



# ALPHA

HVLS

INDUSTRIAL FAN

5.5M TO 7.3M



ROBUST

**NORD German Motor, Gears  
& Aircraft Grade ALU Blades**



SAFE

**Anti-Drop Patented Hub  
& Swing Guard Design**



EFFICIENT

**5°-8° (C) Temperature Drop  
in Humid Conditions**

# DATA SHEET

ZP-AL-3P-KIT

Version 5

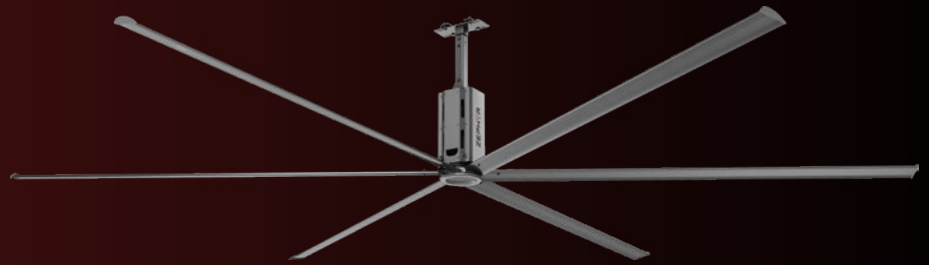
ZEPHYR FANS

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## ALPHA

HVLS INDUSTRIAL FAN

5.5 TO 7.3M



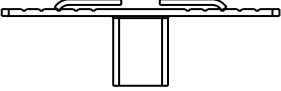



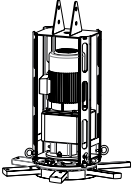




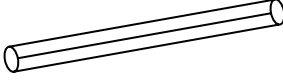

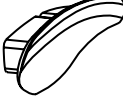
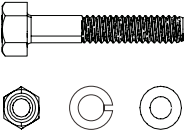
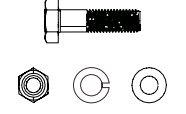
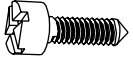



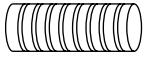
### Description

The ALPHA is the largest High Volume Low Speed (HVLS) fan in our range with an impressive maximum diameter of 7.3 metres. Available in a 3-phase input with a customisable blade size range of 5.5 metres to 7.3 metres this is the cooling solution for large commercial and industrial facilities. German NORD-designed motors and gearboxes for long life, quiet operation, and serviceability. HVLS fans produce a much greater cooling effect than smaller higher speed options while consuming less power, generating less noise, and requiring fewer overall fans.

General		Details	
Fan diameter		Ø5.3 to 7M	
Weight		110 to 125 kg	
Construction/materials		Extruded 6061 Aluminium, Q345b Steel motor	
Operating Temperature		-20 °C to 60 °C	
Power		Details	
Input Voltage		Three-phase: 415V	
Current (A) 415V		3.25A	
Operating Frequency		50Hz	
Total Power Consumed		1500W	
Motor Power (KW/HP)		1.5KW/2.0HP	
Operation		Details	
Air flow (m <sup>3</sup> /min)		10,500 to 13,800m <sup>3</sup> /min	
RPM		20 to 63RPM	
Noise (dBa)		43dBa	
Application Area		1050to 1800mSQM	
Protection		Details	
Compliance		Motor: CE, UL, CSA; Controller: UL, CE; Whole fitting: CE, CB	
Warranty		5 Years	

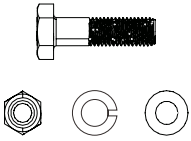
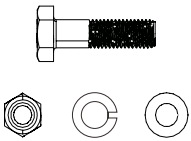
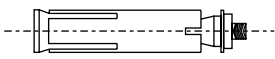
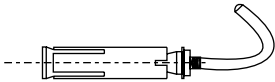
**Verify product contents**

Check the status and quantity to ensure you have the user manual, and all these parts:

	Mounting bracket (1 set)		safety cable (65m)
	cardan joint (1 pc)		safety retainer (6pcs)
	Drive (1pc)		Extension rod (1pc)
	VFD controller (1pc)		fan blade (6pcs)
	Power cable (33m)		Wiring pipe (8 pcs)
	Hub cover (1 pc)		Empenage (6 pcs)
	M16 x 130mm (4pcs Hex Head Cap Screw) M16 Nylock Nut (4pcs) M16 Spring Washer (4pcs) M16 Flat Washer (8pcs)		
	M10 x 50mm (12pcs Hex Head Cap Screw) M10 Nylock Nut (12pcs) M10 Spring Washer (12pcs) M10 Flat Washer (24pcs)		
	Tapping screw 5 *16mm (12pcs)		
	Flat head screw 5 *10mm (3pcs)		
	M6 (14pcs) Steel wire clamp		
	Straight Joint 20mm (5pcs)		
	Corrugated pipe 15mm (2 meters)		

