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Independent Protection Co., Inc.

Corporate Mission Statement

Our corporate mission is to provide manufactured products at a level to reward our team members with above normal living means and provide long-term job security to our employees while maintaining our position as a world class manufacturer and supplier of transit/specialty vehicles and lightning protection materials as defined by our customers in the areas of quality, delivery, technology and cost.

Our long-term objective is to instill in all our team members the belief that success, profit and job security can only be provided by satisfied customers.

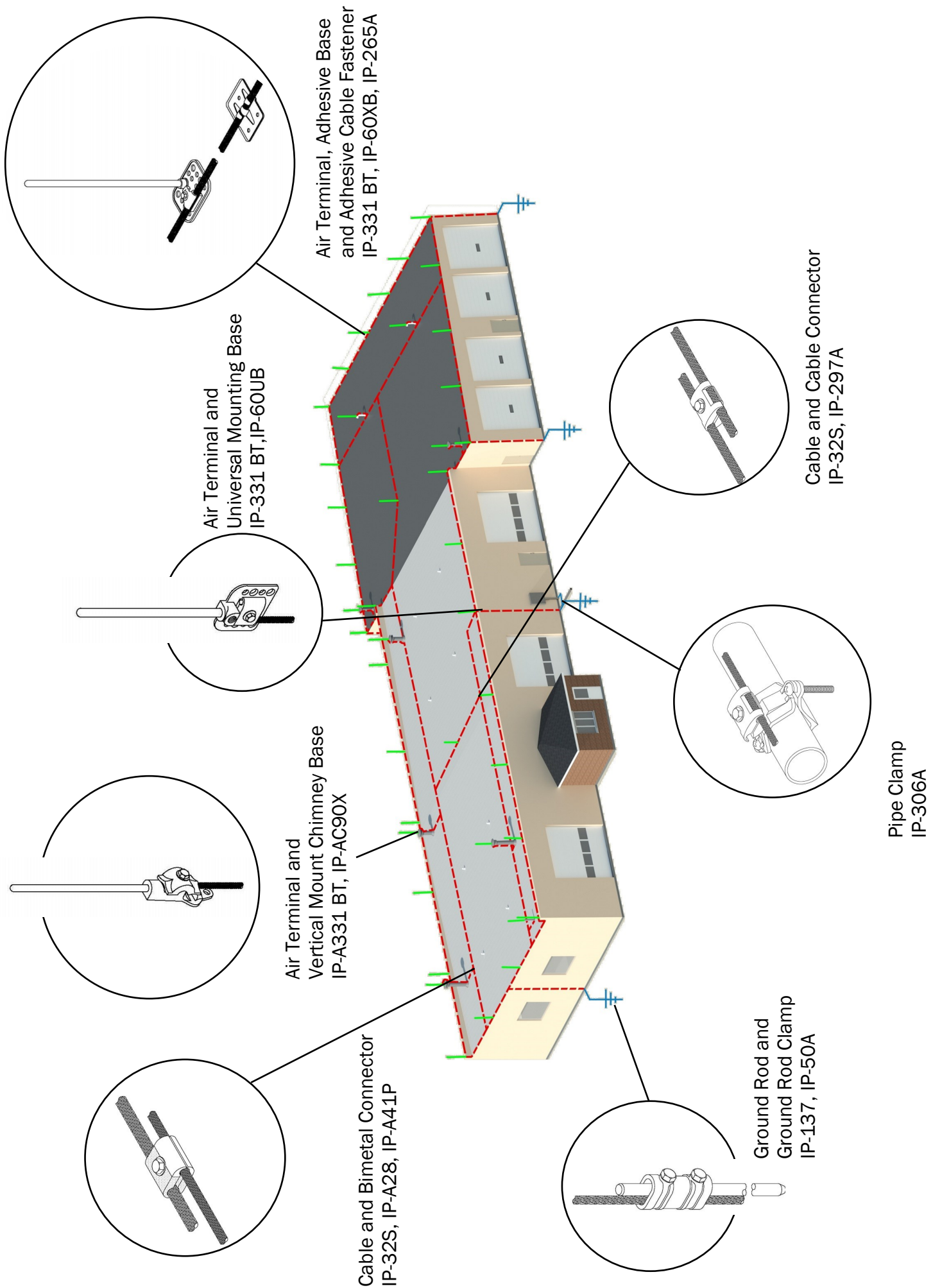
Our goal is to develop customer service as our No. 1 priority in the belief that if we satisfy our customers beyond their expectations; satisfied customers will provide success, profit and job security to everyone within our organization.

Spiritual Mission Statement

Our spiritual mission is to provide a manufacturing work environment that will promote and strengthen a strong belief in God our Father, which will hopefully lead to a personal one on one relationship with Jesus Christ our Lord for everyone of our team members, customers and other contacts.

Our long-term objective is to support an attitude where family takes top priority and where involvement in church and local community service activities are encouraged.

Our goal is to tithe 10% of our annual corporate profits to the glory of God for the work of His Kingdom and the support of His will throughout the world.



Air Terminal and Universal Mounting Base
IP-331 BT, IP-60UB

Air Terminal, Adhesive Base and Adhesive Cable Fastener
IP-331 BT, IP-60XB, IP-265A

Air Terminal and Vertical Mount Chimney Base
IP-A331 BT, IP-AC90X

Cable and Bimetal Connector
IP-32S, IP-A28, IP-A4.1P

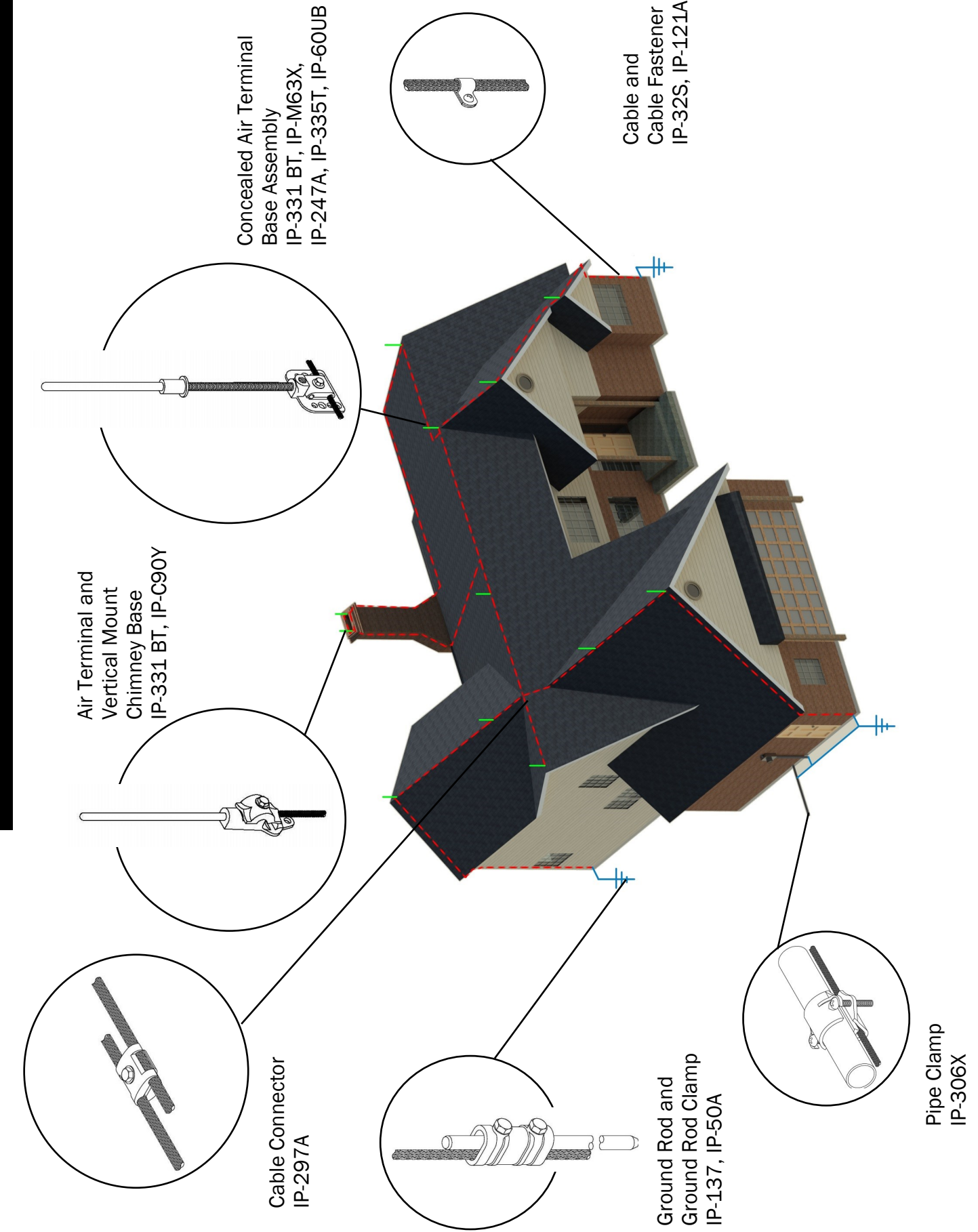
Cable and Cable Connector
IP-32S, IP-297A

Ground Rod and Ground Rod Clamp
IP-137, IP-50A

Pipe Clamp
IP-306A

TYPICAL PITCHED ROOF LIGHTNING PROTECTION SYSTEM

4



4

F.O.B. POINT– Freight costs are the responsibility of the purchaser as all freight is FOB Goshen, IN. IPC prepays the freight and charges are added to the invoice.

TERMS – With approved credit, our standard terms of sale is **2% discount 15 days/Net 30 days**. Open credit limits are available after satisfactory review of your bank and trade references. Request a credit application to initiate the process.

CREDIT APPROVAL FOR U.S. CUSTOMERS – IPC accepts payment by Visa, MasterCard, and Discover. COD and checks in advance are also acceptable methods.

CREDIT POLICY FOR FOREIGN CUSTOMERS – IPC accepts pre-payment direct to our bank by wire transfer. Orders are held and do not leave our plant until the transfer is made. Payment by credit card is also acceptable.

MINIMUM \$ ORDER – IPC has a minimum charge per order of \$50, excluding shipping cost. This minimum fee covers the internal processing costs associated in our order entry and shipping departments.

FAX, EMAIL OR HARD-COPY ORDERS – To promote order accuracy in processing your order, IPC encourages you to fax or email your orders into our office. By using of these methods, IPC provides an additional **1% hard copy discount** as a credit against the invoice for the parts. Maximum credit allowed is \$100.

PACKAGING OF YOUR SHIPMENT – Most all product is packaged in corrugated cartons. For truck size shipments, cartons and/or spools are secured on pallets to prevent damage during transit

METHOD OF SHIPMENT – U.S. Unless there are specific routing instructions provided, IPC will select the most economical method of transportation. FedEx ground is the preferred carrier for smaller parcels. For truck size shipments, we utilize a freight specialist who selects the most economical carrier to your destination.

METHOD OF SHIPMENT - FOREIGN - Shipments to foreign customers are made using your designated freight forwarder or IPC can assist you by using a local freight forwarder.

FREIGHT ESTIMATES – For instances where timing is critical, IPC is able to provide you with freight cost and delivery options prior to the shipment leaving our facility. You can then select the best option in terms of cost and delivery.

INVENTORY ITEMS – With few exceptions, most all products in the catalog are available for immediate shipment. For these items, you can expect your order will be shipped within 24 hours. IPC Customer Service will advise a preliminary shipping date on an item that is not in inventory.

SPECIAL ORDER ITEMS – As IPC continues to steam-line our product line, some products in earlier catalogs might still be available. These items are considered obsolete for various reasons. Delivery could be extended and special pricing applies due to additional setup and handling. Check with IPC prior to quoting older parts numbers to your customers to be sure the product can still be supplied. Orders placed for special order items are non-cancelable and non-refundable.

PRODUCT WARRANTY – IPC warrants its products to be free from defects and will replace defective items for up to a period **five years**. This warranty is based on proper installation techniques of the installing contractor.

RETURN MATERIAL AUTHORIZATION – For shortages or incorrect parts shipped, please call IPC Customer Service within 14 days after receipt of shipment. For product returns on defective parts, also contact IPC Customer Service within 14 days after receipt of shipment.

RE-STOCKING CHARGE – A re-stocking charge of 25% applies to returned products that are returned in 'like new' condition. This defrays our cost of handling and processing these parts in our plant. Items must be returned within 14 days from the original date of shipment. Call IPC Customer Service prior to returning parts.

DAMAGED SHIPMENTS – For shipments that are delivered and received as damaged, the commercial truck carrier is responsible for any claims. Be sure to note on the Bill of Lading that goods were received in a damaged condition to protect yourself and to avoid any issues when a claim is filed for damages. The time frame to file a claim against the carrier is normally within 5 days after receipt of shipment. Call IPC Customer Service for any assistance.

PRODUCT QUALITY – The goal for IPC production is to ship the best quality products to our customers. If for some reason, we do not fulfill this requirement, please contact IPC Customer Service. We will correct the situation and satisfy your expectations.



THIS CATALOG EDITION - This issue of our catalog is now the only active published edition provided to dealer contractors, prospective dealers, architects, engineers and others. Older editions should be used as only a reference editions. If you wish to procure part numbers from prior catalog editions, please call IPC to verify the part can still be manufactured.

UL LISTED PRODUCT - Products manufactured by IPC are listed and approved for use in lightning protection system installations by Underwriters Laboratories. Regular plant visits by UL are made to verify that IPC products meet or exceed the criteria established by UL96. UL approved parts carry the UL mark along with IPC identification. Part numbers approved by UL are shown throughout the catalog and will display the UL logo.

QUOTATIONS - IPC provides written quotations on selected materials and quantities when requested. IPC engineering provides material take offs to our dealer contractors. The take-offs are used by them as they prepare quotes, bids and estimates for submission to their customers.

Installation of a lightning protection system should be provided by qualified and trained personnel. On occasion, IPC will provide complete quotations to architects, engineers and contractors based on information that our office receives. IPC attempts to make every quote as complete as possible based on information supplied. In any case, IPC request that you fully review each quote and adjust the material or part selection as necessary.

Feel free to call our engineering staff for any design or installation questions **prior** to submitting the bid to your customer.

SUBMITTAL DRAWINGS - IPC supplies our dealer contractors with AutoCAD® submittal drawings in response to requests to customer requests. IPC develops drawings after a full review of the specifications and blueprints provided in addition to other verbal communications. Once submittals are finalized, plans are transmitted electronically in AutoCAD® or PDF file formats.

On occasion, a customer may make direct contact with IPC in regards to changes on a particular submittal. Because of potential cost implications, IPC will refer the customer request back to the contractor responsible for the system installation.

For assistance in the submittal process, feel free to contact IPC engineering.

DESIGN ASSISTANCE - IPC's Engineering/Design Department will provide design and installation assistance for those unique or difficult installations. Please feel free to call IPC for our perspective and input.

DESIGN CRITERIA - Nationally recognized standards are used as the basis for design of lightning protection systems. These standards are: National Fire Protection Association, 780; Underwriters Laboratories, 96A; and the Lightning Protection Institute, 175.

REVISIONS TO STANDARD PARTS - At times, there may be applications where an alteration is necessary for standard parts that IPC supplies. I.e. longer length threaded stem, larger mounting hole diameter, etc. Let IPC know of the situation and to verify that we can assist you with your special need.

PRODUCT REVISIONS/ADDITIONS - IPC welcomes your ideas for product improvement on existing parts or potential new parts. The IPC Team will evaluate and discuss the suggestions and then decide a plan of action. In addition, IPC might solicit our larger customers for their input and review. In any case, IPC will keep you informed of the status of the request.

ADHESIVE REQUIREMENTS - IPC offers a limited selection of adhesives for your needs. We suggest for compatibility reasons that you contact the roofing manufacturer for their recommendation for the specific application in question.

FASTENING REQUIREMENTS - When purchasing IPC components don't forget about purchasing products for your fastening requirements. You can find these items in the Fastener Section.

TIN COATING - At times there are occasions where tin (lead) coating is required or specified. For products that require this enhancement, please advise Customer Service when placing your order. Additional charges apply for this service.

NICKEL PLATING - If nickel plating is required on strike termination devices, we can provide this for you. This will normally require additional processing of 10-14 Days. Special pricing applies based on the quantity.

ADDITIONAL CATALOGS - IPC has three other catalog editions available for the following equipment: Trees, Heavy Duty Stack and Ornamental. To request any of these catalog supplements, please contact Customer Service at IPC.



Smooth (UL)



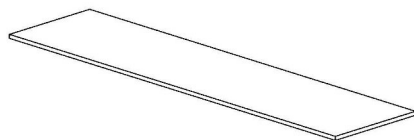
Concentric Strand (UL)



Rope Lay (UL)

Above drawings are typical for cables below.

IPC #	Class	Type Weave	Number Strands	Wire Gauge	Circular Mils	Wt. per 1,000'	Approx. Size	Cable Size	Std. Spool Size	Tinned
Copper Cable										
28S	1	Smooth	28	17	57,400	190	7/16"	No. 3	500'	No
32S	1	Smooth	32	17	64,800	215	15/32"	No. 2	250' & 500'	No
32L	1	Smooth	32	17	64,800	215	15/32"	No. 2	250' & 500'	Yes
40	2	Rope Lay	28	14	121,968	375	1/2"	1/0	250' & 500'	No
40L	2	Rope Lay	28	14	121,968	375	1/2"	1/0	250' & 500'	Yes
21	2	Rope Lay	30	14	130,680	416	1/2"	2/0	250'	No
G3	2	Rope Lay	28	12	209,503	662	5/8"	4/0	250'	No
Aluminum Cable										
A28	1	Smooth	28	14	118,300	130	5/8"	1/0	250' & 500'	No
A30	2	Conc. Strand	37	12-1/2	211,468	200	9/16"	4/0	250' & 500'	No
Copper Secondary Bonding										
22		Smooth	14	17	28,500	90	1/4"	No. 6	250' & 500'	No
Aluminum Secondary Bonding										
A22		Smooth	10	14	43,000	39	5/16"	No. 4	500'	No



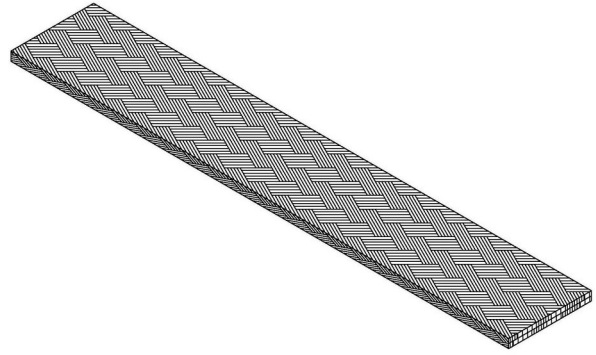
IPC #	Class	Type	Width	Thickness	Wt. Per 1,000'	Std. Coil Size	Tinned
Copper Bonding Strap							
49	1	Strap	1"	0.051	193	25' & 50'	No
49X	1	Strap	1"	0.051	193	25' & 50'	Yes
49Y	1	Strap	1-3/4"	0.064	440	25' & 50'	Yes
Aluminum Secondary Bonding Strap							
A48	1	Strap	5/8"	0.064	48	25' & 50'	No
A49	1	Strap	1"	0.064	73	25' & 50'	Yes
Copper Secondary Bonding Strap							
48A	1	Strap	5/8"	0.051	128	25' & 50'	No
48B	1	Strap	5/8"	0.051	128	25' & 50'	Yes



45

Flexible Copper Bonding Cable

480 strands of 30 gauge copper, 3/4" wide x 1/8" thick, 48,000 circular mils. Wt. is 160 lbs. per 1,000 ft. Standard spool size is 250'.



A45

Flexible Aluminum Bonding Cable

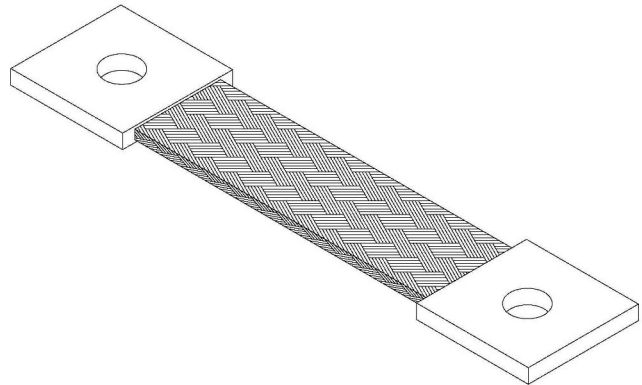
Aluminum. Description same as above. Wt. is 50 lbs. per. 1,000 ft.



