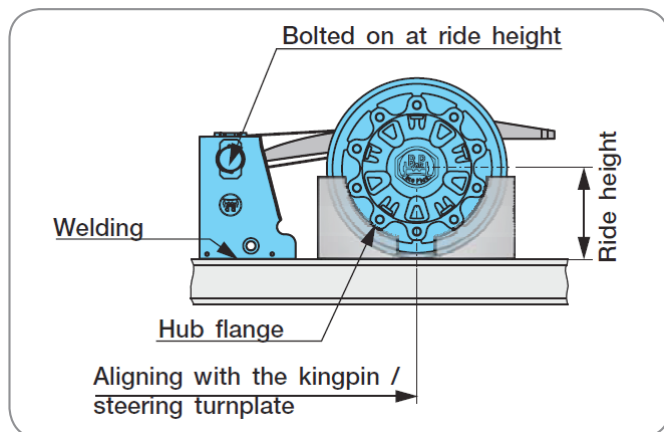


Code of Good Manufacturing Practice

The following is a list of problems which have been observed at various trailer builders from time to time by BPW staff members. As they can all lead to future problems we have decided to issue the following advisory to prevent damage being caused to the BPW products during the manufacturing of the trailer.



1. The moving of trailers on the assembly line

- After the axles and suspensions have been mounted to the chassis on the assembly line, temporary wheels must be fitted on at least one of the axles. This is to ensure that the trailer does not rest on the brake drums on the production floor. The brake drums are not designed to carry the weight of any empty vehicle on the open side of the drum. The result of this practice is that the brake drum can develop internal cracking and failure of the brake drum can occur in operation, causing extensive damage. There have been incidences where the brake drums have burst and damaged the brake spider to the extent that the complete axle has had to be replaced. When these brake drums were sent for material testing no abnormalities in the material specification could be found. This leads BPW Axles to suspect mechanical damage to the drum resulting from mishandling, including those illustrated above.

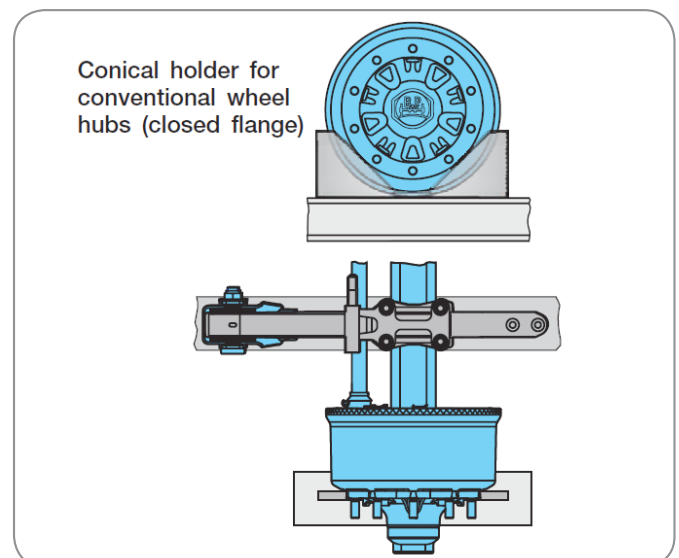
- Another thing to be avoided is the practice of allowing the vehicle to slam down onto the brake drums when turning the vehicle over after welding on the suspension. This can also result in damage to the brake drums in the form of cracks.
- You must also avoid accidentally dropping the axle onto the drums while moving it around.

2. Airbag installation after the vehicle has been painted

BPW recommends that the airbags are only fitted to the vehicle after it has been painted.

The advantages of this recommendation are:

- The airbag will not be damaged during vehicle construction by weld splatter, impact damage from tools, etc.
- If the trailer is lifted during assembly the axles drop away from the chassis. As there is no air in the airbags it tends to create a vacuum which sucks the sides of the airbag inwards. When the vehicle is put back down on the floor the airbags do not roll back correctly over the airbag piston, and the rubber bellow can be pinched and damaged.



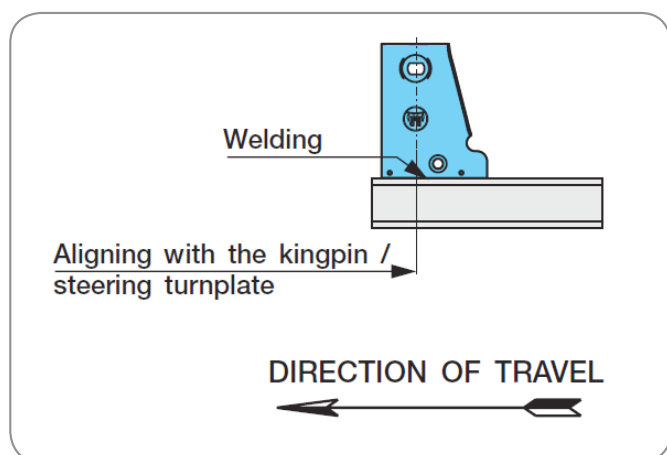
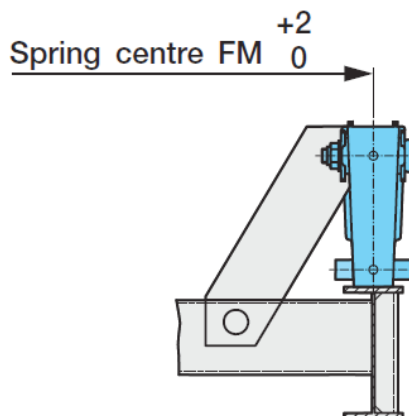
- ⦿ The airbag must be covered before painting to prevent damage to the rubber from the thinners in the paint. Often this is not done and the thinners will make the rubber bellow brittle, shortening the life of the airbag. Rather leave the airbag off until the vehicle has been completely painted.

The implication of this recommendation is that spacers will need to be used between the trailing arm and the chassis.

The spacers can have the following additional advantages:

- ⦿ The length of the spacer can be made so that when fitted the vehicle is already at the correct ride height as if the airbags were installed and inflated. With the suspension at the correct ride height the stress on the Steel-Rubber-Steel bush in the pivot eye of the trailing arm is kept within limits and it will last longer and not be subject to premature wear. Once the bush is damaged the pivot bolt will be permanently loose, even before the trailer enters service.
- ⦿ If no spacers are fitted the entire weight of the vehicle can rest on the shock absorbers and through them onto the shock absorber mounting bolts. These bolts are not designed to carry this weight and can break off.

Many of the defects experienced by the operator early on in a vehicles life can be traced back to incorrect manufacturing procedure in the trailer builder's factory. We hope this Code of Good Manufacturing Practice will enable you to minimise these problems and in so doing give the end user the reliability he expects when specifying BPW Axles and Suspensions.



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