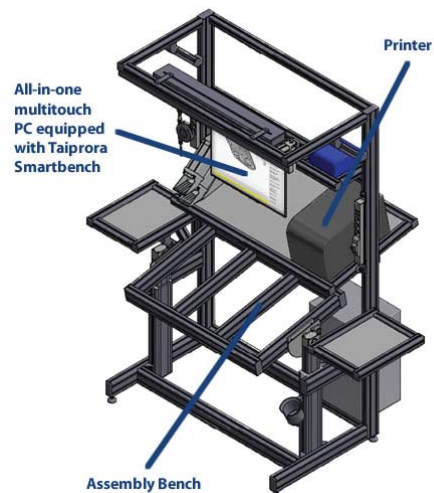


“Smartbench”: Automotive Assembly Workstation

The project Smartbench was carried out for a multinational company leader of Automotive components. It consisted in the realization of **semiautomatic assembly bench** for car door panels **with a system of objectification and control of the mounting, and a supervision software.**

Main Features

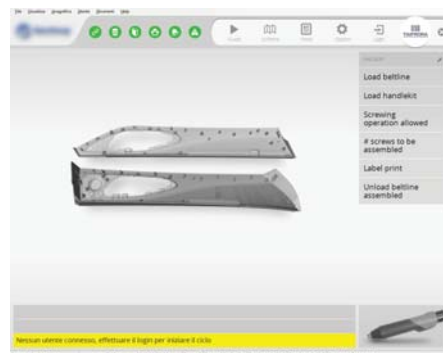
- Assembly bench created with aluminium profiles supplied by Bosch: all benches are adjustable in height (by safety and ergonomic issues);
- The work surface are nests on pallets with 180° rotation. The nests are also suitable for the containment of parts in order to conduct the activities in the best way to preserve the integrity/quality of the final preassembled door panel;
- Worktop with everything necessary for a fast change;
- Station with support plans for part boxes;
- Industrial touch screen panel PC provided in each bench, to show information about assembly process, mounted in a movable arm;
- Accessible and visible operation parameters for the operator side load and unload (indicators by display visual management);
- Barcode reader included in each bench;
- Barcode label printer included;
- Lighting system;
- Station with preventive risk analysis;
- Station designed to give the opportunity to the operator to do first level maintenance easily and quickly.
- Traceability Management (assembly of components, controls recording, angle torque screwing);
- Automatic vision system to recognize materials (i.e. leather, PU, etc), colours and stitchings;
- Screwing management with torque and angle control, managed by PC with data recording for traceability purposes;
- Control system for electric checks on all buttons and leds installed on the panel.



The Smartbench software

The Smartbench software has been designed to be a guide and support to users in the process of car door assembly. Smartbench can be easily customized and used for many different assembly benches.

Thanks to its adaptability to particular production processes and its easy configuration, Smartbench is a reliable system for every assembly bench, giving a new level of control - better and faster - to companies who provide manual or semi-automatic assembly processes.



Assembly cycle example

- Read barcode of component/product to assemble;
- Load component/product to assemble;
- Automatic and fast check by multiple vision/sensor systems of the component/product to assemble;
- Manual assembly;
- Show the presence of all components and the matching with the product variant;
- Proper set up control;
- Proper assembly control by vision system and/or sensors;
- Electric check of all components installed on the panel;
- Label emission only if the previous operations are ok;
- Automatic label scan to check if the label was correct and readable;
- Unload assembled component/product and store on the cart.

