

MAMMOTH FANS

COMMERCIAL II SERIES

INSTALLATION • OPERATION • MAINTENANCE • WARRANTY INFORMATION



INSTRUCTION MANUAL

SKU 211404, 211405, 211406 & 211407

CAUTION

READ INSTRUCTIONS CAREFULLY FOR SAFE
INSTALLATION AND FAN OPERATION.

CONGRATULATIONS ON YOUR PURCHASE

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 large residential, 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.

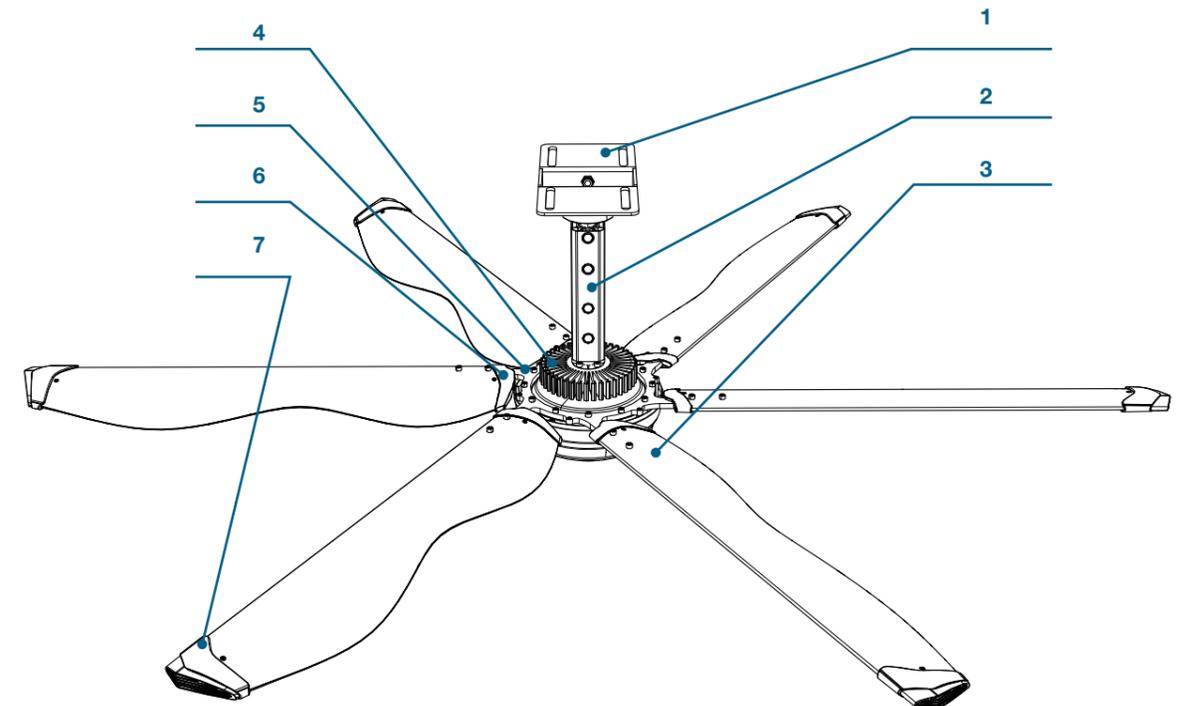
The Mammoth Fan you have purchased is a sophisticated electrical device and all care must be taken to ensure the fan is kept clean and regularly maintained. Any issues arising from misuse or neglect are not covered by the warranty.

SAFETY PRECAUTIONS

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 **4 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.

