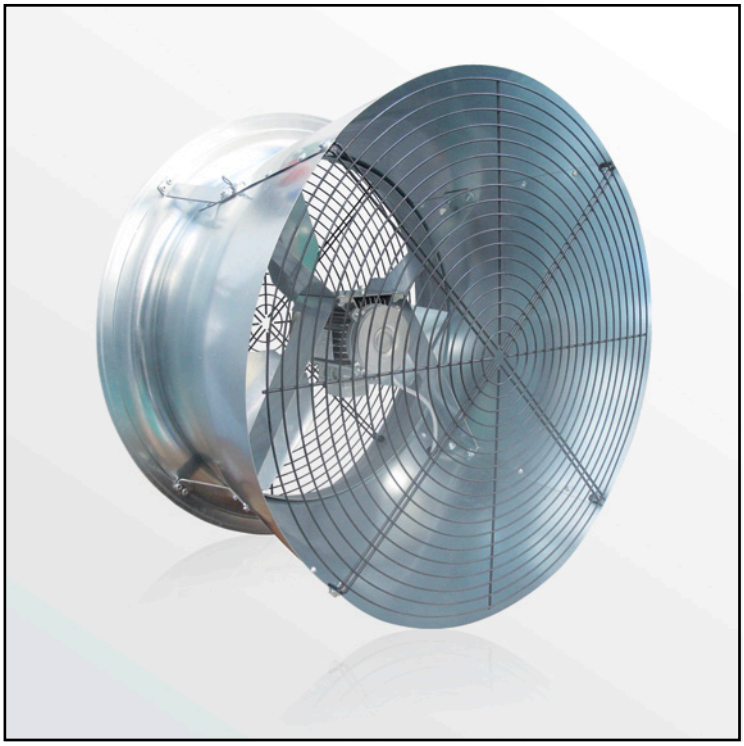
EDC24HE
EDC18HE

Manual for use and maintenance



+ CE Declaration of conformity

EDC24HE - EDC18HE

Air circulation fan

Ag/MIT/UmEN-2165-12/13 rev 1.0

Munters

EDC24HE - EDC18HE

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 Italy S.p.A. reserves the right to effect modifications to the apparatus in accordance with technical and legal developments.

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CE Declaration

1.

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

(Company registration nr. 00081050080)

DECLARES ON ITS OWN RESPONSIBILITY THAT THE APPARATUS

Designation	Fan designed for moving air to control temperature and humidity in greenhouses or rearing sheds.
Model	EDC24HE - EDC18HE
Year of manufacture	2013

CONFORMS WITH THE ESSENTIAL SAFETY REQUIREMENTS STATED BY APPARATUS DIRECTIVE 2006/42/EC AND PERFORMANCE REQUIREMENTS COMPLY WITH THE ERP DIRECTIVE 2009/125/CE.

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), UNI EN ISO 5801:2009

Chiusavecchia, 18th December 2013

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 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: 2013.
Munters cannot guarantee to inform users about the changes or to distribute new manuals to them.

1.4 Attached technical documentation

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

- technical sheet/electric motor instruction booklet.

Safety aspects

2.

WARNING

Failure to respect safety or behavioural rules can produce hazardous situations for users as well as damage to the machine and the place where it is installed. The fan must only be used if it is in perfect operating condition, by personnel who are perfectly aware of the safety measures and possible hazards, and in strict compliance with the instructions given in this manual.

2.1 Personnel requirements

Equipment may only be used by personnel who know and apply the specific requirements given in the user 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.

Personnel training

All operators engaged in the use of the fan must have received adequate information from the employer relating to:

- risks to health and safety at work connected with the use of the machine;
- first aid procedures, fire precautions and evacuation of workplaces;
- devices provided for the safety of operators, and residual risks generated by the machine.

In particular, the employer has the following duties:

- when assigning tasks to operators, to take into account their capabilities in the interests of safeguarding their health and safety;
- to provide adequate means of protection;
- to require compliance by individual operators with the company rules and provisions regarding safety and the use of the collective and individual protective measures at their disposal;
- to ensure that normal and special maintenance operations, or in any event operations necessary for machine safety, are regularly carried out.

All operators must take care of their own safety and health as well as that of other people in the workplace who may be affected by their actions or omissions, in accordance with their personal skills, and the instructions and means provided to them by the employer.

WARNING

Unauthorized tampering/replacement of one or more parts of the machine, or the use of accessories, tools or materials other than those recommended by the manufacturer, are prohibited and release the manufacturer from all liability.

WARNING

Operators must be trained to deal with the occurrence of possible faults, malfunctions or dangerous conditions to themselves or others, and in such an event must:

- stop the fan immediately by operating the emergency stop device (mushroom-shaped pushbutton/main switch mounted on the electrical panel);
- not carry out operations which are beyond their duties and/or technical knowledge.

2.2 General safety instructions

WARNING

- Safety devices must not be removed or rendered ineffective;
- the fan must not be started with guards removed;
- any adjustment or maintenance operation must be performed with the electrical isolating device activated and locked in position with a padlock;
- any operation is prohibited which may cause arcing or sparks or other situations which could start a fire;
- in the event of alarm signals resulting in the intervention of safety devices, the operator must ask for immediate action by qualified technicians responsible for maintenance;
- user must ensure that the environmental and electricity supply conditions in which the fan operates are always within the limits specified in this user manual;
- do not for any reason modify parts of the fan in order to fit additional devices.

2.3 Safety devices

In the process of designing and building the fan, the manufacturer adopted the necessary technical solutions to ensure compliance with fundamental safety requirements: the object of the risk reduction process was to ensure that the operator can use the fan in safety. The machine is provided with protection devices of fixed type and is fitted with an actuator for the emergency stop function.

