

# SUPER-SCREW® Flexible Rubber Fastening System

## Fast, easy alternative to vulcanization

The Super-Screw® Flexible Rubber Fastening System is a unique and innovative solution that acts as an alternative to vulcanization in even the toughest, most demanding applications. The flexible splice screws directly into the belt with great accuracy and precision, offering a solution that is truly like no other.



## *In Any Space, in Any Weather Condition*

This revolutionary fastening system consists of a top and bottom piece of rubber, reinforced with one or more fabric plies for strength, along with pre-drilled holes that are fastened together with screws and a cordless drill and bit. This creates a strong, yet flexible splice that provides all the benefits of vulcanization without the challenges. With Super-Screw, you can install these flexible splices regardless of the location or accessibility of the conveyor belt and regardless of weather conditions. The Super-Screw Flexible Rubber Fastening System can be used on belts with skived belt thicknesses from 5/32" to 3/4" (4 mm to 19 mm), and pulley diameters as small as 6". Sizes are available to accommodate PIW ratings up to 1200.

## *Market Applications*

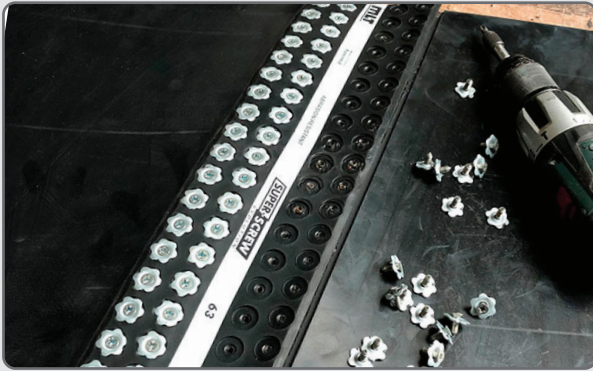
- Quarries
- Cement plants
- Crushed rock
- Underground and surface mining
- Coal
- Hard-rock
- Wood processing
- Industrial minerals

# SUPER-SCREW®

## Flexible Rubber Fastening System

### Fastener Overview

#### *How the Super-Screw® Flexible Rubber Fastening System Works*



The Super-Screw® Flexible Rubber Fastening System utilizes specially-designed self-drilling, self-tapping screws that preserve the integrity of the belt by passing between the carcass threads without cutting them. Super-Screw comes ready to be installed, with assembly spacers already in place, so that the top and bottom covers align correctly. Screws and Pozidrive or "PZ" bits are included for easy installation, without the need for tools beyond a standard powered drill or 1/4" impact driver. The result is a splice that can be installed anytime, anywhere, and in any weather condition.

#### The choice over vulcanization

The simple and practical Super-Screw® Flexible Rubber Fastening System can be used in place of vulcanization, saving you from long periods of downtime due to waiting for a crew to arrive, belt preparation, press set-up, and cooking time. It can also be used in the toughest, most demanding environments, regardless of climate and temperature, keeping your employees safer and more productive. It withstands temperatures from -22° F to 392° F (-30° C

to 200° C), making it the perfect alternative to vulcanization. This easy-to-install fastening system can be used to repair any spot on the belt, or for joining brand new belts ends, without the need for an outside service or skilled technician. The Super-Screw system is also compatible with belt cleaners, and smaller pulley diameters, and is highly abrasion resistant.



*Fast and easy installation*

*Sift-free*

*Withstands temperatures from  
-22° F to 392° F (-30° C to 200° C)*

*Self-tapping screws*

*Strong, yet flexible*

*Wear-resistant and cut-resistant*

*Compatible with small pulley diameters*



# SUPER-SCREW®

## Flexible Rubber Fastening System

# Fastener Selection Guidelines

## Specify the Correct Super-Screw® Flexible Rubber Splice

The four items needed to order a Super-Screw splice are below. The complete part number will be in this order: "A-B-C-D"

### A. Determine the belt tension rating and measure the smallest pulley in your system. This determines the series to use.

