

# BREEZE FAN

Manual for use and maintenance



+ CE Declaration of conformity

## Breeze Fan

Air circulation fan

# Breeze Fan

## Manual for use and maintenance

Original instructions

This manual for use and maintenance is an integral part of the apparatus together with the attached technical documentation and has been produced with reference to Directive 2006/42/EC, paragraph A, Annex II.

This document is destined for the user of the apparatus: it may not be reproduced in whole or in part, committed to computer memory as a file or delivered to third parties without the prior authorisation of the assembler of the system. Munters A/S reserves the right to effect modifications to the apparatus in accordance with technical and legal developments.

### Warranty

For Warranty information please refer to "General terms and condition of sale" available on [https://www.munters.com/globalassets/terms-and-policies/condizioni\\_generali\\_vendita.pdf](https://www.munters.com/globalassets/terms-and-policies/condizioni_generali_vendita.pdf).

### Conditions and Limitations:

- Products and Systems involved in a warranty claim under the "General terms and condition of sale" must have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Munters;
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.



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# 1. CE DECLARATION

## CE Declaration of Conformity

(complies with Subparagraph A Annex II Directive 2006/42/EC)

### Munters A/S

with registered offices in Nordvestvej, 3 - 9600 Aars, Denmark  
(Company registration nr. DK 89 54 94 18)

declares on its own responsibility that the apparatus:

Designation	Fan for industrial buildings, especially barns
Model	Breeze Fan
Year of manufacture	2017

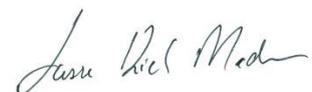
conforms with the essential safety requirements stated by Apparatus Directive 2006/42/EC

with particular reference to the following provisions:

UNI EN ISO 12100, UNI EN ISO 13857, CEI EN 60204-1, CEI EN 61000-6-1, CEI EN 61000-6-3

Aars, 11<sup>th</sup> December 2017

Lasse Kiel Madsen



Legal Representative

## 1.1 Disclaimer

Munters reserves the right to make alternations to specifications, quantities, dimensions etc. for production or other reasons, subsequent to publication. The information contained herein has been prepared by qualified experts within Munters. While we believe the information is accurate and complete, we make no warranty or representation for any particular purposes. The information is offered in good faith and with the understanding that any use of the units or accessories in breach of the directions and warnings in this document is at the sole discretion and risk of the user.

## 1.2 Introduction

Congratulations on your excellent choice of purchasing a Breeze fan!

In order to realize the full benefit from this product it is important that it is installed, commissioned and operated correctly. Before installation or using the fan, this manual should be studied carefully. It is also recommended that it is kept safely for future reference. The manual is intended as a reference for installation, commissioning and day-to-day operation of the fans.

## 1.3 Notes

Date of release: 2017.

Munters cannot guarantee to inform users about the changes or to distribute new manuals to them.

All rights reserved. No part of this manual may be reproduced in any manner whatsoever without the expressed written permission of Munters. The contents of this manual are subject to change without notice.

## 1.4 Attached technical documentation

The listed documentation is to be considered an integral part of this manual:

- technical sheet/electric motor available on <https://www.nord.com>.

## 2. SAFETY ASPECTS

### 2.1 General

The safety of fans is assured by Munters in compliance with the safety requirements indicated by the CE label.

Equipment may only be used by personnel who know and apply the specific requirements given in the use and maintenance manual and the more general instructions contained in various regulations for accident prevention and applicable legislation regarding safety in the workplace, as well as other European Community directives incorporated by the member states into their national legislation.

Knowledge and understanding of the manual and of the attached documents constitute an indispensable tool for reducing hazards and promoting the safety and health of workers.

Safe functioning is assured only when the installation procedure and the instructions for use have been carefully followed.

The following points must be stressed:

- proper transport procedure must be followed;
- the maintenance operator must be kept informed on maintenance procedures (see also the 'Gear Motor manual' [https://www.nord.com/cms/dk/documentation/manuals/details\\_1139/detail\\_42075.jsp](https://www.nord.com/cms/dk/documentation/manuals/details_1139/detail_42075.jsp));
- do not operate the fan without having it firmly fixed to the structure or without complying with the safety regulations for the electrical connection in the local country of use;
- do not install the fan in places where there might be explosion hazards as described by EN 60079 rules;
- do not handle any material which might produce explosive powders;
- the emission of harmful particles and/or gases into the atmosphere must be within the limits determined by local authorities;
- safety equipment necessary for the prevention of accidents at the mounting and operating site shall be provided by the buyer in accordance with the regulations prevailing in the local country;
- fans should not be installed in places where children aged 14 years or less are present.

### 2.2 Installation

After transportation, prior to assembly and installation of the Breeze Fan, a verification of the package condition is required: in case of any discrepancy or damage of the fan components, it is necessary to immediately notify the manufacturer or the transporter.



**WARNING** In order to prevent damage to the fan itself or risk to personnel, resulting from incorrect use, the following points must be checked:

- the assembly and installation of the fan has to be carried out by specialized operators only;
- It is present an adequate support for installing the fan;
- A minimum distance of 1.2m must be left between the fan and any obstacles (see chapter 5.4);
- the fan must not be subjected to high horizontal winds such as those from another air circulator or near a large opening;
- keep the minimum distance between two adjacent fans (see chapter 7.2)

The assembly of the fan has to be carried out in the following phases:

- pre-assembly of the fan components;
- positioning and anchorage of the fan support;
- installation of the blades;
- electrical connection;
- functional verification and commissioning.

### Selecting the location and verification of the requirements for installation

The user assumes the task of preparing a suitable area for installing the fan and in conformity to the requirements from European Directive and national laws which regulate the safety in the workplaces.

The operating environmental conditions of the plant are:

Ambient temperature during operation	-15°C to +40°
Ambient humidity during operation	80%

For the installation operations it is necessary to provide a suitable manoeuvring space adapted to the dimensions of the fan and selected lifting equipment: in the installation zone must be prepared the connection points of the fan to the power supply network.



**WARNING** The building for the installation must be equipped with adequate natural ventilation (no perimeter walls).

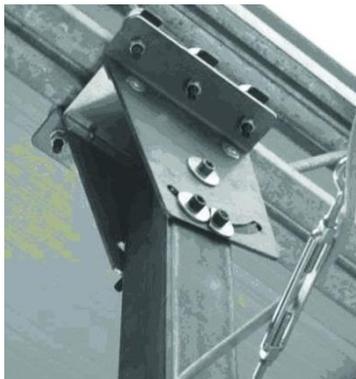


Fig.1

If the fan will be directly assembled to the metal structure of the building, it is necessary to use bolts M10 A2 screwed in the appropriate inserts, placed on the stand for the anchorage (two per side).

Adjustable mounting plate for the rafter fixing.

