

PRODUCT SELECTION GUIDE

INTRODUCTION

For more than 60 years, Spanguard Corporation – formerly known as U-S Safety Trolley – has been a leader in customizable, flexible power distribution for industrial applications. Recognizing that electrical joints were the most common source of failure in crane electrification, our engineers developed the unique no-joint conductor solution – providing clear advantages to meet the demands of industry:

- Eliminates downtime caused by joint-related issues
- Installs in significantly less time than jointed conductor bar systems
- Operates under tension – no expansion joints required
 - Virtually maintenance-free
- Corrosion resistant in harsh environments

SPAN-GUARD

Plant managers, engineers, crane operators, and others with extensive crane experience know that electrical joints are the most common source of crane electrification problems. Electrical joints become loose over time, overheat, expand and contract, causing a loss of power and worse. Span-Guard was the first continuous electric conductor bar introduced. Our uniquely designed joint-free copper conductor with patented self-sealing vinyl cover continues to be the most reliable, high quality conductor system on the market. Ideal for cranes, hoists, and moving equipment where problems and the associated downtime cannot be tolerated.

TRI-BAR / FOUR-BAR

Tri-Bar / Four-Bar continuous electrical conductor bar systems have been a longtime favorite among customers. The joint-free construction, easy installation and maintenance, and custom fabrications make the Tri-Bar/Four-Bar the sensible choice in electric trolley bar systems. This product is commonly used in various types of assembly line manufacturing, aircraft hangar doors, amusement park rides, workstations, and monorails.

* Spanguard reserves the right to update its information at any given time. Download the latest version of this guide and other information @ spanguard.net



TRI-BAR | FOUR-BAR



TRI-BAR / FOUR-BAR

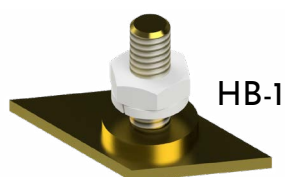
● TEMPERATURE RANGE & EXPANSION

Tri-Bar and Four-Bar systems are recommended for operating temperatures between 0°F (-18°C) & 130°F (54°C). For applications outside this range, consult the factory.

Where temperature variation exceeds 20°F (-7°C), conductor expansion must be considered. A 20 ft (6 m) housing section expands approximately 1/4 in (6.3 mm) per 50 °F (10°C). On crane bridges and runways, install an HB-1 hanger bolt near the center of each 20 ft (6 m) housing section and use SHB-1 sliding hanger bolts at all other locations.

Allow expansion space between each plastic housing section. For example, with an operating temperature range of 30°F (-1°C) to 100°F (38°C), the recommended gap between 20 ft (6 m) housing sections is:

100°F (38°C)	0"
65°F (18°C)	3/16"
30°F (-1°C)	3/8"

