

ACTIVATED ROLLER BELT™ SINGULATORS - FACT SHEET

DEFINITION

A low to high-speed aligner employing Intralox's patented Activated Roller Belting™, a modular plastic belt with embedded rollers that are spaced 2" apart and extend above and below the surface of the belt. Singulators arrange side-by-side cartons or cartons in a pattern so that they are then conveyed in single file, with proper orientation.



Particularly well suited for:

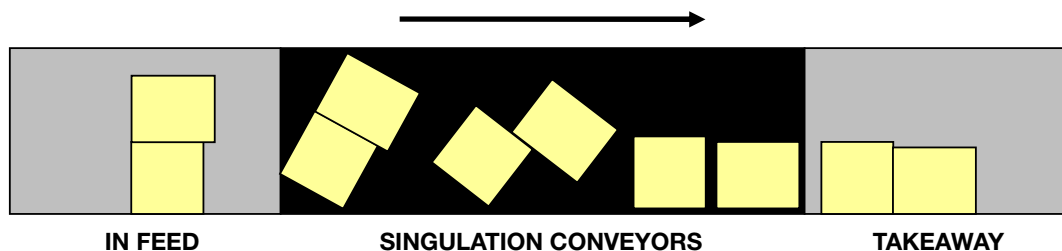
- Singulating packages prior to sortation.
- Descrambling packages prior to merging.
- Descrambling and singulating a group of packages during depalletizing (pallet layer).
- Descrambling articles dumped in bulk from a large container.
- Converting a randomly placed and oriented flow of packages discharged from various equipment types into one of more single-file, oriented flows.
- Descrambling packages merging onto a main trunk-line from multiple, in-feeds.

CONCEPT

Angled Rollers Belt™ Singulators consist of 3 to 4 conveyors with belt rollers arranged in a centering pattern on the first conveyors, and the final conveyor having belt rollers configured in an alignment pattern (see layout below). Depending on the application, each conveyor may contain rollers set at a 0°, 30°, 45° and/or 60° angle. Alignment may be 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 conveyor(s) at increasing speed(s) pull the side-by-sides apart forming a single file. Packages tend to rotate so that their shortest side is leading.
- Last, an alignment conveyor justifies the singulated packages against a rail to prevent the reoccurrence of side-by-sides downstream.

It is important to consider that the exit speed of packages discharging from the singulator will average 2.5 times or more higher than the in-feed conveyor speed in order to accommodate the additional length created once the packages are single file and oriented lengthwise.



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STYLES

Activated Roller Belt™ Singulators can be configured to accommodate a wide range of throughput requirements:

LENGTH	RATING(>98%)	IN-FEED SPEEDS	# OF CONVEYORS	CONVEYOR TYPES/LENGTHS
18'	Avg. = 50 cpm Surge = 100 cpm	≤ 100 fpm	3	Centering 45°-0°-45° / 6' Centering 45°-0°-45° / 6' Centering 45°-0° / 6'

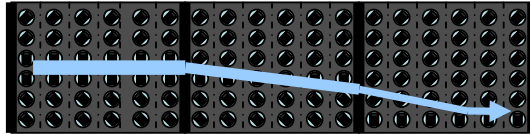


Figure 1: 18' Activated Roller Belt™ Singulators

LENGTH	RATING(>98%)	IN-FEED SPEEDS	# OF CONVEYORS	CONVEYOR TYPES/LENGTHS
24'	Avg. = 60 cpm Surge = 120 cpm	≤ 125 fpm	3	Centering 45°-0°-45° / 8' Centering 45°-0°-45° / 8' Centering 30°-0° / 8'

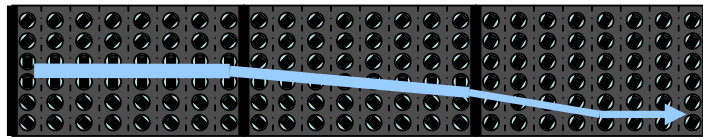


Figure 2: 24' Activated Roller Belt™ Singulators

LENGTH	RATING(>98%)	IN-FEED SPEEDS	# OF CONVEYORS	CONVEYOR TYPES/LENGTHS
30'	Avg. = 70 cpm Surge = 140 cpm	≤ 180 fpm	4	Centering 30°-0°-30° / 8' Centering 45°-0°-45° / 6' Centering 30°-0°-30° / 8' Alignment 30° / 8'

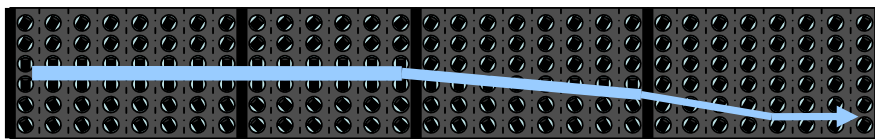


Figure 3: 30' Activated Roller Belt™ Singulators

LENGTH	RATING(>98%)	IN-FEED SPEEDS	# OF CONVEYORS	CONVEYOR TYPES/LENGTHS
36'	Avg. = 80 cpm Surge = 160 cpm	≤ 250 fpm	4	Centering 30°-0°-30° / 10' Centering 45°-0°-45° / 6' Centering 30°-0°-30° / 10' Alignment 30° / 10'

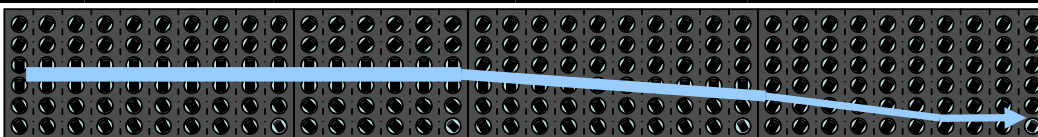


Figure 3: 36' Activated Roller Belt™ Singulators

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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 tightly or loosely wrapped packages with distorted bottom surfaces are not recommended. Omni Metalcraft Corp. has experience with a wide range of package types, contact customer service if there are questions regarding applicability or performance of a certain package type.

PACKAGE SIZES

Minimum package width = 4"

Maximum package width = unlimited

Minimum package length = 4"

Maximum package length = unlimited

SINGULATOR DIMENSIONS

Singulator length is a function of rating. See tables above under **Styles**.

Singulator width (between frames) is recommended to be the same as the in-feed and out-feed conveyor. However, in some circumstances, better performance is attained if the singulator width matches or exceeds the largest diagonal that can occur when a side-by-side composite is rotated 45 degrees. If this measurement results in a larger width than the discharge conveyor, it is recommended to align the guide rails of the in-feed conveyor, singulator, and out-feed conveyors on the package justification side. Note that this "neck down" may increase the potential for jams. Belt width is provided below; overall conveyor width is dependant on equipment design.

Minimum belt width = 12"

Maximum belt width = practically unlimited, e.g., 60" is possible

Width increments = 2"

SINGULATOR SPEED/RATE

Maximum belt speed = 350 fpm

Note: Package speed will be higher due to the forward rotation of the belt rollers.

Maximum rating = (16" carton) = 80 cpm (avg.); 120 cpm (surge.) with average > 98% efficacy.

OPERATING ENVIRONMENT

Minimum Temperature = 32° F (0° C)

If the belt surface is wet, singulation efficacy may diminish. Lubricous fluids will have a larger affect. Some chemicals may react with or weaken Activated Roller Belt™. Contact customer service for assistance.

SPECIAL CONSIDERATIONS

Custom Styles

Activated Roller Belt™ Singulators may incorporate a 90 degree turn or may utilize alternative belt patterns for particular applications. Contact customer service for advice and assistance.