English

OPERATING & INSTALLATION INSTRUCTIONS

CU-450 SPLIT ECO

Please visit **en.norcool.com** for operating & installation instructions in other languages.

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Warnings

This appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance. Cleaning and user maintenance shall not be made by children without supervision.

To avoid contamination of food, please respect the following instructions:

- Opening the door for long periods can cause a significant increase of the temperature in the compartments of the appliance.
- Clean regularly surfaces that can come in contact with food and accessible drainage systems.
- Store raw meat and fish in suitable containers in the refrigerator, so that it is not in contact with or drip onto other food.
- If it is left empty for long periods, switch off, defrost, clean, dry, and leave the door open to prevent mould developing within the cooling room.

Appliances shall be constructed so that lubricants are prevented from polluting food compartments.

Warning

- Use this appliance only for its intended purpose as described in this instruction manual. The appliance must be properly installed in accordance with the manual before it is used.
- When positioning the appliance, ensure the mains power cable is not trapped or damaged.
- Do not connect unit to multiple portable socket-outlets or portable power supplies.

Caution: risk of fire/flammable materials Refrigerant R290, this gas is natural gas with high environmental compatibility that is, however, also combustible.

When transporting and installing the appliance, ensure that no parts of refrigerating circuit are damaged.

Refrigerant leaked from the refrigerating pipes could ignite, if leaking is detected, to avoid any potential source of ignition (spark, naked flames etc.), please open window or door, and keep good ventilating.

For appliances which use flammable refrigerants, the instructions shall include information pertaining to the handling, servicing and disposal of the appliance. The appliance has to be unplugged after use and before carrying out user maintenance on the appliance. 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.

Warning

- Connect the supplied plastic tube to the water overflow pipe on the cold side of the unit, and connect this to a permanent drainage or water container.
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
- Do not use electrical appliances inside the cold room unless they are of the type

recommended by the manufacturer.

- Do not damage the refrigerant circuit.
- Do not store explosive substances such as aerosol cans with a flammable propellant in the cold room of this appliance.
- The door to use for assembling the cold room, shall be made in a way that can be opened from the inside with a force smaller than 70N.

This appliance is intended to be used in households and similar applications such as:

- staff kitchen areas in shops, offices and other working environments;
- farm houses and by clients in hotels, motels and other residential type environments;
- bed and breakfast type environments;
- catering and similar non-retail applications.

Ambient temperature

An explanation shall be given of the meaning of the alpha-numeric characters, indicating the test room climatic class of the appliance, that are marked on the appliance.

Test room climate class	Dry bulb temperature ˚C	Relative humidity %	Dew point ˚C	Water weight in dry air g/kg
0	20	50	9.3	7.3
1	16	80	12.6	9.1
2	22	65	15.2	10.8
3	25	60	16.7	12
4	30	55	20	14.8
5	40	40	23.9	18.8
6	27	70	21	15.8
7	35	75	30	27.3

This product is defined as a customized product and is an unconventional refrigeration appliance. Only one single batch is produced. The main function of this product is not to store food through a refrigeration system, but to provide a refrigeration environment.

1. Product information

CU-450 Split ECO is our split unit, with capacity of 10,000 litres respectively. It is designed for chilling food for use in private households and similar applications. The correct temperature in the cold room will depend on correct construction and insulation.

The warm and cold elements of split units are separate. The cold element is installed in the cold room and consists of: evaporator, fan, thermostat, capillary tubes, filter and light fitting with switches. The warm element is installed in the machinery compartment and consists of: refrigeration compressor, condenser, fan, electrical cabinet and defrosting timer. There are several reasons why the warm element should not be installed in an adjacent room: heat emission, lack of space, aesthetic grounds etc.

The units require a power supply of 220-240VAC 50 Hz and must be connected to an earthed min.10A mains socket. The power cable is connected to the condenser. If the cable is not long enough (2.6m) call an electrician to install a socket closer. The mains socket must be easily accessible for installation/service. The warm element can be located up to 10m pipe length from the cold room, and the two parts must be connected by copper pipe and electric cable. The mains socket must be easily accessible for installation/service.

