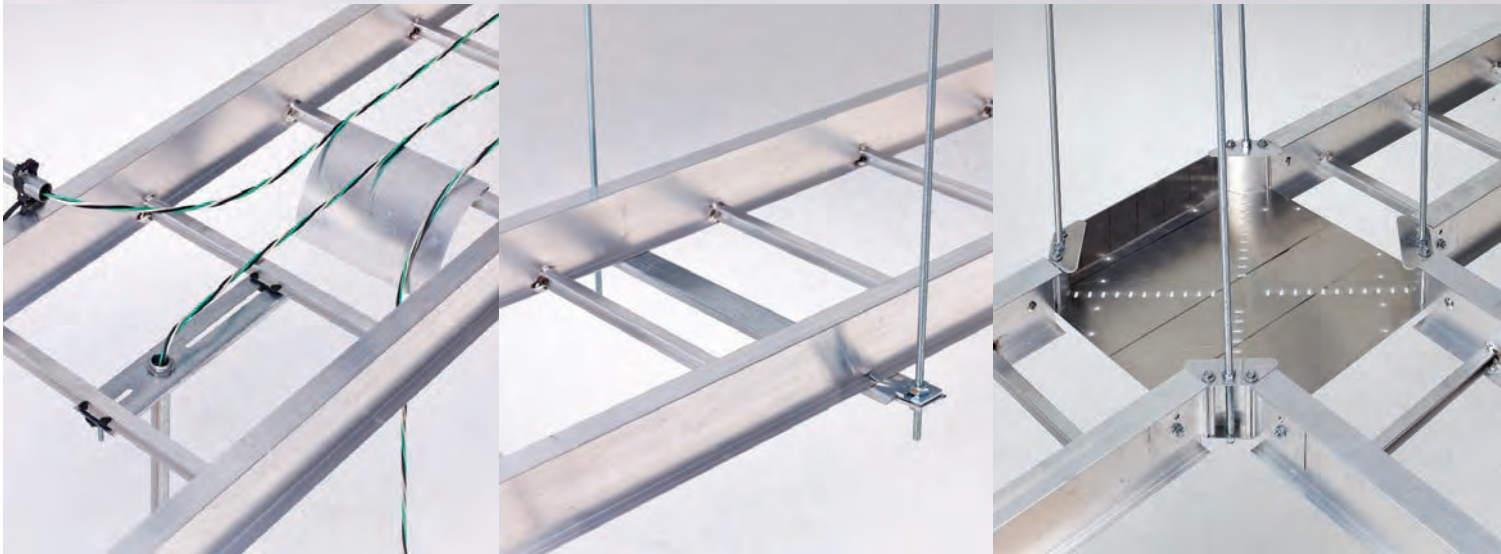
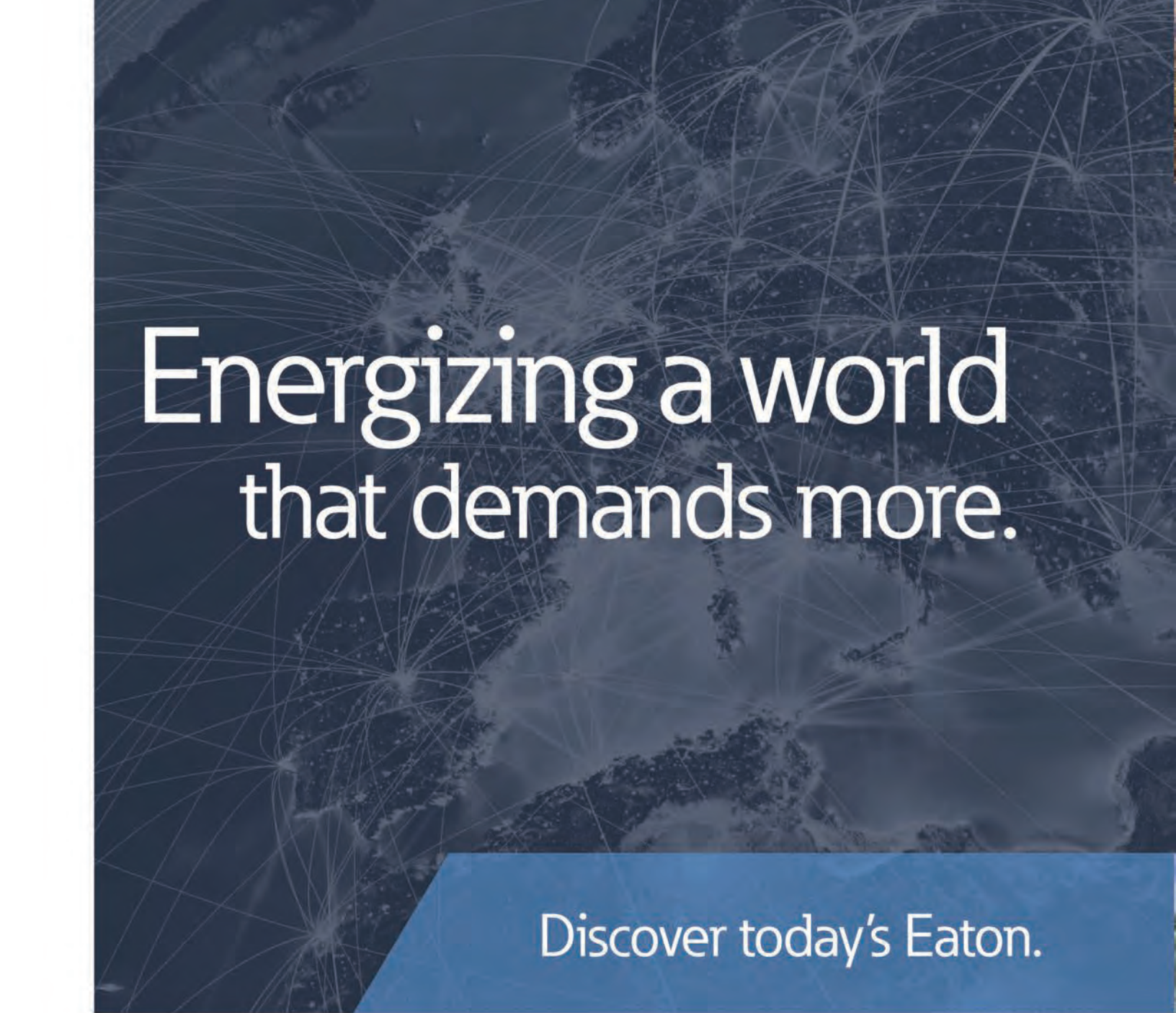


# KwikSplice<sup>TM</sup> aluminum cable tray system





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# General Information

For over 50 years, Eaton's B-Line Business has been a leader in cable management systems. Today, B-Line has state of the art manufacturing facilities to support our customers around the globe. Our knowledgeable customer service, sales and sales engineering team, we are positioned to support cable management requirements from small to large scale commercial, industrial, and data center applications.

## Eaton's B-Line Business Manufacturing Locations



For more information, visit [www.bline.com](http://www.bline.com) or contact us at [www.cooperbline.com/contactus](http://www.cooperbline.com/contactus).



B-Line cable trays conform to the requirements of IEC Standard 61537, 2001 Ed.



Important notice: No warranty, either expressed or implied, is made as to either its applicability to or its compatibility with specific requirements of this information, nor for damages consequential to its use. All design characteristics, specifications, tolerances and similar information are subject to change without notice.

### NOTICE

B-Line reserves the right to change the specifications, materials, equipment, prices or the availability of products at any time without prior notice. While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, B-Line is not responsible for inaccuracies resulting from undetected errors or omissions.

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# KwikSplice™ Aluminum Cable Tray

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Covers - see page 14

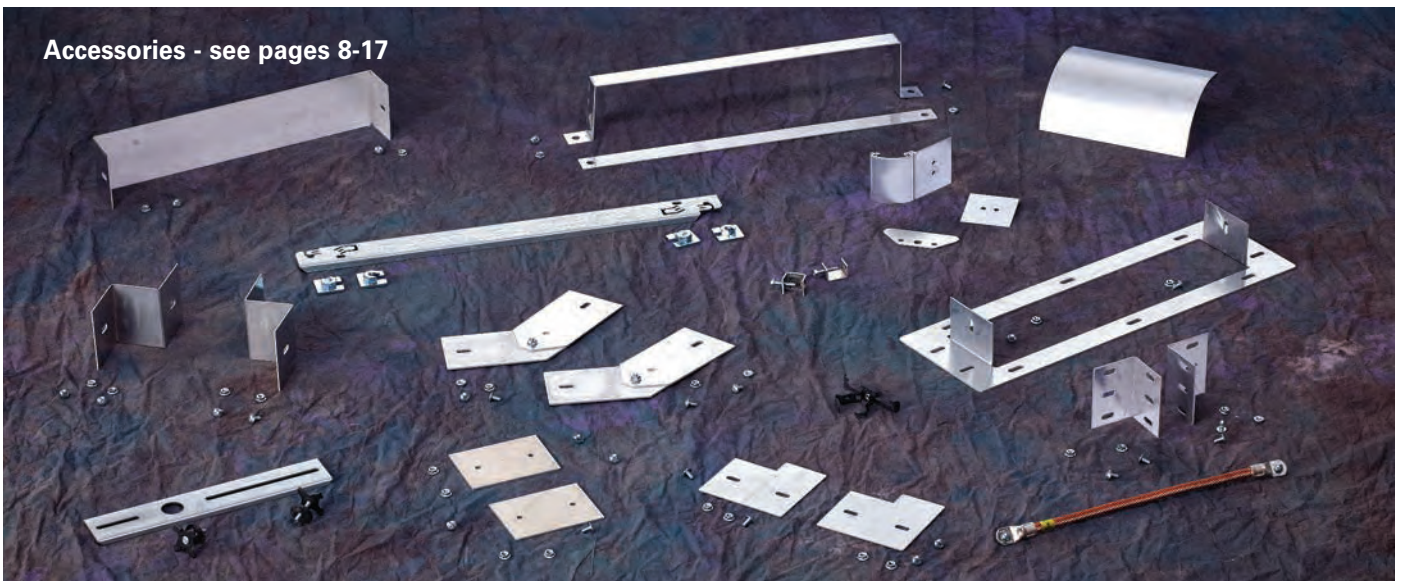




Fittings - see pages 22-34



Accessories - see pages 8-17

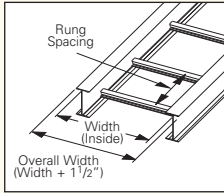


## KSA4A and KSA5A Straight Sections

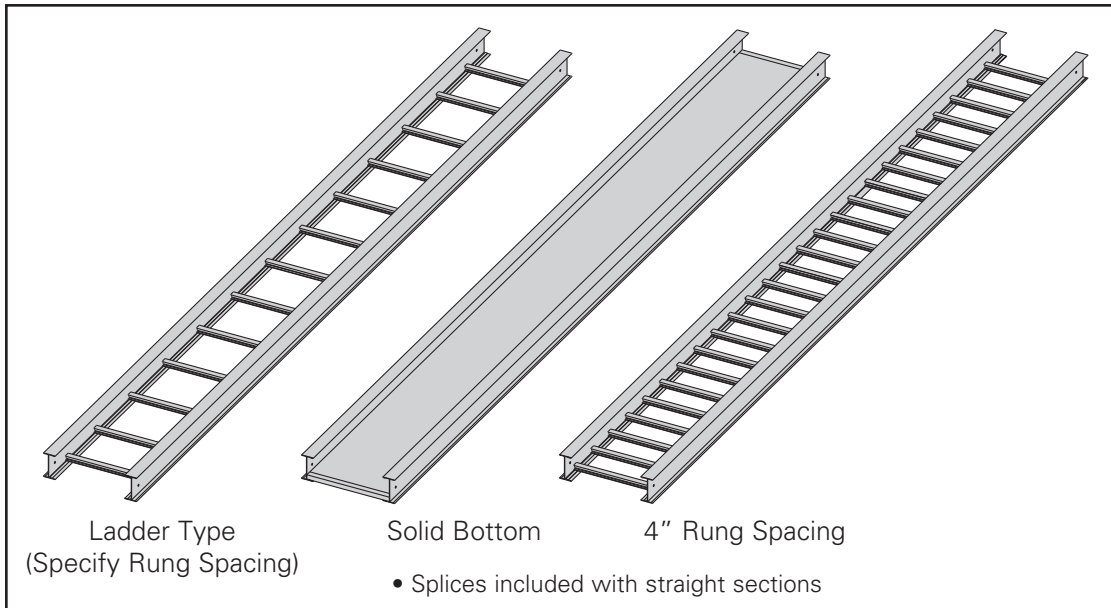
### Straight Section Part Numbering

Prefix  
Example: **KS A 4 A 09 - 12 - 144**

| Series | NEMA Class                                 | Height           | Material     | Type                                                                                                                                                       | Width                                                                          | Length                                                   |
|--------|--------------------------------------------|------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|
| KS     | A = 50 Lbs/Ft<br>NEMA 12A<br>(12 ft. span) | 4 = 4"<br>5 = 5" | A = Aluminum | <b>Ladder-</b><br>06 = 6" rung spacing<br>09 = 9" rung spacing<br>12 = 12" rung spacing<br><br><b>Trough-</b><br>04 = 4" rung spacing<br>SB = Solid Bottom | 06 = 6"<br>09 = 9"<br>12 = 12"<br>18 = 18"<br>24 = 24"<br>30 = 30"<br>36 = 36" | ①144 = 12 ft.<br>②120 = 10 ft.<br>①Primary<br>②Secondary |

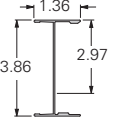


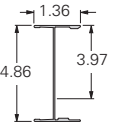
Values are based on simple beam tests per VE-1 on 36" wide cable tray with rungs spaced on 12" centers. The published load safety factor is 1.5. To convert 1.5 safety factor to 2.0, multiply the published load by 0.75. To obtain mid-span deflection, multiply a load by the deflection multiplier. Cable tray must be supported on spans shorter than or equal to the length of the tray.





## KSA4A and KSA5A Straight Section Technical Data

| B-Line Series<br>Side Rail Dimensions                                                          | NEMA, CSA & UL<br>Classifications                                          | Span<br>ft | Load<br>lbs/ft | Deflection<br>Multiplier | Design Factors<br>for Two Rails                                                       | Span<br>meters | Load<br>kg/m | Deflection<br>Multiplier | Design Factors<br>for Two Rails                                                         |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|--------------------------|---------------------------------------------------------------------------------------|----------------|--------------|--------------------------|-----------------------------------------------------------------------------------------|
| <b>KSA4A</b>  | NEMA: 12A<br>CSA: C-3m<br>UL Cross-Sectional<br>Area: 0.60 in <sup>2</sup> | 6          | 221            | 0.0016                   | Area = 0.80 in <sup>2</sup><br>Sx = 0.90 in <sup>3</sup><br>Ix = 1.79 in <sup>4</sup> | 1.8            | 328          | 0.028                    | Area = 5.16 cm <sup>2</sup><br>Sx = 14.75 cm <sup>3</sup><br>Ix = 74.51 cm <sup>4</sup> |
|                                                                                                |                                                                            | 8          | 124            | 0.0051                   |                                                                                       | 2.4            | 185          | 0.088                    |                                                                                         |
|                                                                                                |                                                                            | 10         | 79             | 0.0126                   |                                                                                       | 3.0            | 125          | 0.215                    |                                                                                         |
|                                                                                                |                                                                            | 12         | 55             | 0.0261                   |                                                                                       | 3.7            | 82           | 0.445                    |                                                                                         |
|                                                                                                |                                                                            |            |                |                          |                                                                                       |                |              |                          |                                                                                         |

| B-Line Series<br>Side Rail Dimensions                                                          | NEMA, CSA & UL<br>Classifications                                          | Span<br>ft | Load<br>lbs/ft | Deflection<br>Multiplier | Design Factors<br>for Two Rails                                                       | Span<br>meters | Load<br>kg/m | Deflection<br>Multiplier | Design Factors<br>for Two Rails                                                          |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|--------------------------|---------------------------------------------------------------------------------------|----------------|--------------|--------------------------|------------------------------------------------------------------------------------------|
| <b>KSA5A</b>  | NEMA: 12A<br>CSA: C-3m<br>UL Cross-Sectional<br>Area: 0.60 in <sup>2</sup> | 6          | 219            | 0.0009                   | Area = 0.92 in <sup>2</sup><br>Sx = 1.24 in <sup>3</sup><br>Ix = 3.08 in <sup>4</sup> | 1.8            | 326          | 0.016                    | Area = 5.94 cm <sup>2</sup><br>Sx = 20.32 cm <sup>3</sup><br>Ix = 128.20 cm <sup>4</sup> |
|                                                                                                |                                                                            | 8          | 123            | 0.0030                   |                                                                                       | 2.4            | 183          | 0.051                    |                                                                                          |
|                                                                                                |                                                                            | 10         | 79             | 0.0073                   |                                                                                       | 3.0            | 120          | 0.125                    |                                                                                          |
|                                                                                                |                                                                            | 12         | 55             | 0.0151                   |                                                                                       | 3.7            | 81           | 0.259                    |                                                                                          |
|                                                                                                |                                                                            |            |                |                          |                                                                                       |                |              |                          |                                                                                          |

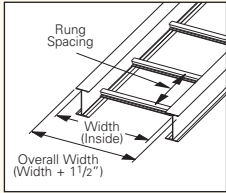
When cable trays are used in continuous spans, the deflection of the cable tray is reduced by as much as 50%.  
 Design factors: Ix = Moment of Inertia, Sx = Section Modulus.

