

MFS

## Manual for use and maintenance



+ CE Declaration of conformity

**MFS**

Air circulation fan

Models: MFS36 - MFS52



# MFS

## 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, and to ErP Directive 2009/125/CE Commission Regulation 327/2011.

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- 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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## CE DECLARATION OF CONFORMITY

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

Munters Italy S.p.A.

with registered offices in strada Piani 2 - 18027 Chiusavecchia (IM) - Italy

DECLARES ON ITS OWN RESPONSIBILITY THAT THE APPARATUS

Designation	Circulation fan designed for moving air to control temperature and humidity in livestock.
Model	MFS36 - MFS52
Year of manufacture	2012

CONFORMS WITH THE ESSENTIAL SAFETY REQUIREMENTS STATED  
BY APPARATUS DIRECTIVE 2006/42/EC

WITH PARTICULAR REFERENCE TO THE FOLLOWING PROVISIONS:

UNI EN 953:2009, UNI EN ISO 12100:2010, UNI EN ISO 12499:2009,  
UNI EN ISO 13857:2008, CEI EN 60204-1:2006 (CEI 44-5).

Chiusavecchia, 04<sup>th</sup> August 2021

Daniela Giglioli



Legal representative

### 1.1 Disclaimer

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### 1.2 Introduction

Congratulations on your excellent choice of purchasing an Euroemme® 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 Euroemme fans.

### 1.3 Notes

Date of release: 2012.

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

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### 1.4 Data for Fan Eco Design Directive

According to the indication of the ErP Directive 2009/125/CE the MFS fan series as circulator fan (fanjet) are not included in the requirements of the commission regulation 327/2011.

### 1.5 Disposal

Do not dispose of this product with general household waste. This product must be disposed according to the laws governing Waste Electrical and Electronic Equipment. If required, contact your local authorities for information regarding the available disposal facilities.

## 2.1 General

The safety of fans is assured by Munters in compliance with the safety requirements indicated by the CE label. 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;
- do not remove the safety mesh guards;
- if the safety mesh is not installed, the manufacturer is exonerated from all responsibility and the use of the fan is considered improper;
- the maintenance operator must be kept informed on maintenance procedures;
- do not operate the fan without the safety mesh properly installed;
- do not operate the fan without having it firmly fixed to the structure or without complying with the safety regulations for the electrical connection;
- 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;
- the fan is intended to be installed and used by qualified personnel who are familiar with relevant safety requirements;
- 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;



### WARNING

The fan must only be used if it is in perfect operating condition, by personnel, aged more than 14 years who are perfectly aware of the safety measures and possible hazards, and in strict compliance with the instructions given in this manual.

## 2.2 Points to observe

The fan must not be driven by impulsive voltage (frequently on/off voltage). This impulse voltage causes an excessive build-up of heat in the motor which can lead to motor failure. The temperature of the outer casing of the motor may be hot to the touch during normal operation.



## 3.1 Delivery check

Upon receipt, inspect the fan for external damage and if found, inform the forwarding agent without delay. Check the data on all the rating plates, especially voltage and frequency. After placing the motor in the working position (see section 5.1), turn the propeller by hand while the fan is switched off to verify smooth rotation of the propeller.

## 3.2 Packaging and transport of assembled fans

The fan has a self-supporting structure in galvanised steel and it is usually delivered without packaging. Upon request fans can be delivered packed in cardboard boxes. Fans should not be permanently stocked one upon the other, regardless if they are delivered with or without packaging. Handling of the fans should not be done manually as the fans have no handles or grips. Consequently one of the following alternatives should be used:

- forklift: before loading, make sure the forks are opened as much as possible to avoid bending of the fan bottom panel;
- crane: fix two bolts in the M8 bushes situated on the sides of the fan housing and hook the lifting cable over the bolts.



### WARNING

Make sure a steel cable or rope of adequate size is being used when the fan is lifted by crane. Fan weights are shown in the technical specification table (see section 7.2).

## 3.3 Structure

The fans consist of the following components:

- fan housing in galvanised steel without welding spots;
- propeller with four blades in stainless or galvanised steel; blades are fixed to the propeller by high-strength pop rivets;
- motor: single-phase or three-phases; 50 Hz; B3 form; F class winding insulation, IP 55 IEC protective class; asynchronous single-speed;
- pyramidal shape and flat meshes for protection on back and front side;
- wall/column mounting system with tilting mechanism (optional extra); to be used when the fan needs to be mounted next to a wall or column;
- tilting mechanism with chain (optional extra); to be used when the fan needs to be suspended from the roof of the structure.

Circulation fans, such as the MFS, 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  $-15^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ . Maximum altitude is 1000 m above sea level. Should a fan be 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.

## 5.1 Assembly of the fans

In case the fans are delivered with the motor in the transport position to minimise space usage during transportation, it is necessary to follow the steps indicated below to move the motor to its working position.

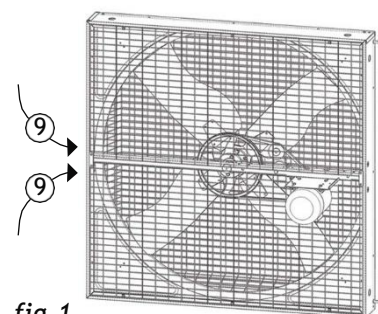
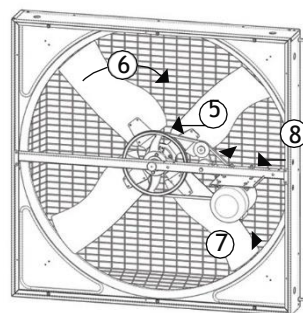
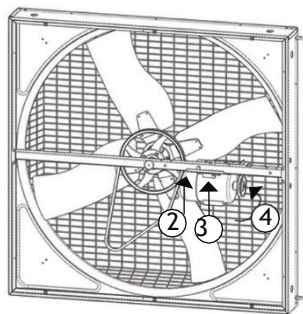
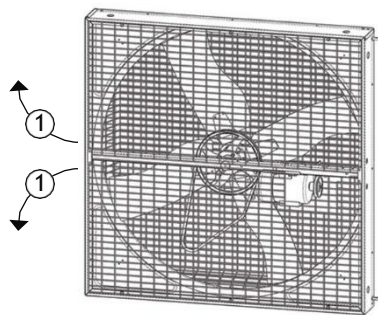


fig.1

1. Unscrew the screws holding the flat safety meshes in place and open the safety meshes.
2. Loosen the bolt in the motor plate closest to the centre of the fan completely and remove it.
3. Loosen the remaining bolt in the motor plate slightly, but do not remove it.
4. Swivel the motor 90° around the remaining bolt in the motor plate and re-insert the bolt that was removed from the motor plate and tighten it slightly.
5. Place the V-belt over the motor pulley and then partially over the central pulley.
6. Rotate the propeller by hand so that the V-belt gets completely into the groove on the central pulley.
7. Verify that the cam is mounted in the right position (see fig.2 / pag.12) and push the motor away from the centre of the fan to tighten the V-belt. See section 8.3 / 8.4 for getting indications about the correct V-belt tension and the use of the cam for moving the motor.
8. Tighten the bolts of the motor plate and of the cam so that the V-belt remains in tension.
9. Close the safety meshes, re-insert and tighten the screws.