**Verify product contents**

\*Please note that different mounting fixtures are used for either: H Beams, concrete beams, rigid frame beam, refer below:

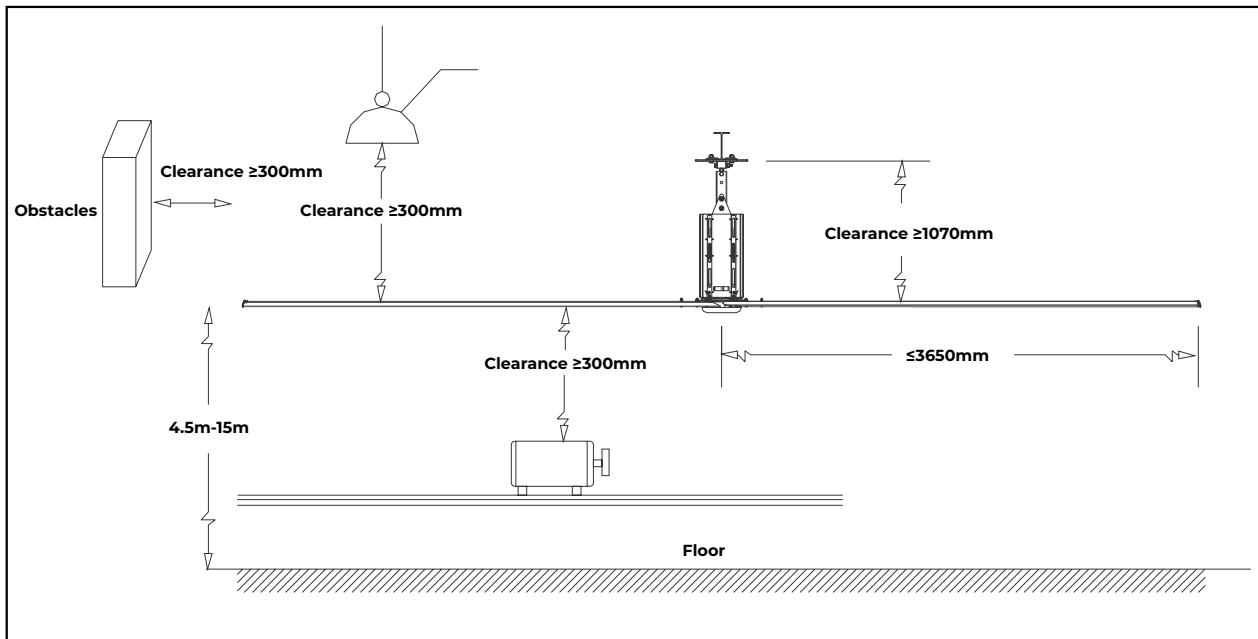
<p>H Beam</p>	<p>Line pipe Clamp 20mm*6pcs Hex Head tapping Screw 5.5*38mm*4pcs Tiger Clamp*6pcs</p>
	<p>M16 x 60mm *4pcs Hex Head Cap Screw M16 Nylock Nut *4pcs M16 Spring Washer *4pcs M16 Flat Washer *8pcs</p>
<p>Concrete beam</p>	<p>Line pipe Clamp 20mm*6pcs Flat head tapping Screw 3.5*35mm 1set Plastic wall plug 1set</p>
	<p>M16 x 60mm *4pcs Hex Head Cap Screw M16 Nylock Nut *4pcs M16 Spring Washer *4pcs M16 Flat Washer *8pcs</p>
	<p>M10 x 100mm *10pcs Expansion Screw (For Concrete Beam)</p>
	<p>M10mm x 100mm *4pcs Expansion Screw (For Concrete Beam)</p>
<p>Rigid frame beam</p>	<p>M16 Nylock Nut *8pcs M16 Spring Washer *4pcs M16 Flat Washer *8pcs M16 Threaded Rod 1Meter Tiger Clamp*6pcs</p>

**Installation Precautions:**

The maximum weight of the fan is about 125kg and the maximum torque is about 260N m. The clearance from the fan to the roof (no matter what the roof structure) is the distance between the location of the lowest part of the fan (nearest to the ground) and the installation of the upper connecting frame of the fan. For an inclined roof, the required distance should be moved to the tip of the blade, otherwise, it may cause the blade tip to collide with the roof or affect the smooth flow of airflow because the distance between the roof and the blade is too short. Overall, it is necessary to maintain reasonable fan blade and roof space to ensure proper air flow.

