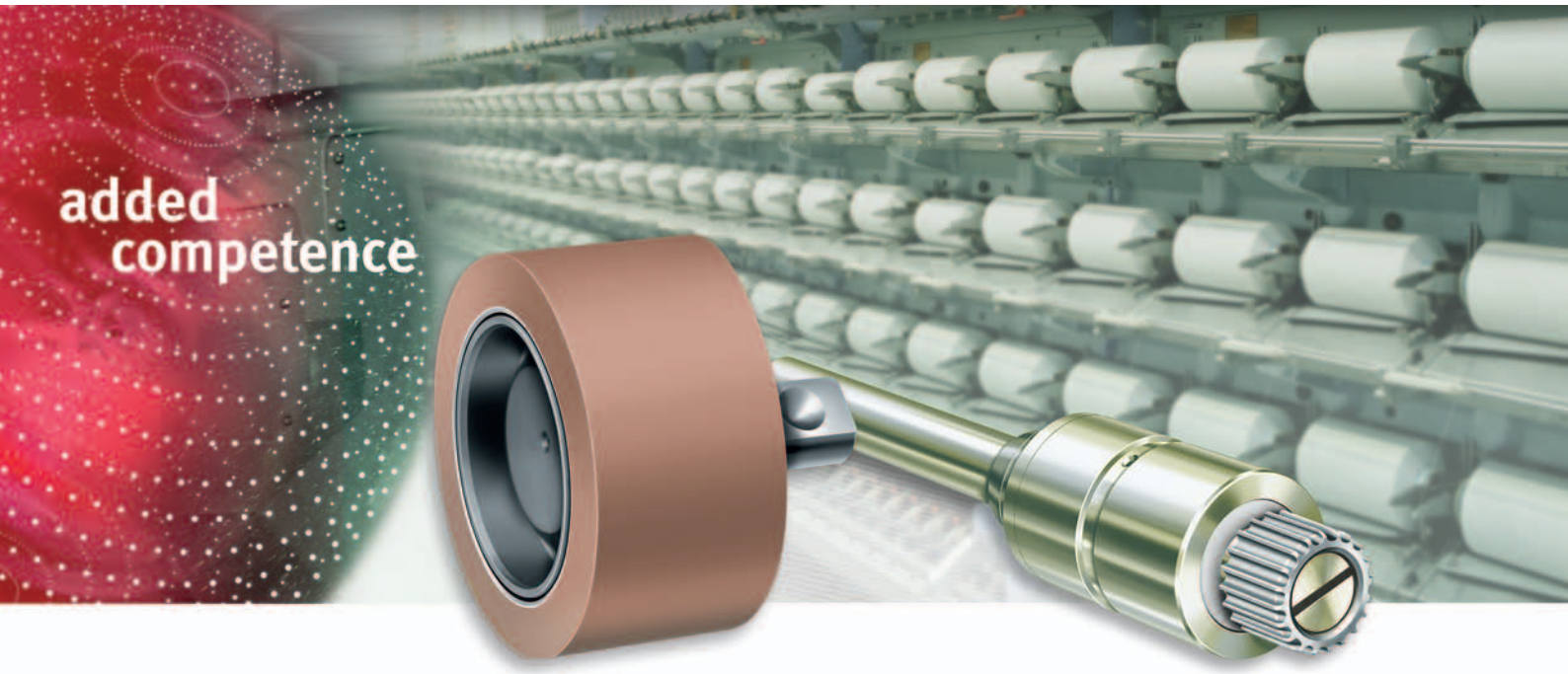




FAG



added
competence

Bearing Supports for Textile Machinery

Durable, reliable and with high accuracy

We have the right bearings for every application ...



Texturing machines: Bearings must operate without vibrations and with very little noise

We offer bearing systems for the entire “textile chain” – you will find high-precision machine elements from the INA and FAG brands in all textile manufacturing processes. Whether for rotary or linear applications – with our products you can always count on special advantages such as high precision, low friction, simple installation and low maintenance requirements. With Schaeffler bearing supports for textile machines you gain from the extra benefits they provide in terms of reliability and long operating life.

Increased efficiency for texturing machines

We offer reduced mass moment of inertia in individual components, low friction, high take-up speeds of up to 1500 m/min, no resonance at operating speed and high reliability.

