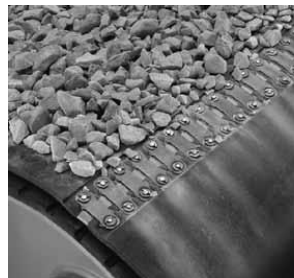




Taylor Product Bulletin #1402

Belt Lacing Systems By:



Lacing Systems Available:

- Clipper Lacing
- Alligator Lacing
- Staple Fasteners
- Rivet Fasteners
- V-Belt Fasteners
- Bolt Hinged Fasteners
- Rivet Hinged Fasteners
- Bolt Solid Plate Fasteners

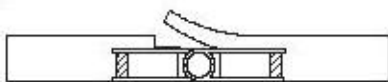
Lacing Styles:



Recessed



Hidden



Flap Over



Standard (Exposed)



How Anchor™/Clipper® Hooks Work

The Clipper® Hook design incorporates a double-staggered grip pattern that gives wire hooks exceptional holding power without degrading the integrity of the belt carcass. The points of the fastener pass through the belt carcass and are formed over, locking the carcass between them.

This low profile splice is highly compatible with conveyor components and compliant with the need for reduced operating noise. Additional splice strength and consistency of splice installation is obtained through precision machine application.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> • Package and Parts Handling • Food Processing • Checkout Counters • Commercial Laundries • Filter Media • Agriculture 	<p>Depending on the application, Clipper® Hooks can be installed with on-site maintenance lacers such as the Roller Lacer®, Roller Lacer® Gold Class™, or Microlacer®, Production Lacers for high volume lacing (Pro 400, Pro 600, Pro 6000, or Electric Hydraulic Lacers), or Specialty Lacers such as the Plier-Tape Lacer, Vice Lacer, Baler Belt Lacer. Please contact Flexco to discuss your application.</p>	<ul style="list-style-type: none"> • Hooks • Connecting Pin • Installation Tool
How to Specify the Correct Clipper® Fastener	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> 1. Measure your Belt Thickness (kN/m, PIW). 2. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. 3. Using the selection chart on page 6, identify possible hook choices. 4. Narrow selections by selecting desired wire diameter. <ul style="list-style-type: none"> • Larger wire diameter provides greater strength and abrasion resistance. • Smaller wire diameter provides less noise and less wear on conveyor components. 5. If multiple choices remain, select either carded or Unibar® style fastener. 	<p>Galvanized Steel. For basic applications, galvanized steel is recommended.</p> <p>Stainless Steel. Type 430 and Type 316 Stainless Steel offers more resistance than steel to abrasion, acids, chemicals, rusting, and magnetic attraction.</p> <p>High Tensile. Added abrasion resistance and fastener retention strength.</p> <p>Specialty Metal.</p> <ul style="list-style-type: none"> • Coated Steel • Rectangular High Tensile • Monel® • Inconel® • Phosphor Bronze • Hastelloy • Black Oxide 	<p>DSS DuraStainless™ - stainless spring steel core with filled nylon coating for superior abrasion resistance, flat belts only.</p> <p>DL Duralink™ - braided stainless cable with filled nylon coating for superior abrasion resistance, crowned pulley or troughed belts.</p> <p>NY Nylosteel - spring steel core with nylon coating for use with galvanized or high tensile fasteners, flat or troughed belts.</p> <p>NYS Nylostainless - stainless spring steel core with nylon coating for use with stainless steel fasteners, flat belts only.</p> <p>NCS Nylon Covered Stainless Steel Cable - braided stainless cable with nylon coating for applications with stainless fasteners, crowned pulley or troughed belts.</p>

Please see page 10 for Anchor/Clipper Fastener selection chart.



How Alligator® Lacing Works

Hammer applied Alligator® Lacing utilizes a design with teeth that are formed so that when they are driven parallel to the length of the belt, the vital longitudinal carcass fibers are not severed.

