



# simatec IH 025 B Induction Heaters and Tools User Manual

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# simatec

**simatec IH 025 B Induction Heaters and Tools**



## Product Information

### Induction Heaters and Tools

Developed to impress professionals, the induction heaters and specialised tools are designed for the perfect handling of rolling bearings. These products guarantee total success with rolling bearings and offer unique hardware solutions for the careful installation and removal, as well as automatic lubrication.

Over 60% of premature bearing failures are preventable and simatec supplies quality tools to prevent contamination, incorrect lubrication, and wear and tear. Improper installation is responsible for over 16% of premature bearing failures. Lack of proper tooling and know-how often leads to new bearings being subjected to high levels of stress and subsurface damage, making premature bearing failure inevitable. To prevent this, the correct procedure should be employed using professional, specialist tools throughout the installation process.

### Product Usage Instructions

#### simatherm Induction Heaters and simatool Tools

The simatherm induction heaters are designed to heat the outer part just enough to produce a temporary clearance, which helps to avoid unwanted stresses when assembling interference-fit parts. This can be done precisely, evenly, quickly, and efficiently. Other methods of heating are slower, less controlled, and can cause more harm than good to bearings. The simatherm induction heaters offer the following advantages:

- Precise, even, quick heating
- No risk of damage (from excessive mechanical stress, open flames, dirty oil baths, excessively hot ovens and plates)
- Automatic demagnetisation
- User friendly
- Increased operational safety
- Selectable power reduction for heating up smaller parts

simatherm induction heaters can be used for workpieces weighing up to 300 kg.

#### simatool Tools

Consistent, professional assembly and removal of bearings and radial seals without specialised tooling is simply impossible. A comprehensive selection of high quality, proven tools enables these operations to be performed quickly and safely every time. The simatool tools offer the following advantages:

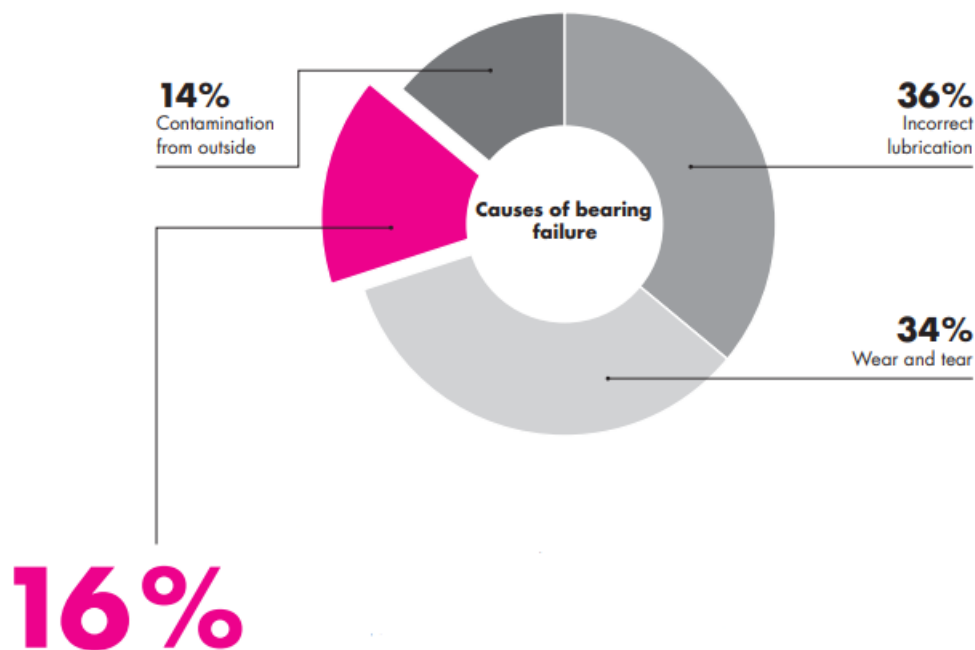
- Reduction of costs through proper installation and removal
- Longer service life of the components
- No damage to adjacent components when defective parts are removed
- High-quality, specially developed tool sets
- Practical, in a robust plastic carrying case with shaped insert
- Quick instruction guide affixed directly onto case for convenience

Developed to impress professionals: Induction heaters and specialised tools for the perfect handling of rolling bearings

Many processes can literally grind to a halt if bearings are not properly installed and lubricated. If it is necessary to replace worn-out bearings and seals, the job must be done efficiently and professionally from the start. simatherm induction heaters and simatool quality tools guarantee total success with rolling bearings.

