

— COMMERCIAL II SERIES —  
INSTRUCTION MANUAL

SKU 211404, 211405, 211406 & 211407



INSTALLATION • OPERATION • MAINTENANCE • WARRANTY INFORMATION

**CAUTION**

READ INSTRUCTIONS CAREFULLY FOR SAFE  
INSTALLATION AND FAN OPERATION.

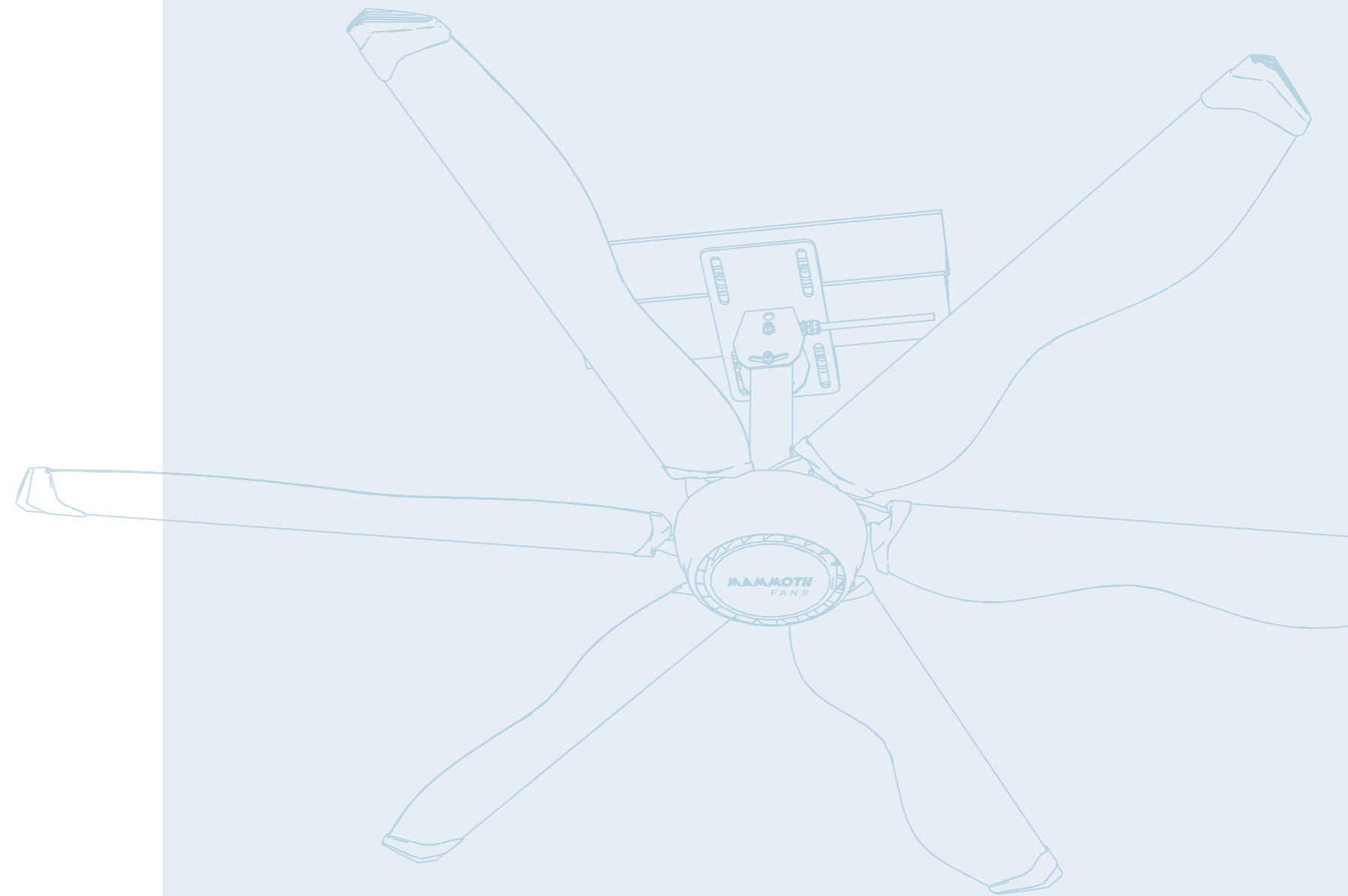
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Congratulations on your purchase of a Mammoth Fan. The Mammoth Fans range features world class permanent magnetic synchronous motor (PMSM) technology and precision-led aeronautical design in mammoth proportions.

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.

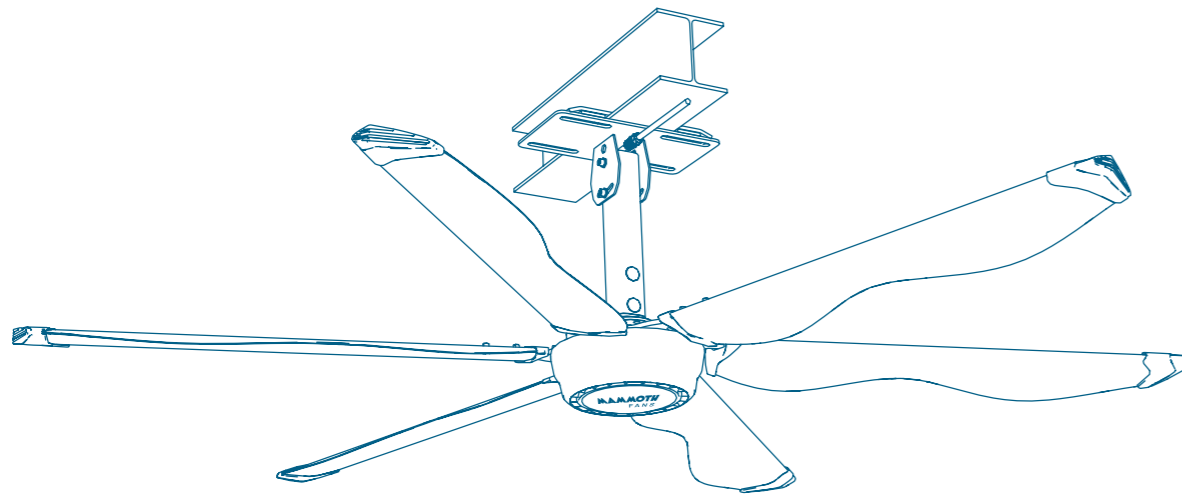
The Mammoth Fan you have purchased is a sophisticated electrical device and all care must be taken to ensure the fan is kept clean and regularly maintained. Any issues arising from misuse or neglect are not covered by the warranty.



## 1. PRODUCT SERIES INTRODUCTION

The Mammoth Commercial II 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

<b>SKU#</b>	211404 / 211405	211406 / 211407
<b>Diameter</b>	2.5m (8ft)	3.0m (10ft)
<b>Rated voltage</b>	220-240V - 50Hz	220-240V - 50Hz
<b>Rated power</b>	150W / 0.15kW	200W / 0.2kW
<b>Full load current</b>	0.7A	1A
<b>Max. speed</b>	130RPM	110RPM
<b>Air volume at max. speed</b>	4200m <sup>3</sup> /min	5150m <sup>3</sup> /min
<b>IP Rating</b>	IP65	IP65
<b>Weight</b>	41kg	44kg

1. Weight: the weight doesn't contain control cabinet, top connection parts, etc.
2. Input power: 220V/1PH±10%.
3. Motor: PMSM (Permanent-magnet synchronous motor).

