TU

Manual for use and maintenance

+ CE Declaration of conformity

TU600 - TU800

Chimney fan

Ag/MIT/UmGB-2181-04/14 rev 1.0

Munters

TU600 - TU800

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.

Munters A/S 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 A/S

with registered offices in Nordvestvej, 3 - 9600 Aars, Denmark

(Company registration nr. DK 89 54 94 18)

DECLARES ON ITS OWN RESPONSIBILITY THAT THE APPARATUS

Designation	Chimney fan designed for moving air to control temperature and humidity in livestock.
Model	TU600 - TU800
Year of manufacture	2014

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

Aars, 5th April 2014

Lasse Kiel Madsen

Legal representative

1.1 Disclaimer

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

1.2 Introduction

Congratulations on your excellent choice of purchasing a TU600 - TU800 chimney fan!
In order to realize the full benefit from this product it is important that it is installed, commissioned and operated correctly. Before installation or using the fan, this manual should be studied carefully. It is also recommended that it is kept safely for future reference. The manual is intended as a reference for installation, commissioning and day-to-day operation of the fans.

1.3 Notes

Date of release: 2014.
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.

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;
- fans are intendended to be installed and used at an height higher than 2.7 meters from ground level;
- in case, for any reason, fans are installed or used at an height lower than 2.7 meters from level ground then, the constructor is exonerated from all responsability 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 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;
- fans should not be installed in places where children aged 14 or less are present.

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.

WARNING

Do not put anything inside the TU 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.

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.

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. After placing the motor in the working position, 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 fans are made of a self-supporting structure in steel, surrounded by a plastic housing. They are usually delivered in unassembled form. Follow the instructions in order to proper assemble them. Assembled fans shall not be stocked one upon the other, if they are delivered with or without packaging. Handling of the assembled 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 that forks are adequately protected for avoiding to damage fan parts;
- crane: fix adequate supports on the housing and then hook the lifting cable on them.

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 plastic, with steel supporting structure;
- propeller air foil design blades made in plastic; blades re-fixed to a corrosion proof aluminum hub;
- motor: single-phase or three-phases; 50 Hz; F class winding insulation, IP 55 IEC protective class;
- a version with high efficiency Munters Drive motor is available for TU600 and TU 800;
- a plastic damper assuring tightenness to air when fan is not in operation.

Operating conditions

4.

Chimney fans, such as the TU600 and TU800, are products to to extract the air from a structure, thereby creating air movement inside the structure which helps to keep under control temperature in livestock buildings.
Normal ambient temperature limits are –25°C to +50°C. Maximum altitude is 1000m 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.

Installation

5.

5.1 Electrical connections for standard motor

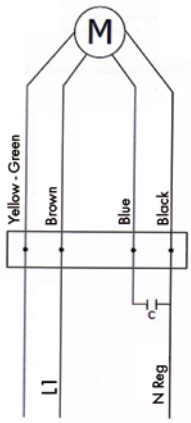


fig.1

With triac inverter
1x230v ac

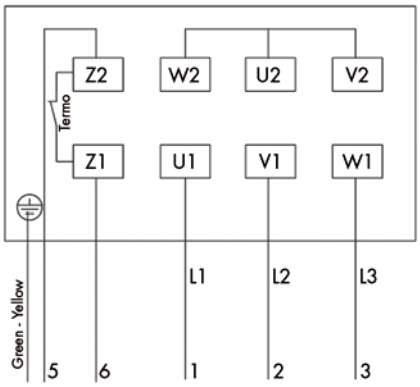


fig.2

With frequency inverter
3x400v ac

5.2 Electrical connections for Munters Drive motor

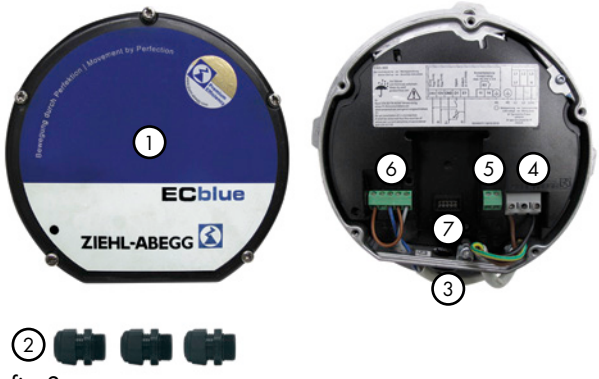
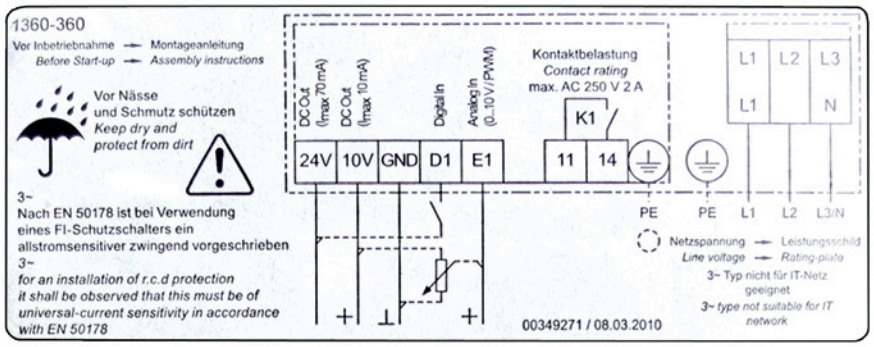


fig.3

1. Cover of controller housing;
2. 3 cable glands (3 x M16) included;
3. cable entry points with plastic fastener;
4. mains connection;
5. connection alarm relay;
6. connection controls;
7. slot for add-on module.



