



**X-life**

proven to be better

## Tapered Roller Bearings

Reliable – energy efficient – suitable for high loads

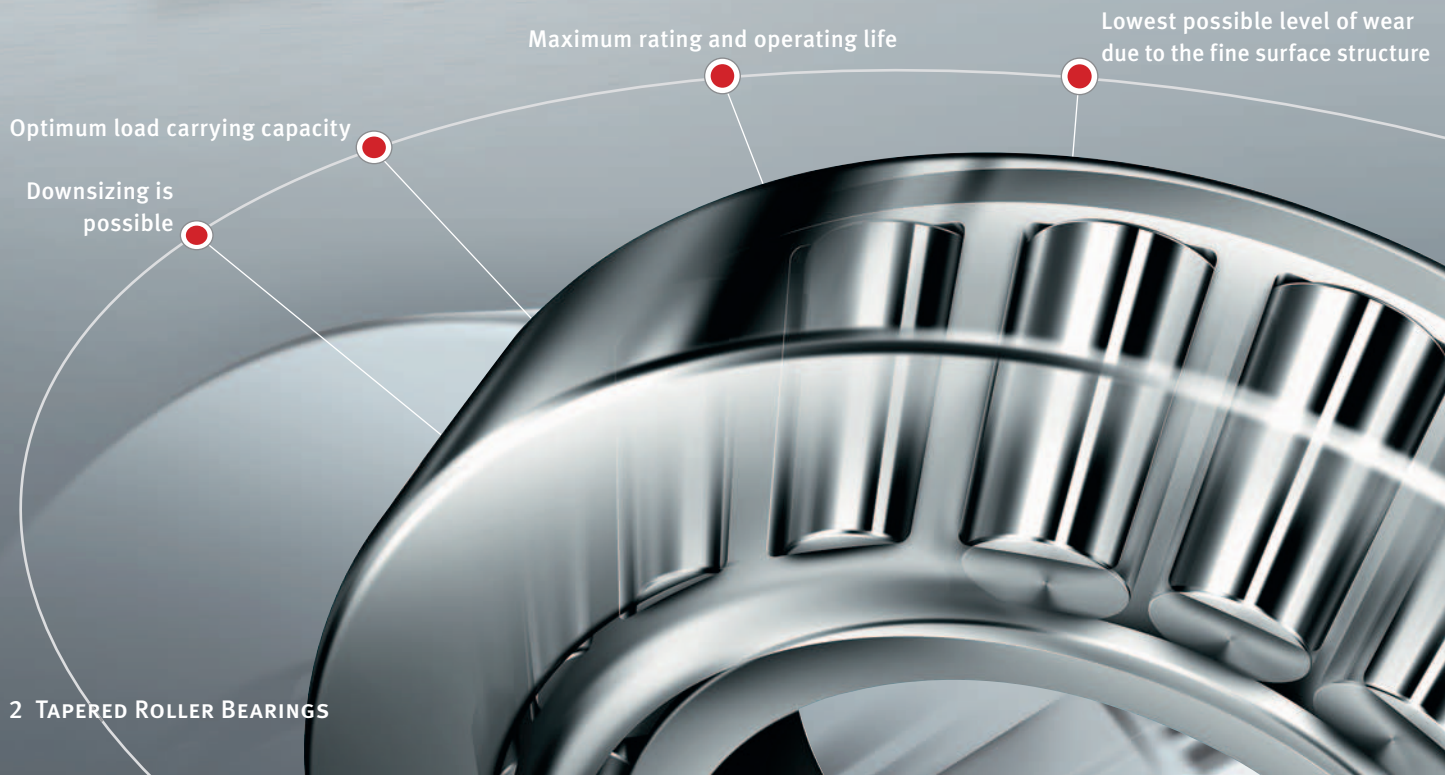
**SCHAEFFLER**

**FAG**

## Tapered roller bearings – a premium product from FAG

Tapered roller bearings are characterized by high radial and axial load carrying capacity and by a large usable speed range. They are efficient at supporting forces and ensure a precise and rigid shaft guidance system due to the large effective distance between the bearings. They are adjustable, can be dismantled, and are therefore easy to fit.

