

FAN COOLER AND HEATER MUAT-FBC SERIES

Installation manual

MUAT-10-FBC
MUAT-20-FBC



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1. APPLICATION

FBC fan coolers/heaters make up a decentralised cooling/heating system. The air streaming through the heat exchanger is cooled/warmed up. Fan coolers/heaters are used for cooling/heating large volume buildings: general, industrial and public buildings etc.

The casing of FBC fan coolers/heaters is made from extended polypropylene EPP. Water droplet catcher and condensate tray are made of ABS plastic

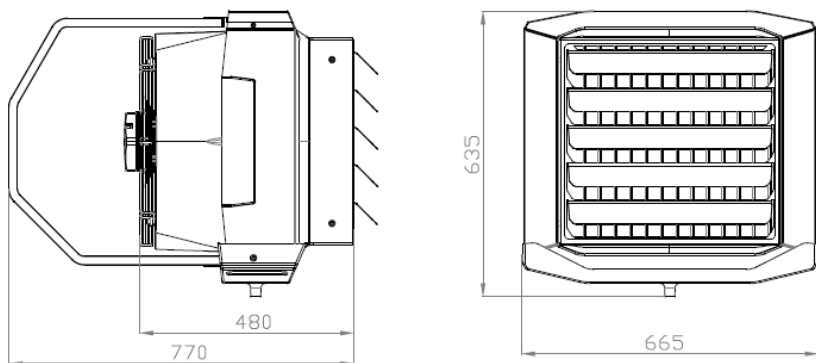
The devices are designed for indoor use where maximum air dustiness does not exceed $0,3 \text{ g/m}^3$. Units are built using copper, aluminum and galvanized steel. It is prohibited to install units in corrosive environments. The devices can not be used in an environment where there is oil mist.

Water heat exchanger could be supply by water or glycol solution up to 60%. The heat exchanger tubes are made of copper. The fluid should not cause corrosion of this material. In particular, the parameters as below should be provided.

Parameter	Value
pH	7,5-9,0
Content of impurities	free of sediments/particles
Total hardness	$[\text{Ca}^{2+}, \text{Mg}^{2+}]/[\text{HCO}_3^-] > 0.5$
Oil and grease	<1 mg/l
Oxygen	<0.1mg/l
Bicarbonate, HCO_3^-	60-300 mg/l
Ammonium	< 1.0 mg/L
Sulphide	< 0.05 mg/L
Chloride, Cl	<100 mg/l

2. TECHNICAL DATA

MUAT-10-FBC



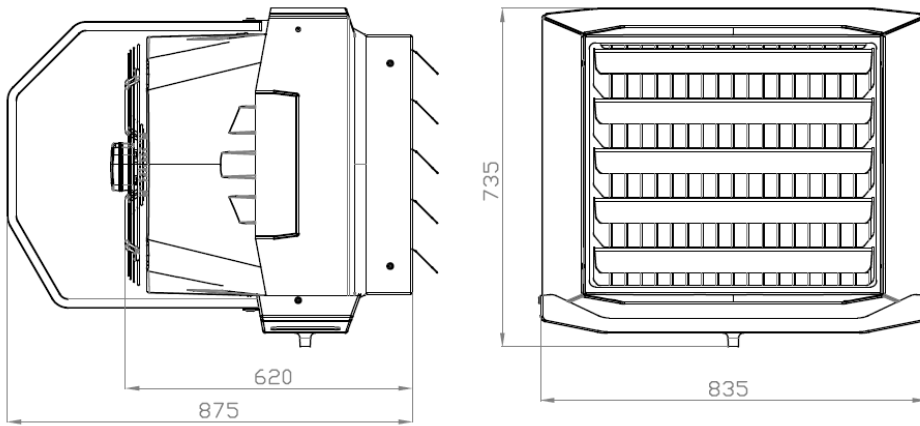
	MUAT-10-FBC		
Speed	III	II	I
Max airflow [m ³ /h]	2900	2050	1150
Power supply [V/Hz]	230/50		
Max current consumption [A]	1,5	1,2	0,6
Max power consumption [W]	340	240	120
IP/ Insulation	54 /F		
Max acoustic pressure level [dB(A)	64,1	54,5	42,1
Horizontal range** [m]	18,0	12,7	7,1
Max heating water temperature [°C]	70		
Max operating pressure [MPa]	1,6		
Connection Przyłącze	3/4"		
Installation	Indoor		
Max working temperature [°C]	55		
Device weight [kg]	23,1		
Weight of device filled with water [kg]	25,8		

