

User's Manual

DRF(I)-OV



DESTRATIFICATOR

CONTENTS

Safety requirements	3
Introduction	5
Use	5
Delivery set	5
Designation key	5
Technical specifications	6
Design and operating logic	7
Mounting and set-up	7
Connection to power mains	9
Technical maintenance	9
Troubleshooting	10
Storage and transportation rules	10
Manufacturer's warranty	11
Acceptance certificate	12
Seller information	12
Mounting certificate	12
Warranty card	13

SAFETY REQUIREMENTS

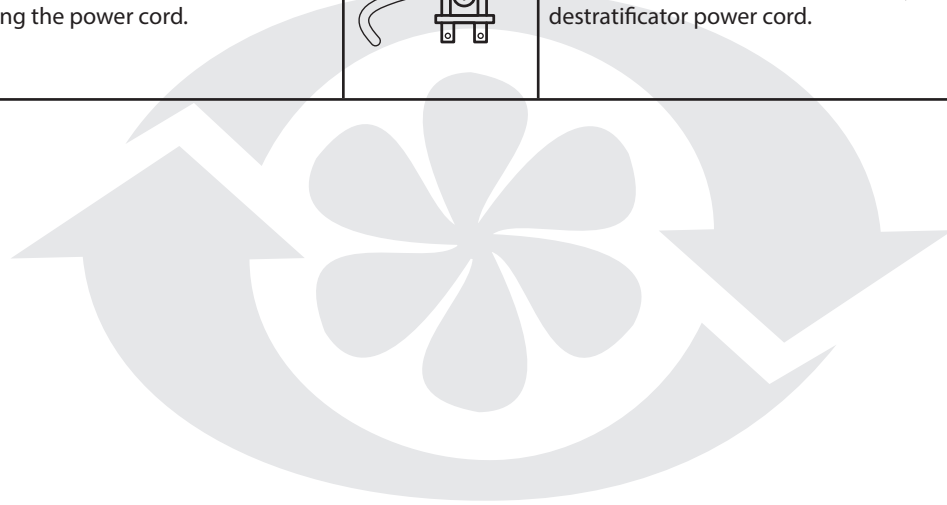
- Read this User's Manual carefully prior to the operation and installation of the Destratificator (hereinafter «Destratificator»).
- Installation and operation of the destratificator shall be performed in accordance with the present User's Operation Manual as well as the provisions of all the applicable local and national construction, electrical and technical codes and standards.
- The warnings contained in the present User's Manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the safety regulations may result in an injury or destratificator damage.
- Upon familiarization keep the User's Manual for the entire service life of the destratificator.
- While transferring equipment control the User's Manual must be turned over to the receiving operator.

The symbols used in the present User's Manual have the following meaning:

	ATTENTION!
	RESTRICTED!

DESTRATIFICATOR INSTALLATION SAFETY PRECAUTIONS

	The destratificator must be disconnected from the power mains prior to every installation or repair operation.		The destratificator must be connected to earth!
	The destratificator must not be operated outside the temperature envelope stated in the User's Manual or in aggressive or explosive environments.		Do not use damaged equipment or conductors to connect the destratificator to the power mains.
	While installing the destratificator follow the safety regulations specific to the use of power tools.		Unpack the destratificator with care.
	Do not change the power cord length at your own discretion. Do not bend the power cord. Avoid damaging the power cord.		Do not position any heating devices or other equipment in close proximity to the destratificator power cord.



DESTRATIFICATOR OPERATION SAFETY PRECAUTIONS

	Do not touch the regulator or the control panel with wet hands. Do not carry out destratificator maintenance with wet hands.		Do not wash the destratificator with water. Avoid penetration of water onto the electric parts of the destratificator.
	Use the destratificator only as intended by the manufacturer!		Disconnect the destratificator from the power mains prior to any technical maintenance.
	Do not let children operate the destratificator!		Keep the power cord intact while operating the destratificator. Do not put any foreign objects on top of the power cord.
	Do not store any flammable gases or highly flammable substances in close proximity to the destratificator.		Do not direct the air flow generated by the destratificator onto combustion equipment or burning candles.
	Should the destratificator generate any unusual sounds, smells or smoke disconnect it from the power mains and contact the service centre.		Check the destratificator for secure installation from time to time in case of prolonged operation.
	Do not block the air passage while the destratificator is working.		

