



MonsterFans

Use Instruction



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MonsterFans Assembly Video:



1 Introduction

Congratulations on your MonsterFan purchase.

The High Volume, Low Speed fans (HVLS) of the MonsterFans series are energy-saving units with high comfort and diameters from 3.6 m (12ft.) to 7.3 m (24 ft.). They move big amounts of air at low rotational speed. The blades are streamlined and ideally engineered according to the principles of aerodynamics.

With a power rating of 1.5 kW, the aluminium blades can move large air masses over a large area and create a comfortable breeze. MonsterFans cool by lowering the ambient temperature. In winter MonsterFans can effectively be used for destratification. Please also note the warning notices for destratification.

1.1 Specifications

Diameter	3.6 m (12 ft)	4.9 m (16 ft)	6.1 m (20 ft)	7.3 m (24 ft)
Article no.	195 80 200	195 80 204	on request	195 80 212
Type	MF-C12	MF-C16	MF-C20	MF-C24
Max. Air Volume	621,000 m ³ /h	675,000 m ³ /h	729,000 m ³ /h	783,000 m ³ /h
Rounds per Minute	10-95 RPM	10-75 RPM	10-65 RPM	10-55 RPM
Weight*	104 kg	113 kg	124 kg	132 kg
Motor Power	1.5 kW / 2 hp			
Max. Electrical Consumption	3.23 A	3.23 A	3.23 A	3.23 A
Supply Voltage	3~400 V, 50 Hz			
Max. Coverage Range	630 m ²	850 m ²	1.380 m ²	1.800 m ²
Recommended Range	150 - 400 m ²	250 - 550 m ²	400 – 800 m ²	500 – 1200 m ²
Sound Pressure Level	55 dB measured at max. rotational speed at 5 m distance			
*Notes: The weight specifications refer to the fan without controller and without mounting set or further extension tube.				

2 Safety Instructions



Read these use instructions carefully before starting the fan. Clear the operating area of the fan from all obstacles to have enough space for the fan.



Before installation and maintenance work on the fan, ensure that the power supply is disconnected.



Ensure that all safety precautions and instructions are followed when installing, operating and maintaining the fan. Failures caused by disregarding these safety precautions can result in serious injury or death. If you do not understand the instructions, please contact your customer service.



Installation, power supply, commissioning, maintenance and repairs may only be carried out by a qualified specialists who are familiar with national and local guidelines for electrical installations and building regulations.



All electrical components are pre-programmed at the factory and ready for use. Follow these installation instructions during installation. Please do not make any changes to components. Install the device completely before putting the device into operation.



To avoid the risk of electric shock, note the following:

- a) Use this device only as intended by the manufacturer. If you have any questions, please contact the manufacturer or your local service partner.
- b) Always disconnect the unit from the power before maintenance or cleaning work.



The mounting of the suspension elements must be carried out by a qualified specialist. The fan's wings have to be installed at least 3.5 m above the floor.



Do not operate or install a big fan or individual parts that are damaged. If the fan does not work properly or if there are any unusual movements of the fan, switch off the power supply and contact your customer service.



Make sure that the replacement of in particular safety-related parts, is carried out by the manufacturer, its customer service or a qualified specialist.



Install the safety cables on each fan according to the installation instructions. The MonsterFans must never be operated without a properly installed safety cable. In an emergency, the safety ropes additionally secure the fan. Proper installation of the ropes is also required for the stabilisation during operation. The fan shall not be operated in windy surroundings.



We recommend also securing the floor under the assembly so that attention is drawn to the work on the ceiling. Review all relevant guidelines to ensure that building regulations are followed in accordance with product certifications.



We always recommend having a structural engineer check who confirms the strength of the building and ceiling structure in advance.



If MonsterFans are located in closed rooms with heaters with indirect exhaust gas systems (unflued), the parallel operation must be prevented by interlocking it!

2.1 Placement & Distances

Before installing the fans, check compliance with all guidelines for fire alarm systems, sprinkler systems and fans. We strongly recommend consultation with your local safety expert. If sprinkler systems are installed, the fans must not interfere with the proper operation of these sprinklers. The control unit can also be connected to a fire alarm system so that the fan stops in an emergency.

The digital inputs and the Modbus interface of the control units are used for switching off and interlocking. If possible, do not mount the fan directly under lights to avoid adverse lighting effects from rotating wings.

If the building has a mezzanine, fans should be installed in the way that they are not accessible to people. HVLS fans should not be installed in the immediate vicinity of air supply outlets or suction inlets of other heating, ventilation, or air conditioning units, see chapter 4.2.

2.2 Checklist

Do you have the right mounting set for your mounting position?

The standard mounting set supplied with this fan for I-beam, allows the fan to be hung on steel beams. Do not mount the fan on a purlin or a framework.
If you are unsure, please contact customer service.

Has a structural engineer checked and approved the assembly position?

The assembly structure must withstand the forces generated by the fan.

The fan is NOT used in parallel with heaters with indirect exhaust gas systems (unflued).

Otherwise, parallel operation must be prevented by interlocking it.

The fan is at a minimum distance from the ceiling in accordance with the specified safety distances.

The fan's wings are installed at least 3.5 m above the floor.

The fan is installed with a minimum distance of 2 times the fan diameter from obstacles and building structure, measured from the fan centre.

The distance between several fans is at least 2.5 times the fan diameter, measured from the fan centre.

The fan is installed that it is not exposed to strong winds and maintains a safety distance of at least 1 times the fan diameter from other heating, ventilation, air conditioning systems or from gates.

The supply voltage is selected correctly.

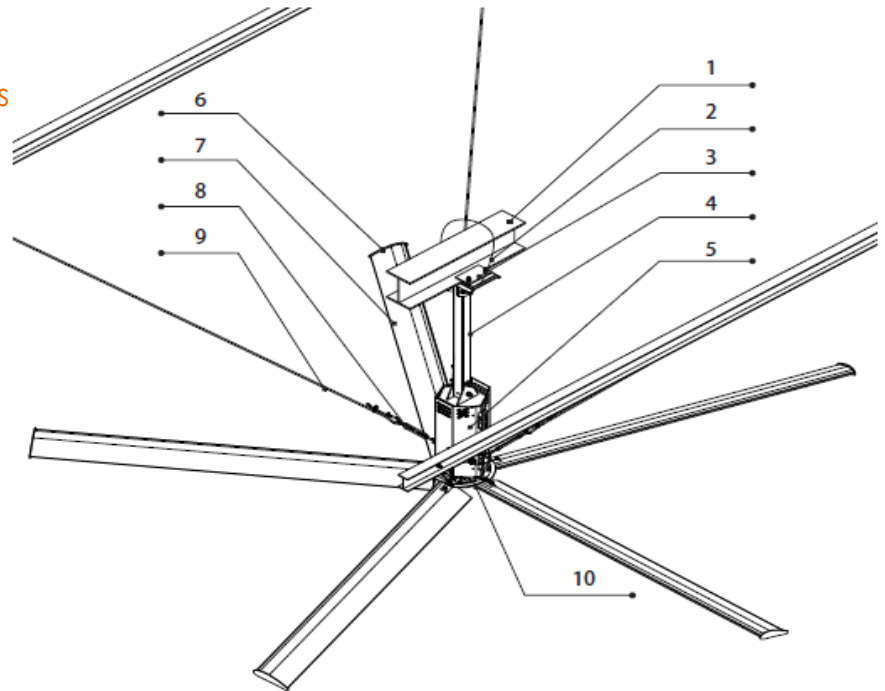
The fan can be secured with the supplied safety ropes

There are mounting points available for the safety ropes.