184

Flexible Bonding Connector

480 strands of 30 gauge copper, 3/4" wide x 1/8" thick, 48,000 circular mils. Connector size is 3/4" wide x 11" overall or 10" from center hole to center hole. Bolt hole is 3/8" diameter. Other lengths available upon request. Wt. .16 lbs. each.



A184

Flexible Bonding Connector

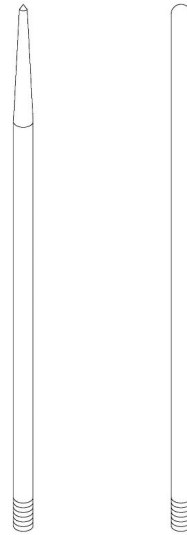
Aluminum. Description same as above. Wt. .06 lbs. each.



**Class I Solid Copper
3/8" Diameter Air Terminals**

Length	Sharp Tip - Part #	Blunt Tip - Part #	Weight Lbs.
12"	330	330 BT	.52
18"	330A	330A BT	.60
24"	330B	330B BT	.80
36"	330C	330C BT	1.26
48"	330D	330D BT	1.68
60"	330E	330E BT	2.10
72"	330F	330F BT	2.52

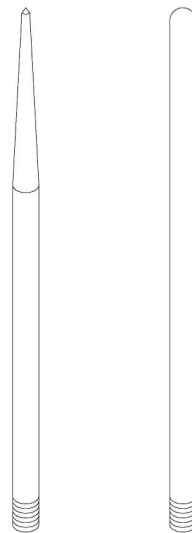
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**Class II Solid Copper
1/2" Diameter Air Terminals**

Length	Sharp Tip - Part #	Blunt Tip - Part #	Weight Lbs.
12"	331	331 BT	.62
18"	331A	331A BT	1.00
24"	331B	331B BT	1.38
36"	331C	331C BT	2.14
48"	331D	331D BT	2.88
60"	331E	331E BT	3.66
72"	331F	331F BT	4.44

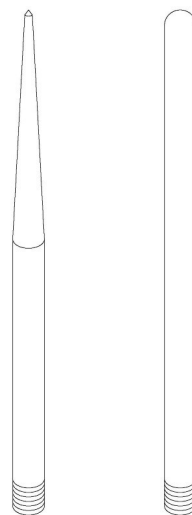
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**Class II Solid Copper
5/8" Diameter Air Terminals**

Length	Sharp Tip - Part #	Blunt Tip - Part #	Weight Lbs.
12"	332	332 BT	.90
18"	332A	332A BT	1.46
24"	332B	332B BT	2.08
36"	332C	332C BT	3.24
48"	332D	332D BT	4.44
60"	332E	332E BT	5.40
72"	332F	332F BT	6.48

*
* 



Note: Other lengths available upon request.

* May require additional lead time.

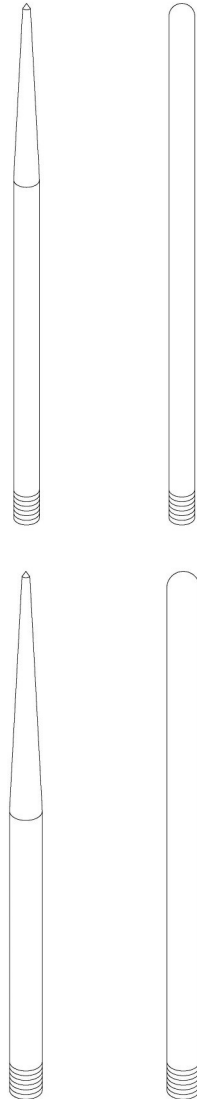
**Class I Solid Aluminum
1/2" Diameter Air Terminals**

Length	Sharp Tip - Part #	Blunt Tip - Part #	Weight Lbs.
12"	A331	A331-BT	.20
18"	A331A	A331A-BT	.30
24"	A331B	A331B-BT	.42
36"	A331C	A331C-BT	.66
48"	A331D	A331D-BT	.88
60"	A331E	A331E-BT	1.08
72"	A331F	A331F-BT	1.36



**Class II Solid Aluminum
5/8" Diameter Air Terminals**

Length	Sharp Tip - Part #	Blunt Tip - Part #	Weight Lbs.
12"	A332	A332-BT	.28
18"	A332A	A332A-BT	.46
24"	A332B	A332B-BT	.60
36"	A332C	A332C-BT	.93
48"	A332D	A332D-BT	1.34
60"	A332E	A332E-BT	1.56
72"	A332F	A332F-BT	1.87



Note: Other lengths available upon request.

* May require additional lead time.

M312 BT

Spring Point Air Terminal

Assembly consists of 1/2" x 12" length solid copper blunt tip air terminal mounted on a 6" stainless steel spring assembly. Total overall length is 18". Please specify bottom thread configuration when ordering. Longer length air terminals available upon request.

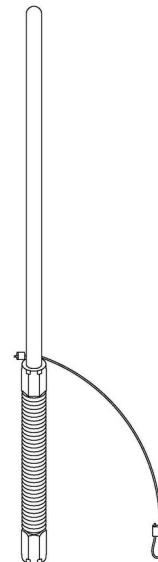
Wt. 1.28 lbs. each.

MA312 BT

Spring Point Air Terminal

Aluminum. Description same as above.

Wt. .60 lbs. each.



240W

Decorative Strike Termination Device

Cast solid bronze decorative terminal. Part is nickel plated and has 3/8" female threads.

Wt. .54 lbs. each.

A240W

Decorative Strike Termination Device

Cast aluminum with 1/2" females threads.

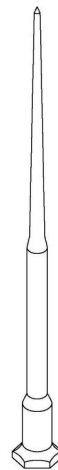
Wt. .16 lbs. each.

240Z

Decorative Strike Termination Device

Cast solid bronze decorative terminal. Part is nickel plated and has 1/2" female threads.

Wt. .54 lbs. each.

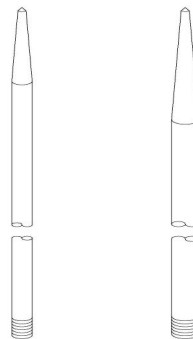


Tin Coated Solid Copper Strike Termination Device

Dimensions	Part #	Weight Lbs.
3/8" x 36"	90	1.24
3/8" x 48"	90B	1.68
3/8" x 60"	91	2.10
1/2" x 36"	G90X	2.14
1/2" x 60"	G91X	3.68



Note: Other lengths available upon request



256

Tin Coated Copper Flue Tile Support

For use with 3/8" rod and standard or round tile up to 7/8" thick.

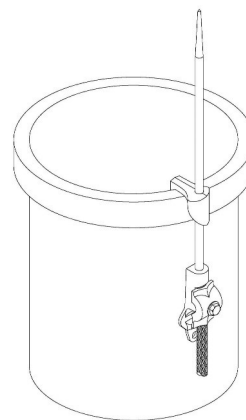
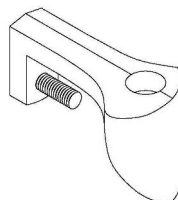
Wt. .18 lbs. each.

256X

Large Tin Coated Copper Flue Tile Clamp

For use with 3/8" rod and tile up to 1 – 3/8" thick.

Wt. .22 lbs. each.



A256X

Large Aluminum Flue Tile Clamp

For use with 1/2" rod.

Wt. .08 lbs. each.



Tube Points

- Furnished in 5/8" OD and in copper and aluminum.
- Tube points are shipped plain as our standard product.
- Full nickel plating is available for up to 48" in length. Add "NP" to part number.
- Point bushings or couplers are ordered as separate components.

Length	Copper - Part #	Weight Lbs.	Aluminum - Part #	Weight Lbs.
12"	101	.22	A101	.10
14"	102	.28	A102	.12
16"	103	.30	A103	.14
18"	104	.34	A104	.14
24"	104A	.46	A104A	.20
30"	105	.58	A105	.26
36"	106	.68	A106	.30
48"	107	.92	A107	.42
54"	108	1.03	A108	.48
60"	109	1.14	A109	.50
72"	110	1.36	A109-72	.58
84"	111	1.58	A109-84	.66
96"	112	1.80	A109-96	.74

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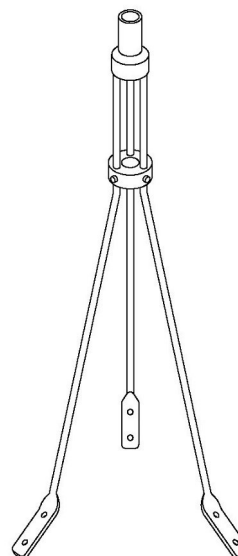


* Air terminals noted with "*" may require additional lead time.

Three leg tripod braces are furnished in copper and aluminum and used with our strike termination devices up to 5/8" diameter. Braces are made of 1/4" rod and are easily shaped for securing to roof. Tripods are also furnished with feet for securing with adhesive. For proper sizing see description below. Other lengths available upon request.

Copper Tripod Supports

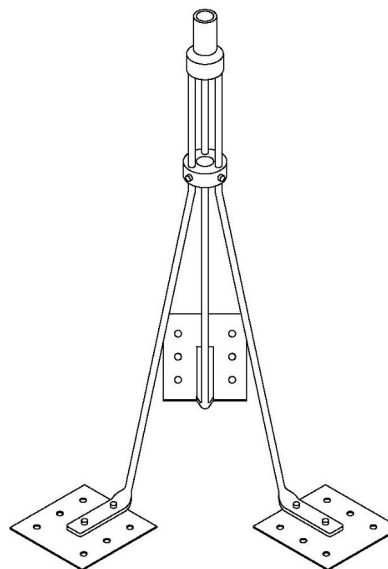
IPC Part #	Description	Weight Lbs.
30A	14" length for 24" point	.88
30AF	Above description with feet	1.14
30	18" length for 30" point	1.15
30F	Above description with feet	1.39
30B	24" length for 36" point	1.45
30BF	Above description with feet	1.75
30C	36" length for 48" point	2.05
30CF	Above description with feet	2.47
30D	48" length for 60" point	2.64
30DF	Above description with feet	3.18



Above illustration depicts tripod without feet.

Aluminum Tripod Supports

IPC Part #	Description	Weight Lbs.
A110X	14" length for 24" point	.34
A110XF	Above description with feet	.32
A110	18" length for 30" point	.46
A110F	Above description with feet	.53
A111	24" length for 36" point	.58
A111F	Above description with feet	.71
A112	36" length for 48" point	.80
A112F	Above description with feet	.70
A113	48" length for 60" point	.84
A113F	Above description with feet	.92



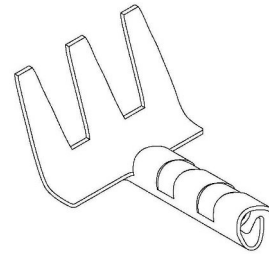
Above illustration depicts tripod with feet.



35

Tube Point Coupler

Pressed copper coupler is crimped into tube point prior to shipping.
Wt. .12 lbs. each.



A35

Tube Point Coupler

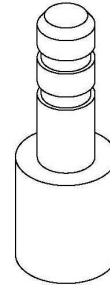
Aluminum. Description same as above.
Wt. .04 lbs. each.



M63

Tube Point Bushing

Machined solid brass coupler with 5/8" female threads is crimped into tube point prior to shipping. Wt. .18 lbs. each.



MA63

Tube Point Bushing

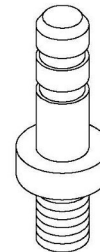
Aluminum. Description same as above.
Wt. .06 lbs. each.



M63 - 12MB

Tube Point Bushing

Machined solid brass coupler with 1/2" male threads is crimped into tube point prior to shipping.
Wt. .18 lbs. each.



MA63 - 12MB

Tube Point Bushing

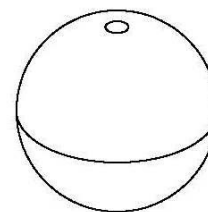
Aluminum 1/2" male. Description same as above.
Wt. .06 lbs. each.



170PP

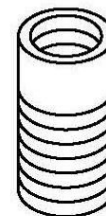
Point Tip Protector

1-1/8" diameter Neoprene ball to fit on sharp tip strike devices. Secure with silicone or construction adhesive to prevent removal of protector.
Wt. .03 lbs. each.



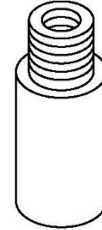
60 Bushing

Machined brass bushing with 1/2" male and 3/8 female threads. Bushing installed in 1/2" female bases to allow use of 3/8" Strike Termination Devices.
Wt. .02 lbs. each.



**Fixed Adaptor Series
Male Top to Female Bottom Adaptors**

Part #	Description	Weight Lbs.
M63Y	Machined brass 3/8" female and 5/8" male top and 3/8" female bottom.	.12
M63Z	Machined brass 5/8" male top and 1/2" female bottom.	.12
MA63Z	Machined aluminum 5/8" male top and 1/2" female bottom.	.04



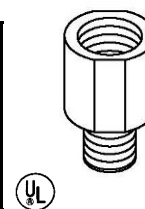
Female Top to Female Bottom Adaptors

Part #	Description	Weight Lbs.
M63E	Machined brass 3/8" female top and 1/2" female bottom.	.14
M63B	Machined brass 3/8" female top and 5/8" female bottom.	.16
M63C	Machined brass 1/2" female top and 5/8" female bottom.	.12
M63X	Machined brass 1/2" female top and 1/2" female bottom.	.12
MA63C	Machined aluminum 1/2" female top and 5/8" female bottom.	.04
MA63X	Machined aluminum 1/2" female top and 1/2" female bottom.	.08



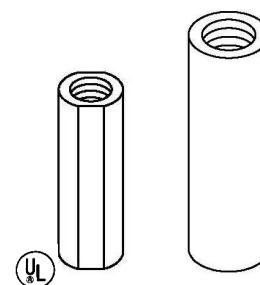
Female Top to Male Bottom Adaptors

Part #	Description	Weight Lbs.
M60UADP	Machined brass 5/8" female top and 1/2" male bottom.	.10
MA60UADP	Machined aluminum 5/8" female top and 1/2" male bottom.	.04



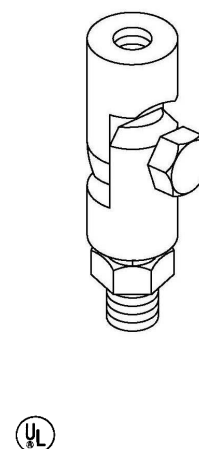
Fixed Couplers
Female Top – Female Bottom Couplers

Part #	Description	Weight Lbs.
M334C	Machined brass coupler with 3/8" female threads on each end, 1-1/4" length.	.04
M335C	Machined brass coupler with 1/2" female threads on each end, 2" length.	.04
MA335C	Machined aluminum coupler with 1/2" female threads on each end, 2" length.	.06



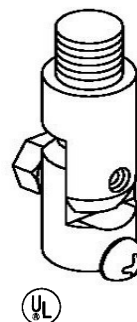
Adjustable Adaptor Series
Female Top-Male Bottom Adjustable Adaptors

Part #	Description	Weight Lbs.
MADJ38FT38MB	Machined brass adjustable adaptor 3/8" female top and 3/8" male bottom	.36
MADJ38FT12MB	Machined brass adjustable adaptor 3/8" female top and 1/2" male bottom	.40
MADJ12FT38MB	Machined brass adjustable adaptor 1/2" female top and 3/8" male bottom	.36
MADJ12FT12MB	Machined brass adjustable adaptor 1/2" female top and 1/2" male bottom	.40
MAADJ12FT12MB	Machined aluminum adjustable adaptor 1/2" female top and 1/2" male bottom	.16
MADJ58FT12MB	Machined brass adjustable adaptor 5/8" female top and 1/2" male bottom	.38
MAADJ58FT12MB	Machined aluminum adjustable adaptor 5/8" female top and 1/2" male bottom	.16



**Adjustable Adaptor Series
Male Top-Female Bottom Adjustable Adaptors**

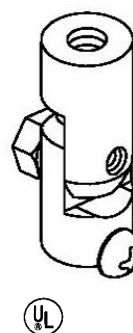
Part #	Description	Weight Lbs.
MADJ58MT12FB	Machined brass 5/8" male top and 1/2" female bottom.	.38
MAADJ58MT12FB	Machined aluminum 5/8" male top and 1/2" female bottom.	.16
MADJ58MT58FB	Machined brass 5/8" male top and 5/8" female bottom.	.42
MAADJ58MT58FB	Machined aluminum 5/8" male top and 5/8" female bottom.	.16



17

**Adjustable Adaptor Series
Female Top-Female Bottom Adjustable Adaptors**

Part #	Description	Weight Lbs.
MADJ38FT12FB	Machined brass 3/8" female top and 1/2" female bottom.	.40
MADJ38FT58FB	Machined brass 3/8" female top and 5/8" female bottom.	.42
MADJ12FT12FB	Machined brass 1/2" female top and 1/2" female bottom.	.38
MAADJ12FT12FB	Machined aluminum 1/2" female top and 1/2" female bottom.	.16
MADJ12FT58FB	Machined brass 1/2" female top and 5/8" female bottom.	.36
MAADJ12FT58FB	Machined aluminum 1/2" female top and 5/8" female bottom.	.14
MADJ58FT12FB	Machined brass 5/8" female top and 1/2" female bottom.	.40
MAADJ58FT12FB	Machined aluminum 5/8" female top and 1/2" female bottom.	.16
MADJ58FT58FB	Machined brass 5/8" female top and 5/8" female bottom.	.42
MAADJ58FT58FB	Machined aluminum 5/8" female top and 5/8" female bottom.	.14



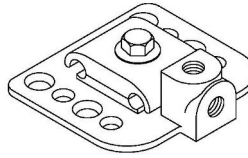
60U

Universal Mounting Base

Cast bronze base can be used in either a vertical or horizontal mounting. For use with 3/8" air terminals. Fasten to surface with adhesive or screws.

Wt. .80 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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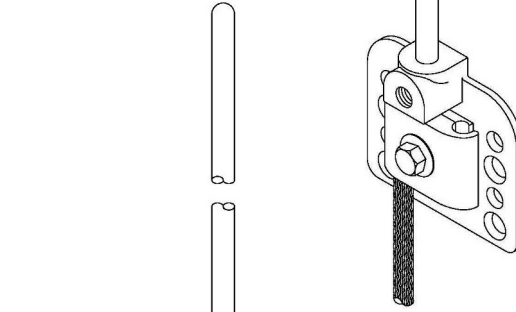
60UB

Universal Mounting Base

Cast bronze for use with 1/2" air terminals.

Wt. .80 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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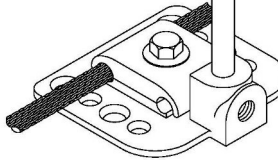


A60UB

Universal Mounting Base

Cast aluminum for use with 1/2" air terminals. Wt. .28 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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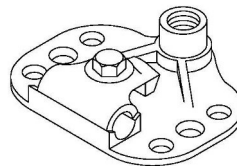


60

Horizontal Mounting Base

Cast bronze base with 3/8" female threads. Wt. .64 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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60B

Horizontal Mounting Base

Cast bronze base with 1/2" female threads. Wt. .64 lbs. each.

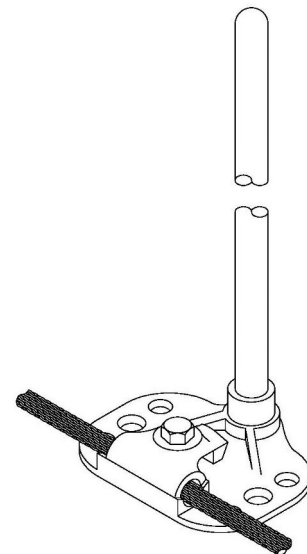
22	28S	32S	40	21	G3	A22	A28	A30
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A60B

Horizontal Mounting Base

Cast aluminum base with 1/2" female threads. Wt. .22 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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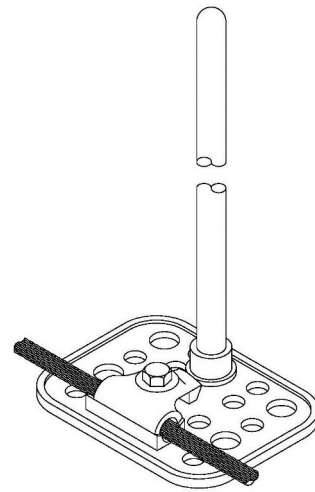


60X

Adhesive Style Horizontal Mounting Base

Cast bronze with 3/8" female threads.
Wt. .96 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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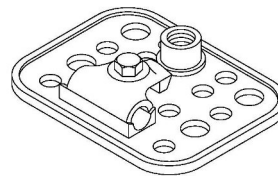


60XB

Adhesive Style Horizontal Mounting Base

Cast bronze with 1/2" female threads.
Wt. .86 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A60XB

Adhesive Style Horizontal Mounting Base

Cast aluminum with 1/2" female threads.
Wt. .26 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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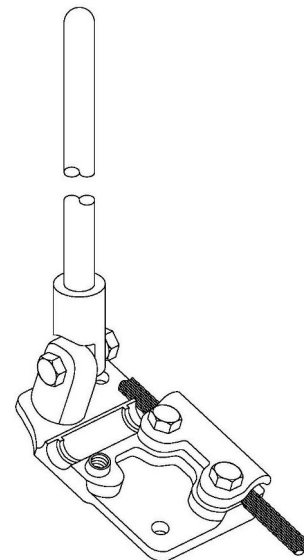


338

Heavy Duty Adjustable Base – Short Neck

Cast bronze with 3/8" female threads.
Wt. 1.55 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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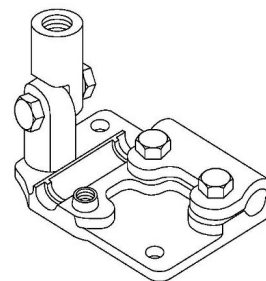


339

Heavy Duty Adjustable Base – Short Neck

Cast bronze with 1/2" female threads.
Wt. 1.55 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A339

Heavy Duty Adjustable Base – Short Neck

Cast aluminum with 1/2" female threads.
Wt. .64 lb. each.

