

# GET THE FACTS

About Conveyor Belt Splicing Techniques



*Partners in Productivity*

# Mechanical Belt Fasteners or Endless Splicing?

No matter what you're moving, minimizing downtime and maximizing output are always top priorities; so choosing the best method of splicing a belt is an important decision.



*Mechanical fasteners can be installed by a variety of on-site, easy-to-use tools.*

*Depending on certain factors, one of two methods of splicing may be preferred. The two methods are:*

- *Mechanical Belt Fastening – the process of joining belt ends with metallic or non-metallic fasteners.*
- *Endless Splicing – the process of joining belt ends through a combination of pressure, heat, and time or through chemical bonding.*



*Presses are used to create endless splices through a combination of heat, pressure, and time.*

## Did You Know?

- All splices wear over time. Mechanical fasteners can be visually monitored, often allowing you to anticipate maintenance. Endless splice wear is more subtle, making predictive replacement more difficult.
- Both mechanical and endless splices can be effective ways to join belt ends. The condition of your belts, the environment they perform in, the demands of your system, and the amount of downtime your operation can afford are all factors that must be considered when deciding which method to use.



**Package & Parts Handling**



**Agriculture**



**Airport Baggage Handling**



**Food & Sanitary Handling**



**Recycling**

# Mechanical Belt Fasteners: Real Benefits for Your System

Mechanical belt fasteners combine easy installation and low-profile designs to withstand loads for light- and medium-duty applications.



***Fact: Mechanical fasteners are easy to install, which helps reduce downtime.***

Most mechanical fasteners can be installed in minutes, using only your on-site crew. They require less belt preparation and splicing can typically be handled right on the conveyor. Plus, Flexco offers a complete line of portable, time-saving installation tools to make mechanical splicing even more efficient.

***Fact: Mechanical fasteners can be installed under virtually any condition.***

Unlike vulcanization, mechanical fasteners are not affected by temperature, shelf life, residue, or moisture levels, so they're excellent choices for environments that are less than ideal.

***Fact: Mechanical fasteners do not interfere with your load/products.***

With low profiles and coined edges, mechanical fasteners from Flexco are easy on your products. We offer non-marking plastic fasteners that are compatible with X-ray machines, metal detectors, and food applications.

In addition, mechanical fasteners can be used to create hybrid splices. Various iterations of recessed and hidden fastener installations are possible as hybrid solutions, improving certain product transport, processes, and belt cleaning.

# HOW DO MECHANICAL FASTENERS WORK?

The way belts are manufactured has evolved over the years — and so have mechanical belt fasteners. Because today's belts tend to be thinner and made of synthetic materials, Flexco has designed fasteners with lower profiles that grip almost any belt carcass.

Our fasteners achieve their holding power by penetrating the carcass fibers without damaging them. They feature teeth that literally “push” the fibers aside, passing between them to embed the fastener in the belt.



Hybrid splice

**Fact:** Mechanical splices work in almost any application and some operations even combine them with endless splices.

For food processing applications, or other loads that involve the need for sanitary conditions, endless splicing is often the preferred option. Yet once a food product has been packaged, plastic or metal fasteners can readily be used in the belt conveying process.

**Fact:** Mechanical fasteners are compatible with almost any type of belt.

They can be used as both temporary and permanent splices on everything from worn belts to high stretch varieties. Only systems with extremely small operating pulleys — under 13 mm (1/2”) — are unsuitable for mechanical fasteners.



Exclusively From Flexco

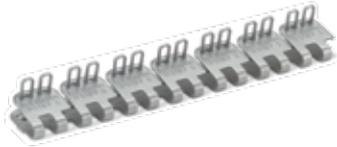
# Metallic Fastening Systems

## Alligator

### Alligator® Ready Set™ Staple

#### Features:

- One-piece fastener strips with pre-inserted staples
- A strong, smooth splice that resists impact damage



#### Materials:

- Steel, 430 & 316 Stainless Steel, MegAlloy®

#### Recommended for:

- Package and parts conveying, food/sanitary operations, agriculture harvesting, recycling, and wood products