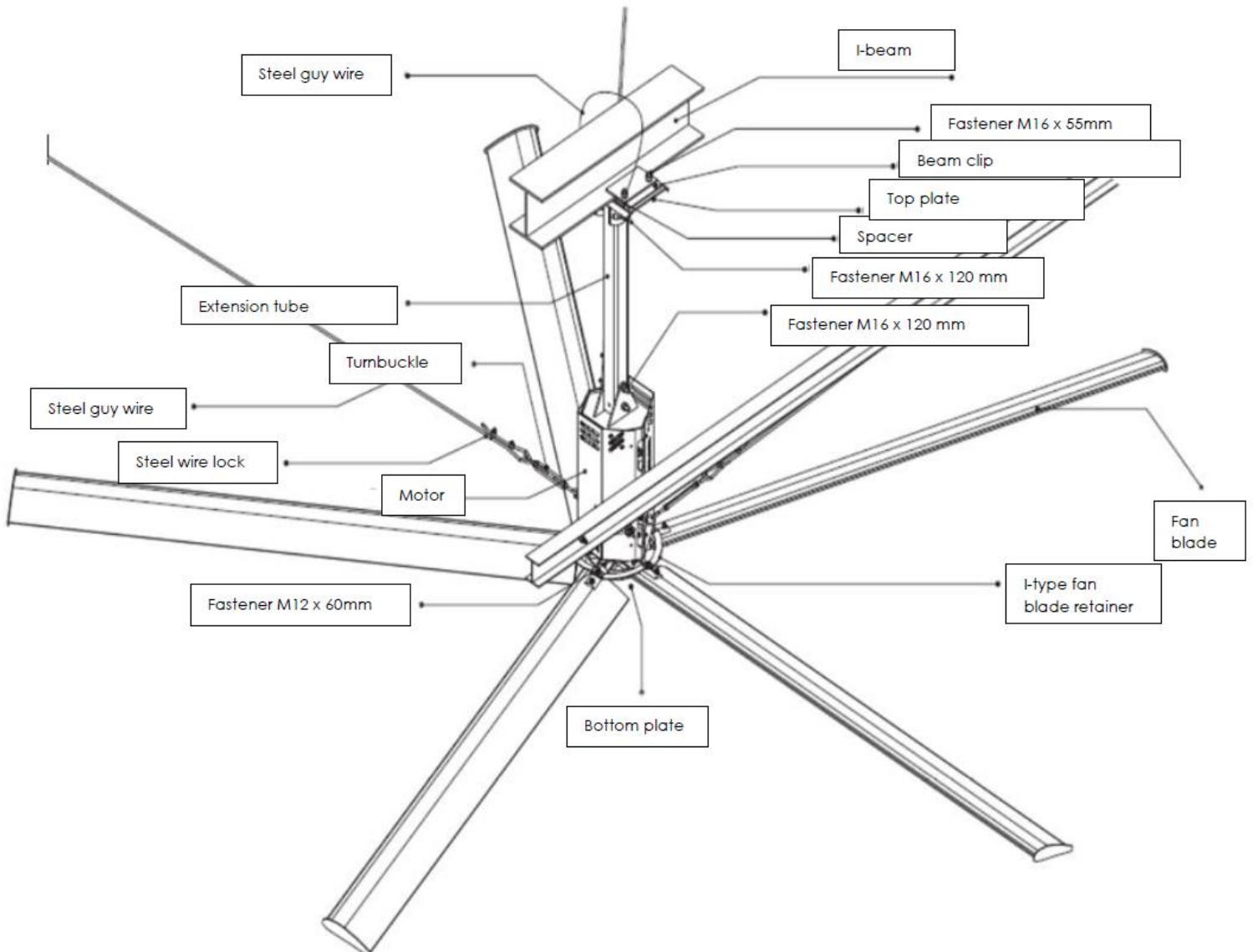
If your fan application does not meet the above requirements, proper operation is at risk.
Please contact your customer service.

3 Parts Overview MonsterFans

1. Steel structure
2. Safety rope ring
3. Steel structure fastening
4. Extension tube
5. Motor housing
6. Winglets of fan blades
7. Fan blades
8. Turnbuckle & clamps
9. Safety steel rope
10. I-type safety adapting piece

