



# **AIRPOLE**

## Installation Manual

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| UPDATES        |        |               |
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# TABLE OF CONTENTS

**SAFETY** ..... 4

**1 INTRODUCTION** ..... 5

**2 TECHNICAL CHARACTERISTICS** ..... 6

**3 DELIVERY** ..... 8

    3.1 Packing List ..... 8

**4 MECHANICAL INSTALLATION** ..... 9

    4.1 Clearances ..... 10

    4.2 Pole Requirements ..... 11

    4.3 Floor Fixation ..... 13

    4.4 Motor Assembly ..... 13

    4.5 Blades Assembly ..... 14

    4.6 Motor ventilation Grid Fixation ..... 15

    4.7 Cover Fixation ..... 15

    4.8 Control Box Installation ..... 16

**5 ELECTRICAL INSTALLATION** ..... 17

**6 FIRST SWITCH ON TEST** ..... 18

**7 OPERATION** ..... 19

**8 MAINTENANCE** ..... 20

**9 TROUBLESHOOTING** ..... 21

# SAFETY

Before the installation, read the following warning and caution instructions:



## WARNING!

**Do NOT install, repair or clean the fan while it is in operation or connected to the power supply.** Failure to do so may result in serious injury or death.

**Do NOT install, handle, repair or clean the fan with wet hands.** Failure to do so may result in serious injury or death.

**Do NOT use wires with worn or damaged insulation.** Doing so may result in serious or fatal electrical shock, fire or other accidents.

**Ensure that the wires are held securely and protected from abrasion, chaffing, overload or other damage.** Risk of serious or fatal electrical shock, fire or other accidents.

**Turn OFF power to the fan if you detect any damage.** Risk of serious or fatal electrical shock, fire or other accidents.

**Do NOT connect a damaged fan to the power supply.** Risk of serious or fatal electrical shock, fire or other accidents.



## CAUTION!

**Use proper lifting equipment to handle the motor and blade boxes.** Otherwise, the fan could be damaged and there is risk of accident.

**Follow the instructions and recommendations contained in this manual carefully.** Failure to do so may result in incorrect installation.

# 1 INTRODUCTION

The Anemoi AIRPOLE fan is perfect for indoor and outdoor applications where it is not possible to make ceiling installations. It has been designed to generate a huge amount of air from the ceiling thanks to the motor power.

This fan is mainly used to increase comfort in summer by generating a smooth breeze even outdoors and can also be used in winter using the heat located in the top coats of the building.



In addition, in combination with the traditional air conditioning systems, the use of fans allows generating important energy savings of up 45% in winter and 25% in summer.

## 2 TECHNICAL CHARACTERISTICS

|  | AIRPOLE 250 | AIRPOLE 300 | AIRPOLE 350 | AIRPOLE 400 | AIRPOLE 450 |
|--|-------------|-------------|-------------|-------------|-------------|
|--|-------------|-------------|-------------|-------------|-------------|

### GENERAL CHARACTERISTICS

|               |                    |      |      |      |      |
|---------------|--------------------|------|------|------|------|
| Diameter      | 2.5m               | 3.0m | 3.5m | 4.0m | 4.5m |
| Blades number | 6 aluminium blades |      |      |      |      |

### MOTOR CHARACTERISTICS

|                     |                    |        |        |       |       |
|---------------------|--------------------|--------|--------|-------|-------|
| Motor power         | 270W               | 270W   | 270W   | 540W  | 540W  |
| Supply voltage      | 230VAC I, 50~60 Hz |        |        |       |       |
| Maximum current (A) | 1.2 A              | 1.2 A  | 1.2 A  | 2.3 A | 2.3 A |
| Maximum speed       | 100rpm             | 100rpm | 100rpm | 80rpm | 70rpm |
| Protection degree   | IP54               | IP54   | IP54   | IP54  | IP54  |
| Sound level         | 50dBA              | 50dBA  | 50dBA  | 50dBA | 50dBA |
| Total weight*       | 178kg              | 206kg  | 210kg  | 251kg | 255kg |
| Motor type          | Magnet motor       |        |        |       |       |