It is essential that there is sufficient ventilation around the warm element in the machinery compartment. Ambient temperature on the warm side outside the cold room must always be higher than inside, but must not exceed 38°C, or be less than 16°C.

Scandinavian Appliances AS also supplies other products that you need for a self-build cold room.

2. Important information

Scandinavian Appliances AS consumer products are sold for normal use in private households. Split units must only be installed by a refrigeration engineer. To ensure correct use and thereby extend the product service life, please read these instructions carefully. The manufacturer will not assume liability for any damage resulting from non-compliance with the instructions. The product will require maintenance even in normal use, plus replacement of components which are worn out can be necessary. These are not covered during the warranty period but are covered by the guarantee in accordance with the Sale of Goods Act.

Other authorities can apply regulations for e.g. lighting, alarm and the like for installation. The electrical safety of the appliance is only guaranteed when it is installed in accordance with the regulations and supplied with the prescribed voltage.

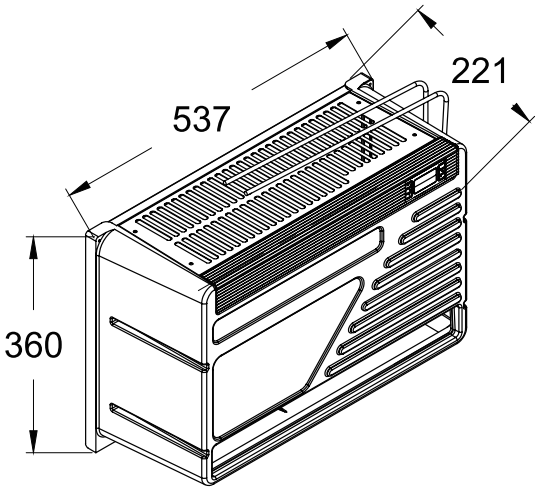
Never allow the unit to be permanently connected via an extension lead. Disconnect plug when cleaning.

The appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

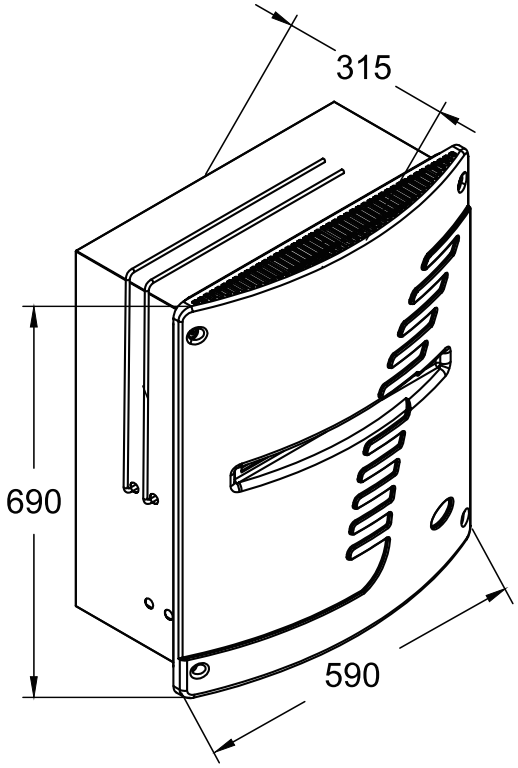
Data plate with serial number is located on the front of the condenser and at the right side of the condenser element. Always state the serial number when contacting the service company or the manufacturer. Repairs must only be made by qualified personnel.

Scandinavian Appliances AS disclaims all liability for typographical errors in these instructions and reserves the right to alter the product specifications.