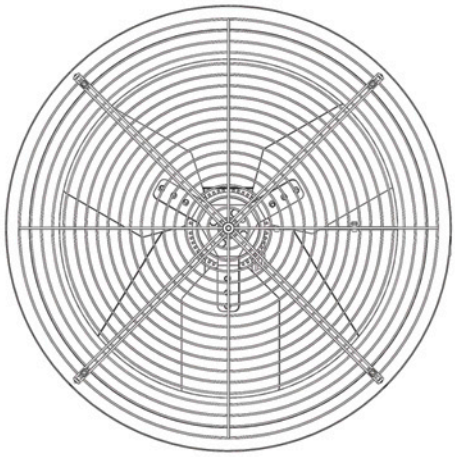
Fixed guards

The fixed guards are solidly fixed to the structure of the machine and cannot easily be eluded: the guards are fixed with systems which require the use of tools for dismantling.

WARNING

Do not start the fan with fixed guards removed: the guards can only be removed with special tools, by specialized and trained personnel and with the system stationary (emergency system activated and electricity and hydraulic fluid isolated). At the end of maintenance operations, the guards which were removed must be replaced correctly.

Position of guard	Type of guard	Notes
Intake side of fan	Guard of fixed type made of metal mesh.	Dimensions and positioning in accordance with the instructions in the standard UNI EN 13857. Removable only by means of special tool.



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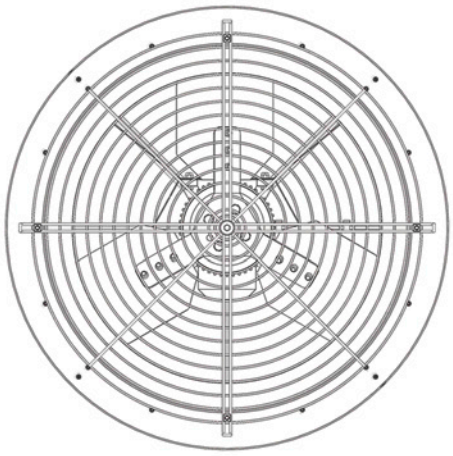
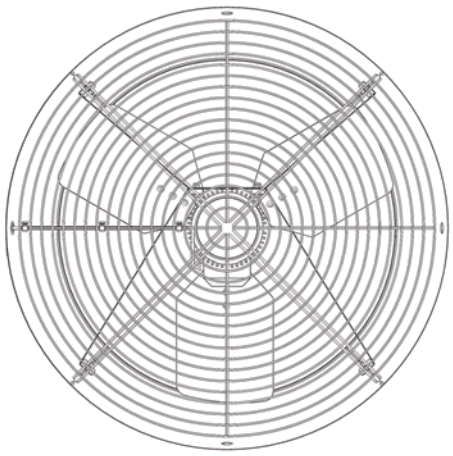


EDC18HE

fig. 1

Outlet side of fan	Guard of fixed type made of metal mesh.	Dimensions and positioning in accordance with the instructions in the standard UNI EN 13857. Removable only by means of special tool



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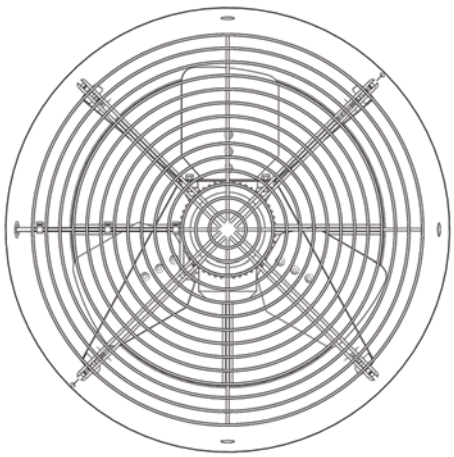

EDC18HE

fig. 2

Emergency stop function

The machine must be equipped at the installation stage with an electrical panel, on which must be installed an actuator for the emergency stop function, which when operated brings dangerous movements to a halt by isolation of the power supply: the button must be mushroom-shaped and coloured red, provided with mechanical restraint and released by turning.

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 *(measured at 2m distance)*	
Fan model	Sound pressure level Lp [dB(A)]
EDC24HE - 0.50 hp - 4 poles	79.5
EDC18HE - 0.33 hp - 4 poles	72.9
EDC18HE - 0.15 hp - 6 poles	62.9

A measurement has been made of the noise produced by the machine during normal operation 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.

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.

Before using

3.

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. Turn propeller by hand to check free rotation. Check the opening of the shutter by hand.

3.2 Packaging and transport of assembled fans

The fan has a self-supporting structure in galvanised steel and it is usually delivered withpackaging. 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:

- trolley: when loading the fan on the trolley make sure fan shutter is positioned outwards;
- forklift: before loading, make sure the forks are opened as much as possible to avoid bending of the fan bottom panel and damaging the shutter;
- 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 7.1)*.

3.3 Structure

The fans consist of the following components:

- fan housing in zinc magnesium galvanized steel steel without welding spots;
- propeller with three blades in stainless or zinc magnesium galvanised steel; blades are fixed to the propeller by high-strength pop rivets;
- asynchronous three-phases motor; 50 or 60 Hz; B3 form; F class winding insulation, IP55 protection class; single-speed.

Operating conditions

4.

4.1 Intended conditions of use

Fans are machines designed for moving air to control temperature and humidity in greenhouses or rearing sheds by extraction, not under pressure. They can even be installed horizontally, without altering or modifying their characteristics.

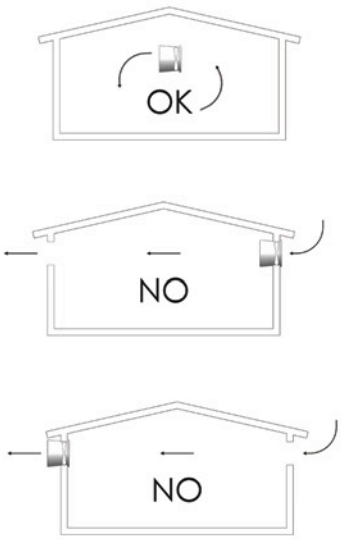

fig. 3

The fan has been designed and built to operate in safety for the user, if used according to the conditions intended by the manufacturer and stated in this user and maintenance manual.

