

# Bolt on hanger brackets

## Installation procedures including wheel alignment

Bolted air suspension hanger brackets are available as an option of the weld-on type in the Airlight 2 range. Bolted hanger brackets are used for a connection to aluminium chassis as well as pre manufactured chassis. The actual configuration is only defined when it comes to mounting of the suspension units. The bolted hanger bracket offers the vehicle manufacturer logistical advantage and increased flexibility in production.

Bolted hanger brackets installation is quite different from the welded hanger brackets. BPW wants to highlight that particular attention has to be paid to the installation sequence for bolt on hanger brackets. Not only is this different for the trailer builders but also when performing axle alignment, the correct sequence has to be followed. **The main reason is to ensure a secure connection of the spring bolt assembly in the hanger, before the hanger is braced to the frame.** By not following the correct sequence, premature wear can be experienced on the spring bolt and hanger brackets.

### Description of connections

Before installation can commence all holes need to be pre drilled in the cross member, bracing plate and the chassis according to the BPW's general arrangement drawing. (See drawing C-04.00.509610).

#### 1. Bracing plate screw connections

The bottom end of the bracing plate (1) is bolted onto the spring bolt (1a) directly using M18 connection bolt with nut (1c, 1d), which therefore permits direct force input. The spring bolt itself is a special flanged bolt. The flange simultaneously serves as a torsion lock. The top end of the bracing plate is bolted with minimum three, grade 10.9, M16, bolts (1b). The holes in the cross member should be dia 16mm and bracing plate should be dia 18mm. Please refer to *figure 1*.

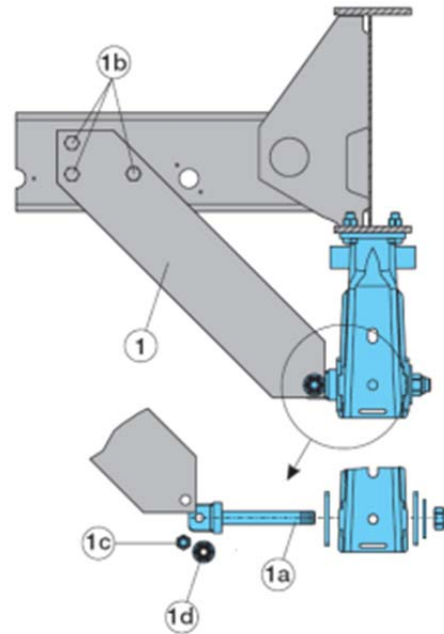


Figure 1: Struts in bolted steel air suspension hanger brackets. (Front view)

## 2. Hanger bracket bolt connection

Each of the hanger brackets is secured onto the vehicle frame with minimum 5 knurled bolts. The knurling bolts serves as a torsion lock. This special bolts have flattened area on their head so they can be mounted directly adjacent to the hanger bracket. The flatness of the longitudinal member must be not greater than 1mm. Please refer to *figure 2*.

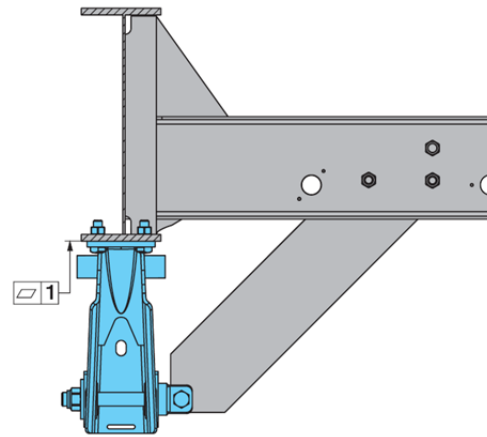


Figure 2: Struts in bolted steel air suspension hanger brackets. (Front view).

## Installation procedures and sequence

Mounting sequence with bolted air suspension hanger brackets. Please refer to *figure 3* and *figure 4* below.

1. Bolt the hanger bracket onto the vehicle frame using M16 knurled bolts.  
[Torque 240-285Nm].
2. Pre-mount the spring bolt **loosely**.
3. Pre-mount the bracing plate with at least three grade 10.9 M16 to the top and an M18 bolt at the spring bolt. Pre-mount the corresponding nuts.
4. Tighten the M18 connecting bolt (bracing plate spring bolt assembly) at approximate 50 N.m.
5. Tighten the M24 spring bolt loosely until all components have been brought into contact.
6. Set the track.
7. Tighten the M24 spring bolt.  
[Torque 605-715N.m]. **Do not use an impact driver.**
8. Tighten the M18 connecting bolt (bracing plate –spring bolt assembly)  
[Torque 390-460N.m].
9. Tighten the top connecting, grade 10.9, M16 bolts to the maximum permitted torque.  
(not supplied by BPW).

