SHUTTLE WHEELS

APPLICATION, CHALLENGES
Shuttle systems are becoming increasingly popular in the field of warehouse technology. Shuttles usually travel on 4 driven wheels. They store and retrieve goods to and from storage bays at high speeds and this generates high dynamic forces. The rapid deceleration and acceleration of shuttles subject the tires on the drive wheels to high loads. The drive wheels must have a strong connection with the drive shafts of the shuttle to transfer drive torque reliably. An additional challenge is to master vibrations in the high-bay warehouse aisles resulting from poor wheel concentricity, impacts from uneven rails or deposits on the rails. This may cause goods in the bays to slip, out of position by which they cannot be grabbed properly with the shuttle. Shuttle wheels are expected to be vibration-free, smooth-running at high speeds and to have good damping properties.

DESIGN, MATERIALS
Shuttle wheels from faigle have a 2-component design. They consist of a polyamide hub and a tire made of PAS-PU TCS. The hub is extremely rigid and ensures high load capacity. A metal part can be cast in the wheel to attach it to the drive shaft. The specially developed tire has extremely high abrasion resistance and a minimised compression set to prevent flattening even after the system remains at standstill for long periods of time. However, the material is still soft enough to provide optimum grip and excellent damping properties. Excellent concentricity is obtained by grinding the running surface. All the materials selected can be provided with antistatic or electrically conducting properties to ensure the dissipation of electrostatic charges.
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**SPECIFICATIONS**

- D  100 – 150 mm
- d  0 – 50 mm
- width  20 – 50 mm

Geometry, detailed construction to customer specifications

**CUSTOMER BENEFITS**

- More reliable operation due to strong bonding between tire and hub
- Longer service life due to high abrasion resistance
- Precise concentricity for quiet running of shuttle
- Very good damping properties due to resilient tire and hub
- Excellent price-performance ratio by using efficient injection moulding processes

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