## Installation Precautions:

With the increase of fan speed, the fan blade will move upward along the diameter of a certain angle, increasing the fan coverage area. Therefore, all obstacles that may be encountered within the radius of the fan and between the horizontal height of the fan's static position and the ceiling should be measured before installation, ensuring that the fan has an appropriate clearance in all directions when running (see below diagram). Ensure that the fan and the existing facilities of the building (horizontal and vertically) have a clearance of at least 300mm.



## Mounting Installation Methods:

Each type of building structure requires a specific mounting bracket, the Zephyr ALPHA fan can only be installed with the included mounting equipment onto H-Beam, Rigid frame beam or Concrete beam structures. For buildings with a different installation structure, an additional set of brackets may need to be customized, please consult Zephyr.



- Verify with the contractor, building owner or structural engineer to ensure that the building structure is sound and adequate to support Zephyr products before installation.
- Ensure to take accurate height measurement of both the structure beam and blade level.
- Ensure to check if the power supply is correct on site.

## Installation Tools:

Please ensure you at least have the following tools:

- Leveling instrument
- Cutting pliers
- Wire stripper
- Lifting device(Scissor lift or scaffold )
- Pliers
- 4 sets of tighteners(or turnbuckle screws)
- Phillips head screwdriver
- Flat head screwdriver
- Tapeline
- Marking pen
- Hand electric drill with M4.2 bit.
- Out hexagonal wrench: 8mm/10mm/14mm/16mm/17mm/24mm

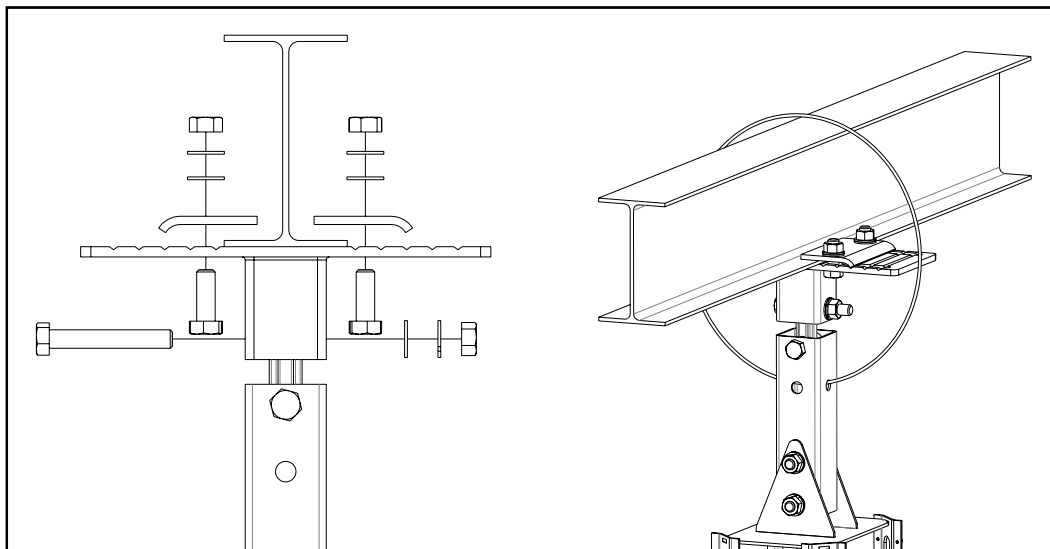
Note: A hammer drill with 12mm drill bit will also be required when connecting to the Concrete beam.

