INSIGHT

get the latest industry and company news from ACORN

Q1
2022
Issue 13

acorn®
industrial services limited

THE MAINTENANCE EDIT

Tips, how-to's and special offers

INDUSTRY UPDATES

new | innovative | value

ACORN named preferred partner for Nadella products

Acorn has been named preferred UK supplier for Nadella's wide range of linear products. This comes as Acorn increase stock holding during January 2022 and upgrade the cutting services offered to customers during the first quarter of the year.

SKF release Quick Maintenance Review

SKF have recently launched a brand new platform that reviews maintenance practices via a questionnaire. Upon completion, the user will receive recommended suggestions on how to improve identified areas - the more detail given, the more advice offered.

Increased SNT plummer block range

Timken has increased it's size offered of SNT Plummer Block bearing units to include 60 new part numbers. This includes 53 new four-bolt SNTD-G housings to the 3000 and 3100 series, plus 7 new housings added to the four-bolt FSNT line in the 200/300 series.

New lubricant for large bearings applications

Developed with SKF's Wind Turbine team, the LGEP 1 grease can deliver extended maintenance intervals and reduce downtime for large bearing applications. It is particularly suitable for lubricating bearings subjected to high loads and low speeds.

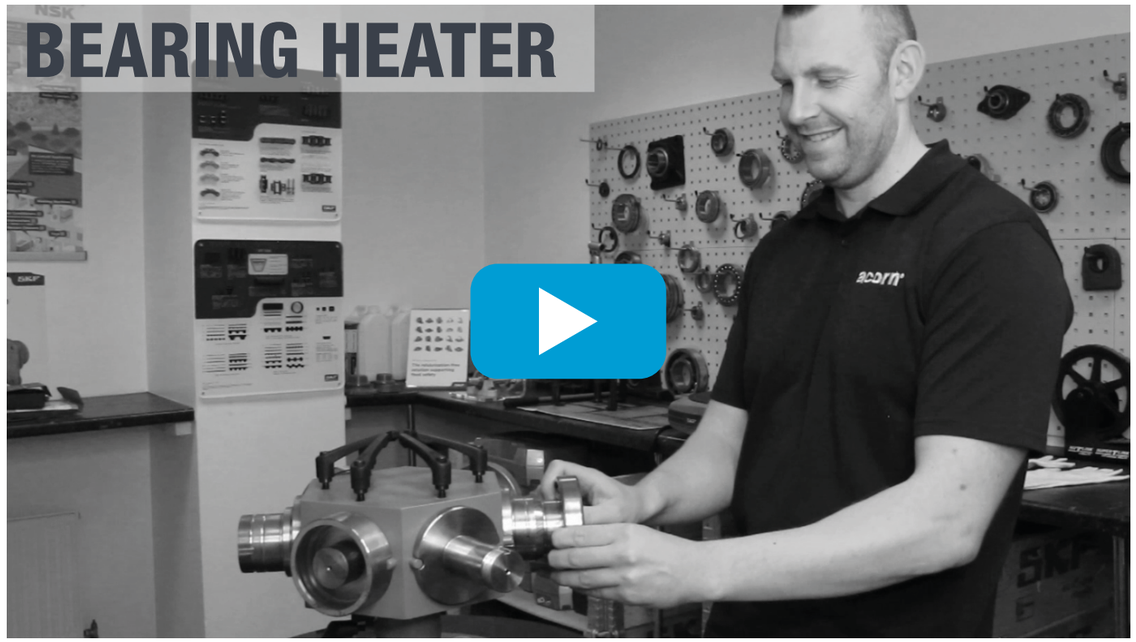
Special roller bearing for heavy duty industry

NSK's range of high-quality spherical roller bearings is steadily growing, being particularly popular in industries such as mining and quarrying, steel and metals, and paper making. These bearings are highly resistant to seizure and wear under demanding operating conditions.

New sealing option for Type-E Tapered Roller Bearings

Adding a superior seal to mounted tapered roller bearings has extended the performance and products life of these Type-E bearings. Often used in environments with high contamination, CR seals offer several lines of defence against contamination.

HOW TO MOUNT A BEARING USING A BEARING HEATER



"So, I've got a bearing to fit onto the demonstration star, as you can see, it doesn't actually fit so I could use manual techniques, or, I can use the equipment which is the SKF TWIM 15.

I have already pre-set it to heat up to 100 degrees; I'll just put the bearing on the heater, the thermocouple goes onto the inner ring. Press start. So, that will heat the bearing up to the correct temperature.

If you have a pacemaker, you need to remember to take a bit of care with this because it can interfere with your pacemaker. If you've got a watch on, the electrical current can affect that as well, so just be careful, make sure you take your watch off, and if you've got a pacemaker, just be safe.