## 2.3 Electrical connection

The fan is supplied together with an electrical casing containing the following equipment:

- frequency controller type Nordac 500E;
- automatic Climate Control Munters Temp Man, Automatic Speed Regulator Munters or similar (optional).

The characteristics of such devices are shown in the documentation available on <http://www.nord.com>.

The fan is supplied without any wired command and control circuit; in the assembly phase, the installer must predispose a control panel which meets the requirements of the standard CEI EN 60439-3 and proceed to the electrical wiring of the fan in accordance to the indications of the standard CEI EN 60204-1 and IEC 60364.

The electrical panel of the fan must be provided with the following equipment (provided with CE mark according to the directive 2006/95/CE).



Fig.2

Lockable isolator.



Fig.3

Thermo-magnetic switch (adapted to the electrical power of the motor). The necessity to install a differential switch is connected to the configuration of the electrical wiring that powers the fan: the installer is responsible for this evaluation in accordance to the indications of the normative IEC 60364.



Fig.4

Emergency stop button red type (mushroom), fitted with mechanical restraint and turn to release (according to UNI EN ISO 13850). The operation of the button must determine the electro-mechanical interruption of the power supply and the electrical motor (1<sup>st</sup> category according to CEI EN 60204-1).



Fig.5

Start/Stop selector (characteristics compatible with nominal electrical current motor) or general electrical panel with command equipment which act on the power supply of the fan.

## 2.4 Residual risks

Mechanical hazards		
Part of machine/stage of use	Description	Plates/provisions/PPE
Installation of machine	Hazard arising from failure to observe ergonomic principles, caused by excessive strain, i.e. generic mechanical hazard during the moving and installing stages of the machine.	  
Electrical hazards		
System area	Description	Plates/provisions/PPE
Panels, covers and electrical apparatus.	The safety signs must be fixed in an extremely visible position on the door of the electrical panel and on covers containing electrical apparatus, to highlight the risks to which an operator could be exposed in the event of opening the electrical panel (danger resulting from the presence of live parts), the level of voltage present, the prohibition of tampering by unauthorized personnel and the prohibition on the use of liquids on electrical apparatus in the event of fire.	  

Hazards generated by noise	
Measuring point: 3 m from motor shaft (under fan blades)	Correct noise pressure level Lp [dB(A)]
3m	55
4m	53
5m	51
6m	50
7m	48

A measurement of the noise produced by the machine during normal operation has been made in order to calculate the equivalent level in conditions of normal use. These values are shown in the above table.



**WARNING** The user and the employer must comply with current national law in terms of protection against daily personal exposure of operators to noise, by providing the use of personal protective equipment (earmuffs, earplugs, etc.) if necessary, depending on the overall level of sound pressure in the installation area, and the daily personal exposure of the employees. In areas where the overall sound level reaches excessive values, personal protective equipment must be used.

## 3. BEFORE USING

### 3.1 Delivery check

Upon receipt, inspect the fan for external damage and if found, inform the transport agent without delay. Check the data on all the rating plates, especially voltage and frequency. After placing the motor in the working position (see chapter 5, Installation), turn the propeller by hand while the fan is switched off to verify smooth rotation of the propeller. Check in particular the fan blades, the hub and the spider.

### 3.2 Packaging and transport

The fan components are usually delivered with packaging. Each package has to be handled properly in order to avoid damages.

### 3.3 Structure

The fans consist of the following components:

- tilting bracket;
- suspension arm;
- gear-motor and frame complete fixture;
- propeller hub galvanized steel;
- propeller composed of 5 blades in aluminium alloy; blades will be attached to the hub using screws;
- suspension and attachment (stainless steel wire cable, clams, hooks, etc.);
- wind sensor (optional).



#### WARNING

- it is mandatory to secure the Breeze Fan with the attachment wires for safety measure so make sure you have the proper mounting structure;
- regarding the fan minimum spacing please see Fig.7 on chapter 5.4
- no person must stand under the fan until the installation is completed



#### WARNING

The fan should not be installed unless the structure on which the fan is to be mounted is of solid construction, undamaged, and is able to support the loads of the fan and its mounting structure. It is the responsibility of the customer and/or end user to verify the stability of the structure.

## 4. OPERATING CONDITIONS

Circulation fans, such as the Breeze Fan, are products to be used to circulate the air inside a structure, thereby creating air movement inside the structure which helps to cool animals down during hot periods.

Normal ambient temperature limits are -15°C to +40°C. Maximum altitude is 1000 m above sea level. If a fan is required to operate at a higher altitude, the loss in mass flow (heat removing capacity) due to lower air density should be taken into consideration.

The Breeze Fan is quite heavy (see chapter 7.2), so before lifting and handling it must be checked that the necessary, suitable equipment is available.

### USES EXPLICITLY EXCLUDED

The Breeze Fan is NOT made and therefore must absolutely NOT be used for other purposes such as (not exhaustive list):

- Use in atmospheric conditions even only potentially explosive
- Use in aggressive atmospheric conditions
- Use in atmospheric conditions with high salinity or humidity over 90% of that of the standard atmospheric air
- Use in places in which external suspended elements are present (for example, fibres, powders, paints, sand)
- Use in outside environments
- Use in places that subject the product to vibrations or oscillations
- Precarious and temporary use

# 5. INSTALLATION

## 5.1 General



**WARNING** Personnel who are responsible for installation, operation, inspection and service must have appropriate knowledge of the instructions, be familiar with procedures for the prevention of accidents and be qualified to carry out the work in question. If the personnel do not have the requisite knowledge, instruction of the personnel must be carried out.



**WARNING** Before installing the Breeze Fan it is necessary that a structural engineer verify that the structure where the fan should be installed is adequate to support the torque generated by the fan when in operation and the weight of the machine.

The structure on which the fan is to be mounted shall be of stiff construction, shall not present damages, and has to be capable to support the loads and the structural stress generated by the fan. The verification of the overall stability of the structure is an exclusive responsibility of the customer and/or the end user.

Munters will not take any liability for any damage which might rise from the use of a support material not adequately chosen or dimensioned.

The reliability of the unit supplied can only be guaranteed if its use corresponds to the intended use according to the sales material and/or the order confirmation.

The owner is responsible for the instructions and safety precautions being observed in relation to current legislative requirements. The manufacturer assumes no responsibility for the Breeze Fan in the event of the incorrect or improper use of the unit.



**NOTE** Read the instruction carefully, before beginning the work.

The Breeze Fan is designed and constructed in accordance with current EN norms for ventilation equipment.

