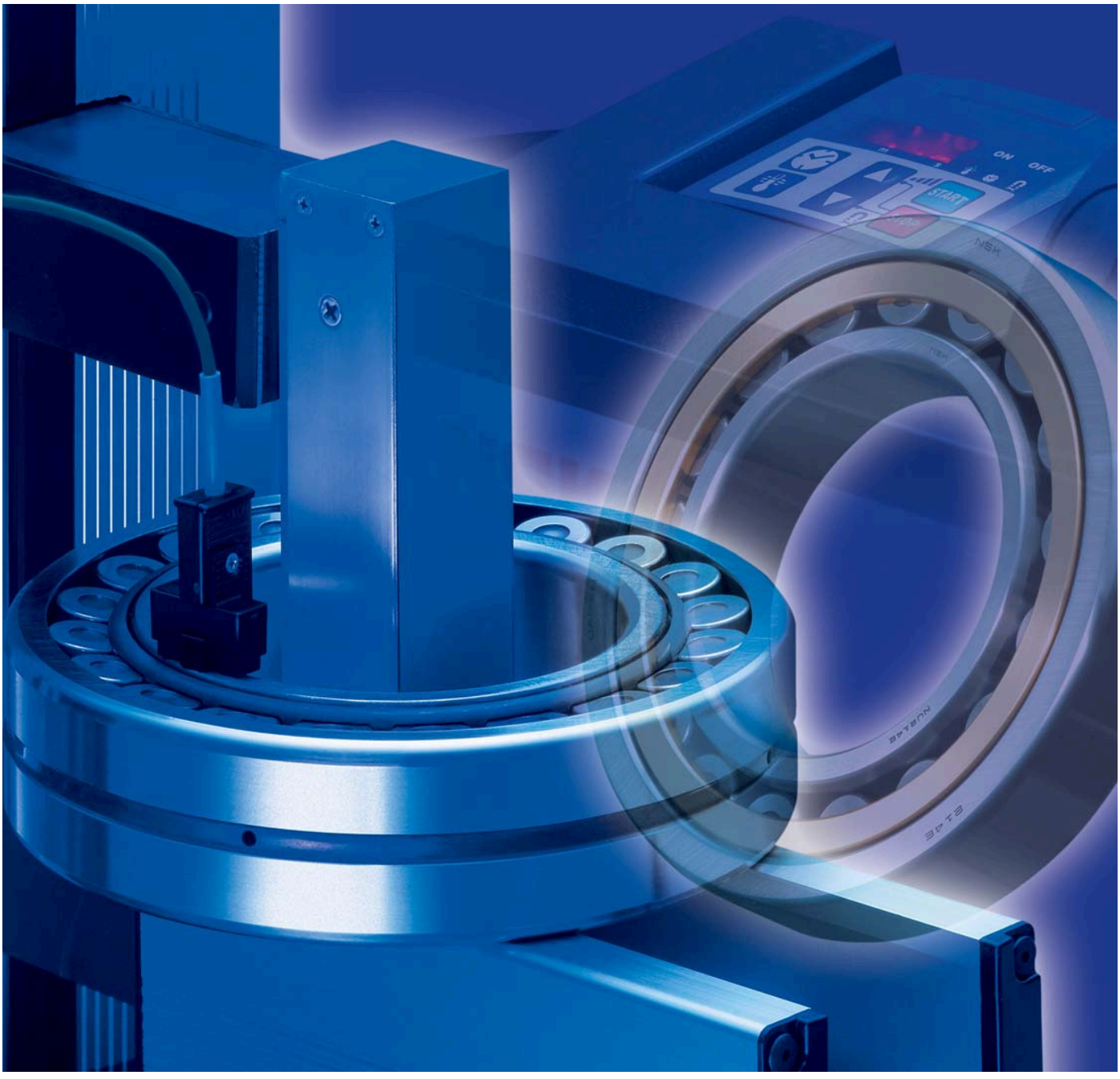
MOTION & CONTROL
NSK

Induction Bearing Heaters



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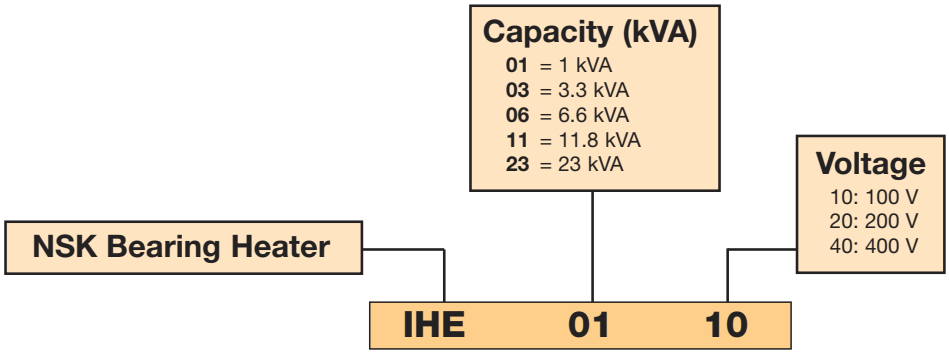

Induction heater usage is a safe and preferred method of heating a bearing in comparison to using a flame or oil bath. Bearing heaters produce strong alternating magnetic fields that induce eddy currents in the metals. The currents cause rapid and efficient heating of the component. The low voltage output eliminates any hazards caused by shocks or sparks.

Bearing heaters from NSK offer a fast, safe and efficient way to mount straight bore bearings on to shafts. They provide uniform inner ring heating that helps to reduce bearing mounting time and cost. Automatic temperature and demagnetizing control features, a light, compact design and the versatility to heat many different bearing sizes make NSK bearing heaters a must-have for maintenance professionals.

Bearing Heater Standard Specifications

Part Number			IHE0110 | IHE0120	IHE0320 | IHE0340	IHE0620 | IHE0640	IHE1120 | IHE1140	IHE2320 | IHE2340
Heating Capacity			**1kVA**	**3.3kVA**	**6.6kVA**	**11.8kVA**	**23kVA**
Applicable Bearing Size	Minimal Bore Diameter (mm ø)		20	35	35	50	50
	Maximum Outside Diameter (mm ø)		200	300	350	600	800
	Thickness (mm)		70	110	200	300	400
	Weight (kg)		12	40	80	300	600
Heated Bearing Type	Can Heat Pre-greased Bearing		Yes				
	Can Heat Sealed Bearing		Yes				
Power Supply Characteristics	Phase		Single	Three	Three	Three	Three
	Voltage (V)		100-120V | 200-240V	200-240V | 380-480V	200-240V | 380-480V	200-240V | 380-480V	200-240V | 380-480V
	Frequency		50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
