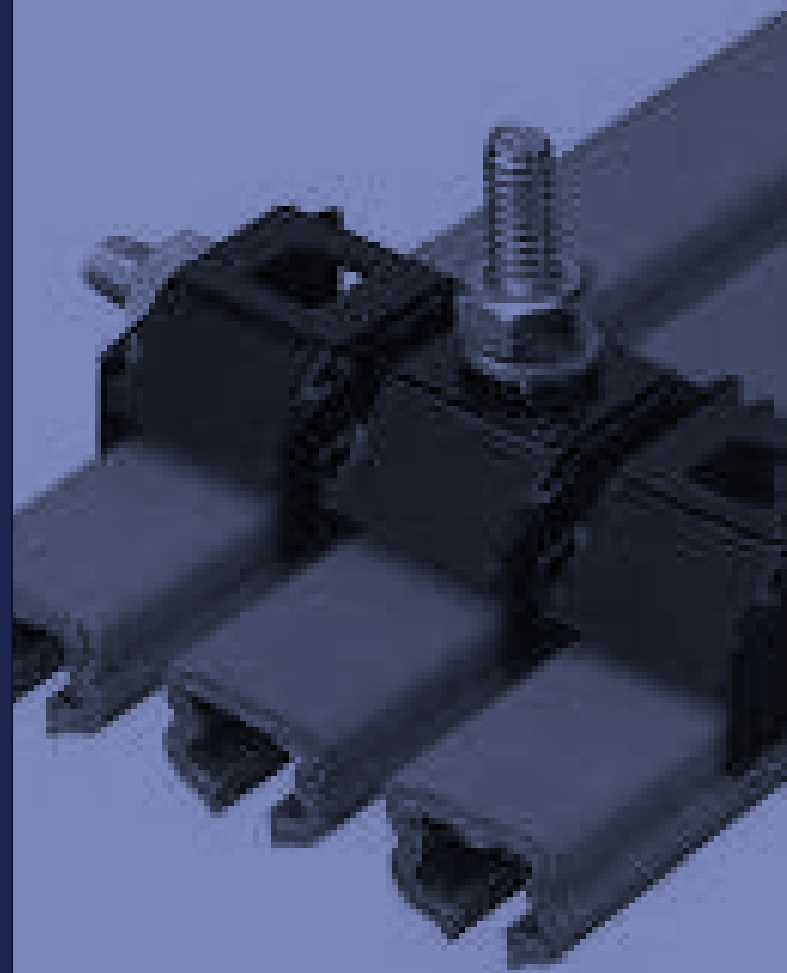


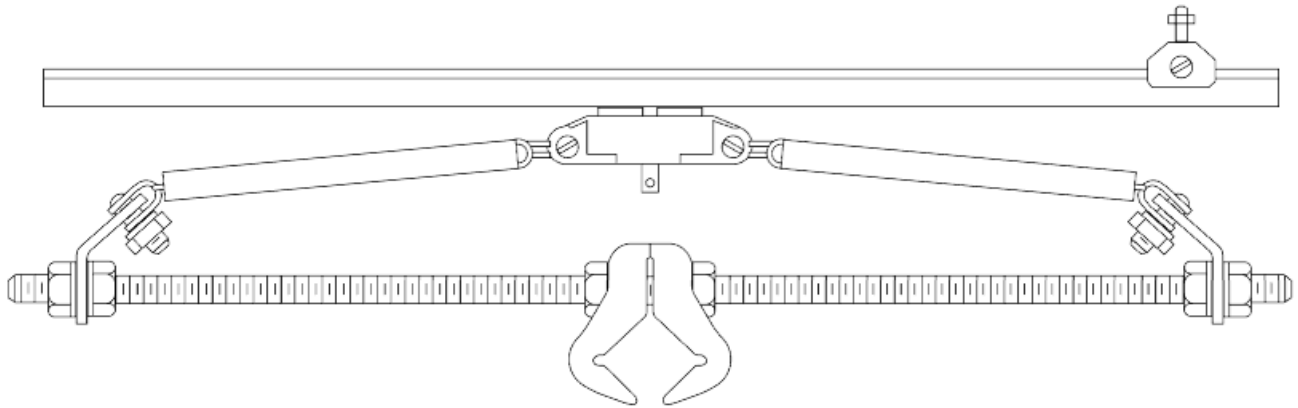
SERIES T SAF-T BAR

Brochure & Installation Guide



Series T SAF-T BAR

General Information



Description & Usage

The advanced Series T Saf-T-Bar system offers the basic engineering concept of an integral insulated conductor which can be applied on a broad range of electrification systems. Series T can be installed rapidly with slide-on or snap-on joint clips. Ganged hanger clamps allow for quick, easy installation. Skin-tight, rigid PVC insulation runs cooler and will not deform under clamp pressure. Two internal contact grooves track the collector providing excellent ventilation with high current capacity for its weight