## KSB4A, KSB5A, and KSB6A Straight Sections

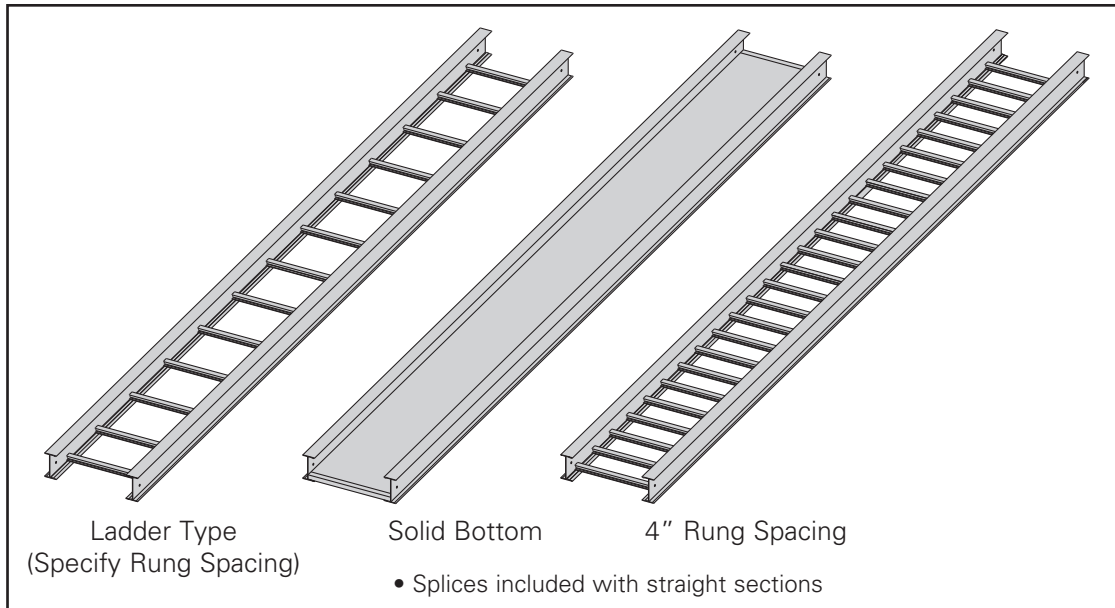
### Straight Section Part Numbering

Prefix  
Example: **KS B 4 A 09 - 12 - 144**

| Series | NEMA Class                                 | Height                     | Material     | Type                                                                                                                                                       | Width                                                                          | Length                                                   |
|--------|--------------------------------------------|----------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------|
| KS     | B = 75 Lbs/Ft<br>NEMA 12B<br>(12 ft. span) | 4 = 4"<br>5 = 5"<br>6 = 6" | A = Aluminum | <b>Ladder-</b><br>06 = 6" rung spacing<br>09 = 9" rung spacing<br>12 = 12" rung spacing<br><br><b>Trough-</b><br>04 = 4" rung spacing<br>SB = Solid Bottom | 06 = 6"<br>09 = 9"<br>12 = 12"<br>18 = 18"<br>24 = 24"<br>30 = 30"<br>36 = 36" | ①144 = 12 ft.<br>②120 = 10 ft.<br>①Primary<br>②Secondary |

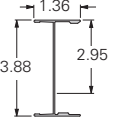


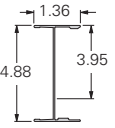
Values are based on simple beam tests per VE-1 on 36" wide cable tray with rungs spaced on 12" centers. The published load safety factor is 1.5. To convert 1.5 safety factor to 2.0, multiply the published load by 0.75. To obtain mid-span deflection, multiply a load by the deflection multiplier. Cable tray must be supported on spans shorter than or equal to the length of the tray.

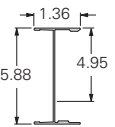




## KSB4A, KSB5A and KSB6A Straight Section Technical Data

| B-Line Series<br>Side Rail Dimensions                                                          | NEMA, CSA & UL<br>Classifications                                          | Span<br>ft | Load<br>lbs/ft | Deflection<br>Multiplier | Design Factors<br>for Two Rails | Span<br>meters | Load<br>kg/m | Deflection<br>Multiplier | Design Factors<br>for Two Rails |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|--------------------------|---------------------------------|----------------|--------------|--------------------------|---------------------------------|
| <b>KSB4A</b>  | NEMA: 12B<br>CSA: D-3m<br>UL Cross-Sectional<br>Area: 0.60 in <sup>2</sup> | 8          | 198            | 0.0040                   | Area = 0.99 in <sup>2</sup>     | 2.4            | 295          | 0.068                    | Area = 6.39 cm <sup>2</sup>     |
|                                                                                                |                                                                            | 10         | 127            | 0.0097                   | Sx = 1.07 in <sup>3</sup>       | 3.0            | 195          | 0.166                    | Sx = 17.53 cm <sup>3</sup>      |
|                                                                                                |                                                                            | 12         | 88             | 0.0201                   | Ix = 2.32 in <sup>4</sup>       | 3.7            | 131          | 0.343                    | Ix = 96.57 cm <sup>4</sup>      |
|                                                                                                |                                                                            |            |                |                          |                                 |                |              |                          |                                 |

| B-Line Series<br>Side Rail Dimensions                                                          | NEMA, CSA & UL<br>Classifications                                          | Span<br>ft | Load<br>lbs/ft | Deflection<br>Multiplier | Design Factors<br>for Two Rails | Span<br>meters | Load<br>kg/m | Deflection<br>Multiplier | Design Factors<br>for Two Rails |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|--------------------------|---------------------------------|----------------|--------------|--------------------------|---------------------------------|
| <b>KSB5A</b>  | NEMA: 12B<br>CSA: D-3m<br>UL Cross-Sectional<br>Area: 0.60 in <sup>2</sup> | 8          | 188            | 0.0023                   | Area = 1.12 in <sup>2</sup>     | 2.4            | 279          | 0.040                    | Area = 7.23 cm <sup>2</sup>     |
|                                                                                                |                                                                            | 10         | 120            | 0.0057                   | Sx = 1.47 in <sup>3</sup>       | 3.0            | 180          | 0.097                    | Sx = 24.09 cm <sup>3</sup>      |
|                                                                                                |                                                                            | 12         | 83             | 0.0118                   | Ix = 3.96 in <sup>4</sup>       | 3.7            | 124          | 0.201                    | Ix = 164.83 cm <sup>4</sup>     |
|                                                                                                |                                                                            |            |                |                          |                                 |                |              |                          |                                 |

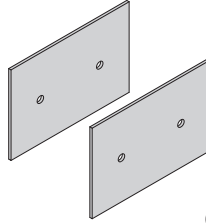
| B-Line Series<br>Side Rail Dimensions                                                            | NEMA, CSA & UL<br>Classifications                                          | Span<br>ft | Load<br>lbs/ft | Deflection<br>Multiplier | Design Factors<br>for Two Rails | Span<br>meters | Load<br>kg/m | Deflection<br>Multiplier | Design Factors<br>for Two Rails |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|--------------------------|---------------------------------|----------------|--------------|--------------------------|---------------------------------|
| <b>KSB6A</b>  | NEMA: 12B<br>CSA: D-3m<br>UL Cross-Sectional<br>Area: 1.00 in <sup>2</sup> | 8          | 179            | 0.0015                   | Area = 1.25 in <sup>2</sup>     | 2.4            | 266          | 0.026                    | Area = 8.06 cm <sup>2</sup>     |
|                                                                                                  |                                                                            | 10         | 114            | 0.0037                   | Sx = 1.91 in <sup>3</sup>       | 3.0            | 179          | 0.062                    | Sx = 31.30 cm <sup>3</sup>      |
|                                                                                                  |                                                                            | 12         | 79             | 0.0076                   | Ix = 6.16 in <sup>4</sup>       | 3.7            | 118          | 0.129                    | Ix = 256.40 cm <sup>4</sup>     |
|                                                                                                  |                                                                            |            |                |                          |                                 |                |              |                          |                                 |

When cable trays are used in continuous spans, the deflection of the cable tray is reduced by as much as 50%.  
Design factors: Ix = Moment of Inertia, Sx = Section Modulus.

# KwikSplice™ - Accessories

## Standard Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified.
- One pair including hardware provided with each straight section.

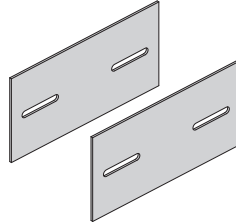


| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-SSP    |
| KS_5A       | KS5A-SSP    |
| KS_6A       | KS6A-SSP    |

— Can be used with both NEMA Class A and B KwikSplice trays.

## Expansion Splice Plates

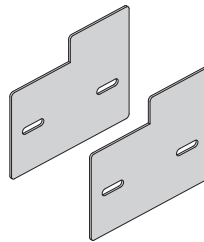
- Furnished in pairs with 1/4" hardware.
- Bonding jumper required.



| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-ESP    |
| KS_5A       | KS5A-ESP    |
| KS_6A       | KS6A-ESP    |

## Step Down Splice Plates

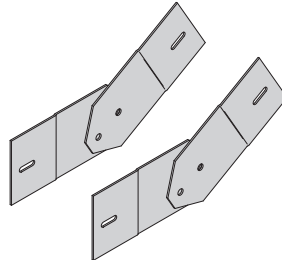
- Furnished in pairs with 1/4" hardware.
- UL Classified.



| Tray Series    | Catalog No. |
|----------------|-------------|
| KS_5A to KS_4A | KSA-DSP-45  |
| KS_6A to KS_4A | KSA-DSP-46  |
| KS_6A to KS_5A | KSA-DSP-56  |

## Vertical Adjustable Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified.

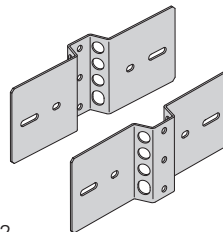


Requires supports within 24" on both sides, per NEMA VE 2.

| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-VSP    |
| KS_5A       | KS5A-VSP    |
| KS_6A       | KS6A-VSP    |

## Horizontal Adjustable Splice Plates

- Furnished in pairs with 1/4" hardware.
- Horizontally adjustable to 90°.
- Vertically adjustable to 15°.
- UL Classified.
- For optional rung, see page 18.

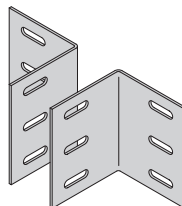


Requires supports within 24" on both sides, per NEMA VE 2.

| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-FSP    |
| KS_5A       | KS5A-FSP    |
| KS_6A       | KS6A-FSP    |

## Tray To Box Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified.



| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-TTB    |
| KS_5A       | KS5A-TTB    |
| KS_6A       | KS6A-TTB    |



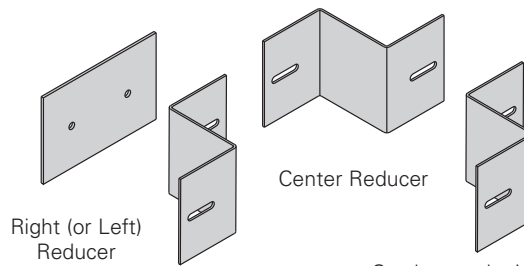
## Offset Reducing Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified.

Specify the following:

† C = center reducer  
S = side reducer

r (tray reduction) 3", 6", 9", 12",  
15", 18", 21", 24", 27", or 30"

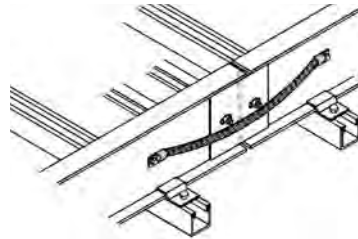


| Tray Series | Catalog No. |
|-------------|-------------|
| KS_4A       | KS4A-RSP-†r |
| KS_5A       | KS5A-RSP-†r |
| KS_6A       | KS6A-RSP-†r |

Can be used with both NEMA Class A and B KwikSplice trays.

## Bonding Jumper

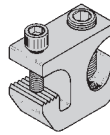
- Furnished with 1/4" hardware.
- UL Classified.



| Ampacity | Catalog No. |
|----------|-------------|
| 1200     | 99-30       |

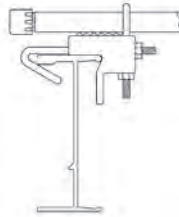
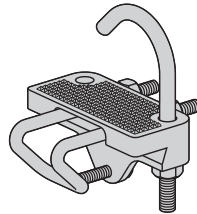
## Grounding Clamp

- Accepts #6 AWG to 250 MCM.
- UL Classified as to its suitability as an equipment grounding conductor.



| Material            | Catalog No. |
|---------------------|-------------|
| Tin Plated Aluminum | 9A-2130     |

## Conduit to Tray Adaptors

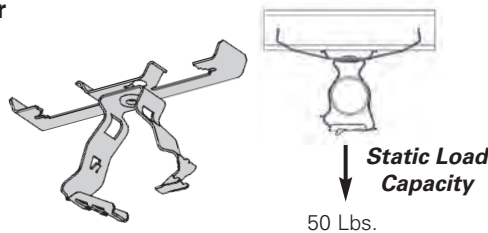


| Conduit Size       | Catalog No.      |
|--------------------|------------------|
| in. (mm)           |                  |
| 1/2, 3/4 (15, 20)  | 9G-1158-1/2, 3/4 |
| 1, 1 1/4 (25, 32)  | 9G-1158-1, 1 1/4 |
| 1 1/2, 2 (40, 50)  | 9G-1158-1 1/2, 2 |
| 2 1/2, 3 (65, 80)  | 9G-1158-2 1/2, 3 |
| 3 1/2, 4 (90, 100) | 9G-1158-3 1/2, 4 |

## Guide-Rite™ Conduit to Tray Adaptor

- Assemblies support 1/2", 3/4", & 1" conduit.
- Attaches to top or bottom of I-Beam side rail flange.

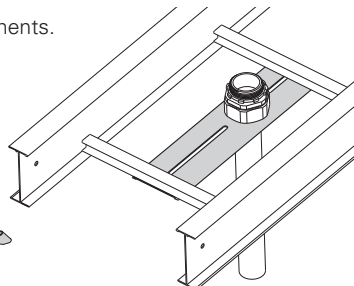
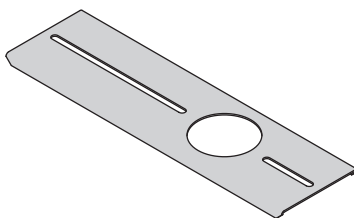
Patent #4958792



| Conduit Size      | Catalog No. |
|-------------------|-------------|
| in. (mm)          |             |
| 1/2, 3/4 (15, 20) | BG-8-12-W2  |
| 1 (25)            | BG-16-W2    |

## Vertical Conduit Hanger Adapter

- Furnished as one plate with fastener attachments.
- Utilizes (2) BAX-4-16 Under Rung Fastener Attachments.
- Accepts 1/2" to 4" conduit.

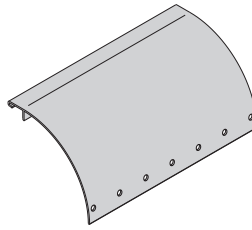


| Conduit Size | Catalog No.   |
|--------------|---------------|
| in. (mm)     |               |
| 1/2 (15)     | KSA-VCH-1/2   |
| 3/4 (20)     | KSA-VCH-3/4   |
| 1 (25)       | KSA-VCH-1     |
| 1 1/4 (32)   | KSA-VCH-1 1/4 |
| 1 1/2 (40)   | KSA-VCH-1 1/2 |
| 2 (50)       | KSA-VCH-2     |
| 3 (75)       | KSA-VCH-3     |
| 4 (100)      | KSA-VCH-4     |

# KwikSplice™ - Accessories

## Drop-Out

- Snaps on to cable tray rung.
- Provides 4" (101mm) radius.
- Holes provided to secure cables.



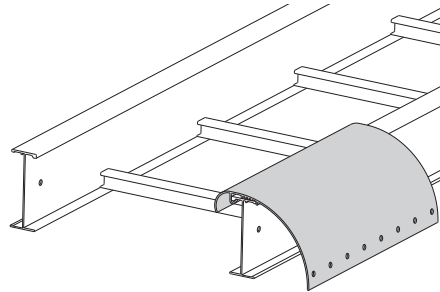
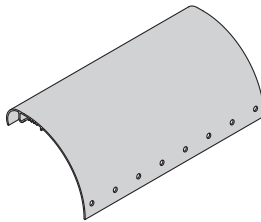
**Catalog No.**

**KSA-OUT-†**

† = Insert tray width

## Side Rail Drop-Out

- Snaps on to cable tray side rail.
- Provides 4" (101mm) radius.
- Holes provided to secure cables.



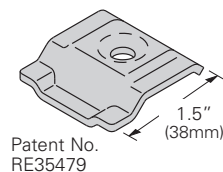
**Catalog No.**

**Length**

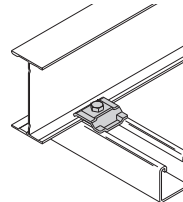
|                   | in. | (mm)  |
|-------------------|-----|-------|
| <b>KSA-SDO-06</b> | 6   | (152) |
| <b>KSA-SDO-12</b> | 12  | (305) |
| <b>KSA-SDO-18</b> | 18  | (457) |

## Clamp/Guide

- Features a no-twist design.
- Each side is labeled to ensure proper installation.
- Designed for 1/4" hardware.
- Furnished in pairs with or without hardware.