* Acoustic pressure level has been measured 5m from the unit in a 1500m³ space with a medium sound absorption coefficient

** Horizontal isothermal range for 0,5 m/s border air stream speed

2. TECHNICAL DATA

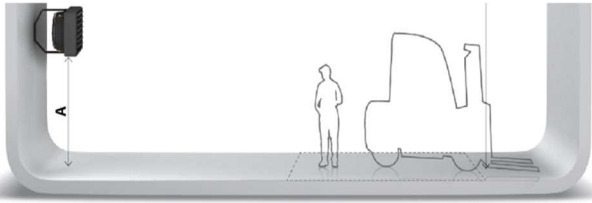
MUAT-20-FBC



	MUAT-20-FBC		
Speed	III	II	I
Max airflow [m ³ /h]	4200	3350	2000
Power supply [V/Hz]	230/50		
Max current consumption [A]	2,4	1,8	1,4
Max power consumption [W]	550	370	270
IP/ Insulation class	54 /F		
Max acoustic pressure level [dB(A)]*	67,5	61,1	52,3
Horizontal range** [m]	20,5	16,3	9,7
Max heating water temperature [°C]	70		
Max operating pressure [MPa]	1,6		
Connection	3/4"		
Installation	Indoor		
Max working temperature [°C]	55		
Device weight [kg]	36,0		
Weight of device filled with water [kg]	41,1		

* Acoustic pressure level has been measured 5m from the unit in a 1500m³ space with a medium sound absorption

** Horizontal isothermal range for 0,5 m/s border air stream speed



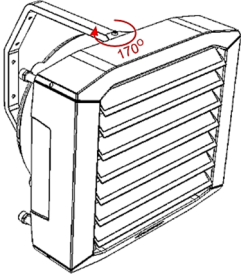
3. INSTALLTION

Units can be mounted to vertical partitions using rotary console.

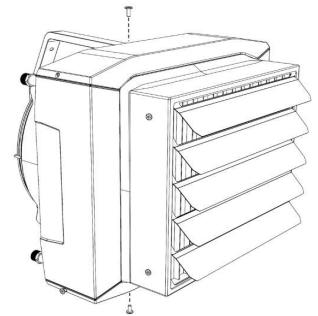
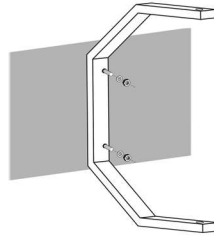
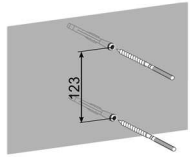
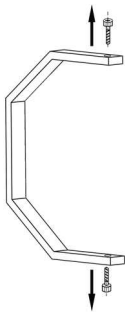
The device should be leveled

