

# USER'S MANUAL

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**DRF-OV**  
**DRFI-OV**  
**DRF-OV EC**



Destratificator

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The present User's manual contains the technical details, operating instructions and technical specification for the destratificator. The DRF-OV / DRFI-OV / DRF-OV EC destratificator (hereinafter «the destratificator» or «the unit» as mentioned in the «Safety requirements» and «Manufacturer's warranty» sections as well as in warnings and information blocks).

## SAFETY REQUIREMENTS

Read the user's manual carefully prior to installing and operating the unit.  
Fulfil the user's manual requirements as well as the provisions of all the applicable local and national construction, electrical and technical norms and standards.  
The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information. Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.  
After a careful reading of the manual, keep it for the entire service life of the unit.  
While transferring the unit control the user's manual must be turned over to the receiving operator.  
Symbol legend:

	<b>WARNING!</b>
	<b>DO NOT!</b>

## UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



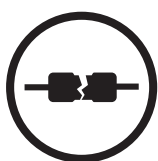
- Unpack the unit with care.



- Do not lay the power cable of the unit in close proximity to heating equipment.



- While installing the unit follow the safety regulations specific to the use of electric tools.



- Do not use damaged equipment or cables when connecting the unit to power mains.



- Do not operate the unit outside the temperature range stated in the user's manual.
- Do not operate the unit in aggressive or explosive environments.



- Do not touch the unit controls with wet hands.
- Do not carry out the installation and maintenance operations with wet hands.



- Do not wash the unit with water.
- Protect the electric parts of the unit against ingress of water.

### UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS



- Do not allow children to operate the unit.



- Disconnect the unit from power mains prior to any technical maintenance.



- Do not store any explosive or highly flammable substances in close proximity to the unit.



- When the unit generates unusual sounds, odour or emits smoke disconnect it from power supply and contact the Seller.



- Do not open the unit during operation.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- Do not block the air duct when the unit is switched on.



- In case of continuous operation of the unit periodically check the security of mounting.



- Do not sit on the unit and avoid placing foreign objects on it.



- Use the unit only for its intended purpose.



**RECYCLE AT THE END OF THE SERVICE LIFE.**

**DO NOT DISPOSE THE PRODUCT WITH UNSORTED MUNICIPAL TRASH.**

## PURPOSE

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 as a result of stratification towards 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 UNIT MAY NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL OR SENSORY CAPACITIES, OR LACKING THE APPROPRIATE TRAINING.**

**THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.**

**THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.**

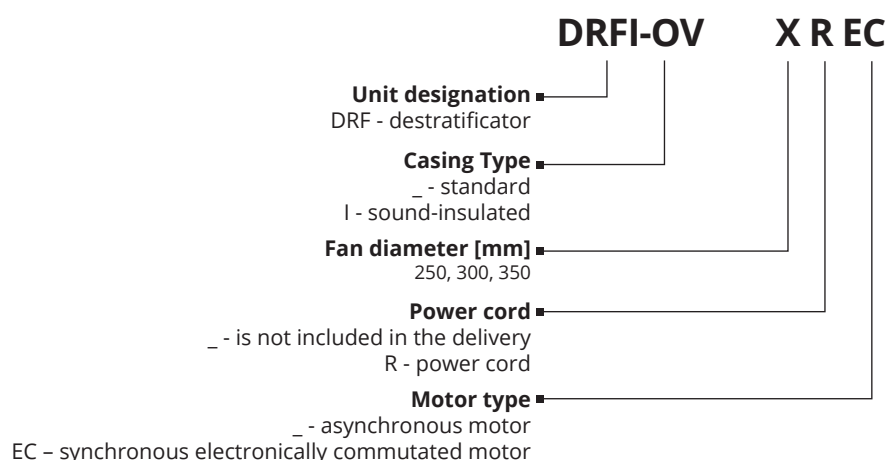
The destratificator is designed for continuous operation without disconnection from the power mains.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

## DELIVERY SET

Name	Number
DESTRATIFICATOR	1 item
Mounting kit	1 item
Cable with a threaded tip	3 m
Fastening kit	1 item
Safety kit	1 item
Cable with a loop	3 m
User's manual	1 item
Packing box	1 item
Power cord (optional)	1 item