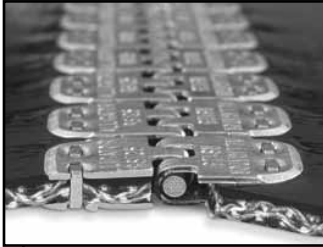
The compression fit of the connecting bar provides a strong, vise-like hold on the belt

and distributes belt tension evenly across the entire belt width. The one-piece fastener strip also ensures that there are no loose pieces to work themselves out of the belt and into the conveyed product. The flat splice obtained with a continuous strip of lacing also helps with hinge pin insertion.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> Manufacturing Assembly Lines Food, Package, and Parts Handling Checkout Counters Agricultural Equipment 	Requires only a hammer; no special tools needed. Unique, patented clips and round gauge rod act as an "extra" pair of hands.	<ul style="list-style-type: none"> Fasteners Hinge Pin Hammer
How to Specify the Correct Alligator® Lacing	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> Determine Belt Tension (kN/m, PIW). Measure your Belt Thickness. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. Choose the fastener size that is appropriate for your specifications in the selection chart below. 	<p>Steel. Standard fastener material.</p> <p>Stainless Steel. Type 316 Stainless Steel</p>	<p>H Steel Corrugated - for all sizes of Alligator belt lacing.</p> <p>SH Stainless Steel Corrugated - for all sizes of Alligator belt lacing.</p> <p>RH Rocker Hinge Pin - for transmission belt lacing, two-piece pin to reduce friction and wear on loops and lacing.</p> <p>NC Nylon Covered Steel Cable - for easier hinge pin insertion.</p> <p>NCS Nylon Covered Stainless Cable - for greater corrosion resistance.</p>

Alligator® Lacing Selection Chart

Lacing Size	For Belts With Mechanical Fastener Ratings Up To:		Belt Thickness Range		Recommended Min. Pulley Diameter		Approx. Corrugated Hinge Pin Diameter	
	kN/m	P.I.W.	mm	in.	mm	in.	mm	in.
00	4.3	25	Up thru 1.6	Up thru 1/16	25	1	1.2	3/64
1	7.8	45	1.6-2.4	1/16-3/32	38	1-1/2	1.6	1/16
7	8.7	50	2.4-3.6	3/32-9/64	51	2	1.6	1/16
15	11.4	65	3.2-4.0	1/8-5/32	64	2-1/2	2.4	3/32
20	16.6	95	4.0-4.8	5/32-3/16	76	3	2.8	7/64
25	17.5	100	4.8-5.6	3/16-7/32	102	4	3.2	1/8
27	17.5	100	5.6-7.1	7/32-9/32	127	5	3.2	1/8
35	26.0	150	7.1-7.9	9/32-5/16	178	7	3.6	9/64
45	28.0	165	7.9-9.5	5/16-3/8	229	9	4.8	3/16
55	30.0	175	9.5-11.1	3/8-7/16	305	12	5.2	13/64
65	35.0	200	11.1-12.7	7/16-1/2	356	14	5.2	13/64



How Alligator® Ready Set™ Staple Fasteners Work

Designed for light and medium duty synthetic carcass belting, the Alligator® Staple fastener utilizes high tensile, stainless steel staple attachment, in conjunction with an extended plate design. This design separates the point of fastener penetration from the line of belt flexing to eliminate splice fatigue at the point of belt attachment.

Staple fasteners are furnished in strips with a bridge between each fastener plate. This strip design minimizes the chance of individual parts dislodging into the conveyed

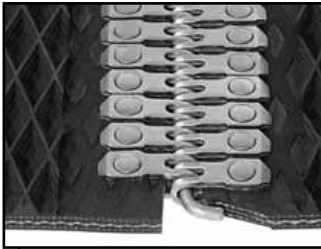
product. The one piece design provides a stronger splice, greater resistance to impact damage, and a smoother, unrippled joint that simplifies hinge pin insertion.

Staples are hammer driven through the fastener and belt, working between the carcass fibers without severing them. The staples are then clinched cross-wise to the belt, so that belt tension does not pull against the staples to unclinch them.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> • Package and Parts Handling • Cased Goods • Food • Wood • Agricultural Products 	<p>A portable, lightweight application tool is easily carried to the job for on-site installation. The tool holds belt and fastener while staples are set with a hammer and a staple driver.</p>	<ul style="list-style-type: none"> • Fasteners • Hinge Pin • Installation Tool • Staple Driver • 0.5 kg (1 lb.) Hammer
How to Specify the Correct Alligator® Staple Fastener	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> 1. Determine Belt Tension (kN/m, PIW). 2. Measure your Belt Thickness. 3. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. 4. Choose the fastener size that is appropriate for your specifications in the selection chart below. 	<p>Steel. Standard fastener material.</p> <p>Stainless Steel. Type 316 Stainless Steel provides extra resistance to abrasion, magnetic attraction, and corrosion from acids and chemicals.</p> <p>Type 430 Magnetic Stainless Steel (Sizes 62 and 125).</p> <p>MegAlloy®. (Sizes 125 and 187) For superior resistance to wear and abrasion.</p>	<p>NC Nylon Covered Steel Cable - for use with steel fasteners, flat or troughed belts.</p> <p>NCS Nylon Covered Stainless Steel Cable - for applications with stainless fasteners, flat or troughed belts.</p> <p>SP Steel Spring Wire - for use with steel fasteners in abrasive or gritty material applications, flat belts only.</p> <p>SS Stainless Steel Spring Wire - for use with stainless fasteners, flat belts only.</p>

