

Benchtop freezer ULT U35

220-240V/50Hz



- Compact personal freezer - easily movable
- Limited maintenance and on site service
- Ergonomic handle

- Eco-friendly, HCFC-free Nature R refrigerant
- Efficient cyclopentane insulation
- ISO 9001, 14001 & 45001 Certified

Specifications

Technical

Gross volume	37 litres
Net volume	37 litres
Temp. range	-60°C to -86°C
Temp. probes	1/PT 1000
Compressor	Secop
Refrigerant	Nature R
Noise level	47 dB
Power consumption 24/h	3,2kWh
Power consumption	1168 kWh / year
Voltage	220-240 V
Frequency	50/60 Hz

Features

Audible & visual alarm	YES
Castors	NO
Inner doors	NO
Defrost	Manual
Integrated lock Battery	YES
Backup	48h
USB	YES
Data connection	MODBUS
Digital controller	XW737K
Data logging	35.500 Entries
High/Low temperature alarm	YES
Shelves, stainless steel	1
Door vacuum release	Automatic
Portholes for external probe & CO2 backup	Ø 20 mm
Connection for remote alarm	YES

Material

Inner	Stainless steel
Outer	Painted steel

Outer dimensions

Height	650 mm
Width	630 mm
Depth	675 mm
Net weight	59 Kg

Inner dimensions

Height	433 mm
Width	439 mm
Depth	271 mm
Insulation	80 mm
Insulation type	PUR
Vacuum Isolated Panels	YES

ULT U35



Product no.

N123000

Storage capacity

Box height	No. of boxes	2 ml. Vials
50 mm	33	3.300

Typical performance data

Avg. cabinet temperature Peak variation	-81,7°C
from set-point Stability in avg.	+2,0/-3,7°C
Min. door open recovery time to -75°C	5°C
Cycle rate on/off	30 min.
Duty cycle	25,7/6,7 min.
Energy consumption	78,7%
Pull down time to -75°C	3,25 kWh/day
Avg. temperature hold over time from -82°C to -60°C	84 min.
	105 min.



ULT U35

GB Instructions for use

Warning

As the appliance contains a flammable refrigerant, it is essential to ensure that the refrigerant pipes are not damaged.

The quantity and type of the refrigerant used in your appliance is indicated on the rating plate.

Standard EN378 specifies that the room in which you install your appliance must have a volume of 1m³ per 8 g of hydrocarbon refrigerant used in the appliances. This is to avoid the formation of flammable gas/air mixtures in the room where the appliance is located in the event of a leak in the refrigerant circuit.

WARNING:

Keep ventilation openings in the appliance's cabinet or in the built-in structure clear of obstruction.

WARNING:

Do not use other mechanical devices or other means to accelerate the defrosting process than those recommended by the manufacturer.

WARNING:

Do not damage the refrigerant system.

WARNING:

Do not use electrical appliances inside the refrigerated storage compartment, unless they are of a type recommended by the manufacturer.

WARNING:

Do not expose the appliance to rain, and secure not splashing water when cleaning the floor.

WARNING:

the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

WARNING:

Children being supervised not to play with the appliance.

WARNING:

Do not store explosives, such as aerosol cans with flammable propellants in the unit.

WARNING:

Danger risk of fire or explosion if flammable refrigerant are used. To be repaired only by trained personnel.

**WARNING:**

When positioning the appliance, ensure the power cord is not trapped or damaged.

WARNING:

Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.

WARNING:

Sharp edges on cabinet, compressor compartment, evaporator, ventilation cover and on internal equipment can occur. Please be aware to avoid injury.

WARNING:

The condenser on the back of the appliance will in some cases have a hot surface. Please be aware to avoid injury.

WARNING:

The appliance must be connected to power minimum 12 hours before using it for storage of medicine.

