

Insul 8[®] Side Contact Design Features

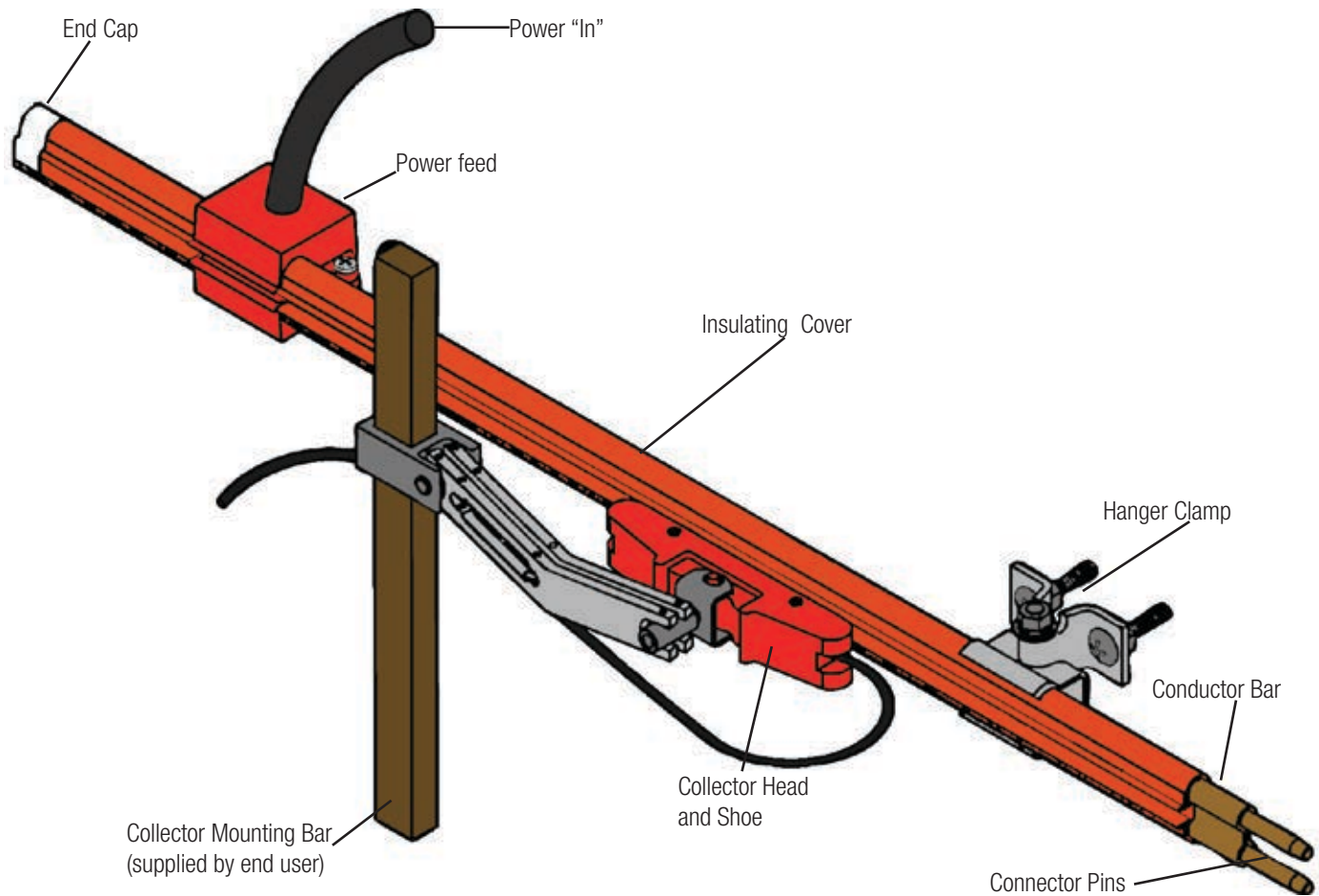
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Conductix-Wampfler Side Contact Conductor Bar is a variation of the 8 Bar system designed for lateral (side) entry of the collector. UL / CSA listed.