Procedure:

1. remove the cover from the controller housing for the connection;
2. all 3 cable entry points are in a sealed condition at delivery; remove plastic fastener if necessary, and insert cable gland, entry points that are not used must remain sealed;
3. insert and connect lines correctly;
4. attach cover of controller housing again carefully in correct position before startup.

WARNING

- Temperatures up to 85°C can be present on the controller housing;
- to connect, always use heat resistant wires or, as an alternative, silicon tubes;
- self-tapping screws are used for the 'PE' conductor connection; these cannot be loosened and sufficiently retightened infinitely;
- remants from installation and foreign object may not remain on the inside.

WARNING

For detailed electric connection instructions for Munters Drive motor refer to Munters Drive motor manual.

5.3 Assembly instructions

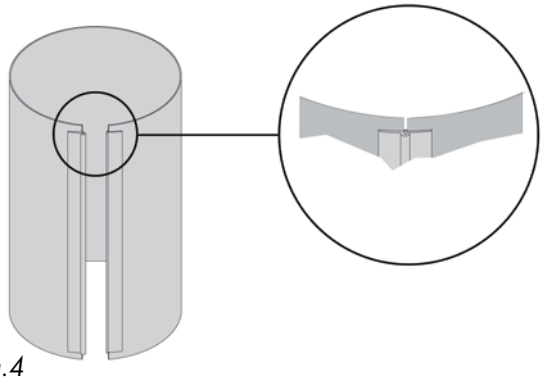
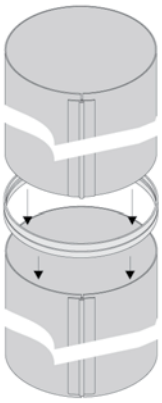


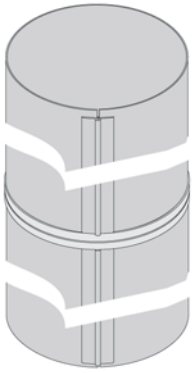
fig.4

Click the two rolling junctions together as in the zoom showing the cut of the pipe.



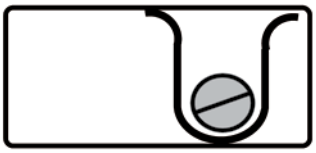
Push the sleeve down the pipe, and fasten it with 8 pcs. of sheet metal screws 4,8x16 (N136-121) and washers 5,3x15 stainless (02-420). Then push the next pipe into the sleeve and fasten with 8 pcs. of sheet metal screws 4,8x16 (N136-121) and washers 5,3x15 stainless (02-420).

fig.5



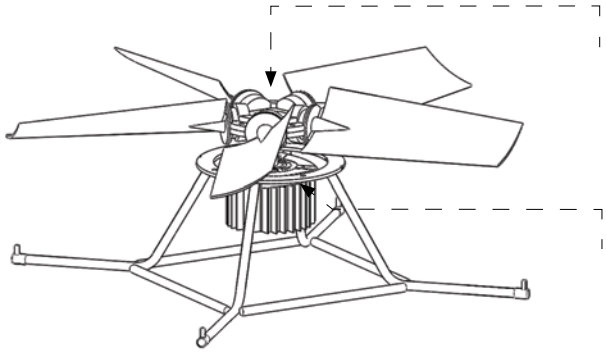
Assembled pipes.

fig.6



Mount 3 pcs. motor fittings inside the pipe in rough-bored holes.
(Figure illustrates motor suspension and cut of the pipe).

fig.7



- Fasten the fan on the shaft.
- Mount the flange on the motor with 4 set screw 6x16.