Patent No.  
RE35479



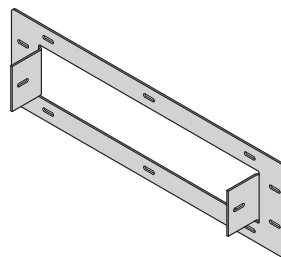
**Catalog No.**

**9ZN-1204** (without hardware)

**9ZN-1204NB** (with hardware)

## Frame Type Box Connector

- Furnished with 1/4" hardware for tray connection.



**Tray  
Series**

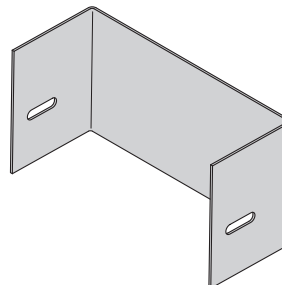
**Catalog No.**

|       |                   |
|-------|-------------------|
| KS_4A | <b>KS4A-FTB-†</b> |
| KS_5A | <b>KS5A-FTB-†</b> |
| KS_6A | <b>KS6A-FTB-†</b> |

† = tray width

## Blind End

- Furnished as one plate with 1/4" hardware.



**Tray  
Series**

**Catalog No.**

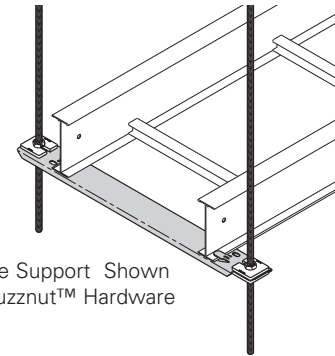
|       |                   |
|-------|-------------------|
| KS_4A | <b>KS4A-END-†</b> |
| KS_5A | <b>KS5A-END-†</b> |
| KS_6A | <b>KS6A-END-†</b> |

† = tray width

— Can be used with both NEMA Class A and B Kwik Splice trays.

## Tab & Lock Trapeze Support

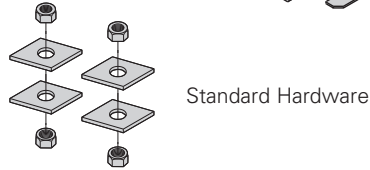
- Hardware purchased separately.
- Accepts up to 3/8" rod.
- Accepts traditional hold down clamps (9ZN-1204) if necessary.
- Ability to adjust tabs with flat head screw driver (not included).
- Tabs clamp cable tray to trapeze support.
- Load capacity: Rated for maximum load of KwikSplice cable tray system.
- Corrosion resistant pre-galvanized zinc finish.
- Other finishes available upon request.



Trapeze Support Shown With Buzznut™ Hardware

Trapeze Support Only

| Hardware  | Qty. | Catalog No     |
|-----------|------|----------------|
| Standard  | (4)  | <b>B201</b>    |
|           | (4)  | <b>3/8" HN</b> |
| <b>or</b> |      |                |
| Buzznut   | (4)  | <b>SLWN3/8</b> |



Standard Hardware



Buzznut™ Hardware

| Catalog No.     | Tray Width |       |
|-----------------|------------|-------|
|                 | in.        | (mm)  |
| <b>KSA-6CT</b>  | 6          | (152) |
| <b>KSA-9CT</b>  | 9          | (229) |
| <b>KSA-12CT</b> | 12         | (305) |
| <b>KSA-18CT</b> | 18         | (457) |
| <b>KSA-24CT</b> | 24         | (610) |
| <b>KSA-30CT</b> | 30         | (762) |
| <b>KSA-36CT</b> | 36         | (914) |

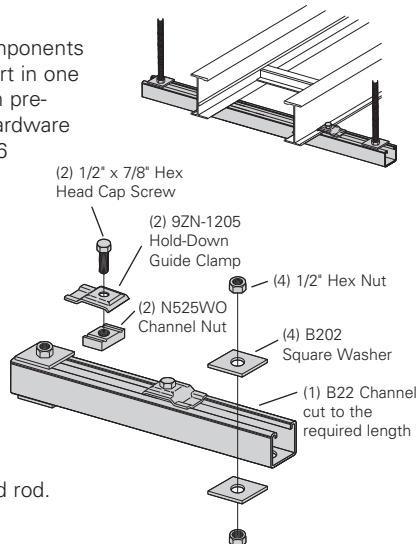
## Trapeze Support Kit

B-Line trapeze kits provide the components required for a single trapeze support in one package. These kits are available in pre-galvanized steel with zinc-plated hardware or hot dip galvanized steel with 316 stainless steel hardware.

The SH channel provides the convenience of pre-punched slots, which eliminate the need for field drilling.

The illustrated hardware is sealed in a plastic bag and boxed with the channel, which is pre-cut to the appropriate length as shown in the chart.

Designed for use with 1/2" threaded rod. Order rod separately.

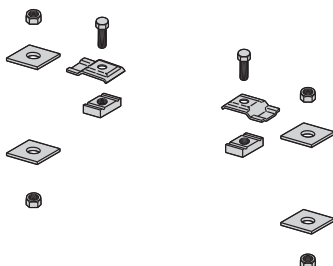


| Catalog No.            | Tray Width |       | Channel Length | Uniform Load |        |
|------------------------|------------|-------|----------------|--------------|--------|
|                        | in.        | (mm)  | in. (mm)       | lbs          | (kN)   |
| <b>9P-5506-22SH(t)</b> | 6          | (152) | 16 (406)       | 1600         | (7.11) |
| <b>9P-5509-22SH(t)</b> | 9          | (229) | 18 (457)       | 1250         | (5.56) |
| <b>9P-5512-22SH(t)</b> | 12         | (305) | 22 (559)       | 1125         | (5.00) |
| <b>9P-5518-22SH(t)</b> | 18         | (457) | 28 (711)       | 865          | (3.85) |
| <b>9P-5524-22SH(t)</b> | 24         | (610) | 34 (864)       | 700          | (3.11) |
| <b>9P-5530-22SH(t)</b> | 30         | (762) | 40 (1016)      | 590          | (2.62) |
| <b>9P-5536-22SH(t)</b> | 36         | (914) | 46 (1168)      | 510          | (2.27) |

• (t) Insert 3/8 for 3/8" threaded rod hardware.

Safety factor of 3.0 on all loads.

## Trapeze Hardware Kit



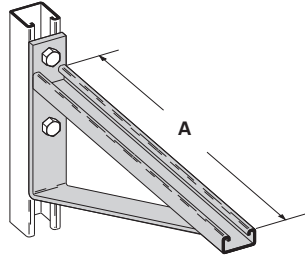
| Catalog No.           | 9ZN-5500-1/2             | 9G-5500-1/2               |
|-----------------------|--------------------------|---------------------------|
| <b>In plastic bag</b> | 1 pr. 9ZN-1205           | 1 pr. 9G-1205             |
|                       | 2 HHC Screw 1/2 x 7/8 ZN | 2 HHC Screw 1/2 x 7/8 SS6 |
|                       | 2 N525 WO ZN             | 2 N525 WO SS6             |
|                       | 4 B202 ZN 1/2" sq washer | 4 B202 HDG 1/2" sq washer |
|                       | 4 HN 1/2 ZN              | 4 HN 1/2 SS6              |



# KwikSplice™ - Accessories

## Bracket (12"-24")

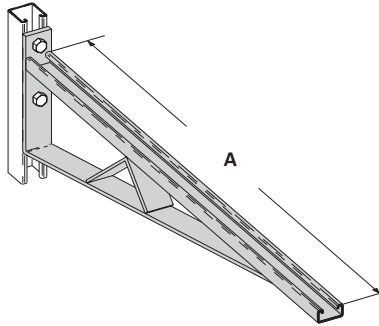
Finishes available:  
ZN, GRN, or HDG  
Safety Load Factor 2.5



| Catalog No.    | Uniform Load |        | Tray Width |             | 'A' |       |
|----------------|--------------|--------|------------|-------------|-----|-------|
|                | lbs          | (kN)   | in.        | (mm)        | in. | (mm)  |
| <b>B494-12</b> | 1580         | (7.02) | 6 & 9      | (152 & 229) | 12  | (305) |
| <b>B494-18</b> | 1000         | (4.45) | 12         | (305)       | 18  | (457) |
| <b>B494-24</b> | 996          | (4.43) | 18         | (457)       | 24  | (610) |

## Bracket (30"-42")

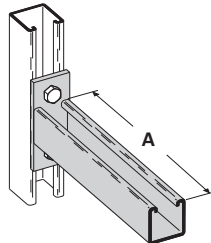
Finishes available:  
ZN, GRN, or HDG  
Safety Load Factor 2.5



| Catalog No.    | Uniform Load |        | Tray Width |       | 'A' |        |
|----------------|--------------|--------|------------|-------|-----|--------|
|                | lbs          | (kN)   | in.        | (mm)  | in. | (mm)   |
| <b>B494-30</b> | 924          | (4.11) | 24         | (610) | 30  | (762)  |
| <b>B494-36</b> | 864          | (3.84) | 30         | (762) | 36  | (914)  |
| <b>B494-42</b> | 580          | (2.58) | 36         | (914) | 42  | (1067) |

## Cantilever Bracket (12"-24")

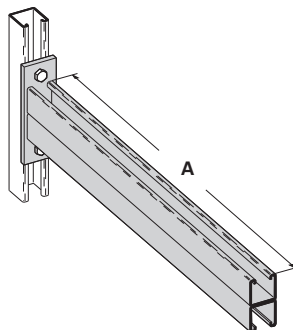
Finishes available:  
ZN, GRN, HDG, SS4 or SS6  
Safety Load Factor 2.5



| Catalog No.    | Uniform Load |        | Tray Width |             | 'A' |       |
|----------------|--------------|--------|------------|-------------|-----|-------|
|                | lbs          | (kN)   | in.        | (mm)        | in. | (mm)  |
| <b>B409-12</b> | 960          | (4.27) | 6 & 9      | (152 & 229) | 12  | (305) |
| <b>B409-18</b> | 640          | (2.84) | 12         | (305)       | 18  | (457) |
| <b>B409-24</b> | 480          | (2.13) | 18         | (457)       | 24  | (610) |

## Cantilever Bracket (12"-42")

Finishes available:  
ZN, GRN, HDG, or SS4  
Safety Load Factor 2.5



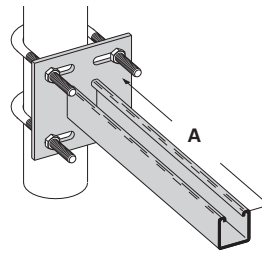
| Catalog No.    | Uniform Load |        | Tray Width |             | 'A' |        |
|----------------|--------------|--------|------------|-------------|-----|--------|
|                | lbs          | (kN)   | in.        | (mm)        | in. | (mm)   |
| <b>B297-12</b> | 1660         | (7.38) | 6 & 9      | (152 & 229) | 12  | (305)  |
| <b>B297-18</b> | 1100         | (4.89) | 12         | (305)       | 18  | (457)  |
| <b>B297-24</b> | 835          | (3.71) | 18         | (457)       | 24  | (610)  |
| <b>B297-30</b> | 665          | (2.95) | 24         | (610)       | 30  | (762)  |
| <b>B297-36</b> | 550          | (2.44) | 30         | (762)       | 36  | (914)  |
| <b>B297-42</b> | 465          | (2.06) | 36         | (914)       | 42  | (1067) |

## Underfloor Support (U-Bolts not included)

Finish available: ZN  
Safety Load Factor 2.5

| U-Bolt Size | Fits Pipe O.D. |           |
|-------------|----------------|-----------|
|             | in.            | (mm)      |
| B501-3/4    | .841 - 1.050   | (21 - 26) |
| B501-1      | 1.051 - 1.315  | (27 - 33) |
| B501-1 1/4  | 1.316 - 1.660  | (33 - 42) |
| B501-1 1/2  | 1.661 - 1.900  | (42 - 48) |
| B501-2      | 1.901 - 2.375  | (48 - 60) |
| B501-2 1/2  | 2.376 - 2.875  | (60 - 73) |

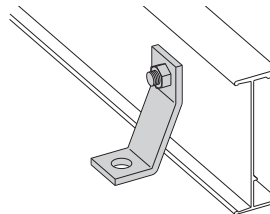
- Order 2 properly sized U-Bolts (sold separately) for each underfloor support.



| Catalog No.      | Uniform Load |        | Tray Width |             | 'A' |       |
|------------------|--------------|--------|------------|-------------|-----|-------|
|                  | lbs          | (kN)   | in.        | (mm)        | in. | (mm)  |
| <b>B409UF-12</b> | 800          | (3.55) | 6 & 9      | (152 & 229) | 12  | (305) |
| <b>B409UF-21</b> | 450          | (2.00) | 12 & 18    | (305 & 457) | 21  | (533) |

## Heavy Duty Hold Down Bracket

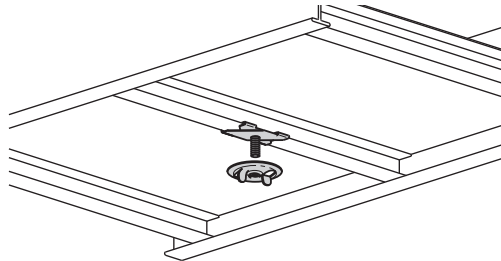
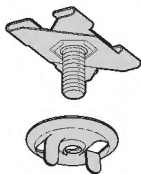
- Design load is 2000 lbs/pair.
- Two bolt design.
- Sold in pairs.
- 3/8" cable tray attachment hardware provided.
- 1/2" support attachment hardware **not** provided.
- (\*) Insert ZN, SS4, or SS6



**Catalog No.**  
**9(\*)-1241**

## Under Rung Fastener Attachment

- Supports electrical fixtures from bottom of rung or siderails.
- Wing nut included.
- Various 1/4"-20 stud lengths available.
- Static Load Capacity: 75 Lbs. (34kg).



| Catalog No.        | Stud Length |
|--------------------|-------------|
|                    | in. (mm)    |
| <b>BAX-4-16</b>    | 5/8 (16)    |
| <b>BAX-4-16-24</b> | 1 1/2 (38)  |
| <b>BAX-4-16-32</b> | 2 (51)      |
| <b>BAX-4-16-48</b> | 3 (76)      |

## DURA-BLOK™ Support Bases with B22 Channel

- Designed as a superior rooftop support for cable tray, UV resistant and approved for most roofing material or other flat surfaces.
- Can be used with any of B-Line cable tray clamps and guides.
- Ultimate Load Capacity: 1,000 lbs. (uniform load)

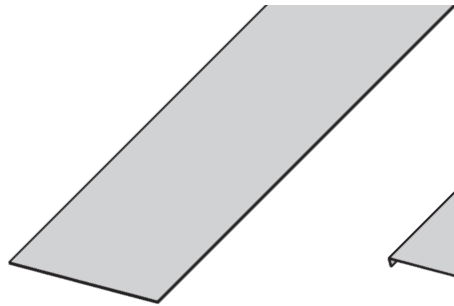


LEEDS credit available, base made from 100% recycled material.

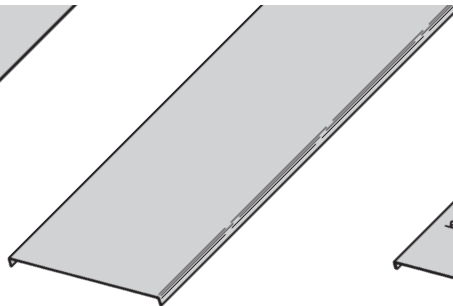
| Catalog No.    | Height x Width x Length |                    |
|----------------|-------------------------|--------------------|
|                | in.                     | (mm)               |
| <b>DB10-28</b> | 5 5/8 x 6 x 28          | (143 x 152 x 711)  |
| <b>DB10-36</b> | 5 5/8 x 6 x 36          | (143 x 152 x 914)  |
| <b>DB10-42</b> | 5 5/8 x 6 x 42          | (143 x 152 x 1067) |
| <b>DB10-50</b> | 5 5/8 x 6 x 50          | (143 x 152 x 1270) |
| <b>DB10-60</b> | 5 5/8 x 6 x 60          | (143 x 152 x 1524) |

General Note: Consult roofing manufacturer or engineer for roof load capacity. The weakest point may be the insulation board beneath the rubber membrane.

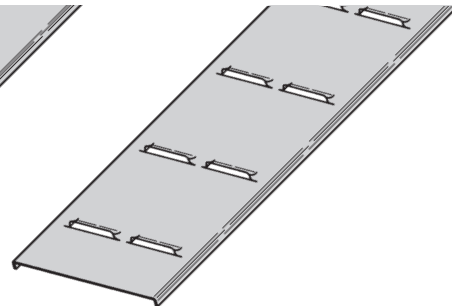
## Covers for KSA4A, KSA5A, KSB4A, KSB5A, and KSB6A



Solid Non-Flanged



Solid Flanged



Ventilated Flanged

A full range of covers are available for straight sections and fittings.

**Solid covers** should be used when maximum enclosure of the cable is desired and no accumulation of heat is expected.

**Ventilated covers** provide cable protection, while allowing heat to escape.

**Flanged covers** have a 1/2 in. (13 mm) flange. Cover clamps are not included with the cover and must be ordered separately.

