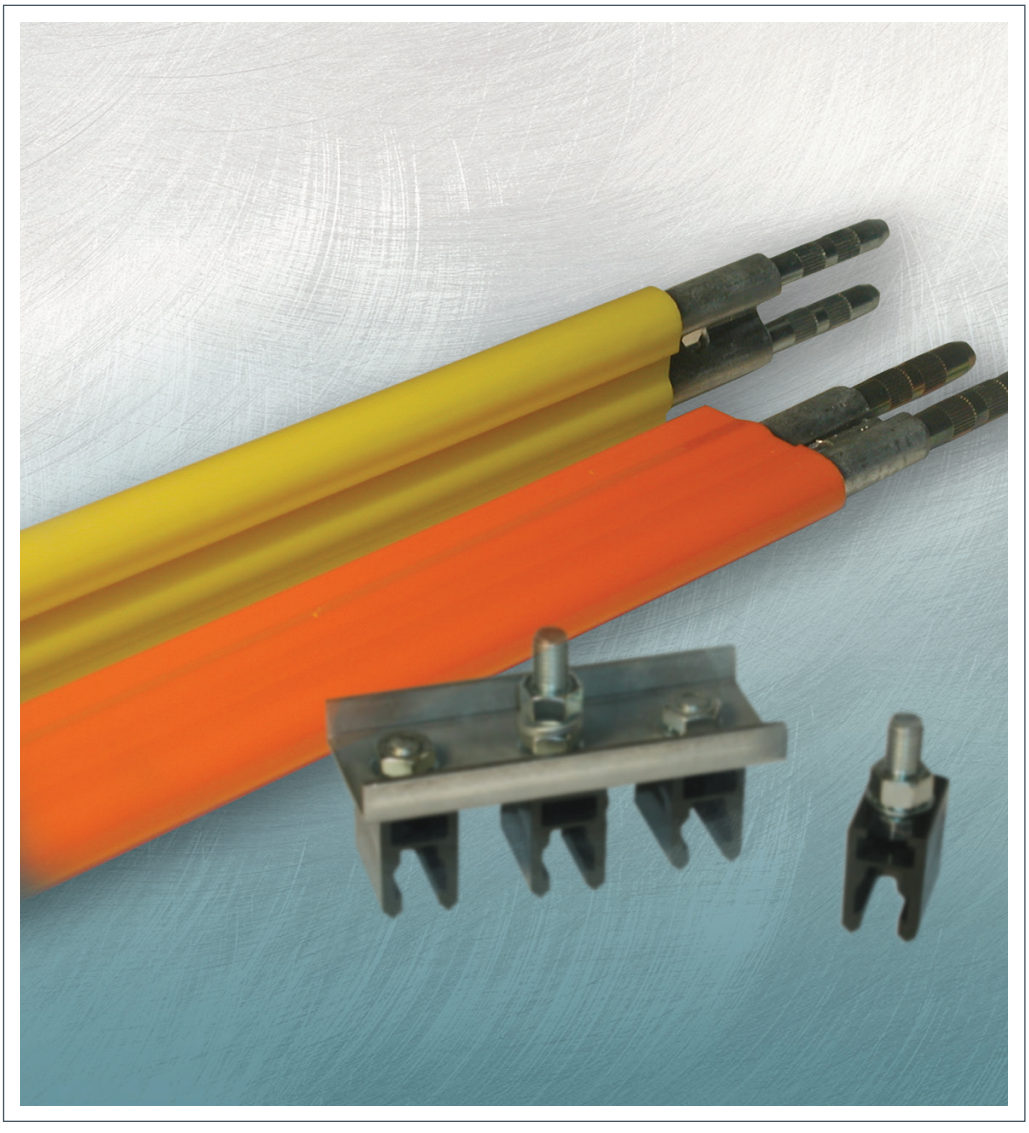
Electromotive Systems

ELECTROBAR® 8-Bar
Conductor Bar System



MAGNETEK
MATERIAL HANDLING
ELECTROMOTIVE SYSTEMS

ELECTROBAR® 8-BAR
CONDUCTOR BAR SYSTEMS

The practical, proven and economical way to deliver electricity to overhead cranes, hoists, monorails and other types of moving equipment.

Whether you need power for a simple top running application or a curved monorail, Magnetek's ELECTROBAR® 8-Bar Conductor Bar System is the solution.