You benefit from high quality and cost-effective manufacturing of filament yarns.

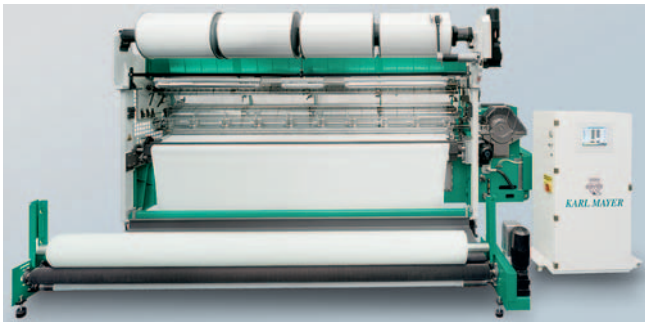


Weaving machine: Precision despite high shock loads

Increased weft insertion rates in weaving machines

We offer precise movements at high shock loads, high rigidity, precision and reliability.

You benefit from lower thread breakage rates, uniform fabric texture and high weft insertion rates.



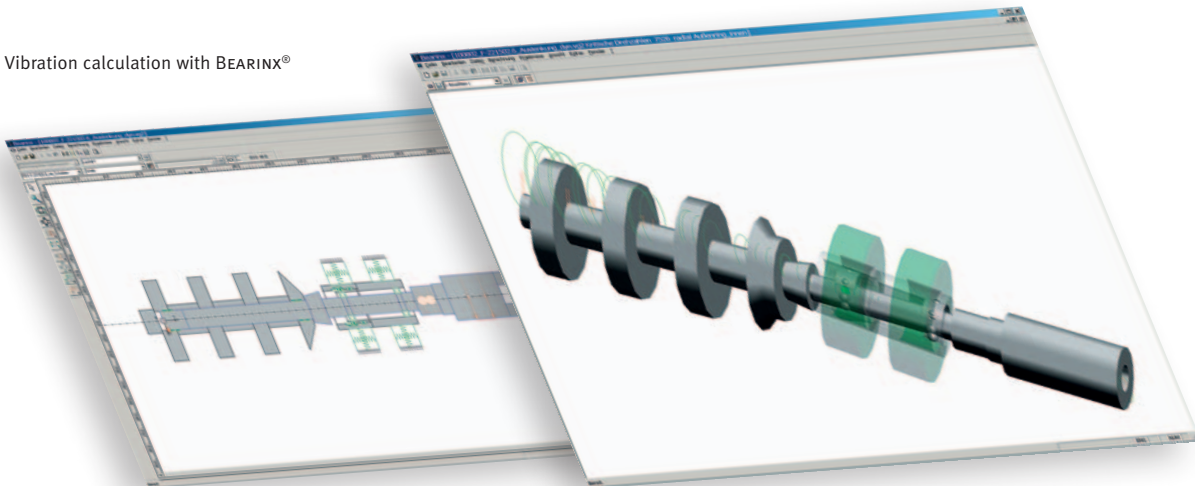
Knitting machine: Repeat accuracy even at very high speeds

More precision for knitting machines

We offer high speeds (3,500 rpm), rigidity and high precision, high swivel frequencies and smoothness of running.

You benefit from precise movements for first-class knitted fabrics 4 to 6 meters wide, the ability to work a very wide range of yarns and even films, as well as high manufacturing output with a wide variety of patterns.

Vibration calculation with BEARINX®



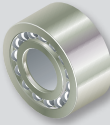
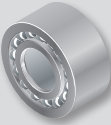


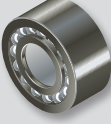
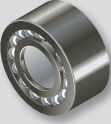
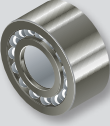
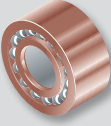
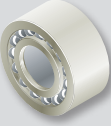
... But we go a step further: Real development partnership!

As a Schaeffler customer, you can count on receiving the best-possible product for every application. Close partnerships with textile machine manufacturers mean that INA and FAG's product range really thrives, since we continuously develop existing products and shared ideas are used as the basis for new products.

Use our expertise for your technological progress!