Alligator® Ready Set™ Staple Fasteners Selection Chart

Fastener Size	Operating Tension Range		Belt Thickness Range		Min. Pulley Diameter		Approx. Hinge Pin Diameter	
	kN/m	P.I.W.	mm	in.	mm	in.	mm (nylon-steel)	in. (nylon-steel)
RS62	17	100	1.5-3.2	1/16-1/8	50	2	nylon 2.0, steel 2.0	nylon .080, steel .080
RS125	28	160	3.2-4.8	1/8-3/16	75	3	nylon 3.6, steel 3.6	nylon .141, steel .141
RS187	35	200	4.8-6.4	3/16-1/4	102	4	nylon 5.2, steel 4.7	nylon .203, steel .187



How Alligator® Rivet Fasteners Work

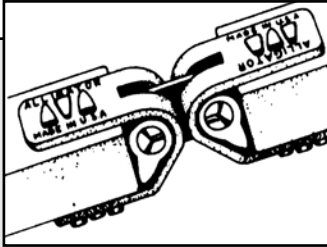
The Alligator® Rivet Fastener system uses the self-setting rivet technology that Flexco developed for the underground mining market. The patented rivets work between the carcass fibers, without severing them, leaving the entire belt carcass intact. The fasteners and rivets of this system are constructed from durable, abrasion-resistant stainless steel for long life.

Because the rivets are self-setting, fasteners are installed quickly from the top side of the belt. Rivets are driven through the fastener plates and the belt, passing between the carcass fibers. The specially-shaped head of each pilot nail works in conjunction with the application tool's anvil plate to set the rivets.

Applications	Installation Method	What You Need for Installation
Hay Baling	Fasteners are installed in one simple procedure with self-setting rivets, using a portable fixture and hammer.	<ul style="list-style-type: none"> • Fasteners • Rivets • Hinge Pin • Installation Tool • 0.5 kg (1 lb.) Hammer
How to Specify the Correct Alligator® Rivet Fastener	Fastener Metal Selection	Hinge Pin Selection
Fits most round hay balers. Contact Customer Service for more information.	Stainless Steel. Type 300 Series Stainless Steel.	Steel Corrugated - the standard metal pin. Corrugations retain pin within the splice. Stainless Steel Spring Wire - resists wear and corrosion.

Alligator® Rivet Fastener Selection Chart

Operating Tension Range		Belt Thickness Range		Pulley Diameter		Approx. Hinge Pin Diameter	
kN/m	P.I.W.	mm	in.	mm	in.	mm	in.
52	300	3.2-5.6	1/8-7/32	88	3-1/2	3.6	.140



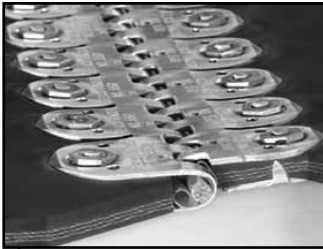
How Alligator® V-Belt Fasteners Work

The Alligator® V-Belt Fastening System is designed to grip the ends of a v-belt without interfering with the sheaves (pulleys) that the belt passes around.

Staples or nails are driven through the fastener and belt and folded over.

They are then hammered tight against the bottom plate of the fastener clinching the belt between the fastener plates. There is nothing that protrudes beyond the sides of the belt that would interfere with the sheaves.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> • Power Transmission • Agricultural Harvesting • Manufacturing 	<p>These fasteners are inserted into a holder/tool along with the belt end. The staples/nails are driven through the splice and when complete, the entire assembly is removed from the holder. Insert the hinge and the belt is ready to be run.</p>	<ul style="list-style-type: none"> • Fasteners • Hinge Pin • Staples/Nails • Holder/Tool • Rocker Pin Tools • 0.5 kg (1 lb.) Hammer
How to Specify the Correct Alligator® V-Belt Fastener	Fastener Metal Selection	Hinge Pin Selection
<p>The fastener size is determined by the belt size that you use. Simply choose the fastener that corresponds to your belt, A312, B437, or C531.</p>	<p>Steel. Standard fastener material.</p>	<p>Rocker Pins are included with the fasteners.</p>



How Flexco® Bolt Hinged Fasteners Work

Flexco® Bolt Hinged fasteners provide a flexible joint for belts operating over small pulleys. Because the joint is easily separated by simply removing the hinge pin, entire belt sections may be added or eliminated.