5.2 Holes for pulley

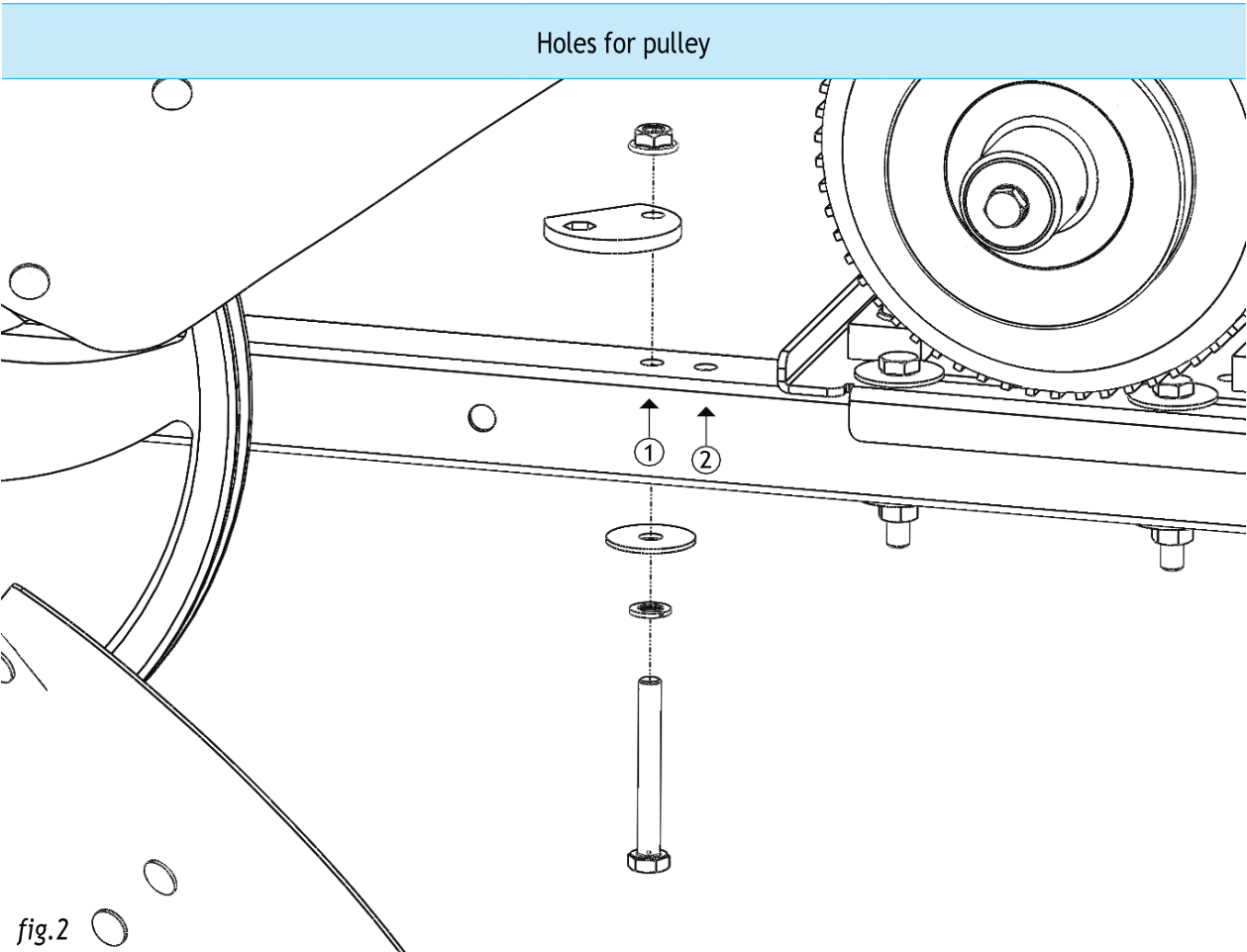


fig.2

Model	Motor [Hp]	Frequency [Hz]	Hole n°
MFS52	1.00	50	2
	2.00	50	1
MFS36	1.20	50	1
	1.00	50	1
	0.75	50	1 or 2 (*)
	0.50	50	2

(\*) according to the tollerance of the V-belt lenght.

### 5.3 Belt tensioner (optional)

1. Follow steps till n° 4 (see section 5.1).
2. Install the belt tensioner in the hole to the left of the motor base (as seen from the air intake side) and tighten the bolt.
3. Install the V-belt onto the pulleys. Start by placing the belt onto the motor pulley, then over the idler pulley and then onto the central pulley. Once the V-belt is partially over the pulley, it might be necessary to start rotate the propeller by hand to help pull the V-belt completely onto the pulley.

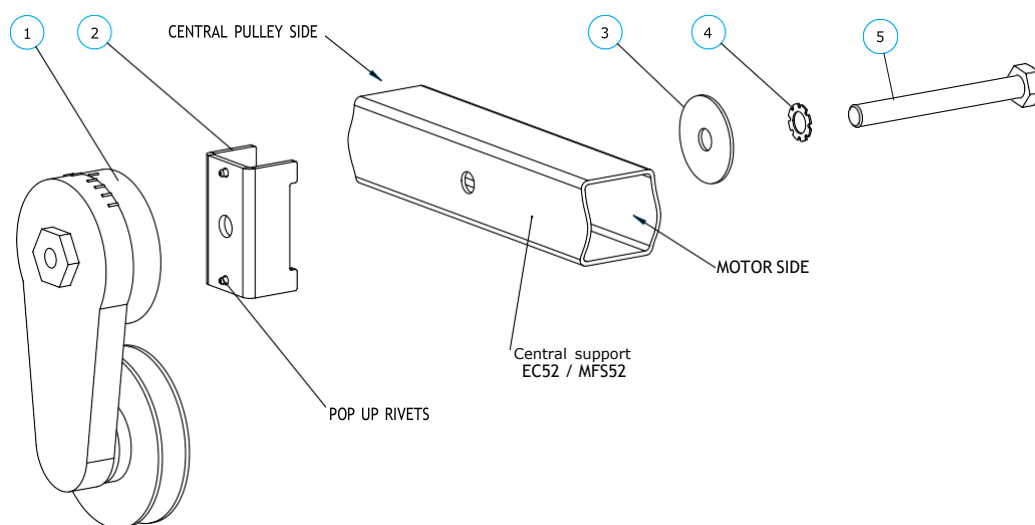


fig.3

4. To torque the belt tensioner to the proper setting place a 10mm Allen key into the hexagonal hole of the cam. Following the indications of section 8.4, turn the Allen key pushing the motor until the single mark on one half of the belt tensioner is aligned with the second mark on the opposite half of the tensioner. Hold tensioner at this setting and tighten the bolts fastening the cam and the motor slide.