NOTE For further information, please refer to the technical documentation attached to this manual.

4.2 Non-permitted conditions of use

Total or partial failure to observe the instructions given in this manual could cause damage to the fan and/or people.

The following uses are to be considered not permitted and improper:

- use in the event of faults and/or tampering with the installed safety devices;
- use by personnel not specifically trained;
- installation of the fan for extraction or circulation under pressure;
- use contrary to existing regulations;
- incorrect installation differing from instructions given in this manual;

- supply from an electrical network with characteristics different from that specified in the wiring diagram;
- total or partial failure to observe instructions;
- insufficient maintenance;
- use of non-original spare parts;
- use of lubricants with characteristics different from those specified in the technical documentation attached to the manual;
- use by minors;
- use under the influence of drugs, alcohol, etc.

WARNING

Use of the fan other than as described in the user manual or outside the operational limits laid down by the manufacturer is considered IMPROPER USE. In the event of IMPROPER USE the manufacturer declines all liability in relation to any damage that may be caused to persons or property, and any kind of warranty will be considered invalidated.

Use of non-original spare parts

Original spare parts ensure the reliability and safety of the operation of the fan: in the event of maintenance/ replacement, consult the spare parts list, the list of parts and components used and the relevant technical documentation attached to this manual.

WARNING

In the event of replacement of safety devices, it is essential to maintain the safety and operational characteristics of the original device, preferring replacement with an identical component.

Insufficient maintenance

A correct normal maintenance is one that maintains the original integrity or restores the fan's efficiency, while at the same time limiting normal deterioration resulting from use.
Special maintenance work can also prolong the usable life of the machine and/or, secondarily, can improve its efficiency, reliability, productivity and ease of maintenance and inspection.

Unauthorized modifications or tampering

No operation is permitted which is aimed at making modifications to the fan and the safety devices fitted to it; similarly, it is not possible to alter its operational and performance characteristics.

WARNING

Interference with the command and control circuits is prohibited: such operations could cause damage to the equipment and serious danger to the operator.

NOTE

Modifications made to the fan which do not come into the categories of normal and special maintenance, or which alter its operational and performance characteristics, invalidate the machine's compliance with the requirements of the applicable directives, as attested by the manufacturer with the EC declaration of conformity: it is up to the person responsible for the modification to resubmit the machine to the assessment conformity procedures specified in the applicable directives.

Use in a potentially explosive atmosphere

The fan has been designed and built to operate in environments where the presence of a potentially explosive atmosphere is not expected, in other words it is not intended to handle materials which release explosive dust. Emission into the atmosphere of harmful particles or gases must be contained within the limits established by current regulations.

WARNING

The fan has been designed and built in such a way that it CANNOT operate in a classified area, according to directive 1999/92/EC.

Installation

5.

After fan has been delivered but before fitting and installation, check condition of the consignment: in the event of discrepancy or damage to the machine, the manufacturer or carrier must be informed immediately.

WARNING Fitting and installation of the fan must be performed by specialized personnel, in order to prevent damage to the equipment or hazards to people as a result of faulty fitting.

Fitting the fan must be carried out according to the following stages:

- positioning and anchoring the fan;
- connection to the mains electricity supply;
- operational testing and putting into operation.

5.1 Choice of site and checking installation requirements

The user is responsible for preparing an area suitable for installation of the equipment and complying with the requirements laid down by European directives and national law governing safety at places of work.
Environmental conditions for operating the equipment are as follows:

Ambient temperature during operation	Ambient humidity during operation
- 25°C / + 50 °C	< 90%

For operation of fan installation, a manoeuvring area must be made available that is suitable for the fan dimensions and the chosen lifting equipment: electrical points must be provided in the installation area for fan connection to the mains electricity supply.

The area adjacent to the fan in the premises from which air is being extracted must be kept clear to allow the air to exit freely. It is also prohibited for anyone to remain in this area, because of the presence of organic gases and dust which may be present in the airflow

5.2 Installing Series EDCHE fans

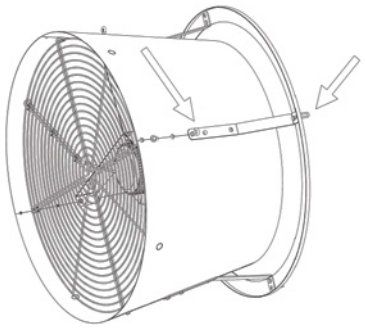

fig. 4

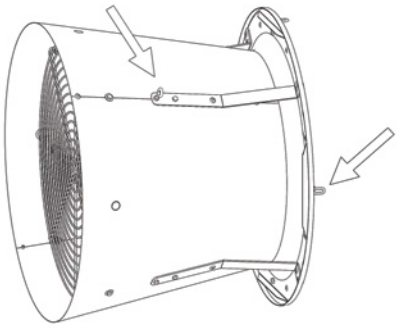

fig. 5

Circulators are designed and built for hanging installation and have therefore eyebolts to be hung.
Warning: always check up if cable and chain dimensions are suitable to hold up the fan's weight and if they have the proper length to distribute the strain uniformly.

5.3 Connection to the electrical system

The fan is supplied without a command and control circuit, but with all the internal electrical connections already made.
At the fitting stage, the installer must set up a control panel in compliance with the requirements of standard IEC EN 60439-1, and arrange the wiring of the fan in accordance with the instructions in standards IEC EN 60204-1 and IEC 60364.
The electrical panel of the fan must generally be equipped with the following devices (bearing EC marking as per directive 2006/95/EC):

	Lockable isolating switch.
	Magnetothermic switch (chosen to suit the power of the motor). The need to fit a switch of differential type depends on the configuration of the electrical system supplying the fan: it is the installer's responsibility to make this assessment in accordance with the instructions in standard IEC 60364.

