| | Statutory requirement | BPW recommendation ... Conventional brake- system laden | Conventional brake- system unladen | E B S (electronic brakesystem) laden | E B S (electronic brakesystem) unladen |
|---|---|---|---|---|---|
| **Drawbar trailer** | 50 % | **60 - 63%** | **the unladen condition is to aim** | **ca. 61,5 %** | **the unladen condition is to aim** |
| **Semitrailer** | 45 % | **55 – 58%** | | **ca. 56,5 %** | |
| **Centre axle trailer** | 50 % | **60 - 63%** | | **ca. 61,5 %** | |

**General recommendations :**

- The height of the centre of gravity stated by the vehicle manufacturer must be checked for plausibility and corrected following consultation if necessary.
- If the lever length is greater than 150 mm, make sure that only long-travel diaphragm cylinders are used. Long-travel cylinders must always be used with automatic slack adjusters.
- Overload protection valve must always be used with compressed- air brake system in combination with spring-type brake cylinder.
- The identification data of the BPW brakes please take form our technical information sheets TE-1498.0 and TE-2328.0
- Basically the statutory regulations in UN R 13 are to be applied. (13)

**… Additionally for drawbar trailers:**

- Front/rear equipment difference should always be kept as little as possible. The vehicle must be configureted so that the braking effect on the rear axle does not fall below 50% given a theoretical tyre/road adhesion value of 0.8.

**Valve setting:**

Lead: Should only be provided in exceptional circumstances when necessary in order to comply with statutory regulations. It should always be possible to achieve minimum braking with a 0 bar lead.

ALB regulators: As a rule, 2 ALB regulators must be installed in drawbar trailers. Regulation of the ALB regulator in laden condition should only be undertaken in exceptional circumstances. Output pressures of $p_2 < 5$ bar at pm = 6.5 bar should be avoided if possible.

Adaption valve: The pressure retention should be set at the limit of the permitted statutory range (% Pe according to Appendix VII or lower limit of the configuration band).

Articulated valve: Must be included under the following conditions, if not before:

$$\frac{\text{Front braking torque}}{\text{Rear braking torque}} \geq 1.2 \quad \text{for 3-axle trailer}$$

and

$$\frac{\text{Front braking torque}}{\text{Rear braking torque}} \geq 1.4 \quad \text{for 2-axle trailer}$$

**Setting parameters of EBS brake systems:**

Parameterization of EBS brake systems as follows:

**In SN-brakes (drum brake)**
- set pressure at pm = 0,8 bar
- deceleration empty vehicle = deceleration forces loaded (hide empty braking band)

**In TSB brakes (disc brakes)**
- set pressure at pm = 0,6 bar
- deceleration values - empty - into the mid to upper band limit band

deceleration values between said first - and the last parameter point are linearly adjust .

Recommandations for applications in Scandinavia :
- deceleration values - empty and loaded - at the upper band limit (13)

**Brake force distribution:**

Up to pm ≥ 2.0 bar, the ratio of $\frac{\text{brake force}}{\text{axle load rations}}$ of the individual axles of drawbar trailers must be kept as even as possible.

Braking values at pm = 6.5 bar: **See page 1**

**Service brake pressure :**
should not be more than 6,8 bar.

**Brake calculations with BPW brake cylinder:**
In case BPW brake cylinders are to be used in brake calculations, the value of Co= 17 Nm has to be deducted for the calculated camshaft momentum owing to the omission of the outer return spring.

**Configuration of the parking brake system:**
The parking brake effect must be $z_{[F]} \geq 0{,}23$ (23%).
for Switzerland and England : .... $z_{[F]} \geq 0{,}28$ (28%). (13)

**Other BPW recommendations:**
Current information, including BPW- recommendation for tractor/trailer combinations can be found in the commercial vehicle catalogue and on the **www.bpw.de** website.

**In well-founded individual cases and after consultation of BPW Bergische Achsen KG a deviation from the before mentioned recommendations is possible.**