

Importance of maintenance and correct maintenance procedures on the pivot bolt assembly

Introduction

BPW has always prided itself on being a company that considers the long-term value and ease of use of its products. As such BPW has developed products that are “maintenance friendly” or “low maintenance”. No system is, however, maintenance free. This is especially true for components that experience frequent and high impact loading as is the case with trailer suspension and axles.

BPW allows operators more flexibility when scheduling their maintenance of the axles and suspension by requiring maintenance based on a period of elapsed time (for example every 3 months) instead of completed kms (for example every 20 000 km). This allows for maintenance to be scheduled well ahead of time and allow for appropriate route planning

Only the hub assembly is maintenance free for the first 3 years for on road applications and 2 years for all other applications. All other items require maintenance and inspection on more frequent basis.

All of the information related to maintenance schedules can be found on our website at <https://www.bpw.co.za/support-services>.

Pivot bolt assembly maintenance requirements

South Africa is plagued by rapidly deteriorating road conditions which leads to increased wear on vehicle components and increases the need for vehicle maintenance and inspections.

One of the most important items to frequently inspect is the spring pivot bolt assembly. An extract from our “Maintenance Instructions” book is shown below. The spring pivot bolt should be inspected as part of the first service (between 1 000 km to 5 000 km of the first load) and subsequently should be checked every 6 months for on road applications and 3 months for off-road applications.

Due to the deteriorating road conditions, BPW Axles released a technical bulletin in September 2022 that has required that the adjusting plates on the hanger brackets be tack welded after adjustment. This is an effort to make the pivot bolt assembly more robust for the increasingly difficult conditions faced in South Africa. The technical bulletin is attached and can be found on our website. <https://bpw.co.za/downloads/bulletins/tech-tips/TB42-Updated-Pivot-Bolt-Installation-Requirement.pdf>

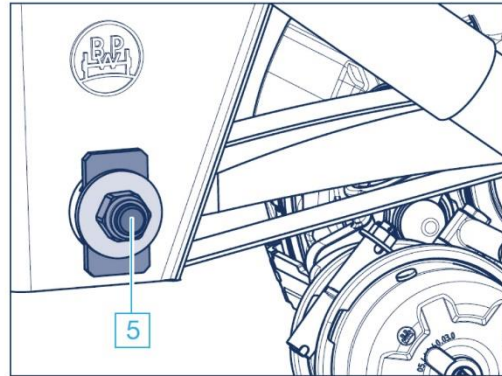
The average tightening torque recommended for the pivot bolt assembly is 650 Nm. The maximum recommended value is 715 Nm and can be utilized if the vehicles are operating in severe conditions. With the worsening operating conditions in South Africa, BPW Axles recommends that operators consider the use of the higher value in the prescribed torque range in conjunction with tack welding of the adjusting plates.

5 Spring pivot bolts

- Service intervals as shown on page 68 -

Check bushes, move vehicle back and forth slightly with the brake applied, or move rolled spring ends with the aid of a lever. No play should be present in the rolled spring end when doing so. If the fastening is loose the spring pivot bolt may be damaged.

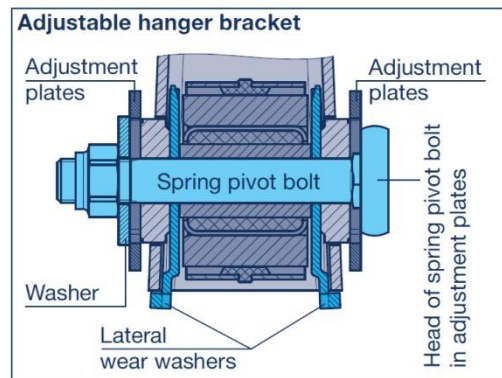
- Check the lateral wear washers in the hanger bracket.
- Check the M 24 or M 30 lock nut on the spring pivot bolt for tightness.



Tightening torque with a torque wrench:

Air suspension hanger brackets and channel crossmember from 09/2007:
M 24 (SW 36) M = **650 Nm** (605 - 715 Nm)

The serviceable life of the rubber / steel bush is dependent on the tightness of the inner steel bushing.



It is important to note that the tightening of all bolt assemblies on BPW suspensions require the use of a regularly calibrated torque wrench. Although impact wrenches can initially seem attractive due to perceived time savings, they frequently cause over tightening of bolts. Overtightening of the bolt can lead to deformation of the bolt and the loosening of the assembly as a result thereof. There is unfortunately no way of undoing this damage and can cause catastrophic failure of safety critical components such as the pivot bolt assembly. The risk vs reward is therefore not attractive when considering the possible long-term damage to the pivot bolt assembly and your vehicle due to over torquing of bolts.

It is also important to note that it does not help to first torque the pivot bolt assembly with an impact torque gun and to afterwards check the torque with the calibrated torque wrench. The impact gun will damage/stretch the bolt assembly and provide a false reading. Once stretched the assembly has a very high probability of coming loose during operation.

The use of impact tools is therefore NOT allowed on any BPW components.

If the pivot bolt assembly has come loose during operation, it is important to inspect the pivot bolt bush and wear plates. If there are any wear marks on the wearing plate, or if the center steel sleeve of the bush is no longer protruding on either side (compared to the outer sleeve of the bush), the entire pivot bolt assembly needs to be replaced. The protrusion of the inner sleeve of the bush is shown in the figure below



The inner sleeve of the bush should protrude slightly compared to the outer sleeve. If not, the pivot bolt assembly should be replaced immediately

BPW axles has an excellent sales and technical team that will gladly assist you and your fleet. Should you have any queries or uncertainty regarding maintenance schedules or maintenance problems, please do not hesitate to contact us. BPW Axles also has useful workshop posters that assist workshops in determining the tightening torques and other critical settings on all components. If your workshop or your service provider does not have this poster, please let us know and we will gladly supply it. It can also be found online at <https://www.bpw.co.za/downloads/maintenance-instructions/BPW-maintenance-wall-chart2017.pdf>.

For a list of all our accredited workshops, please follow the following link.
<https://www.bpw.co.za/network>