

Manual Dehumidifier KT 45 Eco



Perfection is our aim



EC – Declaration of Conformity

in sense of EC machine directive 2006 / 42 / EEC

Type of machine:

KT 45 Eco


is designed, constructed and manufactured in accordance with the above-mentioned directive, the directive for low tension 2014/35 EEC and EMV directive 2014/30 EEC. Rohs directive EEC 2011/65 and WEEE directive EEC 2012/19.

The following harmonized standards have been used:

- EN 60335-2-40 Standard for electrical dehumidifiers
- EN 60335-1 Directive of electrical appliances for use at home or similar purposes
- EN 6100-3-2 Electromagnetic Compatibility
- EN 6100-3-3 Electromagnetic Compatibility
- EN 55014-1 Electromagnetic Compatibility
- CISPR 14-1 Electromagnetic Compatibility
- EN 55014-2 Electromagnetic Compatibility
- CISPR 14-2 Electromagnetic Compatibility

Mönchengladbach,
15.02.2021

Place, Date



Signature

Managing Director

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1. GENERAL SAFETY INFORMATION

The operator must provide the user with the operating instructions and ensure that the user understands the contents.



WARNING
Risk of fire / flammable materials



- The appliance contains a flammable refrigerant. Read the supplied instructions / warnings
For units using R290: (Class A3, acc. ISO 817)
This is a natural refrigerant.



- Read the operators manual.



- Read the service manual.

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that the refrigerants may not contain an odour.
- Appliance should be installed, operated and stored in a room with a floor area larger than 4 m².



WARNINGS

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 in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

- Compliance with national gas regulations shall be observed.
- R290 (Class A3, acc. ISO 817) has a low GWP (Global Warming Potential) of 3 and an ODP (Ozone Depletion Potential) of 0.
- The maximum refrigerant charge amount 0,150 kg.
- Keep ventilation openings clear of obstruction.
- The appliance shall be stored so as to prevent mechanical damage from occurring.

- A warning that the appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with industry's recognized assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

2. APPLIANCE RELEVANT SAFETY INFORMATION



ATTENTION

This dehumidifier must not be used in rooms under the following conditions:

- **potentially explosive atmosphere**
- **aggressive atmospheres**
- **featuring a high concentration of solvents**
- **an extremely high ratio of dust**

Keep unit grounded: Always operate the unit with a grounding plug and a grounded electrical outlet. A grounding plug is an essential safety feature that helps reduce the risk of shock or fire.

Protect power cord from damage: Never operate a unit with a damaged power cord, as this may lead to electrical or fire hazards. If the power supply cord is damaged, it must be replaced by a cord of the same type and amperage rating.

Extension cords: Extension cords must be grounded and able to deliver the appropriate voltage to the unit.

Handle with care: Do not drop, throw or crash the dehumidifier. Rough treatment can damage the components or wiring and create a hazardous condition.

Run on stable surface: Always operate the unit on a stable, level surface, for example the floor or a strong counter, so that the dehumidifier cannot fall and cause injury.

Keep out of water: Never operate the unit in pooled or standing water, as this may create a risk of injury from electrical shock. Do not store or operate outdoors. If electrical wiring or components become wet, thoroughly dry them before using the unit. If in doubt do not use the dehumidifier and consult a qualified technician or a vendors approved engineer.

Keep air intakes clear: Do not clog or block the air intakes by placing the dehumidifier too close to curtains, walls or anything that will restrict the air inlet. This may cause the unit to overheat and result in a fire or electrical hazard.

Keep filter clean: Always use a clean air filter. Do not allow any material to clog the filter, as this may cause the dehumidifier to overheat. Never use without a filter. Always check, and if necessary, clean the filter before switching the dehumidifier on. Do not allow oil, grease, or other contaminants to be drawn into the dehumidifier.

Keep electrical components dry: Never allow water inside the dehumidifier's electrical components. If these areas become wet for any reason, thoroughly dry them before using the dehumidifier. If in doubt do not use the dehumidifier and consult a qualified technician or a vendors approved engineer.

3. GENERAL ADVICE

Before putting your dehumidifier into operation for the first time, the instructions manual should be studied carefully.

After receiving the unit you should check your dehumidifier for any transport damage. In case of damage, you should inform the sender immediately.

Transport damages should be stated after unpacking the equipment. The respective seller or specialised reseller should be contacted immediately.

