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■ **INA SL04 Cylindrical Roller Bearing: Customers Profit from Improved Performance and Environmental Friendliness**

Further Development of Outer Ring Profile

Plastic rope sheaves, mainly made of PA6G, are increasingly being used due to their special properties, such as **low weight, good weather resistance, and reduced cable wear**. That is why machines like mobile cranes are now almost exclusively equipped with plastic rope sheaves. Increasingly large radial loads and diagonal cable pulls result in high contact pressures between the plastic rope sheave and outer bearing ring. The changed demands made on sheave bearings were what led to the completely new design of the outer profile of our SL04 bearings.

The change was preceded by an extensive calculated verification using FEA that factored in the most important determining factors.

For example:

- **Operating conditions**
- **Operating temperatures**
- **Material values of the plastic rope sheaves**
- **Assembly**

With the new geometry, **an outer bearing surface is achieved that is approx. 20% wider**, along with stress-optimized edge transitions. This reduces contact pressures and critical stresses in the surrounding component. The time-tested design of the relubrication method via the outer ring was retained.

Bearing assembly and disassembly are unchanged!

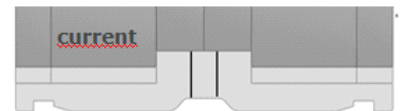
Bearings with the new AU contour bear the **-D suffix** (see also [TPI 237](#)). The new bearing versions are being gradually introduced as of 2015, starting with the PRIO types.

- SL04150
 - SL04170
 - SL04200
 - SL045020
 - SL045024
- each in the D-PP-RR-C5-GA22 version

Environmentally Friendly Measures

■ **CrVI-free Corrotect coating**

SL04 cylindrical roller bearings from the catalog and SL04 special bearings with an F no. for rope sheaves are delivered almost exclusively with a Corrotect coating. The CrVI-free coating lives up to market demands for environmentally friendly products.



Please note: During the changeover from products containing CrVI to those that are CrVI-free, it is possible for bearings with different visual appearances to be delivered. In order to avoid customer uncertainty, a special packing slip [MON86](#) will be included in the packaging during the transition time.

■ **Preservation**

As part of a Group-wide standardization of preservation methods, oil preservation is being introduced for SL04 bearings without a Corrotect coating. The use of VCI paper is therefore no longer necessary.

■ **Packaging**

To preserve the environment, the SL04 bearing packaging is being changed for single items or small quantities from cardboard boxes to slip-lid packaging with one bearing each. Customer-specific large packaging is not affected by the change.



Lubrication According to Application-related Grease Groups: “Grease Application Grease Groups”

INA SL04..PP cylindrical roller bearings are delivered with grease as standard. Due to the supply security required throughout the Group, each grease group should have two greases on hand from two different suppliers. This has also been implemented for the rope sheave application area.

	NEW	Previously
Standard grease from the catalog Operating temperature -20 °C to +80 °C	GA08	L271 (SM03)
Extended temperature range Operating temperature -40 °C to +80 °C	GA22	L091 (SM12)

You can find comprehensive information and details (e.g. suffixes, etc.) on the INA SL04 cylindrical roller bearings in rope sheaves in our new **TPI 237** leaflet under the following link:

http://www.schaeffler.com/remotemedien/media/shared_media/08_media_library/01_publications/schaeffler_2/tpi/downloads_8/tpi_237_de_en.pdf

If you have any other questions or require further information, please contact your Schaeffler External Sales team.

■ **Standardizing the Number of Attachment Bores in Outer Rings of INA ZKLF Axial Angular Contact Roller Bearings**

Affected products:

ZKLF1762, ZKLF2068, ZKLF2575, ZKLF3080, ZKLF3590, ZKLF40100, ZKLF50115



Flange-mounted axial angular contact roller bearing ZKLF

Changeover date:
2/1/2015

From February 2015, the number of attachment bores for INA ZKLF flange-mounted axial angular contact roller bearings has been successively adapted to the ZKLF...2AP series (bearing pair). This means that the number of bores in these types will double and become the new standard, which also applies for the PE and HC versions.

Advantages:

- **Standardization improves availability and delivery performance**
This change makes it possible to better safeguard delivery reliability and improves our ability to respond to your orders.
- **No changes to customers' adjacent constructions required**
The previous number and position of fixing screws can be retained with the new pitch, i.e. every second bore can remain unused when single bearings are mounted in the machine.
- **Installation guide**
A visible packing slip in German and English is enclosed in every package to inform your installation personnel of this change.