- Always keep the keys in a separate place and out of reach of children.
- Do not step on the lower panel to reach medicine in the top of the appliance.
- Before servicing or cleaning the appliance, unplug the appliance from the mains or disconnect the electrical power supply.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.
- Relevant for Australia: Supply cord fitted with a plug complies with AS/NZS 3112.
- Frost formation on the interior evaporator wall and upper parts is a natural phenomenon. Therefore, the appliance should be defrosted during normal cleaning or maintenance.
- Please note that changes to the appliance construction will cancel all warranty and product liability.
- This device is intended to be used exclusively for medical products.
- If medicine is spilled in the appliance or the defrost water canal is has to be cleaned immediately to avoid the medicine to evaporate to the surroundings.
- If the instructions is lost please contact your supplier of the appliance to have a new instruction for use.
- If service needed to this device, please be aware of only using service personnel with education in handling medical devices.



Contents

Warning 2

Get to know your freezer..... 5

Before starting the appliance..... 6

Electrical connection. 7

Battery backup system at start-up..... 8

Installation and start-up..... 9

Ventilation guards. 10

Levelling the appliance..... 11

Port hole 12

Remoe alarm funktion..... 13

Controller. Operation and function..... 14

Defrosting, cleaning and maintenance 16

Fault finding 18

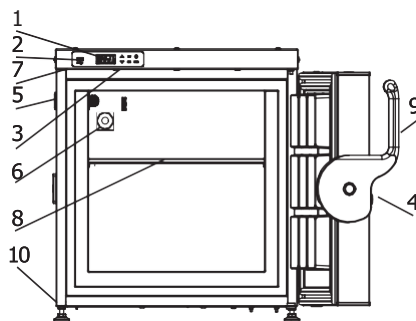
Warranty, spare parts and service..... 19

Disposal. 20

Get to know your freezer:

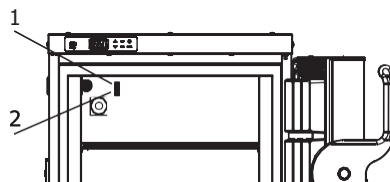
Front & internal view

1. Display – With integrated keyboard
2. USB port – Export historical data.
3. Light – Only when door is opened
4. Lock – Push and turn lock. “Insert the key into the keyhole and push and turn the key 180 degrees clockwise”.
5. Porthole – Hole for external sensor and CO2 backup.
6. Vacuum release – Ensure the door opens easily. IMPORTANT make sure its free of ice.
7. Door contact – Can be both a magnetic or mechanical contact.
8. Shelf. shelf designed to carry the weight of max. 15 kg
9. Door handle
10. Feet / Adjustable feet – some have anti slip. See installation and start-up



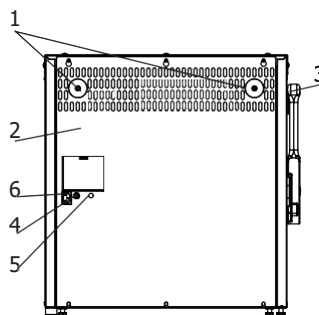
Sensor placement

1. TR3 – Regulating probe.
2. External sensor – Use a 3.5mm cable tie to mount external sensor. The cable tie can be found in the plastic bag.



Backview

1. Ventilation guards.
2. Rating plate.
3. Porthole – Hole for external sensor and CO2 backup. See chapter Installation and Start-up
4. Voltage free contact.
5. Battery backup button – It will take 10 days for the battery to be fully charged.
6. Power supply – IEC plug or hardwired.



Before starting the appliance

Before operating your new appliance, please read the following instructions carefully as they contain important information on safety, installation, operation and maintenance. Keep the instructions for future reference.

On receipt, check to ensure that the appliance has not been damaged during transport. Transport damage should be reported to the local distributor before the appliance is taken into use.

Clean the inside of the cabinet according to the cleaning instructions.

If during transport the appliance has been laid down, or if it has been stored in cold surroundings (colder than +5°C), it must be allowed to stabilise in an upright position for at least an hour before being switched on.

