



# Maintenance and lubrication products

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## Maintenance and lubrication products

SKF develops and markets maintenance tools, lubricants and lubricators to optimize mounting, dismounting and lubrication of bearings. The product assortment includes mechanical tools, heaters, oil injection equipment, instruments, lubricants and lubricators (→ the catalogue “SKF Maintenance and Lubrication Products” or online at [www.mapro.skf.com](http://www.mapro.skf.com)).

## Mechanical tools

Mechanical tools are used mainly for mounting and dismounting small and medium-sized bearings. The SKF range comprises tools for the installation and removal of bearings and locking devices. The range also contains bearing handling tools for safe and rapid lifting and positioning of bearings weighing up to 500 kg.

### Hook and impact spanners

SKF hook spanners have the exact radius to suit the appropriate lock nut. This enables safe and efficient tightening and minimizes the risk of damage to both the nut and shaft.

Impact spanners are made of spheroidal graphite cast iron and have a special impact face to transmit a maximum torque to the nut. Each spanner can be used with several nut sizes.

### Lock nut spanners and axial lock nut sockets

To mount SKF self-aligning ball bearings on adapter sleeves in housings, a special bearing lock nut spanner set TMHN 7 is available. Using these spanners, the appropriate tightening angle is easy to achieve and this enables consistently accurate bearing mounting.

Axial lock nut sockets are especially useful if there is insufficient space around the lock nut. They have drive connections suitable for use with power tools or torque wrenches.

### Bearing fitting tools

SKF bearing fitting tools enable small bearings to be cold mounted on a shaft. They can also be used to mount bushings, seals and pulleys. The kits consist of impact rings and sleeves and a dead blow hammer.



## Jaw pullers

SKF jaw pullers enable a wide range of bearings to be dismantled. One of the puller series, designated TMMA, which design is unique to SKF, incorporates a spring enabling easy opening and closing of the arms, while a special safety solution helps to prevent dangerous overload. A range of hydraulic spindles and rams are also available for increased puller forces. The SKF jaw puller range contains pullers with withdrawal forces up to 500 kN.



## Strong back pullers

SKF strong back pullers are supplied as kits with all necessary accessories to cover the most difficult pulling operations. Strong back pullers consist of either a two or three-piece separable yoke, which when placed behind the bearing makes a “strong back”. The pulling force can be applied using a mechanical spindle, a hydraulic spindle or a hydraulic ram.



## Internal and blind pullers

To dismantle a wide range of deep groove ball bearings from blind housing bores quickly and easily, SKF has developed blind housing puller kits. These pullers have hinged arms with specially machined ends so that they fit into the bearing raceway(s), enabling the bearing to be extracted from the housing.

Puller kits for removing bearings from housings, using an internal pull, consist of a number of adjustable collets that can be expanded to fit on the rear side of the bearing bore. A slide hammer arrangement allows large forces to be applied to the bearing in order to remove it.



## Bearing heaters

A fast and very efficient way to heat a bearing for mounting is to use an induction heater. These heaters, which only heat metallic components, control bearing temperature safely and accurately, to minimize the risk of bearing damage caused by excessive heat.

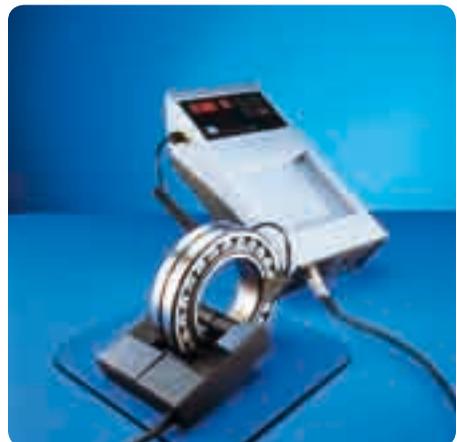
### Induction heaters

SKF pioneered the use of induction heaters for bearing applications. SKF TIH induction heaters cover a wide range of bearing types and sizes. The smaller heaters are recommended for bearings weighing up to 80 kg while the largest floor model can be used for bearings up to 700 kg.

Large heaters are also suitable for heating smaller bearings, as a power reduction feature is incorporated. SKF induction heaters can be controlled by means of time or temperature. In addition, they feature a bearing heating mode to help prevent damage to bearings through overheating. At the end of each heating cycle, the bearings are automatically demagnetized.

### Portable induction heater

The portable SKF induction heater heats bearings and other components with a bore diameter up to 100 mm and a maximum weight of 5 kg. It uses a patented method of heating based on high frequency induction for optimized efficiency. This truly portable unit weighs just 4,5 kg and is supplied with a heating clamp, temperature probe, power cable and a carrying case.



## Hot plate

The SKF electric hot plate heats small bearings and other machinery components. It is suitable for bearings with an outside diameter up to approximately 170 mm or with a weight up to 4 kg. A lid for retaining the heat also prevents dirt from entering the bearing.

## Heating devices to remove inner rings

A range of special heating devices for removing cylindrical roller bearing inner rings from shafts is available from SKF. Aluminium heating rings are designed for dismantling inner rings of small and medium-size cylindrical roller bearings.

Adjustable induction heaters are also available for frequent dismantling of various sizes of cylindrical roller bearing inner rings. Two sizes are available covering raceway diameters from 80 to 170 mm. Non-adjustable induction heaters are designed to suit a particular bearing and application. They are normally used to dismount inner rings of multi-row cylindrical roller bearings.

