nVent | HOFFMAN

We connect and protect

Air-to-air heat exchangers for electric encloures

Installation, operation and maintenance manual

CE UKCA

MIX

TABLE OF CONTENTS

⚠ **ATTENTION!**

Read carefully and completely before installation. Keep the manual until unit decommissioning.

1. HEAT EXCHANGER APPLICATION

The **MIX** series heat exchangers described in this manual are designed and built to cool the air inside electrical switchboards in order to protect components sensitive to thermal shock when the external temperature is lower than the internal temperature. They also provide **IP54** ingress protection against contaminating and aggressive substances.

1.1 Intended use

The **MIX** heat exchanger must be used:

- For cooling electrical switchboards
- Within the temperature and voltage-supply limits indicated on the data plate (**F.07**, **pos. 2**) of the heat exchanger and also given in table **F.08** of this manual
- With ambient (external) temperatures lower than those inside the electrical switchboard and in any case lower than the maximum temperature specified in the technical specifications
- Away from any sources of heat or hot air
- In an environment with adequate air exchange
- On switchboards with **IP54** rating or higher, and which are completely free of dust and/or other contaminants

To ensure correct operation, the specified scheduled maintenance operations (see section **9**) must be performed regularly. Incorrect or careless use may cause irreparable damage to the heat exchanger and may lead to hazardous situations.

1.2 Improper use

The **MIX** heat exchanger must NOT be used:

- Under any condition except those described in section **1.1**
- Outdoors, with excessive concentration of solid contaminants and/or aggressive chemical contaminants
- With the doors of the electrical switchboard open (figure **F.04**), or installed on enclosures without a minimum **IP54** rating
- In explosive atmospheres, or those with aggressive chemicals or high concentrations of dust or oil suspended in the air
- In potentially inflammable atmospheres
- Exposed to the elements
- Without the front panel
- With the intake and outlet air flows obstructed by walls or objects that are too close

To this end, check the minimum distances as regards the external air flow (figure **F.02**), and make sure there are no obstructions caused by the switchboard components as regards the internal air flow.

2. SUPPLY

Inside the packaging you will find:

- **1** Heat exchanger
- **1** Installation, operation and maintenance manual
- **1** CE conformity certificate
- **1** Test certificate
- **1** A4 drilling template
- **1** Installation kit containing (**F.01**):
  - M6 Screws (**p.1**)
  - Screws (**p.3**)
- **1** Self-adhesive sealing strip (**F.01, p.4**)
- **1** Lifting eyebolt (**F.07, p.1**)
- **2** Louvered vents (**F.01, p.2**)

3. UPDATES

TEXA INDUSTRIES S.r.l. reserves the right to update its products and the corresponding manuals based on technical progress without prior notice. Please note that at the time of sale, this manual and the corresponding product may not be considered inadequate merely because they are not subject to the above-mentioned updates.

4. TECHNICAL FEATURES

(figures **F. 08** and **F. 09**)

The unit's technical features and CE marking are given on the data plate attached to the heat exchanger.

5. TRANSPORT AND HANDLING

The packaged heat exchanger must not be exposed to temperatures above 70°C or below –20°C. Upon receipt, check that the packaging has not been damaged during shipping.

To lift the heat exchanger in a safe manner, the supplied M6 eyebolt may be used; this should be fitted into the threaded insert located on the top of the heat exchanger (figure **F.07, p.1**).

6. ASSEMBLY

Before performing any work inside the switchboard, disconnect the power supply. The heat exchanger's flexibility (figure **F.01**) allows it to be mounted either inside or outside the electrical switchboard enclosure.

According to the type of assembly chosen, make the necessary holes and cuts on the switchboard enclosure using the drilling template supplied with the heat exchanger. Fit the sealing strip on the side of the heat exchanger connected to the electrical switchboard enclosure and fasten as illustrated in the diagram (figure **F.01**).

If installing inside the switchboard enclosure, change the position of the power cable exit as shown in the diagram (figure **F.03**), switching the position of the plastic plug with that of the cable gland.

Ensure that the fasteners and couplings do not come into contact with the equipment contained inside the switchboard enclosure. For better performance, install the heat exchanger as high up as possible.