Keep the packaging for the dehumidifier in a safe place in order to be able to despatch the dehumidifier safely if it requires a service. In order to save space, you can simply cut through the adhesive tape using a knife and fold up the cardboard box.

4. DEHUMIDIFIERS PRINCIPLES

This dehumidifier is designed to reduce humidity from the air in a building or part of a building. The purpose is to prevent humidity damage, and to dry out wet materials such as carpet, floors, walls, furniture, contents, timber and structural materials.

This dehumidifier can prevent the formation of condensation, reduce air humidity and keep constant a desired relative humidity value. The time necessary for the dehumidifier to dry a room and reach the desired relative humidity depends on the environmental conditions prevailing within the room. For example the number of air changes with outside, any sources of moisture and the room temperature can all either speed up or slow down the dehumidification process.

The dehumidifier functions according to the condensation principle with heat recovery. The fan takes the humid air from the room in and across a filter and then through an evaporator. Here the air is cooled below dew point so that the water vapour of the air forms a condensate on the coils which flows into the water collecting tank. The cooled and dried air is heated again by a condenser. By recycling the room air through the dehumidifier over and over again the moisture content and relative humidity of the air is reduced.

5. INSTALLATION AND TRANSPORTATION

For installation and transportation, the following instructions must be considered:

- The air inlet and the air outlet must not be covered whilst the dehumidifier is in operation.
- Before any moving the dehumidifier it must be switched off by its ON-OFF switch. The mains plug is to be removed from the socket and the water tank should be emptied.
- For transportation the dehumidifier should be secured on a level base only and must be prevented from rolling around.
- The dehumidifier must always be transported vertically.
- This dehumidifier must be used exclusively for air dry.
- If the dehumidifier has been in a horizontal position for any time over a few minutes, you must let it stand in the upright position for at least 30 minutes before operating. This allows the oil to drain back into the compressor.

6. OPERATING INSTRUCTIONS



ATTENTION

- Operate the dehumidifier only in the upright position.
- Plug in to a standard outlet with the correct voltage and amperage for the unit.
- If the dehumidifier turns off for any reason, wait five minutes before turning it on again. This prevents the compressor from being damaged.
- Check dehumidifier daily for correct operation.
- Protect floor surfaces from water.

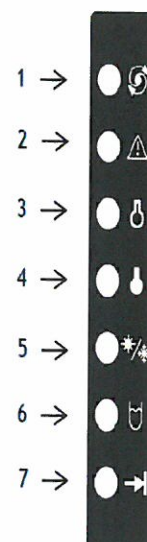
Please proceed as follows to start using this dehumidifier:

- After transported, the dehumidifier should stand in the upright position for 30 minutes. This is recommended to extend the compressor's operating lifetime.
- Plug in the dehumidifier into the mains.
- Check that the water tank is in position.
- Switch on the I/O-switch and check if time counter is running. Both I/O-switch and the time counter are located in the upper right side of the dehumidifier, along with the leds. The control panel must be illuminated after switching on the I/O-switch. Check for the proper operation of both the fan and compressor before leaving the unit unattended.
- The dehumidifier will operate continuously until you switch it off or, in case of operation with water tank, until it gets full.
- If operating with a remote humidistat (optional accessory) switch on the dehumidifier and set the remot humidistat to the required humidity rate level.

7. ELECTRONIC CONTROLS

This unit is equipped with an electronic control board. The meaning of each LED and correspondent symbol on the control panel is the following:

- 1 Run Mode - The dehumidifier is running
- 2 Error - If there is any damaged electronic sensor; too high or too low temperature
- 3 Low temperature - The unit is in automatic defrost mode
- 4 Internal high temperature - The air filter is blocked
- 5 Ambient temperature - Turns off the dehumidifier when limit temperatures are reached
- 6 Water tank - The water tank is full and must be emptied
- 7 Set point - The relative humidity (accessory) set point has been reached



Control panel label

8. AUTOMATIC DEFROSTING SYSTEM

During normal dehumidifying operation, ice may form on the evaporator. This dehumidifier is equipped with an automatic hot-gas defrosting system and if ice is detected by the temperature sensor, it will defrost automatically according to the following principle:

- A temperature sensor measures the condition existing in the critical area of the evaporator;
- It transmits an electrical signal to the main electric board. It has been designed to avoid frequent defrost cycles and consequent loss of efficiency;
- The relay switches off the fan and simultaneously opens the solenoid valve;
- Hot gas is guided into the evaporator until the latter is completely free of ice;
- Subsequently, the dehumidifier will operate again in its normal mode when the temperature sensor measures +7°C;
- The time between defrost cycles is 20 min. after.