### FAN PERFORMANCE

|                         |                          |                          |                          |                          |                          |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Airflow                 | 100,800m <sup>3</sup> /h | 144,000m <sup>3</sup> /h | 169,200m <sup>3</sup> /h | 223,200m <sup>3</sup> /h | 273,600m <sup>3</sup> /h |
| Recommended coverage ** | 380 m <sup>2</sup>       | 590 m <sup>2</sup>       | 760 m <sup>2</sup>       | 930 m <sup>2</sup>       | 1,130 m <sup>2</sup>     |
| Max. Coverage ***       | 532 m <sup>2</sup>       | 826 m <sup>2</sup>       | 1,064 m <sup>2</sup>     | 1,302 m <sup>2</sup>     | 1,582 m <sup>2</sup>     |

### CONTROL

|            |   |
|------------|---|
| Controller | Commercial VFD with potentiometer or RS485 connection |
|------------|---|

### OPTIONS

|        |                                     |
|--------|-------------------------------------|
| Colour | Optional blade colour customization |
|--------|-------------------------------------|

\* Depending on pole weight.

\*\* Air speed > 0.5m/s.

\*\*\* Air speed > 0.2m/s.

**AIRPOLE 500**
**AIRPOLE 550**
**AIRPOLE 650**
**AIRPOLE 730**
**GENERAL CHARACTERISTICS**

|                      |                    |      |      |      |
|----------------------|--------------------|------|------|------|
| <b>Diameter</b>      | 5.0m               | 5.5m | 6.5m | 7.3m |
| <b>Blades number</b> | 6 aluminium blades |      |      |      |

**MOTOR CHARACTERISTICS**

|                            |                    |       |       |       |
|----------------------------|--------------------|-------|-------|-------|
| <b>Motor power</b>         | 820W               | 820W  | 1100W | 1100W |
| <b>Supply voltage</b>      | 230VAC I, 50~60 Hz |       |       |       |
| <b>Maximum current (A)</b> | 3.6 A              | 3.6 A | 5 A   | 5 A   |
| <b>Maximum speed</b>       | 70rpm              | 60rpm | 60rpm | 60rpm |
| <b>Protection degree</b>   | IP54               | IP54  | IP54  | IP54  |
| <b>Sound level</b>         | 50dBA              | 50dBA | 50dBA | 50dBA |
| <b>Total weight*</b>       | 291kg              | 293kg | 306kg | 320kg |
| <b>Motor type</b>          | Magnet motor       |       |       |       |

**FAN PERFORMANCE**

|                                |                          |                          |                          |                          |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>Airflow</b>                 | 309,600m <sup>3</sup> /h | 385,200m <sup>3</sup> /h | 475,200m <sup>3</sup> /h | 601,200m <sup>3</sup> /h |
| <b>Recommended coverage **</b> | 1,310 m <sup>2</sup>     | 1,490 m <sup>2</sup>     | 1,750 m <sup>2</sup>     | 2,050 m <sup>2</sup>     |
| <b>Max. Coverage ***</b>       | 1,834 m <sup>2</sup>     | 2,086 m <sup>2</sup>     | 2,450 m <sup>2</sup>     | 2,870 m <sup>2</sup>     |

**CONTROL**

|                   |   |
|-------------------|---|
| <b>Controller</b> | Commercial VFD with potentiometer or RS485 connection |
|-------------------|---|

**OPTIONS**

|               |                                     |
|---------------|-------------------------------------|
| <b>Colour</b> | Optional blade colour customization |
|---------------|-------------------------------------|

\* Depending on pole weight.

\*\* Air speed > 0.5m/s.

\*\*\* Air speed > 0.2m/s.

## 3 DELIVERY

The Anemoi AIRPOLE fan is delivered in two wood boxes, one including the motor parts and the other the blades. Handle the fan boxes carefully and with proper lifting equipment to avoid any damage.



### CAUTION!

**Use proper lifting equipment to handle the motor and blade boxes.** Otherwise, the fan could be damaged and there is risk of accident.

### 3.1 Packing List

The following tables include the different pieces sent inside the boxes. Please check the status and quantity of the fan equipment and the supporting parts immediately after you have opened the box to make sure that the goods received are in accordance with your order. If parts are missing or damaged, please inform our company's responsible person immediately for revision.