A high pitched beeping noise indicates that it's ready, so all we have to do is take the thermocouple off, take the bearing over to be fitted and it should, just slide on, just like that. All we do is hold it in position for 20-30 seconds, wait for the bearing to cool around the interference fit, that way it'll avoid any gaps between the abutment and the bearing and, jobs a good' un!

Watch the full video on YouTube @ Acorn Industrial Services Ltd.

Connect with Power Transmission Product Manager, Paul Speight on Linkedin

Follow us on:

HOW TO FIT A BEARING

With around one in six premature bearing failures occurring as a result of poor fitting practices, it's easy to see why it's so important that bearings are fitted properly. But there are so many different ways to fit a bearing – how do you know which is right for your machinery?

In this article, we'll talk you through the different ways of fitting a bearing, as well as exploring the methods that you should be avoiding, helping you to get the most out of your machinery.

What tools do you need to fit a bearing?

Before we take a look at the different methods of fitting a bearing, let's consider the tools you'll need to fit a bearing.

The tools that you'll need to fit a bearing will depend on the method that you choose. The two most common methods of mounting a bearing are mechanical and heat. If you plan to use mechanical methods of fitting a bearing, you'll need to invest in a bearing fitting tool kit. Alternatively, if you choose to mount your bearings using heat, you'll need to purchase or hire a bearing heater.

Whichever method you choose, you'll also need to ensure that you have the right PPE. Depending on the method that you choose, this may include heatproof gloves and safety glasses. This will help you to stay safe during the bearing fitting process.

Before fitting a bearing

There are a few things you'll need to do before you begin fitting your bearing. This will help to ensure that the fitting process goes smoothly, as well as helping your bearing to achieve its maximum service life.

Firstly, you'll need to ensure that the replacement bearing has been stored correctly. This means keeping the bearing clean and dry, at an ambient temperature. It's also important that the storage conditions are free from any vibrations which could cause damage to the bearing.

You'll then need to take the time to carefully inspect both the shaft and housing, ensuring that they are clean and in good condition. If there are gouges, nicks or burrs on the shaft, it will need to be repaired. Emery paper is frequently used for this purpose, but it's important to note that loose particles from the paper can contaminate the bearing. For this reason, industrial Scotch-Brite pads are the preferred tool for removing any fretting or corrosion from the shaft.

It's also important to measure the shaft and housing using calibrated measuring tools to ensure that they are within the recommended dimensional tolerances. If they are not within these recommended tolerances, they will need to be replaced to avoid compromising the lifespan of the bearing.

Finally, it's critical that the replacement bearing is not unwrapped until you are ready to begin the installation. This will help to prevent contamination from entering the bearing, giving it the best possible chance of achieving its maximum service life.

Bearing fitting methods

There are three main methods of fitting a bearing. These are mechanical, heat and hydraulic. There is some overlap in terms of when you should use each method, so there isn't always one definitive answer as to which method is best for your situation.

The below sets out the criteria for which each mounting method is suitable:

MECHANICAL MOUNTING - Bearing size: Small - Medium
Seat type: Cylindrical, tapered, adapter sleeve, withdrawal sleeve
HEAT MOUNTING - Bearing size: All sizes
Seat type: Cylindrical

HYDRAULIC MOUNTING - Bearing size: All sizes
Seat type: Tapered, adapter sleeve, withdrawal sleeve

FITTING A BEARING MECHANICALLY

Mechanical mounting methods allow you to fit a bearing without using heat. This is also known as cold fitting. This method of mounting is most commonly used on small and medium size bearings with almost any type of seat.

The most popular mechanical fitting method is to attach an impact ring to the bearing, onto which a sleeve is placed. Force is then applied to the sleeve using a dead blow hammer, which transmits force through the impact ring and into the bearing. This slowly eases the bearing onto the shaft without damage. Tools that may be used during mechanical bearing fitting include:

Impact ring
Impact sleeve
Dead blow hammer
SKF's TMFT 36 is a popular choice when it comes to bearing fitting tool kits, as it contains everything that you will need to mount bearings mechanically. This bearing fitting tool kit facilitates the safe and effective mounting of bearings ranging from 10mm – 55mm in bore diameter on shaft, housing and blind applications.

FITTING A BEARING WITH HEAT

When heat is applied to a bearing, it will naturally expand. This means that the bore of the bearing will increase, allowing it to be easily slid into place on a shaft. For this reason, heat is one of the most popular fitting methods for all sizes of bearing.

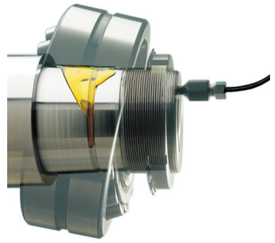
There are many different ways of heating a bearing – some of which are safer and more effective than others. You may have heard of bearings being heated with a naked flame or an oil bath – these methods are best avoided at all costs due to the dangers involved and the damage that they can inflict on bearings.