Series T is ideal for the following applications: light rail systems, automated storage and retrieval systems, conveyors, indoor locations (dry), small cranes, monorails, hoists, moving cameras and instruments

Other features

- Collector is captured within the twin-contact conductor profile of the bar
- Compact dimensions with rails mounted on 1" centers.
- Modular design of this system facilitates use with multiple conductor and collector configurations

Series T SAF-T BAR

Conductor Bar Components



Series T conductor bar is constructed of roll-formed galvanized steel and is supplied with rail insulation along with the joint splice pre-mounted to one end of the conductor bar. The galvanized steel version provides a current capacity of 65 Amps at 30°C ambient temperature and continuous duty.

TA65x10 TA65x10: 65 Amp Indoor Conductor With Joint Kit x 10 feet

PART #	APPLICATION	COLOR	COVER MATERIAL
TA65x10	Phase	Orange	PVC
TA65Gx10	Ground	Green	PVC
TA65HHx10	High Heat	Red	Lexan



DESCRIPTION	TA65
Material	Galvanized Steel
Nominal current	65 Amps
DC resistance	0.0007 Ohms/ft
AC Impedance	0.0018 Ohms/ft at 60 Hz
Weight	4 lbs
Max Voltage	600 V
Support Spacing	5.0 ft
Standard Rail Length	10 ft
Maximum Rail Temperature	160°F (standard cover) / 260°F (high heat lexan cover)
Conductor Mounting	Can be installed in standard or lateral orientation
Curves	Factory Curves to a 36" minimum radius

Characteristics

- Nominal current is based on 30°C and is for 100% duty.
- Complete with normal phase rail cover, orange rigid PVC, 160°F heat distortion point, 260psi, self extinguishing.
- Complete with ground rail cover, green rigid PVC, 160°F heat distortion point, 260psi, self extinguishing.
- Complete with red lexan high heat cover, 260°F heat distortion point, 260psi, self extinguishing.
- Series T conductor kits are provided with the rail joint pre-mounted to the rail.



Series T SAF-T BAR

Conductor Bar Components



Connects and aligns standard 10' conductor lengths. Consists of a 4" joint cover that slides over the exposed joint area to complete the insulation. The joint cover locks in place by means of indents and is formed of the same material as the insulating conductor cover. Splice joints are pre-installed on one end of each conductor rail.

TJ65 Splice Joint Kit



The TF100 is a terminal lug with insulating cover that clamps onto a 3/4" (19.1 mm) length of bare conductor to feed power to the bar. It will accept wires up to # 6 flex. Rated at 100 amperes. The conductor may also be fed by securing a standard terminal lug to the 1/4" hole in the end of the conductor and taping over it for insulation

TF100 Powerfeed



End Cap TN100C is a sleeve required to complete the insulation of the conductor. It extends 1/2" (13 mm) over the end of the bar. As an alternative, the conductor may be cut back so that the regular insulating cover extends 1/2" beyond the end of the conductor. End Cap may also be used as a transfer end cap having a $\pm 1/8"$ (± 3.2 mm) tolerance with a 1" (25 mm) gap setting on interlocks.

TN100C End Cap



A rigid plastic sleeve, providing 1/2" (13 mm) over-surface gap electrically, for electrical segmentation of conductor bar. A self-supporting sleeve.

TA65IS Isolation Sleeve

Series T SAF-T BAR

Conductor Bar Components



The Tow Bar is an optional mounting bracket for Series T collectors. It is designed to mount to a 1"(25.4 mm) square bar and connect to the standard towlines supplied with the Series T collector assemblies.

The threaded rod is 18 inches long and is equipped with a clip at each end which provides a connection point for the S-hook at the end of the T-bar towlines. The TB-18 will provide the proper angle of pull to ensure smooth travel of the collectors as they are pulled through the rail.

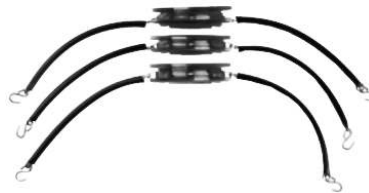
Connect up to 3 collectors to a single TB-18 tow bar.

TB-18 Tow Bar

Collectors with self-lubricating contacts for quiet operation and long life. Multiple collectors are supplied as single units times the number of poles.



