

Wheel carrier

The part of the wheel suspension which supports the wheel bearing is referred to as the wheel carrier.

Function

The task of the wheel carrier is to support a car's wheel bearing – and therefore also the wheel with it. The brake disc, brake calliper and the drive shaft (on driven axles) are also connected to the wheel carrier. A broad spectrum of geometric solutions exists to match the axle concept in question.

All wheel carriers on driven axles feature a bore hole for the wheel bearing to be mounted and the drive shaft's link pins to be guided through. On driven axles, the inner races on the wheel bearings rotate. On non-driven axles, either the inner or outer races can rotate. Wheel carriers on non-driven axles therefore often have a pin to enable the wheel bearing to be mounted.

The complex interfaces with the control arms, brake callipers, drive shaft (if relevant) and spring struts must be precisely attuned to one another when the chassis is designed. The wheel carrier should be as light as possible because its sole means of suspension/shock absorption is the tyre in each case (unsprung mass).

Materials

Modern-day wheel carriers are made of aluminium or steel. The materials used for the wheel carriers must satisfy strict requirements. As such, the materials are required to be especially solid and rigid. What's more, they must also be resistant to corrosion. The ideal material and manufacturing method primarily depend on the following factors:

- Material characteristics
- Wheel loads
- Weight
- Cost

For example, wheel carriers made of forged steel are used where high wheel loads are encountered. On the other hand, wheel carriers are made of forged aluminium in cases where lightweight construction is vital. The chilled-casting method is used when weight and cost should both be kept moderate.

Safety

Wheel carriers are responsible for active safety to a significant extent, which is why the materials are subject to such stringent requirements.

Images



CORTECO_EN

Source: <https://www.my-cardictionary.com/dictionary/chassis/wheel-carrier>