

## Wheel bearing types

The wheel bearing is important for the rolling characteristics of a wheel and, consequently, for the mobility of the application equipment. It must meet the requirements concerning load capacity, duration of operation, environmental influences, starting and rolling resistance and possible further requirement criteria.



### Plain bore

(indicated as 'G' in the product code)

The plain bore is a simple, cost-effective and durable wheel bearing, corrosion-resistant and maintenance-free under standard conditions.

Plain bores are mainly used for light duty and transport equipment castors and are suitable for low speeds and intermittent use.

For wheels with tubular steel hubs, plain bore bushes made of nylon are used.

At high speeds under high loads, overheating may occur. Cast iron wheels with plain bore must be regularly lubricated.



### Roller bearing

(indicated as 'R' in the product code)

The roller bearing is a sturdy, robust, largely maintenance-free wheel bearing type which only requires a small mounting space.

Roller bearings (also called needle bearings) have a small radial bearing play and have proven particularly successful with castors for transport equipment.

Roller bearings consist of steel rollers fitted into a plastic or steel cage. These rollers roll between the axle tube and the wheel hub. As there is no sliding friction, only rolling friction during the rotation around the axle, the rolling resistance of the wheel is relatively low, even with higher loads.

Roller bearings are lubricated with long-life grease and are maintenance-free under standard conditions.

In addition to the standard version, roller bearings are also available in stainless steel (indicated as 'XR' in the product code).



### Central ball bearing (C) with ball bearing cover

(indicated as 'K' in the product code)

A central ball bearing offers a very precise, light running performance and a good sealing. These bearings are mostly used for synthetic wheels with small loads and for guide rollers. The wheel centre is directly injected onto the central ball bearing.

The central bearing is equipped with two sealing caps (slipping sealing, so-called 2RS-bearing) as standard.

Ball bearings are lubricated with long-life grease and are maintenance-free under standard conditions.

## Wheel bearing types



**Central ball bearing (C) with additional ball bearing seals**  
(indicated as 'KD' in the product code)

A special additional ball bearing seal is available where high sealing requirements are needed for ball bearings used in corrosive wet applications. The combination of ball bearing sealing caps (slipping sealing, so-called 2RS-bearings), clearance sealing and additional slipping sealing ensures an optimum protection of the ball bearing against splash water and contamination. Wheels with additional ball bearing seals are suitable for machine washing. The slipping sealing produces a slightly increased rolling resistance. Ball bearings are lubricated with long-life grease and are maintenance-free under standard conditions.



**Ball bearing**  
(indicated as 'K' in the product code)

The bearing type with grooved ball bearing (also called precision ball bearing) meets highest demands on load capacity, rolling characteristics (also at higher speeds) and resistance to environmental influences. Grooved ball bearings have the smallest bearing play and are mainly used for technically demanding transport equipment castors and heavy duty castors. A cover plate provides protection against dust (non-slipping sealing, so-called Z-bearing). For special requirements, ball bearings can be fitted with one or two sealing caps (slipping sealing, so-called RS or 2RS-bearing). Wheel bearings with sealed ball bearings (RS, 2RS) should not be lubricated as the ball bearing could be damaged. Grooved ball bearings are lubricated with long-life grease and are maintenance-free under standard conditions. As standard, two ball bearings are fitted into the hub. The ball bearings inner rings are separated by means of a spacer sleeve to ensure a tight fit. In addition to the standard version, ball bearings are also available in stainless steel (indicated as 'XK' in the product code), with special heat-resistant grease (indicated as 'HK' in the product code, stainless steel version: indicated as 'HXK' in the product code) or as heat-resistant ball bearing (oven bearing, indicated as 'IK' in the product code). With a reduced load capacity heat-resistant ball bearings are suitable at temperatures between -30° C and +300° C.



**Ball bearing with additional ball bearing seals**  
(indicated as 'KD' in the product code)

A special additional ball bearing seal is available where high sealing requirements are needed for ball bearings used in corrosive wet applications. The combination of ball bearing sealing caps (slipping sealing, so-called 2RS-bearings), clearance sealing and additional slipping sealing ensures an optimum protection of the ball bearing against splash water and contamination. Wheels with additional ball bearing seals are suitable for machine washing. The slipping sealing produces a slightly increased rolling resistance. The axle diameter is reduced and the clamping length is increased by 2 mm as the sealing elements assume the function of the flanged bushes. Wheels with ball bearing seals can be fitted easily into swivel and fixed brackets. Due to the smaller axle diameter, sealed versions are only conditionally suitable for end wheel applications. In comparison to ball bearing seals, the additional slipping rubber sealing is not used in the ball bearing cover (indicated as 'HKA', 'XKA' in the product code). The option -XKA is also suitable for machine washing due to the stainless steel ball bearings.



**Spherical roller bearing**  
(indicated as 'PR' in the product code)

Spherical roller bearings have two roller rows which have a large rolling body contact surface and therefore attain an extremely high load capacity with relatively small dimensions. Spherical roller bearings offer angular mobility and are therefore insensitive to axle deflections. Due to the extremely high load rating, remarkable operational performance is reached. Spherical roller bearings are therefore preferred for use in heavy duty wheels for plant engineering with continuous use. As standard, two spherical roller bearings are fitted into the hub. The spherical roller bearings inner rings are separated by means of a spacer sleeve to ensure a tight fit. Spherical roller bearings have no sealing as standard. Special sealing washers for spherical roller bearings are available upon request.