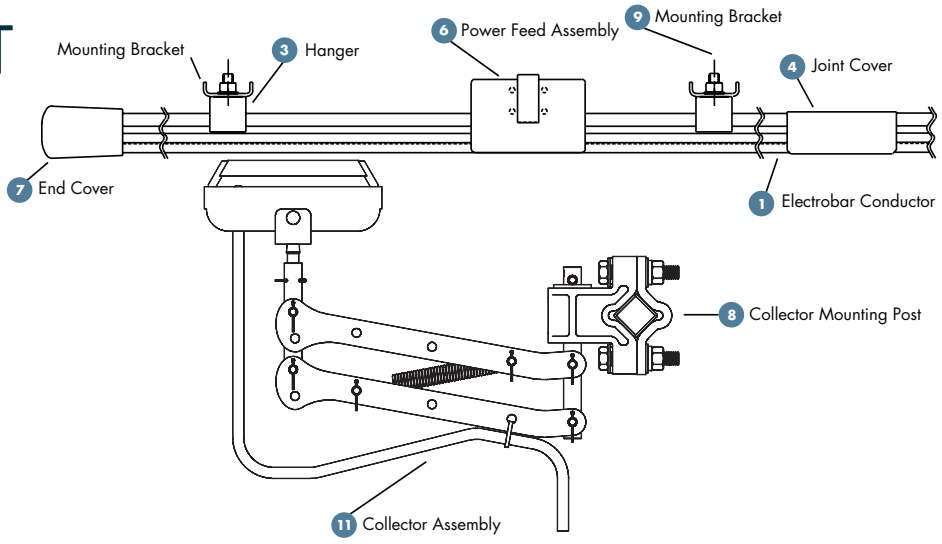
- Assembles easily and can be mounted either vertically or horizontally
- Figure 8 design allows you to use it interchangeably with common bottom-entry 8-bar systems
- Available for 90, 110 and 350 Amp applications
- Cover options available for high temperature environments
- Collector assemblies feature corrosion resistant pivot pins, impact-resistant, universally interchangeable reinforced polyamide arms and electrically insulated collector bodies
- Single and tandem collector assemblies available for smooth, continuous contact along straight runways or curved applications
- Conductor sections are roll-formed galvanized steel in 90 and 110 Amp ratings, and copper in 350 Amp rating
- All systems are designed to carry the specified current rating using a duty cycle of 70% (84 seconds on and 36 seconds off)*
- Most items are available from stock for same day shipment

Please call Magnetek Material Handling today at 800.288.8178 to answer all of your questions, confirm your selection, or provide a customized quotation for your specific application needs!

*Several critical factors determine the proper and safe sizing of Electrification Conductor Bar. The selection criteria and technical specifications found on pages 4 and 5 will assist you in the selection of a proper conductor size and system type to meet the ampacity and voltage drop criteria, environmental conditions, and expansion locations for your application.

Many parts of the Electrobar 8-Bar system are made from plastic insulating materials. The insulating covers for normal temperature use are made of PVC, the plastic hangers are made from polyamide (nylon) as are the plastic parts of the collectors. If your application uses materials or chemicals that can evaporate or get into the air and onto the conductor bar parts, please consult with Magnetek about the suitability of this product in your environment.

COMPONENT
SELECTION GUIDE



STANDARD SYSTEM COMPONENTS

#	Ampere Rating	Standard Cover			High Temperature Cover			Page Number
		90	110	350	90	110	350	
1	Conductor	8-90A	8-110A	8-350A	8-90AH	8-110AH	8-350AH	4
2*	Expansion	8-90E	8-110E	8-350E	8-90EH	8-110EH	8-350EH	5
4	Joint Cover	8-JC			8-JCH			5
5*	Joint Keeper	N/A		8-JK	N/A		8-JK	6
6	Power Feed	8-90CF	8-110CF	8-350CF-N	8-90CF	8-110CF	8-350CF-N	6
7	End Cover	8-EC						6
8	Collector Mounting Post	C-CMP						6-8
10*	Connecting Tool	8-T						6

* Not shown

HANGER ASSEMBLIES

#	Options	Snap-In			Steel with Cross Bolt		Single Steel Snap-In with Hardware	Stainless Steel with Cross Bolt	Anchor	Page Number
		Single	3-Pole	4-Pole	Single	Triple				
3		8-H	8-H3	8-H4	8-SH	8-SH3	8-SPH	8-SSH	8-HA	5