Rolling bearing calculation

BEARINX® enables users to calculate, display and document specific bearing loads in detail while taking operating and environmental conditions into consideration – even for complex machine systems. For example, we used the rotor dynamic tool from BEARINX® in the development of a chuck shaft to calculate the vibration behavior of the chuck. The benefit for our customer: A measurable decrease in the number of tests required, which led to a reduction in development costs.

Schaeffler coatings for bearings in textile machinery			
Anti-corrosion protection for steel	 Corrotect® ZI (zinc iron)	 Durotect® Z (zinc phosphate)	 Durotect® B (black oxide finishing)
Protection against wear	 Durotect® CM	 Triondur® C+	 Triondur® CX+
Reducing friction	 Triondur® C	 Durotect® C (copper)	 Durotect® S (silver)

Extend the operating life: Surface coatings in textile machinery

Surface coating

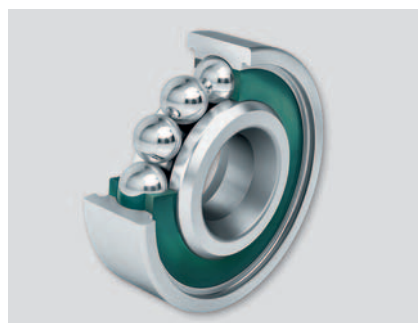
Modern coating systems, which are often developed by Schaeffler and tested in-house in our testing centers, contribute to extending the life of our products and ensuring they function safely. Surface coatings influence the running-in behavior and emergency running characteristics

of bearings. They improve corrosion protection and optimize the wear and friction behavior.

Our engineering teams across the world provide support to customers in all phases of product development and offer assistance with selecting the right bearing for your application.



Corrosion-resistant: Friction spindle bearing with Corrotect®



Alternative lubricant: Lubtect® shaft lever bearing



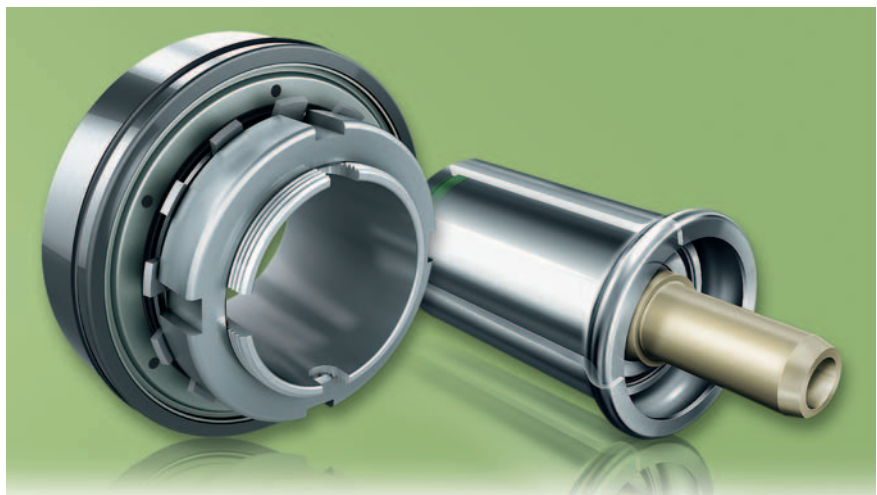
High-performance material mix: Hybrid spindle bearing

For more energy efficiency: Low-friction rolling bearings...

Textile machines demand innovative and cost-effective solutions that often cannot be realized using standard bearings. This is why we offer system components from INA and FAG as complete systems that are perfectly matched to the application in question.

The following selection of products provides an initial overview of what we offer. You will find information about our product range and technical details in our publication TMB.

- **Radial ball bearing units for texturing machines:** A reliable and cost-effective solution – low friction, smooth running, easy to install and with effective seals.
- **Friction spindle bearings for texturing units:** Precise running without resonance in a broad supercritical work range; ready-to-fit solution, no adjustment required and protected from corrosion by Corrotect® coating.
- **Compacting rollers for texturing machines:** Extremely long life due to effective seals and a relubrication facility; the roller is set on the delivery roller by means of a pivot joint.



