

WHEEL BEARING GENERATIONS

TAPERED ROLLER WHEEL BEARINGS

Tapered roller wheel bearings are a type of cartridge bearing consisting of an outer race (cup) and inner race (cone), with a row of ball bearings in between. The cups and cones are typically made from steel or aluminium, while the bearings themselves are usually steel surrounded by a layer of grease.

Cups are pressed onto the wheel hub, while cones are inserted to the axle. Their operation is simple: the bearings inside the cups and cones allow the hub to spin freely around the axle, helping the wheel rotate smoothly.

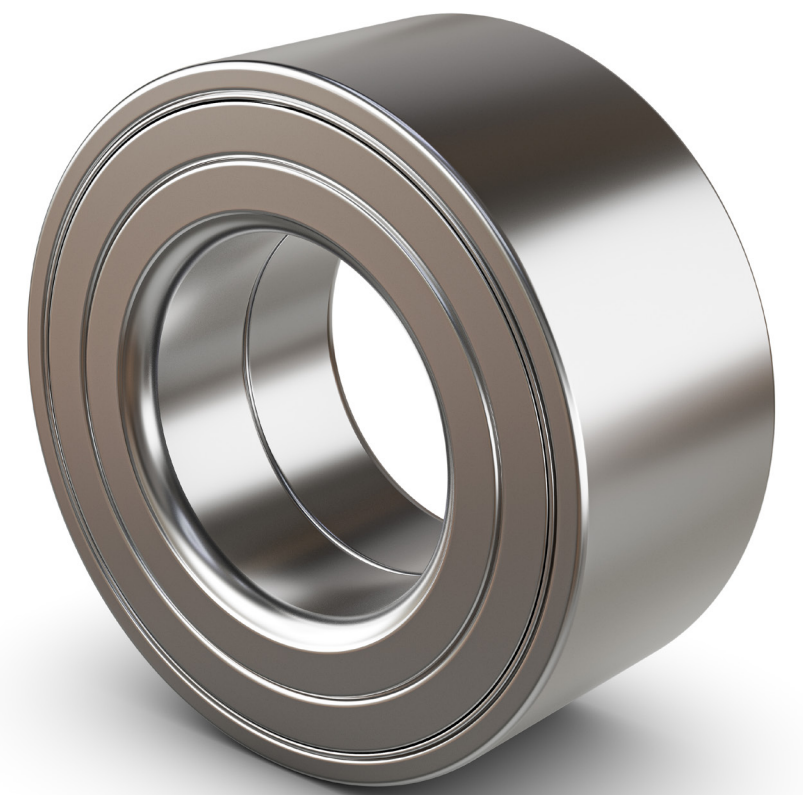
Single tapered roller bearings arranged in pairs are becoming increasingly uncommon, being replaced by compact wheel bearing units that can take on more peripheral functions from generation to generation.

WHEEL BEARING GENERATIONS

Generation 1

This was the first wheel bearing unit on the market. It is available with both ball and tapered rollers.

This design supports a vehicle's wheels rotation by reducing friction between the axle and the wheel hub. While known for its adjustability and durability, this bearing requires maintenance.



Generation 2

These bearings are a more advanced compared to Generation 1. They are commonly used in modern vehicles and offer improvements in performance and durability.

Unlike Generation 1 bearings which are separate components, Generation 2 bearings often come as an integrated hub assembly. This means the bearing and hub are pre-assembled and sealed. The built in seals provide better protection from contaminants, facilitating better performance and longevity, and makes them easier to maintain.

Generation 3

These bearings are the latest advancement in wheel bearing technology. They are designed to offer even better performance, durability, and integration compared to earlier generations.

Like Generation 2, these bearings often come as fully integrated units that include the bearing and hub. This assembly simplifies installation and ensures precise alignment.

Some Generation 3 bearings feature built-in sensors that monitor parameters including wheel speed for vehicle systems such as the anti-lock braking system (ABS) or traction control, helping improve safety and performance.



CONTACT

01302 727 312
info@nakata.uk

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