



Fully automated assembly system with IO-Link®

The art of making kitchens

It was not by chance that nobilia became Europe's largest kitchen manufacturer. So, what is its recipe for success? One of the ingredients is efficient kitchen unit production on highly automated assembly systems, many of which are supplied by Hüttenhölcher and use Festo automation products – equipped with IO-Link® – to improve flexibility and availability.

Nobilia produces around 3,000 kitchens every working day, and around 660,000 fitted kitchens per year. With each kitchen comprising 10 units on average, this equates to more than 6.5 million kitchen units. "That kind of output simply isn't possible without a high degree of automation," explains Martin Henkenjohann, Head of Engineering at nobilia. "At the end of the day, consumers have individual expectations when it comes to their kitchen. This often leads to a batch size of 1 in production."

High-end solutions for exacting demands

With its cost-effective and reliable production facilities, nobilia is able to meet its own exacting demands in terms of output, speed and performance while ensuring delivery date reliability and high-quality service. Working in close partnership with nobilia, Hüttenhölcher uses its specific expertise to develop high-end custom solutions for the assembly systems at nobilia. "Our continuous improvement processes are built on technological innovation. Many of these innovations – such as components with IO-Link® capability or the Motion Terminal – are from Festo and are characterised by high product quality, solution and consulting expertise," says Hüttenhölcher. The latest fully automated assembly system for manufacturing

kitchen unit drawers that Hüttenhölcher has supplied to nobilia has two levels. On the upper level, the front panels are machined in the drilling system and the required mounting holes are added. On the lower level, the corresponding drawers are assembled in parallel. The last step is assembly, when the front panel is placed in front of the drawer.

Different front panels in a wide variety of sizes, materials and colours travel along the production line one after another according to the order specifications. "The front panels function as a kind of master in the system," says Henkenjohann. As soon as a front panel is fed in, the system detects its exact identity via a bar code. Using

this data, the drilling system automatically adjusts itself to the size of the front panel and the required hole pattern. At the same time, the system starts assembling the appropriate drawer box at the bottom part of the machine. In the final step on the line, the front panel and the box are joined together to create the finished drawer.

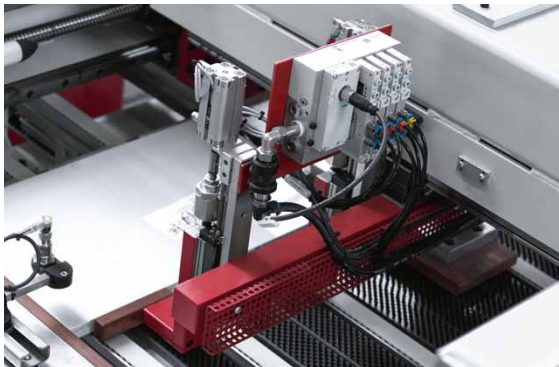
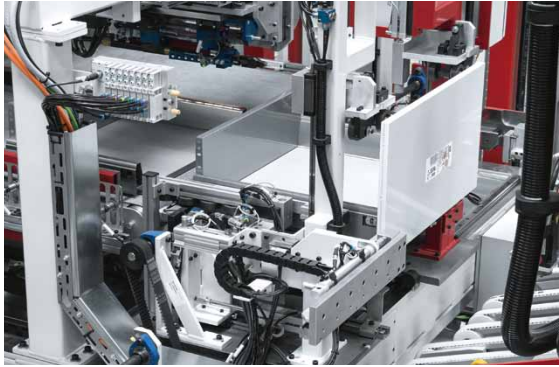
Stars in Pneumatics

A large number of pneumatic drives from the Stars in Pneumatics series move the front panels and drawers from one assembly step to the next, hold them and clamp them for processing. The drives ADN, DNC, DFM, DSBC and DSNU demonstrate their qualities, such as sturdiness and long service life in a dusty environment while ➔



"Technical availability and the highest plant precision are the top priority. That's why we stipulate that our machine suppliers use Festo for many areas."

Martin Henkenjohann, Head of Engineering at nobilia



Automation technology from Festo is responsible for moving the front panels and drawers from one assembly step to the next as well as for secure holding and clamping.



“During servicing, IO-Link® dramatically speeds up troubleshooting, thus ensuring that a machine restarts faster. This dramatically improves system availability.”

Daniel Hüttenhölcher, Managing Director, Hüttenhölcher Maschinenbau GmbH & Co. KG

slides SLT round off the installed product portfolio. The Stars in Pneumatics include 2,200 automation products that are noted for their robustness, attractive prices and worldwide availability. With their optimised functionality, they can solve 80 per cent of all automation tasks. “The high quality of Festo automation products is the reason why virtually all our customers insist on having Festo as the automation supplier in their system specifications,” explains Daniel Hüttenhölcher. For instance, the specification for the latest system supplied to nobilia by Hüttenhölcher stipulated that the IO-Link® interface had to be used. “This is simply because we managed to

con-vince the engineers and technicians from Hüttenhölcher and nobilia of the benefits of this connection technology,” explains Viktor Peters, Sales Engineer at Festo.

Increased system availability with IO-Link®

All the pneumatic functions are controlled by the valve terminal VTUG with IO-Link®. The valve terminal is compact, has a high flow rate and has this simple connection technology on board. IO-Link® is a uniform, standardised and therefore efficient technology for installation and wiring. IO-Link® devices can be parameterised simply and

conveniently – and can be put back into operation immediately after replacement with no need for engineering software tools.

“During servicing, IO-Link® dramatically speeds up troubleshooting, thus ensuring that a machine restarts faster,” says Hüttenhölcher. This is possible because the Festo IO-Link® master has extensive diagnostics options. What’s more, devices with IO-Link® capability, such as intelligent sensors and actuators, parameterise themselves automatically in the event of replacement. “This dramatically improves system availability,” adds Henkenjohann.



Fully automated assembly system for manufacturing kitchen unit drawers at the nobilia plant in Verl.



Reduced assembly time: with IO-Link® (left), there is no longer any need to separately wire in each valve connection and that seriously reduces the amount of electrical installation work.



Upgrading systems to get closer to Industry 4.0

Complex diagnostics can be transferred rapidly using standardised protocols, and predictive maintenance and condition monitoring concepts can be implemented. Festo also offers many IO-Link® devices, from different sensor series right up to valve terminals, electric drives and stepper motor controllers. According to Daniel Hüttenhölischer: “With this modern connection technology, Festo is giving our machines a major upgrade that will take us one step closer to achieving Industry 4.0. Because there is no longer any need for single wiring connections, IO-Link®

seriously reduces the amount of electrical installation work. Thanks to the software, the parameterisation settings can be replicated multiple times, saving a great deal of time during commissioning.” ■

- www.festo.com/iolink
- www.festo.com/vtug

Link to video:
www.festo.com/wood

nobilia-Werke

J. Stickling GmbH & Co. KG
Waldstraße 53–57
33415 Verl
Germany
www.nobilia.com

Area of business:
Manufacture and sale
of fitted kitchens

Hüttenhölischer Maschinenbau GmbH & Co. KG

Grasweg 47
33415 Verl
Germany
www.huettenhoelscher.de

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