	MUAT-10-FBC	MUAT-20-FBC
A	2,5-7,0	2,5-7,0

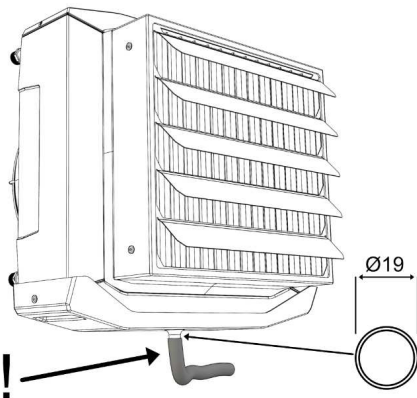
3.1. INSTALLATION – BRACKET



3.2. ASSEMBLY INSTRUCTIONS



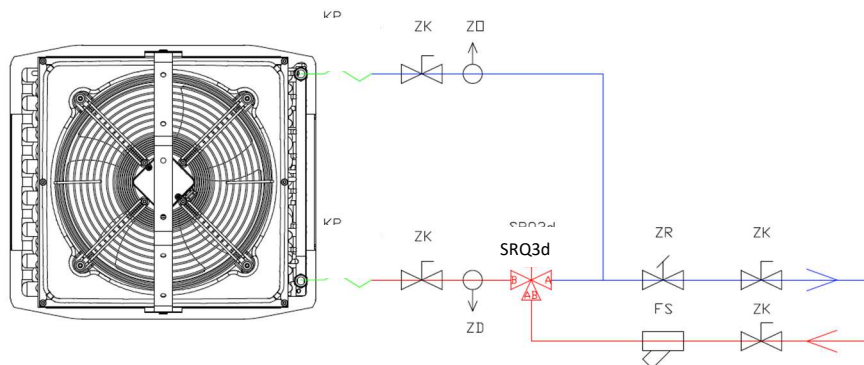
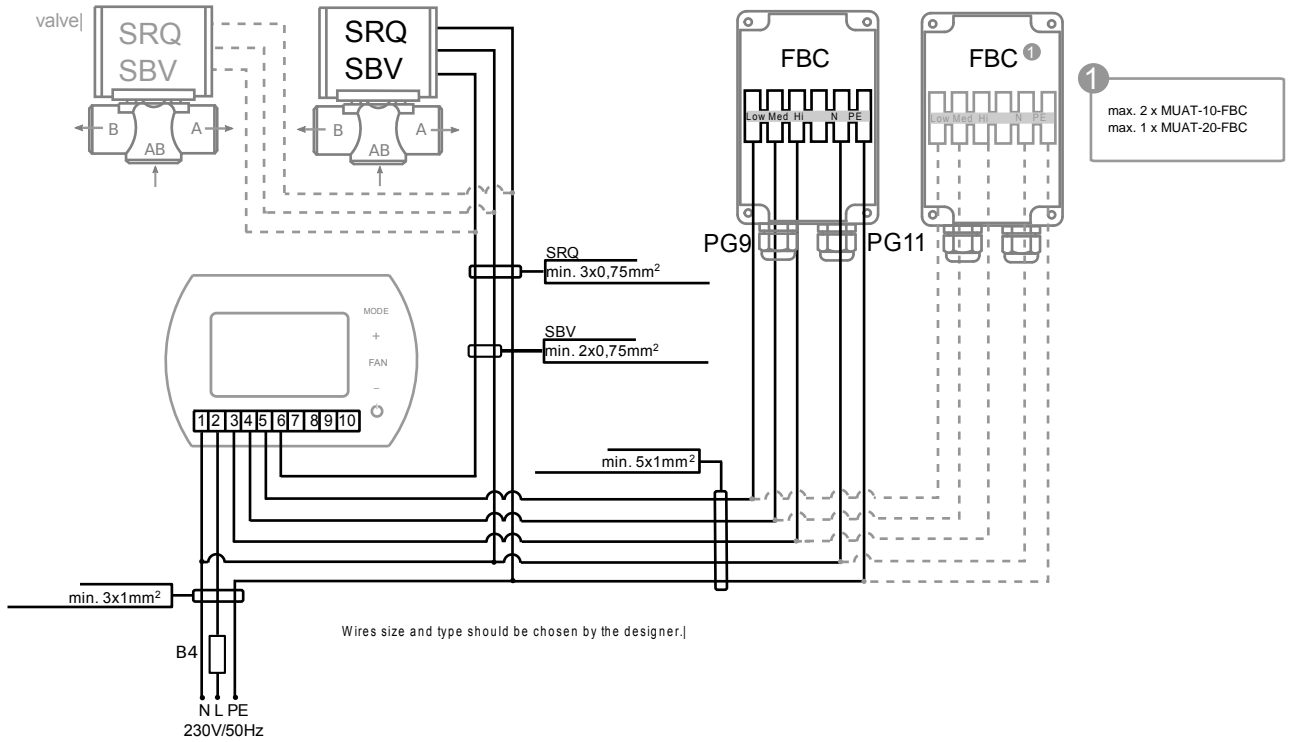
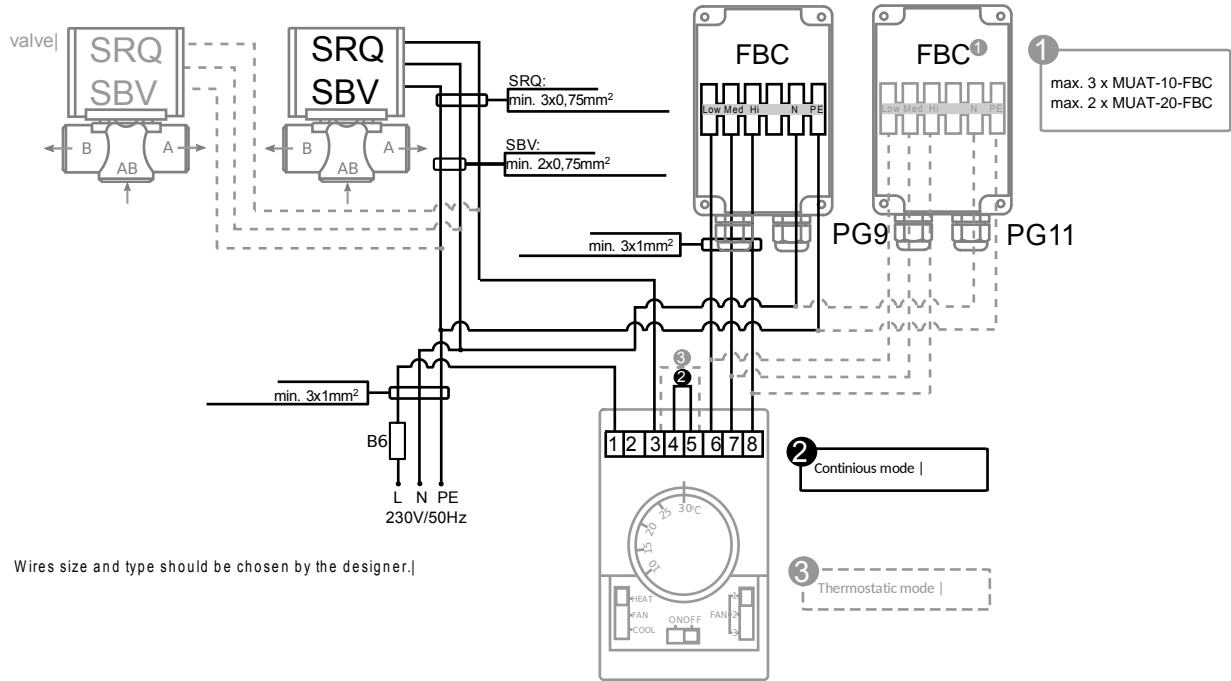
M8 screws are in set with bracket