However, the increasing productivity in industry means that rising demands are being made of tapered roller bearings as well. They should operate for longer, generate as little friction as possible, and of course be easy to maintain. Schaeffler's response: Tapered roller bearings in X-life quality.



## What benefits does X-life quality offer the customer?

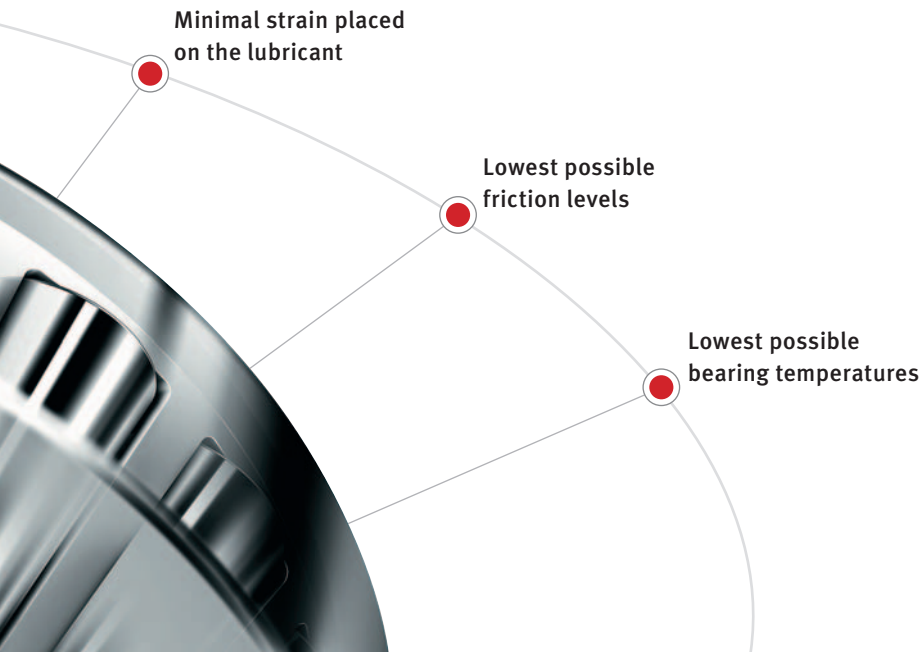
### X-life. Proven to be better

X-life is the seal of quality for particularly high-performance products from the INA and FAG brands.

X-life products are characterized by a high rating and operating life – the result of higher dynamic load ratings than those of current standard products. They therefore open up entirely new design possibilities and make a

significant contribution to improving the overall cost-effectiveness of the application.

This increase in performance is down to the state-of-the-art manufacturing technologies and improved internal construction. This produces better and more even surfaces and contact surfaces, and thus optimized load distribution in the bearing.



Minimal strain placed on the lubricant

Lowest possible friction levels

Lowest possible bearing temperatures

## X-life. What have we improved?

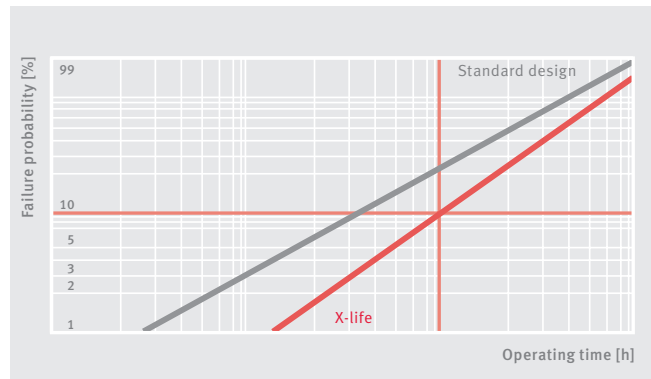
### Higher dimensional and running accuracy

Significantly reduced dimensional and running tolerances compared with DIN 620 / ISO 492 tolerance class PN ensure optimum load distribution. Stress peaks are prevented even more effectively and material loading is thus reduced even further. In operation, X-life bearings are therefore characterized by significantly smoother running and lower levels of noise generation.



