

ACTIVATED ROLLER BELT™ SWITCH - FACT SHEET

DEFINITION

A low to high-speed switch 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. Packages are diverted by actuating a carry-way that causes the angled rollers in the belt to spin, thus sending the package down a specific lane. Activated Roller Belt™ Switches have proven to be safer and require less maintenance and downtime versus slat switches.



Particularly well suited for:

- Wide or heavy duty applications where horizontal slat switches are being considered.
- Drop-in replacement of old or problematic slat switches.
- Applications that are near workers – does not require perimeter safety devices.
- Wash-down environments (stainless steel).
- Multi-sized package flow.
- Small, light articles, such as CD, DVD cases.
- Heavy articles, up to 75 lbs./sq.ft.
- Fragile or delicate articles, such as glass.
- Articles with grab-points, such as strapped newspaper bundles.
- Articles that are sensitive to contamination – does not require oil or grease.

STYLES

Activated Roller Belt™ may contain rollers set at 45° angles. Higher speeds increase side velocity of packages and could subject packages to damage when they encounter side rails. See **Special Considerations** below for common approaches used to reduce side velocities in these applications.

Switches are commonly available in 3 basic configurations:

- 1:2 center infeed
- 1:2 side infeed (right-hand or left-hand)
- 1:3 center infeed

Note: Package speed will be up to 90% higher than belt speed over active rollers depending on the application.

Center infeed units employ a dual direction Activated Roller Belt™ with alternating rows of left/right facing rollers to direct packages optionally to the left or right. See following diagrams for specifics on each configuration.

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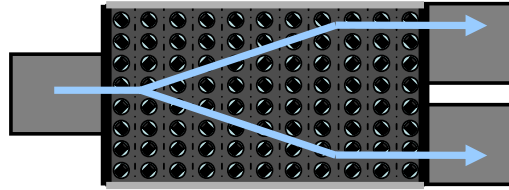


Figure 1: Activated Roller Belt™ Switch, 1:2 Center Infeed

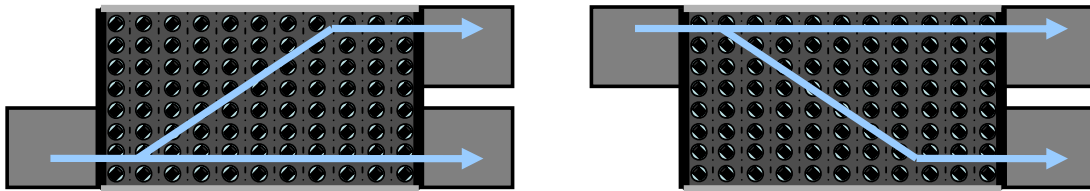


Figure 2: Activated Roller Belt™ Switch, 1:2 Side Infeed (left-hand & right-hand)

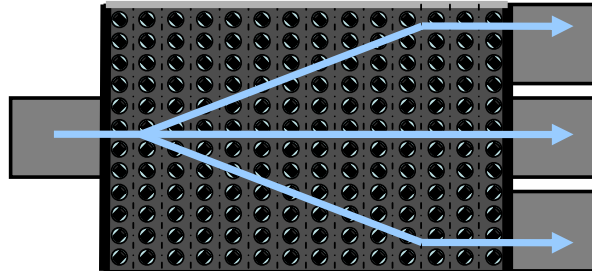


Figure 3: Activated Roller Belt™ Switch, 1:3 Center Infeed

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 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"; center infeed = 8"

Maximum package width = practically unlimited, dependent on width of divert opening

Minimum package length = 4"; center infeed = 8"

Maximum package length = practically unlimited, dependent on width of divert opening

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PACKAGE ORIENTATION

Orientation with length in the direction of flow is generally recommended. Packages with length-to-width high aspect ratios (e.g., 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, low friction bead rail may help to maintain orientation. Intralox has experience with a wide range of package types, contact customer service for guidance on maintaining orientation with a particular package type.

GAP REQUIRED BETWEEN PACKAGES

Maximum sorter length = infeed gap = 8"

The package should be delivered to the switch at the same belt speed as the switch belt speed.

Note: *Dependent on application and equipment design, more gapping may be required. Check with equipment manufacturer.*

SWITCH DIMENSIONS

Switch length is dependent on package trajectory. A general rule of thumb to determine trajectory is 2.5 units of length for every 1 unit of maximum side travel required.

Note: *The uniformity and surface friction of the package bottom, and environmental conditions may impose additional length requirements. This is particularly important when considering a center infeed, where the density of active rollers in contact with the package is half that of side infeed styles.*

Switch width is dependent on the location of takeaway conveyors and belt restrictions.

Minimum belt width = 8"8"; center infeed = 12"

Maximum belt width = practically unlimited, e.g., 120" is possible

Width increments = 2"; center infeed = 4" for symmetrical layout

SWITCH SPEED/RATE

Maximum speed = 300 fpm

Maximum rate (18" carton) = 90 cpm

OPERATING ENVIRONMENT

Minimum Temperature = 32° F (0° C)

Under very cold operating temperatures, and/or occasional wet conditions, trajectories will extend outward and additional length is recommended. Some chemicals may react with or weaken Activated Roller Belt™. Contact Omni Metalcraft Customer Service for information.

SPECIAL CONSIDERATIONS

Mitigating High Side Velocities

The side velocity of packages is a function of conveyor speed. For speeds greater than 200 fpm, the impact of packages against a side rail may cause damage to the package. To mitigate this high side velocity, switches may incorporate one or more of the following design features:

- One or more lanes of rollers near the justification rail(s) can be disengaged by dropping out the carryway. Generally this is done by actual testing in the field during start-up testing.
- A variable Activated Roller Belt™ or multiple parallel belts can be implemented. The angle of the rollers can be step-wise reduced as the package nears the justification side of the belt.