



DAMBACH relies on compact control system from Bosch Rexroth for new shuttle system

ctlX CORE controls extended arm storage and retrieval machines and materials handling systems



The company DAMBACH Lagersysteme is bringing the benefits of automation to the pallet warehouse. The DAMBACH COMPACT SHUTTLE allows pallets in high-bay warehouses to be stored and retrieved even more efficiently. It is controlled by the space-saving, high-performance ctrlX CORE and can thus play to its strengths in an ideal manner.

High bay warehouses offer great potential when it comes to storage space and handling capacity. With flexible and automated materials handling systems, these factors can be exploited to the full in a way which would not be possible with manually operated systems. DAMBACH therefore develops automated storage systems which meet both current and future demands for versatility and speed in industry and commerce.

With more than 48 years of experience, DAMBACH offers versatile intralogistics solutions as well as warehouse and conveyor technology for system integrators and general contractors. The automatic storage and retrieval machines for high bay and small parts warehouses as well as pallet shuttle systems work hand in hand with the materials handling systems.

The DAMBACH COMPACT SHUTTLE makes it possible to store and retrieve large load carriers, e.g. Euro pallets, in high-bay warehouse channels. It is extremely quick too: It takes less than two seconds to pick up or put down a load. Up to 1,500 kilograms can be picked up and transported reliably and quickly.

In combination with stacker cranes or a transport vehicle, a particularly compact, multi-deep storage of pallets can be achieved. The storage channels are equipped with running profiles on which the shuttle moves. It travels precisely on the running profile to the specific storage area and then picks up or puts down the desired pallet. The storage and retrieval machine or transport vehicle then brings the shuttle to the relevant loading or unloading point in the warehouse.