## Gloves

SKF heat resistant gloves are specially designed for the handling of heated bearings and other machine components.



## Hydraulic tools

A variety of hydraulic tools is available to mount and dismount bearings in a safe and controlled manner. The SKF oil injection method enables easy working while the SKF Drive-up Method provides accurate results.

### Hydraulic nuts

HMV .. E type hydraulic nuts enable mounting and dismounting of bearings with a tapered bore of 50 mm and above. When compared with mechanical methods, they considerably reduce the time and effort needed to install or remove a bearing. SKF HMV .. E nuts are available with metric or imperial threads or with a plain bore.

SKF HMV .. E nuts, when used in conjunction with SKF pumps fitted with a digital pressure gauge and a dial indicator, enable the full advantages of the SKF Drive-up Method to be realized.



## Hydraulic pumps and oil injectors

SKF hand-operated hydraulic pumps can develop pressures up to 150 MPa. They can be supplied with a highly accurate pressure gauge, which enables the SKF Drive-up Method to be employed. All pumps are contained in a sturdy carrying case complete with a hose, quick connection coupling, nipple and mounting fluid.

Oil Injectors can supply oil pressures up to 400 MPa. The SKF range comprises single injectors as well as a number of kits, which contain an injector and a selection of the most common accessories such as an adapter block, high-pressure pipes and nipples.

For large bearings and applications requiring a larger volume of oil, several air-driven portable pumps and injectors providing pressures up to 300 MPa are available.

## Hydraulic accessories

To facilitate connections between hydraulic tools and most applications, SKF offers a wide range of accessories including pressure gauges, high pressure pipes, connection nipples and mounting and dismantling fluids.



## Instruments

To realize maximum bearing life, it is important to determine the operating condition of machinery and their bearings. With the SKF measuring instrument range, critical environmental conditions can be analysed to achieve optimum bearing performance.

### Tachometer

Optical measurement is a safe and reliable technique to determine rotational speed. Using non-contact instruments is often essential to meet industrial safety regulations. SKF provides a highly accurate optical tachometer. A range of accessories enables linear and direct contact rotational speeds to be measured.



### Thermometers

The temperature of a bearing or bearing housing is a quick and easy indication of the running conditions of the bearing. SKF provides a range of contact and non-contact thermometers from the indispensable ThermoPen up to a highly accurate, advanced dual channel, wide range thermometer. A comprehensive range of temperature probes for a variety of applications is also available.



### Electronic stethoscope

The noise of a machine can help indicate troublesome parts such as damaged bearings, valve chatter, tappet noise, piston slap and gear and pump noise. The SKF electronic stethoscope is a hand-held instrument that picks up the noise or vibration from a machine via a probe and helps the user locate the source of the noise.



## Oil check monitor

The SKF oil check monitor determines oil condition by analysing the contamination levels and electro-chemical changes in both mineral and synthetic based oils. It was developed originally for engine oils but is suitable for gear and lubrication oils. It can also help to detect water, anti-freeze or metallic particles in an oil sample.

## Alignment instruments and shims

SKF has developed laser alignment tools to make the machinery alignment process faster, easier and more reliable. Using the latest laser technology, the SKF shaft alignment tool measures both the parallel and angular alignment of shafts to be connected.

SKF's belt alignment tool aligns the grooves in a pulley rather than the pulley face, facilitating accurate and simultaneous adjustment of belt tension and pulley alignment.

A comprehensive range of pre-cut machinery shims in both metric and inch dimensions is available.



## Lubricants and lubricators

The value and importance of using the right lubricant is explained in the section “Lubrication”, starting on **page 229**. The formulation of all SKF bearing greases is based on extensive research, grease performance testing and field experience.

SKF developed many of the internationally accepted bearing-related grease testing parameters. For correct lubricant application, a range of lubrication equipment is available from SKF.

### Greases

SKF offers a range of high quality lubricating greases to suit many bearing applications and conditions. The greases have been developed specifically to meet the needs of rolling bearings and their application conditions.

A guide to select the most suitable SKF grease can be found in **table 2** on **pages 246** and **247**. The table also contains the important properties.

### Grease guns and pumps

The SKF range also includes grease guns, manual and air-driven grease pumps and grease filler pumps. Grease filler pumps are used to fill grease guns and grease packers from standard SKF grease drums.

### Grease meter

The SKF grease meter can accurately measure the volume of grease pumped into a bearing. A wide range of accessories is available.



## SYSTEM 24® single point automatic lubricator

SYSTEM 24 is a single point automatic lubricator, pre-filled with SKF grease or oil. Compared with traditional manual re-lubrication techniques, SYSTEM 24 provides a more accurate control of the quantity of lubricant supplied. It can be set to continuously supply the correct amount of quality lubricant over a given time period, up to a maximum of one year.

## SYSTEM MultiPoint automatic lubricator

SKF SYSTEM MultiPoint is a microprocessor controlled automatic lubricator. Grease can be supplied to up to eight points, using standard SKF grease cartridges. The cartridges make sure that only clean fresh grease is used. SYSTEM MultiPoint lubricator has been tested and approved for use with all SKF bearing greases.

## Oil leveller

The SKF oil levellers are designed for automatic adjustment of the optimal oil level in oil bath lubricated applications. They effectively overcome the problem of adjusting the correct oil level during operation or due to leakage rather than just during standstill.