## 2. SAFETY PRECAUTIONS

### 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.

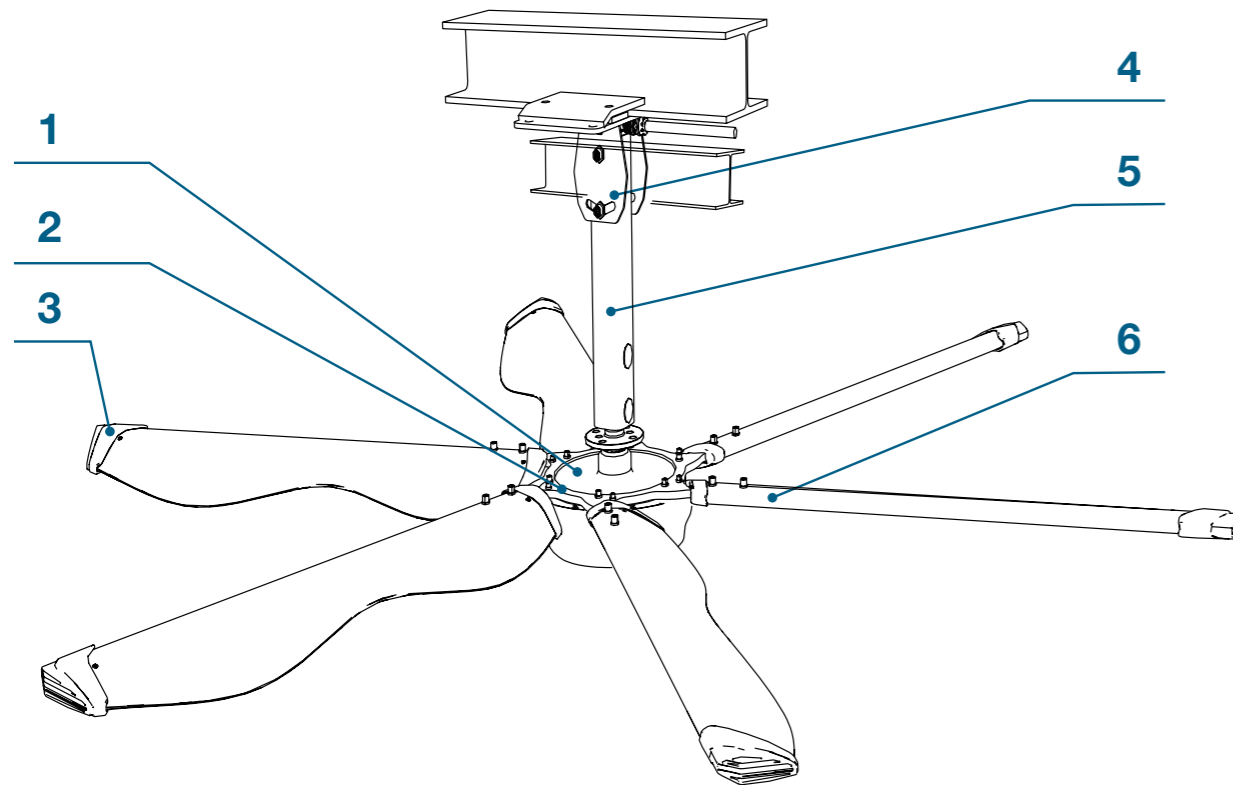
**NOTE:** Always start the fan on low speed.

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.



### 3. PRODUCT COMPONENTS

#### 3.1 General components\*



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

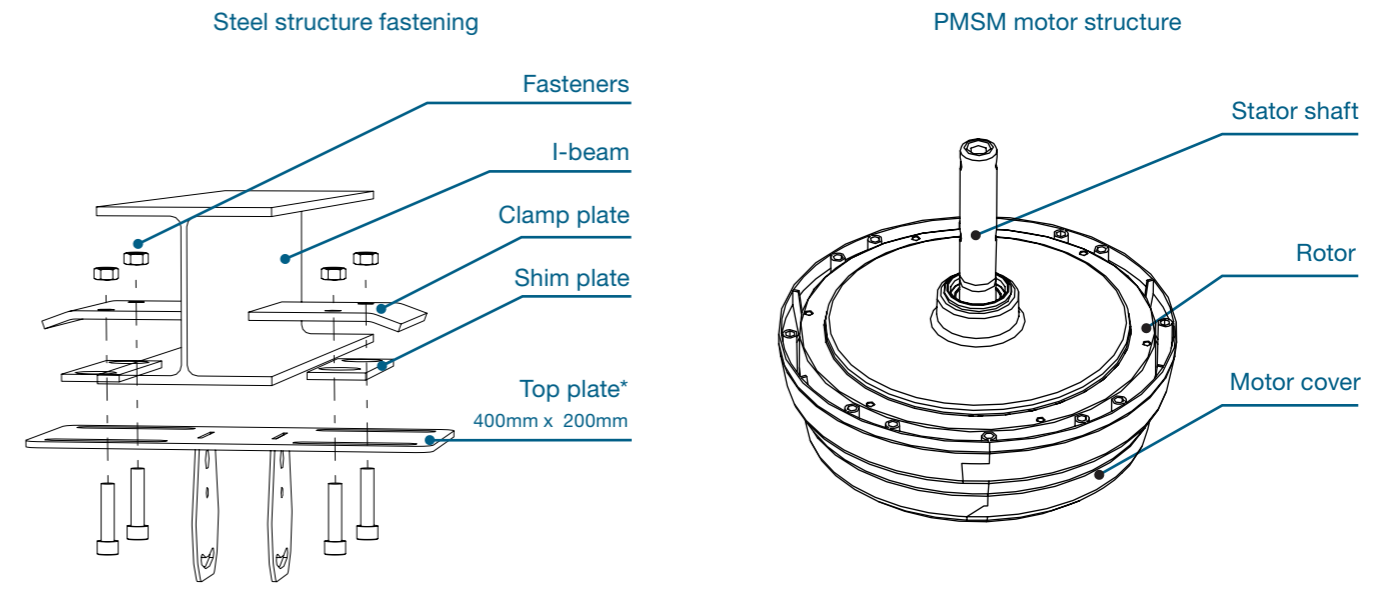
\* Please note that the top bracket pictured may vary slightly to those supplied.

#### 3.2 Packing specifications

CASE NO	DIMENSIONS (LxWxHmm)	Volume (m³)	Gross weight (kg)	Remark
1	1400 x 600 x 330	0.28	80	Main body carton

### 3. PRODUCT COMPONENTS

#### 3.3 Standard component introduction




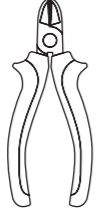
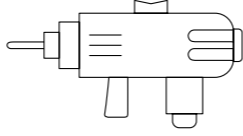

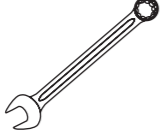

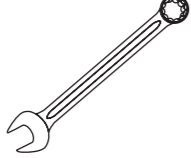

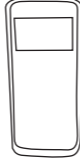
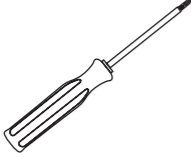
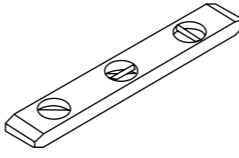
\* Please note that the top bracket pictured may vary slightly to those supplied.

#### 3.4 Control unit system structure





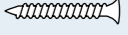




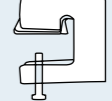
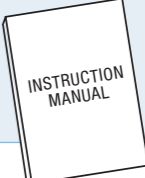
### 3. PRODUCT COMPONENTS

#### 3.5 Installation tools required

NO.	COMPONENTS	DIAGRAM	NO.	COMPONENTS	DIAGRAM
1	5mm/6mm Allen wrench		8	Quick wrench	
2	Wire-cutter		9	Impact drill	
3	Pliers		10	Paintbrush	
4	16mm open end wrench		11	Tap measure	
5	24mm open end wrench		12	Screw glue	
6	Flat head screwdriver		13	Diastimeter	
7	Phillips head screwdriver		14	Level ruler	

### 3. PRODUCT COMPONENTS

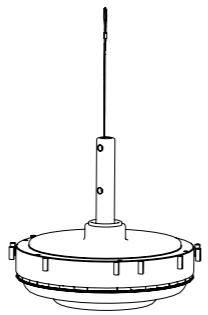


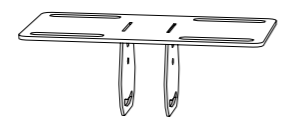


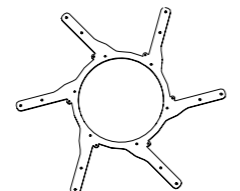
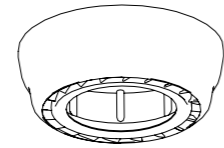
#### 3.6 Fastener packing list

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	Buckle on beam	
9	Instruction manual	

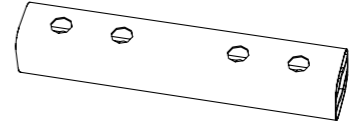
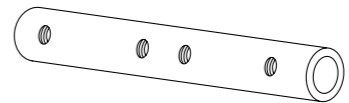
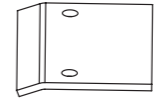
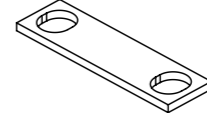

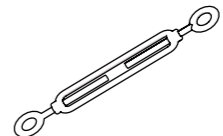
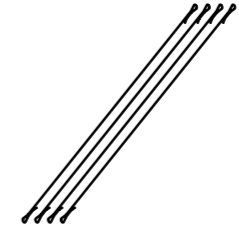




### 3. PRODUCT COMPONENTS

#### 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	 <small>* Please note that the top bracket pictured may vary slightly to those supplied.</small>	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