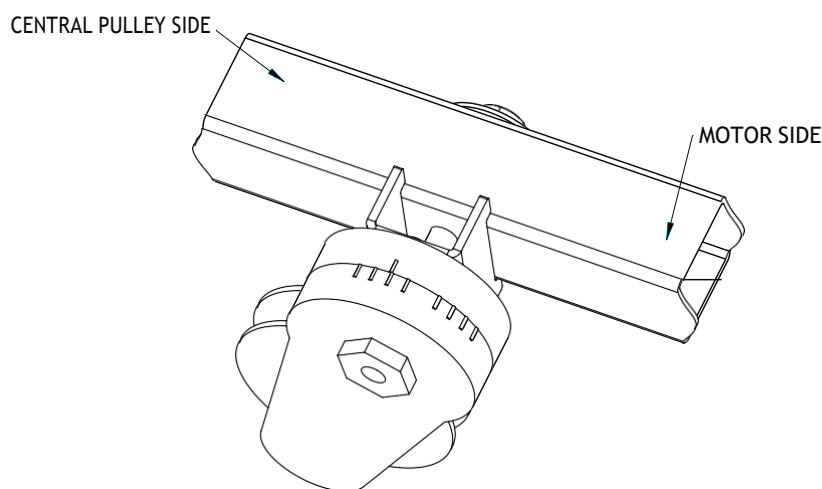


fig.4

**Drive alignment**

1. Use a straight edge to check the alignment of the pulleys.
2. Check alignment of belt on idler pulley, it should be centered on the idler pulley. The belt tensioner's idler pulley is fixed in position, therefore, alignment must be obtained by adjusting the motor and propeller pulleys.
3. If an adjustment is needed, remove the belt, then loosen the set screws in the pulleys and move them as necessary to achieve proper alignment.
4. Remember to tighten the pulley set screws after making an adjustment.
5. Drive alignment is very important for long belt life and proper operation.

Installation now complete, reconnect power to the motor and install outlet or inlet guard.

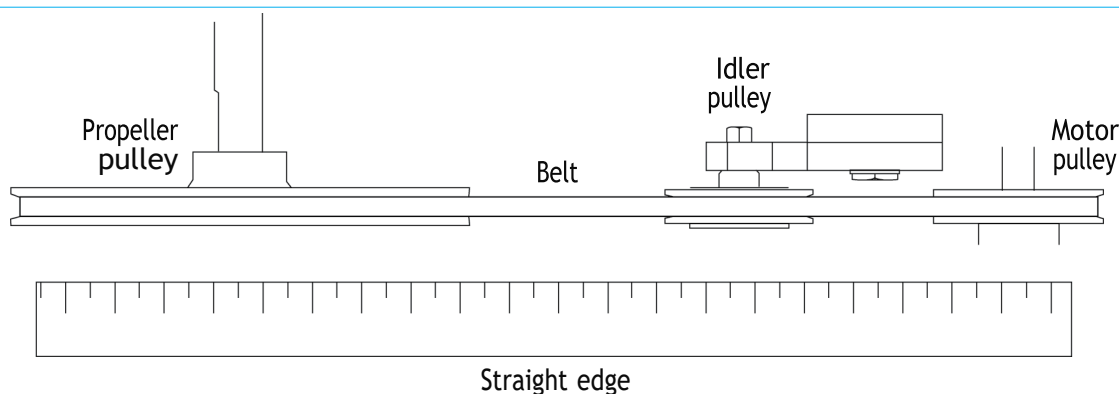


fig.5

**5.4 Tilting device**

The fan (MFS36-52) can be tilted both in vertical and horizontal as indicated below:

Metal structure

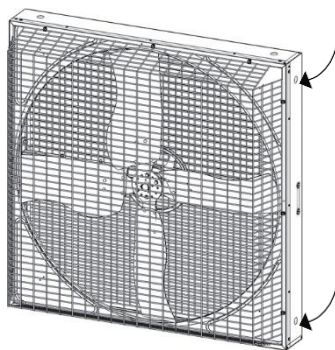


fig.6

If the fan is directly fixed to a metal structure, M8 bolts - 8.8 type, should be used and screwed into the proper threaded inserts placed on the body (2 on each side).

### Chain suspension



fig.7

If the fan is used as a circulator chains should be fixed to the M8 eyebolts previously installed on the extremity of the lateral sides by the threaded M8 bushes.

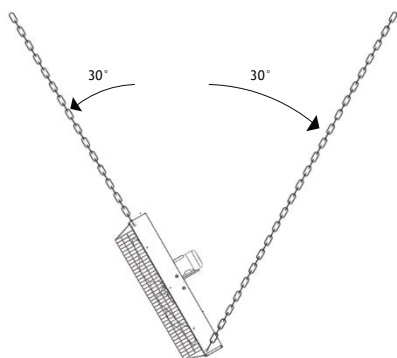


fig.8

### Wall/column mounting system

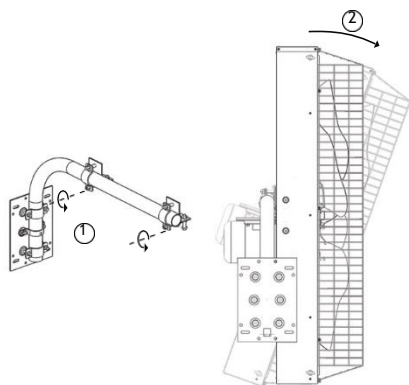


fig.9

#### VERTICAL TILTING

1. Loosen both the bottom bolts (it is not necessary to remove the bolts completely from the fan).
2. Tilt the fan to the desired angle.
3. Fasten the two bolts from the step 1.

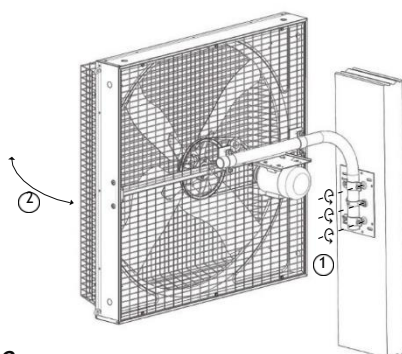


fig.10

#### HORIZONTAL TILTING

1. Loosen side bolts (it is not necessary to remove the bolts completely from the support).
2. Tilt the fan to the desired angle.
3. Fasten the bolts from the step 1.

### 5.5 Placement of fans



#### NOTE

If the MFS is installed near a wall or similar obstacle, a free space at least of 1,500mm should be left open on the fan air intake side.

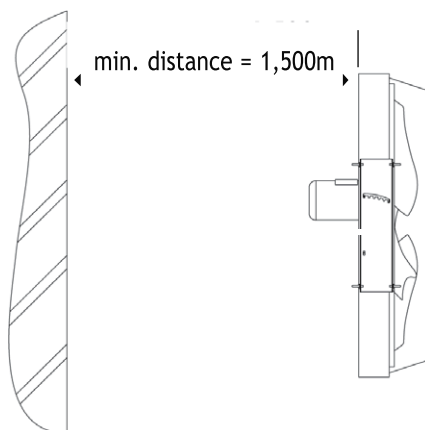


fig. 11

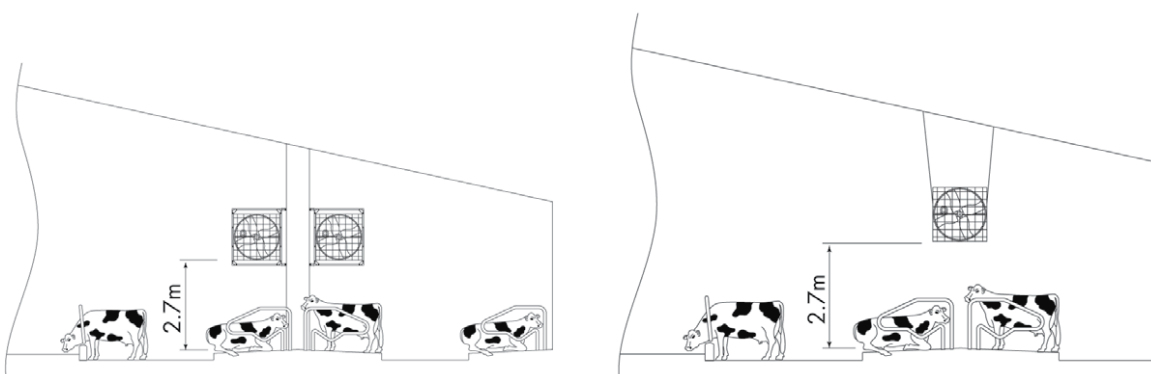


fig. 12



#### WARNING

In order to comply with CE regulations, fans should be mounted so that the bottom of the fan is 2.7m or higher from the floor below it.



