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Logistics: dictating the production cycle

High-performance and extremely efficient logistics are crucial to the success of Porsche Leipzig, as they set the production pace. There is a huge logistical challenge in managing the extremely wide variety of vehicle configurations, and providing the right material for the right car in exactly the right place and time.



Annual production in the Porsche Leipzig factory has increased more than sixfold since August 2002. The variety of products assembled has also increased as a result of the factory's expansion, as well as the production mix and increasing individualisation. The new Porsche logistics concept was devised to meet these exact challenges, and to optimise the logistics system operated by the Porsche factory in Leipzig.

Assembly line production is based on just-in-time production (JIT), with just-in-sequence (JIS) operating as an advanced JIT concept; these organisational and management concepts are aimed at supplying assembly lines according to need. A coordinated production and material flow throughout the supply chain allows each part to be brought to the assembly line in sequence and on time. A consistent, coordinated order sequence ensures that only parts which can be fitted immediately are delivered according to the line cycle.

In particular, the inbound concept is being reshaped as part of the new Porsche logistics concept. Utilisation of trucks can be increased by moving away from local forwarders for factory supplies and towards direct transport, leading to a reduction in freight traffic. At the same time, warehouse capacities are increased by, for example, implementing an automated small parts warehouse (AKL). This warehouse provides Euro containers for tugger trains, and is differentiated from conventional AKLs by the shuttle technology used: around 100 shuttles ensure high availability levels, and as they each have their own drive systems their energy consumption is reduced by more than 30 per cent compared to an AKL using stacker cranes. Driverless transport vehicles (FTF) are the final piece in the concept puzzle. These function autonomously and carry sequence trolleys with just-in-sequence modules directly to the line. Warehouse capacity and automation are also enhanced by dynamic picking, which fills picking trolleys for the assembly line, and improves working conditions for employees thanks to shorter picking routes. The high-density picking zone contains a conveying section with shuttle technology at a height of four metres, designed to transport bins to the rack aisle and empty bins back to the delivery station. Booking in and out of the warehouse is done automatically after bins are transferred from the forklift to the line.



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