air volume at max. speed	4550m3/min	5250m3/min	6560m3/min	7550m3/min
Weight	41kg	44kg	48kg	52kg

1. Weight: the weight doesn't contain control cabinet, top connection parts, etc.
2. Input power: 220V/1PH±l0%.
3. Motor: PMSM (Permanent-magnet synchronous motor).

SAFETY PRECAUTIONS 2

1. Always ensure the power is turned OFF before installing, maintaining, cleaning or adjusting the fan.
2. Must be assembled and installed by a licensed electrician.
3. All wiring and installation of the fan must adhere to the latest local and national wiring rules such as the AS/NZS 3000:2018, electrical installations.
4. The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.
5. Children should be supervised to ensure that they do not play with the appliance.
6. An all-pole disconnection switch must be incorporated into the fixed wiring in accordance with local wiring rules.
7. The structure to which the fan is to be mounted must be capable of supporting **2 times** the weight of the product and its own structural loading. Check with a structural engineer if unsure.
8. Please do not alter the structure of the install site without prior advice from a structural engineer.
9. The fan should be mounted so that the blades are at least 3.5m above the floor.
10. This fan is suitable for covered alfresco use.
11. The fan must be installed with the electrical control box supplied.
12. During installation, adjustment, and cleaning, ensure the blades are not bent as this will drastically impact the performance of the fan.
13. Please make sure the fan's input voltage and supply voltage are the same before operating.
14. Please do not open the electrical control box without first isolating the power as electrical shock may occur.
15. Please do not operate the fan if you notice any damage to or noises from the fan.
16. The control box is a sophisticated controller designed specifically for your Mammoth Fan. **No modifications to the controller** are permitted and failure to follow this advice could cause injury or death.
17. Within the electrical control box is a high-voltage storage capacitor. When you operate the fan, please wait for 3 minutes to let the voltage discharge to prevent electric shock.
18. Ensure sufficient clearance around the fan and NO obstructions before starting up the fan. Failure to do so will cause significant damage and will not be covered under the warranty.
19. Do not cut power to the fan while it is in operation. Please stop the fan first and then isolate the power.

WARNING

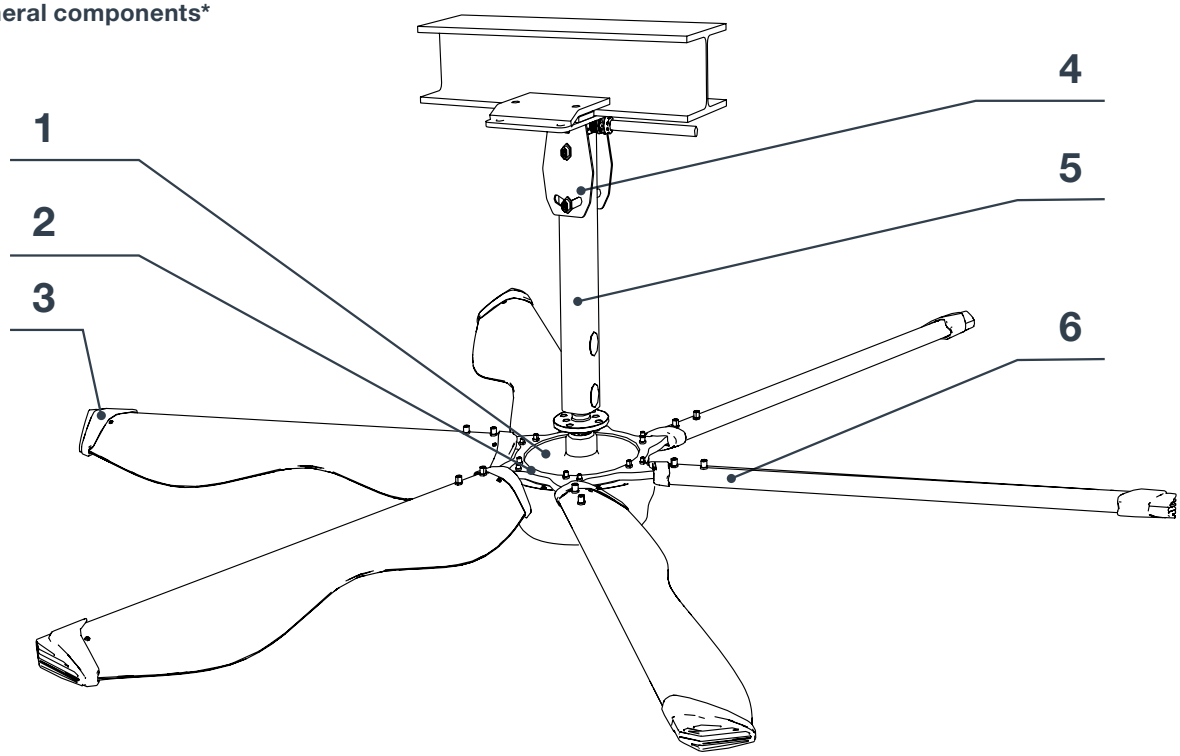
Please read the instruction manual before operation.

Ensure the fan is clear of all obstructions before operation. If the fan is unbalanced or noisy, immediately shut it down and contact Mammoth Fans support. Ensure the power is isolated before any maintenance work is carried out on the fan or controller.

Note: Always start the fan on low speed.

3 PRODUCT COMPONENTS

3.1 General components*



1	PMSM motor	4	L-shaped top plate
2	Intergrated fan blade connector	5	Extension tube
3	Winglet	6	Fan blade

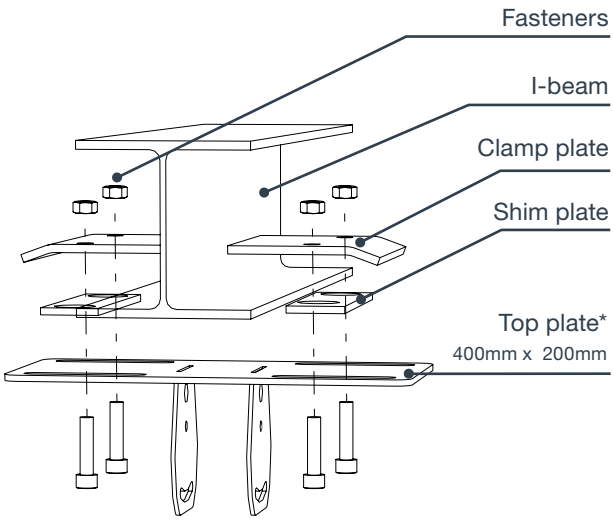
* Please note that the top bracket pictured may vary slightly to those supplied.

3.2 Packing specifications

SKU	CASE NO	DIMENSIONS (LxWxHcm)	Volume (m^3)	Gross weight (kg)	Remark
211404-211407	1	140 x 62 x 33	0.28	93	Main body crate
211418-211421	1	80 x 45 x 80	0.29	70	Main body crate
211418-211421	2	200 x 30 x 20	0.12	34	Fan blade crate

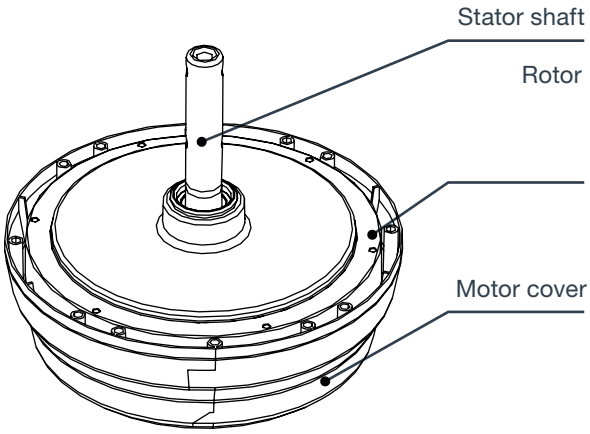
3.3 Standard component introduction

Steel structure fastening



* Please note that the top bracket pictured may vary slightly to those supplied.

PMSM motor structure

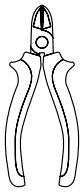
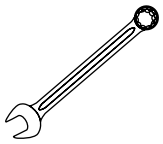
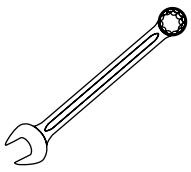
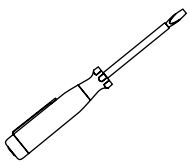
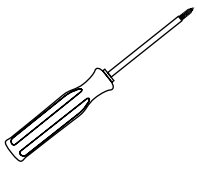


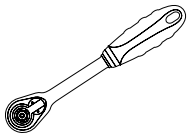
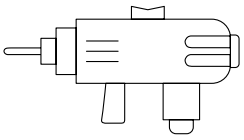
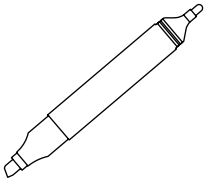
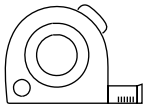
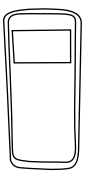
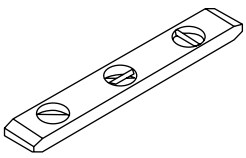
3.4 Control unit system structure

DIMENSIONS (WxHxDmm)
260 x 162 x 68

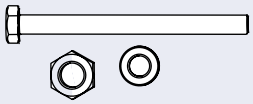
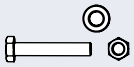
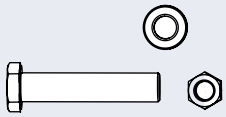
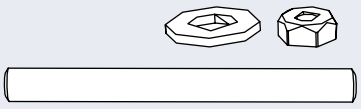
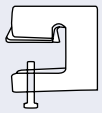
3 PRODUCT COMPONENTS

3.5 Installation tools required

NO.	COMPONENTS	DIAGRAM
1	5mm/6mm Allen wrench	
2	Wire-cutter	
3	Pliers	
4	16mm open end wrench	
5	24mm open end wrench	
6	Flat head screwdriver	
7	Phillips head screwdriver	

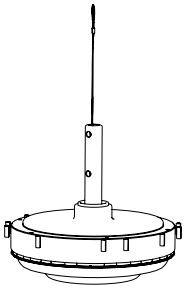
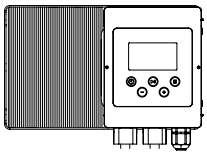
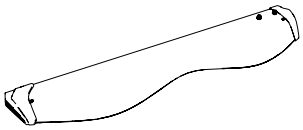
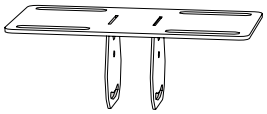
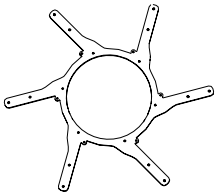
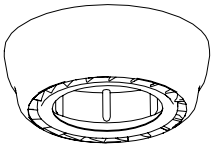
NO.	COMPONENTS	DIAGRAM
8	Quick wrench	
9	Impact drill	
10	Paintbrush	
11	Tap measure	
12	Screw glue	
13	Diastimeter	
14	Level ruler	