9. CONDENSATES OUTLET

This dehumidifier is equipped with a water collecting tank which is provided ex works with a threadplug for draining the condensate. In addition, a hose connection is included in the scope of supply for a 14-mm hose (9/16") with which the user can lead the condensate directly into a drain.

During normal operation, the device collects water in the water tank and stops operating when the float reaches the maximum water level. The corresponding LED on the control panel also lights up (see section 7).

To use the hose for draining the condensate, you should proceed as follows:

- Empty the water tank;
- Remove the plug from the bottom of the water tank;
- Fasten the 9/16" (14 mm) fitting in the bottom of the water tank;
- Attach the hose supplied with the dehumidifier to the 9/16" (14 mm) fitting;
- The end of the hose must always be at a lower plane than the top of the water tank and headed to a larger vessel or directly to a drain. The hose must be headed downwards as it uses gravity to drain.

10. CONDENSATES PUMP WORKING MODE (OPTION)

- Switch off the dehumidifier and disconnect the mains plug from the socket;
- Remove the water bucket from the dehumidifier and empty it;
- Fit in an 8-mm-hose (inner diameter) with the desired length onto the water outlet of the submersible pump and make it pass through the hole in the left side panel and then install the pump inside the bucket;
- Plug in the pump to the pump socket located beneath the water pan in the right and return the bucket to its room;
- Extend the hose to an existing drain point or sewer;

- Plug in the dehumidifier and switch it on;
- Test if the pump is working and is draining out water by adding water to the bucket until you check that the water is being pumped out from the bucket.


11. ELECTRICAL CONNECTIONS

This dehumidifier was designed to operate in a 220 - 240 V ~ 50Hz electrical installation. Make sure that the electric sockets are connected to earth and that all safety precautions are taken.

12. OPERATING CONDITIONS

This dehumidifier can be operated within an ambient temperature range from +5°C to +32°C and with a relative humidity from 50 % to 90 %. It is suitable for application on construction sites, residential buildings, museums, archives, garages and storage rooms.

13. SPECIFICATIONS

Model		KT 45 ECO
Temperature range		+5 °C - +32°C
Relative humidity range		50% - 90%
Defrosting system		Hot gas
Rated voltage		220 - 240 V ~ 50 Hz
Power consumption	32°C – 80%	0,610 kW
Rated current		2,8 A
Air consumption		520 m³/h
Contents water tank		8 l
Refrigerant charge		R290 / 150 g 
Global warming potential (GWP)		3
Equivalent tons of CO2		0,00045t
Hermetically sealed systems, filled with a flammable refrigerant		
Drying capacity (l/24h)	32°C – 80%	38
	27°C – 80%	35
	20°C – 60%	18
Dehumidifier dimensions W×D×H [mm]		550 x 560 x 905
Weight		35 kg
Electronic control		✓
Noise level		61 dB(A)

14. TROUBLESHOOTING

Trouble	Cause	Solution
Unit does not operate	No power to the unit	Plug in the unit; check power at outlet
	Completely filled water tank	Water tank must be emptied and installed again
	Switch not turned ON	Turn on the switch on Pos. I
Doesn't dehumidify	Ambient temperature is lower than +5°C.	Under this condition the dehumidifier becomes inefficient. It is recommended to switch off the dehumidifier
	Ambient temperature exceeds +32°C.	Under this condition the compressor is overloaded and switches off automatically. It is recommended to switch off the dehumidifier
	The ambient air humidity is lower than 50%	Under this condition the dehumidifier becomes inefficient. It is recommended to switch off the dehumidifier
	The air filter is strongly soiled	The air filter must be exchanged
	Not enough time to dry	Allow more time to dry
Compressor will not start	Overload protector is defective	Consult reseller or authorized workshop
	Running capacitor is defective	Consult reseller or authorized workshop
The fan is out of operation	The dehumidifier is running a defrost cycle	The dehumidifier will switch on the fan automatically after some minutes. If not, consult reseller or authorized workshop
	Fan not running	Consult reseller or authorized workshop
Unit continuously in defrost and you can see an ice block on the evaporator	Defective control assembly	Consult reseller or authorized workshop
	The room temperature is lower than +5°C.	Assure that the device is only set up in rooms with temperatures above +5°C
	Defective bypass relay valve	Consult reseller or authorized workshop
Unit does not defrost	Defective temperature sensor	Consult reseller or authorized workshop
	Defective control assembly	Consult reseller or authorized workshop
	Defective bypass relay valve	Consult reseller or authorized workshop
Time counter does not run	Switch not turned ON	Turn on the switch on Pos. I
	Completely filled water collecting tank	The water collecting tank must be emptied and installed again
	Defective time counter	Consult reseller or authorized workshop