Side Contact is Ideal When:

- There is insufficient room for standard "bottom entry" mounting
- Conductors must be more closely spaced than standard 8 Bar allows



Component Descriptions

Conductor Bar: The supply of incoming power

Power feed: Attachment of incoming power

Collector: Collects the incoming power and transfers it to the moving machine

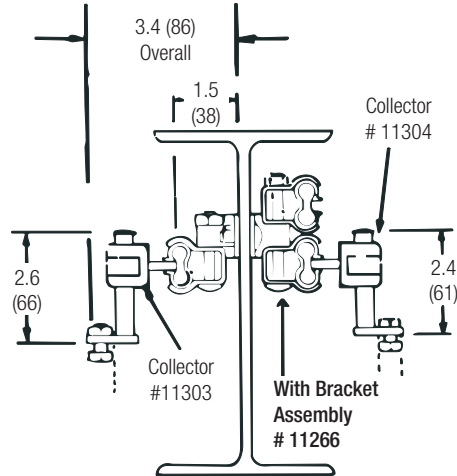
Hangers: Supports the conductor bar, may also be used as an anchor to direct movement due to expansion and contraction

End Cover: Safety protection at the end of conductor system

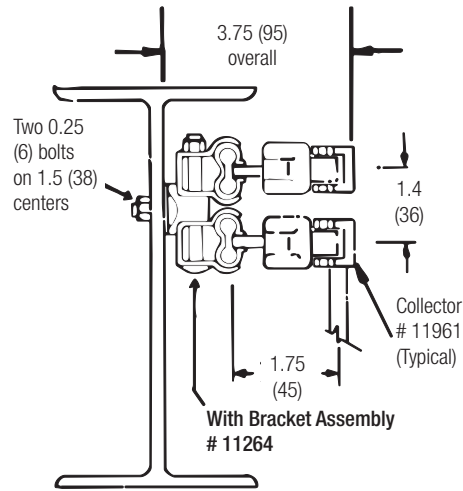
Typical Side Contact Mounting Arrangements

Shown below are some typical mounting arrangements for Side Contact. Trolleys on which collectors are mounted must be stabilized, particularly in systems involving discontinuous circuits. One acceptable way is to use guide rollers on the edge of the track flange.

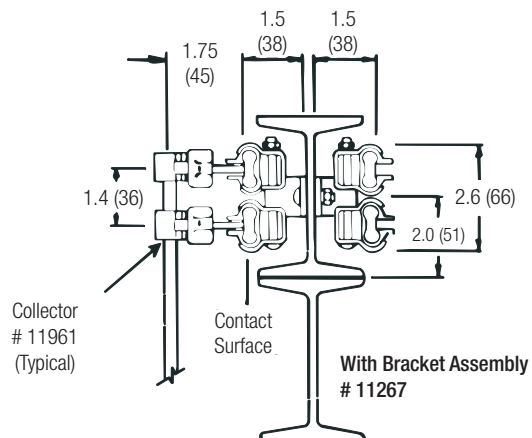
One Conductor Left and Two Right



Two Conductors on the Right



Two Conductor on the Right, Two on the Left



Side Contact Conductor Bar, Expansions, Power Feeds

Side Contact Conductor Bar comes with cover and connector pins installed. Joint Keepers are required when ordering copper or laminated bar. Bars are available in 40A, 90A, 110A, 250A, and 350A capacities @ 600 volts maximum. Expansion Sections listed below are required every 350 feet (106.7m) for 40A, 90A, and 110A systems or 250 feet (76.2m) for 250A and 350A systems to compensate for thermal expansion. Power Feeds bring outside power to the conductor bar.

