

# MAINTENANCE MANUAL

**AZ KLIMA a.s.**

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## 1. GENERAL PRINCIPLES OF MAINTENANCE



### Safety instructions

On the air handling unit is permitted to work or to open it only if you follow points above:

- 1) Electrical power supply is interrupted at all phases
- 2) Unit is ensured against the switch on (e.g. blocking of the service switch)
- 3) All moving parts are still (impeller, the fan belt, engine, rotors)
- 4) All heat exchangers are cooled to the temperature at which do not cause burns.

After completion of the maintenance work must be done before switch the device on:

- 1) All protective equipment and accessories must be fully functional (e.g. protective covers).
- 2) Check that in the unit does are no forgotten items (tools, etc.) and that no person is in a unsafety area (e.g. inside the unit)

**Any work on the unit can be carried out by person who has required permissions to the activities, including qualifications of workers.**

**Electric motors and actuators are maintained according to the instructions of their producers.**

**During the lifetime of the device it is necessary to maintain the labels on the chambers and equipment complete and readable.**

### Intervals for maintenance

The maintenance intervals specified for devices with normally polluted air and for year-round operation. In the case of particularly polluted air or other operating conditions, it is necessary to appropriately shorten the maintenance intervals.

### Cleaning and maintenance

#### Unit casing

- Roundly impurities are removed by the vacuum cleaner
- Other impurities remove with a wet cloth or using detergents on fats and oils
- All galvanized parts treat with protective spray.
- All moving parts, eg. door handles, hinges, sometimes treat with lubricating spray.
- All seals, especially the door seals sometimes suck out.

### Disinfectants

For disinfection use only alcohol-based resources.

### Explanation of used symbols

<b>A</b>	- The activities of which is authorized to perform only authorized service
<b>D</b>	- Repeat as needed
<b>M</b>	- Activity which is carried out by trained staff, in charge of the device user
<b>O</b>	- The activity performed by professional, specialized company
<b>P</b>	- The regular repetition of maintenance in a given year
<b>S</b>	- Activities that must be performed before the summer season
<b>W</b>	- Activities that must be performed before the winter season

## 2. MAINTENANCE OF INDIVIDUAL SECTIONS

### 2.1.1. Fan and motor

<b>Overview and description of actions for maintenance that should be performed during the maintenance:</b>	<b>Performs</b>	<b>Repetition</b>	<b>Int. per year</b>
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Fan</b>			
➤ Check the external and internal surfaces of the chamber for presence of impurities and corrosion - cleaning of all parts clean and paint the corrosion parts	O	P	4
➤ Check the mounting of the fan and the status of the vibration dampers (mounts)	A	P	4
➤ Check the balance of the impeller and the width of the gap of the impeller - clean dirt and balance impeller	A	P	4
➤ Visual inspection of the blades of the fan	O	P	4
➤ Check noise of bearings - fan bearings have continuous filling lubricants – DO NOT LUBRICATE - replacement of bearings after a lifetime of 5,000 hours	A	P	4
➤ Check the tightness of the flexible connection - repair or replacement in case of leaks	O	P	4
➤ Check grounding - tighten, clean joins, replacement of wires	O	P	4
➤ Cleaning the chamber from dirt and unwanted objects - vacuum all dirt	M	P	1
➤ Check the functionality of speed regulator	A	P	4
<b>Motor</b>			
➤ Clean up the engine from dirt	M	P	4
➤ Check for damage and corrosion, fastening - clean cooling stator blades, tighten all of the mechanical joins.	O	P	4
➤ Check the direction of rotation, and noise of bearings - examination of stress of belt drive	M	P	4
➤ Check noise of bearings - bearings have continuous filling lubricants – DO NOT LUBRICATE - replacement of bearings after a lifetime of 10.000 hours	A	P	4
➤ Check the electrical connections, mounting clips, measuring of operational current - tighten the connections, tighten glands	A	P	4
➤ Check grounding - tighten, clean joins, replacement of wires	M	P	4
<b>The belt drive and/or clutch actuator</b>			
➤ Check for damage and wear of belts - in case of damage, replace all belts on the pulley	O	P	4
➤ Setting of stress of the belt - tightening according to the description of the manufacturer, tightening after replacing	O	P	4
➤ Check of the tightness of fastening the support, as needed, replacing the screws	A	P	4
➤ Check the alignment of the pulleys-motor and blower wheel – check for misalignment, release impurities	A	P	4
➤ Control of the temperature, clean of clutch drive	A	P	4

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Direct drive</b>			
➤ Check the strength of join of the wheel with the shaft	O	P	4
➤ Clean the motor and the impeller blades from dirty	M	P	4
➤ Check the fastening of the support device and vibration dampers – tighten screws as necessary, replace as needed	A	P	4
➤ Control of the operation temperature	A	P	4
➤ Check grounding - tighten, clean joins, replacement of wires	M	P	4



### Warning for maintenance

In the case of multi-shift operation and other special operating conditions, for example: transported air temperature > 40°C, increased dust levels, etc. It is advisable to shorten the time between maintenance.