Connect pipe for draining condensate

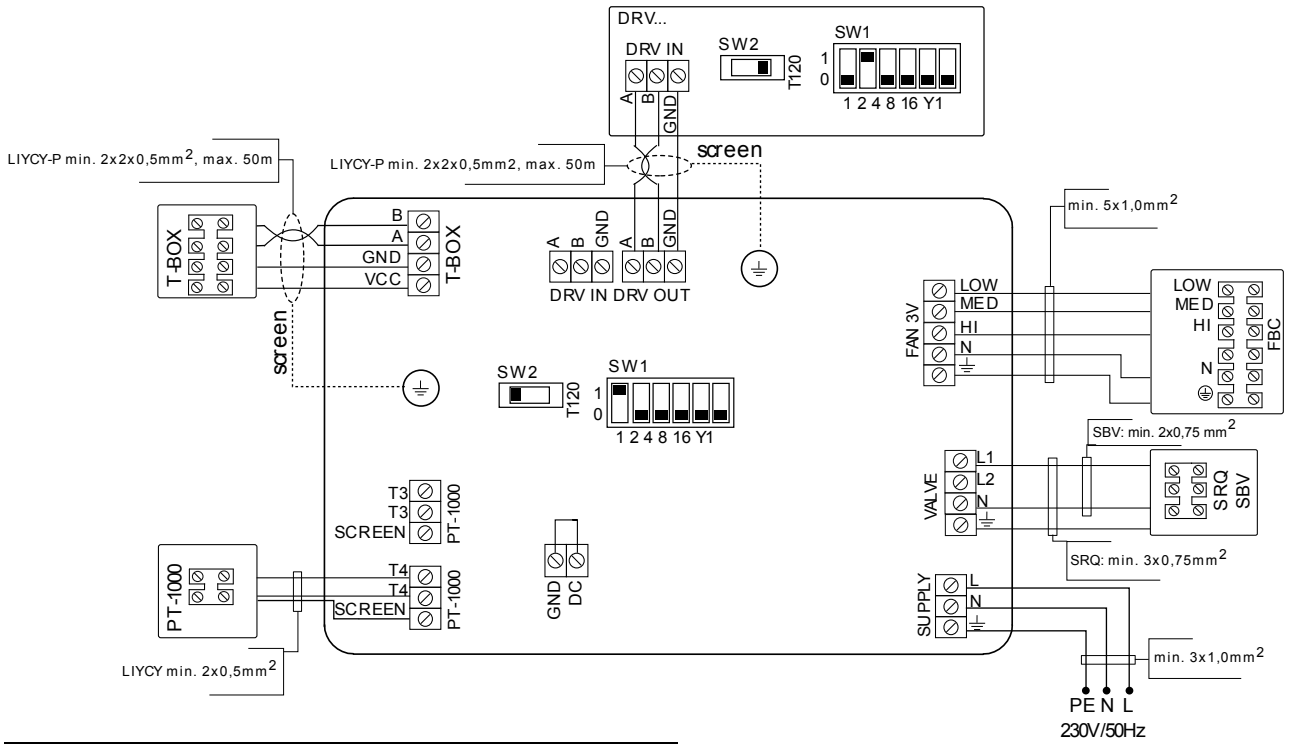
If the outer tube fits loosely, use a hose clamp

4. CONNECTION DIAGRAMS



4. CONNECTION DIAGRAMS

BMS

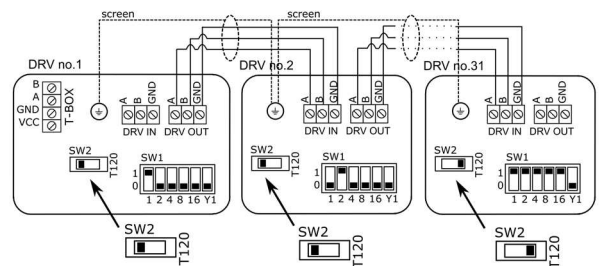


Cable Gland:	6 x PG9 + 2 x PG 11
Wires size and type should be chosen by the designer.	

EN: When connecting DRV modules to the T-box controller or BMS, you have to binary set addresses on each (each DRV must have individual address) DRV module by DIP-switch SW1. To address modules check if the power supply is turned off, set the addresses as shown in the table, finally turn on the power supply .]

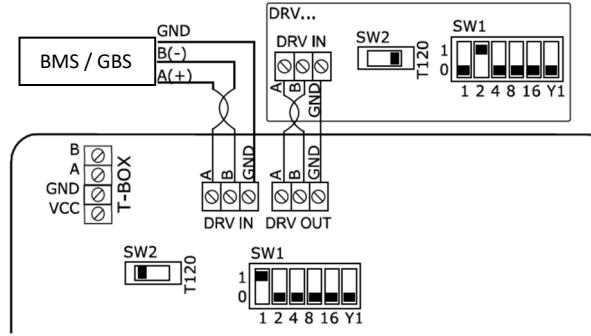
DRV no.						
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...						
31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4	5	6
	1	2	4	8	16	Y1

EN: It is possible to connect up to 31 modules DRV and control them with one T-box controller .]



EN: DRV modules can be connected to the BMS (Building Management System).

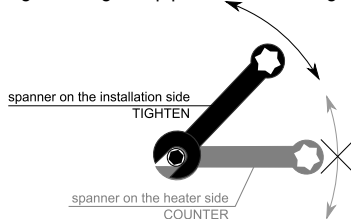
WARNING: The connection must be carried out with 3-wire (recommended UTP) to connectors DRV IN



5. START-UP AND OPERATION

Guidelines for System Connection

- In the case of devices intended for cooling, control valves cutting off the flow of the fluid through the exchanger should be used. In the absence of a cooling signal, the valve should be closed to avoid overcooling the device.
- The connection should be executed in a way which does not induce stresses.
- It is recommended to install vent valves at the highest point of the system.
- The system should be executed so that, in the case of a failure, it is possible to disassemble the device. For this purpose it is best to use shut-off valves near the device.
- The system with the cooling/heating medium must be protected against an increase of the pressure above the permissible value (1.6 MPa).
- While screwing exchanger to pipeline - connecting stubs has to be held.



