YOUR SYSTEM PARTNER

axles and suspensions
braking systems
bearing technology
suspension systems
landing legs
aluminium wheels
telematics
air tanks
trailer superstructures
lighting

pioneering solutions • greater efficiency
With just a few operations the hub is removed using the central screw connection - just like wheel changes in motor racing.

The BPW ECO Plus 2 hub is a maintenance free, closed bearing hub system that offers a five year unlimited mileage warranty for on-road and three years for off-road applications.

A major benefit includes BPW’s fitting of standard DIN ISO taper roller bearings which are available worldwide. They also offer full serviceability, thereby offering reduced whole life operating costs. The stepped bearing means there is no need to use a puller or other special tools. The roller bearings remain in the hub where they are well protected against dirt and moisture.

- 5 years on-road warranty.
- 3 years off-road warranty.
- Unlimited mileage warranty.
Torque Limiter

With all ECO hub systems no bearing free play is required. A bearing pre-load must be set. With the ECO Plus 2 system the spindle bolt is fitted with an integrated torque limiter. A simple but ingenious design, the bolt slips as soon as the required pre-set torque is achieved, eliminating the potential to under or over-tighten the hub unit.

ECO PLUS 2 AVAILABLE WITH DRUM BRAKE, DISC BRAKE AND SELF-STEERING AXLES

Installation is quick and easy

Box spanners are all that are required for the hub cap and the axle bolt. In the case of the drum brake the wheel can remain fitted to the hub during removal and installation.

HUB REMOVAL IS SIMPLE

ONE

Removal of the hub cap using the BPW hub cap spanner - Part No. 03.339.05.02.0

TWO

Spring releases from the bolt to remove the locking device.

THREE

Reusable locking device and spring assembly.

FOUR

Unscrew the spindle bolt which acts as a puller. No special tools required.

FIVE

The spindle bolt removed and disengaged from the thread.

BPW uses DIN ISO taper roller bearings.
Available worldwide.
Easily installed.
**ECO DRUM BRAKE**

SUITABLE FOR ALL APPLICATIONS, BPW’S ECO DRUM BRAKE IS THE PRODUCT OF 110 YEARS OF BPW’S BRAKING EXPERTISE

ECO Drum’s predecessor, Brake 95, was considered to be the best drum brake on the market due to its extremely robust design, ease of maintenance and low life cycle costs - sales of more than 11 million units speak for themselves. Now, BPW has further optimised this classic drum brake extending a technological lead over the competition - enter the ECO Drum.

- **Improved safety**
  BPW’s S-Cam drum brake offers a greater degree of safety for both long and short distance operation.

- **Only one central spring**
  The BPW S-Cam drum brake has only one pull-off spring. The high tensile force of this specifically designed, high performance component means the brake is rapidly reset to its original position.

- **Simple re-adjustment of the ABS sensor**
  If necessary, the ABS sensor can be easily adjusted through an opening in the back plate.

- **Low operating and spare parts costs**
  Simpler and faster brake servicing due to the patented ECO principle.

- **Weight reduction**
  Reduction in weight of approximately 8 kg with the ECO Plus 2 (compared to the ECO Plus).

THE DESIGN OF BPW’S ECO HUB SYSTEM ALLOWS EASY REMOVAL OF THE ENTIRE WHEEL/HUB UNIT INCLUDING THE BRAKE DRUM AND BEARINGS.

**ONE**

To dismantle, the brake shoes are simply levered off and removed.

**TWO**

The brake shoes are dismantled.

**THREE**

The new brake shoes are positioned and located with a soft hammer. Anchor retaining springs are re-fastened.

**FOUR**

Anchor retaining springs in position.
**Bearing-mounted brake roller for long life**

Brake rollers, which include long life lubrication, guarantee smooth running properties and consistent brake efficiency. The brake roller is secured on its pin by locking rings and operates with almost no resistance.

The supply of grease for the inner brass bush is sufficient to last the life of the brake lining. When the lining is changed the inner bushes should be cleaned and re-greased in accordance with BPW maintenance recommendations. As a result, the BPW drum brake guarantees a consistently high level of performance throughout the entire service life of the vehicle.

**Clamping rings - precise location**

Special clamping rings give precise brake shoe location. The brake shoe pivot is off-set by 30° thus ensuring the shoes are held precisely in place. The oval spring rings clamp the brake shoes onto the anchor plates without any play.

**Brake linings easily changed - no special tools required.**

**PREPARATION OF BRAKE SHOES FOR ASSEMBLY**

**ONE**

The brake roller is cleaned and re-greased.

