



## Shuttle flaps

### Application / Challenges

Shuttle flaps are heavy-duty components in the shuttle systems used in automated warehouses. Their function is to place items in the bays and retrieve them.

When the flaps are raised, a telescopic arm reaches into the bay. The flaps then swing down behind the item and the telescopic arm is retracted, pulling the item with it.

Meeting extremely high load-capacity and durability standards requires extensive expertise in geometry and material design. Most conventional shuttle flaps are milled metal parts which are complicated to produce. It is virtually impossible to manufacture them cost effectively in large volumes.

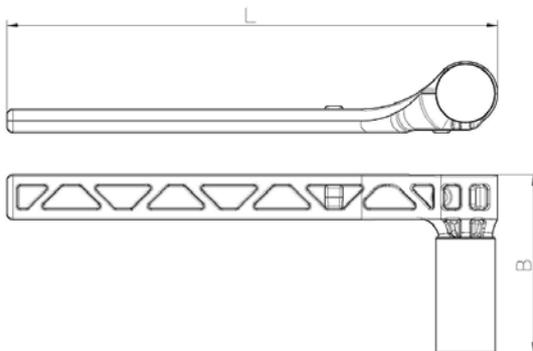


## Solution and materials

faigle shuttle flaps are injection moulded and made entirely of plastic. We ensure outstanding load-bearing capacity and durability levels by using an FEM-optimised ribbed construction, as well as PAS-PAA LCF, a carbon-fibre-reinforced material.

The flaps can pass hardness tests involving more than five million load cycles without any breakdowns. What's more, plastic shuttle flaps are about 80% lighter than conventional steel models.

The injection-moulded design allows for the integration of snap and lock functionality, which significantly reduces both the number of components and assembly times. The flaps are fitted with a maintenance-free PAS-LXY plain bearing and two shock absorbers made from soft PAS-PU.



## Customer benefits

- ✔ Lightweight design with optimised, high-strength geometry
- ✔ High-performance plastics deliver outstanding durability
- ✔ Extremely cost-effective with short lead times thanks to efficient production using injection moulding
- ✔ Quick and easy assembly due to integration of bearing, drive and damping functions in a single component

## Specifications

L 100 – 300mm  
B 15 – 80mm

Customised geometry and detail engineering