## 5.2 Tools required for the installation of the Breeze Fan

	Ring/open-ended spanner – 10
	Ring/open-ended spanner – 13
	Ring/open-ended spanner - 17
	Ring/open-ended spanner - 19

	<p>AccuDrill</p>
	<p>Spiral drill bit - Ø6; Ø10; Ø12.5</p>
	<p>Phillips screwdriver</p>
	<p>Torx 20 Bits</p>
	<p>Allen key 6</p>
<p>Other</p>	<p>Spirit level, bits holder, adjustable spanner, polygrip pliers, rubber headed hammer, square tool</p>

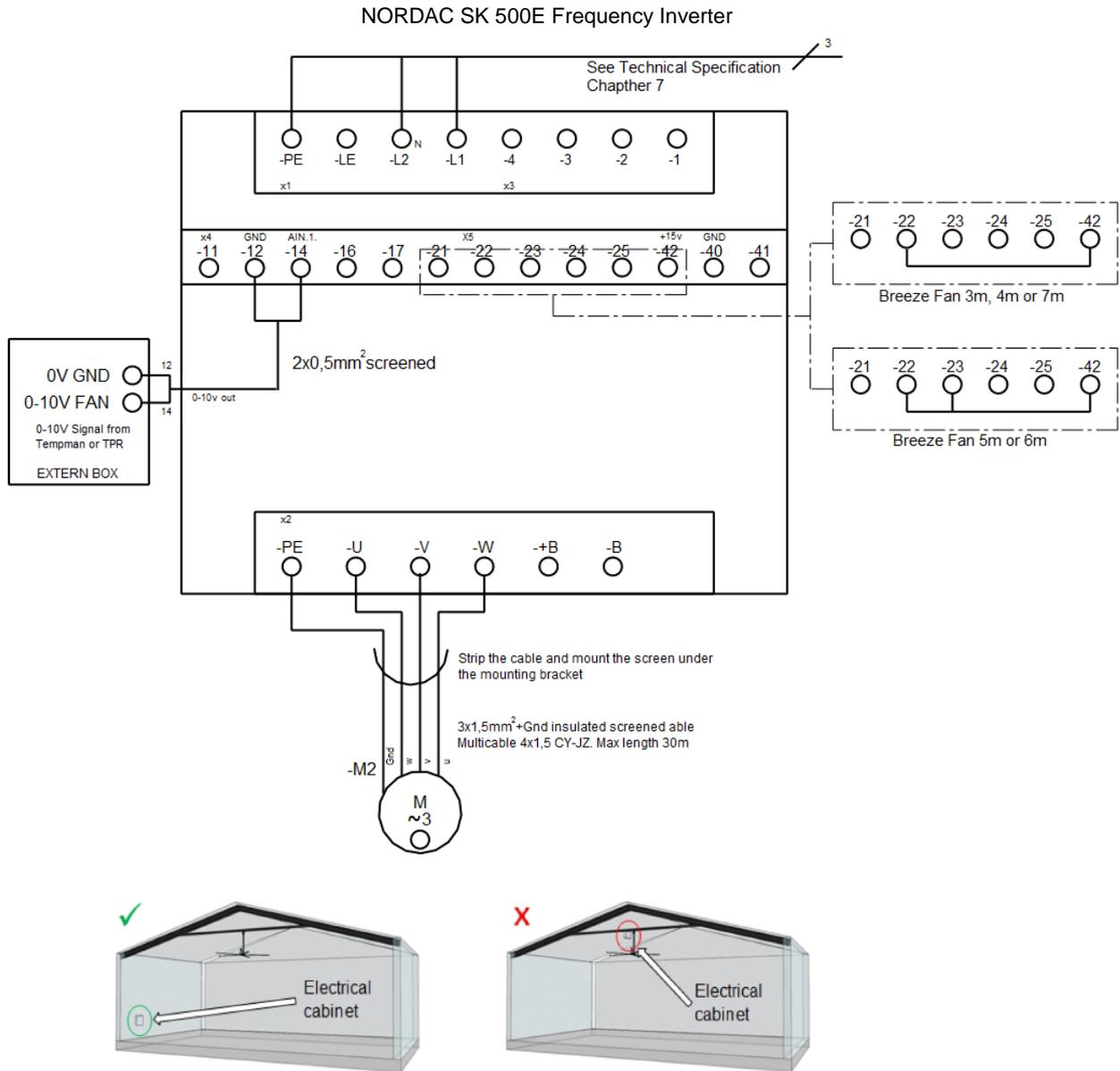


**WARNING** Please pay attention to use a torque wrench or a calibrated screwdriver to respect the following tightening torque:

- M8 Screw: 27 Nm
- M10 Screw: 50 Nm unless otherwise indicated
- M12 Screw: 90 Nm