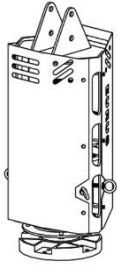


3.1 Bill of Materials



Bill of Materials - MonsterFans

1. Motor Housing



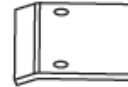
2. Top-Plate



3. Spacer
2x



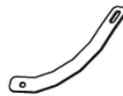
4. Beam clip
2x



5. Turnbuckle 4x
& 1x replacement



6. I-type fan
blade retainer 5x



7. Fastener M5 x 12 mm
3x



8. Bottom plate



9. Safety steel rope
40m length



10. Steel wire lock
55x



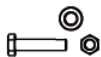
11. Fastener
M12 x 80 mm
10x



12. Fastener
M16 x 55 mm
4x



13. Fastener
M16 x 120 mm
4x



14. Metal joint on
Controller Box
2x



15. Controller Box



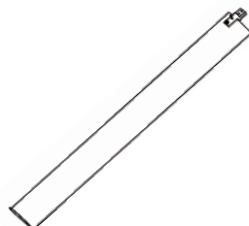
16. Techn. Manual
MonsterFans



17. Techn. Manual
Danfoss VFD



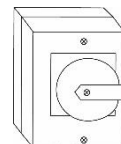
18. Fan blades
5x



19. Extension Tube
1m length













20. 3-Pole switch-
disconnecter



21. Thimbles
16x



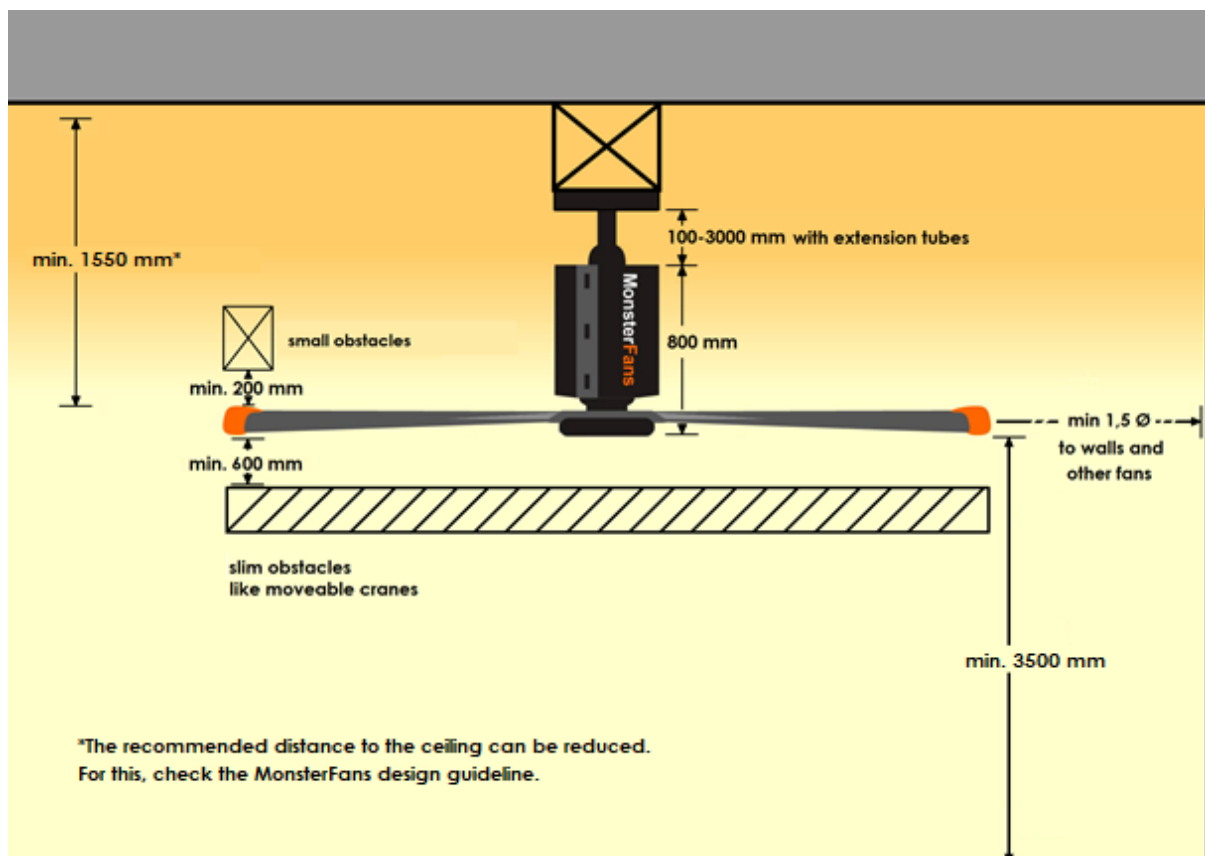
3.2 Required Tools

				
Spanner Set	Socket Wrench Set	Screwdriver Cross & Slot	Spirit Level	Wire rope shear
				
Cable Shears	Wire Stripper	Multimeter	Distance Meter	Threadlocker Glue

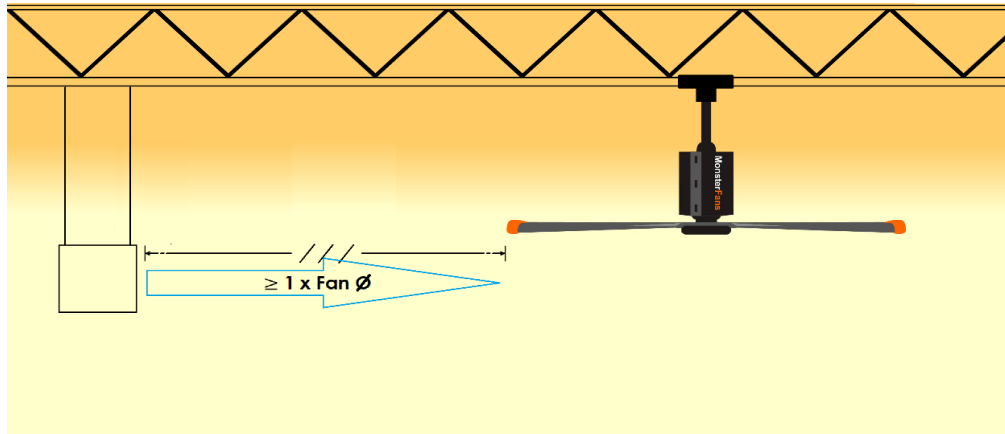
Please also note the necessary safety precautions for the use of a scissor lift and the general safety precautions. Two specialists are required for the installation.

4 Installation & Mounting

4.1 Safety Clearances

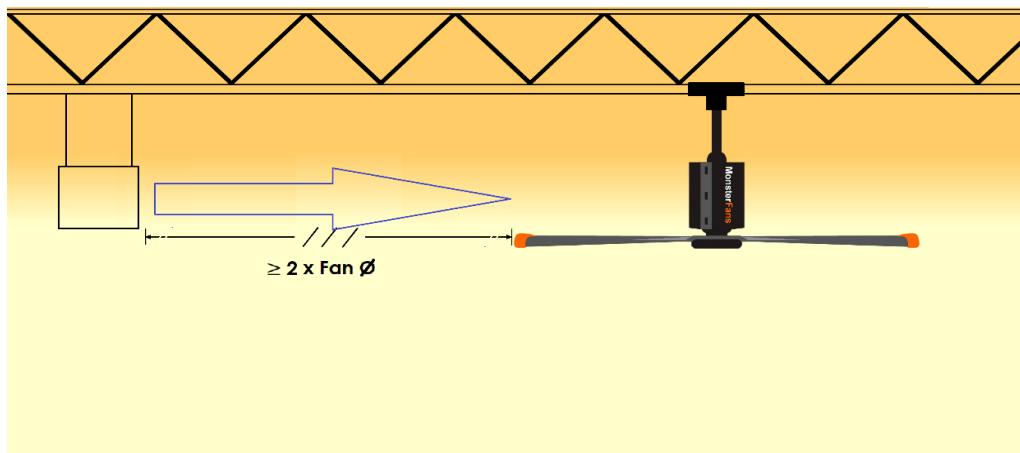


4.2 Safety Distances to Ventilation Systems



If the air supply outlet of a ventilation system is **below** the blades, a minimum distance of 1 times or larger the fan diameter from the blade tip is sufficient.

If the air supply outlet of a ventilation system is located **above** the blades, a minimum distance of 2 times or larger the fan diameter from the blade tip is necessary.

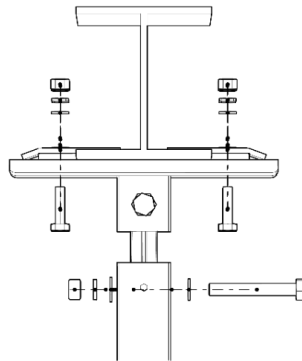
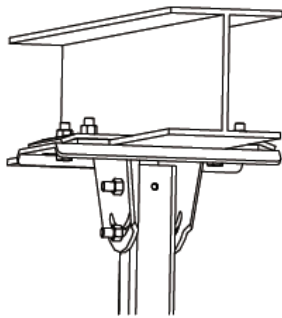


4.3 Required Installation Environment

Installation Environment	Conditions
Installation Location	Inside
Temperature Range	-15 + 55 °C Do not use the product in environments with strong temperature fluctuations. The product must not be exposed to frost.
Humidity	Below 95% relative humidity
Surrounding	The fan and controller must not be exposed to flammable or corrosive gases. Metal powder, oils, water and other foreign objects must not get into the controller. Distances to hot sources e.g. heaters must be maintained. Please note the manufacturer's safety clearances. If MonsterFans are located in closed rooms with heaters with indirect flue gas systems (unflued), parallel operation must be prevented by interlocking it.