fig.8

5.4 Placement of fans

ROOF INSTALLATION

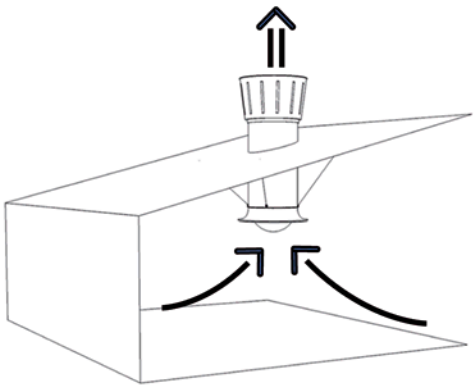


fig.9

CEILING INSTALLATION

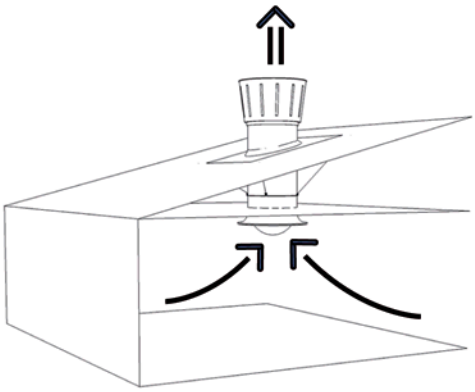


fig.10

FLOOR INSIDE INSTALLATION

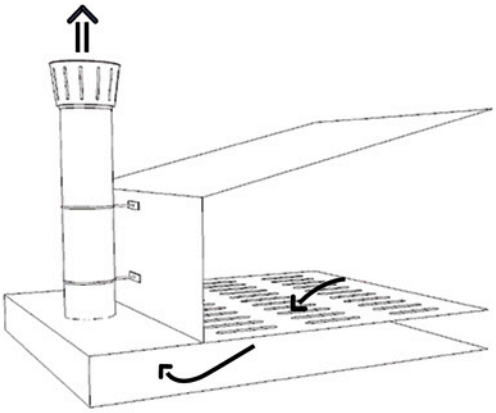


fig.11

FLOOR OUTSIDE INSTALLATION

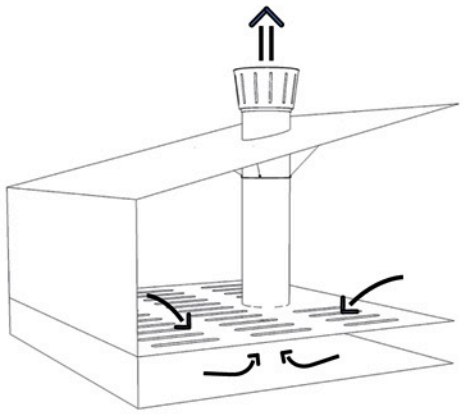


fig.12

NOTE

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

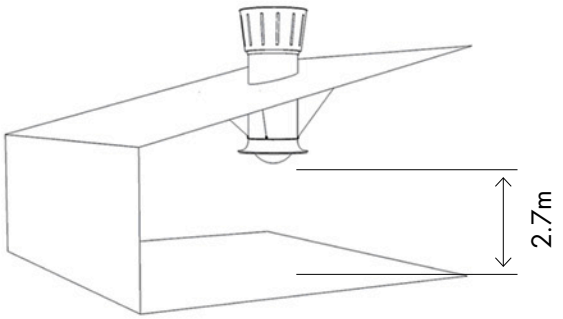


fig.13

5.5 Electrical wiring

The fan is delivered without an electrical control box. 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.

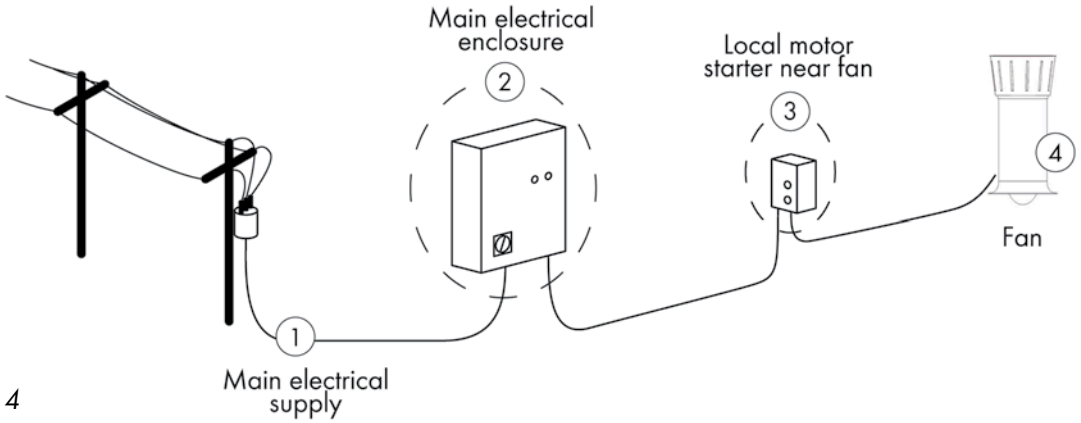


fig.14

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.

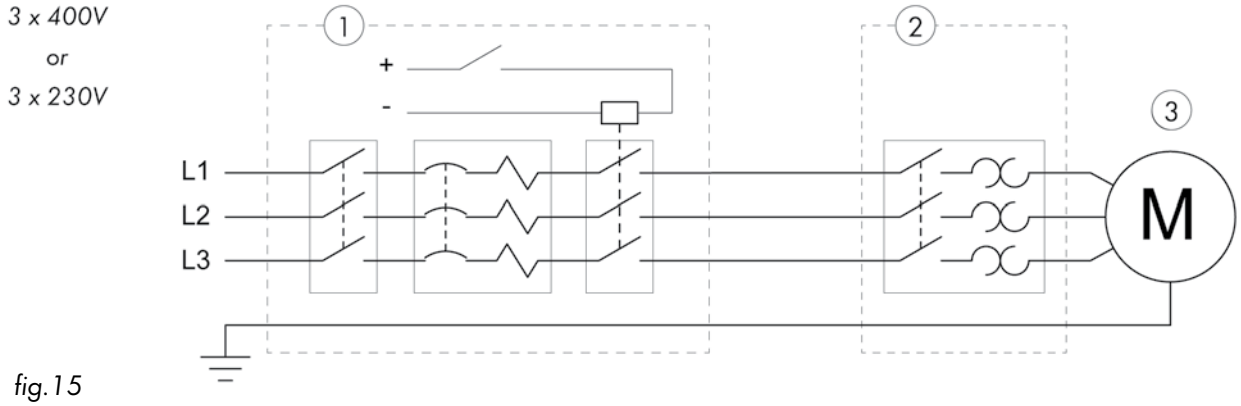


fig.15

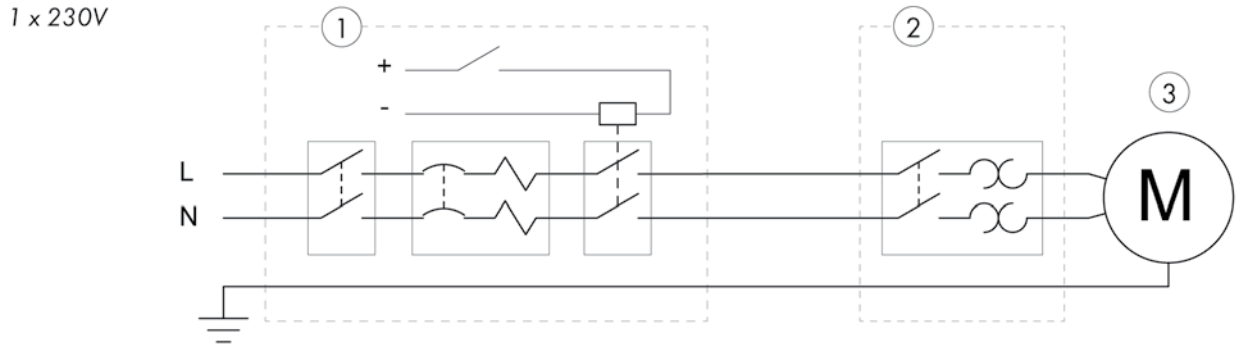


fig.16

(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.