#### Installation:

- Alligator® RSC187 Installation Tool – portable installation system requires only a hammer and lightweight installation tool that can be easily carried to the job site
- Alligator® Staple Gold Class™ Plus Installation Tool – an air-operated system designed to speed installation and ensure consistent application; ideal for operations with high splice volume



Alligator® RSC187 Tool



## Clipper

### Clipper® Wire Hooks

#### Features:

- Low-profile, machine-applied hook fasteners
- Available in a variety of wire diameters, leg and point lengths, strip lengths, and styles



#### Materials:

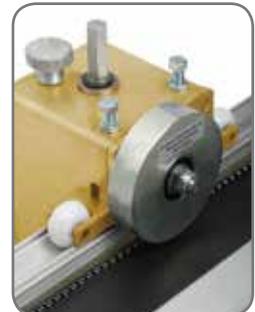
- Steel, 430 & 316 Stainless Steel, high tensile steel, Monel® 400, Inconel® 600, phosphor bronze, Hastelloy C-22, and black oxide

#### Recommended for:

- Package/parts conveying, food processing, agriculture harvesting, general manufacturing, filter media, laundry, and corrugated box board manufacturing

#### Installation:

- On-site maintenance lacing tools – Roller Lacer®, Roller Lacer® Gold Class™, Microlacer®
- Production lacing tools – for high-volume splicing; Pro 600, Pro 6000, Electric Hydraulic Lacers
- Specialty lacing tools – Vise Lacers, LW95 Lacer



Roller Lacer® Gold Class™

## Alligator

### Alligator® Lacing

#### Features:

- Interlaced fastener strips that create an exceptionally smooth joint
- Available in continuous lengths to fit any belt width
- Ideal for transmission belts and other less demanding, low volume applications



#### Materials:

- Steel and Stainless Steel

#### Recommended for:

- Package/parts conveying, food/sanitary operations, agriculture harvesting, recycling, and wood products

#### Installation:

- Requires no special tools – only a hammer



Hammer Installation

# Non-Metallic Fastening Systems



## Alligator® Plastic Rivet

### Features:

- One-piece fastener with beveled edges that create a smooth, low-profile splice
- Suitable for pulleys as small as 38 mm (1-1/2") and belts up to 3.2 mm (1/8") thick

### Materials:

- UV-resistant black, FDA-accepted white and blue plastic



### Recommended for:

- Pharmaceutical and food processing, metal stamping, and operations with metal detectors or X-ray equipment

### Installation Tools:

- Alligator® Spin-Set™ – automated tool that welds the rivet heads of the fastener through heat and friction



Alligator® Spin-Set™ Tool



## Alligator® Spiral Lace

### Features:

- Non-metallic fasteners fabricated into the belt for a smooth, non-marking splice
- Ideal for operations with pulleys as small as 13 mm (1/2") or delicate loads

### Materials:

- Black polyester, FDA-approved white polyester, high-temperature-resistant PEEK



### Recommended for:

- Pharmaceutical and food processing, metal stamping, and operations with metal detectors or X-ray equipment

### Installation:

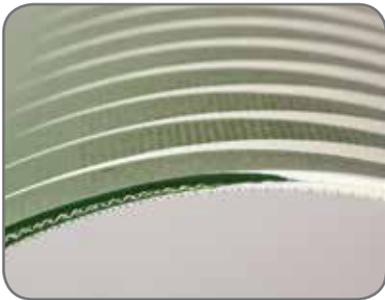
- Should be installed by an experienced belt shop; maintaining an inventory of ready-to-use replacement belts can reduce downtime



# Endless Splicing

This method of belt fabrication creates strong, long-lasting splices through a process of bonding prepared belt ends to create a smooth splice. Endless splices are ideal for food and sanitary conveying applications and also in applications requiring low profile splices that will not mark conveyors or conveyed products.

Endless splicing is also compatible with small pulleys, including nose bars, and can usually be completed with minimum downtime – meaning your belt can get up and running faster.



Novitool® PUN M™  
Mobile Finger Punch

***Fact: Endless splicing creates a smooth and seamless splice.***

Endless splicing is ideal for food and sanitary handling or other applications with small residue. There is no danger of particles sifting through the splice or bacteria growing in fastener penetration points. And, because the splice is smooth and seamless, it won't wear on the conveyor system or the product being moved.