3. Dimensions and technical specifications



CU-450 Spilt ECO cold element
Evaporator element



External dimensions, warm element	W590 x H690 x D315 mm
External dimensions, cold element	W537 x H360 x D221 mm
Power max.	Max. 500W
Lighting	6,5W LED
Ext. lighting socket	Max. 20W LED
Defrosting	Automatic
Coolant	R290
Net weight, warm element	27 kg
Net weight, cold element	8,5 kg
Power cable length	2,6 m
Compressor	Cubigel NUY80RA1
Volt/Hz	220-240V AC 50Hz
Capacity	Up to 10.000 liters
Thermostat setting	2-18˚C (default 5˚C)
Ambient temperature	16-38˚C
Min. distance to ceiling cold side	200 mm
Min. distance to ceiling/floor warm side	500 mm/500 mm
Unit cold element installed on wall	

4. Pre-installation

First, unpack the cabinet and check it for any transport damage. Do not use a damaged cooling unit. In the event of damage, please contact the shipping company and make sure that the damage is noted on the consignment note. Check that all the items on the item list are present. Contact the manufacturer in the event of damage or missing parts.

Do not locate the unit directly opposite the door as this can cause condensation on the magnetic seals.

The unit is fitted with a defrost timer. This ensures that the evaporator melts the frost every 210 minutes. Defrost water must be drained to a collection tank, drum or the like. Can also be connected to a drain.

NOTE: Remember a water lock if connecting to a drain.

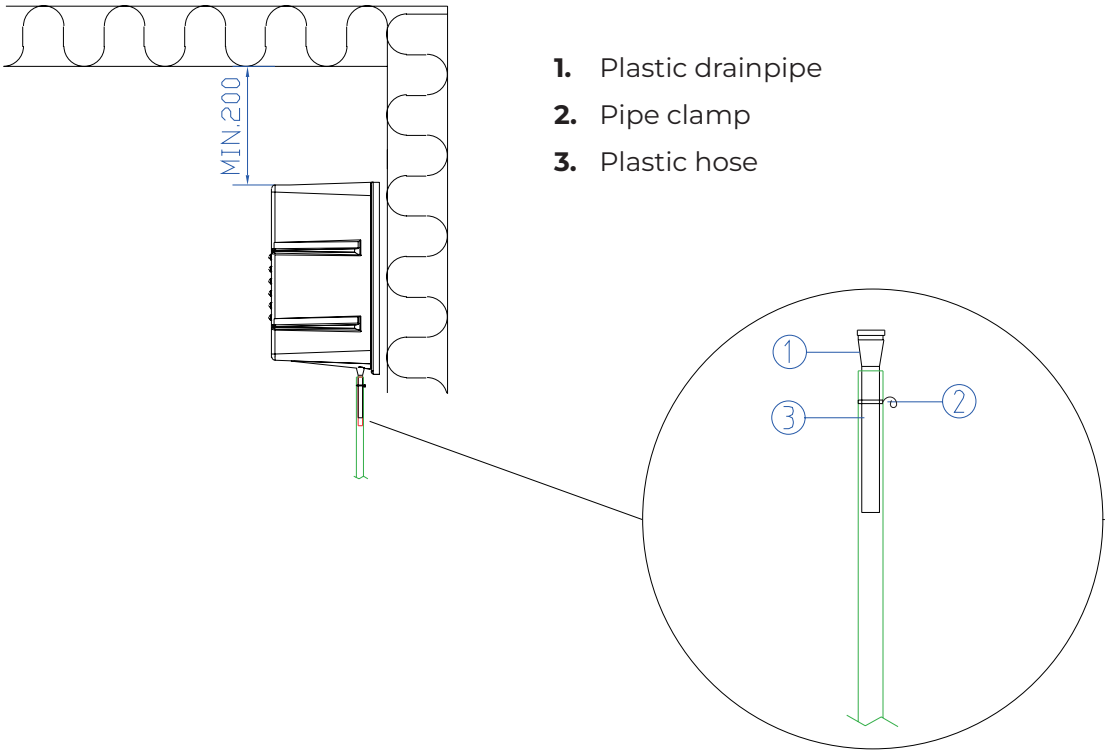
5. Installation

Installation must be performed by a refrigeration engineer.