Standard fan motors have the following voltage and frequency:

- 230/400V three-phase 50 Hz
- 230V single phase 50 Hz

WARNING

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

WARNING

Motor specifications are written on the label stuck on the motor. Before operating the fan, make sure the motor turns in a way to move the air from bell mount towards outside of the building. To change the direction of rotation of a three-phase motor it is necessary to change the connection of two of the phases.

Commissioning

6.

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

1. check if all the fans are secured tightly to the roof or metal structure;
2. ensure that all fans are installed according to safety requirements;
3. ensure that all electrical connections are done properly and comply with local regulations;
4. note in which direction the propellers are supposed to turn, in a way to move the air from bell mount towards outside of the building;
5. remove all obstacles from the front and back sides of the fans;
6. ensure that all people and animals are standing clear of the fans;
7. turn the electrical power to the fans on;
8. observe the direction in which the propeller of each of the fans are turning to ensure that it is in the same direction;
9. turn the electrical power to the fans off.

WARNING

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

Technical data

7.

7.1 Dimensions

ROOF/CEILING DIMENSIONS

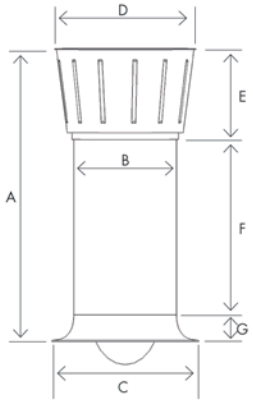


fig.17

Model	A	B	C	D	E	F	G	H
TU600	1,830	633	900	900	660	1,000	170	-
TU800	1,830	837	1,100	1,100	660	1,000	170	-

FLOOR INSIDE/OUTSIDE DIMENSIONS

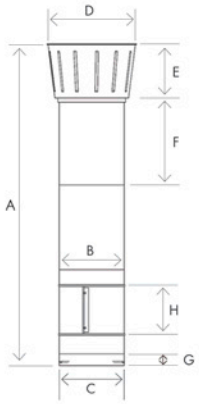


fig.19

Model	A	B	C	D	E	F	G	H
TU600	3,830	633	900	900	660	1,000	170	940
TU800	3,830	837	1,100	1,100	660	1,000	170	940

7.2 Technical specifications

		TU600			TU800				
Motor type		STD	Munters Drive		STD			Munters Drive	
Motor size	[W]	250	660		370	430	550	660	
Voltage	[V]	1×230	1×230		1×230	3×400	1×230	1×230	
Weight of fully equipped fan	[kg]	27	25		39			37	
Nominal propeller speed	[rpm]	900	1,000	500	900			1,000	500
Airflow at 0 Pa	[m^3/h] [cfm]	11,720 [6,898]	12,729 [7,492]	6,152 [3,621]	18,650 [10,977]	19,820 [11,666]	19,875 [11,698]	20,653 [12,156]	11,042 [6,499]
Airflow at 20 Pa	[m^3/h] [cfm]	10,740 [6,321]	12,090 [7,116]	4,553 [2,680]	17,230 [10,141]	18,290 [10,765]	18,329 [10,788]	19,364 [11,397]	8,741 [5,145]
Airflow at 40 Pa	[m^3/h] [cfm]	9,560 [5,627]	11,414 [6,718]	-	15,460 [9,099]	16,730 [9,847]	16,728 [9,846]	18,244 [10,738]	3,881 [2,284]
Specific performance at 0 Pa	[(m^3/h)/W] [cfm/W]	27.5 [16.2]	28.4 [16.7]	91.4 [53.8]	31.7 [18.6]	33.0 [19.4]	25.0 [14.7]	34.0 [20.0]	116.0 [68.3]
Specific performance at 20 Pa	[(m^3/h)/W] [cfm/W]	24.0 [14.1]	24.9 [14.7]	57.2 [33.7]	27.0 [15.9]	27.0 [15.9]	22.0 [12.9]	27.8 [16.4]	66.5 [39.1]
Specific performance at 40 Pa	[(m^3/h)/W] [cfm/W]	20.1 [11.8]	22.0 [13.0]	-	23.0 [13.5]	22.4 [13.2]	19.1 [11.3]	24.0 [14.1]	27.8[16.4]
Propeller Ø	[mm] [inch]	600 [23.6]			800 [31.5]				
Number of blades		10			5				
Propeller pitch	[°]	45			35		40	35	
Max operating temperature	[°C] [°F]	50 [122]							
IEC protective class of electric motor		IP55							