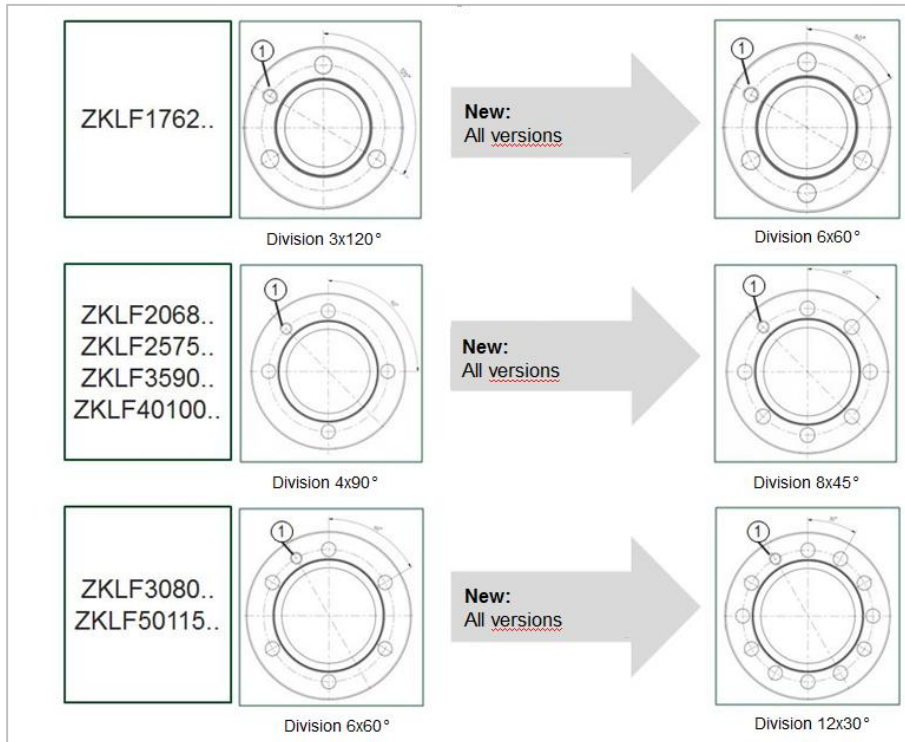


Fig. 1: Standardization of ZKLF bore arrangements: Individual ZKLF bearings retain the bore arrangement of the paired 2AP design (1 – lubrication connection)

If you have any other questions or require further information, please contact your Schaeffler External Sales team.

■ **Roller Clutches – One Idea – Many Applications – Great Potential**

Roller clutches transfer a torque in one direction and move freely in the opposite direction. In neutral, they have a low frictional torque to prevent drive losses from occurring and to save energy.

FRAX series roller clutches are clutches in sleeve design with outer rings and integrated clamping ramps manufactured using forming methods.

Compared to drawn cup roller clutches with needle rollers, they are capable of transferring much higher levels of torque. The compact design therefore provides an excellent power density, which also makes assembly very easy.

The best known use of the FRAX is the **E-starter one-way clutch in motorcycles**. This forms the connection between the electric starter and the crankshaft. The one-way clutch safeguards the starter components from damage when the combustion engine is started and the engine speed exceeds that of the starter.

There are also numerous application possibilities in industrial systems. For example:

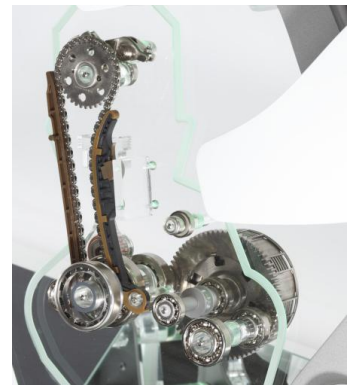
- overrunning clutch in packaging machines
- speed compensation in conveyor systems
- etc.

In vehicle engineering as well, there are other potential applications for different one-way clutches from Schaeffler:

- one-way clutch disks for decoupling from irregularities in the powertrain drive
- automatic transmission converter.



One-way clutch



E-starter one-way clutch in a motorcycle

■ Optimally Adapted Design Solutions for Customer Applications

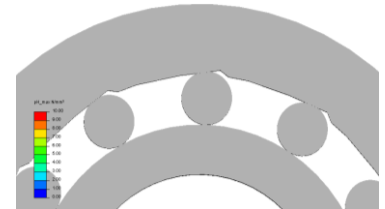
Our engineers develop and design roller clutches in close coordination with you. This makes it possible to optimally adapt the design and the layout of the one-way clutch.