Note: If the appliance is to be laid down, the door must face upwards and the appliance must be enclosed in the original packaging.

Intended use

Nordic Lab biomedical freezers are designed to provide reliable temperature stability and precision and ensure an ideal cold temperature storage for sensitive items is achieved. The products are designed for the following operating ranges:

Models	ULT U35
Temperature range	-60°C to -86°C
Fabric Set Point	-82°C
Ambient Temperature	+16°C to +32°C
Relative humidity	Max 70 %
Number of probes	1



WARNING: This unit is not a “rapid-freeze” device. Freezing large quantities of liquid, or high-water content items, will temporarily increase the chamber temperature and will cause the compressors to operate for a prolonged time period. Avoid opening the door for extended time periods since chamber temperature air will escape rapidly. Also, keep the inner doors closed as much as possible. When room air, which is higher in humidity, replaces chamber air, frost may develop in the chamber more rapidly.

Electrical connection

Wiring and connections in power supply systems must be all applicable (local and national) electrical codes. Consult these codes lengths and sizes prior to cabinet installation.

This device complies with relevant EU directives including Low Voltage Directive 2014/35/EU and Electromagnetic Compatibility Directive 2014/30/EU

The socket should be freely accessible. Connect the appliance only to 220/240V / 50Hz alternating current via a correctly installed earthed socket.

The socket must be fused with a 10A or 13A fuse.

If the appliance is to be operated in a non-European country, check on the rating plate whether the indicated voltage and current type correspond to the values of your mains supply.

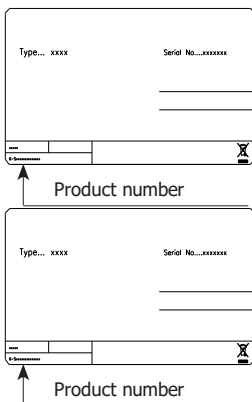
Data regarding voltage and absorbed power / current are given on the rating plate.

The power cord may be replaced by a technician only.

The rating plate provides various technical information as well as type and serial number

The climate class is stated on the nameplate. This specifies the optimum room temperature.

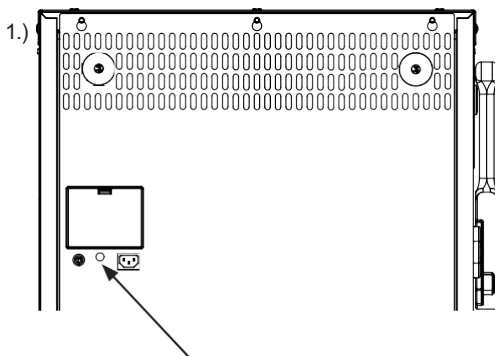
Room climate class	Max room temperature °C	Relative humidity %
3	25	60
4	30	55
5	40	40
7	35	75



Battery backup

This appliance is equipped with a battery back up system.
Please activate the battery backup before final placement

The appliance is equipped with a battery backup system, which supplies the controller with power at power failure. The backup system duration is 48 hours.



- 1.) Push the orange button to switch on the battery backup system.

Check if the display for the battery status-LED is ON ☐ - ☐ + ☐ - ☐ +

Note!

When starting up the appliance for the first time it is necessary to charge the battery for 10 days.

Note!

The battery backup system does not supply the cooling system with power. When starting up the appliance for the first time it is necessary to switch on the battery backup system.

Note!

The battery for backup should be changed every third year to secure 48 hours of back up. Please put this change in the maintenance schedule for every third year.

Ventilation guards

The two ventilation guards are mounted before moving the appliance to its final placement.