**TWO**

The pin is driven in and secured with two retaining rings.

**THREE**

The pull-off spring is fitted...

**FOUR**

...joining the two brake shoes.
ECO DISC BRAKE

HOW IS BPW’S ECO DISC BRAKE DIFFERENT TO THOSE CURRENTLY ON THE MARKET?

Trailer disc brake axles have previously derived from the truck industry, but not so the ECO Disc. BPW engineers have succeeded in developing a trailer disc brake which is uncompromisingly geared towards the requirements of the trailer running gear.

In addition to being more service-friendly, the compact design of the ECO Disc has enabled weight savings amounting to more than 10 kg per axle.

BPW started producing its own brake disc some 20 years ago. Since then the Company has been significantly involved in the development of the caliper and the brake application technology. Obviously the ECO Disc is the next logical step from an evolutionary point of view. Today the entire BPW ECO Disc is ‘Made by BPW’.

In order to ensure that the new trailer disc brake meets BPW’s high quality standards it has been subjected to BPW’s own road testing and thoroughly put through its paces in extremely demanding field trials.

New:
Internal seals for better protection against thermal and mechanical damage.

Ease of service:
Easy accessibility of the adjustment mechanism makes it possible to change pads in record time.

Compact design:
Up to 13 kg weight saving thanks to clever integration into the system.
**EASY REMOVAL**

Due to the ECO principle there is no need to dismantle the brake caliper when changing brake discs.*

Simply remove the brake pads, knock out the wheel studs and unscrew the hub. This allows the disc to be rotated sideways and removed without the need to dismantle the brake caliper.

---

**ECO DISC BRAKE - 3 SIZES**

**TSB 3709**  
(Ø disc 370 mm, for 9 t axle load) to suit 19.5" and 22.5" wheels.

**TSB 4309**  
(Ø disc 430 mm, for 9 t axle load) to suit 22.5" wheels.

**TSB 4312**  
(Ø disc 430 mm, for 12 t axle load) to suit 22.5" wheels.

---

**Your advantages at a glance:**

- Weight saving of up to 13 kg – innovative compact design.
- Fewer interfaces and perfect integration of the brake into the axle system.
- No need to dismantle the brake caliper when changing brake discs*.
- The optimum positioning of the adjustment mechanism makes it possible to change brake pads in record time.
- Perfect sealing of the moveable bearing due to additional seals.
- Protection against dirt and moisture thanks to the internal seals.
- Longer service life due to optimally matched friction pairing.

* Except TSB 4312 and the TSB 3709 ET=0
LL SELF STEERING AXLE

The unique and simple steering components enable automatic control, dependent on the load being carried. Moreover, the added driver-friendly feature permits greater vehicle manoeuvrability both in and out of confined spaces.

BPW’s LL steering axle has been designed with a self-locking facility when reversing. Unlike other systems, as soon as the trailer begins to move backwards, the steer mechanism is locked in the straight-ahead position.

The benefits of fitting BPW’s self-steer axle?

- Optimum manoeuvrability.
- Lower fuel consumption.
- Lower tyre cost.
- Reduced stress on the chassis.

With a BPW steering axle the trailer corners better and follows the same path as the tractor unit. Forces acting on the tyres when cornering are distributed more evenly.

As a result it has been shown that the life of the tyre on the front axle increases by up to 50%, while that of the rear axle can increase by as much as 70%.

BPW’s LL self-steering axle is also available with a 27 degree of steer, ideal for longer trailers.

To simplify installation BPW has developed a double-cranked trailing arm. This allows the trailer builder to fit a BPW self-steering axle to a standard chassis without the need to reduce the chassis width in the area of the steer axle.

We have done the tests:

Tyre consumption on a three-axle vehicle over 1 million km, used in distribution haulage.
The principle of the BPW self-steering axle is described by the abbreviation LL – it stands for load dependent steering. The axle stub is connected to the axle beam via a specially designed pressure bearing. When travelling in a straight line the weight of the load acting on the pressure bearing keeps the wheels in the straight ahead position. When the trailer enters a bend, side forces acting on the tyres cause the wheels to turn slightly and the flanks of the pressure bearing to slide over each other allowing the wheels to move from the straight ahead position and create a steering effect.

The degree of steering is dependent on the axle load and the ‘tightness’ of the bend. Both wheels are connected via a tie-bar to ensure the same degree of steer on each wheel.

BPW self-steering axles operate without the need for power assisted stabilisers. They are automatically controlled according to the load being carried. Because the design of the self-steering axle is so simple, the number of individual components required is low. This saves weight and reduces installation and maintenance costs.