## DESIGNATION KEY



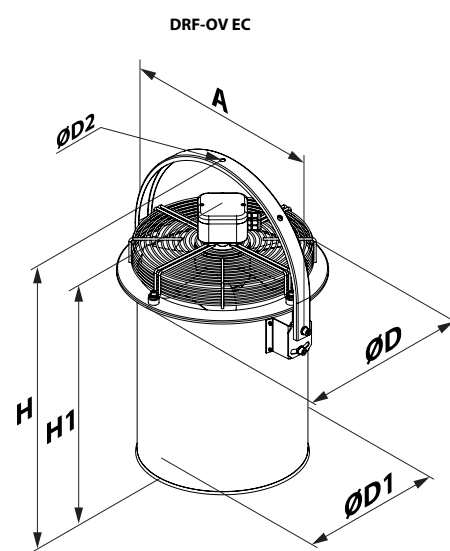
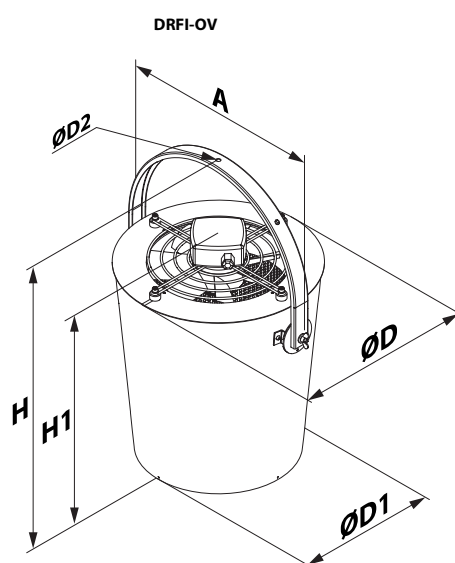
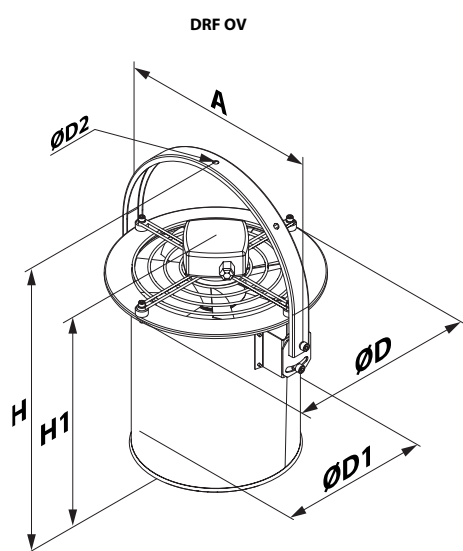
## TECHNICAL DATA

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 destratificator undergoes continuous improvement - therefore, some models may slightly differ from the ones described in the User's manual.

Parameter	DRF-OV 250 DRFI-OV 250	DRF-OV 300 DRFI-OV 300	DRF-OV 350 DRFI-OV 350	DRF-OV EC 250	DRF-OV EC 300	DRF-OV EC 350
Voltage [V] at 50 Hz	1~230					
Power [W]	50	75	140	83	97	73
Current [A]	0.22	0.35	0.65	0.72	0.8	0.65
Max. air capacity [m³/h]	800	1340	2500	1460	1780	2620
RPM	1380	1350	1380	2400	1645	1100
Max. transported air temperature [°C]	60					
Ingress protection rating	IPX4					

Destratificator type	Dimensions [mm]						Weight [kg]
	A	H	H1	D	D1	D2	
DRF-OV 250	390	524	386	341	260	11	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
DRF-OV EC 250	390	524	444	341	260		5.5
DRF-OV EC 300	442	620	527	392	316		6.8
DRF-OV EC 350	490	705	587	442	360		9.9



The destratificator 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 ball bearings and built-in thermal protection enabling its automatic restarting.