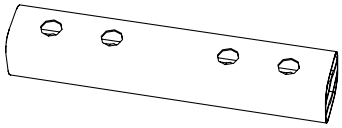
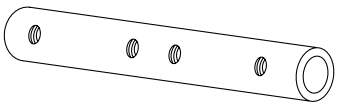
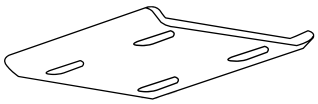
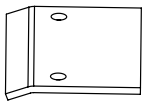
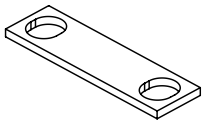
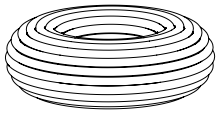
3.6 Fastener packing list

NO.	COMPONENTS	DIAGRAM
1	M8 x 20mm screws	
2	M6 x 20mm screws	
3	Drywall nails	
4	M10 x 100mm screws	
5	M5 x 20mm screws	
6	M10 x 30mm screws	
7	M15 x 65mm screws	
8	M16 x 1000mm Threaded Rod	
9	Buckle on beam	
10	Instruction manual	

3 PRODUCT COMPONENTS

3.7 Parts list

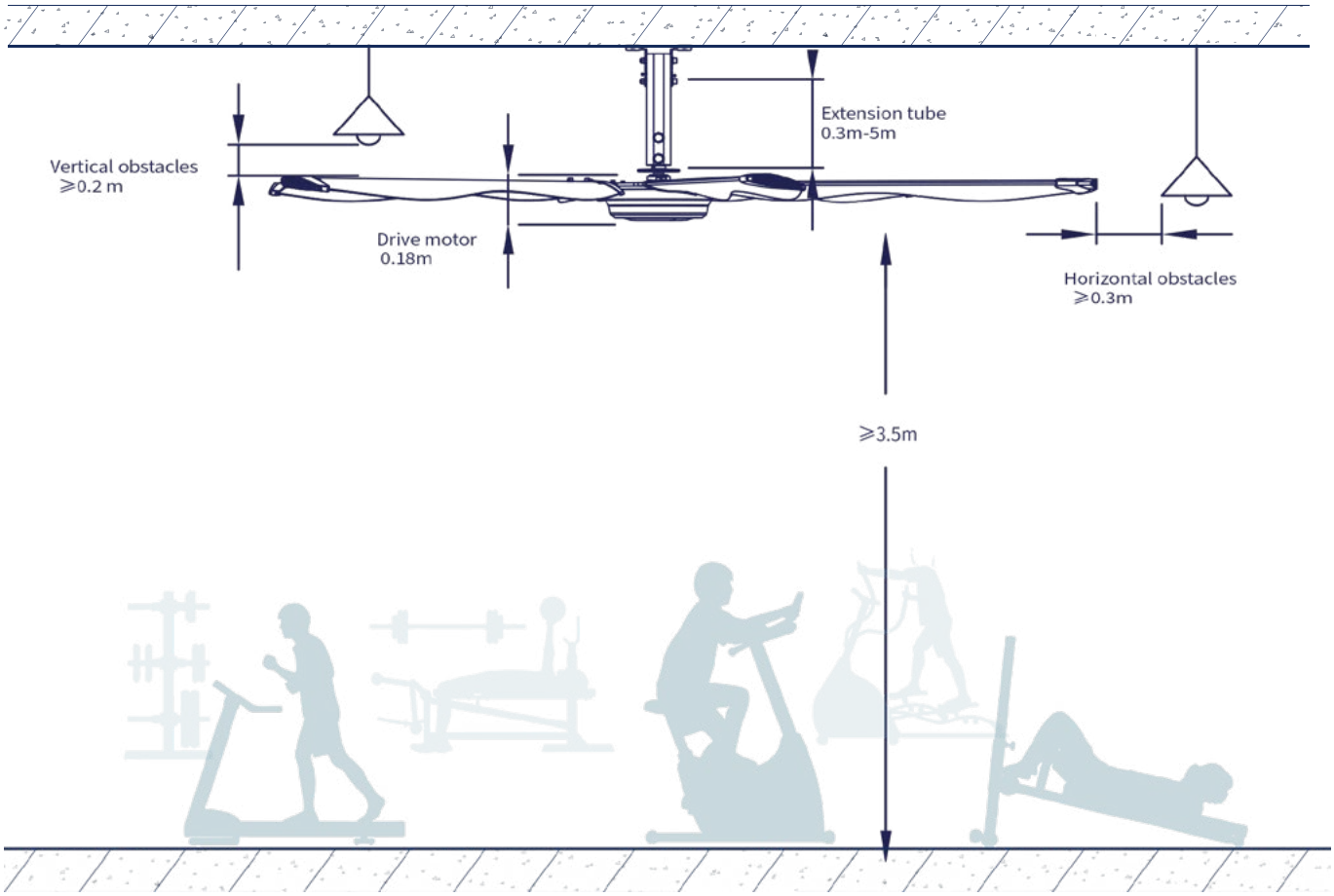
NO.	COMPONENTS	PIECES	DIAGRAM	NOTES
1	**Motor**	1		Main component
2	**220V Control Cabinet**	1		Main component
3	**Fan Blade**	6		Main component
4	**Top Plate**	1	 * Please note that the top bracket pictured may vary slightly to those supplied.	Component principle 400mm x 200mm
5	**Logo Cover**	1		Mounting component
6	**Wire Reel**	1		Mounting component
7	**Integrated Fan Blade Connector**	1		Safety component
8	**Motor Protective Cover**	1		Components of security

NO.	COMPONENTS	PIECES	DIAGRAM	NOTES
9	**Extension Tube**	1		Components of security 1.0m rod included
10	**Extension tube connecting shaft**	1		Mounting component
11	**Upper Plate**	1		Mounting component 400mm x 200mm
12	**Clamp plate**	2		Mounting component
13	**Shim plate**	2		Safety component
14	**Wire rope grip**	22		Components of security
15	**Turnbuckle**	4		Use of wiring
16	**Quick link**	4		Use of wiring
17	**Wire rope**	4		40m
18	**Cable**	2		3-core 2.5mm - 10m 4-core 1.5mm - 40m
19	**Metal hose**	2		20m

4 INSTALLATION REQUIREMENTS

4.1. Roof installation requirement

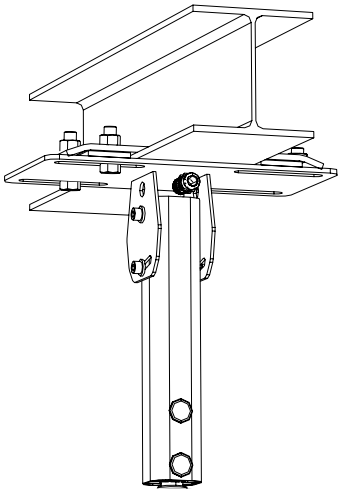
The Mammoth Fan must be installed in a location where the blades have enough space between the fan and the nearest objects or walls (refer to the below diagram for detailed spacing requirement). Secure the hanging bracket to the ceiling joist or structure with provided bolts and nuts. Ensure there are 3-4 threads left on the bolt after tightening the nut. The structure to which the fan is to be mounted must be capable of supporting 2 times the weight of the product and its own structural loading. Check with a structural engineer if unsure.



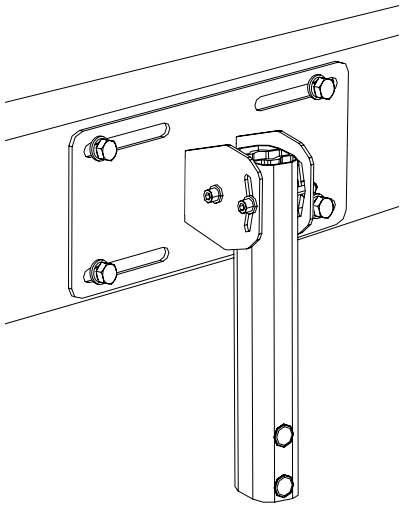
Notice

Be cautious of items like light fittings which may swing into the path of the spinning fan. Ensure appropriate clearance is maintained.

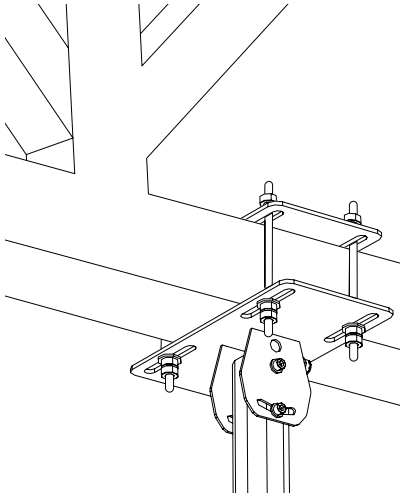
4.2 Mounting options



I-beam steel structure (included as standard)



90 degree concrete structure



Steel, concrete or timber beam structure

4.3 Product working conditions

ENVIRONMENT	CONDITION
Installation space	Interior
Environment temperature	-15°C~55°C To improve reliability, use the product where the temperature does not change sharply.
Humidity	Less than 95% RH
Environment	Non-corrosive, flammable gases, metal powder, oil, water and other foreign bodies will not enter the controller inside the place. Less salty.
Altitude	Less than 1,000m

5 FAN INSTALLATION PROCEDURE

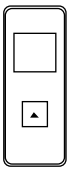
STEP 1 | INSTALLATION READINESS CHECK

Check the product and accessories to make sure they are correct.

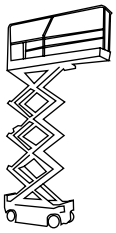
Prepare safety measures (such as harness, safety helmets, etc.), climbing equipment, tools, etc.