	Red emergency stop button, mushroom type, provided with mechanical locking and release by turning (in compliance with UNI EN ISO 13850). Operating the button must bring about the electromechanical isolation of the power supply to the electric motor (category 0/1 according to IEC EN 60204-1).
	Start/stop selector switch (with characteristics compatible with the nominal current of the motor), or main panel for managing the equipment, with control devices which act on the electrical supply to the fan.

WARNING

Do not supply power to the fan during installation stage.
Installer must issue a declaration of correct installation in accordance with applicable legislation in the country of use.

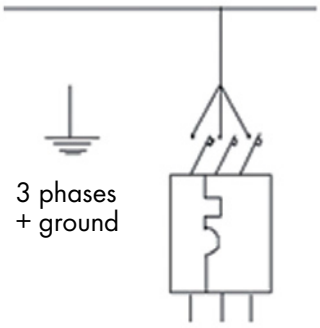

fig. 6

WARNING

The rating plate data of the electric motor and the instructions given in the attached technical documentation must be used for sizing the power supply cable.

In the event of installations that do not comply with the directions given in this chapter, the manufacturer's liability ceases, along with the validity of the CE Declaration of Conformity.

The electrical lines must be laid in accordance with requirements of the laws applying in the place of installation, and in any event:

- they must be laid with cables of adequate section for the power of the fan and the length of the line itself;
- they must make an effective earth connection;
- they must have isolating devices and automatic protection against overload and short circuits.

Before activating the electrical supply to the machine by turning the isolator switch to position On, a series of checks must be made:

- check that the voltage and frequency of the power source correspond to those indicated in the equipment technical data and electrical diagram;

- check that the supply cables and the conductor providing external protection are correctly connected;
- check that the connections in the control and power circuits are properly tight;
- check that the intensity of the short-circuit expected at the connection terminals is compatible with the breaking power of the protection switch upstream of the electrical panel;
- check that the protection devices (fuses, magnetothermic switches) are correctly sized, and that the phases are connected in the correct order: check that the fan rotates in the direction that makes air entering on Venturi side and leaving the fan from cone side.

Equipotential earthing wiring safeguard

To create effective protection against the risk of electrocution, the outer protection conductor must be connected to terminal PE inside an electrical panel.

For correct sizing of the protection conductors, see following requirements as indicated in standard IEC EN 60204-1:

- phase conductor up to 16 mm^2: section of the protection conductor equal to the section of the supply conductor;
- phase conductor between 16 and 35 mm^2: section of protection conductor equal to 16 mm^2;
- phase conductor over 35 mm^2: section of protection conductor equal to at least half the section of the supply conductor.

WARNING

When connecting all the metal masses to the earth system, check that there are no insulating elements between the various conductive masses (metal parts). The system must not be put into operation unless the equipotentiality of the masses and the connection to the earth system have previously been checked.

Protection against contact voltages

The choice of device to protect the electrical system must be made in such a way as to ensure the safe intervention of the main automatic switches and any differential devices linked to them. For an appropriate choice of the type of protection for the machine's supply line, taking into account whether the distribution system is TT or TN, it is advisable to consult an electrical systems designer, in order to ensure compliance with the requirements of standard IEC 64-8 or the equivalent provisions in the country where the machine is being installed.

5.4 Tests and checks before startup

Before startup, it is extremely important to carry out a very careful check of the fan, in order to prevent malfunctions and/or accidents.

In particular, perform the following operations:

1. Equipotential earthing wiring safeguard:
   - check the fan visually, verifying that there are no particular mechanical irregularities or foreign bodies inside the structure;
   - check that the protective structures (fixed guards made of metal mesh) are correctly positioned and fixed;
   - check that the emergency stop function actuator operates correctly.

WARNING Tension the belt after three days of operation: improper tension will lead to premature wear on the transmission devices.

2. Checking the electrical system:
   - check that the supply conductors are properly fixed to the terminals of the isolating switch;
   - check the connections of the conductors in the equipotential earthing wiring safeguard;
   - check that the guards inside the electrical panel are correctly positioned and fixed;
   - check that the safety devices are receiving power and are active, and check their effectiveness.

After this series of checks has been carried out, the fan is ready for its first startup.

Commissioning

6.

WARNING The fan must not be used without first reading and understanding the user manual and becoming completely familiar with the controls.

6.1 Control devices

This chapter gives instructions on the control devices with which the electrical control panel must be fitted, which shall be done at the installation stage.
At the fitting stage, the installer must set up a control panel complying with the requirements of standard IEC EN 60439-1 and arrange the wiring of the fan in accordance with the instructions in standards IEC EN 60204-1 and IEC 60364.
The electrical circuit of the fan must generally be fitted with the devices indicated in *section 5.4*.

6.2 Instructions for machine use

Switching on and starting up

Before starting the machine:

- check that all the guards for the hazardous areas are in their correct positions;
- check that all the electrical safety components are in place and check their effectiveness by activating them;
- check the presence of the electricity supply.

To start the fan, go through the following procedure:

- turn the isolator switch to position On;
- press the fan starter button.

Normal stopping

In the event of necessity the fan can be stopped by operating the relative control device (stop), which shall be installed on the electrical panel.
Activating this control must cause the fan blade to stop rotating, but does not cause isolation of the power supply: the fan can be started again by pressing the start button.

In the event that the fan does not need to be used for an extended period of time, the following stop procedure must be used:

- operate the stop button
- operate the emergency stop button;
- open the main isolator switch (position "0") on the electrical panel and attach a padlock to the actuator.