7.3 Motor specifications

Model	Nominal Power [W]	[hp]	Phases	Speed	Frequency [Hz]	Voltage [V]	Current [A]	rpm	Poles
TU600	250	0.33	1	multi[1]	50	230	2.3	900	6
	660[2]	0.90	1	multi[3]	50	230	-	1,000	-
TU800	370	0.50	1	multi[1]	50	230	3	900	6
	430	0.60	3	multi[4]	50	400	1.3	900	6
	550	0.75	1	multi[1]	50	230	4	900	6
	660[2]	0.90	1	multi[3]	50	230	-	1,000	-

[1] *With triac inverter.*
[2] *With Munters Drive motor.*
[3] *With built-in inverter.*
[4] *With frequency inverter.*

7.4 Data for Fan Eco Design Directive

Product information requirements → *(according to ANNEX I - 3.2 of regulation)*	1	2	3	4	optional	5	6a	6b	6c	7	8
Fan description*	Overall efficiency η%	Measurement category	Efficiency category	Efficiency grade	Target efficiency grade 2013 (2015)	VSD must be installed with the fan	Motor power input at optimum energy efficiency [W]	Flow rate at optimum energy efficiency [m^3/h]	Pressure at optimum energy efficiency [Pa]	RPM at optimum energy efficiency	Specific ratio
TU600 STD 250W	27.5	A	static	36	36 (–)	no	485	8,150	58.9	898	1
TU600 MUNTERS DRIVE 660W	41.1	A	static	49	36 (40)	yes	555	9,266	80.1	999	1
TU800 STD 370W	34.2	A	static	41.4	36 (40)	no	721	11,420	77.7	879	1
TU800 STD 430W	35.4	A	static	42.2	36 (40)	no	826	13,040	80.6	815	1
TU800 STD 550W	28.2	A	static	36	36(–)	no	925	13,699	67.8	809	1
TU800 MUNTERS DRIVE 660W	48.7	A	static	60.5	36 (40)	yes	136	7,211	28.9	540	1

* *Fans tested are configured according to COMMISSION REGULATION (EU) No 327/2011 of 30th March 2011 - ANNEX II - 1.5.*

Maintenance

8.

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 plastic damper and other components. Severe dust on the motor can cause overheating and subsequent motor failure.

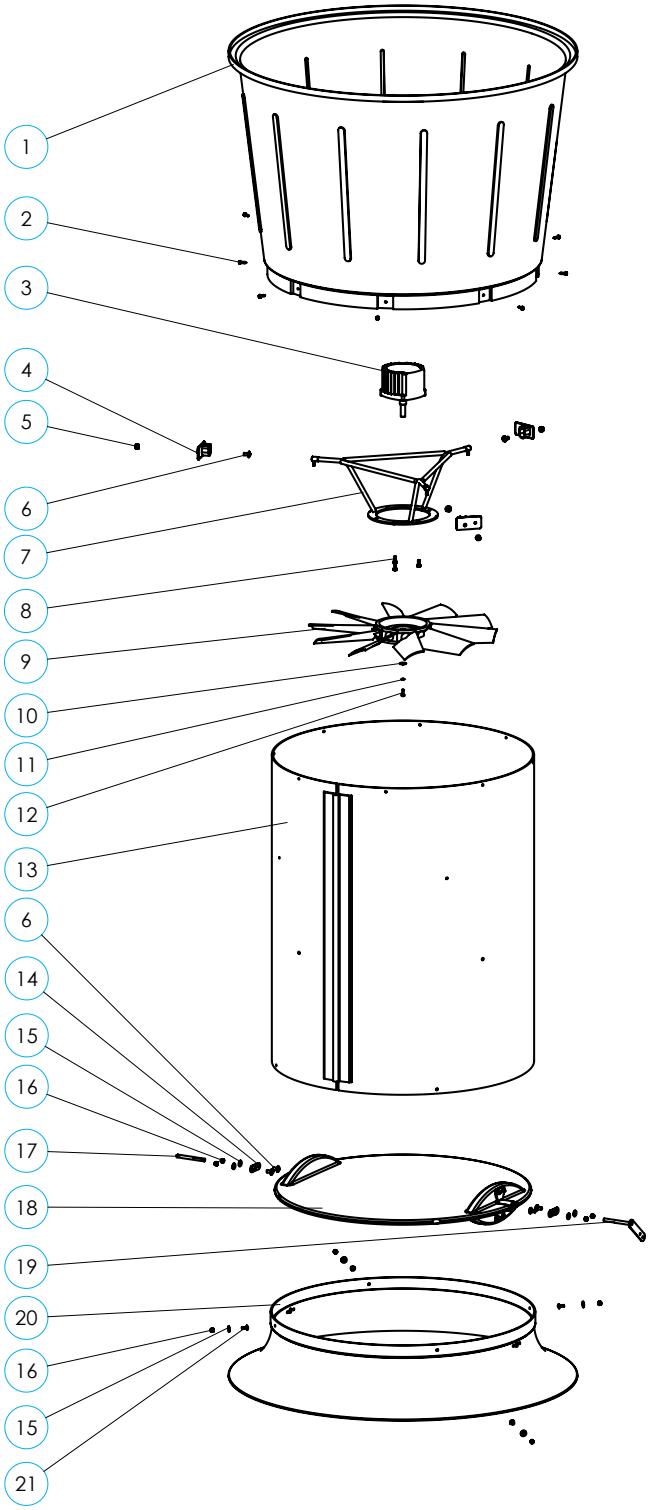
WARNING Keep motor body clean. Dust deposit on motor body will lead to overheating and failure of bearings and motor itself.
Do not use water for motor cleaning. Use compressed air only. Water spraying will cause rust inside the bearings and lead to their failure.

WARNING The fan components 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 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.

Spare part list

9.