Factory installed covers are available in:

- **Rigid PVC:** -10° F to 160° F (- 23.3° C to 71.1° C)
- **Medium Heat:** - 25° F To 250° F (- 31.7° C to 121.1° C)

Stainless Steel, 40A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05 M)	24273	7.0 (3.18)	24298	6.6 (2.99)
Conductor Bar, 5 ft (1.52 M)	24274	3.5 (1.59)	24299	3.3 (1.50)
Expansion Section, 10 ft (3.05 M)	24277	10.0 (4.57)	24302	10.3 (4.67)
Power feed	11289	0.34 (0.15)	11289	0.34 (0.15)
End Cover	11295	0.03 (0.01)	11295	0.03 (0.01)

Galvanized Steel, 90A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05m)	24275	4.5 (2.04)	24300	4.5 (2.04)
Conductor Bar, 5 ft (1.52m)	24276	3.5 (1.59)	24301	3.3 (1.59)
Expansion Section, 10 ft (3.05)	24278	6.7 (3.04)	24303	6.7 (3.04)
Power feed	11289	0.34 (0.15)	11289	0.34 (0.15)
End Cover	24424	0.03 (0.01)	24424	0.03 (0.01)

Galvanized Steel, 110A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05m)	11223	7.0 (3.18)	11239	6.6 (2.99)
Conductor Bar, 5 ft (1.52m)	11224	3.5 (1.59)	11240	3.3 (1.50)
Expansion Section, 10 ft (3.05)	11255	10.0 (4.57)	11259	10.3 (4.67)
Power feed	11289	0.34 (0.15)	11289	0.34 (0.15)
End Cover	11295	0.03 (0.0)	11295	0.03 (0.01)

Side Contact Conductor Bar, Expansions, Power Feeds

Stainless Clad Copper 250A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05m)	11227	7.0 (3.18)	11243	6.6 (2.99)
Conductor Bar, 5 ft (1.52m)	11228	3.5 (1.59)	11244	3.3 (1.50)
Expansion Section, 10 ft (3.05)	11256	11.0 (5.00)	11260	10.3 (4.67)
Power feed	11289	0.34 (0.15)	11289	0.34 (0.15)
End Cover	11295	0.03 (0.01)	11295	0.03 (0.01)

Copper Steel Laminate 250A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05m)	11231	7.0 (3.18)	11247	6.6 (2.99)
Conductor Bar, 5 ft (1.52m)	11232	3.5 (1.59)	11248	3.3 (1.50)
Expansion Section, 10 ft (3.05)	11257	11.0 (4.99)	11261	10.3 (4.67)
Power feed	11289	0.34 (0.15)	11289	0.34 (0.15)
End Cover	11295	0.03 (0.01)	11295	0.03 (0.01)

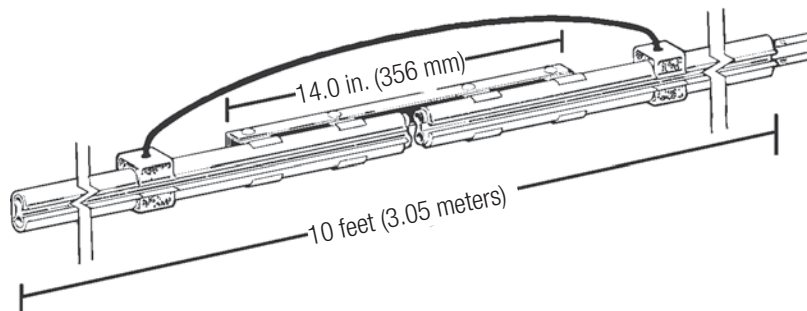
Electrolytic Copper 350A



Item	Rigid PVC Cover		Medium Heat Cover	
	Part No.	Wt lb (kg)	Part No.	Wt lb (kg)
Conductor Bar, 10 ft (3.05m)	11235	7.0 (3.175)	11251	6.6 (2.994)
Conductor Bar, 5 ft (1.52m)	11236	3.5 (1.588)	11252	3.3 (1.497)
Expansion Section, 10 ft (3.05)	11258	11.0 (4.990)	11262	10.3 (4.672)
Power feed	11289	0.4 (0.122)	11289	0.4 (0.122)
End Cover	11295	0.03 (0.014)	11295	0.03 (0.014)

Expansion Section

Expansion Sections compensate for the thermal expansion that occurs from a combination of ambient heat and electrical heat. Power feeds and flexible jumpers are factory installed to meet electrical and mechanical requirements of each system. Part numbers are located in the conductor tables - See pages 33-34.



