SCHAEFFLER

We pioneer motion

Food, Beverage, and Packaging Industry Playbook

Schaeffler's Products and Services

Interactive e-booklet

Start

Food, Beverage, and Packaging Industry Playbook

This Schaeffler Playbook supports sales activities in the food, beverage, and packaging industry. It provides valuable information about all aspects of the industry and shows what makes Schaeffler the leading technology partner for the sector: the products, systems, and solutions with which Schaeffler helps the industry to reach its goals. From the production process and the (user-specific) product and service portfolio to customized solutions, this Playbook answers every question, all for the purpose of meeting our goal of giving our customers the best advice possible.

Food, Beverage, and Packaging Industry

Processes in the Food, Beverage, and Packaging Industry

Processes in the food, beverage, and packaging industry are just as varied as the products themselves: all kinds of consistencies from liquid to solid, raw or processed foodstuffs, and all kinds of packaging, from bottles to bulk solids to individually shrink-wrapped products. Three typical, ideal workflows are illustrated below.

Filling line
PET line

Baking line
Cookie production

Packaging processes

The PET Bottle Filling Line

PET bottles are manufactured in a single or two-stage process. In the two-stage process, the preforms are delivered and given their final bottle shape in the stretch blow molding machine. They are then cleaned, filled, sealed, labeled and prepared for transportation. In the single-stage process, manufacturing and further processing take place entirely on site.

1 PET blanks and stretch blow molding machine

Polyethylene terephthalate (PET) preforms are extracted from storage containers, heated, and given their final shape in the stretch blow molding machine.

2 Cleaning and sterilization

Dust particles and residues are removed before the bottle is dried using sterile hot air.

3 Filling and sealing

The bottles are filled up to the specified fill level. Sealing them immediately prevents contamination.

4 Labeling and packaging

The bottles are labeled and grouped into bundles using plastic shrink wrap.

Process graphic: PET filling line ›

Baking Line, Using Cookie Production as an Example

Conveyor belts play a key role in the production of baked goods, since transport and production are often simultaneous. The dough has time to rest on its way to the oven, for example. Baking also takes place on a conveyor belt, and the baked goods then have time to cool while being transported for packaging.

Storing ingredients in silos

1 Mixing and portioning

The ingredients are extracted into containers weighing 3 – 5 metric tons using compressed air. In these containers they are mixed, portioned, and shaped to go onto the dough belt.

2 Cutting and pressing

A rotary cutter presses the dough into cookie form and cuts it. Tension in the dough is reduced during subsequent transportation on the resting belt.

3 Baking

Conveyor belts transport the dough through a tunnel oven. The oven is typically between 25 and 100 m long.

4 Stacking

A stacker stacks the cookies in preparation for further packaging.

Process graphic: baking line ›

Packaging Processes

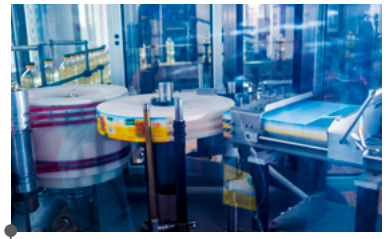
No food or beverage is supplied without protective packaging. That's why packaging is part of every production line. Below, we describe the typical workflows in packaging, which are incorporated into the various steps in the process on the individual production lines.

Check
Mechanical check of fill level and seal.

1 Primary packaging

Tubes, glass, flexible packaging, or containers: Primary packaging is in direct contact with the product, and must therefore meet stringent hygiene standards.

Labeling



Labeling involves attaching a label, band, or medallion to the packaging. Secondary or tertiary packaging is also labeled.

Check
Mechanical check of seal or position of label.

2 Secondary packaging

Additional packaging for presentation or sale.

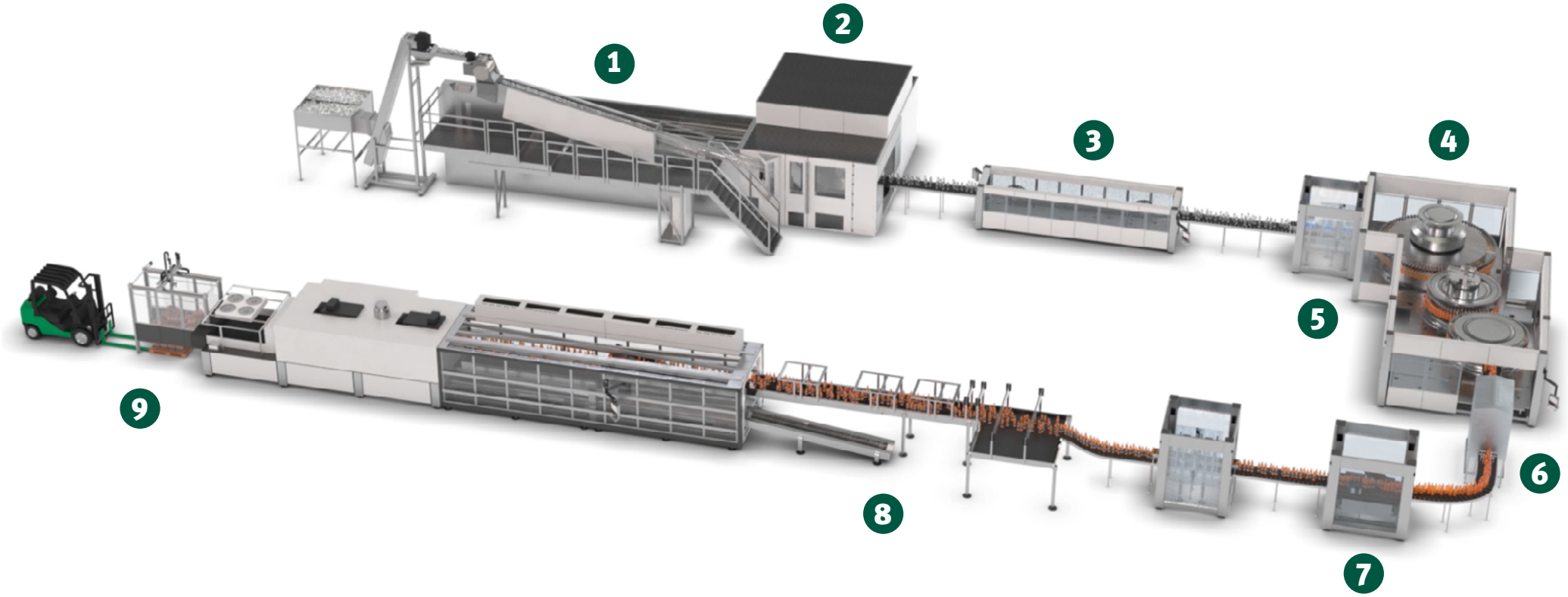
In-house transport

Conveyor belts take products from one location to another and serve as inline buffers to bridge short-term material supply interruptions.

3 Palletizing

Tertiary packaging using cardboard or film to provide safe transport or improve stackability.

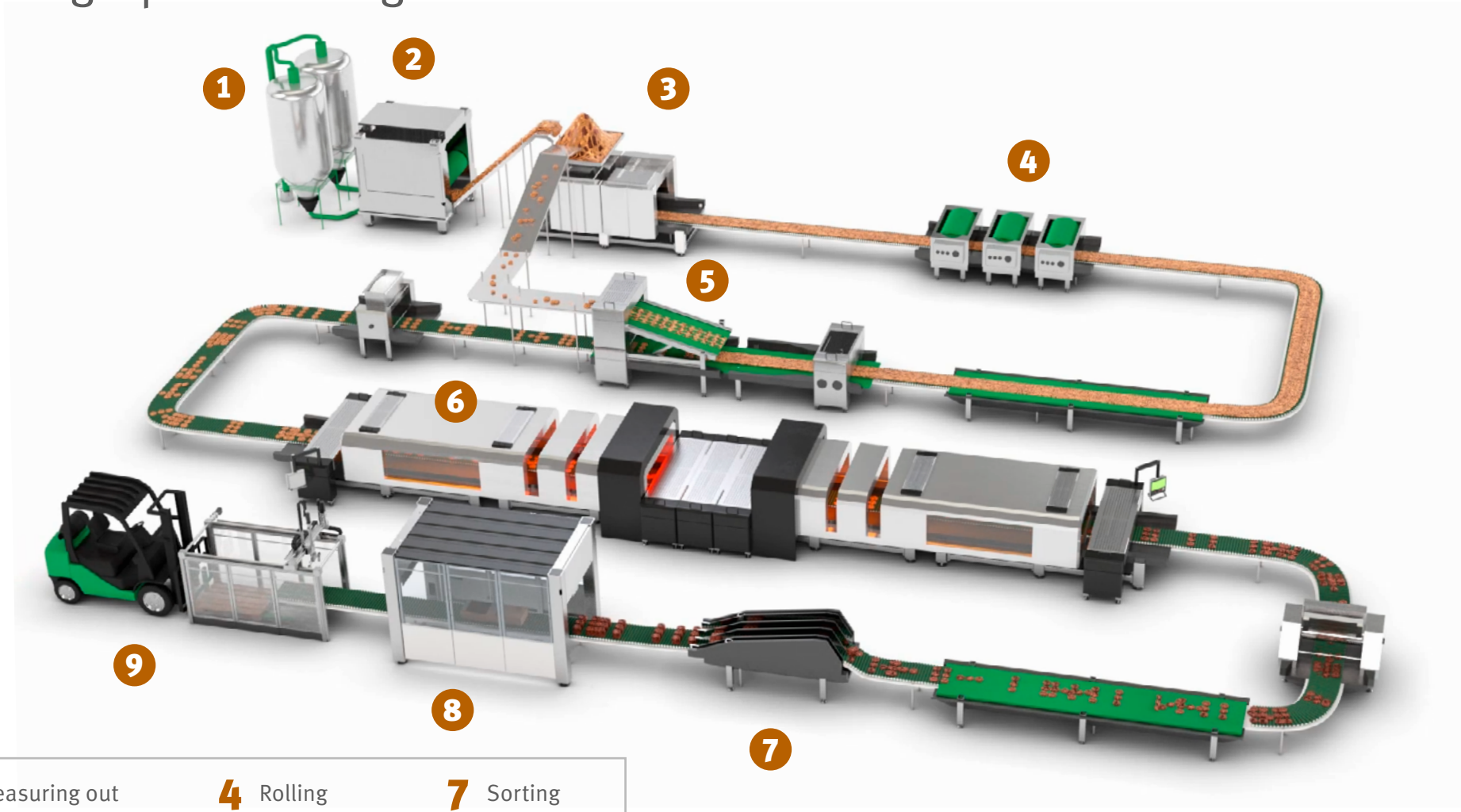
Process graphic: PET filling line



1	Infeed	**4**	Filling	**7**	Labeling
2	Stretch blow molding	**5**	Capping	**8**	Transport by conveyor
3	Washing	**6**	Pasteurization	**9**	Palletizing

Process graphic: baking line ›

Process graphic: baking line



1	Measuring out	4	Rolling	7	Sorting
2	Mixing	5	Shaping	8	Packaging
3	Kneading	6	Baking	9	Palletizing

Process graphic: PET filling line ›

Industry Trends – Growth Market in Constant Transition

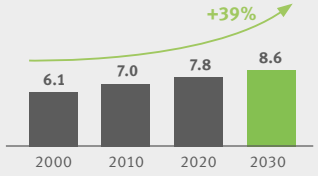
Global developments and technological innovations have a critical impact on the food, beverage, and packaging industry. Schaeffler helps customers take advantage of changing market conditions and to thrive in a competitive market environment thanks to top-quality processes and products.

New habits lead to new markets
Changing lifestyles directly impact on the way food and beverages are produced and consumed. For companies, this means a constant supply of new opportunities, markets, and challenges. Two trends can be identified as the main drivers of development in the food, beverage, and packaging industry: global developments, which impact on demand and the nature of consumption, and technological innovations, which companies use to secure benefits in a demanding market environment.

Trends in the food, beverage, and packaging industry
- Sustainability and resource efficiency
- Clean, safe, and automated production
- Reduced total cost of ownership (TCO)
- Increasing use of run-dry bearings as makers move away from lubricant use
- Ready-to-fit assemblies
- Smart solutions to reduce system downtime
- Alignment with quality seals and certification (organic, Nutri-Score, etc.)
- Increasing demand for secondary and tertiary packaging as a result of changed consumption habits

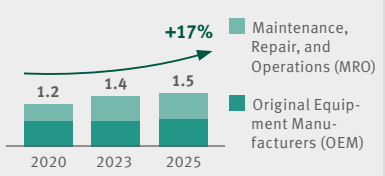
Market drivers:
- Increased demand for food and beverages due to global rise in prosperity
- Global population growth
- Less self-sufficiency as a result of urbanization and industrialization
- 24/7 availability of food and beverages
- Changed consumption habits (convenience food, snackification, soft food diet)
- Online shopping
- Vertical farming in indoor areas

Global population growth
(population numbers in billions)



Source: Statista 2020

Global market for food and beverages
(€ billion)



Source: Omdia Q4/2020

Challenges in the Food, Beverage, and Packaging Industry

High growth rates, strong competition, and stringent regulations – anyone hoping to thrive in the food, beverage, and packaging industry market must offer high product quality and satisfy technical and hygiene requirements in the production process.

Demanding environment for components, systems, and operators

The factors giving rise to challenges in the food, beverage, and packaging industry are hygiene, system quality, and the market environment. Plant operators must satisfy stringent regulations and ensure the foodstuffs they produce are safe. Constant innovation in the market environment also creates the need for continuous system optimization. Technical challenges in the production process constitute the third factor:

- Extreme temperatures and high mechanical stress
- Regular cleaning cycles using aggressive agents
- Stringent hygiene requirements even during maintenance and repairs
- Often restricted access to machines and relevant bearings
- Risk of corrosion and wear to materials through contact with the processed foodstuffs
- Protection against contamination of production thanks to appropriate sealing of components
- Need for predictive maintenance with appropriate consideration for food safety

Overview of challenges

Stringent state or religious **requirements**	Sophisticated **production conditions**	Constant **pressure to innovate**

Benefits with Schaeffler

Thanks to its innovative solutions and many years of experience in the food, beverage, and packaging industry, Schaeffler helps customers worldwide to achieve their goals.

Ready-to-fit assembly

Turnkey, plug-and-play units with reduced maintenance requirements and condition monitoring

Minimized outages and plant downtime

Higher output thanks to reduced downtime, spare parts available at short notice, and individually developed stockpiling plans

Extensive support

Direct contact with recognized industry experts, 24/7 support with eLISA and access to our medias knowledge database

Facts and Figures

227.5 kg
packaging material
per person in Germany

38% of the global packaging market is represented by the food and beverage industry

Revenue in the European food industry in 2021:
€1,093 billion

One factory produces approx.
2 million
cans per day

Proportion of outgoings on food and beverages:
21.5%

An average filling line fills up to
65,000 L
per hour

Did you know?
In 1795, Napoleon offered 12,000 francs for the development of a method of preserving foodstuffs for the army and navy – that was the birth of canned food.

Schaeffler for the Food, Beverage, and Packaging Industry

Schaeffler – Partner to the Food, Beverage, and Packaging Industry

Schaeffler is a partner of leading manufacturers in the food, beverage, and packaging industry. Our broad range of products and services enables us to help our customers worldwide optimize their plant processes.

With robust components and comprehensive expertise, we help customers stay a step ahead of the global competition at all times. Our bearings and linear guidance systems have proven their worth for decades in many applications to suit various requirements and conditions. Working with manufacturers and operators, we develop innovative solutions and open up new opportunities for the industry. We support customers with our expertise built up over many years of candid collaboration with manufacturers worldwide.

With Schaeffler, companies can rely on:

- A global network of experts
- Broad-based expertise with bearings
- User-friendly engineering tools in medias
- Sustainable product concepts
- Extensive digital solutions and an application-specific service portfolio

Benefits offered by Schaeffler in the Food, Beverage, and Packaging Industry

Broad, sector-specific **portfolio**	Robust **seals** and **bearings**	Satisfying state and religious **regulations** (kosher, halal, NSF H1 food grade)	Individual **support** and **cooperation**

We support our customers

- **with expertise**
  Application-specific support from our engineers.

- **with marketing**
  Information, brochures, and social media content on our Partner Portal and in the Schaeffler Media Library.

- **with interchangeability**
  A large database with customer part numbers and customized support when converting to Schaeffler parts.

- **during all project phases**
  Planning, implementation, post-processing, and maintenance.

About the Schaeffler Partner Portal ›

Read customer success stories ›

Schaeffler Products and Services for the Food, Beverage, and Packaging Industry

Extreme temperatures, frequent cleaning cycles involving harsh or corrosive cleaning agents, and the highest hygiene and safety standards demand specially developed solutions. We understand the requirements of the food, beverage, and packaging industry based on our many years of working with leading manufacturers. Our bearings and linear guidance systems have proven their worth for decades in countless applications involving all kinds of demands and stress. That's how we provide our customers with efficient support in achieving their goals. In addition to a large number of customized solutions, we also offer a broad portfolio of innovative products and services across a bearing's entire lifecycle.

Your advantages

- Many years of expertise
- Constant optimization based on current market trends
- Turnkey solutions
- Suitable for conditions of highly dynamic motion
- Schaeffler's program covers 80% of applications
- Long service life
- Reduced maintenance requirements
- High level of operational safety
- Personal support

Schaeffler rolling bearings for the food, beverage, and packaging industry

FD deep groove ball bearings

FD radial insert ball bearing housing units

Rollers

Spindle bearings

Needle roller bearings

LUBTECT

Special coatings

Cylindrical roller bearings

Linear guides and systems

Schaeffler services for the food, beverage, and packaging industry

Mounting tools and services

Lubrication solutions

Monitoring solutions and services

Expert services

Sustainability at Schaeffler

Sustainability is one of the Schaeffler Group's four company values. Our sustainability strategy is consistently aligned with the three ESG dimensions of environment, social, and governance.

Sustainable production for every industry
Schaeffler helps its customers reduce the CO_2 emissions of their plants, fully utilize their resources, and minimize their operating costs. This allows them to achieve their sustainability goals while at the same time optimizing their production processes.

Safety and high product quality
Schaeffler's solutions and products enable safe production with a consistently high product and process quality. They allow customers to improve the durability of their plants and also protect them from contaminants. This is also a form of sustainability.

Success thanks to innovative technologies
Climate-friendly production also means increasing plant availability and avoiding waste. Automated system solutions and smart condition monitoring are examples of how sustainable production can become a factor for success when innovative technologies are used.

Benefits for our customers in terms of sustainability

Better market positioning through sustainable products	**Lower production costs** through resource efficiency	**Sustainable production** through innovative technologies	**Long-term success** through high product quality

Focus on sustainability

Schaeffler takes its social and ecological responsibilities seriously. Our road map for the fight against climate change includes ambitious goals:

- By 2025, we want to reduce emissions in our own production by 75% compared to 2019.
- From 2030, our production will be completely climate neutral. By 2030, emissions resulting from input and raw materials in our supply chain will be reduced by 25%.
- From 2040, our supply chain will also be completely climate neutral thanks to specific reduction measures. We will offset unavoidable emissions with compensation measures.

As described in our Sustainability Report, we have been recognized multiple times for our contribution to the fight against climate change.

To the Sustainability Report ↗

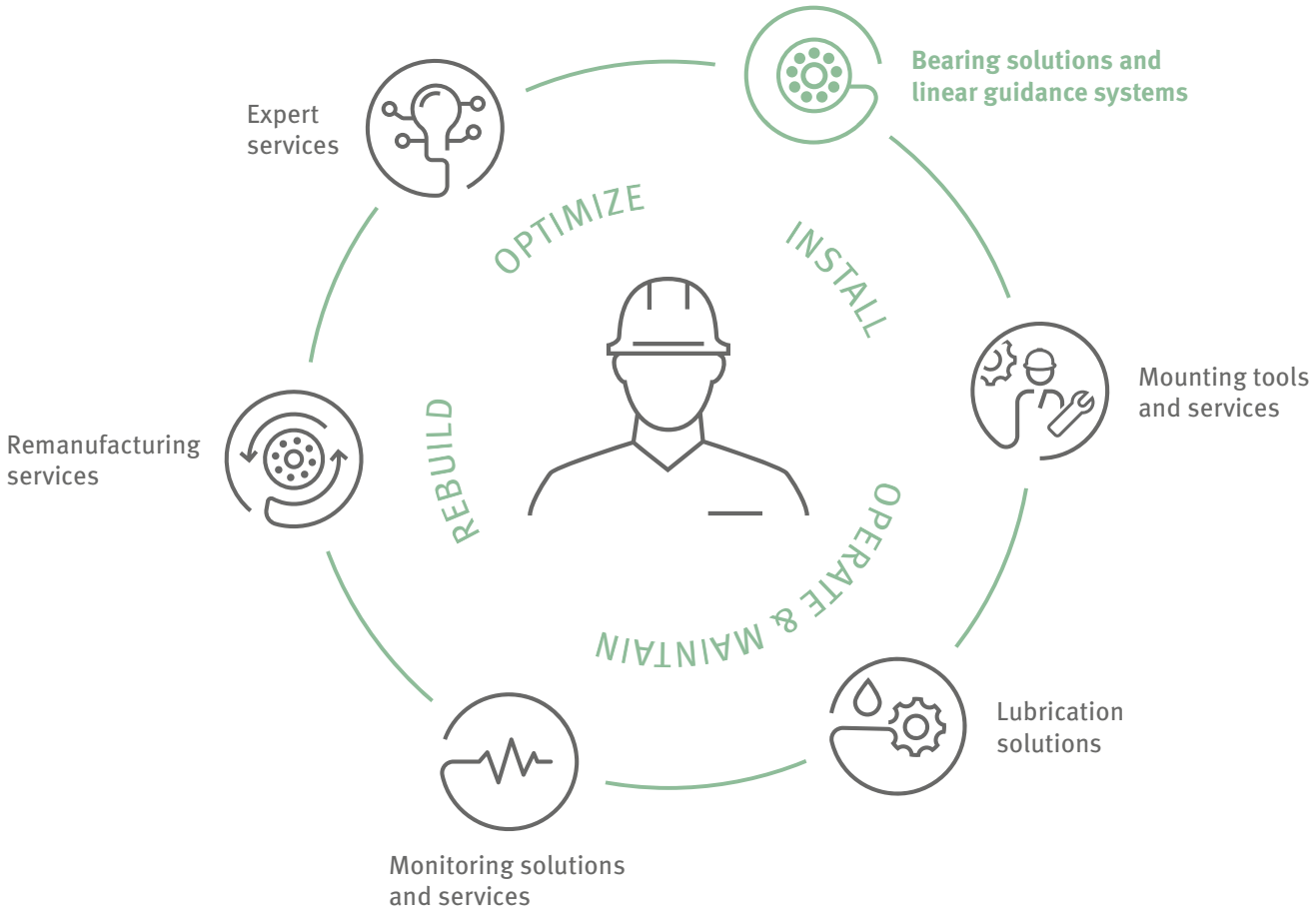
Added Value in Every Phase of the Life Cycle

Our customers are at the center of everything we do. No matter what industry they come from: we equip them with our innovations for pioneering motion. From bearing solutions to complete linear guidance systems, that's how we pioneer motion for the industry of the future. We pioneer motion.