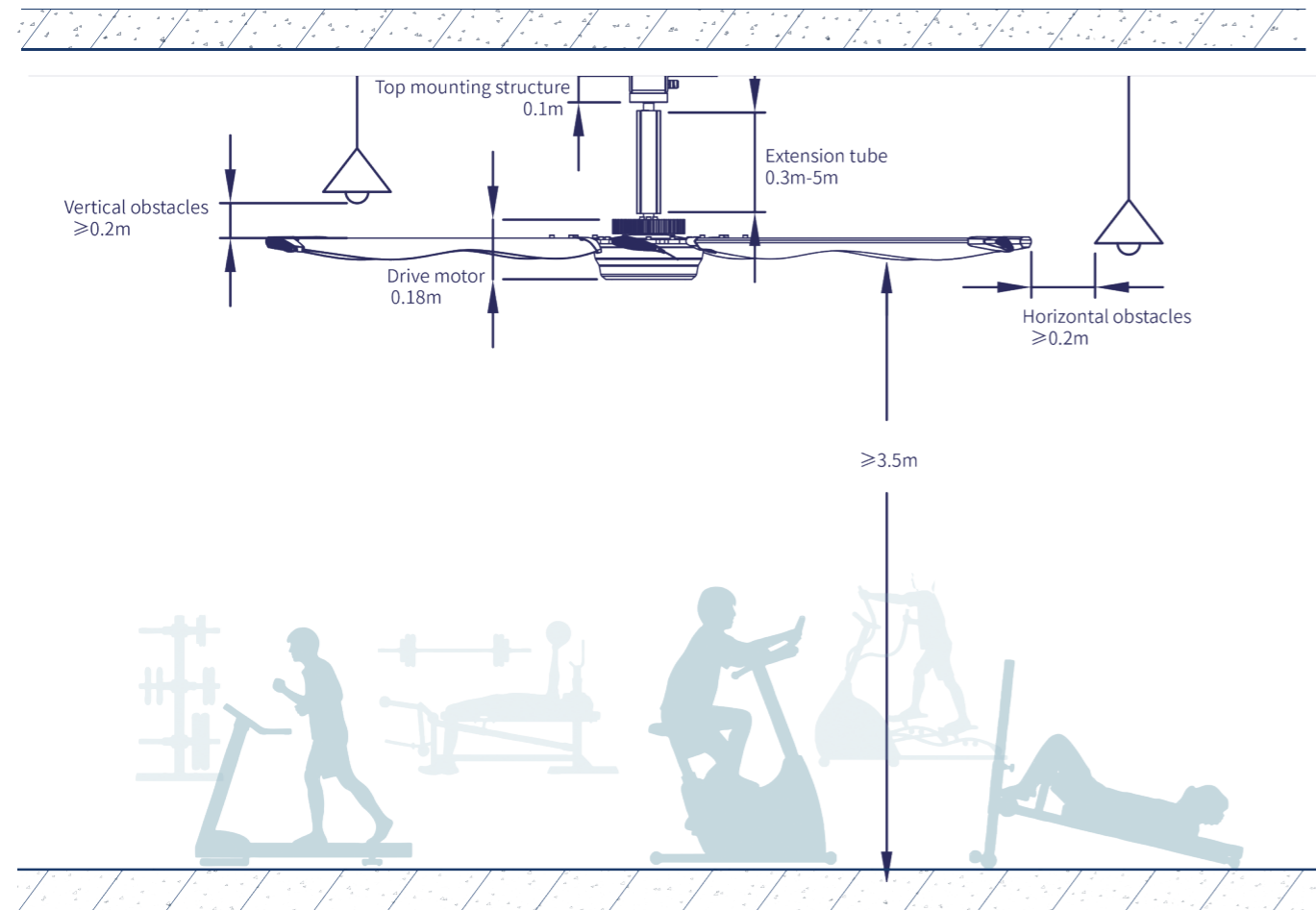
### 3. PRODUCT COMPONENTS

NO.	COMPONENTS	PIECES	DIAGRAM	NOTES
9	Extension Tube	1		Components of security
10	Extension tube connecting shaft	1		Mounting component
11	Clamp plate	2		Mounting component
12	Shim plate	2		Safety component
13	Wire rope grip	22		Components of security
14	Turnbuckle	4		Use of wiring
15	Wire rope	ø5 20mm		
16	Cable	1		
17	Metal hose	1		

## 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.

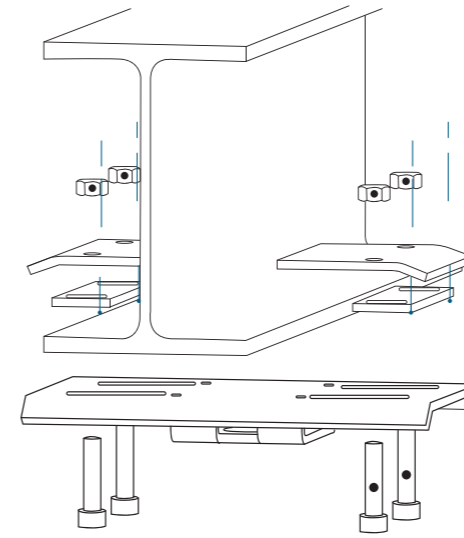


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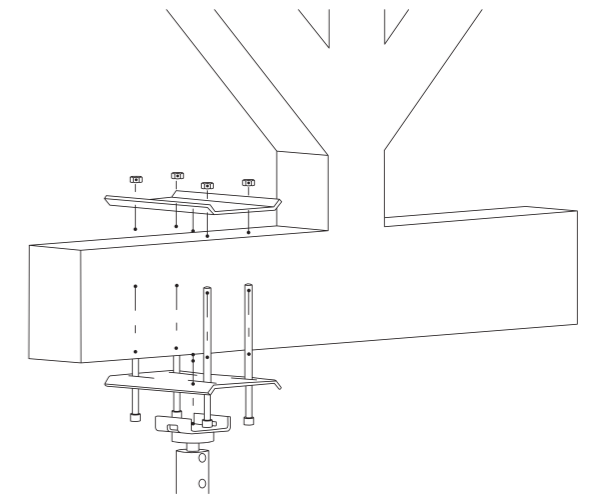
Be cautious of items like light fittings which may swing into the path of the spinning fan. Ensure appropriate clearance is maintained.

## 4. INSTALLATION REQUIREMENTS

### 4.2 Mounting options



I-beam steel structure (included as standard)



Steel, concrete or timber beam structure  
Example of how to install to a truss setup.

### 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.

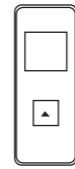
Prepare safety measures (such as harness, safety helmets, etc.), climbing equipment, tools, etc.



