BPW Axle lifts

The benefits of an axle lift is the reduced tyre wear when un-laden or under light load. Improvement in fuel consumption due to the rolling resistance and when combined with a steering axle the improvements increase. BPW Axles offers three types of axle lifts:

1. Double-sided axle lift
2. One-sided axle lift
3. Centre axle lift

Axle lifts are controlled either electro-pneumatically (electric switch), manual control (hand operated valve) or automatically (compact valve).

Double-sided axle lift

The double-sided axle lift can be used on all axles as the space requirements for the axle lift is minimal. The advantages of this axle lift is that it can be used for drum and disk braked axles. It has a low weight has it mounts directly to the pivot bolt and as such no additional mounting structure needs to be installed. The lifting force is generated by two axle lift boosters, one on each hanger (see Figure 1) to raise the axle by pushing directly on the trailing arms. These axle lifts cannot be fitted on certain underslung suspensions due to the ground clearance (dependant on hanger bracket and tyre used).

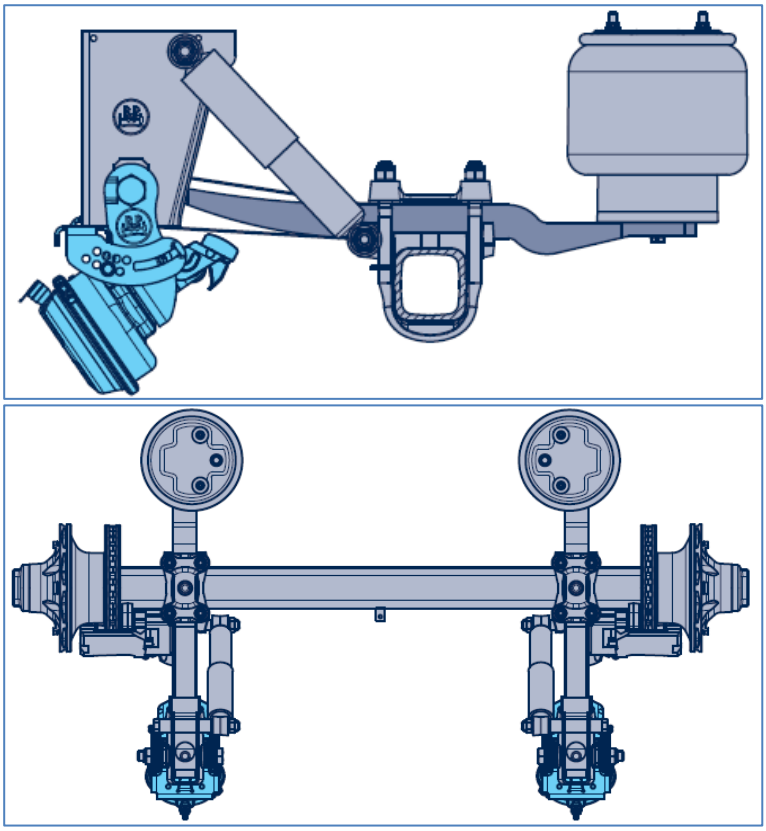

Figure 1

One-sided axle lift

The one-sided axle lift is can only be used on the first axle due to the space requirements. The lifting arm is assembled on the front air suspension hanger bracket using the pivot bolt. The airbag sits centrally on the lifting arm and is attached under the vehicle chassis (see Figure 2). The side lift is predominately used for suspension where ground clearance is crucial.