B-Line recommends that covers be placed on vertical cable tray runs to a height of 6 ft. (1.83 m) to 8 ft. (2.44 m) above the floor to isolate both cables and protect personnel.

## Aluminum Cover Part Numbering

Prefix

Example: **80 7 A - 24 - 144**

### Cover Type

80 = Solid  
81 = Ventilated

### Detail

6 = Non-Flanged  
(80 & 81 type only)  
7 = Flange

### Material

A = Aluminum

### Tray Width

06 = 6"  
09 = 9"  
12 = 12"  
18 = 18"  
24 = 24"  
30 = 30"  
36 = 36"

### Item Description

For Straight Section Cover:

144 = 12 ft. (3.66 m)  
120 = 10 ft. (3.05 m)  
72 = 6 ft. (1.83 m)  
60 = 5 ft. (1.52 m)

For fitting covers: Insert suffix of fitting to be covered.  
See example below.

## Examples of Catalog Numbers for Fitting Covers:

### Horizontal Bend Cover

Prefix: 80 7 A - 18 - 90 HB 24  
Suffix: Radius, Fitting, Angle, Width, Material, Detail, Cover Type

### Vertical Bend Cover

Prefix: 80 7 A - 24 - 90 VO 24 - 4\*  
Suffix: Side Rail\*, Height, Radius, Fitting, Angle, Width, Material, Detail, Cover Type

\* Required for VO fittings only



## Standard Cover Clamp

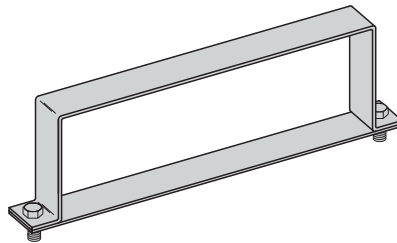
- For indoor service only.
- Setscrew included.
- Sold per piece.



| Tray Type | Side Rail Height | Catalog No. |
|-----------|------------------|-------------|
| KS Series | All Sizes        | 9ZN-9012    |
|           |                  | 9A-9012     |

## Heavy Duty Cover Clamp

- Recommended for outdoor service.



| Side Rail Height | Catalog No.   |
|------------------|---------------|
| in. (mm)         |               |
| 4 101            | KS4A-HDCC-(‡) |
| 5 127            | KS5A-HDCC-(‡) |
| 6 152            | KS6A-HDCC-(‡) |

(‡) Insert tray width

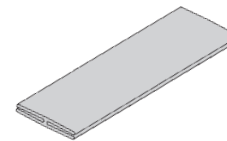
### Quantity of Standard Cover Clamps Required

|                                     |        |
|-------------------------------------|--------|
| Straight Section 60" or 72" .....   | 4 pcs. |
| Straight Section 120" or 144" ..... | 6 pcs. |
| Horizontal/Vertical Bends .....     | 4 pcs. |
| Tees .....                          | 6 pcs. |
| Crosses .....                       | 8 pcs. |

Note: When using the Heavy Duty Cover Clamp, only one-half the number of clamps stated above is required.

## Cover Joint Strip

- Used to join covers
- Plastic
- (‡) Insert tray width



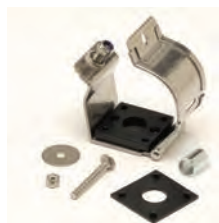
### Catalog No.

99-9980-(‡)

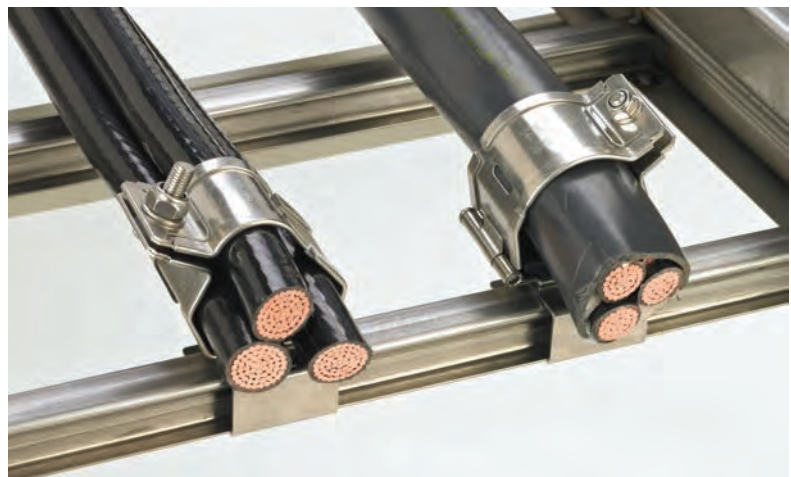
## Cable Cleats

(see Cable Tray Systems catalog)

### Trefoil Cable Cleats



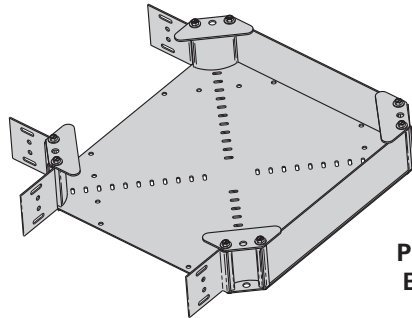
### Single Cable Cleats



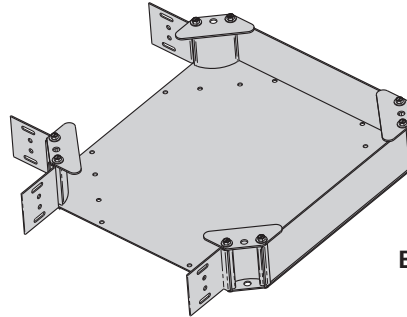
# KwikSplice™ - Accessories

## Universal Fitting

- Aluminum construction.
- 2" smooth radius.
- UL Classified.
- Shipped as a 90° horizontal bend.
- Field modify to create a tee or cross.
- Includes four pairs of toolless hinge splice plates.
- Patent Pending.



**Punched Bottom**



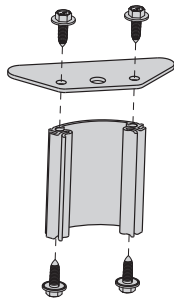
**Solid Bottom**

| Tray Series | Catalog No.        |                      |
|-------------|--------------------|----------------------|
|             | Punched            | Solid                |
| KS_4A       | <b>KS4A-UF-(†)</b> | <b>KS4ASB-UF-(†)</b> |
| KS_5A       | <b>KS5A-UF-(†)</b> | <b>KS5ASB-UF-(†)</b> |
| KS_6A       | <b>KS6A-UF-(†)</b> | <b>KS6ASB-UF-(†)</b> |

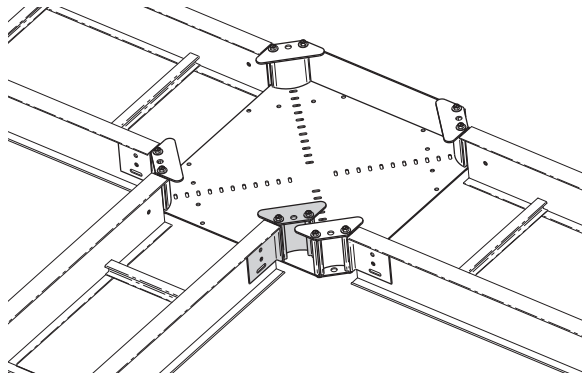
(†) Insert Tray Width 6" (152mm) to 36" (914mm)

## Corner Post For Universal Fitting

- Use to create reducing fittings.
- Furnished with hardware.
- 2" inside radius.
- Used on punched bottom only.
- UL Classified.
- Patent Pending.



### Universal Fitting Shown as a Reducing Tee

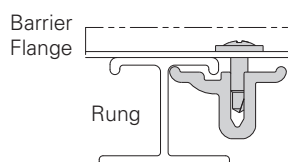


| Tray Series | Catalog No.    |
|-------------|----------------|
| KS_4A       | <b>KS4A-CP</b> |
| KS_5A       | <b>KS5A-CP</b> |
| KS_6A       | <b>KS6A-CP</b> |

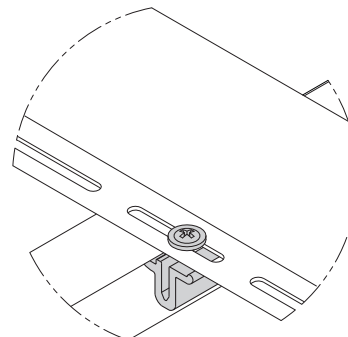
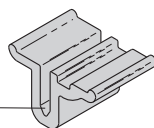
† = tray width

## Barrier Strip Clip

- Provides attachment to KwikSplice rung.
- Allows for installed barrier adjustment.
- Asymmetrical clip provides a wide range for screw location.
- Barriers strip clips and hardware are included with all barriers.



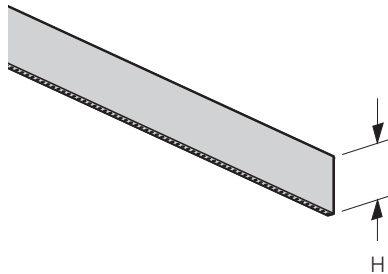
Screw slot for sheet metal screw



| Catalog No.   |
|---------------|
| <b>9A-RBC</b> |

## Straight Section Barrier Strip

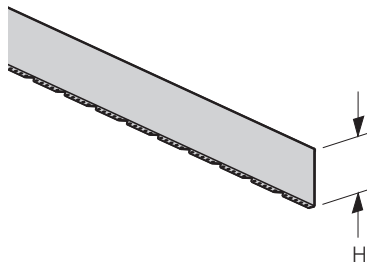
- Furnished with four (4) barrier strip clips, mounting hardware and splice.
- Standard lengths are 144" (12 ft) & 120" (10 ft).
- Order catalog number based on loading depth 'H'.



| Tray Series | Catalog No.           | H   |       |
|-------------|-----------------------|-----|-------|
|             |                       | in. | (mm)  |
| KS_4A       | <b>R4A-DSL-Length</b> | 3   | (76)  |
| KS_5A       | <b>R5A-DSL-Length</b> | 4   | (101) |
| KS_6A       | <b>R6A-DSL-Length</b> | 5   | (127) |

## Horizontal Bend Barrier Strip

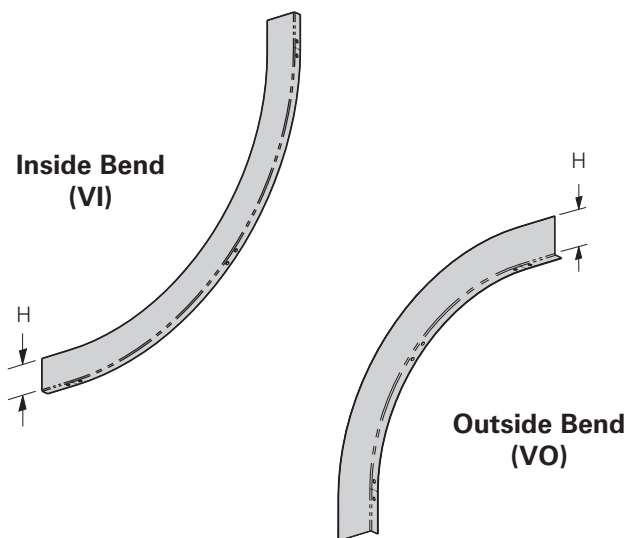
- Furnished with three (3) barrier strip clips, mounting hardware and splice.
- Standard length is 72" (6 ft).
- Flexible to fit desired angles.
- Order catalog number based on loading depth 'H'.



| Tray Series | Catalog No.    | H   |       |
|-------------|----------------|-----|-------|
|             |                | in. | (mm)  |
| KS_4A       | <b>R4A-DHB</b> | 3   | (76)  |
| KS_5A       | <b>R5A-DHB</b> | 4   | (101) |
| KS_6A       | <b>R6A-DHB</b> | 5   | (127) |

## Vertical Bend Barrier Strip

- Furnished with three (3) barrier strip clips, mounting hardware and splice.

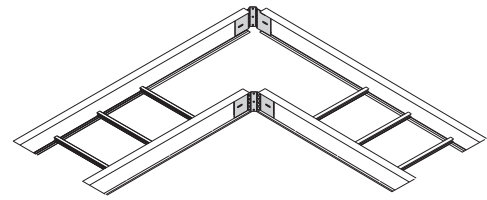
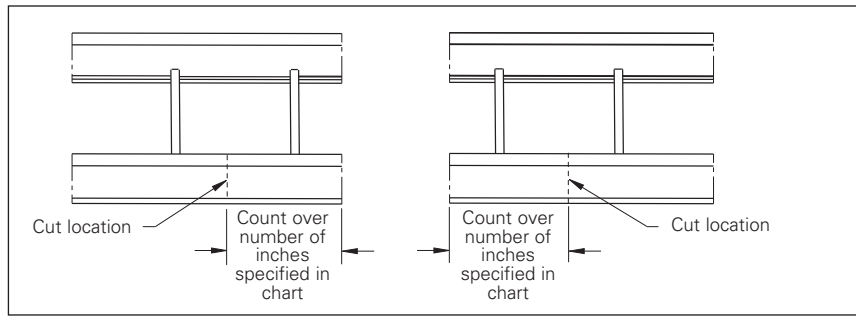


| Tray Series | Catalog No.             |                         | H   |       |
|-------------|-------------------------|-------------------------|-----|-------|
|             | Inside Bend             | Outside Bend            | in. | (mm)  |
| KS_4A       | <b>R4A-DVI-(**)R(†)</b> | <b>R4A-DVO-(**)R(†)</b> | 3   | (76)  |
| KS_5A       | <b>R5A-DVI-(**)R(†)</b> | <b>R5A-DVO-(**)R(†)</b> | 4   | (101) |
| KS_6A       | <b>R6A-DVI-(**)R(†)</b> | <b>R6A-DVO-(**)R(†)</b> | 5   | (127) |

(\*\*) Insert 30°, 45°, 60°, 90° for angles  
(†) Insert 12, 24 for radius



## How to miter cut KwikSplice cable tray for use with Horizontal Adjustable splice plates.



### KSA5A09-12-144 Straight Section shown with required side rail removed to form 90° fitting.

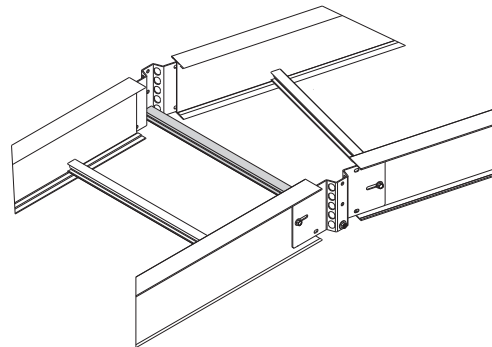
Example: For a 12" wide 90° bend, the cuts must be made 12<sup>5</sup>/<sub>8</sub>" (320.7mm) from the end.

- Mark desired hole/cut locations per chart.
- Remove any rungs (if necessary) affected by cuts.
- Cut side rails through center of required holes per chart.
- Mount outside Horizontal Adjustable splice plate with provided hardware and bend Kwik Splice sections to desired angle.
- Form inside Horizontal Adjustable splice plate to fit contour of inner rails and bolt into place.
- Reinstall (if necessary) appropriate rungs.
- Torque to 18 ft•lbs.
- If Splice Rung Kit (see below) is required, order separately.
- Recommend adding one to the value in the chart if the first hole is less than <sup>3</sup>/<sub>8</sub>" from the end of tray.

| Tray Width | Cut Length from Rail End For Desired Angle |                                        |                                        |                                        |
|------------|--------------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
|            | 30°                                        | 45°                                    | 60°                                    | 90°                                    |
| in. (mm)   | in. (mm)                                   | in. (mm)                               | in. (mm)                               | in. (mm)                               |
| 6 (152)    | 1 <sup>5</sup> / <sub>8</sub> (41.3)       | 3 <sup>1</sup> / <sub>8</sub> (79.4)   | 3 <sup>1</sup> / <sub>8</sub> (79.4)   | 6 <sup>1</sup> / <sub>4</sub> (158.7)  |
| 9 (228)    | 3 <sup>1</sup> / <sub>8</sub> (79.4)       | 3 <sup>1</sup> / <sub>8</sub> (79.4)   | 4 <sup>3</sup> / <sub>4</sub> (120.6)  | 9 <sup>3</sup> / <sub>8</sub> (238.2)  |
| 12 (305)   | 3 <sup>1</sup> / <sub>8</sub> (79.4)       | 4 <sup>3</sup> / <sub>4</sub> (120.6)  | 6 <sup>1</sup> / <sub>4</sub> (158.7)  | 12 <sup>5</sup> / <sub>8</sub> (320.7) |
| 18 (457)   | 4 <sup>3</sup> / <sub>4</sub> (120.6)      | 7 <sup>7</sup> / <sub>8</sub> (200.0)  | 11 (279.4)                             | 17 <sup>1</sup> / <sub>4</sub> (438.1) |
| 24 (609)   | 6 <sup>1</sup> / <sub>4</sub> (158.7)      | 9 <sup>3</sup> / <sub>8</sub> (238.2)  | 14 <sup>1</sup> / <sub>8</sub> (358.8) | 23 <sup>5</sup> / <sub>8</sub> (600.1) |
| 30 (762)   | 7 <sup>7</sup> / <sub>8</sub> (200.0)      | 12 <sup>5</sup> / <sub>8</sub> (320.7) | 17 <sup>1</sup> / <sub>4</sub> (438.1) | 29 <sup>7</sup> / <sub>8</sub> (758.8) |
| 36 (914)   | 9 <sup>3</sup> / <sub>8</sub> (238.2)      | 15 <sup>3</sup> / <sub>4</sub> (400.0) | 20 <sup>3</sup> / <sub>8</sub> (517.5) | 36 <sup>1</sup> / <sub>8</sub> (917.6) |

## Horizontal Adjustable Splice Rung Kit

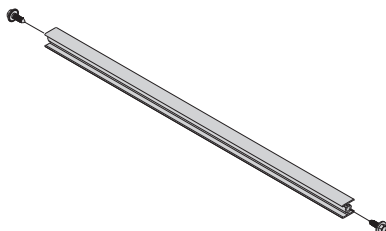
- Kit allows a support rung to be added to Horizontal Adjustable splice plates so that cables may be supported through a bend.
- The support rung is available in three lengths and should be ordered based upon tray width.
- The rung length is sized so that it will fit a maximum tray width when Horizontal Adjustable splices are used to make a bend up to 90°.
- Once the Horizontal Adjustable splices are installed in the cable tray system, the distance between the splice mounting surfaces should be measured. Cut support rung to the measured distance and install using the hardware included. Torque to 18 ft•lbs.