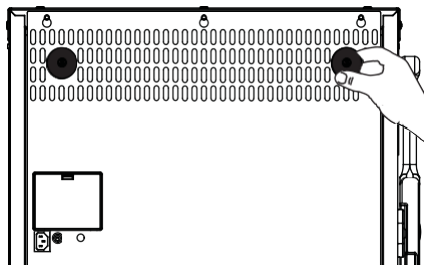
The guards function is to secure an absolute minimum of ventilation, if the appliance is pushed too close up against a wall.

Steps:

Mount the ventilation guards in the holes on the backcover.

Note!

(Some models have pre mounted ventilations guards)



Location and ventilation

This unit must be installed according to the below condition:

If the unit is installed in a location against the below conditions, it's specified performance may not be achieved or malfunction and accident may occur.

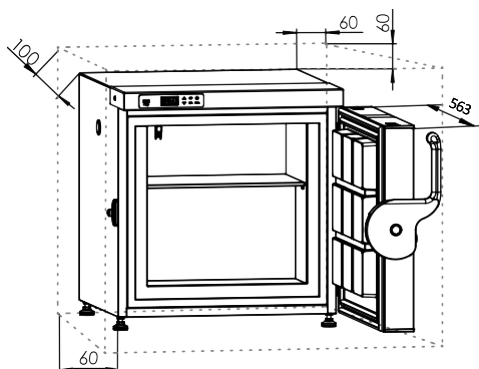
1. A location not exposed to direct sunlight
2. A location where the unit is not exposed to rain
3. In a dry, well ventilated room
According to the described in Intended use
4. Away from sources of heat
5. In a location with minimal variations in temperature

Secure ventilation, above, below and around the appliance. See illustrations.

(All dimensions are in millimeter (mm)).

Note!

There need to be space for the door to open in at least 90 degrees.

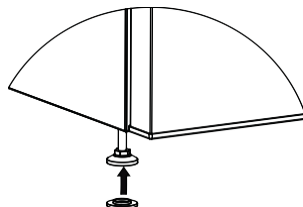


Levelling the appliance

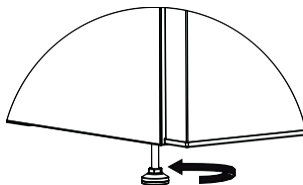
Make sure the appliance is level. It can be levelled by rotating the adjustable feet of the appliance.

Be certain to lock the breaks for units equipped with casters.

1. Some models have "anti slip base" for the feet. Grab them from the plastic bag and mount them



2. Adjust the four feet until the unit is level.

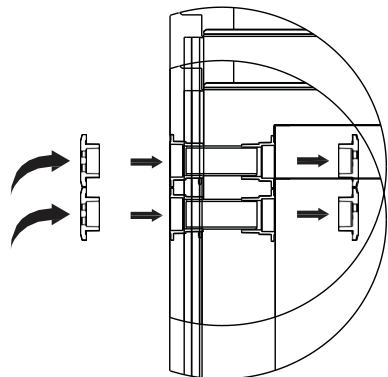
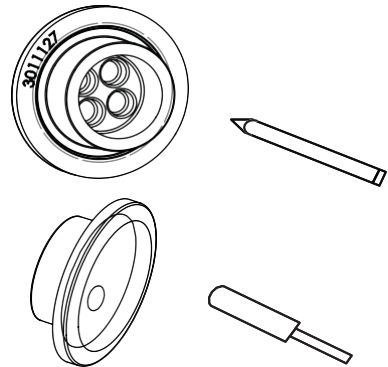
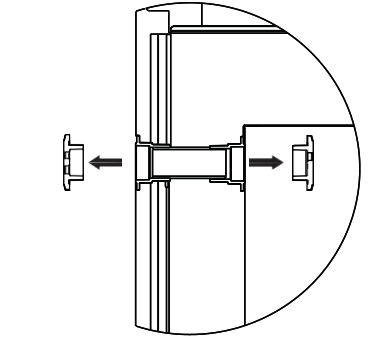


Porthole

Porthole is used to pass the temperature probe or nozzle of a back-up system in the chamber.