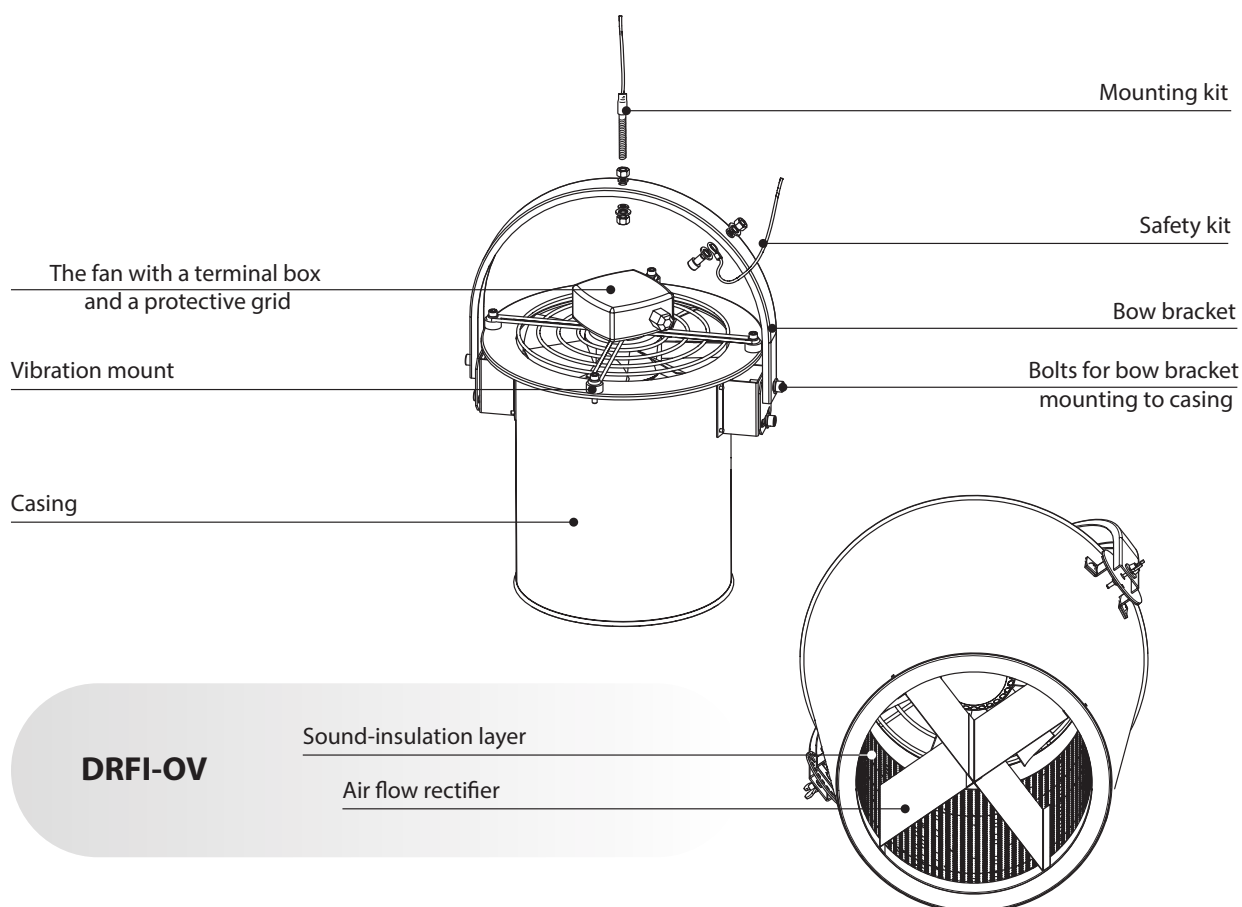
Motor ingress protection rating is IP54.

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 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 as well as the mounting and the safety cables with threaded joints each 3 m long.

The destratificator position can be fixed every 15°.



## MOUNTING AND SET-UP



**READ THE USER'S MANUAL PRIOR TO MOUNTING THE UNIT.  
MAKE SURE THAT THE UNIT IS NOT DAMAGED. DO NOT USE DAMAGED UNITS!**

Having unpacked the destratificator and prior to installation:

- 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.

The destratificator is designed for installation on premises protected against atmospheric phenomena.