22	28S	32S	40	21	G3	A22	A28	A30
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336

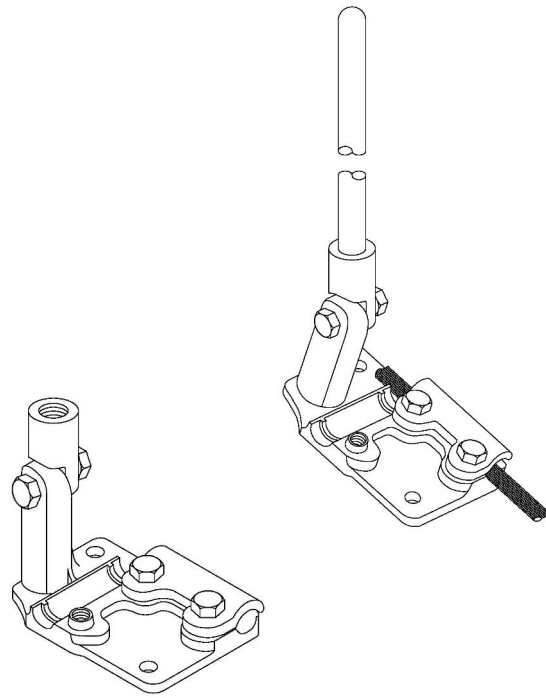
Heavy Duty Adjustable Base – Long Neck
 Cast bronze part with 3/8" female threads.
 Wt. 1.75 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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337

Heavy Duty Adjustable Base – Long Neck
 Cast bronze part with 1/2" female threads.
 Wt. 1.55 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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20

A337

Heavy Duty Adjustable Base – Long Neck
 Cast aluminum with only 1/2" female threads. Wt. .64 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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67B

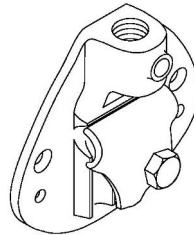
Vertical Flat Surface Base
 Cast bronze with 1/2" female threads.
 Wt. .78 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A67B

Vertical Flat Surface Base
 Cast aluminum with 1/2" female threads.
 Wt. .26 lbs. each.

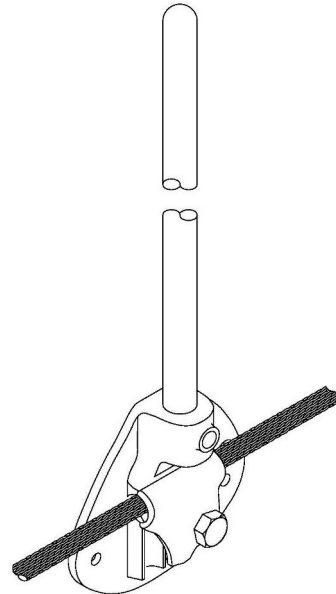
22	28S	32S	40	21	G3	A22	A28	A30
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67C

Vertical Flat Surface Base
 Cast bronze with 3/8" female threads.
 Wt. .80 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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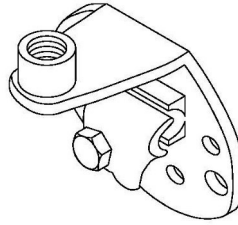


273

Offset Vertical Base

Cast bronze with 1/2" female threads. Air terminals are off-set 1-3/4" from mounting surface. Wt. .76 lbs. each.

273	28S	32S	40	21	G3	A22	A28	A30
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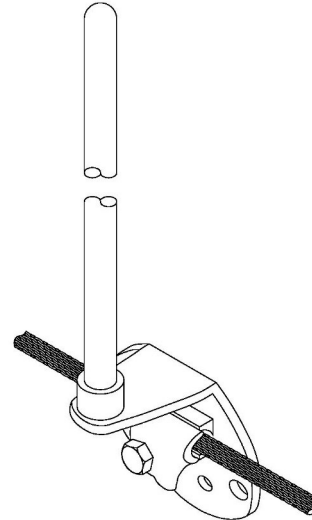


A273

Offset Vertical Base

Cast aluminum with 1/2" female threads. Wt. .25 lbs. each.

A273	28S	32S	40	21	G3	A22	A28	A30
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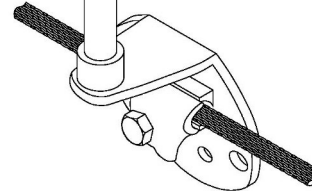


274

Offset Vertical Base Support

Cast bronze with 3/8" female threads. Air terminals are off-set 1-3/4" from surface. Wt. .76 lbs. each.

274	28S	32S	40	21	G3	A22	A28	A30
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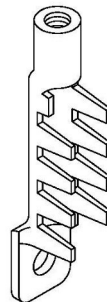


271A

Vertical Mount for Chimney Base

Cast bronze for use with 3/8" threaded rod. Part has crimp type cable fastener and set screw. Wt. .22 lbs. each.

271A	28S	32S	40	21	G3	A22	A28	A30
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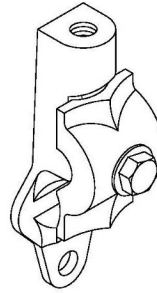


C90X

Vertical Mount Chimney Base

Cast bronze base with 3/8" female threads.
Wt. .46 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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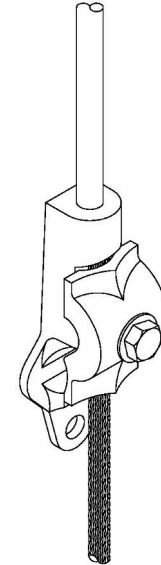


AC90X

Vertical Mount Chimney Base

Cast aluminum and 1/2" female threads.
Wt. .16 lb. each.

22	28S	32S	40	21	G3	A22	A28	A30
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22

C90Y

Vertical Mount Chimney Base

Cast bronze base with 1/2" female threads.
Wt. .50 lbs. each.

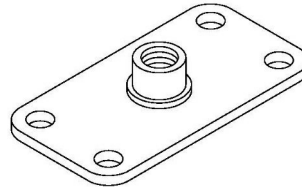
22	28S	32S	40	21	G3	A22	A28	A30
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179

Flat Surface Horizontal Base

Cast bronze has 8 square inches of bonding surface. With 3/8" female threads.
Wt. .42 lbs. each.



179A

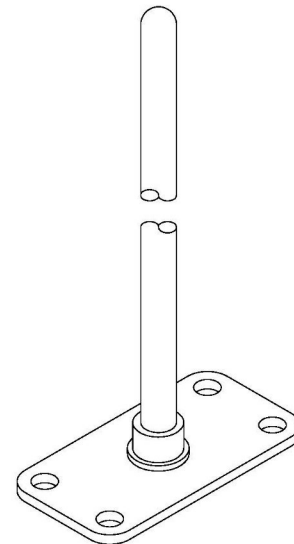
Flat Surface Horizontal Base

Cast bronze part has 8 square inches of bonding surface and has 1/2" female threads.
Wt. .40 lbs. each.

A179A

Flat Surface Horizontal Base

Cast aluminum. Description same as above.
Wt. .12 lbs. each.

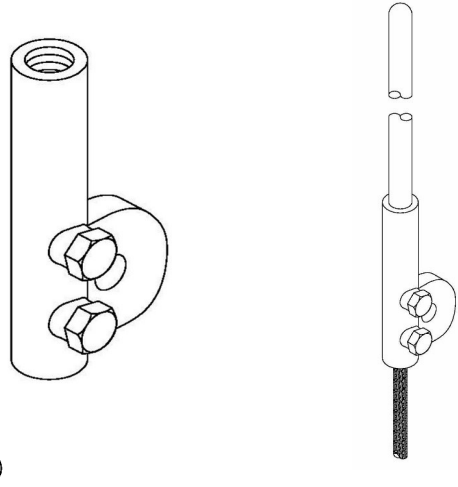


260

Heavy Duty Straight Connector

Cast bronze part provided with 1/2" female threads and two hex-head bolts for securing cable. May be furnished with 5/8" threads when specified. Wt. .54 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A260

Heavy Duty Straight Connector

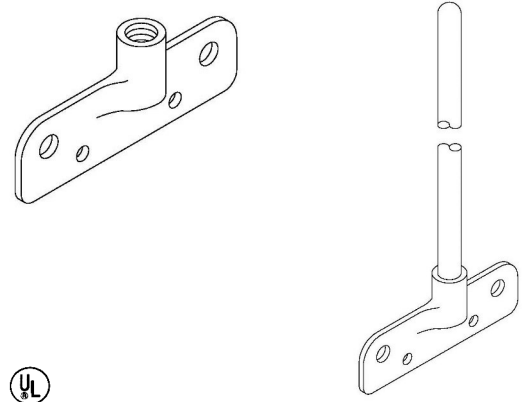
Cast aluminum. Description same as above. Wt. .22 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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178

Flat Surface Vertical Base

Cast bronze with 1/2" female threads and over 4 square inches of bonding surface. Wt. .30 lbs. each.



A178

Flat Surface Vertical Base

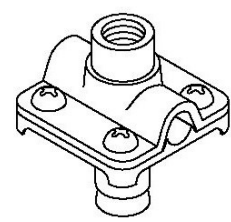
Cast aluminum. Description same as above. Wt. .10 lbs. each.

60A

Flat Surface Air Terminal Base

Cast bronze part is provided with 3/8" female threads and furnished with 5/16" lead anchor and screw. Wt. .68 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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60A 1/2" ID

Flat Surface Air Terminal Base

Cast bronze part is provided with 3/8" female threads and furnished with 5/16" lead anchor and screw. Wt. .68 lbs. each.

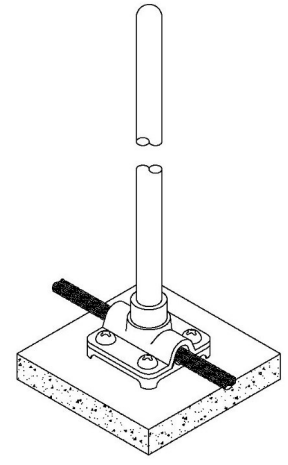
22	28S	32S	40	21	G3	A22	A28	A30
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A60A 1/2" ID

Flat Surface Air Terminal Base

Cast aluminum. Description same as above. Wt. .28 lbs. each.

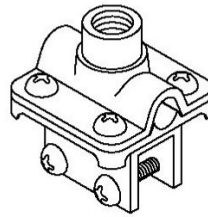
22	28S	32S	40	21	G3	A22	A28	A30
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60SS

Standing Seam Base Support

Cast bronze base support with cable fastener. Cable can run parallel or perpendicular to standing seam. Part is furnished with 3/8" female and for seams up to 13/16" Wt. .93 lbs. each.

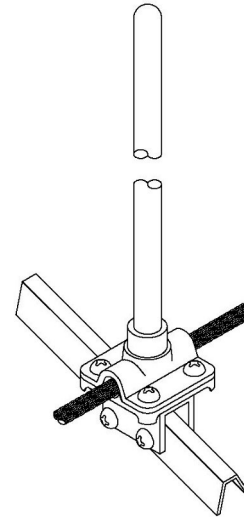


22	28S	32S	40	21	G3	A22	A28	A30
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60SS 1/2" ID

Standing Seam Base Support

Cast bronze base support with cable fastener. Cable can run parallel or perpendicular to standing seam. Part is furnished with 1/2" ID female threads and for seams up to 13/16" wide. Wt. .93 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A60SS 1/2" ID

Standing Seam Base Support

Aluminum base support with cable fastener. Cable can run parallel or perpendicular to standing seam. Part is furnished with 1/2" ID female threads and for seams up to 7/8" wide. Wt. .32 lbs. each.

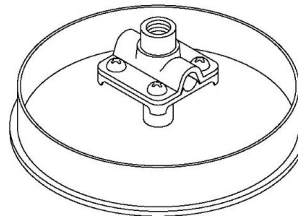
22	28S	32S	40	21	G3	A22	A28	A30
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266B

Pan Type Adhesive Air Terminal Base

Cast bronze base with 3/8" female threads and outer diameter of pan is 6" OD. Pan is fastened with adhesive and filled with stone chips or concrete. Wt. 2.90 lbs. each.

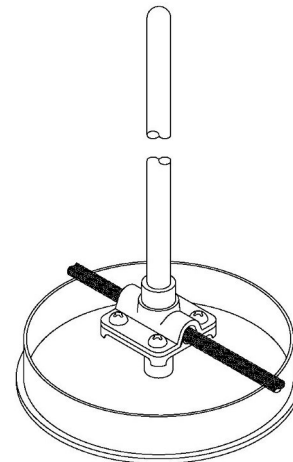


22	28S	32S	40	21	G3	A22	A28	A30
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266B 1/2" ID

Pan Type Adhesive Air Terminal Base

Cast bronze base with 1/2" ID female threads and outer diameter of pan is 6" OD. Pan is fastened with adhesive and filled with stone chips or concrete. Wt. 2.90 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A266B

Pan Type Adhesive Air Terminal Base

Cast aluminum. 1/2" female only. Description same as above. Wt. .98 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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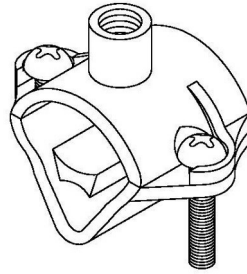
181

Railing Bracket Air Terminal Base

Cast bronze part is for use with railings up to 1-3/4" diameter. Part is threaded for 3/8" female.

Wt. .74 lbs. each.

22	28S	32S	40	21	G3	A22	A25	A30
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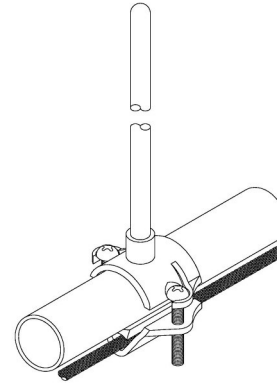
181A

Railing Bracket Air Terminal Base

Cast bronze part is for use with railing up to 1-3/4" diameter. Part is threaded for 1/2" female threads.

Wt. .74 lbs. each.

22	28S	32S	40	21	G3	A22	A25	A30
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A181A

Railing Bracket Air Terminal Base

Cast aluminum. Description same as above.

Wt. .28 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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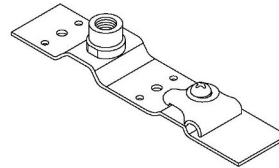
M55

Shorter Saddle Style Air Terminal Base

Copper strap material is 6" in length for applications where space is limited. Part is furnished with 3/8" female threads.

Wt. .48 lbs. each.

22	28S	32S	40	21	G3	A22	A25	A30
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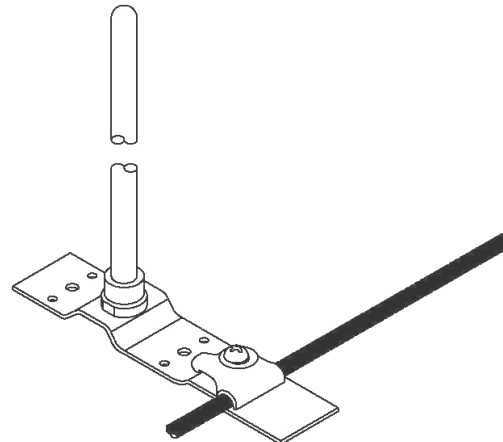
M55 1/2" ID

Shorter Saddle Style Air Terminal Base

Copper strap material is 6" in length for applications where space is limited.

Wt. .48 lbs. each.

22	28S	32S	40	21	G3	A22	A25	A30
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MA55 1/2" ID

Shorter Saddle Style Air Terminal Base

Aluminum strap material. Description same as above.

Wt. .20 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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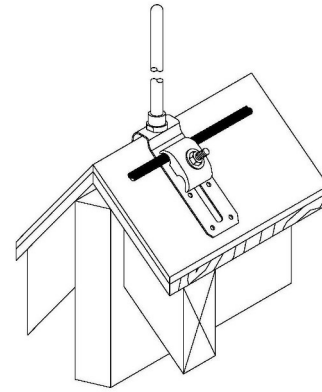


M74

Slider Saddle Base (FROM PG 22)

Copper strap material 11" in length with adjustable slider cable support. Part is furnished with 3/8" female threads. Wt. .77 lbs. each.

28	28S	32S	40	21	GS	A22	A28	A30
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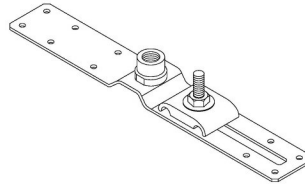


M74 1/2" ID

Slider Saddle Base

Copper strap material 11" in length with adjustable slider cable support. Part is furnished with 1/2" female threads. Wt. .77 lbs. each.

28	28S	32S	40	21	GS	A22	A28	A30
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MA74 1/2" ID

Slider Style Saddle Base

Aluminum strap material with 1/2" female threads. Description same as above. Wt. .36 lbs. each.

28	28S	32S	40	21	GS	A22	A28	A30
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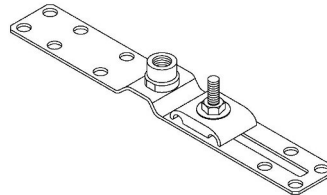


M74Y

Paste Down Saddle Base

Copper strap 12" in length with clamp down cable connector. Part is furnished with 3/8" female threads. Wt. .70 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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M74Y 1/2" ID

Paste Down Saddle Base

Copper strap 12" in length with clamp down cable connector. Part is furnished with 1/2" female threads. Wt. .70 lbs. each.

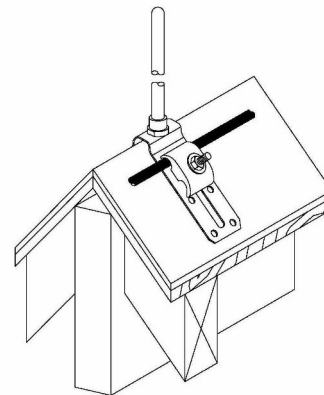
28	28S	32S	40	21	GS	A22	A28	A30
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MA74Y 1/2" ID

Paste Down Saddle Base

Aluminum strap material with 1/2" female threads. Description same as above. Wt. .28 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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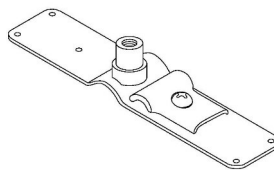


F414

Concealed Saddle Base

Cast bronze is 6-1/4" in length with 3/8" female threads.
Wt. .32 lbs. each.

28	28S	32S	40	21	G3	A22	A26	A30
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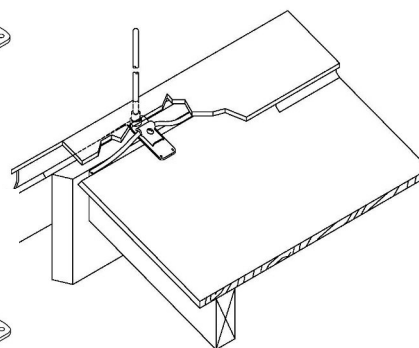
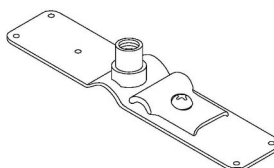


F414H

Concealed Saddle Base

Cast bronze part with 1/2" female threads.
Wt. .32 lbs. each

28	28S	32S	40	21	G3	A22	A26	A30
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AF414

Concealed Saddle Base

Cast aluminum with 1/2" female threads.
Wt. .14 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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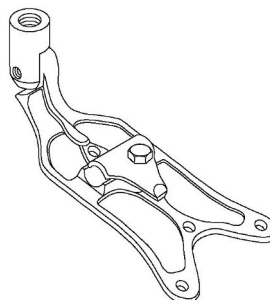


243

Semi-Concealed Adjustable Base

Cast bronze base with adjustable adaptor and is furnished with 3/8" female threads.
Wt. 1.08 lbs. each.