We have done the tests:
Our long term studies have proved that with the LL self-steering axle you can make dramatic savings in terms of diesel costs.

FUEL SAVINGS
Example: distribution application

<table>
<thead>
<tr>
<th>km</th>
<th>200,000</th>
<th>400,000</th>
<th>600,000</th>
<th>800,000</th>
<th>1,000,000</th>
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<tr>
<td>Litres</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>10,000</td>
<td>8,000</td>
<td>6,000</td>
<td>4,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

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SUSPENSION SYSTEMS

High performance, low maintenance and reduced whole life costs are key to the development of all BPW equipment. It is for these reasons that BPW remains Europe’s No.1 in suspension technology. Quality is not an issue, and safety is never compromised. And, when it comes to economy, BPW has pulled out all the stops.

AIRLIGHT II - SUSPENSION SYSTEM

The Airlight II air suspension system offers all the advantages of flexible trailing arm technology. Trailing arms can be precisely adapted to a particular vehicle and its application.

A major benefit of the Airlight II is that if the running gear ever suffers damage, for example due to an accident, the parts affected can be repaired or replaced individually.

- **Less weight – more payload**
  The structural design of the trailing arms, hanger brackets and axle clamping arrangement reduce the weight of a tri-axle trailer by up to 93 kg.

- **Safe driving characteristics, maximum vibration absorption**
  The trailing arm absorbs the strongest vibrations from the running gear and from uneven road surfaces reducing stress on tyres, frame, vehicle body and the load itself.

- **Repairable, maintenance friendly and always available**
  BPW’s bolted design enables low cost replacement of individual components.

- **Optimum tyre life for a more cost effective operation**
  The result of the unique design of the flexible trailing arm principle.

- **Low maintenance**
  For on-road applications the bolted connections do not have to be re-tightened within the stated warranty period due to the clamping concept between axle beam, spring seat and trailing arms.

- **Easier assembly, simpler track adjustment**
  The narrow profile of the hanger bracket, in conjunction with the straight side surfaces, significantly reduces assembly times.
**SL RANGE**

Specially developed for high axle loads, off-road and special applications.

Where high axle loads, off-road, or arduous duty cycle applications are anticipated, BPW’s SL suspension range is the choice. It features the traditional low maintenance U-bolt clamping arrangement between the suspension components and the axle enabling cost saving replacement of individual parts.

The SL suspension incorporates the 100 mm wide spring steel trailing arm principle and, using both single and twin leaf configurations, allows axle loads up to 14 tonnes to be accommodated.

Structurally reinforced trailer chassis designs to meet such conditions are truly complemented by the BPW SL suspension range.

**COMBI AIR BAG**

In road/rail/ship transport, trailers with air suspension systems are lifted by gantry crane or manoeuvred by marshalling tractors. It is during these movements that a conventional air suspension risks damage to the air bags. However, the patented Combi air bag from BPW provides an effective safeguard against folding and creasing of the air bag, resulting in a longer service life.

The air bag of the Combi is divided into two parts. The air bag is bolted onto the vehicle frame with the rolling piston, whilst the centering cone is connected to the trailing arm. When the trailer is lifted, the axle and the cone move downwards.

The axle movement is restricted by the shock absorbers. However, the air bag remains in its rest position.

When the trailer is lowered to the ground, the air bag and centering cone once more come together. The bag can neither fold nor crease.

---

**Your advantages at a glance:**

- For axle loads 4 to 14 tonnes.
- Robust and easy to service.
- 100 mm wide trailing arms.
- Possible ride heights from 220 mm to 600 mm.
- Single and twin leaf trailing arms available.
- U-bolt clamping arrangement means individual parts can be replaced.
- Suitable for long stroke air bags.
The ECO Air COMPACT suspension is mounted on a two-part cast member and the new steel-rubber-bush. With fewer components this innovative technology makes the ECO Air COMPACT particularly robust. This is because the optimum transfer of forces is ensured by the diagonal screwed joints combined with the four points of support. An additional advantage is that the individual components are not welded and can therefore be easily replaced.

**New steel-rubber-bush**

The specially designed steel-rubber-bush is asymmetrical, can handle all demands placed on it and is designed without any recesses. Its optimised axial and vertical track guidance helps contribute towards high operating comfort and lower tyre wear. Consistent load absorption, as well as even deformation, ensure smooth operating and long life expectancy.

**Your advantages at a glance:**

- 30% fewer module versions for more flexibility.
- 50% reduced assembly time through re-designed axle lift.
- 50% lower number of components for a robust design and long life expectancy.
- 100% maintenance-free spring seat arrangement reducing operating costs.

