

SHIELDED CHANNEL-BAR ELECTRICAL CONDUCTOR BAR

DANGER

Persons performing installation, service or maintenance activities on, near, or with electrical conductor systems are exposed to electrical hazards that could result in serious injury or death if proper precautions are not followed. Before performing such work, disconnect the electrical power source for the system at the disconnect device and lock it out, following appropriate Lockout/Tagout (LOTO) procedures, to prevent electric power from being applied while work is being performed.

All persons must use safe work practices appropriate to the electrical system, and follow all workplace procedures and policies. This requires specific knowledge, equipment and training beyond the scope of this document. Workplace supervisors are responsible to assure that all persons under their supervision are properly trained, properly equipped, and are following appropriate safety practices.

Shielded Channel-Bar Electrification Systems

TC/American Crane Shielded Channel-Bar is used for electrification of crane and monorail systems for electrically powered equipment operating at 600 volts or less. This is a highly versatile product which, when installed per the following instructions, will give many years of trouble-free operation.

Shielded Channel-Bar conductor bars are a universal design that may be used in either “side contact” (“web mounted”) or in “bottom contact” (“bottom entry”) positions.

- **Side Contact:** conductor bars are mounted on brackets that bolt to the web of 200, 325 and 400 Series patented track girder rail (or to the hanger rod of 200 Series 2R3-5T rail). Shoes of electrical collectors enter the conductor bar from the open side position.
- **Bottom Contact:** conductor bars are mounted on brackets that may either be clamped to the top flange or bolted to the web of girder rail (or to the hanger rod of 200 Series 2R3-5T rail). Shoes of electrical collectors enter the conductor bar from the open bottom position.

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General Installation Instructions

The various tasks for installation of electrical conductor bars must be planned in relation to the type of system; i.e., a crane runway, a straight monorail, cranes and monorails with interlocks, a monorail with curves and switches, or some combination of equipment.

Components of a TC/American Crane Shielded Channel-Bar Electrical Conductor Bar System are described within the pages of these instructions. Become familiar with each component before attempting to proceed with installation. A sequence of installation listed below is a general guideline only.

- When shipment is received, check all parts for damage. Repair and/or replace as necessary.
- Check packing lists against materials received, identify all parts, correct any shortages and sort all hardware.
- If materials are to be stored for any length of time, either in a shop or at a job site, assure they are secured from loss and protected from damage.
- Assure that persons doing installation are familiar with the parts, have read these instructions, and have proper tools and equipment to accomplish the tasks.
- These instructions assume that the rail has been installed, leveled, aligned and braced.
- Review drawings to become familiar with layout of the system. Plan the installation of conductor bars for most efficient use of the lengths provided (to keep field cutting to a minimum). For a crane runway or straight monorail, start installation at one end and move down the line. For a monorail with switches and curves, mount the curved bars and move outward from there. Install straight bars from the switch straight sections, working outward. For straight bars between two switches, cut bars to fit (allow for length of transfer guides).
- Installation is a logical process of mating conductor bars to the rail system.
 - ✓ Side Contact Conductors: if the rail has been provided with punched web holes for “side contact” mounted bars, begin by installing the mounting brackets. See Chart “B” of these instructions for proper orientation. If the rail web has not been punched, locate and drill mounting holes per instructions shown in Figure 9.
 - ✓ Bottom Contact Conductors: for systems with “bottom contact” mounted bars, clamp the fabricated mounting brackets to the top flange of the rail at 4'-0" maximum spacing. Place the first bracket approximately 9" in from one end of rail and adjust other bracket locations as needed to avoid rail splices. For brackets designed to bolt to rail web, install at provided web hole locations, or drill web holes as needed.
 - ✓ See additional details for installation or assembly of each component within these instructions.
- Install conductor bar into mounting clips.
- For systems with switches, interlocks or other non-continuous bars, adjust gaps between bar ends as shown in the instructions and install transfer guides.
- Assemble splices to join conductor bars together. Be sure to locate the Power Feed Splice Assemblies near the location of the building power supply. If necessary, prep conductor bars for an Intermediate Power Feed and install.
- After all bars are installed and adjusted for position, tighten all mounting clips.
- Verify proper gaging (distance from treadline) and that bars are straight with a minimum of rise or sag between support brackets.
- Install end caps.
- After an electrician has connected electrical power to the bars, verify that power is “Locked Out” until after installation of cranes, hoist, drivetractors, etc. is completed.

Shielded Channel-Bar Conductor Assemblies

When a conductor bar “system” is ordered (that is, not as individual piece parts), you will be shipped a quantity of standard length conductor bars with cover, mounting brackets, splices, power feeds and end caps, as determined by engineering, to assemble a power distribution system for a monorail or crane runway. These components are shipped “loose” for field assembly. Conductor bars for monorail switches are normally cut, formed and installed. Bars for monorail curves are normally cut and formed, but shipped loose to avoid shipping damage.

You may also order individual piece parts to make a system, or to repair or replace an existing conductor bar system.

Some conductor bar pieces may need to be field cut to fit the layout of the system (i.e., a 15’ piece may need to be cut to a shorter length as required, or a 5’ piece may need to be cut to fit between two switches, etc.).

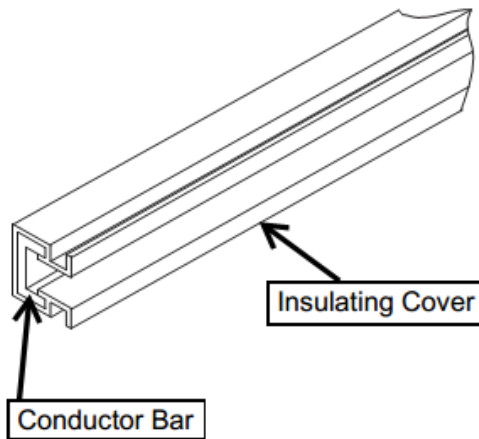


Figure 1

Part Number	Description	Temp Rating
10-2725-01	20' Assembly	Standard (150°F)
10-2725-02	10' Assembly	Standard (150°F)
10-2725-03	5' Assembly	Standard (150°F)
10-3076-01	20' Assembly	Hi-Temp (265°F)
10-3076-02	10' Assembly	Hi-Temp (265°F)
10-3076-03	5' Assembly	Hi-Temp (265°F)

TC/American Crane Shielded Channel-Bar Conductor Bar Assembly

- a) Bar
 - b) Cover
- (See Figure 1)

Straight pieces provided in 5, 10 and 20 foot lengths. Field cut as required to fit the system.

Conductor Bar provided with either:

- a) Standard Cover (Red), up to 150°F
- b) Hi-Temp Cover (Orange), up to 265°F

NOTES:

A) Cutting Bar and Cover to fit: bar and cover may be cut with a hand hacksaw. Cuts must be square. Remove all burrs. Face of bar where the collector shoe rides must be smooth.