Steps:

1. See chapter “Get to know your...” for placement of porthole on your device.
2. Take out the two rubber plugs.
3. Press a pencil through the marks on the inside of the rubber plugs.
4. Put your external sensor through the porthole, in the same direction as the arrow seen on the illustrations to the left or as described below.
5. Put the sensor through the outer rubber plug.
6. Then through the foam cylinder inside the porthole.
7. Then through the inner rubber plug.
8. Use the cable tie to mount your sensor.



Remote alarm funktion

Your device is equipped with a remote alarm connection to send alarm signals to a building management system, a monitoring unit, visual or acoustical warning device etc.

The alarm output is managed freely by the built in controller of the unit.

Alarm criteria may be too low temperature, too high temperature, power failure, open door or similar.

The alarm output is an electrical floating output (dry contact) which acts like a ON/OFF switch.

A SPDT (single pole, dual throw) relay with maximum switch rating of 250V 3A is maintained by the build-in XW737K control-ler unit.

The relay terminals are explained this way:

COM: COMMON terminal

NO: NORMALLY OPEN terminal.
Connects to COM when the alarm is activated

NC: NORMALLY CLOSED terminal.
Disconnects from COM when the alarm is activated

An alarm interface cable of maximum 30 meters can be attached without the use of tools to the 3-pole alarm clamp connector.

Wire thickness must be within 0.5mm² to 2.5mm² and fitted with core crimp terminals.

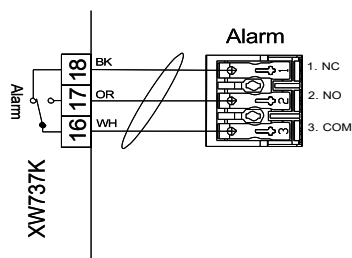
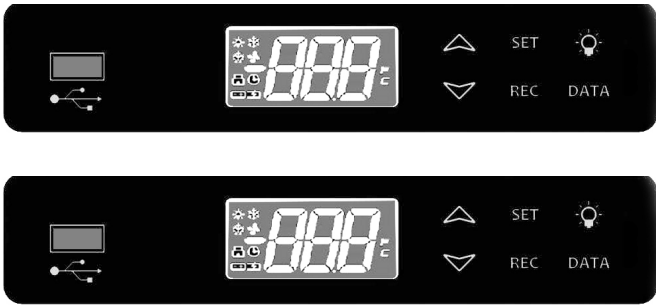


Fig. Internal XW737K controller with build-in alarm relay

Controller. Operation and function

User interface



LEDS

Each LED function is described in the following table.

LED	MODE	Function
	ON	Compressor enabled
	Flashing	Anti-short cycle delay enabled
	ON	An alarm is occurring
	ON	Recording activated
	ON	Battery status OK
	Flashing	Battery is being charged
	Flashing	Charging problem or battery failure
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase
LED	MODE	Function
	ON	Compressor enabled
	Flashing	Anti-short cycle delay enabled
	ON	An alarm is occurring
	ON	Recording activated

	ON	Battery status OK
	Flashing	Battery is being charged
	Flashing	Charging problem or battery failure
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

Buttons

SET	To display target set point in programming mode it selects a parameter og confirm an operation.
	(UP) To enter fast access menu In programming mode it browses the parameter codes or increases the displayed value.
	(DOWN) In programming mode it browses the parameter codes or decreases the displayed value.
DATA	Export data from button.
	Not relevant.
REC	Log activation and deactivation from button (Password protected).
SET	To display target set point in programming mode it selects a parameter og confirm an operation.
	(UP) To enter fast access menu In programming mode it browses the parameter codes or increases the displayed value.
	(DOWN) In programming mode it browses the parameter codes or decreases the displayed value.
DATA	Export data from button.
	Not relevant.
REC	Log activation and deactivation from button (Password protected).