What's more, we create innovations to extend the lifetime of these solutions. And with over 100 years of experience in the bearing business, we have earned the experience it takes to add value to every stage of the solution lifetime.

From the moment one of our solutions is installed to how it is operated and maintained: Schaeffler has a full portfolio of solutions and services to support maintenance teams and managers. Called Schaeffler Lifetime Solutions, the portfolio includes mounting tools and services as well as solutions and services for condition monitoring and lubrication.

But the lifetime does not end there. Schaeffler also offers remanufacturing services to extend the lifecycle of bearings belonging to our customers and expert services to optimize their use. And that's how we add value over the lifetime for our customers.



Products and Services by Sector

Bearing Solutions for the Filling Line

As one of the world's largest roller bearing manufacturers, Schaeffler is an important partner for the food, beverage, and packaging industry. Based on our in-depth industry knowledge, we provide our customers with optimum bearing solutions for their applications – for maximum reliability even under the harshest ambient conditions.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Infeed	Stretch blow molding	Washing	Filling	Capping	Labeling	Packaging	Transport by conveyor	Palletizing
1 FD deep groove ball bearings ›	●				●	●			
2 FD radial insert ball bearing housing units ›	●			●			●	●	
3 Linear guidance systems ›		●		●		●	●		●
4 Yoke and stud-type track rollers ›		●		●	●		●		●
5 Spindle bearings ›					●	●			
6 Needle roller bearings ›		●	●				●		
7 LUBTECT ›		●	●						
8 Special coatings ›					●				
9 Slewing rings ›		●		●					
10 Deep groove ball bearings ›	●			●	●				
11 Radial insert ball bearing housing units, cast iron / sheet steel ›	●		●						
12 Needle roller / axial deep grove ball bearing combination ›		●							

Lifetime Solutions for the filling line ›

Lifetime Solutions for the Filling Line

Schaeffler Lifetime Solutions offers an end-to-end portfolio specially tailored to the needs of maintenance teams and plant managers. From assembly to condition monitoring and smart lubrication, our products, solutions, and services are perfectly coordinated and help prevent up to 100% of all machine outages. Keep your machines rolling with Schaeffler.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Infeed	Stretch blow molding	Washing	Filling	Capping	Pasteurization	Labeling	Transport by conveyor	Packaging	Palletizing
1 ProLink CMS ›	●		●	●	●	●	●	●	●	
2 SmartCheck ›	●		●	●	●	●	●	●	●	
3 OPTIME Condition Monitoring ›	●		●			●		●	●	
4 OPTIME C1 ›	●		●	●	●	●	●	●	●	
5 CONCEPT1–8 ›	●		●	●	●	●	●	●	●	
6 ARCANOL ›	●	●	●	●	●	●	●	●	●	●
7 HEATER ›	●	●	●		●	●	●	●	●	●
8 MF-IDUCTOR ›	●	●	●		●	●	●	●	●	●
9 Mechanical tools ›	●	●	●	●	●	●	●	●	●	●

Our comprehensive offering is completed by a broad range of expert services › and training courses ›.

Bearing Solutions for the filling line ›

Bearing Solutions for the Baking Line

As one of the world's largest roller bearing manufacturers, Schaeffler is an important partner for the food, beverage, and packaging industry. Based on our in-depth industry knowledge, we provide our customers with optimum bearing solutions for their applications – for maximum reliability even under the harshest ambient conditions.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Mixing	Kneading	Rolling	Shaping	Baking	Sorting	Packaging	
1 FD deep groove ball bearings ›	●	●	●	●	●	●		
2 FD radial insert ball bearing housing units ›	●	●	●	●	●	●	●	
3 Linear guidance systems ›					●	●	●	
4 Yoke and stud-type track rollers ›	●	●	●		●			
5 Needle roller bearings ›					●			
6 LUBTECT ›	●	●	●			●		
7 Tapered roller bearings ›						●		
8 Radial insert ball bearing housing units, cast iron / sheet steel ›				●	●			

Lifetime Solutions for the baking line ›

Lifetime Solutions for the Baking Line

Schaeffler Lifetime Solutions offers an end-to-end portfolio specially tailored to the needs of maintenance teams and plant managers. From assembly to condition monitoring and smart lubrication, our products, solutions, and services are perfectly coordinated and help prevent up to 100% of all machine outages. Keep your machines rolling with Schaeffler.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Measuring out	Mixing	Kneading	Rolling	Shaping	Baking	Sorting	Packaging
1 ProLink CMS ›	●	●	●	●	●	●	●	●
2 SmartCheck ›	●	●	●	●	●	●	●	●
3 OPTIME Condition Monitoring ›	●			●		●		●
4 OPTIME C1 ›	●	●	●	●	●	●	●	●
5 CONCEPT1–8 ›	●	●	●	●	●	●	●	●
6 ARCANOL ›	●	●	●	●	●	●	●	●
7 HEATER ›	●	●	●	●	●	●	●	●
8 MF-IDUCTOR ›	●				●	●	●	●
9 Hydraulic pumps ›		●	●	●				
10 Hydraulic nuts HYDNUT ›	●	●	●	●	●	●	●	●
11 Mechanical tools ›	●	●	●	●	●	●	●	●

Our comprehensive offering is completed by a broad range of expert services › and training courses ›.

Bearing Solutions for the baking line ›

Bearing Solutions for Packaging Processes

As one of the world's largest roller bearing manufacturers, Schaeffler is an important partner for the food, beverage, and packaging industry. Based on our in-depth industry knowledge, we provide our customers with optimum bearing solutions for their applications – for maximum reliability even under the harshest ambient conditions.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Punching	Folding and gluing	Hot foil stamping	Printing	Braille printing	Periphery	Palletizing	Transport by conveyor	Labeling	Stretch wrapping
1 FD deep groove ball bearings ›	●	●	●				●			●	
2 FD radial insert ball bearing housing units ›		●		●			●		●		
3 Linear guidance systems ›	●	●	●	●			●	●	●	●	●
4 Yoke and stud-type track rollers ›	●	●	●	●			●				●
5 Needle roller bearings ›	●	●	●	●	●		●				
6 LUBTECT ›	●		●								
7 Special coatings ›									●		
8 Slewing rings ›											●
9 Cylindrical roller bearings ›				●							
10 Radial insert ball bearing housing units, cast iron / sheet steel ›									●		●

Lifetime Solutions for packaging processes ›

Lifetime Solutions for Packaging Processes

Schaeffler Lifetime Solutions offers an end-to-end portfolio specially tailored to the needs of maintenance teams and plant managers. From assembly to condition monitoring and smart lubrication: Our products, solutions, and services are perfectly coordinated and help prevent up to 100% of all machine outages – keep your machines rolling with Schaeffler.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Punching	Folding and gluing	Hot foil stamping	Printing	Braille printing	Periphery	Palletizing	Transport by conveyor	Labeling	Stretch wrapping
1 ProLink CMS ›	●	●	●	●	●			●	●	●
2 SmartCheck ›	●	●	●	●	●			●	●	●
3 OPTIME Condition Monitoring ›	●	●	●	●	●			●		
4 OPTIME C1 ›	●	●	●	●	●			●	●	●
5 CONCEPT1–8 ›	●	●	●	●	●			●	●	●
6 ARCANOL ›	●	●	●	●	●	●	●	●	●	●
7 HEATER ›	●	●				●	●	●		●
8 MF-IDUCTOR ›	●	●	●	●	●	●	●	●	●	●
9 Mechanical tools ›	●	●	●	●	●	●	●	●	●	●

Our comprehensive offering is completed by a broad range of expert services › and training courses ›.

Bearing Solutions for packaging processes ›

Bearing Solutions for Auxiliary Units

As one of the world's largest roller bearing manufacturers, Schaeffler is an important partner for the food, beverage, and packaging industry. Based on our in-depth industry knowledge, we provide our customers with optimum bearing solutions for their applications – for maximum reliability even under the harshest ambient conditions.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Compressors	Fans	Gear units	Electric motors	Pumps
1 Needle roller bearings ›	●		●		●
2 Deep groove ball bearings ›	●	●	●	●	●
3 Spherical roller bearings ›		●	●		●
4 Current-insulating cylindrical roller bearings ›				●	
5 Current-insulating deep groove ball bearings ›				●	
6 Tapered roller bearings ›			●		●
7 Cylindrical roller bearings ›	●	●	●	●	●
8 Angular contact bearings ›	●	●	●	●	●
10 Split spherical roller bearings ›		●			
11 Four-point contact ball bearings ›	●		●		

Lifetime Solutions for auxiliary units ›

Lifetime Solutions for Auxiliary Units

Schaeffler Lifetime Solutions offers an end-to-end portfolio specially tailored to the needs of maintenance teams and plant managers. From assembly to condition monitoring and smart lubrication, our products, solutions, and services are perfectly coordinated and help prevent up to 100% of all machine outages. Keep your machines rolling with Schaeffler.

Navigation instructions:
With the help of this overview, you can quickly and easily access the corresponding content in the Playbook by clicking the respective application or product in the table.

	Compressors	Fans	Gear units	Electric motors	Pumps
1 ProLink CMS ›	●	●	●	●	●
2 SmartCheck ›	●	●	●	●	●
3 OPTIME Condition Monitoring ›	●	●	●	●	●
4 OPTIME C1 ›	●	●		●	●
5 CONCEPT1–8 ›	●	●		●	●
6 ARCANOL ›	●	●		●	●
7 HEATER ›	●	●	●	●	●
8 MF-IDUCTOR ›	●	●	●	●	●
9 Hydraulic pumps ›	●	●	●	●	●
10 Hydraulic nuts HYDNUT ›	●	●	●	●	●
11 Mechanical tools ›	●	●	●	●	●

Our comprehensive offering is completed by a broad range of expert services › and training courses ›.

Bearing Solutions for auxiliary units ›

Application-Specific Solutions

Application-Specific Solutions
Filling Line

Infeed

Gentle handling: the preform loader

Task in the filling line

- Automatically feeding PET preforms into the blow molding machine

Challenges

- Industrial safety during operation
- Wet cleaning
- Avoiding contamination of preforms with dust and other foreign matter

Schaeffler solutions

- Sealed deep groove ball bearings in X-life quality
- Housing units with sealed stainless steel bearings for better protection against corrosion
- Cast iron housing units or plastic radial insert ball bearing housing units
- All housing units can be easily fixed to the shaft using grub screws or an eccentric locking collar, so the unit can be swapped quickly, thus reducing downtime
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Stretch Blow Molding

Accurate and fast: the stretch blow molding machine

Task in the filling line

- Manufacturing PET bottles

Challenges

- Very short cycle times and high-precision machine motion
- Downtime caused by outages or maintenance work
- Stringent food safety requirements
- Rigid guidance and minimal, even displacement forces
- Oscillating movements and high static stress

Schaeffler solutions

- Various low-friction linear guides
- Yoke and stud-type track rollers with various sealing and coating options such as Corrotect®
- Initial greasing with food-grade grease, NFS H1-approved
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Needle roller and needle roller/axial deep grove ball bearing combination in X-life quality
- Various lifetime solutions for quick and easy assembly and disassembly

Bearing Solutions ›

Lifetime Solutions ›

Washing

High-level hygiene: bottle cleaning machine

Task in the filling line

- Cleaning bottles prior to filling

Challenges

- Stringent hygiene requirements
- Aggressive cleaning agents
- Humid environment and high risk of corrosion

Schaeffler solutions

- Radial insert ball bearing housing units with optimized sealing function, corrosion protection and lifetime lubrication
- Extensive accessories for radial insert ball bearing housing units, including seals and covers to protect against splashing water
- Needle roller bearings in X-life quality
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›
Lifetime Solutions ›

Filling

High cycle speed, high-accuracy: automatic filling lines

Task in the filling line

- Automatic filling of plastic and glass bottles and cans

Challenges

- Fast cycle speeds and precision in filling
- High dynamic loads
- Humid environment
- Stringent hygiene regulations and aggressive cleaning agents
- Precise meshing of individual process stages
- Highly rigid bearing arrangement and low friction moments

Schaeffler solutions

- Yoke and stud-type track rollers with optimized INA profile
- Slewing rings as four-point contact ball bearings or crossed roller bearings in light or heavy versions with internal or external gear teeth
- Corrosion-resistant Bearing Solutions and ceramic hybrid bearings (also in combination with Cronidur high-performance steel)
- Deep groove ball bearings with LUBTECT lubricant compound
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS), and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Capping

Awash with ideas: the automatic capper

Task in the filling line

- Automated capping of filled bottles in filling lines

Challenges

- Resistance to hot cleaning water or foam
- No lubricant leakage
- Offsetting misalignments

Schaeffler solutions

- Yoke and stud-type track rollers with optimized INA profile to reduce compression associated with tilting, and minimal wear between outer ring, outside surface, and mating track
- RS high-performance seals and other seals (shields, lip seals)
- Lubrication with H1 approval
- Various corrosion protection layers, such as Corrotect®
- Wear protection, such as Triondur coating
- Corrosion-resistant Bearing Solutions such as hybrid bearings in combination with Cronidur high-performance steel
- Various condition monitoring systems (SmartCheck, ProLink CMS), and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Pasteurization

Fast heating for a longer shelf life: the pasteurizer

Tasks in the filling line

- Fast heating with steam, hot water, pressure or microwave
- Killing off microorganisms in food and beverages

Challenges

- High temperatures
- Plant must be highly reliable
- Downtime caused by outages or maintenance work

Schaeffler solutions

- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Labeling

Flexible in every form: the labeling machine

Task in the filling line

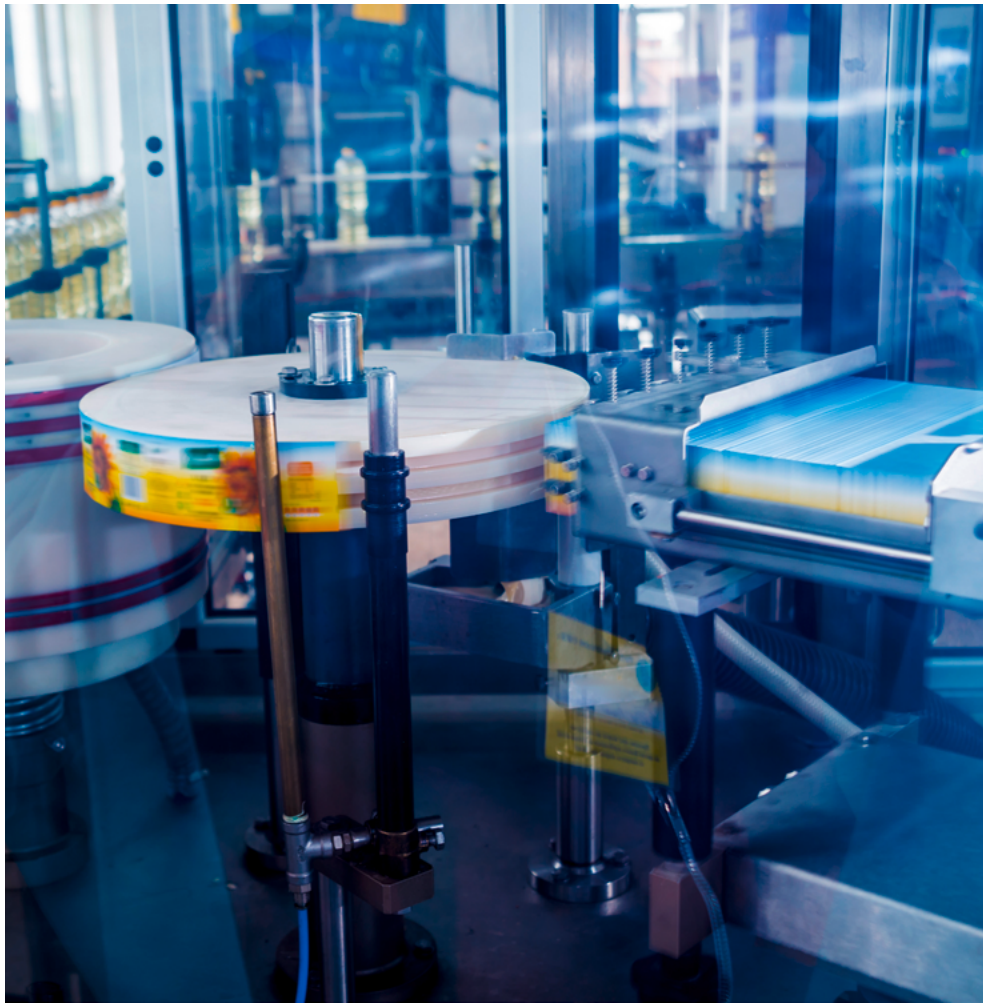
- Applying labels in various forms, sizes, and formats to front and back

Challenges

- Many different bottle formats, label sizes, and label positions
- Labeling machines must be individually set
- Processing of corrosive substances such as fruit juices
- High temperatures when applying labels

Schaeffler solutions

- Made using corrosion-resistant materials or materials with an anticorrosive coating for spindles, linear guides, and other components
- Smart condition monitoring and condition-based lubrication (OPTIME)
- Complete, ready-to-install linear table, including adjustment unit
- Spindle bearings in the cutting device
- Various condition monitoring systems (ProLink CMS), and other Lifetime Solutions



Bearing Solutions ›

Lifetime Solutions ›

Packaging

Fast, accurate, clean: the box folding and gluing machine

Task in the filling line

- Folding and gluing paper, cardboard, corrugated cardboard, or laminated material

Challenges

- Fast production speed
- High quality of manufactured cartons
- Stringent hygiene requirements and strict regulations
- Sustainability and cost reduction

Schaeffler solutions

- Monorail guidance systems for precise and very fast longitudinal movements and short-stroke applications
- Needle roller bearings and cam rollers for box stream adjustment
- Sealing systems and bearings perfectly lubricated and sealed ex-factory to ensure clean production operations
- Driveshaft bearings
- Radial insert ball bearing housing units in FD design
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS), and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Transport by Conveyor

Targeted goods transport from A to B: the conveyor belt

Task in the filling line

- Reliable transport of goods to the packaging, filling, or palletizing station

Challenges

- Smooth, perfect running for non-stop production
- Demanding environmental conditions
- Stringent hygiene regulations

Schaeffler solutions

- Food-grade radial insert ball bearing housing units in FD design
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Palletizing

Up to every task: the bundle palletizer

Tasks in the filling line

- Transportation, loading, and emptying of pallets
- Inserting intermediate layers, forming bundles into layers

Challenge

- Sophisticated combination tasks

Schaeffler solutions

- Yoke and stud-type track rollers with optimized INA profile to reduce compression associated with tilting, and minimal wear between outer ring, outside surface, and mating track
- Monorail guidance systems for every stress range
- Linear system technology individually coordinated with the application

Bearing Solutions ›

Lifetime Solutions ›

Application-Specific Solutions
Baking line

- Measuring Out
- Mixing
- Kneading
- Rolling
- Shaping
- Baking
- Sorting
- Packaging

Measuring Out

Always precisely prepared: the automatic measuring system

Task in the baking line

- Preparing and measuring out individual ingredients down to the last gram

Challenges

- Preventing contamination
- Regular cleaning
- Early identification of bearing problems
- Easy bearing replacement

Schaeffler solutions

- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Mixing

Powerful yet gentle: the dough mixer

Task in the baking line

- Producing a homogeneous dough

Challenges

- Easy, regular cleaning
- Increased risk of bearing wear caused by contamination with sugar and other ingredients
- Stringent food regulations
- Early identification of bearing problems
- Easy bearing replacement

Schaeffler solutions

- Food-grade deep groove ball bearings and radial insert ball bearing housing units in FD design
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Kneading

Powerful and robust: the dough kneader

Task in the baking line

- Mechanical dough preparation

Challenges

- Increased risk of bearing wear caused by contamination with sugar and other ingredients
- Regular cleaning
- Early identification of bearing problems
- Easy bearing replacement

Schaeffler solutions

- Food-grade deep groove ball bearings and radial insert ball bearing housing units in FD design
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Rolling

Keeps running even under difficult conditions: the dough conveyor

Task in the baking line

- Rolling dough carefully and evenly

Challenges

- Humid environmental conditions, based on factors such as plant cleaning
- Contamination by dough residues

Schaeffler solutions

- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Deep groove ball bearings and radial-insert ball bearings in stainless steel design
- Radial insert ball bearing housing units in FD design
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Shaping

Versatile: the shaper and portioner

Task in the baking line

- Shaping, pricking, and cutting dough and mixtures of various consistencies

Challenge

- To take up shaft angle offset caused by production and assembly errors

Schaeffler solutions

- Ready to assemble radial insert ball bearing housing units, cast iron / sheet steel
- Food-grade radial insert ball bearing housing units and deep groove ball bearings in FD design
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Baking

Perfect temperature at all levels: the oven

Task in the baking line

- Thermal process to change food properties

Challenges

- High temperatures
- Reducing water activity in foodstuffs
- Hygienic environment
- Humid environmental conditions, based on factors such as plant cleaning or cleaning of the application

