



## INNOVATIVE, EFFECTIVE DEPALLETIZING SOLUTIONS

Omni's low to high-speed singulator utilizing Intralox patented Activated Roller Belting™ (ARB), a modular plastic belt with embedded rollers that are spaced 2" apart, and extend above and below the surface of the belt. ARB singulators eliminate most troublesome side-by-side packages or patterned packages so they are properly conveyed in single file, with the proper orientation.

### FEATURES

- Singulating packages prior to sortation
- Descrambling packages prior to merging
- Descrambling & singulating a pallet layer of packages during depalletizing
- Converts groups of packages into a single-file, oriented line
- Justifies packages along a fixed guide for consistent package location

### ACCESSORIES

- Fixed or retractable package bump turn for case turning
- UHMW lined side guides
- Low friction bead rail side guides
- Transition rollers (powered or gravity) for smaller packages

### STAGE 1: UNSCRAMBLING



### STAGE 2: SINGULATING



### STAGE 3: ALIGNING



## ARB SINGULATION STYLES & CONSIDERATIONS

ARB Singulators consist of 3-4 conveyors with the belt rollers arranged in a centering pattern on the first conveyors, and the final conveyor having belt rollers configured in an alignment pattern. Depending on the specific application, each conveyor may contain belt rollers set at 0°, 30°, 45° and/or 60° angle. Alignment may be either left-hand, or right-hand.

- The first centering conveyor is used to rotate side-by-side packages so that one package leads the other.
- Subsequent centering conveyors at increasing speeds pull the side-by-sides apart, forming a single file line.
- Finally, an alignment conveyor justifies the singulated packages against a rail to prevent the reoccurrence of side-by-sides further downstream.

It is important to consider that the discharge speed of the singulated packages from the singulator will average 2.5 times or higher than the infeed speed. The speed changes are necessary to accommodate the additional length created once the packages are in single file, and oriented length-wise.

### PACKAGE TYPES

Packages with rigid, uniform, flat bottoms are best. Examples of packages that work well are: corrugated boxes, lithograph packaging, tightly packed polybags, polybags containing flat contents, shrink-wrapped items with flat bottoms, large envelopes, CD/DVD cases, strapped bundles of magazines, books, tires, plastic trays, and totes without large chines. Soft-sided packages, packages with non-uniform bottom surfaces that conform to the roller pattern, and loosely wrapped packages are not recommended. Omni has experience with a wide range of package types; please contact our customer service representatives when there are questions regarding applicability or performance of a certain package type.

### PACKAGE SIZES

#### Width

- Minimum: 4"
- Maximum: practically unlimited

#### Length

- Minimum: 4"
- Maximum: practically unlimited

### PACKAGE ORIENTATION

Packages with high length-to-width aspect ratios (i.e., greater than 2:1) have a tendency to orient with length in the direction of flow due to friction against the side rail. If package orientation must be maintained, a low friction bead rail may help to maintain orientation. Omni has experience with a wide range of package types; please contact a customer service representative for guidance on maintaining orientation with a particular package type.

### SINGULATOR DIMENSIONS

#### Length

ARB Singulators can be configured to accommodate a wide range of package sizes and throughput requirements. Singulator lengths can vary dependent on package size and throughput requirements. Please contact a customer service representative for your specific application.

#### Width

Belt widths can vary from 12" to 144" in 2" increments. The BF is typically recommended to be the same as the infeed and discharge conveyors. However, in some circumstances, better performance is attained if the singulator width matches or exceeds the largest diagonal dimension that can occur when a side-by-side composite is rotated at 45°. If this measurement results in a larger width than the discharge conveyor, it is recommended to align the guide rails of the infeed conveyor, singulator, and discharge conveyors to the package justification side.

### SINGULATOR SPEED/RATE

#### Belt Speed

- Maximum: 350 fpm

Note: Package speed will be up to 90% higher due to the forward rotation of the ARB rollers

### OPERATING ENVIRONMENT

#### Temperature

- Minimum temperature: 32° F (0° C)

If the belt surface is wet, the angle of the package trajectory may diminish. Lubricous fluids will have a larger effect. Some chemicals may react with or weaken ARB. Please contact a customer service representative for more information.