

PRESS RELEASE

Smart Workplace – How will the assembly workstation be in the future?

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Bad Mergentheim/Main-Tauber-Kreis. Assemblers and operators are exposed to number of challenges in the industry: unforeseeable events, increasing volatilities and shortage of resources, increasing requirements of flexibility and productivity. How will the nature of work be in the future? How will the assembly workstation of tomorrow look like? Would it not be better to rely on fully-automated systems, so that everything is there exactly when and where it is needed? Systems, which are connected, work hand-in-hand with people and are integrated with each other? Systems, which can react within seconds – even to unforeseeable events?

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The answers to these questions lie in the physical and digital logistics and system solutions for production materials and operating materials of Würth Industrie Service GmbH & Co. KG. On one hand, the target is to design lean and simple workflows and processes in the supply chain to the extent possible. On the other hand, the focus is on man and his individual requirements: an ergonomic and precisely tailored work environment, support and simplification of his tasks as well as an intelligent connection of the processes between man and machine.

The manual workplace

The journey of working efficiently starts with good ergonomics. Individually adapting to one's own work situation and the associated activities and tasks is a prerequisite for the work of the future. Würth Aluminium Profile System WAPS® offers the base here. Using different parts and components, the experts of Würth Industrie Service develop the workplace that is the right fit for the customer as per the 5S aspects in his work environment in the industry. Mobile versions as well as special solutions such as hygiene boards and hygiene trolleys also enable people to operate flexibly. In addition, there is a wide range of equipment options. One such example is OPT-I-STORE®, the hard foam inserts, which lend structure to trays, drawers or storage shelves as well safely store and transport high-quality parts such as tools. The attachment system CLIP-O-FLEX® gives flexibility to the assembly station with its rails and suspension profile. Thus, trays, storage shelves or even holders for cans, adhesive tapes or other devices can be used properly and placed exactly where they are needed. Another add-on is the W-KLT®Clip for Kanban bins, making them easy to move and easy to hang on the workplace to save space.

This establishes the connection between the assembly workstation and centralised Kanban storage location for direct materials. In this scenario, the operator is himself responsible for procuring, provisioning and withdrawing his goods. This means that he procures the required items on his own from the centralised storage. Long distances, time spent on activities that do not add value, manual sources of error, and lack of transparency are inevitable.

So how can this manual workplace, consisting of purely physical components, actually become intelligent? What if these distances and time were a thing of the past?

With intelligent system solutions to Smart Workplace

The provisioning, procurement and reordering of material can be customised exactly to the requirements and consumption of manufacturing customers through digital supply concepts. That too without interference or human intervention! Manual workplaces are made flexible by deploying small-sized bins for decentralised supply at individual assembly workstation. The small-sized bins W-KLT®2.0 S of Würth Industrie Service guarantee an efficient process design. They have least volume to date if compared with the existing Würth small load carriers, W-KLT®2.0, that are based on the VDA standard. Initially filled and labelled in the in-house weighing plant or through regional cooperations, the small-sized bins are then closed with a lid to secure them for transport, and stored in the warehouse for small parts and buffer in the logistics centre. The small-sized bins are integrated into the mother bin W-KLT®2.0 for shipping to the customer. While W-KLT®2.0 (4315) has loading capacity of 10 small-sized bins, W-KLT®2.0 (4115) can store 4 small-sized bins in total. Thus, the small-sized bins can be used in Kanban for all bin sizes in a seamless and modular manner according to the modular principle. At onsite, a system administrator of Würth Industrie Service fills the bins in the shelves at the centralised storage facilities of the customer.

