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Instruction Manual
KN2 Catalyser

English

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Contents

1 Important information

1.1 Limitation of liability

The contents of this instruction manual have been produced in compliance with current laws and standards. The device has been developed in accordance with the latest state of technology.

mihmvogt assumes no liability for damage resulting from:

- Disregard/non-observance of the instruction manual
- Deliberate misuse
- Inappropriate use
- Deployment of untrained personnel
- Deployment of non-specialist personnel (for maintenance work, etc.)
- Technical modifications to the device which were not agreed with mihmvogt
- Use of replacement parts which are not approved by mihmvogt

1.2 Scope of delivery

Fig. 1: Scope of delivery

I KN2 catalyser
II Adaptor flange
III Fixing screws

1.3 Interfaces

The KN2 catalyser is flange-mounted to a mihmvogt laboratory kiln and supplied with a working voltage via a special plug socket on the laboratory kiln.

For further details please see the instruction manual for the appropriate laboratory kiln.

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1.4 Legal information

⚠ The local accident prevention regulations and general safety instructions for the device's area of application apply.

⚠ Please read this instruction manual carefully before using the KN2 catalyser.

⚠ Ensure that the KN2 catalyser is only connected to a power supply which complies with the power supply specifications on the type plate.

⚠ Never place or use the device in the vicinity of sources of gas.

⚠ Protect the device against splash water and never immerse the device and the power plug in water.

⚠ Never remove the plug from the socket by pulling the cable.

⚠ Ensure that the device is set up on a stable and safe underground and set it up out of the reach of small children.

⚠ The device may not be used if either the device itself or the power cable is damaged or the device no longer works faultlessly. In this case you should contact the mihmvogt service centre immediately.

⚠ Follow the maintenance instructions and intervals.

⚠ Protect the device against the effects of the weather (damp, etc.).

⚠ Maintenance, cleaning and repair work which are not specifically designated as being for the end customer may only be carried out by trained specialist personnel.

1.5 Documentation

1.5.1 Contents and design

This instruction manual is a part of the KN2 catalyser. It contains instructions and information on the safe handling of the device and must be available to every user during the entire service life of the device.

1.5.2 Labelling concept for instructions

Instruction type	Depiction	Meaning
Acute danger to life	DANGER	Dangerous situation which will certainly result in serious injury or death if not avoided
Danger to life and risk of serious injury	WARNING	Dangerous situation which could result in serious injury or death if not avoided
Risk of light to moderate injuries	CAUTION	Dangerous situation which could result in light to moderate injuries if not avoided
Information, ease of use	INSTRUCTION	Indicates information which does not concern personal injuries, e.g. instructions regarding material damage

⚠ Indicates a general safety instruction
1. Instruction
→ Outcome

1.6 Service address

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@: info@mihm-vogt.de
www.mihm-vogt.de

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2 Safety

2.1 Appropriate use

2.1.1 Area of use

The KN2 catalyser is flange-mounted onto a mihmvogt laboratory kiln and reduces the exhaust fumes produced by the laboratory kiln through oxidation and reduction processes.

The KN2 catalyser is conceived and optimised exclusively for mihmvogt laboratory kilns.

The KN2 catalyser must be installed if

- the laboratory kiln‘s exhaust fumes cannot be discharged into a chimney or directly into the atmosphere for reasons of space
- the dental laboratory is located in a residential area and and/or people in the direct vicinity complain of offensive smells

2.1.2 Personnel requirements

Only qualified personnel are permitted to handle and use the KN2 catalyser.

The operator of the KN2 catalyser is obliged to instruct all users of the device and to point out the hazards which can arise when using the KN2 catalyser.

Personnel requirements:

Trained laboratory worker, trained dental technician – is in a position to perform tasks assigned and to recognise and avoid possible hazards themselves due to their specialist training, knowledge and experience.

Trained electrical technician – is in a position to perform work on electrical equipment and to recognise and avoid possible hazards themselves due to their specialist training, knowledge and experience and also knowledge of the relevant standards and directives.