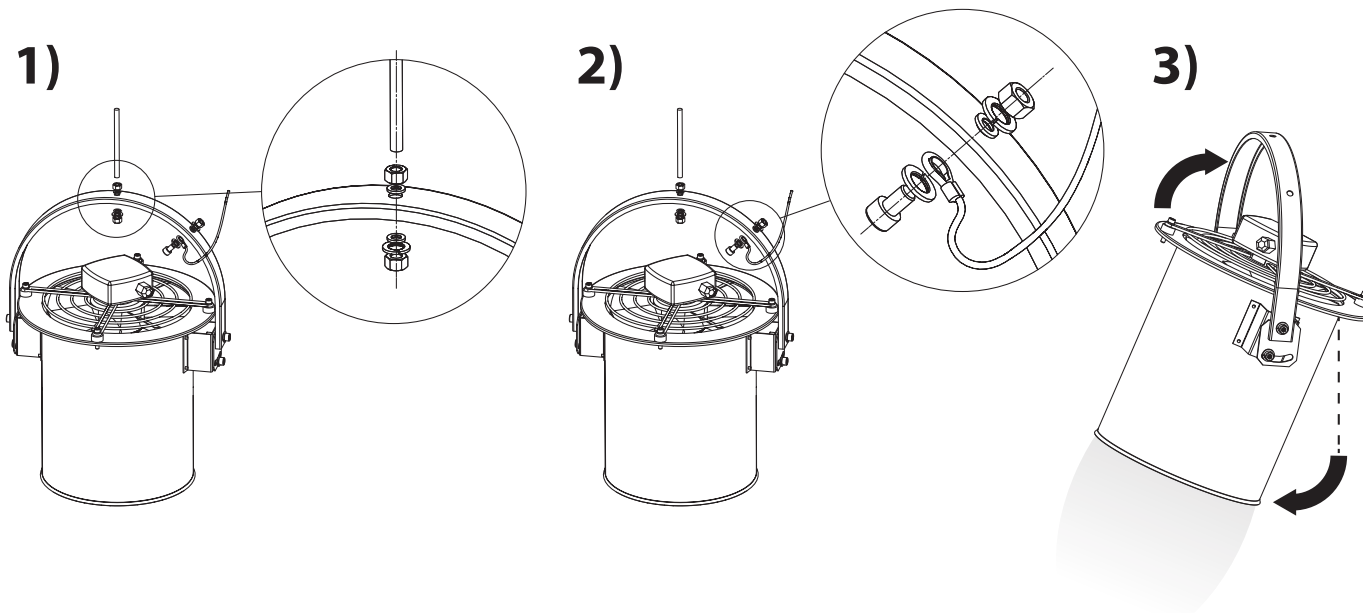
The unit is installed under the ceiling of the premises with the airflow nozzle down.

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 cables allows the additional benefit of unit angle correction by adjusting the safety cable length.

Mounting sequence:

- Attach the destratificator by the bow bracket.
- Secure the destratificator to the threaded bar with 2 nuts (see Fig. 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. 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).
- Tighten the bolts between the casing and the bracket.



## CONNECTION TO POWER MAINS



**DISCONNECT THE UNIT FROM POWER SUPPLY PRIOR TO ANY ELECTRIC INSTALLATION OPERATIONS.**

**THE POWER MAINS CONNECTION SHALL ONLY BE PERFORMED BY QUALIFIED PERSONNEL AFTER CAREFUL READING OF THE USER'S MANUAL.**

**CONNECT THE UNIT TO AN AC POWER SUPPLY WITH THE VOLTAGE CORRESPONDING TO THE VALUE SPECIFIED IN THE TABLE OF TECHNICAL DATA. CHECK THE ENTIRE POWER CORD LENGTH FOR CHOKING. DO NOT SWITCH ON THE UNIT IF THE CABLE IS DAMAGED.**

**THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE SHOWN ON THE RATING PLATE. ANY INTERNAL CONNECTION MODIFICATIONS ARE NOT ALLOWED AND RESULT IN WARRANTY LOSS.**

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

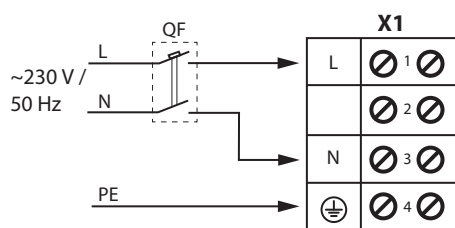
The destratificator is intended for connection to a single-phase 230 V/50 Hz AC mains. The destratificator connection must be made using durable, insulated and heat-resistant conductors (cables and wires). The external lead-in (230 V/50 Hz) must be equipped with a circuit breaker built into the stationary wiring to disconnect all the mains phases. The QF external circuit breaker position must ensure free access for quick power-off of the unit.

The recommended circuit breaker nominal current is 1.0 A. The conductor section is 0.75 mm<sup>2</sup>. 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).

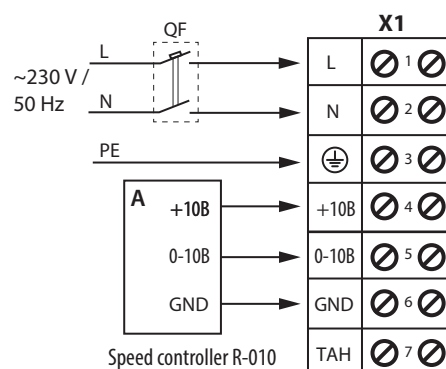
The destratificator connections are made on the X1 terminal block mounted inside the terminal box on the casing of the destratificator. The electrical connections diagram sticker is located inside the terminal box.

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.