4.4 Mounting Sets

The fans are usually connected to an I-beam
Accordingly, this element as standard is included in every packaging unit.

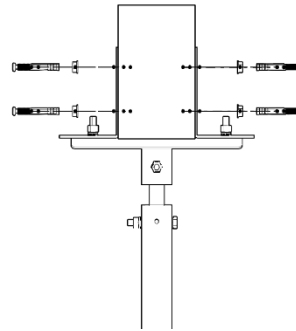
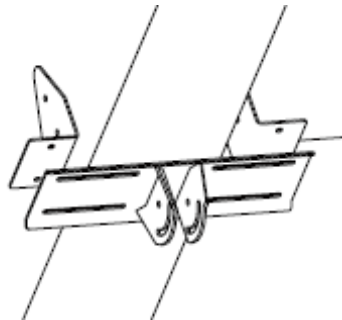
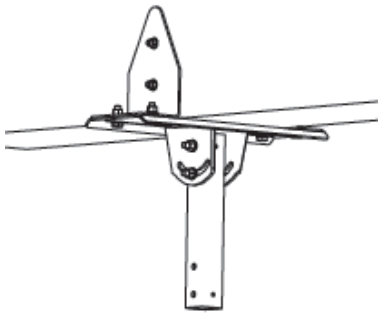


Standard Mounting Set
(for I-Beam)

Article no
19580220

Weight: 14 kg

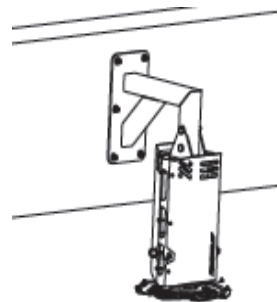
Optional mounting set for concrete structure



Mounting Set
for
concrete structure
Article no.
19580222

Weight: 26 kg

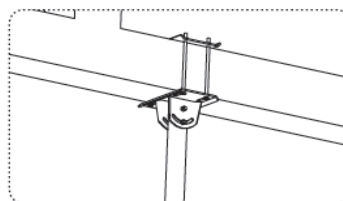
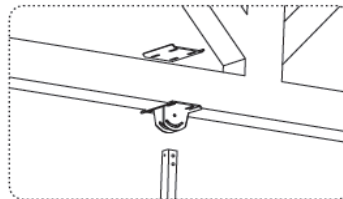
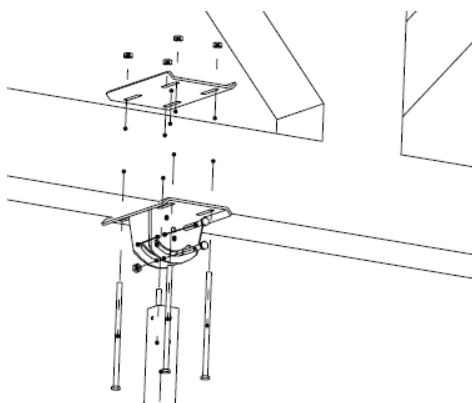
Optional mounting set for side mount on concrete



Mounting set for
side mount
on concrete
Article no.
19580223

Weight: 16 kg

Optional mounting set for bent structure



Mounting Set
for bent structure
Article no.
19580224

Weight: 26 kg

4.5 Extension Elements

The MonsterFans fans are delivered ex-works with a hanging element of standard 1m. Optionally, we offer another 1 m and 2 m extension element and a connection piece to connect two extension elements.

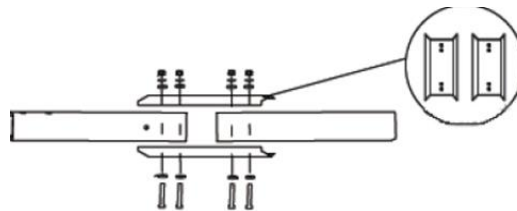
The max. length of these extension elements must not exceed 3 m consisting of max. 2 elements. Likewise, only one connection set may be used to connect two extension elements. Otherwise the stability of the fan can be influenced.

Extension tube
1 m standard length
Article no: 19580230
Weight: 8 kg

Optional Extension tube 1,5 m length
Article no 19580231
Weight: 12 kg

Optional Extension tube 2 m length
Article no 19580232
Weight: 16 kg

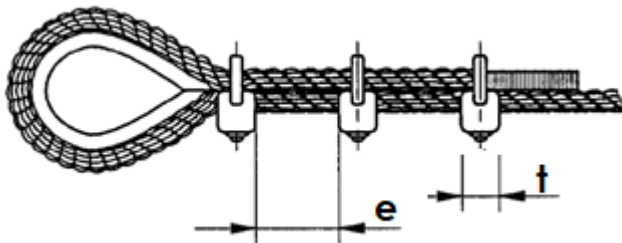
Connecting piece for extension tubes incl. bolts & screws:
Article no. 19580239
Weight: 3 kg



4.6 Wire rope clamps & Thimbles

EN 13411-5:2009-02 stipulates the use of at least 3 wire rope clamps and thimbles for end connections for steel wire ropes of nominal size 5 mm.

The first wire rope clamp should be attached directly to the thimble. The clamp should always be attached to the loaded part of the rope.



The distance "e" between the wire rope clamps should be at least 1.5 "t" and not more than 3 "t", where "t" is the width of the clamp jaw.

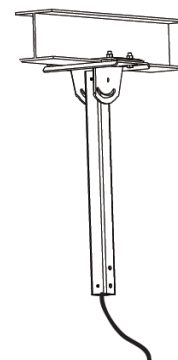
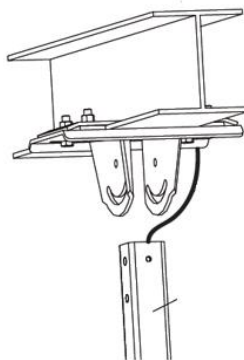
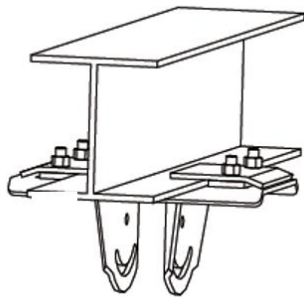
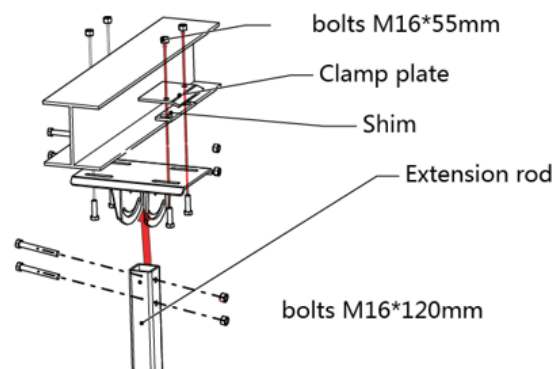
When making the connection and before commissioning, the collar nuts should be tightened to a torque of 2 Nm. The recommended tightening torque applies to wire rope clamps where the contact surfaces and threads of the nuts have been lubricated.