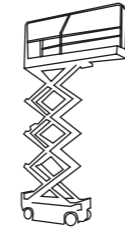
Safety helmet



Gloves



Diastimeter

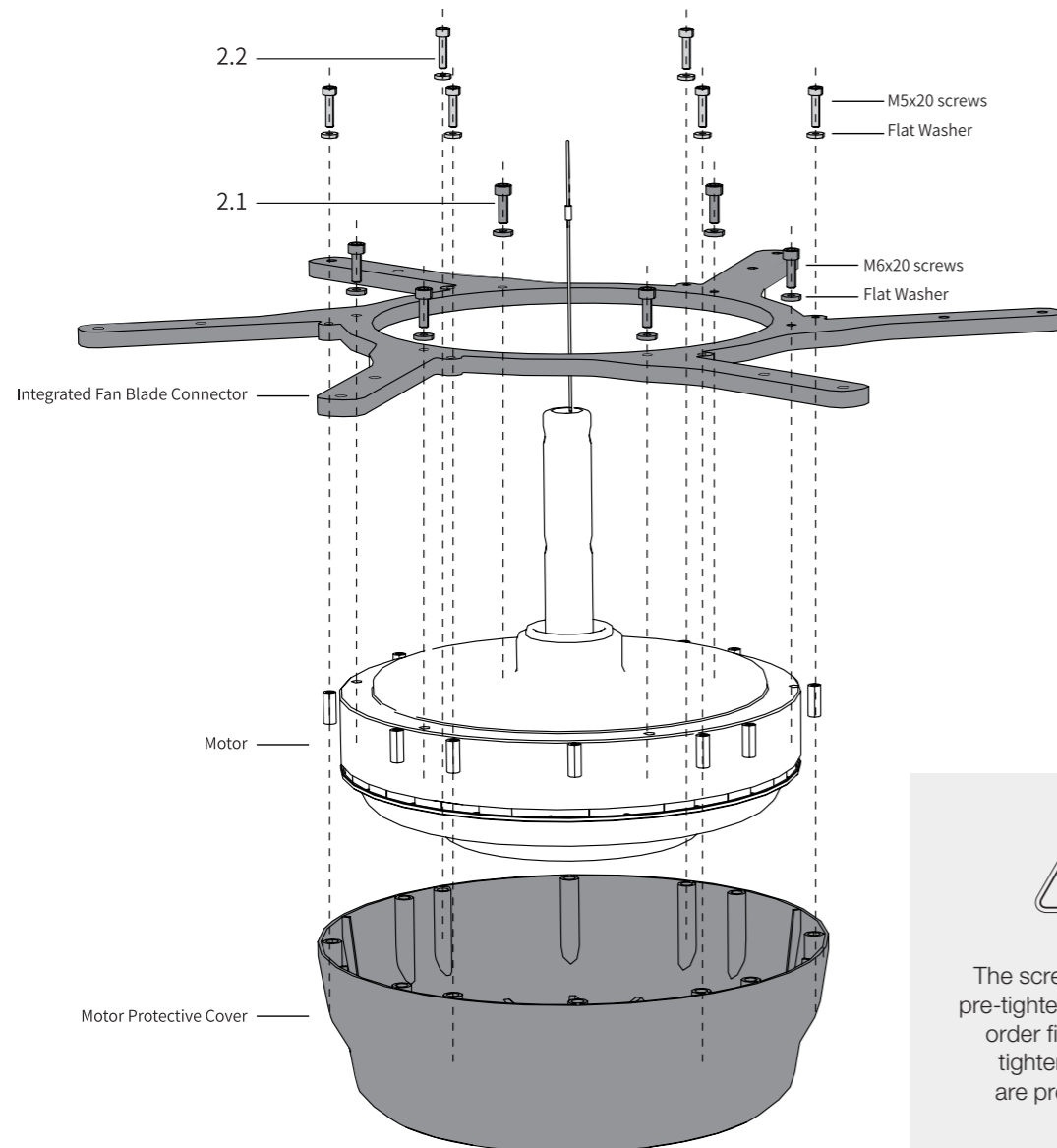


Ladder truck

### STEP 2 | INSTALL THE INTEGRATED FAN BLADE CONNECTOR

2.1 Use a 5mm Allen wrench to install 6 M6 x 20mm screws.

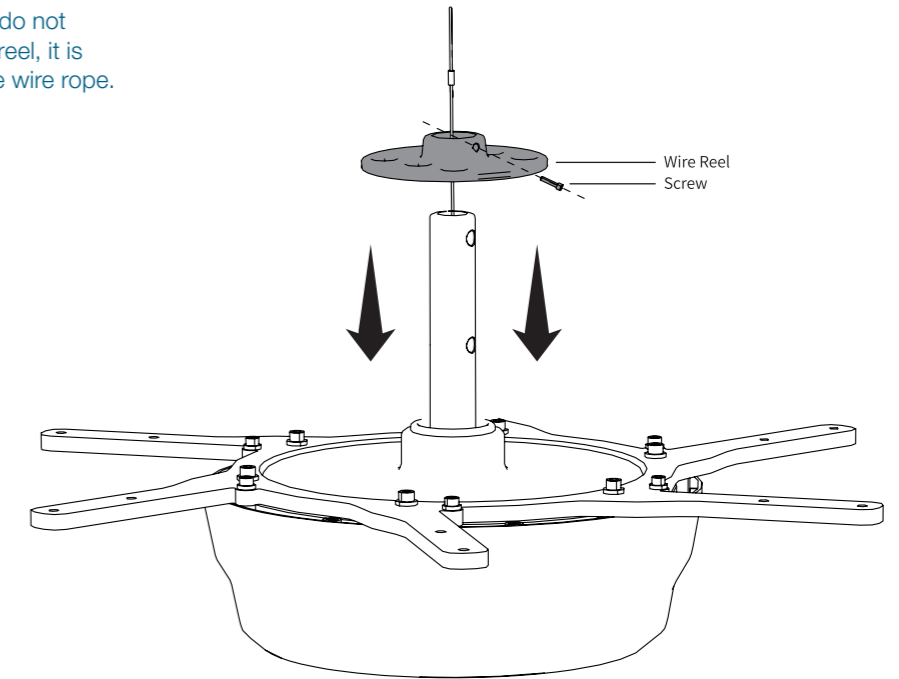
2.2 Use a 4mm Allen wrench to install 6 M5 x 20mm screws to install the motor protective cover.



## 5. FAN INSTALLATION PROCEDURE

### 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.

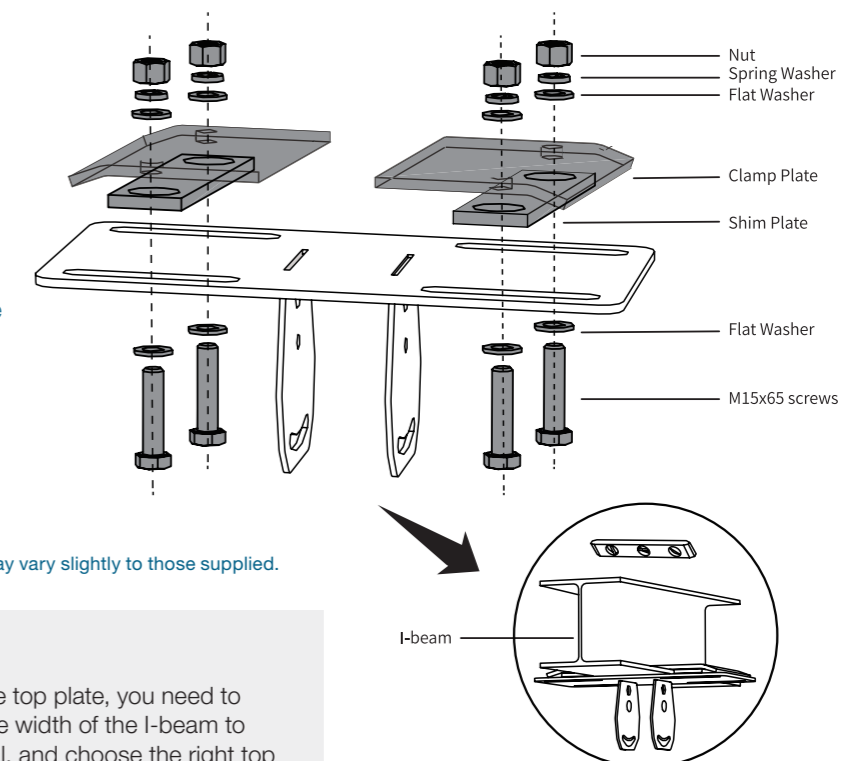
4.2 Pre-tighten the M15 x 65mm screws with 24mm wrench and 24mm socket to ensure it does not loosen or fall off, and leave a certain gap to facilitate the installation of the clamp and top plate clamp on the I-beam. Fully attach the top plate to the I-beam, make sure the top plate is vertical to the 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.



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.



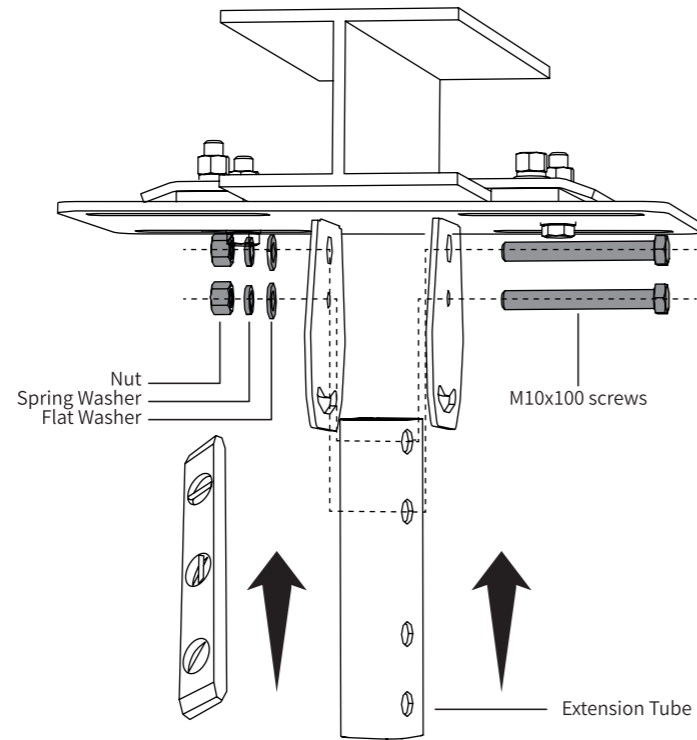


## 5. FAN INSTALLATION PROCEDURE

### 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 M10 x 100mm 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.

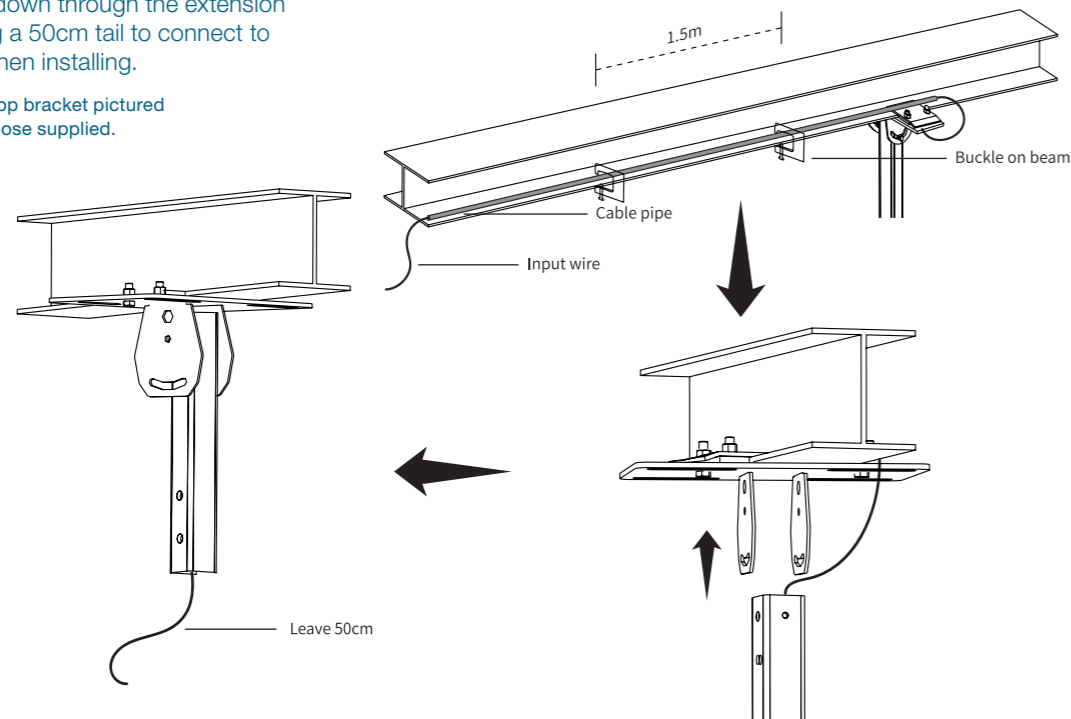


### STEP 6 | THREADING THE CABLE WIRES\*

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.