### Shutdown of operation

- When shutdown of operation for a period longer than three months is necessary to remove the belts to prevent overload of bearing.
- When shutdown of operation is for a period longer than year, it is necessary to replace the bearings before commissioning the unit, for bearings with self-lubrication, remove old lubricant and fill a new lubrication. It is necessary to follow the regulations of the manufacturer of the fan.

## 2.1.2. Flaps

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Closing and regulation flaps</b>			
➤ Check the function, pollution and corrosion – check functionality when rotating, check closing positions	M	P	4
➤ Check the function of the actuator - tighten the clamping parts	O	P	1
➤ Check the connections and functions depending on MaC.	O	P	1
➤ Check the operation and stability of the handles – tighten of fixing, replace when necessary	O	P	1
➤ Cleaning of contact surfaces – vacuum all dirt, replac the sealing parts	M	P	2



### Warning for maintenance

Flap with plastic gear wheels keep without lubrication with oil or grease!

## 2.1.3. Air filter

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Filtration chamber and filters</b>			
➤ Clean a chamber – vacuum cleaning of all impurities	M	P	2
➤ Check the status and the function of the pressure sensors – cleaning of tubes and measuring probes	M	P	2
➤ Check the degree of siltation and damage to the filter - measurement of pressure loss during unit operation	M	P	2
➤ Cleaning of regenerate filters – cleaning the filter according to the manufacturer's description	M	D	-
➤ Replacement of filters – replace with the same type, interval adjust according to the current clogging – according to the pressure sensor!	M	D	-



### Warning for maintenance

**The unit must not be started without fitted filter!**

Use protective clothing or breathing mask during maintenance and replacing of filters.

All used filter materials must be disposed of in accordance with environmental requirements

## 2.1.4. Attenuator

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Attenuator</b>			
➤ Check for damage of coulisses - repair damaged surfaces	A	P	1
➤ Pollution check - clean surfaces using vacuum-cleaning	A	D	-



### Warning for maintenance

During maintenance avoid damaging of the absorption material.

## 2.1.5. Water air heater

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Water air heater</b>			
➤ Check of pollution and damage to blades on the side of the air – mechanical or chemical cleaning of the blades and the chamber, flattening of blades	M	P	2
➤ Check medium inlet and outlet – tighten flanges, repair damaged insulation	O	W	1
➤ Check for leaks and function of the shut-off valves – at least 5 x open and close to release of sediments	O	W	1
➤ Control function and operation of the mixing valve – from the parent control system via test commands for opening and closing	O	W	1
➤ Anti-freeze protection system check – simulate freezing directly on the sensor	O	W	1
➤ Venting heater at stop pumps – add liquid, rotate the pump and vent it again	O	W	1
➤ Perform the draining of sediments in the exchanger – disconnect, drain the heat exchanger, clean it with flowing water	O	D	-



### Shutdown of operation

When prolonged downtime of operation, with regard to the risk of freezing, the air heater must be completely drain out. To do this, you must unmount all of the vent and drain bolts. At the same time it is necessary to draining of each heater with blow air (compressed air, fan, etc.), because in heater remains the rest of the liquid, which is a risk of freezing. Frozen heaters can lead to permanent damage to the heat exchanger.

### Warning for maintenance

When the discharge of hot media, there is a danger of scalding! Frozen heaters can lead to permanent damage to the heat exchanger.