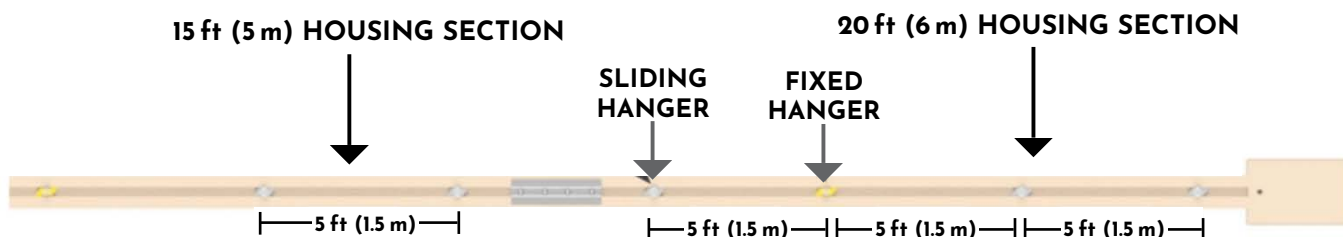


HB-1



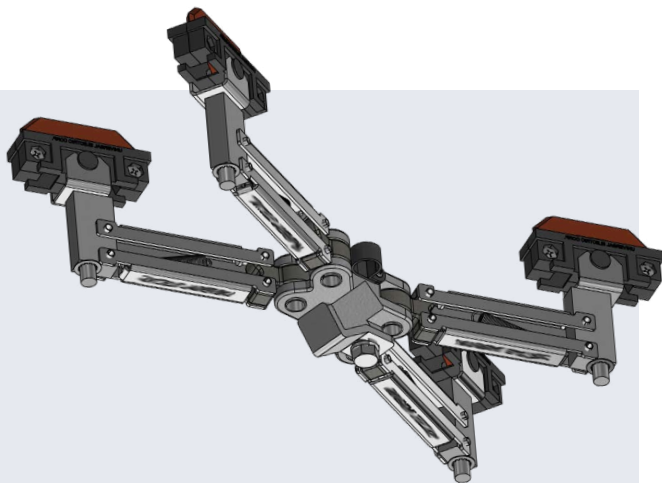
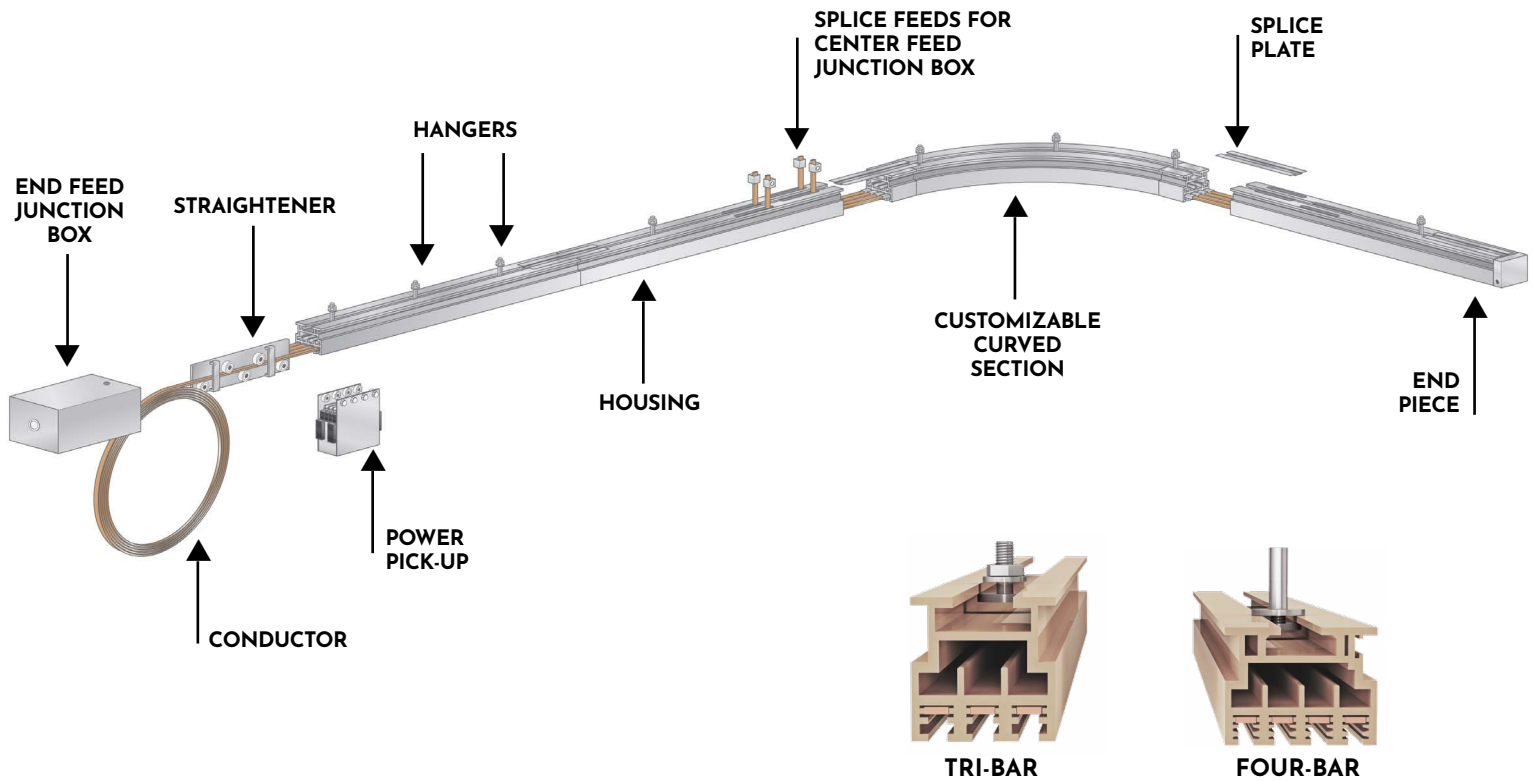
SHB-1