## Installation Guide

### Step 1 - Installing onto the building

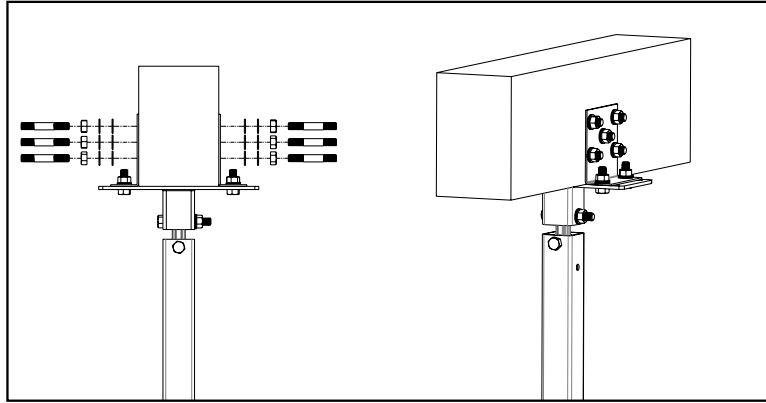
#### H-Beam

Connect to a steel H-Beam with the adjustable mounting bracket set, (the fan can be easily clipped onto on any steel H-beam, without changing the steel structure).The device can be adjusted according to the width of the beam (170mm-340mm).



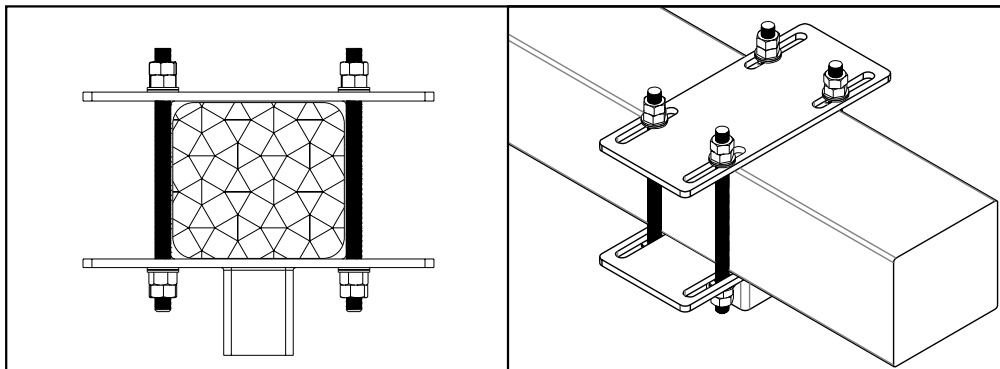
### Concrete Beam

Connect the mounting device by fixing the expansion bolts onto the concrete beam, the mounting device can be adjusted to the width of the beam (240mm~420mm).



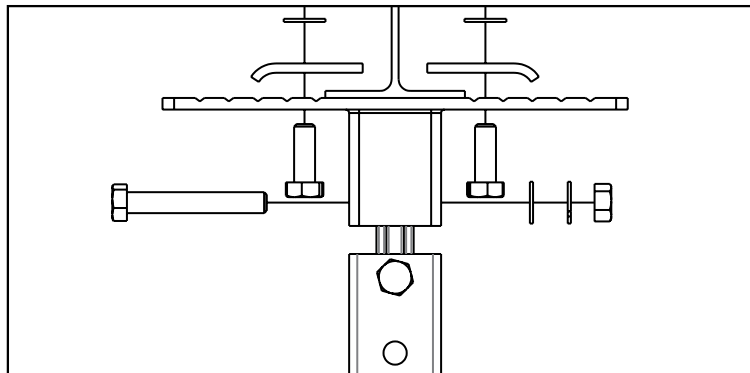
### Rigid Frame Beam

Connect the mounting device by threaded rod onto the rigid frame beam. Cut the threaded rod into 4pcs based on the height of the rigid frame beam. The device can be adjusted according to the width of the beam (80-400mm).



### Cardan Joint Installation

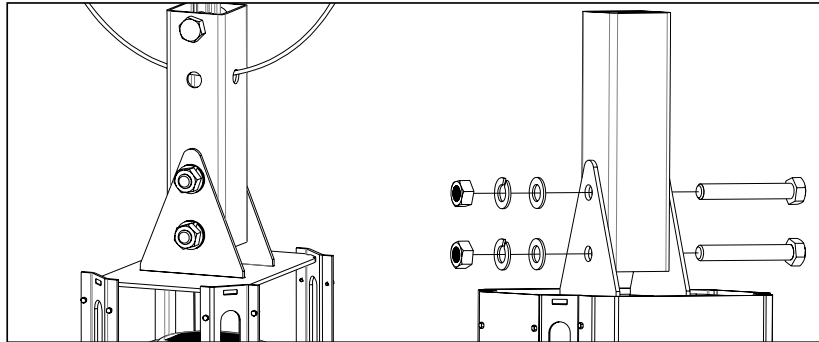
For sloped beams use the cardan joint to install the Zephyr fan, this allows the fan to freely oscillate and self-level in conjunction to the slope angle.