Other types of bearing heaters include cones, heated plates and pizza ovens. Although these offer a significant improvement on naked flames and oil baths, they often result in uneven heating of the bearing which can lead to bearing damage. This can significantly shorten the lifespan of the bearing.

The most effective way to heat a bearing for mounting is to use a bearing induction heater. These provide a fast, safe and efficient method of heating almost any size of bearing. You'll need to choose a bearing heater that is suitable for the size of bearing that you need to heat.

If you regularly replace bearings, there are benefits to buying a

bearing heater. However, if you rarely need to fit a bearing, it could be more beneficial to hire a bearing heater. This means that you can choose the perfect bearing heater for your needs, hiring it for exactly as long as you need it.



FITTING A BEARING WITH HYDRAULICS

There are two different types of hydraulic fitting methods: the drive up method and the oil injection method. Hydraulic fitting methods are suitable for use in bearings with tapered shaft seats, as well as adapter and withdrawal sleeves.

In the drive up method, a hydraulic nut is positioned onto either a threaded section of the shaft or the thread of the sleeve, resting against the inner ring of the bearing. Oil is then pumped into the hydraulic nut using a hydraulic pump, to drive it up the shaft. This in turn pushes the bearing along the shaft until it reaches the desired position.

In the oil injection method, a thin film of oil is injected through ducts and distribution grooves between the bearing and its seat. This works to virtually eliminate the friction between them, reducing the pulling forces required by up to 90%. This enables the bearing to slide smoothly onto the shaft.

In summary

There are three main methods of fitting a bearing: mechanically, with heat or hydraulically. The method that you choose will depend on the size and type of bearing that you are mounting, as well as the location and accessibility of the bearing.

If you need advice on selecting the best way to fit a bearing, our bearing and maintenance product experts are on hand to help. We have a wide range of SKF bearing fitting tools available from stock, from bearing fitting tool kits to hydraulic pumps, as well as a range of bearing heaters available to purchase or hire.

For more information about fitting a bearing, or specialist advice for your application, contact your local knowledgeable sales team today.

TALK TO THE EXPERTS

Connect with Bearings Product Manager, Andy Fletcher on LinkedIn, or:

T: 0800 8766 441

E: enquiries@acorn-ind.co.uk

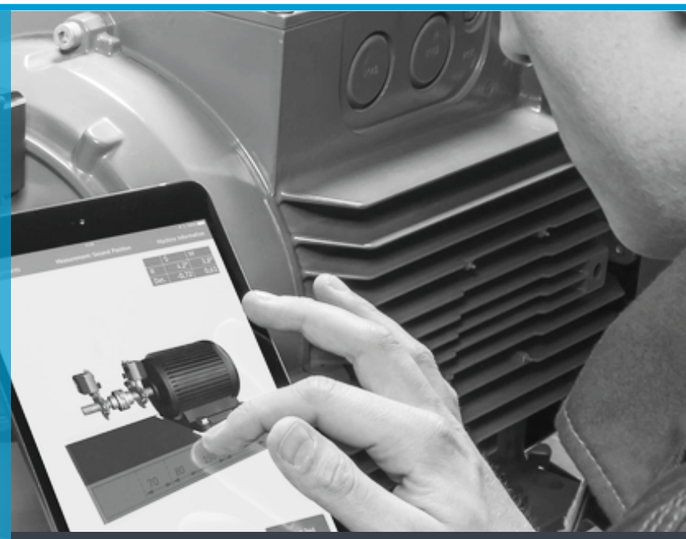
W: www.acorn-ind.co.uk

MAPRO HIRE RANGE SAVES CUSTOMER WITH MINIMAL WAIT TIME

ACORNs Maintenance Product hire range saves a local repair service carrying out a shaft alignment.

Industry:
Repairs Services

Cost & Time Saving:
2-3 days in lost production



The issue

ACORN'S South West branch were recently contacted by a local repair company who had agreed to align a customer's shaft using the SKF TKSA41 Shaft Alignment Tool. However, when they arrived to carry out the job, they found the shaft was in a vertical orientation, meaning the SKF TKSA41 wouldn't be capable of performing a vertical alignment. As they needed to complete the job that day, the company called South West Branch Manager, Jon Sidwick to see what could be done.

The solution

Jon advised that the SKF TKSA51 is capable of vertical alignment and that ACORN had the tool available to hire that day, saving the customer having to buy a piece of equipment they were unsure would work for their specific needs. Within 1 hour, ACORN had the TKSA51 was on a carrier down to the company, allowing them to perform the required measurement that day. In the end, the repair company were able to get their customers production line back up and running only 12 hours later than scheduled, saving their customer 2 to 3 days in lost production.