INTRODUCTION

The present User's Manual contains the technical details, operating instructions and technical specification for DRF-OV and DRFI-OV destratificator.

USE

A destratificator is a device intended to minimize the heat loss by cancelling the temperature differential on the premises. destratificators are essential elements of energy-saving solutions for buildings and premises.

Such units are used to force the warm air accumulated under the ceiling toward the lower part of the space. By ensuring an even temperature in the entire space a destratificator helps to reduce the heating costs. In the warm season destratificators are used to supply fresh air into a specific zone thus creating a favorable microclimate in the ventilated area.

The destratificator is designed for continuous operation without disconnection from the power mains.

The air being handled must not contain any combustible or explosive mixtures, chemical fumes, sticky substances, fibrous materials, coarse dust, soot, fat or any environment prolific for the formation of harmful substances (toxic substances, dust and pathogens).

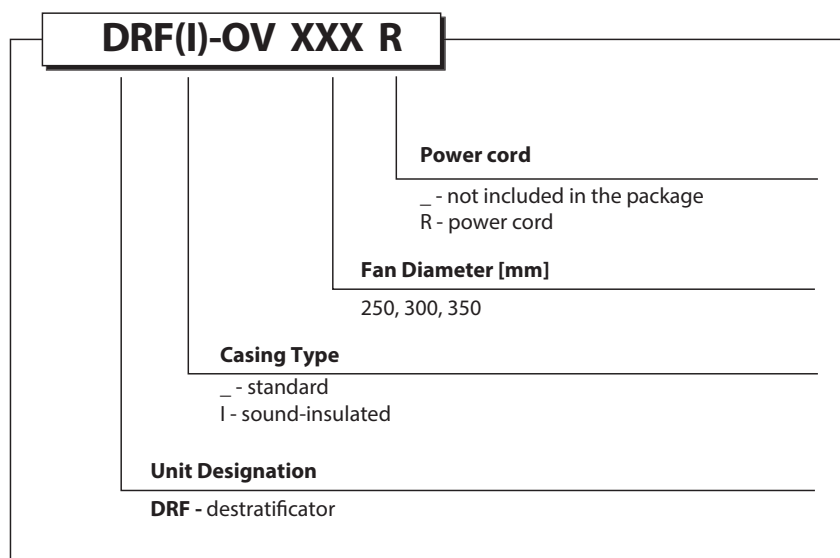


**THE DESTRATIFICATOR IS NOT INTENDED FOR OPERATION BY CHILDREN OR ANY PERSONS WITH LIMITED SENSORY OR MENTAL CAPACITY AS WELL PERSONS LACKING THE REQUIRED TRAINING.
THE DESTRATIFICATOR MUST BE HANDLED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE SAFETY BRIEFING.
THE CHOICE OF DESTRATIFICATOR INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED.**

DELIVERY SET

- destratificator — 1 piece;
- Mounting kit — 1 piece:
 - Cable with a threaded tip, 3 m;
 - Fastenings;
- Safety kit — 1 piece:
 - Cable with a loop, 3 m;
 - Fastenings;
- User's Manual - 1 piece;
- Shipping Box - 1 piece;
- Power cord (optional) — 1 piece.

DESIGNATION KEY



TECHNICAL SPECIFICATIONS

The destratificator is designed for operation in an enclosed area at ambient temperatures from -0 °C to + 45 °C at relative humidity of up to 80% (at +25 °C).

The unit meets the requirements of IPX4 hazardous parts access and water ingress protection standard.

The unit is rated electric hazard protection Class I.