B) Field Prep for Splice Holes: Conductor Bar Assemblies are provided from the factory with holes in the bar and cover at each end for bolted splice assemblies. If the bar assembly is field cut, new splice holes must be field drilled in the bar and cover. See Figure 5.

C) Straightness: bar is shipped from the factory in a straight condition. Any bar that becomes bent or kinked in shipping or handling must be straightened or replaced.

Shielded Channel-Bar Splice Assemblies and Power Feeds

Part Number	Description
• 10-2722-00	Splice Assembly with Standard Temp Cover
• 10-3124-00	Splice Assembly with Hi-Temp Cover
• 10-2723-00	Power Feed Splice Assembly with Standard Temp Cover (shown)
• 10-3125-00	Power Feed Splice Assembly with Hi-Temp Cover

Splice Assemblies and Power Feed Splice Assemblies are assembled as shown in Figure 2. Install splice bar with threads away from conductor bar. Verify bosses on bottom of splice bar are in full contact with conductor bar surface. Verify countersunk heads of screws are flush and smooth with inside surface of the bar.

Tighten screws securely into the threaded holes of the Splice Bar with 1/8" hex wrench. Install #10 Nuts onto the screws as a jam nut. Install Splice Cover (snaps in place). Assure cover completely encloses the splice bar assembly.

Caution: do not use splices to force ends of bars into alignment.

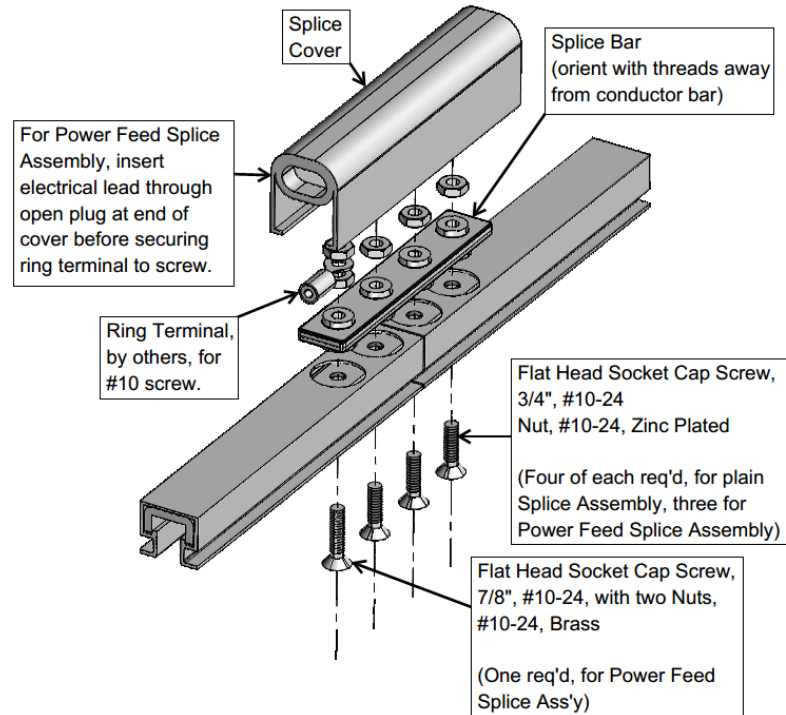


Figure 2

See General Notes below.

GENERAL NOTES: (for Splice, Splice Power Feed and Intermediate Power Feed Assemblies)

A) Power Feed Splice Assemblies: have one splice bolt 7/8" long, provided with two #10 brass nuts. One brass nut is used in the standard location as a jam nut; the other is installed over the electrical power lead ring terminal.

B) Ring Terminals: are provided by others.

C) Power Feed Routing: insert the electrical power lead through the plug at the end of the power feed cover before securing the ring terminal to the #10 screw. A jumper wire with ring terminals may be installed from one Intermediate Power Feed to another (on conductor bars on a switch inner frame, for example) to transfer power between bars on straight and curved sections (note: verify proper phasing).

D) Bar to Bar Joint: after splice assembly is complete, verify that inside surface of conductor bar ends are aligned and smooth. If necessary, grind smooth to remove any burrs. Also verify that inside faces of conductor bar cover are smoothly aligned...bevel ends slightly if necessary.

E) Conductor Bar Gap: normal gap between ends of conductor bar at a splice should be approximately 1/32".

F) Field Prep for Conductor Bar Splice Holes: if ends of conductor bars have been field cut, new splice holes must be field drilled. See Figure 5.

G) Field Prep of Conductor Bar for Intermediate Power Feeds: see Figure 4.

H) Splices Near a Switch: no conductor bar splice should be made within two feet of a switch (too much possibility of conductor bar alignment errors).

Shielded Channel-Bar Intermediate Power Feed

Part Number	Description
• 10-2726-00	Intermediate Power Feed Assembly with Standard Temp Cover
• 10-3126-00	Intermediate Power Feed Assembly with Hi-Temp Cover

If Splice Power Feeds cannot be used, Intermediate Power Feeds may be installed as shown in Figure 3. Field locate as required for the system.

Holes in the conductor bar and cover must be made in the field. See instructions below in Figure 4.

After assembly is complete, verify head of #10 screw is flush with inside surface of conductor bar. Grind smooth to remove any burrs.

Power feed cover snaps into place. Verify that cover completely encloses the power feed connection.

See appropriate general notes on Page 5.

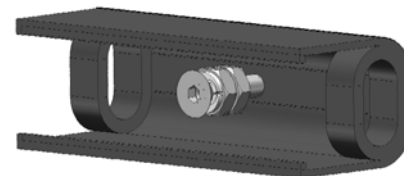
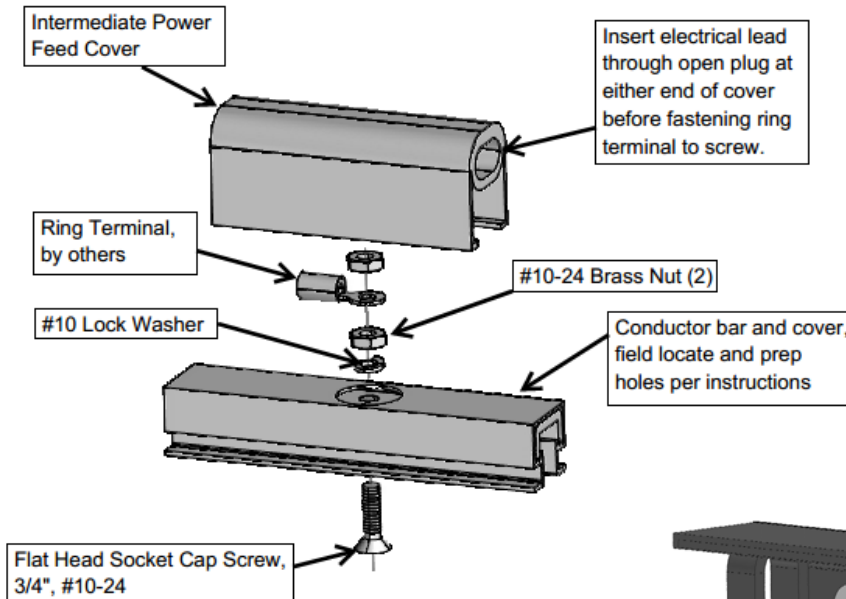