PARTS LIST

1. General parts



1. Top plate (top connector)

2. Extension tube

3. Fan blade

4. Driving device

5. Integral fan blade connector

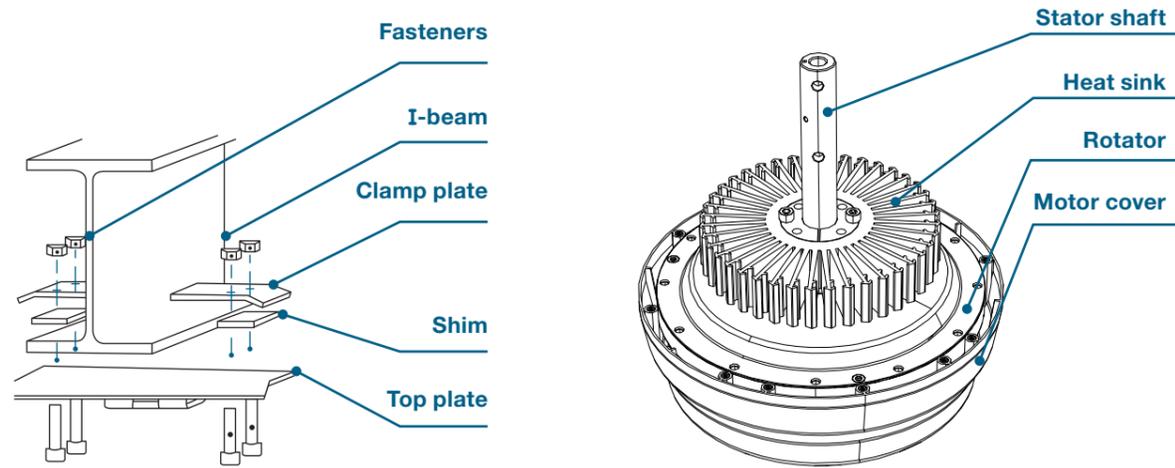
6. Fan blade plug

7. Fan blade winglet

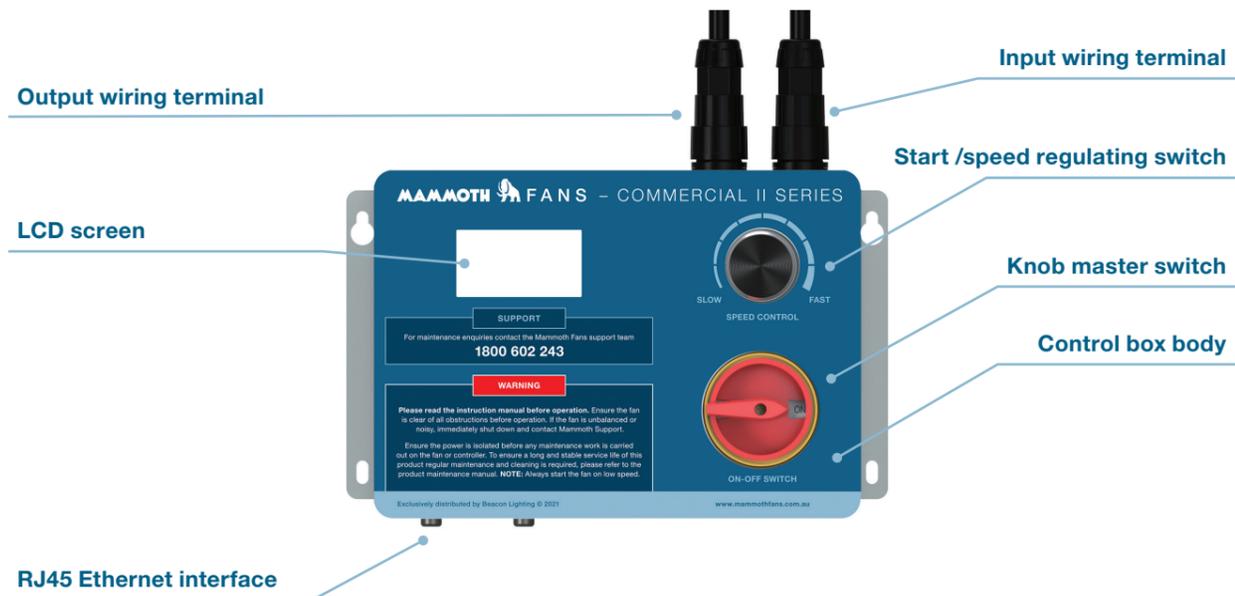


PARTS LIST

2. Standard component parts

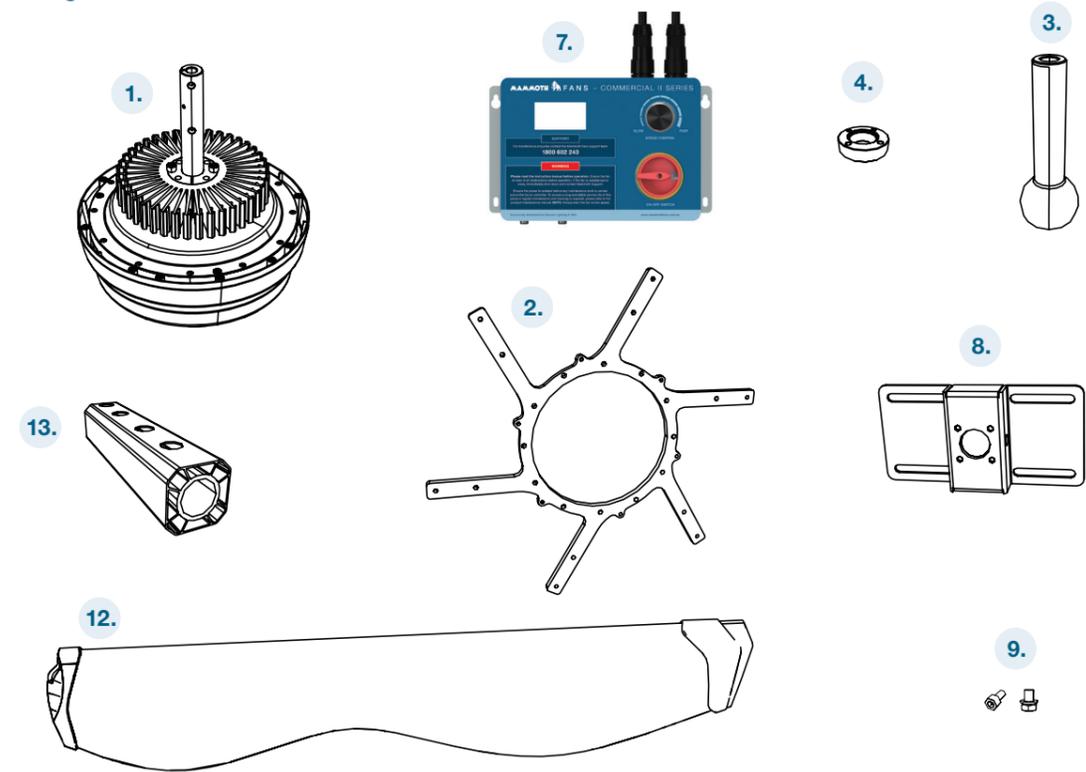


3. Control unit



PARTS LIST

4. Packing list



PACKING SPECIFICATION

CASE NO	DIMENSIONS (LxWxHmm)	Volume (m ³)	Gross weight (kg)	Remark
1	1400 x 600 x 310	0.16	70	Main body carton

NO.	DESCRIPTION	NO.	DESCRIPTION
1	PMS motor	8	Top plate
2	Fan blade connector	9	Screw and fastener package
3	Cardan joint	10	Fan hub
4	Cardan joint base	11	Motor bottom cover
5	Aluminium alloy bushing	12	Blade components
6	Coil of wire	13	Extension tube
7	Fan controller		