Safety helmet

Gloves



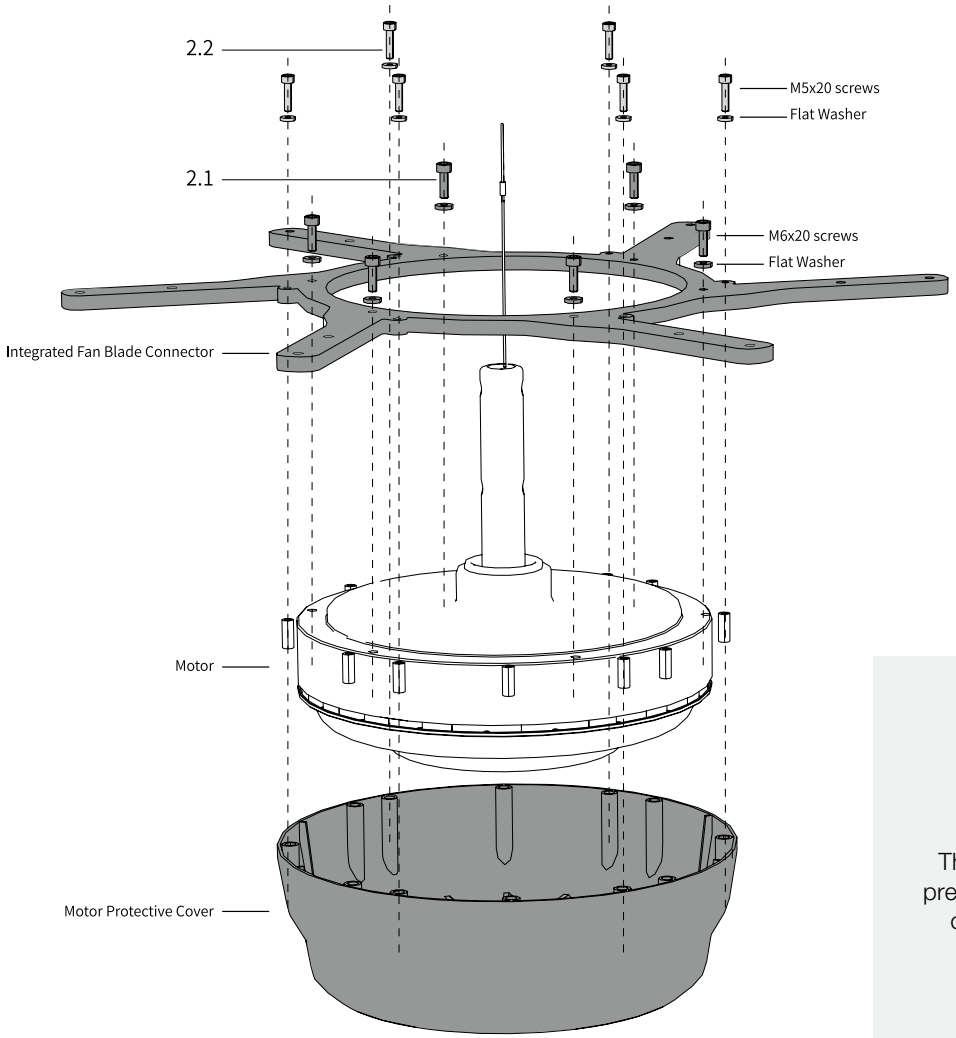
Diastimeter



Ladder truck

STEP 2 | INSTALL THE INTEGRATED FAN BLADE CONNECTOR

2.1 Use a 5mm Allen wrench to install 6 M6 x 20mm screws.
2.2 Use a 4mm Allen wrench to install 6 M5 x 20mm screws to install the motor protective cover.

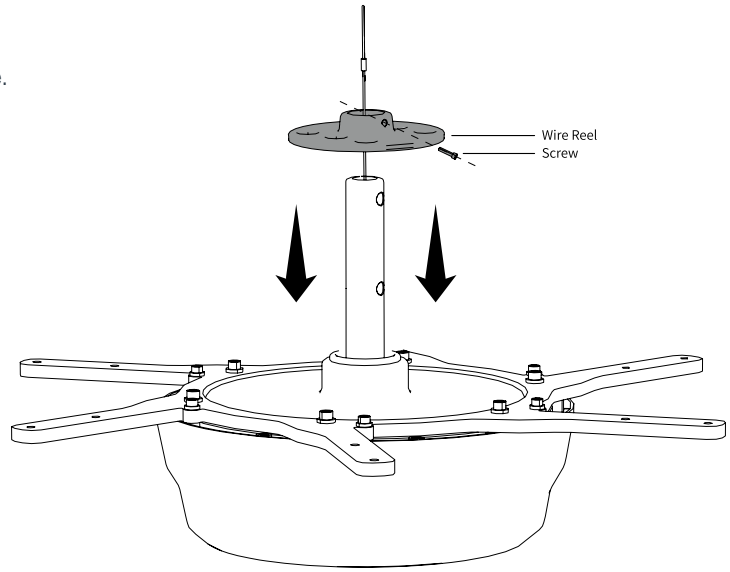


Notice

The screws should be pre-tightened in diagonal order first, and then tightened after all are pre-tightened.

STEP 3 | INSTALL THE WIRE REEL

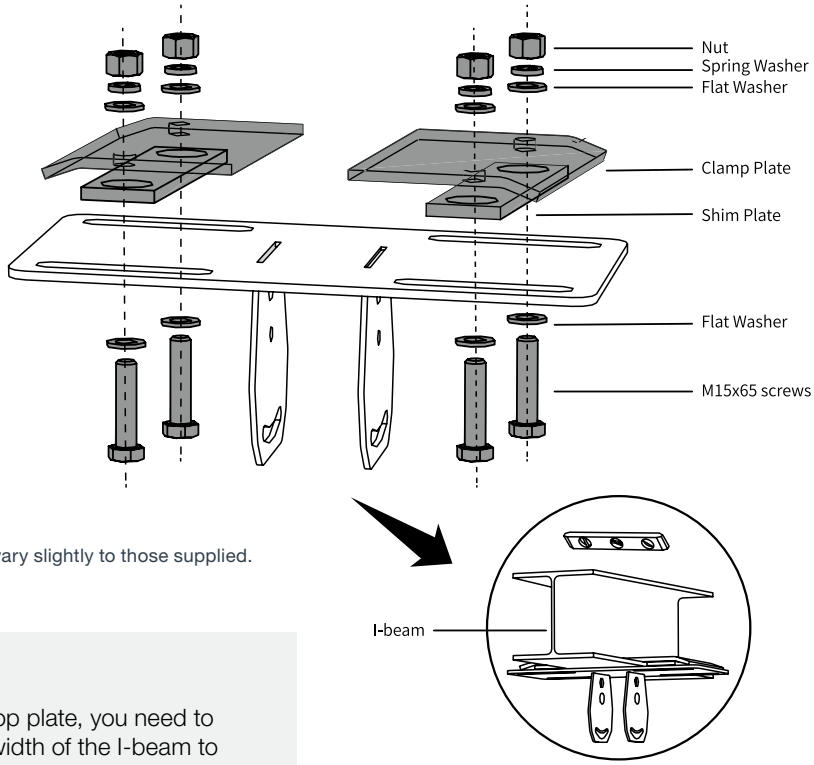
Put the wire reel on the motor, do not tighten the screws on the wire reel, it is easier to adjust the angle of the wire rope.



STEP 4 | INSTALL THE TOP PLATE*

4.1 Before installing the top plate, place the shim plate and clamp plate on the top plate in sequence on the ground.

4.2 Pre-tighten the Ml5 x 65mm screws with 24mm wrench and 24mm socket to ensure it does not loosen or fall off, and leave a certain gap to facilitate the installation of the clamp and top plate clamp on the I-beam. Fully attach the top plate to the I-beam, make sure the top plate is vertical to the I-beam, pre-tighten the top plate screws to prevent falling, and tighten the screws last.



* Please note that the top bracket pictured may vary slightly to those supplied.

WARNING
Notice

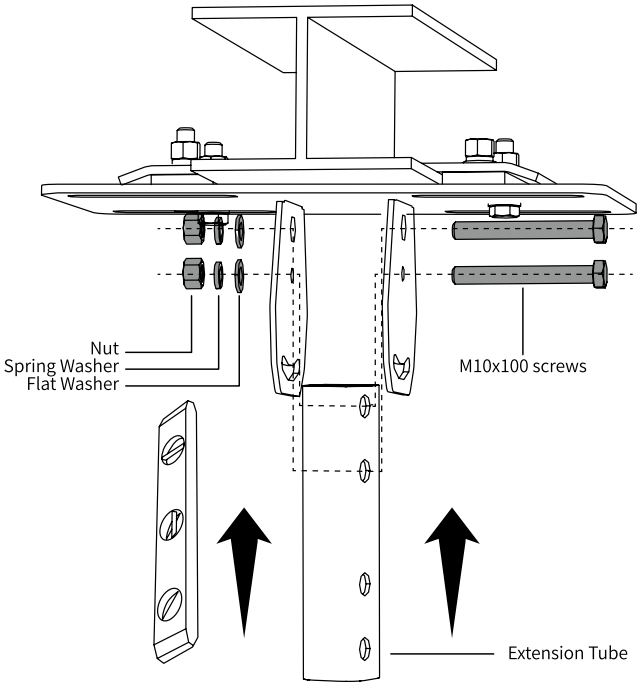
Before installing the top plate, you need to measure across the width of the I-beam to see if it is horizontal, and choose the right top plate specifications and accessories.

5 FAN INSTALLATION PROCEDURE

STEP 5 | INSTALL THE EXTENSION TUBE*

Put the extension tube in the top plate connector, align the holes, fix the extension tube to the top plate with MI0 x I00mm screws, adjust the verticality with a level, pre-tighten the screws with a 16mm socket and a wrench, and finally tighten them with a quick wrench.

* Please note that the top bracket pictured may vary slightly to those supplied.