TU600 MUNTERS DRIVE

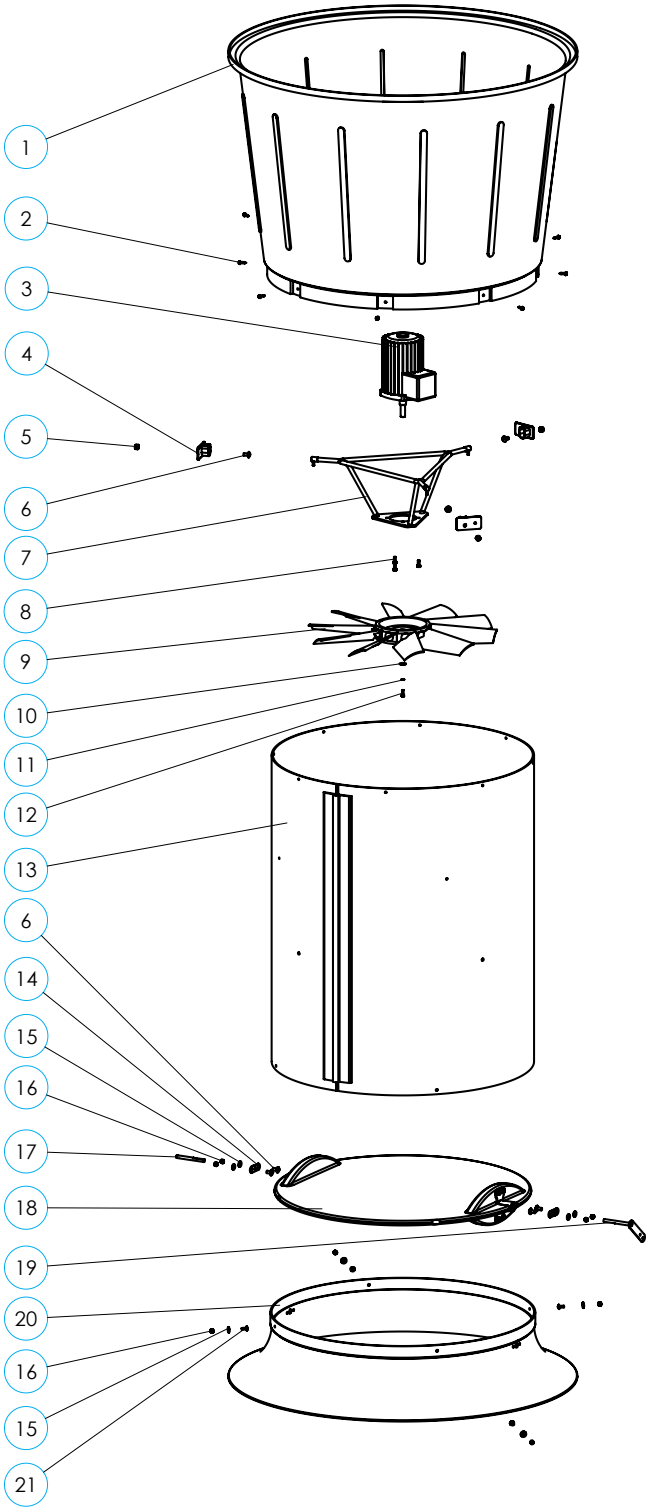


Ref.	Description	Q.ty
TU600 MUNTERS DRIVE		
1	CONE Ø600	1
2	SELF-TAPPINGSCREW 4.8×19	8
3	MUNTERS DRIVE MOTOR	1
4	MOTOR SUPPORT	3
5	SELF-LOCKING NUT M8	3
6	SLOTTED PAN HEAD SCREW M8×16	7
7	MUNTERS DRIVE MOTOR CAGE Ø600	1
8	HEXAGON SCREW M6X16	11
9	PROPELLER Ø600	1
10	WASHER Ø5X20	1
11	SPRING WASHER Ø5	1
12	HEXAGON SCREW M5X16	1
13	FAN BODY Ø600	1
14	BUSH FOR DAMPER SHAFT	2
15	WASHER Ø6×18	8
16	SELF-LOCKING NUT M6	8
17	AXLE	1
18	DAMPER Ø600	1
19	ACTUATOR SHAFT	1
20	AIR CONVEYOR Ø600	1
21	SLOTTED PAN HEAD SCREW M6×16	4