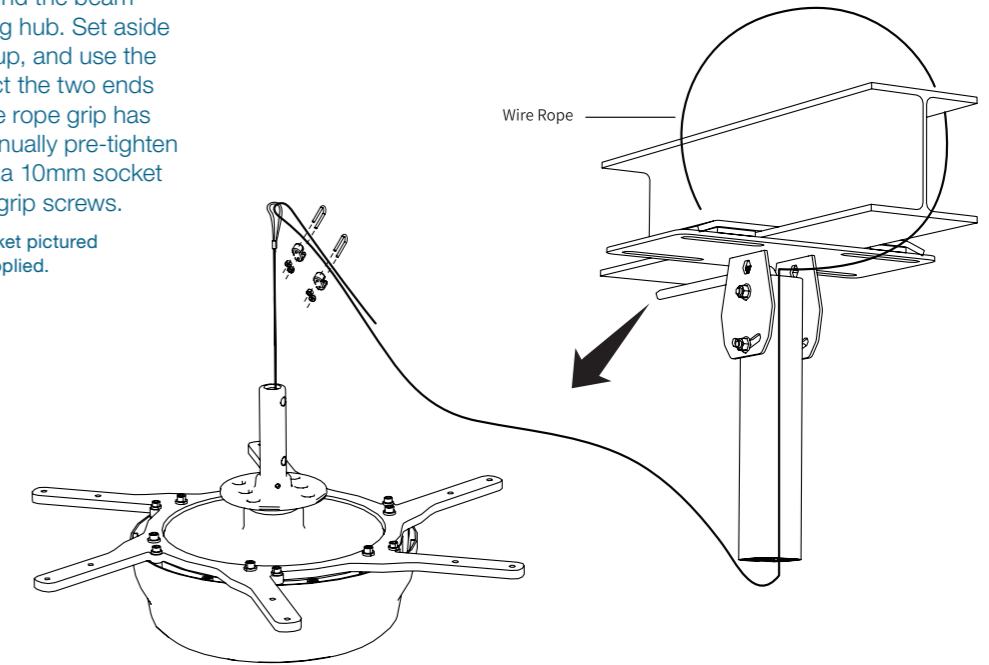


## 5. FAN INSTALLATION PROCEDURE

### 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.

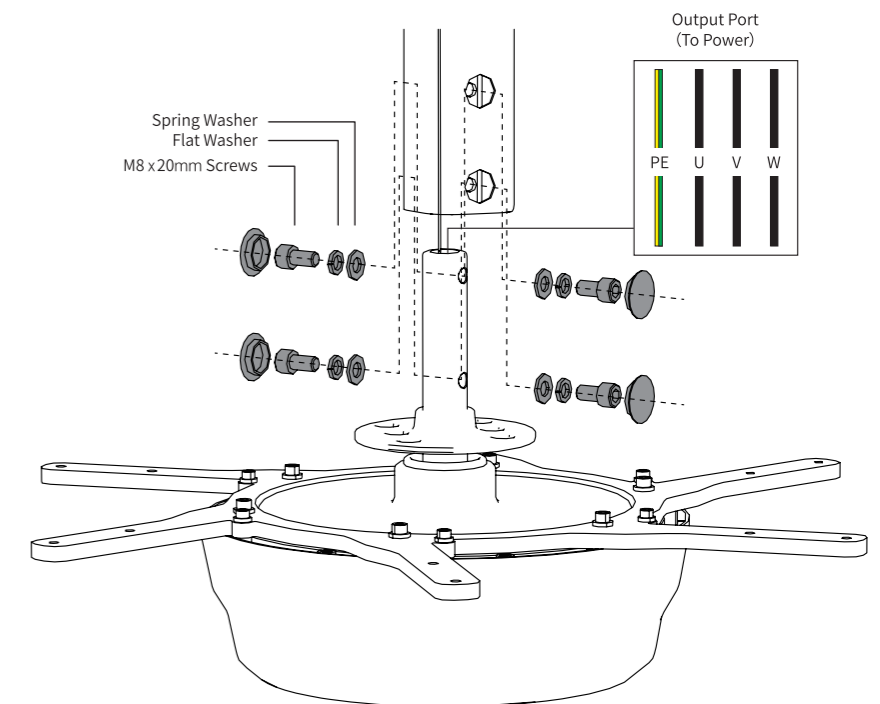


### STEP 8 | INSTALL THE MOTOR

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.

**WARNING**  
Notice

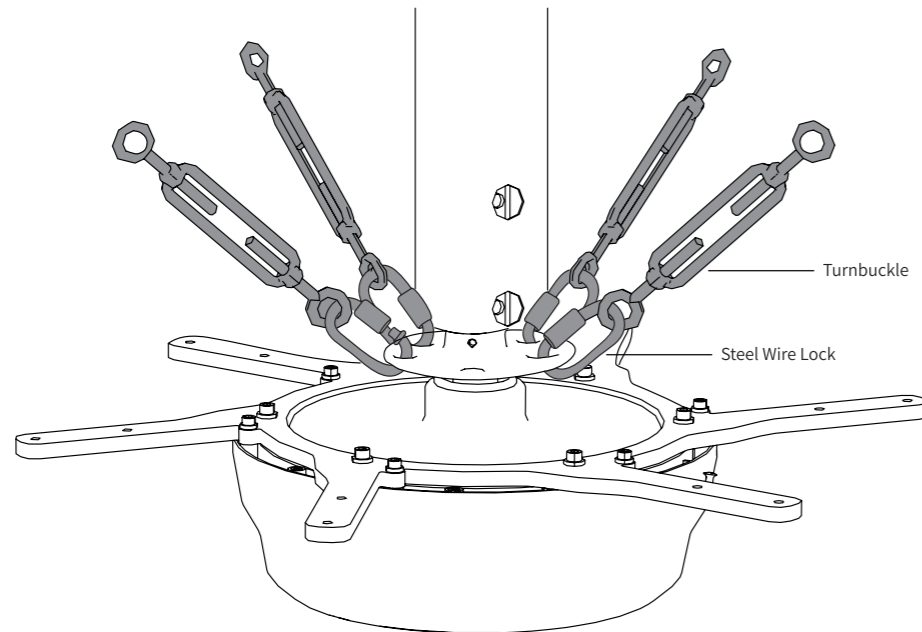
Adjust the wires in the extension tube and the wires of the motor in the same direction. When installing the motor, have two people work together to lift the motor to prevent the motor from sliding sideways.



## 5. FAN INSTALLATION PROCEDURE

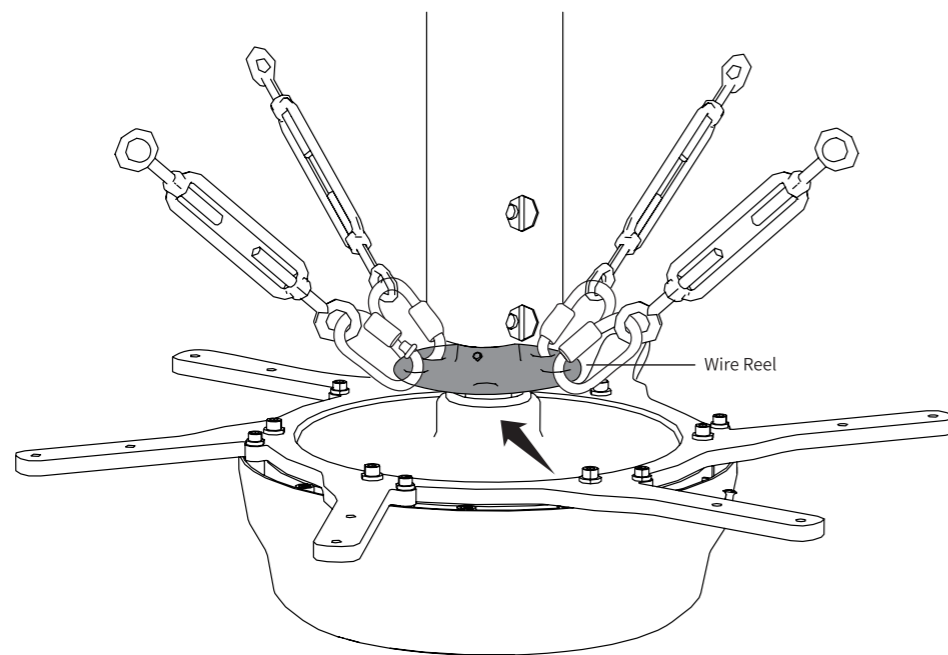
### STEP 9 | INSTALL TURNBUCKLE

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.