### Through hardened premium material

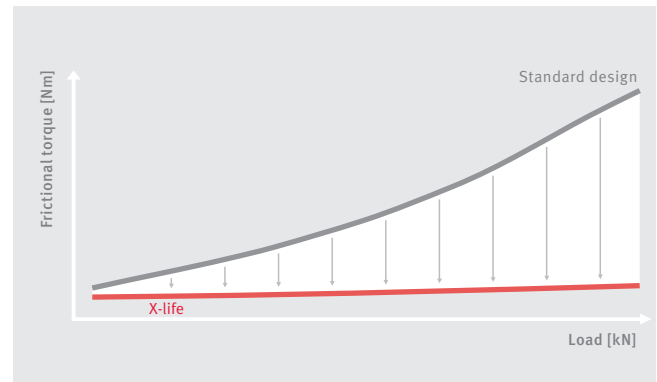
The specially heat treated material makes the surfaces of the inner and outer rings more resistant to solid particles and under mixed friction conditions. This means a further considerable increase in the life of the tapered roller bearings. Bearings with an outside diameter of 220 mm and above are dimensionally stable up to operating temperatures of 200°C.



**Measurably improved in 4 dimensions**

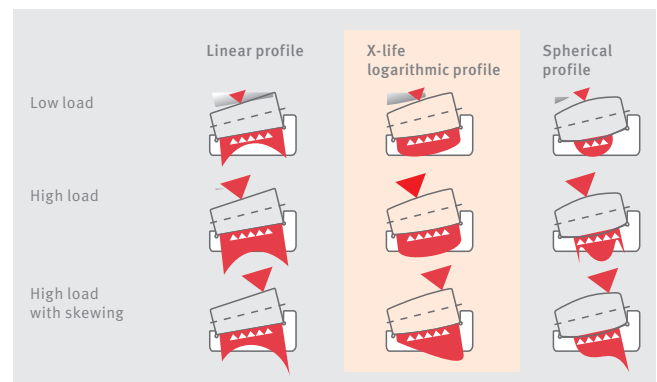
**Optimized surfaces**

An elasto-hydrodynamic lubricant film is formed even at very low speeds due to the low surface roughness of the rings and the rollers. The bearings can be placed under very high loads directly after initial operation. Together with the increased geometrical and running accuracy of the X-life design, the improved surface topography reduces the generation of friction and heat to a large extent.



**Improved geometry**

The logarithmic profile for the raceways and the outside surfaces of the rollers was further optimized so that stress peaks under even higher loads and any possible skewing are compensated. The match between the contact geometry of the inner ring ribs and the roller end faces was improved again in order to further minimize friction and therefore reduce heat generation.



## X-life quality. It pays off

A high radial load combined with a high axial force, a large speed range, precise and rigid shaft guidance, and a low maintenance outlay: It pays to use our bearings in a wide range of industrial applications.

**From the field:** FAG tapered roller bearings in X-life quality are now indispensable for the construction and agricultural machinery sectors, where efficient and high-performance bearing supports are essential.

In the axle bearing, the optimized surfaces mean that a hydrodynamic lubricant film can be formed even at low speeds, e.g. during field operation. Friction and wear are reduced. Even at the pinion shaft's top speed (driving the tractor at 50 km/h on the road), the X-life tapered roller bearings prove their quality, efficiency, and durability. In addition to saving fuel, this also increases the reliability of the machine.



*Axle bearing supports in agricultural machinery*



*Mobile hydraulics in construction machinery*



*Drill head bearings in the mining industry*



*Road rollers*



*Rolling mills in the steel industry*



*Oil and gas conveyance technology*



*Grinding rollers in vertical mills*



*Gearboxes, e.g. in wind turbines*

**Cost-effective**  
**Reliable in operation**  
**Energy-saving**

## X-life. Your TCO benefit

X-life offers greater efficiency throughout the entire lifecycle of our tapered roller bearings, which therefore means greater efficiency for your application – from both a technical and economical standpoint (total cost of ownership).

- **Extremely reliable**
- **High-performance** – dynamic load ratings up to 20% higher than those of the previous design **and** an increase in nominal rating life of up to 70% under the same operating conditions
- **Low friction** – up to 50% less friction compared to the previous design (up to 75% for bearings with a large contact angle due to the increased influence of the axial load) **and** a bearing temperature reduction of up to 20%

**Conclusion: FAG tapered roller bearings in X-life quality increase the overall efficiency of your machines and equipment.**



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Issued: 2014, August

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