5 years unlimited mileage warranty
LANDING LEGS

ROBUST:
BPW landing gear has a strengthened universal mounting plate. The legs are also reinforced at the bottom of the outer section – both of which provide protection against lateral forces. The highest level of quality control checks are carried out before despatch.

EASY TO FIT & OPERATE:
The mounting holes enable universal fixings. During operation, the low gearing forces make it easier to operate.

FOOT OPTIONS:
Compensating, flat, rocking and wheels.

MAINTENANCE:
The landing legs are greased with BPW's ECO-Li 91 and are maintenance free for 3 years. They are specially coated against corrosion and also to protect against wear.
The Brilliant version

As with all BPW equipment the very highest levels of quality and cost effectiveness have been the twin drivers of the development of the ECO Wheel. Manufactured in Germany, this robust, forged aluminium wheel, compared to a steel wheel, is around 50% lighter. For a tri-axle trailer this leads to a weight saving of around 120 kgs.

Available in 3 finishes

Brilliant
To achieve this look the wheel is put through a fine brushing process, which gives it an almost polished appearance. It is a low maintenance wheel that doesn’t require polishing.

Highly polished
A superior polished effect for a gleaming appearance.

Pearlescent
For those who want their wheels to shine, but don’t have the time to do it, the Pearlescent wheel only needs soap and water to bring it back to its shiny appearance.

Your advantages at a glance:

- Quality and reliability ‘Made in Germany’: produced by a partner with more than 60 years of forging expertise – Otto Fuchs.*
- Optimum strength due to forged, high-strength aluminium wrought alloy.
- 5 year warranty - unlimited mileage.
- TÜV-tested and with KBA registration for wheel sizes.
- Outstanding wheel load of max 5 t with 120 mm offset, and as a result, longer service life compared to a 4.5 t standard wheel.
- Available in all standard sizes.

*Otto Fuchs KG produces extrusion press products, forged items and ring rolling products made of aluminium, magnesium, titanium and nickel alloys for aerospace, the commercial vehicle industry, the construction industry and also machinery and plant construction. Over 50 years ago, Otto Fuchs developed the first forged alloy wheel for series production for Porsche - the legendary Porsche winged wheel.
Hesterberg, part of the BPW group of companies, is one of Europe's leading manufacturers of fasteners and curtainsider pillars and lifting roof systems for commercial vehicles. Hesterberg has gained a fine reputation for its innovative and high quality products under the Hestal brand.

With its extensive product range Hestal provide an intelligent solution for curtainsiders, box vans, refrigerated vehicles, dropsides and tippers. The Hestal product range is fitted by many European trailer builders, whilst here in the UK the Hestal VarioMaster pillar is fitted as standard by some of the UK's major trailer manufacturers.

**LIFTMASTER**

The LiftMaster is a roof height adjustment system that allows the existing load volume to be fully used by raising the vehicle roof.

Each roof corner can be lifted independently; hence the trailer can be loaded from any one side or the rear. Lifting the roof takes seconds to do. The operator simply pumps the hydraulic cylinder using a hand lever located at the desired corner. Once the trailer is loaded, at the press of a button the roof can be lowered smoothly to its resting position.

**VARIOMASTER 903**

The VarioMaster pillar from Hestal is a high quality, simple to operate, sliding pillar. Its one-handed operation allows fast load access. These pillars can be moved anywhere along the trailer side and then locked into the required position so that the handler has full accessibility to the load.

- Internal loading height from 2.5 m to 3.1 m.
- Carriages and telescopes can be used for a variety of roof straps.
- Simple fitting by means of blind rivet technology.
- No mechanical operation of individual parts required.
- Tarpaulin slat pockets can be positioned in a 5 mm frame.
- All components are KTL coated.
- Tested to comply with German legal requirements and regulations (DEKRA).
BPW’s TCONTROL is an innovative telematics system offering real-time information.