TE501CR



TE503CR

PART #	POLES	SHOE SIZE	TOWLINES	SHOE MATL	RECOMMENDED FOR	AMPS
TE301	Single	Short	Yes	Beryllium-Copper	Systems with bend radii tighter than 48"	30A
TE302	Dual	Short	Yes	Beryllium-Copper	Systems with bend radii tighter than 48"	30A
TE303	Triple	Short	Yes	Beryllium-Copper	Systems with bend radii tighter than 48"	30A
TE501CR	Single	Standard	Yes	Copper Graphite	Systems without tight radii	50A
TE502CR	Dual	Standard	Yes	Copper Graphite	Systems without tight radii	50A
TE503CR	Triple	Standard	Yes	Copper Graphite	Systems without tight radii	50A



Series T SAF-T BAR

Hanger Mounting Clamps

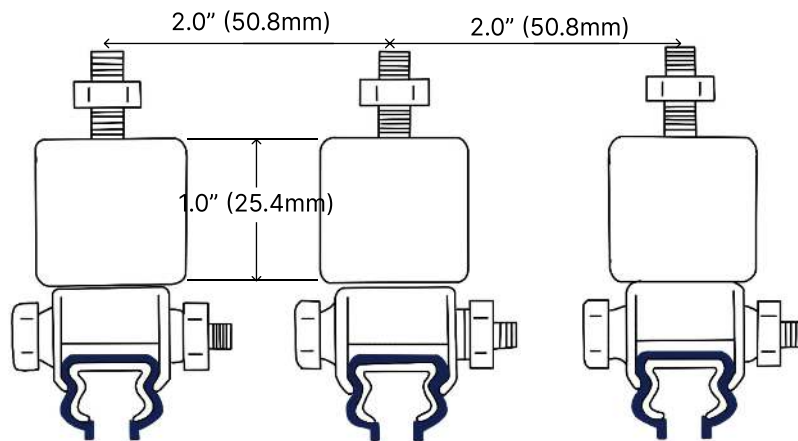
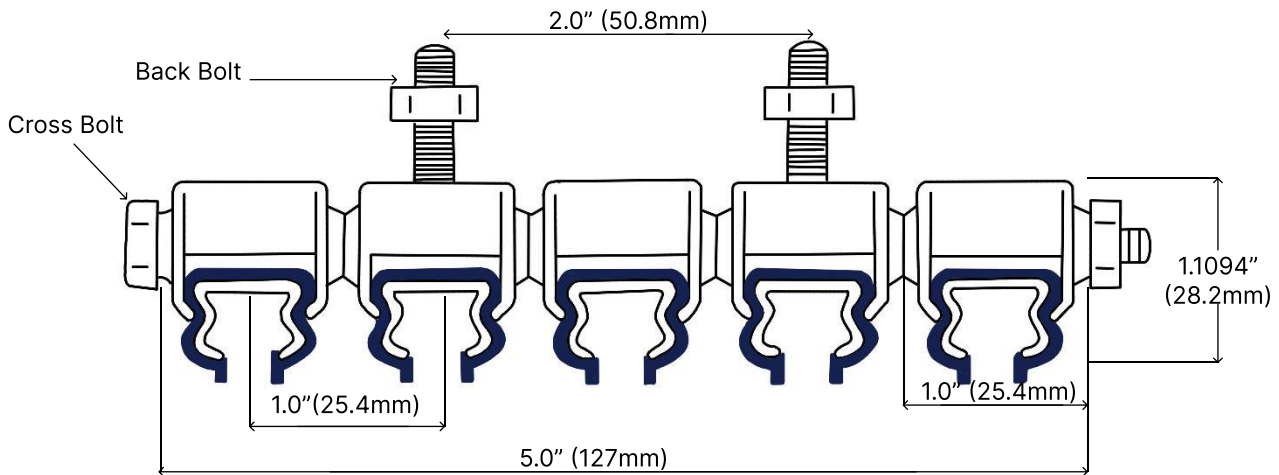


Nylon coated stamped steel hanger clamps can be furnished in multiples on 1" (25 mm) centers. Can be mounted using cross bolt or back bolt. Bolts are 1/4" and require a 5/16" mounting hole. Hangers are required for every 5' (1.52 m) of conductor. Joints should be located not more than 3" (76.2 mm) from hangers to avoid flexing

Note: A spool mount insulator hanger option is available as an alternative - Contact Factory

POLE	PART #
1	TH101
2	TH201
3	TH301
4	TH402
5	TH502

Dimensions



Series T SAF-T BAR

Joining Conductor Sections



Joining Sections



1. Slide hanger clamps on bar. Secure clamps in mounting holes on brackets. Be sure bar slides smoothly inside each clamp (until joining operation is completed). Maintain 3" spacing at ends of bars.
2. Insert Joint Tool into holes at ends of Bars. Draw Bars together until they butt. Slide cover over joint. Tighten clamps on bar.