28	28S	32S	40	21	G3	A22	A26	A30
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243 1/2" ID

Semi-Concealed Adjustable Base

Cast bronze base with adjustable adaptor and is furnished with 1/2" female threads.
Wt. 1.08 lbs. each.

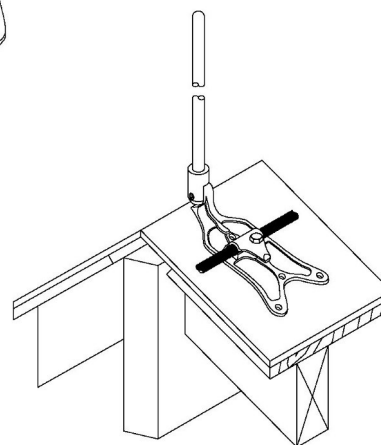
28	28S	32S	40	21	G3	A22	A26	A30
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A243 1/2" ID

Semi-Concealed Adjustable Base

Cast aluminum with 1/2" female threads.
Description same as above.
Wt. .36 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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240 Series

Concealed Base Assembly

Assembly includes threaded stainless steel stem, neoprene washer, nailing bracket, cable connector, stainless steel washer and nut. Longer length stems available upon request.

28	28S	32S	40	21	35	A22	A28	A30	UL
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240 Assembly Copper, 3/8" x 15" stem.
Wt. 1.02 lbs. each.

A240 Assembly Aluminum, 1/2" x 15" stem.
Wt. .50 lbs. each.

240B Assembly Copper, 3/8" x 18" stem.
Wt. 1.16 lbs. each.

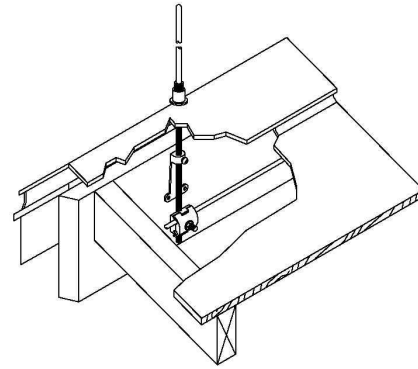
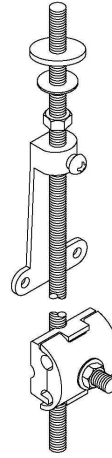
240-24" Assembly Copper, 3/8" x 24" stem.
Wt. 1.31 lbs. each.

28

A240B Assembly Aluminum, 1/2" x 18" stem.
Wt. .55 lbs. each.

240X Assembly Copper, 1/2" x 15" stem.
Wt. 1.14 lbs. each.

240D Assembly Copper, 1/2" x 18" stem.
Wt. 1.36 lbs. each.



240 Series Component Parts

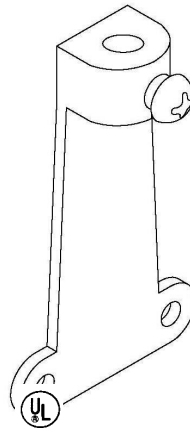
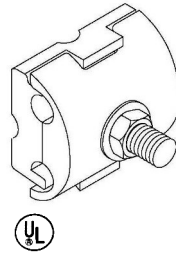
Descriptions are noted above.

240 Connector

A240 Connector

240 Nail Bracket

A240 Nail Bracket

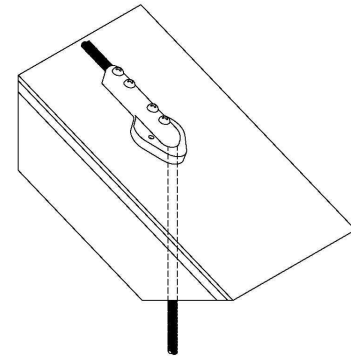
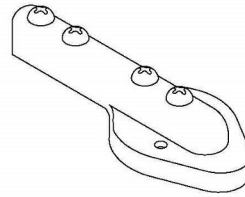


325

Thru Roof Connector

Cast bronze connector with pressure style cable fastener on top and crimp connector on bottom side. Bottom side of part is recessed to allow for sealant to assure a weather tight seal. Wt. .72 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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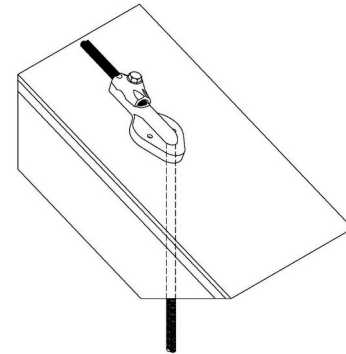
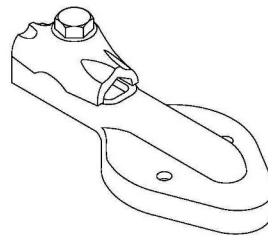


A325

Thru Roof Connector

Cast aluminum connector with pressure style cable fastener on top of crimp connector on bottom side. Bottom side part is recessed to allow for sealant to assure a weather tight seal. Wt. .24 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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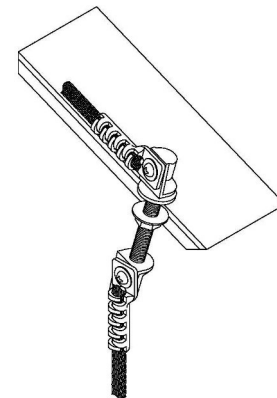
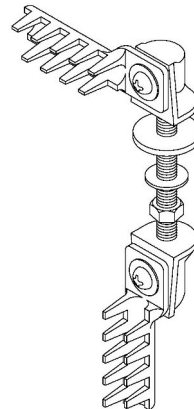
272A

Thru Roof Connector

Cast bronze with swivel crimp connector on each end with threaded stainless steel rod 3/8" x 4-3/4".

Wt. .76 lb. each.

28	28S	32S	40	21	G3	A28	A28	A30
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A272A

Thru Roof Connector

Cast aluminum. Threaded stainless steel rod 1/2" x 4-3/4". Description same as above.

Wt. .46 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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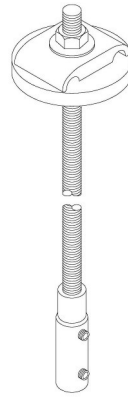


597C

Thru Roof Connector for 1-1/2" PVC

Cast bronze and machined brass assembly consists of IP-597 Cap, cable connector, IP-M597C bottom cable connector and 1/2" x 8" threaded stainless steel rod. Wt. 1.18 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A597C

Thru Roof Connector for 1-1/2" PVC

Cast and machined aluminum assembly. Description same as above. Furnished with IP-MA597C bottom cable connector. Wt. .64 lbs. each.

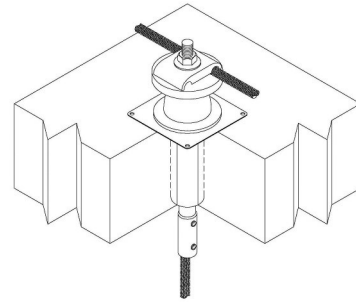
22	28S	32S	40	21	G3	A22	A28	A30
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597BM

Bimetallic Thru Roof Connector for 1-1/2" PVC

Cast bronze and aluminum assembly consists of aluminum IP-A597 cap, cable connector on top, IP-M597 bottom cable connector with hex-head bolts and 1/2" x 8" threaded stainless steel rod. Wt. .80 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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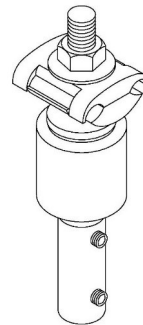


597P

Thru Roof Connector Assembly for 1" PVC

Cast bronze and machined brass assembly consists of IP-297A cable connector, IP-247A neoprene washer, PVC end cap, and IP-M597C bottom cable connector with set screws. Overall assembly length is 4-1/2". Wt. .60 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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30

A597P

Thru Roof Connector Assembly for 1" PVC

Cast and machined aluminum. Description same as above. Wt. .60 lbs. each.

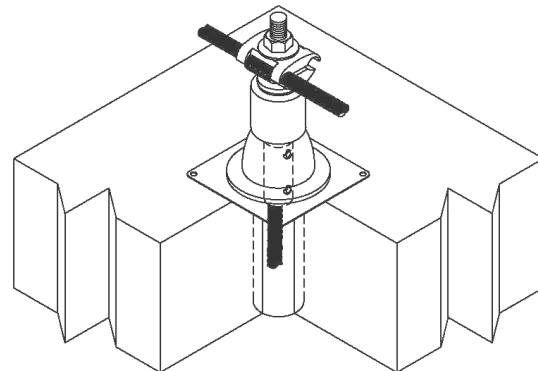
22	28S	32S	40	21	G3	A22	A28	A30
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597PBM

Thru Roof Connector Assembly for 1" PVC

Cast aluminum and machined brass assembly consists of IP-A297A cable connector, IP-247A neoprene washer, PVC end cap, and IP-M597C bottom cable connector with set screws. Overall assembly length is 4-1/2". Wt. .60 lbs. each

22	28S	32S	40	21	G3	A22	A28	A30
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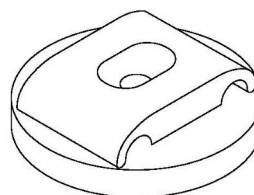


597 Cap

Thru Roof Connector and Cap

Cast bronze includes both the IP-60U cable connector and cap and is drilled out for 1/2" rod. Nut and washer are not included. Wt. .60 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A597 Cap

Thru Roof Connector and Cap

Aluminum. Description same as above. Wt. .18 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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#334T - 3/8" Threaded SS Rod

Furnished in multiples of 1" or by the foot. Wt. .30 lb. per foot.

#335T - 1/2" Threaded SS Rod

Furnished in multiples of 1" or by the foot. Wt. .54 lb. per foot.



M597 Bottom Only

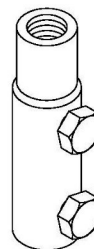
Machined brass connector with hex-head bolts. Wt. .26 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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MA597 Bottom Only

Machined aluminum. Description same as above. Wt. .10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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M597C Bottom Only

Machined brass connector with set screws. Wt. .26 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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MA597C Bottom Only

Machined aluminum. Description same as above. Wt. .26 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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597R

Right Angle Thru Roof Connector

Cast thru roof connector consists of 596 bus connector, neoprene washer, hex nut, washer, IP-M597 bottom cable connector and 1/2" x 8" threaded stainless steel rod. Longer lengths of threaded rod available upon request. Wt. 1.30 lbs. each.

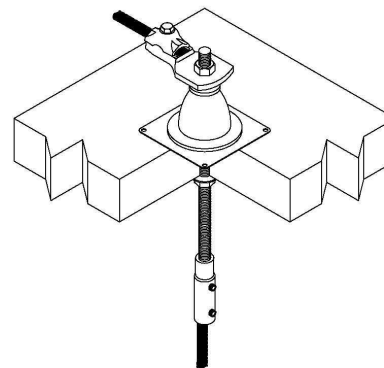
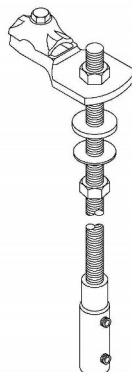
22	28S	32S	40	21	G3	A22	A28	A30
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A597R

Right Angle Thru Roof Connector

Cast aluminum. Description same as above. Wt. .74 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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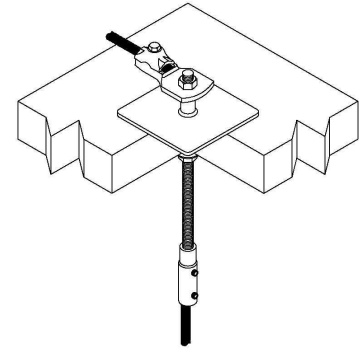
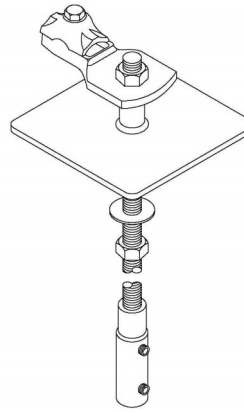


597X

Right Angle Thru Roof Connector

Cast bronze thru roof connector consists of IP-596 bus connector, neoprene washer, hex nut, washer, IP-M597 bottom cable connector and 1/2" x 8" threaded stainless steel rod. Longer lengths of threaded rod available upon request. Wt. 2.04 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A597X

Right Angle Thru Roof Connector

Aluminum. Description same as above. Wt. 1.10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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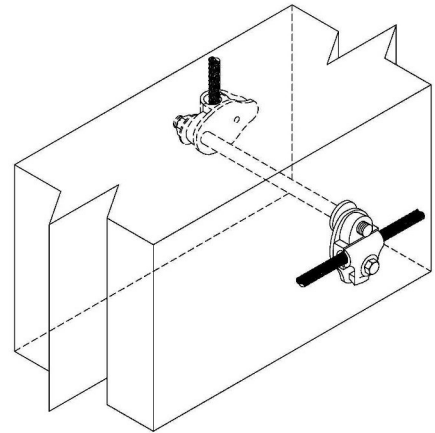
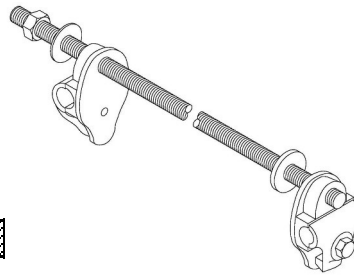


272X

Thru-Wall Connector

Cast bronze assembly includes two bronze cable connectors, 1/2" x 12" threaded stainless steel rod, neoprene washer, hex nut and washer. Longer lengths of threaded rod available upon request. Wt. 1.78 lbs. each

22	28S	32S	40	21	G3	A22	A28	A30
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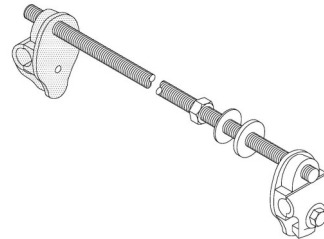


A272X

Thru-Wall Connector

Cast aluminum. Description same as above. Wt. .60 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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272X BM

Bi-Metal Thru-Wall Connector

Assembly has cable connectors in bronze and aluminum. Description same as above. Wt. 1.20 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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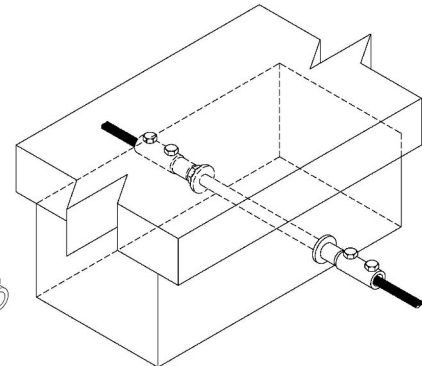
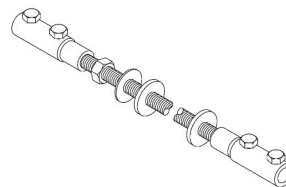


597

Straight Thru Wall Assembly

Thru wall assembly consists of two neoprene washers, hex nut, washer, IP-M597 cable connector on each end and 1/2" x 8" threaded stainless steel rod. Longer lengths of rod available upon request. Wt. 1.10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A597

Straight Thru Wall Assembly

Machined aluminum. Description same as above. Wt. .68 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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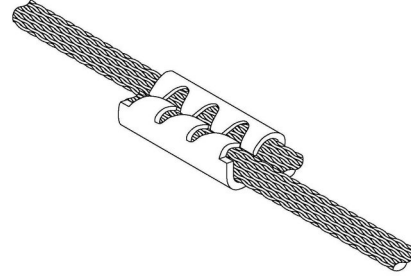
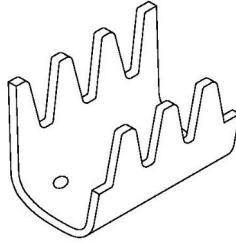


193S

Parallel Splicer

Pressed copper crimp splicer 2" length.
Wt. .12 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A193S

Parallel Splicer

Pressed aluminum. Description same as above. Wt. .06 lbs. each.

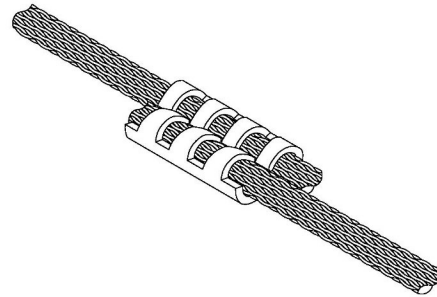
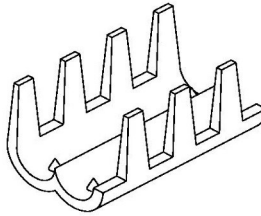
22	28S	32S	40	21	G3	A28	A30
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193A

Parallel Splicer

Cast bronze crimp splicer 2" length.
Wt. .16 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A193A

Parallel Splicer

Cast aluminum. Description same as above. Wt. .06 lbs. each.

22	28S	32S	40	21	G3	A28	A30
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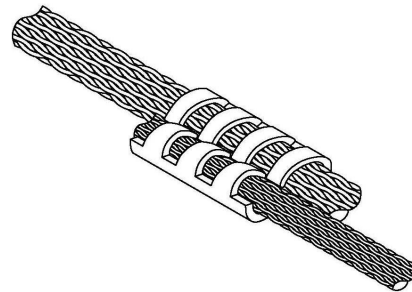
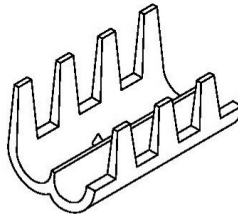


193X

Parallel Splicer

Cast bronze crimp splicer 2" length. For one main cable and one bonding cable.
Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A193X

Parallel Splicer

Cast aluminum. Description same as above.
Wt. .06 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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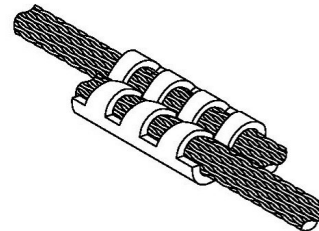
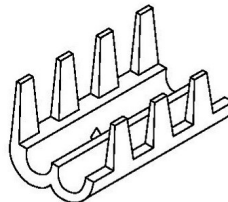


193X22

Parallel Splicer

Cast bronze crimp splicer 2" length. For use with two bonding cables. Wt. .10 lbs. each.

22	28S	32S	40	21	G3	A28	A30
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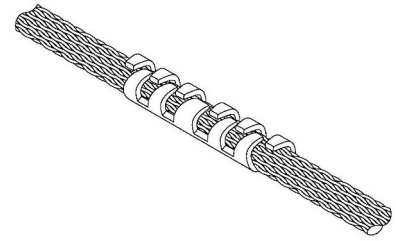


33L

Straight Splicer

Pressed copper crimp splicer 3-3/4" length. Wt. .10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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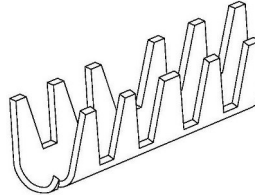


A33L

Straight Splicer

Pressed aluminum. Description same as above. Wt. .04 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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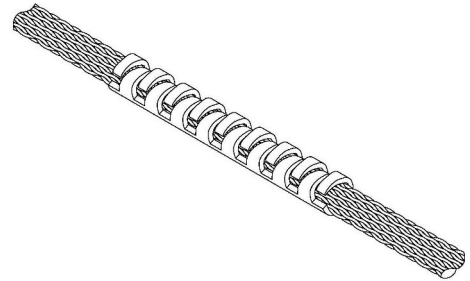
34

33X

Straight Splicer

Cast bronze crimp splicer 4-1/2" length. Wt. .20 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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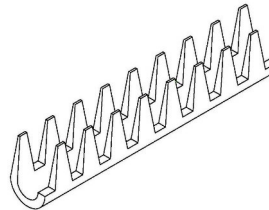


A33X

Straight Splicer

Cast aluminum. Description same as above. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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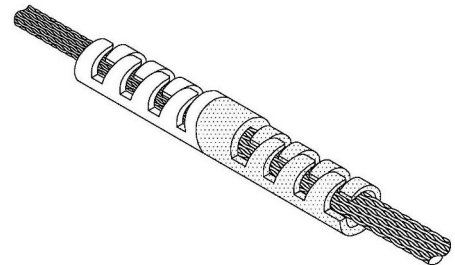
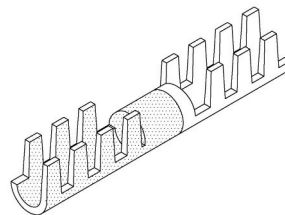


A33D

Bimetal Straight Splicer

Cast aluminum and bronze crimp splicer 5-1/2" length. Wt. .36 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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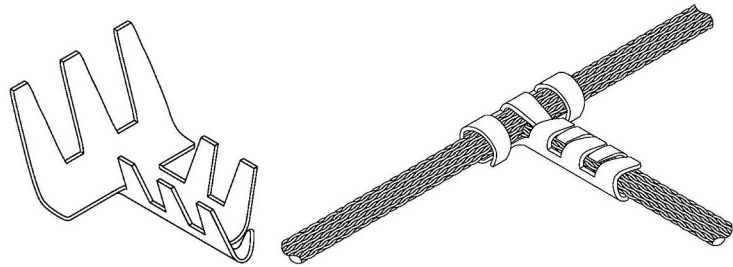


34L

"T" Splicer

Pressed copper crimp splicer.
Wt. .12 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A34L

"T" Splicer

Pressed aluminum. Description same as above. Wt. .04 lbs. each.