Example:

Flex connectors are installed on an 18" (457mm) wide tray with approximately a 45° bend.

The correct support rung kit is 9A-RFM-24RK. The tray width is 24" or less and the angle is less than 90°.



| For Tray Width           | Catalog No.        | Actual Rung Length |
|--------------------------|--------------------|--------------------|
| in. (mm)                 |                    | in. (mm)           |
| 6, 9, 12 (152, 228, 305) | <b>9A-RFM-12RK</b> | 20 (508)           |
| 18, 24 (457, 609)        | <b>9A-RFM-24RK</b> | 37 (940)           |
| 30, 36 (762, 914)        | <b>9A-RFM-36RK</b> | 54 (1371)          |

## Data Cables

The National Electrical Code allows for 50% fill of ventilated cable tray for control or signal wiring (Article 392-9(b)).

This rule requires that all the individual cable cross-sectional areas added up may not exceed one half the cable tray area.

The cable tray area is equal to the width times the load depth.

In actual practice with data cables, however, the cable tray becomes completely full in reaching the "50% cable fill".

The tray is completely full, but the sum of the cable areas is only 50% of the tray area, due to the empty spaces between the cables.

## Data Cable Fill and Weight Chart

Number of Category 5/5e/6 Cables and Calculated Cable Weight in Lbs/Ft

| Tray Depth |     | Tray Width |        |        |         |        |        |        |        |        |        |        |        |        |        |
|------------|-----|------------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|            |     | 6"         |        | 9"     |         | 12"    |        | 18"    |        | 24"    |        | 30"    |        | 36"    |        |
| in         | mm  | Cables     | lbs/ft | Cables | lt-s/ft | Cables | lbs/ft | Cables | lbs/ft | Cables | lbs/ft | Cables | lbs/ft | Cables | lbs/ft |
| 4"         | 101 | 347        | 9      | 520    | 13      | 693    | 18     | 1040   | 27     | 1386   | 35     | 1733   | 43     | 2079   | 54     |
| 5"         | 127 | 433        | 12     | 650    | 17      | 866    | 23     | 1299   | 34     | 1733   | 43     | 2166   | 53     | 2599   | 68     |
| 6"         | 152 | 520        | 14     | 780    | 20      | 1040   | 27     | 1559   | 41     | 2079   | 52     | 2599   | 64     | 3119   | 81     |

This chart was based on 50% fill of 4 UTP Category 5, 5e, or 6 cables (O.D. = .21" .026 lbs/ft).

In the above loading grid, the weight of the cables is not the issue. The volume capacity of the tray governs. For example, the worst case (6" load depth, 36" wide) has a total cable weight of 81 lbs/ft.

## Section 161xx - KwikSplice™ Cable Tray

### PART 1 GENERAL

- 1.1 Summary
  - A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, tests and services to install complete cable tray systems as shown on the drawings.
  - B. Cable tray systems are defined to include, but are not limited to straight sections of cable trays, fittings, drop-outs, supports and accessories.
- 1.2 References
  - A. NEMA VE 1-2009 - Metal Cable Tray Systems.
  - B. NEMA VE 2-2013 - Cable Tray Installation Guidelines.
  - C. ANSI/NFPA 70 – National Electrical Code
- 1.3 Drawings
  - A. The drawings, which constitute a part of these specifications, indicate the general route of the cable runway systems. Data presented on these drawings is as accurate as preliminary surveys and planning can determine until final equipment selection is made. Accuracy is not guaranteed and field verification of all dimensions, routing, etc., is required.
  - B. Specifications and drawings are for assistance and guidance, but exact routing, locations, distances and levels will be governed by actual field conditions. Contractor is directed to make field surveys as part of his work prior to submitting system layout drawings.
- 1.4 Quality Assurance
  - A. Manufacturers: Firms regularly engaged in manufacture of cable trays and fittings of types and capacities required, whose products have been in satisfactory use in similar service for not less than 10 years.
  - B. NEMA Compliance: Comply with NEMA Standards Publication Number VE1, "Cable Tray Systems".
  - C. NEC Compliance: Comply with NEC, as applicable to construction and installation of cable tray and cable channel systems (Article 392, NEC).
  - D. UL Compliance: Provide products that are UL-classified and labeled.
  - E. NFPA Compliance: Comply with NFPA 70B, "Recommended Practice for Electrical Equipment Maintenance" pertaining to installation of cable tray systems.
- 1.5 Delivery, Storage and Handling
  - A. Deliver cable tray systems and components carefully to avoid breakage, denting and scoring finishes. Do not install damaged equipment.
  - B. Store cable trays and accessories in original cartons and in clean dry space; protect from weather and construction traffic. Wet materials should be unpacked and dried before storage.
- 1.6 Submittals
  - A. Shop Drawings: Indicate tray type, dimensions, support points, and finishes.
  - B. Product Data: Submit fittings and accessories.
  - C. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

### PART 2 PRODUCTS

- 2.1 Acceptable Manufacturers
  - A. Manufacturer: Subject to compliance with these specifications, cable tray systems shall be as manufactured by Eaton's B-Line Business (formerly Cooper B-Line, Inc.).
- 2.2 Cable Tray Sections and Components
  - A. General: Except as otherwise indicated, provide metal cable trays, of types, classes, and sizes indicated; with splice plates, bolts, nuts and washers for connecting units. Construct units with rounded edges and smooth surfaces; in compliance with applicable standards; and with the following additional construction features. Cable tray shall be installed according to the latest revision of NEMA VE-2.
  - B. Material and Finish: Straight section, fitting side rails, rungs and splice plates shall be extruded from Aluminum Association Alloy 6063. All fabricated parts shall be made from Aluminum Association Alloy 5052.
- 2.3 Type of Tray System
  - A. Ladder Cable Trays shall consist of two longitudinal members (side rails) with transverse members (rungs) welded to both side rails. Both side rails and rungs shall be I-beam configuration. Side rails shall have a splice retention groove to accept a splice plate. Rungs shall be spaced [4] [6] [9] [12] inches on center. Rung spacing in radiused fittings shall be industry standard 9" and measured at the center of the tray's width.

(continued on page 21)

(continued from page 20)

- B. Ventilated Bottom Cable Trays shall consist of two longitudinal members (side rails) with rungs spaced 4" on center.
- C. Solid Bottom Cable Trays shall consist of two longitudinal members (side rails) with a solid sheet over rungs spaced on 12" centers.
- D. Cable tray loading depth shall be [3] [4] [5] inches per NEMA VE-1.
- E. Straight sections shall be supplied in standard [10 foot (3.05m)] [12 foot (3.65m)] lengths.
- F. Cable tray widths shall be [6] [9] [12] [18] [24] [30] [36] inches or as shown on drawings.
- G. Splice plates shall have a maximum of (2) two nuts and bolts per plate. The resistance of fixed splice connections between adjacent sections of tray shall not exceed 0.00033 ohms. Splice plates shall be furnished with straight sections and fittings. All horizontal fittings (horizontal bend, horizontal tee, horizontal cross) to be installed utilizing B-Line Kwik Splice™ Universal Fitting. All vertical fittings must have a minimum radius of [12] [24] inches.

\*\*\*\*\* [OR] \*\*\*\*\*

All fittings must have a minimum radius of [12] [24] inches.

## 2.4 Loading Capacities

- A. Cable trays shall meet NEMA class designation:  
{NEMA 12A: [50 lbs./ft. on a 12 ft. span]} OR {NEMA 12B: [75 lbs./ft. on a 12 ft. span]}.

\*\*\*\*\* [OR] \*\*\*\*\*

- B. Cable tray shall be capable of carrying a uniformly distributed load of \_\_\_\_\_ lbs./ft on a \_\_\_\_\_ foot support span with a safety factor of 1.5 when supported as a simple span and tested per NEMA VE 1 Section 5.2.

## 2.5 Accessories

### A. Covers:

1. Furnish only where indicated on the Drawings.
2. Solid or ventilated as indicated.
3. Same manufacturer and material as the tray.
4. Secure covers with manufacturer's approved clamps.
5. Clamp spacing per manufacturer's recommendations.

### B. Dividers:

1. Manufactured by the cable tray manufacturer of the same material as the tray.

### C. Mounting hardware:

1. Zinc coated tray bolts, nuts, and fasteners: quantity not to exceed two each per splice plate.

### D. Trapeze Supports

1. Manufactured by the cable tray manufacturer.

### E. Cable Exit Options

1. Radiused drop outs must be utilized for cables exiting the cable tray through the rungs or over either side rail

\*\*\*\*\* [OR] \*\*\*\*\*

2. Conduit connectors must be utilized to securely connect the conduit runs to the cable tray when a cable exits through the rungs or over either side rail.

## PART 3 EXECUTION

### 3.1 Installation

- A. Install cable trays as indicated: Installation shall be in accordance with equipment manufacturer's instructions, and with recognized industry practices to ensure that cable tray equipment comply with requirements of NEC and applicable portions of NFPA 70B. Reference NEMA-VE2 for general cable tray installation guidelines.
- B. Coordinate cable tray with other electrical work as necessary to properly integrate installation of cable tray work with other work.
- C. Provide sufficient space encompassing cable trays to permit access for installing and maintaining cables.
- D. Cable tray fitting supports shall be located such that they meet the strength requirements of straight sections. Install fitting supports per NEMA VE-2 guidelines, or in accordance with manufacturer's instructions.

### 3.2 Testing

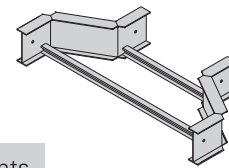
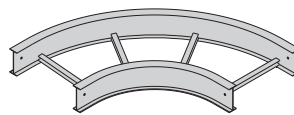
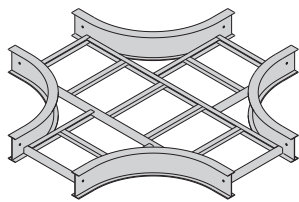
- A. Test cable trays to ensure electrical continuity of bonding and grounding connections, and to demonstrate compliance with specified maximum grounding resistance. See NFPA 70B, Chapter 18, for testing and test methods.
- B. Manufacturer shall provide test reports witnessed by an independent testing laboratory of the "worst case" loading conditions outlined in this specification and performed in accordance with the latest revision of NEMA VE-1/CSA C22.2 No. 126. 1-09.

**END OF SECTION**



# KwikSplice™ - Fittings

## Fittings For KSA4A, KSA5A, KSB4A, KSB5A and KSB6A



Fittings engineered with 3" tangents for splicing integrity.

### Fitting Part Numbering

| Prefix                                    |                            |              |                                                                                                                 |                                                                                |                                              |                                                                                                                                                                                                                                                             |                      |
|-------------------------------------------|----------------------------|--------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Example: <b>KS 4 A 09 - 12 - 90 HB 24</b> |                            |              |                                                                                                                 |                                                                                |                                              |                                                                                                                                                                                                                                                             |                      |
| Series                                    | Height                     | Material     | Type                                                                                                            | Width                                                                          | Angle*                                       | Fitting Type                                                                                                                                                                                                                                                | Radius               |
| KS =<br>KwikSplice                        | 4 = 4"<br>5 = 5"<br>6 = 6" | A = Aluminum | <b>Ladder</b><br>09 =<br>9" rung spacing<br><br><b>Other</b><br>04 =<br>4" rung spacing<br>SB =<br>Solid Bottom | 06 = 6"<br>09 = 9"<br>12 = 12"<br>18 = 18"<br>24 = 24"<br>30 = 30"<br>36 = 36" | 30 = 30°<br>45 = 45°<br>60 = 60°<br>90 = 90° | *HB = Horizontal Bend<br>HT = Horizontal Tee<br>HX = Horizontal Cross<br>*VI = Vertical Inside Bend<br>*VO = Vertical Outside Bend<br>VT = Vertical Tee, Down<br>VTU = Vertical Tee, Up<br>LR = Left Reducer<br>RR = Right Reducer<br>SR = Straight Reducer | 12 = 12"<br>24 = 24" |

### Expanding & Reducing Horizontal Tee & Cross Fitting Part Numbering

| Prefix                                      |                            |              |                                                                                                                 |                                                                                |                                                                                |                                                                                                                                                                                                                                      |                      |
|---------------------------------------------|----------------------------|--------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Example: <b>KS 4 A 04 - 24 - 12 - HT 24</b> |                            |              |                                                                                                                 |                                                                                |                                                                                |                                                                                                                                                                                                                                      |                      |
| Series                                      | Height                     | Material     | Type                                                                                                            | Width 1                                                                        | Width 2                                                                        | Fitting Type                                                                                                                                                                                                                         | Radius               |
| KS =<br>KwikSplice                          | 4 = 4"<br>5 = 5"<br>6 = 6" | A = Aluminum | <b>Ladder</b><br>09 =<br>9" rung spacing<br><br><b>Other</b><br>04 =<br>4" rung spacing<br>SB =<br>Solid Bottom | 06 = 6"<br>09 = 9"<br>12 = 12"<br>18 = 18"<br>24 = 24"<br>30 = 30"<br>36 = 36" | 06 = 6"<br>09 = 9"<br>12 = 12"<br>18 = 18"<br>24 = 24"<br>30 = 30"<br>36 = 36" | HT = Horizontal Tee<br>(Reducing - where Width 1<br>is larger than Width 2)<br>(Expanding - where Width 1<br>is smaller than Width 2)<br><br>HX = Horizontal Cross<br>(Reducing/Expanding - where Width 1<br>is larger than Width 2) | 12 = 12"<br>24 = 24" |

For ventilated or solid bottom, add 04 or SB as shown below: Available 6" thru 36"

Prefix  
**KS5A04 - 24 - 90HB24**

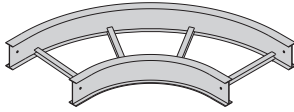
4" Rung Spacing Bottom

Prefix  
**KS5ASB - 24 - 90HB24**

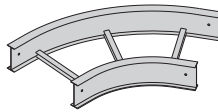
Solid Bottom

## Horizontal Bend 90° 60° (HB)

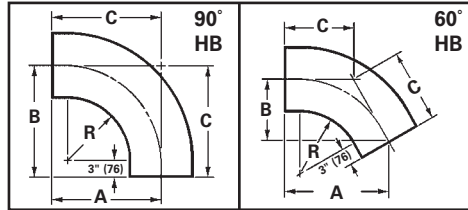
1 pair splice plates with hardware included.