Making texturing more cost-effective: Easy-to-fit INA radial insert ball bearing and lightweight thread guidance roller with customized surface coating

- **Yoke type track rollers,** for example in lay drives: Effective support for high shocks due to thick-walled outer rings of special steel. The optimized outside surface profile protects the mating track, which leads to longer operating life of the bearings and adjacent construction.
- **Cylindrical roller bearings,** for example in lay drives, for locating and non-locating bearing solutions even with marginal lubrication and strong vibrations.
- **Tape tension pulleys,** for OE spin boxes, for example: Durable solution with low energy requirements; with relubrication facility and long maintenance intervals, can be balanced separately if required.
- **Hybrid spindle bearings** – for example for heated godets and cold overflow rollers in chemical fiber processing: durable super-precision bearings that facilitate higher speeds.



Comprehensive range of products: Yoke and stud type track rollers



Cylindrical roller bearing with solid brass cage



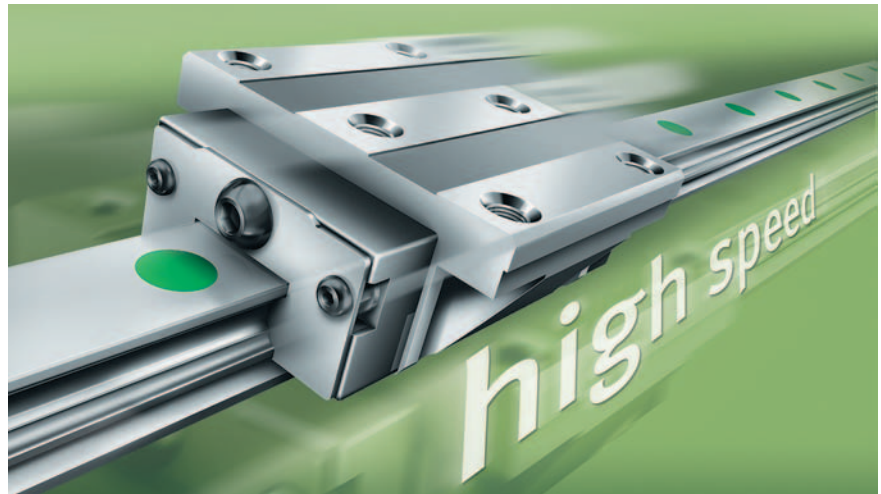
22,000 rpm: Tape tension pulley for OE spin boxes

...and highly-dynamic linear guidance systems

INA Linear Technology has been working closely with renowned textile machine manufacturers for several years. They value the comprehensive application support we provide coupled with a product range that is unique in terms of scope worldwide. We offer a complete modular system for the bearing supports of all linear movements in textile machines – from customized shafts with linear ball bearings to mechatronic systems such as linear actuators with drives and control systems.

Here are some examples from applications in large embroidery machines and weaving machines:

- **Four-row linear recirculating ball bearing and guideway assemblies** permit extreme acceleration (up to 20 times acceleration due to gravity in the shuttle drive), safely compensate micro-vibrations (e.g. when positioning the frame for threading), and are supplemented by accessories comprising a perfectly-matched seal and lubrication concept for various environmental conditions.



Up to 10 m/s: Four-row high-speed linear recirculating ball bearing and guideway assembly
→ constructed from standard components without reducing the load carrying capacity and rigidity!

- **Driven linear actuators** achieve speeds of up to 10 m/s, for example in positioning units for moving embroidery frames or as complete systems for transfer points in automatic embroidery machines.
- **Linear actuators** with direct drives are used, for example, for guiding threads when manufacturing truck tarpaulin.
- **Track roller guidance systems** are lightweight and can achieve speeds of up to 10 m/s and ensure highly-dynamic and precise movements and

functional processes, for example, for adjusting the height of embroidery frames without clearance.

- **Linear ball bearings** are a cost-effective solution for a wide range of applications, amongst others, for positioning the shuttle and are characterized by long operating life, quiet and smooth running and have an angular adjustment facility up to ± 30 degrees.

We would be happy to advise you.
info-linear@schaeffler.com



For precise positioning:
INA linear actuators



Highly dynamic:
Lightweight track roller guidance system



Cost-effective:
Linear ball bearing (lightweight series)



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