WARNING

Interrupting the electricity supply, equivalent to isolating by the operator with the main switch, causes complete fan shutdown: restoring the electricity supply will not cause any movement in the machine.

Emergency stop

Operating the main emergency stop button causes the fan to stop moving.
The function is controlled by a red mushroom type button on a yellow background, provided with mechanical locking and release by turning. Operating it causes the instantaneous interruption of the power supply to the electric motor which makes the rotor turn (uncontrolled shutdown category 0 according to IEC EN 60204-1).

Resetting after stopping

1. Resetting after normal stopping
   After normal stopping the operating cycle must be reset by following the procedure described in *section 6.1*.

2. Resetting after emergency stop
   After an emergency stop, the operating cycle must be reset by following the procedure described below:
   - reset the actuator by which the emergency stop command was given (by turning the relative mushroom button);
   - for an exact reset sequence, refer to the instructions given in *section 6.1*.

Technical data

7.

7.1 Dimensions

EDC24HE

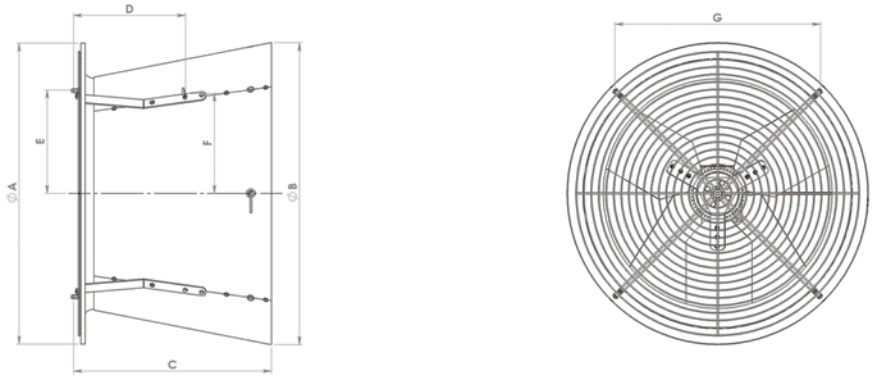

fig.7

EDC18HE

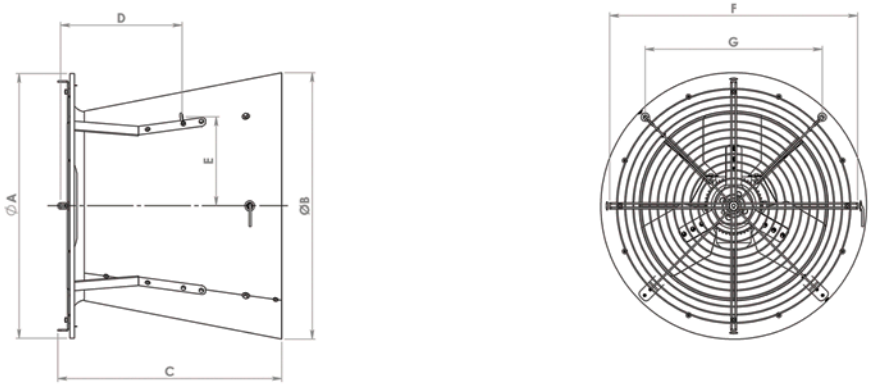

fig.8

Model	ØA	ØB	C	D	E	F	G
EDC24HE	800	800	550	350	275	275	550
EDC18HE	650	650	550	350	225	610	450

7.2 Technical specifications

		EDC24HE	EDC18HE	
		4 poles - 0.5Hp	4 poles - 0.33Hp	6 poles - 0.15Hp
Number of blades		3	3	3
Propeller diameter	mm [inch]	630 [24]	475 [18]	475 [18]
Weight of fully equipped fan	[kg]	24	18	17
Airflow at 0 Pa	m^3/h [cfm]	10,087 [5,937]	5,046 [2,970]	3,483 [2,050]
Specific performance at 0 Pa	m^3/h /W [cfm/W]	17.7 [10.4]	15.6 [9.2]	17.2 [10.1]
Max. operating temperature	°C [°F]	50 [122]	50 [122]	50 [122]
Nominal propeller speed 50/60Hz	[rpm]	1,400/1,630	1,370/1,650	950/-
IEC protective class of electric motor		IP55	IP55	IP55
Electric motor winding insulation grade		F	F	F

All values refer to 3 phase 50 Hz single speed motors.

7.3 Motor specifications

Model	Nominal Power [W]	[hp]	Phases	Speed	Frequency [Hz]	Voltage [V]	Current [A]	rpm	Poles
EDC24HE	370	0.5	3	multi*	50	230/400	1.9/1.1	1,360	4
	370	0.5	1	single multi (triac)	50	200/230	2.4	1,380	4
	370	0.5	3	single	50	230/400	1.9/1.1	1,400	4
	550	0.75	3	single	60	230/400	2.4/1.4	1,630	4
EDC18HE	240	0.33	3	single	50	230/400	1.35/0.78	1,370	4
	240	0.33	3	single	60	230/400	1.3/0.75	1,650	4
	240	0.33	1	single multi (triac)	50	230	2.1	1,320	4
	120	0.15	3	single	50	230/400	1.2/0.7	950	6

** Multi speed motors must be regulated with auto-transformer which is not supplied.*

Maintenance

8.

Task	Frequency
Visual inspection to check for defects	Daily
Clear dust	Every second month *Warning: No high pressure water to be sprayed on motor and bearings.*

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.
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.

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 sytems 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 definetely ordered from the manufacturer as spare parts and it cannot just be replaced with other components, even similar, not supplied by the constructor 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.

8.3 Replacement of propeller

If propeller damaging occurs, it is necessary to substitute the whole propeller because of the difficulty to balance it, in the field.