But it goes one step further. Digital solutions are in demand, which allow C-Parts to be procured fully automatically according to the requirements and the processes to be simple and lean so that the production employees no longer have to place the order by themselves. The centralised storage and decentralised workplaces can be automated and connected by implementing RFID technology – for example, with a module that is only as big as a smartphone, the innovative battery-operated iPLACER® of Würth Industrie Service. Equipped with a reader and transmitter, the iPLACER® can be placed

anywhere - the device triggers an order by itself at the workplace, when required. On the other hand, when it is attached to any flow rack, the user can record incoming and outgoing goods, bookings, standing orders and order releases without any manual efforts. This self-sufficient system offers the customers an automated replenishment control at any location, and thus complete transparency of their consumption - without having to make time-consuming trips to the centralised storage. Another innovative solution with similar objective is the scale system iScale. iSCALE is a sensor-controlled scale, which is directly connected with the Kanban bin and is independently movable. As a result, it can be used flexibly in the industrial environment. In addition to assembly line, material storage and Kanban storage location, it can be used directly at the assembly workstation and workplace. On the basis of the weight, the system notifies the requirements of production materials and other small parts digitally - from the customer's point of use directly to the ERP system of Würth Industrie Service and ensures an exact automated replenishment. The online information platform, WIS portal, contains real-time information on whether and which items are ordered and when they will be delivered. C-Parts can thus organise themselves. This is because manual efforts and rigid procedures are a thing of the past, and an agile process is created that manages the handling of parts automatically and individually according to the consumption. Even unexpected events such as peaks in demand can be intercepted quickly and managed thanks to the system solutions of Würth Industrie Service.

But that is not all ...

It is always worthwhile to look beyond at the research for future developments. Since 2013, the experts from Würth Industrie Service have been closely working together with Fraunhofer Institute for Material Flow and Logistics (IML) and developing solutions for material procurement of tomorrow. The company is able to implement technology trends for an efficient C-Parts management in a timely and precise manner by actively working together with highly qualified scientists. At the same time, it is extremely important to harmonise and efficiently align the value chain and intralogistics processes. Only a customised business model turns the data supply of Würth Industrie Service into a potential turnover. This is exactly where the company is starting with the new concept of purely data-driven business models in the course of existing cooperation and actively engaging in development. Transparency and traceability of their inventory is an important success factor for the industry customers. Another example here is the

pilot project on iDISPLAY. This digital rack label contains all the information such as bin type, items, customer material number, storage location, quantity and batch. Using the pick-by-light function, the items can be easily and quickly searched onsite. The focus is always on demand: there was no comparable product in the market that could link the digital and real world in procurement in this way. In addition to iDISPLAY as a practical system for guiding within storage management, other assistance systems can be used, for example to help the operator during assembly. Assembly assistance systems can control the operator's work steps and even guide him - especially in the case of highly varied assembly with many different C-Parts. In addition, autonomous vehicles such as shuttles can be used, which take over the intralogistics supply between the central Kanban storage location and the decentralised workstation completely independently, and serve the operator with exactly the parts that are actually needed.

In the workplace of the future, people will work together with automatically triggering ordering systems, autonomous vehicles to save long distances and with assistance systems, which will intuitively point to the right product and location. The assembly workplace of the future - unimaginable yesterday, real today, smart tomorrow. The change has already started. It is exciting!

Photo material:

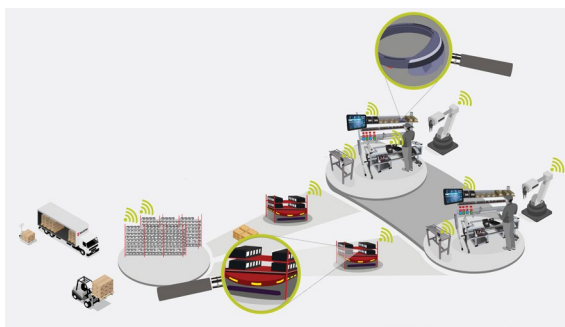


Photo 1: Visualisation_workplace of the future.jpeg

Caption 1: Intelligent supply – Connecting man and machine: In the workplace of the future, people will work together with automatically triggering ordering systems and autonomous vehicles.

Photo source: Archives of Würth Industrie Service GmbH & Co. KG



Photo 2: iScale_scale system.jpeg

Caption 2: iSCALE is a sensor-controlled scale, which is directly connected with the Kanban bin and is independently movable.

Photo source: Archives of Würth Industrie Service GmbH & Co. KG



Photo 2: Workplace solutions.jpeg

Caption 2: The journey of working efficiently starts with good ergonomics: the base is customised workplace solutions as per 5S rules.

Photo source: Archives of Würth Industrie Service GmbH & Co. KG