Most conveyor belting has a mechanical fastener rating. Care should be taken not to operate the belting or fasteners beyond their recommended rating. Refer to page 4 for a chart listing the recommended maximum tension for each series. Consider pulleys over which the belt makes at least a 90-degree wrap. For tail or take-up of the self-cleaning "wing type" pulley, 25% larger diameter dimensions are usually required. Refer to the Super-Screw Series Technical Data chart on page 5 for selecting the appropriate series based on the PIW and minimum pulley diameter.

### B. Measure belt thickness after skiving. This determines the screw length needed.

Measure the thickness of the belt after skiving by subtracting the top cover thickness from the overall belt thickness, or by measuring from the bottom of the belt to the top of the top ply. Refer to the Thickness After Skive guide on page 5 to find the "mm rounded up" number.

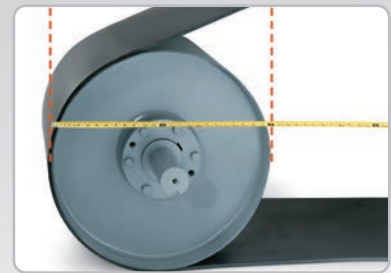
### C. Choose the Super-Screw Splice length.

Super-Screw® Evolution has an 18° bias installation requirement, so splices must be ordered wider than belt width. The formula for length to order Evolution is (Belt Width) × (1.067) then round down to the nearest inch. Super-Screw® Original has a 5° bias installation requirement, so splice length required is equal to belt width (example: order a 36" splice for a 36" wide belt). You can also refer to the Splice Width Selection Guide on page 6 for total splice length needed for common belt widths.

### D. Select the rubber compound best suited for the application.

This determines the type of rubber for the splice.

Rubber Compounds			
Rubber Compound Details	Color on Splice Stripe	Specs	Applications
AR (Abrasion Resistant)	White	Lowest DIN Rating (most resistant to abrasion)	Sand, Gravel, Quarries, Cement, Abrasive Applications
HOT	Orange	Heat Resistant up to 392°F	High-Temp Applications from 170° to 392°F. Clinker, foundries, hot sand
MOR (Moderately Oil Resistant)	Green	Moderately Oil Resistant	Wood, Pulp & Paper, Sawmills
SS (Stainless Steel)	White with Yellow Outline	Abrasion Resistant rubber compound with 316 stainless screws and internal hardware	Corrosive Environments, chemical fertilizer, plants, chemical plants, some mining applications
MSHA (Fire-Resistant/Anti-Static, Anti-Sparking)	Blue	MSHA/Fire-Resistant/Anti-Static	Underground Mining, Coal, Silos
White (FDA/USDA Food Grade)	Splice all White	FDA/USDA Food Grade	Food
AR BB/FB/SB (Bare back/Friction Back/Sliding Bed)	White with Bottom Ply Exposed	Abrasion resistant rubber compound with an extra ply vulcanized onto bottom.	Where an impact bed is present. Many times a standard AR will work. Use this for continuous sliding bed applications and on bare back belts
MOR BB/FB/SB (Bare back/Friction Back/Sliding Bed)	Green with Bottom Ply Exposed	MOR rubber compound with an extra ply vulcanized onto bottom.	Where an impact bed it present. Many times a standard MOR will work. Use this for continuous sliding bed applications and on bare back belts



Measure smallest pulley diameter and determine the belt's tension rating (PIW)



Measure belt thickness after skiving



Choose Super-Screw splice length



Select rubber compound



# SUPER-SCREW®

## Flexible Rubber Fastening System

# Super-Screw® Splice Selection Guidelines

Use the chart below to determine which Super-Screw® fastener series and screw length to use.

## Super-Screw® Technical Data

Additional specifications to consider when selecting your splice type can be found in the chart below.