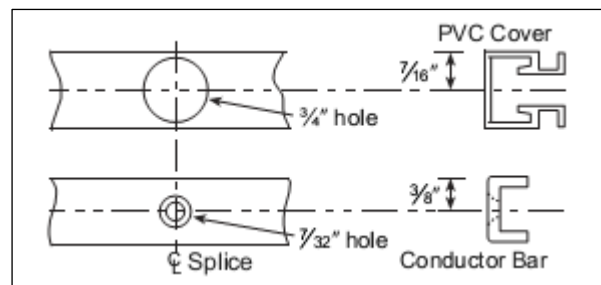
Figure 3

Field Prep Instructions for Splice and Power Feed Assemblies

- Intermediate Power Feed Assembly

Countersink 7/32" hole for #10-24 flat head screw with #10, 82° countersink tool.

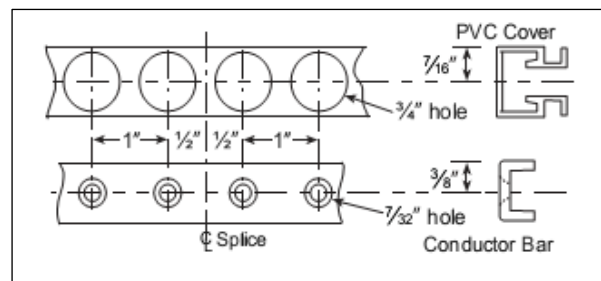
Figure 4



- Splice Assembly and Power Feed Splice Assembly

Countersink 7/32" holes for #10-24 flat head screw with #10, 82° countersink tool.

Figure 5



Support Brackets for Shielded Channel-Bar Electrical Conductors

Side Contact (Web) Mounting Bracket for Girder Rail

Typical assembly of side contact conductor bar mounting bracket bolted to girder rail web. See Figure 6 (shows one side only).

Note: nylon bushings are used as reducer bushings for 1/2" diameter mounting holes factory punched in web of 325 Series rail. Not required for 200 Series rail (holes are factory drilled at 9/32") or if web holes are field drilled to size (9/32"). See Figure 9 for field drilling instructions.

Bracket assemblies may be mounted on the rail while it is on the ground or after it is installed. Leave mounting clips loose so conductor bar and cover can be slipped lengthwise into the clips.

Clips clamp tightly to the outer surface of the insulating cover. After splices have been made, tighten clips securely so bar and cover assembly cannot move.

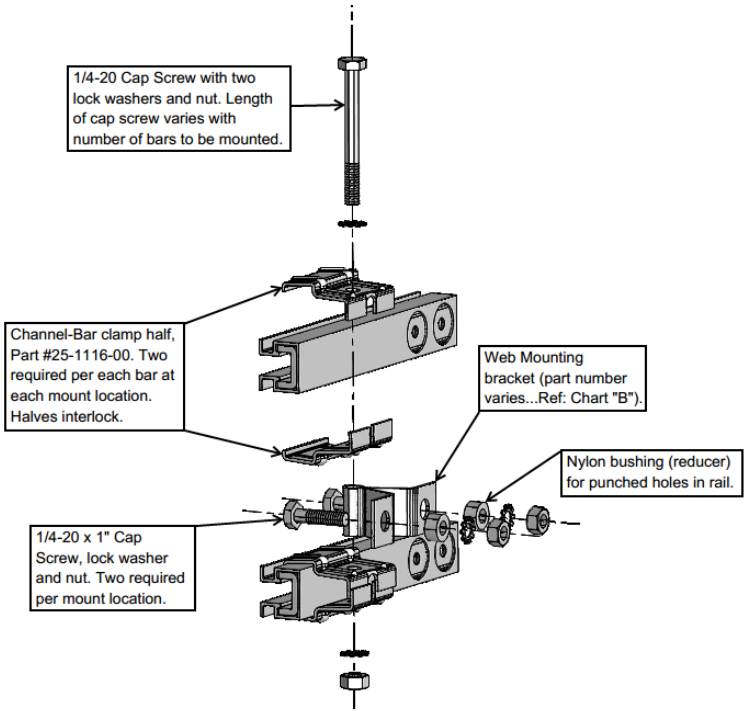


Figure 6

Notes: Maximum 4 foot spacing between support brackets.
After installation, verify that collectors track the bar smoothly over the full length.

See below:

- Figure 7 – Side Contact conductor bar mounted on 200 Series Girder Rail used as a Monorail or a Crane Bridge, with Electrical Collectors mounted on a typical trolley.
- Figure 8 – Side Contact conductor bar mounted on 325L Series Rail with Electrical Collectors mounted on a typical trolley.

See Chart "A" for a list of trolleys (wheel diameter) and electrical gages. Also see the TC/American Crane Systems Catalog for other examples and a view of collectors mounted on end trucks.

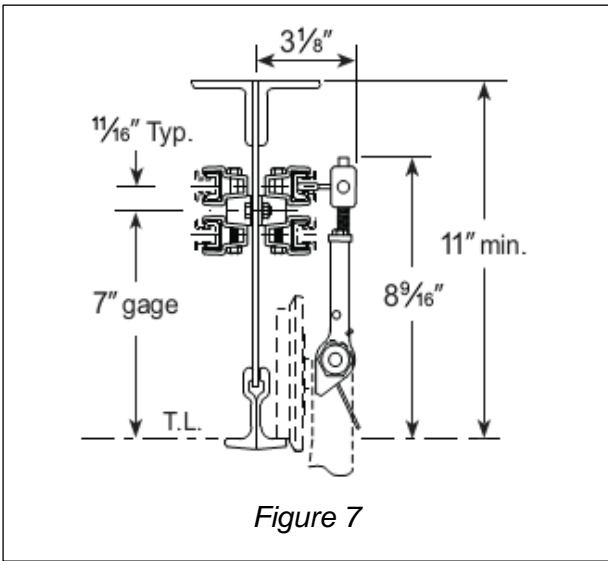


Figure 7

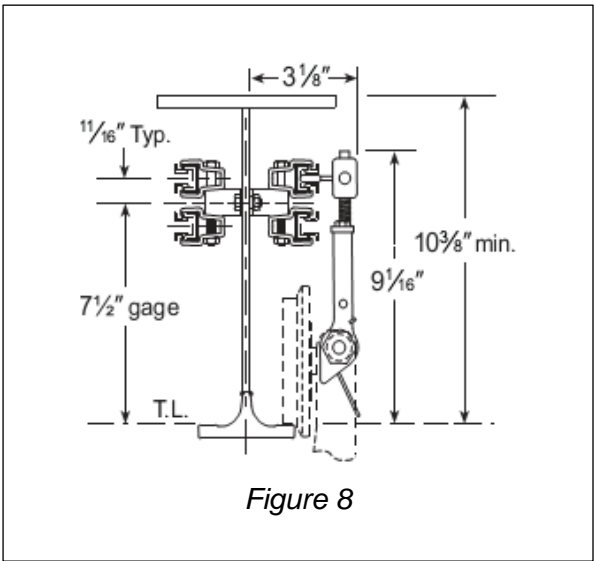


Figure 8

Locations for field drilled web holes for side contact conductor bar mounting brackets.