Schaeffler solutions

- Radial insert ball bearing housing units, cast iron / sheet steel
- Food-grade radial insert ball bearing housing units in FD design
- Yoke and stud-type track rollers with optimized INA profile
- Needle roller bearings in X-life quality
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Sorting

Mobile and compact: the automated picking station

Task in the baking line

- Stacking, placing, freezing, or preparing for further processing

Challenges

- Limited component installation space
- Use of cleaning agents
- Stringent hygiene regulations

Schaeffler solutions

- Food-grade radial insert ball bearing housing units in FD design
- Linear guides and system solutions
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Packaging

Well protected and decoratively packed: the packaging plant

Tasks in the baking line

- Placing products in packaging
- Combining individual packages into cartons

Challenges

- Use of cleaning agents
- Stringent hygiene regulations

Schaeffler solutions

- Monorail guidance systems, track roller guidance systems, shafts and shaft guidance systems
- System and assembly solutions
- Food-grade radial insert ball bearing housing units in FD design
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Application-Specific Solutions for Packaging Processes

Punching

Durable: the punching and stamping machine

Task in packaging processes

- Punching and stamping out cardboard packaging

Challenge

- Constant shock stress on the drive axis in the punching machine

Schaeffler solutions

- Monorail guidance systems
- Deep groove ball bearings and needle roller bearings in X-life quality
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Folding and Gluing

Fast and accurate: the folding box gluing machine

Task in packaging processes

- Precise production of stable and high-quality boxes

Challenge

- Ensuring high-quality packaging while maintaining a high production speed

Schaeffler solutions

- Monorail guidance systems
- Needle roller bearings in X-life quality
- Cam rollers and roller guidance systems (LF)
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Hot Foil Stamping

For a top-quality finish: the hot foil stamper

Task in packaging processes

- Transferring decorative foil under pressure and at high temperatures to finish packaging

Challenge

- High maintenance requirements

Schaeffler solutions

- Monorail guidance systems
- Deep groove ball bearings and needle roller bearings in X-life quality
- Relubrication and maintenance-free bearings with LUBTECT lubricating compound, NSF H1 approved
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Printing

Also suitable for difficult surfaces: the flexoprint machine

Task in packaging processes

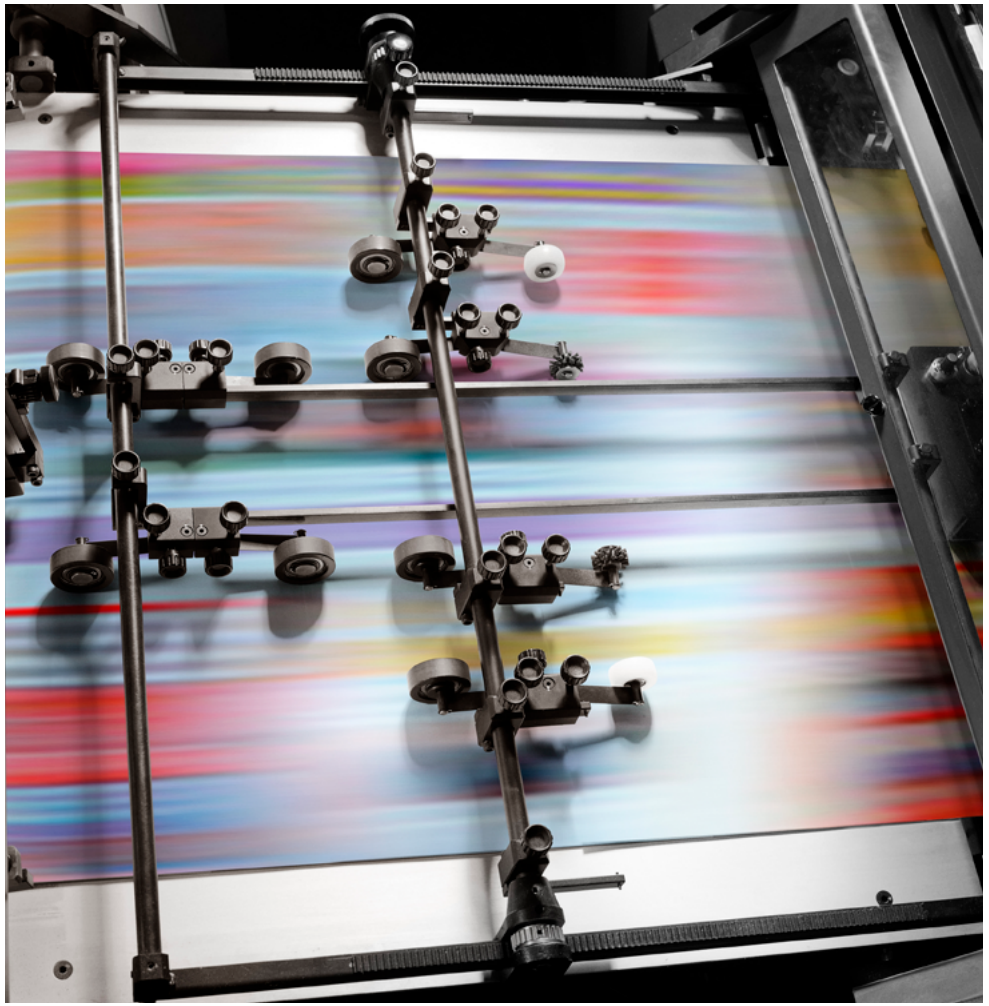
- Printing of packaging using the flexoprint process

Challenge

- Maximum productivity, process stability, and flexibility

Schaeffler solutions

- Needle roller bearings in X-life quality
- Radial insert ball bearing housing units
- Monorail guidance systems
- Cylindrical roller bearings in X-life quality
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions



Bearing Solutions ›

Lifetime Solutions ›

Braille Printing

Making the essentials tangible: the braille printer

Task in packaging processes

- Application of braille script to secondary packaging

Challenges

- High maintenance requirements
- Precision

Schaeffler solutions

- Needle roller bearings in X-life quality
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Periphery

Completing the process: the box loader

Task in packaging processes

- Infeed of process materials (e.g., box loader)

Challenges

- Demand for speed and precision
- Reliability, to ensure the consistency of the main process

Schaeffler solutions

- Deep groove ball bearings and radial insert ball bearing housing units in FD design
- Shaft and monorail guidance systems
- Various lifetime solutions for quick and easy assembly and disassembly

Bearing Solutions ›

Lifetime Solutions ›

Palletizing

Preparation for transport: the palletizer

Task in packaging processes

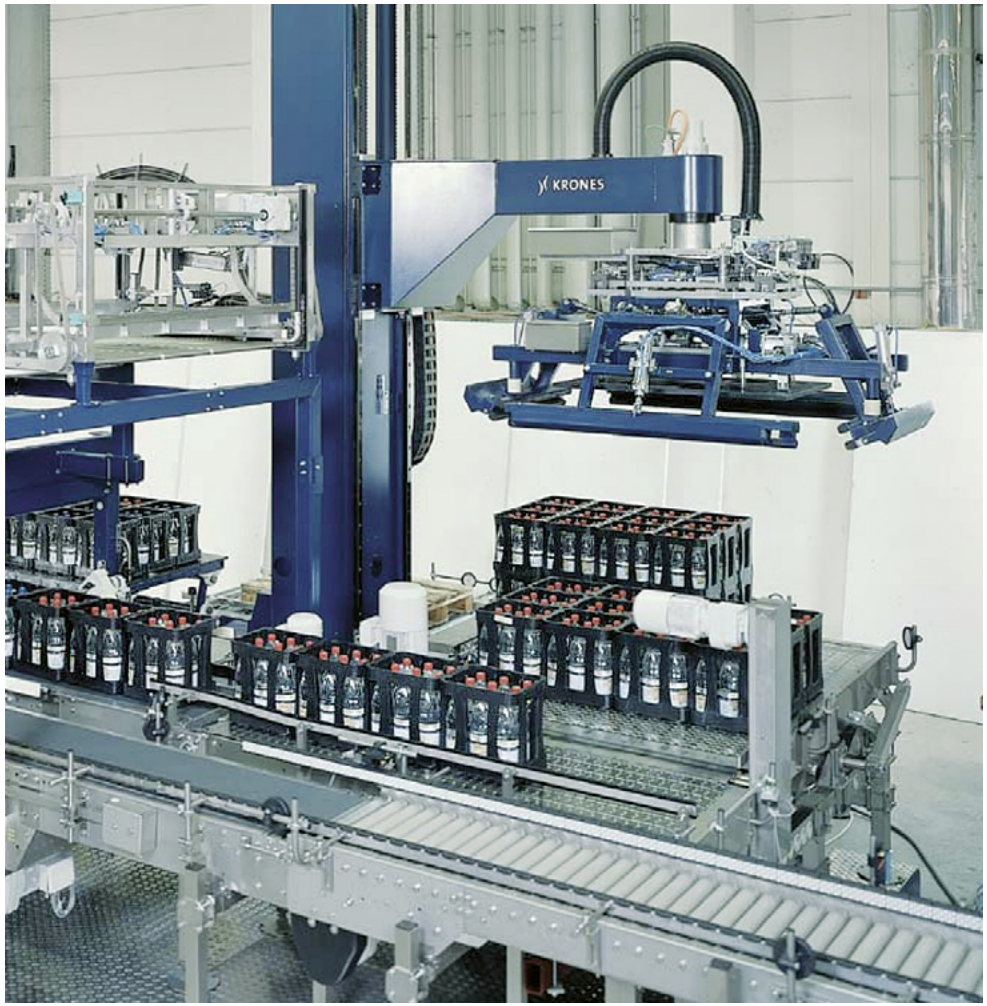
- Pallet loading and unloading

Challenges

- Heavy loads
- All product sizes
- High moment values due to large radius
- Short cycle times

Schaeffler solutions

- Linear guidance systems
- Precision shaft gearheads
- Various lifetime solutions for quick and easy assembly and disassembly



Bearing Solutions ›

Lifetime Solutions ›

Transport by Conveyor

Targeted goods transport from A to B: the conveyor belt

Task in packaging processes

- Transport of goods to the packaging, filling, or palletizing station

Challenges

- Smooth, perfect running for non-stop production
- Demanding environmental conditions
- Stringent hygiene regulations

Solutions

- Food-grade radial insert ball bearing housing units in FD design and radial insert ball bearing housing units, cast iron / sheet steel
- Seals and coatings such as the Corrotect® corrosion protection layer
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Labeling

Decorative content description: the labeler

Task in packaging processes

- Application of labels showing ingredients and nutritional values on front and back

Challenges

- Fast and accurate positioning necessary
- Must cover many different bottle formats, label sizes, and label positions
- Labeling machine settings must be arranged separately
- Resistance to harsh cleaning agents and humidity

Schaeffler solutions

- Food-grade deep groove ball bearings in FD design
- Linear guidance systems
- System and assembly solutions
- Screw drives
- Shafts
- Various condition monitoring systems (SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Stretch Wrapping

Extremely resilient: the foil stretcher

Task in packaging processes

- Wrapping packaging units with foil for goods transport

Challenges

- Highly rigid plant
- Heavy loads

Schaeffler solutions

- Food-grade deep groove ball bearings in FD design
- Slewing rings
- Linear guides
- Yoke and stud-type track rollers with optimized INA profile
- Radial insert ball bearing housing units, cast iron

Bearing Solutions ›

Lifetime Solutions ›

Application-Specific Solutions
Auxiliary units

Compressors and Vacuum Pumps

For versatile application in process engineering

Tasks in the food, beverage, and packaging industry

- Controlling valves in production plants
- Transport of materials in powder form
- Cleaning, fermenting, and cooling
- Vacuum packaging

Challenges

- Contamination-free compressed air (ensuring it is oil-, water-, and bacteria-free)
- Minimum life cycle costs and long service life
- Energy efficiency and reduced CO_2 emissions
- Maximum safety

Schaeffler solutions

- Four-point contact, deep groove, cylindrical, and angular contact bearings
- Needle roller bearings, in inner ring only
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Fans and Ventilators

For maintaining clean air, tempering, and pneumatic transportation

Tasks in the food, beverage, and packaging industry

- Keeping air clean, especially in dusty environments
- Temperature control on the shop floor
- Air supply for production processes
- Smokers, fermentation cabinets, quick freezers, industrial ovens

Challenges

- Maximum availability and energy efficiency
- Effective, low-friction sealing against dust and moisture
- Precise and easy-to-assemble complete bearing systems

Schaeffler solutions

- Gen C friction-optimized deep groove ball bearings
- Ball bearings, axial contact bearings, and cylindrical roller bearings
- Split and unsplit spherical roller bearings
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Gear Units

For use in various applications

Tasks in the food, beverage, and packaging industry

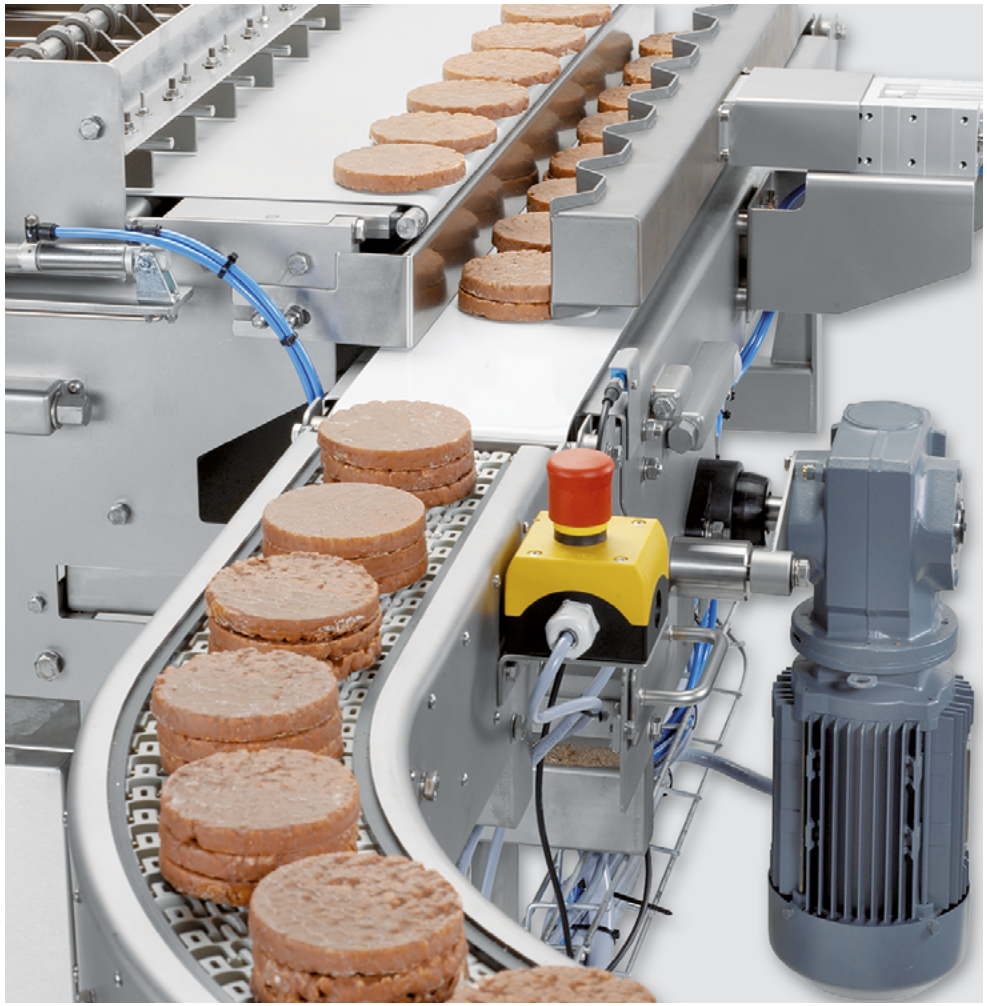
- Translation from (rotational) motion to production machinery
- Actuators and conveyor belt drives
- Robots
- Distribution carousel for bottle filling lines
- Precision gear systems in packaging and processing machinery

Challenges

- Intensive cleaning cycles
- Stringent hygiene requirements
- High radial and axial loads

Schaeffler solutions

- Gen C friction-optimized deep groove ball bearings
- Broad range of other ball bearings and roller bearings
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS) and other Lifetime Solutions



Bearing Solutions ›

Lifetime Solutions ›

Electric Motors

For safe and smooth running

Tasks in the food, beverage, and packaging industry

- Drive for conveyor belts, fans, distribution points, fillers, and portal robots
- Drive for drying, kneading, and mixing machines

Challenges

- Current discharge in frequency converter-driven motors
- Energy efficiency
- Explosion protection
- Maximum availability

Schaeffler solutions

- Current-insulating bearings (deep groove ball bearings, cylindrical roller bearings)
- Gen C friction-optimized deep groove ball bearings
- Deep groove ball bearings, axial contact bearings, and cylindrical roller bearings
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other Lifetime Solutions

Bearing Solutions ›

Lifetime Solutions ›

Pumps

Keeping transport flowing

Task in the food, beverage, and packaging industry

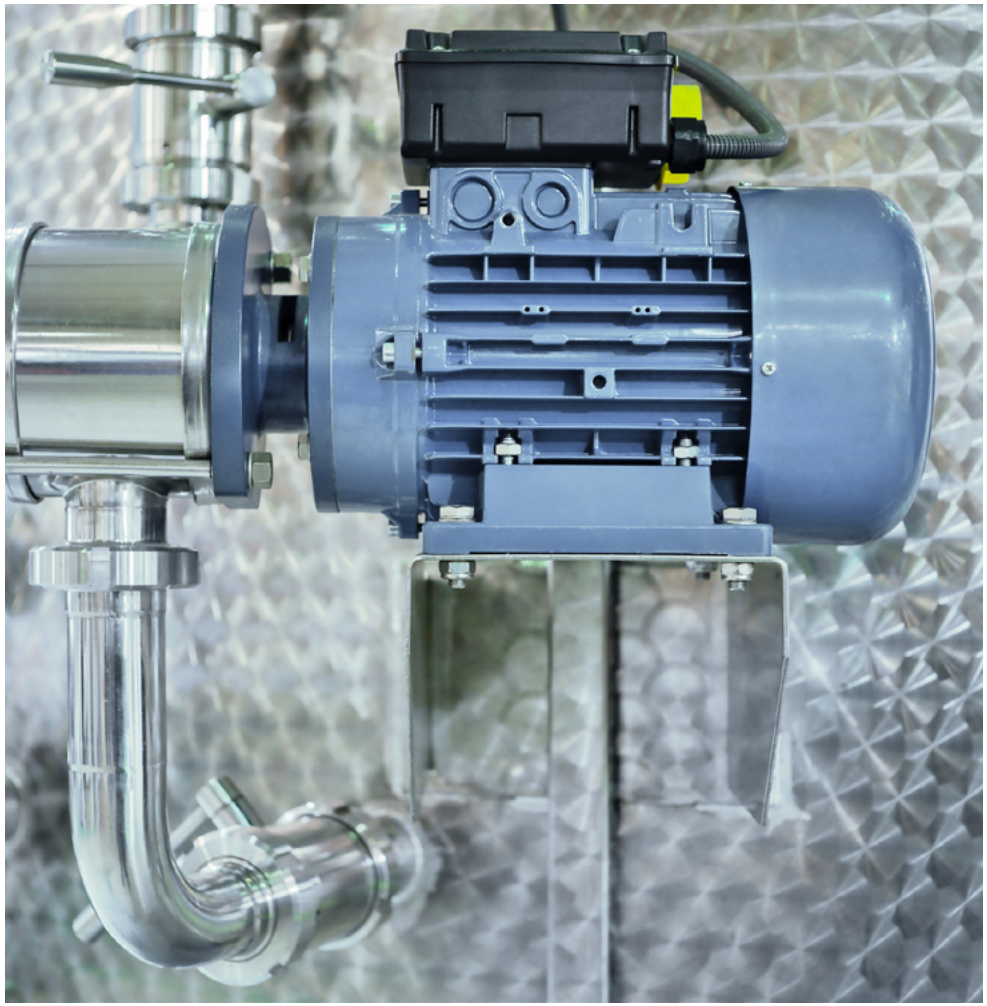
- Further transport and pumping of liquid foodstuffs, beverages, water, and wastewater

Challenges

- Maximum availability
- Energy efficiency
- Optimum sealing with low-friction operation

Schaeffler solutions

- Gen C friction-optimized deep groove ball bearings
- Ball bearings, axial contact bearings, and cylindrical roller bearings
- Sealing solutions
- Various condition monitoring systems (OPTIME Condition Monitoring, SmartCheck, ProLink CMS)
- Optimal lubrication with automatic CONCEPT lubricators or the OPTIME C1 smart lubricator solution
- ARCANOL lubricants and other lifetime solutions



Bearing Solutions ›

Lifetime Solutions ›

Products and Services

Bearing Solutions ›

Lifetime Solutions ›

Bearing Solutions for the Food, Beverage, and Packaging Industry

FOOD Program FD: Deep Groove Ball Bearings

For safe operation in food processing systems

Single-row deep groove ball bearings from the Schaeffler FOOD Program FD were specially developed for the food industry. They offer much greater resistance to corrosion and media than standard deep groove ball bearings. The grease used is approved for use in food production.

Given the stringent hygiene requirements in food production, machine components are regularly cleaned and in many cases are also disinfected. Hot steam, steam jets, and aggressive, corrosive media affect bearing steel, cages, sealing washers and lubricants. That can impact negatively on both service life and running characteristics. Our FD deep groove ball bearings are therefore designed to ensure maximum corrosion resistance and prevent contamination caused by the penetration of water and other substances. Bearing rings, cages, and rolling elements are made of stainless steel. Single-lip contact seals on both sides ensure the sealing effect. FD deep groove ball bearings are maintenance-free, since they are packed with enough grease to last their entire service life. The lubricating grease meets the requirements of NSF and the FDA for use with foodstuffs.