90° Horizontal Bend



60° Horizontal Bend



### Bottoms manufactured:

Ladder = 9" Rung Spacing

04 = 4" Rung Spacing

SB = Flat sheet over 9" Rung Spacing

| Bend Radius<br>R | Tray Width | 90° Horizontal Bend Dimensions |              |              |              | 60° Horizontal Bend Dimensions |                |              |                |
|------------------|------------|--------------------------------|--------------|--------------|--------------|--------------------------------|----------------|--------------|----------------|
|                  |            | Catalog No.                    | A            | B            | C            | Catalog No.                    | A              | B            | C              |
| in. (mm)         | in. (mm)   |                                | in. (mm)     | in. (mm)     | in. (mm)     |                                | in. (mm)       | in. (mm)     | in. (mm)       |
| 12 (305)         | 6 (152)    | (Pre)-06-90HB12                | 18 (457)     | 18 (457)     | 18 (457)     | (Pre)-06-60HB12                | 17 1/2 (445)   | 10 1/8 (257) | 11 11/16 (297) |
|                  | 9 (228)    | (Pre)-09-90HB12                | 19 1/2 (495) | 19 1/2 (495) | 19 1/2 (495) | (Pre)-09-60HB12                | 18 13/16 (478) | 10 7/8 (276) | 12 1/2 (318)   |
|                  | 12 (305)   | (Pre)-12-90HB12                | 21 (533)     | 21 (533)     | 21 (533)     | (Pre)-12-60HB12                | 20 1/16 (510)  | 11 5/8 (295) | 13 3/8 (340)   |
|                  | 18 (457)   | (Pre)-18-90HB12                | 24 (610)     | 24 (610)     | 24 (610)     | (Pre)-18-60HB12                | 22 11/16 (576) | 13 3/8 (333) | 15 1/8 (384)   |
|                  | 24 (609)   | (Pre)-24-90HB12                | 27 (686)     | 27 (686)     | 27 (686)     | (Pre)-24-60HB12                | 25 5/16 (643)  | 14 5/8 (372) | 16 7/8 (429)   |
|                  | 30 (762)   | (Pre)-30-90HB12                | 30 (762)     | 30 (762)     | 30 (762)     | (Pre)-30-60HB12                | 27 7/8 (708)   | 16 1/8 (410) | 18 9/16 (472)  |
|                  | 36 (914)   | (Pre)-36-90HB12                | 33 (838)     | 33 (838)     | 33 (838)     | (Pre)-36-60HB12                | 30 1/2 (775)   | 17 5/8 (448) | 20 5/16 (516)  |
| 24 (610)         | 6 (152)    | (Pre)-06-90HB24                | 30 (762)     | 30 (762)     | 30 (762)     | (Pre)-06-60HB24                | 27 7/8 (708)   | 16 1/8 (410) | 18 9/16 (472)  |
|                  | 9 (228)    | (Pre)-09-90HB24                | 31 1/2 (800) | 31 1/2 (800) | 31 1/2 (800) | (Pre)-09-60HB24                | 29 3/16 (741)  | 16 7/8 (429) | 19 7/16 (494)  |
|                  | 12 (305)   | (Pre)-12-90HB24                | 33 (838)     | 33 (838)     | 33 (838)     | (Pre)-12-60HB24                | 30 1/2 (775)   | 17 5/8 (448) | 20 5/16 (516)  |
|                  | 18 (457)   | (Pre)-18-90HB24                | 36 (914)     | 36 (914)     | 36 (914)     | (Pre)-18-60HB24                | 33 1/16 (708)  | 19 1/8 (486) | 22 1/16 (560)  |
|                  | 24 (609)   | (Pre)-24-90HB24                | 39 (991)     | 39 (991)     | 39 (991)     | (Pre)-24-60HB24                | 35 11/16 (907) | 20 5/8 (524) | 23 13/16 (605) |
|                  | 30 (762)   | (Pre)-30-90HB24                | 42 (1067)    | 42 (1067)    | 42 (1067)    | (Pre)-30-60HB24                | 38 1/4 (972)   | 22 1/8 (564) | 25 1/2 (648)   |
|                  | 36 (914)   | (Pre)-36-90HB24                | 45 (1143)    | 45 (1143)    | 45 (1143)    | (Pre)-36-60HB24                | 40 7/8 (1038)  | 23 5/8 (600) | 27 1/4 (692)   |

(Pre) See page 22 for catalog number prefix.

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

# KwikSplice™ - Fittings

## Horizontal Bend 45° 30° (HB)

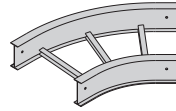
1 pair splice plates with hardware included.

**Bottoms manufactured:**

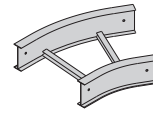
**Ladder = 9" Rung Spacing**

**04 = 4" Rung Spacing**

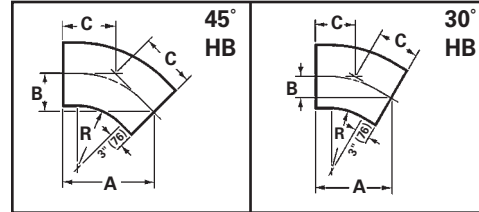
**SB = Flat sheet over 9" Rung Spacing**



45° Horizontal Bend



30° Horizontal Bend



| Bend Radius<br>R | Tray Width | 45° Horizontal Bend Dimensions |                                        |                                        |                                        | 30° Horizontal Bend Dimensions |                                      |                                       |                                        |
|------------------|------------|--------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|--------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|
|                  |            | Catalog No.                    | A                                      | B                                      | C                                      | Catalog No.                    | A                                    | B                                     | C                                      |
|                  | in. (mm)   |                                | in. (mm)                               | in. (mm)                               | in. (mm)                               |                                | in. (mm)                             | in. (mm)                              | in. (mm)                               |
| 12 (305)         | 6 (152)    | (Pre)-06-45HB12                | 15 <sup>3</sup> / <sub>4</sub> (400)   | 6 <sup>1</sup> / <sub>2</sub> (165)    | 9 <sup>3</sup> / <sub>16</sub> (233)   | (Pre)-06-30HB12                | 13 <sup>1</sup> / <sub>8</sub> (333) | 3 <sup>1</sup> / <sub>2</sub> (89)    | 7 (179)                                |
|                  | 9 (228)    | (Pre)-09-45HB12                | 16 <sup>13</sup> / <sub>16</sub> (427) | 6 <sup>15</sup> / <sub>16</sub> (176)  | 9 <sup>13</sup> / <sub>16</sub> (249)  | (Pre)-09-30HB12                | 13 <sup>7</sup> / <sub>8</sub> (352) | 3 <sup>11</sup> / <sub>16</sub> (94)  | 7 <sup>7</sup> / <sub>16</sub> (189)   |
|                  | 12 (305)   | (Pre)-12-45HB12                | 17 <sup>7</sup> / <sub>8</sub> (454)   | 7 <sup>3</sup> / <sub>8</sub> (187)    | 10 <sup>7</sup> / <sub>16</sub> (265)  | (Pre)-12-30HB12                | 14 <sup>5</sup> / <sub>8</sub> (372) | 3 <sup>15</sup> / <sub>16</sub> (100) | 7 <sup>13</sup> / <sub>16</sub> (198)  |
|                  | 18 (457)   | (Pre)-18-45HB12                | 20 (508)                               | 8 <sup>1</sup> / <sub>4</sub> (210)    | 11 <sup>11</sup> / <sub>16</sub> (297) | (Pre)-18-30HB12                | 16 <sup>1</sup> / <sub>8</sub> (410) | 4 <sup>5</sup> / <sub>16</sub> (135)  | 8 <sup>5</sup> / <sub>8</sub> (219)    |
|                  | 24 (609)   | (Pre)-24-45HB12                | 22 <sup>1</sup> / <sub>16</sub> (560)  | 9 <sup>1</sup> / <sub>8</sub> (232)    | 12 <sup>15</sup> / <sub>16</sub> (329) | (Pre)-24-30HB12                | 17 <sup>5</sup> / <sub>8</sub> (448) | 4 <sup>11</sup> / <sub>16</sub> (119) | 9 <sup>7</sup> / <sub>16</sub> (240)   |
|                  | 30 (762)   | (Pre)-30-45HB12                | 24 <sup>3</sup> / <sub>16</sub> (614)  | 10 (254)                               | 14 <sup>3</sup> / <sub>16</sub> (360)  | (Pre)-30-30HB12                | 19 <sup>1</sup> / <sub>8</sub> (486) | 5 <sup>1</sup> / <sub>8</sub> (130)   | 10 <sup>1</sup> / <sub>4</sub> (260)   |
|                  | 36 (914)   | (Pre)-36-45HB12                | 26 <sup>5</sup> / <sub>16</sub> (668)  | 10 <sup>15</sup> / <sub>16</sub> (278) | 15 <sup>7</sup> / <sub>16</sub> (392)  | (Pre)-36-30HB12                | 20 <sup>5</sup> / <sub>8</sub> (524) | 5 <sup>1</sup> / <sub>2</sub> (140)   | 11 <sup>1</sup> / <sub>16</sub> (281)  |
| 24 (610)         | 6 (152)    | (Pre)-06-45HB24                | 24 <sup>3</sup> / <sub>16</sub> (614)  | 10 (254)                               | 14 <sup>3</sup> / <sub>16</sub> (360)  | (Pre)-06-30HB24                | 19 <sup>1</sup> / <sub>8</sub> (486) | 5 <sup>1</sup> / <sub>8</sub> (130)   | 10 <sup>1</sup> / <sub>4</sub> (260)   |
|                  | 9 (228)    | (Pre)-09-45HB24                | 25 <sup>1</sup> / <sub>4</sub> (641)   | 10 <sup>1</sup> / <sub>2</sub> (267)   | 14 <sup>13</sup> / <sub>16</sub> (376) | (Pre)-09-30HB24                | 19 <sup>7</sup> / <sub>8</sub> (505) | 5 <sup>5</sup> / <sub>16</sub> (135)  | 10 <sup>5</sup> / <sub>8</sub> (270)   |
|                  | 12 (305)   | (Pre)-12-45HB24                | 26 <sup>5</sup> / <sub>16</sub> (668)  | 10 <sup>15</sup> / <sub>16</sub> (278) | 15 <sup>7</sup> / <sub>16</sub> (392)  | (Pre)-12-30HB24                | 20 <sup>5</sup> / <sub>8</sub> (524) | 5 <sup>1</sup> / <sub>2</sub> (140)   | 11 <sup>1</sup> / <sub>16</sub> (281)  |
|                  | 18 (457)   | (Pre)-18-45HB24                | 28 <sup>7</sup> / <sub>16</sub> (722)  | 11 <sup>13</sup> / <sub>16</sub> (300) | 16 <sup>11</sup> / <sub>16</sub> (424) | (Pre)-18-30HB24                | 22 <sup>1</sup> / <sub>8</sub> (562) | 5 <sup>15</sup> / <sub>16</sub> (151) | 11 <sup>13</sup> / <sub>16</sub> (300) |
|                  | 24 (609)   | (Pre)-24-45HB24                | 30 <sup>9</sup> / <sub>16</sub> (766)  | 12 <sup>11</sup> / <sub>16</sub> (322) | 17 <sup>15</sup> / <sub>16</sub> (456) | (Pre)-24-30HB24                | 23 <sup>5</sup> / <sub>8</sub> (600) | 6 <sup>5</sup> / <sub>16</sub> (160)  | 12 <sup>5</sup> / <sub>8</sub> (321)   |
|                  | 30 (762)   | (Pre)-30-45HB24                | 32 <sup>11</sup> / <sub>16</sub> (830) | 13 <sup>9</sup> / <sub>16</sub> (344)  | 19 <sup>1</sup> / <sub>8</sub> (486)   | (Pre)-30-30HB24                | 25 <sup>1</sup> / <sub>8</sub> (638) | 6 <sup>3</sup> / <sub>4</sub> (172)   | 13 <sup>7</sup> / <sub>16</sub> (341)  |
|                  | 36 (914)   | (Pre)-36-45HB24                | 34 <sup>13</sup> / <sub>16</sub> (884) | 14 <sup>7</sup> / <sub>16</sub> (367)  | 20 <sup>3</sup> / <sub>8</sub> (518)   | (Pre)-36-30HB24                | 26 <sup>5</sup> / <sub>8</sub> (676) | 7 <sup>1</sup> / <sub>8</sub> (181)   | 14 <sup>1</sup> / <sub>4</sub> (362)   |

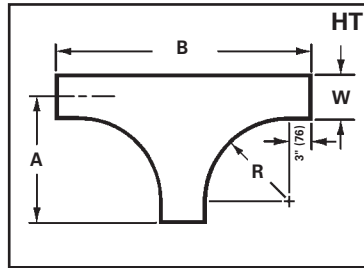
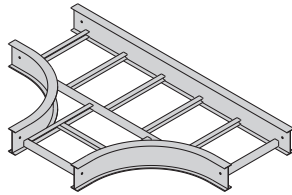
**(Pre) See page 22 for catalog number prefix.**

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

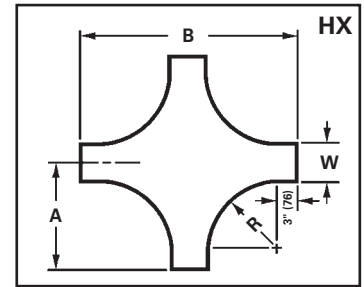
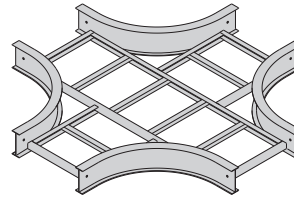
## Horizontal Tee (HT)

2 pair splice plates with hardware included.



## Horizontal Cross (HX)

3 pair splice plates with hardware included.



| Bend Radius<br>R | Tray Width | Horizontal Tee Dimensions |              |           | Horizontal Cross Dimensions |              |           |
|------------------|------------|---------------------------|--------------|-----------|-----------------------------|--------------|-----------|
|                  |            | Catalog Number            | A            | B         | Catalog Number              | A            | B         |
| in. (mm)         | in. (mm)   |                           | in. (mm)     | in. (mm)  |                             | in. (mm)     | in. (mm)  |
| 12 (305)         | 6 (152)    | (Prefix)-06-HT12          | 18 (457)     | 36 (914)  | (Prefix)-06-HX12            | 18 (457)     | 36 (914)  |
|                  | 9 (229)    | (Prefix)-09-HT12          | 19 1/2 (496) | 39 (991)  | (Prefix)-09-HX12            | 19 1/2 (496) | 39 (991)  |
|                  | 12 (305)   | (Prefix)-12-HT12          | 21 (533)     | 42 (1067) | (Prefix)-12-HX12            | 21 (533)     | 42 (1067) |
|                  | 18 (457)   | (Prefix)-18-HT12          | 24 (609)     | 48 (1219) | (Prefix)-18-HX12            | 24 (609)     | 48 (1219) |
|                  | 24 (609)   | (Prefix)-24-HT12          | 27 (686)     | 54 (1372) | (Prefix)-24-HX12            | 27 (686)     | 54 (1372) |
|                  | 30 (762)   | (Prefix)-30-HT12          | 30 (762)     | 60 (1524) | (Prefix)-30-HX12            | 30 (762)     | 60 (1524) |
|                  | 36 (914)   | (Prefix)-36-HT12          | 33 (838)     | 66 (1676) | (Prefix)-36-HX12            | 33 (838)     | 66 (1676) |
| 24 (610)         | 6 (152)    | (Prefix)-06-HT24          | 30 (762)     | 60 (1542) | (Prefix)-06-HX24            | 30 (762)     | 60 (1542) |
|                  | 9 (229)    | (Prefix)-09-HT24          | 31 1/2 (800) | 63 (1600) | (Prefix)-09-HX24            | 31 1/2 (800) | 63 (1600) |
|                  | 12 (305)   | (Prefix)-12-HT24          | 33 (838)     | 66 (1676) | (Prefix)-12-HX24            | 33 (838)     | 66 (1676) |
|                  | 18 (457)   | (Prefix)-18-HT24          | 36 (914)     | 72 (1828) | (Prefix)-18-HX24            | 36 (914)     | 72 (1828) |
|                  | 24 (609)   | (Prefix)-24-HT24          | 39 (991)     | 78 (1982) | (Prefix)-24-HX24            | 39 (991)     | 78 (1982) |
|                  | 30 (762)   | (Prefix)-30-HT24          | 42 (1067)    | 84 (2134) | (Prefix)-30-HX24            | 42 (1067)    | 84 (2134) |
|                  | 36 (914)   | (Prefix)-36-HT24          | 45 (1143)    | 90 (2286) | (Prefix)-36-HX24            | 45 (1143)    | 90 (2286) |

(Prefix) See page 22 for catalog number prefix.

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

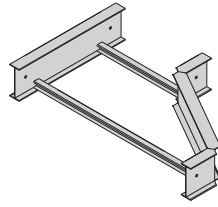
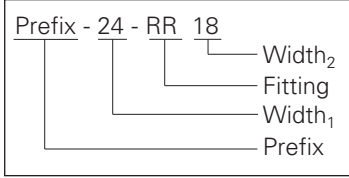


# KwikSplice™ - Fittings

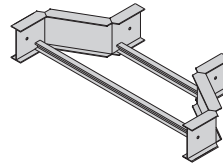
## Reducers (LR, SR, RR)

1 pair splice plates with hardware included.