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Side Contact Connectors and Covers

Connector Pins



Used to join the conductor bar together.

Description	Part No.	Wt lb (kg)
Galvanized steel for 110A	11120	0.8 (0.36)
Copper for 250 and 350A	11121	0.8 (0.36)
Galvanized steel for 90A	21914	0.8 (0.36)
Stainless steel for 40A	24196	0.8 (0.36)

Insulating Cover



Replacement Part in the event original supplied cover becomes damaged or cracked.

Available in PVC or Lexan cover. The cover is designed for indoor use.

Description	Part No.	Length ft (m)	Wt lb (kg)
Rigid PVC to 160° F	34579	10.0 (3.05)	1.5 (6.80)
Medium Heat to 250° F	11294	10.0 (3.05)	1.5 (6.80)

End Cover



Used to close the end of the conductors to cover exposed conductor and avoid accidental contact. Also used as a transfer cap for switch applications.

Description	Part No.	Wt lb (kg)
For 40, 110, 250 and 350A	11295	0.03 (0.01)
For 90A	24424	0.03 (0.01)

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Side Contact Power Feed & Pick-up Guide

Power feed

Fully insulated clamp is easily installed anywhere on the system for feeding power to the conductor bar.



11289 (shown with only half cover)

Description	Part No.	Wt lb (kg)
Complete Assembly, Clamp & Case	11289	0.34 (0.15)
Power feed case with hardware	11290	0.20 (0.09)
Clamp Assembly	11291	0.10 (0.05)

Pick-up Guides

Used at the end of conductors to guide collectors that completely leave the conductors (Discontinuous Systems) then re-engage.

Requires use of self-centering collectors, see page 39-40.

NOT TO BE USED FOR SWITCH APPLICATIONS



Description	Part No.	Wt lb (kg)
For all systems (except 90A)	11292	1.25 (0.57)

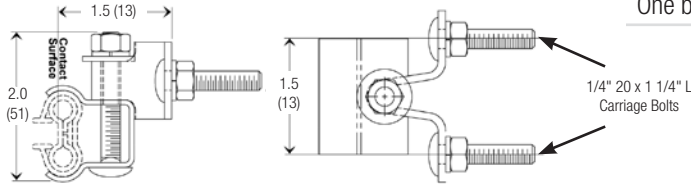
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Side Contact Hanger Brackets and Clamps

Provides a simple method for installing Side Contact Conductors on conveyors, monorails, bridges, crane runways and switches. These supports secure and separate the insulated conductors uniformly with a minimal amount of installation time. Hanger clamps are all stainless steel with 1/4" zinc plated hardware.

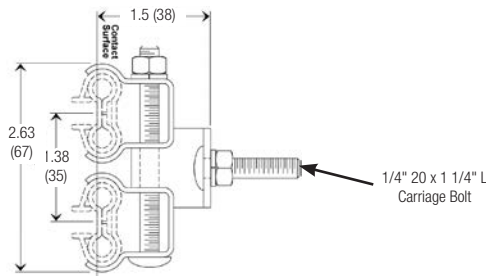
Contact Factory if you need a configurations not shown.