Application areas ›

Product information ↗

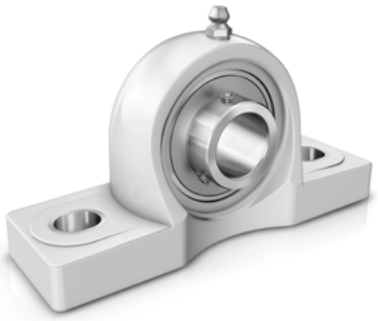
Advantages at a glance

- Use of stainless steel
- High-quality grease with NSF H1 approval and also halal and kosher certification
- Sealed on both sides with elastomer contact seals
- Operating temperatures between –30°C and +100°C
- Resistant to moisture, wastewater, salt spray mist, weak alkaline and weak acidic media
- Optional version as hybrid bearing with Si3N4 ceramic rolling elements

More on media resistance ›

Food Program FD: Radial Insert Ball Bearing Housing Units

For improved safety and efficiency



Radial insert ball bearing housing units from the Schaeffler FD FOOD program consist of a white plastic housing with a high-quality sealing system and prefitted radial insert ball bearing. This design protects the bearing against corrosion and prevents grease from leaking into the processing environment. All materials are EU and FDA compliant, and offer excellent chemical and water resistance.

Sturdy, ready-to-install radial insert ball bearing housing units can be found in almost all production lines across the food processing industry. They're used in conveyor belts, driveshafts, and packaging plants. Radial insert ball bearing housing units in the FOOD Program improve food safety, increase plant efficiency, extend product life, and make cleaning easier. Radial insert ball bearings in FD design are based on single-row deep groove ball bearings. All components are made of stainless steel to ensure higher resistance to corrosion and media. The chemical and hot water-resistant PBT housing works with the seal and protective caps to protect the bearing against contamination and the food against contact with lubricating grease. The food-grade grease used is H1, halal, and kosher certified, and meets the relevant NSF and FDA requirements.

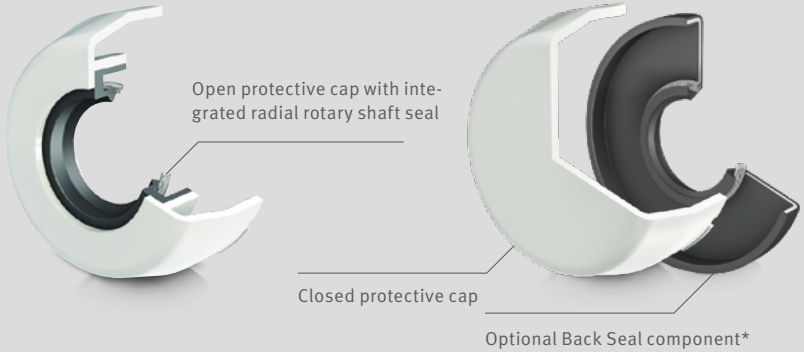
Application areas ›

Product information ↗

Long-lasting shaft bearings in conveyor belts

As a linking element in food and beverage production, conveyor systems have to function reliably 24/7. To avoid plant downtime, the use of plummer block housing and flanged housing units (with radial insert ball bearings, RIBB) is recommended, in two-hole and four-hole housing variants for optimal shaft motion. The spherical outer ring of the corrosion-resistant deep groove ball bearings compensates for static misalignments in the shafts. To prevent grease from escaping into the production environment and to protect the bearing from water ingress during the cleaning processes, the shaft ends are covered using sealed protective caps which are supplied with them.

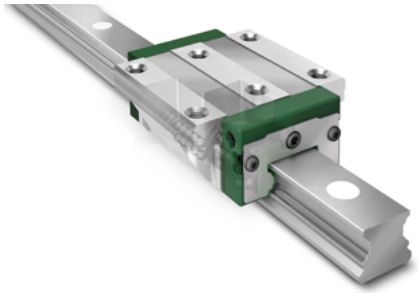
Accessories for radial insert bearing units



*For specific product types only

Linear Guidance Systems

Modular components for improved motion

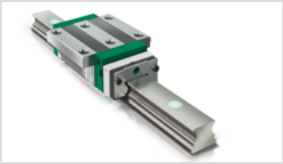


Linear guides are a key component in various applications. This expression covers numerous types of products: monorail guidance systems consisting of carriages and guideways, and also shaft or track roller guidance systems. There are also screw drives and linear units. Schaeffler provides linear guidance systems for all requirements and accessories for extended service life.

Efficient linear guidance systems are essential for ensuring the best possible plant performance. Precise movements enable you to coordinate process stages down to the millimeter, and to transport products from one production stage to the next. Linear guides are low-friction, light, and function extremely reliably. They are designed for maximum loads and are resistant to aggressive cleaning agents and high temperatures.
In addition to proven standard components and system solutions on a modular principle, the Schaeffler portfolio also includes modified components to suit customer requirements. With specially coordinated seals and lubricants, Schaeffler also offers solutions to improve plant service life and performance.

Application areas ›

Product information ↗



Monorail guidance systems
Versatile movement options for continuous operation.
Learn more ›

Track roller guidance systems
Smooth-running components for high speeds.
Learn more ›

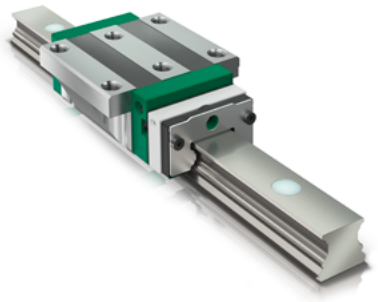
Shafts and shaft guidance systems
Practical linear guides with long, low-maintenance service lives.
Learn more ›

Screw drives
Maximum precision and low-friction operation.
Learn more ›

System technology
Flexible, ready-to-install solution.
Learn more ›

Monorail Guidance Systems

High strength for a wide range of applications

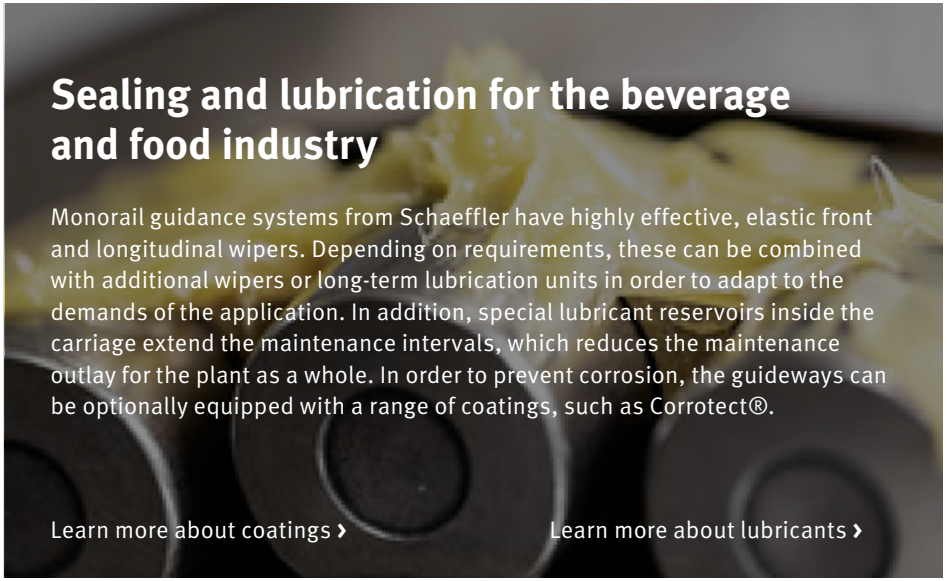


A low-maintenance solution for all applications requiring guidance or positional accuracy: Monorail guidance systems impress with their resilience and load-carrying capacity, offering plenty of design freedom with guides and carriages that can be freely combined.

Monorail guidance systems absorb forces from all directions (except in the direction of motion) and moments around all axes. The Schaeffler product portfolio extends to a range of ball and roller monorail guidance systems, and provides the ideal solution for every application. The monorail guidance systems are available in various accuracy and preload classes. As standard, they have an integrated lubricant reservoir which saves the lubricants directly in the roller element area. That makes for very low-maintenance and long-life products, which can be enhanced further with the optional use of low-corrosion steels. They are suitable for long, unlimited stroke lengths involving heavy loads.

Application areas ›

Product information ↗



The optimum solution for every application

- **Ball monorail guidance systems**
  These consist of guideways and carriages with four or six rows of ball bearings. These include the strongest and stiffest monorail guidance systems based on ball bearings.
- **Miniature ball monorail guidance systems**
  Every unit consists of at least one carriage with one locating face and one guideway each. Miniature ball monorail guidance systems impress with their high load-carrying capacity and minimal space requirements.
- **Roller monorail guidance systems**
  These consist of a carriage with full-complement roller system and guideway. Thanks to the linear contact with the rolling element, roller monorail guidance systems achieve the highest possible load-carrying capacity of all monorail guidance systems.

LF Track Roller Guidance Systems

Highly dynamic thanks to light construction

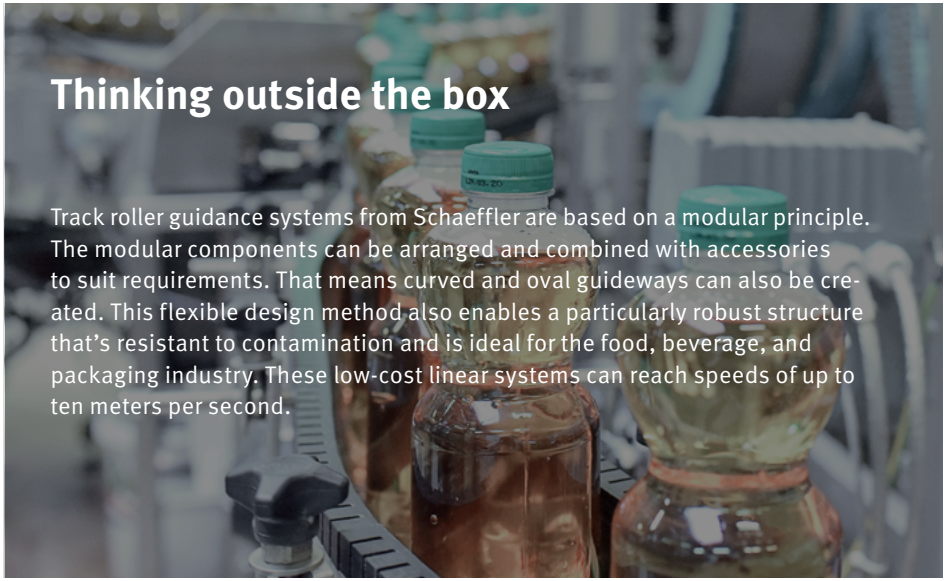
High speeds, quiet operation, and long travel distances: The design of track roller guidance systems makes them perfect for tasks in handling systems. The modular system using standard components covers a broad profile of applications, enabling precisely coordinated designs.

Track roller guidance systems consist of three components: carriages, composite guideways, and track rollers. The components are made of light aluminum, combining low cost with sturdiness. With solid and hollow-section guideways, a support rail of high bending rigidity, half guideways, and curved guideway elements, the modular system provides the right components for both circular and oval guidance systems. These reliable, low-wear components also take up little space.

Track roller guidance systems combine very low friction with the ultimate in quiet running, and they are low-maintenance thanks to well sealed track rollers. Rust-resistant and coated versions are available as options in order to increase resistance to moisture and aggressive media (e.g., cleaning agents).

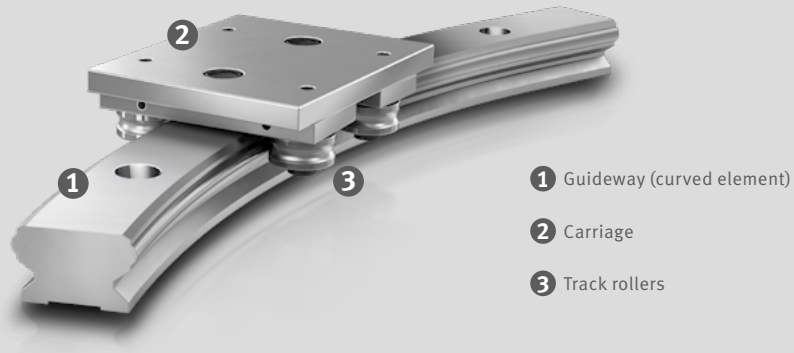
Application areas ›

Product information ↗



With all the advantages of track roller guidance systems

Fast on the curve: turntable trolleys for roller guides on both curved and straight rails.



Shafts and Shaft Guidance Systems

Low-friction modular solutions

Developed for maximum service life: Our shaft guidance systems offer a high load-carrying capacity with minimal space requirements. The application-oriented and technically highly advanced longitudinal guideways combine affordable investment costs and minimal maintenance effort.

Shaft guidance systems consist of shafts and/or shaft supports on which low-friction linear ball bearings or plain bearings run. The lightweight design combines top-level sealing properties with a high level of resilience. The shaft guidance systems impress with their ease of installation and high level of precision. The linear bearings which run on the shaft are designed for high radial loads with minimum weight of their own, and enable longitudinal guideways with unlimited travel. With a shaft length of up to six meters, other stroke lengths can easily be achieved. If a greater length is required, shaft ends can also be prepared for joints. For even more convenience and easier installation at the customer's end, the Schaeffler portfolio also includes complete linear bearing units. Customers benefit from low costs thanks to mass production in high unit quantities with no impact on quality.

Application areas ›

Product information ↗

Five series for perfectly accurate stroke lengths

Schaeffler offers linear units for shaft guidance systems in five different series, each with a specially adapted application focus:

- Compact
- Light
- Heavy duty
- Machined
- Plain bearing

The various series are optimized for offsetting misalignments, running with even less friction, rapid accelerations and travel velocities or an extended service life.

Advantages at a glance

- Five series with a specific focus of application
- Excellent sealing properties
- Low-maintenance and robust
- High power density with a small footprint
- Complete precision and easy assembly
- Minimal friction

Screw Drives

Reasonably priced solution for maximum precision

High performance with low weight and compact design – screw drives are all-rounders and are also suitable for use in difficult circumstances. Schaeffler's screw drive portfolio includes roller screw drives (RGT), ball screw drives (KGT), and planetary screw drives (PWG), thus constituting the ideal solution for every application.

Whereas ball screw drives stand out on account of their fast processing speeds and low friction, planetary drives offer maximum power density and load-carrying capacity, making them excellent drives for actuators. All screw drives from Schaeffler score with excellent repeatability and can be accurately positioned. Another advantage is that the shaft ends can be processed to suit customer requirements. The individual solutions enable easy assembly in any given customer application, and optimum transfer of forces.

To match the various screw drives, the Schaeffler portfolio also includes customized bearing components for the various drive spindles. The two-row axial angular contact bearings, which are also available in X-life design, offer a high dynamic load-bearing capacity with minimal friction and low noise operation.

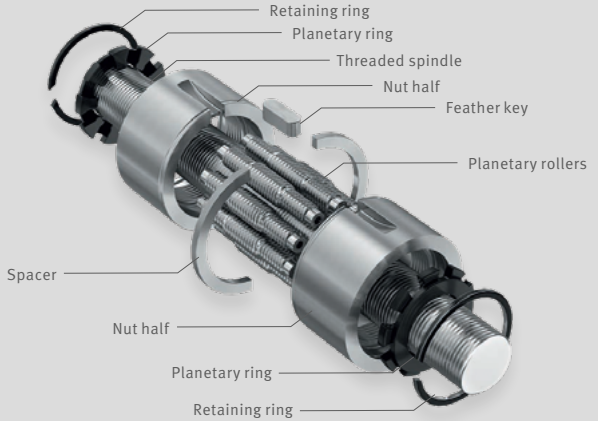
Application areas ›

Product information ↗

State-of-the-art technology for sustainable plastic containers

Screw drives are ideally suited for plastic blow molding of bottles and containers in the food and beverage industry. Their low torque range enables precise process control with the smallest movements. Screw drives excel with a great power density combined with a long service life and high peak load absorption. That means products can be calibrated, injection-molded, and sealed to an ideal level.

Maximum power density – planetary screw drives (PWG)



System Technology

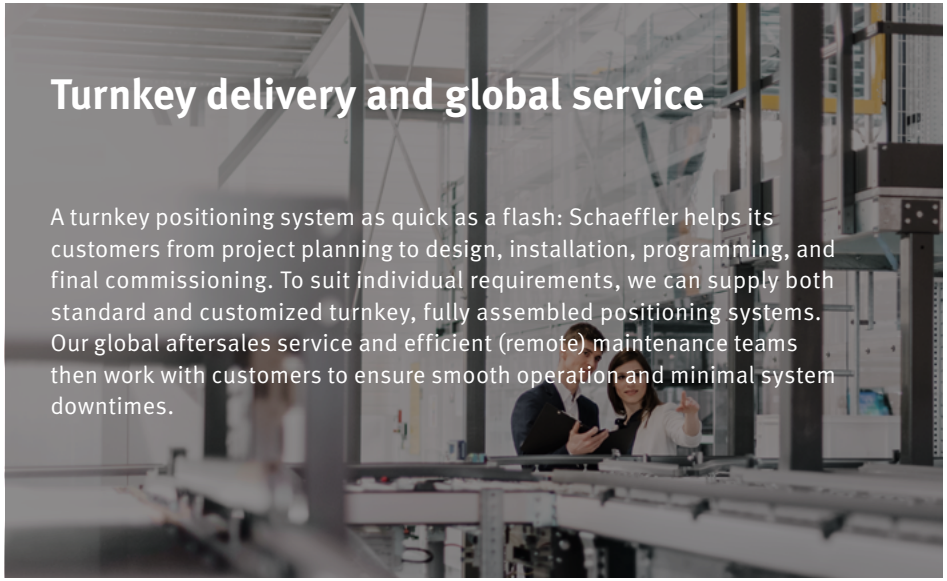
Compact positioning systems for all requirements

Complete, customized solution for handling systems: Our system technology comprises perfectly coordinated linear units with the appropriate accessories and electric drive systems. Depending on what our customers want, we can supply everything from turn-key, single-axis units to fully integrated multi-axis positioning systems.

Schaeffler's portfolio in the area of system technology includes reasonably priced solutions for all areas of application, thanks to the use of standard components that can be used in combination. These perfectly coordinated components save time on planning, design, and procurement. Thus, for example, Schaeffler's solutions for palletizing robots combine a long service life with low power and media consumption. An extensive program of accessories with retaining and connecting elements, couplings, and more, ensures a smooth fit in existing systems.

Application areas ›

Product information ↗



Turnkey delivery and global service

A turnkey positioning system as quick as a flash: Schaeffler helps its customers from project planning to design, installation, programming, and final commissioning. To suit individual requirements, we can supply both standard and customized turnkey, fully assembled positioning systems. Our global aftersales service and efficient (remote) maintenance teams then work with customers to ensure smooth operation and minimal system downtimes.

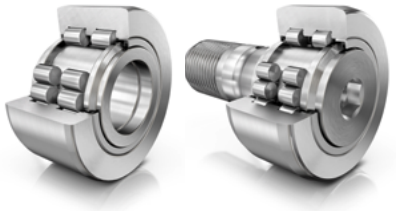
Complete, turnkey solutions

As an option, we can supply your customized positioning system fully assembled and ready to use. Our range of services includes all necessary tasks and preparatory work, such as::

- Project planning and design
- Full and partial design
- Pre-assembly and full assembly of components
- Protection and operating systems
- Controllers and programming
- Transport and final assembly of the positioning system
- Commissioning and aftersales service
- (Remote) maintenance

Yoke and Stud-type Track Rollers

PWTR and PWKR: reliable and robust bearing solution

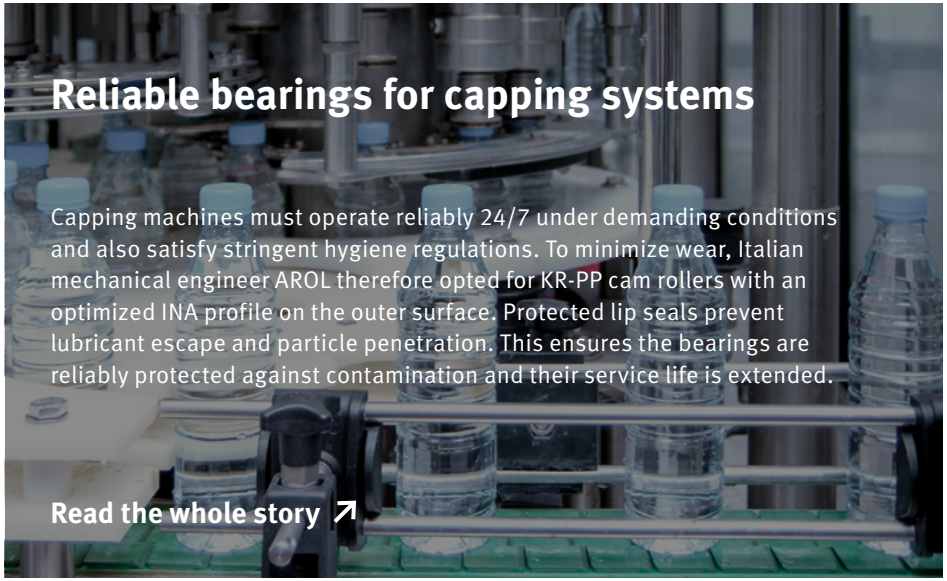


These ready-to-install rolling bearings have particularly thick-walled outer rings with a crowned or cylindrical outside surface. They are easy to assemble using bolts or integrated studs onto an even or curved mating track. They are suitable for accommodating high radial loads and tolerate axial loads caused by skewed running, misalignment, and contact running impacts.

Yoke and stud-type track rollers are available in different versions for use in cam gears, support shafts, and conveying equipment. They stand out on account of their particularly solid outer rings. In design, they correspond to self-retaining, single- or double-row ball bearings. Journals are made with crowned outer rings, machined roller studs and ball and cage assemblies with plastic cages. Back-up rollers are special double- or multi-row needle or cylindrical roller bearings with a thick-walled, profiled outer ring made of steel. These are suitable for transmitting high radial loads. The cam rollers, which are similar in construction, differ mainly by having machined roller studs with a fixing thread.