### Prevent premature bearing failure

Over 60% of premature bearing failures are preventable. simatec supplies unique hardware solutions for the careful installation and removal and automatic lubrication.



### Improper installation

Over 16% of premature bearing failures are caused by improper installation. The lack of proper tooling and know-how often leads to new bearings being subjected to high levels of stress and sub-surface damage. This makes premature bearing failure inevitable. In order to prevent this, the correct procedure should be employed using professional, specialist tools throughout the installation process. Only in this way will the new bearings reach their expected service life.

### The proper installation and removal of rolling bearings

The best way to avoid unwanted stresses when assembling interference-fit parts is to heat the outer part just enough to produce a temporary clearance. simatherm induction heaters allow this to be done precisely, evenly, quickly and efficiently. Other methods of heating are slower, less controlled and can cause more harm than good to bearings.



### Advantages

- Precise, even, quick heating
- There is no risk of damage (from excessive mechanical stress, open flames, dirty oil baths, excessively hot ovens and plates) Automatic demagnetisation
- User friendly
- Increased operational safety
- Selectable power reduction for heating up smaller parts

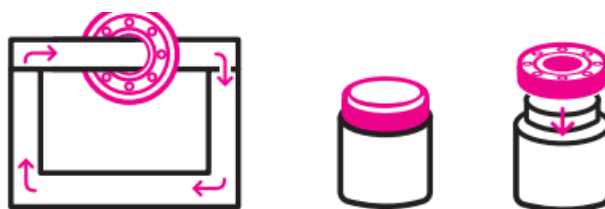
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### Advantages

- Reduction of costs through proper installation and removal Longer service life of the components
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- Quick instruction guide affixed directly onto case for convenience

### **simatherm – perfect solutions for the clean, efficient installation of rolling bearings**

With simatherm induction heaters, rolling bearings and other ring-shaped metal parts can be heated in a highly efficient manner. They allow a quick and clean installation and replace conventional heating methods such as heating plates, hot oil baths, open flames and ovens. During the heating process, only the workpiece is heated while the device itself remains cool. simatherm induction heaters can be used for workpieces weighing up to 300 kg.

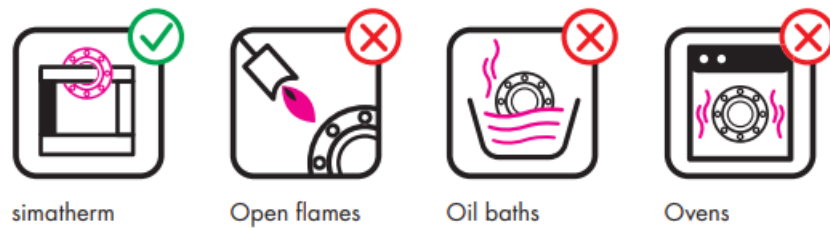


simatherm induction heaters

### Heating with induction

The heating of rolling bearings and ring-shaped metal parts by induction has proved to be an excellent method for

installing these parts with both speed and care. An alternating electro-magnetic field induces a high current directly in the workpiece and raises this precisely to the prescribed installation temperature in a controlled manner.



### Where induction heaters are used

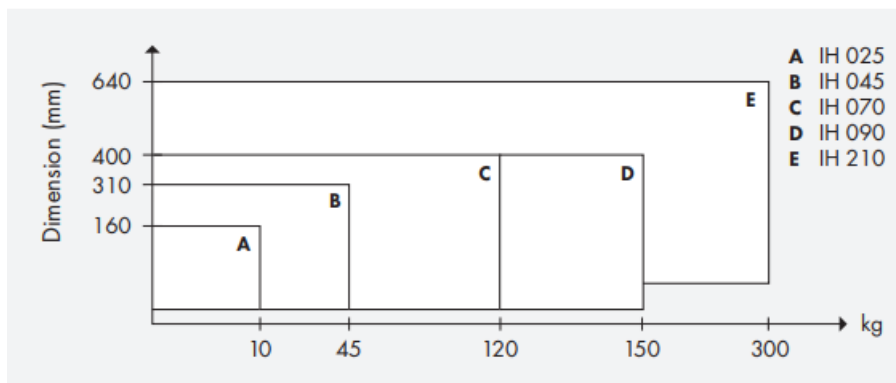
- Vehicle industry
- Gear box manufacture
- Manufacture of electric motors
- Manufacture of pumps
- General engineering
- Maintenance and repair workshops

