



## **DIVERTING: A Comparison of Angled Roller Belt (ARESTM) Diverters to Slat/Shoe Diverters**

While the concept of using angled rollers to handle cases has been utilized for many years, a new technology has emerged called ARESTM (Angled Roller Engagement System) that controls and directs the flow of products traveling on the Angled Roller Belt. Other equipment which provides some of the same type of product control includes Slat and Shoe Style Diverters.

The concept with Angled Roller Belt technology, licensed by Intralox®, is the integration of small rollers into the plastic belt and engaging them to control the motion of the packages traveling on the belt surface. By controlling the engagement of the transport roller, the motion of the package can be predetermined. This technology can be utilized in turning, switching, merging, singulating and diverting products.

Angled Roller Belts are available with the rollers set into the belt at 30, 45, and 60 degree angles. The greater the angle of the roller, the more radical the angle of product movement becomes. 30 degree belts are typically used for alignment or turning applications, while the 45 and 60 degree belts are used primarily for diverting or merging applications.

A Shoe Diverter uses a mechanical pusher on a slatted belt. A pneumatic divert arm pushes a shoe across the slats to direct the product onto a take away conveyor. Shoe style diverters typically only run one direction. Slat style diverters use mechanical arms or magnets to force the slats laterally across rods for diverting applications. Shoe and Slat Diverters as well as the Angled Roller Belt Switch Diverter use control logic to determine the direction of product.

The following is a comparison of the ARESTM Diverter to Slat/Shoe Diverters in the categories of Footprint, Throughput, Flexibility, Maintenance and Cost.

**Footprint:** In most applications, Slat and Shoe Diverters need more width on the sides of the equipment to house the diverting mechanism. The ARESTM Diverter only has to be as wide as the case. Depending on product stability and rates the ARESTM Diverter may require less length.

**Throughput:** Slat and Shoe Diverters both have many moving parts. If those moving parts aren't operating reliably, it will cause errors in product justification and jams. Fewer

moving parts and less overall complexity on the ARESTM systems reduce case jams and increase up-time on downstream conveyors.

**Flexibility:** Slat and Shoe Diverters are typically used for diverting and some merging tasks. The ARESTM System can accomplish many tasks such as switching, merging, turning, singulating and diverting in one type of equipment. Further the Intralox® patented series 400 Angled Roller belt is modular which allows the belt to be designed to widths in 2" increments. Rollers can be installed at different angles or in opposing directions within the same belt in order to achieve the desired functions. This allows more precise control and allows product centering or diverting in either direction. Slat and Shoe Diverters are more limited in options.

**Maintenance:** According to an Intralox® study, the maintenance of an ARESTM Diverter is 40% - 90% less than Slat and Shoe Diverters. The simple concept requires fewer moving parts. The ARESTM rollers only spin when activated to divert product. The materials used for the belt and rollers provide excellent life even in abrasive or wet applications and at high speeds. Easy access to components and the modular design of the belt allow quick and efficient repairs if a part is damaged or worn.

**Cost:** The simple design of an ARESTM Diverter compared to a conventional Slat or Shoe style divert typically results in a 15% - 25% lower initial cost, depending on the application. Reduced maintenance cost, increased productivity and reliability yield substantial long term cost advantage.

Nercon Eng. & Mfg., Inc. has over 30 years experience engineering and manufacturing conveyor systems and equipment. For more information about diverting solutions, call 920-233-3268 or visit [www.nercon.com](http://www.nercon.com). To learn more about Angled Roller Belt technology, visit [www.nercon.com/TheNerconAngle](http://www.nercon.com/TheNerconAngle).

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