5.1 Evaporator element

1. Install evaporator element using 6 x 4.2 x 32mm screws on wall 200 – 300mm down from ceiling and with space at sides for pipe installation.
2. Do not locate the unit directly opposite the door as this can cause condensation on the magnetic seals around the door.
3. Pipe connection is on right side of evaporator. Prepare appropriate piping. Install dry filter.
4. Prepare for electric connection between units.
5. Fit cover using 6 x 4.2 x 32mm screws.
6. Connect plastic hose to drain nozzle

NOTE: Reinforce join with plastic drainpipe. See diagram.



1. Plastic drainpipe
2. Pipe clamp
3. Plastic hose

5.2 Condenser element

- Mount shelf (galvanised element) on wall using the 5 screws supplied.
- Secure foam insulation on rear, nearest the galvanised element.
- Place condenser element on shelf, secure at top using screw and rubber sleeve.

Drain condensation to a container (tub or the like) or to a floor drain using a plastic hose (remember a U-bend).

5.3 Refrigeration installation

Suction pipe (8mm) and fluid pipe (6mm) connected (braised) to nozzles on condenser and evaporator element.

NOTE: Remember filter. Pipes should be insulated.

Pressure test unit. Evacuate and fill with R290 coolant. Evaporation temperature -10 °C.

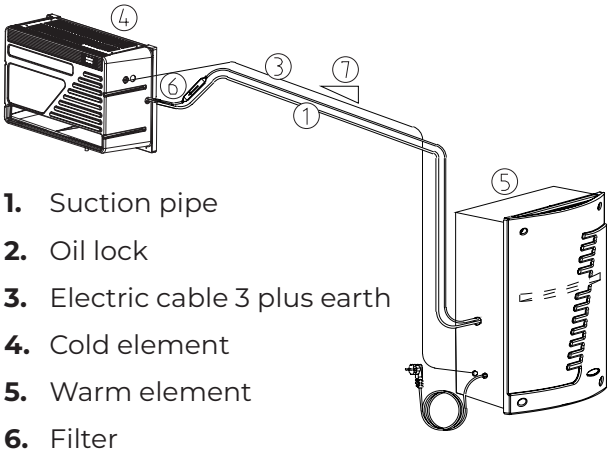
NOTE: An oil lock may be required.

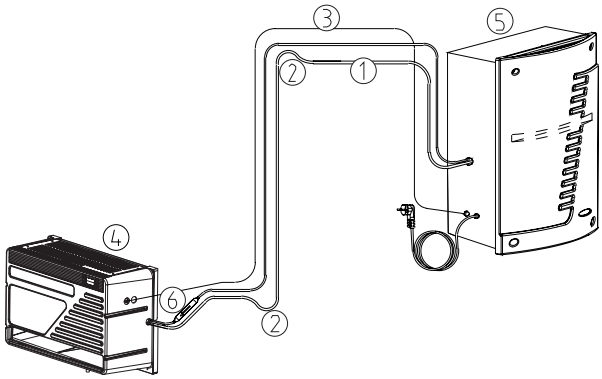
Alternative 1

Pipes can be installed with a fall towards the evaporator element all the way from where they go down to the machine element.

Alternative 2

Oil lock must be fitted so that the entire height difference is a vertical pipe with oil lock up and down.
NOTE: It is vital to avoid oil pockets, i.e. a completely level horizontal stretch.