Single Bar, One Side of Beam



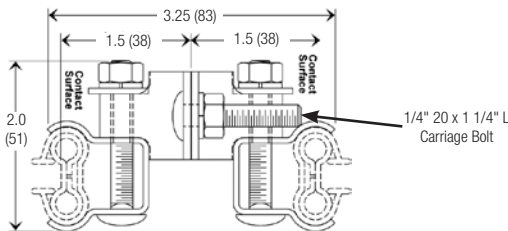
For	Part No.
One bar, one side of beam	11263

Two Bars, One Side of Beam



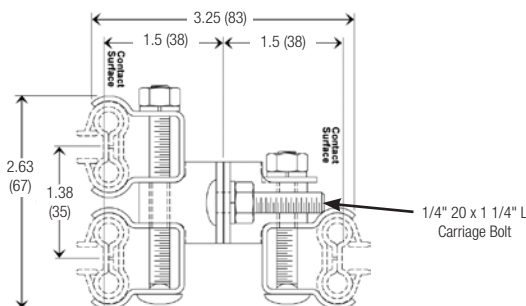
For	Part No.
Two bars, one side of beam	11264

One Bar, Each Side of Beam



For	Part No.
One bar, each side of beam	11265

Two Bars One Side of Beam, One on the Other

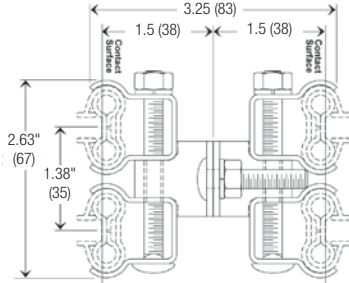


For	Part No.
Two bars one side of beam, one on the other	11266

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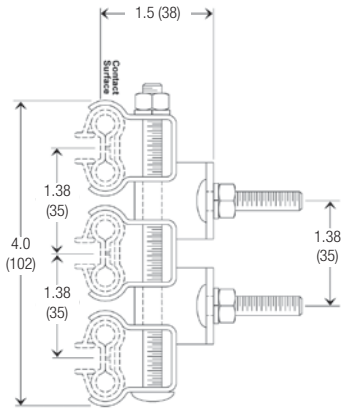
Side Contact Hanger Brackets and Clamps

Two Bars, On Each Side of Beam



For	Part No.
Two bars, each side of beam	11267

Three Bars, On One Side of Beam



For	Part No.
Three bars on one side of beam	31844

Single Conductor Hangers



17690



27927

Standard hanger spacing should every 4 feet for straight runs or every 3 feet for curves.

Description	Part No.
Stainless Steel hanger with 1/4" zinc plated hardware	27927
Stainless Steel hanger with 1/4" stainless steel hardware	27926
Stainless Steel hanger with insulator and 1/4" stainless steel hardware	17690

Side Contact Collectors

Side Contact Collectors are available in numerous configurations to match the application. Note that collectors should not be used as power switching devices. The resultant arcing may cause rapid deterioration of both contact shoes and conductor bars. Ampere capacity of conductor bars, power feeds, jumpers etc., should be greater than or equal to that of the system. Contact factory for systems using tandem mounted collectors and special requirements. For mechanically discontinuous systems, only collectors designated as "self-centering" should be used.

Contact shoe pressure: Between 4 and 6 pounds (1.81 kg to 2.72 kg) for all collector styles.

M-Head, L-Base Type, 40A

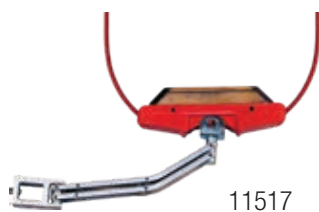


For conveyor, monorail systems, and crane bridges. Operates through curves at a minimum radii of 9.0 (228).

Standard pigtail length: 15" (381 mm)

Description	Part No.
Standard Collector, for continuous systems	11961
Self Centering Collector, for discontinuous systems that are equipped with pickup guide 11292	12295

M-Head, L-Base Type, 80A

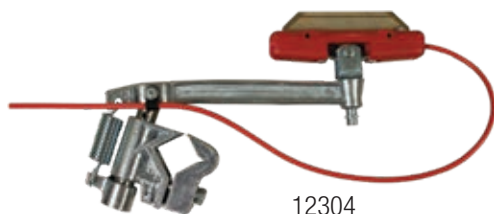


For conveyor, monorail systems, and crane bridges. Operates through curves at a minimum radii of 9.0 (228). Includes an additional pigtail for extra current capacity.