5. Required installation tools



ADJUSTABLE WRENCH



SOCKET WRENCH



LASER DISTANCE MEASURE



LEVEL



ALLEN KEYS



MULTIMETER



WIRE-CUTTER



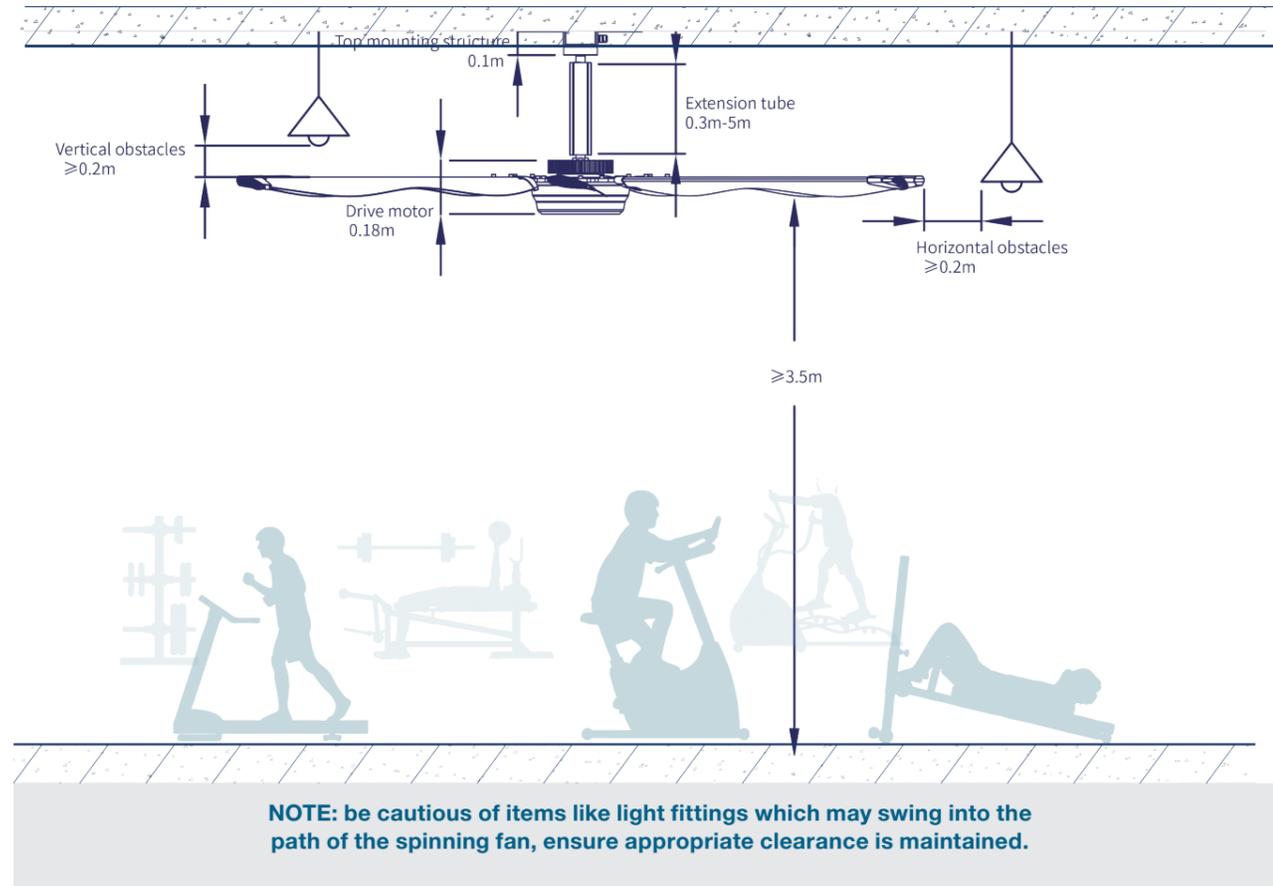
SCREW GLUE



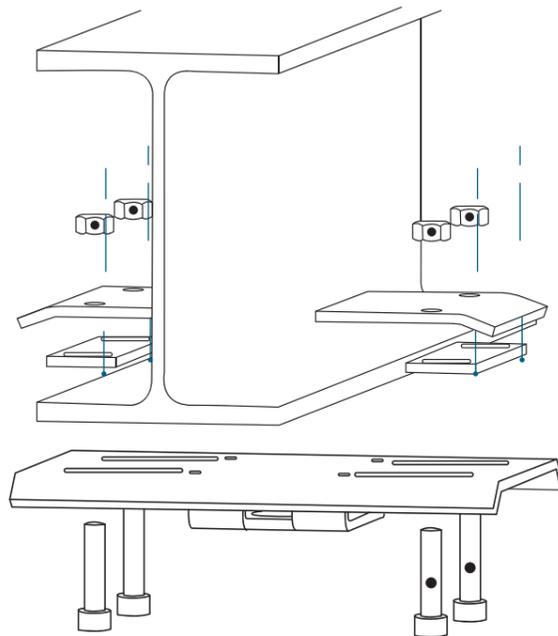
INSTALLATION REQUIREMENT

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 4 times the weight of the product and its own structural loading. Check with a structural engineer if unsure.