2.1.3 Safety-relevant environmental conditions

INSTRUCTION	
	**INSTRUCTION** **A safe distance of 15-40 cm to the fume extraction hood must be maintained when the KN2 catalyser is used under a fume extraction hood.**

INSTRUCTION	
	**Excessive back pressure due to extension of the exhaust gas pipe!** The back pressure increases and the exhaust fumes are pressed back into the catalyser. • An additional fan (ZL2) must be installed when using exhaust pipe extensions up to 3 m. **The following applies:** **1.0m (3m) must be deducted from the permissible overall length for every bend in the exhaust air system.**

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2.2 Possible inappropriate use

- Use on laboratory kilns which have not been manufactured or approved by mihmvogt.
- Use as a catalyser or air filter in devices which do not match the devices described under appropriate use.
- Non-observance of the minimum distances from fume exhaust hoods.
- Non-use of the additional ventilator (ZL2) if the exhaust pipe is extended.
- Use of excessive quantities of wax in the laboratory kiln.

2.3 Operator's liability

The device is used in the commercial field. The operator of the device is therefore subject to the statutory obligations regarding occupational safety.

Apart from occupational safety instructions in this instruction manual, the safety, accident prevention and environmental regulations valid for the area in which the device is used must be observed. The following apply especially:

- The operator must be informed about the applicable work safety directives and in a risk assessment additionally investigate additional hazards which arise from the specific working conditions at the device's place of use. This must be implemented in the form of operating instructions for operating the device.
- The operator must clearly define and assign responsibilities for installation, operation, maintenance and cleaning.
- The operator must ensure that all personnel who handle the device have read and understood the instruction manual.
- In addition, personnel must be trained and informed of hazards at regular intervals.
- The operator must provide the appropriate protective equipment for staff.
- Furthermore, the operator is responsible for ensuring that the device is always in technically faultless condition. The following therefore applies:
  The operator must ensure that the maintenance intervals specified in this instruction manual are complied with.
- The operator must have all safety equipment checked regularly for functionality and completeness.

3 Technical data

Voltage	230 V
Capacity	650 W
Height x depth	39 x 17 cm
Exhaust pipe Ø	150 mm
Induction pipe Ø	34 mm
Air quantity	300 m³/h
Weight	4,4 kg

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4 Design and function

Task

mihmvogt catalysers correspond to the latest state of technology and were developed to break down hydrocarbons into CO2 and H2O.

Design

Fig. 2: KN2 catalyser design

1	KN2 catalyser
2	Locking screw
3	Flange mounting
4	Fan
5	Inner tube
6	Heating element
7	Insulation fleece
8	Catalyser honeycombs

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Function

The KN2 catalyser is flange-mounted to the rear of a mihmvogt laboratory kiln. The catalyser is pre-heated by an integrated heating unit. A fan fitted to the lower end of the catalyser produces a partial vacuum and sucks the fumes caused by burning wax out of investment material out of the laboratory kiln and guides them through the catalyser honeycombs. A heating element integrated into the catalyser heats up the exhaust gases to approx. 600°C and breaks them down (when used appropriately) mainly into CO2 and H2O.

DANGER	
	**Danger due to high operating temperatures (approx. 600°C) in the catalyser housing!** Serious burns to limbs. • Do not reach into the catalyser housing during operation under any circumstances. • Allow the device to cool down completely before working on or in the catalyser housing.

WARNING	
	**Health hazard due to harmful or irritating substances!** Manufacturers of investment materials and waxes disclose no information about further ingredients for reasons of confidentiality. It is therefore not possible for mihmvogt to give any information about residues released and their composition. • Ensure there is always fresh air in the vicinity of the catalyser. • Do not use the device if there is suspicion that poisonous gases are being released.

5 Delivery – unpacking, storage

5.1 Delivery - unpacking

INSTRUCTION	
	**On arrival of the delivery the catalyser and all associated components must be checked for damage. Damaged components must not be installed and must be reported immediately to mihmvogt.**

5.2 Storage

INSTRUCTION	
	**All catalyser components must be stored in a dry, dust-free environment until they are installed.**

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6 Installation conditions

6.1 Environmental conditions

INSTRUCTION	
	When the KN2 catalyser is used under a fume extraction hood a safety distance of 15-40 cm to the extraction hood must be maintained.