1. Suction pipe
2. Oil lock
3. Electric cable 3 plus earth
4. Cold element
5. Warm element
6. Filter
7. Fall

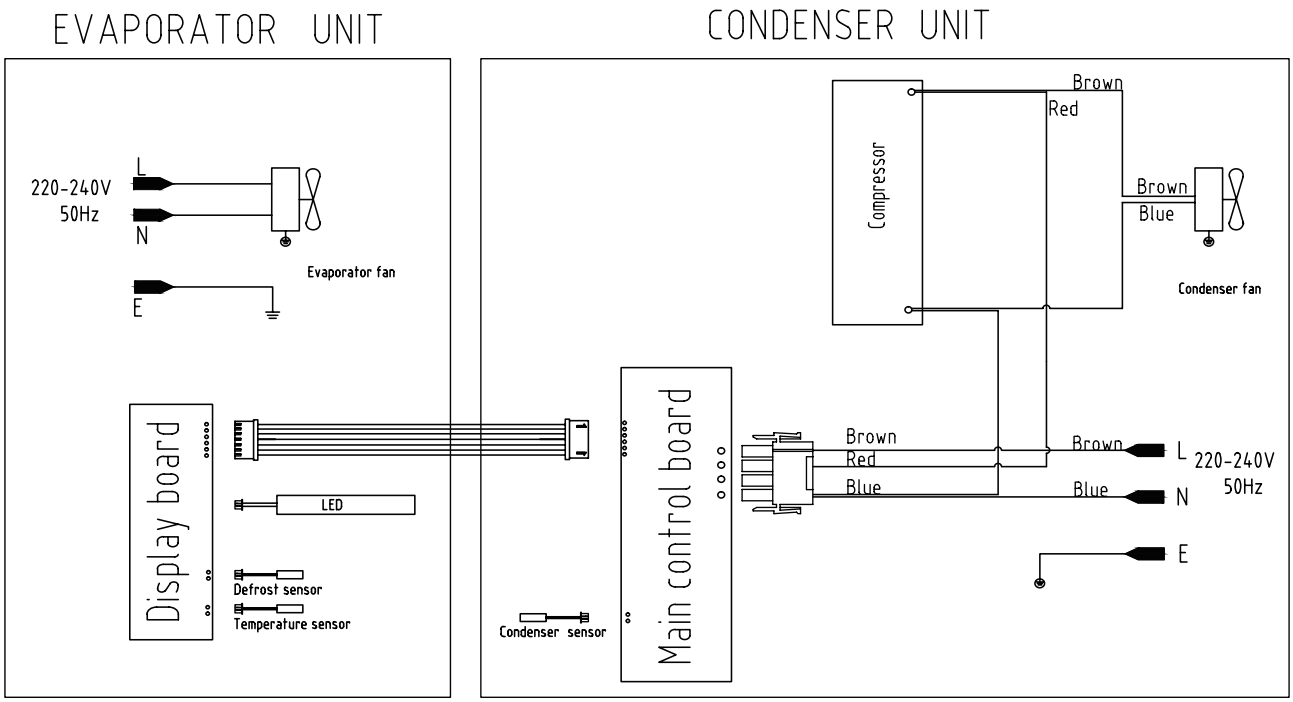
During installation, adjust the filling amount according to the length of copper pipe, referring to the following:

Length of copper tube	0 m	2 m	4 m	6 m	8 m	10 m
Liquid addition	86 g	95 g	100 g	110 g	110 g	120 g

5.4 Electric connections

Run a 2 wire plus earth cable (for minimum 10A current) from cable clamp on evaporator element to that on the condenser element. Connection diagram built in to condenser element cover.

5.5 Wiring diagram



6. Using the appliance

6.1 Replacing the LED bars fro CU-450 Split ECO

The LED bars must be replaced by an authorized technician.

6.2 Controller icons and temperature settings

The unit is equipped with an electronic controller located on the cover of the cold side.

Indicates compressor is activated.

Indicates fan is activated.

Indicates defrosting is activated.

SET Indicates parameter programming.

Indicates buzzer alarm occurred.

The controller has a range of 2 °C – 18 °C, with default setting of 5 °C. In order to adjust the set point please follow the steps below:

- Press and hold ‘SET’ for two seconds, the display will flash the current set point value.
- Press ‘UP’ or ‘DOWN’ arrow button to adjust the temperature.
- Press ‘SET’ again or do nothing for 30 seconds and the system will automatically save the setting and end setting mode

6.3 Switching on/off the light

Press ‘Lig’ to turn on/off the light.

6.4 Manual defrost

Press and hold ‘def/down’ button for 8 seconds to start manual defrost. The defrost will stop automatically when the deicing temperature is reached.

