

# SKF EAZ 80/130 SKF EAZ 130/170



Instructions for use  
Mode d'emploi  
Bedienungsanleitung  
Instrucciones de uso  
Manuale d'istruzioni

Instruções de uso  
使用说明书  
Инструкция по эксплуатации  
Betjeningsvejledning

|           |    |           |
|-----------|----|-----------|
| English   | 3  | English   |
| Français  | 11 | Français  |
| Deutsch   | 19 | Deutsch   |
| Español   | 27 | Español   |
| Italiano  | 35 | Italiano  |
| Português | 43 | Português |
| 中文        | 51 | 中文        |
| Русский   | 59 | Русский   |
| Dansk     | 67 | Dansk     |



## Table of contents

|                                    |    |
|------------------------------------|----|
| EC Declaration of conformity ..... | 4  |
| Safety recommendations .....       | 5  |
| 1. Description .....               | 6  |
| 2. Application .....               | 6  |
| 3. Technical data .....            | 7  |
| 4. Operating instructions .....    | 9  |
| 5. Safety features .....           | 10 |
| 6. Maintenance .....               | 10 |

## EU Declaration of conformity

We,  
SKF Maintenance Products  
Kelvinbaan 16  
3439 MT Nieuwegein  
The Netherlands

herewith declare that the following products:

**Induction heaters**  
**EAZ 80/130**  
**EAZ 130/170**

which this declaration refers to, are in accordance with the conditions of the following directives:

EUROPEAN LOW VOLTAGE DIRECTIVE 2014/35/EU  
EMC DIRECTIVE 2014/30/EU  
EUROPEAN ROHS DIRECTIVE 2011/65/EU

Nieuwegein, The Netherlands,  
September 2017

A handwritten signature in black ink, appearing to read 'Sébastien David', with a horizontal line underneath.

Sébastien David  
Manager Product Development and Quality



### Safety recommendations

- Follow the operating instructions at all times.
- The heater should not be used in areas where there is a risk for explosion.
- Risk of electrical hazard. Only qualified and adequately trained personnel must be allowed to operate the equipment.
- During the heating process observe a safety distance of 1 m (3.3 ft) with the Induction Heater.
- Since a magnetic field is generated by the induction heater, people wearing cardiac pacemakers or having metallic implants must observe a safety distance of at least 5 metres (16 ft) from the induction heater during operation. Electronic equipment, such as wristwatches, mobile phones, may also be affected.
- Use proper handling equipment when lifting heavy workpieces. Secure the workpiece with appropriate lifting and handling equipment while heating.
- Never modify the heater.
- All repair work should be carried out by an SKF repair shop.
- Make sure the supply voltage is correct. Connecting the induction heater to the wrong voltage supply will void the warranty and probably damage the heater.
- Always make sure the heater is securely connected to earth.
- Do not expose electronic components to high humidity or water.
- Never introduce body parts into the bore of the heater during operation.
- Do not use the equipment in case of damage or heavy wear is detected on the heating coil.
- Handle the coil with care to avoid shock loads and jamming during mounting and dismounting.
- Cracked rings must not be heated with the electrical induction heater.

## 1. Description

The tool consists of a circular yoke on which six adjustable yokes are attached. All yokes are made of laminated iron. Each yoke has an induction coil through which an alternating current of 50/60 Hz is fed.

The yokes are pressed against the raceway of the inner ring to be removed.

The alternating magnetic fields between the yokes pass through the inner ring and produce eddy currents which cause a rapid heating and expansion of the inner ring which can then be easily dismounted. For remounting, TIH induction heaters with automatic demagnetization are recommended.

## 2. Application

The heaters are used for dismounting of the various sizes of cylindrical bearing inner rings types NU, NJ and NUP mounted on a shaft with an interference fit up to n6.

This tool is available in two sizes, one for inner rings with a raceway diameter of 80 up to 130 mm (EAZ 80/130) and one for 130 up to 170 mm (EAZ 130/170).