Super-Screw Belt Specifications Chart												
Fastener Strip Series	Type	Maximum Belt Tension	Minimum Pulley Diameter		Belt Thickness After Skiving		Top of Splice Thickness		Bottom of Splice Thickness		Overall Width of Splice	
		P.I.W	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
35 Series	Evolution	200	6	160	5/32 - 1/2	4 - 13	1/8	3.5	1/8	3	2-27/32	72
63 Series	Evolution	360	8	200	5/32 - 1/2	4 - 13	1/4	6	1/8	3	4-9/16	116
65 Series	Evolution	360	8	200	5/32 - 1/2	4 - 13	15/64	6	11/64	4	4-9/16	116
80 Series	Evolution	450	10	250	5/32 - 1/2	4 - 14	1/4	6	3/16	4.7	6-5/16	160
85 Series	Original	450	10	250	5/32 - 19/32	4 - 15	9/32	7	7/32	6	5-7/8	156
100 Series	Original	650	12	300	5/32 - 19/32	4 - 15	9/32	7	7/32	6	5-7/8	156
105 Series	Original	650	13	330	5/32 - 19/32	4 - 15	11/32	9	7/32	6	5-7/8	156
180 Series	Original	1030	16	400	9/32 - 13/16	7 - 21	9/32	7	15/64	6	10-1/2	266
200 Series	Original	1200	20	500	9/32 - 3/4	7 - 19	11/32	9	15/64	6	10-1/2	266

## Thickness After Skive Guide

Thickness After Skive*			Screw Length (mm)								
in.	mm	mm for "B" of Part Number**	35	63	65	80	85	100	105	180	200
1/8"	3.2	4	10	10	12	-	-	-	-	-	-
3/16"	4.8	6	12	12	14	14	16	16	18	19	21
1/4"	6.4	8	14	14	16	16	18	18	20	21	22.5
5/16"	7.9	8	14	14	16	16	18	18	20	21	22.5
3/8"	9.5	10	16	16	18	18	20	20	22	22.5	24
7/16"	11.1	12	18	18	20	20	22	22	24	24	25.5
1/2"	12.7	14	20	20	22	22	24	24	30	25.5	27
9/16"	14.3	16	-	-	-	24	30	30	-	27	28.5
5/8"	15.9	16	-	-	-	-	30	30	-	28.5	30
11/16"	17.5	18	-	-	-	-	-	-	-	30	31.5
3/4"	19.1	20	-	-	-	-	-	-	-	30	-

**NOTE:** Screw length is not equal to thickness after skive. The screws are longer to go through the top strip, belt, and bottom strip. See Fig. 1

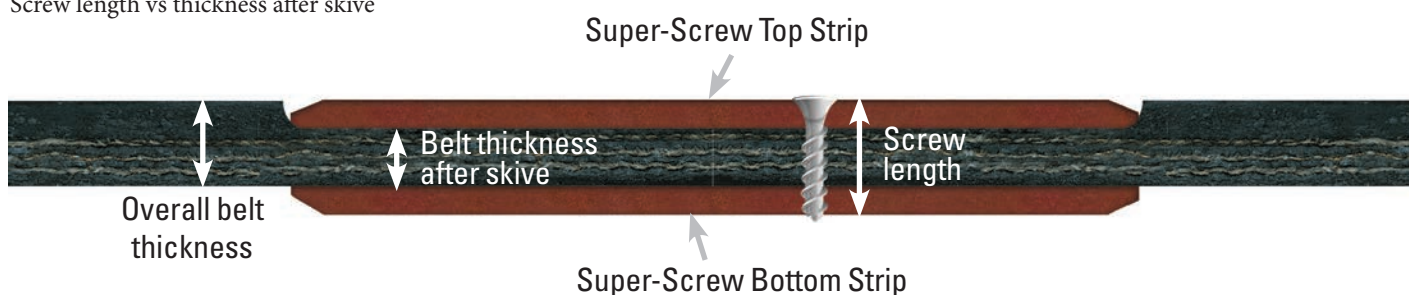
35-105 Series use 5mm diameter screws. 180-200 Series use 6mm diameter screws.

\* Top (or top and bottom) cover of belt must be skived to this thickness for screws to engage

\*\* This is the "thickness after skive" for letter "B" of the part number

**Figure 1:**

Screw length vs thickness after skive



# SUPER-SCREW®

## Flexible Rubber Fastening System

# Additional Super-Screw® Selection Guidelines

## Required Installation Equipment

The following tools are needed to properly splice a belt using the Super-Screw® Flexible Rubber Fastening System:

- Super-Screw® Fastener Strips
- Screws\*
- Assembly spacers
- Powered drill or 1/4" impact driver
- PZ bit
- Belt Skiver
- Belt Marking Pen
- Tape Measure
- Belt or Carpenters Square

\*Evolution screws include washers; Original screws do not require washers

## Super-Screw® Metal Options for Screws and Inserts

The Super-Screw® Flexible Rubber Fastening System features two different metal options of screws and inserts.