6.5 Alarm function

If the temperature of the compressor exceeds a specific value the controller will generate an audible alarm. If the alarm sounds and the display show the code “ACH” you need to clean the condenser filter and the condenser as described in the “Cleaning & Maintenance” section and reset the alarm by pressing the “Mute’’ controller button. If the problem persists, please order service call.

If the compressor’s temperature exceeds the compressor’s operating temperature limits, the controller will generate an audible alarm and shut down the cooling system, as high temperatures can reduce the cooler’s service life considerably. In this case you need to clean both the filter and the condenser as described in the “Cleaning & Maintenance” section, and reset the alarm and the cooling system by pressing the “Mute’’ controller button. If the problem persists, please order service call.

6.6 Cleaning and maintenance

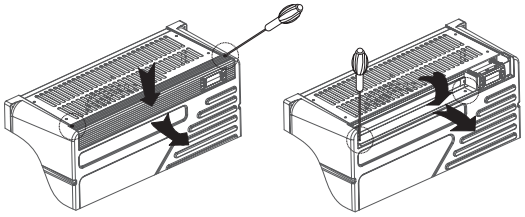
To achieve optimum operation (longer service life) it is important that the condenser is cleaned to remove dust and dirt regularly, at least four times per year, in addition to other requirements.

To access condenser, remove the 4 screws on the cover of the condenser element.

Remember! Disconnect mains plug before removal. Cleaning the condenser is best performed by vacuum cleaning the condenser fins. On CU-450 Split they are placed on the underside of

the con- densor. Exercise caution. The fins are thin and easily damaged. Replace cover after cleaning. Check drain on cold side to ensure the water can run freely to the collection tank, drum or the like, on the cold room side.

To avoid mould forming, bad smells etc, regular cleaning (including inside the cold room) is essential. We recommend mild, warm soapy water for cleaning inside the cold room.



Remove the screw, press the lid, remove the screw and remove the LED lamp.

Using the appliance

- Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.
- Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
- Do not damage the refrigerant circuit.
- Do not store explosive substances such as aerosol cans with a flammable propellant in the cold room of this appliance.
- Do not use electrical appliances inside the cold room of the appliance, unless they are of the type recommended by the manufacturer.
- The door to use for assembling the cold room, shall be made in a way that can be opened from the inside with a force smaller than 70N.

Concerning the cooling room this cooling unit is built into, observe the following:

- Children aged from 3 to 8 years are allowed to load and unload the cooling room.
- Consider the temperature distribution in the cooling room concerning storage of specific types of food.
- Opening the door for long periods can cause a significant increase of the temperature in the compartment of the appliance.
- Clear regularly surfaces that can come in contact with food and accessible drainage systems.
- Store raw meat and fish in suitable containers in the refrigerator, so that it is not in contact with or drip onto other food.
- If it is left empty for long periods, switch off, defrost, clean, dry, and leave the door open to prevent mould developing within the cooling room.

7. Service and troubleshooting

Fault	Cause	Remedy
Unit not cooling sufficiently	Controller set point too high	Adjust set point to lower value
	Abient temperature too high	Reduce temperature in room at the unit's warm side. Check that air flow is unobstructed over and under the unit
	Ambient temperature too low	Increase temperature in room at the unit's warm side
	Door not sealed/closed	Check door is sealed/closed
	Condenser blocked (dust, etc.)	Remove and clean dust filter
	Evaporator iced up	Switch the unit off to defrost
Unit not working	Fuses	Check fuses in main house fuse box
	Mains power cable	Check power cable is properly connected to the mains socket
Light/fan not working	LED or power supply defective	Order service on our website
	Fan defective	Order service on our website
Water leak	Drainpipe blocked	If possible, remove blockage
	Drip pan leaking	Order service on our website
	Warm air getting into cold room	Check magnetic seal on door, locate leak and repair
Controller error code	E0: temperature sensor error	Unplug the power cord for two minutes, and reconnect. If problem remains, order service.
	E1: defrost sensor error	
	E2: condenser sensor error	
	H1: high temperature alarm	Check compressor icon, order service
	AC: condenser high temperature alarm	Clean the dust filter, and check the airflow is unobstructed over and under the front cover on warm side
	ACH: condenser excess temperature alarm	Clean dust filter

For service, see our website at **en.norcool.com**

By checking the above before ordering service, you will help the service engineer know what parts they may need to bring and what measures to take.