The heaters are suitable for the following bearings of the NU, NJ, NUP range:

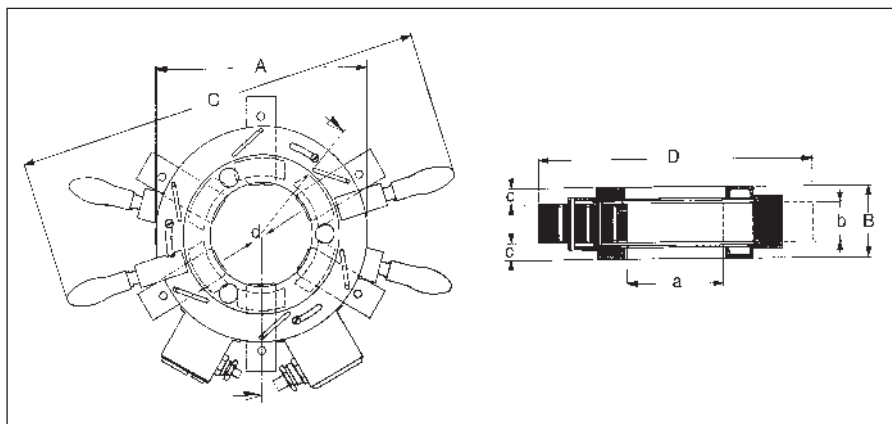
| <b>EAZ 80/130</b> | <b>EAZ 130/170</b> |
|-------------------|--------------------|
| 213-221           | 222-228            |
| 313-320           | 321-326            |
| 412-418           | 419-424            |
| 1014-1022         | 1024-1030          |
| 2213-2220         | 2222-2228          |
| 2313-2320         | 2322-2326          |

All E types included.

### 3. Technical data

All units are equipped with remote control switches, signal lamps for 'power on' and 'overheating' as well as automatic overheating protection. The connection cable is delivered complete with plug (DIN 49463) and wall-connector with power relay.

|                        |                        |
|------------------------|------------------------|
| Interference fit       | maximal n6             |
| Cable                  | 5 m (16 ft)            |
| Control lamps          | power on / overheating |
| Overheating protection | automatic              |
| Remote control         | standard               |
| Wall connector         | standard               |



| Dimensions | EAZ 80/130 |           | EAZ 130/170 |           |
|------------|------------|-----------|-------------|-----------|
|            | mm         | in        | mm          | in        |
| A          | 285        | 11.2      | 335         | 13.2      |
| B          | 125        | 4.9       | 135         | 5.3       |
| C          | 555        | 21.8      | 610         | 24.0      |
| D          | 315/365    | 12.4/14.4 | 340/380     | 13.4/15.0 |
| a          | 134        | 5.3       | 180         | 7.1       |
| b          | 50         | 2.0       | 50          | 2.0       |
| c          | 40         | 1.6       | 45          | 1.8       |
| d          | 80/132     | 3.1/5.2   | 130/172     | 5.1/6.8   |
| Weight     | 28 kg      | 62 lb     | 35 kg       | 77 lb     |



The tools can be delivered for any voltage between 230 and 500 V 50/60 Hz with two or three phases (EAZ 130/170 only).

The units are standard available for the following supplies:

| Designation  | Net Supply      | Current |
|--------------|-----------------|---------|
| EAZ 80/130A  | 2 x 230 V/50 Hz | 40 A    |
| EAZ 80/130B  | 2 x 400 V/50 Hz | 45 A    |
| EAZ 80/130C  | 2 x 460 V/60 Hz | 25 A    |
| EAZ 80/130D  | 2 x 415 V/50 Hz | 35 A    |
| EAZ 130/170A | 2 x 230 V/50 Hz | 60 A    |
| EAZ 130/170B | 2 x 400 V/50 Hz | 45 A    |
| EAZ 130/170D | 3 x 230 V/50 Hz | 43 A    |
| EAZ 130/170E | 3 x 400 V/50 Hz | 35 A    |
| EAZ 130/170F | 3 x 460 V/60 Hz | 23 A    |
| EAZ 130/170G | 3 x 420 V/60 Hz | 30 A    |
| EAZ 130/170H | 3 x 415 V/50 Hz | 30 A    |

## 4. Operating instructions

- The wall connector shall be connected to the supply by an authorised electrician.
- Compare the line voltage with indication given on the heater.
- Connect the plug to the wall connector. Make sure that the shaft has a good earth connection for safety reasons. The heater is earthed via the earth connection of the plug.
- Adjust the yokes by moving the handles so that the tool can be fitted to the ring to be withdrawn. Press the handles together until the yokes grip the track of the ring.



Never switch on the heater if the yokes are not in contact with the ring.  
The yokes would then close instantly due to the strong magnetic field.