Application areas ›

Product information ↗



Corrotect® coating provides protection in critical environments

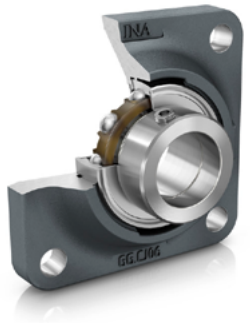
Uncoated (left) and Corrotect-coated track roller (right) following a salt spray test

In principle, yoke and stud-type track rollers made of corrosion-resistant steels can be used in the food and beverage industry. For many applications, however, the more economical special Corrotect coating is recommended. It offers elevated corrosion protection against moisture, wastewater, salt spray mist, and weak alkaline and weak acidic cleaning media.

Learn more about coatings ›

Radial Insert Ball Bearing Housing Units, Cast Iron or Sheet Steel

Turnkey units to offset misalignments



The housing units are available in many different versions, e.g., plummer block housing, flanged housing, or take-up housing units. The units are ready to assemble and consist of cast iron or sheet steel housings in which the radial insert ball bearings are integrated.

The dimensions of the cast iron radial insert ball bearing housing units are standardized in accordance with DIN/ISO 3228. They are well suited for offsetting static shaft misalignments caused by imprecise assembly and tolerances in the adjacent construction. The radial insert ball bearing housing units can be screwed to the adjacent construction, can be relubricated, and are highly resilient. This especially applies to the optional versions covering the expanded temperature range of –40°C to +180°C and high temperatures of up to +250°C. All catalog cast iron housings are available with a lubrication groove and hole.

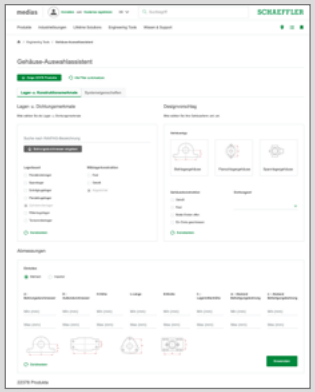
The dimensions of the steel plate radial insert ball bearing housing units are standardized in accordance with DIN/ISO 3228 / JIS B 1559. The two-part units, pressed from deep-drawn sheet metal, have a good load-carrying capacity combined with minimal weight, and are suitable for assembly on uneven surfaces.

Application areas ›

Product information ↗

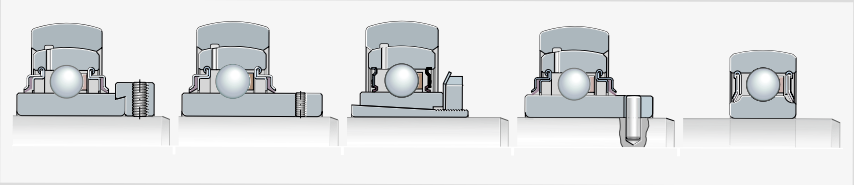
Housing selection assistant

The housing selection assistant helps with the choosing of the right housing and the right housing units for the application in question, drawn from the extensive portfolio of Schaeffler housings. Thanks to its intuitive user guide, this tool is easy to use. It considers both bearing and design features in addition to system properties. Both metric and imperial units can be entered.



To the Housing Selection Assistant ↗

Location methods for radial insert ball bearings



Various location methods are available for radial insert ball bearings:

- Assembly on drawn shafts
- Alternative location method using profiled bores, e.g., square or hexagonal bores, and with a fit seat on the shaft

Needle Roller Bearings

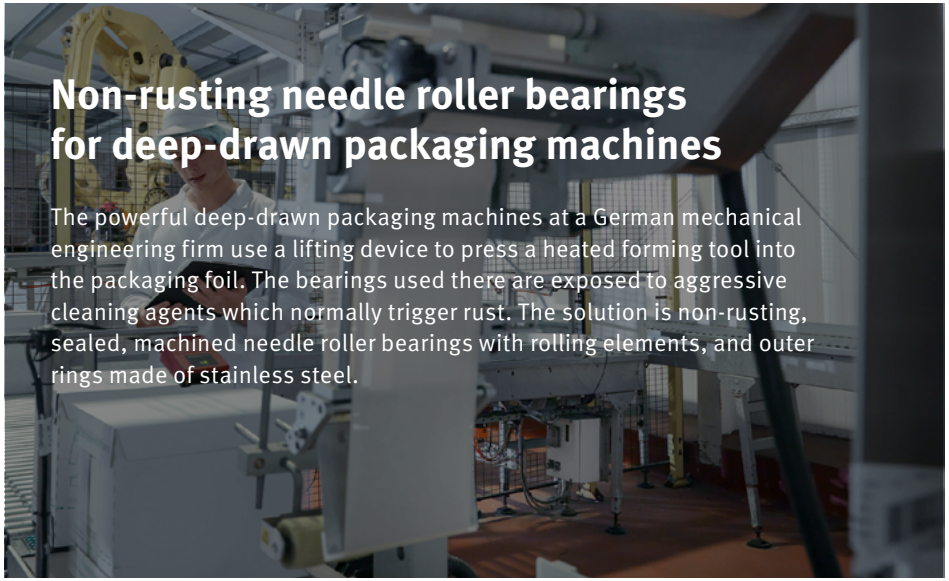
High load capacity in a small size

Proven for machine elements for shaping bearings with a high load-carrying capacity while saving radial space: Schaeffler offers the whole range of needle roller bearing solutions. In addition to many radial needle roller bearings, axial needle roller bearings in X-life quality also form part of the range, in addition to drawn cup needle roller bearings.

Needle roller bearings are rolling bearings with an especially low section height. Their rolling elements look like needles, and while they resemble cylindrical rollers, they are much thinner and longer, giving them a high load capacity relative to their respective size. The Schaeffler portfolio includes needle roller bearings with or without ribs and with or without an inner ring. Combined needle roller bearings comprising radial needle roller bearings with a rolling bearing component capable of supporting axial loads are also available from Schaeffler in X-life quality. The X-life machined needle roller bearings from Schaeffler also stand out thanks to their even higher load rating, which is 13 percent higher than traditional needle roller bearings. This is possible thanks to their improved surface quality. The result: a longer operating life, reduced demand on the lubricant, and less friction for lower bearing temperatures.

Application areas ›

Product information ↗



Non-rusting needle roller bearings for deep-drawn packaging machines

The powerful deep-drawn packaging machines at a German mechanical engineering firm use a lifting device to press a heated forming tool into the packaging foil. The bearings used there are exposed to aggressive cleaning agents which normally trigger rust. The solution is non-rusting, sealed, machined needle roller bearings with rolling elements, and outer rings made of stainless steel.

The needle roller bearing portfolio at a glance

- Machined needle roller bearings with ribs on the outer ring
- Machined needle roller bearings without ribs on the outer ring
- Aligning needle roller bearings
- Combined needle roller bearings
- Needle roller and cage assemblies
- Drawn cup needle roller bearings with open end
- Drawn cup needle roller bearings with closed end
- Axial needle roller bearings

Angular Contact Bearings

For combined radial and axial loads

Low noise and durable even when prevailing forces differ, angular contact bearings in the X-life version optimally support different loads acting simultaneously and transmit them from one raceway to another.

Schaeffler offers angular contact bearings in single-row and double-row versions. Whereas single-row bearings are ideal for radial loads and for medium to heavy axial loads in one direction, double-row bearings can support heavy radial and axial loads as well as tilting moments in both directions. In terms of design, they correspond to two single-row angular contact ball bearings in an O arrangement, but they are narrower to a certain extent. This makes them the first choice for smaller design envelopes. Angular contact bearings from Schaeffler are available with plastic, brass, and sheet-steel cages.

Application areas ›

Product information ↗

Filling and capping perfectly coordinated

To prevent contamination with benzene, steam, oxygen, extraneous odors, or microorganisms, bottles in beverage production must be capped quickly after filling. Two capping machines from a major German OEM make use of double-row sealed angular contact bearings made of stainless steel and ceramic rolling elements for this purpose.

Silicon nitride ball bearings (Si_3N_4 ceramic)

Silicon nitride is one of the technical ceramics with the highest performance. This chemical compound is particularly resistant to most acids and alkalis commonly encountered in processing operations in the food industry. This extends the (service) life of the bearing, even under extremely high loads.

Spindle Bearings

For the highest requirements for guidance accuracy

Spindle bearings are high-precision, single-row angular contact bearings for maximum speeds. Thanks to their extremely tight tolerances, they are used in applications with high demands on guidance accuracy in particular.

We offer spindle bearings in all versions demanded for system-specific spindle drives. An application-based selection of contact geometry, material, surface quality, and lubricant feeds ensures excellent rotatory power, maximum precision, rigidity, high radial load-carrying capacity, and excellent vibration performance. The most important design variables are steel or ceramic balls, which may also take the form of hybrid bearings, various steel qualities, open and sealed versions, Direct Lube and X-life designs. Universal spindle bearings are designed to enable them to be assembled in any arrangement or combined in varying sets with no loss of performance. Both inventory maintenance and the procurement of spare parts are made easier as a result.

Application areas ›

Product information ↗

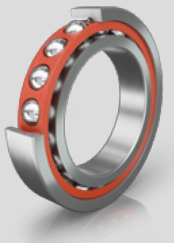
B-spindle bearings in standard and hybrid versions (with ceramic balls)

Features

- Classical spindle bearings
- Large balls
- Contact angle 15° and 25°
- For moderate speed levels
- These bearings are available with steel and ceramic balls and in open, sealed and Direct Lube design

Benefits

- Compact design
- High load absorption, rigidity, and long service life



Advantages at a glance

- Bearings are ready to fit
- Reduced assembly input
- Long service life
- Major economic benefit
- Compact design despite high load absorption
- Robust and long-life applications
- High load-carrying capacity and rigidity

Torque Motors: RIB Series

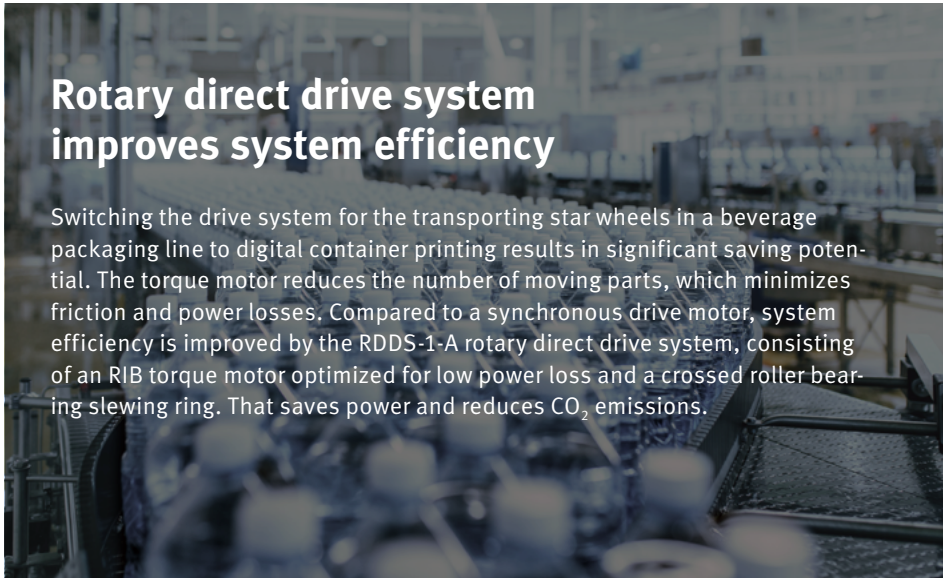
For high system efficiency and reduced energy requirements

Ready to install, rotary AC direct drives in the RIB series are slotted motors with an internal rotor. These permanently magnetically excited synchronous torque motors are optimized for extremely dynamic motion, high torques, and precise positioning. They combine a compact design and high torque density, and represent a cost-saving downsizing solution.

Torque motors transmit the force generated in a magnetic field directly to the drive shaft. That offers significant advantages in terms of dynamics, rigidity, precision, and energy consumption. In the RIB series, the primary component is the fully encapsulated stator with an external cooling jacket. The secondary component is an internal cylindrical interference ring with a large internal diameter and permanent magnets attached on the outside. Depending on requirements, RIB direct drives can be optimized for maximum torque or for low power loss. With no change in footprint, the torque motors can offer more power or use load reserves to improve efficiency with lower capacity utilization. In practice, that means up to 20 percent more torque or as much as 30 percent less power loss.

Application areas ›

Product information ↗



Rotary direct drive system improves system efficiency

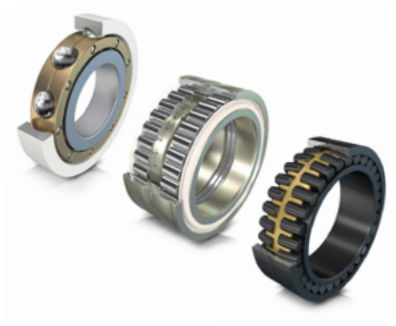
Switching the drive system for the transporting star wheels in a beverage packaging line to digital container printing results in significant saving potential. The torque motor reduces the number of moving parts, which minimizes friction and power losses. Compared to a synchronous drive motor, system efficiency is improved by the RDDS-1-A rotary direct drive system, consisting of an RIB torque motor optimized for low power loss and a crossed roller bearing slewing ring. That saves power and reduces CO_2 emissions.

Advantages at a glance

- Optimized for low power loss
- High dynamic response and system rigidity
- Compact design
- Maintenance-free
- Good synchronization characteristics
- Reduced energy consumption
- Cost savings through downsizing
- Higher machine accuracy possible

Special Coatings

For high performance and long service life



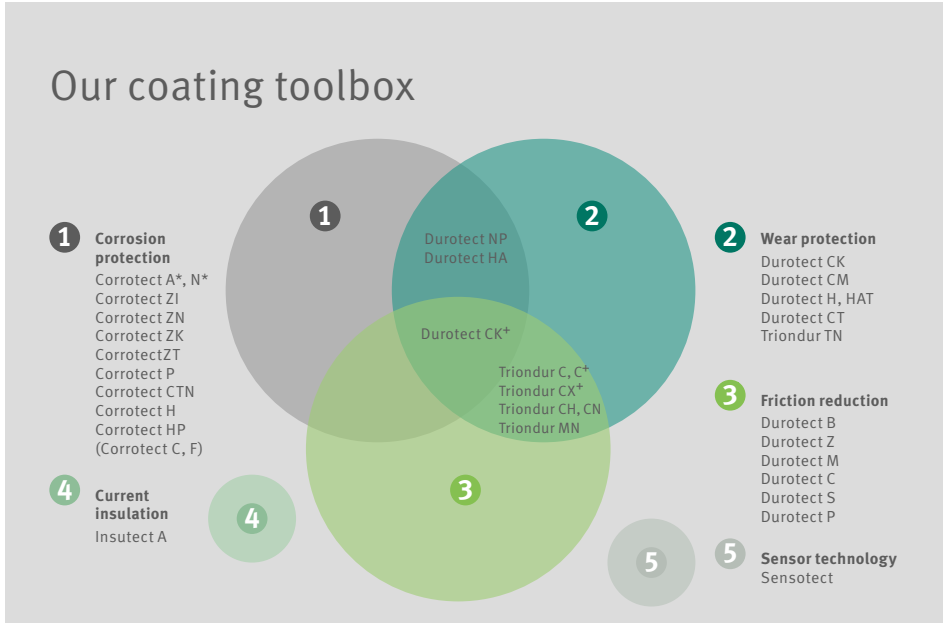
On an optional basis, functional coatings can be applied to our precision components and systems. The surface qualities optimized in this way improve component performance and service life, improve their resistance to cleaning agents and to deterioration caused by the foodstuffs themselves. Maintenance intervals are extended, and power losses are reduced.

The choice of coating method depends on the individual requirements in terms of bearing properties. Corrotect® coating systems are used mainly to protect against corrosion. The Durotect® process is recommended if protection against wear and tear and friction is required, either individually or in combination. For components which are also subject to major tribomechanical stresses, Triondur® coating systems produced using the PVD or CVD process are recommended. Insutect® coating systems are used almost exclusively for electrical insulation. The sensory coating Sensotect® is relevant to Industry 4.0 and the digitalization of production processes. It enables the continuous measurement of force and torque on two- and three-dimensional component geometries. The sensor technology is applied directly to the component surface using PVD technology and subsequent laser structuring.

Application areas ›

Product information ↗

Our coating toolbox



LUBTECT

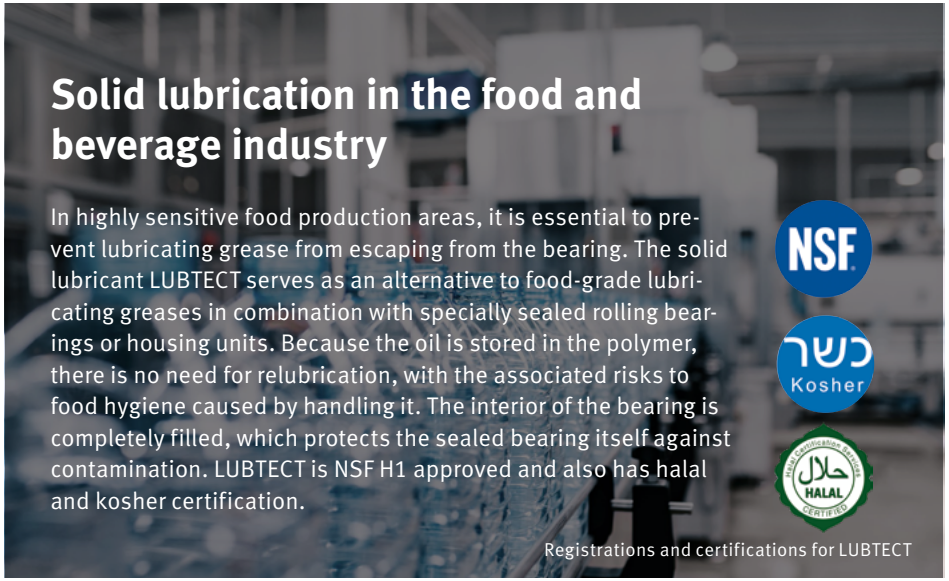
Maintenance-free, long-life solid lubricant

The solid lubricant LUBTECT is suitable for applications involving rapid acceleration, oscillating motion, and low speeds. It can't be forced out of the roller bearing raceway. In sensitive production environments, there is practically no risk of contamination thanks to the special properties of the material.

LUBTECT is a lubricant with dimensional stability, in which a polymer functions as a porous carrier which absorbs the oil like a sponge. LUBTECT almost completely fills the inside of the roller bearing. Since the solid lubricant can't be forced out of the roller bearing, the rolling elements are always surrounded by the lubricant. Under load, the polymer releases small amounts of oil, and absorbs it again at rest. For applications involving very low speeds and heavy loads in particular, LUBTECT reliably assures the formation of a separating lubricating film between the rolling element and raceway. Under rapid acceleration, it can't be displaced to zones with lower kinematics, and during short, repetitive swivel movements, brinelling on the bearing raceways caused by inadequate lubrication is effectively avoided. Since LUBTECT is dimensionally stable, it also eliminates the risk of contamination from escaping lubricant or contamination of products and packaging in sensitive production environments.

Application areas ›

Product information ↗



Advantages at a glance

- Broad range of applications: can be supplied for deep-groove bearings, tapered roller bearings, spherical roller bearings, and cylindrical and needle roller bearings
- Low maintenance costs since no relubrication is needed
- Service life up to five times longer*
- No washing out during cleaning processes
- Extremely low moments of friction
- High resistance to water, media, and dust
- No forming of condensation
- Non-allergenic
- NSF H1 approved, also kosher and halal certified

*Compared to bearings using lubricating grease

Slewing Rings

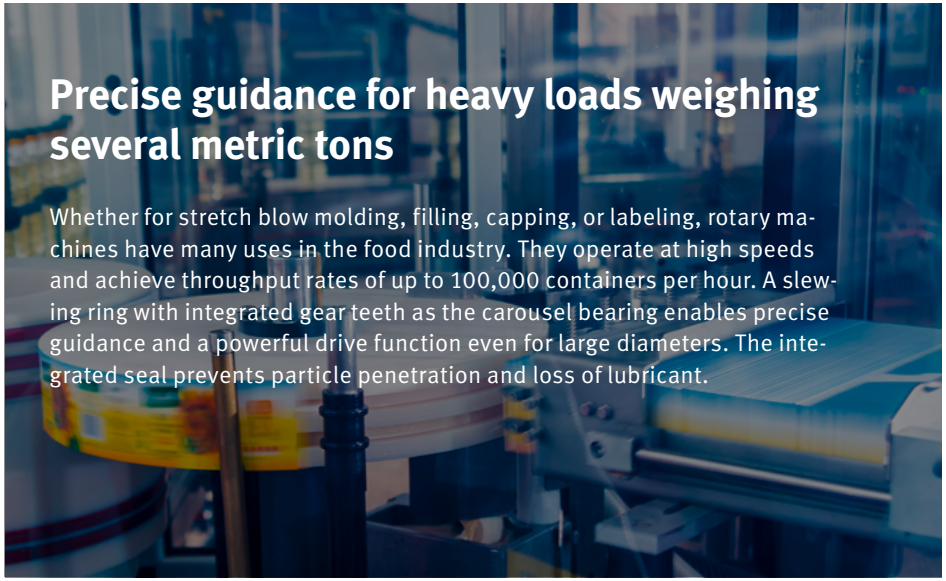
For radial, axial, and tilting moment loads

Slewing rings are generally very large ball or roller bearings with a high load-carrying capacity, which are used mainly in heavy mechanical engineering situations. They are designed especially for oscillating movements, slowly rotating motions, and heavy stationary loads, and reliably absorb axial forces and tilting moments.

Thanks to their design, slewing rings can often enable conventional bearing arrangements involving a combination of radial and axial bearings to be reduced to one bearing position. This makes them particularly economical, since the effort and cost involved in connection design can sometimes be significantly reduced as a result. They are used for heavy loads and stringent safety requirements, and must cope with slow rotatory and swivel movements in particular. The bearing rings are made without gear teeth, but can also be supplied with outward- and inward-facing teeth for drive solutions. Slewing rings are available in various versions, as four-point contact ball bearings, crossed roller bearings, and Y-bearings, for example.