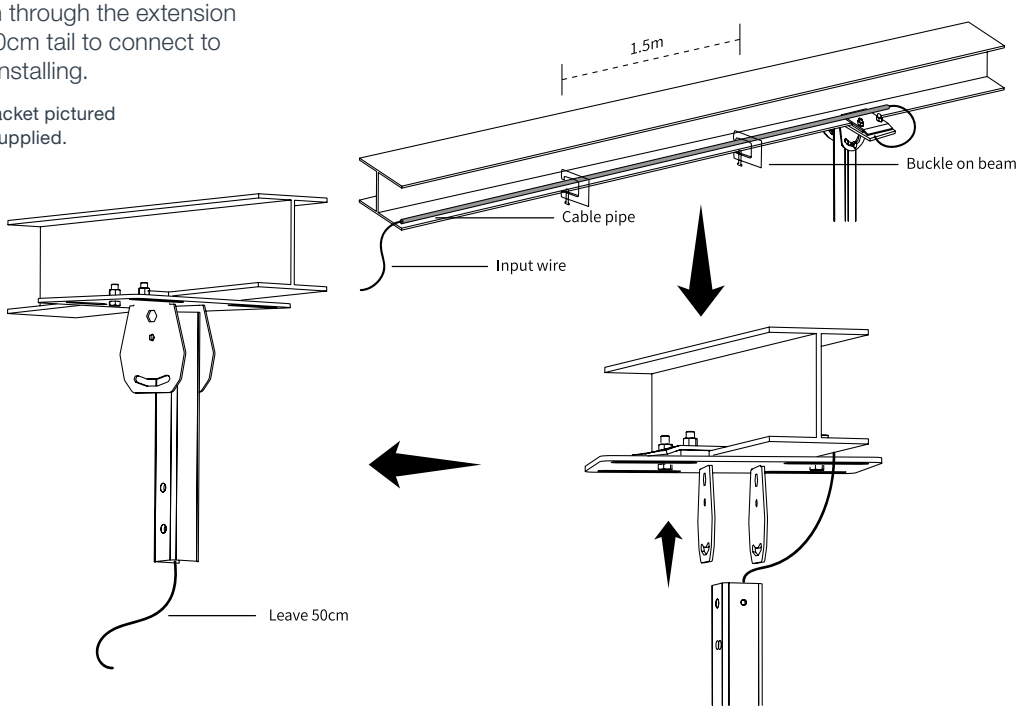


STEP 6 | THREADING THE CABLE WIRES*

6.1 Install mounting bracket to beam.

6.2 Feed cable down through the extension tube, leaving a 50cm tail to connect to the motor when installing.

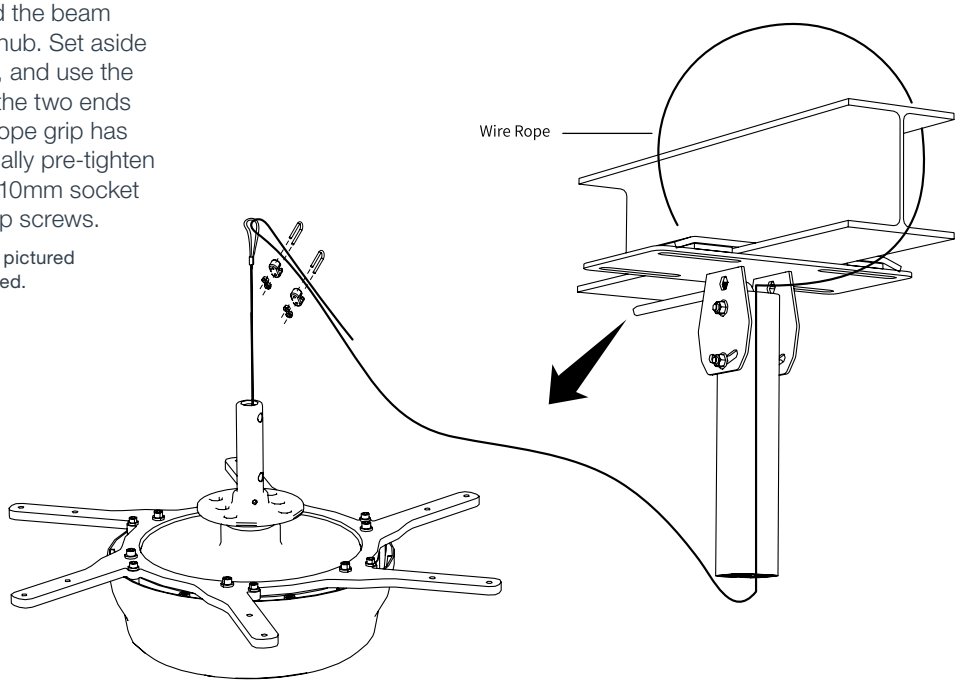
* Please note that the top bracket pictured may vary slightly to those supplied.



STEP 7 | INSTALL WIRE ROPE*

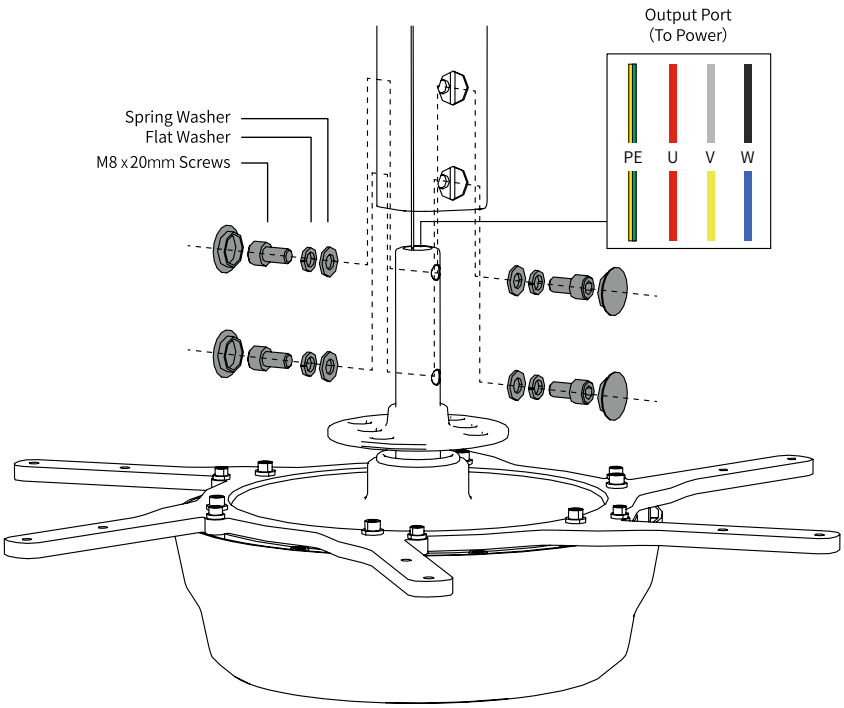
Wrap the wire rope around the beam through the top plate ring hub. Set aside the wire rope as a backup, and use the wire rope grip to connect the two ends of the wire rope (the wire rope grip has two M6 x 5mm) and manually pre-tighten to prevent slipping. Use a 10mm socket to tighten the wire rope grip screws.

* Please note that the top bracket pictured may vary slightly to those supplied.



STEP 8 | INSTALL THE MOTOR

Connect the cable, connect the safety rope, align the upper end of the motor with the hole at the bottom of the extension tube, and install the motor to the extension tube with M8 x 20mm screws. Tighten the screws with a 7mm Allen wrench.



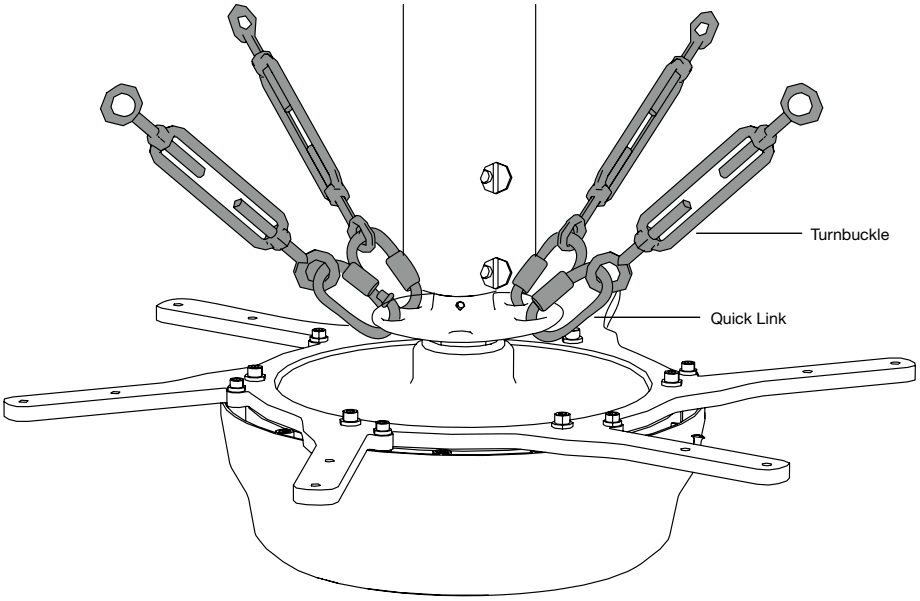
Notice

Adjust the wires in the extension tube and the wires of the motor in the same direction. When installing the motor, have two people work together to lift the motor to prevent the motor from sliding sideways.

5 FAN INSTALLATION PROCEDURE

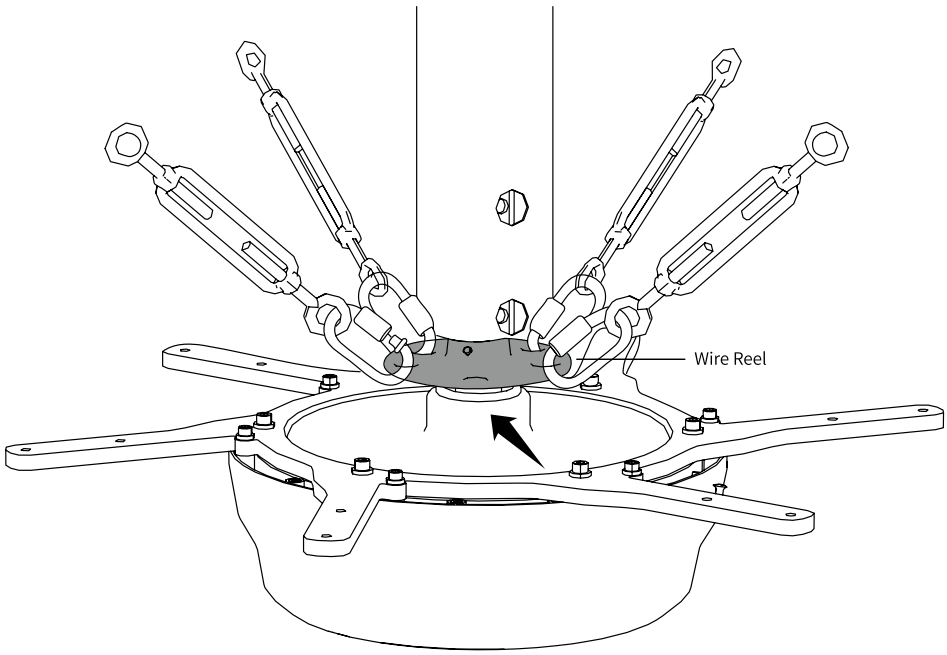
STEP 9 | INSTALL TURNBUCKLE

Install the turnbuckle, fasten the turnbuckle steel wire lock, use a 14mm wrench to tighten the connecting ring nut, use a quick wrench and an 8mm socket, hold the steel wire lock with one hand, and hold a tool in the other to tighten the steel wire lock.