Standard pigtail length: 15" (381 mm)

Description	Part No.
Standard Collector, for continuous systems	11517
Self Centering Collector, for discontinuous systems that are equipped with pickup guide 11292	11518

M-Head, H-Base Type, 40A



This rugged collector provides a long stroke for continuous systems where clearance is not restricted.

Standard pigtail length: 15" (381 mm)

Description	Part No.
Standard Collector, for continuous systems	12304
Same as 12304, except a counter weight is added for lateral mount	12306

Side Contact Collectors

M-Head, L-Base Type, Tandem 160A



11519

For systems that require 160A capacity. Operates through curves to minimum radii of 24.0 (610). Has tandem collectors and additional pigtails for the added current capacity.

Standard pigtail length: 15" (381 mm)

Description	Part No.
Standard Collector, for continuous systems	11519
Self-centering tandem. For discontinued systems equipped with pickup guide 11292 that require 160A capacity.	15046

M-Head, L-Base Type, Tandem 80A



11955

Continuous systems that require 80A capacity. Operates through curves to minimum radii of 24.0 (610). Has tandem collectors.

Standard pigtail length: 15" (381 mm)

Description	Part No.
Standard Collector	11955
Self-centering tandem. For discontinued systems equipped with pickup guide 11292 that require 80A capacity.	11954

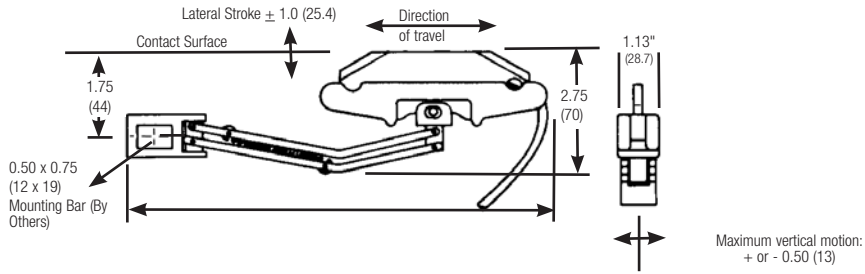
Side Contact Collector Parts

Description	Part No.
Case only, for M-Head, H-Base Collectors	11307
Case only, for M-Head, L-Base collectors	11300
Contact shoe (copper graphite) for all M-Head collectors	14104
Head assembly for M-Head, H-Base collectors	12296
Head assembly for M-Head, L-Base collectors	11930

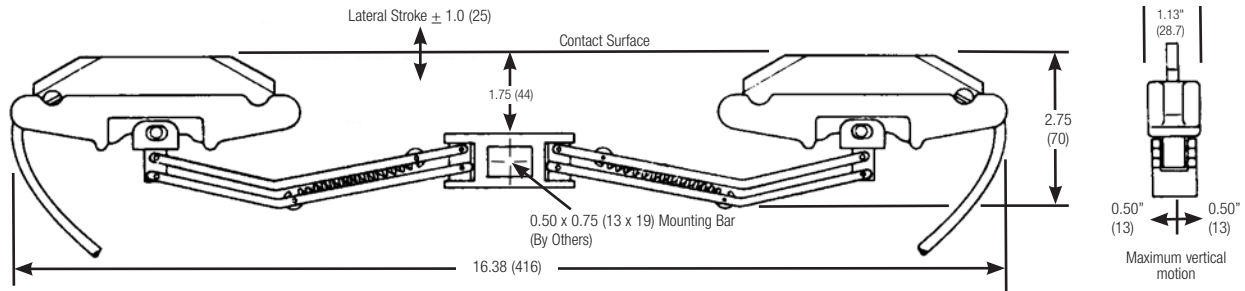
Side Contact Collector Parts and Dimensions