Fixed Hanger Bolt (**HB-1**) per housing section.
Space Sliding Hanger Bolts (**SHB-1**) 5 ft (1.5 m) apart.



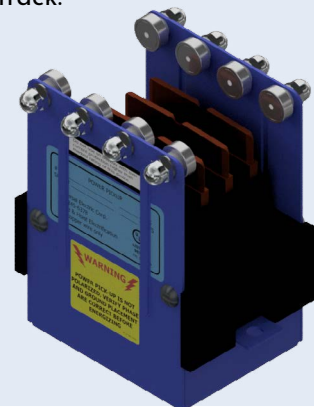
TRI-BAR / FOUR-BAR

SYSTEM LAYOUT DRAWING



35, 70 & 125 Amp Spring Loaded Collectors
durable design is optimal for moving trolleys.

15 & 30 Amp Power Pickups
self-supported design with built-in wiring box area. The unit rolls on bearings captive on the track.



STRAIGHT HOUSING & CONDUCTOR

Housing is supplied in 20 ft (6 m) lengths, with the last section cut as required for correct total system length. Custom lengths available upon request.

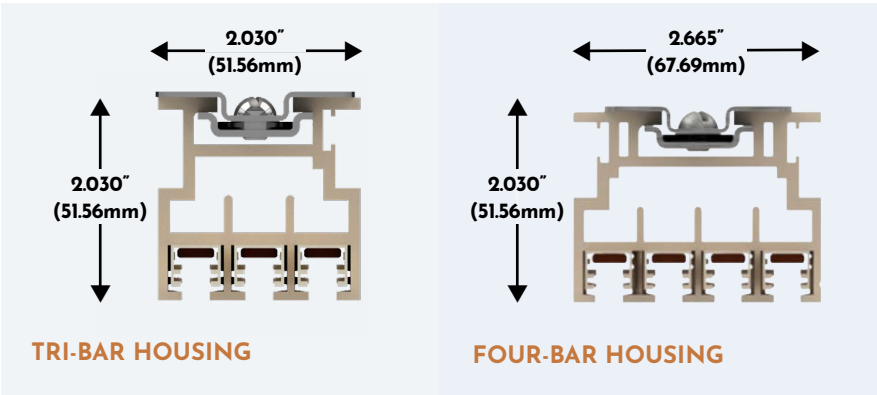
Tri-Bar / Four-Bar Jointless Conductor is available in either 100 or 125 amp copper and comes supplied on a reel. The conductor is fed through the housing channels after the housing structure has been installed and secured in place.



FBHS-XX

INSULATED STRAIGHT HOUSING

CATALOG #	PRODUCT DESCRIPTION	WEIGHT / FT (.3M)
TBHS-XX	Tri-Bar Housing Straight	1.1 lbs (0.50 kg)
FBHS-XX	Four-Bar Housing Straight	1.1 lbs (0.50 kg)



125C

COPPER CONDUCTOR

CATALOG #	PRODUCT DESCRIPTION	WEIGHT / FT (.3M)
125C	125 Amp Copper Conductor	0.22 lbs (0.10 kg)

CURVED HOUSING

Custom Sections can be manufactured in radii as small as 18" (457 mm), customizable to any curve, oval or circular configuration. Copper is pre-installed inside curved housing, ready for field assembly.