	Input Current (A)		7.2A | 4.0A	5.3A | 2.7A	8.1A | 4.0A	13.2A | 6.6A	27.0A | 13.5A
Dimensions of Body	H (mm)		347	510	660	1230	1435
	W (mm)		175	305	385	700	850
	L (mm)		470	755	975	1250	1600
	Main Body Weight (kg)		13.6 | 13.2	43	81	241	335
	Accessories Weight (kg)		2.4	6.6	12.5	33.7	64.2
Control Specifications	Temperature Control Mode	Range	36 – 250°C				
		Temp. Sensor Type	K – type				
		Accuracy	1°C				
	Time Control Mode	Range	0 – 100 min				
		Accuracy	1s				
	Power Reduction	By 10%	50 – 100%				
	Demagnetization		300 μ T(3G)				
Heating Core Spec.	Maximum Flux (T)		1.5T				
Operation Spec.	Operation		Operator with LEDs				
	Sequence Operation		Yes				
Temp. Display	Celsius/Fahrenheit Changeover		Yes				

Slide Type Bearing Installation Table				•	•	•	•
I-Type Core	N-CI-1815	(bore diameter 20~35)	•				
	N-CI-1825	(bore diameter 35~50)	•				
	N-CI-1835	(bore diameter 50mm above)	•				
	N-CI-2525	(bore diameter 35~50)		•			
	N-CI-2535	(bore diameter 50~70)		•			
	N-CI-2545	(bore diameter 70mm above)		•			
	N-CI-3725	(bore diameter 35~50)			•		
	N-CI-3735	(bore diameter 50~80)			•		
	N-CI-3755	(bore diameter 80mm above)			•		
	N-CI-5235	(bore diameter 50~80)				•	
	N-CI-5255	(bore diameter 80~100)				•	
	N-CI-5270	(bore diameter 100mm above)				•	
	N-CI-6735	(bore diameter 50~80)					•
	N-CI-6755	(bore diameter 80~130)					•
	N-CI-6785	(bore diameter 130mm above)					•
I-Type Core Lift-up Tool	N-CL-578					•	•
Temperature Sensor	N-CTC-300	lead length 300 mm	•				
	N-CTC-500	lead length 500 mm		•	•		
	N-CTC-1000	lead length 1000 mm				•	•

Remarks 1. Bearings should not be heated higher than 120˚C (248˚F).
2. Handle the heated product with care.