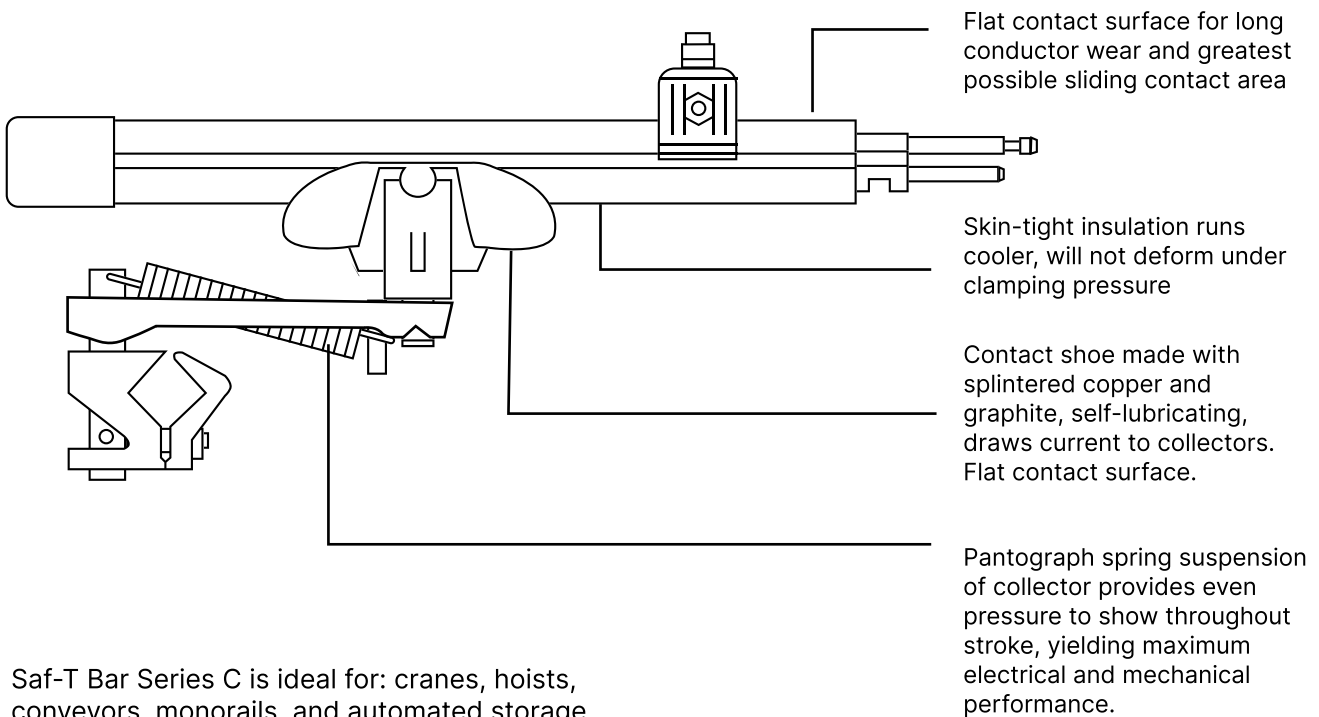
SERIES C SAF-T BAR

Brochure & Installation Guide



Series C SAF-T BAR

Description, Features and Uses



Saf-T Bar Series C is ideal for: cranes, hoists, conveyors, monorails, and automated storage and retrieval systems

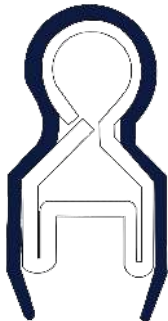
Description & Options

Series C Conductor Bar is roll-formed of galvanized steel (110A) or copper (300A). The "C" shaped contact surface ensures positive tracking of the collector shoe and good contact throughout the travel of the system. The standard material is supplied in 10 ft lengths with all necessary joining hardware. Installation is simple and requires only a joining tool to connect the rails. Ampacity



Series C SAF-T BAR

General Information



Can be mounted so collector shoes enter from the bottom (vertical mode) or from the side (horizontal mode). Able to be factory curved to a minimum of 18 inches (457mm) radius with a maximum collector size of 70A.

Support Spacing: 5 ft (1.5 M)

Maximum rail temperature: 160°F (71°C) at 260 PSI (standard cover)
 260°F (127°C) at 260PSI (medium temperature Lexan cover)
 375°F (191C°) at 260 PSI (high heat fiberglass cover)

Type	BAR MATERIAL	NOMINAL CURRENT (Amps)	MAX VOLTAGE	DC RESISTANCE (Ohms/ft)	Wt lb/ft (kg/m)
CA110	Galvanized Steel	100	600	0.00050	0.48
CA300	Electrolytic Copper	300	600	0.00008	0.48