## Installation Guide

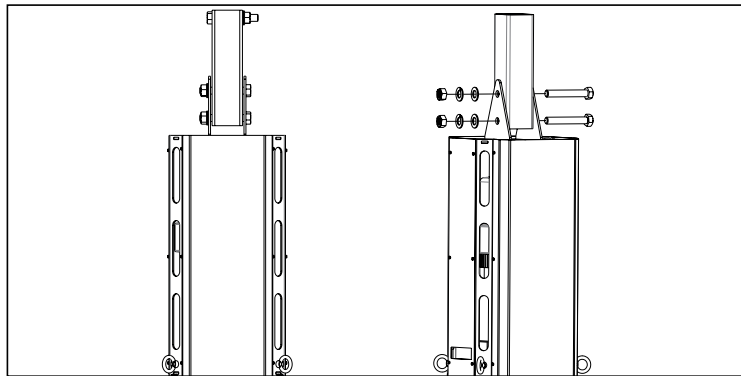
### Step 2 - Installing the extension rod

Connect the ends of extension rod with the Cardan joint and drive device with the bolts (please note that the length of the extension rod is customized according to site parameters, this will need to be cut on site).

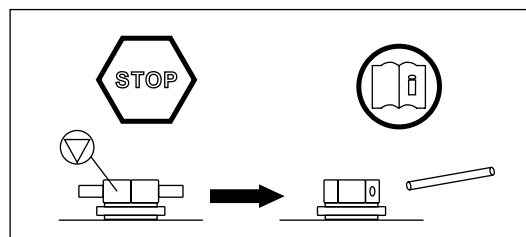


### Step 3 - Installing the drive

Fix the extension rod onto the drive device with the supplied bolts (please note that the drive device is preassembled as a singular unit, the drive device is heavy and will require 2-3 people to lift and install).



Do not remove the oil plug until the fan is properly mounted. If the oil plug is removed before the fan is mounted, oil in the gear box reducer may spill out.





## Installation Guide

### Step 4 - Connecting to power supply and wiring

The wire conduit layout should be done in accordance to site parameters and respective state, industry Australian standards and legislation.

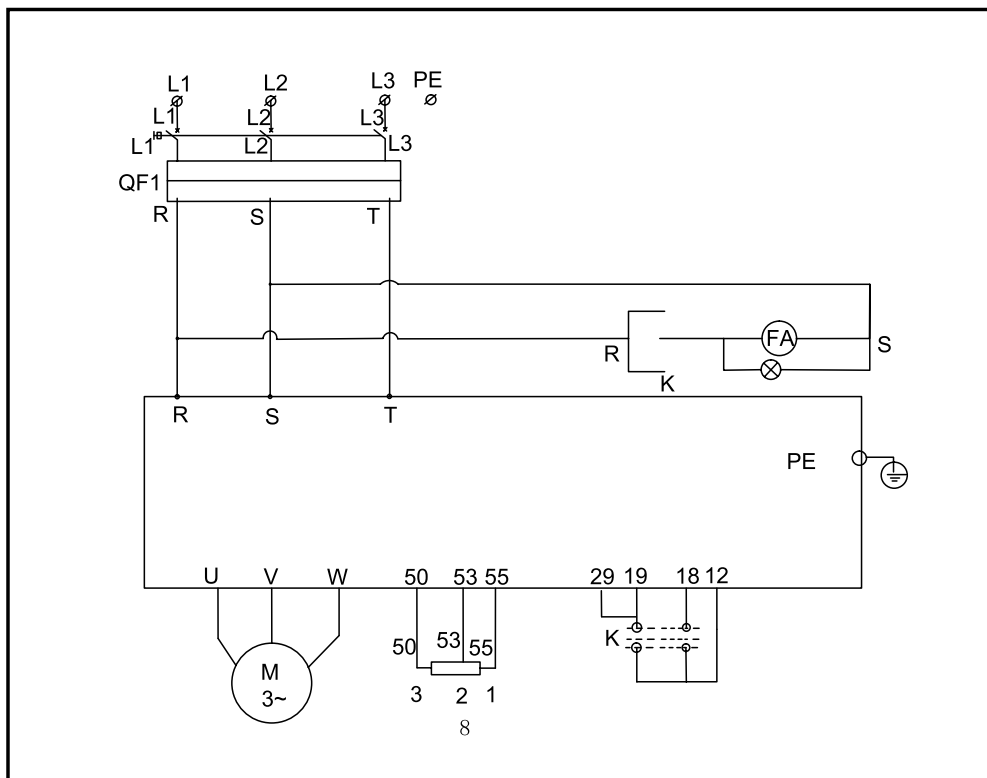
Before wiring, please make sure the power is off. Then connect to the power supply. If the site power supply is three phase delta type. Connect motor wire first then connect the electric wires to the control box.