STEP 10 | WIRE REEL

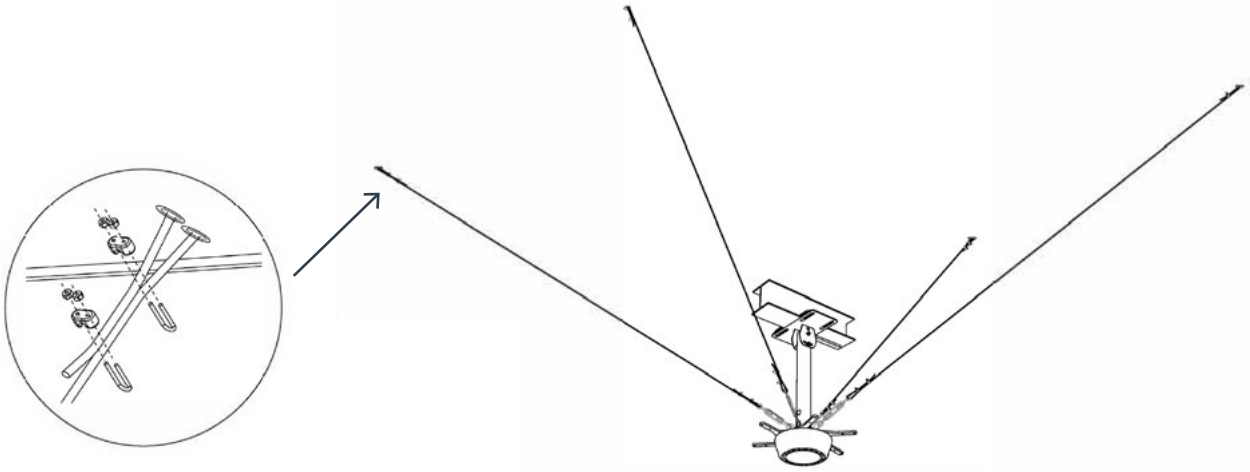
Adjust the position of the wire reel and tighten the wire reel.



STEP 11 | INSTALL WIRE SUPPORTS

At the pulling point, the wire rope will be passed through the hole and then manually fixed and pre-tightened using the wire rope grip. Finally, tighten the wire rope grip with a quick wrench and 8mm socket.

NOTE:
Check the length of cable required for the drop of the fan. It should achieve a 30-45 degree angle. If you need more, purchase this grade of cable: **4.8mm 7 strand 700/800 tensile**

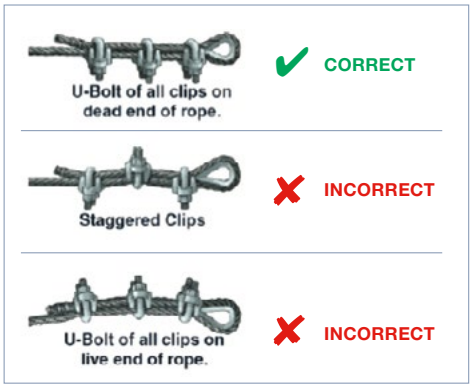


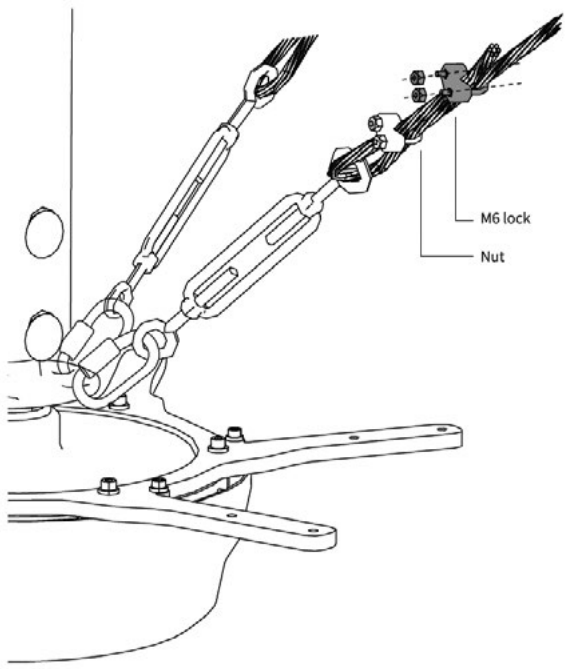
STEP 12 | WIRE ROPE CONNECTING THE MOTOR

Pull the other end of the wire rope to the turnbuckle end of the motor. After confirming the length (the end of the rope just touches the lower end of the extension tube), cut the wire rope, pass it through the turnbuckle, tighten the wire rope, and use the wire rope grip to manually tighten. Use the quick wrench and the 8mm socket to tighten the turnbuckle, and repeat the above steps to pull all 4 wire supports.

Wire Rope Clip

Below is a diagram showing proper wire rope grip installation. It is imperative that you install the saddle on the live end of the wire rope.

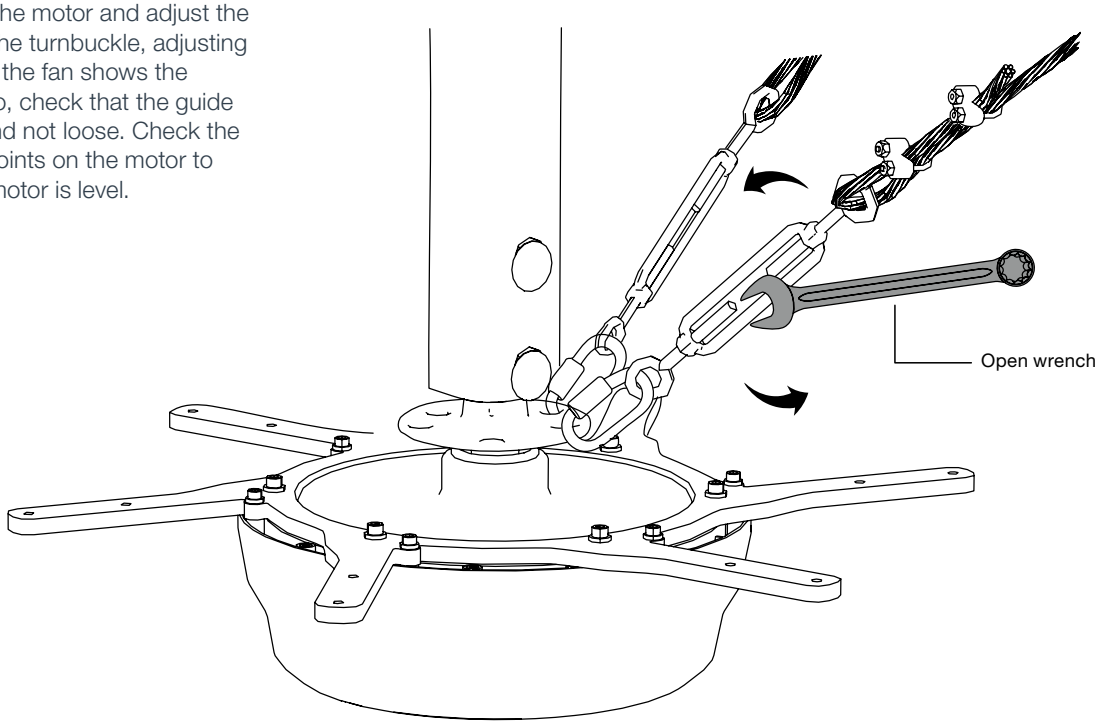




5 FAN INSTALLATION PROCEDURE

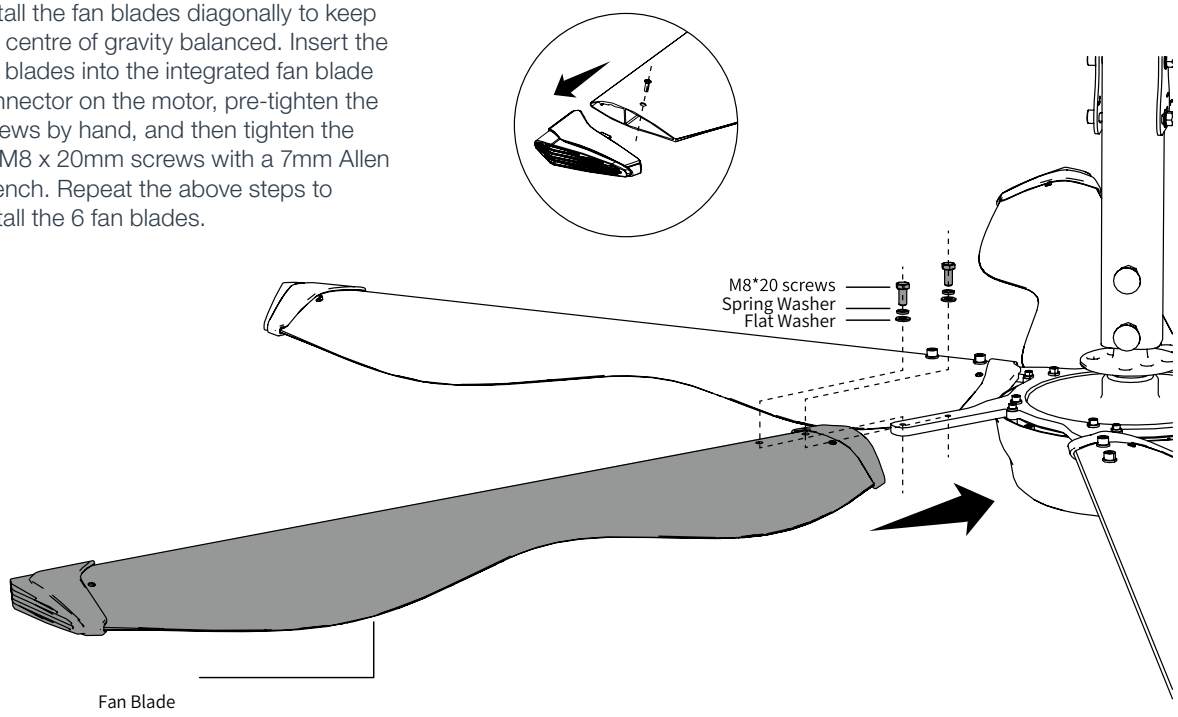
STEP 13 | ADJUST THE MOTOR TO A BALANCED POSITION

Place a level on the motor and adjust the guide ropes via the turnbuckle, adjusting each buckle unit the fan shows the bubble level. Also, check that the guide wires are tight and not loose. Check the level at several points on the motor to ensure that the motor is level.