### Typical applications

- Bearings
- Gearwheels
- Sprockets
- Compression rings
- Labyrinth rings
- Sleeves
- Joints

### Selection table for simatherm induction heaters

The selection of the appropriate simatherm heating device depends essentially on the dimensions and weight of the workpieces:



### Hot Plate HPS (small) und HPL (large)

Electrical heating plate with temperature control

Specially designed for heating multiple small components

- HPS for workpieces weighing up to 5 kg;
- HPL for workpieces weighing up to 10 kg Plate surface (WxD) for
- HPS: 380×180 mm; for HPL: 380×380 mm
- Also included: 1 pair of protective gloves
- Available for voltages of 100–115 and 230 V
- Control range from 50 to 200 °C



### Induction Heater IH 025 VOLCANO

- The lightweight portable device with excellent performance

The portable induction heater for heating small ferritic workpieces

- For workpieces weighing up to 10 kg
- For workpieces with a minimum inner diameter of 20 mm up to a maximum outer diameter of 160 mm
- Also included: 1 temperature probe, 1 pair of protective gloves, 1 carrying case Available for voltages of 100, 115 and 230 V
- PTC (predictive temperature control) for automatic temperature monitoring



### Induction Heater IH 045

World's first controllable induction heater with an app



For heating the most common roller bearings

- For rolling bearings weighing up to 45 kg
- For workpieces with an inner diameter of 20 to 310 mm
- Also included: 3 yokes, 1 temperature probe, 1 pair of protective gloves
- Available for voltages of 100–120 and 230 V



Get the app «simatec world of maintenance»



## Induction Heater IH 070

The popular all-round heater for flexible use

For heating medium-sized workpieces

- For rolling bearings weighing up to 120 kg
- For workpieces with an inner diameter of 20 to 400 mm
- Also included: 3 yokes, 1 temperature probe, 1 pair of protective gloves
- Available for voltages of 100, 115 and 230 V
- Swivel arm available as an option



### Induction Heater IH 090

The compact heater for serial production

Heating device with cooling fan for medium-sized workpieces

- For rolling bearings weighing up to 150 kg
- For workpieces with an inner diameter of 20 to 400 mm
- Also included: 3 yokes, 1 swivel arm, 1 temperature probe, 1 pair of protective gloves
- Available for voltages of 200, 400–480 and 500–575 V
- Fan cooling for continuous operation



### Induction Heater IH 210

The most powerful table-top heater

For heating large workpieces



- For rolling bearings weighing up to 300 kg
- For workpieces with an inner diameter of 60 to 640 mm
- Also included: 2 yokes, 1 temperature probe, 1 pair of protective gloves
- Available for voltages of 200, 400–480 and 500–575 V
- Extremely simple operation thanks to the sliding yoke



**info:** You can find a detailed data sheet for each simatherm induction heater under [www.simatec.com/en/simatherm](http://www.simatec.com/en/simatherm)

### simatherm applications

- The simatherm induction heaters VOLCANO IH 025 and IH 070 with two differently sized workpieces: the model IH 070 (in the front) heats a gearwheel sleeve to the specified installation temperature.
- The induction heater IH 070 is the ideal choice for heating the return sprocket of the step chain of an escalator.



- The simatherm IH 045 is operated via the APP simatec WoM. The spherical roller bearing is heated with the two-sensor mode, to avoid mechanical stresses in the bearing.
- The simatherm IH 045 is operated via the APP simatec WoM. The spherical roller bearing is heated with the two-sensor mode, to avoid mechanical stresses in the bearing.



- Working on a train wheel-set, the high-performance induction heater IH 210 heats a massive bearing housing to allow a bearing to be inserted.
- The portable VOLCANO IH 025 is used for the installation of gear shafts. For this purpose, a tapered roller bearing is heated to the desired temperature using the temperature monitoring system.



## Technical data



Type	Hot Plate HPS	Hot Plate HPL	IH 025
Description	Heaters for small workpieces		Induction heater for small workpieces
Designation	HPS 200/230 V (Art.110-18010) HPS 200/110 V (Art.110-18020)	HPL 200/230 V (Art.110-18030) HPL 200/110 V (Art.110-18040)	IH 025/230 V (Art. 110-11010) IH 025/115 V (Art. 110-11030) IH 025/100 V (Art. 110-11020)
Voltage	220–240 V 100–120 V		220– 240 V 110–120 V 100 V