- Switch on the heater. The yokes are now strongly attached to the ring due to the magnetic forces. Feel the moment the ring is released by trying to rotate the tool together with the ring. The ring will release within 30 seconds and can then easily be rotated and withdrawn.
- Switch off the heater.
- Remove the inner ring carefully, without damaging the yokes, from the heater. As the ring is magnetized it might still stick a little to the yokes.

### Notes:

- An accurate thermometer should be used in order to avoid overheating
- In the event of too high coil temperatures the heater is switched off automatically. The unit is ready for use again after cooling down.  
A warning lamp indicates too high coil temperatures.
- The inner rings are magnetized once they have been heated.  
Should the ring be remounted demagnetization is required so that no magnetism remains in the ring. A TIH induction heater is recommended for this purpose.

## 5. Safety features

The induction heater is equipped with the following safety features:

- Automatic overheating protection.
- Fuses in wall connector.
- Metal parts connected to earth.
- Under extreme conditions (e.g. unstable supply, static electricity, etc.) might 'reset' itself for safety reasons.

## 6. Maintenance

To ensure optimum performance and lifetime:

- Protect the heater/yokes against corrosion, damage and deformation.
- Avoid impact against the yokes.
- Protect the heater from water and very high humidity.

Spare parts are available on request.

目 录

符合欧盟相关产品条例的声明 .....52

安全需知 .....53

1. 简介 .....54

2. 应用 .....54

3. 技术参数 .....55

4. 使用说明 .....57

5. 安全特征.....58

6. 维护 .....58

## 符合欧盟相关产品条例的声明

我们，  
SKF维护产品  
Kelvinbaan 16  
3439 MT Nieuwegein  
荷兰

在此声明，以下产品：

可调式电磁感应加热器  
**EAZ 80/130**  
**EAZ 130/170**

的设计和制造遵从  
欧盟电磁兼容指令VOLTAGE DIRECTIVE 2014/35/EU  
欧盟电磁兼容指令EMC DIRECTIVE 2014/30/EU  
欧洲 ROHS 指令 2011/65/EU

Nieuwegein, 荷兰,  
2017年9月



Sébastien David  
产品研发与质量经理



### 安全需知

- 始终按照操作说明进行作业。
- 严禁在具有爆炸风险的地方使用加热器。
- 电击危险。务必只能由符合资质并且经过恰当培训的人员操作设备。
- 在加热过程中，务必与电感应加热器保持1米（3.3英尺）的安全距离。
- 电感应加热器会产生电磁场，因此，如果操作人员佩戴有心脏起搏器或金属植入物，请务必在操作过程中与电感应加热器至少保持5米（16英尺）的距离。电气设备，比如腕表、手机等也可能受影响。
- 提升重型工件时，请使用恰当的夹持设备。在加热时，请使用恰当的提升设备和夹持设备以保证工件安全。
- 严禁改动加热器。
- 所有维修工作均由斯凯孚维修店铺执行。
- 请确保采用正确的电源电压。电感应加热器若连接错误的电源电压将使保修担保失效并且很可能损坏加热器。
- 请始终确保加热器安全接地。
- 严禁将电气组件暴露在高度潮湿的环境中或水中。
- 在操作过程中，严禁将身体部位探入加热器的闭合磁路内。
- 一旦发现设备受损或线圈被查出严重磨损，严禁继续使用该设备。
- 在安装和拆卸过程中，轻拿轻放加热器，避免冲击载荷和干扰。
- 严禁使用电感应加热器加热开口环。

# 1. 简介

该加热器包括了一个圆环形的磁轭，上面另附有六个可用来调节加热器内孔尺寸的磁轭，所有这些磁轭都是硅钢片层叠而成。

每根磁轭上都有电磁感应线圈，引导50/60Hz的交变电流。磁轭紧贴住要拆下的轴承内圈的外表面。在磁轭间产生的交变磁场穿过轴承内圈时，会在内圈上产生感应电流，从而使内圈被迅速地加热而膨胀，这样就可以很容易地把内圈从轴上拆下来。若要安装，建议使用SKF具有自动退磁功能的TIH系列加热器。

# 2. 应用

该加热器应用于拆卸不同尺寸的圆柱滚子NU、NJ和NUP类的轴承的内圈，当其与轴紧配合最高至n6时。该类型的加热器有两种规格，一种适用于内圈外径80-130mm（EAZ 80/130），另一种适用于内圈外径130-170mm（EAZ 130/170）。该加热器适用以下的NU、NJ和NUP圆柱滚子轴承：