Three Advantages

1 Even Heating Without Bearing Damage

The use of direct flame or a blowtorch to heat a bearing is hazardous, risky and may cause uneven thermal expansion and/or material alteration.

NSK's induction bearing heater uses the electromagnetic induction principle to heat bearings evenly, allowing them to thermally expand without causing damage to the bearings.

This feature eliminates unnecessary damage, thereby improving work efficiency.

2 Quick and Efficient Heating

NSK's induction bearing heater has exciting coils embedded in a core similar to the primary winding in a transformer. AC current flowing through the coils induces a secondary current around the inner ring of the bearing, which generates heat due to the bearing's resistance to electrical currents.

This reduces energy waste and allows for quick heating of the bearing. The induction heating method provides high safety, reliability and work efficiency.

3 Clean Heating

The oil bath shrink fit process requires extra time and cost to clean the bearing, even with the use of new oil. NSK's induction bearing heaters heat cleanly and retain the original pre-lubrication, even on grease sealed bearings, without the use of oil.

Oil storage management is not required, thereby improving the working environment.

Bearing Heater

Environmentally Friendly with High Functionality

NSK's induction bearing heater provides a proper shrink-fitting process, which extends the life expectancy of a bearing. This process is less hazardous and better for personal health and safety. The force fit methods, using a hammer or a press, have a higher likelihood of causing damage to a bearing. This shortens bearing life expectancy. Traditional and conventional heating methods, such as ovens, oil baths or blowtorches, produce smoke, fumes or oil waste. These are hazardous to human health and impose a burden on the environment. NSK's bearing heater provides a solution to these problems.

Three Features

1 Versatile

NSK's induction bearing heater is designed primarily for the heating of bearings. However, it can heat bushings, gears, pulleys, couplings and other ring-shaped objects.

2 Built-in Demagnetization

NSK's induction bearing heater is digitally controlled and demagnetizes a bearing automatically after heating. Manual demagnetization is also possible.

3 Temperature and Timer Control

NSK's induction bearing heater has two control modes: Temperature and Time. In Temperature Control Mode, the temperature can be set up to 250°C as standard. The temperature indication can be changed to Fahrenheit or Celsius through the control panel. Temperature retention keeps the bearing at the set temperature until Stop is pressed. In Timer Control Mode, time can be set up to 60 minutes.

Slide Type Bearing Installation Table

Once a bearing and I-type core are installed in the Slide Type Bearing Installation Table, one simply has to move the table to the heating position. This device enables easy mounting and dismounting of hot and heavy bearings.

Temperature Sensor

The small and sensitive temperature sensor continuously monitors the bearing temperature to ensure precise detection of bearing temperature. The sensor works at high temperature rising rates as well as when the sensor is set in a confined area.

Power Supply Compatibility

NSK's induction bearing heater is compatible with a wide range of voltage and frequency supplies. Stationary types of bearing heaters are connected to a 3-phase AC power supply, while portable types are connected to a single-phase AC power supply.

Fault Tolerance

When heating a bearing without installing the temperature sensor and in other abnormal incidences, NSK's bearing heater detects the faults and stops heating automatically. This assures safe operation of the bearing heater.

Operation Panel

The operation panel is common to all types of NSK bearing heaters. The user-friendly panel is operated by use of push-button symbols. Symbols represent individual elemental commands of the bearing heater. The external control signal inputs and outputs are standard and allow the bearing heater to be embedded into your FA system.

Broad Range of Work Size

NSK's bearing heaters accommodate a broad range of bearing sizes by selecting an I-type core suitable for the inner ring diameter.

Optimal Heating

NSK's bearing heater senses the electrical properties of the bearing and the I-type core, heating the work using optimal conditions. IDBH series features a convenient Power Reduction function that sets the reduction rate 50-100% by 10% for delicate work requiring slow heating.