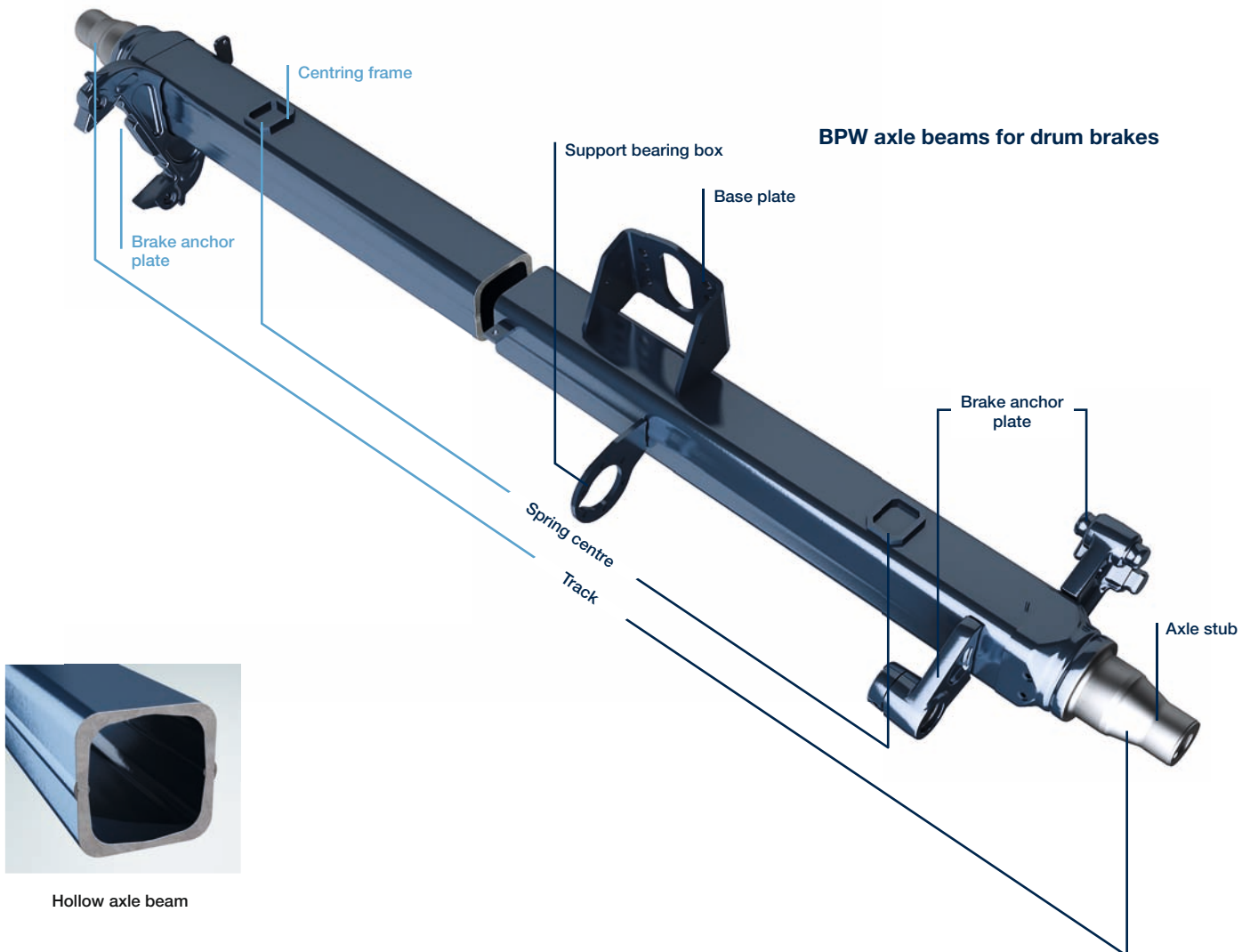


# We build on the sturdy square profile so that everything runs smoothly when you are driving.

BPW axle beams have been square for years. And for good reason. Despite their low inherent weight, they offer extreme stability and the greatest possible reliability. It is a BPW design principle that has proven itself millions of times over. Together with our brakes and suspension systems, the square axle beam offers a sturdy basis for a long vehicle service life.