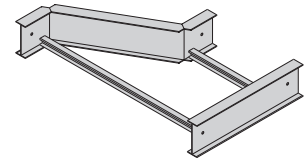
### Reducer Part Numbering



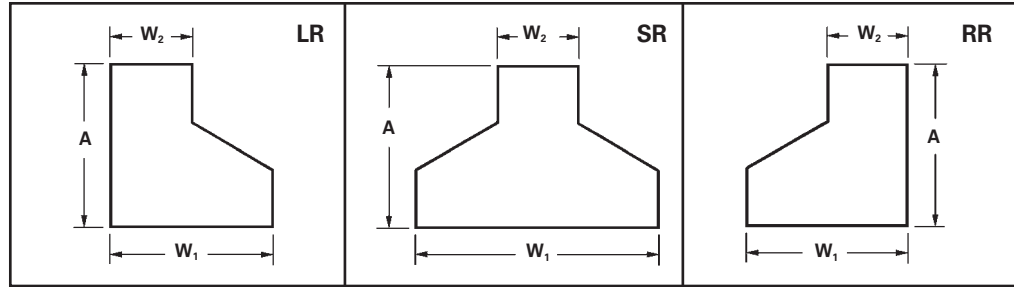
Left Reducer



Straight Reducer



Right Reducer



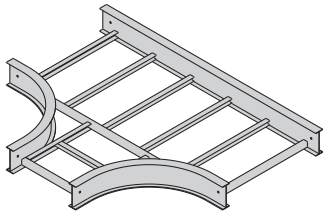
| Tray Width     |                | Left Reducer - LR |                                        | Straight Reducer - SR |                                        | Right Reducer - RR |                                        |
|----------------|----------------|-------------------|----------------------------------------|-----------------------|----------------------------------------|--------------------|----------------------------------------|
| W <sub>1</sub> | W <sub>2</sub> | Catalog No.       | A                                      | Catalog No.           | A                                      | Catalog No.        | A                                      |
| in. (mm)       | in. (mm)       |                   | in. (mm)                               |                       | in. (mm)                               |                    | in. (mm)                               |
| 9 (228)        | 6 (152)        | (Prefix)-09-LR06  | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-09-SR06      | 8 <sup>7</sup> / <sub>8</sub> (225)    | (Prefix)-09-RR06   | 9 <sup>3</sup> / <sub>4</sub> (248)    |
| 12 (305)       | 6 (152)        | (Prefix)-12-LR06  | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-12-SR06      | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-12-RR06   | 11 <sup>1</sup> / <sub>2</sub> (292)   |
|                | 9 (228)        | (Prefix)-12-LR09  | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-12-SR09      | 8 <sup>7</sup> / <sub>8</sub> (225)    | (Prefix)-12-RR09   | 9 <sup>3</sup> / <sub>4</sub> (248)    |
| 18 (457)       | 6 (152)        | (Prefix)-18-LR06  | 14 <sup>15</sup> / <sub>16</sub> (379) | (Prefix)-18-SR06      | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-18-RR06   | 14 <sup>15</sup> / <sub>16</sub> (379) |
|                | 9 (228)        | (Prefix)-18-LR09  | 13 <sup>3</sup> / <sub>16</sub> (340)  | (Prefix)-18-SR09      | 10 <sup>5</sup> / <sub>8</sub> (270)   | (Prefix)-18-RR09   | 13 <sup>3</sup> / <sub>16</sub> (340)  |
|                | 12 (305)       | (Prefix)-18-LR12  | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-18-SR12      | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-18-RR12   | 11 <sup>1</sup> / <sub>2</sub> (292)   |
| 24 (609)       | 6 (152)        | (Prefix)-24-LR06  | 18 <sup>3</sup> / <sub>8</sub> (467)   | (Prefix)-24-SR06      | 13 <sup>3</sup> / <sub>16</sub> (340)  | (Prefix)-24-RR06   | 18 <sup>3</sup> / <sub>8</sub> (467)   |
|                | 9 (228)        | (Prefix)-24-LR09  | 16 <sup>11</sup> / <sub>16</sub> (424) | (Prefix)-24-SR09      | 12 <sup>3</sup> / <sub>8</sub> (314)   | (Prefix)-24-RR09   | 16 <sup>11</sup> / <sub>16</sub> (424) |
|                | 12 (305)       | (Prefix)-24-LR12  | 14 <sup>15</sup> / <sub>16</sub> (379) | (Prefix)-24-SR12      | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-24-RR12   | 14 <sup>15</sup> / <sub>16</sub> (379) |
|                | 18 (457)       | (Prefix)-24-LR18  | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-24-SR18      | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-24-RR18   | 11 <sup>1</sup> / <sub>2</sub> (292)   |
| 30 (762)       | 6 (152)        | (Prefix)-30-LR06  | 21 <sup>7</sup> / <sub>8</sub> (555)   | (Prefix)-30-SR06      | 14 <sup>15</sup> / <sub>16</sub> (380) | (Prefix)-30-RR06   | 21 <sup>7</sup> / <sub>8</sub> (555)   |
|                | 9 (228)        | (Prefix)-30-LR09  | 20 <sup>1</sup> / <sub>8</sub> (511)   | (Prefix)-30-SR09      | 14 <sup>1</sup> / <sub>16</sub> (358)  | (Prefix)-30-RR09   | 20 <sup>1</sup> / <sub>8</sub> (511)   |
|                | 12 (305)       | (Prefix)-30-LR12  | 18 <sup>3</sup> / <sub>8</sub> (462)   | (Prefix)-30-SR12      | 13 <sup>3</sup> / <sub>16</sub> (335)  | (Prefix)-30-RR12   | 18 <sup>3</sup> / <sub>8</sub> (462)   |
|                | 18 (459)       | (Prefix)-30-LR18  | 14 <sup>15</sup> / <sub>16</sub> (380) | (Prefix)-30-SR18      | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-30-RR18   | 14 <sup>15</sup> / <sub>16</sub> (380) |
|                | 24 (609)       | (Prefix)-30-LR24  | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-30-SR24      | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-30-RR24   | 11 <sup>1</sup> / <sub>2</sub> (292)   |
| 36 (914)       | 6 (152)        | (Prefix)-36-LR06  | 25 <sup>5</sup> / <sub>16</sub> (643)  | (Prefix)-36-SR06      | 16 <sup>11</sup> / <sub>16</sub> (424) | (Prefix)-36-RR06   | 23 <sup>5</sup> / <sub>16</sub> (643)  |
|                | 9 (228)        | (Prefix)-36-LR09  | 23 <sup>9</sup> / <sub>16</sub> (598)  | (Prefix)-36-SR09      | 15 <sup>13</sup> / <sub>16</sub> (402) | (Prefix)-36-RR09   | 23 <sup>9</sup> / <sub>16</sub> (598)  |
|                | 12 (305)       | (Prefix)-36-LR12  | 21 <sup>7</sup> / <sub>8</sub> (555)   | (Prefix)-36-SR12      | 14 <sup>15</sup> / <sub>16</sub> (380) | (Prefix)-36-RR12   | 21 <sup>7</sup> / <sub>8</sub> (555)   |
|                | 18 (457)       | (Prefix)-36-LR18  | 18 <sup>3</sup> / <sub>8</sub> (462)   | (Prefix)-36-SR18      | 13 <sup>3</sup> / <sub>16</sub> (335)  | (Prefix)-36-RR18   | 18 <sup>3</sup> / <sub>8</sub> (462)   |
|                | 24 (609)       | (Prefix)-36-LR24  | 14 <sup>15</sup> / <sub>16</sub> (380) | (Prefix)-36-SR24      | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-36-RR24   | 14 <sup>15</sup> / <sub>16</sub> (380) |
|                | 30 (762)       | (Prefix)-36-LR30  | 11 <sup>1</sup> / <sub>2</sub> (292)   | (Prefix)-36-SR30      | 9 <sup>3</sup> / <sub>4</sub> (248)    | (Prefix)-36-RR30   | 11 <sup>1</sup> / <sub>2</sub> (292)   |

(Prefix) See page 22 for catalog number prefix.

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width. Manufacturing tolerances apply to all dimensions.

## Horizontal Reducing Tee (HT)

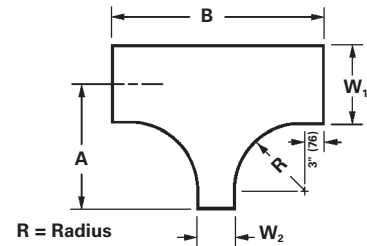
2 pair splice plates with hardware included.



Prefix - 36 - 18 - HT 24

Radius  
Fitting  
Width W<sub>2</sub>  
Width W<sub>1</sub>

To complete catalog number, insert fitting prefix.



| Tray Width                 |                            | * Insert Radius<br>(12" or 24")<br>Catalog No. | R = 12" Radius (305) |               | R = 24" Radius (609) |               |
|----------------------------|----------------------------|------------------------------------------------|----------------------|---------------|----------------------|---------------|
| W <sub>1</sub><br>in. (mm) | W <sub>2</sub><br>in. (mm) |                                                | A<br>in. (mm)        | B<br>in. (mm) | A<br>in. (mm)        | B<br>in. (mm) |
| 9 (228)                    | 6 (152)                    | (Prefix)-09-06-HT*                             | 19½ (496)            | 36 (914)      | 31½ (800)            | 60 (1524)     |
| 12 (305)                   | 6 (152)                    | (Prefix)-12-06-HT*                             | 21 (533)             | 36 (914)      | 33 (838)             | 60 (1524)     |
|                            | 9 (228)                    | (Prefix)-12-09-HT*                             | 21 (533)             | 39 (991)      | 33 (838)             | 63 (1600)     |
| 18 (475)                   | 6 (152)                    | (Prefix)-18-06-HT*                             | 24 (609)             | 36 (914)      | 36 (914)             | 60 (1524)     |
|                            | 9 (228)                    | (Prefix)-18-09-HT*                             | 24 (609)             | 39 (991)      | 36 (914)             | 63 (1600)     |
|                            | 12 (305)                   | (Prefix)-18-12-HT*                             | 24 (609)             | 42 (1067)     | 36 (914)             | 66 (1676)     |
| 24 (609)                   | 6 (152)                    | (Prefix)-24-06-HT*                             | 27 (686)             | 36 (914)      | 39 (991)             | 60 (1524)     |
|                            | 9 (228)                    | (Prefix)-24-09-HT*                             | 27 (686)             | 39 (991)      | 39 (991)             | 63 (1600)     |
|                            | 12 (305)                   | (Prefix)-24-12-HT*                             | 27 (686)             | 42 (1067)     | 39 (991)             | 66 (1676)     |
|                            | 18 (457)                   | (Prefix)-24-18-HT*                             | 27 (686)             | 48 (1219)     | 39 (991)             | 72 (1829)     |
| 30 (762)                   | 6 (152)                    | (Prefix)-30-06-HT*                             | 30 (762)             | 36 (914)      | 42 (1067)            | 60 (1524)     |
|                            | 9 (228)                    | (Prefix)-30-09-HT*                             | 30 (762)             | 39 (991)      | 42 (1067)            | 63 (1600)     |
|                            | 12 (305)                   | (Prefix)-30-12-HT*                             | 30 (762)             | 42 (1067)     | 42 (1067)            | 66 (1676)     |
|                            | 18 (457)                   | (Prefix)-30-18-HT*                             | 30 (762)             | 48 (1219)     | 42 (1067)            | 72 (1829)     |
|                            | 24 (609)                   | (Prefix)-30-24-HT*                             | 30 (762)             | 54 (1372)     | 42 (1067)            | 78 (1981)     |
| 36 (914)                   | 6 (152)                    | (Prefix)-36-06-HT*                             | 33 (838)             | 36 (914)      | 45 (1143)            | 60 (1524)     |
|                            | 9 (228)                    | (Prefix)-36-09-HT*                             | 33 (838)             | 39 (991)      | 45 (1143)            | 63 (1600)     |
|                            | 12 (305)                   | (Prefix)-36-12-HT*                             | 33 (838)             | 42 (1067)     | 45 (1143)            | 66 (1676)     |
|                            | 18 (457)                   | (Prefix)-36-18-HT*                             | 33 (838)             | 48 (1219)     | 45 (1143)            | 72 (1829)     |
|                            | 24 (609)                   | (Prefix)-36-24-HT*                             | 33 (838)             | 54 (1372)     | 45 (1143)            | 78 (1981)     |
|                            | 30 (762)                   | (Prefix)-36-30-HT*                             | 33 (838)             | 60 (1524)     | 45 (1143)            | 84 (2134)     |

(Prefix) See page 22 for catalog number prefix.

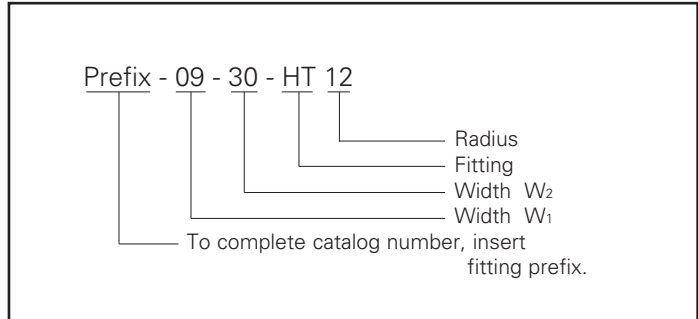
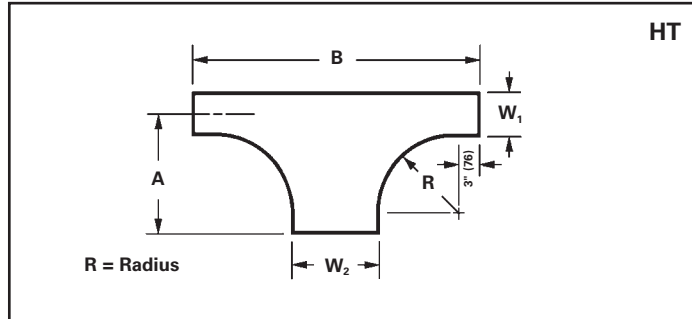
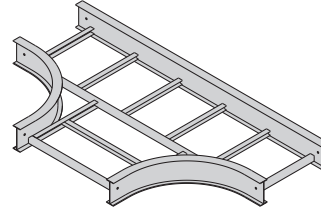
Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

## Horizontal Expanding Tee (HT)

2 pair splice plates with hardware included.



| Tray Width     |                | * Insert Radius<br>(12" or 24")<br>Catalog No. | R = 12" Radius (305) |               | R = 24" Radius (609) |               |
|----------------|----------------|------------------------------------------------|----------------------|---------------|----------------------|---------------|
| W1<br>in. (mm) | W2<br>in. (mm) |                                                | A<br>in. (mm)        | B<br>in. (mm) | A<br>in. (mm)        | B<br>in. (mm) |
| 6 (152)        | 9 (228)        | (Prefix)-06-09-HT*                             | 18 (457)             | 39 991)       | 30 (762)             | 63 (1600)     |
|                | 12 (305)       | (Prefix)-06-12-HT*                             | 18 (457)             | 42 1067)      | 30 (762)             | 66 (1676)     |
|                | 18 (457)       | (Prefix)-06-18-HT*                             | 18 (457)             | 48 1219)      | 30 (762)             | 72 (1829)     |
|                | 24 (609)       | (Prefix)-06-24-HT*                             | 18 (457)             | 54 1372)      | 30 (762)             | 78 (1981)     |
|                | 30 (762)       | (Prefix)-06-30-HT*                             | 18 (457)             | 60 1524)      | 30 (762)             | 84 (2134)     |
|                | 36 (914)       | (Prefix)-06-36-HT*                             | 18 (457)             | 66 1676)      | 30 (762)             | 90 (2286)     |
| 9 (228)        | 12 (305)       | (Prefix)-09-12-HT*                             | 19½ (496)            | 42 1067)      | 31½ (800)            | 66 (1676)     |
|                | 18 (457)       | (Prefix)-09-18-HT*                             | 19½ (496)            | 48 1219)      | 31½ (800)            | 72 (1829)     |
|                | 24 (609)       | (Prefix)-09-24-HT*                             | 19½ (496)            | 54 1372)      | 31½ (800)            | 78 (1981)     |
|                | 30 (762)       | (Prefix)-09-30-HT*                             | 19½ (496)            | 60 1524)      | 31½ (800)            | 84 (2134)     |
|                | 36 (914)       | (Prefix)-09-36-HT*                             | 19½ (496)            | 66 1676)      | 31½ (800)            | 90 (2286)     |
| 12 (305)       | 18 (457)       | (Prefix)-12-18-HT*                             | 21 (533)             | 48 1219)      | 33 (838)             | 72 (1829)     |
|                | 24 (609)       | (Prefix)-12-24-HT*                             | 21 (533)             | 54 1372)      | 33 (838)             | 78 (1981)     |
|                | 30 (762)       | (Prefix)-12-30-HT*                             | 21 (533)             | 60 1524)      | 33 (838)             | 84 (2134)     |
|                | 36 (914)       | (Prefix)-12-36-HT*                             | 21 (533)             | 66 1676)      | 33 (838)             | 90 (2286)     |
| 18 (457)       | 24 (609)       | (Prefix)-18-24-HT*                             | 24 (609)             | 54 1372)      | 36 (914)             | 78 (1981)     |
|                | 30 (762)       | (Prefix)-18-30-HT*                             | 24 (609)             | 60 1524)      | 36 (914)             | 84 (2134)     |
|                | 36 (914)       | (Prefix)-18-36-HT*                             | 24 (609)             | 66 1676)      | 36 (914)             | 90 (2286)     |
| 24 (609)       | 30 (762)       | (Prefix)-24-30-HT*                             | 27 (686)             | 60 1524)      | 39 (991)             | 84 (2134)     |
|                | 36 (914)       | (Prefix)-24-36-HT*                             | 27 (686)             | 66 1676)      | 39 (991)             | 90 (2286)     |
| 36 (762)       | 36 (914)       | (Prefix)-30-36-HT*                             | 30 (762)             | 66 1676)      | 42 (1067)            | 90 (2286)     |

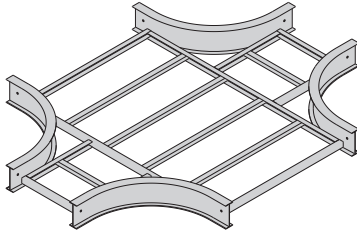
(Prefix) See page 22 for catalog number prefix.

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

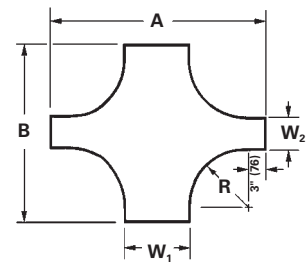
## Horizontal Expanding/Reducing Cross (HX)

3 pair splice plates with hardware included.



Prefix - 36 - 18 - HX 24

Radius  
Fitting  
Width W<sub>2</sub>  
Width W<sub>1</sub>  
To complete catalog number, insert fitting prefix.



