Addressing Transfer Point Challenges

Presented by:

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Agenda

• Introduction
• About Transfer Points
• Transfer Point Issues
• FOD – What is it and why is it important?
• Transfer Point Solutions – Pros and Cons
• Case Study
• Q&A
About Me

• Todd Stewart
• Almost 30 years with Flexco
• My past roles
• My current role
Transfer Points

- What are transfer points?
- What types are out there?
  - Belt to Belt
  - Belt to Roller
  - Belt to Chute/Slide
  - Hitch Conveyor
Top Three Transfer Point Issues

- Smaller conveyed parcels, such as garment shipping bags, get lodged in the transfer damaging the product contained as well as conveyor components
- Debris becoming lodged in the transfer
- Conveyor belt and components becoming damaged by debris lodged in the transfer
What is FOD?

– FOD stands for foreign object debris.

Types of FOD

– Screws, nuts, bolts
– Assembled product components
– Other conveyable items that break free from package
Damage caused by FOD:

- Damage to a transfer plate
- Belt Rips
- Belt gouges
- Belt tears/cuts
- Package damage
Solution: Transfer Plates

Transfer plates (T-plates) are installed to bridge the gap between two belted conveyors, between a conveyor and a chute/slide, or between a conveyor and a roller bed conveyor (live roller or gravity roller). The primary purpose is to provide a smooth transition of product across the transfer areas. The secondary purpose is to protect packages, belt, and conveyor components from potential damage caused by FOD.
Types of Transfer Plates: UHMW Plated

- **Pros**
  - Static mounted to angle iron
  - Beveled edges
  - Custom cut/fit to each transfer
  - Generally set with a 1/8” clearance
  - Generally safe for mechanical splice
  - Perceived as in-expensive

- **Cons**
  - Debris gets caught in t-plate damaging belt or conveyed packages
  - Warps and wears over time
  - Installation time can reach up to 3 hours
  - Hand fabricated
Types of Transfer Plates: Belting & Metal Plate

– Pros
  • Standard belting material
  • Angle iron base with steel plate cap
  • Angle iron welded in place
  • Considered low cost

– Cons
  • Traps FOD
  • Allows FOD into transfer
  • Allows smaller packages and shipping bags to go into transfer
  • Short running life
Types of Transfer Plates: Pop-out Roller

- Pros
  - Lower Friction
  - Pops out for safety
  - Generally safe for mechanical splice

- Cons
  - Frequent pop outs – leaves open transfer
  - Louder
  - Bearing wear and seizure
  - Tape, straps, etc. can get wrapped around roller
Types of Transfer Plates: Inverted Brush

– Pros
  • Static mounted
  • Lower friction
  • Inexpensive
  • Generally safe for mechanical splice

– Cons
  • Catches and holds FOD
  • Wears belt
  • Short run life
Types of Transfer Plates: Segmented Transfer Plate

- Pros
  - Long service life
  - Simple installation
  - Eliminates belt, splice, and product damage
  - Span size configurability
  - Safe for mechanical belt splice
  - Weld in place or bolt in place

- Cons
  - Newer technology that industry is just becoming aware of
Hitch Conveyor

A hitch conveyor is one that changes elevation, either form a horizontal to an incline or from a decline to a horizontal, utilizing a single drive system. A hitch is created at the transition point between the two conveyor sections.
Types of Hitch Protectors: Floating Block

• Pros
  – Single UHMW trapezoidal shape
  – UHMW generally has angle iron bolted to bottom for stiffness
  – “floating” installation held in place by installed blocks
  – Generally safe for mechanical splice

• Cons
  – Pops out too easy
  – Allows FOD into hitch
  – Allows smaller packages and shipping bags to go into hitch
Types of Hitch Protectors: Simple Metal Guard (OEM)

• Pros
  – Metal angle iron
  – Welded in place or bolt in place
  – Low cost

• Cons
  – Traps FOD
  – Allows FOD into hitch
  – Allows smaller packages and shipping bags to go into hitch
  – Can damage belt
  – Can damage belt splice
Types of Hitch Protectors: Segmented

- **Pros**
  - Long service life
  - Simple installation
  - Eliminates belt, splice, and product damage
  - Individual segments can raise or release
  - Safe with mechanical splices

- **Cons**
  - Newer technology that industry is just becoming aware of
Case Study

- 300 transfer related issues daily
- Shipping envelopes and small parcels
- Installation of Segmented Transfer Plate
- Massive decrease in issues
Types of Transfer Plates: No Transfer

- **Pros**
  - No added expense at installation
  - Safe for mechanical splice
  - Quiet running

- **Cons**
  - Small packages get lodged into open transfer
  - Metered packages get temporarily stuck in transfer
  - Totes could tip
  - Could be considered less safe for workers
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