DRFI-OV wiring diagram



DRF-OV EC wiring 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

Fault	Possible reasons	Troubleshooting
The fan does not start	No power supply.	Make sure that the unit is properly connected to the power mains and make any corrections, if necessary.
	Jammed motor.	Switch off the destratificator. Troubleshoot the motor jamming. Switch on the destratificator again.
Circuit breaker tripping during the fan start	Excessive electric current consumption caused by a short circuit.	Switch off the destratificator. Contact the Seller.
	Motor winding thermal protection is activated.	Wait till the fan cools down and the thermal switch resets to its normal position (about 3-5 minutes).
Noise, vibration	The fan impeller is soiled.	Clean the impellers.
	The screw connection is loose.	Check the screw connection and tighten the screws if needed.

## STORAGE AND TRANSPORTATION REGULATIONS

Store the unit in the manufacturer's original packing box in a dry closed ventilated premise with temperature range from +5 °C (+ 41 °F) to + 40 °C (104°F).

Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation and sealing deformation.

Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.

Fulfil the requirements for transportation of the specified cargo type.

The unit can be transported in the original packing by any mode of transport without limitation provided proper protection against precipitation and mechanical damage.

Avoid sharp blows, scratches or rough handling during loading and unloading.

## MANUFACTURER'S WARRANTY

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, mounting and operation regulations.

Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation the user is entitled to elimination of faults by the manufacturer by means of warranty repair at the factory free of charge.

The warranty repair shall include work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation.

The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

### The warranty repair does not include:

- routine technical maintenance
- unit installation / dismantling
- unit setup

To benefit from warranty repair the user must provide the unit, the user's manual with the purchase date stamp and the payment document certifying the purchase.

The unit model must comply with the one stated in the user's manual.

### Contact the Seller for warranty service.

### The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packing and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- User's violation of the unit installation regulations.
- User's violation of the unit control regulations.
- Unit connection to the power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in the power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- User's violation of the unit transportation regulations.
- User's violation of the unit storage regulations.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment document certifying the unit purchase.
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**FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.**



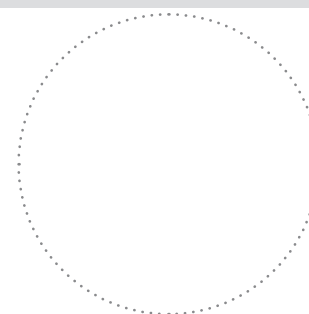
**USERS' WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.**

## ACCEPTANCE CERTIFICATE

<b>Unit Type</b>	DESTRATIFICATOR
<b>Model</b>	DRF___-OV___
<b>Serial Number</b>	
<b>Manufacture Date</b>	
<p>Is compliant with the technical specifications and is recognized as serviceable. We hereby declare that the product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This certificate is issued following test carried out on samples of the product referred to above.</p>	
<b>Quality Inspector's Stamp</b>	

## SELLER INFORMATION

<b>Seller</b>	
<b>Address</b>	
<b>Phone Number</b>	
<b>E-mail</b>	
<b>Purchase Date</b>	



Seller's Stamp

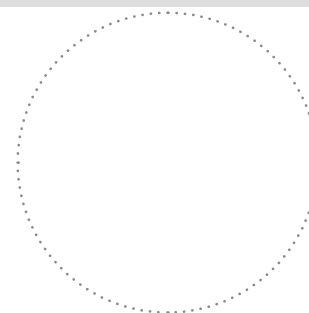
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.

<b>Customer's Signature</b>	
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## MOUNTING CERTIFICATE

The unit has been connected to power mains pursuant to the requirements stated in the present user's manual.

<b>Company Name</b>	
<b>Address</b>	
<b>Phone Number</b>	
<b>Installation Technician's Full Name</b>	
<b>Installation Date:</b>	<b>Signature:</b>



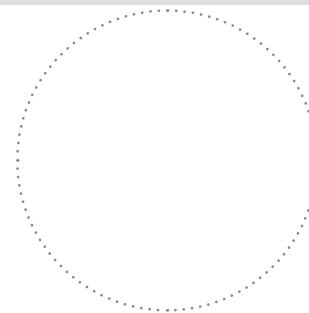
Installation  
Company Stamp

The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.

<b>Signature:</b>	
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## WARRANTY CARD

<b>Unit Type</b>	DESTRATIFICATOR
<b>Model</b>	DRF___-OV___
<b>Serial Number</b>	
<b>Manufacture Date</b>	
<b>Purchase Date</b>	
<b>Warranty Period</b>	
<b>Seller</b>	



Seller's Stamp



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