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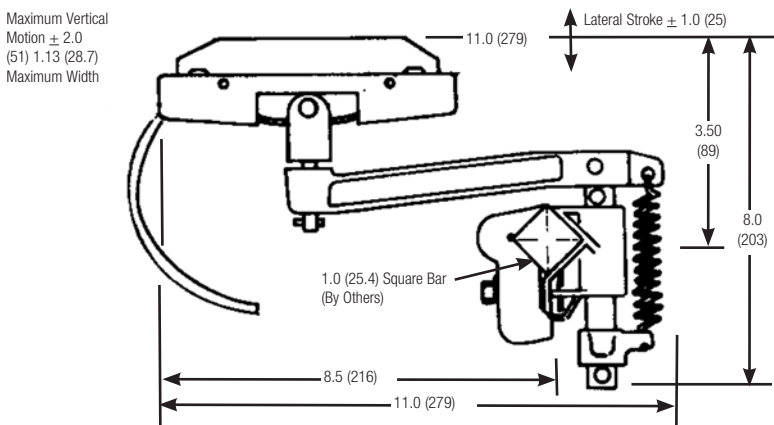
M-Head, L-Base Collectors (11961 shown)



M-Head, L-Base Collectors, Tandem (11955 shown)



M-Head, H-Base Collectors (12304 shown)



Side Contact Slip Rings & Curves

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Curves

Side Contact can be set up to handle curves, horizontally or vertically, with standard 6.0 (152) tangents on each end. The systems are specially designed for curves, switches, interlocks, gaps, and continuous control circuits. They are readily adaptable to most operating conditions. Both conductor bar and insulated cover are sufficiently flexible to permit bending to any desired radius up to the noted minimums. Hanger spacing is every 3 feet (0.91 meters) on curves. Maximum bar length is 10 feet (3.05 meters). Information required for curves are:

- Radius for each conductor bar
- Angle
- Inside or outside contact
- Tangents if other than 6" standard.

Conductor Type	Cover	Current Cap. (Amps)	Min. Radius	Part No.
Galvanized Steel	PVC (standard heat)	110	9.0 (229)	11226
Stainless Clad Copper Laminate	PVC (standard heat)	250	9.0 (229)	11230
Copper Steel Laminate	PVC (standard heat)	250	9.0 (229)	11234
Rolled Copper	PVC (standard heat)	350	9.0 (229)	11238
Galvanized Steel	Lexan (medium heat)	110	57.0 (1448)	11242
Stainless Clad Copper Laminate	Lexan (medium heat)	250	57.0 (1448)	11246
Copper Steel Laminate	Lexan (medium heat)	250	57.0 (1448)	11250
Rolled Copper	Lexan (medium heat)	350	57.0 (1448)	11254

Slip Rings, PVC Standard Heat Covers

Conductor Type	Current Cap. (Amps)	Radius Range - in. (mm)	Pieces	Part No.
Galvanized Steel	110	9.0 to 34.0 (229 to 864)	2-180 ⁰ pieces	23642
Stainless Clad Copper Laminate	250	9.0 to 34.0 (229 to 864)	2-180 ⁰ pieces	23643
Copper Steel Laminate	250	9.0 to 34.0 (229 to 864)	2-180 ⁰ pieces	23644
Rolled Copper	350	9.0 to 34.0 (229 to 864)	2-180 ⁰ pieces	23645
Galvanized Steel	110	34.5 to 51.0 (876 to 1295)	3-120 ⁰ pieces	23646
Stainless Clad Copper Laminate	250	34.5 to 51.0 (876 to 1295)	3-120 ⁰ pieces	23647
Copper Steel Laminate	250	34.5 to 51.0 (876 to 1295)	3-120 ⁰ pieces	23648
Rolled Copper	350	34.5 to 51.0 (876 to 1295)	3-120 ⁰ pieces	23649
Galvanized Steel	110	51.1 to 69.0 (1298 to 1753)	4-90 ⁰ pieces	23650
Stainless Clad Copper Laminate	250	51.1 to 69.0 (1298 to 1753)	4-90 ⁰ pieces	23651
Copper Steel Laminate	250	51.1 to 69.0 (1298 to 1753)	4-90 ⁰ pieces	23652
Rolled Copper	350	51.1 to 69.0 (1298 to 1753)	4-90 ⁰ pieces	23653