## 2.1.6. Electric air heater

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Electric air heater</b>			
➤ Check for corrosion and clogging with burnout impurities – in case of damage by corrosion, replace with new – Attention – DO NOT paint chambers!	A	W	1
➤ Check function of each spirals – commands to turn on/off from the parent control system	A	W	1
➤ Check thermal fuse – simulation of overheating	A	W	1
➤ Check and clean the electronic performance switches – clean the contact surface of the semiconductor/cooler	A	W	1

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Electric air heater</b>			
➤ Check and tighten all electrical connections – tanned or heated wires replace	A	W	1
➤ Check grounding – tighten, clean joins, replace wires when necessary	O	W	1
➤ Clean on the side of the air – vacuum clean all the impurities (after first start the remnants are burned and can cause temporary smell of burning)	A	W	1
➤ Air flow check – check the continuity through chamber	A	W	1



### Warning for maintenance

Before performing the maintenance it is necessary to cool down an electric heater in order to avoid burns.

## 2.1.7. Gas air heater

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Gas air heater</b>			
➤ Check for corrosion and clogging with burnout impurities	A	W	1
➤ – in case of damage by corrosion, replace with new – <b>Attention – DO NOT paint chambers!</b>			
➤ Check the function of the safety thermostat – simulation of overheating of the chamber	A	W	1
➤ Check and tighten all electrical connections – tanned or heated wires replace	A	W	1
➤ Check grounding – tighten, clean joins, replace wires when necessary	O	W	1
➤ Check the condensate drain (for flue exhaust) – cleanup from sediments, fill with min 10 l water	M	W	1
➤ Clean air side of exchanger - vacuum clean all dirt	M	W	1
➤ Clean and adjust of the burner – according to a specific manufacturer's instructions!	A	W	1
➤ Check the functionality of the thermostat – after turning off the burner fan is decelerating and stops after cooling of heat exchanger	A	W	1
➤ Check the fan cooling of heat exchanger – min 240 seconds of deceleration	A	W	1
➤ Revision of the burner, measurement and adjustment of flue gas values according to the valid laws and standards	A	W	1



## 2.1.8. Water air cooler

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Water air cooler</b>			
➤ Check of pollution and damage to blades on the side of the air – mechanical or chemical cleaning of the blades and the chamber, flattening of blades	M	P	2
➤ Check medium inlet and outlet – tighten flanges, repair damaged insulation	O	S	1
➤ Check the condensate drain – cleanup sediments, fill with min.10l of water, checking functionality and filling the siphon	M	S	1
➤ Check for leaks and function of the shut-off valves – at least 5 x open and close to release of sediments	O	S	1
➤ Control function and operation of the mixing valve – from the parent control system via test commands for opening and closing	O	S	1
➤ Venting heater at stop pumps – add liquid, rotate the pump and vent it again	O	S	1
➤ Perform the draining of sediments in the exchanger – disconnect, drain the heat exchanger, clean it with flowing water	O	D	-



### Warning for maintenance

During filling, or venting prevent direct contact with the antifreeze mixture. Danger of chemical burns! We recommend to pour approx. 1,0l of antifreeze mixture to system, i.e. ethyl alcohol

### Shutdown of operation

When prolonged downtime of operation, with regard to the risk of freezing, the air cooler must be completely drain out. To do this, you must unmount all of the vent and drain bolts. At the same time it is necessary to draining of each cooler with blow air (compressed air, fan, etc.), because in cooler remains the rest of the liquid, which is a risk of freezing. Frozen cooler can lead to permanent damage to the heat exchanger.

### 2.1.9. Direct cooling

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Direct cooler – direct evaporation</b>			
➤ Operation and maintenance of cooling circuit must be carried out according to the manufacturer's instructions, the cooling unit and at set intervals. With regard to the valid normatives and legislative provisions.	A	D	
➤ Check the operation and functionality of the system – check direct cooling supply	A	S	1
➤ Check of pollution and damage to blades on the side of the air – mechanical or chemical cleaning of the blades and the chamber, flattening of blades	O	P	1
➤ Check the condensate drain – cleanup sediments, fill with min.10l of water, checking functionality and filling the siphon	M	P	2
➤ Check the separators of drops – clean from sediments	O	P	1



#### Warning for maintenance

During maintenance avoid staining the skin with refrigerant and handle with regard to the environment protection. Follow the maintenance manuals and operational instructions of the manufacturer.

### 2.1.10. Rotary exchanger

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Rotary exchanger</b>			
➤ Check of pollution and damage to blades on the side of the air – mechanical or chemical cleaning of the blades and the chamber, flattening of blades	A	P	2
➤ Check the sealing elements and the between the chambers – flatten, tighten or replace the sealing brushes	M	P	2
➤ Check drive – lubricate and maintenance the transmission system and electric motor	A	W	1
➤ Check belt stress – perform stress of belt or replace	M	P	2
➤ Check the deflection of the rotary wheel - tighten and fasten of bearing boxes	A	W	1
➤ Clean air side of exchanger - vacuum clean all dirt	M	P	2



#### Shutdown of operation

During longer shutdown (e.g. in summer), put the internal rotor self-cleaning at least 1x a week into the operation.