Part Numbers

TYPE	STD HEAT POLE CONDUCTOR	STD HEAT GROUND CONDUCTOR	MID HEAT	HIGH HEAT	JOINT/ EXTRA JOINT KIT	JOINT/ EXTRA JOINT KIT MID HEAT	POWER FEED	EXPANSION SECTION	POWER FEED MID HEAT
CA110	CA110X20	CA110X10G	CA110HHX10	CA110FIX10	CJ110	CJ110HH	350F	CA110XG-2	350FHH
CA300	CA300X10	CA300X10G	CA300HHX10	CA300FIX10	CJ300	CJ300HH	350F	CA110XG-2	350FHH

End Cap Part Number: CN100 ("Standard Heat" Only)

- Nominal current is based on 86°F (71°C) and is for 100% duty.
- Complete with orange rigid "Standard Heat" PVC insulator cover, which has a 260psi. Self-extinguishing.
- Complete with green rigid PVC insulator cover, 260psi. Self-extinguishing.
- Complete with red Lexan "Medium Heat" insulator cover, which has 260psi. Self-extinguishing.
- Complete with fiber glass "High Heat" cover, which has 260psi. Self-extinguishing.
- Series C and Series T are provided with the rail joint pre-mounted to the rail. If special cuts are required, the extra joint kit is available for series C.



Series C SAF-T BAR

Conductor Bar Components



Extra Joint Kits



The Power feed provides an electrical connection from power source to conductor bar. May be located at any joint, but preferably near the center of the system. The power feed is 1-1/4" (31.8 mm) long and clamps to the top lobe of the conductor with 1/4" screws. The power feed is insulated by a cover and a nylon cap.

Power Feeds



Black nylon cap is driven onto end of the conductor to complete the insulation. Contoured to permit passage of the collector shoe. End caps can be used in pairs at switch transfers, interlocks, expansion gaps, and isolation points. Trim conductor slot after installation.

End Cap CN100



Used to electrically isolate adjacent conductor sections with a 1/2" over surface gap. The sleeve will support adjacent conductor sections, but must have hangers within 6" on each side of the isolation sleeve. Collectors bridge the gap electrically. Two sleeves separated by 6" of conductor are required to prevent collectors from bridging the gap as in signal or control functions.

CA100IS Isolation Sleeve

Series C SAF-T BAR

Conductor Bar Components



Used for discontinuous circuits such as bridge controls, runway circuits at fire doors, etc., to allow collector to leave conductor and be realigned on return. Works with all bar capacities. Use with self-centering collectors only. The guide is provided with hanger clamp and end cap. The guide itself is secured to the bracket with a 3/8" bolt and the conductor is secured to the guide with a hanger clamp. Conductors must be mounted on 3" (76 mm) centers minimum. Install conductor one inch into guide throat.

CP100 Pick-up Guide



Used to track the collector through bar misalignments of 1/8" to 1/2" (3-13 mm) laterally and of up to 1/8" in the direction of contact. Self-centering collectors are not required, but dual collectors are required if power interruption cannot be accommodated.

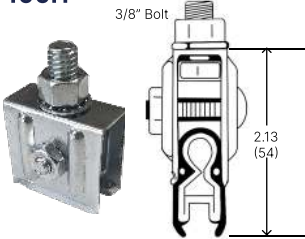
Conductors must be mounted on 3" (76 mm) centers minimum. Install conductor 1-1/2" (38 mm) into guide throat.

CT100 Transfer Guides

Series C SAF-T BAR

Hanger Clamps

100H



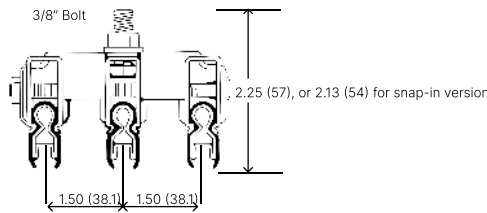
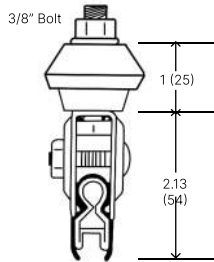
Cross-Bolt Hanger Clamps

Cross-bolt hanger clamps are factory set to snap in place, but must be field adjusted for correct sliding tension after installing the conductor (unless used as an anchor).

Sliding hangers (for conductor expansion): Tighten cross bolts, then back off 1/4 turn.

