

# EDDYTHERM<sup>®</sup>

Fast, easy, reliable:  
The logical approach to shrink fitting



# Extend bearing life with proper shrink fitting

## Why Shrink Fitting?

Shrink-fit technology uses the expansion and contraction properties of metal to enable smaller shafts carry the same torsion moment as larger keyed ones.

Proper shrink fitting extends the life of roller bearings by several times. Many other shaft mounted machine parts such as gears, pinions, seals and spacers that often require shrink fitting are known to suffer reduced life expectancy due to improper installation.

What constitutes "proper" fitting technique? Mechanical methods such as hammers and hydraulic presses risk damaging the inside surface of the inner ring and the bearing races. The better shrink fitting solution is via heating. But beware: blow torches and hot plates tend to overheat, while oil baths are slow heating, present environmental and safety hazards, cause bearing contamination and loss of prelubrication.

## Advantages of Induction Heating

### ■ proper fitting

Workpieces are heated evenly, with no danger of overheating. Bearing prelubrication remains in place, and the bearing remains free of contamination.

### ■ ecological energy efficiency

Induction heating requires minimal energy to fit bearings and produces no vapor, smoke or used oil.

### ■ portability

Workpieces may be mounted 'on site' very quickly with little set-up required.

### ■ safety

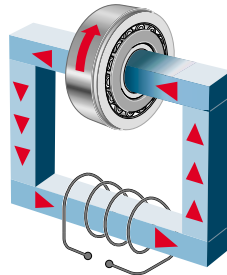
Only workpieces become hot: no accident-prone hot oil, hot plates or open flames.

### ■ demagnetization

All EDDYTHERM® heaters demagnetize workpieces automatically at the end of every heating cycle with no residual magnetism to collect debris.

## The Process

EDDYTHERM® utilizes the induction principle as in transformers - its core and windings can be seen as the primary side, but the workpiece acts as a short-circuited secondary winding, which heats up rapidly due to its great electrical resistance. This phenomenon allows EDDYTHERM® to control heating by continuously monitoring the workpiece temperature and adjusting its own heating power accordingly. This results in even heating of only the inner bearing ring. The heater itself remains cool to touch.



## EDDYTHERM® advantages

- /// User-oriented sensor displays
- /// Robust industrial design
- /// Designed to German standards
- /// Straightforward operation
- /// Rapid and efficient heating
- /// Self-diagnostic program



## Operation



Mount workpiece either standing or lying on one side. Large workpieces are no problem with the 4x swivel arm.



Mount the miniature magnetic temperature probe.



Select the heating mode (indicated by corresponding LED).  
Temperature hold  
Temperature shutoff  
Timed shutoff



Set desired temperature or time using 'up' or 'down' keys.



Throughout the heating cycle, the current temperature or the remaining heating time is displayed continuously.

**Automatic shutoff**  
If the heater is not operated for approximately five minutes, it shuts off automatically; it restarts when any key is pressed.

**Program interruption**  
Whenever the heating cycle is interrupted prematurely by pressing the STOP key, the demagnetization cycle takes place automatically.



**Demagnetization**  
Workpieces can also be demagnetized without heating.

## Advantages at a glance

Service modes and

design

than VDE

operation

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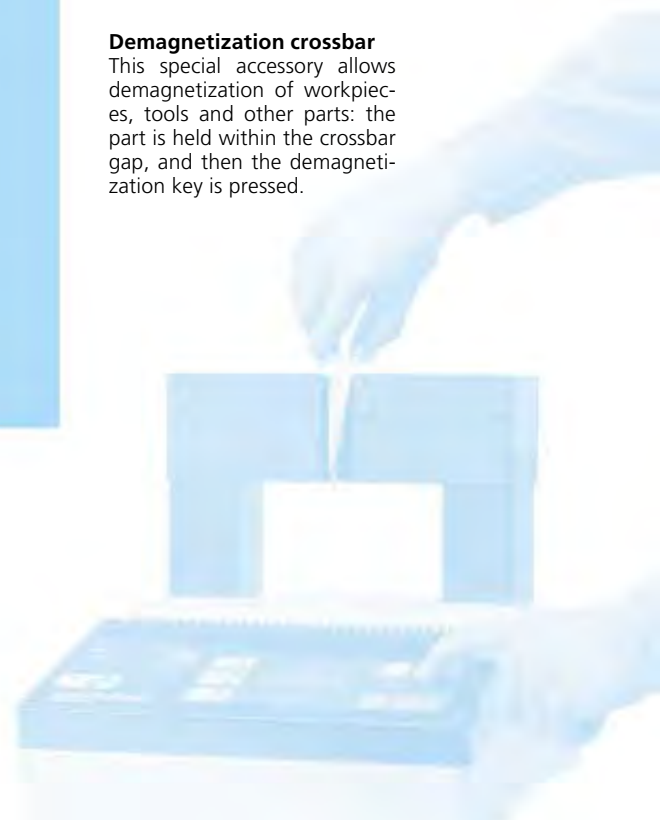
- /// Spares workpieces from physical damage
- /// Automatic demagnetization following every heating cycle
- /// Acoustic signal at end of heating cycle
- /// Available for supply voltages from 200 to 600 V, 50/60Hz
- /// Modular design for easy service
- /// Environmental friendly

### Demagnetization crossbar

This special accessory allows demagnetization of workpieces, tools and other parts: the part is held within the crossbar gap, and then the demagnetization key is pressed.