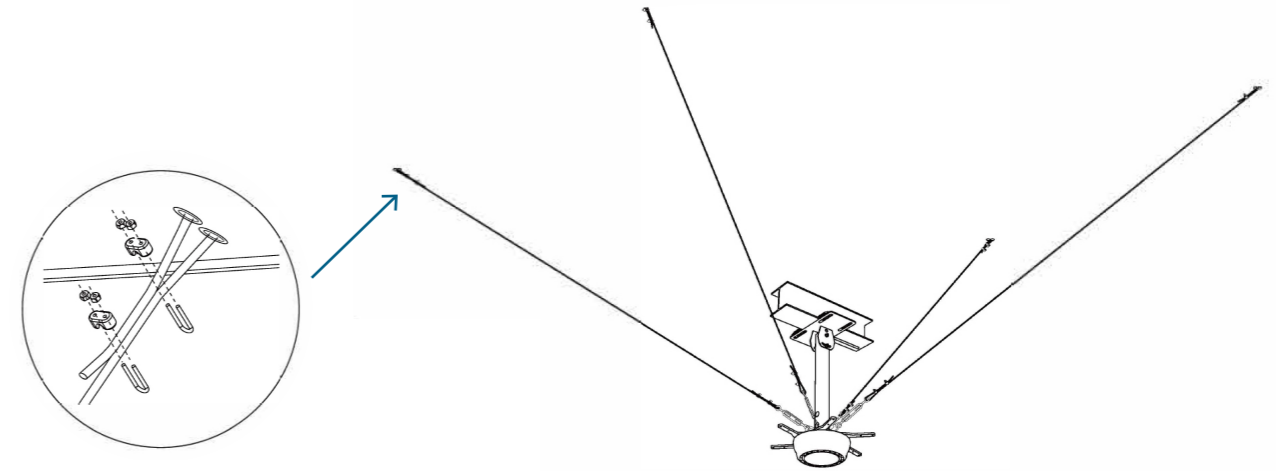
## 5. FAN INSTALLATION PROCEDURE

### 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**

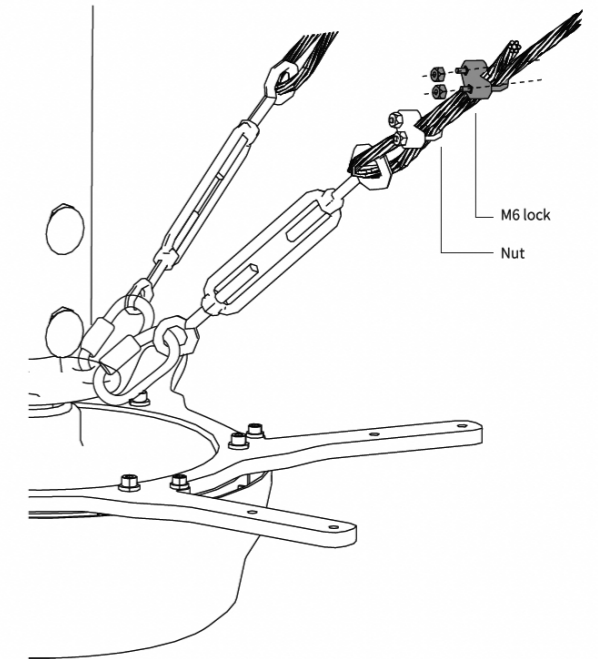
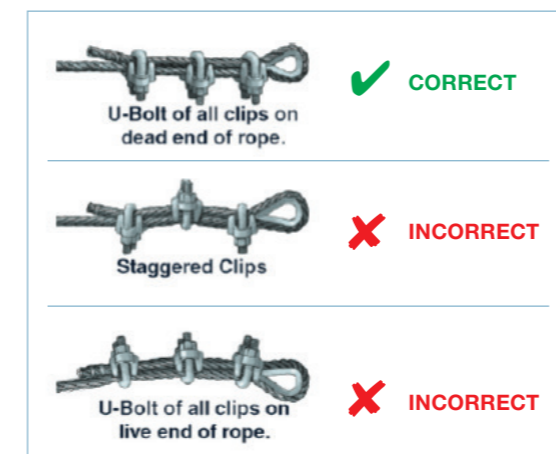


### STEP 12 | WIRE ROPE CONNECTING THE MOTOR

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

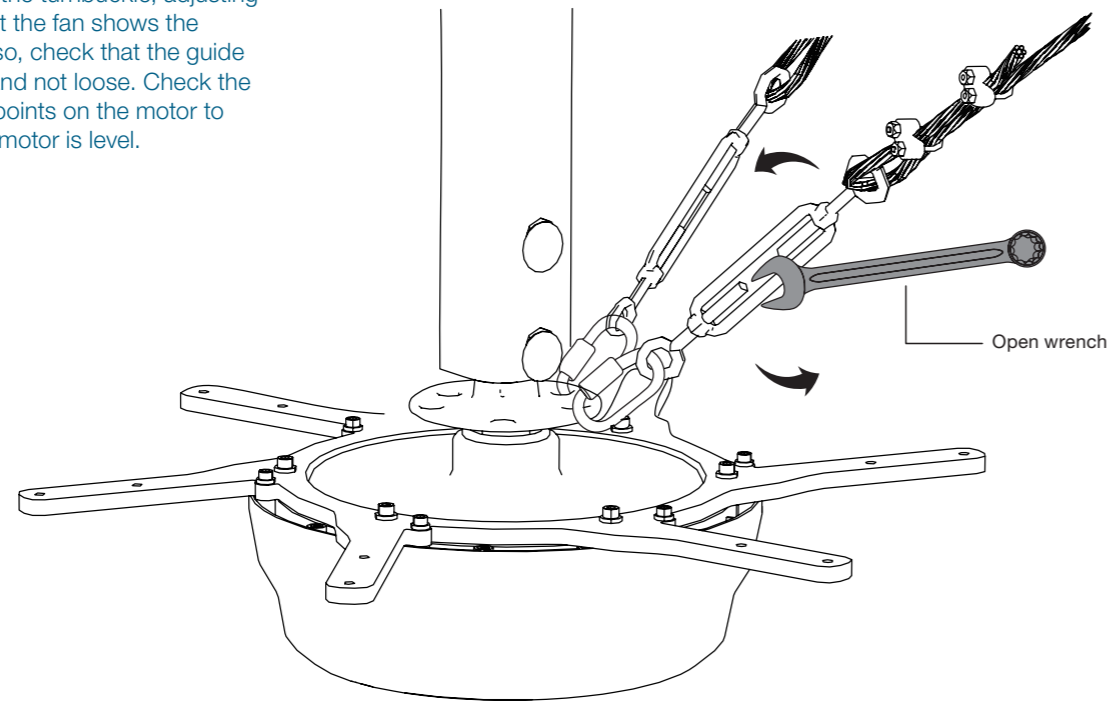
Below is a diagram showing proper wire rope grip installation. It is imperative that you install the saddle on the live end of the wire rope.



## 5. FAN INSTALLATION PROCEDURE

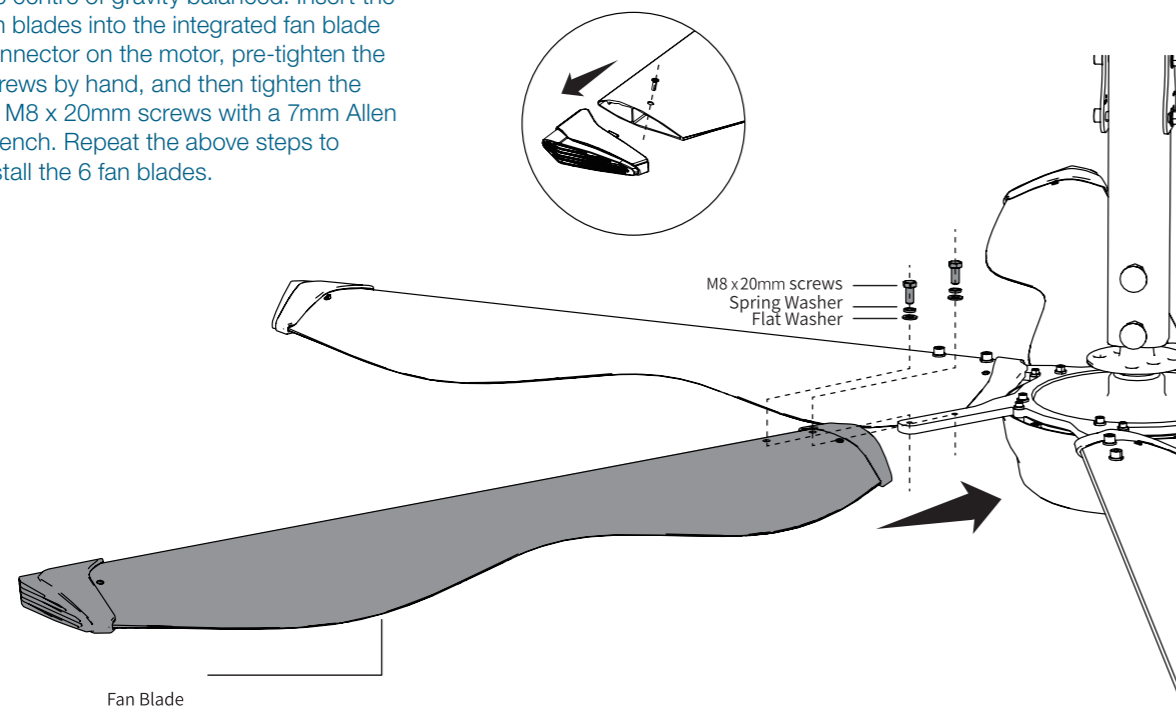
### STEP 13 | ADJUST THE MOTOR TO A BALANCED POSITION