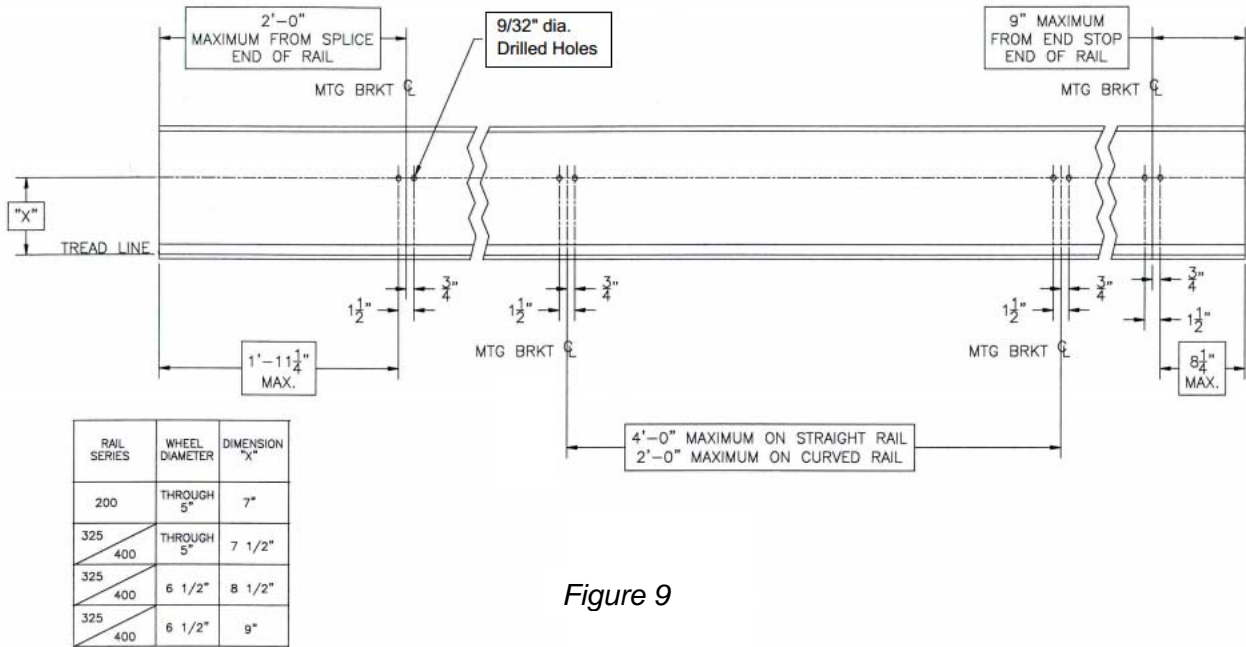


Figure 9

Side Contact (Rod) Mounting Bracket, 200 Series, 2R3-5T Rail

Typical assembly of side contact conductor bar mounting bracket on rod supported rails (see Figure 10 and Figure 11). A support bracket is required on every hanger on 2R3-5T rail. Figure 11 shows Electrical Collectors mounted on a typical trolley.

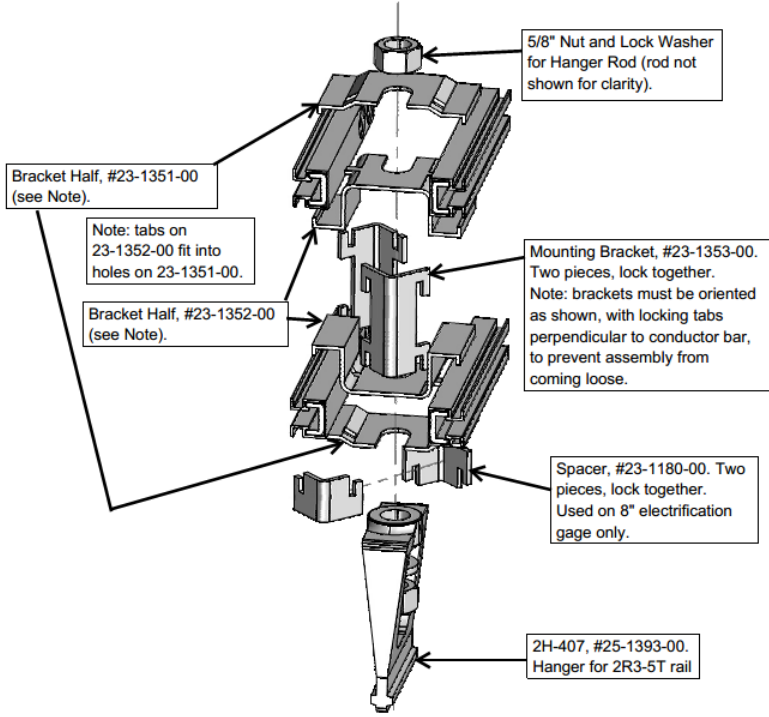


Figure 10

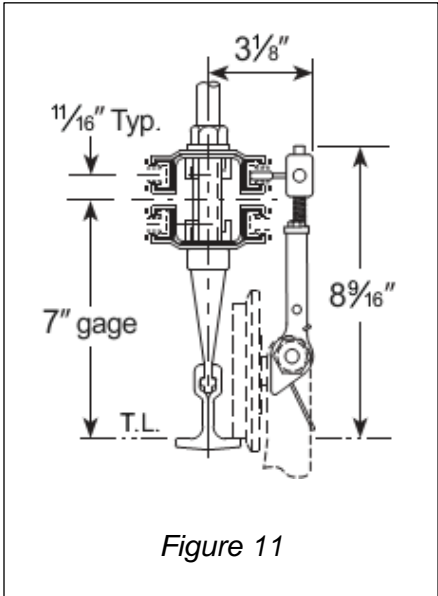


Figure 11

Bottom Contact Mounting Bar and Clips

Figure 12: Typical assembly of bottom contact conductor bar mounting bar and support clip.

Support clips clamp tightly to the outer surface of the conductor bar insulating cover.

Note: Maximum 4 foot spacing between support brackets.