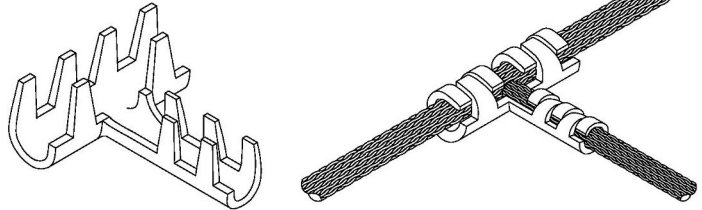
22	28S	32S	40	21	G3	A22	A28	A30
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3

"T" Splicer

Cast bronze crimp splicer. For one primary and secondary cable. Wt. .10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A3

"T" Splicer

Cast aluminum. Description same as above. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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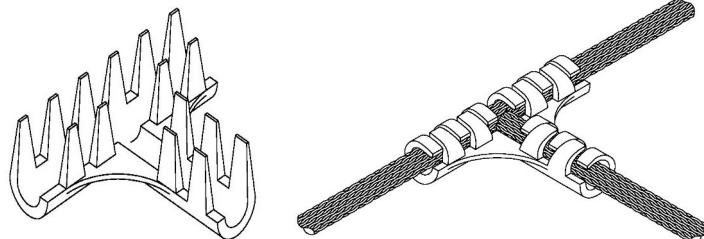


262

"T" Splicer

Cast bronze crimp splicer.
Wt. .22 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A262

"T" Splicer

Cast aluminum. Description same as above. Wt. .12 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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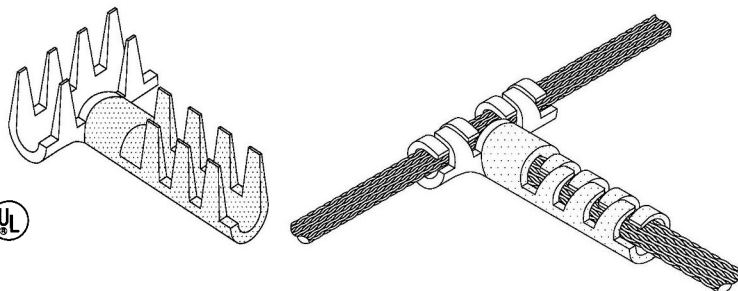


A34B

Bimetal "T" Splicer

Cast aluminum and bronze crimp splicer for use with copper and aluminum cable. Wt. .30 lbs. each.

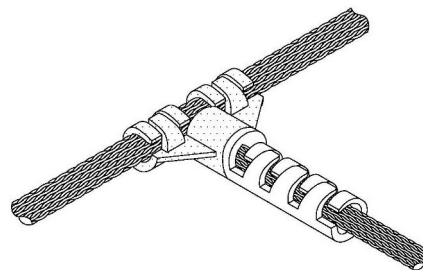
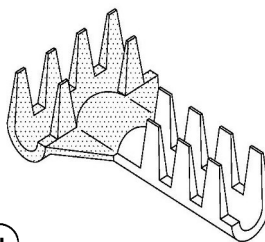
22	28S	32S	40	21	G3	A22	A28	A30
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A34A

Bimetal "T" Splicer

Cast aluminum and bronze crimp splicer for use with copper and aluminum cable. Wt. .34 lbs. each.

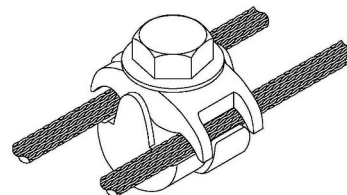
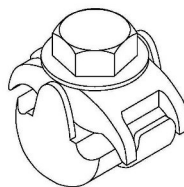


22	28S	32S	40	21	G3	A22	A28	A30	UL
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297

Secondary Multi-Purpose Clamp

Cast bronze crimp splicer 3/4" length. For one primary and one secondary cable. Wt. .22 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A297

Secondary Multi-Purpose Clamp

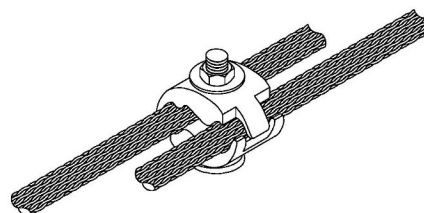
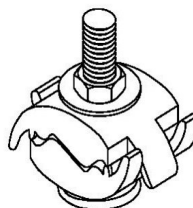
Cast aluminum. Description same as above. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	UL
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25G

Secondary All Purpose Parallel Connector

Cast bronze pressure style connector 1" length. For one primary and one secondary cable. Wt. .28 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A25G

Secondary All Purpose Parallel Connector

Cast aluminum. Description same as above. Wt. .14 lbs. each.

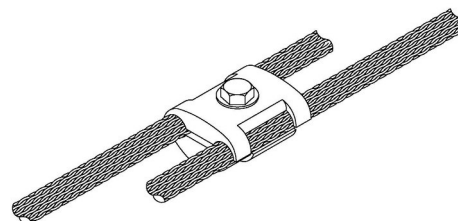
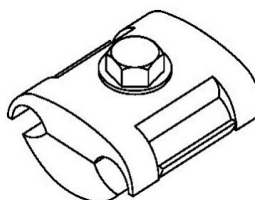
22	28S	32S	40	21	G3	A22	A28	A30	UL
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297A

Large Parallel Multi-Purpose Clamp

Cast bronze pressure style connector 2" length. Wt. is .38 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A297A

Large Parallel Multi-Purpose Clamp

Cast aluminum. Description same as above. Wt. .14 lbs. each.

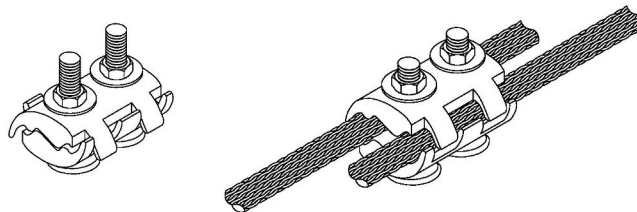
22	28S	32S	40	21	G3	A22	A28	A30	UL
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G28

Parallel All Purpose Connector

Cast bronze pressure style connector 2" in length. Wt. is .54 each.

22	28S	32S	40	21	G3	A28	A28	A30
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AG28

Parallel All Purpose Connector

Cast aluminum pressure style connector 2" in length. Wt. .28 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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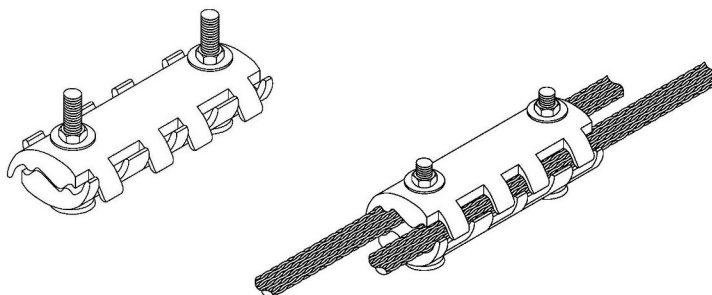


G27

Large Parallel All Purpose Connector

Cast bronze pressure type connector 4" in length. Wt. .86 lbs. each.

22	28S	32S	40	21	G3	A28	A28	A30
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AG27

Large Parallel All Purpose Connector

Cast aluminum pressure type connector 4" in length. Wt. .34 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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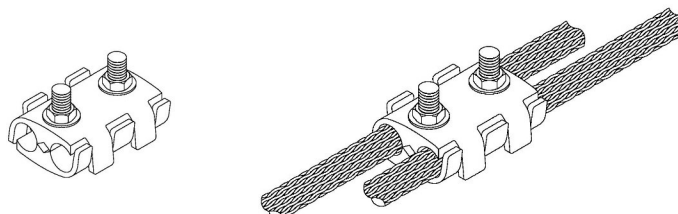


296

Heavy Duty Parallel All Purpose Connector

Cast bronze pressure style connector 2-1/2" in length. Wt. .80 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A296

Heavy Duty Parallel All Purpose Connector

Cast aluminum pressure style connector 2-1/2" in length. Wt. .38 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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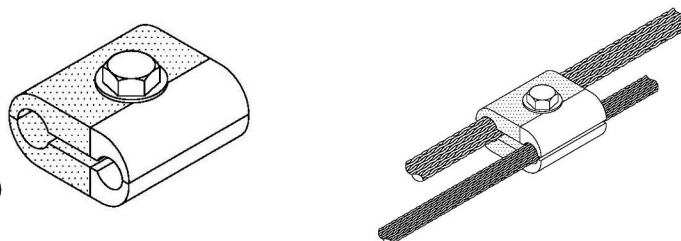


A41P

Parallel Bimetal Connector

Cast bronze and aluminum pressure style connector. Wt. .30 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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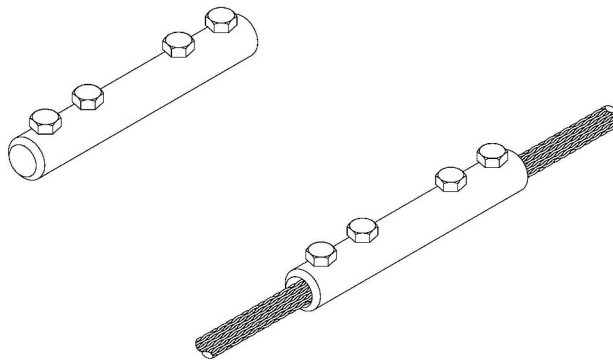


MG73

Heavy Duty Straight Cable Connector

Machined brass bolt style part 4-7/8" length. Wt. .65 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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MAG73

Heavy Duty Straight Cable Connector

Machined aluminum bolt style part 4-7/8" in length. Wt. .24 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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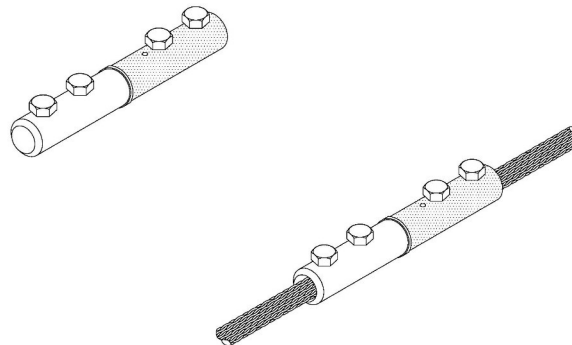


MA175

Bimetal Connector-Disconnecter

Machined brass and aluminum part for use with copper and aluminum cables. Length is 5". Wt. .45 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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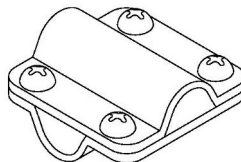


119

Cross Run Connector

Cast bronze pressure type connector for connecting two cables. Wt. .58 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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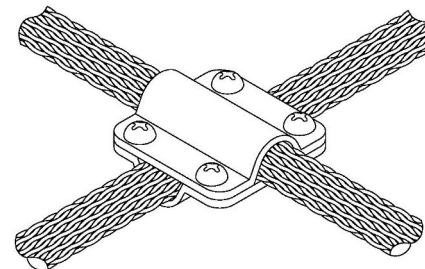


119A

Cross Run Connector

Cast bronze pressure type connector for connecting two larger cables up to 5/8" diameter. Wt. is .46 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A119A

Cross Run Connector

Cast aluminum pressure type connector for connecting two cables. Wt. .16 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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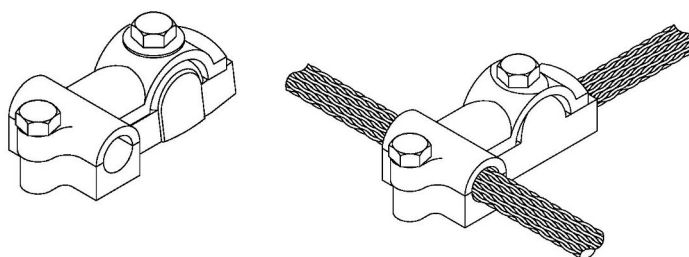


304

"T" Connector

Cast bronze pressure type "T" connector.
Wt. .52 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A304

"T" Connector

Cast aluminum pressure "T" connector.
Wt. .18 lbs. each.

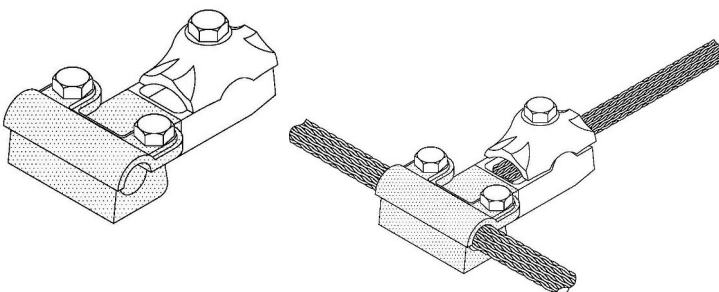
22	28S	32S	40	21	G3	A22	A28	A30	
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A304A

Bimetal "T" Connector

Cast bronze and aluminum pressure type
"T" Connector. Wt. .64 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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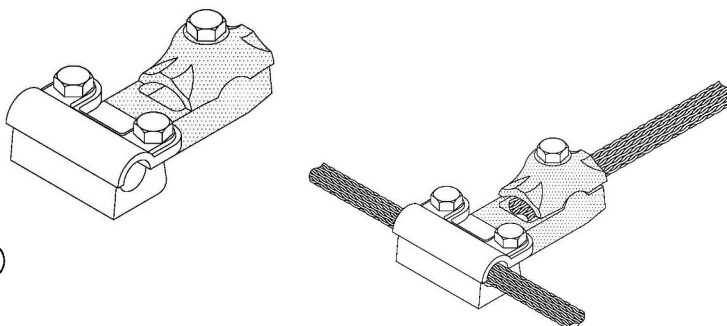


A304B

Bimetal "T" Connector

Cast bronze and aluminum pressure type
"T" connector. Wt. .64 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	
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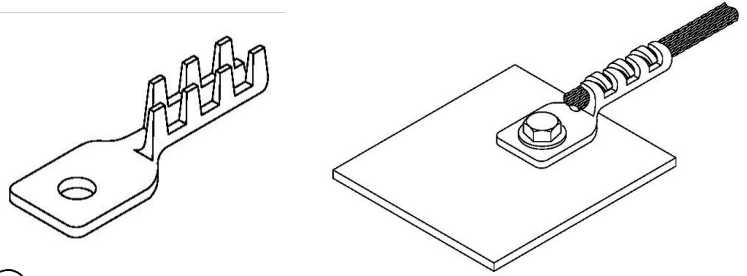


4

Small Metal Track Connector

Cast bronze crimp splicer connector for smaller cable. Mounting hole is 5/16" diameter. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A4

Small Metal Track Connector

Cast aluminum. Description same as above. Wt. .04 lbs. each.

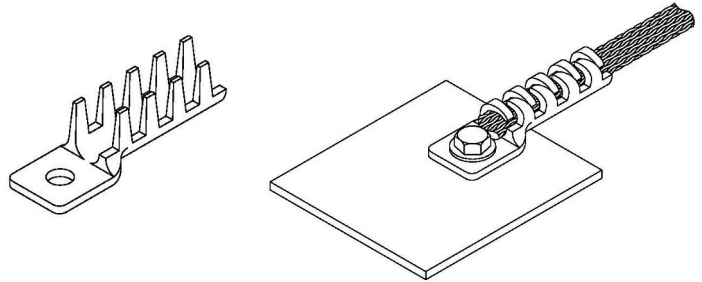
22	28S	32S	40	21	G3	A22	A28	A30	
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5

Large Metal Track Connector

Cast bronze crimp splicer connector for standard cable. Mounting hole is 5/16" diameter. Wt. .14 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A5

Large Metal Track Connector

Cast aluminum. Description same as above. Wt. .08 lbs. each.

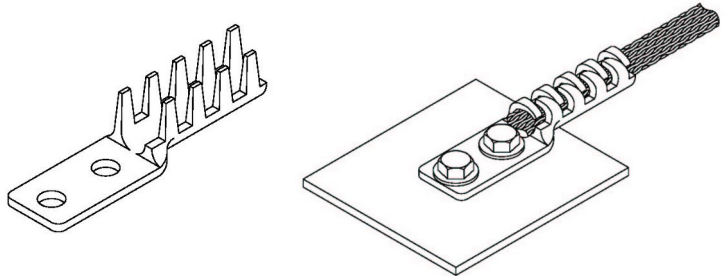
22	28S	32S	40	21	G3	A22	A28	A30	
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219

Two Hole Track Connector

Cast bronze crimp splicer connector for standard size cable. Wt. .18 lb. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A219

Two Hole Track Connector

Cast aluminum. Description same as above. Wt. .06 lbs. each.

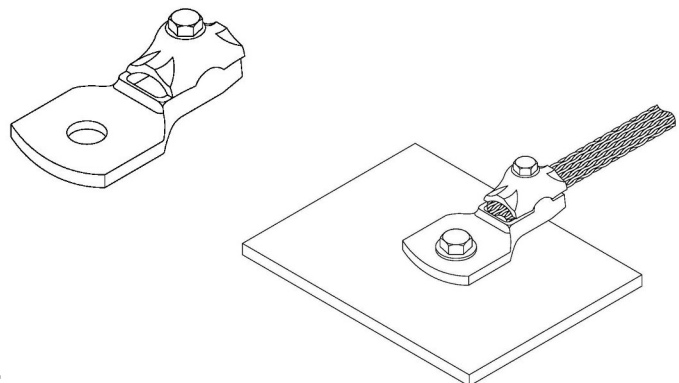
22	28S	32S	40	21	G3	A22	A28	A30	
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596

Bus Terminal

Cast bronze with 4-1/2 square inches of contact for standard cable. Mounting hole is 1/2" diameter. Wt. .54 lbs. each.

22	28S	32S	40	21	G3	A28	A28	A30
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A596

Bus Terminal

Cast aluminum. Description same as above. Wt. .18 lbs. each.