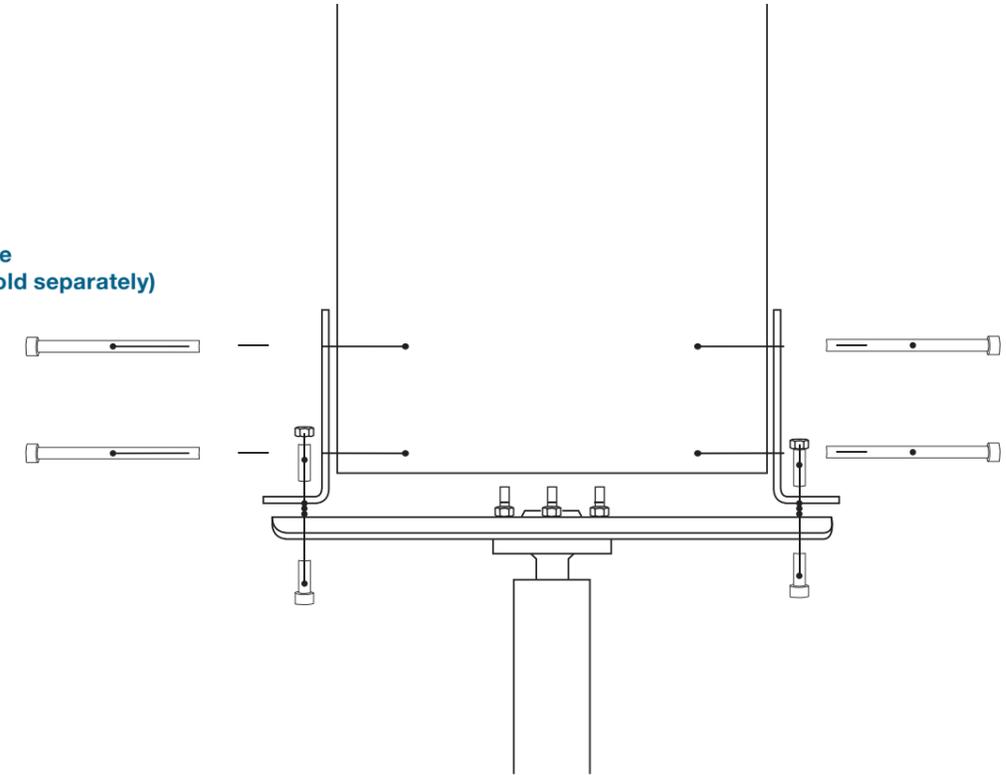


2. I-beam steel structure (included as standard)

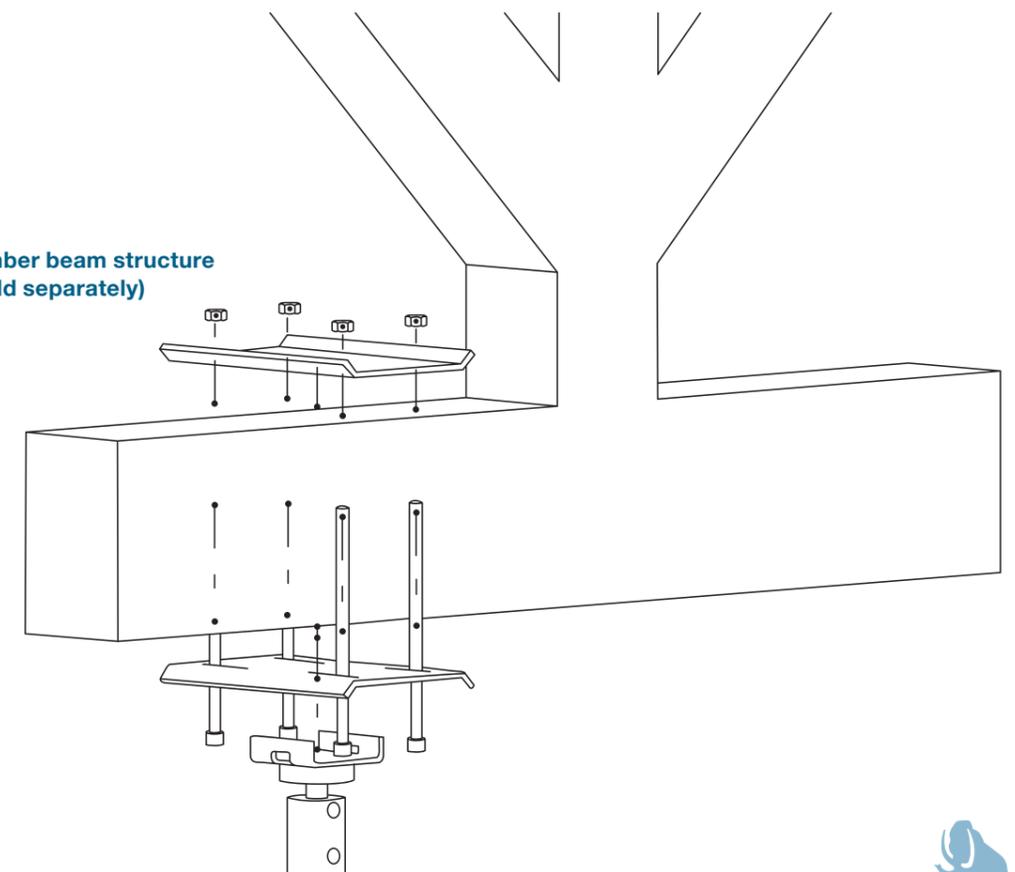


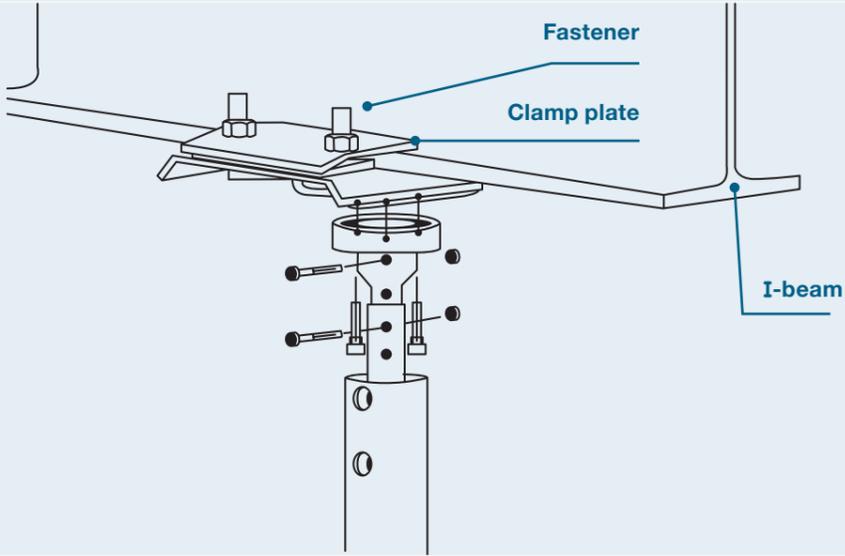
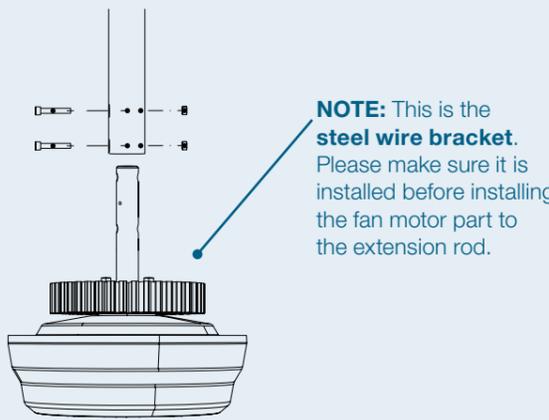