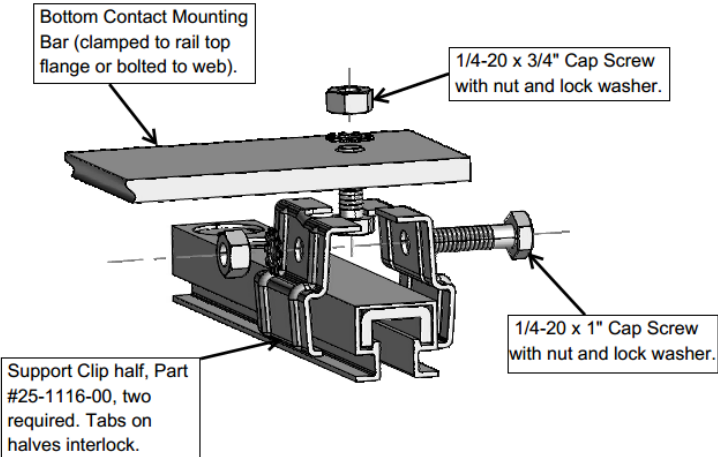


Figure 12

Note: When ordering a Bottom Contact Conductor Bar System, advise the mounting location of the collector mounting bar, relative to the riding tread of the rail. This varies, depending upon whether the collector mounting bar is attached to a crane end truck, a drivetractor or a hoist carrier. If the crane, drivetractor or hoist carrier is ordered from TC/American Crane, we will design the proper brackets.

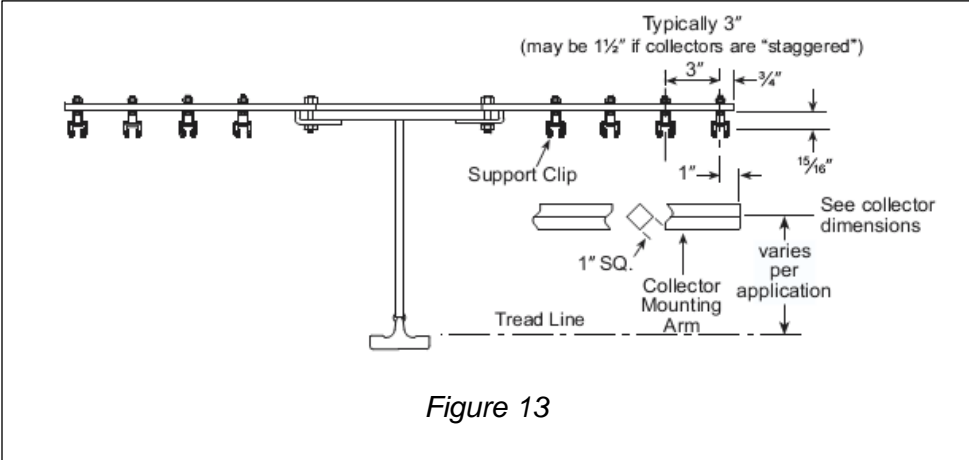


Figure 13

Typical configuration of bottom contact conductor bar mounted on a crane bridge or monorail, with mounting bars clamped to top flange of rail (see Figure 13) or bolted to web of rail (see Figure 14).

Note: Collector Mounting Arm is a 1" square bar attached to hoist carrier, crane end truck, etc.

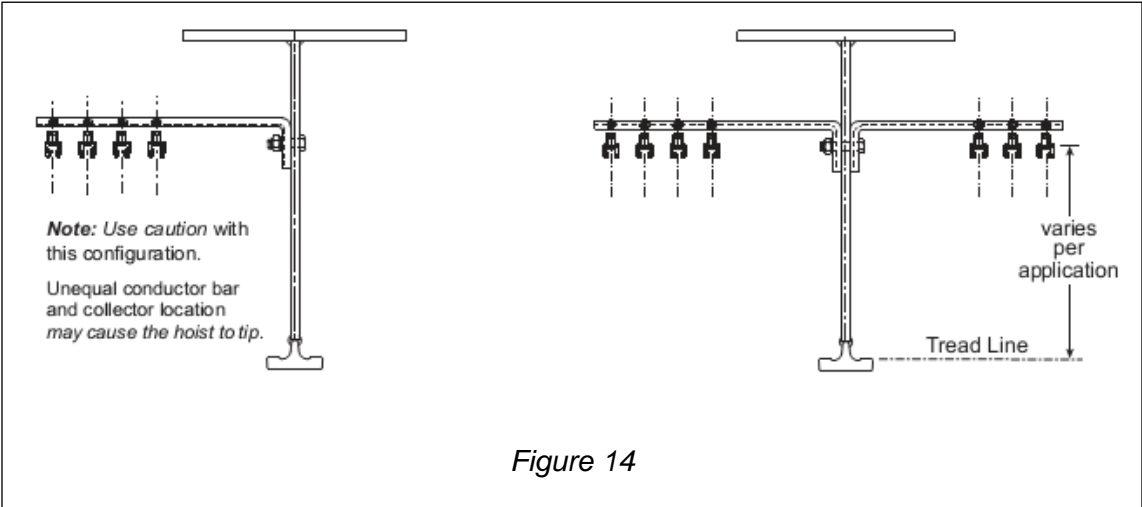
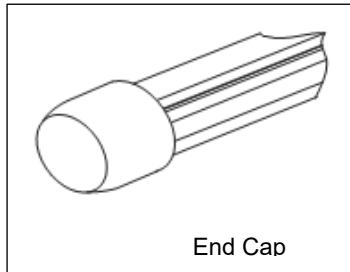


Figure 14

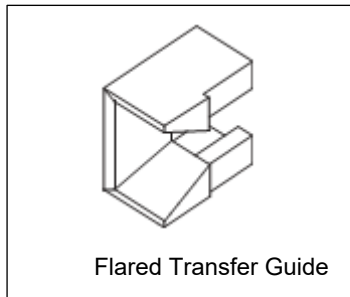
Shielded Channel-Bar Conductor Bar End Caps and Guides

Part Number	Description
• 23-1318-00	End Cap
• 23-1879-00	Flared Transfer Guide
• 25-3145-00	Notched Transfer Guide



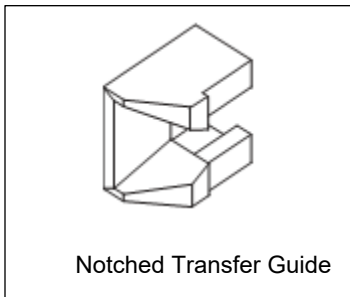
End Cap: provides protection from accidental contact with end of conductor bar. Made of neoprene. Slip on over square cut end of bar and cover.

NOTE: assure there is sufficient length of conductor bar at end of runs so collectors do not contact the end caps.



Flared Transfer Guide: used for electrified monorail systems with switches, interlocks, cross-overs or other applications with discontinuous bars. Fits over the outside of the insulating cover.