COLLECTOR ASSEMBLIES

#	Description	100 Amp Single Arm	200 Amp Tandem Arm	Page Number
11	Collector	PC-100PC, PC-100C, PC-100PCL PC-100SPC, PC-100SC, PC-100SPCL	PC-200PTC, PC-200TC, PC-200PTCL PC-200SPTC, PC-200STC, PC-200SPTCL	7-8
	Replacement Shoe Assembly	C-100CH, C-100SCH		

MOUNTING BRACKETS

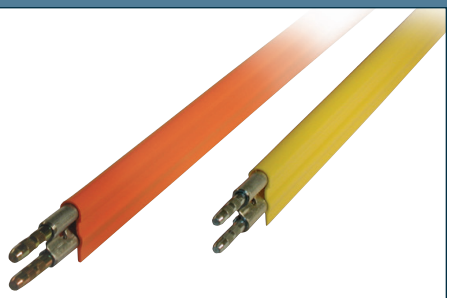
#	Length in Inches	Galvanized			Page Number
		15"	18"	24"	
9	Web Mount	BKS-W15-G	BKS-W18-G	BKS-W24-G	6
	Flange Mount	BKS-F15-G	BKS-F18-G	BKS-F24-G	
	Flange Mount with Clips	N/A	BKS-F18A-G	BKS-F24A-G	
		4-Conductor			
	Vertical Mount Web	BK-L4			

ELECTROBAR® 8-BAR
CONDUCTOR BAR SYSTEMS

Conductor bar sections are easily installed in the field using a connecting tool and joint cover, or joint keeper, to join each 10 foot bar or expansion section. Expansion sections accommodate the expected temperature variance and ambient temperature considerations of the installation, and when used with the proper anchoring, control the expansion and contraction of the conductor bar. Electrobar figure 8 systems on straight runways are to be supported every 5 feet for horizontal applications, and every 4 feet for vertical mount applications (consult the factory for curved system requirements). Hanger assemblies are available in several different styles, from single steel clamp to 4-Pole arrangements, and are easily installed in our slotted web or flange mount brackets. Electrobar components can be selected to complete electrification systems for main line/top-running, monorail/underhung, and bottom-entry applications, operating at speeds of up to 900 feet per minute.

1. CONDUCTOR BAR SECTIONS

Available in 10 foot sections or cut to whole foot lengths (conductor bar sections include cover, connecting pins and joint covers). Multiply the number of conductors required by the total length of the runway to be electrified, and divide the result by 10 to arrive at the proper number of conductor bar sections.



Description	Catalog Number		
	90 Amp	110 Amp	350 Amp
Standard Orange Cover	8-90A	8-110A	8-350A
Standard Green Cover	8-90A-G	8-110A-G	8-350A-G
High Temperature Yellow Cover Rated to 280° F	8-90AH	8-110AH	8-350AH
Approximate Shipping Weight	4.5 lbs.	5.50 lbs.	7.10 lbs.

NOTE: It is permissible to use the smallest rated bar as the ground. Example: 90, 110 or 350 Amp Electrobar 8-Bar system - use the 90 Amp 8-Bar as the ground.

VOLTAGE DROP CALCULATIONS

Single Phase–A.C.	2 x Amps x Zac x distance (feet from power feed)
Three Phase–A.C.	1.732 x Amps x Zac x distance (feet from power feed)
Direct Current	2 x Amps x Rdc x distance (feet from power feed)

Voltage Drop = (voltage drop x 100)/460 (voltage)

System	A.C. Impedance (Zac)	D.C. Resistance (Rdc)
90 Amp	.0011 Ohms/Ft.	.00073 Ohms/Ft.
110 Amp	.0008 Ohms/Ft.	.0005 Ohms/Ft.
350 Amp	.00008 Ohms/Ft.	.00005 Ohms/Ft.

The Voltage Drop for most installations should not exceed 3%.

CONDUCTOR APPLICATION

Minimum spacing between conductor is 1.75" with standard collectors, and 1.50" with narrow collectors.
Minimum spacing between conductor is 3" if an expansion section is utilized.

2. CONDUCTOR BAR EXPANSION SECTIONS

Expansion sections are complete 10 foot assemblies, shipped with power feed and two anchor hangers. Expansions should be used at all building expansion joints, and compensate for ambient and environmental temperature variations.