#### WARNING

Fans have to be installed taking care to have central support placed in correspondence of a concrete wall or a dedicated metal frame, which has to be strong enough to support the weight of the fan. This is mandatory for guaranteeing the correct functioning of the fans eliminating vibrations and avoiding possible malfunctioning.

### 5.6 Electrical wiring

The fan is delivered without an electrical control box, but the fan motor comes already wired. Connection to the power supply must be done by means of a thermal overload protection switch, whose size depends on motor power. For safety reasons the overload switch can be locked by a padlock, not supplied by Munters.



The installer must provide a suitable control box in compliance with requirements specified by EN 60204 rules. Electrical earthing must be carried out according to local regulations before the motor is connected to the supply voltage.

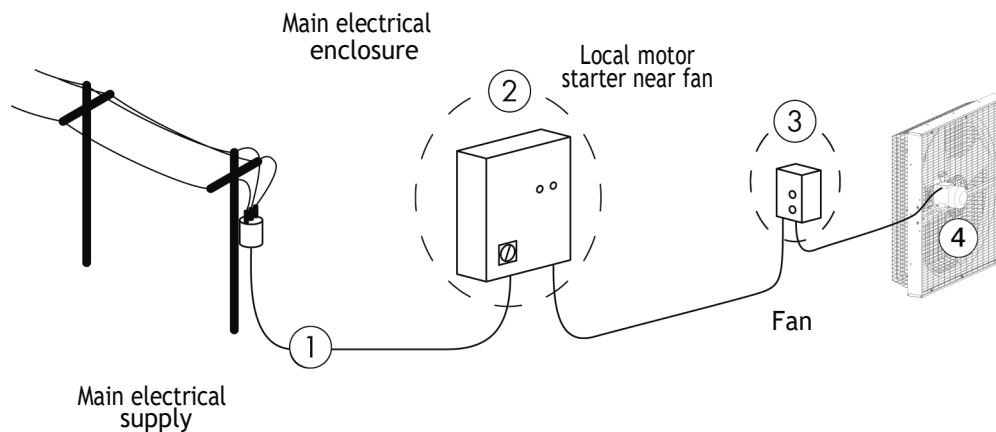


fig. 13

Below are suggested wiring diagrams for connecting the fan to the mains electrical supply. These diagrams are however subject to local laws and regulations and should be modified if necessary to comply with such laws and regulations.

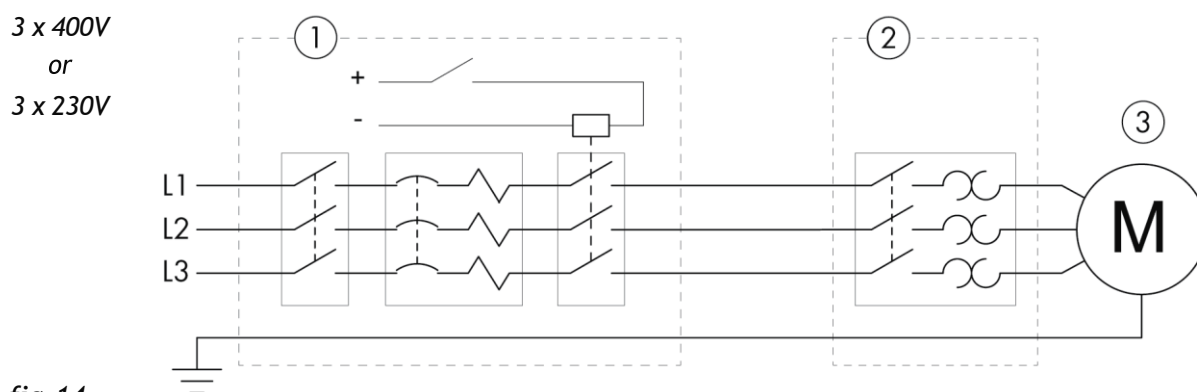


fig. 14

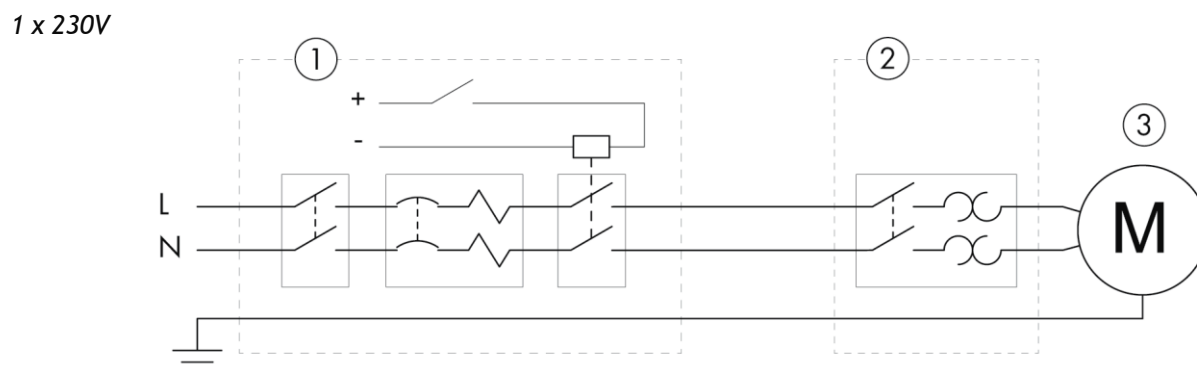


fig. 15

- ① = Overload protection switch
- ② = Circuit breaker
- ③ = Fan motor

**NOTE**

Failure to operate the fan with an overload protection device will render the motor guarantee null and void. Such motor overload protection devices can be ordered from Munters and be supplied with the fans.

**WARNING**

The connection cable must be completely extracted from the fan housing in order to avoid being damaged by moving parts.

To avoid excessive voltage drop, which can be harmful to electrical motors, care must be taken as to the thickness of cables used as well as the distance (D) from the main electrical enclosure to the motor. In the Table below are the maximum allowable distances.