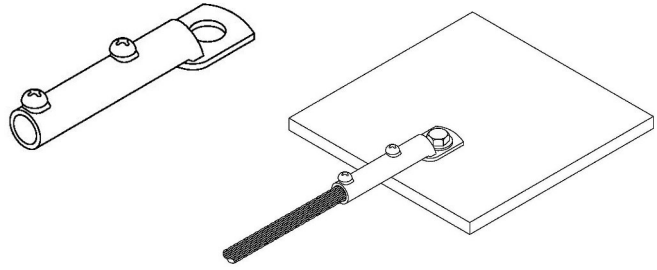
22	28S	32S	40	21	G3	A28	A28	A30	
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G68

Small Bus Terminal

Cast bronze bonding lug for smaller bonding cable. Mounting hole is 5/16" diameter. Wt. .14 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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AG68

Small Bus Terminal

Cast aluminum. Description same as above. Wt. .06 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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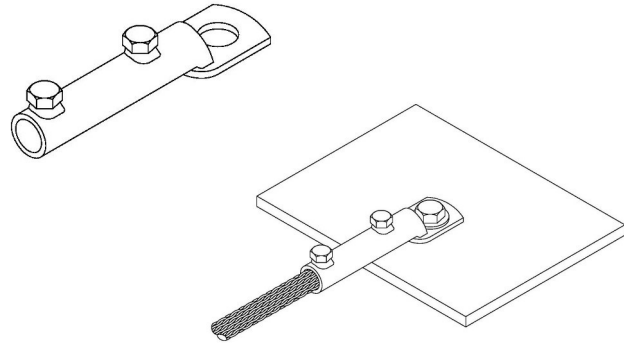


G67

Bus Terminal

Cast bronze used for connecting standard cable. Mounting hole is 1/2" diameter. Wt. .28 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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AG67

Heavy Duty Bus Terminal

Cast aluminum. Description same as above. Wt. .12 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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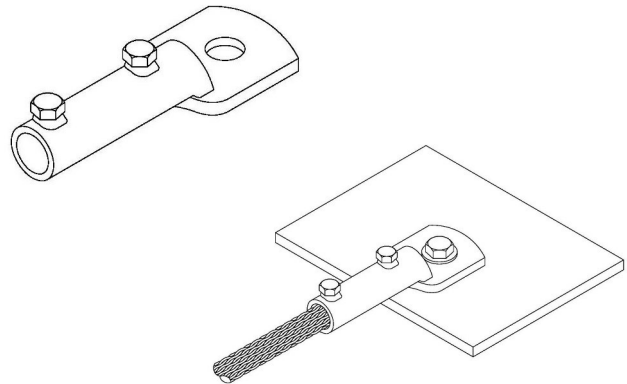


596A

Heavy Duty Bus Terminal

Cast bronze has 3 square inches of surface contact for connecting larger cables to larger metal bodies. Mounting hole is 1/2" diameter. Wt. .68 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A596A

Heavy Duty Bus Terminal

Cast aluminum. Description same as above. Wt. .24 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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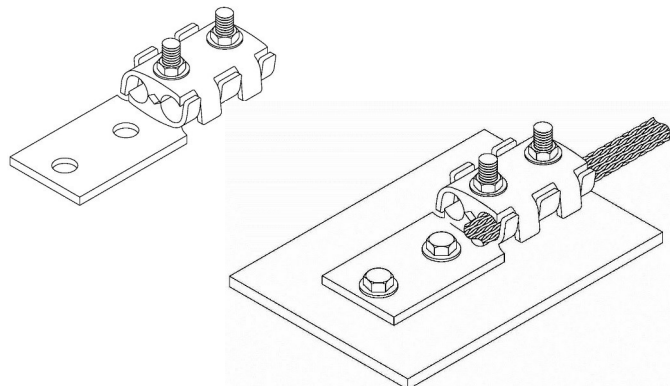


347

Heavy Duty Bus Terminal

Cast bronze bus terminal with 6 square inches of surface contact for two cables up to 5/8" diameter. Mounting hole is 1/2" diameter. Wt. 1.12 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A347

Heavy Duty Bus Terminal

Cast aluminum. Description same as above. Wt. .46 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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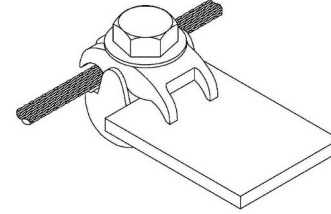
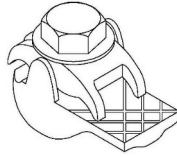


298

Cable Connector to Flat Steel

Cast bronze pressure type connector for bonding cables only. Wt. .18 lbs. each.

789	65	22	28S	32S	G3	A28	A28	A30
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A298

Cable Connector to Flat Steel

Cast aluminum pressure type connector for bonding cables only. Wt. .08 lbs. each.

28	28S	32S	40	21	G3	A22	A28	A30	UL
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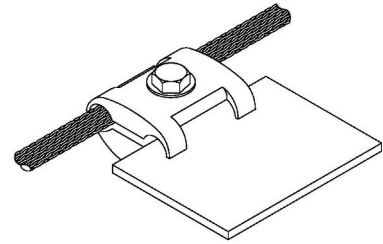
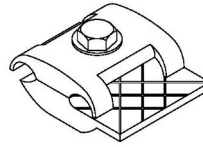
42

298A

Large Cable Connector to Flat Steel

Cast bronze pressure type connector for standard size cable. Wt. .40 lbs. each.

32	28S	32S	40	21	G3	A28	A28	A30
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A298A

Large Cable Connector to Flat Steel

Cast aluminum. Description same as above. Wt. .16 lbs. each.

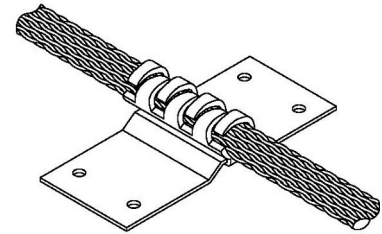
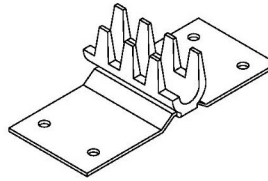
22	28S	32S	40	21	G3	A22	A28	A30	UL
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120

Bonding Connector

Cast bronze crimp and pressed copper splicer for standard cable bonds to metallic surfaces. Bonding area is 4 square inches. Part is tinned. Wt. .22 lbs. each.

32	28S	32S	40	21	G3	A22	A28	A30
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A120

Bonding Connector

Cast and pressed aluminum. Description same as above. Wt. .10 lbs. each.

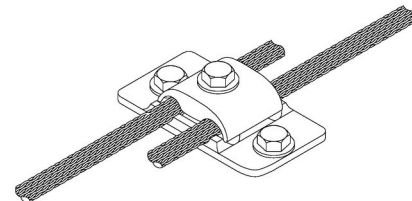
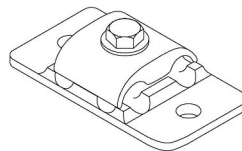
22	28S	32S	40	21	G3	A22	A28	A30	UL
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238B

Bonding Connector Plate

Cast bronze plate with pressure type universal style cable fastener. Bonding area is 8 square inches. Wt. .66 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A238B

Bonding Connector Plate

Cast Aluminum. Description same as above. Wt. .22 lbs. each.

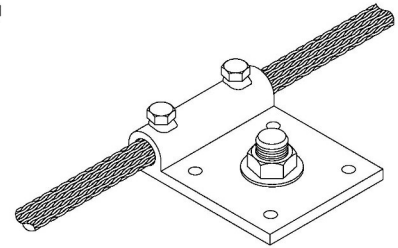
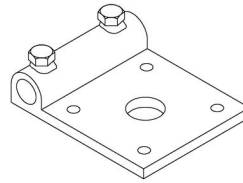
22	28S	32S	40	21	G3	A22	A28	A30	UL
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238

Heavy Duty Bonding Plate

Cast bronze plate with 8 square inches of bonding area and mounting hole is 3/4" diameter. Wt. .78 lbs. each.

238	28S	32S	40	21	G3	A22	A28	A30
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A238

Heavy Duty Bonding Plate

Cast aluminum. Description same as above. Wt. .26 lbs. each.

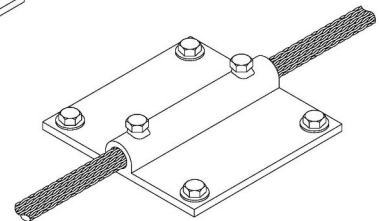
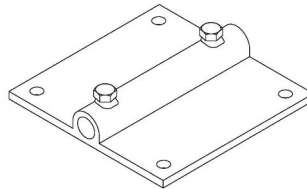
238	28S	32S	40	21	G3	A22	A28	A30	UL
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G89

Heavy Duty Bonding Plate

Cast bronze plate and size is 4" x 4" x 3/16" affording 16 square inches of bonding area. Wt. 1.35 lbs. each.

238	28S	32S	40	21	G3	A22	A28	A30
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AG89

Heavy Duty Bonding Plate

Cast aluminum. Description same as above. Wt. .40 lbs. each.

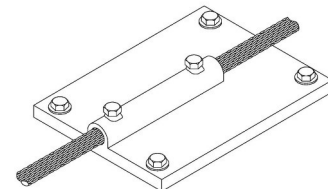
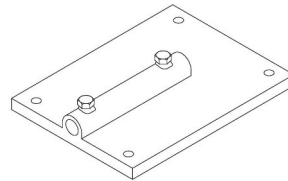
238	28S	32S	40	21	G3	A22	A28	A30	UL
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G88

Extra Heavy Duty Bonding Plate

Cast bronze plate and size is 6" x 4 - 7/16" x 3/16" with over 26 square inches of bonding area. Wt. 3.40 lbs. each.

238	28S	32S	40	21	G3	A22	A28	A30
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AG88

Extra Heavy Duty Bonding Plate

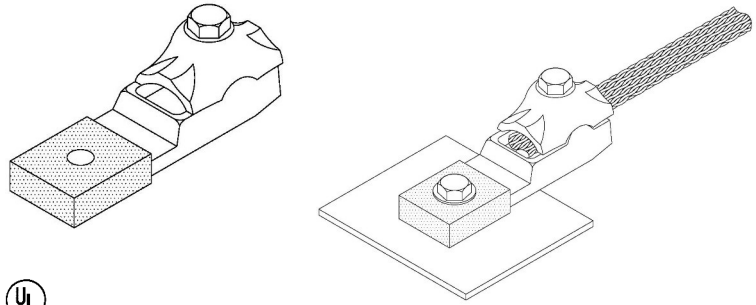
Cast aluminum - same description as above. Wt. 1.20 lbs. each.

238	28S	32S	40	21	G3	A22	A28	A30	UL
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A183X

Bimetal Connector

Cast bronze and aluminum. For connecting copper cable to aluminum surfaces. Mounting hole is 5/16" diameter. Wt. .48 lbs. each.



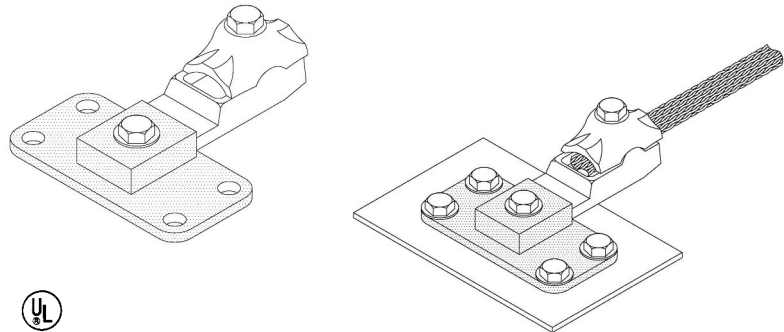
28	28S	32S	40	21	G3	A22	A28	A30
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A183

Bimetal Bonding Plate

Cast aluminum and bronze for connecting copper cable to structural beams. Part provides 8 square inches of bonding area. Mounting holes are 5/16" diameter. Wt. .60 lbs. each.



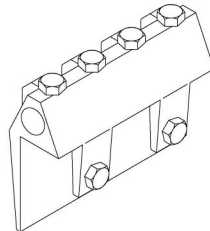
28	28S	32S	40	21	G3	A22	A28	A30
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235X

Heavy Duty Beam Connector

Cast bronze part provides 8 square inches of bonding area. For cables as shown and for use with steel plates up to 3/4" thick. Wt. 1.58 lbs. each.

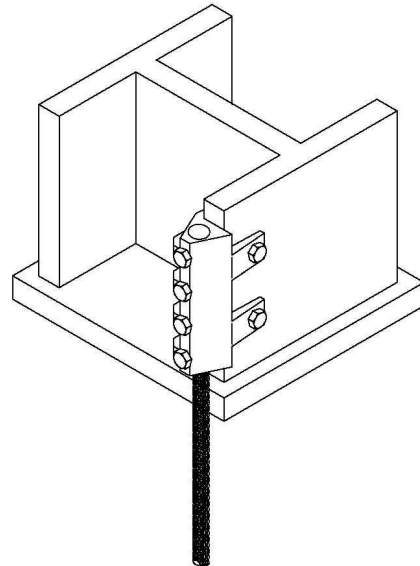


28	28S	32S	40	21	G3	A22	A28	A30
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A235X

Heavy Duty Beam Connector

Cast Aluminum. Description same as above. Wt. .58 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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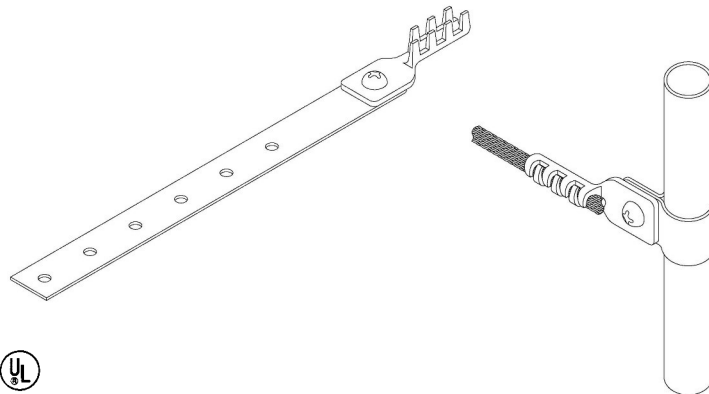


214

Band Style Bonding Strap

Cast bronze crimp style fitting (IP-4) with 8" of IP-49 for use with bonding metal bodies. For use with up to 2" pipe. Longer lengths available upon request. Wt. .22 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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A214

Band Style Bonding Strap

Cast aluminum. Description same as above. Wt. .08 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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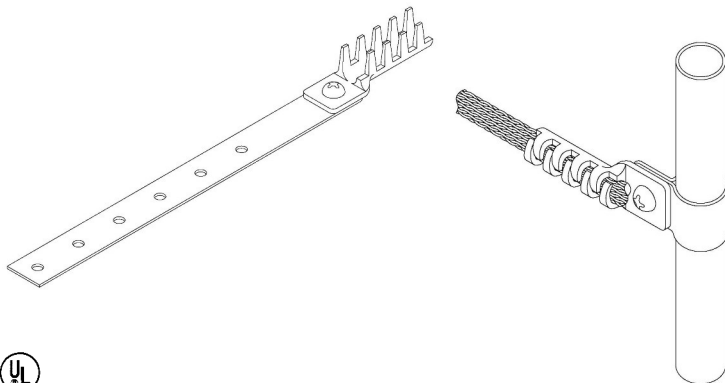


215

Band Style Bonding Strap

Cast bronze crimp style fitting (IP-5) with 8" of IP-49 for use with standard cable. For use with up to 2" pipe. Longer lengths available upon request. Wt. .28 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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45

A215

Band Style Bonding Strap

Cast aluminum. Description same as above. Wt. .14 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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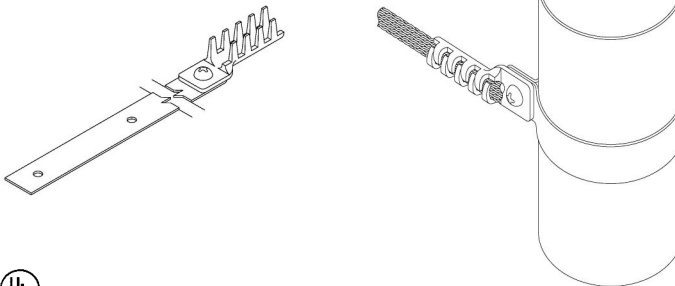


118

Vent Pipe Bonding Strap

Cast bronze crimp style fitting (IP-5) with 15" length of tinned IP-49X copper strap. For use with up to 4" pipe. Longer lengths available upon request. Wt. .42 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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A118

Vent Pipe Bonding Strap

Cast aluminum. Description same as above. Wt. .20 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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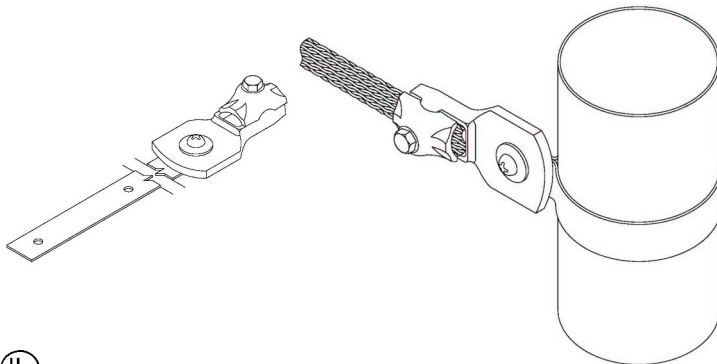


118X

Vent Pipe Bonding Strap

Cast pressure type fitting (IP-596) with 15" of tinned IP-49X copper strap. For use with up to 4" pipe. Longer lengths available upon request. Wt. .80 lbs. each.

22	28S	32S	40	21	GS	A22	A28	A30
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A118X

Vent Pipe Bonding Strap

Cast aluminum. Description same as above. Wt. .30 lbs. each.

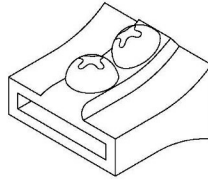
22	28S	32S	40	21	GS	A22	A28	A30
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307X

Adjustable Strap Fastener

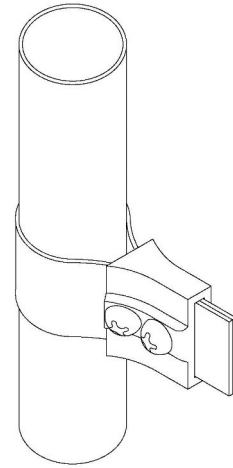
Cast bronze connector is used with (IP-49) strap. Wt. .14 lbs. each.



A307X

Adjustable Strap Fastener

Cast aluminum is used with (IP-A49) strap. Wt. .06 lbs. each.



46

308

Bonding Connector

Cast bronze crimp connector for standard cable and for 1" (IP-49) strap. Wt. .28 lbs. each.

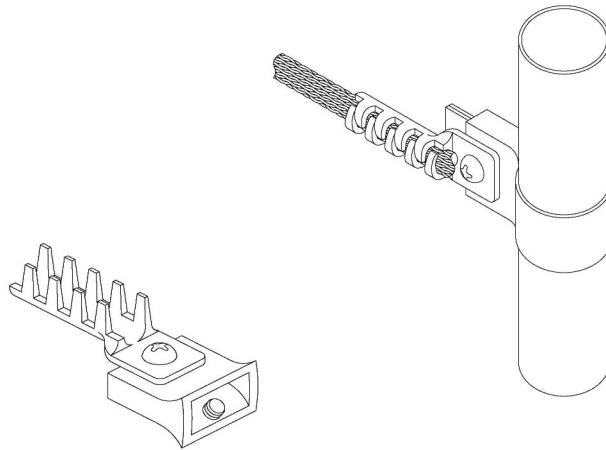
22	28S	32S	40	2"	G3	A22	A25	A30
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A308

Bonding Connector

Cast aluminum crimp connector for standard cable and for 1" (IP-A49). Wt. .14 lbs. each.

22	28S	32S	40	2"	G3	A22	A28	A30
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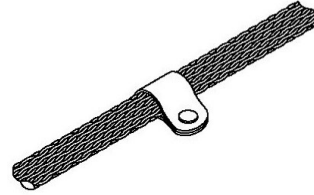
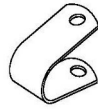


83

One Nail Clip Fastener

Pressed copper loop for standard size cables. Wt. .01 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A83

One Nail Clip Fastener

Pressed aluminum. Description same as above. Wt. .006 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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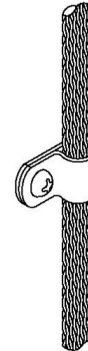
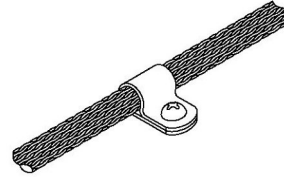
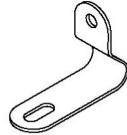


121A

Loop Fastener

Pressed copper loop for standard size cables. Mounting hole is 1/4" diameter. Wt. .02 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A121A

Loop Fastener

Pressed aluminum. Description same as above. Wt. .01 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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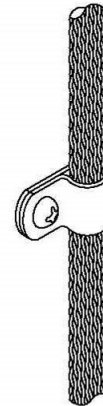
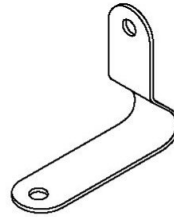


121C

Large Loop Fastener

Pressed copper loop for 4/0 cable. Mounting hole is 1/4" diameter. Wt. .04 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A121C

Large Loop Fastener

Pressed aluminum. Description same as above. Wt. .01 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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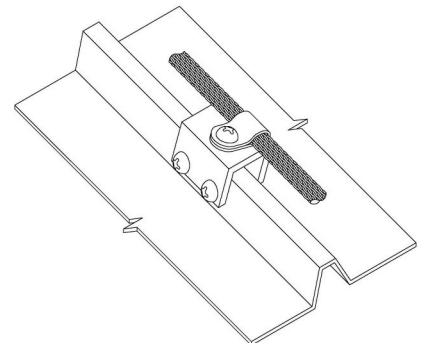
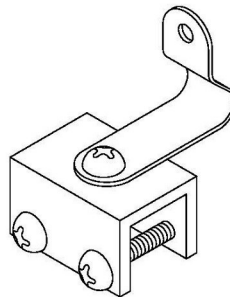


121SS

Standing Seam Loop Fastener

Cast bronze base with pressed copper loop style fastener for seams up to 13/16" wide. Cable run can be parallel or perpendicular. Wt. .18 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A121SS

Standing Seam Loop Fastener

Machined aluminum. Description same as above. Seams up to 7/8" wide. Wt. .14 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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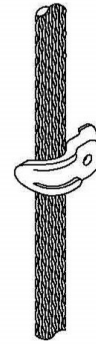
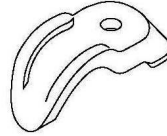


84

One-Hole Fastener

Cast bronze fastener for mounting with nail. Wt. .04 lbs. each.