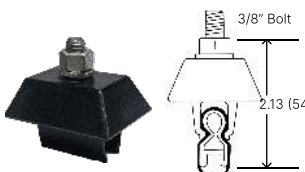
Anchor hangers: Tighten cross-bolts to 6 ft lb

100KN



PART #	DESCRIPTION	APPLICATION
100H	Single Hanger, Plated Steel	Indoor, Clean, Dry
100HSS	Single Hanger, Stainless Steel	Indoor, Corrosive Environments
100HN	Single Hanger, Plastic Coated Steel	Indoor, Dirty, Dry
100K	Single Hanger, with Insulator Spool, Plated Steel	Indoor/Outdoor, Wet, Dirty
100KSS	Single Hanger, with Insulator Spool, Stainless Steel	Wet, Dirty, Corrosive Environment
100KN	Single Hanger, with Insulator Spool, Plastic Coated Steel	Wet, Dirty, Corrosive Environment
100H3-1	Three-Pole Hanger, 1.5" Centers	Indoor, Clean, Dry
100H-2	Three-Pole Hanger, 2.0" Centers	Indoor, Clean, Dry

100PH



Snap-in Hanger Clamps

Lexan snap-in hangers for use only on Series C PVC cover rated to 160°F, with holding rib. For high temperature applications, use Cross Bolt Hanger Clamps. All push-on snap hangers require a firm press to seat the conductor into the hanger. To remove the conductor, it is recommended that it be slid out to avoid damage to the hanger.

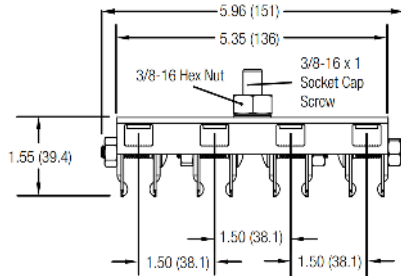
PART #	APPLICATION NOTES	DRILL SIZE
100P	Same mounting dimensions as 100H hanger	100H, 100HN, 100K, 100KN
100PH	Same as 100P, with "rain hat" for serve outdoor conditions	100H, 100HN, 100K, 100KN
100P3-1	Multiple pole, 1.5" (38.1mm) centers: Indoors, wet, dirty.	100H3-1
100P3-2	Multiple pole, 2.0" (50.8mm) centers: Indoors, wet, dirty.	100H3-2
100PA	Incorporates fiberglass filler for added strength, includes Fiber Pin Anchor Device inserted into 1/4" field-drilled hole	



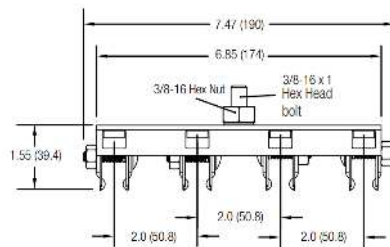
Series C SAF-T BAR

Four-Pole Hangers

100H4-1



100H4-2

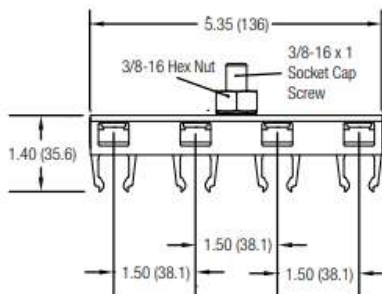


Steel Cross-Bolt Multiple Hanger

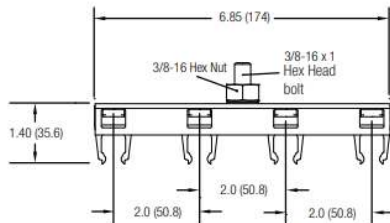
Hanger bodies are made with 1.62" (14.1mm) wide galvanized steel channel. These brackets can be used horizontally (bottom entry) or vertically (lateral entry).

PART #	SPACE BETWEEN BARS, in. (mm)
100H4-1	1.5 (38.1)
100H4-2	2.0 (50.8)

100P4-1



1004P-2



"Snap-in" Multiple Hanger

Hanger bodies are made with 1.62" (14.1mm) wide galvanized steel channel. These brackets can be used horizontally (bottom entry) or vertically (lateral entry).

PART #	SPACE BETWEEN BARS, in. (mm)
100P4-1	1.5 (38.1)
1004P-2	2.0 (50.8)