INSTRUCTION	
	Excessive back pressure due to exhaust pipe extension! The back pressure increases and the fumes are pressed back into the catalyser. • An additional fan (ZL2) must be installed when using exhaust pipe extensions up to 3 m. **The following applies:** **1.0m (3m) must be deducted from the permissible overall length for every bend in the exhaust air system.**

6.2 Supply connections

INSTRUCTION	
	During operation, the catalyser may only be connected to the plug socket on a mihmvogt laboratory kiln. The switch-off temperatures for these plug sockets are pre-set for speed investment materials.

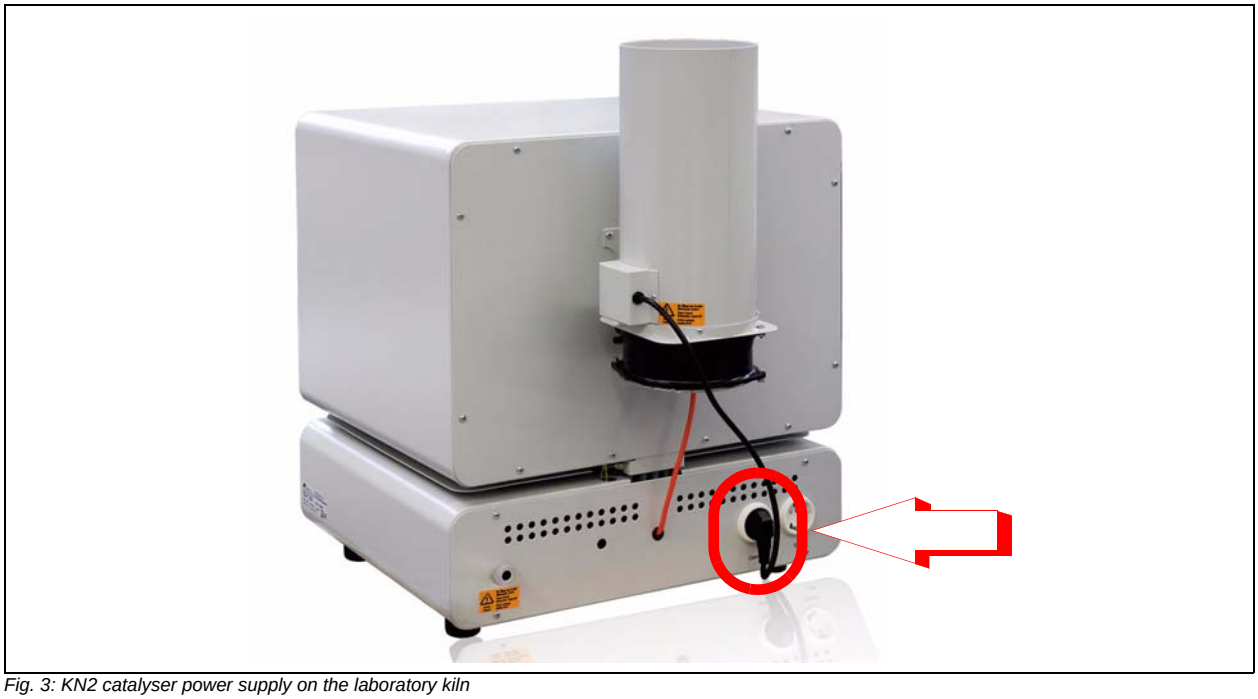

Fig. 3: KN2 catalyser power supply on the laboratory kiln

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7 Installation and putting into operation