### 5.3 Electrical wirings

#### Electrical installation frequency inverter without reverse for Breeze Fan



Munters Nordvestvej 3 9600 Års TLF.98623311

Fig.6



**WARNING** The power cable must be shielded, suitable for VFD use and the maximum length is 30 m.

## 5.4 Spacing of fans

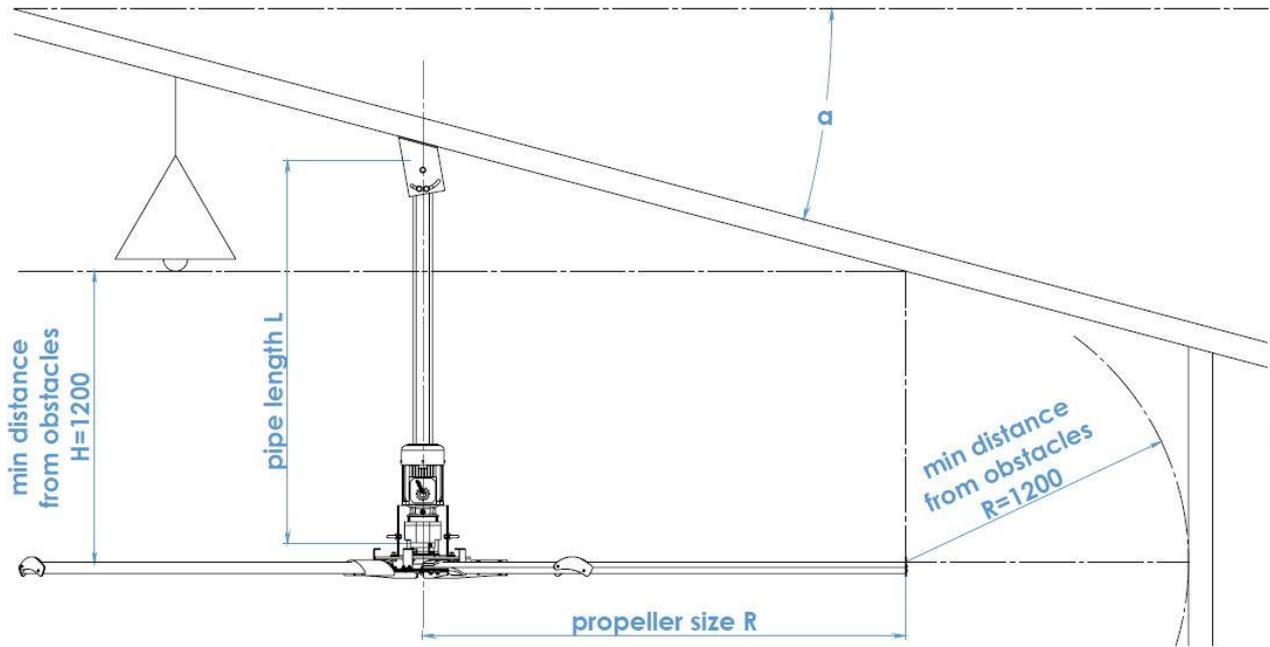


Fig.7

Propeller size		Roof slope $\alpha$ [°] (min -> max)	
R [m]	$\varnothing$ [m]	Short pipe (L=1.5 m)	Long pipe (L=2.25 m)
1.5	3	0 → 16	17 → 38
2.0	4	0 → 12	13 → 30
2.5	5	0 → 10	11 → 25
3.0	6	0 → 8	9 → 21
3.5	7	0 → 7	8 → 19

The recommendations should be complied with since they represent the optimum efficiency for the Breeze Fan.

A minimum distance of 4m must be left between the lowest part of the Breeze fan and the floor. The installer has also to assess any interference with machinery, balconies, balustrades, or anything else between the floor and the fan, that may interfere with it. Before beginning the installation, the area must be properly signaled and there must be no people or objects that may hamper or be damaged by accidental falling of parts of the fan. The area over which the Breeze fan's action is effective is about 3 times the diameter of the fan. Munters expressly forbids installations in which no space is left between one machine and another equal to the diameter of the fan itself. The installer is fully responsible for connecting the Breeze fan to the ceiling.

## 5.5 Installation of rafter suspension unit

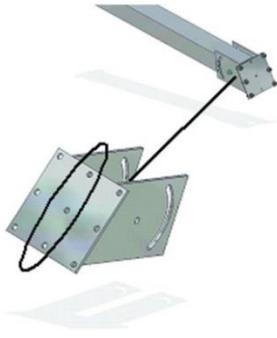


Fig.8

Fig.8 shows the tilting bracket that has to be attached to the rafter. In order to enable the bracket to adapt to different rafter widths, the extra set of holes on the top side (centre) of the bracket can be used.

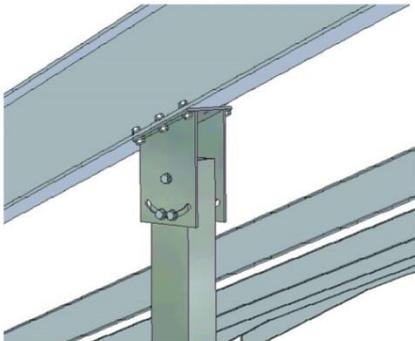


Fig.9

The bracket **MUST** be secured with the accompanying 6 bolts M10 A2, although the attachment holes are arbitrary. It is recommended that the tilting bracket be held up against the rafter and the appropriate holes marked off. Holes should then be drilled all the way through the rafter. The tilting bracket should be fitted as shown in Fig.9.



Fig.10

When the tilting bracket has been attached to the rafter, it is ready to be fitted with the suspension arm.

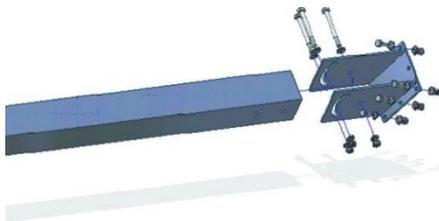


Fig.11

Fit the suspension arm into the tilting bracket and secure with the accompanying set of bolts.

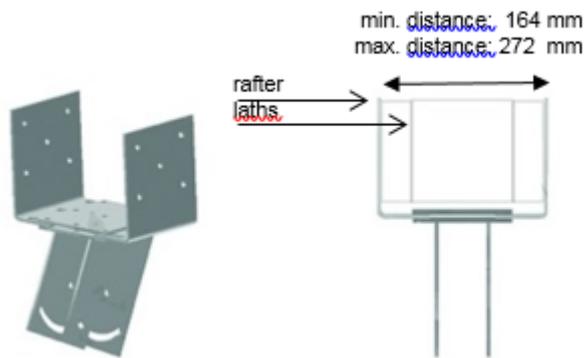


Fig.12

Assembly flex fittings installed in buildings with wooden rafters.



**WARNING** Attach the suspension arm loosely so that the weight pulls it to the vertical position, then tight the bolts.

### 5.6 Installation of complete motor fixture including motor

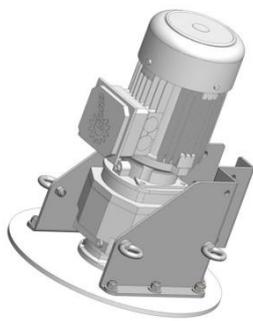


Fig.13

As shown in Fig.13, the gear motor and motor fixture are available as a complete unit. The eye nuts shown are used for 4 x wire attachment. The attachment equipment makes up part of the Breeze Fan's stabilizing/safety equipment.

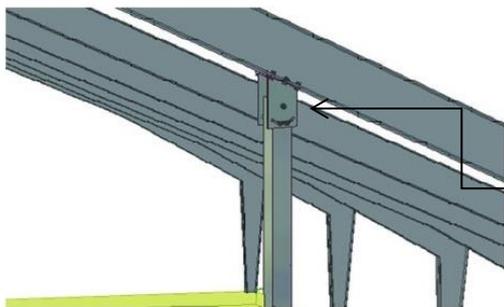


Fig.14

Suspension arm tightened (must be vertical).

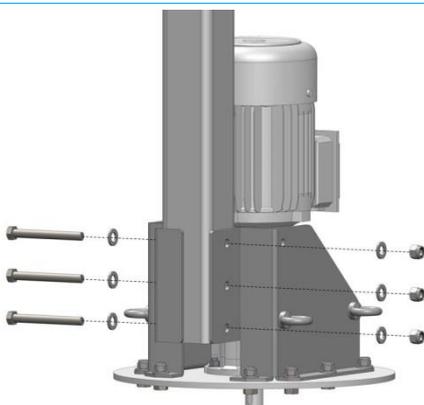


Fig.15

Fit the suspension arm to the complete motor fixture by means of 3 screws M12, 6 washers Ø12 and 3 self-locking nuts M12 (tightening torque 90 Nm).