The main outside and connecting dimensions as well as the appearance and technical parameters of the unit are given on Figure 1 and in Tables 1 and 2.

The destratificator undergoes continuous improvement - therefore, some models may slightly differ from the ones described herein.

Table 1. Technical Specifications

Type	DRF-OV 250 DRFI-OV 250	DRF-OV 300 DRFI-OV 300	DRF-OV 350 DRFI-OV 350
Voltage [V] / 50 Hz	230		
Power Consumption [W]	50	75	140
Current [A]	0,22	0,35	0,65
Maximum Air Flow [m ³]	800	1340	2500
Rotation Speed [min ⁻¹]	1380	1350	1380
Max. Handled Air Temperature [°C]	60		
Protection Rating	IP X4		

Table 2. Outside and Connecting Dimensions

Destratificator Type	Dimensions [mm]						Weight [kg]
	A	H	H1	D	D1	D2	
DRF-OV 250	390	524	386	341	260	9,1	6,0
DRF-OV 300	442	620	456	392	316		7,2
DRF-OV 350	490	705	516	442	360		9,7
DRFI-OV 250	456	626	468	384	302		11,0
DRFI-OV 300	506	701	518	434	352		14,5
DRFI-OV 350	556	776	569	484	402		17,0

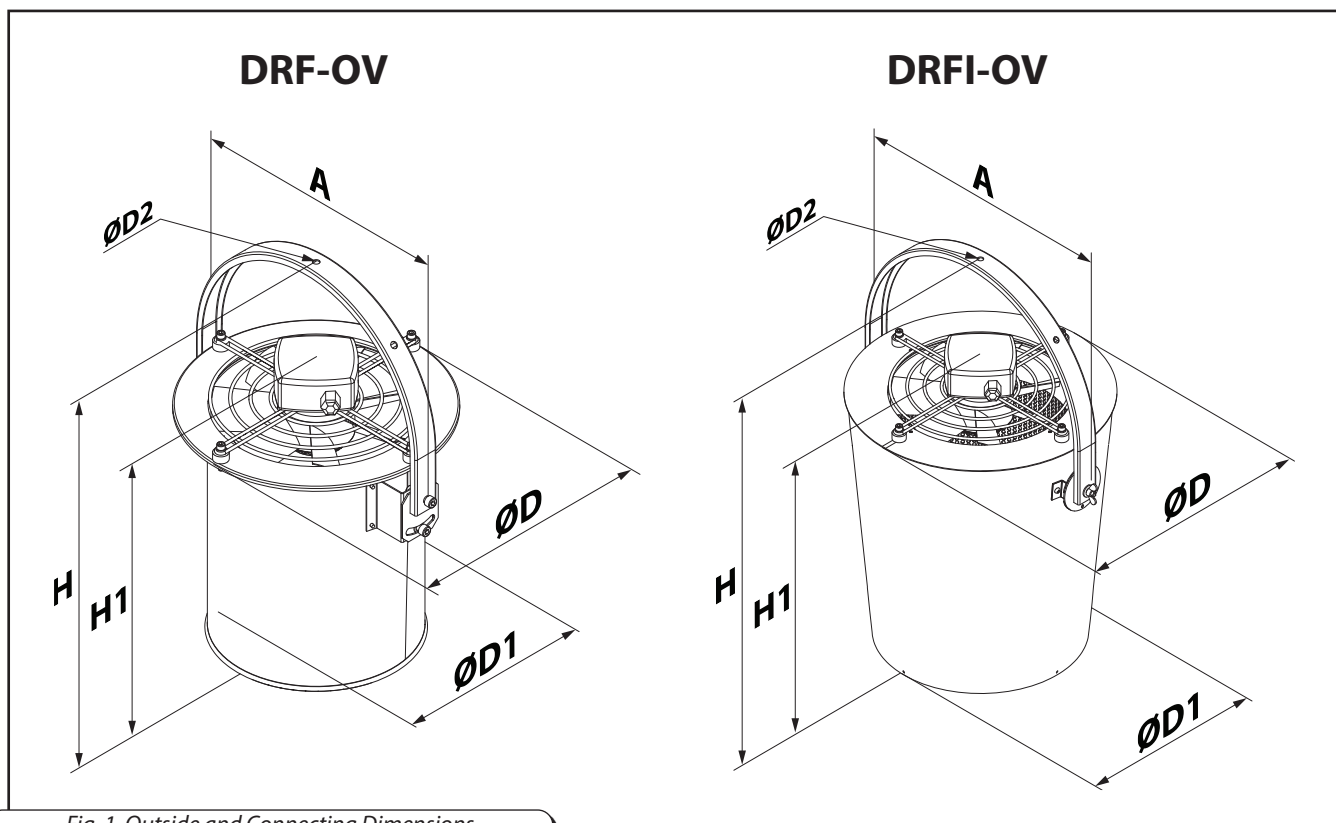


Fig. 1. Outside and Connecting Dimensions

The destratificator (see Fig. 2) consists of an axial fan attached to the casing via the vibration mounts. The destratificator has a polymer-coated steel casing.

The destratificator is equipped with a single-phase asynchronous motors with an external rotor and an axial impeller. The motor is equipped with built-in thermal protection enabling its automatic restarting and utilizes rolling-element bearings. The motor protection class is IP 44.

The DRFI-OV casing has special perforation and a sound-insulating layer of mineral wool to reduce the noise generated by the axial fan. The DRFI-OV destratificator has a flow straightener at the discharge which ensures direct air flow and maximum air throw distance.

The destratificator is mounted by means of the bow bracket (DRFI-OV can be fixed with 15° steps) as well as the mounting and the safety cables with threaded joints each 3 m long.