Controller. Operation and function

How to see and modify the setpoint

How to: See the Set point

1. Push and immediately release the SET key: the display will show the Set point value.
2. Push and immediately release the SET key or wait for 60 sec to display the temperature in the unit.

How to: Change the Set point

1. Push the SET key more than 2 sec to change the Set point value.
2. The value of the set point will be displayed and the “°C” LED will start blinking.
3. To change the Set value push the UP or DOWN arrows within 60 sec.
4. To save the new set point value, push the SET key again or wait for 60 sec.

Clock settings and RTC alarm reset RESET

1. Push the UP key once, to acces the menu.
2. The display shows H0, then push SET.
3. The parameters for setting time and date occurs. To set the parameter push SET, push the UP or DOWN button to change the parameter. Confirm by pushing SET. The time and date parameters:
 Hur: hour
 0in: minutes
 Udy: weekday
 dAy: date
 Non: month
 yEA: year

To exit: Press **SET + UP** keys for about 10 sec. or wait 60 sec.

How to export data and alarms to USB

1. Insert the **USB** key
2. Push the **DATA** key for more that 3 sec.
3. Controller starts uploading data to **USB**
4. At the end the following message will be displayed:
 - a. “**End**” if everything it’s ok
 - b. “**Err**” if exporting has not taken place.

Alarms

The controller memorizes the last 100 alarms happened, together with their start and finish time. It’s possible to export the alarms as described in the previous chapter.

Active alarm

Controller will show active alarm alternated with the temperature inside the unit.

Alarm signals

Message	Cause
“PF1”	Regulating probe TR3 failure
“HA1”	TR3 High Alarm
“LA1”	TR3 Low Alarm
“dA”	Door Open Alarm
“CA”	Serious Alarm

The alarm message is displayed until the alarm condition is recovered.

All the alarm messages are showed alternating with the temperature in the unit.

Except for the “PF1” which is flashing.

Defrosting, cleaning and maintenance

Defrosting:

The items stored in the freezer and the humidity of the surrounding air gradually cause frost and ice to form inside the freezer. A thin layer of frost or ice does not affect freezer performance, but the thicker the layer, the higher the energy consumption.

Never use electrical apparatus or sharp implements as these may damage the inside of the appliance.

Quick defrosting:

Small amounts of loose frost can be removed using a plastic scraper.

Defrosting has to be done regularly to prevent ice building.

The ice build depends on the use of the freezer. The more daily door openings – the more manual defrosting.

Door open/ close per 24h	Advised monthly manual defrosting
<5	1-2
<10	2-4
<15	4-6

Thoroughly defrosting:

When the layer of frost and ice exceeds 4-5 mm the freezer should be completely defrosted. It is recommended that defrosting be performed when there are no items stored in the freezer.

Proceed as follows:

1. Disconnect the power supply.
2. Place a bowl of hot (but not boiling) water in the freezer, close the door and wait approx. 30 minutes before removing loose frost with the plastic scraper.
3. To prevent water from damaging the floor during defrosting, it is advisable to cover the floor around the freezer to protect against ice and splashes. When all the frost and ice have melted, clean the inside of the appliance using water with a mild, perfume-free detergent. Dry the freezer with a soft cloth.
4. Return items to the freezer when the required temperature has been reached.

Cleaning and maintenance

Before cleaning, disconnect the power supply and remove all loose fittings.

The appliance is best cleaned using warm water (max. 65°C) with a little mild, perfume-free detergent. Never use cleaning agents that scour. Use a soft cloth. Rinse with clean water and dry thoroughly. It is important to prevent water from entering the control panel.