7. ELECTRICAL CONNECTION

7.1 Safety

⚠ **Warning! Electrical connections must only be performed by specialised and authorised personnel. Switch off power to the enclosure before making the connection.**

Check that there is no power to the switchboard and that the supply voltage corresponds to the characteristics given on the heat exchanger's data plate. The power supply must be protected using appropriate time-delay fuses (type T) or circuit breakers per the indications given in table **F.08**. Connect the cables following the indications given in the wiring diagram, ensuring you have correctly identified all wires.

8. REGULATION THERMOSTAT FOR EXTERNAL FAN (OPTIONAL)

The thermostat is a mechanical model with a gas-filled bulb positioned at the enclosure air intake point. It measures and controls the temperature, enabling and disabling the external fan as necessary.

The thermostat is factory-set to 35°C; if you wish to change the setpoint you must use a screwdriver to adjust the thermostat pin, after cutting off the power supply to the heat exchanger and removing the panel.

The thermostat set point can be adjusted to between 20°C and 46°C (**F.07, p.3**). For temperatures outside this range, contact our technical department.

The thermostat has a hysteresis of 4°C, therefore the fan will start at a temperature around 4°C higher than that at which it stopped. After adjustment, replace the panel and restore the power supply.

9. MAINTENANCE

Caution! Before embarking on any maintenance work, switch off the power to the enclosure.

The only work required concerns cleaning the exchanger ambient coil (figure **F.05**) and periodical checks, as explained below:

Job	Frequency
Checking and cleaning the ambient-side coil	Every 2 months
Checking the fans for overheating or excessive vibration	Every 6 months

To clean the coil: remove the front casing, take the coil out and remove dry dust with compressed air (pressure should be no more than 4 bar), then clean off grease and oil with suitable detergents, compatible with PVC, PE, PP and silicone. Lastly, dry thoroughly and reassemble. Any repairs that may be required must only be performed by specialised and authorised personnel.

10. TECHNICAL INFORMATION

10.1 Operating principle

The operating principle of air-air heat exchangers is based on the transfer of heat between two air flows with different temperatures through a surface featuring a high heat transfer coefficient (figure **F.06**) which separates the two environments to avoid the transfer of dirt and contaminants from the exterior to the interior environment.

10.2 Safety devices

The fans are fitted with an internal protection device that shuts them off in the event of overheating.

11. DISPOSAL

Before beginning removal of the unit, ensure that it has had its power supply disconnected.

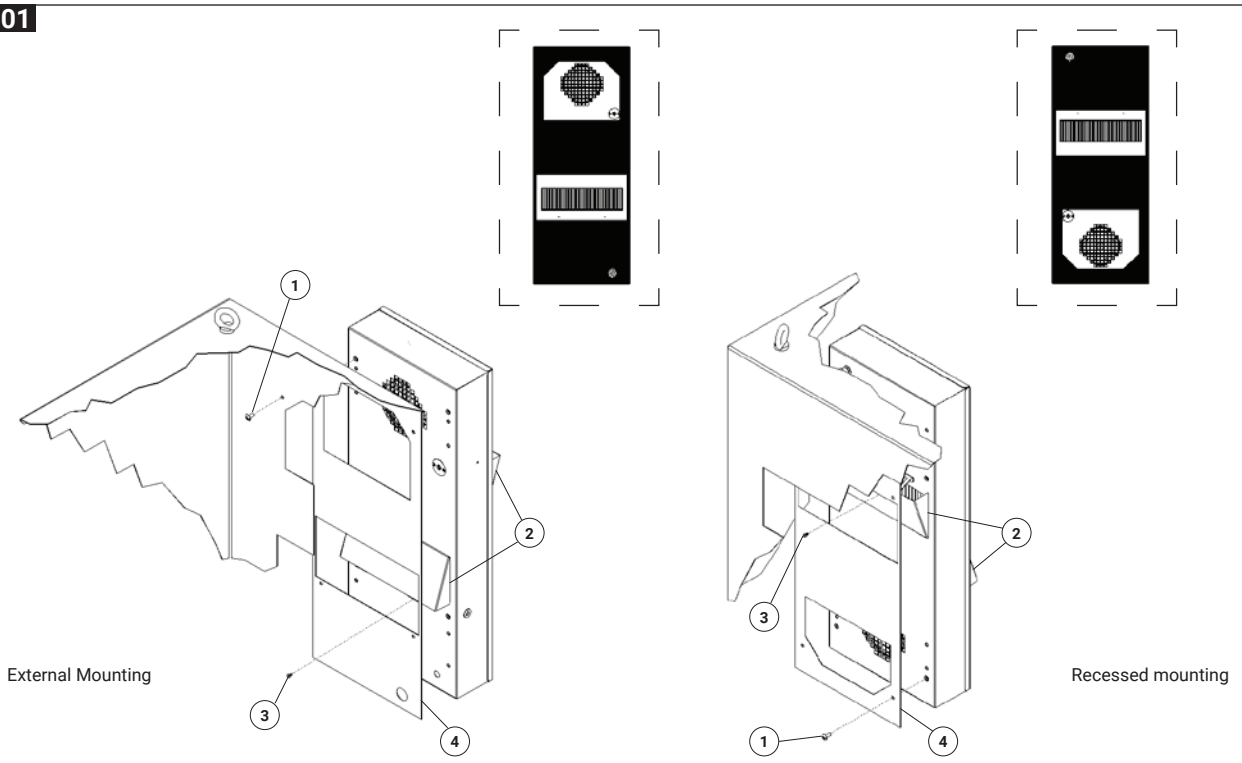
The removal of this unit must be performed by expert personnel and the competent authorities.