INSTALLATION REQUIREMENT

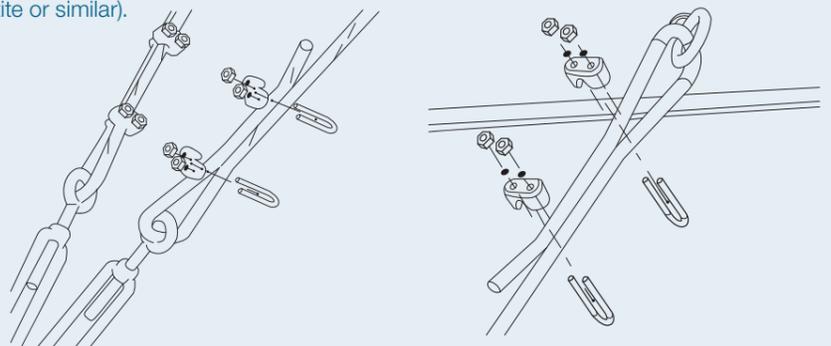
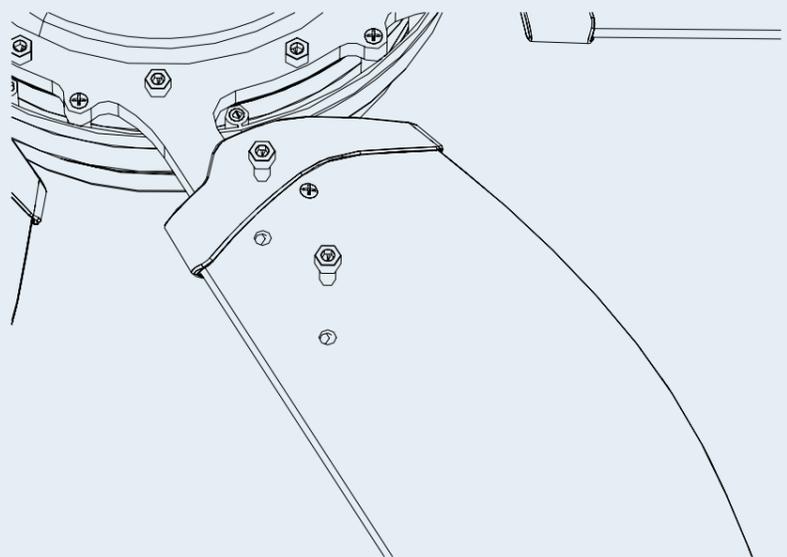
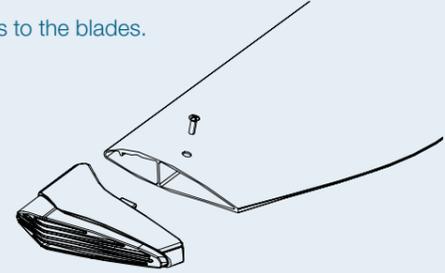
3. Concrete structure (This accessory is sold separately)