## BPW axle beams for disc brakes



Hollow axle beam

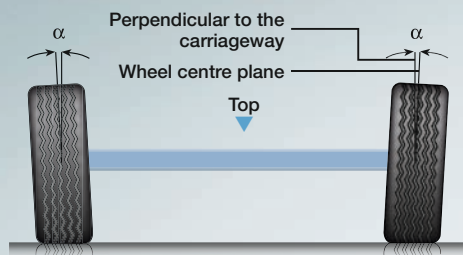


### BPW axle beams – Features and benefits

- ▶ The square axle beam is optimally adapted to the total forces arising, such as bending and torsional loads
- ▶ Low inherent weight combined with the highest possible stiffness for heavy payloads
- ▶ Joining the quenched and tempered axle stubs to the square axle beam using the flash butt-welding process ensures a uniquely strong connection as well as the longest possible service life
- ▶ BPW axle beams are prepared for ABS retrofitting as standard
- ▶ Even tyre wear because the axle beam has a positive camber and a narrow toe-in tolerance
- ▶ Easy installation/removal of the wheel hub thanks to stepped bearing seats on the axle stub
- ▶ Long-lasting corrosion protection by cataphoretic dip-coating with zinc-phosphating, KTL<sub>Zn</sub>

## Relief for tyres and the driver. For BPW, it's purely a question of adjustment.

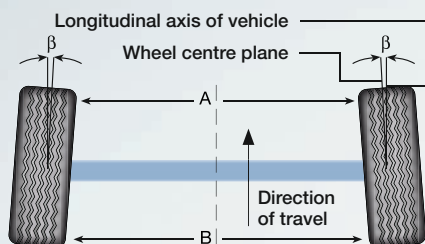
The camber and toe-in of each BPW axle beam are set at the factory. These are minor values, but they have a big effect on driving. That is because having the right camber and toe-in adds up to greater road safety and efficiency.



### Positive camber – Unladen vehicle

Camber is defined as the angle ( $\alpha$ ) between the wheel centre plane and a line drawn perpendicular to the plane of the carriage way. The camber is positive if the top of the wheel is angled outwards when the axle is unladen.

The bending load on the axle beam when the vehicle is laden causes the wheel to straighten. This means the tyre rolls with optimum road contact when the vehicle is laden (the most critical condition in terms of wear). This avoids uneven, premature tyre wear.



### Toe-in

Toe is the angle ( $\beta$ ) between the longitudinal axis of the vehicle and the wheel centre plane. Toe-in means the front part of the wheel is turned inwards towards the longitudinal axis of the vehicle – i.e. the distance between the front of the tyres (A) is less than the distance at the rear (B). During driving, the rolling resistance of the tyres causes the angle ( $\beta$ ) to be forced back to zero, thereby ensuring stable straight-ahead driving. Without toe-in, the wheels would attempt to run outwards.

## Camber and toe-in – Features and benefits

- ▶ Setting a positive camber ensures maximum contact between the carriage way and the tyres when the vehicle is laden, optimum tyre tracking and avoidance of uneven, premature tyre wear
- ▶ Having the toe-in set exactly ensures stable straight-ahead driving
- ▶ Lower operating costs and improved road safety



## BPW rigid axles – Features and benefits

- ▶ For axle loads up to 20 t
- ▶ Versions with air or leaf suspension
- ▶ Versions with disc or drum brake
- ▶ With (mounted) BPW brake cylinders
- ▶ Wheels with or without offset
- ▶ Single or twin tyres
- ▶ Wheel sizes from 12 to 24 inches
- ▶ Stud or hub centring
- ▶ For disc wheels (steel or aluminium) or star wheels (TRILEX)
- ▶ ABS can be retrofitted
- ▶ All axles also have cathophoretic dip-coating and zinc-phosphating ( $KTL_{Zn}$ ) at inaccessible points such as in cavities to provide optimum protection against corrosion
- ▶ BPW axles and suspension units are resistant to temperature effects in line with NATO requirements