Motor	Phases	Frequency [Hz]	Voltage [V]	Speed	Current [A]	Cross sectional area of cable		
						1.5mm <sup>2</sup>	2.5mm <sup>2</sup>	4mm <sup>2</sup>
						Maximum allowable length: D [m]		
2.0hp/ 1.5kW	3	50	230	single	6.1	50	90	140
	3	50	400	single	3.5	90	150	240
1.0hp/ 0.75kW	1	50	200-230	single/multi	5.2	60	100	160
	3	50	230	single/multi	4.3-3.8	90	150	240
	3	50	400	single/multi	2.5-2.2	280	460	730
0.75hp/ 0.55kW	1	50	200-230	single/multi	4.5	80	130	210
	3	50	230	single	2.8	110	190	300
	3	50	400	single	1.6	350	580	920
	3	50	230	multi	2.9-2.4	80	140	220
	3	50	400	multi	1.65-1.4	260	440	700
0.5hp/ 0.37kW	1	50	200-230	single/multi	3.0	100	170	280
	3	50	230	single	2.3	140	230	360
	3	50	400	single	1.3	430	710	1,130
	3	50	230	multi	2.4-1.9	100	170	280
	3	50	400	multi	1.4-1.1	320	540	860

Standard fan motors have the following voltage and frequency:  
230/400V three-phase 50 Hz.

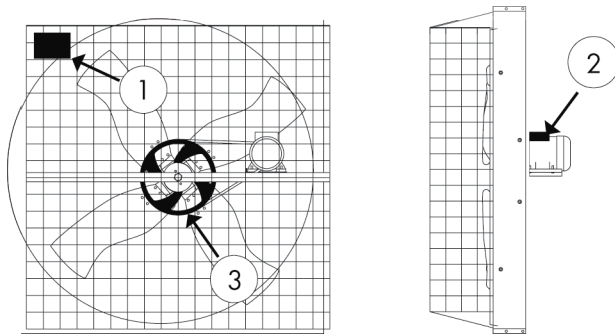


fig. 16

Motor specifications are written on the label stuck on the frame and motor (No. 1 and 2 in diagram). Before operating the fan, make sure the motor turns as shown by the arrow on the central pulley (No. 3 in diagram). To change the direction of rotation of a three-phase motor it is necessary to change the connection of two of the phases.

**NOTE**

Some models of our fans allow to adjust the number of revolutions through inverter (also called VFD). In case of adjustment made by VFD the installer has to pay particular attention to the following aspects:

- it is necessary that the resistance of the ground line to which the equipment are connected has a very low values (about 15-20 ohm) in order to avoid high currents that can flow through the motor bearings and damage them;
- it is necessary to install the proper line filters, to avoid interference and allow proper operation of the equipment;
- the minimum frequency of operation of the engines in the case of absence of a forced external ventilation is 30 Hz; In the case of an operating frequency below 30 Hz is necessary to provide an external forced ventilation to the engine.

**WARNING**

- If unusual oscillating movement is observed, immediately stop using the ceiling fan and contact manufacturer, its service agent or suitably qualified persons.
- Fixing the fan to the ceiling such as hooks or other devices must be made with sufficient force to support 4 times the weight of the ceiling fan.
- The assembly of the suspension system must be carried out by the manufacturer, his service agent or suitably qualified persons.

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

- check if all the fans are secured tightly to the suspension chains or mounting system;
- ensure that all the necessary safety equipment is fitted to the fans;
- ensure that all electrical connections are done properly and comply with local regulations;
- note in which direction the propellers are supposed to turn, by observing the direction of the arrow on the central pulley;
- remove all obstacles from the front and back sides of the fans;
- ensure that all people and animals are standing clear of the fans;
- turn the electrical power to the fans on;
- observe the direction in which the propeller of each of the fans are turning to ensure that it is in the same direction as that of the arrow on the central pulley;
- 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.

## 7.1 Dimensions

### MFS36

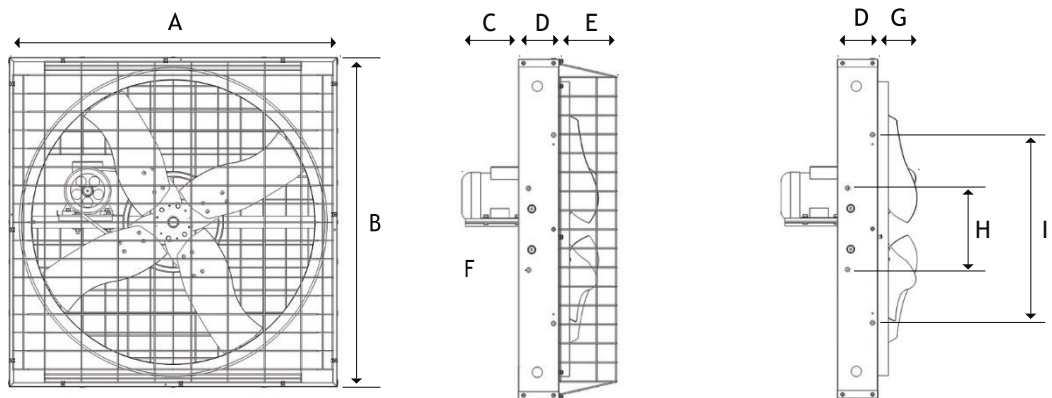


fig.17

### MFS52

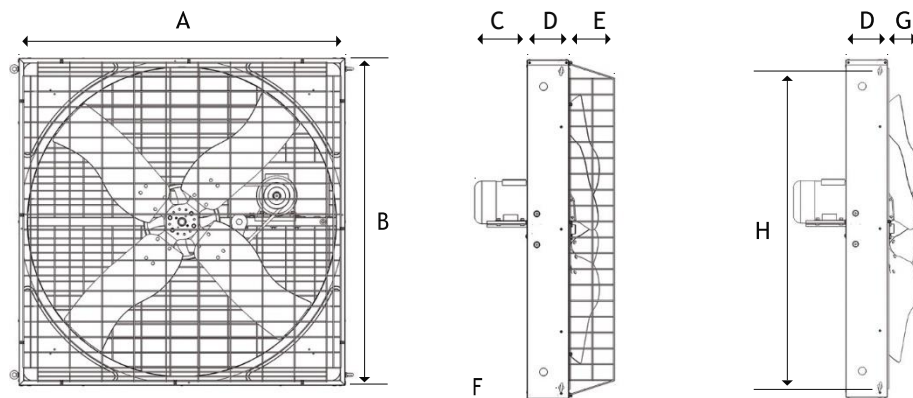


fig.18

Fan dimensions [mm]

Model	A	B	C	D	E	F	G	H	I
MFS36	1,085	1,085	180*	130	200	M8	130	260	600
MFS52	1,425	1,425	220*	176	190	M8	125	1,330	.

\* Distance may vary according to the type motor installed.