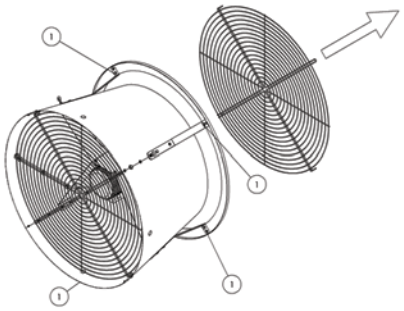

fig. 9

1. Unscrew q.ty 4 M06 screws (ref. 1) and remove rear safety mesh guard.

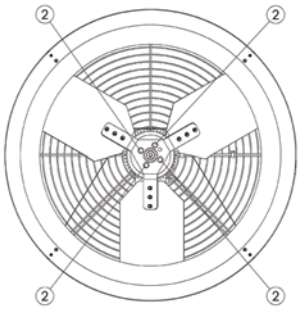

fig. 10

2. Unscrew q.ty 4 M08 screws and remove corresponding q.ty 4 Ø08 serrated washers (ref. 2) on the propeller hub.

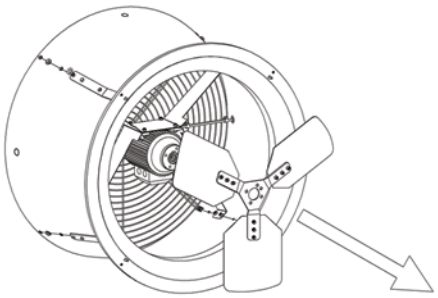

fig. 11

3. Remove the propeller.

8.4 Replacement of motor

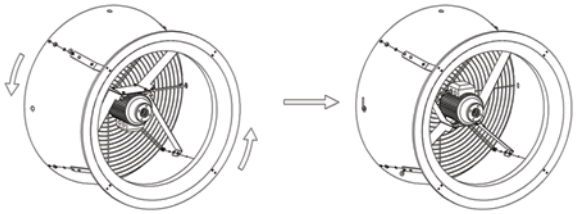

fig. 12

1. Follow the procedure illustrated to remove the propeller and then turn the fan upsdie-down. In this way the motor will not fall down when you will remove the bolts & screws as indicated at point 2.

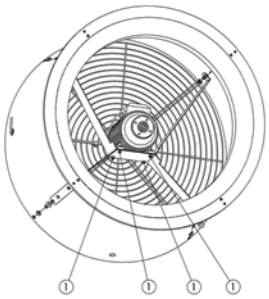

fig. 13

2. Unscrew and remove q.ty 4 screws, q.ty 4 washers and q.ty 4 nuts (ref.1) from the motor support.

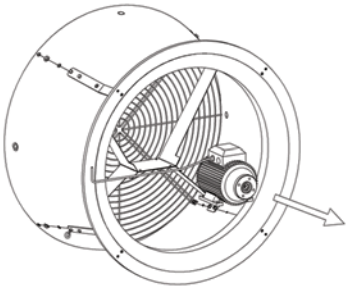

fig. 14

3. Remove motor from fan frame.

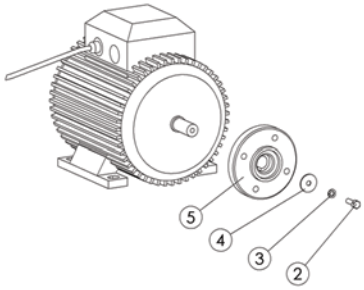

fig. 15

4. Unscrew and remove the screw (ref.2) and the washers (ref.3 & 4) from the motor axle and pull out the hub (ref.5).
5. Insert the new shutter bearing assembly.
6. Put back the shutter blades and fix the closing
7. Springs in their position.
8. Fit the cover side plates back (see n.1).

WARNING

The metal sheet used for constructing the fan housing and shutter blades have a minimum ZM120 galvanization surface treatment (equivalent of 9µm on each side) which corresponds to a corrosion resistance in salty mist of 1,000h. Whenever it is intended to use the fans in ambients characterized by the presence of particularily agressive agents (ammonia, clavolanic acid, etc.) the user, before installing the fan at the installation site must verify that the environmental conditions are compatible with the intended use of the materials that compose the fan.

NOTE

There are a number of steps that can greatly reduce or eliminate the white rust formation on the tightly packed components:

- keep the components dry;
- unpack the components to permit air circulation between the surfaces;
- stack the components to allow water to drain out;
- keep the packed components in such way to prevent moisture contact with the galvanized surface.