		Frequency			
TASK	Description	Quarterly	Annually	3 Years	As needed
The compressor compartment and the condenser must be kept free of dust and dirt.	1. Unplug unit from power supply 2. Remove the lower panel. 3. Use a vacuum cleaner to remove dust and dirt.	X			
The door gasket(s) around the door must be cleaned regularly.	1. Wipe the seal with a soft cloth and clean water 2. Check that it continues to provide a tight seal.				X
Perform a temperature calibration at least once a year.	Only a certified technician must make the calibration.		X		
Clean vacuum release	1. Excessive frost accumulation in the vacuum release could restrict air flow. 2. Brush away any loose frost using a stiff nylon brush. 3. If frost has built up in the pipe of the vacuum release, thrust with a stick to remove the frost inside.				X
Defrost and clean the chamber to prevent ice building.	Quick defrosting: Small amounts of loose frost can be removed using a plastic scraper.				X
	Complete defrost: 1. Remove all products and place it in another ULT cabinet. 2. Disconnect the power supply. 3. Open the inner and outer doors. 4. Wait until the ice has thawed. 5. Dispose of the ice and wipe out water. 6. Dry the interior of the device. 7. Close the doors and start the freezer				X
Replace the battery backup for the controller every 3 years.	Only a certified technician must replace the battery.			X	
Clean the interior and exterior of the device.	1. Use warm water (max. 65°C) with a little mild, perfume-free detergent with a soft cloth. 2. Rinse with clean water and dry thoroughly. Note: It is important to prevent water from entering the control panel.				X

Fault finding

Fault	Possible cause	Remedy
Screen of keyboard is not lit.	Power failure; the fuse is blown; the appliance is not plugged in correctly, the power is cut.	Check that power is connected. Reset the fuse
Temperature in freezer too high	The ventilation grille is blocked. The door is not closed properly. The quantity of items placed in the freezer at a time is greater than the capacity of the appliance. Thick layer of frost and ice. The temperature setting is too high	Ensure unhindered air circulation Close the door and wait a few hours Wait a few hours Defrost the freezer. Lower the temperature setting.
Temperature in freezer too low.	The temperature setting is too low	Raise the temperature setting
Vibration or bothersome noise	The appliance is not level.	Level the appliance (For model with adjustable feet: use a spirit level)
Compressor runs continuously.	The temperature setting is too low. Too high room temperature.	Raise the temperature setting. Ensure adequate ventilation
Display or alarm log shows "RTC" error	The date and time is not set.	Please set the date and time

Warranty, spare parts and service

Warranty disclaimer

Faults and damage caused directly or indirectly by incorrect operation, misuse, insufficient maintenance, incorrect building, installation or mains connection. Fire, accident, lightening, voltage variation or other electrical interference, including defective fuses or faults in mains installations.

Repairs performed by others than approved service centres and any other faults and damage that the manufacturer can substantiate are caused by reasons other than manufacturing or material faults are not covered by the warranty.

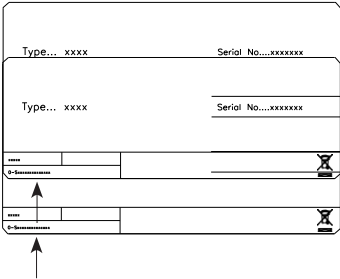
Please note that changes to the construction of the appliance or changes to the component equipment of the appliance will invalidate warranty and product liability, and the appliance cannot be used lawfully. The approval stated on rating plate will also be invalidated.

Transport damage discovered by the buyer is primarily a matter to be settled between the buyer and the distributor, i.e. the distributor must ensure that such complaints are resolved to the buyer's satisfaction.

Before calling for technical assistance, please check whether you are able to rectify the fault yourself. If your request for assistance is unwarranted, e.g. if the appliance has failed as a result of a blown fuse or incorrect operation, you will be charged the costs incurred by your call for technical assistance.

Spare parts

When ordering spare parts, please state the type, serial and product numbers of your appliance. This information is given on the rating plate. The rating plate contains various technical information, including product-type and serial numbers.



Disposal

Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



For business users in the European Union.

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

These symbols are only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Note for the battery symbol:



This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.



Reserving the right to alter specifications without prior notice.

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