

## Standalone storage and handling systems



### Task

The task lies in transporting prefabricated turned parts to the clamping system of the milling machine. The unit must be built in a compact way. A parts depot including loading and discharging handling must be designed, which can be autonomously filled and unloaded with manufacturing parts without interruption for one shift (8 h). A repeat accuracy maximum of the system of  $\pm 0.1$  mm needs to be taken into account. The gripper system must be designed in a way that the two different processing sides of the turned parts can be gripped in the exact position. On the automation market, the system must be able to assert itself against investment goods such as robot stations.

### Solution

The handling components are mounted onto a sturdy welded frame with a coolant drip pan. The products are fed to the unit via a double belt conveyor belt. The autonomy can be significantly improved with up to three pallets measuring 320x400 mm. The clocking in Y-direction is carried out by an axis system which fixes the pallets and makes them variably movable. A telescopic cantilever axle ensures the required compactness of the unit. At the X-cantilever with a 1,300 mm hub, there is the Z-hub and the modular swivel gripper system with two change grippers. The double gripper enables different gripping geometries and fast parts exchange times. The lock on the inner wall at the milling machine feedthrough protects against chips and cooling water leakage.

### Result

A niche product was created, which in terms of price positions itself between docked robot stations and fully integrated automation solutions. We have succeeded in developing a compact handling system which offers a high level of flexibility, modularity and autonomy.

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