Made of PVC. Facilitates smooth transition of the sliding collector shoe across conductor bar gaps.



Notched Transfer Guide: used at ends of some conductor bars on inside radius of curves (i.e., Glide Switches where the switch curved rail meets the outgoing curve rail) and on outside radius of curves within a switch. Fits over the outside of the insulating cover.

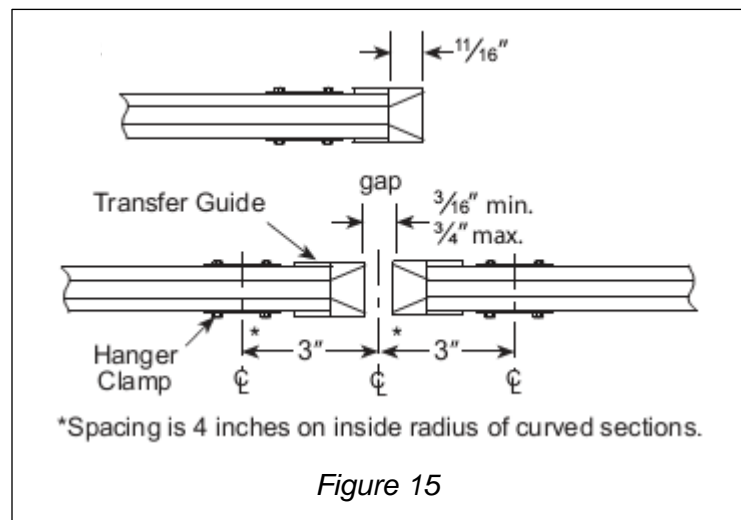
Made of PVC. Facilitates smooth transition of the sliding collector shoe across conductor bar gaps.

Instructions for Field Installation of Transfer Guides

Flared Transfer Guides: must be field installed on the bars that will adjoin those with factory installed Transfer Guides.

Establish the gap between conductor bars as shown in Figure 15. This allows adequate clearance for a crane to safely pass by a spur rail or for a switch to operate, yet is close enough to allow collector shoes to transition smoothly from bar to bar.

Notched Flared Guides: Install as shown in Figure 16 and Figure 17.



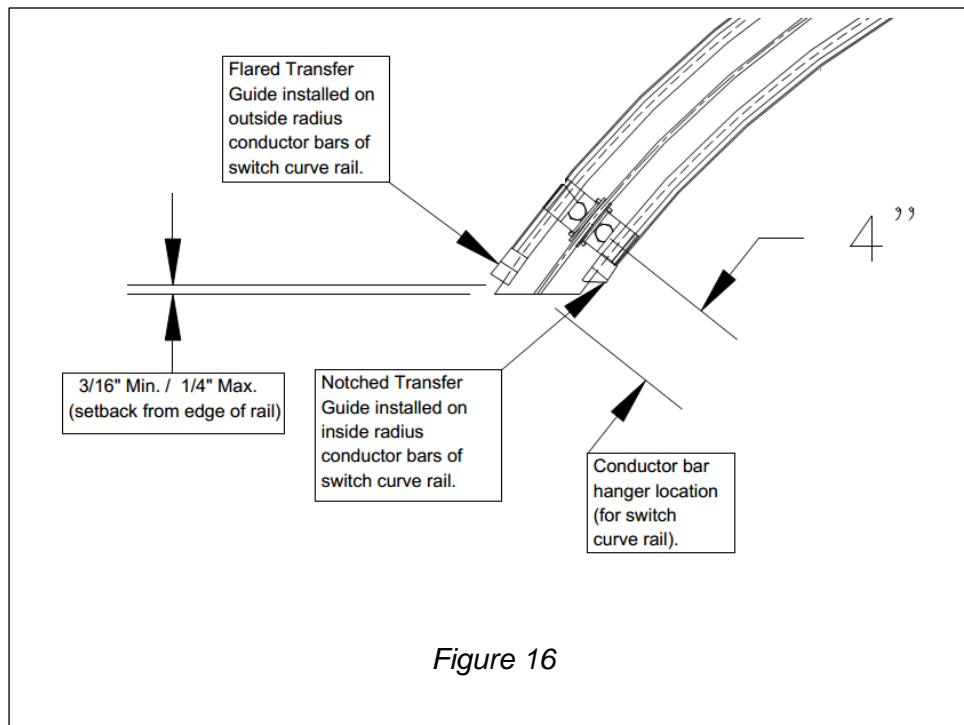
NOTES:

- a) **Transfer Guides installed either at the factory or in the field:** Transfer Guides are factory installed on interlocking crane bridge conductors, bars on moveable switch sections and other factory assembled conductor systems as required.

Conductor bars curved at the factory for mounting on switch curves (the curve that completes the bend from the switch) are typically shipped loose for field mounting. Transfer Guides for these bars are not assembled to the conductor bar (to reduce shipping damage) and must be field installed. Transfer Guides for all loose straight conductor bars must be field installed.

- b) **Installation of Transfer Guides:** After final installation adjustments (conductor bars correctly located and mounting clips securely tightened), bond transfer guides to conductor bar covers with PVC cement (provided by others).
- c) **Conductor Bar Alignment and Gaging:** for smooth transition of collectors across a gap, conductor bars must be aligned vertically and horizontally, and accurately gaged (measure of distance) from tread line of the rail.
- d) **Hangar Clamp Bracket location at either side of gap:** see Figure 15, 3" for straight conductor bar systems, 4" on inside radius of curved sections.
- e) **Single or Dual Head Collectors:** depending upon the length of the gap and how well the conductor bars are aligned, a "single head" collector may not be able to maintain electrical contact (continuity) between bars as the collector shoe crosses the gap. This may cause a problem for motorized carriers with variable frequency controls.

For conductor bar systems with interlocks, switches or other devices with a gap in the conductor bar, TC/American Crane recommends the use of "dual head collectors" or "tandem single head collectors."



Installation of Flared and Notched Transfer Guides on 200, 600 and 800 Series Electrified Glide Switch Curves

Shown is the correct placement of Flared and Notched Transfer Guides on a switch curve (outgoing curve). Field bond guides to curved conductor bar cover with PVC cement.

Configuration of Transfer Guides on 2000 Series Electrified Glide Switches

2000 Series Electrified Glide Switches are factory assembled with conductor bars, transfer guides and splice preps as shown in Figure 17.

The conductor bars on outgoing monorail and switch curves are field spliced to the switch conductor bars.