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

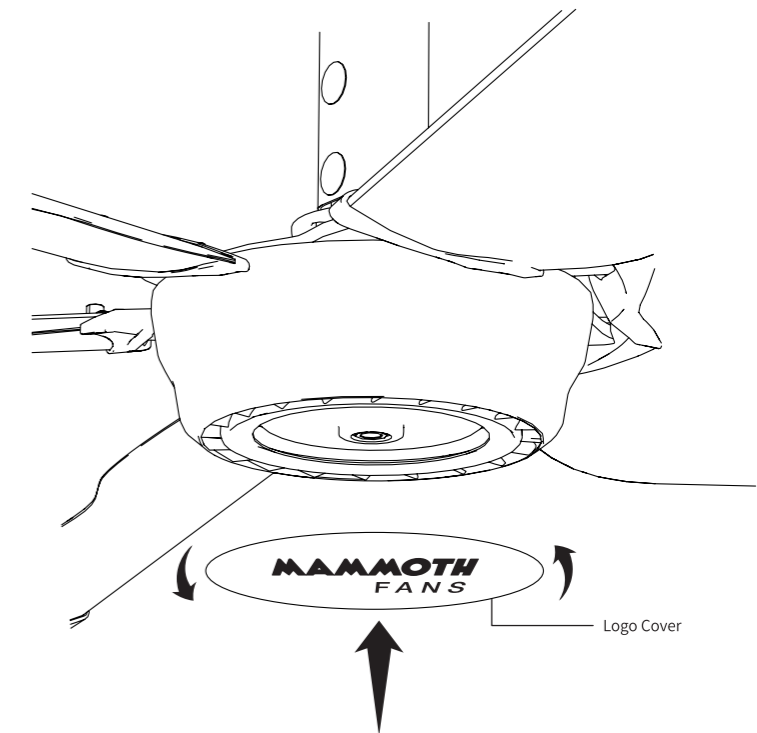
Install the fan blades diagonally to keep the centre of gravity balanced. Insert the fan blades into the integrated fan blade connector on the motor, pre-tighten the screws by hand, and then tighten the 12 M8 x 20mm screws with a 7mm Allen wrench. Repeat the above steps to install the 6 fan blades.



## 5. FAN INSTALLATION PROCEDURE

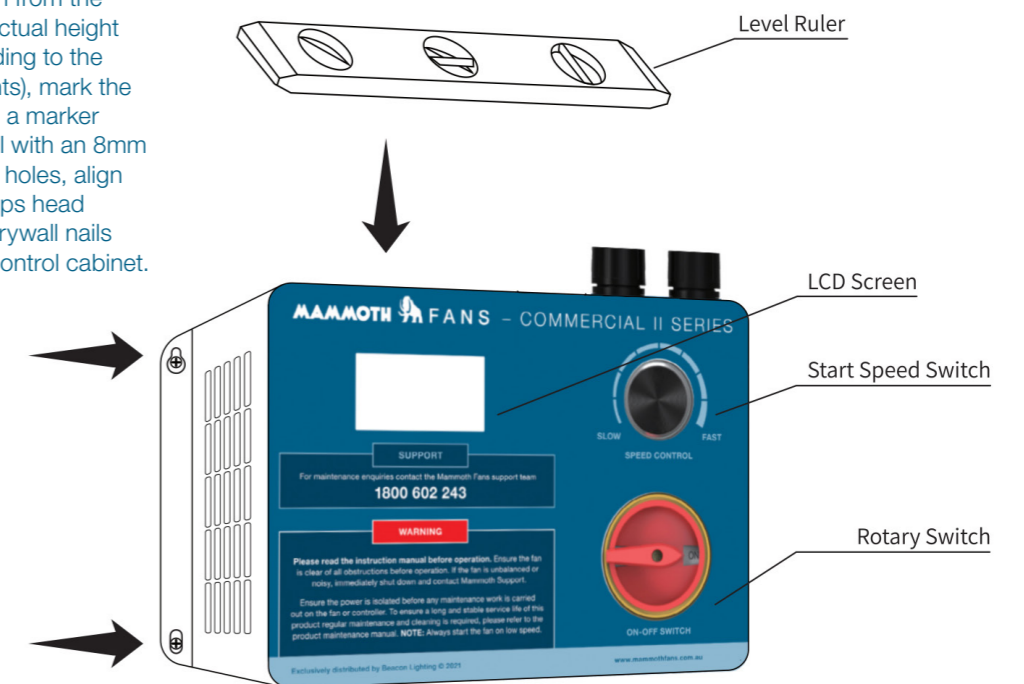
### STEP 15 | INSTALL THE LOGO COVER

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 | INSTALL THE CONTROL CABINET

Install the control cabinet at the location specified by the customer. Measure the level with a level ruler. The bottom of the control cabinet should be 1.2m to 1.3m from the ground (although the actual height can be installed according to the customer's requirements), mark the fixed hole position with a marker pen, use an impact drill with an 8mm impact drill bit to make holes, align the 4 holes, use a Phillips head screwdriver to screw drywall nails into the wall to fix the control cabinet.

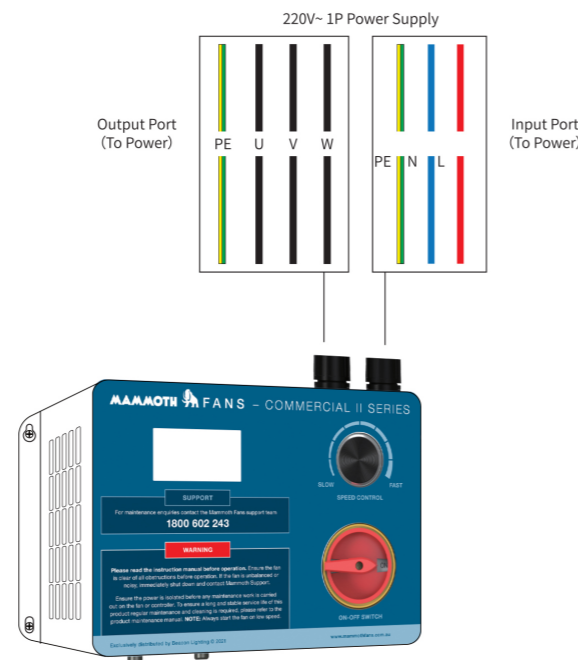


## 5. FAN INSTALLATION PROCEDURE

### STEP 17 | CONTROL CABINET WIRING

The Output Port and Input Port cables are clearly marked in the picture shown to the right.

Strip the cable and crimp the bullet terminals supplied to the cable. Connect the corresponding cable to the control wiring.

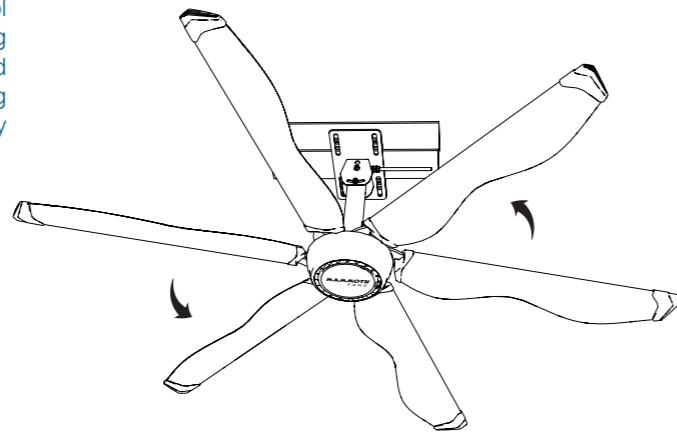


### STEP 18 | CHECK AND TEST RUNNING

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 19 | 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.