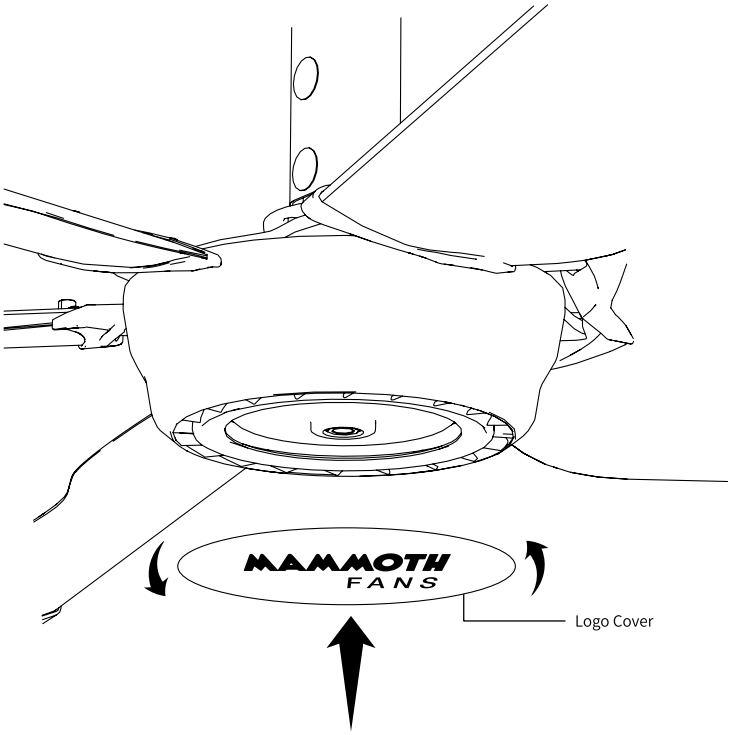
STEP 14 | INSTALL THE FAN BLADES

Install the fan blades diagonally to keep the centre of gravity balanced. Insert the fan blades into the integrated fan blade connector on the motor, pre-tighten the screws by hand, and then tighten the 12 M8 x 20mm screws with a 7mm Allen wrench. Repeat the above steps to install the 6 fan blades.



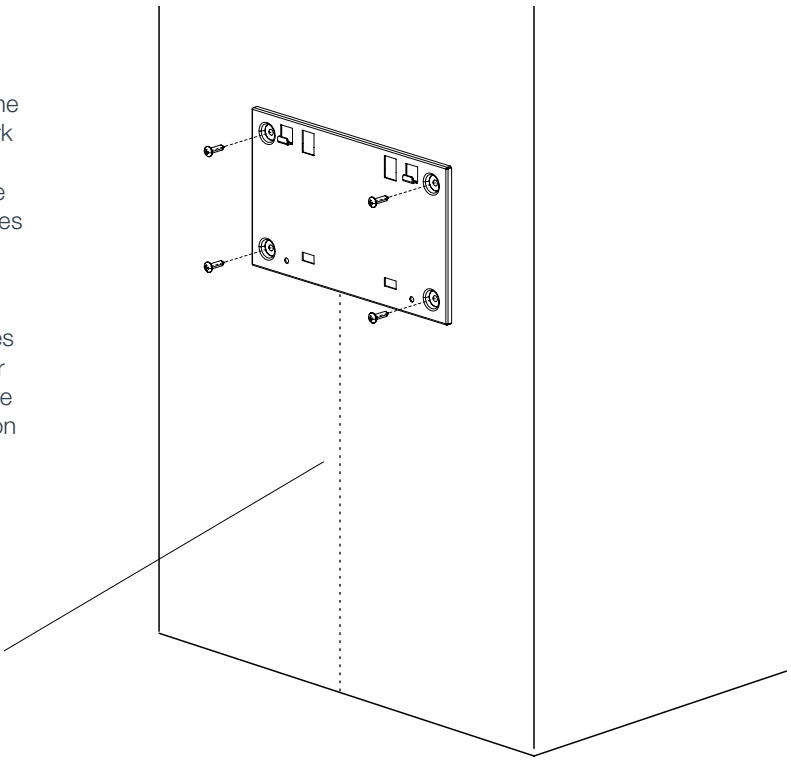
STEP 15 | INSTALL THE LOGO COVER

When installing the logo cover, fit the logo cover onto the chassis, align it with the screw hole, and rotate it clockwise to confirm that the logo cover is secure and not loose.



STEP 16 | CONTROLLER BACKPLATE INSTALLATION

Place backplate of the Controller at 1.2 - 1.4m high (specific height depends on customer requirements and on-site conditions). Use a level ruler to adjust the backplate's horizontal position and mark the positions of four mounting holes. Use a 4mm drill bit to make holes at the marked positions. Insert expansion tubes and place the backplate with a raised hook on top side. Use a Philips head screwdriver to screw in ST4.8 * 20 self-tapping screws into the expansion tubes to fix the backplate. Place the level ruler at the bottom of the backplate to double check the backplate's horizontal position after it has been fixed.

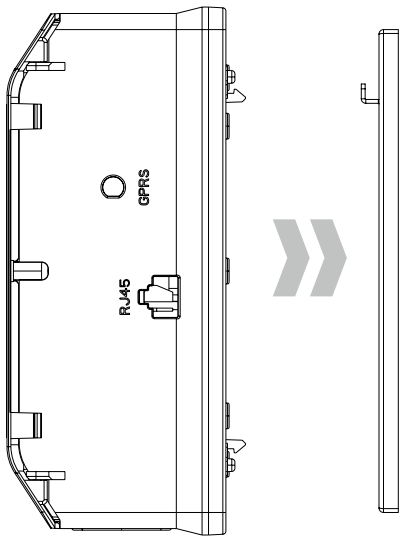


5 FAN INSTALLATION PROCEDURE

STEP 17 | CONTROLLER INSTALLATION

Position the upper end of controller 1cm above the backplate and gradually get closer to backplate. Ensure it is aligned both horizontally and vertically. The lower end of the controller's backplate clip will press against the backplate. Press the upper end of the controller to fit it into the top portion of the backplate, then move the controller downwards so that the lower clip slides into the backplate hole.

Gently pull on the controller to check if it is firmly installed.



STEP 18 | CONTROL CABINET WIRING

Use a flathead screwdriver to gently pry the recessed area of the panel to open the cover.

Slide the output cable into the metal hose (cut to the appropriate length). Put one end of the metal hose into the controller's output terminal and secured, fixing the metal hose.

Pull the output cable out of the metal hose and insert it into the wiring compartment. Use wire strippers to strip insulation cover of output cable and then strip 1cm of insulation cover of 4 inner wires.

Connect the yellow-green, red, grey, and black inner wires with the corresponding terminals (PE/U/V/W) in the wiring compartment and tighten them.

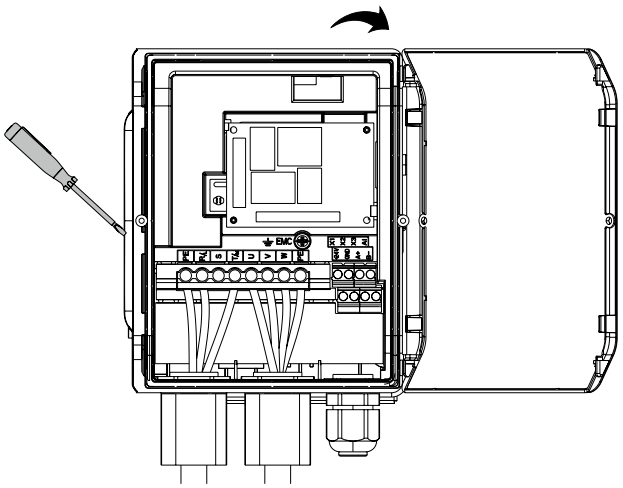
Repeat Step 2 to secure the input cable's metal hose.

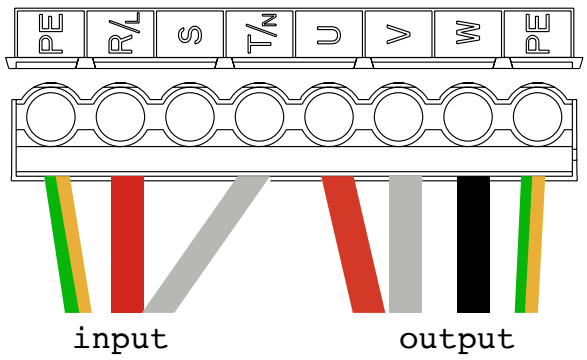
Pull the input cable out of the metal hose and insert it into the wiring compartment. Use wire strippers to strip insulation cover of input cable and then strip 1cm of insulation cover of 3 inner wires.

Connect the yellow-green, red, and grey wires to the corresponding terminals (PE/L/N) in the wiring compartment and tighten them.

Gently pull the seven inner wires to check if the connections are secure.

Gently press and close the wiring compartment cover.

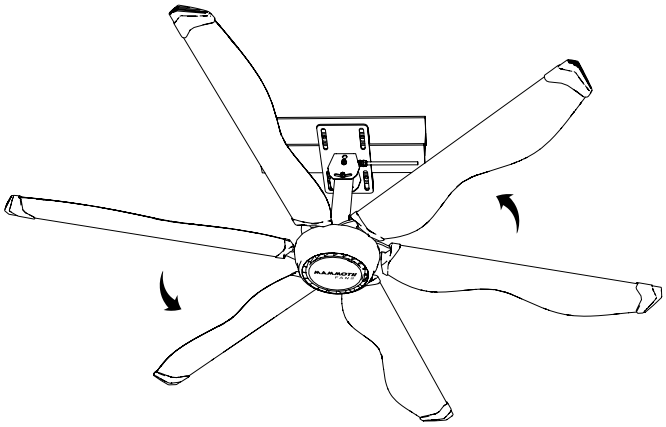




STEP 19 | CHECK AND TEST RUNNING

After the main power supply is powered on, the fan control cabinet power is powered on, and the fan starts running at a low speed, gradually increase the fan operating speed to the highest value. Check whether the fan is running normally and whether there is any abnormal noise. If any problem is found, stop the fan immediately.

NOTE:
Use a spirit level and ensure blades are level before switching on. Run the fan for 15 mins and observe, whether it is spinning in the correct direction (anti-clockwise), listen for any abnormal noise, ensure there is no movement in the support cables. Check the current is within the rated range.



STEP 20 | DEBUGGING

Each Mammoth Fan is tested prior to leaving the factory. If there seems to be a problem, double check all electrical connections, and contact the Mammoth support team.

STEP 21 | HANDOVER

Ensure the customer is instructed on how to operate and isolate the fan.