Designed as a compression fastener, the Flexco® Bolt Hinged model is fastened to the belt ends with high strength bolts. The bolts

compress the plates into the belt cover. Additional holding capability is provided by the fastener teeth that imbed in the belt without damage to the belt carcass.

This combination distributes the splice tension across the entire plate width while the teeth secure the fastener into the belt carcass to resist pull-out.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> • Construction Equipment • Road Machinery • Coal, Salt, Potash Mines • Stacking and Stockpiling Belts • Other Applications Involving Smaller Pulleys 	Fasteners can be installed in the shop or on-site with either simple hand tools or power tools.	<ul style="list-style-type: none"> • Fastener Plates • Bolts & Nuts • Templet • Belt Punch • Wrench • Bolt Horn • Flexco Installation Tool • Impact Tool or Carpenter's Brace
How to Specify the Correct Flexco® Bolt Hinged Fastener	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> 1. Determine Belt Tension (kN/m, PIW). 2. Measure your Belt Thickness. 3. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. 4. Choose the fastener size that is appropriate for your specifications in the selection chart below. 	<p>Steel. For most applications, plated steel is recommended.</p> <p>Stainless Steel. Type 316 Stainless Steel provides extra resistance to abrasion, magnetic attraction, and corrosion from acids and chemicals.</p>	<p>NC Nylon Covered Steel Cable - for use with steel fasteners, flat or troughed belts.</p> <p>NCS Nylon Covered Stainless Steel Cable - for applications with stainless fasteners, flat or troughed belts.</p>

Flexco® Bolt Hinged Fastener Selection Chart

Fastener Size	For Belts With Mechanical Fastener Ratings Up To:		Belt Thickness Range		Recommended Min. Pulley Diameter			
					Operating Tension 100% of Belt Rating		Operating Tension Under 75% of Belt Rating	
	kN/m	P.I.W.	mm	in.	mm	in.	mm	in.
375X	33	190	6-11	1/4-13/32	152	6	102	4
550	52	300	6-16	1/4-5/8	230	9	178	7



How Flexco® Rivet Hinged Fasteners Work

Designed for synthetic carcass belting as well as other styles of belt, Flexco®SR™ (Self-Setting Rivet) Fasteners utilize multiple rivet attachment. This provides maximum resistance to pull-out and allows the patented rivets to work between the carcass fibers without severing them, leaving the entire belt carcass intact. It does not rely solely upon the carcass material to resist pull-out.

Because the rivets are self-setting, fasteners are installed quickly from the top side of the

belt. Rivets are driven through the fastener plates and through the belt, passing between the carcass fibers. The specially-shaped head of each pilot nail works in conjunction with the applicator tool's anvil plate to set the rivets.

The same hammer blows that set the rivets also compress the fastener plates into the belt cover. The broad width and heavy gauge of the plates give extended wear life. These plates compress uniformly and are specially coined so there are no high spots or edges to hang up.

Applications	Installation Method	What You Need for Installation
<ul style="list-style-type: none"> Underground Mining Asphalt Plants Aggregate and Ready-mix Plants Log Belts and Similar Applications 	Fastener installed with portable fixture and hammer. Fasteners are installed in one simple procedure with self-setting rivets.	<ul style="list-style-type: none"> Fastener Rivets Hinge Pin Flexco Installation Tool Hammer
How to Specify the Correct Flexco® Rivet Hinged Fastener	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> Determine Belt Tension (kN/m, PIW). Measure your Belt Thickness. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. Choose the fastener size that is appropriate for your specifications in the selection chart below. 	<p>Steel. For most applications, plated steel is recommended.</p> <p>Stainless Steel. Type 316 Stainless Steel provides extra resistance to abrasion, magnetic attraction and corrosion from acids and chemicals.</p> <p>RustAlloy®. Resists corrosion due to mine water or other chemical attack.</p> <p>MegAlloy®. For superior resistance to wear and abrasion.</p>	<p>AC Bare Armored Cable - for extendable conveyors.</p> <p>ACS Bare Armored Stainless Cable - for extendable conveyors.</p> <p>NAC Nylon Covered Armored Cable - right for many applications, long service life.</p> <p>NC Nylon Covered Steel Cable - for use with steel fasteners, flat or troughed belts.</p> <p>NCS Nylon Covered Stainless Steel Cable - for applications with stainless fasteners, flat or troughed belts.</p> <p>SSC Bare Stainless Steel Cable - for corrosion resistance, flat belts.</p>