After the first application of the load the tightening torque should be checked again and corrected if necessary.

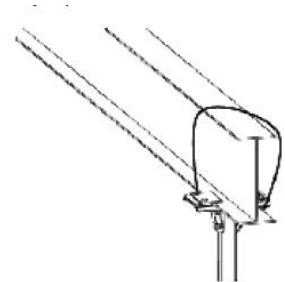
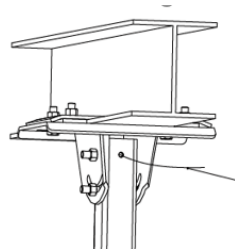
4.7 Installation of MonsterFans

Start by installing the mounting element on the ceiling.

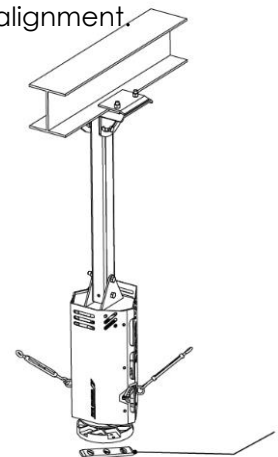
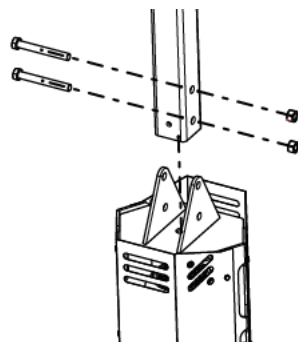
Attachment of the suspension & extension element

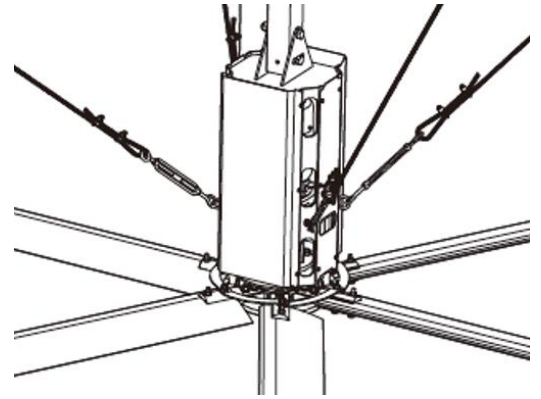
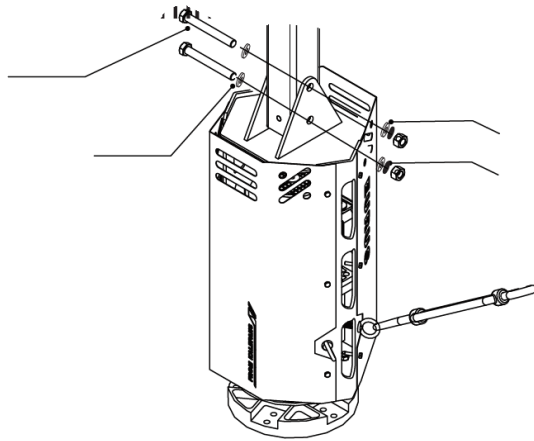


Pull your electrical cable through the extension tube. Then attach the safety steel rope (parts list no 9) and secure it with the steel wire lock (no 10). Observe the notes on wire rope clamp connections.

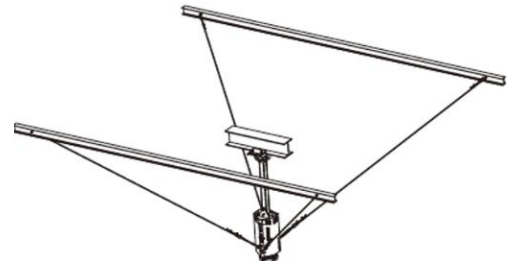
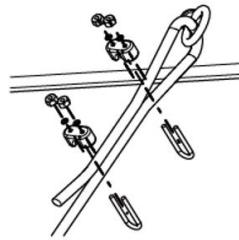
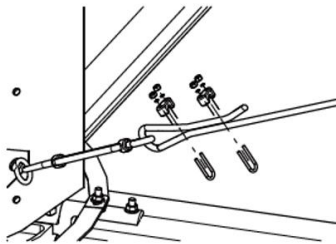


Mount the motor housing with the motor on the extension element. Use the M16 x 120 mm screws for this. Pay attention to an exactly horizontal alignment.



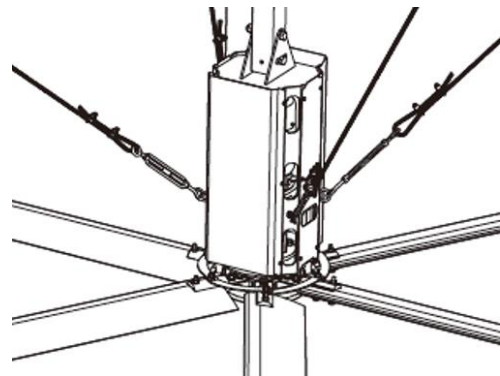
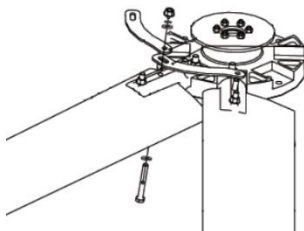


Note: The safety steel ropes must be aligned symmetrically for the same load, then tightened evenly, use the turnbuckles and a threadlocker glue at the end.

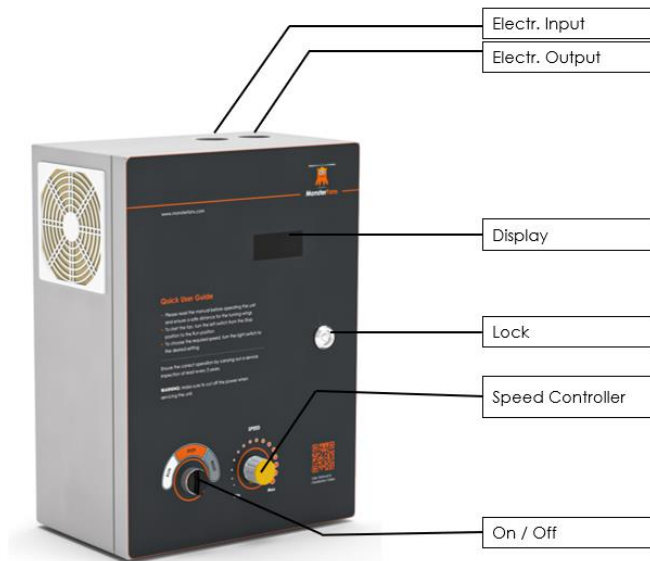


Connect the motor supply cable to the motor terminal box. Observe the instructions in chapter 4.8 Electrical connections.

Now assemble the fan blades. Use the M10 x 100 mm screws. Pay attention to an exact alignment of the rotor blades and use threadlocker glue. When assembling, make sure to connect all retaining brackets (parts list no.6) to each other. Then install the bottom plate (parts list no 8) with the screws M5 x 12 mm (no 7).