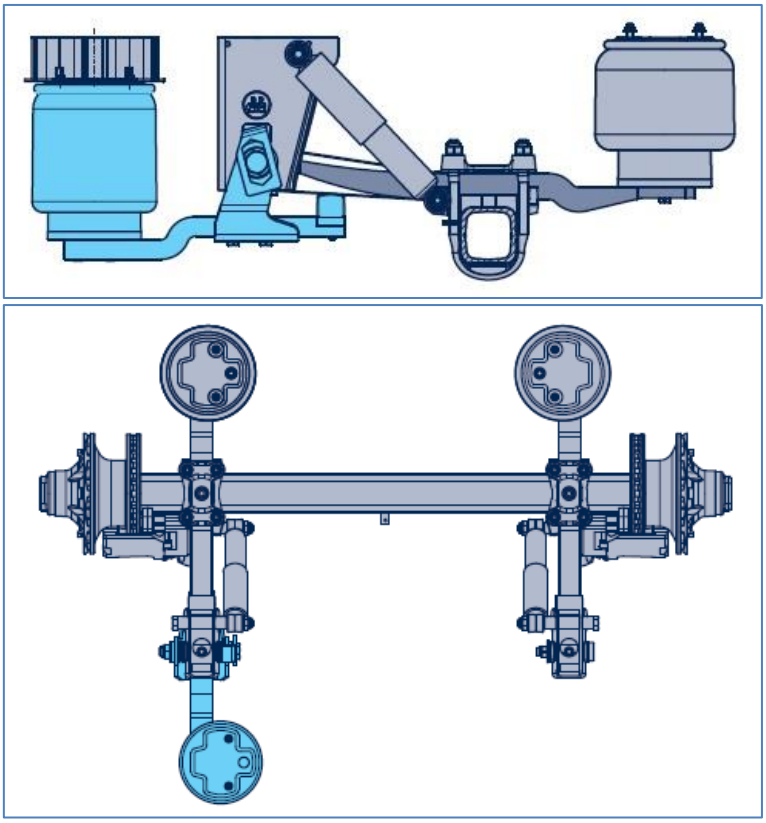

Figure 2

The one-side axle lift uses a BPW 30 airbag (same as in the suspension). They are design to carry 4500 kg per side and since the axle and suspension (together with the tyres) are less than a 1000kg the pressure to the airbag must be limited. This is to ensure that the axle lift airbag never applies its full force to lift the axle. This can cause various components to get damaged. The maximum pressure for the lifting airbag needs to be limited to 5 bar.

Centre axle lift

The Centre axle lift can be used on all three axle groups. It is generally used when either the centre or last axle needs to be raised and for underslung suspension where ground clearance is limited. The axle lift is attached to a cross-member on the vehicle frame via an additional lifting hanger bracket in the centre of the vehicle (see Figure 3). A lifting bracket is welded to the axle beam onto which the lifting arm of the axle lift acts. The centre axle lift is the heaviest out of all three axle lifts due to the extra frame work required to mount the axle lift.

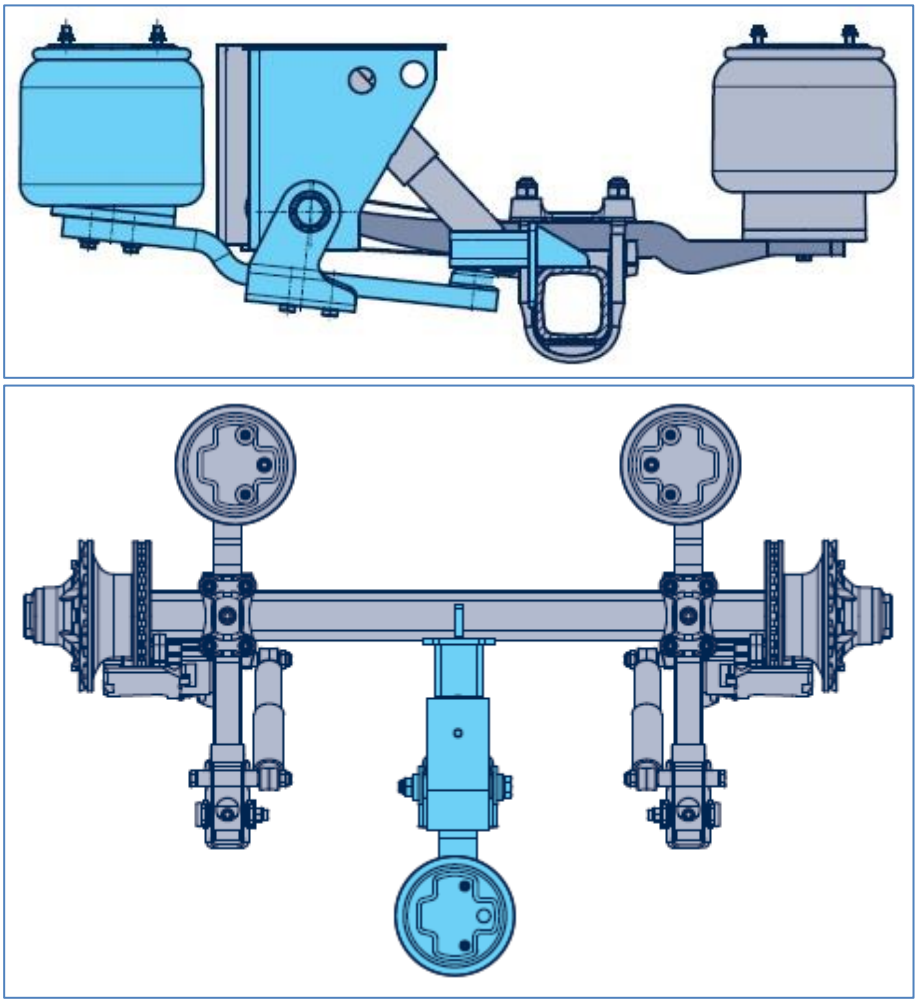

Figure 3

As with the One-sided axle lift, the centre axle lift needs to be fitted with a pressure limiting valve.

Please note:

The ride height of the air suspension units equipped with an axle lift device should be set such that there is a minimum upward travel of 100mm to ensure that the is enough clearance between tyre and ground. If it is impossible to adjust the ride height to the minimum upward travel, corresponding air suspension valve technology must be used to create sufficient ground clearance with a second ride height.
Detailed drawings and installation instructions can be found in the BPW Air Suspension Installation Instruction booklet.