Do not connect the power supply to the drive directly.

### Wiring diagram

#### Three Phase 415V



## Installation Guide

### Step 5 - Installation of security cables

Each fan has four steel wire ropes. Please ensure that the angle between each steel wire and the drive device is approximately 45 degrees, any variation in the angle will affect the strength of the steel wires. Please adhere to the below guidelines:

#### Method 1: Installing with turnbuckle

1. Use four safety cables per fan, with three clamps per rope. (One clamp for the site structure, two clamps for turnbuckle).
2. Use the closed-end of turnbuckle to fix the steel wire to the building structure, and use the open end of the turnbuckle to fix the steel wire to the safety rings of the fan.

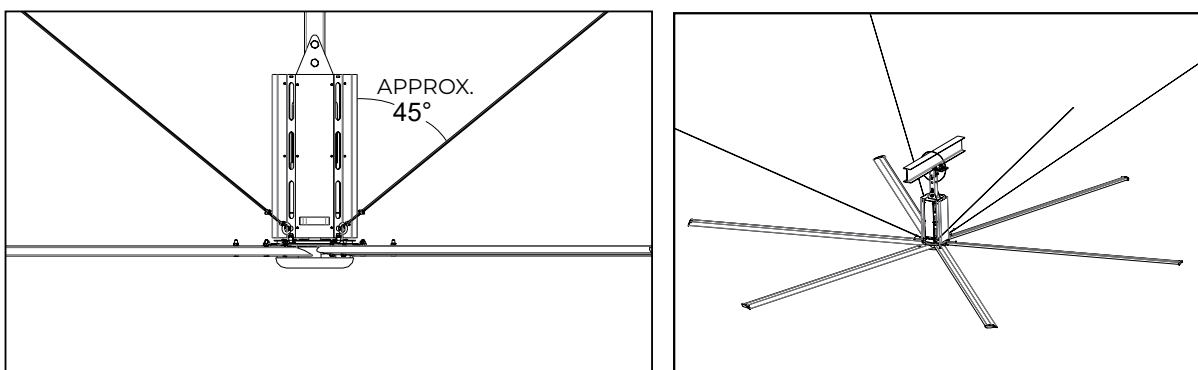
**CAUTION:** It is important to avoid wrapping the steel wire around any sharp corner. Although the external force used to fix and balance the fan is very small, the continuous running of the fan may cause fatigue damage to the steel wire rope over an abrasive surface.

3. Attach the steel wire to the building first, install one clamp per wire and tighten.
4. Attach the steel wire to the closed-end turnbuckle, and use the open-end of the turnbuckle to fix onto the safety ring of the fan. Install two clamps per wire.
5. Using the turnbuckle, tighten each steel wire rope gradually and use a leveling instrument to make sure the drive device of the fan is at a vertically level position.

#### Method 2: Installing with tightener

1. Attach the steel wire to the site structure first, install one clamp per wire and tighten.
2. Attach the steel wire to the safety ring of the motor frame, install two clamps per wire, do not tighten the screws immediately.
3. Use the tightener to tighten each steel wire rope gradually, while using a leveling instrument to ensure that the drive device of the fan is at a vertically level position. Lock the clamp screw near the motor of each steel wire, loosen the tightener and lock the end clamp screw.