### 20 | HANDOVER

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

## 6. OPERATING INSTRUCTIONS

1. Please read the Safety Precautions on page 5 very carefully before operating.
2. Confirm the wiring has been connected correctly, then turn the main knob to "ON". Now it's powered on.
3. Press the 'start speed switch' twice to use the 'start speed switch' to control the rotation speed.
4. Press the 'rotation button' twice to stop the motor. Then turn the main knob to OFF to completely stop the rotation.

#### LCD display:

If the interface isn't used within 1 minute, the LCD screen will turn from bright to dark. The brightness is restored after input.

#### Main switch:

When the switch points to OFF, it is powered off; when the switch points to ON, it is powered on.



**Rotation speed button:** multi-function knob. Please check the below table for details.

Function	Adjust rotation speed	Start, stop button	Malfunction reset
Definition	Rotate the rotation speed button clockwise to increase speed and anti-clockwise to decrease speed.	Press the rotation speed button once to start and stop.	When 'malfunction' appears on the LCD display, press the rotation speed button once to reset it. If this doesn't work, contact Mammoth following the guide shown on screen.

#### Note:

**Short press of the rotation speed button:** press for less than 2 seconds

**Long press of the rotation speed button:** press for more than 2 seconds

### How to START / STOP

**WARNING:** Before operation, please read the manual very carefully. Remove obstacles in the operating area to ensure that the fan runs with safe distance. Before commencing any maintenance, please make sure you have already turned off the power supply. The operation must be done by professionals to avoid being injured.

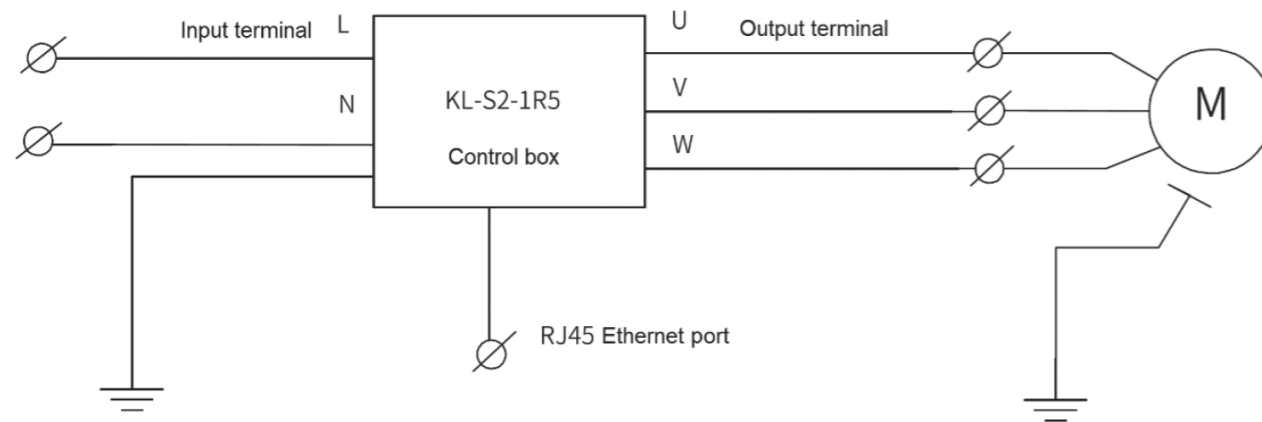
#### START

1. Make sure that there are no obstacles and potential hazards in operating space.
2. Make sure that the input power is correct and meets the product.
3. Make sure that the speed knob points to the minimum position.
4. Start the equipment and turn the switch from "stop" to "run".
5. After the fan runs, adjust the rotation speed knob to achieve the best effect.

#### STOP

1. Stop the equipment and shut down the controller strictly according to the operating instruction.
2. Please do not cut the power off during the running.

## 7. ELECTRICAL WIRING DIAGRAM

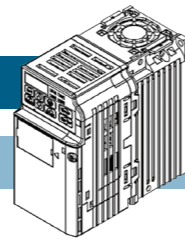


### NOTE:

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.

## 8. DESCRIPTION OF COMMON PARAMETERS OF CONTROL SYSTEM

### LCD DISPLAY STATUS CONFIRMATION



After the controller is powered on, when the switch points to ON, the machine is powered on, and the LCD displays: given rotating speed, operating current, input voltage, operating status, whether "output rotating speed" is locked, failure interface and other specific interface information as follows. Note: interface is preset to English.

OPERATING INTERFACE	ACCELERATING INTERFACE	STANDBY INTERFACE
<div style="border: 1px solid black; padding: 5px;"> <p>Fan Speed <b>50 RPM</b></p> <p>1.5 v</p> <p><b>RUN</b></p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Fan Speed <b>50 RPM</b></p> <p>1.5 v</p> <p><b>ACCEL</b></p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Fan Speed <b>50 RPM</b></p> <p>1.5 v</p> <p><b>STANDBY</b></p> </div>
SETTING INTERFACE	DECELERATING INTERFACE	FAILURE INTERFACE
<div style="border: 1px solid black; padding: 5px;"> <p>Set</p> <p>S00 return</p> <p>S01 Speed lock</p> <p><b>S02 Motor learning</b></p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p>Fan Speed <b>50 RPM</b></p> <p>1.5 v</p> <p><b>DECEL</b></p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p><b>Error code</b></p> <p>E.0LF [1909]</p> <p>contact us</p> <p><b>ER</b></p> </div>

## 9. USER SETTING INTERFACE DESCRIPTION

In the standby state, long-press the knob (more than 2 seconds) to enter the 'setting interface'. The setting interface functions are as follows:

FUNCTION CODE	DESCRIPTION	EXPLANATION
S00	Return	Function can be used to return to the main interface. If it doesn't return by this function, it will automatically return to the main interface after 10s.
S01	Rotating speed unlocked/ rotating speed locked	Once locked, the adjusting knob will not change the given rotating speed to prevent accidental touching. Select this function again to unlock the rotating speed.
S02	Motor self-learning	Function can be used to improve motor operation control.
S03	Operation direction switch	If the motor runs in the wrong direction, the motor direction can be switched by this function.

## 10. 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.

## 11. 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.



## 12. TROUBLESHOOTING

### 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.

ER Code	Description
<i>E. oC1/E.oC2/E.oC3</i>	Acceleration / deceleration / constant speed / overcurrent
<i>E. oU1/E.oU2/E.oU3</i>	Acceleration / deceleration / constant speed / overvoltage
<i>E. Lu</i>	Undervoltage during operation
<i>E.oCXx</i>	Mid-acceleration / mid-deceleration / mid-speed / overcurrent fault
<i>E. oL1</i>	Motor overload
<i>E. oL2</i>	Controller overload
<i>E. 1LF</i>	Input phase loss
<i>E. oLFxx</i>	U/V/W phase output phase loss
<i>E. oH2</i>	IGBT module over temperature
<i>E.oUXx</i>	Mid-acceleration / moderate / mid-speed / stop / over voltage fault
<i>E. TEXx</i>	Self-learning output current exceeds limit
<i>E. SPJ</i>	Rapid failure

## 12. TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.Lu</i>	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
<i>E.oCXx</i>	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.



## 12. TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.oL1</i>	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
<i>E.oL2</i>	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

## 12. TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.iLF</i>	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
<i>E.oLFxx</i>	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
<i>E.oH2</i>	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.



## 12. TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.OUxx</i>	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.



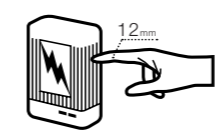

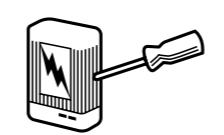

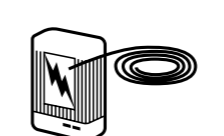





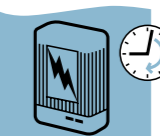

Code	Desc.	Reason	Solution
<i>E.TExx</i>	Self-learning failures	The output current of the controller exceeds the upper and lower limits	Check if the motor connection is correct, reset and retry self-learning. If the error still occurs, contact the Mammoth Fan support team.

**Note:** where "xx" is self-learning faults ub code.

Code	Desc.	Reason	Solution
<i>E.SP1</i>	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.

## 13. IP (INGRESS PROTECTION) RATINGS GUIDE

SOLIDS		WATER	
1	 Protected against a solid object greater than 50 mm such as a hand.	1	 Protected against vertically falling drops of water. Limited ingress permitted.
2	 Protected against a solid object greater than 12.5 mm such as a finger.	2	 Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.
3	 Protected against a solid object greater than 2.5 mm such as a screwdriver.	3	 Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for three minutes.
4	 Protected against a solid object greater than 1 mm such as a wire.	4	 Protected against water splashed from all directions. Limited ingress permitted.
5	 Dust protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.	5	 Protected against jets of water. Limited ingress permitted.
6	 Dust tight. No ingress of dust. Two to eight hours.	6	 Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
		7	 Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.
		8	 Protection against the effects of immersion in water under pressure for long periods.

Rating Example:

**IP 65**

INGRESS PROTECTION



## 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](http://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.

**Distributed by:**

**Beacon Lighting**

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Derrimut, Victoria, 3026,  
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