12. TROUBLESHOOTING

Malfunction	Conditions	Causes	Remedy
It fails to cool	No component works	No electricity getting to the unit	Check there is voltage as well as closing of doors and switches
	Only one of the two fans are working	Fan failed	Change the fan
		Capacitor failed	Change the capacitor
	The fans are working	Heat exchanger coil either dirty or clogged	Clean the coil
		Ambient temperature over the maximum working limit	Ventilate the premises where the enclosure is installed to keep ambient temperature lower

13. PICTOGRAMS

F.01



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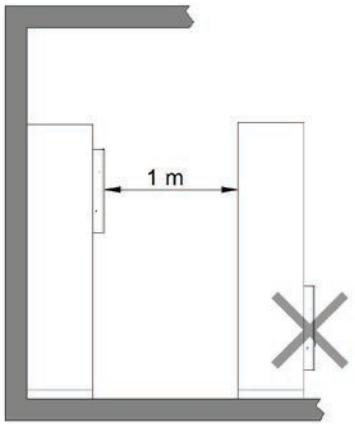

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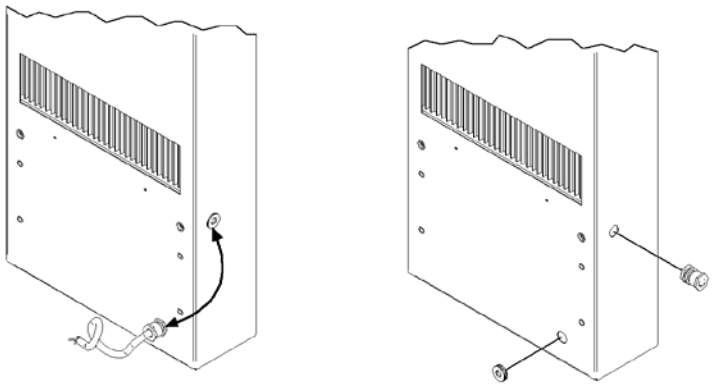

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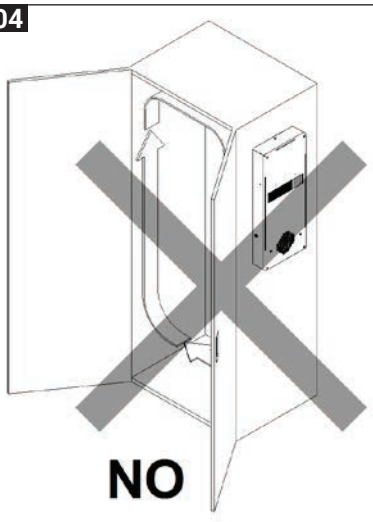