15. MAINTENANCE

Always turn off the power and disconnect the main cable before performing maintenance procedures. All service procedures below are to be **executed with the unit unplugged**. Perform before each use or as needed.

INSPECT ELECTRICAL SYSTEM

Inspect the electrical cord for damage at regular intervals.

KEEP OUT DUST

Keep dust from surfaces and volumes to dry.

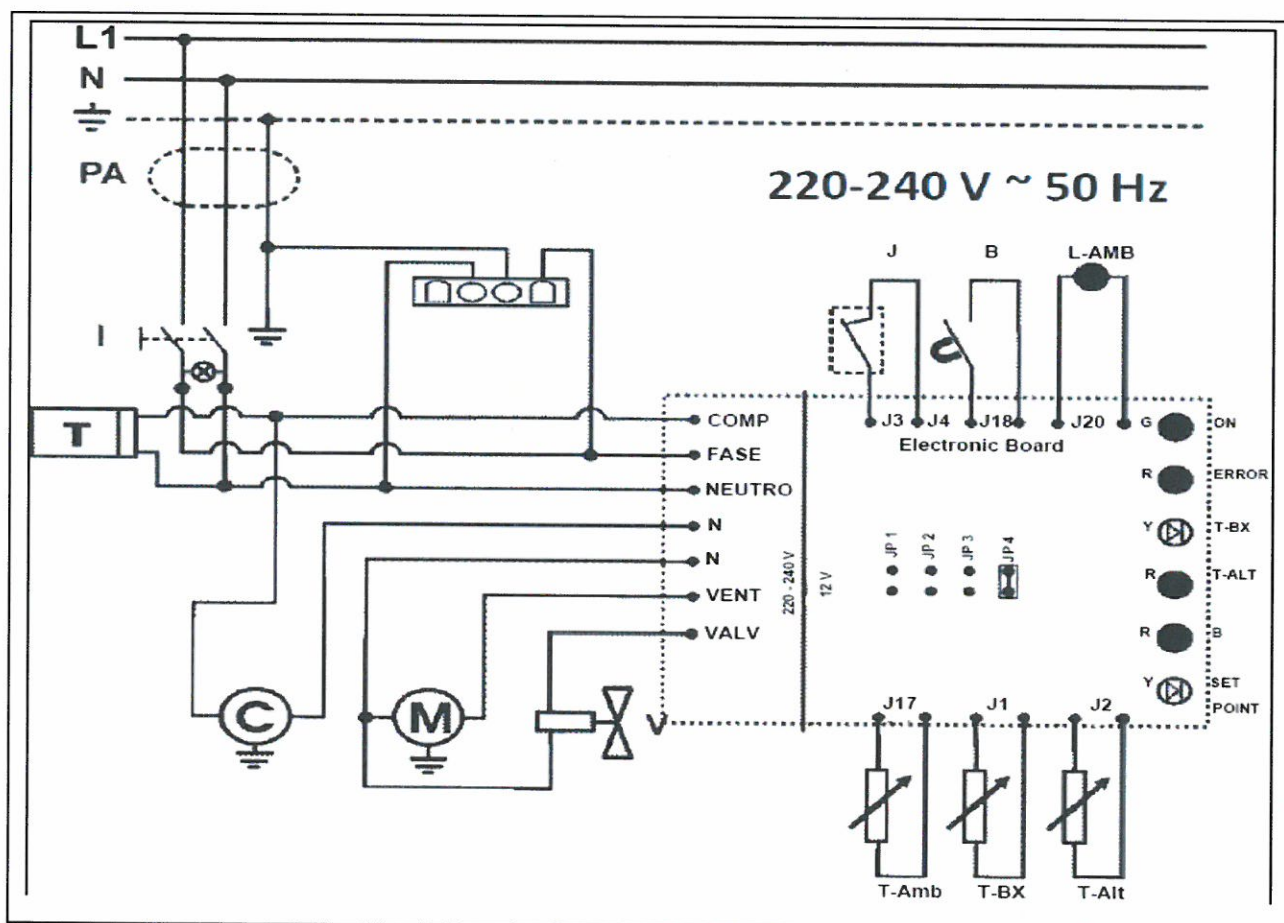
KEEP AIR FILTER CLEAN

Inspect air filter regularly so that it doesn't get clogged.