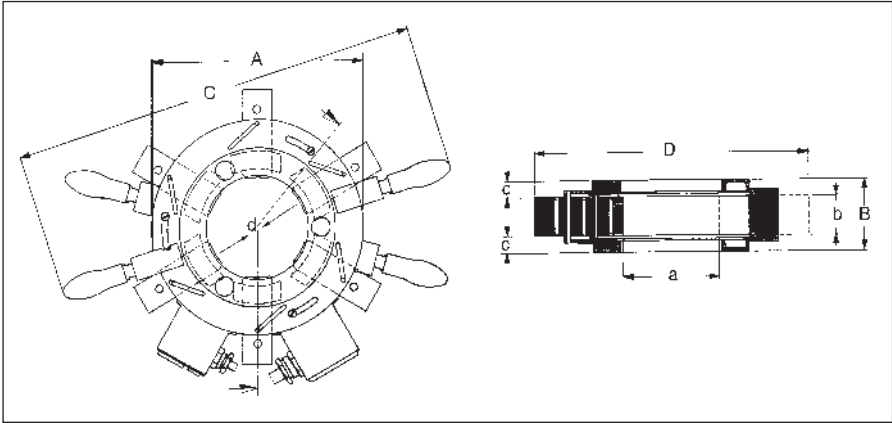
| EAZ 80/130 | EAZ 130/170 |
|------------|-------------|
| 213-221    | 222-228     |
| 313-320    | 321-326     |
| 412-418    | 419-424     |
| 1014-1022  | 1024-1030   |
| 2213-2220  | 2222-2228   |
| 2313-2320  | 2322-2326   |

所有E型包括在其内。

### 3. 技术参数

所有型号的可调式EAZ电磁感应加热器都配有遥控器，电源和过热指示灯以及过热自动保护功能。电源电缆配有插头（DIN 49463）和继电器保护接头。

|      |       |
|------|-------|
| 紧配合  | 最大n6  |
| 电缆   | 5m    |
| 指示灯  | 电源/过热 |
| 过热保护 | 自动    |
| 遥控   | 标准    |
| 接头   | 标准    |



| 尺寸 | EAZ 80/130 | EAZ 130/170 |
|----|------------|-------------|
|    | mm         | mm          |
| A  | 285        | 335         |
| B  | 125        | 135         |
| C  | 555        | 610         |
| D  | 315/365    | 340/380     |
| a  | 134        | 180         |
| b  | 50         | 50          |
| c  | 40         | 45          |
| d  | 80/132     | 130/172     |
| 重量 | 28 kg      | 35 kg       |



该加热器有从230V-500V，50/60Hz的两相或三相电（仅适用于EAZ 130/170）的不同型号可供选择。下表为可提供的标准型号：

| 订货号          | 电源              | 电流   |
|--------------|-----------------|------|
| EAZ 80/130A  | 2 x 230 V/50 Hz | 40 A |
| EAZ 80/130B  | 2 x 400 V/50 Hz | 45 A |
| EAZ 80/130C  | 2 x 460 V/60 Hz | 25 A |
| EAZ 80/130D  | 2 x 415 V/50 Hz | 35 A |
| EAZ 130/170A | 2 x 230 V/50 Hz | 60 A |
| EAZ 130/170B | 2 x 400 V/50 Hz | 45 A |
| EAZ 130/170D | 3 x 230 V/50 Hz | 43 A |
| EAZ 130/170E | 3 x 400 V/50 Hz | 35 A |
| EAZ 130/170F | 3 x 460 V/60 Hz | 23 A |
| EAZ 130/170G | 3 x 420 V/60 Hz | 30 A |
| EAZ 130/170H | 3 x 415 V/50 Hz | 30 A |

## 4. 使用说明

- 电源接头应由具备资质的电气工程师接到供电柜上。
- 比较电源电压和加热器上所示的电压
- 将插头接到电源接头上。因安全的需要，确保轴有良好的接地。电热器是通过插头的接地线接地的。
- 通过移动手柄调节磁轭，以确保加热器磁轭可以紧贴到要拆下的内圈上。同时捏紧加热器的手柄，直到磁轭抓到内圈上。



加热器应放于正确位置并使磁轭与套圈接触，否则严禁开机，以免因强大磁场作用使两者产生突然撞击。

- 打开加热器电源。因为磁力吸引的作用，磁轭就会牢牢吸附到内圈上。尝试旋转加热器和内圈，找到感觉松动的时刻，在接下来的30秒内，内圈就会很容易转动和取下来。
- 关闭加热器电源。
- 从加热器里小心地取出内圈，不要损坏磁轭。由于内圈在加热过程中被磁化了，它可能会轻粘在磁轭上。