## Warning for maintenance

Before the winter, check the wheel deflection – in summer, when it is turned off, it is loaded on one side. Do not increase air flow above the allowed maximum.

### 2.1.11. Plate heat exchanger

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Plate heat exchanger</b>			
➤ Check of pollution and damage to blades on the side of the air – mechanical or chemical cleaning of the blades and the chamber	O	P	2
➤ Check the condensate drain – cleanup sediments, fill with min.10l of water, checking functionality and filling the siphon – in winter can siphon dry	M	D	2
➤ Check the status and operation of the by-pass flap and mixing flap - check the cleanliness, functionality, including flaps actuators and their proper closing	O	P	2
➤ Check the function of the freeze sensor of exchanger – simulation of freezing of exhaust air	O	W	1



## Warning for maintenance

Clean with compressed air or high-pressure water without additives. Carefully remove the dirty water.

### 2.1.12. Moistening chamber

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Water moistening</b>			
➤ Operation and maintenance must be carried out according to the manufacturer's instructions and at set intervals. With regard to the valid normatives and legislative provisions.			
➤ Check nozzles – check clogging and cleaning them – according to the manufacturer's instructions	A	P	2
➤ Check the water circuit – check tightness of water circuit, inspection and check of filling and checking the maximum/minimum levels in the system, cleaning the water filter on the water supply – according to the manufacturer's instructions	A	P	2
➤ Check the function of the pump – check tightness of the pump, cleaning and maintenance the pump seals – according to the manufacturer's instructions	A	P	2
➤ Check the drainage from the waste tub – clean the connection from sediments, clean the siphon, fill up with min.10l of water – according to the manufacturer's instructions	O	P	2
➤ Cleaning of collection reservoir – chemical cleaning of collection reservoir – follow the manufacturer instructions.	A	P	2

Overview and description of actions for maintenance that should be performed during the maintenance:	Performs	Repetition	Int. per year
The minimum recommended maintenance interval is recommended to shorten in case of that the device is in a dusty or excessively contaminated environment or in case of operating mode is continuous or multi-shift.			
<b>Water moistening</b>			
➤ Check the system of regulation and control (MaC) - test operation of the controller or of the parent control system – according to the manufacturer's instructions	O	P	1
➤ As instructed from the manufacturer, it is necessary to control the amount of germs and compare with allowable values, or ensure that the cleaning. Inner surfaces should also be assessed to organic pollution or other pollution, or clean or disinfect.	O	D	
<b>Steam moistening</b>			
➤ Operation and maintenance must be carried out according to the manufacturer's instructions and at set intervals. With regard to the valid normatives and legislative provisions..			
➤ Check nozzles – check clogging and cleaning them – according to the manufacturer's instructions	A	P	2
➤ Check the circuit of steam and condensate piping – check the cleanness, pressure and temperature control – according to the manufacturer's instructions	A	P	2
➤ Check the drainage from the waste tub – clean the connection from sediments, clean the siphon, fill up with min.10l of water – according to the manufacturer's instructions	M	P	2
➤ Check the function of the safety parts of steam generator – according to the manufacturer's instructions	A	P	2
➤ Clean steam generators – drain out and clean the steam tank containers, rollers, cleaning of the heating rods, cleaning inside of the unit according to the instructions of the manufacturer	A	P	2
➤ Check the electrical connections and grounding of all joins, tightening -tighten the bushing. Check the functionality of all protective elements – according to the manufacturer's instructions	O	P	1
➤ Check the system of regulation and control (MaC) - test operation of the controller or of the parent control system – according to the manufacturer's instructions	O	P	1



### Warning for maintenance

Equipment for moistening air fill only with water at adjusted parameters given by the manufacturer of the device. During the long shutdown of the moistening chamber must be chamber cleaned and dried.

### Shutdown of operation

Drain out the waste tub, siphon /via drain plugs/ completely empty the chamber. Put off separators of drops and rectifiers, then clean them. Completely clean the chamber with usual detergents, or treat with decalcification cleaner (see manufacturer's instructions). Dry the internal surfaces by deceleration of the fan. Chamber could be filled again when moistening is commissioning into operation.