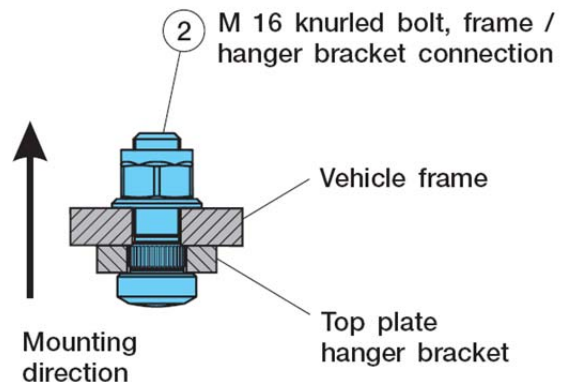


Figure 3: Hanger bracket to chassis bolt assembly.

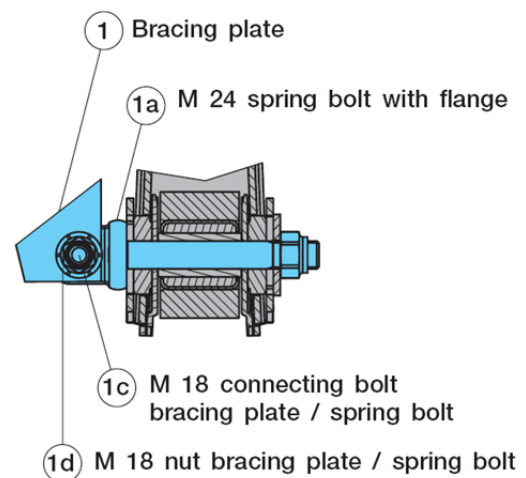


Figure 4: Spring bolt assembly with bracing plate.

### Sequence for setting the wheel alignment

It is necessary to confirm the tracking accuracy during installation as well as after repairs on axles, brackets or trailing arms. If track correction is necessary, it can be carried out as follows:

1. Raise and support the vehicle frame.
2. Exhaust the air out of the air bags.
3. **Loosen** the M 18 bolt on the bracing plate spring bolt assembly.
4. **Loosen** the three M 16's bolts on the bracing plate (top).
5. Align the centre axle (reference axle), in case of tandem use the front axle as reference axle.
6. Slide the connecting linkage on both sides, as required, upwards or downwards with **light** hammer blows, see *figure 5* below.
7. Tighten the M18 connecting bolt (bracing plate spring bolt assembly) at approximate 50 N.m.
8. Tighten the M24 spring bolt. [Torque 605-715N.m]. **Do not use an impact driver.**
9. Tighten the M18 connecting bolt (bracing plate –spring bolt assembly) [Torque 390-460N.m].
10. Tighten the top connecting grade 10.9 M16bolts to the maximum permitted torque. (not supplied by BPW).

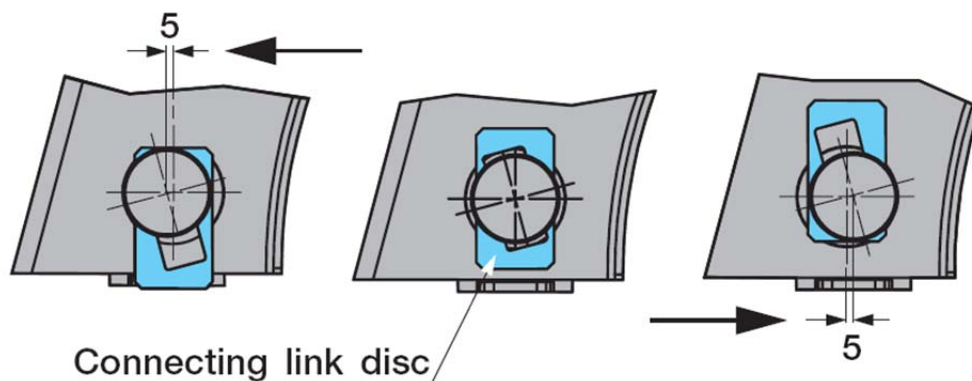


Figure 5: Tracking plate on spring bolt assembly.

If there's any queries please don't hesitate to call BPW.