7.1 Installation

1. Remove the discharge pipe (2) on the mihmvogt laboratory kiln.

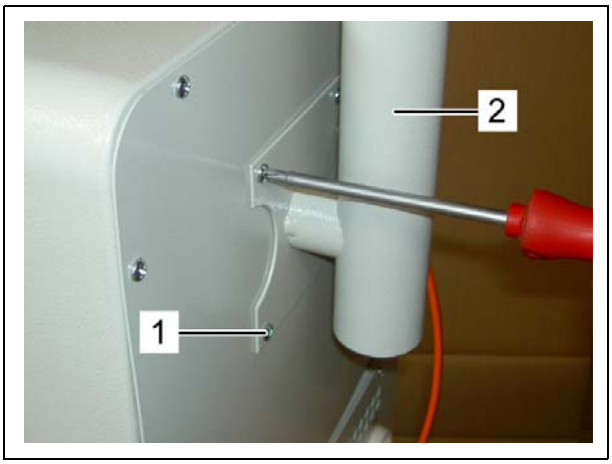

Fig. 4: Remove screws (1) in the discharge pipe

2. Fit the KN2 catalyser adaptor flange (1) (4 screws).

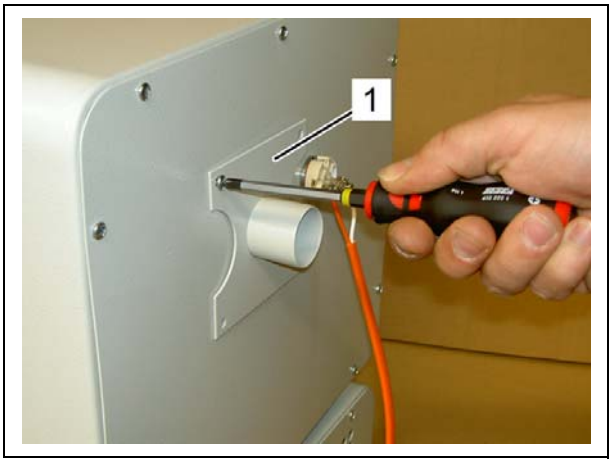

Fig. 5: Fit adaptor flange (1)

3. Push the KN2 catalyser (1) on to the adaptor flange and fix it with the fixing screw (2).

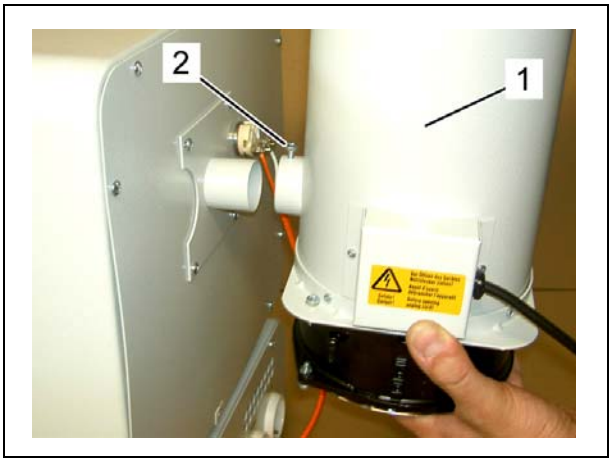

Fig. 6: Fit KN2 catalyser

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4. Connect the KN2 catalyser's power plug to the power socket on the mihmvogt laboratory kiln (see Fig.3: KN2 catalyser power supply on the laboratory kiln on Page 9).

INSTRUCTION

The power socket's cut-off temperature is set via the mihmvogt laboratory kiln. This setting process is described in the laboratory kiln documentation.

7.2 Initial putting into operation

The KN2 catalyser is controlled via the mihmvogt laboratory kiln.

DANGER

Danger due to high operating temperatures (approx. 600°C) in the catalyser housing!
Severe burns to limbs.

- Do not reach into the catalyser during operation under any circumstances.
- Let the device cool completely before undertaking any work on and in the catalyser housing.

WARNING

Warning: hot surfaces!
During operation the catalyser housing heats up to approx. 600°C.

- Always wear heat-resistant safety gloves when working on the catalyser.
- Let the catalyser cool completely before touching it.

7.3 Additional fan (ZL2)

The exhaust air system can be extended by up to 3m in case the KN2 catalyser has to be operated in an unfavourable location. To prevent the formation of back pressure due to the exhaust gas tract being too long, an additional fan (ZL2) must be integrated into the exhaust air system. The additional fan (ZL2) is placed directly on the catalyser.

⚠ Please note that every bend in the exhaust air system reduces the overall permissible length by one metre (1.0m).

Fig. 7: Additional fan (ZL2)

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8 Maintenance

8.1 Servicing interval

What?	Who?	When?
Burn catalyser honeycombs clean	Qualified personnel	1x per month*
Replace catalyser honeycombs	Qualified personnel	Every 2 years*

*The servicing interval depends on the investment materials used and the number of times per day the kiln is used!

8.2 Maintenance work

8.2.1 Burning the catalyser honeycombs free

DANGER

Danger due to high operating temperatures (approx. 600°C) in the catalyser housing!
Serious burns to limbs.
- Do not reach into the catalyser during operation under any circumstances.
- Let the device cool completely before undertaking any work on and in the catalyser housing.