Start Up

- Before connecting the power supply check the correctness of connection of the fan motor and the controllers. These connections should be executed in accordance with their technical documentation.
- Before connecting the power supply check whether the mains voltage is in accordance with the voltage on the device data plate.
- Before starting the device check the correctness of connection of the cooling/heating medium conduits and the tightness of the system.
- The electrical system supplying the fan motor should be additionally protected with a circuit breaker against the effects of a possible short-circuit in the system.
- Starting the device without connecting the ground conductor is forbidden.

Operation

- The device is designed for operation inside buildings, at temperatures above 0°C. In low temperatures (below 0°C) there is a danger of freezing of the fluid.

The manufacturer bears no responsibility for damage of the heat exchanger resulting from freezing of the medium in the exchanger. If operation of the device is expected at temperatures lower than 0°C, then glycol solution should be used as the cooling/heating medium, or special automatic systems should be used for protecting against freezing of the medium in the exchanger.

- It is forbidden to place any objects on the heater or to hang any objects on the connecting stubs.
- The device must be inspected periodically. In the case of incorrect operation of the device it should be switched off immediately.

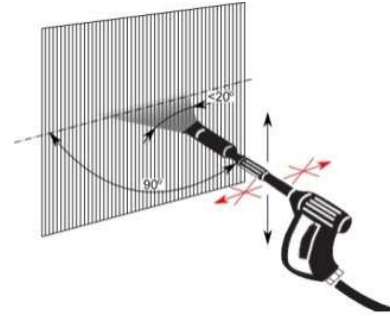
It is forbidden to use a damaged device. The manufacturer bears no responsibility for damage resulting from the use of a damaged device.

- If it is necessary to clean the exchanger, be careful not to damage the aluminium lamellas.
- For the time of performing inspection or cleaning the device, the electrical power supply should be disconnected.
- In case water is drained from the device for a longer period of time, the exchanger tubes should be emptied with compressed air.
- It is not allowed to make any modification to the unit. Any modification results in warranty loss.

Periodic inspections

To keep proper technical parameters Salvador Escoda SA recommends periodic service (every 6 months) of fan heaters on behalf of the user. During inspections user should:

- Check heat exchanger, if it is filled dirty or dusty. If necessary - use pressurized air stream to clean the exchanger's lamellas,



- Check fan blades, in case of dirt use damp cloth and remove dirt,
- Check bracket installation,
- Check heat exchanger and if the hydraulic connection has been done properly,
- Check wires insulation,
- Check power supply,
- Check medium flow,
- Check levelling of the unit.

6. SERVICE AND WARRANTY TERMS

Please contact your dealer in order to get familiar with the warranty terms and its limitation.

In the case of any irregularities in the device operation, please contact the manufacturer's service department.

The manufacturer bears no responsibility for operating the device in a manner inconsistent with its purpose, by persons not authorised for this, and for damage resulting from this!

7. CONFORMITY WITH WEEE DIRECTIVE 2012/19/UE

Running a business without harming the environment and observing the rules of proper handling of waste electrical and electronic equipment is a priority for MUNDOCLIMA.

The symbol of the crossed out wheeled bin placed on the equipment, packaging or documents attached means that the product must not be disposed of with other wastes. It is the responsibility of the user to hand the used equipment to a designated collection point for proper processing. The symbol means at the same time that the equipment was placed on the market after August 13, 2005.



For information on the collection system of waste electrical and electronic equipment, please contact the distributor.

REMEMBER :

Do not dispose of used equipment together with other waste! There are financial penalties for this. Proper handling of used equipment prevents potential negative consequences for the environment and human health. At the same time, we save the Earth's natural resources, reusing resources obtained from the processing of equipment.

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