Spare part list

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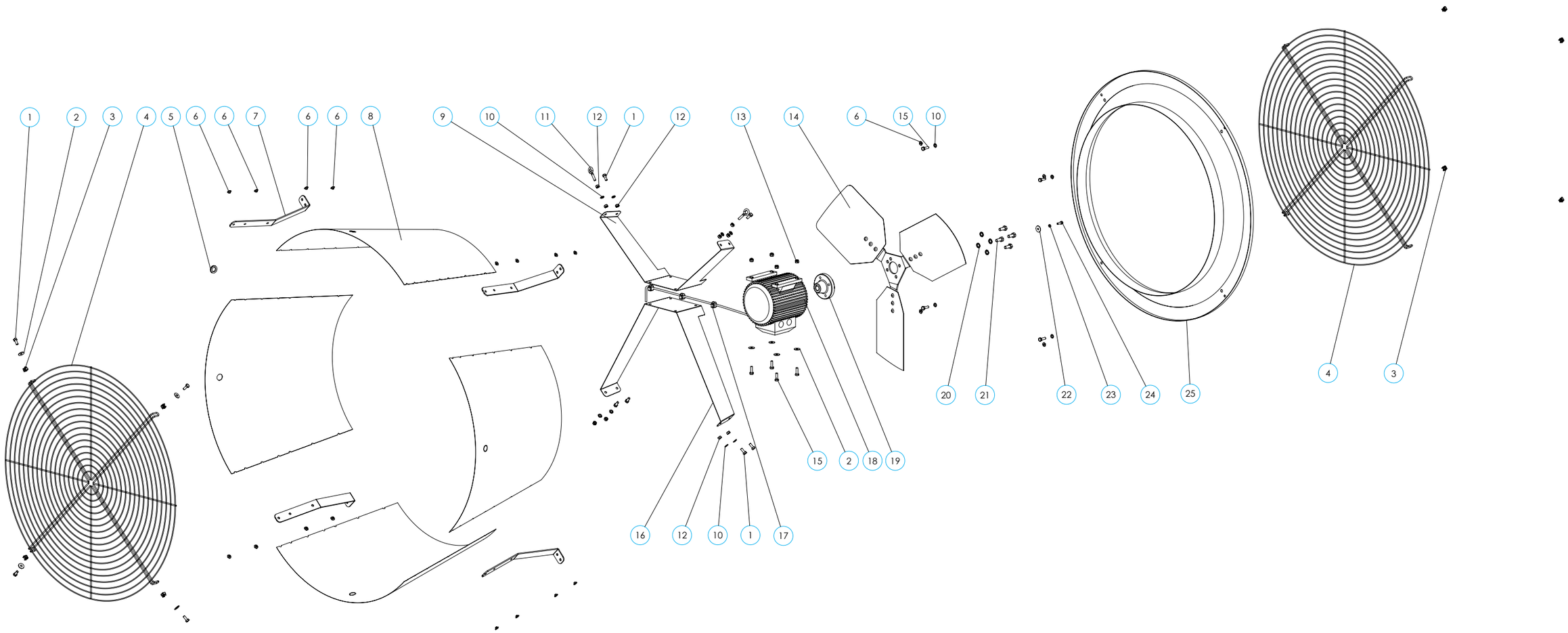

fig.16

REF.	DESCRIPTION	QUANTITY
1	HEXAGON SCREW M6X16	10
2	PLAIN WASHER Ø6X18	8
3	CAGE NUT M6	8
4	SAFETY MESH GUARD	2
5	RUBBER GROMMET	1
6	POP UP RIVET 6.4X8	20
7	CONE BRACKET	4
8	CONE SECTOR	4
9	MOTOR SLIDE - SMALL	1
10	SPRING WASHER Ø6	12
11	EYE SCREW M6X25	2
12	HEXAGON NUT THICK M6	10
13	SELF LOCKING NUT M6	4
14	PROPELLER	1
15	HEXAGON SCREW M6X20	8
16	MOTOR SLIDE - BIG	1
17	PLASTIC CLAMP 3,6X140	3
18	MOTOR	SEE TABLE 1
19	PROPELLER HUB	1
20	TOOTHED WASHER Ø8	4
21	HEXAGON SCREW M8X20	4
22	PLAIN WASHER Ø5X20	1
23	SPRING WASHER Ø5	1
24	HEXAGON SCREW M5X16	1
25	CONVEYOR	1
26	EUROEMME STICKER 131X18 *(not shown in the exploded view)*	1

TABLE 1: PROPELLER/MOTOR GROUP

PROPELLER MATERIAL		PROPELLER INCLINATION	MOTOR TYPE
ZINC MAGNESIUM	AISI 430	18°	3-PHASE 50HZ ONE SPEED - 0.37KW/0.50HP 4P
		18°	3-PHASE 50HZ MULTI-SPEED - 0.37KW/0.50HP 4P
		12°	ONE-PHASE 50HZ ONE SPEED/MULTI-SPEED - 0.37KW/0.50HP 4P
		12°	3-PHASE 60HZ ONE SPEED - 0.55KW/0.75HP 4P

Chapter9 Spare part list

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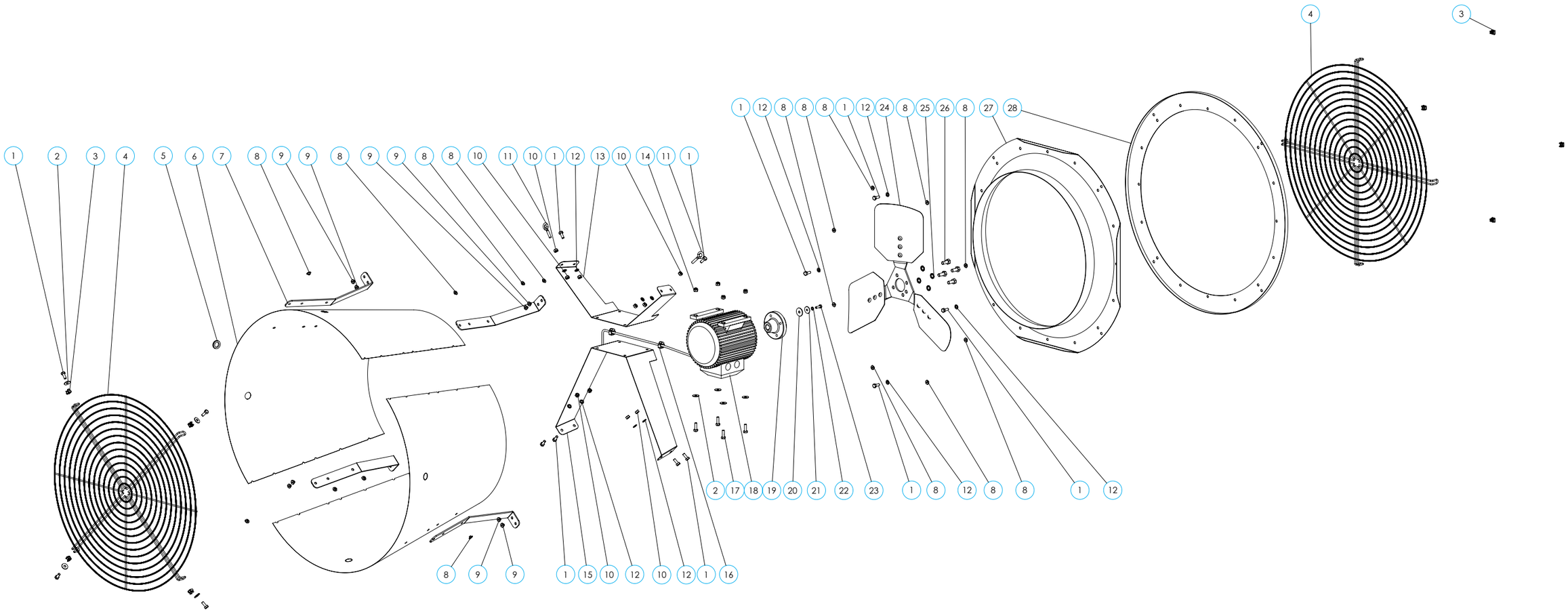