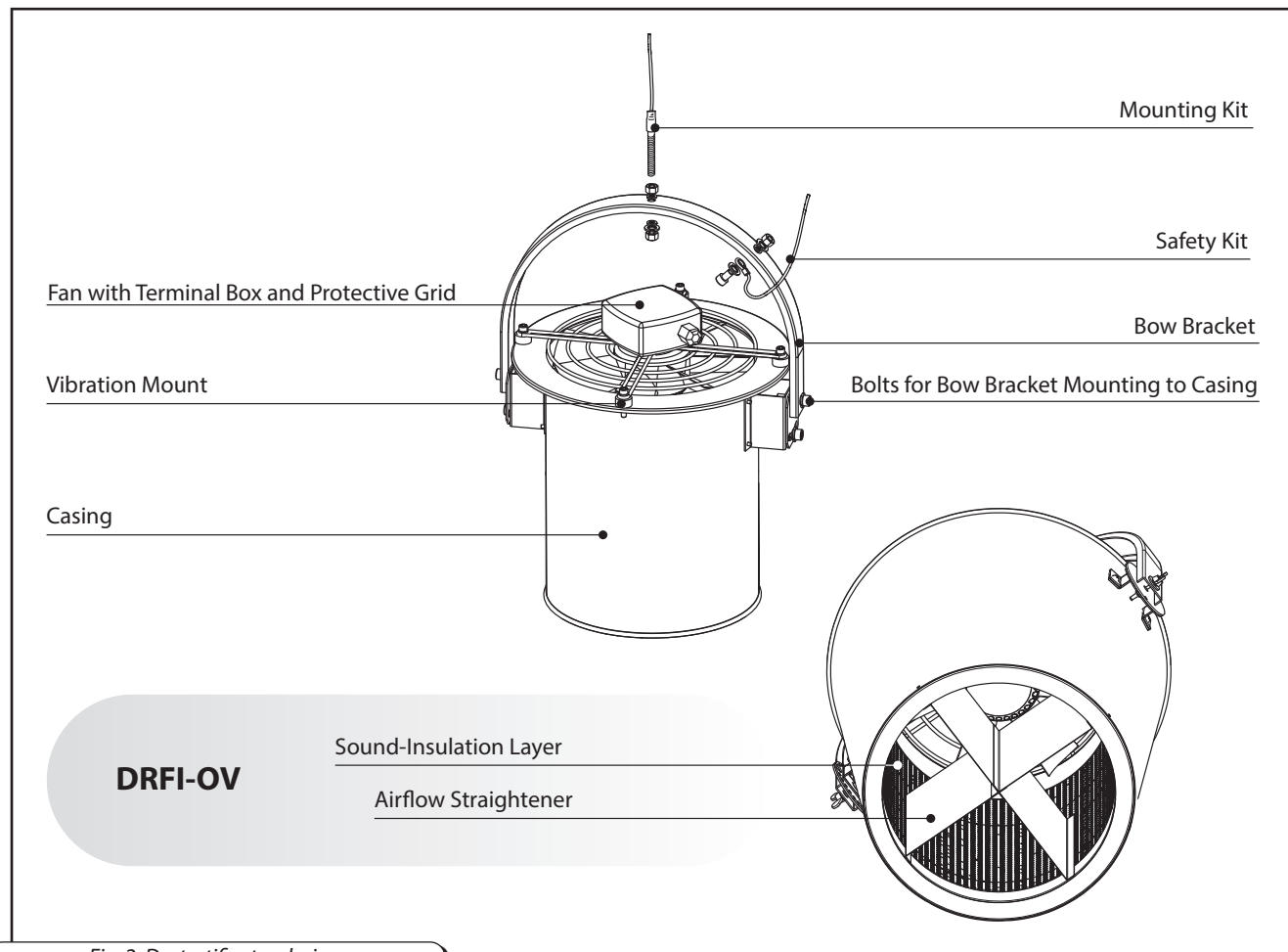


Fig. 2. Destratificator design

MOUNTING AND SET-UP

Having unpacked the destratificator and prior to installation:

- Read the User's Operation Manual carefully;
- Check for signs of transit damage;
- Manually check the impeller for smooth rotation.
- Check the load-bearing structures at the installation site for adequate strength.

Follow the safety regulations during the make-ready procedures and destratificator operation.

Installation:

The destratificator is designed for installation on premises protected against atmospheric phenomena. The unit is installed under the ceiling of the premises with the airflow nozzle down.

The destratificator is intended to be rigidly mounted to the load-bearing structure or suspended by means of the mounting kit (included in the delivery package). Mounting the destratificator on two two cables allows the additional benefit of unit angle correction by adjusting the safety cable length.

- Attach the destratificator by the bow bracket;
- Secure the destratificator to the threaded bar with 2 nuts (see Fig. 3.1);
- Avoid deformation of the destratificator elements during installation;
- Attach one end of the safety cable to the building structures;
- Attach the other end of the safety cable to the destratificator bracket (Fig. 3.2);

- Loosen the fastening bolts between the destratificator and the bracket, turn the destratificator and direct its nozzle toward the intended air supply area (see Fig. 3.3);
- Tighten the bolts between the casing and the bracket.