Using modern calculation tools and simulation methods, the one-way clutches are ideally designed for your adjacent construction with respect to the torque conveyed and functional safety.

To verify the functionality, tests on the components and system can be performed directly on site at Schaeffler on test stands in the testing facility.

Manufacturing of the sleeves with integrated clamping ramps using forming methods ensures a high level of process reliability in the series. That is what makes this sophisticated high-volume product convincing, both in technical as well as in economic terms.

Do you want a specific design for use in your product, or do you require more information? Please contact our Schaeffler sales team.

**Calculating one-way clutches**

■ **FAG CONCEPT2 Lubricator: One for Two**

The FAG CONCEPT2 lubricator was introduced for the first time at the Hannover Messe this year. It is ideally suited for assemblies with two lubrication points, such as electric motors, fans, and compressors.

You can find an overview of the technical advantages and product properties here or in the product brochure at the following link:

<http://www.schaeffler.de/content.schaeffler.de/en/mediathek/library/library-details.jsp?id=69634561>

Overview of the Technical Advantages:

- Supply of up to two lubrication points
- Different lubrication intervals for each outlet
- Battery operation or grid operation (24 V DC) possible
- Wide operating temperature range
- Reliable piston pumps as feed pumps
- Metering quantities independent of the ambient temperature
- Measurement of back pressure up to the lubrication point
- Optional activation using an external control unit (24 V DC version)
- Simple coupling to machine operation possible (24 V DC version)
- Great pressure build-up
- Engine running control
- Fill level monitoring

Product Properties:

- Lubricating media: Oil and grease up to NLGI 2
- Up to two outlets
- Electricity supply: Battery / 24 V DC
- Lubricant reservoir: Cartridge with 250 cm³
- Feed pressure: up to 50 bar (24 V DC) or 30 bar (battery operation)
- Operating temperature: -20 °C to +70 °C

Customer Benefits:

- Only one lubricating device is needed instead of two
- Two bearings with different lubrication requirements can be supplied
- Simple coupling to machine operation possible (24 V DC version)
- The maintenance process is simplified
- Good price/performance ratio

The FAG CONCEPT2 can already be ordered, and the first devices will be delivered from the Schweinfurt factory from July 2015.

For further information or if you have any questions, please get in touch with your usual Schaeffler contact person.



■ How-to Videos for FAG SmartCheck

Four how-to videos have been created to further support you during your first steps in operating FAG SmartCheck. Please use these videos to learn more about initial operation, learning mode, network integration, and the starter kit.

Step-by-step Instructions for Making It Easy to Get Started

Step-by-step, our video instructions show the contents of the hardware package, how to connect the hardware, and finally how to set it up. Video instructions are available on the following topics:

- **FAG SmartCheck Starter Kit Introduction**
- **FAG SmartCheck Initial Operation**
- **FAG SmartCheck Learning Mode and What to Do in Case of an Alarm**
- **FAG SmartCheck Network Integration**

Advantages/Benefits:

- The basics for handling and operating FAG SmartCheck are clearly explained.
- The videos are ideal for rounding off the operating instructions.
- The videos are short, visual, and understandable.

The **how-to videos** can be found in the video section on the **FAG SmartCheck Microsite** at the following link:

<http://www.fag-smartcheck.com/video.html?ci#anker>

Moreover, the videos are also available on the **Schaeffler YouTube** channel in the Products and Applications section and in the **Media Library** on the Schaeffler website.

FAG SmartCheck is a good option when an uncomplicated and cost-effective monitoring solution is needed for smaller or less-critical machines. The how-to videos are only a first step in gaining an even better understanding of the product. Let us surprise you!

For further information or any questions, please get in touch your Schaeffler sales representative.





■ **New Brochure “Warning: Counterfeit!”**

Over just a few pages, our **“Warning: Counterfeit”** brochure comprehensively covers the issue of counterfeits, including a real-life example. Please use this brochure to learn about this sensitive issue.

The new brochure is available for you to download from the Internet media library in German, English, Portuguese, Spanish, and Hungarian.

<http://www.schaeffler.de/content.schaeffler.de/en/mediathek/library/library-details.jsp?id=943985>

You can also order a print version through your sales representative.



If you have further questions about counterfeits, please contact us by sending an email to the **Schaeffler Brand Protection Team**:

Piraterie@schaeffler.com.