Appendix I - Selection of Systems

Carefully review your equipment and application to choose the correct system and reduce the risk of system failures, equipment downtime, and maintenance time and expense. There are eight interrelated factors that should be considered when selecting the correct system.

Environmental Conditions

- **Freezing Conditions** - Might require a **heater wire** to keep the conductor contact surface free from ice.
- **Water and/or Dust** - Might adversely affect components and might require the use of insulated hangers to better isolate the “live” conductors from ground.
- **Chemicals** – Can adversely affect system components. Acidic or basic fumes may require stainless steel hardware and components. With the Hevi-Bar II system, you may want to consider the optional “**Dura-Coat**” treatment to reduce component corrosion. This is available for 8-bar; contact the Factory for details.
- **Cutting Oils** – May negatively affect polycarbonate components
- **Radiation** - May require the use of non-PVC components and non-galvanized plated components.

Mounting and Installation

- **Bottom Entry** – Puts the running surface on the bottom side of the conductor, which keeps dust, water, or debris away.
- **Lateral (or side) Entry** – Can be used if space is limited. Lateral mounting is not recommended for dusty, outdoor, or wet conditions. You may be able to stagger the collectors to decrease the space required for the system.
- **Installation** – Collector Arms are designed to accommodate a certain amount of movement or misalignments between the crane/ vehicle and the conductor. However, if misalignments are excessive the collector could disengage from the bar.
Poor collector installation is the single greatest cause of new system problems. Installation Instructions should be strictly followed to optimize system performance and prevent problems. Manuals are available at www.conductix.us.

Number of Power and Bonding Conductors Required

- **Power Legs** - Each “power leg” requires one run of bar
- **Bonding (Ground) Bar** - Per article 610.61 (National Electrical Code): “The trolley frame and bridge frame shall not be considered as electrically grounded through the bridge and trolley wheels and its respective tracks. A separate bonding conductor shall be provided”. A bonding bar is required for all overhead cranes built after 2004.

Moving Versus Stationary Applications

- **Moving Machine** - Draws maximum power as it moves. Current-induced heat is dissipated over a wider area of the conductor.
- **Stationary Machine** - Draws maximum power while stationary for extended periods (e.g.: welding stations, testing equipment, or cranes that repeatedly lift in the same location). Current-induced heat is not easily dissipated when collectors are stationary. In these cases, verify that the collectors and conductors are adequate for the application.

Current and Voltage Requirements

The purchase of a new conductor system affords the opportunity to size the system for additional cranes or larger cranes that may be added in the future. *A small investment now could avoid major investments in the future.*

- **Conductor Bar Rating** – Per NEC Article 610-14, the bar must accommodate 100% of the current of all the largest motors involved in a single movement, plus 50% of the next largest motors. The auxiliary hoist motor must be included if it works in conjunction with the main hoist. The system also must accommodate 100% the current draw of auxiliary equipment such as magnets, lighting, air conditioners, etc. that operate when the largest motors are energized.
- **Multiple Cranes on a Single Runway** – Sum the amperage requirements of each crane, then apply the appropriate “*diversity factor*” (NEC Table 610-14e). All cranes do not pull the maximum load all the time or pull the load at the same time.
- **Two Cranes Working in Tandem** - Do not apply the diversity factor, since both run at the same time. See Specification Data Sheet, Pgs. 6-7 for further “total load” calculation details.