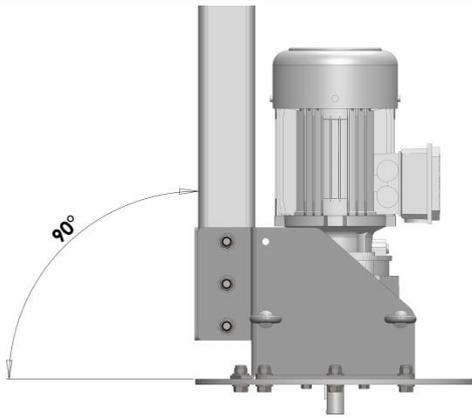


Fig.16

Using a square tool, make sure to have 90° between the suspension arm and the bottom flange motor.

### 5.7 Installation of attachment wires

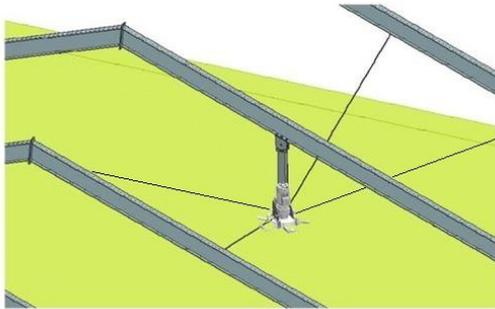


Fig.17

Fit the attachment wires as shown in Fig.17. In order to attach the safety hook to the rafter, drill a 12.5 mm diameter hole through the rafter (drill at a suitable distance that enables the safety hook to close). The wires will help to stabilise the Breeze Fan, thus ensuring that minor vibrations do not cause fatigue failures in the structural elements or attachment systems. It is important that when the attachment wires are fitted, the suspension arm does not deviate from the vertical position (the tension from the 4 wires must be distributed symmetrically around the centre of the Breeze Fan).

#### Installation sequence

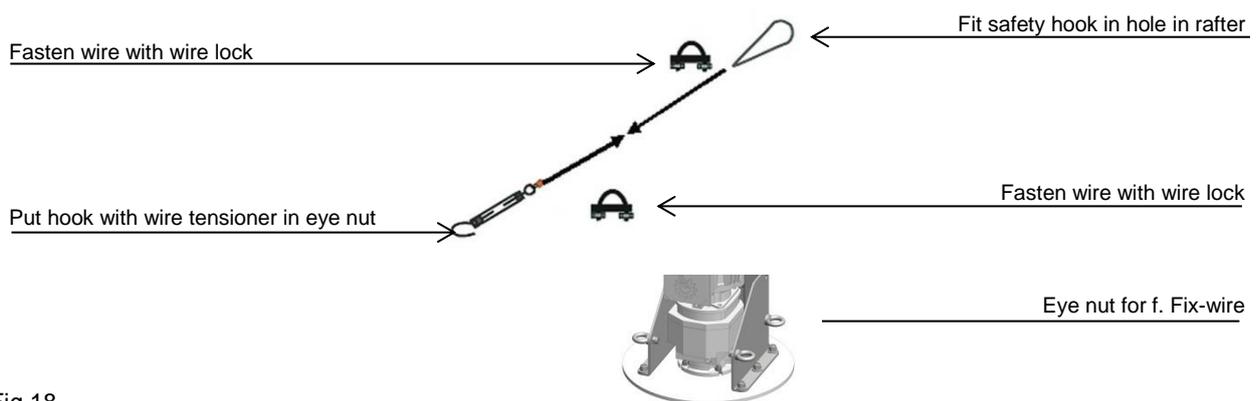


Fig.18



**NOTE** Tighten the wire with a wire strainer, hard by hand, then turn 3 times (Fig.18).

Munters provides an attachment wires kit for the Breeze fan. The attachment wires kit ensure the stability of the Breeze fan and maintain it at its height if, due to external causes, the fan is abnormally stressed or the ceiling mount with the suspension arm only does not guarantee a sufficient solidity over time.



**WARNING** Munters does not accept any responsibility for not using the attachment wires kit for installation.



**WARNING** It is important that when the fall protection is fitted, the suspension arm does not deviate from the vertical position.

### 5.8 Installation of hub

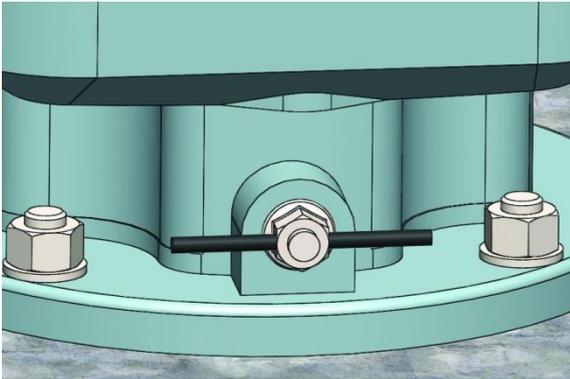


Fig.19

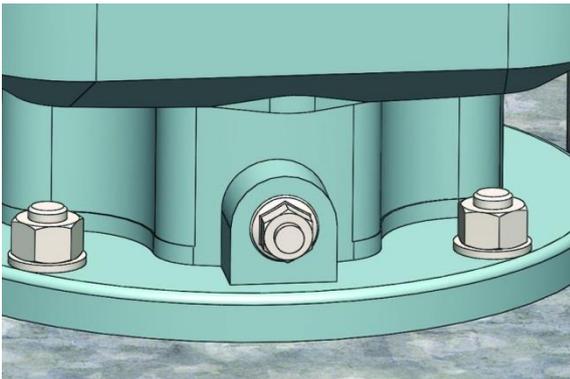


Fig.20

**Important!**

Make sure the sealed vent is activated (rubber pen is removed) as shown prior to gear unit start up.

### 5.9 Installation of blades

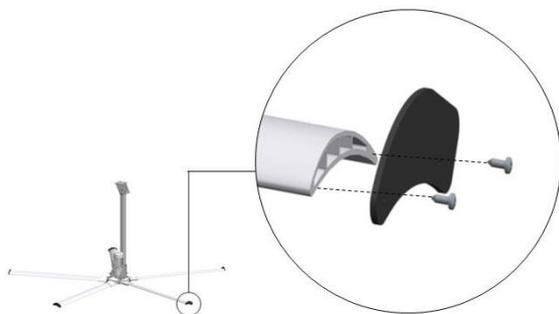


Fig.21

Fasten the fan end into pilot.

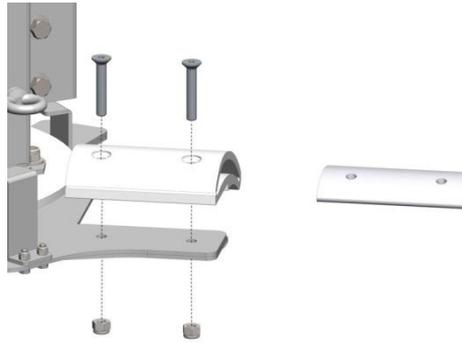


Fig.22

Fit the blade by means of 2 screws M10 and 2 self-locking nuts (tightening torque 70 Nm).