Mounting kit dimensions for MFS52

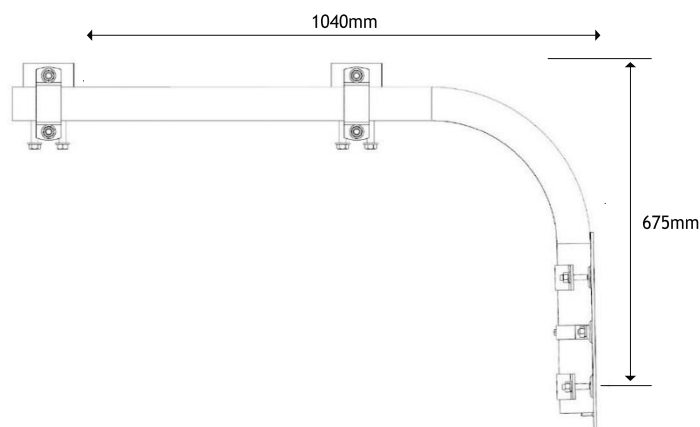


fig.19

## 7.2 Technical specifications

	MFS36			MFS52	
	0.5hp	0.75hp	1.0 & 1.2hp	1.0 & 1.2hp	2.0hp
Number of blades	4				
Propeller diameter	915 [36]			1,320 [52]	
Weight of fully equipped fan	38	38.5	41.5	43	47
Airflow at 0 Pa	16,740 [9,853]	19,770 [11,636]	21,973 [12,933]	37,638 [22,153]	44,803 [26,370]
Specific performance at 0 Pa	33.3 [19.6]	26.7 [15.7]	21.6 [12.7]	33.5 [19.7]	25.3 [14.9]
Max. operating temperature	40 [104]				
Max. operating pressure	10				
Nominal propeller speed	479	570	636	406	461
IEC protective class of electric motor	IP55				
Electric motor winding insulation grade	F				

## 7.3 Motor specifications

Code	Nominal Power [W]            [Hp]		Phases	Speed	Frequency [Hz]	Voltage [V]	Current [A]	rpm
MFS36								
a	370	0.5	1	single	50	200/230	3	1,350
b	370	0.5	1	multi	50	200/230	3	1,350
d	370	0.5	3	single	50	230/400	2.3/1.3	1,400
f	370	0.5	3	multi	50	230/400	2.4/1.4	1,360
h	550	0.75	1	single	50	200/230	4.5	1,380
i	550	0.75	1	multi	50	200/230	4.5	1,380
k	550	0.75	3	single	50	230/400	2.8/1.6	1,400
m	550	0.75	3	multi	50	230/400	2.9/1.65	1,380
o	735	1.0	1	single	50	200/230	5.2	1,350
p	735	1.0	1	multi	50	200/230	5.2	1,350
r	735	1.0	3	single	50	230/400	3.5/2	1,400
t	880	1.2	3	multi	50	230/400	4.3/2.5	1,380
MFS52								
a	735	1.0	1	single	50	200/230	5.2	1,350
b	735	1.0	1	multi	50	200/230	5.2	1,350
d	735	1.0	3	single	50	230/400	3.5/2	1,400
f	880	1.2	3	multi	50	230/400	4.3/2.5	1,380
h	1,500	2.0	3	single	50	230/400	6.1/3.5	1,400

## 8.1 Introduction

Maintenance must only be carried out by qualified personnel only using suitable tools and working methods. 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 standstill.



### WARNING

The capacitor in single-phase motors can retain a charge which appears across the motor terminals even when the motor has reached standstill.

Fans do not contain parts needing periodic lubrication, as moving parts are either manufactured from self lubricating materials, or are sealed with lifetime lubrication.

## 8.2 Cleaning

Inspect the fan at regular intervals and keep it clean. It is advised to perform periodic cleaning of safety mesh guards. Dust on the safety mesh guards causes extra power consumption; severe dust on the motor can cause overheating and subsequent motor failure.



### WARNING

Keep motor body clean. Dust deposit on motor body will lead to overheating and failure of bearings and motor itself.

Do not use water for motor cleaning. Use compressed air only. Water spraying will cause rust inside the bearings and lead to their failure.

## 8.3 Belt tensioning check up (without belt tensioner)

Check V-belt tension at regular intervals, the correct tension is obtained when maximum deflection (half-way from motor and central pulley) is about 10 mm, when pushed in by thumb.



### WARNING

Tighten fan belt after this fan has been running for 3 days. Without adjusting the tension, transmission components can wear out early.



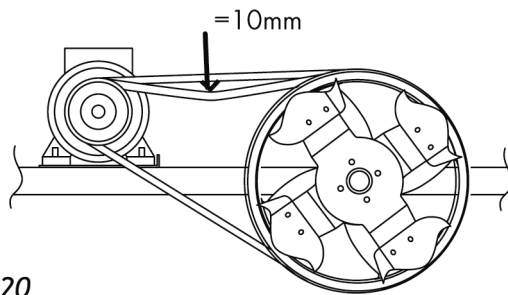
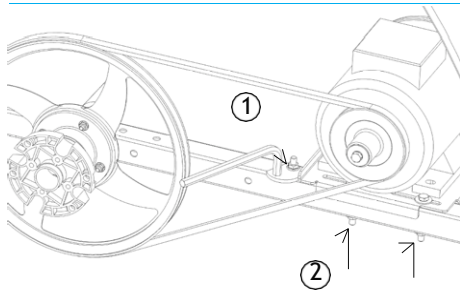


fig.20

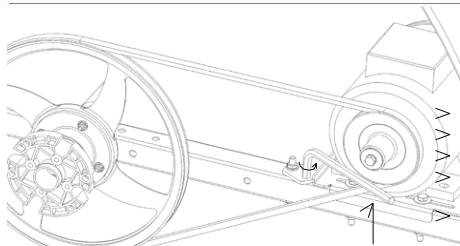
To reset the correct tension:

- open the safety mesh guards;
- unscrew motor slide fixing screws (without removing them);
- using the tensioning belt adjuster instruction tighten the V-belt by pushing the motor sideways;
- tighten the fixing screws adequately;
- fix the safety meshes guard to the fan housing.

## 8.4 Tensioning belt adjuster



1. Loosen the nut of the cam (ref.1) and of the motor slide (ref.2) and insert a 10 mm Allen key into the hexagonal hole of the cam.



2. By turning the Allen key push the engine forward until it reaches the desired position.
3. Tighten the nuts of the motor slide and of the cam.

fig.21

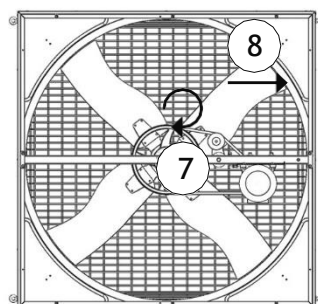
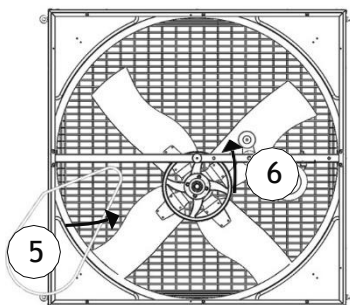
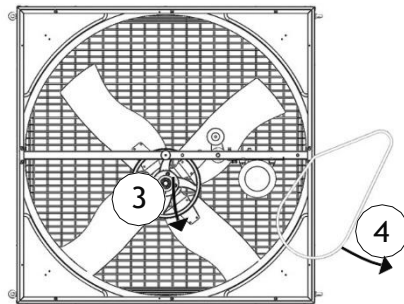
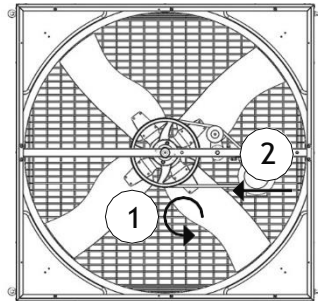


### WARNING

Do not operate the fan with the safety protections removed: safety meshes can be removed only with specific tools by qualified technicians when the fan reaches a complete standstill.

The fixing systems of the safety protections are not interchangeable with other devices. Therefore, if for maintenance reasons the user damages or loses any component, this must be definitely ordered from the manufacturer as spare parts and it cannot just be replaced with other components, even similar, not supplied by the manufacturer itself. In this particular event the manufacturer refuses all responsibility on consequent damages caused to things and people and considers any kind of warranty lost.