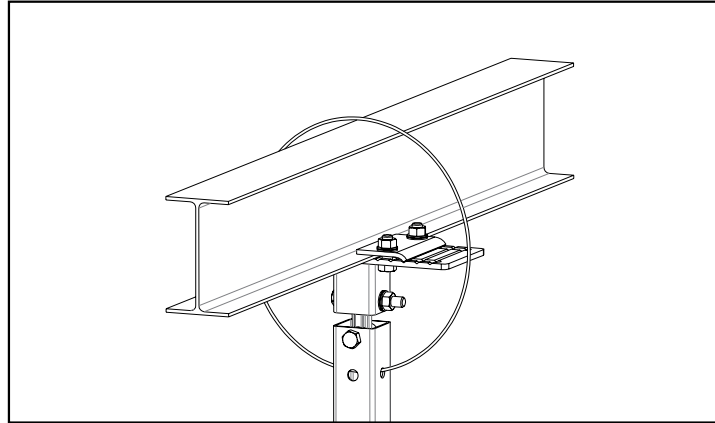
**CAUTION:** Ensure each wire rope has the same tightness after installation.



## Installation Guide

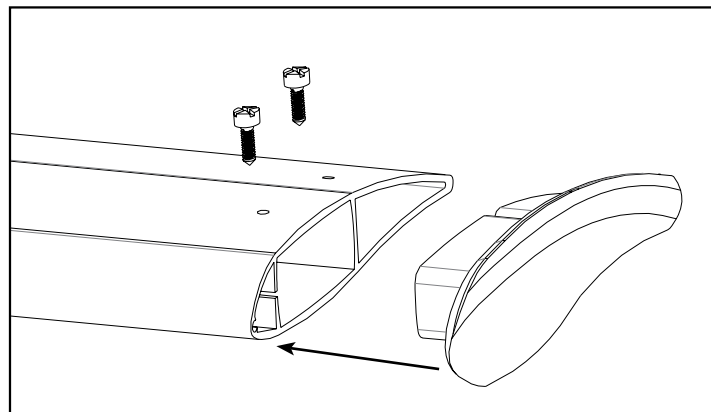
### Step 6 - Safety Cable

The wire rope is wound around the site roof beam structure and connected with the motor frame by extending through the inner cavity of the rod and forming a closed loop.



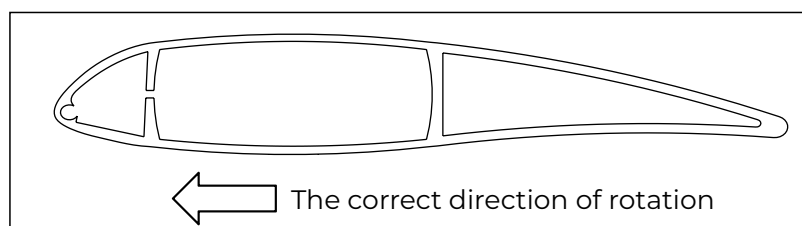
### Step 7 - Empennage installation to fan blade

Insert the empennage to each airfoil blade and fix it by using the two tapping screws.



### Step 8 - Fan blade installation

- The fan blade is pre-installed onto the fan wheel hub, simply insert the fan blade onto the blade pins and fix with two bolts per blade. The correct direction of the blade installation should be the blade upwind surface (thick round part of the blade) the highest, blade leeward surface downward as per the diagram below:

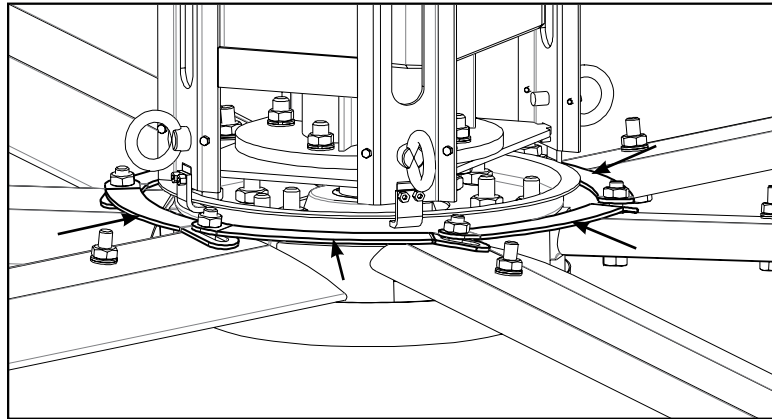


## Installation Guide

### Step 8 - Fan blade installation

2. Attach the 6pcs safety retainer on the top of the fan to connect each blade together, as seen in the diagram below:

**CAUTION:** Tighten the outside bolts first, then tighten bolts along the top of the fan.



### Step 9 - Hub cover installation

Place the bottom cover close to the hub and tighten it with the included bolts.