UFBC125-072-180-INT1

- U = Universal
- FB = Four-Bar
- C = Curve
- 125 = 125 Amps
- 72 = 72" Inside Radius
- 180 = 180°F Arc
- INT = Internal Polarization
- 1 = Bar Face Down

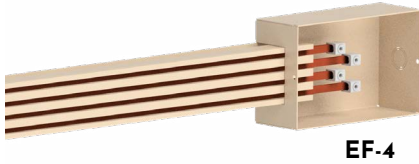
CONFIGURING THE CURVE

SYSTEM	U Universal		
PRODUCT TYPE	TB Tri-Bar		FB Four-Bar
CURVE	C = Curve		
AMPS	100 100 Amps		125 125 Amps
INSIDE RADIUS	XXX "INCHES		
ARC	XXX °F		
POLARIZATION	INT Internal	EXT External	TOP Top
ORIENTATION	1 = Bar Face Down	2 = Bars Face Out	3 = Bars Face In

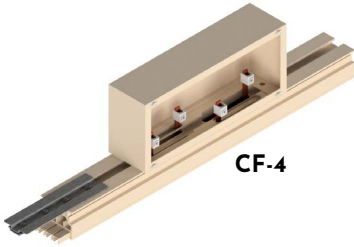
UFBC125-072-90-INT1

UFBC125-072-180-TOP2

POWER FEEDS & END PIECE



EF-4



CF-4

End Feeds and Center Feeds provide power to the entire Tri-Bar/Four-Bar system. The **Junction Box** is used to enclose the End Feed or Center Feed connections. The metal box has a removable side with bolts that fasten it to the system. **Appropriate hardware – nuts, washers, lugs, etc. – is also provided.**

End Pieces are installed at the end of every Tri-Bar / Four-Bar run to insulate the conductors and end the run.

END & CENTER FEEDS

CATALOG #	PRODUCT DESCRIPTION	WEIGHT/UNIT
EF-3	Tri-Bar End Feed	3 lbs (1.4 kg)
CF-3	Tri-Bar Center Feed	7 lbs (1.2 kg)
EF-4	Four-Bar End Feed	3 lbs (1.4 kg)
CF-4	Four-Bar Center Feed	7 lbs (1.2 kg)
JBCF-4	Junction Box Center Feed	3.92 lbs (1.78 kg)
JB	Junction Box Only	3.92 lbs (1.78 kg)
JB EF-4	Junction Box with End Feed for Conductor	2.92 lbs (1.32 kg)