TABLE 3: PROPELLER/MOTOR GROUP

MOTOR			PROPELLER	
POWER [W]	RPM	PHASES×TENSION [V]	BLADES No.	INCLINATION [°]
660	1,000	1×230	10	45

TU600STD

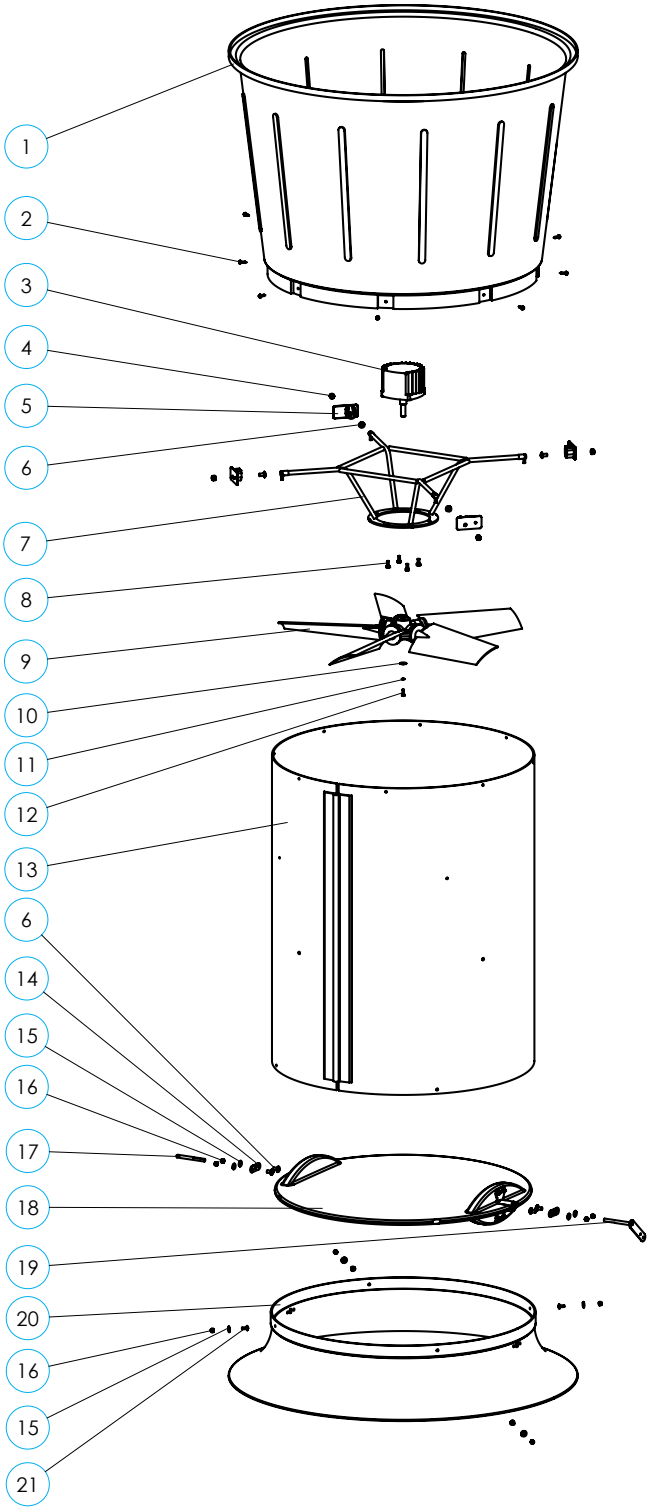


Ref.	Description	Q.ty
	TU600STD	
1	CONE Ø600	1
2	SELF-TAPPINGSCREW 4.8×19	8
3	MOTOR	1
4	MOTOR SUPPORT	3
5	SELF-LOCKING NUT M8	3
6	SLOTTED PAN HEAD SCREW M8×16	7
7	MOTOR CAGE Ø600	1
8	HEXAGON SCREW M6X16	11
9	PROPELLER Ø600	1
10	WASHER Ø5X20	1
11	SPRING WASHER Ø5	1
12	HEXAGON SCREW M5X16	1
13	FAN BODY Ø600	1
14	BUSH FOR DAMPER SHAFT	2
15	WASHER Ø6×18	8
16	SELF-LOCKING NUT M6	8
17	AXLE	1
18	DAMPER Ø600	1
19	ACTUATOR SHAFT	1
20	AIR CONVEYOR Ø600	1
21	SLOTTED PAN HEAD SCREW M6×16	4