#### Motor box:

| NO. | Component name            | QTY    |
|-----|---------------------------|--------|
| 1   | Motor                     | 1 pc   |
| 2   | Control box               | 1 pc   |
| 3   | Fan hub                   | 1 pc   |
| 4   | M22 bolts and nuts        | 6 pcs  |
| 5   | M18 bolts and nuts        | 6 pcs  |
| 6   | Conical cover for motor   | 1 pc   |
| 7   | Motor ventilation grid    | 1 pc   |
| 8   | Ventilation grid screws   | 6 pcs  |
| 9   | Fan top cover             | 1 pc   |
| 10  | Fan cover screws          | 6 pcs  |
| 11  | Bolted flange             | 1 pc   |
| 12  | Blade retainer            | 6 pcs  |
| 13  | M6 bolts, nuts and washer | 24 pcs |

#### Blades box:

| NO. | Component name | QTY   |
|-----|----------------|-------|
| 1   | Fan Blade      | 6 pcs |



## 4 MECHANICAL INSTALLATION



### CAUTION!

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**Follow the instructions and recommendations contained in this section carefully.** Failure to do so may result in incorrect installation.

---

The Anemoi AIRPOLE fan is designed for floor installation. Ensure that the floor area chosen can hold the weight of the fan and that there are no obstacles in its operating range. The maximum weight of the fan is about 320kg depending on the pole's weight.

Before installing the fan, it is necessary to sign and protect the working area to prevent anyone from going under the fan. It is recommended to fence at least four meters around the lifting equipment.

Follow any national or local regulation regarding installations in height.



### SAFETY!

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**Ensure that the floor area chosen can hold the weight of the fan and that there are no obstacles in its operating range.** Failure to do so may result in equipment damage or accident.

---

**Ensure sign and protect the working area.** Failure to do so may result in serious injury or death.

---

**Ensure following any national or local regulation.** Failure to do so may result in serious injury or death.

---

**Do NOT install the fan while it is in operation or connected to power supply.** Doing so may result in serious or fatal electrical shock.

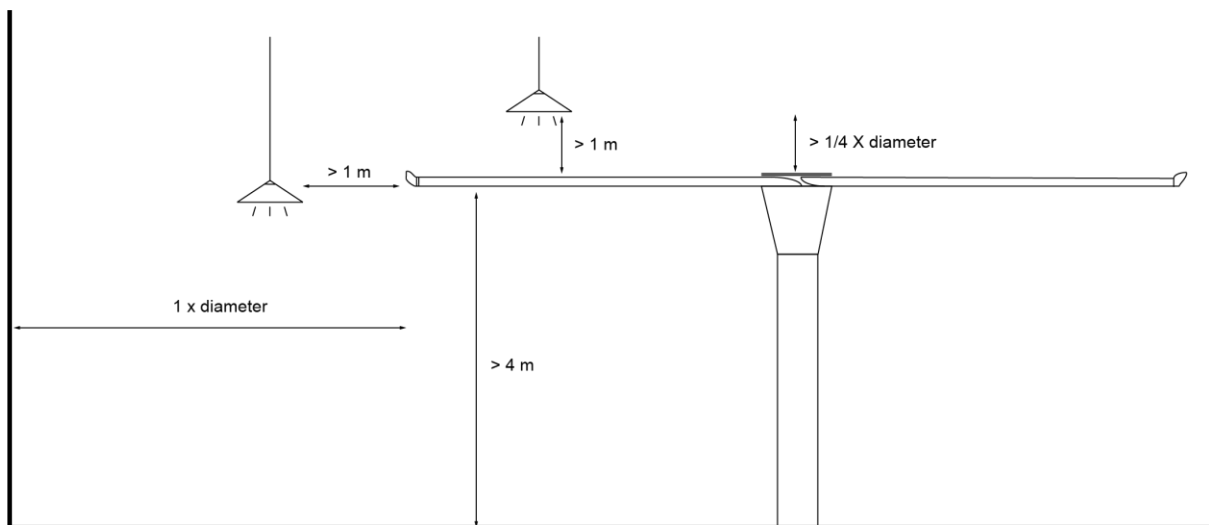
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## 4.1 Clearances

In order to ensure the maximum coverage of the Anemoi AIRPOLE, all obstacles that may be encountered within the radius of the fan and the roof (if there is any roof) should be considered before installation, ensuring that the fan has an appropriate clearance in all directions when running.

If there are lamps above the fan blades, change their position if necessary, to avoid the strobe effect. Ensure that the fan is installed at a height greater than four meters.

The next figure shows all clearances:



### CAUTION!

Ensure that the minimum distances are achieved. Otherwise, the fan could be damaged.

It is recommended to protect the fan if there is the possibility to receive impacts.