EP-4

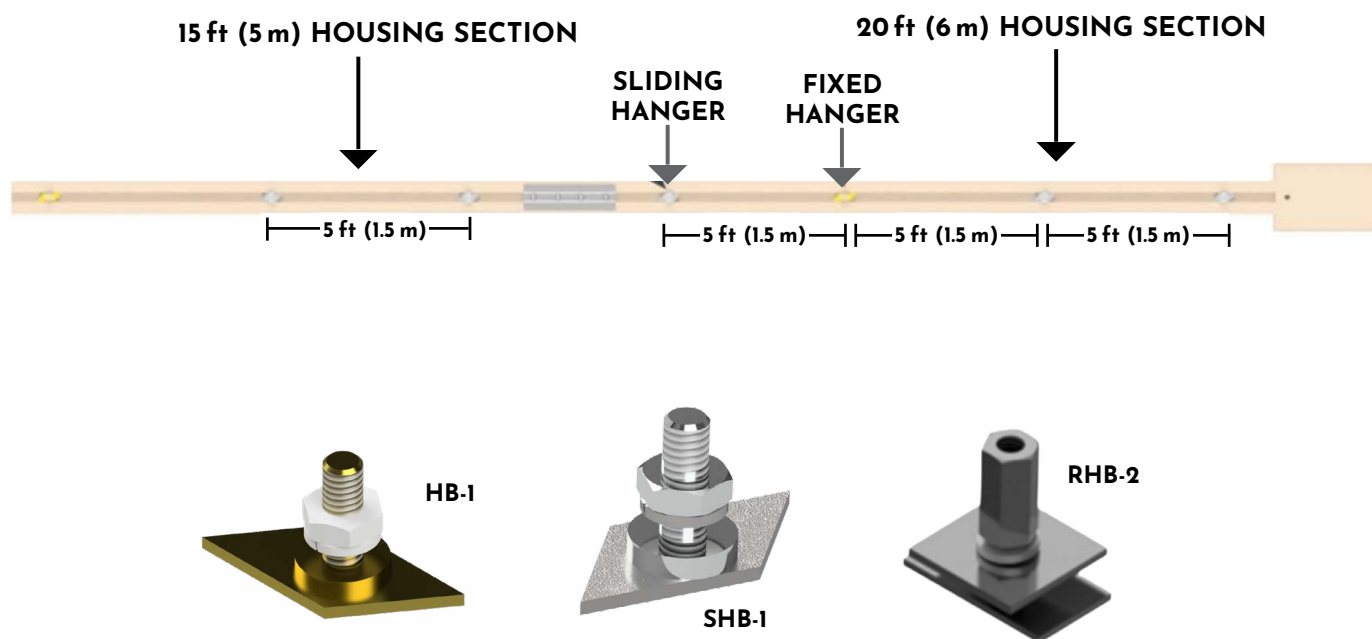
END PIECE

CATALOG #	PRODUCT DESCRIPTION	WEIGHT/UNIT
EP-3	Tri-Bar End Piece	1.0 lbs (0.45 kg)
EP-4	Four-Bar End Piece	1.0 lbs (0.45 kg)
EC-4	Four-Bar End Cap Only	.04 lbs (0.02 kg)

HANGERS / MOUNTING SUPPORT

Hangers are used to support the system. A variety of hangers are available, including types that twist-in or slide in from the end, threaded rod coupler hangers, beam clamps and ceiling bracket hangers.

Fixed Hanger Bolt (HB-1) per housing section. **Sliding Hanger Bolts (SHB-1)** should be spaced 5 ft (1.5 m) apart.



HANGERS

CATALOG #	PRODUCT DESCRIPTION	WEIGHT/UNIT
HB-1	Fixed Hanger Twist-In 5/16" Stud	0.10 lbs (0.04 kg)
SHB-1	Sliding Hanger Twist-In 5/16" Stud	0.10 lbs (0.04 kg)
HB-2	Fixed Hanger 2" (51 mm) Long 5/16" Stud	0.10 lbs (0.04 kg)
SHB-2	Sliding Hanger 2" (51 mm) Long 5/16" Stud	0.10 lbs (0.04 kg)
RHB-2	Rod Mount Hanger 3/8" All-Thread	
BHB-2	Fixed Hanger & Beam Clamp	
BSHB-2	Sliding Hanger & Beam Clamp	



COLLECTOR & SHOES

Self-Supported Power Pickup Collectors use roller bearings to maneuver the track. An internal wiring box is built into the unit and variations of Power Pickups are available for different needs. **Collector shoes are included.**

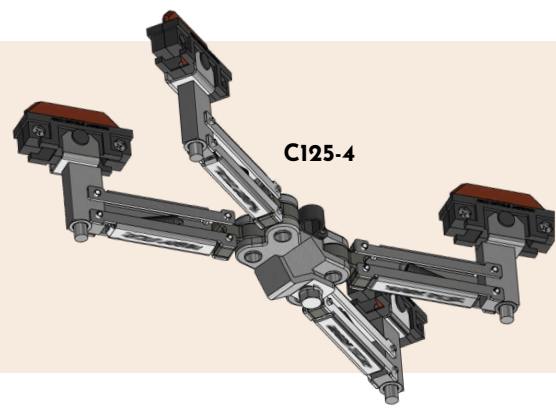
All Tri-Bar / Four-Bar Power Pickups are 600V Maximum.