Now wire the cable to the Controller box.
Use your own electrical cable for this.



Now install the Controller Box. We recommend installing it at a height of approx. 1.6 m. The 3-pole switch disconnector (parts list no. 20) must be mounted and integrated in the direct vicinity of the Controller Box. Operation is only permitted with an emergency stop mechanism! The switch-disconnector may only be operated in emergency situations. An interruption of the power supply during operation can damage the frequency inverter as well as the motor!

Use a adequately dimensioned and EMC-compliant power cable for the motor connection, such as: *LAPP ÖLFLEX® CLASSIC 110 CY 4 G 2.5* [or equivalent].

4.8 Electric Connections

Apply the supply voltage, 3 ph + PE, to the "control supply line" terminals. The motor supply cable is connected directly to the frequency Inverter, the shielding next to the strain relief is connected to the PE. The start command of the frequency inverter can be brought out and interrupted via the remote release contact.

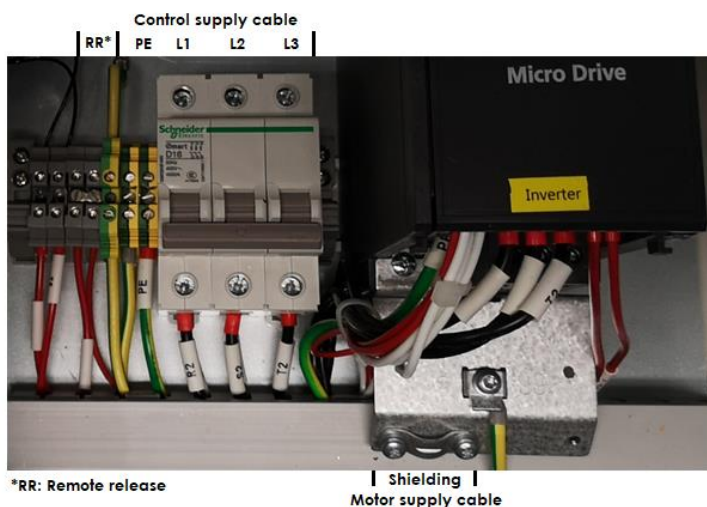


Figure: Controller Connection

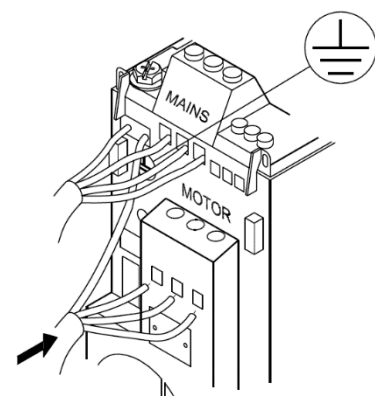


Figure: Inverter connection

To connect the motor please remove the MonsterFans cover from the motor housing above the motor terminal box and unscrew the cover from the motor terminal box. Lead the motor connection cable through the EMC gland and pay attention to the position of the shielding braid.

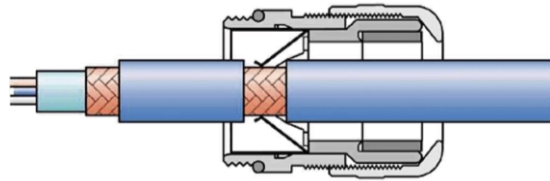


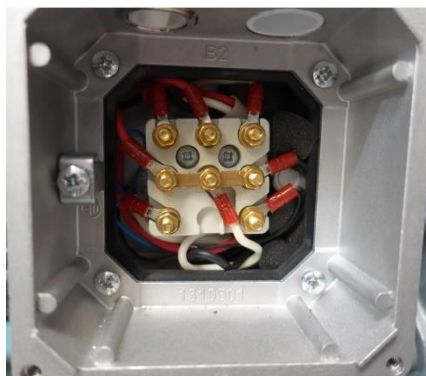
Figure: LAPP Skintop MS-SC EMC Cable Gland

Schematic Shielding Connection

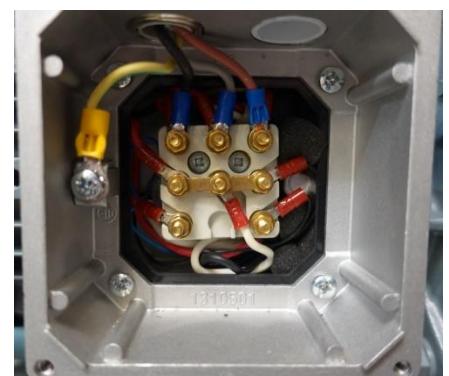
For the motor wiring, please remove the MonsterFans cover from the motor housing above the motor connection box. Then wire the motor in star cabling according to the connection diagram above. The fan is operated exclusively with 3 phases, 400 volts AC.



Nord Motor Wiring



Clamps with a Star Connection Stud

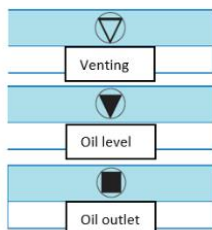


Wiring Fan Motor

4.9 Oil Check and Oil Safety Pin

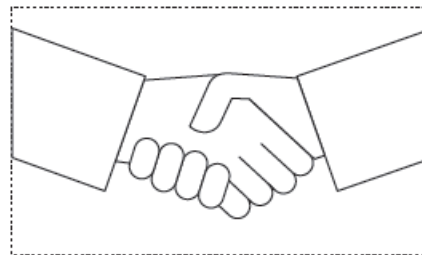
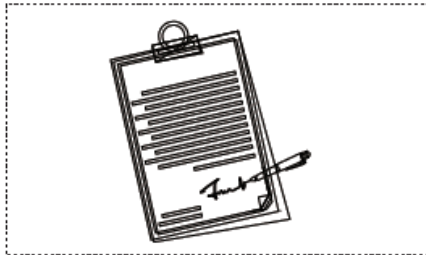


Please also check the oil level before starting up. There is a **safety pin** on the bleed screw. **The safety pin must be removed before the initial start-up.** The engine is operated with synthetic oil (lubricant: Synth ISO VG 680, 3.1 litres).



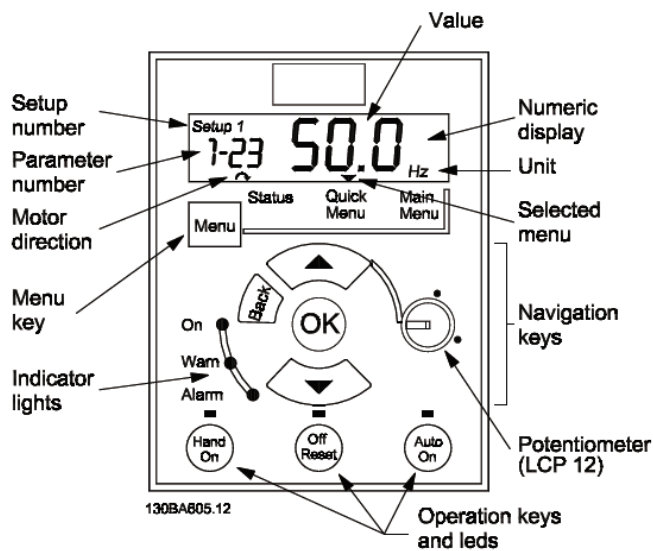
The safety pin is provided with a cable tie ex works to make the safety pin visible and to make it easier to remove the safety pins.

