INSTRUCTIONS FOR USE OF Z, KHK BAND HEATERS

IMPORTANT: READ THROUGH THE INSTRUCTIONS CAREFULLY BEFORE USE AND KEEP IN A SAFE

Dear customer,

Thank you very much for placing your trust in heating elements from the IHNE & TESCH Group. We have been developing and producing high-quality electrical heating technology of the kind you have opted for since 1932.

1. General

Our heating elements are high-quality products made in Germany that have be subjected to rigorous quality checks throughout all stages of development and production. A high degree of vertical integration and the many years of experience of our employees ensure that our high level of performance can be maintained.

This quality standard will give you a guarantee of continued reliable use of the heating elements over long periods of time, provided that the technical information set out below is observed.

If you have any other questions on installing and using the heating elements or any of our other products not covered in the information below, our field service staff and sales engineers will be happy to help.

Our heating systems conform to the applicable provisions of relevant EU directives and Equipment and Product Safety Act and bear the CE mark.

2. Applications

Our Band Heaters are suitable for heating solids (Nozzle and Tool heating).

The heating elements are components, not fully operational equipment. The intended use is in industrial electrothermal machinery.

3. Safety information

The instructions for use must be read carefully and understood prior to commissioning the heating systems. Incorrect assembly, selecting the wrong heating system and regulating a heating system incorrectly will cause defects and accidents.

For safety reasons, the heating systems may only be used for the applications described in these instructions for use. General operating instructions and safety information must be observed. When assembling the system, the safety instructions relevant to the installation location and generally accepted technical rules and standards must be observed.

Heating systems must not under any circumstances be commissioned if there are visible signs of (transport) damage.

Heating systems must not be commissioned until it has been ensured that the insulation resistance is ≥ 1 MOhm.

The surface temperature of the heating systems must not cause the temperature of the material to be heated to rise to a critical level that could, for example, trigger a fire, explosion, the emission of smoke or gas, etc.

The heating systems must not be commissioned until they have been mounted such the entire contact surface cannot move.

Operating conditions other than those described in the instructions for use will cause heating systems to malfunction or fail. Special applications must be approved by IHNE & TESCH.

Caution: Risk of combustion!

High temperatures occur during operation. All surfaces must be cold (≤ 40°C) when performing work on heating systems.

4. Connection

Caution: Electrical connections !

The electrical connection must only be performed by qualified electricians or persons trained in electrical safety. Work on equipment must be carried out with the equipment disconnected from the mains. It must also be ensured that the equipment cannot unintentionally be made live again.

Note the connection voltage!

Standards and specifications for electrical work must be observed. Particular attention must be paid here to conformity of the operating voltage (as embossed on the equipment) with the supply voltage.

4.1 Protective conductor

It is imperative that the protective conductor is connected, where available. Otherwise the connection of the protective conductor of the heating system must be checked as part of the mechanical connection to the machine.

4.2 Ex area

Operation of the heating systems in an Ex area is not permissible.

4.3 Connecting line

To avoid short circuits, the connecting lines must be routed such that they cannot come into contact with sharp edges or objects. It must be ensured that the terminal area is protected against the penetration of materials (e.g. oils, plastics, moisture, greases and gases).

Note:

The appropriate connection variant for the terminal area (e.g. cables, stranded wires, connectors, busbars etc.) must be chosen depending on the ambient temperatures.

5. Technical data

5.1 Surface temperature

The specifications given below are maximum values for the heating side and must not be exceeded:

Z type:	280 °C max.
KHK type:	400 °C max.

6. Assembly

It must always be ensured that no mechanical damage can occur due to external influences, e.g. moving parts.

The heaters have to be secured with the damping provided to the torque levels specified below:

	clamping screws	pressure spring lock
Z	8,5 Nm	8,5 Nm
KHK	5,8 Nm	5,8 Nm

Band Heaters with compression or pressure springs should only be tensioned to the point where there is still some springtravel remaining.

When heating Bands with clamping screw, the heaters must be retightened during first heating phase to ensure the proper fit of the heaters against the material to be heated.

Heaters may be damaged as a result of overheating if they are not attached by means of a form-fit connection.

7. Operating conditions

7.1 Temperatures

The connecting lines must be protected against temperature effects or be designed to withstand them.

7.1.1 Temperature control

Heating systems can absorb moisture during storage or storage in the wrong conditions, so they must be fitted with temperature control with start-up circuitry.

7.2 Protection against accidental contact, dust and moisture

The heating systems must be protected against contact, dust and moisture according to the ambient conditions. During operation, it is particularly important to prevent the ingress of any foreign matter such as oil, water, plastic etc.

7.3 Storage

If storing for a prolonged period of time (several months), it must be ensured through measures within the system that the insulation resistance will drop.

Heating systems must not be commissioned until it has been ensured that the insulation resistance is ≥ 1 MOhm.

Note:

We recommend that heating systems are stored in a dry environment and that a suitable desiccant is added as appropriate.

7.4 Disposal

Disposal must be carried out in accordance with statutory regulations.

8. Troubleshooting and remedy of faults

Fault	Possible cause	Remedy
Not heating	No mains voltage present	Check/replace fuse, switch on the switch
	Loose mains connection	Tighten the mains connection
	Torn connection	Replace the heating system
	Heater band faulty	Replace the heater band
Insufficient heating	Incorrect heater band, loose heater band	Replace the heater band Tighten the heater band so that a positive-locking fit is created
	Incorrect operating voltage	Connect the prescribed supply voltage
Excessive heating	Incorrect operating voltage	Connect the prescribed supply voltage
	Construction of heating elements	Retighten the heater band
Heater bands cannot be mounted	Diameter not correct	Readjust the heater band diameter
	Transport/storage damage	Replace the heater band

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