

Guarding the hitch

In package handling applications, you will find a variety of conveyor systems designed to sort many types of items – large boxes, small package parcel bags, envelopes, etc. It is common for conveyors operating in these facilities to have what is called a hitch transfer. A hitch transfer usually involves a transition from a horizontal belt to an inclined belt or from a decline to a horizontal belt, such that packages move over the head pulley of the transferring belt in a “waterfall” fashion and on to the receiving belt below. The advantage of using a hitch in these cases is that one continuous conveyor belt with a single drive can be used. The disadvantage of using a hitch is that the envelopes and small package parcel bags being sorted can get sucked back under the drop and damaged by the bend pulley below.



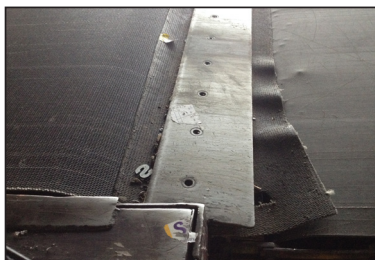
Unguarded hitch

Finding a solution

Some operations chalk up the problems with hitch transfers to the cost of doing business, choosing to deal with customers angry about damaged packages or unhappy maintenance crews who must continually shut down conveyors to repair damaged belts and pulleys. Others set out to find a solution either by creating their own homemade mechanisms or by seeking help from the OEM. In these cases, the hitch protector solutions tend to be the same: a block of UHMW screwed to an angle iron, which is positioned at the hitch and affixed to the side panels of the conveyor.

While these fixes may limit the number of packages being sucked back into the bend pulley, they do not totally solve the problem. In fact, oftentimes, the block of UHMW causes more issues.

Homemade solutions



An ill-fitting piece of UHMW guards this hitch, making it susceptible to jams and package damage.

Foreign object debris (FOD) is a dirty phrase in the package handling world. When there is FOD on the belt, there is potential for something to go very wrong. In the case of the hitch transfer with a homemade or OEM protector that often does not adequately cover the hitch opening,

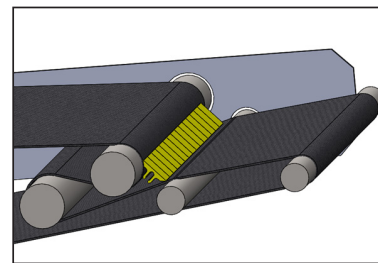
part of the package gets snagged on the ill-fitting hitch protector, producing a rip in the package. FOD can be caused by the contents of a damaged bag spilling on to the belt. This means two things: you now have a damaged package, and the contents of that package could cause serious problems at the hitch.

For example, a rigid object on the belt can get jammed under the homemade hitch protector and slice the conveyor belt like a knife as it travels under the block. If a piece of clothing slips out of its packaging, it can slide past the block, get tangled around the bend pulley, and cause failure of the belt splice.

Another problem that occurs when using a solid block of UHMW to protect the hitch is that if a parcel does get lodged between it and the belt, something must give. Either the package is destroyed, the conveyor belt is damaged, or the whole block fails, leaving the drop unprotected. With the drop unprotected, more items can be pulled in to the bend pulley, resulting in catastrophic failure.

What to look for in a hitch protector

If a solid block of UHMW isn't the answer, then what is? An engineered solution – one that has segments, rather



A engineered solution is the best option for protecting the hitch.

than a solid piece. This segmented design is useful, allowing only a portion of the guard to dislodge before a jam occurs, which can damage both the package and the belt. Choosing a brightly colored hitch guard is also an important feature so

that maintenance crews can easily see when a segment has dislodged.

It is important to pay special attention to the mounting system on the hitch guard. Finding a system that works with scanner eye systems may be necessary and should be an available option.

Finally, it is important to select a hitch guard that can be adjusted for an optimal guard-to-belt fit that discourages material jamming.

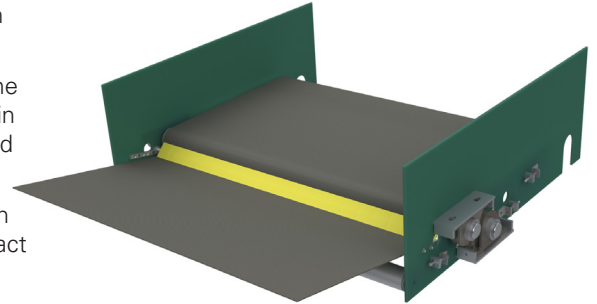
Solutions from Flexco

Hitch Guard

Flexco offers a solution for hitch transfers – the Hitch Guard. Designed to provide a precision fit in the gap, the Flexco Hitch Guard not only stops packages before they get sucked into the bend pulley, but also protects the bend pulley and belt from damage caused by FOD.

The Hitch Guard is engineered to provide a smooth transition of product over the conveyor hitch. The Hitch Guard prevents small objects from becoming lodged in the hitch, which can cause longitudinal conveyor belt tears, damage to conveyed products, and costly periods of unscheduled downtime.

- Permits a single segment to release, preventing belt damage should a foreign object become lodged in the guard, but keeping the remaining segments intact for maximum operational efficiencies.
- Compatible with mechanical and endless belt splices.
- Bright yellow color makes segments easy to monitor for replacement.
- Two mounting designs offer compatibility with most systems, including those with existing Scanner Eyes.



Also from Flexco

Segmented Transfer Plate

Flexco Segmented Transfer Plates are designed to cover the gap between conveyors that are positioned end-to-end, end-to-chute, or end-to-other conveyor structure. Available for belt widths up to 60", transfer plates protect packages and other products from damage, while preventing belt tears and other damage from lodged foreign objects. Segmented Transfer Plates are designed to be easily removed for maintenance. Paired segments are available to accommodate gap widths from 4-10 inches.