**Galvanized:** Galvanized steel is the standard fastener material for most applications. Galvanization helps combat mild corrosion.

**Stainless:** 316 Stainless steel provides extra resistance to magnetic attraction and corrosion from acids and other chemicals.



<b>Metal Options for Screws and Inserts</b>					
<b>Rubber Compound Details</b>	<b>Abrasion Resistance</b>	<b>Chemical Resistance</b>	<b>Rust Resistance</b>	<b>Magnetic</b>	<b>Spark-Free</b>
AR (Abrasion Resistant)	Excellent	Fair	Fair	Yes	No
HOT (Heat Resistant)	Fair	Fair	Fair	Yes	No
MOR (Moderately Oil Resistant)	Good	Fair	Fair	Yes	No
SS (Stainless Steel)	Good	Excellent	Excellent	Slightly	No
MSHA (Fire-Resistant/Anti-Static, Anti-Sparking)	Good	Fair	Fair	Yes	Spark Resistant
White (FDA/USDA Food Grade)	Fair	Good	Fair	Yes	No
AR BB/FB/SB (Bare back/Friction Back/Sliding Bed)	Excellent	Fair	Fair	Yes	No
MOR BB/FB/SB (Bare back/Friction Back/Sliding Bed)	Good	Fair	Fair	Yes	No

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### Super-Screw® Full Roll Ordering

When ordering a full roll, different screw lengths can be specified as needed in any quantity. Total screw quantity for a full roll of each series is listed below.

Super-Screw® Full Roll Ordering Chart						
Ordering Number	Full Roll Size		Packaging	Spacer Quantity	Screw Quantity	PZ Bit Quantity
Super-Screw® Full Roll Series	in.	m				
35 Series Full Roll	984	25	Top and bottom in one box	100	2300 w/washers	20 PZ2
63 Series Full Roll	984	25		100	4600 w/washers	
65 Series Full Roll	984	25		100	4600 w/washers	
80 Series Full Roll	984	25		100	6900 w/washers	
85 Series Full Roll	984	25		250	7700	
100 Series Full Roll	984	25		250	7700	
105 Series Full Roll	984	25		250	7700	
180 Series Full Roll	600	15		150	3970	
200 Series Full Roll	600	15	150	3970	20 PZ3	

### Super-Screw® Cut Length Ordering

Ready to install cut lengths are also available and are delivered with the appropriate number of screws and PZ bits to install the splice. When ordering a cut-to-length splice, the four items on page 3 are required: Super-Screw Series, belt thickness after skive, splice length, and rubber compound. Total screw and spacer quantity for common sizes is below.

Super-Screw® Cut Length Ordering Chart														
Belt Width		35 Series			63/65 Series			80 Series			85 Series			
in.	mm	Splice Length	# Screws	# Spacers	Splice Length	# Screws	# Spacers	Splice Length	# Screws	# Spacers	Splice Length	# Screws	# Spacers	
12	300	12	28	2	12	56	2	12	84	2	12	94	2	
18	450	19	44	2	19	88	2	19	134	2	18	140	3	
24	600	25	58	3	25	116	3	25	176	3	24	186	4	
30	750	32	74	3	32	148	3	32	224	3	30	232	5	
36	900	38	88	4	38	176	4	38	266	4	36	278	6	
42	1050	44	102	4	44	204	4	44	308	4	42	324	7	
48	1200	51	118	4	51	236	4	51	358	4	48	370	8	
54	1350	57	132	5	57	264	5	57	400	5	54	416	9	
60	1500	64	148	5	64	296	5	64	448	5	60	462	10	
72	1800	76	176	6	76	350	6	76	532	6	72	556	11	
84	2100	89	206	7	89	410	7	89	624	7	84	648	13	
Per inch screw multiplier		2.3			4.6			7.0			7.7			