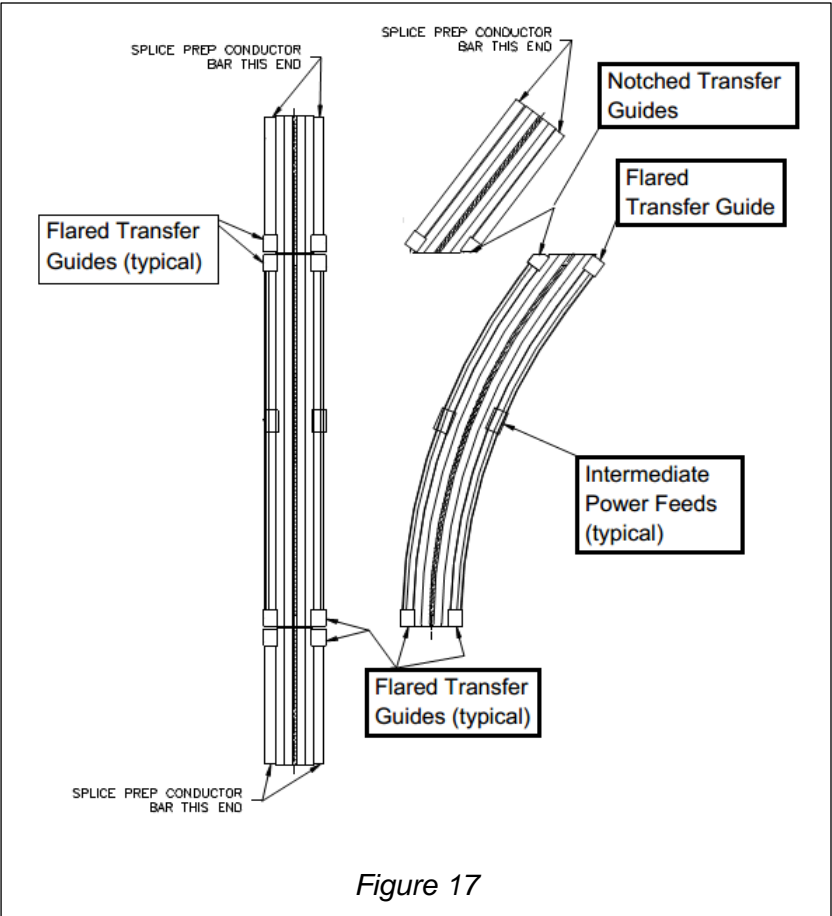
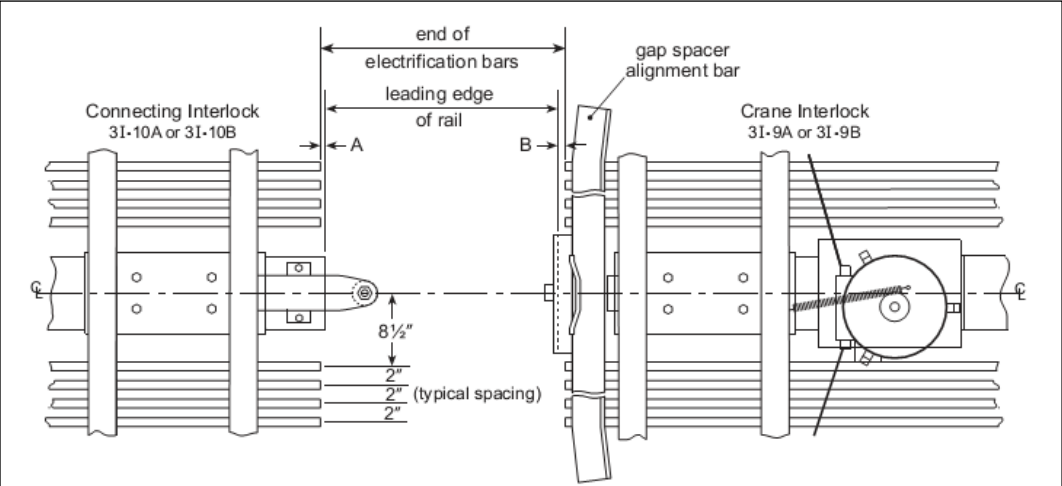


Figure 17

Set-Back of Conductor Bars from End of Rails with Interlock

Figure 18 shows the typical “set-back” of conductor bars when installed with an interlocking system.

Position bar and transfer guide assemblies as required.



**Set-Back of Conductor Bars from End of Rail with Interlock
(Bottom Contact Bars Shown)**

A = 1/8" – 3/16" for either Bottom or Side Contact
 B = 1/8" – 3/16" if Side Contact, 1/2" if Bottom Contact

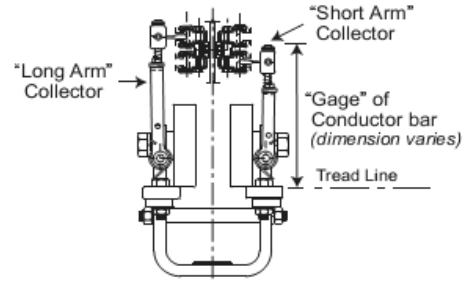
Figure 18

CHART "A"

Trolley Side Contact Electrification Chart

Applications shown for current TC/American trolleys only.
(For old or obsolete trolleys, contact the factory.)

Note: Order collectors by part number only.



Typical Web Mounted Conductor Bar with Side Contact Collectors

Trolleys	Channel-Bar				Figure-8				Elec Gage	Trolley Wheel Dia.
	Single Head 35 amp		Dual Head 70 amp		Single Head 100 Amp		Dual Head 200 amp			
	short arm	long arm	short arm	long arm	short arm	long arm	short arm	long arm		
200 Series										
2T-750-2 2T-1150-4 These require one #10-2125-00 collector mounting bracket per collector.	10-1872-00 E-988-SA (fig. 1)	10-1873-00 E-989-LA	10-3500-00 E-988-SAD (fig. 8)	10-3501-00 E-989-LAD	10-1880-00 8E-988-SA	10-1879-00 8E-989-LA	10-3534-00 8E-988-SAD	10-3535-00 8E-989-LAD	7"	3"
2T-850-2 2T-1200-4	none		none		none		none		-	3"
2T-2000-2/2SR 2T-2800-4/4SR 2T-3100-4/SR -4CC 2T-5600-8/8SR -8CC	10-1872-00 E-988-SA (fig. 1)	10-1873-00 E-989-LA	10-3500-00 E-988-SAD (fig. 8)	10-3501-00 E-989-LAD	10-1880-00 8E-988-SA	10-1879-00 8E-989-LA	10-3534-00 8E-988-SAD	10-3535-00 8E-989-LAD	7"	4"
2T-3000-2 2T-4000-4	none		none		none		none		-	5½"
325 Series										
3T-750-2 3T-1150-4 These require one #10-2125-00 collector mounting bracket per collector.	10-1854-00 E-6988-SA (fig. 2)	10-1855-00 E-6989-LA	10-3502-01 E-6988-SAD (fig. 9)	10-3503-01 E-6989-LAD	10-1883-00 8E-6988-SA	10-1885-00 8E-6989-LA	10-3536-01 8E-6988-SAD	10-3537-01 8E-6989-LAD	7½"	3"
3T-850-2 3T-1200-4	none		none		none		none		-	3"
3T-2000-2/2SR 3T-2800-4/4SR 3T-3100-4/SR -4CC	10-1854-00 E-6988-SA (fig. 2)	10-1855-00 E-6989-LA	10-3502-01 E-6988-SAD (fig. 9)	10-3503-01 E-6989-LAD	10-1883-00 8E-6988-SA	10-1885-00 8E-6989-LA	10-3536-01 8E-6988-SAD	10-3537-01 8E-6989-LAD	7½"	4"
3T-2700-2/2SR 3T-5400-4/4SR	10-1867-00 E-7988-SA (fig. 3)	10-1866-00 E-7989-LA	10-3504-00 E-7988-SAD (fig. 10)	10-3505-00 E-7989-LAD	10-1882-00 8E-7988-SA	10-1881-00 8E-7989-LA	10-3538-00 8E-7988-SAD	10-3539-00 8E-7989-LAD	7½"	4½"

CHART "A" (cont.)