4. Steel, concrete or timber beam structure (This accessory is sold separately)



FAN INSTALLATION	
1. PREPARATION	Carefully unload and position the fan on the ground in a location that won't be impacted by ladders, scissor lifts or personnel.
2. PLAN	Carefully plan and consider the following information 1. Installation point 2. Installation height 3. Whether there are obstacles (such as lights, cables, fire protection, cameras, forklift access, etc.) 4. The position of the control box 5. The input power and design of your electrical layout 6. Traction steel wire position
3. SAFETY	Ensure power is isolated to the area that you are working. Ensure safe practices are followed in regards to working at heights and lifting heavy equipment. Follow appropriate guidelines and regulations in your region.
4. TOP PLATE	Fasten the top plate to the H beam, ensuring a tight connection between the beam and the plate. Screw glue (Loctite or similar) should be used.
5. EXTENSION TUBE	 <p>Fastener Clamp plate I-beam</p>
6. POWER CABLE	Ensure you have sufficient length of the cable coming from the extension tube.
7. MAIN BODY	<p>Ensure bolts are horizontal before tightening the main body to the extension tube.</p>  <p>NOTE: This is the steel wire bracket. Please make sure it is installed before installing the fan motor part to the extension rod.</p>
8. WIRING	Make the appropriate electrical connection to the fan body, ensure neat and tight connections are completed.

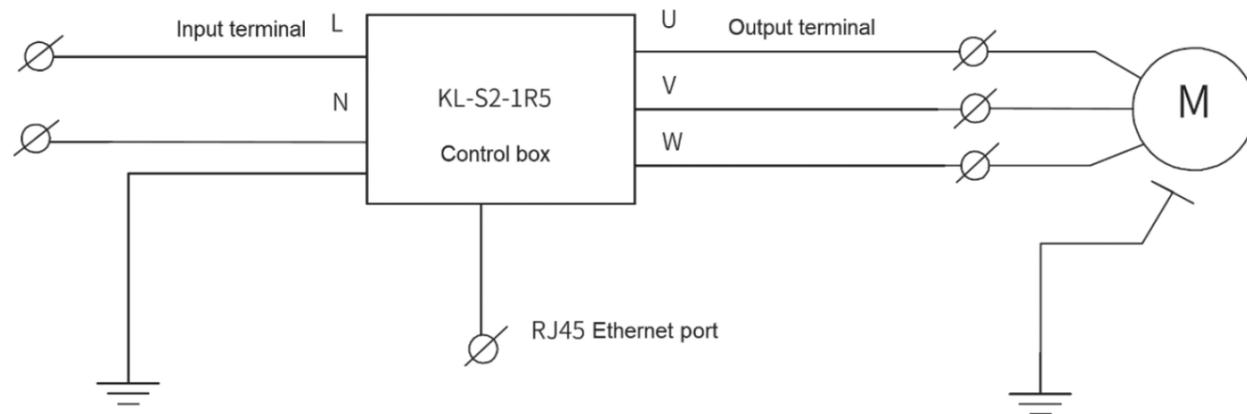
FAN INSTALLATION	
9. STEEL WIRING	<p>Important – support wires should be evenly spaced in 4 opposing directions, to evenly distribute any stress and movement. Wire clamps should be secure and glued with screw glue (Loctite or similar).</p> 
10. POWER CABLE	Wiring should follow local regulations.
11. FAN BLADES	<p>Fan blades should be mounted one after the other in opposites to each other. Two people will be required to effectively mount and tighten the fan blades and safety support screws. This procedure must be done while the fan motor is mounted on the ceiling. Trying to complete this on the floor then mounting the fan will cause damage to the blades.</p> 
12. FAN BLADE TIP INSTALLATION	<p>Secure fan blade tips to the blades.</p> 
13. CONTROL BOX	The height from floor to the bottom of the control box should be around 1.2 metres and in a safe and practical position.
14. WIRING	Distinguish the input and output, make sure the ground wire is in place and wire to local wiring standards.



FAN INSTALLATION

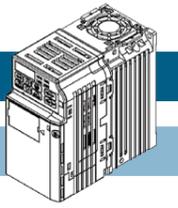
15. DEBUGGING	Each Mammoth Fan is tested prior to leaving the factory. If there seems to be a problem double check all electrical connections, and contact the Mammoth support team.
16. COMMISSIONING	Use a spirit level and ensure blades are level before switching on. Run the fan for 15mins and observe, is it spinning in the correct direction (anti-clockwise for summer), listen for any abnormal noise, ensure there is no movement in the support cables. Check the current is within the rated range.
17. HANDOVER	Ensure the customer is instructed on how to operate and isolate the fan.