Belt Width		100/105 Series			180 Series			200 Series		
in.	mm	Splice Length	# Screws	# Spacers	Splice Length	# Screws	# Spacers	Splice Length	# Screws	# Spacers
12	300	12	94	2	12	80	2	12	80	2
18	450	18	140	3	18	120	3	18	120	3
24	600	24	186	4	24	160	4	24	160	4
30	750	30	232	5	30	200	5	30	200	5
36	900	36	278	6	36	240	6	36	240	6
42	1050	42	324	7	42	280	7	42	280	7
48	1200	48	370	8	48	320	8	48	320	8
54	1350	54	416	9	54	360	9	54	360	9
60	1500	60	462	10	60	400	10	60	400	10
72	1800	72	556	11	72	480	11	72	480	11
84	2100	84	648	13	84	560	13	84	560	13
Per inch screw multiplier		7.7			6.66			6.66		

\* Bias: Super-Screw Evolution is installed on an 18 degree bias (4" per width foot) so it is necessary to order a wider splice than the belt width. The calculation for Evolution splice width is (Belt Width) x (1.067) and round down to the nearest inch. Super-Screw Original is on a less steep bias so splice width is equal to belt width. It is very important to make sure the splice width is correct on your order as we cut all Super-Screw splices to order.

\* Sizes not listed: to calculate screw counts for sizes not listed multiply the splice width needed (see above note for calculating this) by the following multipliers depending on the series and round up to the next even number. Please note, to keep the math simple, this calculation will be slightly more than what is listed on the chart above.  
Screw count multipliers (multiply by belt width for total screws needed for a splice): 35: 2.3, 63/65: 4.6, 80: 7.0, 85/100/105: 7.7, 180/200: 6.66

# SUPER-SCREW®

## Flexible Rubber Fastening System

### Belt Preparation Tools

#### Flex-Lifter™ Belt Lifter

Lifting a conveyor belt out of the way to do belt repair and maintenance can be a difficult and hazardous job. The Flex-Lifter™ safely lifts and holds tensioned conveyor belts up to the stated ratings.

- Highest safe lift rating available: 4000 lbs (1810 kg) for the Medium and Large models; 6000 lb (2700 kg) for the XL model
- Eliminates pry bars and manual lifting
- Wide, dual-rail base maintains unit stability
- Optimized lift height provides sufficient room to make repairs safely

Flex-Lifter™		
Description	Ordering Number	
Medium Flex-Lifter	FL-M	
Large Flex-Lifter	FL-L	
XL Flex-Lifter	FL-XL	
XL V-Return Lift Bar	FLVRL-XL	
Aluminum Content		
Aluminum Alloy Type	Percent	
	Mg Magnesium	Ti Titanium
4043	0.05	0.2
5356	5.5	0.2
6005	0.6	0.1
6061	1.0	0.0
6063	0.7	0.0
7075	2.5	0.0



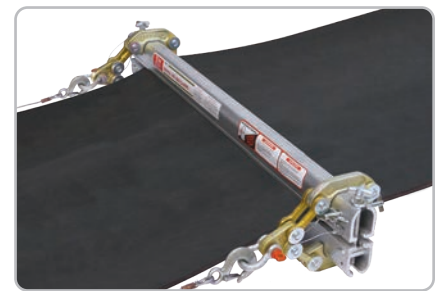
Flex-Lifter™ Belt Lifter

#### Far-Pul™ HD® Belt Clamps

Easy-to-use, lightweight and sturdy belt clamp, specially engineered for heavy-duty applications. With a load capacity up to three tons (2.7 metric tons) when used with two 1-1/2 ton come-alongs, it securely grips belts up to 1" (25 mm) thick.

- Provides even tensioning across belt width
- Retaining pins ensure scissors remain secured on the bar
- Each set includes four clamp bars and four steel clamp scissors with carry bag

Far-Pul™ HD® Belt Clamps		
Belt Width		Ordering Number
in.	mm	
Up to 30	Up to 750	LSHD30
Up to 36	Up to 900	LSHD36
Up to 42	Up to 1050	LSHD42
Up to 48	Up to 1200	LSHD48
Up to 54	Up to 1350	LSHD54
Up to 60	Up to 1500	LSHD60
Up to 72	Up to 1800	LSHD72
Aluminum Content		
Aluminum Alloy Type	Percent	
	Mg Magnesium	Ti Titanium
6061	1.0	0.0



Far-Pul™ HD® Belt Clamp

#### Electric Belt Cutter

The Electric Belt Cutter quickly and easily cuts all types of belting from the softest of natural rubbers to the hardest constructed solid woven PVC and fabric plied belts.