Application areas ›

Product information ↗



Precise guidance for heavy loads weighing several metric tons

Whether for stretch blow molding, filling, capping, or labeling, rotary machines have many uses in the food industry. They operate at high speeds and achieve throughput rates of up to 100,000 containers per hour. A slewing ring with integrated gear teeth as the carousel bearing enables precise guidance and a powerful drive function even for large diameters. The integrated seal prevents particle penetration and loss of lubricant.

Differences between four-point contact and crossed roller bearings

Four-point contact ball bearings:

- When the connection design is uneven or right-angled
- Low requirement for bearing precision and rigidity
- Compact design on account of single-row structure
- For use in rotary axes in filling machines, etc.

Crossed roller bearings:

- Higher load-carrying capacity than four-point contact ball bearings
- For smooth, jolt-free running and low rotational resistance
- High (axial) run-out accuracy and rigidity
- For use in robots, machine tools, etc.

Tapered Roller Bearings

Bearings with optimum load distribution

Heavy-duty, reliable, and energy efficient: Tapered roller bearings balance loads effectively due to their bearing spacing and ensure precise and rigid shaft guidance. They have a broad speed range and are easy to adjust, disassemble, and assemble.

Tapered roller bearings manage radial and axial loads with equal effectiveness. They are also characterized by a broad usable range of speeds. The tapered roller bearings reliably withstand loads even under adverse conditions and ensure precise and rigid shaft guidance. The adjustability and removability of the bearings ensure easy installation and maintenance. Schaeffler offers most of the standard series of tapered roller bearings in X-life quality. The effect: higher load capacity, less maintenance, longer service life, and optimized overall cost-effectiveness. We also offer a wide range of flexible and individual product solutions through our concept of partnership-based development.

Application areas ›

Product information ↗

Benefits of X-life quality

- Dynamic load ratings increased by up to 20%
- Approximately 70% longer service life under the same operating conditions
- Up to 75% less friction
- Lower operating costs, thanks to reduced energy consumption
- Extended maintenance intervals, thanks to improved lubrication
- Less strain on lubrication, thanks to reduced heat generation

Deep Groove Ball Bearings

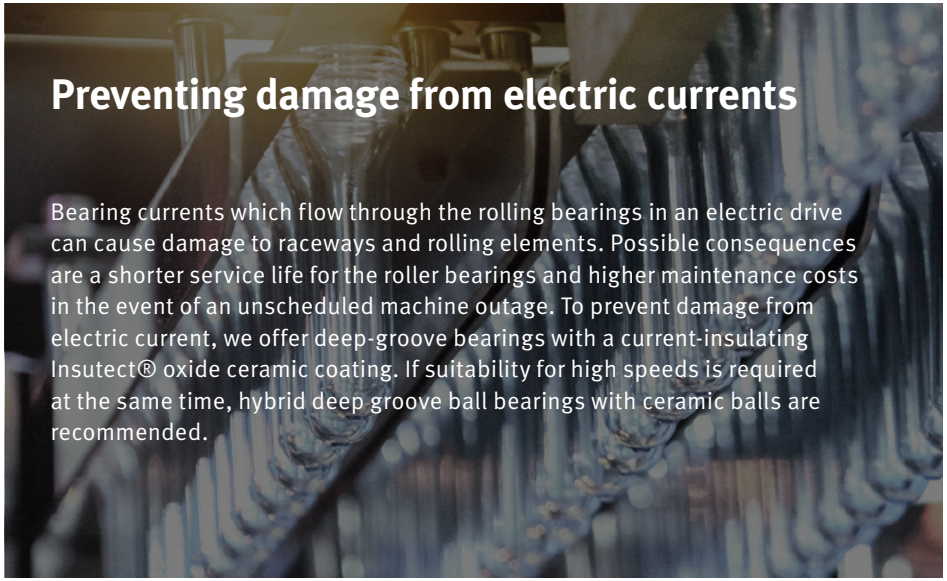
For low-friction, reliable operation

Deep groove ball bearings are versatile, self-retaining bearings. These bearings, with a simple design, high resistance, durability, and low maintenance, are available in different variants: single-row or double-row, open or sealed design.

Single-row deep groove ball bearings are designed for high speeds and can accommodate both radial and axial forces. If a large radial load-carrying capacity is required for which single-row deep groove ball bearings are not sufficient, the double-row variants are the best choice.
They can be subjected to higher loads because of the larger number of rolling elements. Since the bearings also support loads caused by tilting, they are suitable for particularly short shafts that are only to be supported by one bearing. Deep groove ball bearings are especially used in electric motors for driving industrial pumps and fans, but these versatile bearings are also primarily deployed wherever components rotate.

Application areas ›

Product information ↗



Generation C deep groove ball bearings

More durable, quieter, lower friction:

- Suitable for high speeds
- Refined manufacturing processes
- Reduced amount of noise generated
- Optimized bearing kinematics
- High sealing effect without friction losses

Spherical Roller Bearings

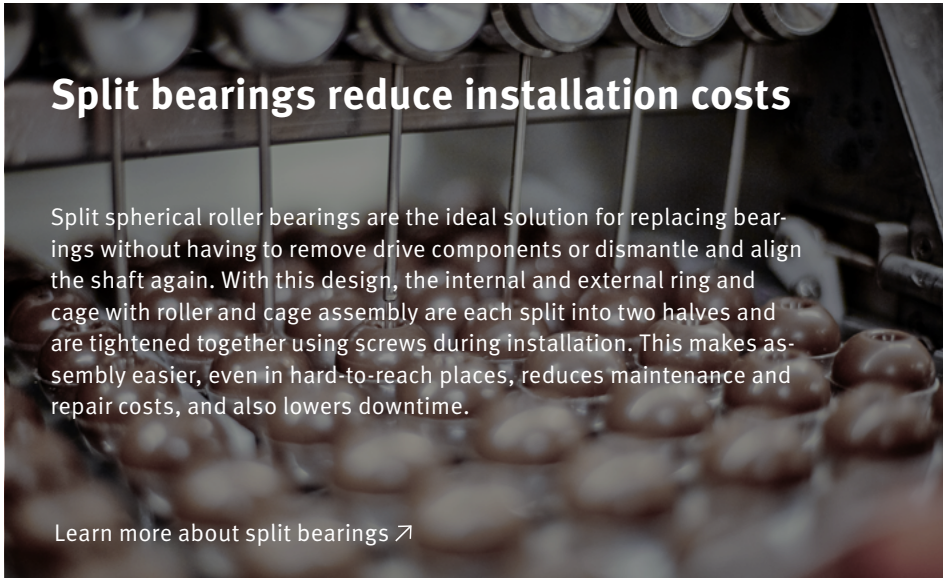
For special loads and long service life

Designed for the highest loads, our spherical roller bearings are made for plants in which high stresses occur and where shaft deflections or misalignments have to be compensated. In every area of application, they are distinctive for their high performance and reliability.

X-life increases performance, cost-effectiveness, operating life, and reliability. Decisive advantages from which customers benefit include optimum kinematics, low wear, and a 60% longer service life, with low maintenance requirements and minimal costs compared to the previous standard. The versatile bearings also save space as significantly smaller bearings can easily match the performance of larger variants.

Application areas ›

Product information ↗



Split bearings reduce installation costs

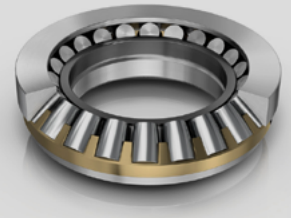
Split spherical roller bearings are the ideal solution for replacing bearings without having to remove drive components or dismantle and align the shaft again. With this design, the internal and external ring and cage with roller and cage assembly are each split into two halves and are tightened together using screws during installation. This makes assembly easier, even in hard-to-reach places, reduces maintenance and repair costs, and also lowers downtime.

Learn more about split bearings ↗

Ideal for heavy loads and high speeds

If, in addition to very high load-carrying capacity, the application demands suitability for fast speeds and offsetting shaft deformations and misalignments, our single-row, adjustable-angle axial-spherical roller bearings are the first choice. The raceways are arranged oblique to the bearing axis, and the machined barrel rollers are asymmetrically arranged. On account of this special geometry, axial-spherical roller bearings absorb very strong, unilateral axial forces and high radial loads simultaneously.

Learn more ↗



Cylindrical Roller Bearings

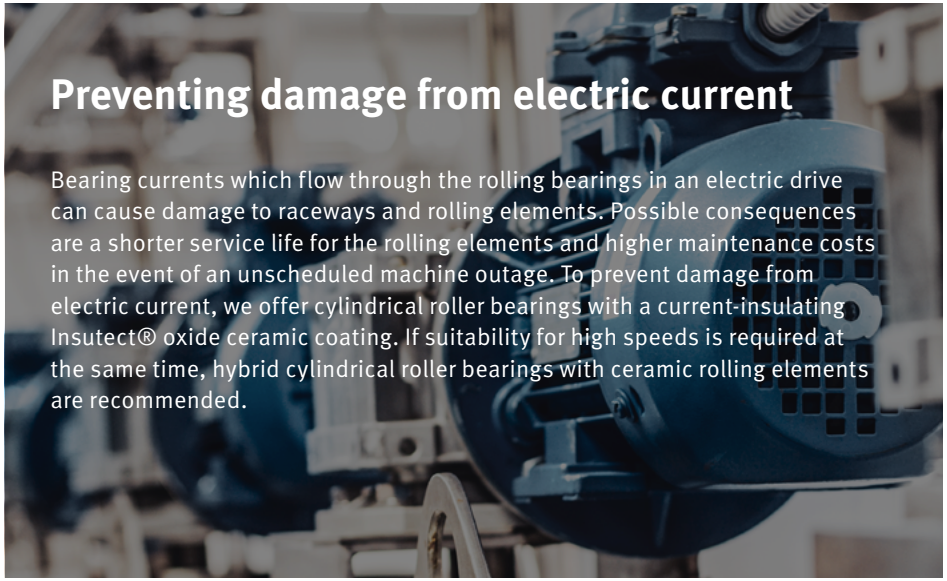
For heavy radial and axial loads

Able to withstand enormous forces: Cylindrical roller bearings can withstand extremely heavy radial loads, and can also handle axial forces if they are used as support or locating bearings. Radial loads are transferred via the race, while axial loads are transferred via the rolling-element end faces and ribs.

Cylindrical roller bearings basically comprise a single- or multi-row set of cylindrical rolling elements. They are available in a variety of designs, dimensional ranges, and sizes to meet specific requirements. Options include different combinations of ribs on the inner and outer rings, with or without a cage, in a single-row full-complement or double-row full-complement version, and with a variety of cage versions, or also X-life quality. What all the versions have in common is that they are all suitable for heavy radial loads, because, in contrast to a ball, a roller has a larger contact area perpendicular to the roller axis. This doesn't just enable a more efficient transmission of greater forces, it also makes the bearings more rigid and smaller in size for the same load. Cylindrical roller bearings are easy to dismantle and mount.

Application areas ›

Product information ↗



Preventing damage from electric current

Bearing currents which flow through the rolling bearings in an electric drive can cause damage to raceways and rolling elements. Possible consequences are a shorter service life for the rolling elements and higher maintenance costs in the event of an unscheduled machine outage. To prevent damage from electric current, we offer cylindrical roller bearings with a current-insulating Insutect® oxide ceramic coating. If suitability for high speeds is required at the same time, hybrid cylindrical roller bearings with ceramic rolling elements are recommended.

Optimal performance with X-life quality

- Dynamic load ratings increased by up to 20%
- Approximately 70% longer service life under the same operating conditions
- Up to 50% less friction
- Much longer service life with equivalent loading
- Higher performance with matching service life
- Same dimensions as standard bearings

Lifetime Solutions

OPTIME Ecosystem

Easy in every way

Consisting of award-winning solutions for both condition monitoring and smart lubrication, the OPTIME Ecosystem reduces unplanned downtime by making predictive maintenance easy for the process industry. Here is an overview of the ecosystem's elements and how they work together.

OPTIME User Interface
Including an intuitive mobile app, dashboard, and expert viewer: these user interfaces give users easy access to the right information at the right time, no matter where they are or what their role is.

OPTIME Cloud & Analytics
With unlimited processing power and capacity, OPTIME Cloud & Analytics takes huge amounts of data and makes it easy to understand and work with.

OPTIME REST-API
The OPTIME REST-API makes it easy to connect the OPTIME Ecosystem to other existing systems – and get the most out of the data collected.

OPTIME Gateway
A standalone device that lets users connect to the OPTIME Cloud via a mobile network or Ethernet. Makes secure cloud connectivity and IT integration easy.

OPTIME Mesh Network
Connecting all OPTIME Ecosystem devices via the gateways: The automatic and self-healing OPTIME Mesh Network is easy to set up, needs low energy, and makes large-scale installations possible.

OPTIME Condition Monitoring
Wireless vibration sensors that let users monitor their machines from wherever they are.

OPTIME Smart Lubrication
Smart lubricators that simplify the complex job of machine lubrication.

OPTIME Connector Service
The OPTIME Connector Service lets users easily connect even more devices to the OPTIME Ecosystem and get a more comprehensive overview of what their machines are doing.

Application areas ›
Product information ↗
Learn more about OPTIME Condition Monitoring ›
Learn more about OPTIME C1 ›

OPTIME Condition Monitoring

Plug. Play. Predict.

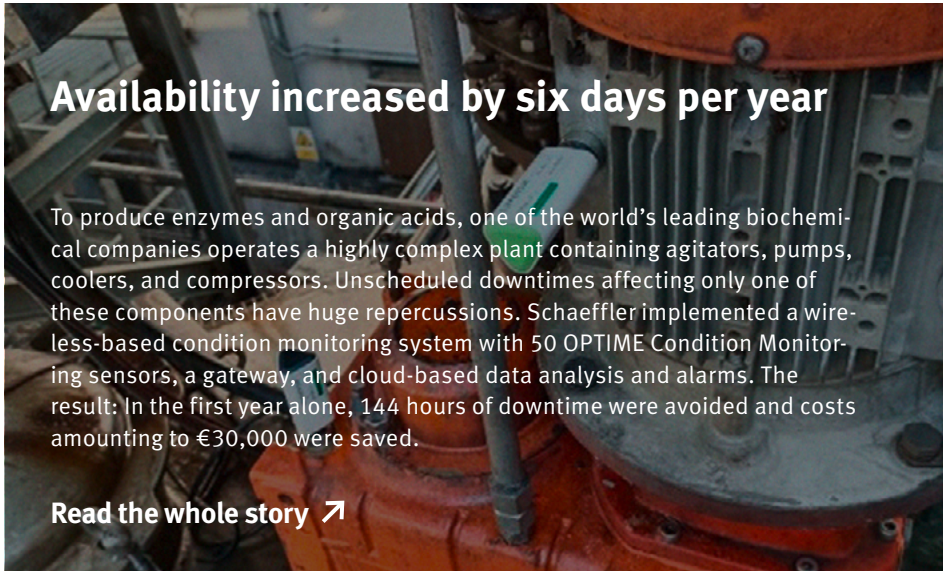
Condition monitoring can be expensive. Which is why up to 95% of all machines inside factories are only sporadically monitored – or not at all. This can lead to breakdowns and unplanned downtime.

Schaeffler's OPTIME Condition Monitoring solution helps eliminate such downtime thanks to wireless vibration sensors that can detect potential damage, imbalances, and misalignments weeks in advance. Its simple plug-and-play functionality means installing it takes mere minutes – no prior experience required. This allows entire plants to be monitored in just a single day.

The wireless condition monitoring solution also works with almost all machines – and is more affordable than most other condition monitoring solutions. And scaling up is always possible as additional vibration sensors can be easily added at any time.

Application areas ›

Product information ↗



OPTIME Ecosystem

Easy in every way

Consisting of award-winning solutions for both condition monitoring and smart lubrication, the OPTIME Ecosystem reduces expensive downtime by making predictive maintenance easy for the process industry.

Learn more about the Ecosystem ›

ProLink CMS

Multi-channel condition monitoring system for vibration measurement

ProLink CMS monitors the condition of machinery and equipment by measuring vibrations. The system is ideally suited for monitoring complex aggregates and, thanks to remote sensor technology, is ideal for use in harsh ambient conditions.

ProLink is a vibration monitoring system for ongoing frequency-selective plant monitoring. It consists of a processor module and up to four vibration modules as well as four further I/O modules for the detection of additional signals, such as temperature, loads or similar. This covers a wide range of applications. Integrated Schaeffler SmartWeb software is used for simple configuration. The connected modules along with their inputs and outputs are configured in it and adapted to the system on site. After the analysis, the system can transmit characteristic values or alarms (up to a maximum 32 analog signals) to a control system. With the help of interfaces such as OPC/UA or Profinet, all information from the ProLink can be transmitted to the higher-level control system.

Application areas ›

Product information ↗

Fail-safe operation in negative temperatures

In the cool and cold stores of Zentis GmbH & Co. KG in Aachen, Germany, shelf servicing units transport heavy loads in all directions. This places a heavy strain on the bearings in the units. Because a replacement during an unscheduled downtime would be very time-consuming, Zentis looked for a monitoring solution which would detect the maintenance requirement at an early stage. Certified Schaeffler sales partner KSA Kubben + Steinemer created a customized solution based on ProLink CMS, which still delivers reliable measured values even under harsh frost conditions.

Read the whole story ↗

Advantages at a glance

- Simple commissioning, immediately ready for use
- Wide range of integration options
- Visualization of all information about system status
- Early fault detection
- Connectivity with digital infrastructure
- Hygienic, safe installation in the control cabinet

SmartCheck

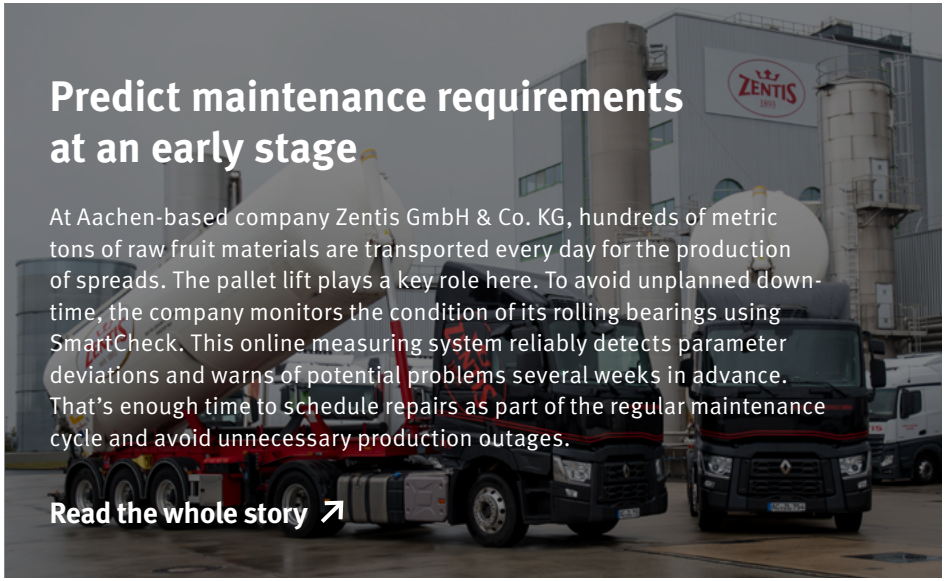
Online measuring system for decentralized machine monitoring

SmartCheck is a compact, innovative, modular online measuring system for continuous, decentralized monitoring of machinery and process parameters. The system is particularly attractive for assemblies where monitoring was previously too cost-intensive.

Companies often forgo continuous monitoring of the process variables of standard units such as pumps, motors, and gearboxes for cost reasons. SmartCheck changes this. The system offers the same performance features as expensive monitoring systems, but is compact, easy to install, and easy to operate. After installation and setup, for example, vibration as well as motor speed and temperature can be displayed in a web browser. Alarms go off if a limit is exceeded. In addition, a connection to the control system or the control station is possible using analog and digital interfaces. In the case of complex and specific requirements, monitoring can also be implemented using multiple SmartChecks.

Application areas ›

Product information ↗



Predict maintenance requirements at an early stage

At Aachen-based company Zentis GmbH & Co. KG, hundreds of metric tons of raw fruit materials are transported every day for the production of spreads. The pallet lift plays a key role here. To avoid unplanned downtime, the company monitors the condition of its rolling bearings using SmartCheck. This online measuring system reliably detects parameter deviations and warns of potential problems several weeks in advance. That's enough time to schedule repairs as part of the regular maintenance cycle and avoid unnecessary production outages.

Read the whole story ↗

Function

The device can be connected to the control system or the control station using analog and digital interfaces, for example.

OPTIME C1

Turn complexity into simplicity

The world is complex. And so is the job of a maintenance manager. Part of that complexity comes from the truly insignificant things. The tasks they wish they could cut out of their daily routines – but can't. Because there's been simply no better way of doing it. Not until now at least.

Combining all the benefits of automatic lubrication with award-winning smart technology: The OPTIME C1 is the world's first truly smart lubricator and eliminates tasks such as manual lubrication and having to manually check many lubrication points. Instead: all the maintenance manager needs to do to check on the status of their lubrication points is to check the app – from wherever they are.

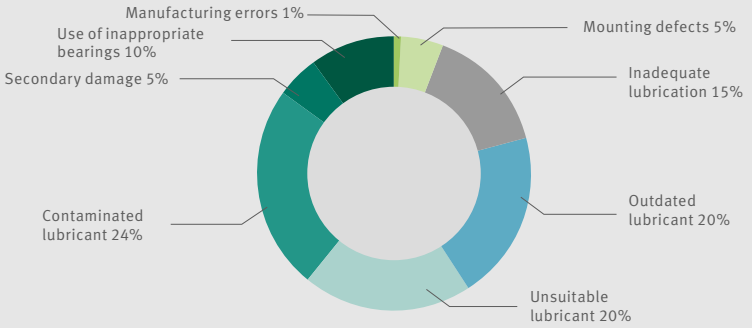
With an extremely intuitive interface, the OPTIME C1 will tell the user which lubrication points are insufficiently supplied and which cartridges need to be refilled or replaced. Thus eliminating premature bearing failure caused by insufficient and/or incorrect lubrication – and eliminating downtime.