Remove the gross of the dust and dirt with a soft brush and then wash it with tap water and let it dry before inserting it again.

16. ELECTRIC DIAGRAMS

DEHUMIDIFIER ELECTRC WIRING



L 1 - Line

N - Common

 - Earthing

PA - Terminal block

I - Main switch

T - Time counter

J - Jack socket

B - Tank level Reed sensor

C - Compressor

M - Fan motor

V - Solenoid valve

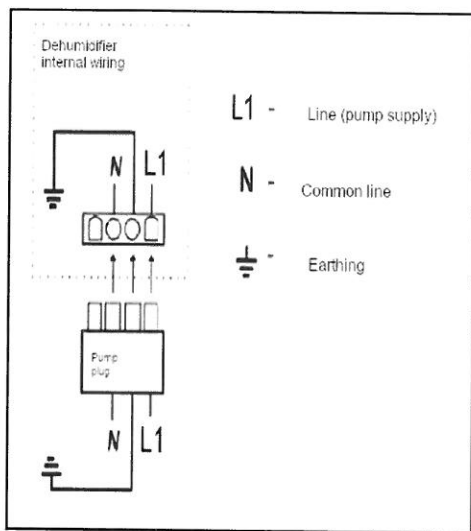
T-BX - Low temperature probe

T-Alt - High temperature probe

T-Amb - Ambient temperature probe

L-Amb - Ambient temperature alarm lamp

PUMP CONNECTION WIRING (OPTION)



In case of using a water condensates pump it must be connected to the socket located underneath the water pan of the dehumidifier, and only then it is possible to switch it on again.

The water pump is supplied by the **L1** and **N** wirings.

As the condensates starts to flow into the bucket and the pumps first float is activated, the pump starts to pump out the water. If somehow the hose gets clogged the water level will start to rise until the bucket float with the magnetic moves away from the level sensor, due to the rising of the water level, making the dehumidifier to stop by full bucket detection and consequently lighting up the full bucket led, which will force the user to check the bucket.

OBS.:

Pump wiring must be connected according to this electric wiring diagram!