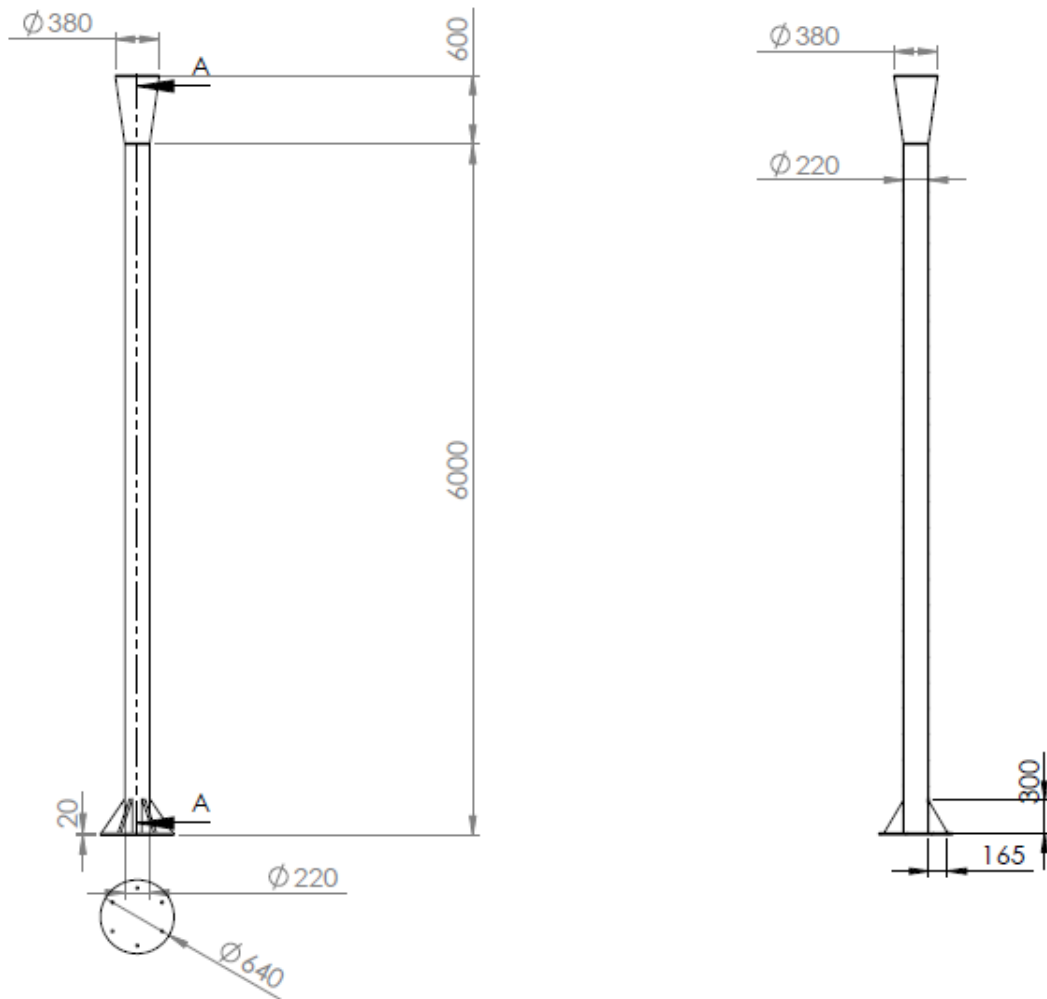
### CAUTION!

Protect the fan if there is the possibility to receive impacts. Otherwise, the fan could be damaged.