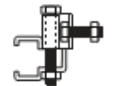

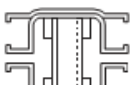
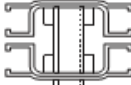
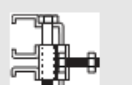

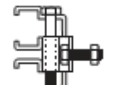
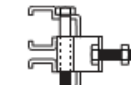

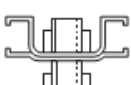
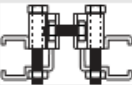
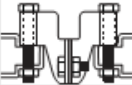
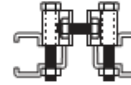
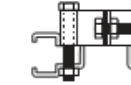
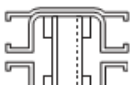

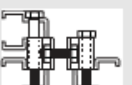

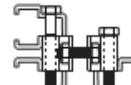
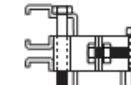

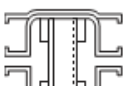
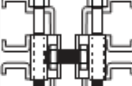

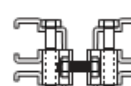
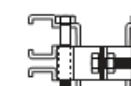
cont'd Trolley/Side Contact Collector Application Chart

Trolleys	Channel-Bar				Figure-8				Elec Gage	Trolley Wheel Dia.
	Single Head 35 amp		Dual Head 70 amp		Single Head 100 amp		Dual Head 200 amp			
	short arm	long arm	short arm	long arm	short arm	long arm	short arm	long arm		
325 Series										
*3T-6200-2/2SR	10-1846-00 E-83-SA (fig. 4)	10-1847-00 E-84-LA	10-3506-00 E-83-SAD (fig. 11)	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"
*3T-12400-4/4SR	10-3494-00 E-783-SA (fig. 6)	10-3495-00 E-784-LA	10-3544-00 E-783-SAD (fig. 13)	10-3545-00 E-784-LAD	10-3498-00 8E-783-SA	10-3499-00 8E-784-LA	10-3548-00 8E-783-SAD	10-3549-00 8E-784-LAD	7½"	5"
<p>* Note: For 3T-6200-2/-2SR and 3T-12400-4/-4SR Trolleys used with 325H or 400 Series Rail (including Switches with 325H or 400 Series Rail), use E-83SA/E-84LA or 8E-83SA/8E-84LA collectors.</p> <p>For 3T-6200-2/-2SR and 3T-12400-4/-4SR Trolleys used with 325L Series Rail (including Switches with 325L Series Rail), use E-783SA/E-784LA or 8E-783SA/8E-784LA collectors.</p>										
3T-24800-8/8SR	10-1846-00 E-83-SA (fig. 4)	10-1847-00 E-84-LA	10-3506-00 E-83-SAD (fig. 11)	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"
3T-8000-2/2SR 3T-16000-4/4SR	10-3419-00 E-85-SA (fig. 5)	10-3420-00 E-86-LA	10-3510-00 E-85-SAD (fig. 12)	10-3511-00 E-86-LAD	10-3532-00 8E-85-SA	10-3533-00 8E-86-LA	10-3542-00 8E-85-SAD	10-3543-00 8E-86-LAD	9"	6½"
3T-10000-2SR 3T-20000-4SR	none		none		none		none		-	9"
400 Series										
4T-4100-2SR (drivetractors)	10-1846-00 E-83-SA (fig. 4)	10-1847-00 E-84-LA	10-3506-00 E-83-SAD (fig. 11)	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"
4T-4200-2SR (bolted yoke)	none		none		none		none		-	5"
4T-6600-2SR (bolted yoke)	none		none		none		none		-	6½"
450 Series										
45T-15000-2SR 45T-30000-4SR	none		none		none		none		-	9" 9"
Motorized Trolleys										
3MT5-6200-AT		10-3508-00 E-84-LAT (fig. 7)		10-3553-00 E-84-LATD (fig. 14)		10-3550-00 8E-84-LAT		10-3555-00 8E-84-LATD	7½"	5"
3MT5-6200-A2		10-3509-00 E-84-LAMT (fig. 7)		10-3556-00 E-84-LAMTD (fig. 14)		10-3551-00 8E-84-LAMT		10-3558-00 8E-84-LAMTD	7½"	5"
3MT6-8000-A2		10-3512-00 E-86-LAMT (fig. 7)		10-3559-00 E-86-LAMTD (fig. 14)		10-3552-00 8E-86-LAMT		10-3561-00 8E-86-LAMTD	9"	6½"
3MT9-10000-B	none		none		none		none		-	9"
45MT-15000-C	none		none		none		none		-	9"

Chart "B"

Shielded Channel-Bar Side Contact Mounting Bracket

Electrification Mounting Brackets (side contact)

Number of Bars	200 Series 2R3-5T Rail		200 Series Girder Rail		325 Series	
	7" Gage	8" Gage	7" Gage	8" Gage*	3", 4", 4½" Wheel Diameter	5", 6½" Wheel Diameter
One	E985-23 10-1930-00 	E985-25 10-2135-00 	E985-61 10-1932-00 	E985-62 10-1944-00 	E985-61 10-1932-00 	E85-52 10-1937-00 
Two 1 Side	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-27 10-1933-00 	E985-30 10-1945-00 	E985-27 10-1933-00 	E85-19 10-1938-00 
Two Both Sides	E985-23 10-1930-00 	E985-25 10-2135-00 	E985-59 10-1934-00 	E985-60 10-1946-00 	E985-59 10-1934-00 	E85-51 10-1939-00 
Three	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-28 10-1935-00 	E985-31 10-1947-00 	E985-28 10-1935-00 	E85-20 10-1940-00 
Four	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-29 10-1936-00 	E985-32 10-1948-00 	E985-29 10-1936-00 	E85-21 10-1941-00 
Collectors	E-988S & E-989L	E-988S & E-989L	E-988S & E-989L	E-988S & E-989L		

* For all 8" gage brackets (200 series girder rail), drill rail at 7" gage.