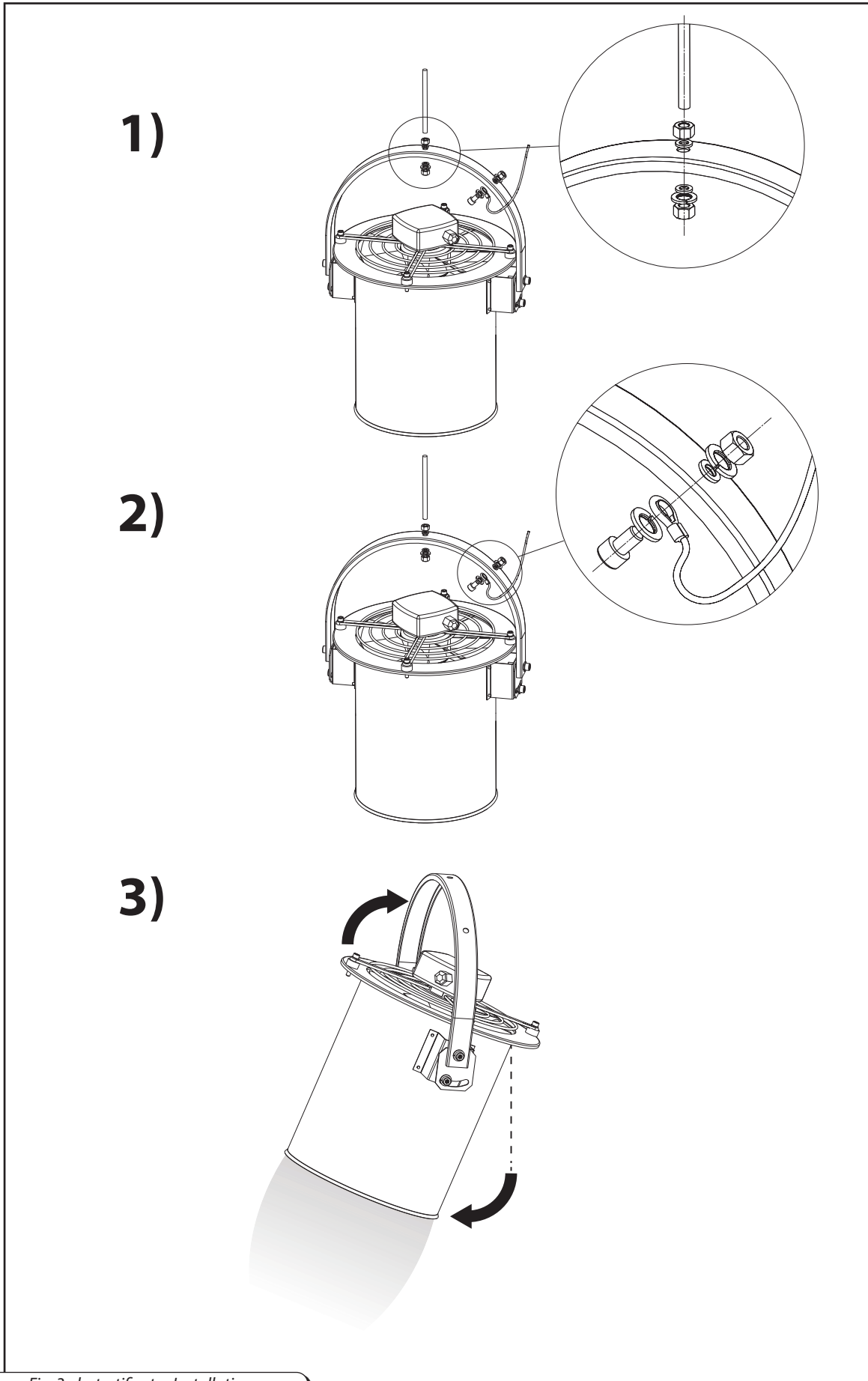


Fig. 3. destratificator Installation

CONNECTION TO POWER MAINS



THE DESTRATIFICATOR MUST BE CONNECTED TO THE POWER MAINS ONLY BY QUALIFIED PERSONS HAVING BEEN MADE FAMILIAR WITH THE PRESENT OPERATION MANUAL.

THE UNIT IS INTENDED FOR CONNECTION TO AC MAINS SUPPLYING THE VOLTAGE COMPLIANT WITH THE TECHNICAL SPECIFICATION CHART.

CHECK THE ENTIRE POWER CORD LENGTH FOR CHOKING. DO NOT SWITCH ON THE DESTRATIFICATOR IF THE POWER CORD IS DAMAGED.

DISCONNECT THE DESTRATIFICATOR FROM THE POWER SUPPLY PRIOR TO ANY WORK ON THE UNIT! THE NOMINAL ELECTRICAL PARAMETERS OF THE DESTRATIFICATOR ARE GIVEN ON THE MANUFACTURER'S LABEL. ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.