8. Disposal of used products

This is based on guidelines laid down in environment protection legislation according to the European Parliament's directives on disposal of electric and electronic products (WEEE). The directive is intended to protect and improve the environment, protect human health and exploit natural resources sparingly and sensibly.

We kindly ask you, the end-user, to observe the following:

1. If the product stops working, including after having been repaired, check if it can be repaired before you dispose of it. If in doubt, contact your vendor or dealer for further information on possible repair of the product.
2. If the product is at the end of its service life – i.e. cannot be repaired or recycled, do not dispose of the product with other unsorted refuse. Contact your local waste disposal or recycling facility, in order for them to collect the product for recycling.To contribute to the improvement and recycling process of this product, do not remove or destroy parts of the product before collection. By doing so you can reduce its potential for recycling.

NOTE: Disposing of electronic and electrical products in landfill and by incineration can cause severe harm to the environment. When worn out substances are not recycled, new resources have to be used for new products. This represents a loss of resources, as the consumption of energy, transport and the negative effect on the environment if such processes is great. Another problem is that this type of product can contain coolants with gases such as hydro fluorocarbon (HFC). HFC gases exacerbate the greenhouse effect which in turn causes a warmer climate when they are released into the atmosphere.

The symbol below, which is also found on the product, indicates separate collection of electric and electronic appliances based on the European Union's WEEE directive.

Disposal Old appliances still have some surplus value. An environmentally friendly approach will ensure that valuable raw materials are recycled. The refrigerants used in your equipment and insulation materials require special handling procedures. Make sure there is no pipe damage on the back of the equipment before handling. Up-to-date information on the options for disposing of old equipment and packaging from old equipment can be obtained from the local municipal office.

NOTE: If the product carries this symbol, it is your responsibility as consumer to contribute to recycling by ensuring the product is not disposed of with other refuse, but is delivered to your local refuse depot and recycling centre. Please contact the relevant authorities in your area for more information on collection schemes.

Finally, make sure you comply with all recycling legislation applicable in your municipality or your country.

9. CU-450 Split ECO Item List

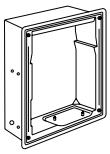
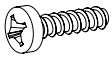
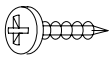
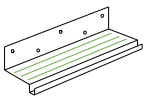
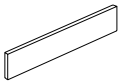
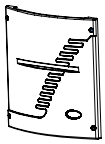
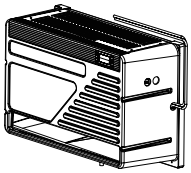
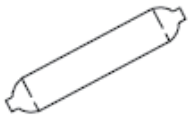
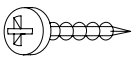
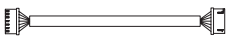
Figure:	Description:	Item number:	Qty:
	CU-450 Split ECO warm part	8900007748	1
	ST4.8x25	8900007704	5
	M5x16	8900006768	4
	ST4x30	8900006767	4
	M4x12	8900007706	2
	Skive 10x20 / Washer 10x20	8900007702	1
	Rubber pad	8900007698	1
	Brakett / Bracket	8900007694	1
	Top Plate	8900007695	1

Figure:	Description:	Item number:	Qty:
	Tettelist / Cell rubber	8900007700	2
	Frontdeksel / Front cover	8900007684	1
	CU-450 Split ECO cold part	8900007749	1
	Filter / Dryer	8900007696	1
	ST4.2x32	8900007703	6
	Copper tube 6 x 80mm	8900007697	1
	Drain tube Ø11x1500mm	8900006771	1
	Pipe clamp	8900006766	1
	4m Connecting wire	8900007693	1
	Cleaning brush	9970240211	1

Notes

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Please visit out website for operating &
installation instructions in other languages.

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