



Comparing Combining Conveyors and Merging Solutions

Nercon has engineered many automated equipment solutions for combining different types of products and packages. Choosing the right type of equipment depends on the application which is defined as the characteristics of the product, the line layout and production speeds required for the line. The following is an overview of some common combining solutions for product and package handling.



Differential Speed Lane Merge Systems



One of the more simple merging solutions is to use variable speed drives to set the different speeds of the conveying chain. On the left is a system that uses two side-by-side mat-style chains that are running at different speeds. When the pouches approach at the same time they are metered and guided with the rail into single file.



Pneumatic Gate Merges



On the left is a Fish-Tail Gate. This type of merge can be used in slow to moderate speed lines. An advantage of the Fish-Tail Gate is that clamps or stops are typically not needed and the swing can begin while the product is travelling to the merge.

In the lower left photo is a Swing Gate with pneumatic control. This unit offers a lower entry-level purchase cost combining solution, compared to servo controlled gates. The product is accumulated in lanes and a pneumatic gate is controlled to swing to individual lanes where products are released in slugs. Pneumatic gates can be used for merging or laning.



Depending on the type of products and speeds, powered side rails can be a stand-alone merge solution or it is often an added device to assist products as they come in contact with the rail.



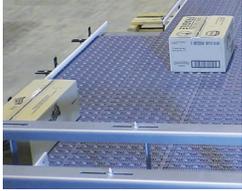
Pressureless Combiners



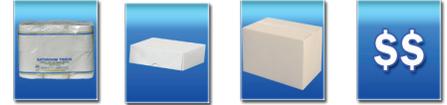
The Pressureless Combiner uses multiple belts and carefully calculated chain speeds in order to combine and single file products. The multi-chain combining method reduces back pressure which prevents label or product damage. Another advantage of pressureless combining is that very little rail adjustment is needed with product change-over. Pressureless combiners can single file both round and non-round product shapes.

Note: The (\$) dollar sign symbols represent bracket pricing. One (\$) sign signifies an entry level purchase. Two (\$\$) dollar signs represent an additional investment for the solution which could be in the range of \$50,000 to \$100,000. And three (\$\$\$) dollar signs signifies a highly controlled and automated system that would most likely be over \$100,000. The other graphics represent the types of packages that can be handled on the system.

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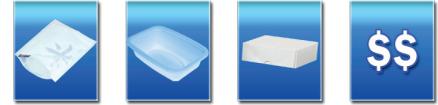
ARB™ Activated Roller Belt™ Merge System



ARB™ (Activated Roller Belt™ systems) can be designed to merge, divert, align, center, turn, sort and descramble. A free spinning roller below the roller top belt rises to engage the angled roller and directs the package to the designated discharge location. ARB™ systems do not require pushing arms or moving gates, which reduces maintenance and down-time on these combining solutions. Many types of packages can be handled on ARB™ systems, including bundles, cartons and cases. ARB™ systems are licensed by Intralox®.



Live Roller Metering and Merging Systems



The Live Roller Conveyor simply and economically merges products without the use of clamps, stops or controls. This system has the ability to stall the product until it is in proper sequence before entering the merge. Simple plow rails or powered side rails are used to merge multiple lanes into single file. This system is best used in handling packages that cannot touch or have back-pressure during conveying. Nercon has engineered these systems for handling shrink wrapped and cardboard over-wrapped packages as well as pouches. The Live Roller Merge Conveyor is also licensed by Intralox®.



Servo Gates



The advantage of servo drives on swing gate systems is precise control of the product at higher speeds. Servo gates can be engineered to handle round and non-round packages. The product is accumulated in an array of individual lanes and the servo gate merge combines products at the discharge. Products are typically delivered to gates using a pivoting powered dual side driver, or non-powered guide rails.



Servo Smart Belts



Servo controlled smart belts are best used to space low profile products such as light weight trays or cartons. Servo belts provide exact placement and control over the product coming into the merge. Often powered rails are used to enhance the merge of the product as it connects with the rail. Servo belts can be integrated into horizontal merge applications and vertical or overhead combining applications.