After proper cabling and checking, you can turn on the power. The area around the fan must be free of obstacles. Start with a test run of 10 minutes. If the operation of the fan works properly, instruct the operator and please use the handover protocol for a formal handover.

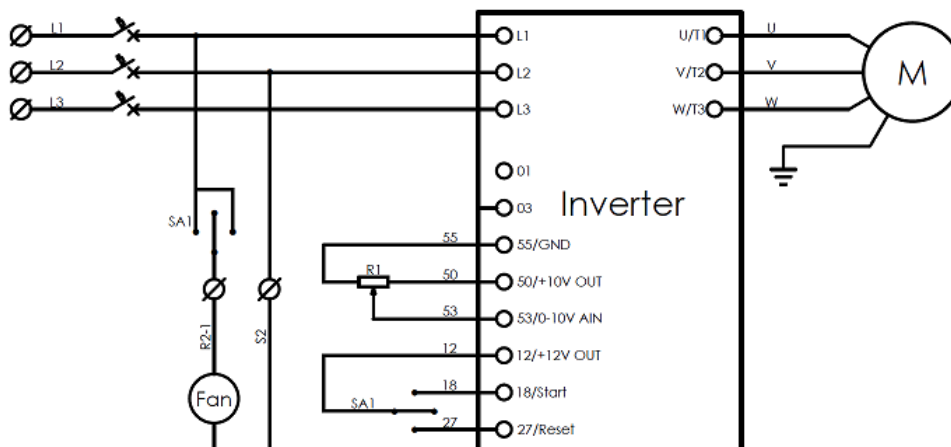


5 Frequency Inverter

A variable frequency drive is integrated in the MonsterFans Controller Box. You will find detailed technical instructions from the manufacturer attached. The frequency Inverter is pre-programmed at the factory and ready for operation.



You will also find the following **Wiring Diagram (3~400V, 50 Hz)** printed inside the Controller Box.



6 Commissioning

6.1 Test Run

Ideally, test the fan for 10 minutes to see if there is any unusual noise, vibration from the device or from the safety steel ropes.

Also make sure that the fan runs safely with a sufficient safety distance to all possible obstacles.

Commissioning:

1. Make sure that the fan can run free of obstacles.
2. Check the direction of rotation of the blades, regular operation is counter-clockwise.
3. Make sure that the input voltage is correct and meets the requirements.
4. Set the speed controller to the minimum position.
5. Switch on the fan and turn the switch from STOP to RUN.
6. After the fan has started, set the speed control knob to the desired speed.

Caution:

1. It is prohibited to interrupt the power supply during fan operation.
2. The fan is not designed for reverse operation.
3. The direction of rotation can only be changed by phase rotation on the frequency converter.

6.2 Warnings

- A change in shape or the bending of rotor blades is strictly prohibited.
- Please do not carry out any work or repairs while the device is switched on in order to avoid an electric shock.
- Please do not change the original technical structure of the fan.
- Please do not open the switch box / controller box during operation to avoid an electric shock.
- Do not operate devices with malfunctions as this can lead to serious injuries.
- Structural or parameter changes to the electrical control box are strictly prohibited, as this can lead to equipment damage, injuries or death due to improper use.
- After disconnecting the power supply, there may still be a residual voltage in the controller box. Wait 2 minutes until the contacts are de-energised. Switching off the display is not an indication that there is no voltage.
- The installation and laying of the electrical cabling must be carried out by a qualified specialist.
- Please use the device components enclosed and specified by MonsterFans.
- Do not interrupt the power supply while the fan is running. Otherwise the fan will be damaged. The power supply may only be switched off, after the rotating blades have stopped completely.

6.3 Troubleshooting

Common causes of incorrect operation:

- The supply voltage is incorrectly selected or switched off.
- If the fan does not work, please check first if the speed controller is at MIN and check also the Run/Stop button.
- Unauthorised personnel must not open the Controller Box. Our local service partner will send you a trained specialist for repairs or adjustments.
- If you notice, that the fan or Controller Box is damaged or has unusual noises, stop using it with immediate effect. Switch off the power supply and contact your service partner.
- A damage of the device caused by improper use is not covered by the warranty.

6.4 Frequency Inverter Error Messages

Number	Description	Warning	Alarm	Trip Lock	Error	Cause of problem
2	Live zero error	X	X			Signal on terminal 53 or 60 is less than 50% of the value set in: <ul style="list-style-type: none"> parameter 6-10 Terminal 53 Low Voltage parameter 6-12 Terminal 53 Low Current parameter 6-22 Terminal 54 Low Current
4	Mains phase loss ¹⁾	X	X	X		Missing phase on supply side, or too high voltage imbalance. Check supply voltage.
7	DC over voltage ¹⁾	X	X			DC-link voltage exceeds the limit.
8	DC under voltage ¹⁾	X	X			DC-link voltage drops below the voltage warning limit.
9	Inverter overloaded	X	X			More than 100% load for too long.
10	Motor ETR overtemperature	X	X			Motor is too hot. The load has exceeded 100% for too long.
11	Motor thermistor overtemperature	X	X			Thermistor or thermistor connection is disconnected.
12	Torque limit	X				Torque exceeds value set in either parameter 4-16 Torque Limit Motor Mode or 4-17 Torque Limit Generator Mode.
13	Overcurrent	X	X	X		Inverter peak current limit is exceeded.
14	Ground fault	X	X	X		Discharge from output phases to ground.
16	Short Circuit		X	X		Short circuit in motor or on motor terminals.
17	Control word time-out	X	X			No communication to frequency converter.
25	Brake resistor short-circuited		X	X		Brake resistor is short-circuited, thus the brake function is disconnected.
27	Brake chopper short-circuited		X	X		Brake transistor is short-circuited, thus the brake function is disconnected.
28	Brake check		X			Brake resistor is not connected/working.
29	Power board over temp	X	X	X		Heat sink cut-out temperature has been reached.
30	Motor phase U missing		X	X		Motor phase U is missing. Check the phase.
31	Motor phase V missing		X	X		Motor phase V is missing. Check the phase.
32	Motor phase W missing		X	X		Motor phase W is missing. Check the phase.
38	Internal fault		X	X		Contact local Danfoss supplier.
44	Ground fault		X	X		Discharge from output phases to ground.
47	Control Voltage Fault		X	X		24 V DC is overloaded.
51	AMA check U_{nom} and I_{nom}		X			Wrong setting for motor voltage and/or motor current.
52	AMA low I_{nom}		X			Motor current is too low. Check settings.
59	Current limit	X				Frequency converter overload.
63	Mechanical Brake Low		X			Actual motor current has not exceeded the release brake-current within the start delay-time window.
80	Frequency Converter Initialised to Default Value		X			All parameter settings are initialised to default settings.
84	The connection between frequency converter and LCP is lost				X	No communication between LCP and frequency converter.
85	Key disabled				X	See parameter group 0-4* LCP.
86	Copy fail				X	An error occurred while copying from frequency converter to LCP, or from LCP to frequency converter.
87	LCP data invalid				X	Occurs when copying from LCP if the LCP contains erroneous data - or if no data was uploaded to the LCP.
88	LCP data not compatible				X	Occurs when copying from LCP if data are moved between frequency converters with major differences in software versions.
89	Parameter read only				X	Occurs when trying to write to a read-only parameter.
90	Parameter database busy				X	LCP and RS485 connection are trying to update parameters simultaneously.
91	Parameter value is not valid in this mode				X	Occurs when trying to write an illegal value to a parameter.
92	Parameter value exceeds the min/max limits				X	Occurs when trying to set a value outside the range.
nw run	Not While Running				X	Parameters can only be changed when the motor is stopped.
Err.	A wrong password was entered				X	Occurs when using a wrong password for changing a password-protected parameter.