TALK TO THE EXPERTS

Get in touch with our dedicated team

T: 0800 8766 441
W: www.acorn-ind.co.uk
E: enquiries@acorn-ind.co.uk

WHAT TYPE OF BEARING PULLER SHOULD I USE?

Choosing the right bearing puller for dismounting your bearings is critical. The safety and ease of removing the bearing will depend on the correct bearing puller being selected.

What is a bearing puller?

A bearing puller is a tool which is used to remove components such as bearings, gears and pulleys from a shaft or a recess. The puller securely grips the component with specially designed jaws before driving it off the shaft.

Bearing pullers are used in every industry for safely and effectively dismounting bearings. Whether you're working in the automotive industry or the food and beverage industry, a bearing pulley could facilitate easy dismounting of your bearings and other components.

Why use a bearing puller?

Bearing pullers are one of the most effective methods of cold dismounting. When a component is securely mounted and cannot be loosened manually, that's where bearing pullers come in.

This could include situations where a damaged part has led to machine breakdown. The failed component must be removed as quickly and as safely as possible in order to keep downtime to a minimum.

If you don't have any specialist tools around, it could be tempting to use a hammer and brute force to remove the bearing. However, this can lead to surrounding components becoming damaged, causing further downtime.

A bearing puller can efficiently remove the stuck component from the shaft or recess, without causing any damage to the shaft or other surrounding components. This helps to promote the uptime and reliability of your machinery.

Bearing pullers also offer a safe method of bearing removal when compared to techniques such as brute force or naked flames. Leading manufacturers such as SKF have optimised their bearing puller designs to ensure that they enable maximum worker safety. After all, no business wants to see their staff injured.

What are the types of bearing puller?

Every bearing puller fall into the broad categories of either an external bearing puller and an internal bearing puller.

External bearing pullers are used when the bearing is mounted onto a shaft. They have jaws which grip the outer diameter of the bearing, along with a forcing screw which pushes against the end of the shaft. As the forcing screw is tightened, the jaws force the bearing along the shaft.

External bearing pullers can be either mechanical or hydraulically-assisted. Hydraulic bearing pullers require minimal manual effort, making them ideal for heavy-duty applications. However, specialist heavy-duty bearing pullers are also available for these applications.

Internal bearing pullers are used where the bearing or component is fitted within a recess, with an opening in the inner diameter. The bearing puller is inserted into the inner diameter of the bearing where it grips the bearing. This can be through expansion or using claws. The bearing can then be pulled from the recess.

Reversible bearing pullers are also available from manufacturers such as SKF. These bearing pullers are suitable for both internal and external pulling, thanks to their reversible arms. These bearing pullers are ideal for use in applications where there are bearings fitted both on shafts and in recesses.

How to decide what type of bearing puller to use

The decision of which bearing puller to use is dependent on many factors. You'll first need to establish whether you need an external or an internal bearing puller.

If the component that you're removing is seated on a shaft and is freely accessibly from the outer diameter, you'll need an external bearing puller. This is the most common type of puller. However, if the part you're trying to remove is in a recess with the inner diameter accessible, you'll need an internal bearing puller.

If you require an external bearing puller, you'll then be able to choose between mechanical and hydraulic bearing pullers. If you're on a tight budget, a mechanical bearing puller may be suitable. However, if you're working with heavy-duty machinery, you might consider a hydraulically-assisted bearing puller to reduce the manual effort required.

You'll also need to consider the space conditions. This includes the diameter and depth of the bearing, along with the available space around the bearing. Some bearing pullers will require more space to operate than others.

The choice of which bearing puller to use should always be made after careful consideration of all influencing factors. If you're unsure which bearing puller to choose, it's best to consult an expert before making your decision.

Where to buy a bearing puller

When you need a bearing puller on a short lead time, it can be tempting to type 'buy bearing puller online' into Google and click on the first option that appears. However, you need to be certain that you're purchasing the right bearing puller for your needs, as well as a genuine and reliable tool.

We carefully select the manufacturers that we work with to ensure that we only supply the highest quality products. When you buy from ACORN, you're receiving our guarantee that you're purchasing genuine, quality products.

We also have a team of experts on hand to help you to choose the right products for your application. We'll take the time to get to know your business to make sure we're recommending the best possible parts for your needs.

acorn®
industrial services limited

DON'T MISS OUT

UPCOMING SPECIAL OFFER

Keep your eyes peeled for upcoming special offers on maintenance products throughout 2022!

Starting with 10% off alignment tools during March 2022. Quote 'INMMAR22' at checkout.

0800 8766 441

enquiries@acorn-ind.co.uk

www.acorn-ind.co.uk