Application areas ›

Product information ↗

Why is correct lubrication important?

Professional, effective lubrication can significantly increase the service life of rolling bearings, reducing costs.



OPTIME Ecosystem

Easy in every way

Did you know that the OPTIME C1 is part of a larger ecosystem that helps reduce expensive downtime? Find out more.

Learn more about the OPTIME Ecosystem ›

CONCEPT1–8

Precise, automatic grease and/or oil lubrication

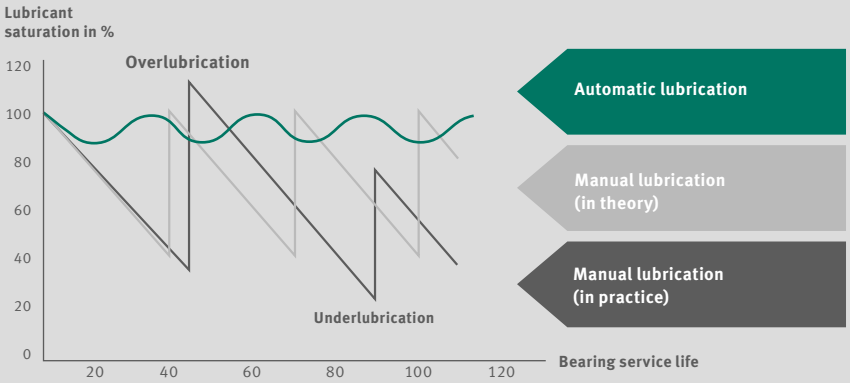
Almost all bearings can be supplied with precise amounts of oil or grease using the automatic lubricators in the CONCEPT series. The range covers single-point devices for entry-level automatic lubrication and complex solutions that can even be integrated into control systems.

The CONCEPT1–8 electrochemical lubricators offer a low-cost and versatile solution for supplying equipment with grease or oil. The lubricant is dispensed by gas pressure built up by means of an electrochemical drive unit. CONCEPT2, CONCEPT4, and CONCEPT8 are electromechanical lubricators and are used for more complex requirements, such as when there are a large number of different lubrication points. They differ in the number of outlets (2, 4, and 8), in whether grease or oil is used, and in whether the dispensing process is to be triggered by internal pulses, for example.

Application areas ›

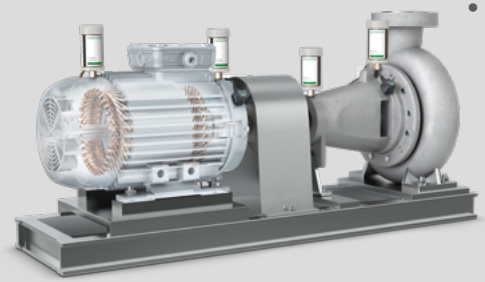
Product information ↗

What is the benefit of automatic lubricators?



Advantages at a glance

- Lubrication for almost all systems
- Premium lubricants
- Future-oriented expertise
- Flexible programmability



ARCANOL

Lubricants for every application

Perfectly matched lubrication increases the performance and service life of a rolling bearing immensely. With ARCANOL, Schaeffler developed a lubricant range that is divided into four different application groups, covering almost all areas of application.

The ARCANOL grease range includes multi-purpose, heavy-duty, high temperature, and specialty greases and currently features 22 different lubricant grades in up to eight different container sizes. ARCANOL greases generally have better characteristics than regular greases. The respective composition was analyzed and tested for each individual application area using modern processes and systems under different operating conditions and with rolling bearings of all designs. They are subjected to a new quality inspection before delivery. This means that there is clear evidence of the quality of each batch. Assembly paste and corrosion protection oil complete the lubricant portfolio.

To the Grease App ↗

Application areas ›

Product information ↗

Lubricants for the food industry

ARCANOL FOOD2 was developed especially for the food industry, and is registered for bearing positions subject to NSF H1 requirements, and is halal and kosher certified. ARCANOL FOOD2 protects bearings against corrosion and displays good resistance to water and cleaning chemicals. This lubricant is available in standard containers or in cartridge form for automatic lubricators in the CONCEPT series. The purity and quality of every batch is subject to stringent checks.

NSF

Kosher

HALAL

Advantages at a glance

- Lubricant matched to the application
- Consistent, high quality standard
- Extended rolling bearing life
- Great savings in grease consumption

Learn more about lubrication accessories and services ›

Accessories and Services for Lubrication

Manual lubrication tools and more

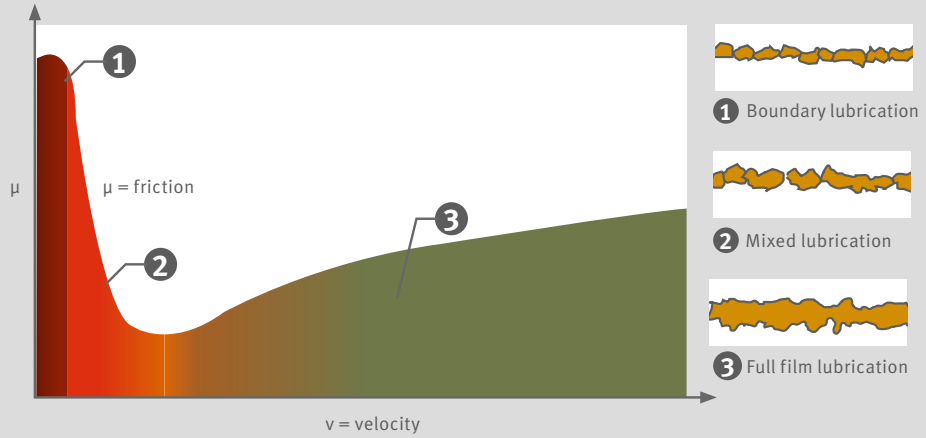
The optimized lubrication portfolio is complemented by accessories for automatic lubricators, manual lubrication tools, customized lubricant cartridges, and assembly pastes, as well as oil for corrosion protection.

If automatic lubrication is not possible or not desired, the optimal amount of grease can be applied with grease dispensing guns or grease pumps and other tools from Schaeffler during manual lubrication. The mounting paste facilitates the sliding of bearing rings and prevents stick/slip effects, scoring, wear, and fretting corrosion. It also provides protection against corrosion. The paste can be used at temperatures between –30°C and +150°C. It is resistant to water, steam, and many alkaline and acid agents. Anti-corrosive oil protects all bare metal surfaces, for example on equipment and machinery, and especially unpacked bearings when stored indoors.

Application areas ›

Product information ↗

Comparison: wear with and without lubrication



HEATER

Inductive heat for precise and sustainable assembly

The inductive heating devices in the HEATER series enable fast, controlled heating, and ensure optimum operation without contamination. They are suitable for all sectors and industries.

The HEATER product line is available in two series. The BASIC series has all the necessary basic functions for induction heating and is suitable for harsh ambient conditions. The HEATER BASIC units are available in either table-top or floor standing configurations for a maximum rolling bearing mass of up to 1,600 kg. The SMART models have a delta-T control system, which is recommended for rolling bearings with low radial clearance. They can precisely document the heating process, which can be important for particularly safety-relevant applications, for example.

Application areas ›

Product information ↗

MF-IDUCTOR: state-of-the-art medium-frequency technology in compact format

MF-IDUCTOR uses advanced medium-frequency technology to support fast and easy assembly and disassembly of bearings, housings, nuts, and many other components. Its compact design means it's flexible to use and enables energy-efficient and cost-effective heating of workpieces. The lightweight hand-operated device is available in two versions: 1.2 KW – 230 V and 2.3 KW – 230V. Customers can also choose between flexible and fixed inductors.

Learn more about the MF-IDUCTOR ↗

Available heating methods

HEATER BASIC

- Temperature mode (controlled heating)
- Time mode (serial heating without temperature sensor)

HEATER SMART

- Temperature mode (controlled heating)
- Time mode (serial heating without temperature sensor)
- Time and temperature mode (select target temperature or heating time)
- Temperature and velocity mode (with maximum temperature gradient per time unit)

Hydraulic Pumps

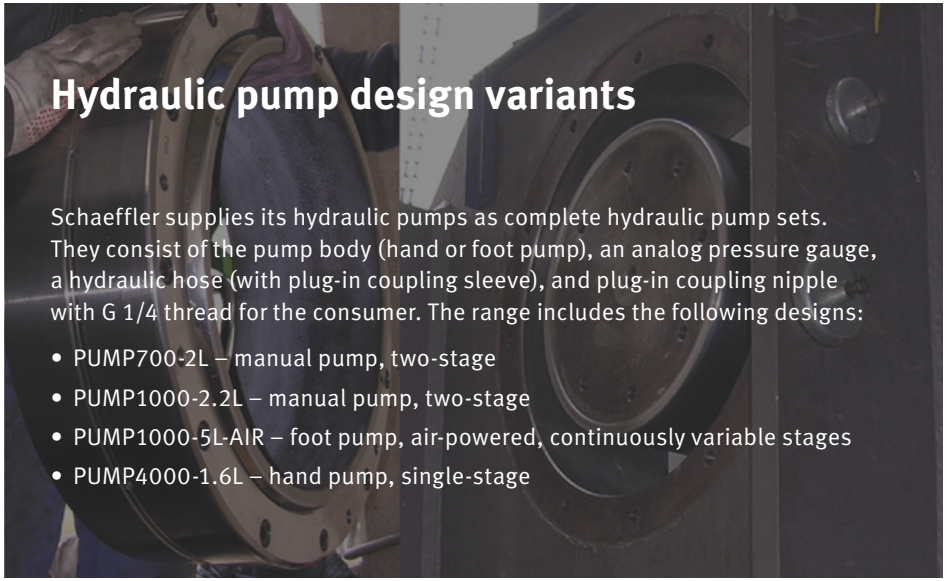
For simple installation and removal of rolling bearings in conjunction with hydraulic nuts

Comfortable work with little force required for assembly and disassembly. Hydraulic hand and foot pumps are used for the installation or removal of rolling bearings in conjunction with hydraulic nuts to pressurize them.

The pumps are also used for the installation and removal of roller bearings with a tight fit, as well as other rotary machine elements where oil is pressed between the fitting surfaces for widening. The risk of bearing damage is significantly reduced because the components and rolling bearings can be precisely positioned by defining a starting pressure. The hydraulic pumps are available in different versions, which can be manual or air-operated. There is a perfectly fitting variant for almost every application.

Application areas ›

Product information ↗



Hydraulic pump design variants

Schaeffler supplies its hydraulic pumps as complete hydraulic pump sets. They consist of the pump body (hand or foot pump), an analog pressure gauge, a hydraulic hose (with plug-in coupling sleeve), and plug-in coupling nipple with G 1/4 thread for the consumer. The range includes the following designs:

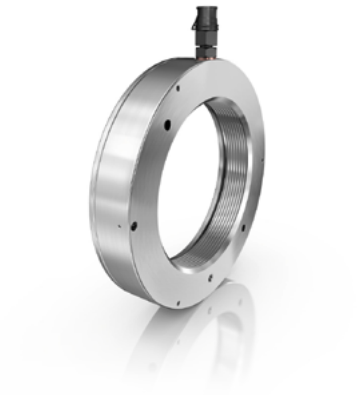
- PUMP700-2L – manual pump, two-stage
- PUMP1000-2.2L – manual pump, two-stage
- PUMP1000-5L-AIR – foot pump, air-powered, continuously variable stages
- PUMP4000-1.6L – hand pump, single-stage

Advantages at a glance

- Work can be done comfortably with minimal force being required
- Risk of damage to rolling bearings is reduced
- Allows precise positioning of rolling bearings
- Oil can easily be refilled
- A digital measuring gauge can be used to monitor the drive-up distance
- Options for surface pressures of up to 200 N/mm²
- Wide range of accessories available

Hydraulic Nuts HYDNUT

For strong contact forces



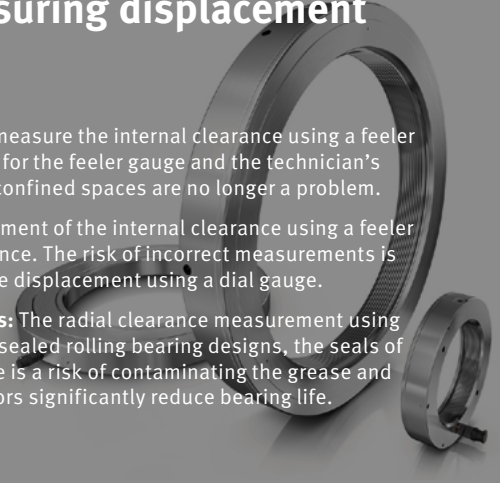
If a lot of force is needed when assembling and disassembling bearings, hydraulic tools such as hydraulic nuts can be valuable tools. When fitting and removing large-size bearings and machine components with a conical bore, they are the first choice.

The application of hydraulic nuts such as HYDNUT..-E and HYDNUT..-E-INCH involves pressing rolling bearings or other ring-shaped components with a conical bore onto a conical seat. They are used mainly when significant force is required and cannot be achieved with pressure screws. In addition, it is easier to set the radial internal clearance for bearings. The hydraulic nut can also be used for disassembly if fastening withdrawal sleeves or adapter sleeves. The HYDNUT..-HEAVY hydraulic nut is ideal for assembling press-fit assemblies where very high drive-up forces are required for gears, shaft couplings, crushers, and roller presses, for example. The HYDNUT..-HEAVY variant is also suitable for special applications, such as those without threads on the shaft or sleeve.

Application areas ›

Product information ↗

Advantages of measuring displacement during mounting



Simplified installation: To be able to measure the internal clearance using a feeler gauge, there must be sufficient space for the feeler gauge and the technician's hand. When using a dial gauge, even confined spaces are no longer a problem.

Safety and accuracy: Correct measurement of the internal clearance using a feeler gauge requires a great deal of experience. The risk of incorrect measurements is almost eliminated when measuring the displacement using a dial gauge.

Correct installation of sealed bearings: The radial clearance measurement using a feeler gauge is also possible for the sealed rolling bearing designs, the seals of which can be removed. However, there is a risk of contaminating the grease and damaging the seal. Both of these factors significantly reduce bearing life.

Designation	Design	Application
HYDNUT50-E to HYDNUT200-E	With metric fine pitch thread to DIN 13	Standardized adapter and withdrawal sleeves with metric dimensions, shaft journal with metric thread
HYDNUT205-E to HYDNUT1180-E	With trapezoidal thread to DIN 103	
HYDNUT50-E-INCH to HYDNUT950-E-INCH	With inch size thread as per ABMA "Standards for Mounting Accessories, Section 8, Locknut Series N-00"	Shaft journal or sleeves with inch thread
HYDNUT100-HEAVY to HYDNUT900-HEAVY	Reinforced design without thread	For high mounting forces, for example in shipbuilding

Mechanical Tools

For professional assembly, disassembly, and maintenance

Mechanical tools are indispensable for mounting, dismounting, and maintaining bearings. The Schaeffler portfolio includes tools that cover all life cycle phases of the rolling bearing while taking into account the total costs for the customer.

For all assembly and maintenance work, it is important to keep the necessary downtimes of the production operation as short as possible. The work must be fast, without quality and safety taking a back seat. Schaeffler's high-quality conveyor and assembly tools, extraction solutions, and installation tool sets, as well as socket wrenches and hook wrenches provide the prerequisites for completing all activities efficiently and maximizing system availability for customers.

Application areas ›

Product information ↗

Mounting tool sets
for mounting small rolling bearings gently

Transport and mounting tool
for lifting and transporting large bearings by crane safely

Socket and hook wrenches
for tightening and loosening locknuts efficiently

Three-section extraction plates
for extraction without damage – by gripping the bearing directly on the inner ring and transmitting the extraction force via the rolling elements

Mechanical extractors
for dismounting bearings, bearing inner rings, and other components cost-effectively

Hydraulic extractors
for dismounting bearings and bearing inner rings even if high extraction forces are required, and for disassembling other components

Customer Success Stories

Zentis GmbH & Co. KG (SmartCheck)

Zentis is one of Europe's leading fruit processing companies and an essential supplier and partner to the food industry and trade. Established in Aachen, Germany, in 1893, the company remains in family ownership.

Challenges

At one of its Aachen locations, about 600 pallets, each containing up to 1,500 kg of raw fruit material, are transported within the high rack store every day. Both the geared motor of the pallet lift and the cable drums are exposed to huge stresses. Unscheduled downtime would start to cause production outages in as little as two hours. After four hours, 60 percent of the production lines would be down, and 90 percent after six hours.
To prevent the situation from reaching that point in the first place, Zentis looked for a solution that would identify potential damage at an early stage based on vibration measurement.
The special challenge: Conditions for measuring are stable only during the six seconds of the upward and downward movements.

Solution

To monitor the pallet lift, Schaeffler installed three SmartChecks, bundled their alarm outputs in a SmartConnect Box, and forwarded the signals to the customer's control system. The SmartConnect Box takes charge of both the power supply and distribution of additional signals via OPC/UA. The result is a significant reduction in cabling overheads. The SmartConnect Box sounds an alarm as soon as the rolling bearings or the gear teeth show unusual characteristic values. SmartCheck reliably detects deviations without being affected by process-related interference signals during startup and braking.

Schaeffler specialists monitored the entire engineering process on site and handed over a turnkey solution which requires no expert knowledge on the part of the customer.

SmartCheck: identify maintenance requirements in good time

The online measuring system detects potential damage to the bearing at an early stage and enables repairs to be performed as part of scheduled maintenance work.

- Monitoring rolling bearings and gear teeth
- Measuring vibrations, imbalance, temperature, speed
- Status display in customer control system
- Power supply and data sharing via SmartConnect Box

Read the whole story ↗

Bearing Solutions ›

Lifetime Solutions ›

OPTIME at a Biochemical Company

The customer is one of the world's leading biochemical companies with more than 100 years of expertise in fermentation. As a supplier of emulsifiers, enzymes, minerals, vitamins, and algae ingredients, it is an important partner to the food, pharmaceutical, cosmetics, and medical technology sector.

Challenges

Complex fermentation processes create all kinds of organic acids for many different applications. To minimize the resulting stresses on the machines, avoid unscheduled downtime, and optimize throughput, the company was already using a range of offline and online monitoring solutions. The most recent plant expansion led to additional maintenance challenges: Transmission gears were meshing unevenly and threatened to wear uncontrollably and faster. The maintenance department turned to Schaeffler in search of a solution.

Solution

Given the size of the plant and the number of components involved, the experts from Schaeffler recommended a solution based on the OPTIME Ecosystem. Pumps, cooling tower fans, agitator gearing systems, and cooling compressors were equipped with a total of 50 OPTIME Condition Monitoring sensors. The data recorded by the condition monitoring system is transmitted via a gateway to the Schaeffler Cloud and analyzed there. If anything unusual is detected, the system alerts the parties and identifies potential causes. Impending outages can be detected at an early stage in this way, and unscheduled downtimes can be avoided.

Read the whole story ↗

Bearing Solutions ›

Lifetime Solutions ›

Overview of customer benefits

In the first year alone, the OPTIME Condition Monitoring system identified 17 faults, five of them serious. As a result, 144 hours (six days) of downtime were avoided and €30,000 was saved, thanks to:

- Continuous condition monitoring
- Rapid fault detection
- Predictive maintenance
- Minimization of unscheduled downtimes

Linear and Rolling Bearings for Beverage Filling

A state-of-the-art food and beverage industry would be inconceivable without stable, hygienic packaging. The customer is one of the world's leading food processing companies and offers complete solutions for filling drinks and products in paste form.

Challenges

High throughput and uninterrupted operation are critical parameters in the production process in filling lines. The food industry is also subject to stringent hygiene conditions. For its forming and filling lines, the customer looked for suitable bearing solutions and linear guidance systems. A key precondition for all components was that they should be resistant to corrosion caused by the sterilization and cleaning agents used. The bearings had to be reliably sealed against particle penetration and lubricant loss, and have undergone initial lubrication with high-quality NSF H1 compliant lubricants.

Solution

The filling line in question consists of the forming/filling unit and the final folding unit. For the first of these, Schaeffler supplied yoke and stud-type track rollers, over which the packaging material is guided and formed into a box. The rolling elements and the inner and outer rings are made of stainless steel, and have nitrile rubber contact seals on both sides.
To arrange the packaging in rows for the final folding process, linear units are needed with fixed carriages and moving guides. Schaeffler created a special linear guidance configuration with a four-row stainless steel ball monorail guidance system, KUVE-B, and carriages. Lubrication is applied centrally via an automatic lubricator. As with the rollers, initial lubrication was performed using NSF H1 compliant lubricants. The guidance rails used are attached to the underside, which makes it easier to clean the upper part.

Read the whole story ↗

Bearing Solutions ›

Lifetime Solutions ›

The quick way to an individual solution

The most important factor for the customer was to have a bearing and linear guidance solution developed in close coordination and made available swiftly. Tools such as the Schaeffler Linear Configurators, which are available online, offer customers a valuable aid in establishing key parameters in advance.

Learn more about the Linear Configurator ›

Zentis GmbH & Co. KG (ProLink CMS)

Zentis GmbH & Co. KG represents innovative fruit processing and high-quality products. Founded in Aachen, Germany, in 1893, the company makes no compromises where quality is concerned, and is an important driving force in the use of new technologies for in-house process optimization.

Challenges

At the high rack store in Aachen, loads in excess of one metric ton are transported to heights of up to 30 meters. This involves the shelf servicing units moving in various directions. The load on the trolley bearings is commensurately high. If repairs are needed, the moving parts can't be replaced immediately on account of their size and assembled position. To prevent unscheduled downtime, a monitoring solution was sought which would reliably communicate the condition of the shelf servicing units even under the difficult conditions of the frozen storage unit at –20°C. Zentis entrusted the task to certified Schaeffler sales partner KSA Kubben + Steinemer GmbH & Co. KG (KSA).

Solution

Each shelf servicing unit was equipped with a Schaeffler ProLink CMS and five sensors as "bearing monitors". The original measurement plan was also adapted to suit the special circumstances on site: Based on many individual measurements during the short, slow operating times, even very short, sudden events can now be reliably identified. The temperature challenges were dealt with by integrating the ProLink CMS system in the control panel on the shelf servicing units, which are heated in the frozen storage area. A cold-resistant adhesive compound keeps the sensors firmly attached to the measuring points even at sub-zero temperatures.