- Designed for cutting all belt widths as well as for extended, longitudinal cuts
- High-speed, steel blade provides for a smooth, accurate cut
- Spring-loaded blade guard protects operator from cutting edge of blade
- Cordless versions allow maximum portability and convenience

Electric Belt Cutter		
Description	Ordering Number	Item Code
Corded Model	EBC1	30001
	EBC2	30002
Cordless Model	CEBC1	30018
	CEBC2	30019
Cutting Capacity		
Description	EBC1/CEBC1	
	Imperial	Metric
Rubber Belt	Up to 1"	Up to 25 mm
PVC Belt	Up to 360 P.I.W.	Up to 630 EP
Description	EBC2/CEBC2	
	Imperial	Metric
Rubber Belt	Up to 2"	Up to 50 mm
PVC Belt	Up to 1140 P.I.W.	Up to 2000 EP



Electric Belt Cutter

#### Belt Grip

When the belt grip is slipped over the belt edge at a right angle, belts can be pulled without damaging the belt surface.

Belt Grip	
Description	Ordering Number
Sold by the pair	22



Belt Grip



# SUPER-SCREW®

## Flexible Rubber Fastening System

### Belt Preparation Tools

#### PS15 Hot Knife Skiver

The PS15 Hot Knife Skiver is a high-quality belt skiving tool that is perfect for preparing belts for Super-Screw® installation.

- Skives belt top covers from 1/16" to 5/8" (1.5 mm to 16 mm) thick
- Spring-loaded clamps and two locking screws make for easy adjustments
- Ergonomically-designed handle for comfort
- Features 4 heat settings and an "off" button

PS15 Hot Knife Skiver	
Item	Description
PS15 Hot Knife Skiver	Includes tool and 20 C6/W6 replacement blades
PS15 Replacement Blades	Pack of 20 C6/W6 replacement blades



PS15 Hot Knife Skiver

#### FEIN Oscillating Belt Skiver

The FEIN Belt Skiver is an oscillating multi-tool that quickly removes rubber from the edge or inside of the belt using vibration without damaging belt plies or carcass.

- An assortment of blades (straight blades, blades for belt ends and belt centers) are available. The blades are designed for 1/8" to 3/8" (2.5 to 10.5 mm) thick belt covers
- Available in cordless/battery-powered and corded (110 Volt) options
- Features 6 oscillating frequency settings

FEIN Oscillating Belt Skiver	
Description	Ordering Number
110V FEIN Skiver	2991356
Cordless FEIN Skiver Kit	2991688
Swerved Blade	2991272
Straight Blade	2991447
1/4" Belt End Blade	2991176
3/16" Belt End Blade	2991366
1/8" Belt End Blade	2991185
3/8" Belt Center Blade	2991478
5/16" Belt Center Blade	2991482
1/4" Belt Center Blade	2991404
3/16" Belt Center Blade	2991405
1/8" Belt Center Blade	2991726



FEIN Oscillating Belt Skiver

#### Screw Variety Kits

To ensure you have the right length screws for a smooth installation, we have created three new Screw Variety Kits. Each kit is specific to a range of Super-Screw series and includes 1,000 total screws in four different lengths to aid in situations where longer or shorter screws are needed at the time of installation. Also included are 10 PZ bits. Each kit is packaged in a durable organizer.

Screw Variety Kits			
Description	Screw Type	Ordering Number	Item Code
Evolution Screw Variety Kit	5mm Diameter with Washers	SVK-EVO	110231
Original Screw Variety Kit, 5mm	5mm Diameter without Washers	SVK-5MM-ORIG	110232
Original Screw Variety Kit, 6mm	6mm Diameter without Washers	SVK-6MM-ORIG	110233



Screw Variety Kit

Authorized Distributor:

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Tel: (630) 971-0150 • Fax: (630) 971-1180 • E-mail: info@flexco.com

Visit [www.flexco.com](http://www.flexco.com) for other Flexco locations and products.

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