

FIAM NEWS

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Tightening automation

FURNITURE INDUSTRY

Automatic assembly of sliding devices for chairs

Customer need:

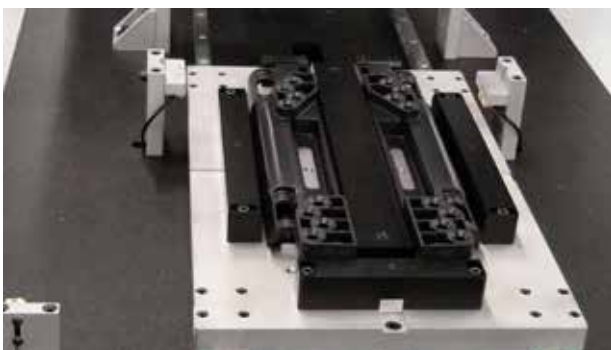
Automatic fastening of 6 threaded bushes on left and right sliding devices.

The machine is to be integrated into the production cycle: a Cartesian robot picks up the components molded by an injection molding machine and places them on a mobile jig including regulation templates; once assembled, the robot picks and removes the elements.

The machine is interfaced via PLC with the molding machine.



Components to be assembled



Customized jig



High-precision device to adjust the wheelbase



2 automatic tightening modules



Control panel

Solution:

Fiam has designed and manufactured a customized automatic machine with 2 tightening automatic modules.

The solution, to be integrated into customer's production line, consists of:

- ✓ Customized jig adjustable and then re-convertible according to different production batches
- ✓ Bushes feeding end automatic escapement system
- ✓ Two tightening units equipped with 2 triple movement sledges, housing 2 air nutrunner motors
- ✓ The units move along 3 linear axes X, Y and Z which allow to reach all the different assembly points
- ✓ The wheelbase is adjustable with a specific **high-precision device that is extremely flexible because manually adjustable depending the change of components**
- ✓ Control panel to manage the working cycle.

The advantages of such solution are:

- **High productivity:** the automatic machine feeding system provides manufacturing operations with a cycle time of 10 seconds/piece
- **Reliability of assembly:** all 6 tightenings occur automatically and with precision
- **Extreme versatility of the system**
It adapts perfectly to different types of components to be assembled
- **Elimination of any manual operation** for high production efficiency.



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