The top five advantages of the BPW Telematics System at a glance:

- Overview of all the crucial factors and scheduling in real time.
- Effective vehicle, fleet, maintenance and job management.
- Security and safety of equipment and units at locations or on routes inside and outside the company premises.
- Effective route scheduling and optimisation in seconds.
- Transparency of routes and tasks, so that new or different employees/drivers can take over seamlessly.
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location information</td>
<td>The TCONTROL uses the GPS system and keeps you constantly informed about the current location of your trailer. This means that not only is your trailer protected against theft, but you also have complete route supervision and so can optimise transport costs and energy consumption.</td>
</tr>
<tr>
<td>Temperature control</td>
<td>With refrigerated trailers the TCONTROL system can be linked in with the fridge unit to provide live temperature data, fridge running hours, fuel level and also offer a reliable temperature history for your end customer.</td>
</tr>
<tr>
<td>Door sensor</td>
<td>A door sensor provides you with the possibility of checking loading and unloading times and optimising these if required. There is also the possibility of adding a door-locking system that is linked into the TCONTROL for added peace of mind when transporting high-cost goods.</td>
</tr>
<tr>
<td>Tractor information</td>
<td>The continuous overview of the current combination of tractor unit and trailer is particularly efficient for your vehicle fleet management.</td>
</tr>
<tr>
<td>EBS data overview</td>
<td>The TCONTROL system is linked into the EBS module and can give live data for the vehicle showing speed, bogey weight and EBS faults. In conjunction with Haldex EBS, the system can also flag up harsh braking applications, roll stability interventions and specific fault codes for the trailer EBS.</td>
</tr>
<tr>
<td>Tyre pressure monitoring</td>
<td>Wireless tyre control monitoring provides not only tyre pressure, but tyre temperature information.</td>
</tr>
</tbody>
</table>
ECO AIR TANKS
LIGHT, ROBUST, ECONOMICAL.

Conventional air tanks are constructed in steel and aluminium. Not so the ECO Air Tank, which is manufactured in reinforced fibreglass plastic (GRP) and offers many advantages.

Weight saving of up to 60% compared with a conventional steel tank
Available from 30 - 120 litres
Corrosion-resistant
Longer life expectancy
Higher loading capacity
Easy to assemble
Modular body
Recyclable

Weight comparison GRP - ALLOY - STEEL

<table>
<thead>
<tr>
<th>Size</th>
<th>Steel</th>
<th>Aluminium</th>
<th>GRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>601 - 310 mm</td>
<td>18 kg</td>
<td>14.5 kg</td>
<td>8.7 kg</td>
</tr>
<tr>
<td>801 - 366 mm</td>
<td>24 kg</td>
<td>13.8 kg</td>
<td>8.7 kg</td>
</tr>
<tr>
<td>1201 - 396 mm</td>
<td>28 kg</td>
<td>13.9 kg</td>
<td>8.7 kg</td>
</tr>
</tbody>
</table>
CUSTOMER SUPPORT

When you’re investing in superb products you’ll want to ensure that your investment is being looked after. That way you can expect maximum returns.

We provide a number of training courses, all with the same objective - improving our customers’ quality and reliability in everyday workshop procedures when dealing with BPW products. Training courses are held in our training/conference room, with adjoining workshop - practical hands-on product training being an essential part of the course. Our courses run throughout the year. Please check our website – www.bpw.co.uk - for forthcoming dates. Or, call our Customer Services Department for details: 0116 281 6100.

AFTERMARKET

To ensure vehicle downtime is kept to the absolute minimum BPW Limited has over 200 spare parts distributors across the UK and Ireland.
Click on to our website - www.bpw.co.uk – to search for your nearest BPW spare parts distributor. Alternatively call the Aftermarket team on 0116 281 6123 and they will be able to advise.

TECHNICAL SUPPORT

Where a complex technical product such as running gear is concerned, the service literally has to be built in. BPW engineers offer support on everything from trailer chassis design, brake calculations and truck-trailer compatibility.

Heavy Axle
Braking Technology – 1 day
Axle and suspension maintenance course – 1 day
Axle and suspension maintenance course – 2 days

Light Axle
Light Axle/Caravan maintenance course – 1 day

Other available courses
Tailor-made and refresher courses for heavy axles
Parts recognition courses.

Conference facilities
Our conference room is also available for our customers to hold their own meetings. The room is fully equipped with a range of audio/visual equipment.

For more information about our training courses, check the website – www.bpw.co.uk or call us on 0116 281 6100.
WE FOLLOW THE ECONOMICAL ROUTE!

BPW is a globally leading manufacturer of intelligent running gear systems for drawbar trailers and semi trailers. From the axle via the suspension and brake to the electronic braking system and telematics, we can provide you with complete one-stop trailer running gear supplies. As an owner-managed company, BPW is consistently focused on one goal: to always offer you precisely the solution which pays off for you in the end. In line with this, we focus on total quality to ensure high reliability and life expectancy, weight and time saving designs ensuring lower operating and maintenance costs, as well as personalised customer service and a tight-knit service network to provide quick and direct support.

Rest assured that with BPW you will always follow the most cost-effective route!