## 8.5 Replacement of V-belt



If the V-belt should be damaged in any way, it has to be replaced. How to replace the V-belt:

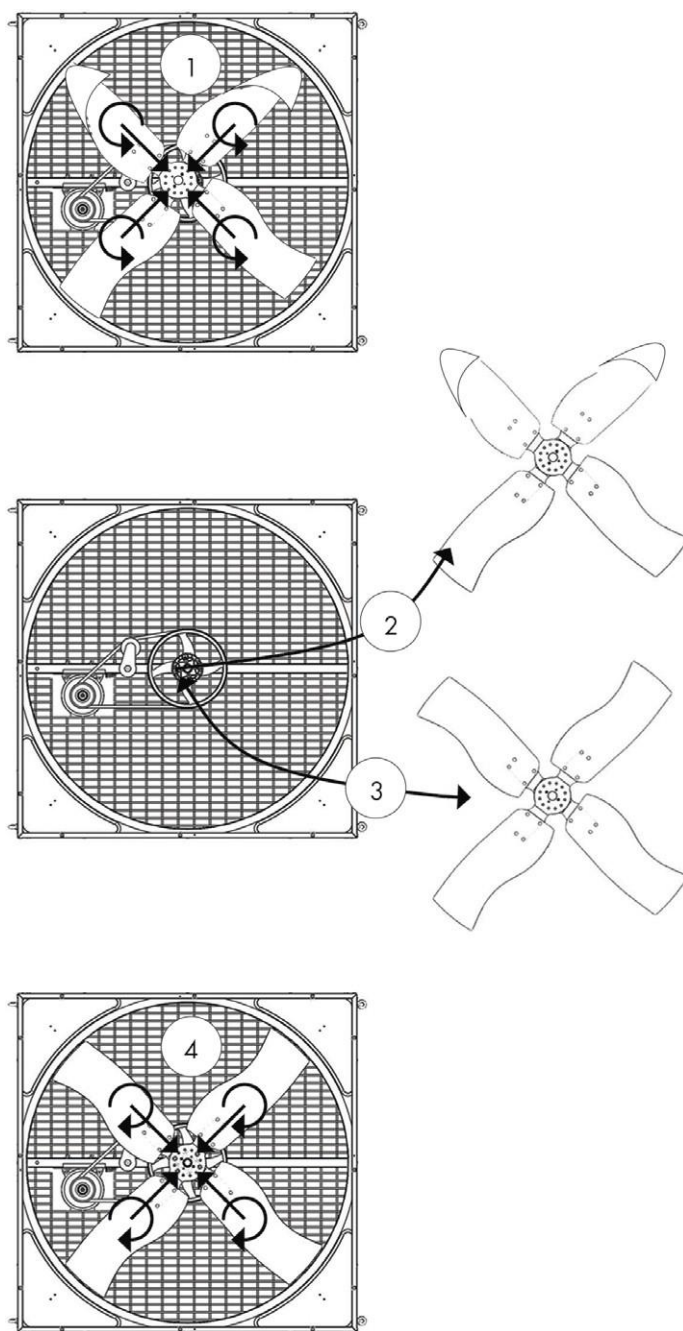
1. open the safety mesh guards and loosen the bolts of the motor frame; slide the motor frame towards the centre of the fan to release any tension on the V-belt;
2. undo the 25mm hexagonal nut holding the propeller assembly to fan body;
3. carefully remove the propeller assembly from the fan body and let it rest on the bottom of the fan body;
4. remove the old V-belt;
5. insert the new V-belt.
6. replace the propeller assembly into the fan body;
7. fasten the 25mm hexagonal nut onto the shaft of the propeller assembly;
8. tighten the V-belt by pushing the motor away from the centre of the fan and then tighten the bolts on the motor frame.

fig.22

## 8.6 Fan bearing lubrication

Bearings are properly sized, with double sealed protection (2RS) and lubricated for life, therefore they do not require any additional lubrication.

## 8.7 Propeller replacement



If damage occurs to the propeller, it is necessary to replace the whole propeller because of the difficulty to balance it in the field. How to replace the propeller:

1. remove the pyramidal safety mesh and unscrew the four M8 bolts holding the propeller to the fan;
2. remove the propeller;
3. insert the new propeller;
4. tighten the four M8 bolts holding the propeller to the fan and re-install the pyramidal safety mesh.

fig.23

# Spare part list

9.