The destratificator is intended for connection to a single-phase 230 V/50 Hz AC mains.

The destratificator connection must be made using durable, insulated and heat-resistant conductors (cables and wires). The external lead-in (230V/50Hz) must be equipped with an automatic cutout switch built into the stationary wiring to disconnect all the mains phases. The QF external switch position (see Fig. 4) must ensure free access for quick power-off of the unit.

The recommended automatic switch nominal current is 1.0 A. The wire section is 0.75 mm². However, the conductor selection shall be based on the maximum permissible wire heating depending on the wire type, its insulation, length and installation method (i.e. overhead, in pipes or inside the walls).

The destratificator connections are made on the X1 terminal block mounted inside the terminal box on the destratificator casing in strict accordance with the electrical connection diagram (see Fig. 4). The electrical connections diagram sticker is located inside the terminal box.

The speed adjustment (continuous and stepped) is performed by means of a thyristor or autotransformer speed regulator. The same regulator device can be used for connecting several destratificators simultaneously provided that their combined capacity and working current remain within the nominal parameters of the speed regulator.

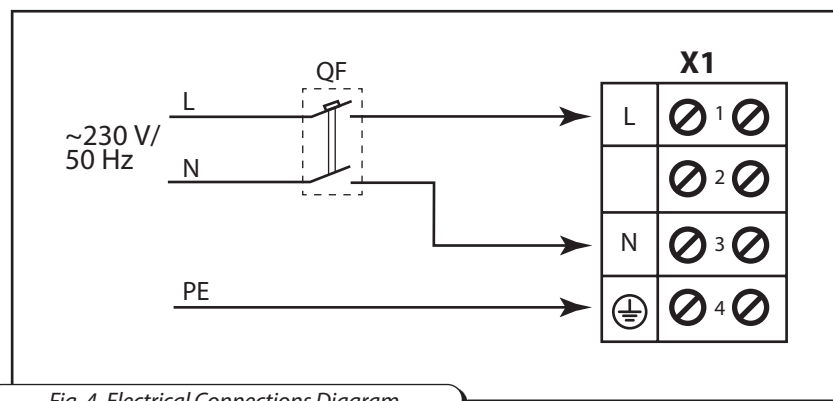


Fig. 4. Electrical Connections Diagram

TECHNICAL MAINTENANCE

The technical maintenance and repair of the destratificator may commence only after its disconnection from the power mains and all the rotating parts coming to a complete halt.

The technical maintenance includes periodic cleaning of the surfaces from accumulated dust and dirt.

The recommended annual maintenance should include:

- Checking the tightness of the fastening bolts and their tightening, if necessary;
- Checking the fan blades for contamination and their cleaning, if necessary.

TROUBLESHOOTING
Table 3. Possible Malfunctions and Their Elimination

Problem	Possible Reasons	Fault handling
Fan will not start	The unit is not connected to the power mains.	Make sure that the unit is properly connected to the power mains and make any corrections, if necessary.
	Motor seizure.	Switch off the destratificator. Eliminate the reason that has caused the motor seizure. Switch on the destratificator again.
The automatic breaker activates upon the unit power-up	Excessive electric current consumption caused by a short circuit.	Switch off the destratificator. Contact the service centre.
Noise and vibration	Fan impeller contaminated.	Clean the fan impeller.
	Loose screw connections.	Check the fastening screws and tighten, if necessary.

STORAGE AND TRANSPORTATION RULES

The destratificator must be stored in the original packing in a ventilated area at the temperature from +5 °C to +40 °C.

The air must not contain any vapors or admixtures which may lead to corrosion or compromise the connection integrity.

Use only suitable lifting equipment for handling operations to prevent damage to the unit. Follow the applicable moving regulations specific to the cargo type while loading and unloading.

The units can be carried by any transport provided their adequate protection from atmospheric precipitation and mechanical damage. Avoid jolts and collisions while loading and unloading.