25	28S	32S	40	21	G3	A22	A28	A30
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A84

One-Hole Fastener

Cast aluminum. Description same as above. Wt. .01 lbs. each.

25	28S	32S	40	21	G3	A22	A28	A30
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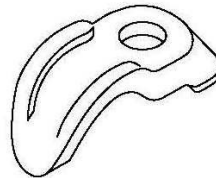
48

84B

Large One-Hole Fastener

Cast bronze fastener has 1/4" diameter hole for mounting. Wt. .04 lbs. each.

25	28S	32S	40	21	G3	A22	A28	A30
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A84B

Large One-Hole Fastener

Cast aluminum. Wt. .01 lbs. each.

25	28S	32S	40	21	G3	A22	A28	A30
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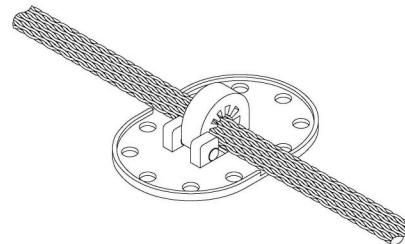
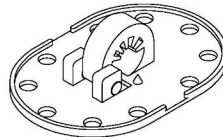


265P

Poly Adhesive Cable Fastener

Superior polycarbonate plastic adhesive cable holder. Part is 2-3/8" wide x 3-1/4" long. Extremely durable, part is fully approved by UL including temperature and impact tests. Wt. .04 lbs. each.

25	28S	32S	40	21	G3	A22	A28	A30
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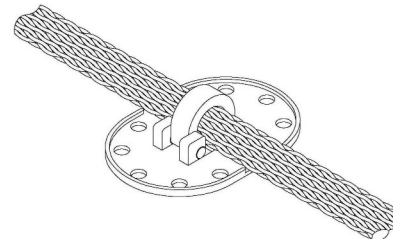
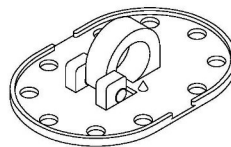


A265P

Poly Adhesive Cable Fastener

Superior polycarbonate plastic adhesive cable holder. Part is 2-3/8" wide x 3-1/4" long. Extremely durable, part is fully approved by UL including temperature and impact tests. Smooth ID for use with larger cables. Wt. .04 lbs. each.

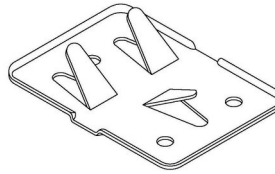
25	28S	32S	40	21	G3	A22	A28	A30
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265A

Adhesive Cable Fastener

Pressed copper adhesive cable fastener with three fold-over tabs to secure cable. Fastener has rolled edges to prevent cuts to mounting surfaces. For use on flat surfaces where fastener penetration is not an option. Size is 2-1/2" wide x 3-1/2" length. Wt. .08 lbs. each.



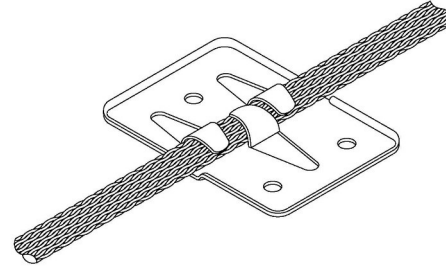
22	28S	32S	40	21	G3	A28	A28	A30
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A265A

Adhesive Cable Fastener

Pressed aluminum - description same as above. Wt. .04 lbs. each

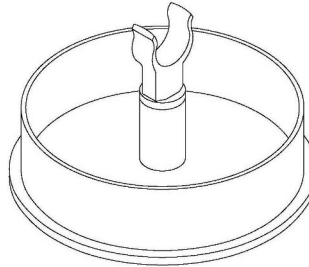
22	28S	32S	40	21	G3	A28	A28	A30
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266

No Nail Pan Style Cable Fastener

Cast bronze fastener with crimp type connector is filled with stone or chips and adhered to roof with adhesive. Outer diameter is 4". Wt. .98 lbs. each.



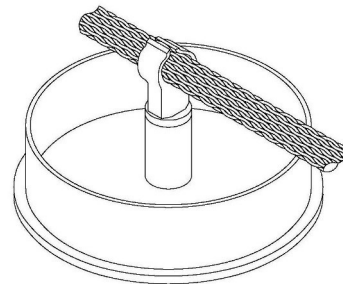
22	28S	32S	40	21	G3	A22	A28	A30
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A266

No Nail Pan Style Cable Fastener

Cast aluminum - description same as above. Wt. .30 lbs. each.

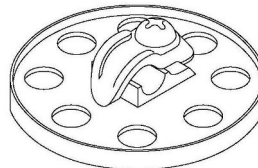
22	28S	32S	40	21	G3	A22	A28	A30
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267

Paste Down Cable Fastener

Cast bronze with clamp style fastener is 3" in diameter. Wt. .32 lbs. each.



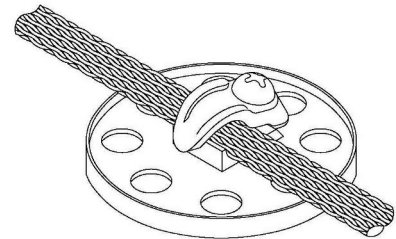
22	28S	32S	40	21	G3	A22	A28	A30
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A267

Paste Down Cable Fastener

Cast aluminum - description same as above. Wt. .10 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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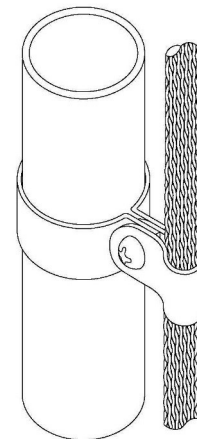
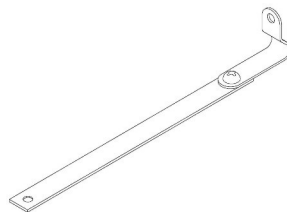


181C

Railing Bracket Clamp

Fastener clamp will fit railings up to 1-3/4" diameter. Fastener clamps for larger diameters available upon request. Wt. .12 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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A181C

Railing Bracket Clamp

Pressed aluminum. Wt. .06 lbs. each.

22	28S	32S	40	21	G3	A28	A28	A30
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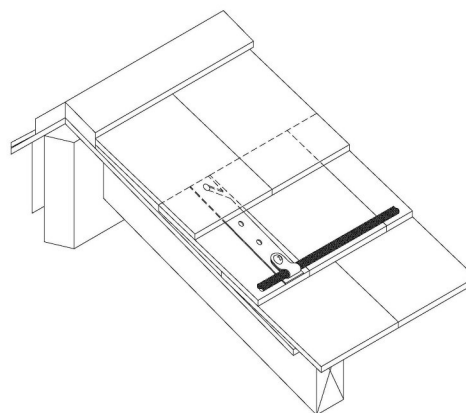
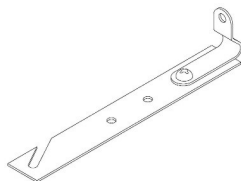


268

Slate Roof Cable Fastener

Fastener clamp is for installation onto slate roofs for cable that runs parallel or perpendicular. Length is adjustable, slips under shingle and hooks around nail. Wt. .15 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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A268

Slate Roof Cable Fastener

Pressed aluminum. Wt. .06 lbs. each.

28	28S	32S	40	21	G3	A28	A28	A30
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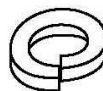


Lock Washers

148L - 1/4" - Wt. .002 lbs. each.

148AL - 5/16" - Wt. .002 lbs. each.

148BL - 3/8" - Wt. .006 lbs. each.



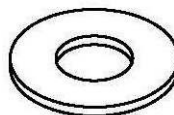
Flat Washers

249L - 1/4" - Wt. .002 lbs. each.

249AL - 5/16" - Wt. .004 lbs. each.

249BL - 3/8" - Wt. .012 lbs. each

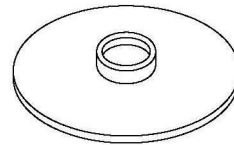
249CL - 1/2" - Wt. .016 lbs. each.



Lead Washers

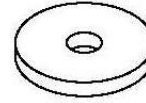
301B - 1-1/4" OD Washer

Washer for use with either 3/8" or 1/2" stems. Wt. .062 lbs. each.



188 - 5/8" OD Washer

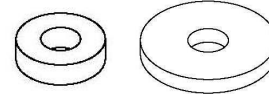
Washer for use with nails or screws. Wt. .014 lbs. each.



Neoprene Rubber Washers

247 - 1/4" ID x 9/16" OD

Wt. .0013 lbs. each.



247A - 3/8" ID x 1-1/4" OD

Wt. .0075 lbs. each.

Nails

143 - Copper 4 Penny nail, 1-1/2" length.

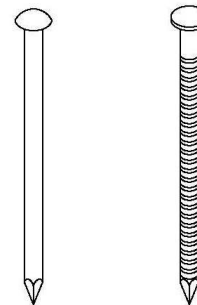
Wt. .006 lbs. each.

144 - Copper 6 Penny nail, 2" length.

Wt. .008 lbs. each.

143L - Stainless Steel Ring Shank 4 Penny nail, 1-1/2" length. Wt. .004 lbs. each

144L - Stainless Steel Ring Shank 6 Penny nail, 2" length. Wt. .006 lbs. each.



Phillips Head Screw

125 - #12 - 3/4" length.

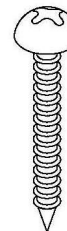
Wt. .006 lbs. each.



Phillips Head Screws

224 - #12 - 1" length - Wt. .01 lbs. each.

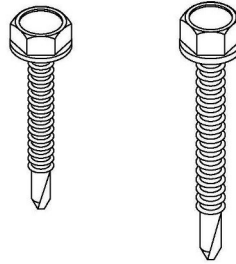
225 - #12 - 1-1/2" length - Wt. .012 lbs. each.



Tek Screws

125T - #10-14 x 1" length - Self-tapping.
Wt. .007 lbs. each.

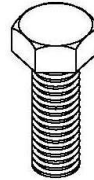
125T12 - #12-14 x 1-1/4" Length
self-tapping. Wt. .011 lbs. each.



Hex Head Bolts

302L - 5/16"-18 x 3/4" length.
Wt. .024 lbs. each.

302AL - 3/8"-16 x 1" length.
Wt. .040 lbs. each.



Nuts

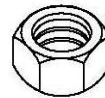
128L - 1/4"-20. Wt. .006 lbs. each.

128AL - 5/16"-18. Wt. .008 lbs. each.

128BL - 3/8"-16. Wt. .010 lbs. each.

128CL - 1/2"-13. Wt. .026 lbs. each.

128DL - 5/8" - 11. Wt. .07 lbs. each.



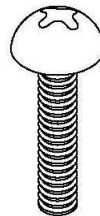
Phillips Head Machine Screws

130L - 1/4" -20 x 1/2" length.
Wt. .010 lbs. each.

131L - 1/4"-20 x 3/4" length.
Wt. .012 lbs. each.

132L - 1/4"-20 x 1" length.
Wt. .016 lbs. each.

133L - 1/4"-20 x 1-1/2" length.
Wt. .020 lbs. each.



123

Loop Fastener With Lead Anchor

Assembly includes an IP-121A cooper loop fastener and a 1/4" lead anchor.

Wt. .08 lbs. each.

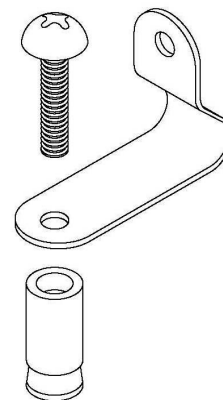
22	28S	32S	40	21	G3	A22	A28	A30
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A123

Loop Fastener With Lead Anchor

Aluminum. As above with IP-A121A aluminum loop fastener. Wt. .07 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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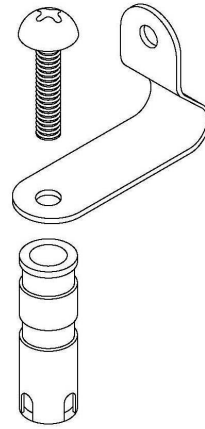


124

Loop Fastener With Expansion Anchor

Assembly includes an IP-121A copper loop fastener and a 1/4" expansion anchor. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A124

Loop Fastener With Expansion Anchor

Aluminum. As above with IP-A121A aluminum loop fastener. Wt. .05 lbs. each.

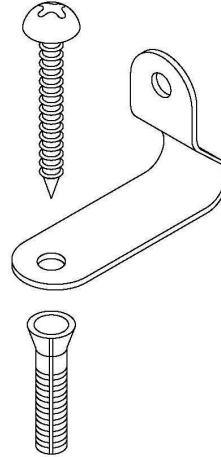
22	28S	32S	40	21	G3	A22	A28	A30
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G64

Loop Fastener With Lead Anchor

Assembly includes 1" SS wood screw, IP-121A copper loop fastener and lead anchor. Wt. .046 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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AG64

Loop Fastener With Lead Anchor

Aluminum. As above with IP-A121A aluminum loop fastener. Wt. .036 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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292

Expansion Anchor and Screw

Cast bronze clamp with anchor and screw. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A292

Expansion Anchor and Screw

Cast aluminum. Wt. .06 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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293

Lead Anchor and Screw

Cast bronze with lead anchor and screw. Wt. .08 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30
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A293

Lead Anchor and Screw

Cast aluminum. Wt. .06 lbs. each.

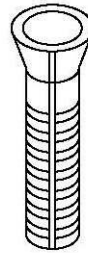
22	28S	32S	40	21	G3	A22	A28	A30
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Lead Anchor Screw-In**For Wood Applications**

295B - For #12 Size Screw (IP-224), 1" length. Drill size 5/16". Wt. .02 lbs. each.

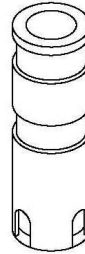
295C - For #12 Size Screw (IP-225), 1-1/2" length. Drill size 5/16". Wt. .02 lbs. each.

**Expansion Anchors****For Wood Applications**

294 - 1/4"-20, 1-1/4" length. Drill size 1/2". Wt. .02 lbs. each.

294A - 5/16"-18, 1-1/2" length. Drill size 9/16". Wt. .04 lbs. each.

561 - 3/8"-16, 2" length. Drill size 3/4". Wt. .04 lbs each.

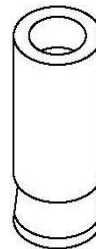
**Lead Anchors****For Masonry Applications**

295 - 1/4"-20, 3/4" length. Drill size 1/2". Wt. .04 lbs. each.

295A - 5/16"-18, 1" length. Drill size 5/8". Wt. .06 lbs. each.

562 - 3/8"-16, 1-1/4" length. Drill size 3/4". Wt. .10 lbs. each.

564 - 1/2"-13, 1-1/2" length. Drill size 7/8". Wt. .16 lbs. each.

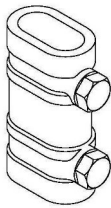
**HD1412S****Hammer Drive Anchor**

Stainless steel drive nail anchor, 1/4" diameter x 1-1/4" length. Wt. .02 lbs. each.

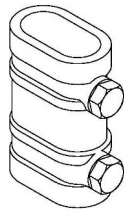


Ground Rods—Copperclad

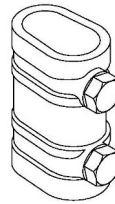
<u>IPC#</u>	<u>Specs</u>	<u>Wt.</u>
137	1/2" x 8'	5.52 lbs.
138	1/2" x 10'	6.98 lbs.
139	5/8" x 8'	6.68 lbs.
577	5/8" x 10'	8.44 lbs.
579	3/4" x 10'	12.36 lbs.



50A



51A



52A

Ground Rod Clamps

Cast bronze clamp with two stainless steel bolts.

50A - 1/2" Clamp. Wt. .36 lbs. each.

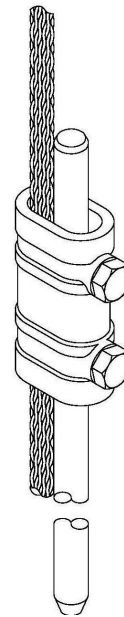
22	28S	32S	40	21	G5	A22	A25	A30	
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51A - 5/8" Clamp. Wt. .42 lbs. each.

22	28S	32S	40	21	G5	A22	A25	A30	
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52A - 3/4" Clamp. Wt. .52 lbs. each

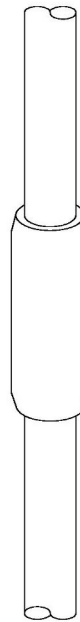
22	28S	32S	40	21	G3	A22	A25	A30	
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Compression Ground Rod Couplers

IPC offers 3" length compression couplers for applications that require multiple ground rods.

IPC#	Specs	Wt.
141CC	1/2" Coupler	.32 lbs.
141XC	5/8" Coupler	.32 lbs.
141YC	3/4" Coupler	.32 lbs.



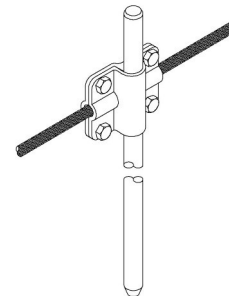
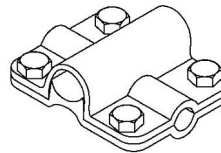
56

119B

Heavy Duty Cross Run Clamp

Cast bronze part has four hex screws and is used for cross-connecting 1/2" diameter cable to either 5/8" or 3/4" diameter ground rods. Wt. .64 lbs. each.

12	28S	32S	40	21	G3	A22	A28	A30
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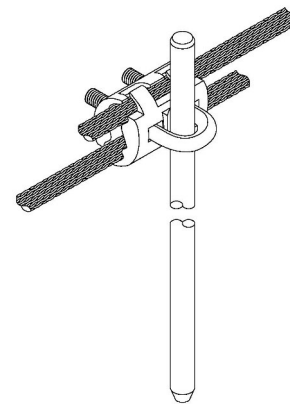
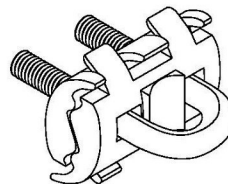


28U

All Purpose U-Bolt Clamp

Cast bronze connector used in addition to ground rod clamp where a connection is needed to tap into a counterpoise or ground loop. One or two horizontal cables can be utilized and ground rod up to 3/4" diameter. The 28U U-bolt clamp is not to be used as a primary ground connection but rather for a secondary connection to a supplemental grounding system. Wt. .62 lbs. each.

12	28S	32S	40	21	G3	A22	A28	A30
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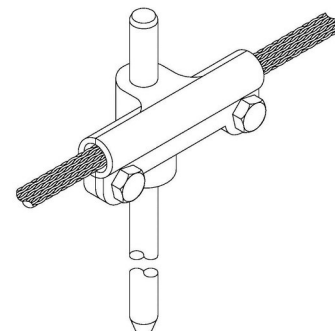
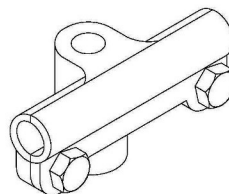


196

Heavy Duty Ground Rod and Cross Run Clamp

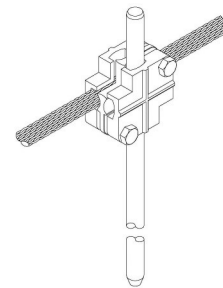
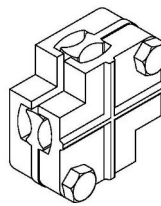
Cast bronze part with 4" length cable connector for connection to 5/8" diameter ground rod. Part also available for 3/4" diameter ground rod upon request. Wt. .86 lbs. each.

12	28S	32S	40	21	G3	A22	A28	A30
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197

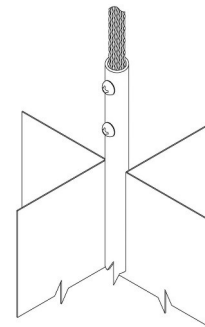
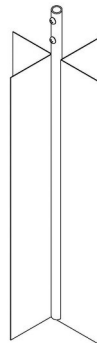
All Purpose Ground Rod and Cable Clamp
 Cast bronze connector for ground rods up through 3/4" diameter and for connection to one cable in either a vertical or horizontal position. Wt. .60 lbs. each.