EDDYTHERM® has been tested on a non-mandatory basis and satisfies the requirements of the German Equipment Safety Law of May 11 2001.

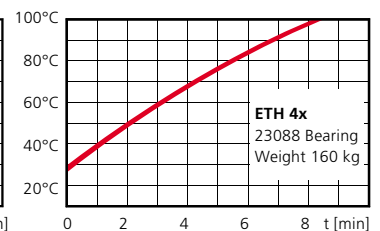
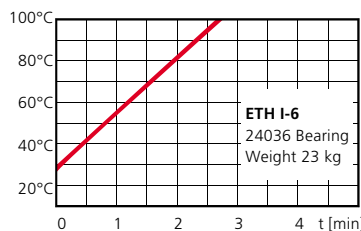
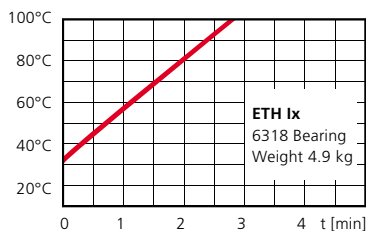




Technical data	EDDYTHERM® le	EDDYTHERM® lx	EDDYTHERM® I-6	EDDYTHERM® 4x
Voltage	100 - 120 V <sup>1)</sup> (ETH 7130) 200 - 240 V <sup>1)</sup> (ETH 7120)	100 - 120 V <sup>1)</sup> (ETH 7110) 200 - 240 V <sup>1)</sup> (ETH 7100)	200 - 480 V <sup>1)</sup> (ETH 7500/X)	200 - 600 V <sup>1)</sup> (ETH 7440/X)
Power consumption	max. 3.5 kVA <sup>2)</sup>	max. 3.5 kVA <sup>2)</sup>	max. 6.0 kVA <sup>2)</sup>	max. 14 kVA <sup>2)</sup>
Thermal overload protection	yes	yes	yes	yes 100% duty rate available
Temperature accuracy	-	better than 3°C	better than 3°C	better than 3°C
Time setting	max. 0:10:00	max. 0:59:59	max. 0:59:59	max. 0:59:59
Residual magnetism after heating	< 2 A/cm	< 2 A/cm	< 2 A/cm	< 2 A/cm
Dimensions (W x D x H)	320 x 330 x 325 mm 12 5/8" x 13" x 12 13/16"	320 x 330 x 325 mm 12 5/8" x 13" x 12 13/16"	320 x 330 x 375 mm 12 5/8" x 13" x 14 3/4"	1120 x 550 x 960 mm 44 1/8" x 21 3/4" x 37 7/8"
Distance between posts	155 mm/ 6 1/8"	155 mm/ 6 1/8"	150 mm/ 5 7/8"	270 mm/ 10 5/8"
Weight (Standard version)	31.5 kg/ 70 lb	31.5 kg/ 70 lb	41 kg/ 90 lb	140 kg/ 308 lb
<b>Standard equipment and optional accessories</b>				
Crossbar for bearing inner dia. Order No.				
> φ 15 mm/ 5/8"	ETH 7650	○	○	○
> φ 20 mm/ 13/16"	ETH 7651	●	●	○
> φ 30 mm/ 1 3/16"	ETH 7652	○	○	●
> φ 43 mm/ 1 3/4"	ETH 7653	●	●	○
> φ 64 mm/ 2 9/16"	ETH 7654	○	○	●
> φ 79 mm/ 3 1/8"	ETH 7655	●	●	○
> φ 86 mm/ 3 7/16"	ETH 7656		●	
> φ 43 mm/ 1 3/4"	ETH 7648			○
> φ 58 mm/ 2 5/16"	ETH 7647			○
Crossbar storage box	ETH 7905	○	○	○
Swivel crossbar for bearing inner dia.				
> φ 108 mm/ 4 1/4"	ETH 7640			●
> φ 79 mm/ 3 1/8"	ETH 7641			○
Demagnetization crossbar	ETH 7670	○	○	○
Temperature probe, magnetic clip-type	ETH 7305		●	●
	ETH 7303		○	○

<sup>1)</sup>Indicate voltage when ordering <sup>2)</sup> Depending upon supply voltage & frequency ○ Option ● Standard equipment

### Examples of bearing heating cycles



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