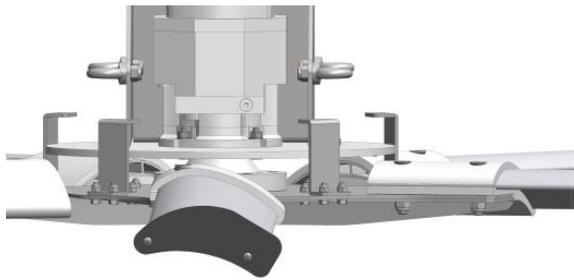


Fig.23

Hub with profile edge.

## 5.10 Wind sensor (optional)



**NOTE** Place the wind sensor in correspondence of the most critical area.

The Breeze Fan with wind sensor is able to manage the machine also if the wind is too strong.

The Breezefan with wind sensor has to work with a specific drive: the SK520 Inverter.

The wind sensor has to be connected like indicated in the pictures below (see Fig.24a and Fig.24b); pay attention that the wind sensor cable is at low voltage (15Vdc) and have to be:

- keep away from high voltage (230Vac or more) or switching signal
- lay out on a standalone tube
- shielded cable.

At the start up (switch on the main power supply and the “switch On” the start command) the Breeze Fan checks the wind speed, before to start the blades rotation. Only if the wind is not too strong, the Breeze Fan starts to work.

If the wind speed is not so strong, the Breeze Fan starts the rotation of the blades (after the Starting Time more or less 1 minute). This time is useful to be sure that the Breeze Fan could work in the correct way and with the right wind condition.

When the Breeze Fan is working and the average wind becomes too strong the machine will be switch off; before the Breeze Fan starts to rotate it needs that the average wind speed becomes lower (inside the working wind range).

If the Wind sensor has disconnected or the wind sensor cable has cut off during the normal working, the Breeze Fan stops to rotate and goes to the shutdown state. In this state (when the wind sensor disconnection occurs), the Breeze Fan tries to restart itself for five times; after that, if the problem is continuously present, it goes to a permanently off state. This fault only occurs when the sensor is disconnected. When the Breeze Fan is in the off state, in order to get it operative again, it is necessary to:

- connect the wind sensor (or check the continuity of the wires) or change the wind sensor;
- switch off the main power supply and wait some seconds (3 seconds are enough);
- switch on the main power supply.

Inverter stand alone

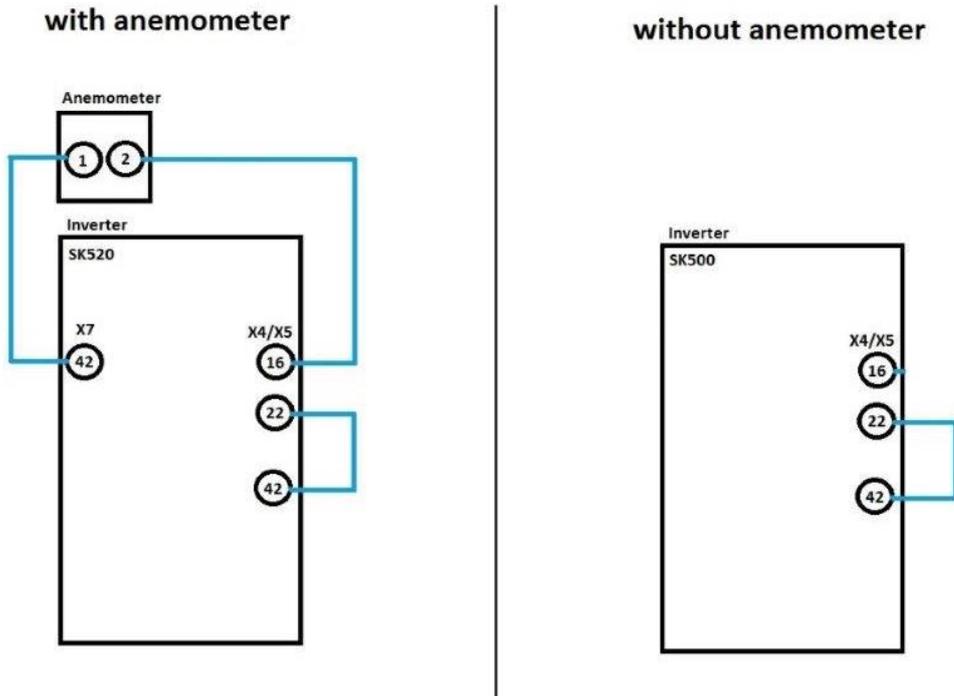


Fig.24a – For Breeze Fan 3m, 4m and 7m

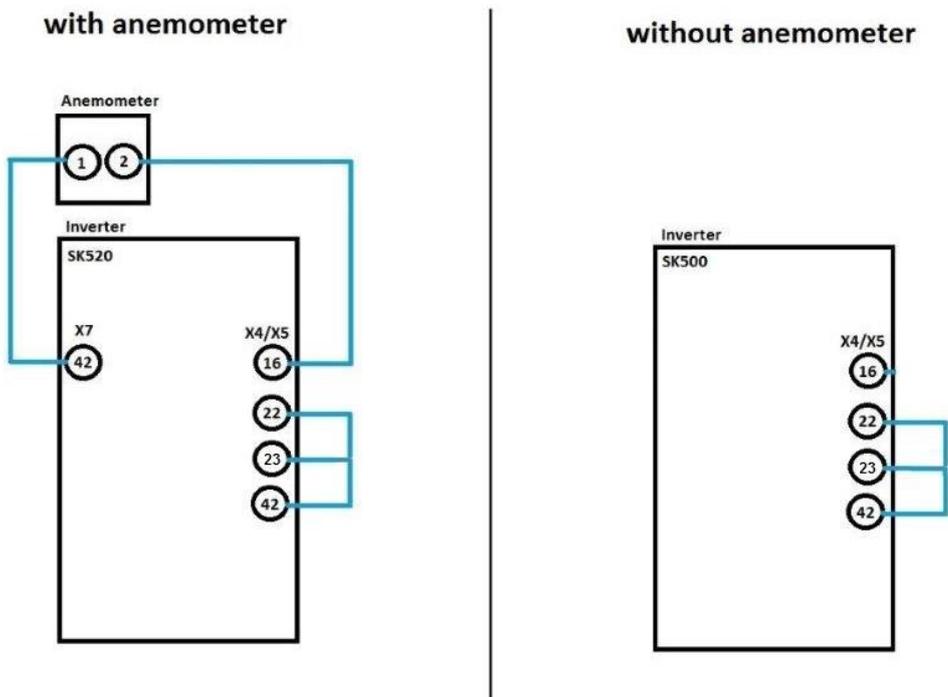


Fig.24b – For Breeze Fan 5m and 6m

Stand-alone Breezefan: left side => with anemometer (the Inverter have to be the SK520E); right side: without anemometer (the inverter is the SK500E).