TABLE 3: PROPELLER/MOTOR GROUP

MOTOR			PROPELLER	
POWER [W]	RPM	PHASES×TENSION [V]	BLADES No.	INCLINATION [°]
250	900	1×230	10	45

TU800 MUNTERS DRIVE

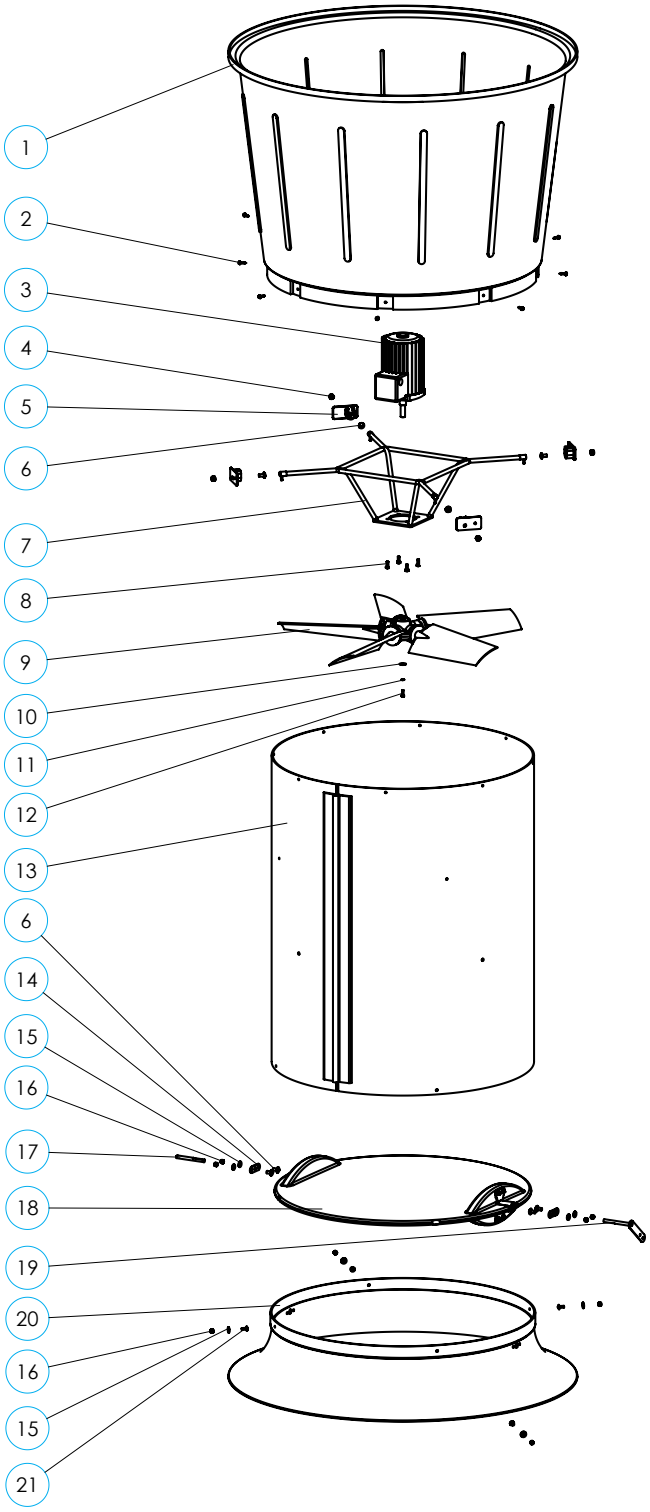


Ref.	Description	Q.ty
TU800 MUNTERS DRIVE		
1	CONE Ø800	1
2	SELF-TAPPINGSCREW 4.8×19	8
3	MUNTERS DRIVE MOTOR	1
4	SELF-LOCKING NUT M8	4
5	MOTOR SUPPORT	4
6	SLOTTED PAN HEAD SCREW M8×16	8
7	MUNTERS DRIVE MOTOR CAGE Ø800	1
8	HEXAGON SCREW M6X16	12
9	PROPELLER Ø800	1
10	WASHER Ø5X20	1
11	SPRING WASHER Ø5	1
12	HEXAGON SCREW M5X16	1
13	FAN BODY Ø800	1
14	BUSH FOR DAMPER SHAFT	2
15	WASHER Ø6×18	8
16	SELF-LOCKING NUT M6	8
17	AXLE	1
18	DAMPER Ø800	1
19	ACTUATOR SHAFT	1
20	AIR CONVEYOR Ø800	1
21	SLOTTED PAN HEAD SCREW M6×16	4

TABLE 1: PROPELLER/MOTOR GROUP

MOTOR			PROPELLER	
POWER [W]	RPM	PHASES×TENSION [V]	BLADES No.	INCLINATION [°]
660	1,000	1×230	5	35

TU800STD



Ref.	Description	Q.ty
	TU800STD	
1	CONE Ø800	1
2	SELF-TAPPINGSCREW 4.8×19	8
3	MOTOR	1
4	SELF-LOCKING NUT M8	4
5	MOTOR SUPPORT	4
6	SLOTTED PAN HEAD SCREW M8×16	8
7	MOTOR CAGE Ø800	1
8	HEXAGON SCREW M6X16	12
9	PROPELLER Ø800	1
10	WASHER Ø5X20	1
11	SPRING WASHER Ø5	1
12	HEXAGON SCREW M5X16	1
13	FAN BODY Ø800	1
14	BUSH FOR DAMPER SHAFT	2
15	WASHER Ø6×18	8
16	SELF-LOCKING NUT M6	8
17	AXLE	1
18	DAMPER Ø800	1
19	ACTUATOR SHAFT	1
20	AIR CONVEYOR Ø800	1
21	SLOTTED PAN HEAD SCREW M6×16	4

TABLE 2: PROPELLER/MOTOR GROUP

MOTOR			PROPELLER	
POWER [W]	RPM	PHASES×TENSION [V]	BLADES No.	INCLINATION [°]
370	900	1×230	5	35
430	900	3×400	5	35
550	900	1×230	5	40

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 TU600 and TU800, (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 A/S
Nordvestvej, 3
9600 Aars, Denmark
Tel: +45 986 233 11
Fax: +45 986 213 54
aghort@munters.dk

TU600 and TU800 exhaust fans are developed and produced by Munters A/S, Denmark

www.munters.com

Australia Munters Pty Limited, Phone +61 2 8843 1594, Brazil Munters Brasil Industria e Comercio Ltda, Phone +55 41 3317 5050, Canada Munters Corporation Mason, Phone +1 517 676 7070, China Munters Air Treatment Equipment (Beijing) Co. Ltd, Phone +86 10 80 418 000, Denmark Munters A/S, Phone +45 9862 3311, India Munters India, Phone +91 20 3052 2520, Indonesia Munters, Phone +62 818 739 235, Italy Munters Italy S.p.A., Chiusavecchia, Phone +39 0183 52 11, Japan Munters K.K., Phone +81 3 5970 0021, Korea Munters Korea Co. Ltd., Phone +82 2 761 8701, Mexico Munters Mexico, Phone +52 818 262 54 00, Russia Munters AB, Phone +7 812 448 5740, Singapore Munters Pte Ltd., Phone +65 744 6828, South Africa and Sub-Sahara Countries Munters (Pty) Ltd., Phone +27 11 997 2000, Spain Munters Spain S.A., Phone +34 91 640 09 02, Sweden Munters AB, Phone +46 8 626 63 00, Thailand Munters Co. Ltd., Phone +66 2 642 2670, Turkey Munters Form Endüstri Sistemleri A.Ş, Phone +90 262 751 3750, USA Munters Corporation Mason, Phone +1 517 676 7070, Vietnam Munters Vietnam, Phone +84 8 3825 6838, Export & Other countries Munters Italy S.p.A., Chiusavecchia Phone +39 0183 52 11

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