

Automatic Loading System for measuring machines

News

Fixturing roundabout

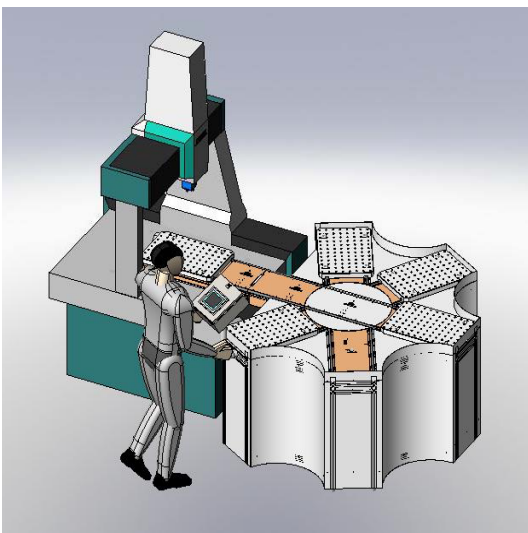
Fast workpiece exchange is necessary to maximize machine running times. Numerous loading and feed systems are already on the market, however these are normally manually operated. To accelerate the entire process of workpiece exchange and reduce standing times of measuring machines to a minimum, Witte has developed an automatic loading system. It can be equipped with three, four, five or more pallets and/or preparation/parking areas as application demands. Depending upon requirements and space conditions the system can be circular, shelf, paternoster, shuttle or bridge type. Transfer from preparation/park position to measuring machine is possible via turntables, transfer tables and levelling systems. Depending upon type of measuring machine pass-through systems for in line measuring operations can be integrated. While the machine is continuously measuring, pallets in loading position are prepared with further work pieces. Once measuring is finished pallets mounted with the next work piece/s are exchanged independently via PC control. Selection of a certain pallet as well as automatic work piece recognition take place e.g. by means of bar code or RFID. The plates are moved



Measuring starts on pallet in position



5 loading areas and turntable



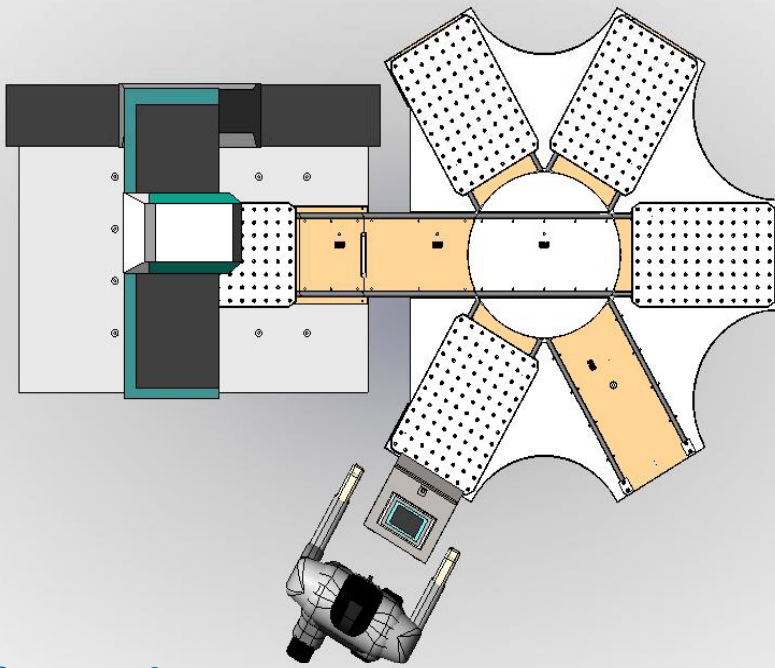
by synchronized drive propelled rack gears, which ensure accurate positioning on the machine table. In park position pallets are secured by contact of gear wheel as well as by pneumatic lock pins against unintentional operation. All final and intermediate pallet positions are sensor monitored. In the measuring machine pallets are lowered on to centering and support pins of the positioning unit. Parts are positioned

with optimum accuracy (no mobile parts involved) without the necessity of permanent energy supply. The extremely low overall height of the positioning unit guarantees greatest possible measuring volume.

Customized or standard grid plates in high-tensile aluminium from Witte with connection possibility for modular fixturing elements as included in the Alufix range complement the loading systems.



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Concept for Automatic Loading Stations

1. Functioning units

- Park positions (floor surface, table, circular, shelf, paternoster, shuttle or bridge type)
- Transfer (turntable, transfer table and levelling system)
- Positioning on measuring machine

2. Guide and drive

- Pallets lie on guide rails and are moved via synchronized drive propelled rack gears
- For small pallets (table operation) drive is incorporated into the table
- Large pallets (floor operation) can be driven independently and remote controlled

3. Positioning

- In park position pallets are secured by contact of gear wheel
- Additionally a pneumatic lock pins is activated to avoid unintentional operation
- In the measuring machine pallets are lowered on to centering and support pins

4. Other details

- Set up height is approx 160mm for pallet size 800x1200mm
- All intermediate and final pallet positions are sensor monitored
- Manual versions, floor units with foundation rails and independent pallets (sandwich plates) as well as couplings to shelf systems are possible

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