<b>Frequency</b>	50– 60 Hz 50– 60 Hz		50– 60 Hz 50– 60 Hz 50– 60 Hz
<b>max. Amperage</b>	5 A 10 A	10 A 20 A	6 A 10,5 A 10,5 A
<b>Power</b>	1000 W 1000 W	2000 W 2000 W	1,5 kVA 1,15 kVA 1,0 kVA
<b>Max. weight of rolling bearing Bore diameter</b>	5 kg	10 kg	10 kg from 20 mm inner diameter to 160 mm outer diameter
<b>Temperature range</b>	50 – 200 °C		20–180 °C
<b>Magnetic probe</b>			Yes, type K
<b>Accuracy (electronic)</b>	± 5 °C		± 3 °C
<b>Range of time control</b>	–		0 –10 minutes
<b>Time setting in steps</b>	–		0,1 minutes
<b>Variable power level</b>	–		8 levels: 10– 20– 30–40–50– 60–80–100%
<b>Automatic demagnetisation</b>	–		Yes
<b>Residual magnetism</b>	–		< 2 A/cm
<b>Coil diameter</b>	–		–
<b>Size of operating area (WxH)</b>	380×180 mm	380×380 mm	–
<b>Dimensions (LxWxH)</b>	390×190×150 mm	390×390×170 mm	340×250×64 mm (over the cone 121 mm)
<b>Overall weight</b>	6 kg	10 kg	3,5 kg
<b>Number of standard yokes</b>	–		–
<b>Standard yokes</b>	–		–

<b>Core cross section</b>	–	–
<b>Movable yoke</b>	–	–
<b>Cooling fan</b>	–	Yes



<b>IH 045</b>	<b>IH 070</b>	<b>IH 090</b>	<b>IH 210</b>
Induction heater for small to medium workpieces	Induction heater for medium-sized workpieces	Induction heater with cooling fan for continuous operation and for medium-sized workpieces	Induction heater for large workpieces
IH 045/230 V (Art. 110-12040) IH 045/115 V (Art. 110-12050) IH 045/100 V (Art. 110-12060)	IH 070/230 V (Art. 110-13010) IH 070/115 V (Art. 110-13020) IH 070/100 V (Art. 110-13030)	IH 090/400 V (Art. 110-14010) IH 090 /575 V (Art. 110-14040) IH 090 /200 V (Art. 110-14020)	IH 210/400 V (Art. 110-15010) IH 210/575 V (Art. 110-15030) IH 210/200 V (Art. 110-15020)
220– 240 V 110–120 V 100 V	220– 240 V 110–120 V 100 V	400– 480 V 575 V 200 V	400– 480 V 575 V 200– 240 V
50– 60 Hz 50– 60 Hz 50– 60 Hz	50– 60 Hz 50– 60 Hz 50– 60 Hz	50– 60 Hz 50– 60 Hz 50– 60 Hz	50– 60 Hz 50– 60 Hz 50– 60 Hz
9 A 15 A 15 A	16 A 20 A 15 A	16 A 16 A 25 A	25 A 18 A 40 A
2,1 kVA 1,7 kVA 1,5 kVA	3,7 kVA 2,2– 2,4 kVA 1,5 kVA	6,4 – 7, 4 kVA 9,2 kVA 5 kVA	10 –11,5 kVA 10,4 kVA 8– 9,2 kVA
45 kg 20–310 mm	120 kg 20– 400 mm	150 kg 20– 400 mm	300 kg 60– 640 mm

20– 180 °C Yes, type K ± 3 °C	20– 250 °C Yes, type K ± 3 °C	20– 250 °C Yes, type K ± 3 °C	20– 250 °C Yes, type K ± 3 °C
0– 60 minutes 0,1 minutes	0– 60 minutes 0,1 minutes	0– 60 minutes 0,1 minutes	0– 60 minutes 0,1 minutes
8 levels: 10– 20– 30–40– 50– 60–80–100%	5 levels: 20– 40–60–80–1 00%	5 levels: 20– 40–60–80–1 00%	5 levels: 20– 40–60–80–1 00%
Yes < 2 A/cm	Yes < 2 A/cm	Yes < 2 A/cm	Yes < 2 A/cm
89 mm	115 mm	115 mm	135 mm
114×160 mm	145×205 mm	145×205 mm Optional: 145×410 mm (A rt. 110-14030)	250×250 mm Optional: 250×375 mm (A rt. 110-15040)
320×267×293 mm	420×280×345 mm	420×280×420 mm	600×350×420 mm
17 kg	35 kg	38 kg	75 kg
3	3	3	2
42,5×42,5×219 mm for be arings with a bore diamet er of at least 60 mm 28×2 8×219 mm for bearings wi th a bore diameter of at le ast 40 mm  14×14×219 mm for bearin gs with a bore diameter of at least 20 mm	55×55×275 mm for bearin gs with a bore diameter of at least 78 mm  28×28×275 mm for bearin gs with a bore diameter of at least 40 mm  14×14×275 mm for bearin gs with a bore diameter of at least 20 mm	55×55×275 mm for bearin gs with a bore diameter of at least 78 mm  28×28×275 mm for bearin gs with a bore diameter of at least 40 mm  14×14×275 mm for bearin gs with a bore diameter of at least 20 mm	70×70×420 mm for bearin gs with a bore diameter of at least 100 mm  40×40×420 mm for bearin gs with a bore diameter of at least 60 mm
42,5×42,5 mm	55×55 mm	55×55 mm	70×70 mm
–	Optional (swivel arm), Art. 190-13020	Swivel arm	Swivel arm
Yes	–	Yes	Optional (Art. 110-15050)