POWER PICKUP

CATALOG #	PRODUCT DESCRIPTION	RATING	WEIGHT/UNIT
PP3-15-3PD	15 Amp Tri-Bar Power Pickup (Deep Box)	15A	1.5 lbs (0.68 kg)
PP3-30-3PD	30 Amp Tri-Bar Power Pickup (Deep Box)	30A	1.5 lbs (0.68 kg)
PP3-50-3PD	50 Amp Tri-Bar Power Pickup (Deep Box)	50A	1.5 lbs (0.68 kg)
PP4-15-4PD	15 Amp Four-Bar Power Pickup (Deep Box)	15A	2.0 lbs (0.90 kg)
PP4-30-4PD	30 Amp Four-Bar Power Pickup (Deep Box)	30A	2.0 lbs (0.90 kg)
PP4-50-4PD	50 Amp Four-Bar Power Pickup (Deep Box)	50A	2.0 lbs (0.90 kg)
PP4-15-4PD ABS	15 Amp Four-Bar Power Pickup (Deep Box) Abrasive	15A	2.0 lbs (0.90 kg)
PP4-15-4P	15 Amp Four-Bar Power Pickup (Standard Box)	15A	2.1 lbs (0.95 kg)
PP4-30-4P	30 Amp Four-Bar Power Pickup (Standard Box)	30A	2.1 lbs (0.95 kg)
PP4-30-4PD-3F	Fused Power Pick-Up (3) 30 Amp Class CC Fuse Holders (Fuses Not Included)	30A	2.4 lbs (1.10 kg)
PP4-30-4W-4PD	Pre-Wired Power Pick-Up, 10AWG/4-Wire SO Cord (5ft (1.5m) Length)	30A	6.10 lbs (2.8 kg)

COLLECTORS & SHOES

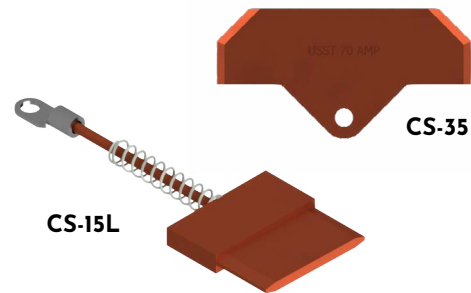
Supported Collectors mount to the equipment using a 1" (25 mm) square bar. It can account for up to 4" (102 mm) horizontal and 4.5" (114 mm) vertical misalignment, in either a 3- or 4-shoe configuration.



CATALOG #	SUPPORTED COLLECTOR PRODUCT DESCRIPTION	RATING	WEIGHT
C35-3	35 Amp Tri-Bar Collector	35A	3 lbs (1.4 kg)
C70-3	70 Amp Tri-Bar Collector	70A	3 lbs (1.4 kg)
C125-3	125 Amp Tri-Bar Collector	125A	3 lbs (1.4 kg)
C35-4	35 Amp Four-Bar Collector	35A	4 lbs (1.8 kg)
C70-4	70 Amp Four-Bar Collector	70A	4 lbs (1.8 kg)
C125-4	125 Amp Four-Bar Collector	125A	4 lbs (1.8 kg)

REPLACEMENT SHOES

Collector Shoes come pre-installed on both the Supported Collector and Power Pickup, but can also be ordered separately. The shoes ride back and forth along the conductor to transfer electricity from the conductor to the crane, or other pieces of equipment being supported. Shoes are made of copper graphite and **require no lubricant**.



CATALOG #	* SHOE PRODUCT DESCRIPTION	RATING
CS-15L	15 Amp Power Pickup Collector Shoe Left	15A
CS-15R	15 Amp Power Pickup Collector Shoe Right	15A
CS-35/70	35/70 Amp Collector Shoe	35/70A
CS-50	50 Amp Collector Shoe	50A
CS-125	125 Amp Collector Shoe Left	125A

* Add "ABS" to Catalog # for Abrasive Shoes *

SPLICE SECTION & ACCESSORIES

Splice Sections are used to extend a system or repair a damaged section. They are supplied in **2 ft (0.6 m)** sections, or can be installed in longer sections if requested.

Additional Tri-Bar / Four-Bar **Accessories & Parts** are also available. Call us for details.