EXPANSION CONSIDERATIONS/ANCHOR LOCATIONS

Expansion Locations: 90 and 110 Amp Steel Conductor Bar Systems

- Mid-Span for straight systems 300 feet long
- Every 150 feet for straight systems over 300 feet long

350 Amp Rolled Copper and Copper/Steel Conductor Bar Systems

- Mid-Span for straight systems 200 feet long
- Every 100 feet for straight systems over 200 feet long

All Systems

- At all building expansion joints

Description	Catalog Number		
	90 Amp	110 Amp	350 Amp
Standard Orange Cover	8-90E	8-110E	8-350E
Standard Green Cover	8-90E-G	8-110E-G	8-350E-G
High Temperature Yellow Cover Rated to 280° F	8-90EH	8-110EH	8-350EH
Approximate Shipping Weight	6.80 lbs.	9.50 lbs.	12.00 lbs.

3. NYLON HANGER ASSEMBLIES

90, 110 and 350 Amp Snap-In Single 3-Pole and 4-Pole

Description	Catalog Number	Approx. Shipping Wt.
Single Hanger	8-H	0.11 lbs.
3-Pole Hanger	8-H3	0.80 lbs.
4-Pole Hanger	8-H4	0.90 lbs.

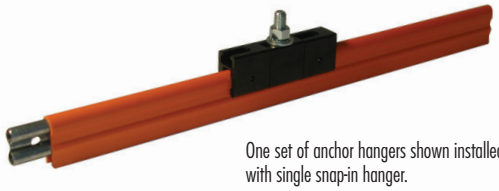
3. STEEL HANGER ASSEMBLIES

Description	Catalog Number	Approx. Shipping Wt.
Hanger with Cross Bolt	8-SH	0.20 lbs.
Steel Snap-In with Hardware	8-SPH	0.24 lbs.

3. ANCHOR HANGERS

90, 110 and 350 Amp

Anchor hangers should be used on all systems to restrict conductor movement. They are also to be used at mid-points between expansion sections and ends.



One set of anchor hangers shown installed with single snap-in hanger.

Description	Catalog Number	Approx. Shipping Wt.
Anchor Hanger	8-HA	0.12 lbs.

4. JOINT COVERS

90, 110 and 350 Amp

Insulating joint covers are installed over each juncture of conductor bar to guard against accidental contact. One joint cover is included with each conductor section purchased.

Description	Catalog Number
Standard Black Cover	8-JC
High Temperature Yellow Cover Rated to 290° F	8-JCH
Approximate Shipping Weight	0.2 lbs.

ACCESSORIES

5. JOINT KEEPERS

For Copper 350 Amp

Joint Keepers are used over each juncture of copper bar to guard against accidental contact and to secure the joint. One joint keeper is included with each copper conductor section purchased.

Description	Catalog Number
Standard and High Temperature 350 Amp Systems	8-JK
Approximate Shipping Weight	0.2 lbs.

6. POWER FEED ASSEMBLY

Power feed assembly has special insulating cover and is installed at the conductor bar joint.

Description	Catalog Number	Approx. Shipping Wt.
90 Amp Power Feed	8-90CF	0.33 lbs.
110 Amp Power Feed	8-110CF	0.34 lbs.
350 Amp Power Feed	8-350CF-N	1.40 lbs.

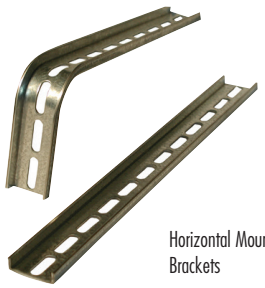
7. END COVER

Vinyl cover for protecting ends of conductor bar at the beginning and the end of a system.

Description	Catalog Number	Approx. Shipping Wt.
End Cover	8-EC	0.05 lbs.

9. MOUNTING BRACKETS

Vertical Web Mount Brackets



Horizontal Mounting Brackets

Mounting Brackets for all systems are comprised of roll-formed steel and are available with galvanized finish. Hanger assemblies sold separately.

- Web Mount brackets are for bottom-entry, main line/top-running applications.
- Flange Mount brackets are for bottom-entry, monorail/underhung applications and are available with or without mounting clips.
- Vertical Mount brackets for web mount, side-entry systems.

