

## Wheels and castors guide

### Wheel bearing types



#### Plain bore

("G" in the product code)

The plain bore is a simple, cost-effective and resilient wheel bearing. It is also corrosion-resistant and maintenance-free under normal conditions. Plain bores are mainly used for light duty and transport equipment castors, which are only moved infrequently and at slow speeds. Nylon plain bore sockets are used for wheels with tubular steel hubs. Plain bores may run hot at high speeds and under high loads. Cast iron wheels with plain bores must be lubricated on a regular basis.

#### Roller bearing

("R" in the product code)

The roller bearing is a robust, resilient and largely maintenance-free wheel bearing that can be installed in a small space. Roller bearings (also called roller basket or needle bearings) have a small radial bearing clearance and are mainly used for transport equipment castors. The roller bearing consists of steel rollers in a synthetic or steel cage. These rollers roll between the axle and the wheel hub. The rotation around the axle causes rolling friction rather than dynamic friction. This keeps the rolling resistance of the wheel relatively low, even under heavy loads. Roller bearings are lubricated with a long-life grease and maintenance-free under normal application conditions. Stainless steel versions of roller bearings are also available (-XR in the product code).

#### Ball bearing

("K" in the product code)

The wheel bearing with grooved ball bearing (also called a precision ball bearing) meets high standards in terms of load capacity, rolling characteristics (even at high speeds) and resistance to environmental factors. Grooved ball bearings have the lowest level of bearing clearance, and are mainly used in technically-demanding transport unit castors and heavy-duty castors. A cover cap provides protection against dust (non-rubbing seal, also known as a Z bearing). Ball bearings can be installed with one or two sealing caps (slipping sealing, also known as an RS or 2RS bearing) for special requirements. Wheel bearings with ball bearings sealed on both sides (2RS) must not be lubricated to avoid damage to the ball bearing. Grooved ball bearings are lubricated using long-life grease and are maintenance-free under normal application conditions. Two ball bearings are installed in the hub as standard. A spacer sleeve is used to maintain the distance between the inner race of the ball bearing. This means that the wheel can be clamped axially into a bracket (exception: roller for pallet trucks). In addition to the standard version, ball bearings are also available in a corrosion-resistant version (-XK in the product code), a version lubricated with heat-resistant special grease (-HK or -HXX (corrosion resistant) in the product code) or as a heat-resistant ball bearing (oven bearing, -IK in the product code). Heat-resistant ball bearings are suitable for use in temperatures between -30 °C and +300 °C with reduced load capacity.

#### Central ball bearing (C) with thread guard

("KA" or "KF" in the product code)

A central ball bearing provides extremely precise and smooth operation, and a good seal. These bearings are primarily used for synthetic wheels supporting small loads and for guide rollers. The ball bearing is encapsulated with the wheel centre. The central ball bearing is provided with two sealing caps (slipping sealing, so-called 2RS bearings) as standard. Ball bearings are lubricated with long-life grease and are maintenance-free under normal application conditions. The additional synthetic ball bearing cover provides protection for both the wheel hub and the thread. When the wheel is fitted in swivel and fixed brackets, no flanged bushes are required, unlike for conventional wheel bearings with ball bearings that are pressed in.

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#### Two central ball bearings (CC) with thread guard

("KA" or "KF" in the product code)

The wheel bearing with two central ball bearings provides a high level of precision and smooth running performance. It also provides an effective seal while meeting demanding load capacity requirements. Positive locking is used to encapsulate the ball bearings with the wheel centre. The central ball bearings are provided with two sealing caps (slipping sealing, so-called 2RS bearings) as standard. The ball bearings are lubricated using long-life grease and are maintenance-free under normal application conditions. The additional synthetic ball bearing cover provides protection for both the wheel hub and the thread. When the wheel is fitted in swivel and fixed brackets, no flanged bushes are required, unlike for conventional wheel bearings with ball bearings that are pressed in.



#### Central ball bearing (C) with thread guard and additional ball bearing seal

("KAD" or "KFD" in the product code)

Additional sealing can be provided for ball bearings used in highly-corrosive wet areas. Combining sealing caps (slipping sealing, so-called 2RS bearing), clearance sealing and an additional slipping sealing provides the ball bearing with optimal protection against water spray and dirt. Wheels with an additional ball bearing seal are suitable for machine washing. The slipping seal increases the rolling resistance slightly. Ball bearings are lubricated with long-life grease and are maintenance-free under normal application conditions. The additional synthetic ball bearing cover provides protection for both the wheel hub and the thread. When the wheel is fitted in swivel and fixed brackets, no flanged bushes are required, unlike for conventional wheel bearings with ball bearings that are pressed in. The ball bearing cover (-HKA, -XKA or -XKF in the product code) does not have the additional rubber sealing ring provided in the version with a ball bearing seal. The -XKA version is also suitable for machine washing due to the corrosion-resistant ball bearing.



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Versions with the ball bearing cover (-HKA, -XKA or -XKF in the product code) do not have the additional rubber sealing ring provided in the version with a ball bearing seal. The -XKA version is also suitable for machine washing due to the corrosion-resistant ball bearing.



#### Spherical roller bearing

("PR" in the product code)

Spherical roller bearings have two rows of rollers to increase the contact surface of the rolling elements and achieve extremely high load capacities while keeping dimensions relatively small. Spherical roller bearings allow for angular adjustment and are therefore resistant to the axle being bent. The extremely high load capacity provides outstanding operational performance. Spherical roller bearings are therefore used in heavy duty wheels, with a focus on plant engineering (three shift operation). Two spherical roller bearings are installed in the hub as standard. A spacer sleeve is used to maintain the distance between the inner races of the spherical roller bearing. This means that the wheel can be clamped into a bracket. Spherical roller bearings are not normally sealed. A special seal is available for spherical roller bearings upon request.