



The right configuration for the right truck

Powered pallet trucks and stackers are designed and built on varying chassis configurations by different manufacturers. The choice of chassis design will determine various factors, including cost, manoeuvrability and capacity. It will also have an effect on the levels of traction and stability experienced in operation

5-wheel chassis with BT Powertrak

The concept of a 5-wheel chassis was originally invented by BT and has since been copied by other manufacturers. It is the standard design configuration of all BT platform trucks (BT Levio and BT Staxio P-series machines), allowing easy handling of heavy loads and high residual capacities for stacking. The benefits of the 5-wheel concept are clear and are best illustrated by comparison with 4-wheel chassis design.

A 4-wheel chassis gives excellent stability and capacity at height, but has two major disadvantages. Firstly, it requires that one of the rear wheels is the steer-wheel, resulting in an imbalance in manoeuvrability, and a much greater turning circle in one direction. Secondly a 4-wheel truck is

dependent on a smooth and level floor surface to be sure of maintaining traction for the drive-wheel. Uneven surfaces or ramps and slopes present major problems for this type of machine.

The 5-wheel solution developed by BT is based on the benefit of 4-wheels for maximum stability – two fork wheels at the front and fixed castor wheels each side at the rear – but with a fifth centrally located large drive-wheel, which is spring-loaded. This is also the steer-wheel. The central positioning allows easy steering and maximum manoeuvrability and the spring-loaded design means that the drive-wheel is always firmly in contact with the ground, ensuring traction at all times.

The benefits of the 5-wheel chassis design were further enhanced with the invention of **BT Powertrak**, in which the spring-loaded drive-wheel's pressure is automatically adapted according to load weight, in order to achieve optimised traction, balanced with minimum steering effort. This concept was copied by another manufacturer under licence, demonstrating that its effectiveness is recognised.

Powered pallet trucks and stackers are often employed in situations involving ramps and slopes. The 5-wheel chassis combined with BT Powertrak is ideally suited to these conditions. The pressure-adapted spring-loaded drive-wheel gives grip to ensure traction, and also carries the truck safely if working close to ramp edges. In contrast, a 4-wheel truck would fall in these conditions.

3-wheel chassis with BT Castorlink

W-series 'walkie' trucks from the BT Levio range and the BT Staxio HWE100 and SWE080L have a 3-wheel chassis with the addition of two spring-loaded caster wheels in the rear corners.

The drive-wheel is, again, centrally placed, allowing easy manoeuvring in the tightest situations. However, in this configuration the drive wheel is fixed, giving maximum traction at all times. Extra stability in operation is provided by the spring-loaded castor wheels, which give clear benefits both in horizontal transport when cornering and increased capacity at height when stacking.

However, it is important that the castor wheels are protected when working in arduous situations such as on ramps and slopes, which is the purpose of the **BT Castorlink** system. This provides lateral stability by linking the castor wheels with a cross-beam, which compensates in challenging conditions, preventing damage to the castors.

3-wheel chassis with adapted BT Powerlink

A further development in the area of stability is provided by **BT Powerlink**. It is designed for W-series trucks that require additional stability due to, for example, longer forks for large loads, or if the optional operator platform is fitted.

Rather like BT Powertrak, it is based on adapted spring pressure according to load weight – but in this case adapting the spring-loading of the castor wheels to give greater stability when required.