Read the whole story ↗

Bearing Solutions ›

Lifetime Solutions ›

Expanded food program: deep groove bearings, housings, and lubricants

For sensitive production areas, Schaeffler offers its own range of corrosion-resistant deep groove ball bearings and housings. The Schaeffler LUBTECT food-grade lubricant was specially designed for these areas, and ensures lasting, reliable lubrication.

Learn more about the FD Food Program ›

Learn more about LUBTECT ›

AROL S.P.A.

Every year, AROL S.P.A. manufactures about 700 capping machines for bottles, glasses, cans, jars, dispensers, canisters, and other containers made of glass, metal, and plastic. The company, based in Canelli, Italy, is one of the world's leading manufacturers in this sector.

Challenges

AROL capping systems are used not only in filling lines for food, beverages, body care products, cosmetics, and cleaning agents, but also in the packaging industry. The lines must operate reliably 24/7 under demanding conditions. High production rates and regular cleaning cycles using aggressive media call for sturdy components offering maximum efficiency and resilience. Stringent hygiene regulations must also be observed. Every bit as tough are the demands on the installed bearing solutions. In the capping process, the linear movement of the capping heads is achieved by means of a rotating disk. Cam rollers reduce the pressure on the mating track, which increases system service life. It is also essential that all bearings be reliably sealed to prevent the penetration of particles and the loss of lubricant.

Solution

To minimize wear and grease consumption, the customer opted for KR-PP cam rollers with a three-layer, two-sided seal using plastic axial plain washers. They also have an optimized profile on the outer surface. That reduces the Hertzian contact stress and the edge stresses on the mating track caused by tipping, which also reduces wear between the external surface of the outer ring and the mating track.

Read the whole story ↗

Bearing Solutions ›

Lifetime Solutions ›

Longer service life even in critical environments

Even in their standard version, KR-PP cam rollers are already the ideal choice for the sophisticated demands of the food, beverage, and packaging industry. The key benefits:

- Reliability in high-speed applications
- Individual, corrosion-resistant solutions
- Application-specific sealing systems

Digital Tools and Support

medias

Knowledge database and digital product catalog

In addition to the Schaeffler product catalog, medias provides detailed information on all products and solutions, including a knowledge database with useful materials, such as white papers and online training courses. Calculation and configuration tools provide support in product selection.

More than just an online store
With the medias platform, Schaeffler fully supports its customers in selecting, configuring, and ordering products. It not only gives you detailed information on products and services in the form of a comprehensive knowledge database, but also advanced e-commerce functions and the necessary engineering tools to help you calculate and configure the products you need in line with your requirements. You can get access to additional exclusive content with a free medias Plus membership. Registered business customers can look forward to an expanded product catalog and an even more efficient quote and order process with medias Business.

To medias ↗

Learn more about the engineering tools ›

The three medias user levels

medias.schaeffler.com

medias Business

Customer area
- For registered business customers
- All functionalities of medias Plus and an efficient quote and order process

medias Plus

Registered user area
- Easy, free registration
- All functionalities of medias and access to premium content (for example, CAD downloads)

medias

Public user area
- No registration necessary
- Access to all product information and consultation functionalities

What medias has to offer

Customers can find these features on our advanced medias e-commerce platform:

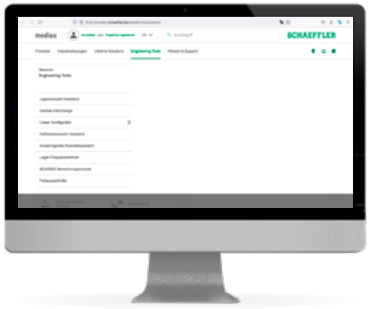
- Detailed information about products and solutions
- Specific solutions for specific industries
- Helpful engineering tools for selecting, calculating, and configuring products
- Comprehensive knowledge database as well as white papers, online courses, customer success stories, and more
- Free newsletter with industrial news from Schaeffler

To the sector page ↗

To the newsletter ↗

medias Engineering Tools

Select, analyze, and configure bearings and accessories



How big is the design envelope? What speeds and loads does the bearing have to withstand? How important is it that it's low noise? With the medias expert tools for selecting, analyzing, and configuring bearings and all types of accessories, Schaeffler supports its customers during the development phase and guides engineers to the right product and its accessories one step at a time.

An optimal arrangement of bearings gives OEMs a significant competitive edge. To help them along, Schaeffler provides its customers with the best possible service and engineering support by making several tools and selection assistants available to its customers' development and design departments on the medias knowledge platform. Once the most important parameters and key design data have been entered, the results are output with specific product recommendations that can be accessed with the click of a mouse. This shortens the development process and creates transparency.

To the medias Engineering Tools ↗

Bearing selection assistant
One of over 24,000: The assistant helps designers find exactly the right bearing for their application.

To the bearing selection assistant ↗

medias-interchange
Help when converting to Schaeffler bearings: medias-interchange converts the rolling bearing designations of other manufacturers to INA/FAG nomenclature.

To medias-interchange ↗

Grease selection guide
Never again use the wrong lubricant: This tool helps users find exactly the right grease so that their bearings run smoothly and have a long service life.

To the grease selection guide ↗

Bearing frequency calculator
Allocate clear frequency models: The calculator makes it possible to determine basic bearing frequencies so that component anomalies can be investigated in a targeted manner.

To the bearing frequency calculator ↗

Housing selection guide
Comprehensive support for selecting housings and housing units: This tool takes environmental conditions into account as well as the demands on the bearing arrangement.

To the housing selection guide ↗

Linear configurator
Simple configuration and calculation of linear systems with multiple tracks and carriages.

To the linear configurator ↗

Linear Configurator

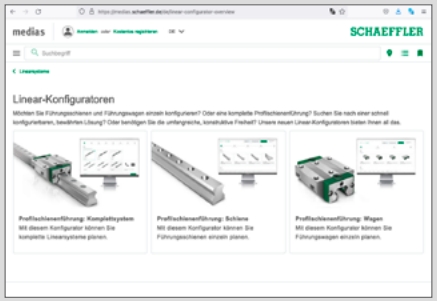
For complete systems, guides, and carriages

The Linear Configurator makes it easy to assemble linear guidance systems with multiple guides and carriages. At the same time, the tool determines the correct product name for ordering purposes. During configuration, all changes and expansions are immediately presented in visual form.

Developers can use the web-based Linear Configurator to configure complex monorail guidance systems in just eight steps. The top-down principle quickly takes you from the required arrangement and the desired product to the basic system properties and details of guideway sets and carriages. The finished configurations can be reviewed, saved, exported, and forwarded at the click of a mouse to standard CAD programs – to order the required products directly from the Schaeffler sales partner, for example. Registration is required in order to use all the functions of the tool. The versatile, smart, and easy tool bundles three modules needed for designing monorail guide solutions, and can be accessed via medias free of charge.

Product information ↗

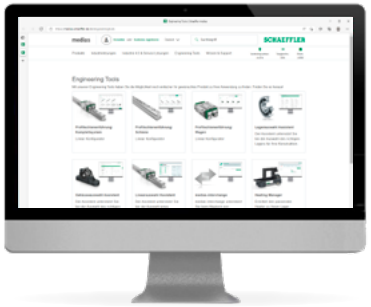
The Configurator at a glance



- Three configurators – guidance systems and carriages, either individually or as complete linear guidance systems
- Preconfigured modular system, flexibly adaptable
- Configuration can be ordered from sales partner
- Full design transparency at every step

BEARINX-online Easy

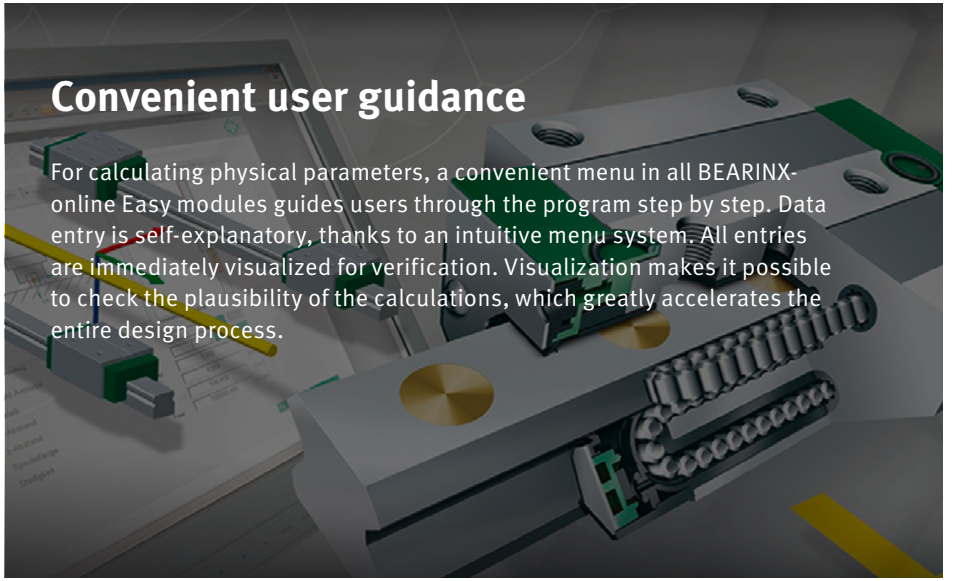
For calculating rolling bearings in shaft and linear guidance systems



Conventional tools generally use highly simplified calculation and approximation methods that examine bearings in isolation instead of looking at the complex interactions on site in the systems. As a result, they fail to take into account the actual load and displacement situation. BEARINX-online Easy allows operators to model and calculate the actual demands and bearing behavior.

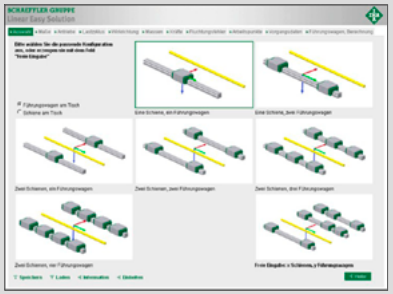
Whether it's frictional forces, mounting setting values, nominal service life, or static load safety factor: Depending on the application, four different BEARINX-online modules are freely accessible at no cost with a one-time registration. They're based on the logic of BEARINX, Schaeffler's leading calculation program that incorporates several decades worth of experience in design consulting. When calculating frictional forces, BEARINX takes rolling and sliding friction into account. For linear calculations, it can consider 1-, 2-, and 3-axis positioning systems and a flexible arrangement of drives. This makes it possible to perform a detailed analysis of the behavior of bearings in actual use. All the results can be downloaded as a PDF for documentation purposes, including in the free online version.

To BEARINX-online Easy ↗



BEARINX-online Easy calculation modules

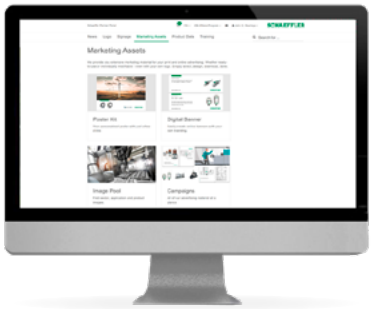
From deformations in linear systems to mounting setting values in screw drive bearing arrangements and complete bearing arrangements in liquid pumps – the broad range of BEARINX-online Easy calculation modules delivers precise data on various use cases:



- BEARINX-online Easy Linear ↗
- BEARINX-online Easy Linearsystem ↗
- BEARINX-online Easy Friction ↗
- BEARINX-online Easy Ballscrew ↗
- BEARINX-online Easy RopeSheave ↗
- BEARINX-online Easy EMachine ↗
- BEARINX-online Easy Pump ↗

Partner Portal

The platform for certified Schaeffler partners



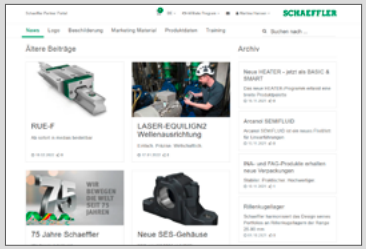
With the Partner Portal, Schaeffler has created a unique platform that provides certified partners with comprehensive information about its broad product and service portfolio and presents innovations. In addition, partners are provided with useful material to support the sale of and consultations regarding products.

Schaeffler has a long tradition of cooperating closely with manufacturers and customers in the development of products and solutions. This philosophy is also reflected in the Partner Portal. Certified Schaeffler partners can find all the information they need about our products and services here, including product data and images for use in product catalogs, blog news, and training for their sales staff. In addition, our partners receive access to exclusive marketing material which can help gain customers.

To the Partner Portal ↗

More partner benefits ›

What you will find on the Partner Portal:



- News and updates
- Training courses
- Campaign material on products and industries
- Product information
- Marketing materials with individual personalization options

Expert Services

Services across all aspects of condition monitoring

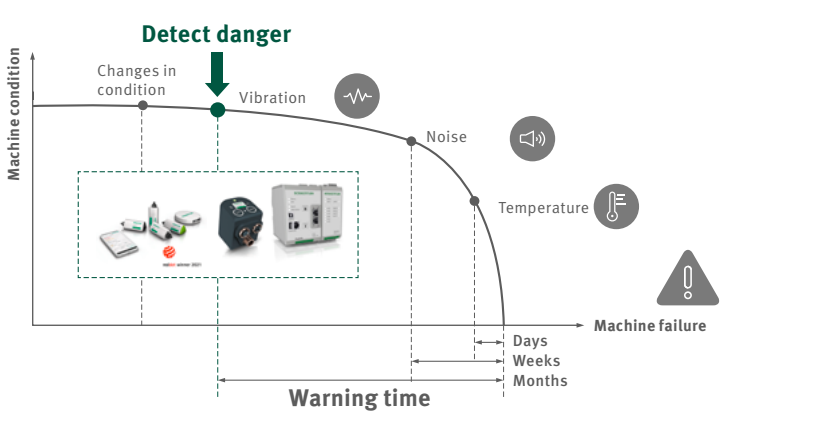
Schaeffler expert services provide support for the use of suitable monitoring systems. This includes not only hardware selection, but also system configuration and, where necessary, its integration into existing systems. Condition monitoring during operation is also provided on request.

Our service specialists support customers throughout the entire service life of their equipment and bearings. They advise on suitable monitoring solutions prior to purchase, and subsequently provide on-site or remote installation assistance and support for configuration and commissioning. On request, they can also provide continuous condition monitoring during operation via online connection or carry out regular on-site measurements for vibration analyses. If malfunctions occur on a machine, they trace faults through comprehensive diagnostics, such as endoscopy. They rectify faults such as imbalances or incorrect lubrication quickly and accurately.

To expert services ↗

Lifetime Solutions ›

Why condition monitoring is important



Services at a glance

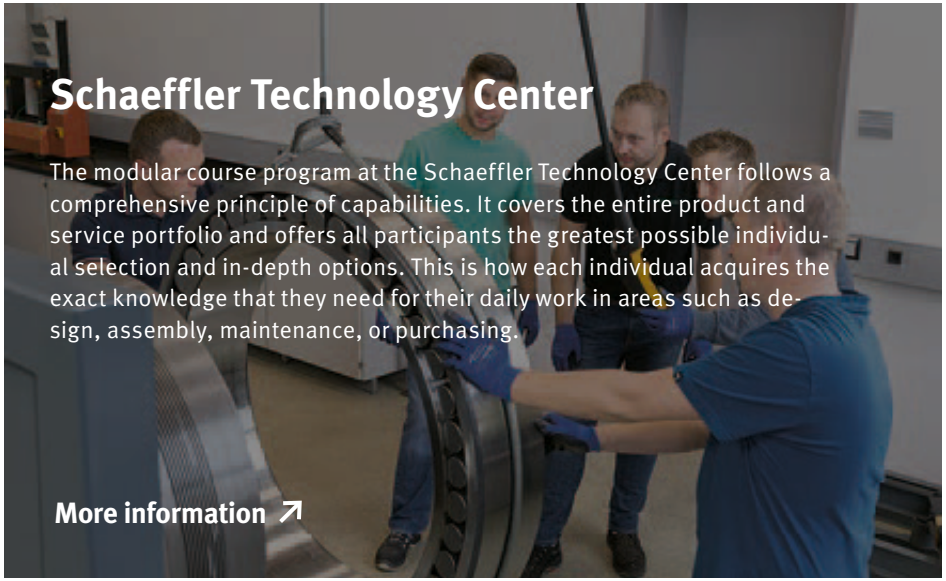
- Condition monitoring consulting
- System history
- On-site support for installation and commissioning
- Remote support during installation
- Vibration analyses
- Remote monitoring

Trainings

Certified expertise from maintenance specialists

Customized training modules familiarize customers with all important Schaeffler products for bearing maintenance. Customers learn details about proper lubrication and detailed know-how about condition-based machine monitoring.

The training courses offered for condition-based machine monitoring start with basic knowledge and an overview of the products that can be used in condition monitoring. Additional modules expand the theoretical expertise gained and are complemented by practical exercises. They prepare for certification courses according to ISO 18436-2. Customers can have their knowledge tested and certified at various levels. Training programs tailored to specific needs are available. In these cases, the modular training program is also customized for the subjects of balancing bearings or lubrication.



Products
- Product training sessions from the rotary, linear, and service areas
- Sector-based product training sessions

Assembly
- Assembly and disassembly of rotary and linear products
- Large bearing assembly

Basic principles
- Basic training sessions, including sector relevance
- Kinematics, speed, lubrication, and fault analysis

Lifetime Solutions
- Vibration analysis
- Balancing and aligning
- Condition monitoring

To the training courses ↗ | Training courses in the Partner Portal ↗ | Lifetime Solutions ›

Aftersales and Customer Service

Literature and Publications ›

Contact ›

Literature and Publications

- Brochures

  Schaeffler solutions for the food, beverage and packaging industry ↗

  Condition Monitoring with OPTIME ↗

  FAG Deep Groove Ball Bearings ↗

  Radial Insert Ball Bearing Housing Units ↗

  Ball Bearings for the Food Industry ↗

  Arcanol Rolling Bearing Greases ↗

- Catalog HR1

  Media Library ↗

- Partner Portal campaign page

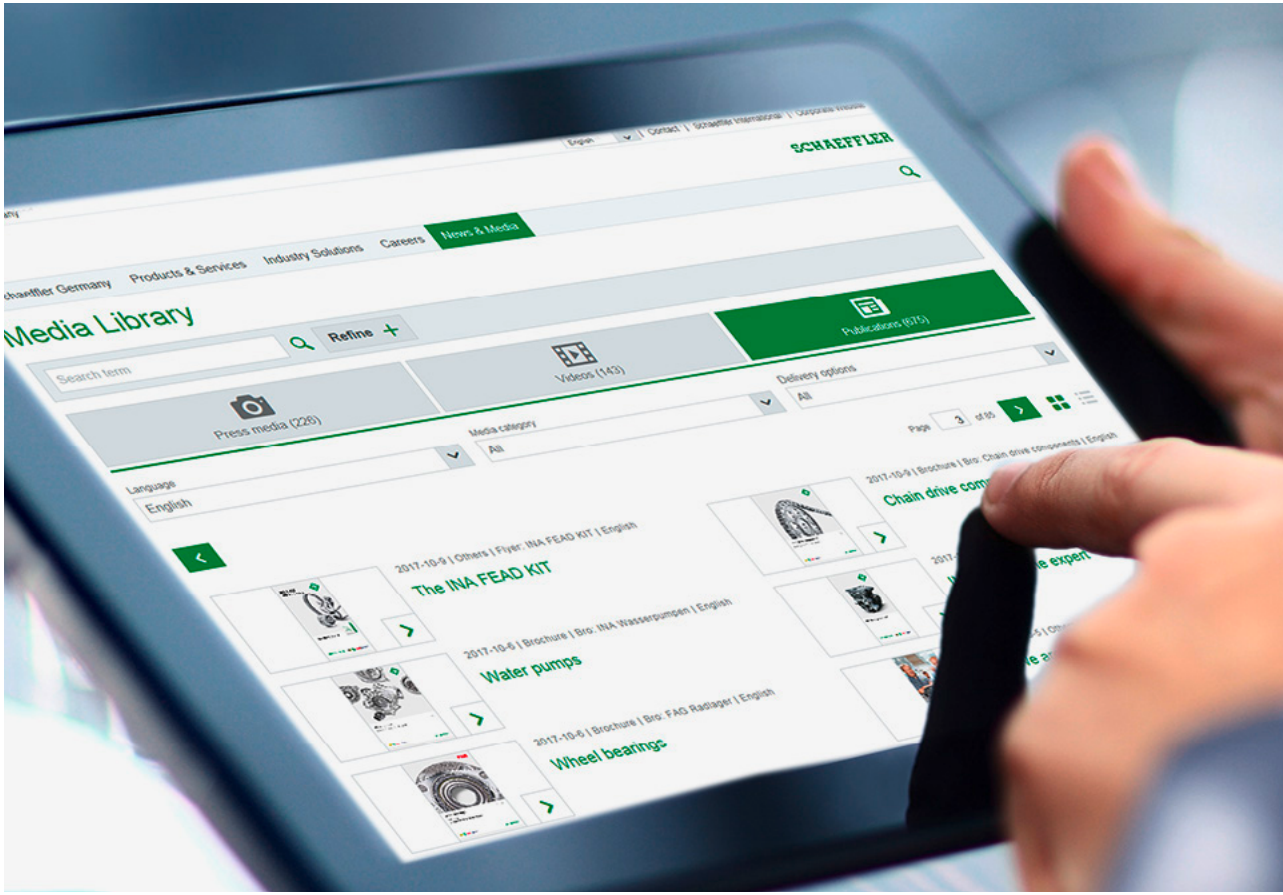
  To the Partner Portal ↗

- Food, Beverage, and Packaging Industry website

  medias ↗

- Condition Monitoring Handbook (print edition)

  Order the book ↗



Contact

How can we help you?
Do you have any questions about our products or solutions?
Feel free to contact us any time!

We are always there for you, wherever you are.
You can find Schaeffler contacts worldwide here.

Schaeffler contacts worldwide ↗

We pioneer motion