Bearing heater TMBH 1

Application

The SKF bearing heater TMBH 1 is intended for heating rolling bearings with an inner diameter up to 80 to 100 mm (3 - 4 in) and a maximum corresponding weight of 4 - 5 kg (9 - 11 lb). Other ring-shaped metal components forming a closed circuit such as gears, pulleys, bushings and shrink rings can also be heated.
This apparatus uses a patented method of heating based on high frequency induction. This new concept caters for optimized efficiency and is a truly portable unit. The unit is supplied with heating clamp, temperature probe, power cable (without plug) and a carrying case as standard.

Principle of operation

An induction heater can be compared with a transformer using the principle of a primary coil with a large number of windings and a secondary coil with a few windings on a mutual core. The input / output voltage ratio is equal to the ratio of the windings, while the energy remains the same. In the case of the SKF Bearing Heater TMBH 1, the primary coil is connected to a high frequency power supply. The bearing acts as a short-circuited single-turn secondary coil through which a low AC voltage flows at high amperage, thus generating a lot of heat. The heater itself as well as the clamp remain at ambient temperature.

Due to different physical proportions the inner ring of a bearing will heat up faster than the outer ring, thus reducing the radial internal clearance. As long as the recommended temperature of 110 ° C (230 °F)is not exceeded, this does not threaten to damage the bearing. Both greased and sealed bearings can be heated without risk of damage.

Demagnetisation

The high frequency current used, which creates low flux density in the bearing, means that no magnetisation will take place, thus avoiding the necessity for demagnetisation.

Safety Features

This bearing heater is equipped with the following safety features:

- Input current fused at 5 A
- Output current restriction to the clamp at 1,2 A at 400 V
- Internal thermal overload protection

In the temperature mode the heater will switch off if the temperature probe does not register a temperature increase of 1 degree every 15 seconds.

A short circuit on the clamp windings or cable will not inflict any risk to the user.

Spare parts

Designation	Description
TMBH 1-1	Control box (complete)
TMBH 1-1A	Logic print
TMBH 1-1B	Power print
TMBH 1-1D	Housing cover (including keyboard foil)
TMBH 1-1E	Keyboard foil
TMBH 1-1F	Mains inlet connector (female Euro-connector)
TMBH 1-1G	Main switch
TMBH 1-2	Heating clamp (including cable and plug)
TMBH 1-2A	Heating clamp plug set (male and female part)
TMBH 1-3	Temperature probe (including cable and plug)
TMBH 1-3A	Temperature probe plug set (male and female part)
TMBH 1-5	Heating pad/bearing stand
MP524	Instruction manual

Technical data

Designation	TMBH 1
Power	
Voltage	100 - 240 V, 50 - 60 Hz
Power (maximum)	350 Watt
Cosine φ	> 0,95
Component size range	
Inner diameter	20 to 100 mm (0.8 to 4 in)
Width	< 50 mm (2 in)
Weight	up to approximately 5 kg (11 lb)
Control functions	
Time control	0 - 60 minutes
Temperature control	0 - 200 °C (32 - 392 °F)
Accuracy temperature control	± 3 °C (6 °F)
Maximum temperature	200 °C (392 °F)
Dimensions	
Control box	450 x 330 x 205 mm (18 x 13 x 8 in)
Heating clamp	114 x 114 mm (4.5 x 4.5 in)

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Operating space heating temp.	5 to 32 °C (40 to 90 °F)
Complete unit in carrying case	370 x 240 x 130 mm (15 x 9 x 5 in)
Length clamp cable	75 cm (30 in)
Length power cable	2 m (80 in)
Length temperature probe cable	100 cm (40 in)
Weight complete unit	4,5 kg (10 lb)

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