17. DISPOSAL



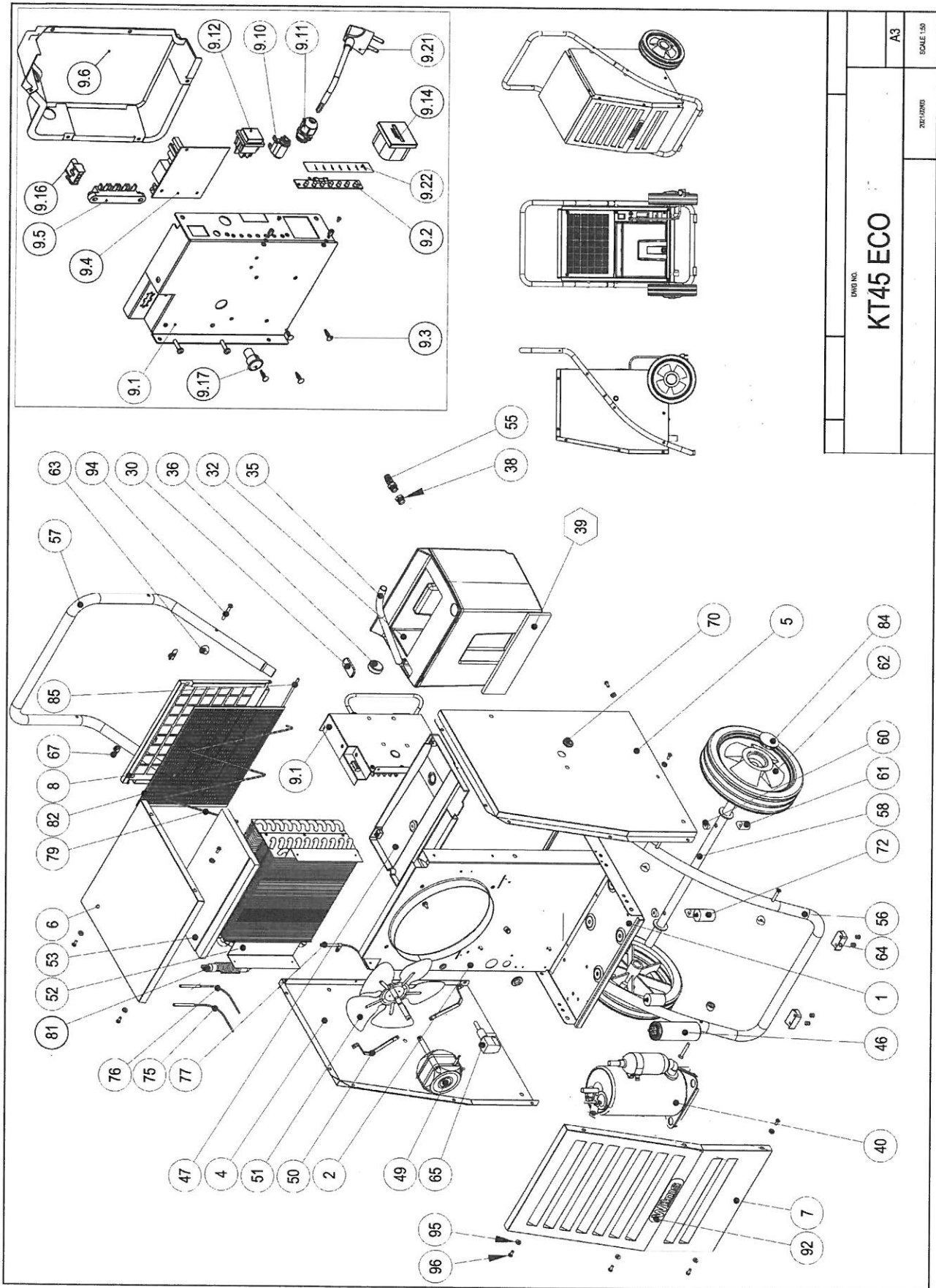
Electronic equipment must not be treated as domestic waste. It must be disposed of in accordance with Directive 2019/19/EU of the European Parliament and Council of 4th July 2019 on the waste of electrical and electronic equipment.

Dispose this equipment in an appropriate manner, according to the relevant legal

regulations or local store for recycling advice.

SPARE - PARTS LIST**KT 45 Eco**

<u>Pos.</u>	<u>Part-No.</u>	<u>Description</u>	<u>Qty.</u>
01	3104500	Bottom sheet metal	1
02	3104501	Frame	1
04	3104502	Right side panel	1
05	3104503	Left side panel	1
06	3104506	Top cover	1
07	3104504	Outlet ventilation grid	1
08	3104505	Inlet ventilation grid	1
9.1	3104750	Control panel	1
9.2	3104751	PCB Led	1
9.3	3104700	PCB Spacer	4
9.4	3104752	Electronic control board	1
9.5	3104701	Terminal block	1
9.6	3104760	Protection box	1
9.10	3104537	Hygrostat jack connector	1
9.11	3104702	Cable holder	1
9.12	3104536	Switch	1
9.14	3104535	Hour meter	1
9.16	3104534	Pump socket	1
9.17	3104703	Level sensor	1
9.21	3104552	Main cable with Schuko plug	1
9.22	3104753	Sticker	1
30	3104704	Float cover	1
32	3104513	Water tank	1
35	3104706	Draining hose	1
36	3104543	Magnet float	1
38	3104553	Plug	1
39	3104708	Foam spacer	1
40	3104761	Rotary compressor	1
46	3104762	Running capacitor	1
47	3104514	Water pan	1
49	3104710	Fan motor	1
50	3104554	Fan motor bracket	4
51	3101625	Fan	1
52	3104546	Condenser / Evaporator	1
53	3104522	Cover	1
55	3104555	Male hose connector	1
56/57	3104510	Handle - complete	1
58	3104509	Wheel shaft	1
60	3104523	Spacer	2
61	3104556	Foot	2
62	3104525	Wheel	2
63	3104715	Saddle washer	6
64	3104716	Saddle foot	2
65	3104712	Solenoid valve body	1
65a	3104713	Solenoid valve coil	1
67	3104529	Turn lock	2
70	3104557	Grommet	1
72	3104558	Spacer	2

