BPW-NEWS SB 03/05 e

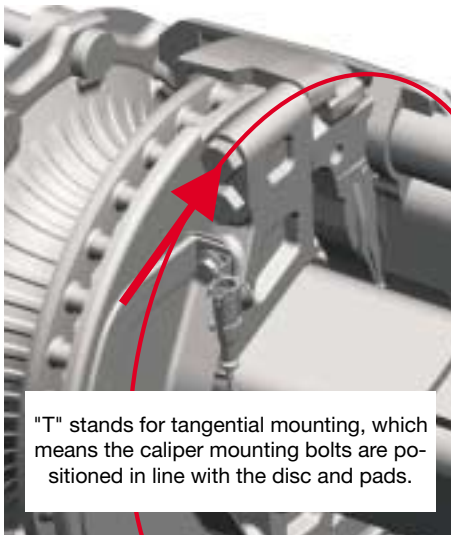
Disc brakes with tangential mounting.

As a company at the cutting edge of technology, BPW Bergische Achsen presented the first fruits of its strategic partnership with Knorr-Bremse AG at the IAA 2002, namely the disc brake with tangential bolted connection. With these new developments, BPW is able to offer from **late April 2003** a mature disc brake system that offers the longest possible brake service life - particularly when combined with the S-hub.

The tangential connection integrates a disc brake into a trailer axle in such a way as to make **service work very straightforward:**

- The same brake disc is used for ET 0 and ET 120, so fewer parts have to be stocked
- Bolt connection points are easier to access.
- Simpler mounting because standard sockets and extensions can be used, as can pneumatic nut-runners
- Quicker calliper mounting because there are fewer retaining bolts (4 instead of 5)

At the same time, the introduction of the tangential connection has made it possible to **reduce** the weight of a disc brake - by up to **10 kg** in the case of the BPW standard **SB 3745 T brake**. Furthermore, the **SB 3745 T** is fitted with **brake pads** that have a **wear volume which is 10 % larger than previously**, meaning that the pads last even longer. This brake meets all the requirements of normal haulage operations (e.g. long distance transport in Western Europe).



"T" stands for tangential mounting, which means the caliper mounting bolts are positioned in line with the disc and pads.

The SB 4345 T will be used for axle loads of 11t and 12 t in future.

Consequently, we will shortly introduce the **new SB 4309 T** brake size together with our system partner Knorr. The design of the SB 4309 T is based on combining a weight-optimised caliper with a **430 mm brake disc**. This results in a reduction of **24 kg per axle** compared to the SB 4345 T.

For the first time, the **SB 4309 T** offers a **technical and economic alternative** for use in applications in which the conditions **call for a higher disc wear capability.**

BPW recommends the SB 4309 T for applications which place high demands on the brakes, e.g. with a high proportion of downhill gradients and regional distribution haulage. Other areas of application include markets where BPW would recommend a drum brake but the customer prefers a disc brake (vehicle fleets with frequently changing tractor/trailer combinations, construction site and forestry vehicles, operation in Eastern Europe).

The following table presents an overview of the future range of BPW disc brakes:

BPW disc brake for axle loads from 9 - 12 t				
Axle load	**Brake**	**Brake size**	**Tyre size**	**Wheel type**
9 t	SB 3745 T	370 x 45	19,5" 22,5"	E, Z, ET 0, ET 120
10 t	SB 3745 T	370 x 45	19,5"	E, Z, ET 0
9 - 10 t	SB 4309 T	430 x 45	22,5"	E, Z, ET 0, ET 120 (only 9 t !)
12 t	SB 4345 T	430 x 45	22,5"	E, Z, ET 0

The new generation of BPW disc brakes has been optimised for use in trailers and is also fitted with a brake disc that has optimum cooling properties. This generation will be launched in April 2003 for both rigid and steering axles. **The following points should be noted:**

- **The existing brake Type Approvals remain valid for the SB 3745 T and SB 4345 T, meaning that vehicle approvals are not affected in these cases:**
- There is no change to installation conditions compared with the previous generation of brakes
- In order to better differentiate the new generation of disc brakes, the axles and suspensions will be given new part numbers.
- **There is a new brake Type Approval for the SB 4309 T brake, so that new approvals are required**
- The new brake Type Approval D 115 TDB 0787 according to ECE Regulation No. 13 for the SB 4309 T can be obtained from BPW or alternatively can be downloaded from the BPW website at www.bpw.de (display the page in German, then select "DOWNLOAD", "Bremsengutachten" and "Test report")
- Once stocks have been exhausted, BPW will no longer be in a position to supply any axles or axle beams with the current generation of disc brakes
- From a **technical and a functional standpoint**, there is **no reason** why **"old" and "new" disc brake axles cannot be combined on the same vehicle**, and the brake Type Approvals do not prohibit this
- To allow disc brake axles with tangential bolted connections to be identified more easily, they will be **marked by a tag on the wheel stud** during the introductory period