If there are more than one Breeze Fan connected into a Master/Slave daisy chain, the behaviour of the Master Breeze Fan manages also all the others connected inverters (Slaves Breeze Fan). The connection between all the inverters has made with only two wires (signal and ground). See the following connection scheme.

Inverter with anemometer: Master/Slave configuration

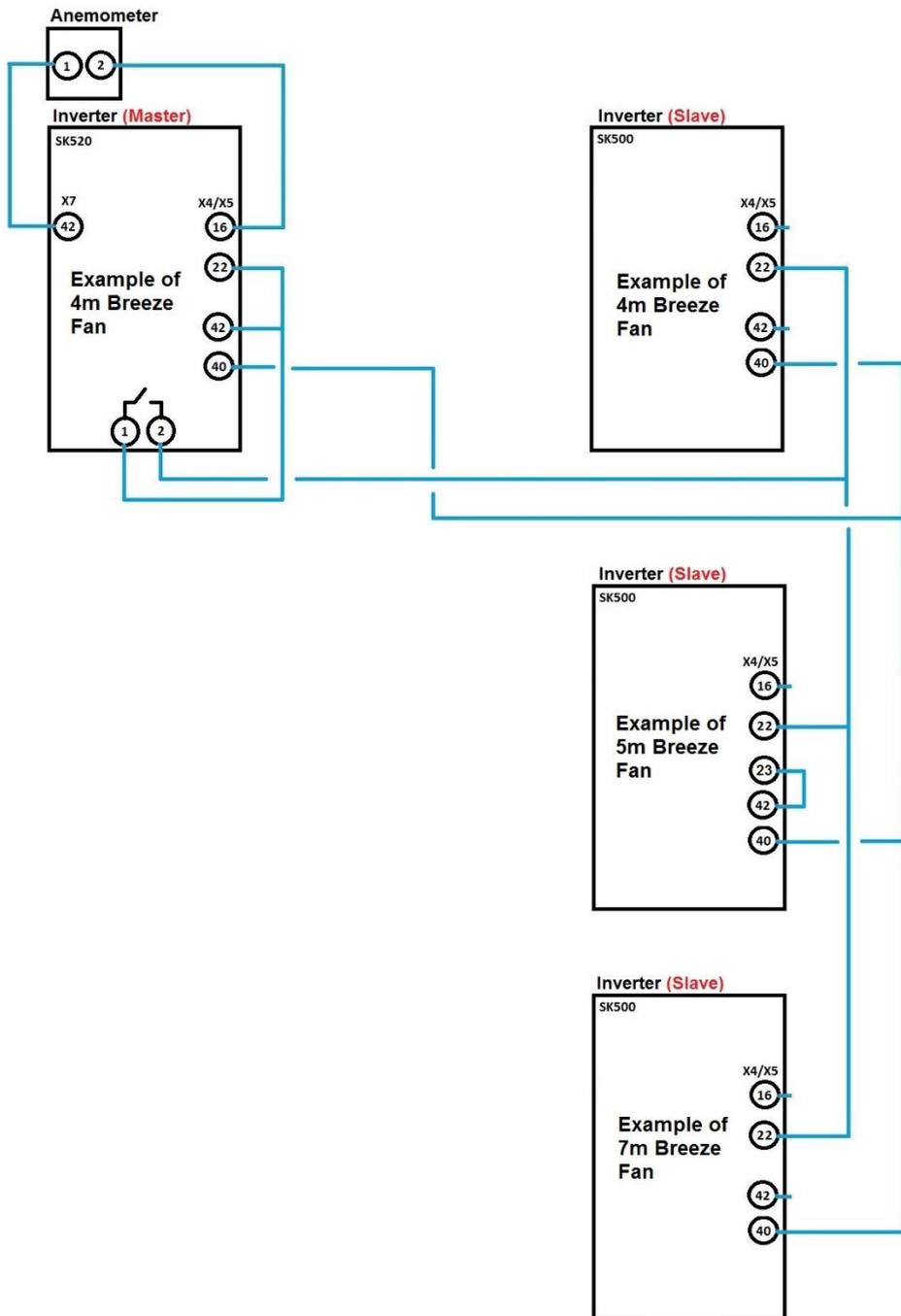


Fig.25



**ATTENTION** The maximum length from Master to last Slave is 150m (screenable 2x0,5mm<sup>2</sup>).

## 6. COMMISSIONING

After installation, follow the steps mentioned below to verify that the fan is working properly:

1. check if all the fans are secured tightly to the suspension;
2. ensure that all the necessary safety equipment is fitted to the fans;
3. ensure that all electrical connections are done properly and comply with local regulations;
4. note in which direction the propellers are supposed to turn;
5. remove all obstacles from the front and back sides of the fan;
6. ensure that all people and animals are standing clear of the fan;
7. turn the electrical power to the fans on;
8. observe the direction in which the propeller of each of the fans is turning;
9. turn the electrical power to the fans off.



**WARNING** Do not attempt to correct any problem observed during the above mentioned steps while the fan is in operation. Wait until the electrical power has been switched off and the fan has come to a complete stand still. Lock the electrical switch in the off position with a pad lock while working on the fan.

## 7. TECHNICAL DATA

### 7.1 General description

The fan is composed from following elements:

- rotor with five blades in aluminum alloy, fixed rigidly to the rotor structure and through removable elements (screws, bolts);
- anchorage system (suspension cables) in stainless steel cables with the gear-motor frame;
- gear-motor type asynchronous three-phase at 50 and 60 Hz, F class isolation, IE2 standard efficiency, protection degree IP55, multi-voltage at variable speed adjustable in frequency using inverter;
- wind sensor (optional).

### 7.2 Technical specifications

MODEL	Diameter	Weight	Power		Rotation speed	Distance between two adjacent fans*
	[m]	[kg]	[hp]	[kW]	[rpm]	[m]
Breeze Fan 3m	3	95	1.5	1.1	21 – 140	9
Breeze Fan 4m	4	101	1.5	1.1	21 – 100	12
Breeze Fan 5m	5	108	1.5	1.1	21 – 80	15
Breeze Fan 6m	6	115	2	1.5	18 – 70	18
Breeze Fan 7m	7	122	2	1.5	18 – 55	21



**WARNING** Do not exceed the max speed above indicated according to the version.

### 7.3 Motor specifications

Code	Power		Gearbox		
	[kW]	[hp]	Code	i	n <sub>2</sub> [rpm]
SK80T1/4 TF	1.1	1.5	SK372.1	20.62	102
SK90T1/4 TF	1.5	2	SK572.1	24.58	85



**WARNING** NordGear motor is designed to work only in conjunction with its NordGear inverter. Any other configuration is not authorized.