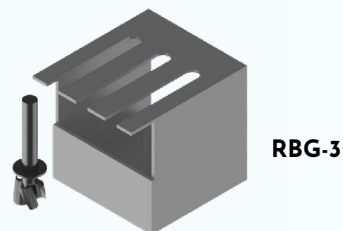
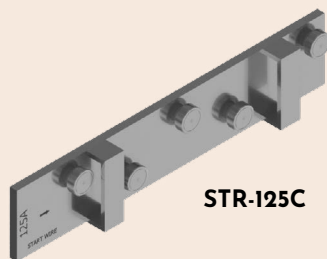
SPLICE SECTION & PARTS

CATALOG #	PRODUCT DESCRIPTION	WEIGHT
SS-3	Tri-Bar Splice Section	3 lbs/ft (1.4 kg/.3 m)
SS-4	Four-Bar Splice Section	4 lbs/ft (1.8 kg/.3 m)
EG-3	Tri-Bar Entrance Guide Attaches to End of Housing when Power Pickup is to Enter & Exit Continually	3.87 lbs (1.76 kg)
EG-4	Four-Bar Entrance Guide Attaches to End of Housing when Power Pickup is to Enter & Exit Continually	3.87 lbs (1.76 kg)
PY-1	Pulling Yoke	.87 lbs (0.39 kg)
SP-1	Splice Plate	.49 lbs (0.22 kg)
IS-1	Insulator Sleeve (Repair Sections Only)	.01 lbs (0.004 kg)

DEPOSIT ITEMS

Deposit Items are for temporary use only and can be returned for a full refund.

Used to straighten copper conductors before insertion into the Tri-Bar / Four-Bar housing, the **STRAIGHTENER TOOL** is helpful with any installation. Highly recommended for conductor lengths of 100 ft (30 m) or more.



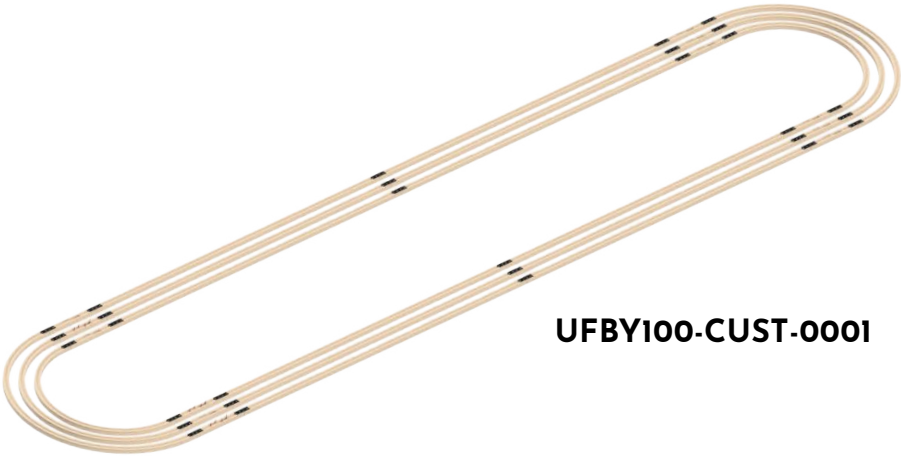
ROUTER BIT GUIDE is used only for field cutting when joining and repairing two damaged sections.

DEPOSIT ITEMS

CATALOG #	PRODUCT DESCRIPTION	WEIGHT/UNIT
STR-125C	125 Amp Copper Straightener Tool	0.6 lbs (0.27 kg)
RBG-3	Tri-Bar Housing Router Bit & Guide	0.4 lbs (0.18 kg)
RBG-4	Four-Bar Housing Router Bit & Guide	0.4 lbs (0.18 kg)

CUSTOM SYSTEM

Custom systems are available on request, including ovals, curves, and other monorail layouts. Each system is supplied with engineered drawings to ensure precise alignment and reliable installation.



UFBY100-CUST-0001

- U = Universal
- FB = Product Type
- Y = System
- 100 = 100 Amps
- CUST = Customer Code
- 0001 = Variation

CUSTOM SYSTEM

SYSTEM	U Universal	
PRODUCT TYPE	TB Tri-Bar	FB Four-Bar
SYSTEM	Y System	
AMPS	125 125 Amps	
CUSTOMER CODE	Custom Code Assigned to Customer System	
VARIATION	0001 Variation	

CONTACT US



sales@spanguard.net



(570) 948-2627



14 N Main Street, Tioga,
Pennsylvania, USA 16946

SPAN-GUARD
CORPORATION
U-S SAFETY TROLLEY