MFS36

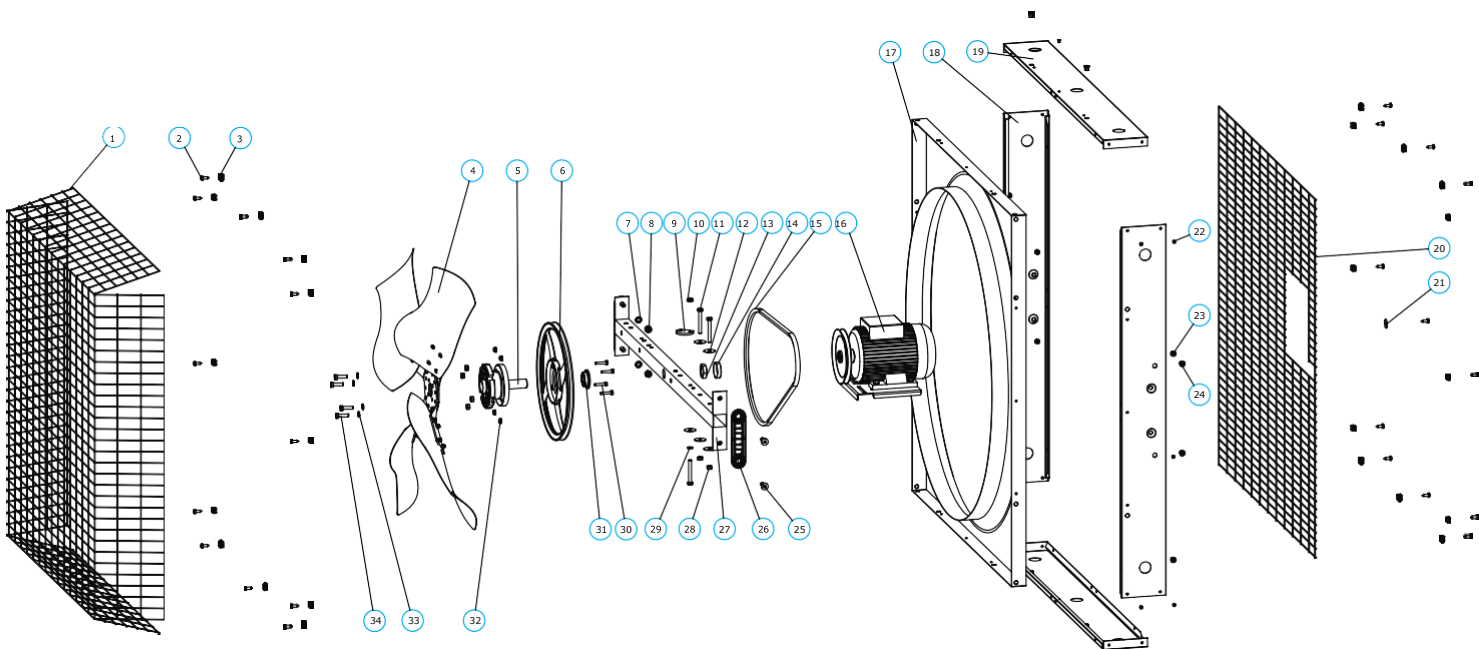


fig.24

REF.	DESCRIPTION	QUANTITY
1	PYRAMIDAL SAFETY MESH	1
2	SELF TAPPING SCREW 6.3X19	25
3	PLASTIC CLIP FOR MESHERS	24
4	PROPELLER	1
5	COMPLETE CENTRAL HUB	1
6	CENTRAL PULLEY	1
7	EXTERNAL TOOTHED WASHER D10	4
8	HEXAGONAL NUT M10	4
9	CAM TENSIONING	1
10	HEXAGON NUT WITH FLANGE M8	1
11	HEXAGONAL SCREW M8X65	3
12	PLAIN WASHER D8X32	5
13	HEXAGONAL NUT M25	1
14	CUP COVER NUT	1
15	A55 V-BELT	1
16	MOTOR	1
17	CONVEYOR	1
18	SIDE PANEL	2
19	TOP / BOTTOM	2
20	SAFETY REAR MESH	1
21	PLAIN WASHER D6X24	1
22	POP UP RIVET D4.9X7 STEEL	12
23	THREADED BUSH M8X17.5	8
24	THREADED BUSH EXAGONAL M8	4
25	HEXAGON SOCKET COUNTERSUNK HEAD SCREW M10X30	4
26	OVAL PLATE	2
27	CENTRAL SUPPORT	1
28	HEXAGONAL NUT M8	10
29	SPRING WASHER Ø8	1
30	HEXAGONAL SCREW M6X30	4
31	WATERPROOF DISTANCE PIECE	1
32	HEXAGON NUT WITH FLANGE M6	4
33	EXT TOOTHED WASHER D8	4
34	HEXAGONAL SCREW M8X30	4

MFS52

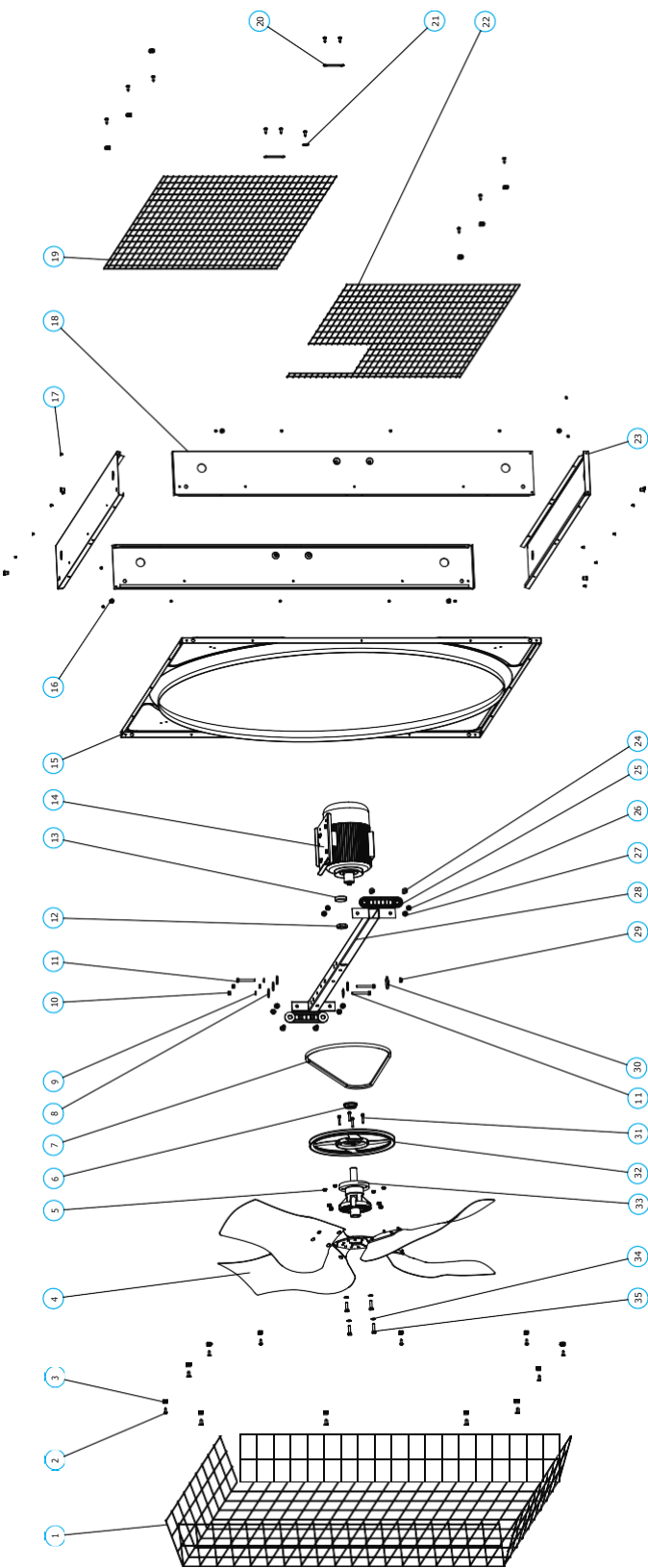


fig.25

REF.	DESCRIPTION	QUANTITY
1	FRONT SAFETY MESH	1
2	SELF TAPPING SCREW 6.3X19	23
3	PLASTIC CLIPS FOR MESH	18
4	PROPELLER	4
5	HEXAGON NUT WITH FLANGE M6	4
6	WATERPROOF DISTANCE PIECE	1
7	V-BELT A61	1
8	PLAIN WASHER Ø08X32	6
9	SPRING WASHER Ø8	4
10	HEXAGONAL NUT M8	10
11	HEXAGON SCREW M8X65	3
12	HEXAGONAL NUT M25	1
13	PLASTIC COVER FOR NUT M25	1
14	MOTOR	1
15	CONVEYOR	1
16	HEXAGONAL THREADED BUSH M8	8
17	POP UP RIVET D4.9×7 STEEL	26
18	SIDE PANEL	2
19	REAR SAFETY MESH	1
20	CENTRAL CLIP FOR REAR MESHES	2
21	PLAIN WASHER D6.7×24	1
22	REAR SAFETY MESH (MOTOR SIDE)	1
23	TOP/BOTTOM PANEL	2
24	HEXAGON SOCKET COUNTERSUNK HEAD SCREW M10X30	4
25	OVAL PLATE	2
26	EXT TOOTHED WASHER D10	4
27	HEXAGONAL NUT M10	4
28	CENTRAL SUPPORT MFS52/EC52	1
29	HEXAGON NUT WITH FLANGE M8	1
30	CAM TENSIONING	1
31	HEXAGONAL SCREW M6X30	4
32	CENTRAL PULLEY	1
33	COMPLETE CENTRAL HUB	1
34	EXT TOOTHED WASHER D8	4
35	HEXAGONAL SCREW M8X30	4

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

Munters Italy S.p.A  
Strada Piani, 12  
18027 Chiusavecchia (IM), Italy  
Tel: +39 0183 52 11  
Fax: +39 0183 521 333  
[info@munters.it](mailto:info@munters.it)

Munters® MFS circulation fans are developed and produced by Munters Italy S.p.A., Italy



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

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