**simatool tools**





### **simatool – quality tools for the installation and removal of bearings and seals**

With simatool tools, rolling bearings and shaft seals can be installed and removed quickly and safely. The well proven tools have an ergonomic design. They allow all types of work to be carried out in a much quicker, safer and more controlled manner. All tools are made from premium materials and are manufactured to a superior standard. Furthermore, the toolsets come in robust plastic cases for convenience and portability.

### **Areas of application of special tools**

- Vehicle industry
- Gear box manufacture
- Manufacture of electric motors
- Manufacture of pumps etc.
- General engineering



**info:** Find more information about our tools at [www.simatec.com/en/simatool](http://www.simatec.com/en/simatool)

## Fitting Tool

### Fitting Tool FT 33

An installation tool that has proven itself thousands of times

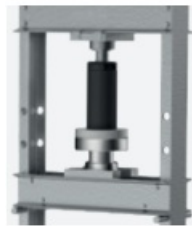


The simatool FT 33 is the fast, precise and reliable tool for the installation of bearings and seals.

- For shaft diameters measuring from 10–50 mm
- The kit includes 33 impact rings, 3 impact sleeves, 1 non-rebound hammer
- Compact toolset includes a selection table in a handy case
- Can also be used for presses in combination with the Fitting Tool FT-P



Fitting Tool  
FT-P



### Fitting Tool FT-P

Tool for pressing bearings in or on by means of a press



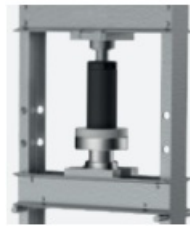
When used in combination with the mechanical press, the simatool FT-P Fitting Tool ensures the correct installation of components up to a maximum press-in force of 5 tons.



- For bearings and components with an inner diameter of more than 50 mm
- For seals with an inner diameter of up to 60 mm
- The tool can be used on presses with a maximum press-in force of 5 tons
- The set contains 1 impact tube, 6 impact rings and 1 adapter ring
- Ideal complement to the proven Fitting Tool FT 33



Fitting Tool  
FT-P



### Ball Bearing Puller BP 61

The internal extractor for demanding users

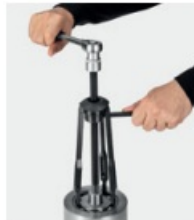


The bearing extractor enables the removal of deep groove ball bearings. The shaft does not have to be removed – a significant advantage.

- For shaft diameters measuring from 10–100 mm
- The kit includes 2 spindles, 6 sets of puller arms, 1 counter bracket
- Compact toolset includes a selection table in a handy case



Ball Bearing Puller  
BP 61



### Ball Bearing Puller BP 160

Professional removal kit for tough jobs

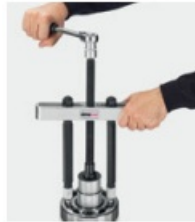


The simatool BP 160 dismounting tool enables the dismounting of deep groove ball bearings from the shaft and from the housing.

- For bearing inner diameters of 30–160 mm
- The set contains 6 sets of ball adapters, 1 spindle, 1 crossbeam, 2 pull rods, 2 extensions and 1 spindle attachment
- The BP 160 dismounting tool is the ideal complement to the BP 61 Bearing Puller



Ball Bearing Puller  
BP 160



### Seal Puller SP 50

The unique solution for challenging tasks



The simatool Seal Puller SP 50 toolset can be used to remove radial shaft seals with extreme ease.