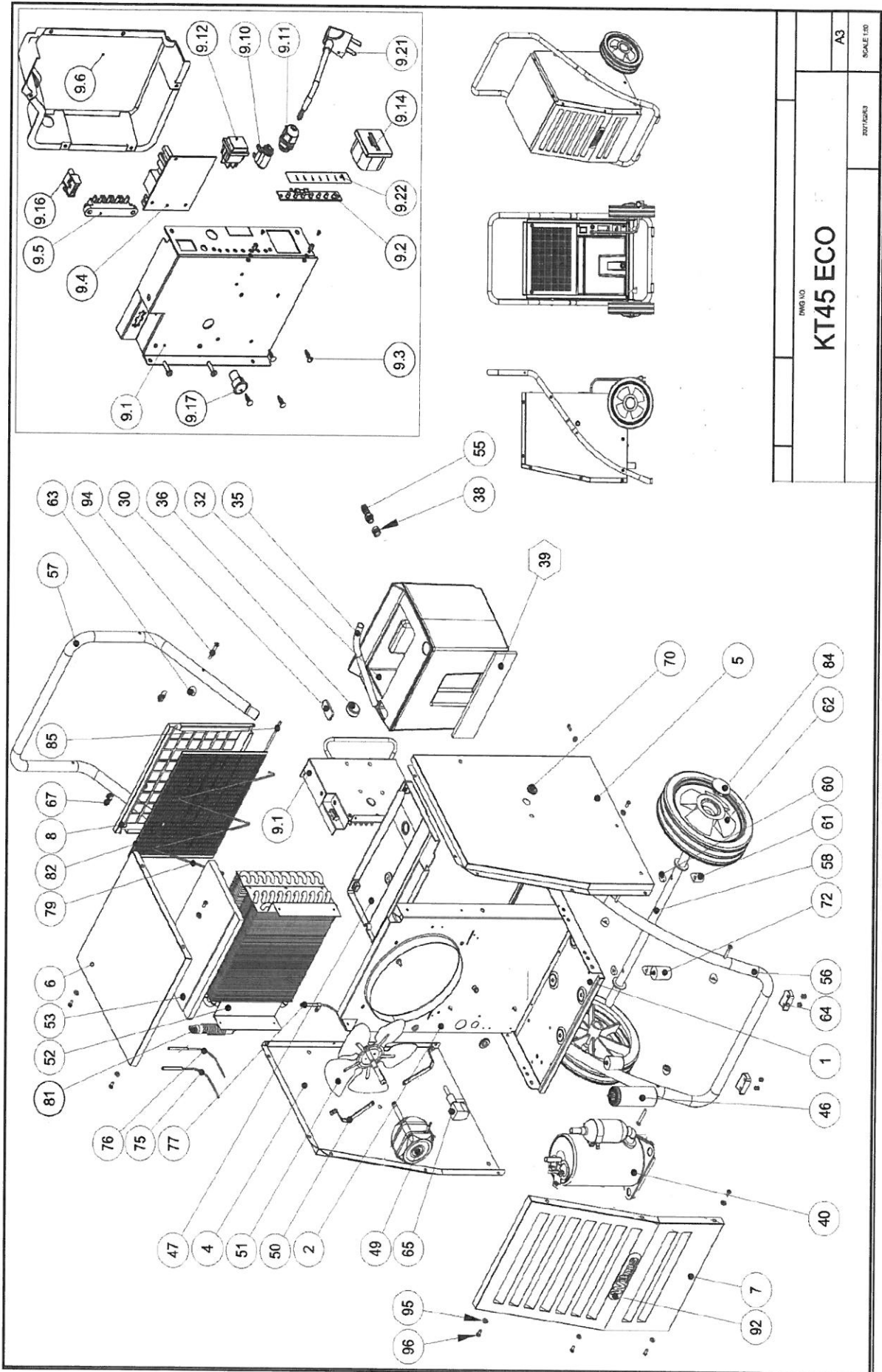


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SPARE-PARTS LIST

KT 45 Eco

<u>Pos.</u>	<u>Part-No.</u>	<u>Description</u>	<u>Qty.</u>
75/76/77	3104763	Sensor set	1
79	3104511	Filter holder	1
81	3104718	Filter dryer	1
82	3104528	Filter	1
84	3104719	Wheel center	2
85	3104512	Filter grid	1
92	3104720	Wilms lable	1
94	3104551	Screw M 6 x 45	6
95	3104550	Gasket M 5	20
96	3104549	Screw M 5 x 10	20
not shown	3104754	Flat cable	1



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