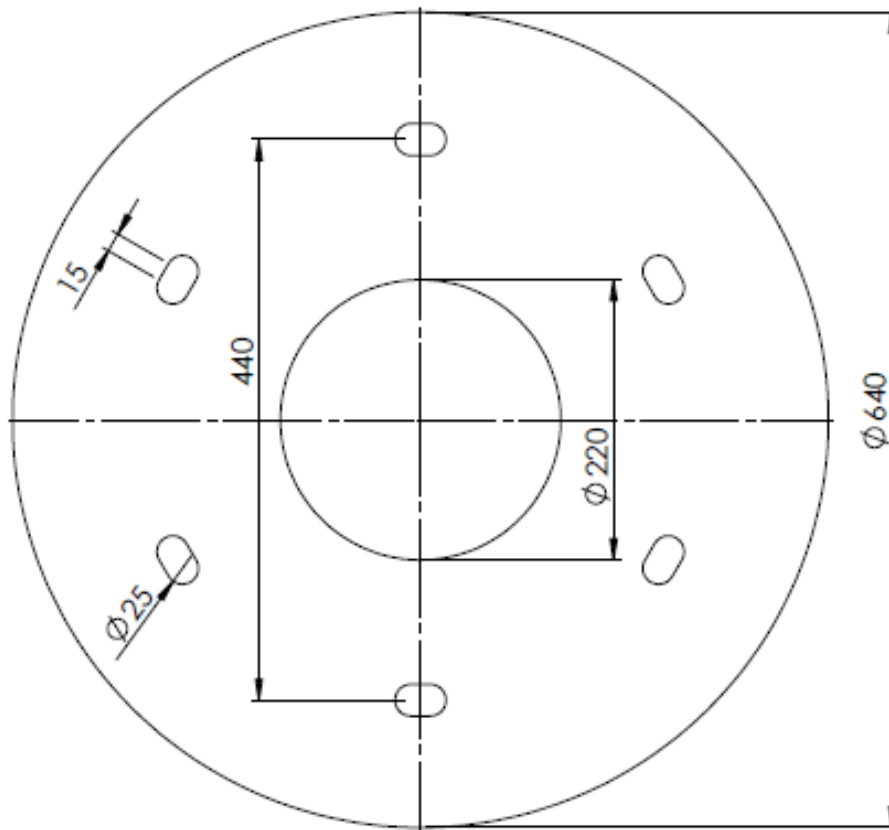
### 4.2 Pole Requirements

The Anemoi AIRPOLE requires a pole that can be ordered to Anemoi or can be manufactured in the installation country to avoid high transport costs.

Dimensions of the tube are as follows:



Recommended dimensions for the floor fixation part are:



### 4.3 Floor Fixation

The Anemoi AIRPOLE should be fixed to the floor using at least M22 bolts. It is recommended to use the recommended floor fixation piece. The fan cannot be installed in inclined floors.



#### CAUTION!

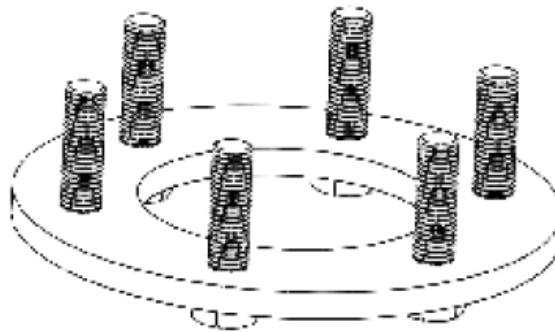
---

**Ensure that the M22 bolts are properly tightened.** Failure to do so may result in equipment damage.

---

### 4.4 Motor Assembly

The AIRPOLE fan is delivered with a bolted flange so that the motor conical cover is correctly fixed to the pole.



The motor's weight is very heavy so it must be lifted by two or three installers, or even lifting equipment.



#### CAUTION!

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**Ensure that the motor bolts are correctly fastened.** Failure to do so may result in equipment damage.

---

**Do not lift the motor weight alone.** Failure to do so may result in serious injury or equipment damage.

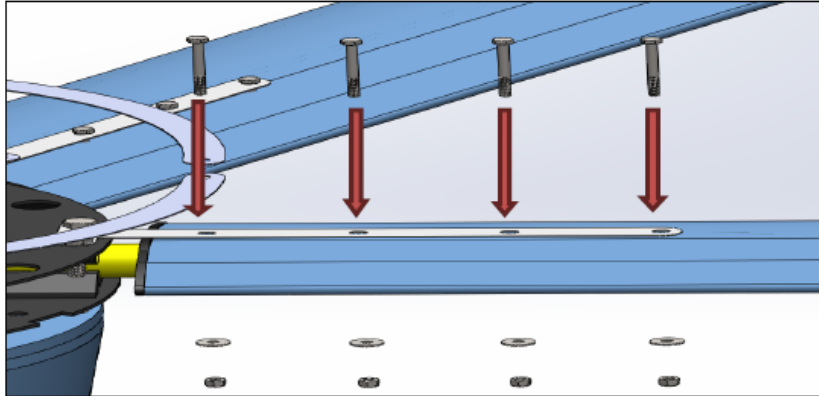
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## 4.5 Blades Assembly