- The kit includes 1 sliding hammer, 2 extensions, 50 tapping screws, 2 wrenches



Seal Puller  
SP 50



### Twin Puller TP 150

The compact and professional tool for all removal situations



The simatool TP 150 can be used to professionally remove deep groove ball bearings and radial shaft seals, regardless of the installation position.

- For shaft diameters measuring from 10–100 mm
- The kit includes 1 sliding hammer, 2 spindles, 6 sets of puller arms, 9 support rings, 1 extension, 50 tapping screws, 1 counter bracket, 2 wrenches
- Compact toolset includes a selection table in a handy case
- Ideal complement to the time-tested simatool Fitting Tool FT 33



## Maintenance

### Maintenance Kit MK 10–30

The universal tool kit for installation and removal



The simatool MK 10–30 combi-kit allows you to rapidly, precisely and reliably install and remove bearings.

- Maintenance Kit MK 10–30
- The universal tool kit for installation and removal
- The simatool MK 10–30 combi-kit allows you to rapidly, precisely and reliably install and remove bearings.



Maintenance Kit  
MK 10-30



### Bearing Handling Tool BHT

The specialist for the reliable handling of medium to large bearings



Bearing Handling  
Tool BHT



The simatool BHT is the ideal solution for lifting, turning, rotating, transporting and installing medium-sized and large bearings.

- BHT 200–400 for outer diameters measuring from 200–400 mm (150 kg);  
BHT 300–500 for outer diameters measuring from 300–500 mm (500 kg);
- BHT 500–700 for outer diameters measuring from 500–700 mm (500 kg)

The set includes 1 hoist, 1 pair of protective gloves, 1 pair of anti-twist devices, 2 hoisting slings

### simatool applications

- The Twin Puller TP 150 does it: a tightly seated bearing of an electric motor is removed without risking damage to the housing or the shaft.
- Knowhow: using a Seal Puller SP 50 to remove a radial seal from a gearbox without damaging the housing or shaft.





- With the aid of extensions, the BP 160 dismantling tool kit also makes it possible to dismantle hard-to-reach bearings easily and professionally.
- The FT-P is the ideal solution for installations with greater forces, as the tool can be used on a press. High-quality aluminum rings that do not deform even with press-in forces of 5 tons.



- The Fitting Tool FT 33 ensures that the mounting force is evenly distributed across the inner and outer rings of the bearing and therefore does not stress the rolling elements.
- The Bearing Handling Tool BHT allows the heavy, pre-heated roller bearing to be safely lifted and accurately positioned on a turbine shaft.



### **simatec – innovative solutions that deliver outstanding customer benefits**

- simatec is an international, Swiss family enterprise. Since its founding in 1983, this motivated team has been developing, manufacturing and marketing innovative products for the maintenance of rolling bearings under the brand names of simalube, sima-therm and simatool.
- The direct customer benefits are always at the forefront. Using newly developed technologies, simatec simplifies complex processes and reduces routine maintenance for tens of thousands of machines around the

globe.

- Selected trading partners sell simatec main-tenance products around the world. They provide professional service and individual, expert advice.

## Maintenance products by simatec –industrial technology

### • Lubricators

- The simalube lubricator provides automatic lubrication over a period of one month to a year and can be adjusted in an infinitely variable manner. simalube supplies every lubricating point with the ideal amount of lubricant – be it oil or grease – so that subsequent manual lubrication is no longer needed and maintenance costs are re-duced in the long term.

### • Induction Heaters

- simatherm induction heaters heat circular metal parts, such as roller bearings, in a very short amount of time, so they can be installed quickly and efficiently. The induc-tive heating of metallic workpieces makes sense from both an economical and eco-logical perspective. simatec is the world's leading manufacturer of these types of heaters.

### • Tools

- The simatool toolkits enable the fast instal-lation and removal of roller bearings and seals. They are used all over the world in machine and maintenance workshops with-in all industries.



## QR SCAN



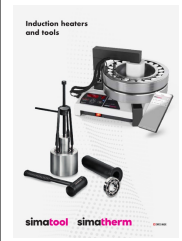
## simatec ag

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- [www.simatec.com](http://www.simatec.com)

## Documents / Resources

	<p><a href="#">simatec IH 025 B Induction Heaters and Tools</a> [pdf] User Manual          IH 025 B, IH 045 C, IH 070 D, IH 090 E, IH 210, IH 025 B Induction Heaters and Tools, IH 025 B , Induction Heaters and Tools, Heaters and Tools, Induction Heaters, Heaters</p>
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## References

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Manuals+.