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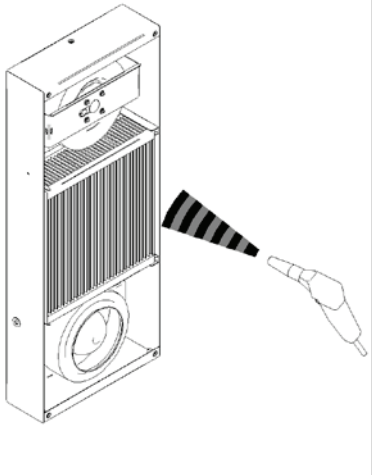
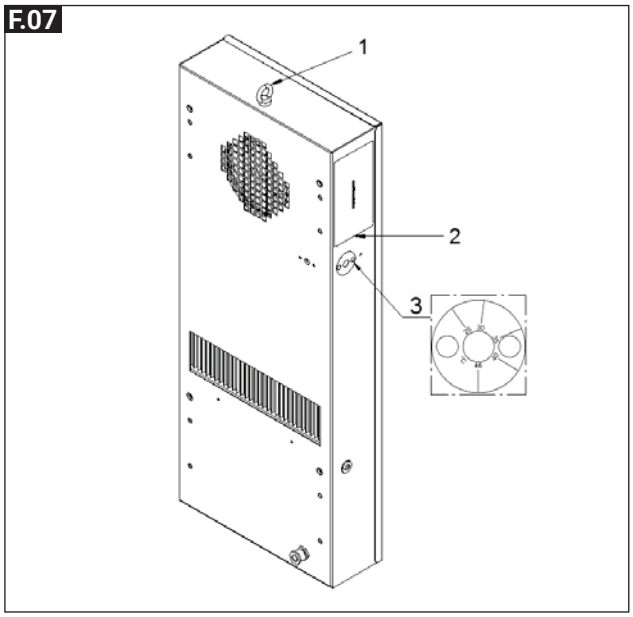


F.06

13. PICTOGRAMS

F.07

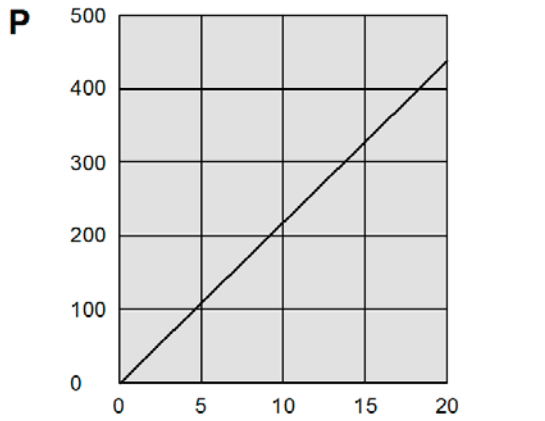


14. TECHNICAL DATA F.08

	Specific heat output	Supply voltage	Dimensions (WxHxD)	Adsorbed current	Pre-fuse T	Adsorbed power	Duty cycle	Internal fan power	External fan power	Enclosure temper-ature range	Ambient temper-ature range	Protection internal circuit	Noise level	Weight	Color	Conformity
												EN60529				
	W/K	V ~ Hz	mm	A	A	W	-	m³/h	m³/h	°C	°C	IP	dB(A)	kg	-	-
MIX22BX0B MIX22CX0B	22 22	230 1 ~ 50-60 115 1 ~ 50-60	189x413x149	0,5 0,96	1 2	72 80	100%	280 280	280 280	–5 ÷ +55	–5 ÷ +55	54	59 60	7	RAL 7035	CE – UKCA
MIX36BX0B MIX36CX0B	36 36	230 1 ~ 50-60 115 1 ~ 50-60	316x771x103	0,64 1,12	1 2	140 150	100%	570 570	570 570	–5 ÷ +55	–5 ÷ +55	54	67 67	10	RAL 7035	CE – UKCA
MIX50BX0B MIX50CX0B	50 50	230 1 ~ 50-60 115 1 ~ 50-60	316x771x103	0,64 1,12	1 2	140 150	100%	600 600	600 600	–5 ÷ +55	–5 ÷ +55	54	67 67	10	RAL 7035	CE – UKCA
MIX80BX0B MIX80CX0B	80 80	230 1 ~ 50-60 115 1 ~ 50-60	317x1260x148	1,06 2,1	2 4	240 255	100%	1050 1050	1050 1050	–5 ÷ +55	–5 ÷ +55	54	75 75	17	RAL 7035	CE – UKCA