### 注意！

- 为防加热过头，需要使用精确的测温仪测量加热温度。
- 一旦感应线圈的温度太高，加热器会自动关闭。在冷却下来后，加热器又可以继续使用。报警灯可在线圈温度过高时发出指示。
- 在内圈被加热的过程中会被磁化。若要重新装回内圈，需要加热后退磁，请使用有自动退磁功能的SKF的TIH系列加热器。

## 5. 安全特征

电磁感应加热器具有下列安全特征：

- 过热自动保护功能
- 接头保险丝
- 金属部件已接地
- 在极端条件下（例如：电压不稳定，静电）可进行安全重启

## 6. 维护

为了确保最佳的性能和最长的使用寿命：

- 防止加热器/磁轭腐蚀，损坏及变形
- 避免撞击磁轭
- 避免将加热器暴露在有水或潮湿的环境中

备件可根据要求提供。

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

Le contenu de cette publication est soumis au copyright de l'éditeur et sa reproduction, même partielle, est interdite sans autorisation écrite préalable. Le plus grand soin a été apporté à l'exactitude des informations données dans cette publication mais SKF décline toute responsabilité pour les pertes ou dommages directs ou indirects découlant de l'utilisation du contenu du présent document.

Nachdruck, auch auszugsweise, nur mit unserer vorherigen schriftlichen Genehmigung gestattet. Die Angaben in dieser Druckschrift wurden mit größter Sorgfalt auf ihre Richtigkeit hin überprüft. Trotzdem kann keine Haftung für Verluste oder Schäden irgendwelcher Art übernommen werden, die sich mittelbar oder unmittelbar aus der Verwendung der hier enthaltenen Informationen ergeben.

El contenido de esta publicación es propiedad de los editores y no puede reproducirse (incluso parcialmente) sin autorización previa por escrito. Se ha tenido el máximo cuidado para garantizar la exactitud de la información contenida en esta publicación, pero no se acepta ninguna responsabilidad por pérdidas o daños, ya sean directos, indirectos o consecuentes, que se produzcan como resultado del uso de dicha información.

La riproduzione, anche parziale, del contenuto di questa pubblicazione è consentita soltanto previa autorizzazione scritta della SKF. Nella stesura è stata dedicata la massima attenzione al fine di assicurare l'accuratezza dei dati, tuttavia non si possono accettare responsabilità per eventuali errori od omissioni, nonché per danni o perdite diretti o indiretti derivanti dall'uso delle informazioni qui contenute.

O conteúdo desta publicação é de direito autoral do editor e não pode ser reproduzido (nem mesmo parcialmente), a não ser com permissão prévia por escrito. Todo cuidado foi tomado para assegurar a precisão das informações contidas nesta publicação, mas nenhuma responsabilidade pode ser aceita por qualquer perda ou dano, seja direto, indireto ou consequente como resultado do uso das informações aqui contidas.

本出版物内容的著作权归出版者所有且未经事先书面许可不得被复制（甚至引用）。我们已采取了一切注意措施以确定本出版物包含的信息准确无误，但我们不对因使用此等信息而产生的任何损失或损害承担任何责任，不论此等责任是直接、间接或附随性的。

Содержание этой публикации является собственностью издателя и не может быть воспроизведено (даже частично) без предварительного письменного разрешения. Несмотря на то, что были приняты все меры по обеспечению точности информации, содержащейся в настоящем издании, издатель не несет ответственности за любой ущерб, прямой или косвенный, вытекающий из использования вышеуказанной информации.

Gengivelse eller kopiering (også i uddrag) af denne tryksag er ikke tilladt uden skriftlig godkendelse fra SKF. Oplysningerne i denne tryksag er nøje gennemgået og kontrolleret, men SKF kan ikke påtage sig noget ansvar for eventuelle tab eller skader opstået direkte eller indirekte som en konsekvens af anvendelse af de, i denne tryksag, angivne oplysninger.



更詳細的可靠度系統產品資訊請連絡：

新豐貿易股份有限公司

電話：02-2586-5638

傳真：02-2586-4593

地址：103台北市大同區重慶北路三段215號

信箱：hht@hht.tw

網址：WWW.HHT.TW