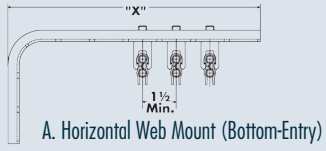
Length in Inches	Galvanized		
	15"	18"	24"
Web Mount	BKS-W15-G	BKS-W18-G	BKS-W24-G
Flange Mount	BKS-F15-G	BKS-F18-G	BKS-F24-G
Flange Mount with Clips	N/A	BKS-F18A-G	BKS-F24A-G
Ship Weight	1.50 lbs.	2.15 lbs.	2.65 lbs.
	4-Conductor		
Vertical Mount Web	BK-L4		
Ship Weight	2.00 lbs.		

SUPPORT SPACING

Standard 8-Bar 90, 110 and 350 Amp Systems:

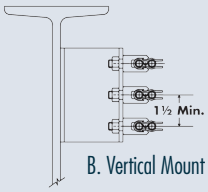
- Horizontal Mounting Applications—support every 5 feet
- Vertical Mounting Applications—support every 4 feet

TYPICAL INSTALLATIONS

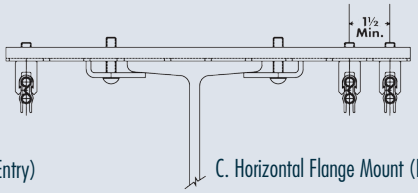


A. Horizontal Web Mount (Bottom-Entry)

Bracket	"X"
BKS-W15	11"
BKS-W18	14"
BKS-W24	20"



B. Vertical Mount (Side-Entry)



C. Horizontal Flange Mount (Bottom-Entry)

8. COLLECTOR MOUNTING POST

1" square bar welded to mounting plate.

Post for mounting collectors. One required for each crane running on the system.

Description	Catalog Number	Approx. Shipping Wt.
Collector Mounting Post	C-CMP	2 lbs.

10. CONNECTING TOOL

Connecting tool for joining conductor bar sections during installation.

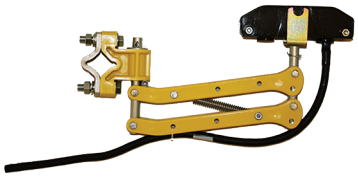
Description	Catalog Number	Approx. Shipping Wt.
Connecting Tool	8-T	2.80 lbs.

COLLECTOR ASSEMBLIES

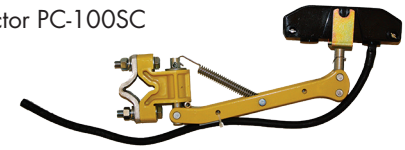
Collector assemblies are designed to travel at speeds up to 900 ft. per minute using standardized components. Electrobar 8-Bar collectors feature an easy to install shoe assembly—simply insert the shoe and cotter pin and make the electrical connection. Our graphite impregnated copper contact shoes are designed for long life and minimal drag. Standard Electrobar 8-Bar collectors have a 100 or 200 Amp continuous current rating. Single or tandem collector shoe assemblies are available.

11. COLLECTOR ASSEMBLIES WITH STANDARD SHOE HOLDERS

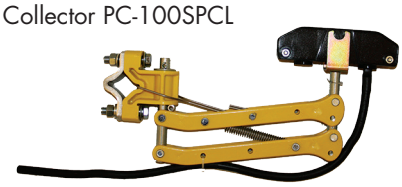
Pantograph Collector PC-100SPC



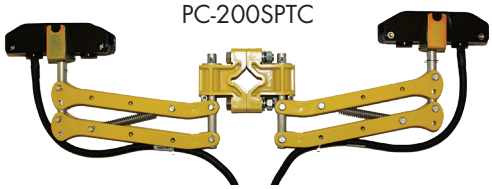
Collector PC-100SC



Lateral Collector PC-100SPCL

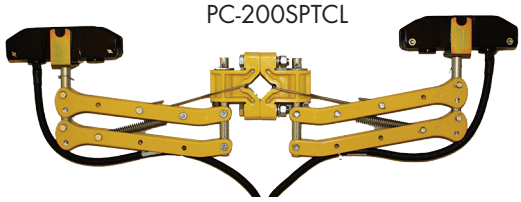


Pantograph Tandem Collector PC-200SPTC



Tandem Collector PC-200STC

Tandem Lateral Collector PC-200SPTCL



Single Arm				
Amps	Catalog Number	Description	Weight	
			Lbs.	Kgs.
100 Amp	PC-100SPC	Pantograph Collector	2.0	0.91
100 Amp	PC-100SC	Collector	1.8	0.8
100 Amp	PC-100SPCL	Lateral Collector	2.0	0.91

Tandem Arm				
Amps	Catalog Number	Description	Weight	
			Lbs.	Kgs.
200 Amp	PC-200SPTC	Pantograph Collector	4.0	1.8
200 Amp	PC-200STC	Collector	3.6	1.6
200 Amp	PC-200SPTCL	Lateral Collector	4.0	1.8

For fixed mounting posts 3.50" – 4.50" from conductor bar running surface. Minimum spacing between conductors is 1.75".