15. PERFORMANCES F.09

MIX22BX0B / MIX22CX0B



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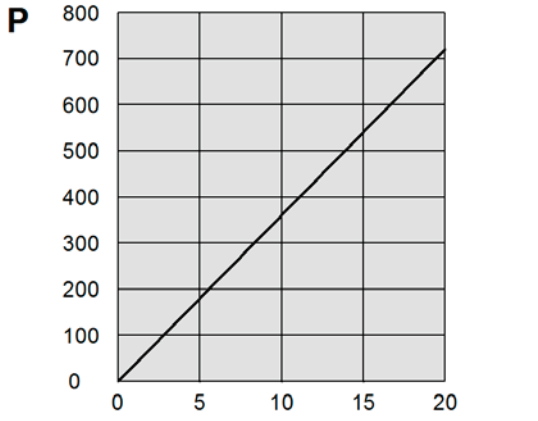

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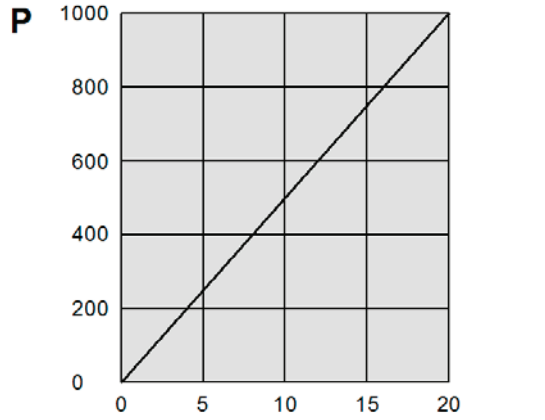

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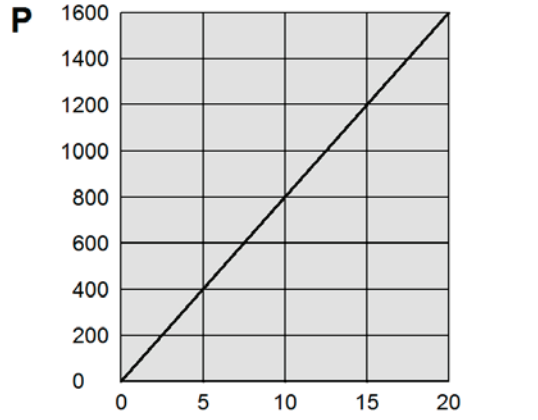
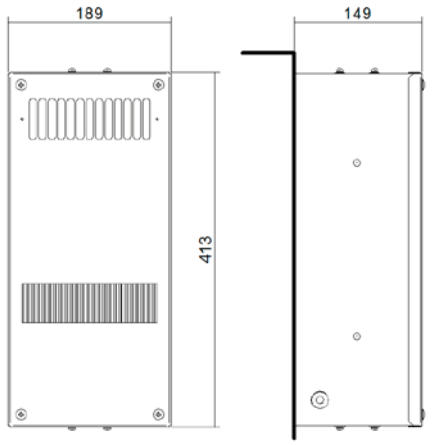


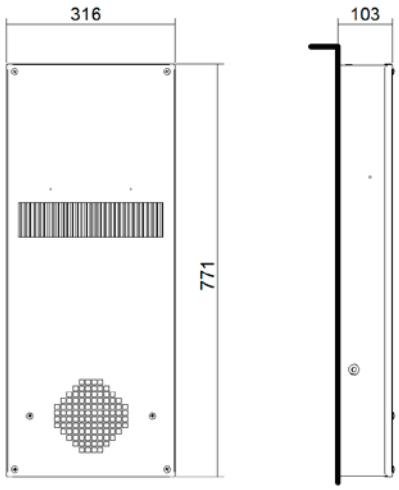
P (W)	Ta (°C)	Ti (°C)	ΔT (K)
Useful cooling output	Ambient temperature	Enclosure internal temperature	Temperature differential