6 OPERATING INSTRUCTIONS

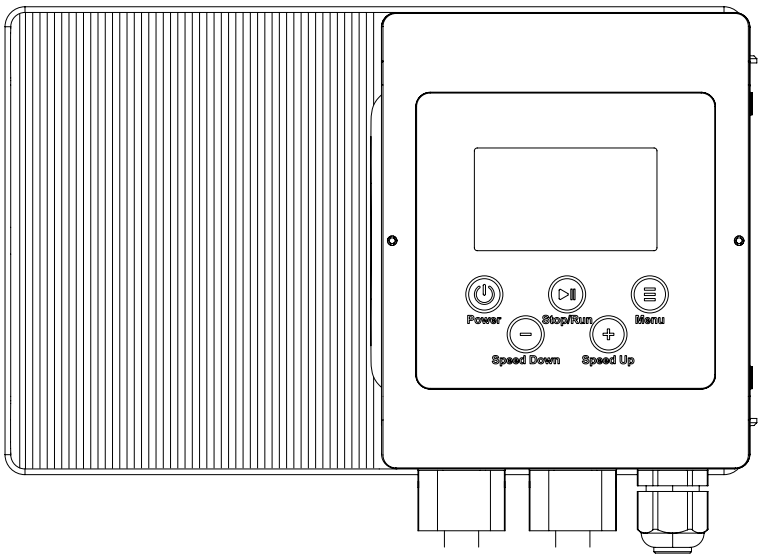
Functions

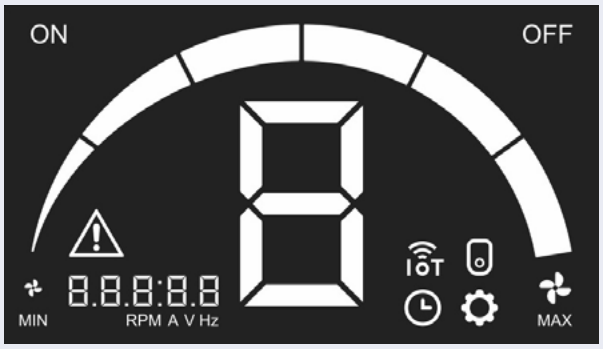
Power Button:
Hold down for 2S to turn on/off the controller.
Turn off the fan when fan stopped.

Speed Up/Down

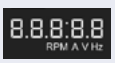
STOP/RUN:
Press to run or stop fan operation.

Menu:
Press to enter Engineering Interface.



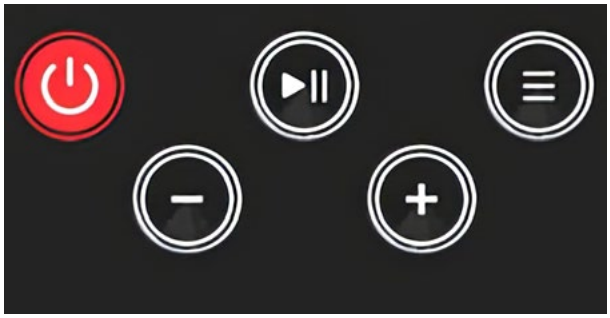
USER INTERFACE	FULL DISPLAY AND ENGINEER INTERFACE
	

Note: The display screen is divided into “user interface” and “engineer interface”, which are suitable for use by different people.

Icon	Definition
	Gear digital display and icon display
	Running status display
	Fault display icon
	IOT and remote control configuration identification
	Timing and engineer interface identification
	Parameter display and unit identification

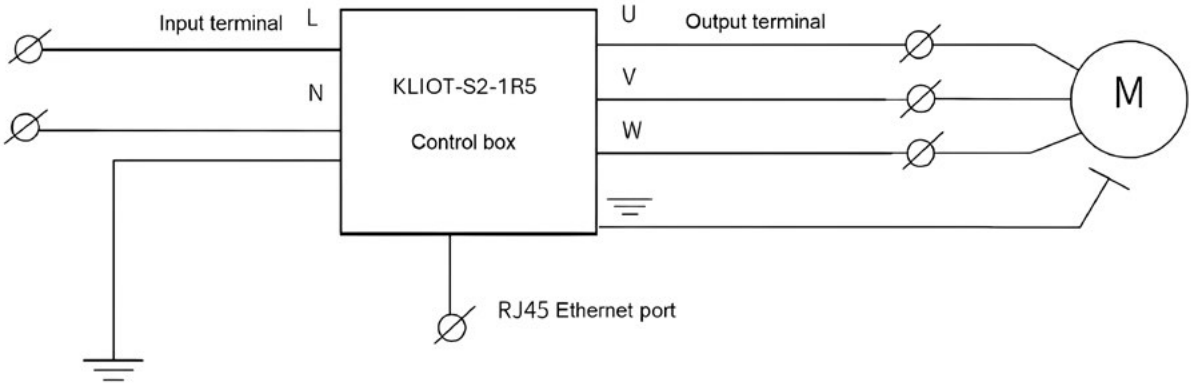
Button description

Note: The corresponding key functions of “User Interface” and “Engineer Interface” are different.
See the table below for detailed description.



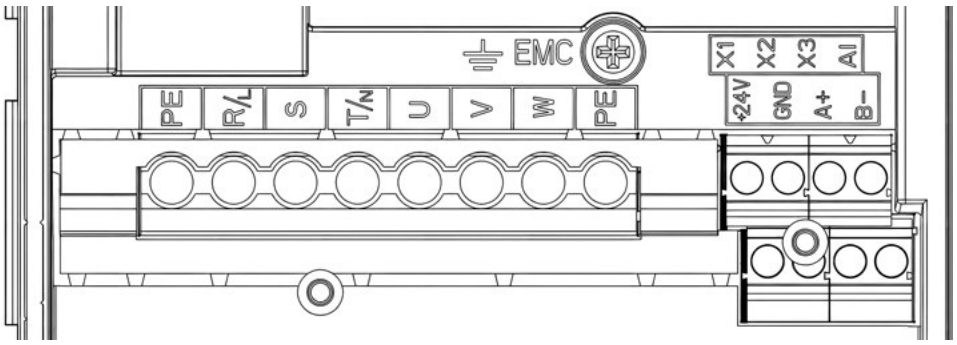
Icon	Definition
	Power switch: long press (more than 2s) to power on and off the product
	Multi-function button User interface: no functionality Press and hold (more than 2s) to enter the engineer interface, and the parameters will be displayed. Engineer interface: Short press (less than 2s): return key Long press (more than 2s): enter C parameter group
	Multi-function button User interface: Short press (less than 2s): run/stop button Engineer interface: 1. In the initial engineer interface Short press (less than 2s): switch to initial engineer interface monitoring variables Long press (more than 2s): Exit the engineer interface and return to the user interface 2. In the F and C parameter group engineer interface Short press (less than 2s): Confirm key Long press (more than 2s): shift key
	Power switch: long press (more than 2s) to power on and off the product

7 ELECTRICAL WIRING DIAGRAM



NOTE:
Make sure the fan is running in the correct direction - anti-clockwise.
If the direction is incorrect, just exchange any 2 of the 3 UVW wires in the control system.

Terminal block information



TERMINAL	TERMINAL NAME	TERMINAL FUNCTION DEFINITION
R/L	Inverter input terminal	For connecting three-phase or two-phase AC power.
S		
T/N		
U	Inverter output terminal	For connecting the motor.
V		
W		
⏚ EMC	ground	Ground terminal, ground resistance<10Oh
PE		
X1/X2/X3-GND	Multifunctional digital input terminal	Support NPN type input; connections for thermostat, relay sensors etc.
AI-GND	Analog input terminal	Input voltage and current range:DC 0V~10V/0mA~20mA。
24V-GND	external+24V power supply	Provided externally+24V Power supply, maximum output current: 100mA。
A+B-	485 Communication terminal	RS485 communication interface; building Management System (BMS) connectivity and Modbus protocol.

CLEANING REPAIR AND MAINTENANCE 8&9

8 | Cleaning

Please ensure the power to your Mammoth Fan is isolated before completing any cleaning and maintenance work. Also ensure you follow all local regulations in regards to safe working at heights. Periodic cleaning of your ceiling fan is the only maintenance required.

1. Use a soft brush or lint-free cloth to avoid scratching the paint finish.

2. A damp cloth can be used to wipe down the blades, however, ensure that excess water doesn't enter any wiring connections as this could damage the fan and cause a safety issue.

3. Ensure that the fitting does not come in contact with any organic solvents or cleaners.

4. The motor has a permanently lubricated ball bearing which does not require maintenance or re-oiling.

9 | Repair and maintenance

Our product design is maintenance-free, but in order to ensure the fan's long life and normal operation, the fan should also be maintained, especially for applications in harsh environments. For any maintenance on the fan or inverter controller, please make sure that the fan stops running and cut off the power supply of the controller to protect personnel.

TIME INTERVAL	RECOMMENDED MAINTENANCE WORK CONTENT
Trial run	- Check the fan for abnormal running sound or vibration - Frequency conversion controller dust removal
Every 2500 hours of work	- Fan blade dust removal
Every 5000 hours of work	- Check mechanical fasteners to ensure that there is no looseness - Check the wire cable to make sure there is no damage

If the fan produces severe noise or vibration during abnormal operation, it indicates that a mechanical part is damaged.

At this time, it should be shut down immediately and a thorough inspection should be done.

TROUBLESHOOTING 10

Common causes of operation malfunction

1. Ensure that the external power supply of the control box is within the range appropriate for the controller.
2. Ensure that there is power to the controller box and turn the speed dial to the minimum setting (Slow). Then turn the control dial to Run. If this doesn't work, turn the control dial to Reset, then to Stop and finally to Run.
3. If on startup you notice any unusual sounds coming from the fan or the controller, immediately return the control dial to Stop and contact the Mammoth support team.
4. Equipment damage due to improper use is not covered by the warranty. Mammoth Fans will not be responsible for personal injuries and equipment damages for failure to comply with the contents of this manual.

