ABB robots assembles the perfect flat pack

Svedplan, part of the Licentia Group, is a fast emerging producer of flat pack furniture that has deployed a team of eight ABB robots to improve competitiveness and reduce risk to manual handlers. As a result, production has increased by 45% from a line that will pay back in less than three years!

As one of Scandinavia’s budding producers of flat pack furniture, Svedplan, turns over SEK 300m (33.3m €) needed to improve processes to maintain competitiveness with low-cost production and reduce the risk to handlers in the packaging process. As demand and production grew, Svedplan knew that automation was the natural development in the production process.

Robotic systems have been involved in loading and unloading production lines, together with automated processes for drilling holes. But packaging the various components was still largely a slow and costly manual activity.

To provide a solution, Svedplan turned to Teamster AB, a specialist in automated process technology, to create a concept that was flexible enough to handle a wide range of large products and allow for fast changes to the line.

Teamster recommended automating half of the manual picking line, creating three stations with a total of eight ABB robots. As a member of ABB’s Partner Network, Teamster understood that ABB Robotics would be able to provide the best robots for the system.

Three IRB 660 robots were used to feed parts directly from pallets to five IRB 4400 robots that pack the products into boxes.

The IRB 660 is a dedicated four-axis palletiser, which combines a 3.15m reach with a 250kg payload. Indeed, the IRB 660 has the versatility, reach and handling capacity to meet the demands of most palletising applications.

Well-balanced steel arms with double bearing joints, a torque-strut on axis 2 and rapid manoeuvrability makes the IRB 4400 perfectly matched for Svedplan’s needs, where speed, accuracy and flexibility are important. For economic operation, the drive train is optimised to give high torque with the lowest power consumption.

The Euros 2,268,000 (£1.5m) investment has made a remarkable impact on the production line. As a result of the automated robotic system, production has increased by an impressive 45% with a return on investment estimated at just two to three years!
Automated lines now prepare 10 to 15 boxes per hour, compared with six to 10 boxes per hour on the manual lines. Payback is estimated at two years – three at most. The new technology is also vital for Svedplan’s future prosperity in the highly competitive furniture market.

To accompany the new robots, vision system software was installed. This enables products to be saved as ‘recipes’ in the system and changes to the product handling can be made efficiently. New products can be introduced quickly by entering the pack size with details of the new packaging position and station.

Worker attitudes towards automation have also changed. Preben Ritter, managing director of Svedplan, commented: “At first, workers were extremely wary of this new technology, but now they feel proud of it!” Svedplan assured workers that, far from threatening their jobs, it was the best way of preserving employment in the face of global competition and significantly there have been no job losses as a result.

Svedplan started business in 1944 as a traditional carpentry workshop, producing solid wooden beds and couches. Today the company specialises in the production of flat-packed furniture units, manufacturing as many as 50,000 products a week for one of the world’s biggest furniture retailers. These are freighted directly from the factory to outlets and distribution centres around the world.

T 0046 (0)21 344012
E margareta.zeicu@se.abb.com
W abb.com/robotics