REPLACEMENT SHOE ASSEMBLY

C-100SCH

Single collector shoe for quick and easy replacement. Used on all collector assemblies above.

Catalog Number	Description	Weight	
		Lbs.	Kgs.
C-100SCH	Replacement Collector Shoe Assembly Standard	0.24	0.11

8. COLLECTOR MOUNTING POST

C-CMP

1" square bar welded to mounting plate.

Post for mounting collectors. One required for each crane running on the system.

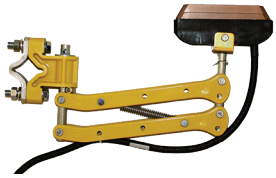
Catalog Number	Description	Weight	
		Lbs.	Kgs.
C-CMP	Collector Mounting Post	4	1.8

COLLECTOR ASSEMBLIES

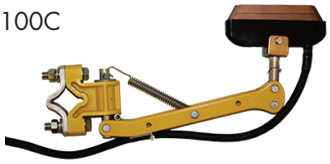
Collector assemblies are designed to travel at speeds up to 900 ft. per minute using standardized components. Electrobar 8-Bar collectors feature an easy to install shoe assembly—simply insert the shoe and cotter pin and make the electrical connection. Our graphite impregnated copper contact shoes are designed for long life and minimal drag. Standard Electrobar 8-Bar collectors have a 100 or 200 Amp continuous current rating. Single or tandem collector shoe assemblies are available.

12. COLLECTOR ASSEMBLIES WITH NARROW SHOE HOLDERS

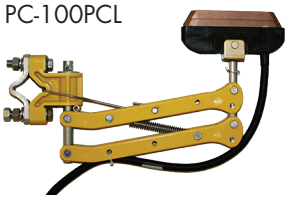
Pantograph Collector PC-100PC



Collector PC-100C



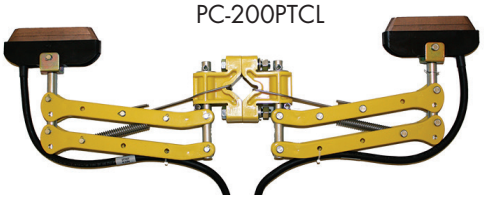
Lateral Collector PC-100PCL



Pantograph Tandem Collector PC-200PTC

Tandem Collector PC-200TC

Tandem Lateral Collector PC-200PTCL



Single Arm				
Amps	Catalog Number	Description	Weight	
			Lbs.	Kgs.
100 Amp	PC-100PC	Pantograph Collector	2.0	0.91
100 Amp	PC-100C	Collector	1.8	0.8
100 Amp	PC-100PCL	Lateral Collector	2.0	0.91

Tandem Arm				
Amps	Catalog Number	Description	Weight	
			Lbs.	Kgs.
200 Amp	PC-200PTC	Pantograph Collector	4.0	1.8
200 Amp	PC-200TC	Collector	3.6	1.6
200 Amp	PC-200PTCL	Lateral Collector	4.0	1.8

For fixed mounting posts 3.50" – 4.50" from conductor bar running surface. Minimum spacing between conductors is 1.50".

REPLACEMENT SHOE ASSEMBLY

C-100CH

Single collector shoe for quick and easy replacement. Used on all collector assemblies above.

Catalog Number	Description	Weight	
		Lbs.	Kgs.
C-100CH	Replacement Collector Shoe Assembly - Narrow	0.24	0.11

8. COLLECTOR MOUNTING POST

C-CMP

1" square bar welded to mounting plate.

Post for mounting collectors. One required for each crane running on the system.

Catalog Number	Description	Weight	
		Lbs.	Kgs.
C-CMP	Collector Mounting Post	4	1.8

MAGNETEK MATERIAL HANDLING
N49 W13650 Campbell Drive, Menomonee Falls, WI 53051 | WWW.MAGNETEKMH.COM
Toll-Free Phone 800.288.8178 | Toll-Free Fax 800.298.3503 | Phone 262.783.3500 | Fax 262.783.3510

MH298_Electrobar 8-Bar Brochure