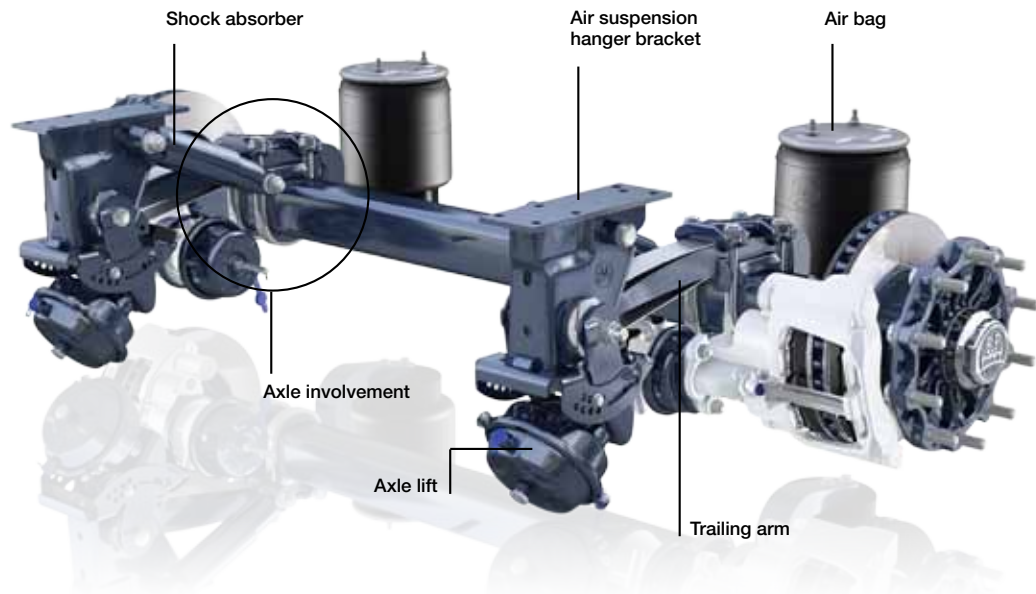
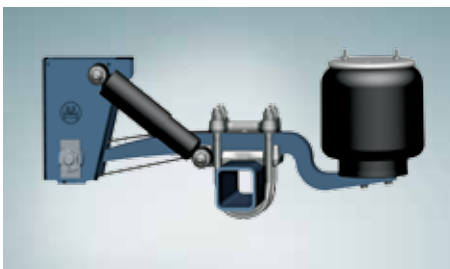


No roads are absolutely smooth. To make up for this, we build absolutely perfect running gear.

A running gear system is only ever as good as its suspension. BPW air suspension systems are individually designed to cope with where and for what they're going to be used, and what load they're going to carry. Only in this way it is possible to ensure the optimum driving safety at the same time as reducing the stress on the driver, the cargo and the body. This reduces wear on the tyres and cuts down the stress on the vehicle body and the cargo – as well as reducing your expenses. Another advantage: The modular construction means that it's easy to exchange individual components in the event of a repair.



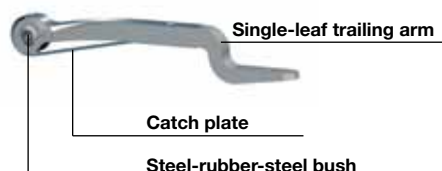
The **U-shaped connection** comprising the axle and flexible trailing arms noticeably reduces unwanted rolling movements and reduces the load on the vehicle frame. This principle of connecting the axle and trailing arms together acts as a stabiliser to cut down rolling movements. In this way, air-sprung suspension systems from BPW achieve safe driving properties as well as a high level of driving comfort.