16. DIMENSIONS F.10

MIX22BX0B / MIX22CX0B



MIX36BX0B / MIX36CX0B
MIX50BX0B / MIX50CX0B



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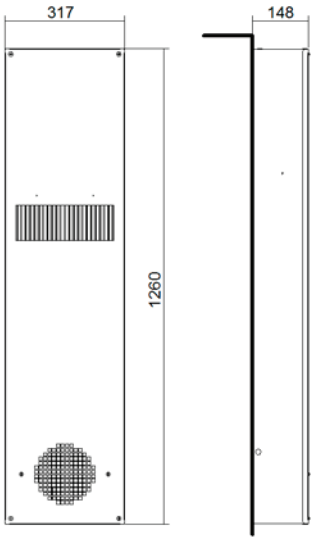
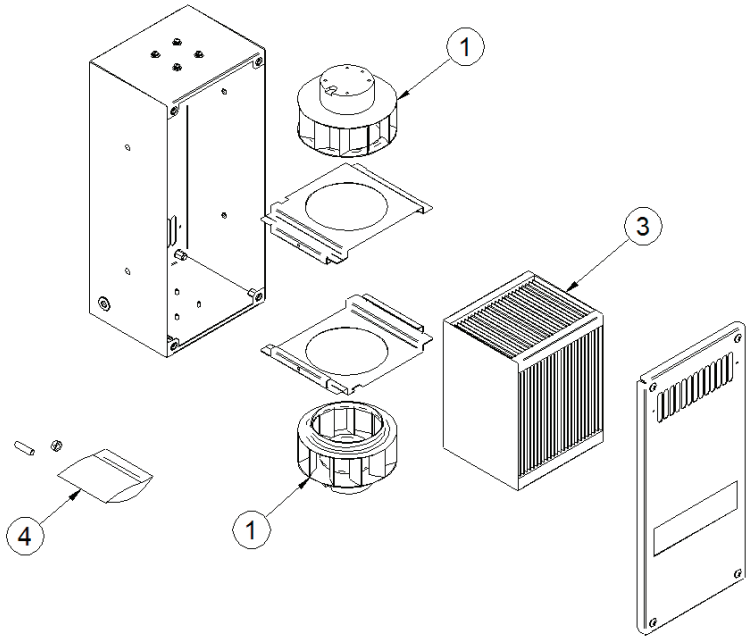
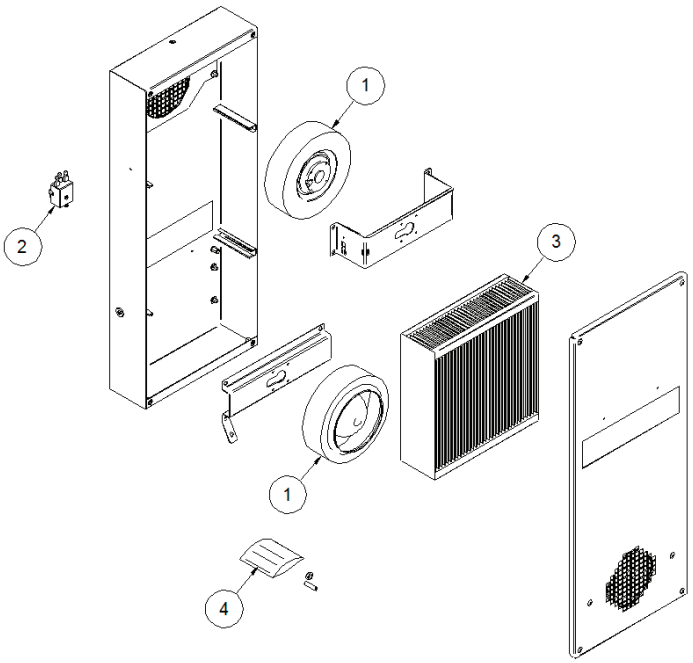