1) These faults are caused by mains distortions. Install a Danfoss line filter to rectify this problem.

7 Warranty & Maintenance

Our quality assurance applies to the entire fan.

The warranty period begins on the date of acceptance by the customer after professional installation and commissioning. This ends with the statutory warranty period. The following causes are not covered by the warranty:

1. Improper use, incorrect installation, incorrect commissioning and unauthorized maintenance.
2. Operator assembles / disassembles the product independently.
3. Force majeure (lightning, earthquake, terror, flood etc.).

To ensure a long service life, we recommend regular maintenance and professional inspection.

Intervals Yearly

Maintenance Work

1. Check the correct rotation of the fan.

**Disconnect the fan from power supply for further maintenance work!
Secure the maintenance area on the floor as well.**

2. Check all safety bracing devices.
3. Check all fastening screws and connecting elements
4. Check the electrical connections and cabling.
5. Check the gearbox for oil leakage.
6. Check all suspension and connection elements.
7. Check the wing connection bolts under the base plate
8. Check the wings and engine components for damage.
9. Check all fan components for signs of corrosion, discoloration, pitting and metal spalling.
10. Check the guy wires for damage or abrasion.
11. Removal of dust and dirt particles from wings and motor.

Every five years (or every 20,000 operating hours)

- Check the oil level, carry out an oil change if necessary.

If a fan runs with strong unusual noises or vibrations, this indicates that the mechanical parts are damaged. Switch off the fan immediately and carry out a comprehensive inspection and maintenance.

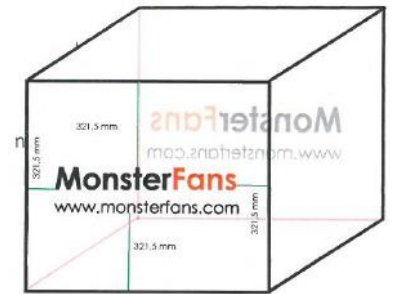
In the event of faults within the warranty period, please do not try to correct them yourself. Please contact your manufacturer.

8 Packaging Units

A MonsterFan is delivered in two wooden boxes.



Picture: Wooden Box Fan Blades



Picture: Wooden Box Motor

Type	Diameter	Dimensions	Weight	Total
MF-C24	7.3 m (24 ft.)	Box Motor: 950 mm*830 mm*520 mm Box fan blades: 3700 mm*420 mm*450 mm	180 kg 127 kg	307 kg
MF-C20 (on request)	6.1 m (20 ft.)	Box Motor: 950 mm*830 mm*520 mm Box fan blades: 3100 mm*420 mm*450 mm	180 kg 117 kg	297 kg
MF-C16	4.9 m (16 ft.)	Box Motor: 950 mm*830 mm*520 mm Box fan blades: 2500 mm*420 mm*450 mm	180 kg 107 kg	287 kg
MF-C12	3.6 m (12 ft.)	Box Motor: 950 mm*830 mm*520 mm Box fan blades: 2100 mm*420 mm*450 mm	180 kg 97 kg	277 kg

9 Acceptance Report for Installation & Commissioning

Customer		Date	
Street		Service techn.	
Postal code		Order No.	
Contact Person		Phone	
E-Mail		Cell phone	

Product type (s)		No. of Fans	
Serial no.		Hub height	
RCD usage		Kind of RCD	
Special conditions		Adjustment of frequencies	

Verification by Customer

Delivery of the technical instructions	Yes <input type="checkbox"/>	No <input type="checkbox"/>
The fan has been put into operation without any problems. (No vibrations, no noise, no error messages)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
The wing surfaces are undamaged.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
The product has been introduced/ instructed by a specialist.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10 min. test run without abnormalities	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Installation was carried out according to customer drawings and customer requirements	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Date

Name / Signature
(Customer)

Name / Signature
(Technician)

10 Acceptance Report of Maintenance

Customer		Date	
Street		Service techn.	
Postal code		Order No.	
Contact Person		Phone	
E-Mail		Cell phone	
Product type(s)		No. of Fans	

Annual Maintenance (Tick Boxes Accordingly)	Year 1	Year 2	Year 3	Year 4	Year 5
1. check the correct fan rotation					
2. check all wire rope connections					
3. check all fixing screws & connecting elements					
4. check the electrical connections					
5. check the gearbox for oil leakage & oil level check					
6. check all suspension and connection elements					
7. check the wing connecting screws under the base plate					
8. check the wings and engine components for damage					
9. examination of all fan components for signs of corrosion, discolouration, pitting and metal spalling					
10. check the wire rope connections for damage or abrasion					
11. removal of dust and dirt particles on wings and motor					
Every five years additionally:					
1. checking the engine functions					
2. check the quality of the oil, carry out an oil change if necessary					
Signature					

11 Declaration of Conformity



Konformitätserklärung / Certificate of Compliance

Hiermit erklären wir, dass das nachfolgend bezeichnete Gerät aufgrund seiner Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits und Gesundheitsanforderungen der EG Richtlinien entspricht.
We hereby declare that the device described below, due to its design and construction and in the version marketed by us, complies with the relevant basic safety and health requirements of the EC directives.

Produkt / Product: MonsterFans HVLS Fans & Controller box
Modell(e) / Model(s): MF-C12, MF-C16, MF-C20, MF-C24

Hersteller / Producer: Schwank GmbH
Bremerhavener Straße 43
D-50735 Cologne/Germany

EU-Richtlinien / EG Guidelines:
2006/42/EG Maschinenrichtlinie / Machinery directive
2014/30/EU Elektromagnetische Verträglichkeit / Electromagnetic compability
2011/65/EU RoHS
2009/125/EG ErP

Folgende harmonisierten Normen wurden berücksichtigt:
The following harmonized standards have been applied:
DIN EN ISO 12100:2013 Sicherheit von Maschinen / Safety of machinery
DIN EN 60204-1:2010 Sicherheit von Maschinen / Safety of machinery
DIN EN 61000-6-1:2007 Elektromagnetische Verträglichkeit / Electromagnetic compability

Oliver Schwank Geschäftsführer / CEO Schwank GmbH Cologne, 24. of November 2020

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Geschäftsführer:
Oliver Schwank
Prof. Dr.-Ing. Friedrich Schöller

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