MANUFACTURER'S WARRANTY

The manufacturer hereby warrants normal destratificator operation over the period of 24 months from the retail sale date provided the user's observance of the transportation, storage, installation and operation regulations.

Should any malfunctions occur in the course of the destratificator operation through the manufacturer's fault during the warranty period the user is entitled to elimination of faults by means of warranty repair performed by the manufacturer.

The warranty repair includes work specific to elimination of faults in the destratificator operation to ensure its intended use by the user within the warranty period. The faults are eliminated by means of replacement or repair of the complete destratificator or the faulty part of such a destratificator.

The warranty repair does not include:

- Routine maintenance;
- destratificator installation/dismounting;
- destratificator setup.

To benefit from warranty repair the user must provide the destratificator, the User's Manual with stamped sale date and the payment document certifying the purchase.

The destratificator model must comply with the one stated in the User's Manual.

The warranty repair or replacement must be done at Seller's point.**The manufacturer's warranty does not apply to the following cases:**

- User's failure to provide the destratificator with the entire delivery package as stated in the User's Manual or with missing component parts previously dismantled by the user;
- Mismatch of the destratificator model and manufacturer with the respective details stated on the destratificator packing and in the User's Manual;
- User's failure to ensure timely technical maintenance of the destratificator;
- External damage to the casing (excluding external modifications of the destratificator as required for its installation) and the internal components of the destratificator;
- Alteration of the destratificator design or engineering changes of the unit;
- Replacement and use of destratificator assemblies, parts and components not approved by the manufacturer;
- Destratificator misuse;
- User's violation of the destratificator installation regulations;
- User's violation of the destratificator control regulations;
- Destratificator connection to the power mains with a voltage different from the one stated in the User's Manual;
- Destratificator breakdown due to voltage surges in the power mains;
- User's discretionary repair of the destratificator;
- Destratificator repair performed by any persons without the manufacturer's authorization;
- Elapsing of the destratificator warranty period;
- User's violation of the established regulations specific to the destratificator transportation;
- User's violation of the destratificator storage regulations;
- Wrongful acts against the destratificator committed by third persons;
- Destratificator breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockade);
- Missing seals if provided by the User's Manual;
- Failure to provide the User's Manual with the sale date stamp;
- Missing payment document certifying the destratificator purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE DESTRATIFICATOR.



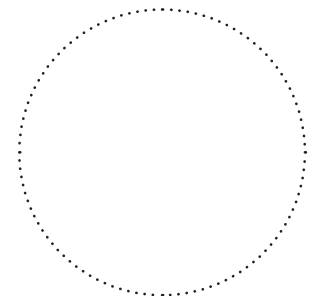
USERS' CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE DESTRATIFICATOR, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE SALE DATE STAMP.

ACCEPTANCE CERTIFICATE

Product Type	Destratificator
Model	DRF(I)-OV _____
Serial Number	
Manufacturing Date	
is compliant with the technical specifications and is hereby declared ready for service.	
Quality Inspector's Stamp	

SELLER INFORMATION

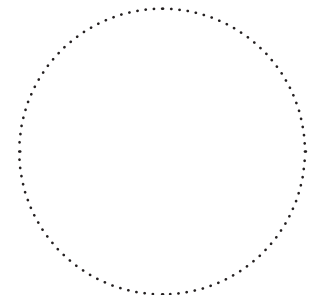
Shop name	
Address	
Phone Number	
E-mail	
Sale date	
This is to certify delivery of the complete destratificator with the User's Manual. The warranty terms are acknowledged and accepted.	
Customer signature	



Seller stamp here

MOUNTING CERTIFICATE

DRF(I)-OV _____ destratificator has been installed and connected to the power mains in accordance with the provisions stated in the present User's Manual.	
Company Name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
This is to certify that the work specific to the destratificator installation has been performed in accordance with all the applicable provisions of local and national construction, electrical and technical codes and standards. The destratificator operates normally as intended by the manufacturer.	
Signature:	



Installer stamp here