Flexco® Rivet Hinged Fastener Selection Chart

Fastener Size	For Belts With Mechanical Fastener Ratings Up To:		Belt Thickness Range		Recommended Min. Pulley Diameter			
	kN/m	P.I.W.	mm	in.	Operating Tension Under 100% of Belt Rating		Operating Tension Under 75% of Belt Rating	
					mm	in.	mm	in.
R5	79	450	6-11	7/32-7/16	230	9	175	7
R5-1/2	114	650	8-15	5/16-19/32	300	12	250	10
R6	140	800	10.5-17	13/32-11/16	450	18	400	16
R6LP	140	800	8-18	5/16-23/32	450	18	400	16
R8	263	1500	10.5-17	13/32-11/16	450	18	400	16



How Flexco® Bolt Solid Plate Fasteners Work

Strength of this fastener is derived from the compression of the plates, mounted above and below the belt, with high tensile strength bolts. This "compression" distributes the splice tension across the full width of each fastener plate. The holding ability is, thereby, increased by not solely relying upon the bolts to resist pull-out.

Additional strength and resistance to pull-out is obtained from the specially formed teeth on each plate. These teeth imbed deep into the belt carcass, without damaging the carcass fibers.

A tight butt splice is achieved through the exaggerated bolt hole spacing in the templet which forces the belt end together. Flexco® Bolt Solid Plate Fasteners permit natural conformance with troughing or transition idlers.

140, 190 and 2-1/2 size fasteners are specifically designed for thinner belting, allowing increased compression, greater reach-back, and more fastener plates per belt width.

Applications	Installation Method	What You Need for Installation
Higher-tension main haulage belts in <ul style="list-style-type: none"> • Coal • Hard-Rock Mining • Foundries • Grain Elevators • Aggregate Plants • Steel Mills 	Holes are punched in belt quickly and accurately with a templet and boring tool. Fasteners are installed on-site with portable, hand, or power tools.	<ul style="list-style-type: none"> • Fastener Plates • Bolts & Nuts • Templet • Belt Punch • Wrench • Bolt Horn • Flexco Installation Tool • Impact Tool or Carpenter's Brace
How to Specify the Correct Flexco® Bolt Solid Plate Fastener	Fastener Metal Selection	Hinge Pin Selection
<ol style="list-style-type: none"> 1. Determine Belt Tension (kN/m, PIW). 2. Measure your Belt Thickness. 3. Measure the Diameter of the Smallest Pulley in your Drive with Belt Wrap more than 90°. 4. Choose the fastener size that is appropriate for your specifications in the selection chart below. 	<p>Steel. For most applications, plated steel is recommended.</p> <p>MegAlloy®. For superior resistance to wear and abrasion.</p> <p>Stainless Steel. Type 316 Stainless Steel provides extra resistance to abrasion, magnetic attraction and corrosion from acids and chemicals.</p> <p>Everdur®. Spark-free material compared to steel and fully non-magnetic.</p> <p>Flexco®VP™. Rubber covered steel top plates.</p>	No Hinge Pin Required.

Flexco® Bolt Solid Plate Fastener Selection Chart

Fastener Size	For Belts With Mechanical Fastener Ratings Up To:		Belt Thickness Range		Recommended Min. Pulley Diameter (90°)					
					Operating Tension 75-100% of Belt Rating		Operating Tension 50-75% of Belt Rating		Operating Tension Under 50% of Belt Rating	
	kN/m	P.I.W.	mm	in.	mm	in.	mm	in.	mm	in.
1	30	150	5-11	3/16-7/16	300	12	260	10	200	8
140*, 140VP	40	225	5-11	3/16-7/16	360	14	300	12	250	10
190, 190VP	65	375	8-14	5/16-9/16	460	18	410	16	360	14
1-1/2	50	300	11-17	7/16-11/16	460	18	410	16	360	14
2, 2VP	75	440	14-21	9/16-13/16	760	30	710	28	610	24
2-1/4	105	620	14-30	9/16-1-3/16	920	36	860	34	860	34
2-1/2	75	450	19-25	3/4-1	1070	42	1070	42	1070	42