### 7.4 Inverter specifications

Breeze Fan without anemometer

Code	Power		Current (Single phase)	Current (Three phase)	Voltage	Frequency
	[kW]	[hp]	[A]		[V]	[Hz]
SK 500E-111-323-A	1.1	1.5	12.0	7.7	220 ±10%	50 - 60
SK 500E-151-323-A	1.5	2	15.2	9.8	220 ±10%	50 - 60

## Breeze Fan with anemometer

Code	Power		Current (Single phase)	Current (Three phase)	Voltage	Frequency
	[kW]	[hp]	[A]			
SK 520E-111-323-A	1.1	1.5	12.0	7.7	220 ±10%	50 - 60
SK 520E-151-323-A	1.5	2	15.2	9.8	220 ±10%	50 - 60



**WARNING** The inverter equipping Breeze fan can be connected either to single phase line (@ 230 V) or to three-phase line (@ 230 V only). Applied frequency can be 50 Hz or 60 Hz.

## 8. MAINTENANCE

### 8.1 Introduction

Maintenance must only be carried out by qualified personnel only using suitable tools and working methods. It is mandatory to purchase and use only original spare parts or those recommended by the manufacturer. The use of non-original spare parts or incorrect assembly exonerates the manufacturer from all liability.

Before any maintenance steps are taken, make sure the power switch is in the off position and locked by a padlock. Make sure the propeller is at a complete stand still.



**WARNING** Maintain clean the gear motor: a lack of cleaning may lead to overheating and breakage of the bearings and also gear motor itself.

It is forbidden the use of high pressure water in order to avoid damage to the gear motor of the fan (corrosion and bearing damage).

The responsibility lies with the operators to maintain the fan clean, free of foreign materials like dust, organic residue, etc.



**WARNING** All the components and spare parts **MUST** be stored in dry and clean environment, and correctly positioned.

### 8.2 Maintenance instructions for geared motor

As regards maintenance instructions for geared motor, please refer to the manual at the following link: [https://www.nord.com/cms/dk/documentation/manuals/details\\_1139/detail\\_42075.jsp](https://www.nord.com/cms/dk/documentation/manuals/details_1139/detail_42075.jsp).

### 8.3 Maintenance instructions for fan

EVERYDAY PERIODIC MAINTENANCE
Visual check of the fan
Acoustic check of the fan
Check blade rotation during operation

6 MONTHS PERIODIC MAINTENANCE
Check the tightening torque (50Nm) of the safety brackets
Check the tightening torque (90 Nm for the 6m and 7m and 50 Nm for the 3m ,4m and 5m) of the propeller hub screw (Fig.26)
Check the blade, hub and spider for signs of damage or cracks and replace if necessary
Check that all the structural screws of the fan and its support are correctly tightened

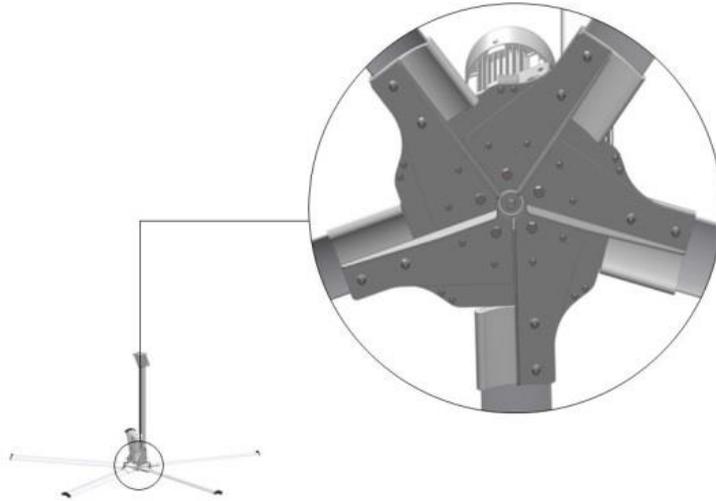


Fig.26

ANNUAL PERIODIC MAINTENANCE
Cleaning of the fan
Check signs of corrosion, oxidation or flaking of metal
Check the safety cable
Check the attachment wires for fraying or damage and replace if necessary
Check motor status and remove dust deposit from it
Check structural integrity of the fan
Check the gear reducer for oil leakage

Requests for technical assistance and spare parts must be made directly to the manufacturer, at the following address:

**Munters A/S**  
Nordvestvej, 3  
9600 Aars, Denmark  
Tel: +45 986 233 11  
Fax: +45 986 213 54  
[aghort@munters.dk](mailto:aghort@munters.dk)

Breeze fan is developed and produced by Munters A/S, Denmark



[www.munters.com](http://www.munters.com)

**Australia** Phone 61 2 8843 1594, [aghort@munters.com.au](mailto:aghort@munters.com.au), **Brazil** Phone +55 41 3317 5050, [contato@munters.com](mailto:contato@munters.com), **Canada** Phone +1 517 676 7070, [aghort.info@munters.com](mailto:aghort.info@munters.com), **China** Phone +86 10 8048 3493, [marketing@munters.cn](mailto:marketing@munters.cn), **Denmark** Phone +45 98 623 311, [aghort@munters.dk](mailto:aghort@munters.dk), **Germany** Phone +49 (0) 25 58 - 93 92-0, **India** Phone +91 20 6681 8900, [info@munters.in](mailto:info@munters.in), **Indonesia** Phone +66 2 642 2670, [info@munters.co.th](mailto:info@munters.co.th), **Israel** Phone +972 3 920 6200, [info@munters.co.il](mailto:info@munters.co.il), **Italy** Phone +39 0183 5211, [info@munters.it](mailto:info@munters.it), **Japan** Phone +81 3 5970 0021, [mkk@munters.jp](mailto:mkk@munters.jp), **Korea** Phone +82 2 7618 701, [munters@munters.co.kr](mailto:munters@munters.co.kr), **Mexico** Phone +52 818 2625 400, [dhinfo@munters.com](mailto:dhinfo@munters.com), **Singapore** Phone +65 7 446 828, [info@munters.com.sg](mailto:info@munters.com.sg), **South Africa and Sub-Saharan Countries** Phone +27 11 997 2000, [info@munters.co.za](mailto:info@munters.co.za), **Spain** Phone +39 0183 5211, [info@munters.it](mailto:info@munters.it), **Sweden** Phone +46 8 6266 300, [info@munters.se](mailto:info@munters.se), **Thailand** Phone +66 2 6422 670, [info@munters.co.th](mailto:info@munters.co.th), **Turkey** Phone +90 262 7513 750, [info@muntersform.com](mailto:info@muntersform.com), **USA** Phone +1 517 676 7070, [aghort.info@munters.com](mailto:aghort.info@munters.com), **Export & Other countries** Phone +39 0183 5211, [info@munters.it](mailto:info@munters.it)