28	28S	32S	40	21	G3	A22	A25	A30	UL
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584

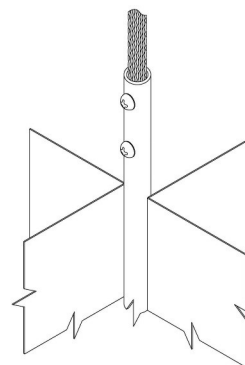
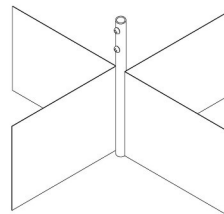
Large Four Wing Ground Plate
 Made from 20 gauge copper sheet with each wing 3-1/2" wide x 18" length. Wt. 3.46 lbs. each.



28	28S	32S	40	21	G3	A22	A25	A30	UL
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585

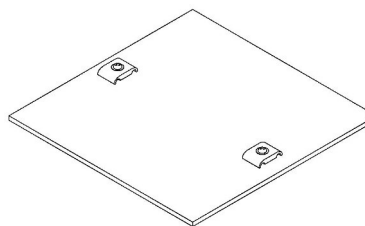
Small Four Wing Ground Plate
 Made from 20 gauge copper sheet with each wing 6" wide x 9" length. Wt. 2.66 lbs. each.



28	28S	32S	40	21	G3	A22	A25	A30	UL
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586

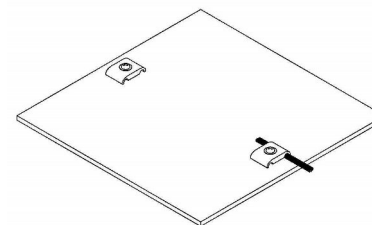
Solid Cast Ground Plate
 Ground plate is cast from bronze and is 12" x 12" x 1/4" thick with two mechanical cable clamps to secure the cable. Wt. 13.28 lbs. each.



28	28S	32S	40	21	G3	A22	A25	A30
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586X

Solid Cast Ground Plate
 Same description as above except 1/2" thick. Wt. 20.68 lbs. each.



28	28S	32S	40	21	G3	A22	A25	A30	UL
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Copper Sheet Ground Plates

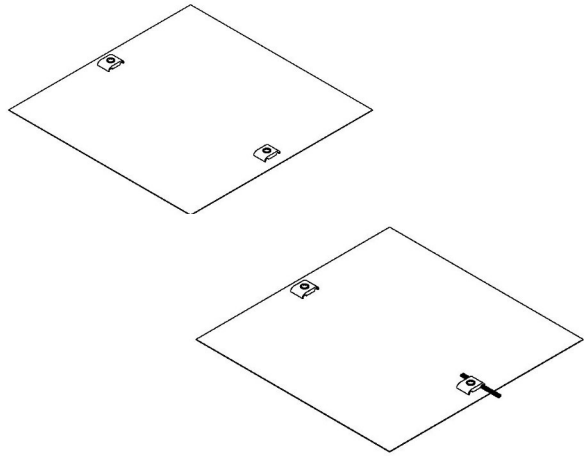
Ground plates are made from 20 gauge copper sheets with two mechanical cable clamps to secure cable. Part number and specifications are as follows:

587 – 18" x 36" length.
Wt. 6.75 lbs. each.

587A – 36" x 36" length.
Wt. 13.48 lbs. each.

588 – 18" x 24" length.
Wt. 4.60 lbs. each.

589 – 18" x 18" length.
Wt. 3.13 lbs. each.

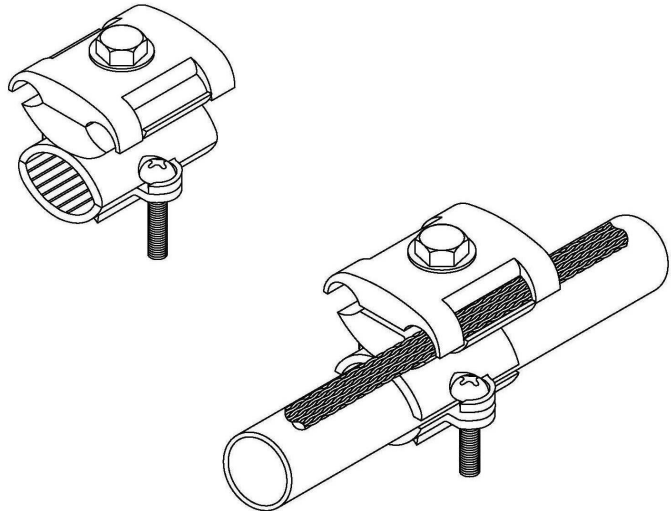


22	28S	32S	40	21	G3	A22	A28	A30	UL
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58 306CX

Small Pipe Clamp for Copper Pipes

Cast bronze pipe clamp for cables through 2/0 providing 1-1/2" contact. Fits maximum 3/4" copper pipe and by inverting bottom casting allows for smaller 1/4" – 5/8" copper pipe. Lower casting is tinned to prevent corrosion. Wt. .62 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A306CX

Small Aluminum Pipe Clamp

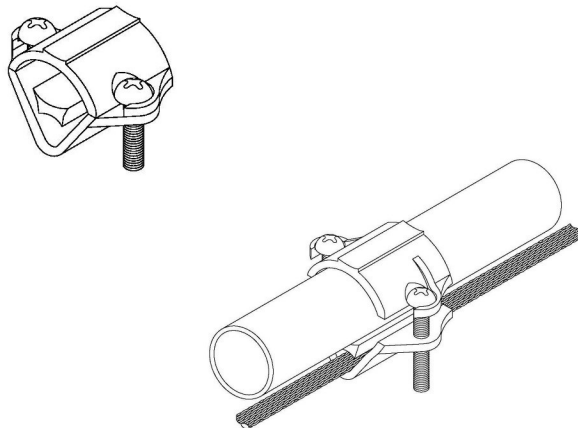
Same description as above except cable clamp is aluminum. Wt. .40 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	UL
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306

Small Perfection Pipe Clamp

Cast bronze pipe clamp for cables through 2/0 providing 1-1/2" contact. Fits 1/2" – 1" iron pipes and 1/4" – 1" copper pipes. Maximum 1-1/2" outer diameter. Part is tinned to prevent corrosion. Wt. .48 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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A306

Small Perfection Pipe Clamp

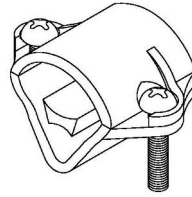
Cast aluminum as above description. Wt. .18 lbs. each.

22	28S	32S	40	21	G3	A22	A28	A30	UL
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306X

Medium Perfection Pipe Clamp

Cast bronze pipe clamp for cables through 2/20 providing 1-1/2" contact. Fits 1-1/4" and 1-1/2" iron pipes. Maximum 2" outer diameter. Part is tinned to prevent corrosion. Wt. .48 lbs. each.

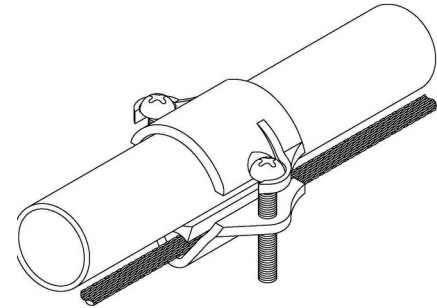


32	28S	32S	40	21	G3	A28	A28	A30
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A306X

Medium Perfection Pipe Clamp

Cast aluminum as above description. Wt. .26 lbs. each.



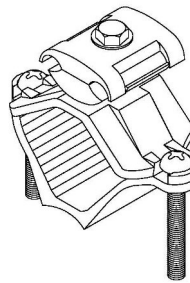
22	28S	32S	40	21	G3	A22	A28	A30
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306A

Large Perfection Pipe Clamp

Cast bronze pipe clamp for cables through 2/0 providing 1-1/2" contact. Fits 1-1/2" – 2" iron pipes. Maximum 2-3/8" outer diameter. Lower casting may be inverted to fit smaller diameter pipes. Lower casting is tinned to prevent corrosion. Wt. 1.04 lbs. each.

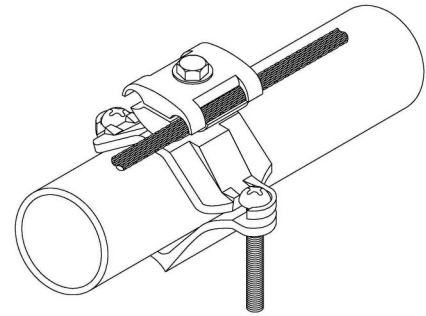


22	28S	32S	40	21	G3	A22	A28	A30
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A306A

Large Perfection Pipe Clamp

Cast aluminum as above description. Wt. .44 lbs. each.



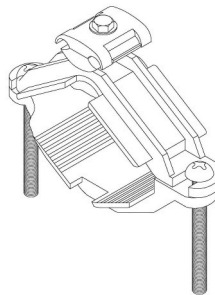
22	28S	32S	40	21	G3	A22	A28	A30
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306B

Extra-Large Perfection Pipe Clamp

Cast bronze pipe clamp for cables through 2/0 providing 1-1/2" contact. Fits 2-1/2" – 4" iron pipes. Maximum 4-1/2" outer diameter. Lower casting is tinned to prevent corrosion. Wt. 1.04 lbs. each.

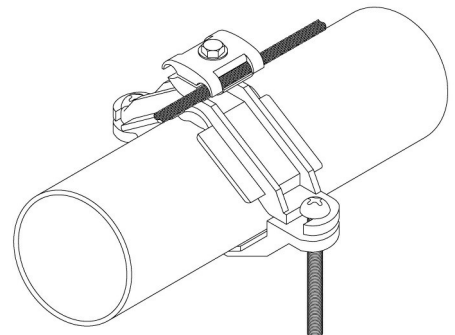


32	28S	32S	40	21	G3	A22	A28	A30
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A306B

Extra-Large Perfection Pipe Clamp

Cast aluminum as above description. Wt. .84 lbs. each.



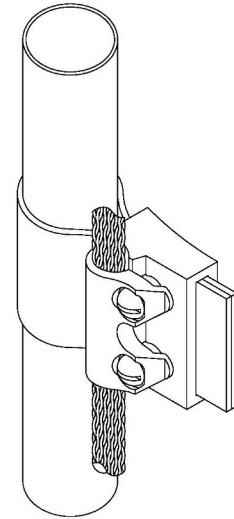
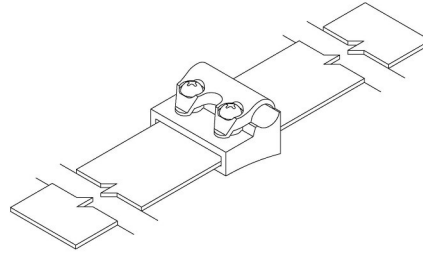
22	28S	32S	40	21	G3	A22	A28	A30
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117, 117A, 117B

Tite-Grip Strap and Clamp

Cast bronze clamp and copper strap for bonding to pipes. Strap (IP-49Y) is shaped around pipe. Casting is positioned within 1/8" of pipe and screw is tightened on flat part of casting. Screws on beveled edge are tightened to draw strap tight. Other length straps available upon request.



117 – 12" Tite-Grip for pipes up to 2" diameter. Wt. 1.02 lbs each.

117A – 18" Tite-Grip Strap for pipes up to 4" diameter. Wt. 1.21 lbs. each.

117B – 32" Tite-Grip Strap for pipes up to 8" diameter. Wt. 1.70 lbs. each.

60

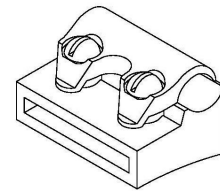
22	28S	32S	40	21	63	A22	A25	A30
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117C

Tite-Grip Clamp

Cast bronze clamp only for use with (IP-49Y), 1-3/4" wide strap. Wt. .58 lbs. each.



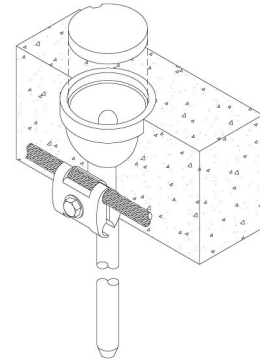
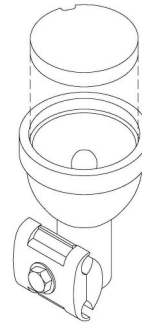
22	28S	32S	40	21	63	A22	A25	A30
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310

Ground Receptacle

Cast bronze receptacle with cable clamp and fastener for connecting one or two cables to ground rod. Lid is furnished with SS chain that secures top to receptacle. When ordering, specify ground rod diameter and threaded or plain. Wt. 2.72 lbs.



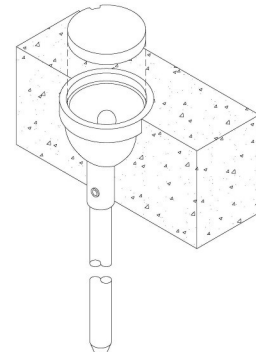
22	28S	32S	40	21	63	A22	A25	A30
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311

Ground Receptacle

Cast bronze receptacle for use with ground rod. Lid is furnished with SS chain that secures top to receptacle. When ordering, specify ground rod diameter and treaded or plain. Wt. 2.22 lbs. each.

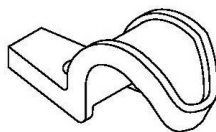


22	28S	32S	40	21	63	A22	A25	A30
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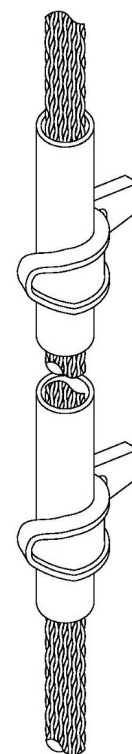
**G81
Guard Fastener**

Cast bronze guard fastener for use with IP-591, 3/4" copper guard pipe. Bolt hole size is 5/16" diameter. Wt. .06 lbs. each.



**591
Guard Pipe**

Copper guard pipe is 8' in length and 3/4" diameter. Fits standard cables through 2/0. Wt. 4.26 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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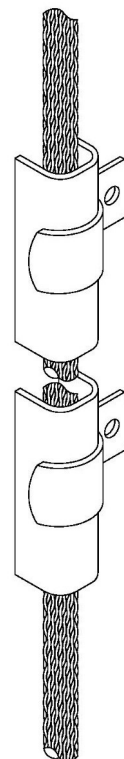
**135A
"U" Guard Fastener**

Galvanized steel fastener for use with IP-349 polyurethane "U" guard or 3/4" PVC. Not for use with copper guards. Wt. .08 lbs. each.



**349P
"U" Guard Channel**

Preformed polyurethane "U" guard is 8' in length and may be painted to desired color. For cables through 2/0 size. Wt. .68 lbs. each.



22	28S	32S	40	21	G3	A22	A28	A30
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177

Bonding Wedge – 1” Conduit

Cast bronze wedge is used when coursing cable through 1” diameter copper conduit. Wedges must be used to bond cable on each end of conduit. Wt. .26 lbs. each.

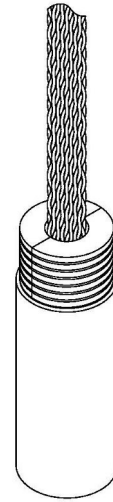
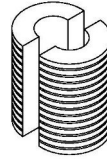
22	28S	32S	40	21	63	A22	A28	A30
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A177

Bonding Wedge—1” Conduit

Cast aluminum. Wt. .08 lbs. each.

22	28S	32S	40	21	63	A22	A28	A30
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62

177X

Bonding Wedge – 3/4” Conduit

Cast bronze wedge is used when coursing cable through 3/4” diameter copper conduit. Wedges must be used to bond cable on each end of conduit. Wt. .04 lbs. each.

22	28S	32S	40	21	63	A22	A28	A30
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IPC has access to other products and services in addition to the lightning protection products that we manufacture. For more information and pricing, please contact IPC Sales and we will assist you.

Chemical Ground Rods

IPC has access to provide electrolytic grounding systems as an alternative product to conventional grounding systems. Chemical ground rods are installed where low-resistance grounding is critical in protection of machinery, electronics, and personnel. Industries for consideration include: power plants, utility substations, cell towers, communication centers, computer sites, and other general commercial and industrial sites.

There are various standard vertical and horizontal models and larger custom sizes are also available. Units come complete with vented covers for easy inspection, a pigtail of copper cable, ground test well and replacements of the specially formulated ground enhancing materials. Call for your specific application.

Surge Protection Devices

IPC has several key manufacturing sources to turn to when it comes to surge protection devices needs. Whether your need is electrical, telephone, computer or CA/TV, our suppliers can provide the technical advice and recommendations that you need. As of September 29, 2009, UL revised their standard UL 1449 and the requirements for lightning protection systems. All surge protection devices must meet the requirements of UL 1449 Third Edition in order to secure a UL Master Label.

Not all specifying or consulting engineers may be aware of this latest revision to UL 1449. If surge protection is this is not in your scope of supply, be sure that the party responsible for installation of surge protection devices is aware of these changes when a UL Master Label is required. A full list of compliant surge protection devices is available on the UL website. Call IPC today with your specific application needs and we will assist you with the proper equipment.

Exothermic Welding Devices

IPC utilizes the thermOweld line of exothermic equipment when connections of this type are required or specified. The thermOweld process creates a permanent homogenous and molecular bond that cannot loosen or corrode. Compared to compression connectors, split bolts, crimp connectors, brazing and other connections, the thermOweld connection is clearly superior. In fact, a thermOweld connection will also withstand more current than the conductor itself.

When mold, welds and other related equipment are needed, contact the IPC sales department and we will assist you in the selection process. We will email you mold configuration sheets for selecting the proper mold and welds and then IPC will order direct from thermOweld. One important thing to remember is that lightning protection cable is sized differently than electrical cables which effects mold construction. Following is a thermOweld designed chart showing the code assigned for IPC cables:

IPC Cable	Cable Code
IPC-22	A
IPC-32S	C
IPC-40	E
IPC-21	G
IPC-G3	K

Orders for thermOweld molds and related equipment are special orders and are dropped shipped direct to your designated location. Mold orders will normally ship within 1-3 days except special design molds which are 4 days after thermOweld receives the order.



IPC offers our contractors a few specialized tools to assist in your installations. More common tools, such as Channel Locks®, hammers, screwdrivers, box wrenches, etc., are ones already in your tool box. If you require any of these, your local home supply store will have these items for your purchase. .

64 354 Collapsible Cable Stand

Stand is made entirely of steel but is lightweight, sturdy and durable. The stand is a big aid for small and large jobs as cable is unwound from the spool without getting tangled. Unit weight is approximately 9 lbs.



357 Cable Cutters

Can be used with both copper and aluminum cable for sizes up to IPC 21 and A30. cable. Cutters are approximately 9" in length.



358 Knipex® Alligator Pliers

Superior gripping angle and power over traditional Channellocks®. The Knipex® Pliers are 10" in length with 3" maximum jaw opening.



365 DH Ground Rod Driver

Driver is designed for driving ground rods into mother earth. The driver is much easier and safer to use as opposed to a sledge hammer. The handle is a hollow pipe with two handles. Driver is approximately 25" in length and weighs about 19 lbs. IPC offers this product as a lower cost alternative rather than the more expensive electric drivers.



369 Point Level

Level is satisfactory for use with any of our strike termination devices. The level is lightweight and small enough to carry in your pocket.



Extech 382252 OHMS Tester Ground Resistance Tester

Tester is used for measuring the resistance of a grounding electrode or ground rod. The tester will provide the user with a three point fall of potential ground resistance field test for projects and installations where this is required. Unit is very compact, battery powered and comes in a convenient carrying case. Complete instructions are provided by the unit's manufacturer.



TGW - 910 - 10 Ground Test Well

Fabricated and molded from HDPE Plastic for non-traffic areas like golf courses and grassy areas. Size is 10" OD top and 13" OD bottom lip x 10 1/2" height. Wt. 4.15 lbs each.



65

Other Ground Test Wells

IPC is able to provide additional test wells based on your specifications. IPC has access to other vendors that provide large units in addition to other heavy duty traffic rated test wells.



172 XP-M1-Adhesive

A moisture cure universal adhesive/sealant designed for bonding and sealing a wide range of construction materials. It forms a tough elastic waterproof seal to most roofing materials, masonry, wood, glass aluminum and foam. Please verify with roofing contractor for compatibility.

***Not to be used on rubber roofs**



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