17. SPARE PARTS F.11

MIX22BX0B
MIX22CX0B



MIX36BX0B
MIX36CX0B
MIX50BX0B
MIX50CX0B

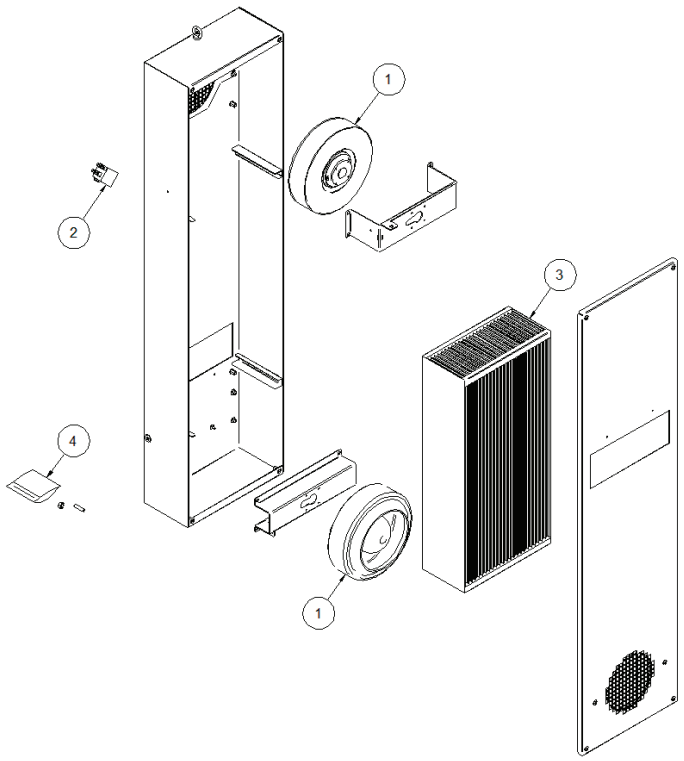


1. Internal fan
2. Mechanical thermostat
3. Exchanger coil
4. Assembly accessory kit

When ordering the following informations are essential: Model, Serial number, Date of production, Requested parts' code

17. SPARE PARTS F.11

MIX80BX0B
MIX80CX0B



18. GUARANTEE

TEXA INDUSTRIES S.r.l. guarantees its product free from quality defects. It also guarantees for 12 months all the product's components starting from the date of shipment and when they are used in the following conditions:

1. When the temperatures of the panel or enclosure are no higher or lower than those indicated on the rating plate.
2. In circuits or systems that do not require cooling capacities higher than those indicated on the rating plate.
3. On premises where the temperatures are no higher or lower than those indicated on the rating plate.
4. On panels or enclosures with at least a minimum protection level of IP54.
5. When the instructions given in the "operating and maintenance" manual, provided with each single product, are fully complied with.

This guarantee does not cover any damage to the product due to:

a. using a type and quantity of gas in the cooling circuit different to that indicated on the rating plate.
b. using the product on unsuitable premises: where there is an acid or corrosive atmosphere.

For each component found to be faulty during the term of the guarantee, the manufacturer will, according to its unquestionable judgement, repair and/or substitute the faulty components free of charge either at its factory or in one of its authorised companies. Any additional expenses incurred for removing, handling and installation if required are not payable by the manufacturer. Any maintenance work needed and requested by the customer care/of his premises, even if it is during the term of the guarantee, will be billed according to the manufacturer rates. The products repaired or substituted in no way modify the time the guarantee starts or ends. The manufacturer can in no way be held liable except for repairing or substituting faulty products and if such products have to be redelivered it will be on a Carriage Forward basis. It is the customer's responsibility to see to the correct earthing, installation and power supply of the product in compliance with current standards. Reference must be made to the current laws in force regarding liability for damage caused by a faulty product, for which manufacturer is insured.

To benefit from the guarantee terms and relative product information it is essential to have the purchase document and the serial number of the product which you will find on the rating plate. The rating plate is printed on plastic and the writing will remain for a long time even on premises and in environments where conditions are particularly bad.

⚠ **ATTENTION:** the guarantee is automatically invalidated if the product is tampered with in any way.

19. ASSISTANCE SERVICE

Assistance Service For machine malfunctions, technical information or advice on installation, please contact Assistance Service at: TEXA INDUSTRIES S.r.l.

Strada Cà Bruciata, 5 46020 – Pegognaga (MN) – ITALIA

Tel.: 0376 – 554511 – e-mail: texa.service@nVent.com

Before contacting the Manufacturer Assistance Service, ensure you have:

A. The full machine code number;

B. The serial number of the machine;

All requests for assistance must be sent to Manufacturer in writing, by email or fax.

⚠ **Warning:** The equipment can only be returned to Manufacturer on request and after agreement by the Manufacturer itself.

20. NOTES

North America

service@nVent.com
Tel +1 763 422 2211
Follow prompts for option 1, then option 2 then option 3

All Other Locations

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