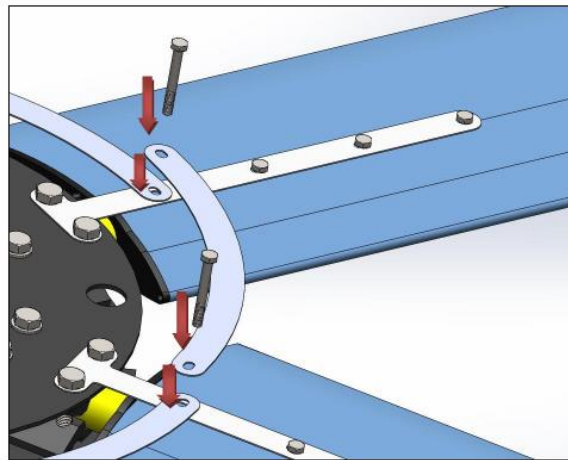
To assemble the blades, it is necessary to screw the plastic end caps, and introduce and fix them to the motor guides.

Insert the blade into the motor bracket and fix it using the M6 bolts and the blades retainer. It is necessary to tighten the outside bolts first and then the inside bolts using the retainers.

The next figure shows the blades assembly:



The next figure shows the blades retainers assembly:

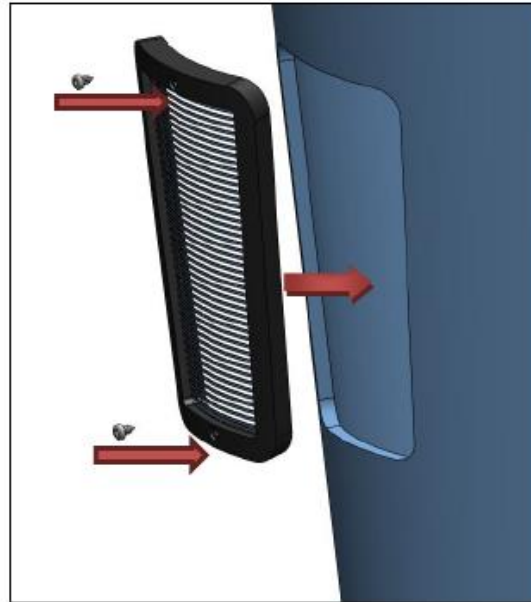


### CAUTION!

**Tighten the outside bolts first and then the inside bolts with the blades' retainer.** Failure to do so may result in incorrect installation.

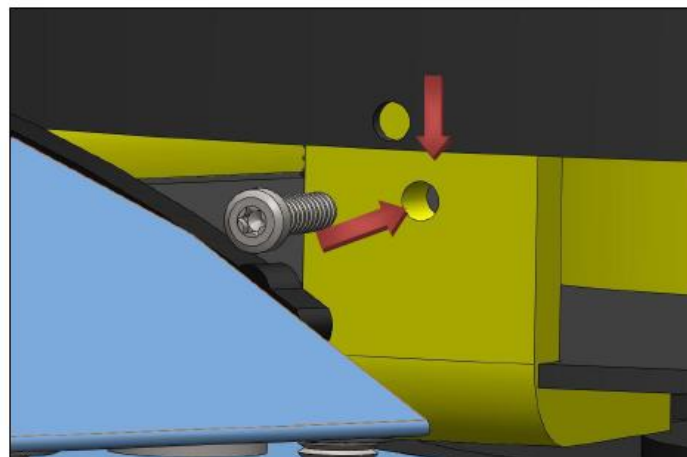
## 4.6 Motor ventilation Grid Fixation

The motor conical protection includes a special grid for ventilation that ventilates it. Use the screws provided to fix it as follows:



## 4.7 Cover Fixation

The motor includes a special cover to protect the fan hub bolts. Use the screws provided to cover the motor as follows:



## 4.8 Control Box Installation

The Anemoi AIRPOLE is controlled through a variable speed drive installed inside the control box

The control box is designed to be screwed directly onto a wall. To that end, it includes a hole on each corner. Before drilling the wall, hold the control box in the desired position and mark the screw location. Please install the control box in a safe area to prevent damage to the equipment.



### **CAUTION!**

---

**Install the control box in a safe area.** Failure to do so may result in equipment damage.

---



## 5 ELECTRICAL INSTALLATION



### WARNING!

---

**Follow the instructions and recommendations contained in this section.** Failure to do so may result in serious injury or death.