## 2.1.13. Measuring a controlling (MaC)

### General provisions

Maintenance can only be carried out with the professional qualifications workers. It is recommended to conclude maintenance contract with a qualified professional company in the field of MaC.

**Maintenance intervals for measuring and controlling devices depends on the supplier of MaC and on instructions document or valid legislative.**

## 3. REVISION AND REPAIR

### Revision of mechanical devices

The revision of the equipment shall be carried out every three months. Subject of revisions:

- cleanness of the internal surfaces, especially the impeller
- conditions of the bearings, smooth operation of motor and bearings
- status of the paint and sealing, functionality of the major parts

Founded and repaired faults are registered in the "Book of revisions and repairs" or "Operational book of device", which the device user is obliged to maintain.

### Spare parts

Spare parts can be ordered from the manufacturer. Some of spare parts. electric motors, springs, belts and bearings must be ordered directly from manufacturers.

### Fan section

For one chamber is considered only on set of bearings supplied and fitted by manufacturer, one set of belts and or set of seals.

In case of replacement of the fan it is necessary to replace always with same type and same technical parameters. If the product is no longer on stock, it is necessary to demand the AZ KLIMA a.s. as a device manufacturer.

Estimated lifetime of fan bearings is 5,000 hours. The lifetime of belts is 6 months.

### Air filters

The dimensions of filters correspond to european standards. According manufacturer are fitted types of filters for each size of chambers. Filters replace interval depends on the operating conditions.

Attention! For environments with danger of explosion, must only be used electrostatic filters. The unit maintenance personal must ensure that after replacing of filters their conductive connection will be done. When replacing the filters must be replaced with the same type, or consult with the manufacturer.

### Heat exchanger chambers

Spare parts are not normally needed. In case of damage to the heat exchanger can be the spare part order at manufacturer. When ordering, it is necessary to include information from the label on the chamber of heat exchanger.

After replace it must be ensured conductive connection of heat exchanger.

## Overview of failures and their removal

Failure	Possible cause	Suggestion how remove the fault
Unit does not reach the designed performance	Closed regulation or closing flaps on ducting or on unit.	Open the closing or regulation flap on ducts
	Clogged air ducts alt. impeller, heat exchangers.	Clean air ducts, impeller, heat exchangers
	Distorted or otherwise damaged air ducts.	Repair or replace damaged part of ducts
	Broken belts.	Replace of belts
	Burnt motor.	Replace of motor
	Clogged filter.	Replace of filter
	Wrong direction of rotation of the impeller.	Change phases of motor
Air values does not match with designed.	Perform a new set of control system according to the project	
The fan vibrates excessively	Unbalanced or heavily polluted impeller, a foreign object in the rotary part.	Balance, clean or replace for a balanced
Overheated bearing	Increased temperature of bearings.	Reduce temperature around
	Incorrectly stressed belts	Ensure correct stress of belts
Bearing hums	Damage after lifetime of the bearing.	Replace bearings
The accumulation of water in the cooling chamber	It is not connected to the drainage siphon, or not filled in.	Connect the drainage through the siphon, fill up with water
	Clogged drainage pipe.	Clean drainage pipe
	A siphon is connected via too long pipe. Or they are fitted with shut-off elements.	Shorten the pipe, remove the closing elements
Non-function flaps	Mechanical barrier in the mechanism or a foreign object in blades of the flap	Remove, ensure new set
	Defective actuator	Replace the actuator for new
	Polluted bearings	Replace, or clean up

## 4. ENVIRONMENTAL PROTECTION

- Dispose of all packing materials considering safety of the environment.
- Packaging materials of cardboard can be turned in for recycling.
- Defective or disposed electrical devices must be left at appropriate collection points.
- In the cooling devices may be used only by authorized refrigerant, which is safety to the environment
- Take care during handling with refrigerant, follow valid normatives and legislative provisions about the protection of the environment.
- The assembly organization is responsible for compliance with the valid normative and legislative provisions about protection of the environment. Compliance with these regulations is obligatory for both the assembly organization, so for a subcontractor.

## 5. DISPOSAL OF DEVICE

After the end of lifetime of the device, it must be passed to the qualified person to dispose and dispose with regard to the environment protection. Metal and non-metal must be scrapped.

Fabric filters can be disposed of by burning at high temperatures in the incinerator.

Disposal of wastes from cellular rigid PUR foam is based on local conditions approved by the competent authority of the local government.

Electric motors and actuators must be destroyed in accordance with the instructions of the manufacturer.

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