The **trailing arm** connects the axle to the vehicle frame via the air suspension hanger brackets and the air bag. BPW trailing arms (single or twin leaf springs) are highly flexible spring steel elements. They are **hot-rolled**, from one piece, after which they are **shot-peened** and **cataphoretic dip-coating and zinc-phosphating**. Trailing arms absorb a great deal of torsional forces applied to the axle beam. Various trailing arm versions permit individual equalisation – for example for axle load, track, spring centre, centre of gravity height and driving comfort. In every situation, their stiffness and flexibility are exactly matched to the vehicle and its application. This reduces the stress on the body and ensures that the vehicle achieves a long service life. The catch plate offers the necessary safety reserves if the worst should come to the worst. Long-life steel-rubber-steel bushes (up to 4 times the service life of rubber-steel bushes) offer **maintenance-free mounting** of the trailing arm. The axle is exactly controlled, while tyre wear and operating costs are both reduced.

Offset BPW trailing arm

Straight BPW trailing arm



More information:

▶ 3-D trailing arms (page 50) ▶ KTL_{zn} coating (page 9)



The **air bag** ensures outstanding suspension of the body and makes it possible to adjust the vehicle height using the „lifting“ and „lowering“ functions.

- ▶ 300 mm Ø for standard and lightweight vehicles
- ▶ 360 mm Ø for greater axle loads and heavy-duty applications
- ▶ Long-travel air bags for swap-body trailers or mega-trailers
- ▶ Combi airbag for piggy-back and Ro-Ro applications



Air suspension hanger brackets transfer all control, braking and acceleration forces from the axle to the vehicle frame. Short, adjustable BPW air suspension hanger brackets with integrated shock absorber mounts make installation easier, reduce weight and cut the torsional load on the vehicle's frame. The vehicle manufacturer benefits from straightforward cross-bracing options at the interface between the frame and the hanger bracket. Rapid unit alignment is possible using BPW hanger brackets with integrated track setting. Production tolerances on the vehicle can be equalised or wheelbases corrected without the need to unfasten the U-bolts (axle tracking). BPW air suspension hanger brackets are available in steel as well as in high-grade steel and aluminium on request.

What is more, with the bolted Airlight II air suspension hanger bracket, BPW is offering manufacturers the opportunity of coating vehicle frames without air suspension hanger brackets, and not connecting them to the complete axle unit until the final assembly stage. Cold-joining technology allows the bolt-on hanger bracket to be mounted on standard frames, including aluminium frames, with bottom boom width as little as 120 mm – no changes are necessary on the frame.



The axle is connected to the trailing arm using the **axle connection comprising**: spring plates, spring pads, segments and U-bolts. Clamped, positive-locking axle connections ensure an even force transfer into the axle appropriate to the degree of load. This is only possible with square axle beams which therefore offer a long service life. The connection parts are attached at the reinforced radii of the axle beam (no welded connection). BPW uses U-bellows because of their spring characteristics. They roll over the rolling piston during compression.



BPW air suspension – Features and benefits

- ▶ Easy to service thanks to modular structure
- ▶ Good availability of spare parts for repairs
- ▶ Optimum axle control by steel-rubber-steel bushes for low tyre wear
- ▶ Air suspension hanger brackets with integrated track setting, optionally also for cold-joining technology
- ▶ Flexible trailing arms for reduced stress on the vehicle
- ▶ Maintenance-free axle connection with Airlight II
- ▶ Optionally with Combi airbag for piggy-back and Ro-Ro applications
- ▶ 3-D trailing arms mean no modification to the vehicle frame is required when installing a BPW self-steering axle
- ▶ Optimum static and dynamic axle load equalisation
- ▶ U-shaped connection for greatest stability and optimum roll resistance
- ▶ Highest driving comfort and sensitive handling of the cargo
- ▶ Catch plate for high safety reserves
- ▶ Optionally with axle lift device for reduced tyre wear
- ▶ Cathaphoretic dip-coating with zinc-phosphating (KTL_{Zn}) for surface protection

More information:

- ▶ Channel crossmember (page 50) ▶ PDC load-dependent damping (page 51) ▶ Combi airbag (page 49) ▶ Axle lifts (page 51) ▶ Heavy-duty air suspension (page 52)
- ▶ KTL_{Zn} coating (page 9)