WARNING

Warning: hot surfaces!
During operation the catalyser housing heats up to approx. 60°C.
- Always wear heat-resistant safety gloves when working on the catalyser.
- Let the catalyser cool completely before touching it.

1. Connect the catalyser to an external power socket (do not use the laboratory kiln's power socket).

WARNING

Warning: health hazard due to harmful or irritant substances!
Manufacturers of investment materials and waxes disclose no information about further ingredients for reasons of confidentiality.

It is therefore not possible for mihmvogt to give any information about residues released and their composition.
- Ensure there is always fresh air in the vicinity of the catalyser.
- Do not use the device if there is suspicion that poisonous gases are being released.

2. Let the catalyser heat up for 90 minutes.

→ The catalyser honeycombs are burnt clean.

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8.2.2 Replacing catalyser honeycombs and insulating fleece

1. Switch off the mihmvogt laboratory kiln.

DANGER	
	**Danger: electricity!** Electric current can cause severe injury or death • Switch off the operating current. • Ensure that nobody can switch the operating current back on. • Check whether the current is completely removed with a two-pole current checker.

2. Remove the catalyser's power plug.

WARNING	
	**Warning: hot surface!** The catalyser housing heats up to approx. 60°C during operation. • Wear heat-resistant safety gloves during all work on the catalyser. • Let the catalyser cool off completely before touching it.

3. Loosen the fixing screw on the catalyser and pull it off the adaptor flange.
4. Pull the insulation fleece from the inner pipe.
5. Turn the catalyser upside down and tap it carefully on a flat, stable surface.

→ The catalyser honeycombs separate from the heating element..

CAUTION	
	**Caution: danger of cuts!** You can inflict cuts on your hands when handling the catalyser honeycombs. • Wear suitable safety gloves when handling the honeycombs.

6. Remove the catalyser honeycombs and dispose of them appropriately (see Disposal on page 14.).
7. Pull a new insulating fleece over the inner pipe.
8. Turn the catalyser round again and place the catalyser honeycombs in the catalyser housing.
9. Push the KN2 catalyser on to the adaptor flange and fix it with the fixing screw.
10. Connect the KN2 catalyser's power plug to the mihmvogt laboratory kiln's power socket.

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9 Disposal

9.1 Safety

WARNING	
	**Contamination of the environment and ground water due to inappropriate disposal.** The regional regulations and directives of the operator's country must be observed when disposing of the product and/or its components.

INSTRUCTION	
	**The tasks to be performed may only be performed by qualified personnel.**

9.2 Disposal

- Separate the catalyser components into recyclable and hazardous substances /operating materials.
- Dispose of catalyser components by bringing them to be recycled.

10 EU declaration of conformity

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EC-Declaration of Conformity of Electric Machines

With reference to directives: 2004/108/EC (Electromagnetic compatibility)
2006/95/EC (Use within certain voltage limits)

Name of Producer: MIHM-VOGT GmbH & Co. KG
Friedrich-List-Str. 8
76297 Stutensee – Blankenloch
Federal Republic of Germany

We hereby declare that the products

Article and Type:	Ceramic furnaces LC3 Laboratory furnaces: KM1, KM3, KMP6, SLM1, SLM3, SLP6, GLM1, GLM3, GLP6, BLM1, BLM3, BLP6, TLM1, TLM3, TLP6, KM3-U, SLM3-U, GLM3-U, BLM3-U, TLM3-U, KMP6-U, SLP6-U, GLP6-U, BLP6-U, TLP6-U, XLM1, XLM3, XLP6, XLM3-U, XLP6-U, HT, HT-S, HT Speed, HT-S Speed. Drying cabinet: TSU-S Ventilation Air Hoods: DU1, DU2, DU3/2, DU3/3
Serial numbers:	37 006 and higher
	Electroplating and polishing units: EG, EG1, EG2, GBH,GABH
Serial numbers:	3329 and higher
	Catalyzer: KN, KN1, KN2 Exhaust Units: DG1, DG2, DG3
Serial numbers:	1417 and higher

are in conformity with the safety regulations stipulated in the directives indicated above.

This declaration will become invalid as soon as any of the listed products are modified without our approval.

Stutensee, 21/10/2010

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(General Manager)

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