---

The Anemoi AIRPOLE motor is controlled by a variable frequency drive installed in the control box. The control VFD is already factory configured to obtain the correct motor performance. To ensure the fan operation, the installers must connect the VFD to the power supply and to the motor.

Before installing the VFD, it is necessary to remove power supply to prevent any accident. Check that power supply is disconnected before starting the installation.

All cabling must comply with national and local regulations on cable cross-sections and ambient temperature. **Copper (60°C/75°C) conductors are recommended.**

Follow any national or local regulation regarding electrical installations.



### WARNING!

---

**Follow national and local electrical regulations.** Failure to do so may result in serious injury or death.

---

**Check that power supply is disconnected before starting the installation.** Failure to do so may result in serious injury or death.

---

**Do NOT install the fan with wet hands.** Failure to do so may result in serious injury or death.

---

**Do not change the VFD configuration.** Otherwise, the warranty would be voided.

---

The Anemoi AIRPOLE engine must be connected to the power supply with an electrical voltage of 230V (I, 50/60Hz) through the control VFD. The control box includes a terminal box to allow for smooth connection to the power supply.

You may use shielded or unshielded cables. The maximum cable length between the control box and the engine should be 100m for unshielded and 50m for shielded cables. Please root the cables along the floor using the shortest possible path.

Electrical and control wiring should be installed in separated circuits to prevent interference.



### WARNING!

---

**Do NOT use wires with worn or damaged insulation.** Doing so may result in serious or fatal electrical shock, fire or other accidents.

---

**Ensure that the wires are held securely and protected from abrasion, chaffing, overload or other damage.** Risk of serious or fatal electrical shock, fire or other accidents.

---

**Do NOT connect the motor to the input line directly.** Failure to do so may result in equipment damage.

---

## 6 FIRST SWITCH ON TEST

Installers must follow the following procedure for the first-time operation of the Anemoi AIRPOLE fan because even if all fans are tested before shipping, they can be damaged during storage or shipping.

Before operation, it is recommended to recheck that all bolts and nuts are correctly fastened.

After performing all mechanical and electrical connection steps included in this manual, run the fan as follows:

- 1- Change the main switch to the start position.
- 2- Run the fan at a low speed (about 20 rpm / min) for during some minutes by turning the potentiometer.
- 3- Verify that there is no abnormal noise.
- 4- Increase its speed gradually.

In the event of any abnormal noise, please contact Anemoi or your distributor.

## 7 OPERATION

The Anemoi AIRPOLE fan is operated through a VFD control panel. Once the fan is powered, follow the next steps to start the fan:

- 1- Change the main switch to the start position.
- 2- Adjust the potentiometer to the required speed.
- 3- Check the speed in the VFD screen.

To stop the fan, perform the procedure in reverse.



### CAUTION!

---

**Do not use the main switch in the box to start and stop the fan.** Otherwise, the warranty would be voided.

---

## 8 MAINTENANCE



### WARNING!

**Do NOT repair or clean the fan while it is in operation or connected to the power supply.** Doing so may result in serious or fatal electrical shock.

Please maintain the fan as follows:

Every three months:

- Verify that the fan is working properly.
- Ensure that the fan does not make any noises or vibrations.
- Check that the blades have not received any impact.

Yearly:

- Check that there no alarms or faults in the variable speed drive located in the control box.
- Ensure that the extension rod screws are properly tightened.
- Ensure that the anchoring screws are properly tightened.
- Ensure that the blade screws are properly tightened.
- Clean the blades using a wet cloth.
- Check that the safety cable is properly fastened.
- Check that the guy wires are properly tightened.
- Check power and control connections in the control box.

## 9 TROUBLESHOOTING

In case of failure, refer to the following table for quick solutions:

| Observation                  | Probable cause                             | Inspection method  |
|------------------------------|--|--|
| The fan can't start normally | The main switch is not working correctly   | Reset the variable frequency drive                                     |
|                              |  | Check control wires connections  |
|                              |  | Replace the main switch  |
| The fan can't start normally | The potentiometer is not working correctly | Reset the variable frequency drive                                     |
|                              |  | Check control wires connections  |
|                              |  | Replace the potentiometer  |
| The fan can't start normally | Voltage below level                        | Check input voltage  |
|                              |  | Check power connections  |
| The fan can't start normally | VFD alarm                                  | Follow the drive instructions to remove the trouble, reset and restart |

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