



MODULAR CONVEYOR PLATFORM

Conveyor for below-zero arctic temperatures

Interroll has made its modular conveyor platform (MCP), with decentrally controlled RollerDrive drive technology, fit for use in environments as cold as minus 30 degrees Celsius. Deep-freeze logistics can now benefit from an efficient, zero-pressure-accumulation material flow.

by Irma Slavinskaite

It's no secret that chilled food lasts longer. But frozen food only really found its way into consumers' kitchens in the 1950s, and since then has become increasingly popular. According to US market research and consulting company Grand View Research, the global volume for frozen foods already exceeded \$250 billion in 2015. There is still plenty of growth potential. British market research firm Technavio predicts annual frozen-goods growth rates of 6 percent in the coming years. The products are popular with consumers not only because of their high hygiene and quality standards but also because of their nutritional value and vitamin levels, which scarcely differ from fresh goods.

Zero-pressure-accumulation material flow at down to minus 30 degrees Celsius

Between production and consumption, frozen foods must be kept at temperatures below minus 18 degrees Celsius. To ensure that this cold chain is not broken even with short-term interruptions, frozen goods are, in some cases, chilled to minus 30 degrees Celsius, a temperature at which most of the processing and transportation steps are carried out. At the same time, more and more demands are being placed on the performance and efficiency of the material flow under these extreme conditions. System integrators that provide the conveying solutions for their customers can now benefit from far more extensive options. "For decades, conventional continuous conveyors have been dictating—and restricting—the possibilities for material flow in deep-freeze logistics," says Christian Hagmaier, Global Product Manager for the MCP. "Interroll now offers a flexible alternative: We have designed the critical components of our state-of-the-art conveyor platform to operate at temperatures as



low as minus 30 degrees Celsius. The specially modified curves, straight sections, diverters and the highly efficient drive allow a zero-pressure-accumulation, standardized material flow to be achieved in deep-freeze logistics."

Simple planning and realization of a complete conveyor

As with the proven conveyor platform from Interroll, a high-performance material flow solution for the deep-freeze area can also be flexibly put together or expanded using standard plug-and-play components. This not only increases work productivity under these extreme ambient conditions but also facilitates installation and maintenance, and gives system integrators decisive advantages in the planning phase. Thanks to user-friendly planning software, which Interroll provides free of charge, work steps can already be simplified in the project planning stage, and new customer requests can be taken into consideration. In addition, the proven standardization of the interface technology ensures an easy integra-

tion into higher-level information technology (IT) systems. All modules are pre-wired and can be configured for the desired fieldbus technologies, for example, EtherCat, Profinet or EtherNet/IP.

Tested under extreme usage conditions

To ensure that the modified conveyor platform can be used without problems in the deep-freeze area, engineers at the Interroll Research Center conducted extensive trials as well as endurance and startup tests at temperatures as low as minus 30 degrees Celsius. They left nothing to chance because at different temperatures, the expansion behavior of the metals and plastics can lead to functional defects. Furthermore, a critical situation arises if unsuitable oil or lubricant become more viscous as temperatures drop. Initially, the conveyors for deep-freeze logistics will be produced for European customers at the global Interroll Competence Center for conveyors and sorters in Sinsheim, Germany. A launch of the products in America and Asia is planned for the near future.