Series C SAF-T BAR

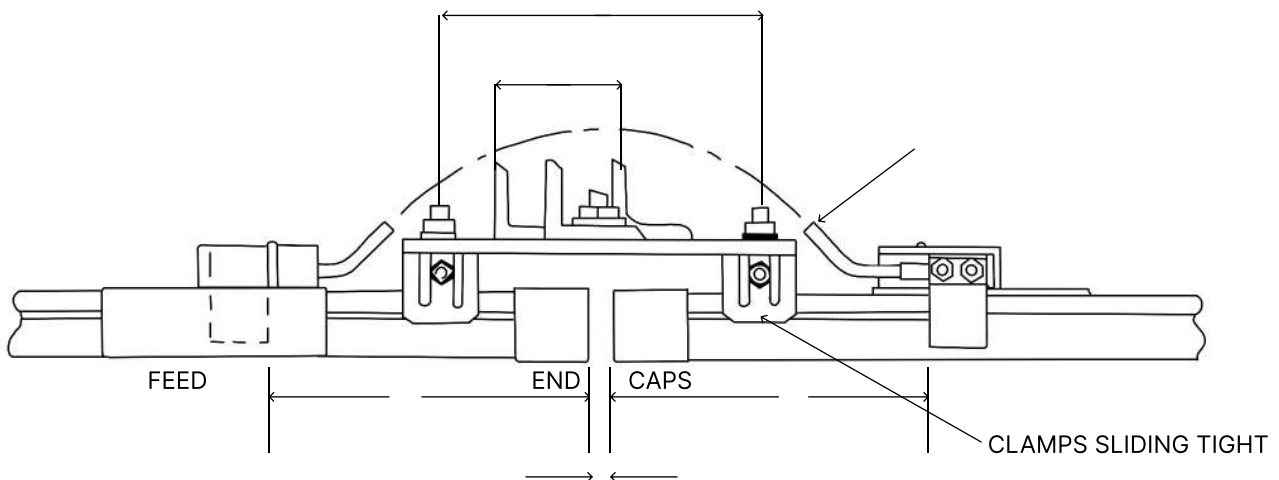
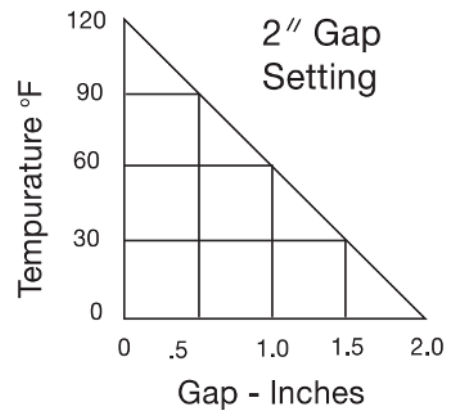
Expansion Sections

Expansion Sections - 2" gap

One Expansion Gap Kit is required for every 150 feet in system length (steel systems) or one per every 100 feet (copper systems). This kit will accommodate up to a 2" expansion gap. The gap should be set based on the bar temperature according to the table below. Gap Guide Bracket is used for mounting. Kits include two extra power feeds and a jumper to bridge the gap electrically. Use tandem collectors to provide power across the expansion gap.



TYPE	EXPANSION REQUIRED AT ft(m)	PART NO.	POWER FEEDS INCLUDED	JUMPERS INCLUDED
CA110	300	CA110XG-2	350F	ONE #4
CA300	200	CA300XG-2	350F	TWO #4



Series C SAF-T BAR

Collector Assemblies



Light Spring (35E)

Standard Arm Collectors (E) are recommended for general use on cranes and stable monorails. 2”(51mm) vertical stroke. Also available in a self-centering version for use with Pick Up Guides - See Pg. 69.

Long Arm Collectors (L) are used where there is excessive motion vertically or horizontally (as with a swaying hoist) and for high-speed applications. 3” (38mm) vertical stroke and are suitable for higher speed applications. Also available in a self-centering version for use with Pick Up Guides - See Pg. 69.



Standard Arm (70E)

Self-Centering Collectors, in either standard arm (C) or long arm (LC) configurations, have centering attachments for discontinuous circuits, swaying hoists, or high speed applications.

Dual-Head (Tandem) Collectors are available in standard (V), long arm (W or LL), and long arm self-centering (LLC) versions depending on ampacity. Dual Head Collectors maintain full shoe contact through gaps (i.e. Expansion Gaps) and apply less pressure per length of bar. These are also used to obtain higher amperage than single collectors. Tandem collections must be mounted on 2” (50.8 mm)centers.

COLLECTOR TYPE	PART NO.			
	25A-50A	50A-100A	100A-150A	100A
Long Arm	35L	70L	150L	100L
Standard Arm, Self-Centering	-	-	-	100C
Long Arm, Self-Centering	-	-	-	100LC
Dual Head (Tandem), Long Arm	35V	-	-	-
Dual Head (Tandem), Long Arm	35W	70LL	150LL	100W
Dual Head (Tandem), Long Arm, Self Centering	-	-	-	100LLC



Dual Head Standard (35V)



