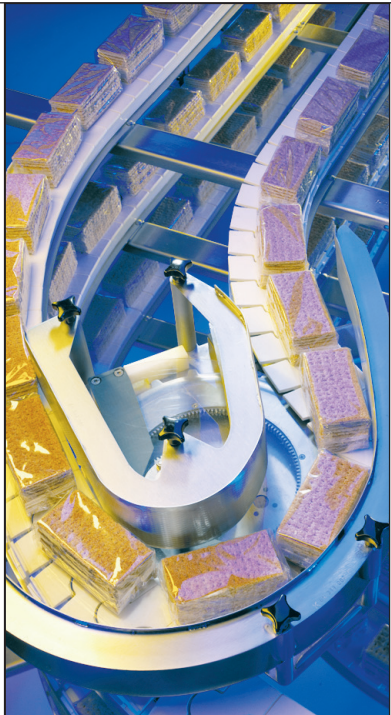


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“ Efficiency gains through **DYNAC** ”

For over 30 years, Hartness International has provided some of the world's most innovatively simple packaging solutions. The company began as a soft drink bottler over 40 years ago and has the unique perspective of both a bottler and an OEM supplier of packaging equipment. When clients complained of limited space, complexity in line

controls and increasingly difficult packages, Hartness not only listened, it took action. In 1998, Hartness introduced the DYNAC (Dynamic Accumulating Conveyor) system. Nearly 10 years later, the DYNAC has re-defined how packaging lines are designed and how containers are conveyed.

The Hartness DYNAC brings dramatic improvement to line efficiency and throughput. The system certainly offers pressure-less, first in/first out (FIFO) accumulation. However, its ability to buffer “micro-stops” and provide a constant and consistent flow of product to downstream equipment has resulted in efficiency increases of over 20% in some cases. The system is available in single file and mass flow configurations depending on bottle shape and line speeds required. Both configurations are available in space-saving spirals that enable one to close couple machinery, allow for sharing of operators, and ultimately decrease the size of lines, while increasing efficiency.

These space saving systems have separate infeed and discharge chains that are linked only by a product transfer device. This floating gear is mechanically connected to both. One conveyor is an extension of the upstream equipment and serves as the infeed for the DYNAC.

The other conveyor is dedicated to the next downstream equipment and serves as the outfeed of the DYNAC. The product transfer remains in a fixed position between the conveyors under normal operation, moving products from infeed to outfeed.

However, if there is a speed change in either of the

conveyors, the transfer is moved in the direction of the faster of the two. The system is an exceptionally simple mechanical solution, with the movement of the transfer controlled solely by the speed of the conveyor.

Under normal operating conditions, the DYNAC operates empty. All containers flow into the base of the machine and are immediately discharged, reducing transit time and allowing for pressure-less, FIFO operation. Because the DYNAC system seeks to run empty, it allows for greater accumulation space than alternative systems. In an instance where the line is running in equilibrium, the DYNAC operates as nothing more than pressure-less conveyance. However, when the line experiences stoppages downstream of the DYNAC, whether they are long or “micro”, the system is immediately called into action.

Further, because the DYNAC utilizes separate chains, it gives manufacturers the unique ability to isolate their production line functions, so that the complex logic required to maintain coordination throughout the entire line is no longer required. Population control that used to be accomplished by speeding up and slowing down motors in concert is accomplished through the simple expansion and contraction of the mechanical transfer within the Hartness DYNAC. The elimination of system interdependence also improves startup, because machines can operate at disparate speeds without penalty.

With more than 27 different designs and a wide variety of footprints to accommodate most any line layout, the DYNAC has evolved into one of the world's most flexible conveyance solutions. No matter the size or configuration, the DYNAC delivers a more stable, consistent flow of product, eliminates the interdependence of machines in the line, simplifies complex line controls, and offers on-demand, FIFO accumulation. Most importantly, the DYNAC allows manufacturers to achieve greater efficiencies and greater throughput in less space.

Today, there are more than 1,000 DYNAC installations worldwide. The installation base includes distilleries, wineries, dairies, soft drinks and personal care throughout Europe and the world.



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