10 TROUBLESHOOTING

Error Code	Failure Description	Failure Type	Error Code	Failure Description	Failure Type
E.SC1 (1)	System failure when acceleration		E.LD1 (79)	Load protection 1	
E.SC2 (2)	System failure when deceleration		E.LD2 (80)	Load protection 2	
E.SC3 (3)	System failure during constant speed		E.CPU (81)	CPU Timeout failures	
E.SC4 (4)	System downtime failure		E.LOC (85)	IC failure	
E.OC1 (5)	Overcurrent during acceleration		E.EEP (86)	Parameter saving Failure	
E.OC2 (6)	Overcurrent during deceleration		E.PLL (87)	Phase-locked loop Failure	
E.OC3 (7)	Overcurrent at constant speed		E.BUS1 (91)	Expansion card A disconnection	
E.OU1 (9)	Overvoltage during acceleration		E.BUS2 (92)	Expansion card B disconnection	
E.OU2 (10)	Overvoltage during deceleration		E.BUS3 (93)	CAN Expansion card failure	
E.OU3 (11)	Overvoltage at constant speed		E.BUS4 (94)	Other expansion card failure	
E.LU (13)	Undervoltage during operation		E.BUS5 (95)	Other expansion card failure	
E.OL1 (14)	The motor is overloaded		E.BUS6 (96)	Other expansion card disconnection	**Failure**
E.OL2 (15)	Inverter 1 is overloaded		E.CP1 (97)	The monitor output 1 failure	
E.OL3 (16)	Inverter 2 is overloaded		E.CP2 (98)	The monitor output 2 failure	
E.OL4 (17)	Inverter 3 is overloaded		E.PAT (99)	Parameter setting failure	
E.ILF (18)	Phrase false in input		E.FA1 (110)	Externally extended reservations 1	
E.OLF (19)	Phrase false in output		E.FA2 (111)	Externally extended reservations 2	
E.OLF1 (20)	U Phrase false		E.FA3 (112)	Externally extended reservations 3	
E.OLF2 (21)	V Phrase false		E.FA4 (113)	Externally extended reservations 4	
E.OLF3 (22)	W Phrase false		E.FA5 (114)	Externally extended reservations 5	
E.OH1 (30)	The rectifier module is overheated		E.FA6 (115)	Externally extended reservations 6	
E.OH2 (31)	IGBT module is overheated		E.FA7 (116)	Externally extended reservations 7	
E.OH3 (32)	The motor is overheated		E.FA8 (117)	Externally extended reservations 8	
E.EF (33)	External faults				
E.CE (34)	Modbus communication failures				
E.HAL1 (35)	U phase zero drift large		A.LU1 (128)	Shutdown undervoltage	
E.HAL2 (36)	V phase zero drift large	**Failure**	A.OU (129)	Shutdown overpressure	
E.HAL (37)	Sum of 3-phase current vectors ≠0		A.ILF (130)	Phrase false in input	
E.HAL3 (38)	W phase zero drift large		A.PID (131)	PID line disconnected	
E.SGxx (40)	Ground-wire short-circuit		A.EEP (132)	Parameter saving warnings	
E.FSG (41)	Fan short-circuit		A.DEF (133)	The speed deviation is too large	
E.PID (42)	PID line disconnected		A.SPD (134)	Abnormal frequency warning	
E.COP (43)	Parameter copy failure		A.GPS1 (135)	GPS device locking	
E.PG1 (44)	Incorrect PG parameter setting		A.GPS2 (136)	GPS line disconnected	
E.PG2 (44)	Encoder Z pulse failure		A.CE (137)	External Warning	
E.PG3 (44)	Resolver verification error		A.LD1 (138)	Load protection 1	
E.PG4 (44)	Resolver breakage		A.LD2 (139)	Load protection 2	
E.PG5 (44)	ABZ encoder disconnection		A.BUS (140)	Expansion card disconnection warning	
E.PG6 (44)	Main encoder disconnection		A.OH1 (141)	Module overheat warning	**Warning**
E.PG7 (44)	Main encoder Z pulse error failure		A.OH3 (142)	Motor overheat warning	
E.PG8 (44)	Encoder Z pulse logic failure		A.RUN1 (143)	Conflicting directives	
E.PG9 (44)	Main encoder Z pulse logic failure		A.RUN2 (158)	Manual terminal start-up protection	
E.PG10 (44)	Encoder Z pulse disconnection		A.RUN3 (159)	Terminal start-up protection	
E.BRU (50)	Brake module failure		A.PA2 (144)	External keyboard disconnection warning	
E.TExx (52)	Parameter self-learning failure(Motor)		A.COP (145)	Parameter Copy warning	
E.IAE1 (71)	Motor angle learning failure 1		A.CP1 (146)	The monitor output 1	
E.IAE2 (72)	Motor angle learning failure 2		A.CP2 (147)	The monitor output 2	
E.IAE3 (73)	Motor angle learning failure 3		A.FA1 (150)	Externally extended reservations 1	
E.PST1 (74)	PMSM Step-out 1		A.FA2 (151)	Externally extended reservations 2	
E.PST2 (75)	PMSM Step-out 2		A.FA3 (152)	Externally extended reservations 3	
E.PST3 (76)	PMSM Step-out 3		A.FA4 (153)	Externally extended reservations 4	
E.DEF (77)	The speed deviation is too large		A.FA5 (154)	Externally extended reservations 5	
E.SPD (78)	Abnormal frequency failure		A.FA6 (155)	Externally extended reservations 6	

Code	Desc.	Reason	Solution
E.Lu	Under pressure in operation	Power outages or instantaneous power outages	Check power and reset
		Input power lack phase	Confirmation of main circuit wiring
		Excessive input voltage fluctuations	Improve the power supply to meet the rated voltage of the controller. If the main circuit power supply is fine, check the main circuit side of the electromagnetic contactor to identify the problem

Note: this fault is detected when the bus voltage is lower than the ** voltage protection point (F10.19) when the controller is running.

Code	Desc.	Reason	Solution
E.oCxx	Mid acceleration/ mid speed/ overcurrent fault	Overload	Reducing load or replacing impulse load of large capacity controller requires reducing load change frequency or replacing larger capacity controller
		Short circuit to the output side of the controller	Check main circuit, eliminate short circuit
		Motor damaged	Measure the resistance between the lines of the motor and replace the motor immediately if conducting
		Too short acceleration/ deceleration time	Increase F01.22 (acceleration time 1) increase F01.23 (deceleration time 1) replace bulk control
		Overvoltage suppression of rising frequency may result in accelerated overcurrent fault	Decrease overvoltage gain F10.13
		Overflow suppression of frequency reduction resulting in decelerated overcurrent fault	Increase overcurrent suppression gain F10.02
		Controller output cable exceeds allowable maximum	Shorten output cable or add sinusoidal filter
		Mis-operation caused by interference	Check the wiring of control circuit, main circuit and ground, remove interference source

Note: this fault is detected when the output current of the controller exceeds the overcurrent point.

10 TROUBLESHOOTING

Code	Desc.	Reason	Solution
E.oL1	Motor overload	Overload	Reduce the load and increase the curve coefficient of overload protection
		Acceleration and deceleration time set too small	Increase F01.22,F01.23 (acceleration and deceleration time)
		Torque lift set too large	Decrease F04.01 (torque increase)
		V/F curve setting is not appropriate	To determine the relationship between voltage and frequency of V/F curve setting, modify F04.00 (VF curve setting) and modify the custom V/F curve related parameters (F04.10~F04.19)
		The characteristics of electronic thermal relay are inconsistent with the characteristics of motor load.	Use of external thermal relays
		Abnormal output current due to input missing phase	Check the main loop to remove input phase

Code	Desc.	Reason	Solution
E.oL2	Controller Overload	Overload	Reduce load Increase the curve coefficient of overload protection of motor
		Acceleration and deceleration time too short	Increase F01.22 F01.23 (acceleration and deceleration time) Decrease F04.01 (torque increase)
		Torque lift set too large	Decrease F04.01 (torque increase)
		V/F curve setting is not appropriate	To determine the relationship between voltage and frequency of V/F curve setting, modify F04.00 (VF curve setting) and modify the custom V/F curve related parameters (F04.10~F04.19)
		Abnormal output current due to input missing phase	Check the main loop to remove input phase

Code	Desc.	Reason	Solution
E.ILF	Input missing phase	Loosening of main circuit terminal of controller	Tighten the screw and restart
		Excessive input voltage fluctuations	Improve the power supply to meet the rated voltage of the controller. If the main circuit power supply is fine, check the main circuit side of the electromagnetic contactor to identify the problem
		Three-phase voltage imbalance	Confirm if there is a problem with the input voltage and improve the power imbalance

Code	Desc.	Reason	Solution
E.oLFXX	Output missing phase	Controller output side U/V/W/ phase break	Check that the motor U/V/W/ phase connection is normal and check that the controller output terminal screw is not loose
		Motor damage	Measure the resistance between the motor wires, and replace the motor immediately if it is connected
		Low motor power	Reset controller or motor power

Code	Desc.	Reason	Solution
E.oH2	IGBT module overheating	Excessive ambient temperature	Reduce the ambient temperature of the controller
		Overload	Reduce load Decrease F01.40 (carrier set)
		Fan fault	Make sure that the fan is running normally. If not, replace the fan and start up again

Note: Correct fan rotation is anti-clock wise, to reverse motor direction swap U and V. **This fan NOT designed to run clockwise.** If no air flow is noticed ensure motor is running in the correct direction.

10 TROUBLESHOOTING

Code	Desc.	Reason	Solution
E.oUxx	Mid acceleration/ moderate/ mid-speed/ stop/over -voltage fault	High voltage	Reduce the supply voltage to a specified range
		Controller output or motor short circuit	Check main circuit wiring, eliminate short circuit
		Too short acceleration/ deceleration time	Determine whether the acceleration stops. The fault detection increases F01.22 (acceleration time 1) increases F01.23 (deceleration time 1)
		Overvoltage suppression of frequency rise may result in accelerated overvoltage fault	Increase overvoltage suppression gain F10.13
		Over-current suppression of frequency-lowering overvoltage fault	Decrease overcurrent suppression gain F10.02 and reduce load
		Surge voltage mixed with input voltage	Add reactor to input side
		Improper setting of speed tracking parameters	Change of speed tracking parameter (F07.25~F07.28)

Note: this fault is detected when the bus voltage exceeds the overvoltage point. Three phase input overvoltage point is 820 V, single-phase input overvoltage point is 400 V.

Code	Desc.	Reason	Solution
E.TExx	Self-learning failures	The output current of the controller exceeds the upper and lower limits	Check if the motor connection is correct, reset and retry self-learning. If the error still occurs, contact the Mammoth Fan support team.

Note: where “xx” is self-learning faults ub code.

Code	Desc.	Reason	Solution
E.SPD	Rapid failure	Controller application	Seek technical support from manufacturer
		Improper setting of relevant parameters for rapid detection	Adjust rapid detection threshold and F10.45 (rapid detection time)
		Fan fault	Make sure that the fan is running normally. If not, replace the fan and start up again

Note: the percentage of output motor speed relative to F01.10 (maximum frequency) is greater than F10.44 (rapid detection threshold), and the fault is reported after continuous F10.45 of rapid detection time. By F10.43 (the rapid protection action), the fault detection and the motor operation mode can be set when the fault is detected.

WARRANTY CONTACT INFORMATION 11

THIS WARRANTY IS VALID IN AUSTRALIA ONLY

In the event of service being required, please call the **Mammoth Fans Support Hotline on 1800 602 243** between **9am and 5pm (AEST) Monday to Friday.**

Every Mammoth Fan is thoroughly inspected and tested before being released for sale. In addition to any warranty rights or conditions under statutory regulations, Mammoth Fans warrant all of its ceiling fans against defective workmanship and faulty materials for 5 years from the date of purchase. Mammoth Fans undertake, at its option, to repair or replace, free of charge, each product or part thereof on condition that;

1. The fan or relevant part has not been subjected to misuse, neglect, or been involved in an accident.

2. The repairs are not required as a result of normal wear and tear.

3. The product was installed by a licensed electrical contractor and to the guidelines outlined in the manual.

4. A copy of the original receipt of purchase is presented.

To make a warranty claim, go to our Mammoth Fans website, or call the Warranty Hotline:

Website: www.mammothfans.com.au/support-and-warranty

Warranty Hotline: 1800 602 243

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Mammoth Fans cannot be held responsible for any repair other than those carried out by it or one of its Authorised Service Agents. Please keep this warranty information in a safe place. This information must be produced in the event of service being required.

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