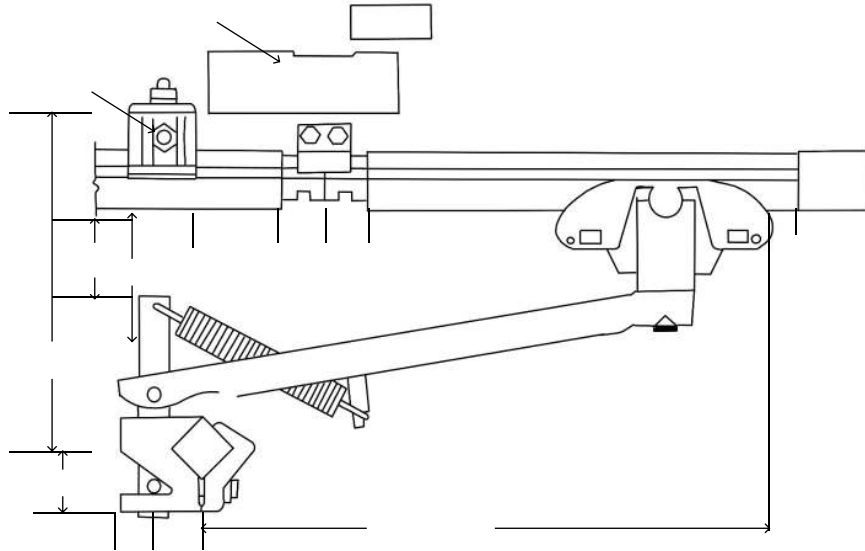
Dual-Head, Long Arm (70LL)



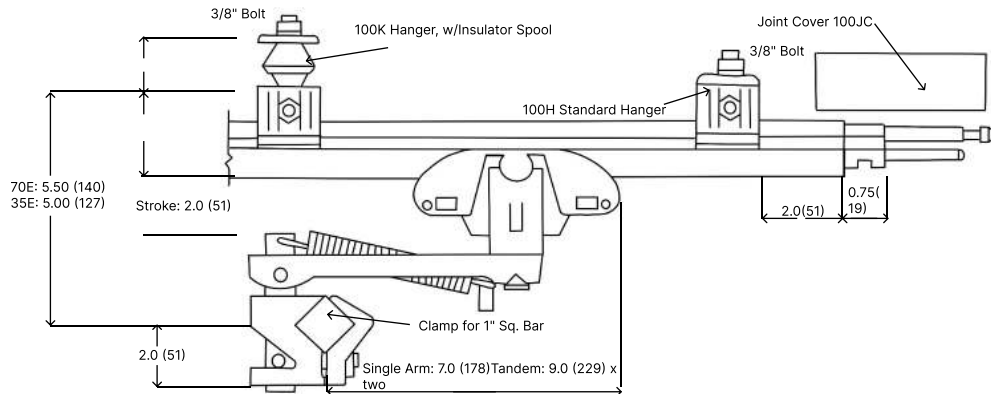
Series C SAF-T BAR

Dimensions

Standard Arm Dimensions



35E
35V
70E
100E
150E



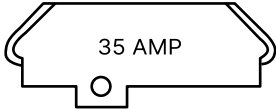
Long Arm Collector

COLLECTOR	A	B
35L	12.00 (305)	
70L	12.00 (305)	
100L	12.25 (311)	
150L	12.25 (311)	
70LL		14.50 (368)
100W		14.75 (375)
150LL		15.00 (381)

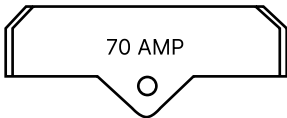
Series C SAF-T BAR

Collector Shoes & Dimensions

Collector Shoes



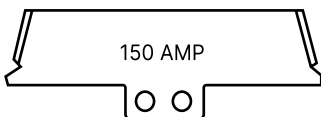
PART #	MATERIALS	SUITABLE FOR
35S	Copper Graphite	35E, 35V, 35L, 35W



PART #	MATERIALS	SUITABLE FOR
70S	Copper Graphite	70E, SC70, SCL70, 70L, SCC70, SCCL70, 70LL,SD70, SE70, SDD70, SEE70
70SC	Cast Iron	70E, SC70, SCL70, 70L, SCC70, SCCL70, 70LL,SD70, SE70, SDD70, SEE70



PART #	MATERIALS	SUITABLE FOR
100S	Copper Graphite	100E, 100L, 100W
100XX	Abrasive Cleaning	100E, 100L, 100W



PART #	MATERIALS	SUITABLE FOR
150S1	Copper Graphite	150E, 150L, 150LL

Collector Parts

DESCRIPTION	35 amps	70 amps	100 amps	150 amps
	35Z	100Z	100Z	100Z
	401AS	707S	601AS100	150AS
		7071	601A100	
	401Y			777Y
			100Y	



Series C SAF-T BAR

Collector Shoes & Components

Collector Shoes

PART #	AMP RANGE	DRAG	SHOE LENGTH	CONTOUR	CURVES	SHOE THICKNESS	CASE #
150SI	100-150		4.375	Blunt	None	0.21	150A
70S	50-100		3.75	Tapered	None	0.19	707-1
35S	25-50		3	Blunt	Short	0.19	401A
100S	100-125		3.75	Blunt	None	0.225	601A100