***Fact: Endless splicing creates a strong, long-lasting solution that can help save money in the long run.***

When properly installed, an endless splice produces an extremely durable bond with enough strength to carry your loads for the long term.

# HOW DOES ENDLESS SPLICING WORK?

***Fact: Endless splicing can be completed in as little as eight minutes.***

Endless splicing doesn't have to be time-consuming. Our portable Aero® splice press doesn't require extra hoses, couplings, air pumps, or water tanks – it's a total solution in itself – so you have everything you need to make the perfect splice.



***Fact: Our endless splicing presses are built for convenience.***

On-site installation of endless splicing doesn't have to mean lengthy set-ups and cycle times. With the Aero press, the only thing necessary is the press itself. With electronic controls and the air compressor built in, there is no need to carry multiple components. In addition to the prep time savings, the Aero press often saves over 30 minutes in cycle time.

Endless splicing bonds two belt ends together by applying pressure with heat, allowing the thermoplastic material to flow and then bond together for a strong splice as the material cools and re-hardens. Alternate methods for use with rubber belts typically involve a chemical bonding and curing process to create the splice.

In the past, thermoplastic endless splicing would require the services of an experienced crew. Once the crew arrived on-site, the splicing operation could take several hours from start to finish – hours where your productivity would be at a standstill. Recent advances by Flexco have changed the process for the better. Endless splices can now be made by the Aero® press in 8-12 minutes with quality repeatable results. The simplicity of this press allows for intuitive operation with minimal training. This is beneficial for the belt shop and end users alike, maximizing productivity.

Whether you are a belt shop or an end user with belt splicing needs, it is easy to justify purchasing the Aero press. Insist on quick, easy, and repeatable quality.

# Flexco Endless Splicing Systems

## Novitool®

### Novitool® Aero® Splice Press

#### Features:

- A quick, 8-12 minute total splice cycle time
- Integrated temperature control and air cooling
- Intuitive, easy to navigate HMI controls
- The proprietary Flexco Aero® Recipe Management Tool makes it easy to import, create, or modify recipes
- All-in-one unit, no external components



#### Recommended for:

- Endless splicing of thermoplastic belts



*Aero® press with included flight case for easy transportation*

## Novitool®

### Novitool® Amigo™ Monolithic Splice Press

#### Features:

- Splice time in less than one minute
- Preheat function removes moisture to avoid pinholes
- Custom templates ensure accurate pitch splicing
- Integrated belt cutter and shielded heat zone designed for operator safety



#### Recommended for:

- Endless splicing of Monolithic belts



*Interchangeable Splice Templates*

## Novitool®

### Novitool® PunM™ Finger Punch

#### Features:

- Manually operated finger punch system that doesn't need electricity or air pressure
- Easy to set-up and use on location
- Punching force of 11,000 lbs. (50 kN)



#### Recommended for:

- Preparation of belt ends for finger, finger-over-finger, bias finger, or bias finger-over-finger splices
- Any belt width can be punched due to the open-end design of the Pun M
- Punchboards available for 50x20 mm, 70x15 mm, and 80x20 mm fingers



*Punched fingers*

## Novitool®

### Novitool® Ply 130™ Ply Separator

#### Features:

- Easy depth adjustment and excellent repeatability
- Can separate belt end in preparation for finger-overlap-finger and stepped splices
- Safe and convenient – foot pedal controls the operation



#### Recommended for:

- Belt shops and on-site jobs
- Preparation of finger-overlap-finger or hybrid splicing



*Precise ply separation*



# Flexco Has the Solution

When a splice needs to be made, decide which method will work better for you based on environmental and working conditions around the belt. As mentioned, temperature, moisture levels, residue, the material you're carrying, and the amount of belt slack you have can all come into play. Both splicing methods can be reliable options, but one may work better over the other in certain scenarios.

For any splicing challenges or needs, Flexco has the solution. Our comprehensive line of mechanical belt fasteners and endless splicing presses will keep you up-and-running – with the least amount of downtime.

*Contact a Flexco representative today for more information on splicing techniques or to find a distributor in your area.*



*Partners in Productivity*

MAXIMIZE YOUR OPERATION'S PERFORMANCE WITH FLEXCO



Visit our website or contact your local distributor to learn more.

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