ELECTRICAL WIRING DIAGRAM



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														
<table border="1"> <tr> <td>Fan Speed 50 RPM</td> <td>RUN</td> </tr> <tr> <td>1.5 v</td> <td></td> </tr> </table>	Fan Speed 50 RPM	RUN	1.5 v		<table border="1"> <tr> <td>Fan Speed 50 RPM</td> <td>ACCEL</td> </tr> <tr> <td>1.5 v</td> <td></td> </tr> </table>	Fan Speed 50 RPM	ACCEL	1.5 v		<table border="1"> <tr> <td>Fan Speed 50 RPM</td> <td>STANDBY</td> </tr> <tr> <td>1.5 v</td> <td></td> </tr> </table>	Fan Speed 50 RPM	STANDBY	1.5 v			
Fan Speed 50 RPM	RUN															
1.5 v																
Fan Speed 50 RPM	ACCEL															
1.5 v																
Fan Speed 50 RPM	STANDBY															
1.5 v																
SETTING INTERFACE	DECELERATING INTERFACE	FAILURE INTERFACE														
<table border="1"> <tr> <td>Set</td> </tr> <tr> <td>S00 return</td> </tr> <tr> <td>S01 Speed lock</td> </tr> <tr> <td>S02 Motor learning</td> </tr> </table>	Set	S00 return	S01 Speed lock	S02 Motor learning	<table border="1"> <tr> <td>Fan Speed 50 RPM</td> <td>DECEL</td> </tr> <tr> <td>1.5 v</td> <td></td> </tr> </table>	Fan Speed 50 RPM	DECEL	1.5 v		<table border="1"> <tr> <td>Error code</td> <td>ER</td> </tr> <tr> <td>E.0LF [1909]</td> <td></td> </tr> <tr> <td>contact us</td> <td></td> </tr> </table>	Error code	ER	E.0LF [1909]		contact us	
Set																
S00 return																
S01 Speed lock																
S02 Motor learning																
Fan Speed 50 RPM	DECEL															
1.5 v																
Error code	ER															
E.0LF [1909]																
contact us																

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.



OPERATING INSTRUCTIONS

1. Please read the precautions very carefully before operating.
2. Please confirm the wirings have 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.

Function description:

1. 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.
2. Main switch: When the switch points to OFF, it is powered off; when the switch points to ON, it is powered on.
3. 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 anticlockwise 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			

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.

CLEANING & MAINTENANCE

Cleaning & maintenance

1. 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. 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.

TECHNICAL INFORMATION

SKU#	211404 / 211405	211406 / 211407
Model no.	SHVLS-D5BAA25	SHVLS-D5BAA30
Diameter	2.5m	3.0m
Rated voltage	220-240V - 50Hz	220-240V - 50Hz
Rated power	150W	200W
Full load current	0.7A	1A
Max. speed	130RPM	110RPM
Air volume at max. speed	4200m ³ /min	5150m ³ /min
Climate class	T - Tropical	T - Tropical
Weight	41kg	44kg



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 acceleration/ 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/ midspeed/ stop/over voltage fault
<i>E. TEXx</i>	Self-learning output current exceeds limit
<i>E. SPD</i>	Rapid failure

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 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
		Misoperation 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.



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

TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.I LF</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



TROUBLESHOOTING

Code	Desc.	Reason	Solution
<i>E.OUxx</i>	Mid acceleration/moderate/midspeed/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.

TROUBLESHOOTING

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.SPI</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.



WARRANTY

WARRANTY HOTLINE- 1800 602 243

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.**

Please make sure you have all the Mammoth Fan details filled out at the end of the manual before making the call.

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.**

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

140 Fulton Drive,
Derrimut, Victoria, 3026,
Australia

Ph **1300 289 808**

Email: warranty@beaconlighting.com.au

WARRANTY

Mammoth Fan WARRANTY INFORMATION

Mammoth Fans Support Hotline - 1800 602 243

Complete and retain this form for your personal records and warranty purposes.

NAME _____

ADDRESS _____

POSTCODE _____

MODEL NUMBER _____

(PO# + DATE CODE sticker here)

PO NUMBER or DATECODE _____

DATE OF PURCHASE _____

INSTALLING LICENSED ELECTRICIAN _____

LICENCE No. _____

ATTACH PROOF OF PURCHASE HERE

THIS COMPLETED DETAIL PAGE SHOULD BE FILLED IN AND EMAILED TO THE MAMMOTH FANS SUPPORT WARRANTY TEAM WHEN REQUESTING WARRANTY SERVICE. APPROVAL FROM MAMMOTH FANS MUST BE OBTAINED BEFORE WORK IS COMMENCED.