fig.17

REF.	DESCRIPTION	QUANTITY
1	HEXAGON SCREW M6X16	10
2	PLAIN WASHER Ø6X18	8
3	CAGE NUT M6	8
4	SAFETY MESH GUARD	2
5	RUBBER GROMMET	1
6	CONE SECTOR	2
7	CONE BRACKET	4
8	POP UP RIVET 6.4X8	16
9	POP UP RIVET 6.4X12	8
10	HEXAGON NUT THICK M6	10
11	EYE SCREW M6X25	2
12	SPRING WASHER Ø6	12
13	MOTOR SLIDE - SMALL	1
14	SELF LOCKING NUT M6	4
15	MOTOR SLIDE - BIG	1
16	PLASTIC CLAMP 3,6X140	2
17	HEXAGON SCREW M6X20	4
18	MOTOR	SEE TABLE 1
19	PROPELLER HUB	1
20	PLAIN WASHER Ø6X24	1
21	PLAIN WASHER Ø5X20	1
22	SPRING WASHER Ø5	1
23	HEXAGON SCREW M5X16	1
24	PROPELLER	1
25	TOOTHED WASHER Ø8	4
26	HEXAGON SCREW M8X20	4
27	CONVEYOR	1
28	CONVEYOR RING	1
29	EUROEMME STICKER 131X18 *(not shown in the exploded view)*	1

TABLE 1: PROPELLER/MOTOR GROUP

PROPELLER MATERIAL		PROPELLER INCLINATION	MOTOR TYPE
ZINC MAGNESIUM	AISI 430	18°	3-PHASE 50HZ ONE SPEED - 0.25KW/0.33HP 4P
		18°	ONE-PHASE 50HZ ONE SPEED - 0.25KW/0.33HP 4P
		12°	3-PHASE 60HZ ONE SPEED - 0.25KW/0.33HP 4P
		18°	3-PHASE 50HZ ONE SPEED - 0.18KW/0.25HP 6P

Warranty

10.

Warranty and technical assistance

Munters products are designed and built to provide reliable and satisfactory performance but cannot be guaranteed free of faults; although they are reliable products they can develop unforeseenable defects and the user must take this into account and arrange adequate emergency or alarm systems if failure to operate could cause damage to the articles for which the Munters plant was required: if this is not done, the user is fully responsible for the damage which they could suffer.
Munters extends this limited warranty to the first purchaser and guarantees its products to be free from defects originating in manufacture or materials for 1 year from the date of delivery, provided that suitable transport, storage, installation and maintenance terms are complied with. The warranty does not apply if the products have been repaired without express authorisation from Munters, or repaired in such a way that, in Munters' judgement, their performance and reliability have been impaired, or incorrectly installed, or subjected to improper use. The user accepts total responsibility for incorrect use of the products.
The warranty on products from outside suppliers fitted to EDCHE, (for example electric motors, etc.) is limited to the conditions stated by the supplier: all claims must be made in writing within eight days of the discovery of the defect and within 12 months of the delivery of the defective product. Munters has thirty days from the date of receipt in which to take action, and has the right to examine the product at the customer's premises or at its own plant (carriage cost to be borne by the customer).
Munters at its sole discretion has the option of replacing or repairing, free of charge, products which it considers defective, and will arrange for their despatch back to the customer carriage paid. In the case of faulty parts of small commercial value which are widely available (such as bolts, etc.) for urgent despatch, where the cost of carriage would exceed the value of the parts, Munters may authorise the customer exclusively to purchase the replacement parts locally; Munters will reimburse the value of the product at its cost price.

Munters will not be liable for costs incurred in demounting the defective part, or the time required to travel to site and the associated travel costs. No agent, employee or dealer is authorised to give any further guarantees or to accept any other liability on Munters' behalf in connection with other Munters products, except in writing with the signature of one of the Company's Managers.

WARNING

In the interests of improving the quality of its products and services, Munters reserves the right at any time and without prior notice to alter the specifications in this manual.

The liability of the manufacturer Munters ceases in the event of:

- dismantling the safety devices;
- use of unauthorised materials;
- inadequate maintenance;
- use of non-original spare parts and accessories.

Barring specific contractual terms, the following are directly at the user's expense:

- preparing installation sites;
- providing an electricity supply (including the protective equipotential bonding (PE) conductor, in accordance with CEI EN 60204-1, paragraph 8.2), for correctly connecting the equipment to the mains electricity supply;
- providing ancillary services appropriate to the requirements of the plant on the basis of the information supplied with regard to installation;
- tools and consumables required for fitting and installation;
- lubricants necessary for commissioning and maintenance.

It is mandatory to purchase and use only original spare parts or those recommended by the manufacturer.
Dismantling and assembly must be performed by qualified technicians and according to the manufacturer's instructions.
The use of non-original spare parts or incorrect assembly exonerates the manufacturer from all liability.

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, 2
18027 Chiusavecchia (IM), Italy
Tel: +39 0183 52 11
Fax: +39 0183 521 333
info@munters.it

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