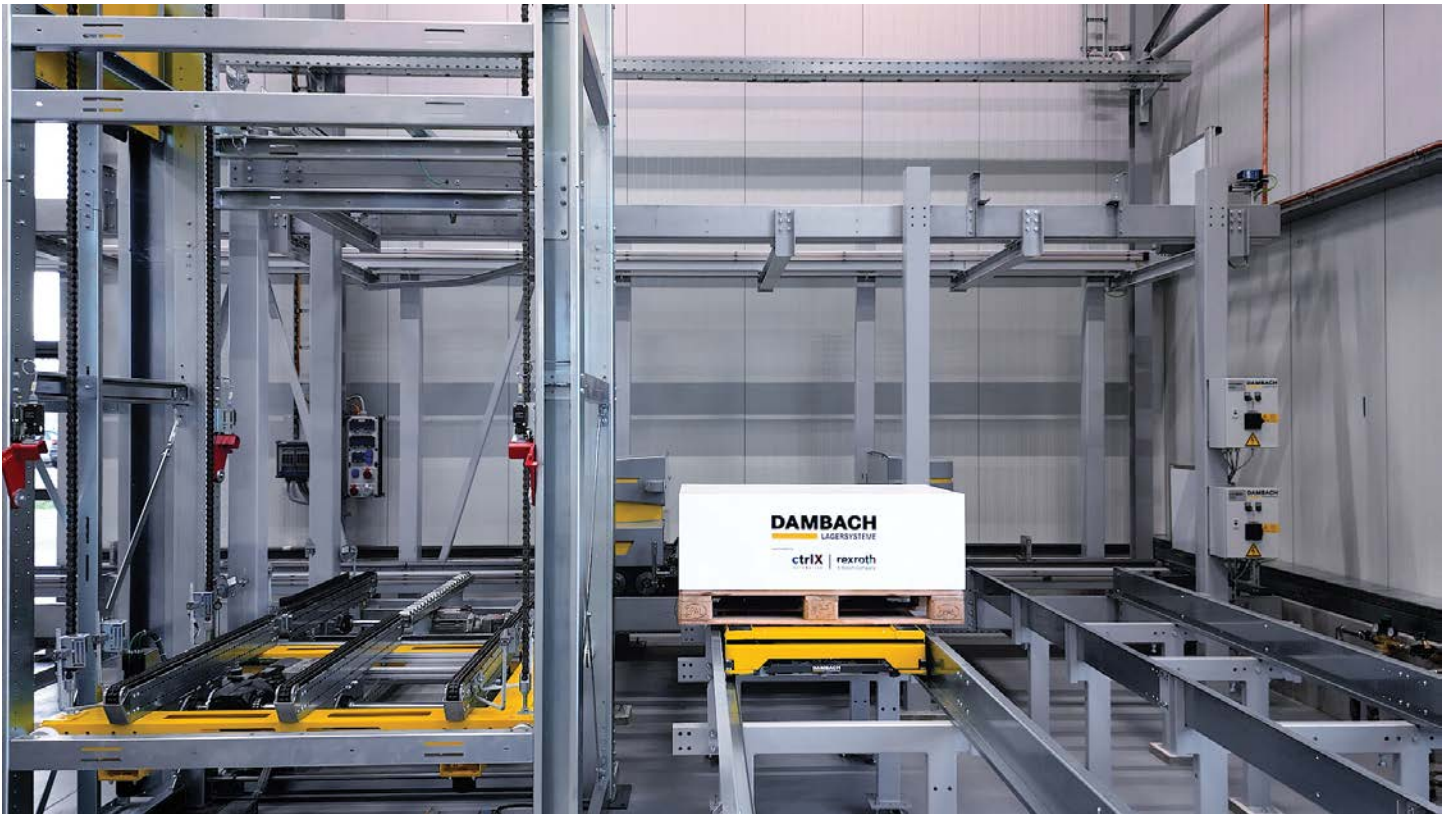
IMPROVED DYNAMICS AND EFFICIENCY IN HIGH BAY WAREHOUSES

“Our previous solution was successfully in use for over ten years but was reaching its limits due to problems with keeping spare parts and increased performance and flexibility requirements. We therefore decided to upgrade the existing shuttle or develop a new one. This resulted in the new DAMBACH COMPACT SHUTTLE 2.0,” explained Thorsten Veit, Head of Control Technology at DAMBACH Lagersysteme GmbH & Co. KG.

A key requirement when developing the system was that it could achieve an even higher packing density on the shelves – with optimized energy requirements. The channel depth and thus the number of storage places should increase as a result. “Short storage and retrieval times are also important in order to make a warehouse as efficient as possible. To achieve these goals, a compact design with a high-power density is required. We therefore decided to integrate ctrlX CORE into our shuttle as the control system,” said Thorsten Veit.

ctrlX CORE is part of Bosch Rexroth’s ctrlX AUTOMATION world. The fact that the control works with app technology thanks to the Linux Ubuntu Core operating system is one of its unique selling points. As a result, new functions can be developed and added easily to meet virtually all automation requirements.

In addition to the control system, the shuttle uses servo drives controlled by ctrlX CORE for the axis movements “running and lifting”. Among other things, DAMBACH uses the motor-integrated servo drive IndraDrive Mi from Bosch Rexroth.



The shuttle runs completely independently with its own power supply. This is provided via PowerCaps for energy storage purposes. As a result, the system can run independently of the storage and retrieval machine in the warehouse channels and store and retrieve goods. The PowerCaps can be recharged in just a few seconds on the storage and retrieval machine or transport vehicle, which means that the system can operate 24/7 without interruptions.

“We decided to use components from Bosch Rexroth because of their compact, high-performance design. This is a key advantage compared to other rival solutions. It saves even more space in the shuttle and we can use the freed-up space to store our shuttle caps. The performance of the new system could therefore be improved further – with an increased operating time,” explained Thorsten Veit.

BROWNFIELD TEST PASSED

Veit described the creation of the joint solution with Bosch Rexroth: “The actual development time was about half a year and included electrical planning and software creation. During pilot runs, the shuttle was put through its paces under real conditions. The results exceeded our expectations.”

Thanks to the more compact dimensions, the storage density in new projects can be increased significantly. At the same time, the solution is 100 % compatible with existing systems. Communication with the higher-level control system is possible via a Profinet/IO or Ethernet/IP connection over a radio link.

GREATER MOVEMENT AND FREEDOM THANKS TO USEFUL EXPANSIONS

Thorsten Veit summed up the benefits: “The control system ctrlX CORE is light, small and open. These properties made the integration extremely easy for us. The engineering and operation are equally straightforward. Programming the system requires no specialist knowledge. And the solution grows along with your requirements. It can easily be expanded with apps such as NodeRed for IoT applications. Thanks to the open platform design, new functions can be added to the shuttle at any time, thus ensuring that it remains future-proof and always on the move.”

Bosch Rexroth Corporation

14001 South Lakes Drive
Charlotte, NC 28273
Telephone: (800) REXROTH
(800) 739-7684
info@boschrexroth-us.com
www.boschrexroth-us.com



 www.facebook.com/BoschRexrothUS

 www.twitter.com/BoschRexrothUS

 www.youtube.com/BoschRexrothUS

 www.linkedin.com/company/bosch-rexroth