HX

| Tray Width     |                | * Insert Radius<br>(12" or 24")<br>Catalog No. | R = 12" Radius (305) |               | R = 24" Radius (609) |               |
|----------------|----------------|------------------------------------------------|----------------------|---------------|----------------------|---------------|
| W1<br>in. (mm) | W2<br>in. (mm) |                                                | A<br>in. (mm)        | B<br>in. (mm) | A<br>in. (mm)        | B<br>in. (mm) |
| 9 (228)        | 6 (152)        | (Prefix)-09-06-HX*                             | 39 (991)             | 36 (914)      | 63 (1600)            | 60 (1372)     |
| 12 (305)       | 6 (152)        | (Prefix)-12-06-HX*                             | 42 (1067)            | 36 (914)      | 66 (1676)            | 60 (1372)     |
|                | 9 (228)        | (Prefix)-12-09-HX*                             | 42 (1067)            | 39 (991)      | 66 (1676)            | 63 (1600)     |
| 18 (457)       | 6 (152)        | (Prefix)-18-06-HX*                             | 48 (1219)            | 36 (914)      | 72 (1829)            | 60 (1372)     |
|                | 9 (228)        | (Prefix)-18-09-HX*                             | 48 (1219)            | 39 (991)      | 72 (1829)            | 63 (1600)     |
|                | 12 (305)       | (Prefix)-18-12-HX*                             | 48 (1219)            | 42 (1067)     | 72 (1829)            | 66 (1676)     |
| 24 (609)       | 6 (152)        | (Prefix)-24-06-HX*                             | 54 (1372)            | 36 (914)      | 78 (1981)            | 60 (1372)     |
|                | 9 (228)        | (Prefix)-24-09-HX*                             | 54 (1372)            | 39 (991)      | 78 (1981)            | 63 (1600)     |
|                | 12 (305)       | (Prefix)-24-12-HX*                             | 54 (1372)            | 42 (1067)     | 78 (1981)            | 66 (1676)     |
|                | 18 (457)       | (Prefix)-24-18-HX*                             | 54 (1372)            | 48 (1219)     | 78 (1981)            | 72 (1829)     |
| 30 (762)       | 6 (152)        | (Prefix)-30-06-HX*                             | 60 (1524)            | 36 (914)      | 84 (2134)            | 60 (1372)     |
|                | 9 (228)        | (Prefix)-30-09-HX*                             | 60 (1524)            | 39 (991)      | 84 (2134)            | 63 (1600)     |
|                | 12 (305)       | (Prefix)-30-12-HX*                             | 60 (1524)            | 42 (1067)     | 84 (2134)            | 66 (1676)     |
|                | 18 (457)       | (Prefix)-30-18-HX*                             | 60 (1524)            | 48 (1219)     | 84 (2134)            | 72 (1829)     |
|                | 24 (609)       | (Prefix)-30-24-HX*                             | 60 (1524)            | 54 (1372)     | 84 (2134)            | 78 (1981)     |
| 36 (914)       | 6 (152)        | (Prefix)-36-06-HX*                             | 66 (1676)            | 36 (914)      | 90 (2286)            | 60 (1372)     |
|                | 9 (228)        | (Prefix)-36-09-HX*                             | 66 (1676)            | 39 (991)      | 90 (2286)            | 63 (1600)     |
|                | 12 (305)       | (Prefix)-36-12-HX*                             | 66 (1676)            | 42 (1067)     | 90 (2286)            | 66 (1676)     |
|                | 18 (457)       | (Prefix)-36-18-HX*                             | 66 (1676)            | 48 (1219)     | 90 (2286)            | 72 (1829)     |
|                | 24 (609)       | (Prefix)-36-24-HX*                             | 66 (1676)            | 54 (1372)     | 90 (2286)            | 78 (1981)     |
|                | 30 (762)       | (Prefix)-36-30-HX*                             | 66 (1676)            | 60 (1524)     | 90 (2286)            | 84 (2134)     |

(Prefix) See page 22 for catalog number prefix.

Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

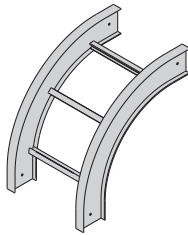
All dimensions in parentheses are millimeters unless otherwise specified.



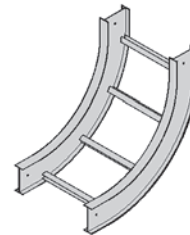
# KwikSplice™ - Fittings

## Vertical Bend 90° (VO, VI)

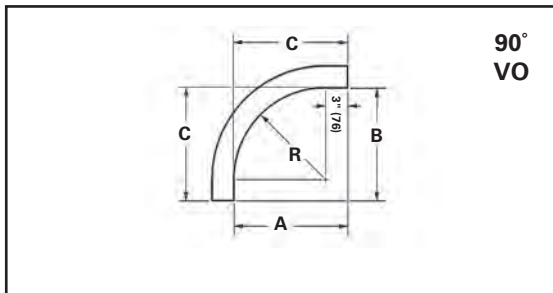
1 pair splice plates with hardware included.



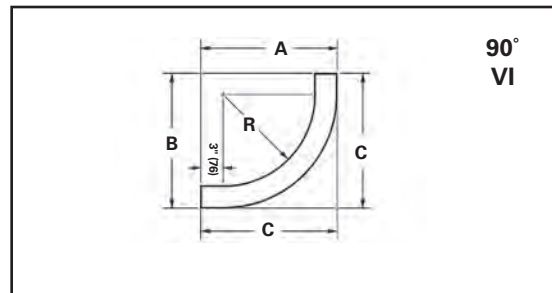
90° Vertical Outside



90° Vertical Inside



90°  
VO



90°  
VI

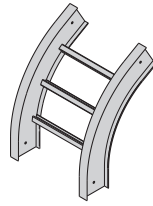
| Bend<br>Radius<br>R | Tray<br>Width<br>Insert | (*) Insert "VO" for<br>Vert. Outside Bend<br>"VI" for<br>Vert. Inside Bend<br>Catalog No. | VO Side Rail<br>Height |             |             | VI Side Rail Height |             |             |             |             |             |             |             |             |
|---------------------|-------------------------|-------------------------------------------------------------------------------------------|------------------------|-------------|-------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                     |                         |                                                                                           | 4" - 6" (101-152)      |             |             | 4" (101)            |             |             | 5" (127)    |             |             | 6" (152)    |             |             |
|                     |                         |                                                                                           | A                      | B           | C           | A                   | B           | C           | A           | B           | C           | A           | B           | C           |
| in. (mm)            | in. (mm)                |                                                                                           | in. (mm)               | in. (mm)    | in. (mm)    | in. (mm)            | in. (mm)    | in. (mm)    | in. (mm)    | in. (mm)    | in. (mm)    | in. (mm)    | in. (mm)    | in. (mm)    |
| 12<br>(305)         | 6 (152)                 | (Prefix)-06-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 9 (228)                 | (Prefix)-09-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 12 (305)                | (Prefix)-12-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 18 (457)                | (Prefix)-18-90(*)12                                                                       | 15<br>(381)            | 15<br>(381) | 15<br>(381) | 19<br>(483)         | 19<br>(483) | 19<br>(483) | 20<br>(508) | 20<br>(508) | 20<br>(508) | 21<br>(533) | 21<br>(533) | 21<br>(533) |
|                     | 24 (609)                | (Prefix)-24-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 30 (762)                | (Prefix)-30-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 36 (914)                | (Prefix)-36-90(*)12                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
| 24<br>(609)         | 6 (152)                 | (Prefix)-06-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 9 (228)                 | (Prefix)-09-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 12 (305)                | (Prefix)-12-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 18 (457)                | (Prefix)-18-90(*)24                                                                       | 27<br>(686)            | 27<br>(686) | 27<br>(686) | 31<br>(787)         | 31<br>(787) | 31<br>(787) | 32<br>(813) | 32<br>(813) | 32<br>(813) | 33<br>(838) | 33<br>(838) | 33<br>(838) |
|                     | 24 (609)                | (Prefix)-24-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 30 (762)                | (Prefix)-30-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |
|                     | 36 (914)                | (Prefix)-36-90(*)24                                                                       |                        |             |             |                     |             |             |             |             |             |             |             |             |

(Prefix) See page 22 for catalog number prefix.

Manufacturing tolerances apply to all dimensions.

## Vertical Bend 60° (VO, VI)

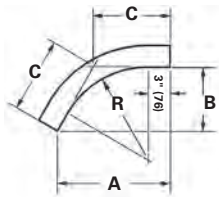
1 pair splice plates with hardware included.



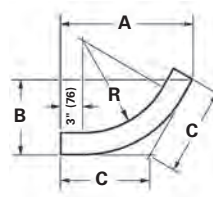
60° Vertical Outside



60° Vertical Inside



60°  
VO



60°  
VI

| Bend<br>Radius<br>R | Tray<br>Width<br>Insert | (*) Insert "VO" for<br>Vert. Outside Bend<br>"VI" for<br>Vert. Inside Bend<br>Catalog No. | VO Side Rail<br>Height                   |                                         |                                          | VI Side Rail Height                     |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|---------------------|-------------------------|-------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------|------------------------------------------|-----------------------------------------|------------------------------------------|
|                     |                         |                                                                                           | 4" - 6" (101-152)                        |                                         |                                          | 4" (101)                                |                                         |                                          | 5" (127)                                |                                         |                                           | 6" (152)                                 |                                         |                                          |
|                     |                         |                                                                                           | A                                        | B                                       | C                                        | A                                       | B                                       | C                                        | A                                       | B                                       | C                                         | A                                        | B                                       | C                                        |
| in. (mm)            | in. (mm)                |                                                                                           | in. (mm)                                 | in. (mm)                                | in. (mm)                                 | in. (mm)                                | in. (mm)                                | in. (mm)                                 | in. (mm)                                | in. (mm)                                | in. (mm)                                  | in. (mm)                                 | in. (mm)                                | in. (mm)                                 |
| 12<br>(305)         | 6 (152)                 | (Prefix)-06-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 9 (228)                 | (Prefix)-09-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 12 (305)                | (Prefix)-12-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 18 (457)                | (Prefix)-18-60(*)12                                                                       | 14 <sup>7</sup> / <sub>8</sub><br>(378)  | 8 <sup>5</sup> / <sub>8</sub><br>(219)  | 9 <sup>15</sup> / <sub>16</sub><br>(253) | 18 <sup>3</sup> / <sub>8</sub><br>(467) | 10 <sup>5</sup> / <sub>8</sub><br>(270) | 12 <sup>1</sup> / <sub>4</sub><br>(311)  | 19 <sup>1</sup> / <sub>4</sub><br>(489) | 11 <sup>1</sup> / <sub>8</sub><br>(283) | 12 <sup>13</sup> / <sub>16</sub><br>(326) | 20 <sup>1</sup> / <sub>16</sub><br>(510) | 11 <sup>5</sup> / <sub>8</sub><br>(296) | 13 <sup>3</sup> / <sub>8</sub><br>(340)  |
|                     | 24 (609)                | (Prefix)-24-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 30 (762)                | (Prefix)-30-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 36 (914)                | (Prefix)-36-60(*)12                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
| 24<br>(609)         | 6 (152)                 | (Prefix)-06-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 9 (228)                 | (Prefix)-09-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 12 (305)                | (Prefix)-12-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 18 (457)                | (Prefix)-18-60(*)24                                                                       | 25 <sup>5</sup> / <sub>16</sub><br>(643) | 14 <sup>5</sup> / <sub>8</sub><br>(372) | 16 <sup>7</sup> / <sub>8</sub><br>(428)  | 28 <sup>3</sup> / <sub>4</sub><br>(730) | 16 <sup>5</sup> / <sub>8</sub><br>(422) | 19 <sup>3</sup> / <sub>16</sub><br>(488) | 29 <sup>5</sup> / <sub>8</sub><br>(753) | 17 <sup>1</sup> / <sub>8</sub><br>(435) | 19 <sup>3</sup> / <sub>4</sub><br>(502)   | 30 <sup>1</sup> / <sub>2</sub><br>(775)  | 17 <sup>5</sup> / <sub>8</sub><br>(448) | 20 <sup>5</sup> / <sub>16</sub><br>(516) |
|                     | 24 (609)                | (Prefix)-24-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 30 (762)                | (Prefix)-30-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |
|                     | 36 (914)                | (Prefix)-36-60(*)24                                                                       |                                          |                                         |                                          |                                         |                                         |                                          |                                         |                                         |                                           |                                          |                                         |                                          |

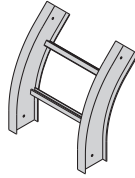
(Prefix) See page 22 for catalog number prefix.

Manufacturing tolerances apply to all dimensions.

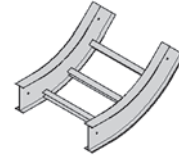
All dimensions in parentheses are millimeters unless otherwise specified.

## Vertical Bend 45° (VO, VI)

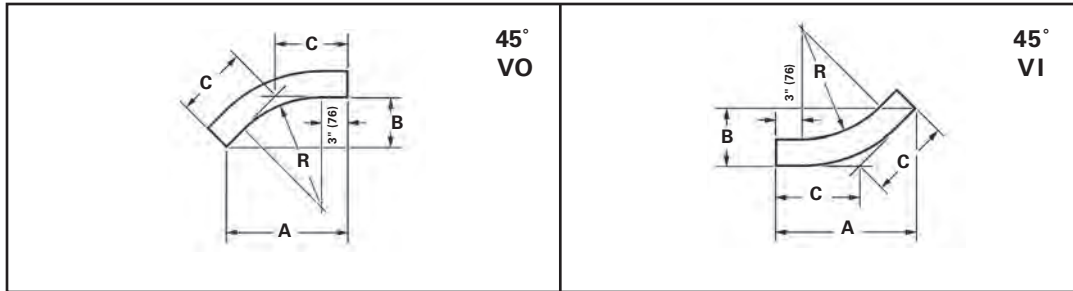
1 pair splice plates with hardware included.



45° Vertical Outside



45° Vertical Inside

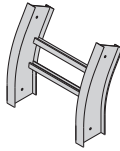


| Bend Radius<br>R | Tray Width Insert | (*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No. | VO Side Rail Height                      |                                        |                                           | VI Side Rail Height                       |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|------------------|-------------------|-------------------------------------------------------------------------------|------------------------------------------|----------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------|-------------------------------------------|------------------------------------------|
|                  |                   |                                                                               | 4" - 6" (101-152)                        |                                        |                                           | 4" (101)                                  |                                          |                                         | 5" (127)                                |                                         |                                          | 6" (152)                                 |                                           |                                          |
|                  |                   |                                                                               | A                                        | B                                      | C                                         | A                                         | B                                        | C                                       | A                                       | B                                       | C                                        | A                                        | B                                         | C                                        |
| in. (mm)         | in. (mm)          |                                                                               | in. (mm)                                 | in. (mm)                               | in. (mm)                                  | in. (mm)                                  | in. (mm)                                 | in. (mm)                                | in. (mm)                                | in. (mm)                                | in. (mm)                                 | in. (mm)                                 | in. (mm)                                  | in. (mm)                                 |
| 12<br>(305)      | 6 (152)           | (Prefix)-06-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 9 (228)           | (Prefix)-09-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 12 (305)          | (Prefix)-12-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 18 (457)          | (Prefix)-18-45(*)12                                                           | 13 <sup>5</sup> / <sub>8</sub><br>(346)  | 5 <sup>5</sup> / <sub>8</sub><br>(143) | 8<br>(203)                                | 16 <sup>7</sup> / <sub>16</sub><br>(417)  | 6 <sup>13</sup> / <sub>16</sub><br>(173) | 9 <sup>5</sup> / <sub>8</sub><br>(245)  | 17 <sup>1</sup> / <sub>8</sub><br>(435) | 7 <sup>1</sup> / <sub>8</sub><br>(181)  | 10 <sup>1</sup> / <sub>16</sub><br>(256) | 17 <sup>7</sup> / <sub>8</sub><br>(454)  | 7 <sup>3</sup> / <sub>8</sub><br>(188)    | 10 <sup>7</sup> / <sub>16</sub><br>(265) |
|                  | 24 (609)          | (Prefix)-24-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 30 (762)          | (Prefix)-30-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 36 (914)          | (Prefix)-36-45(*)12                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
| 24<br>(609)      | 6 (152)           | (Prefix)-06-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 9 (228)           | (Prefix)-09-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 12 (305)          | (Prefix)-12-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 18 (457)          | (Prefix)-18-45(*)24                                                           | 22 <sup>1</sup> / <sub>16</sub><br>(561) | 9 <sup>1</sup> / <sub>8</sub><br>(232) | 12 <sup>15</sup> / <sub>16</sub><br>(329) | 24 <sup>15</sup> / <sub>16</sub><br>(634) | 10 <sup>5</sup> / <sub>16</sub><br>(262) | 14 <sup>5</sup> / <sub>8</sub><br>(372) | 25 <sup>5</sup> / <sub>8</sub><br>(651) | 10 <sup>5</sup> / <sub>8</sub><br>(270) | 15<br>(381)                              | 26 <sup>5</sup> / <sub>16</sub><br>(668) | 10 <sup>15</sup> / <sub>16</sub><br>(278) | 15 <sup>7</sup> / <sub>16</sub><br>(392) |
|                  | 24 (609)          | (Prefix)-24-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 30 (762)          | (Prefix)-30-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |
|                  | 36 (914)          | (Prefix)-36-45(*)24                                                           |                                          |                                        |                                           |                                           |                                          |                                         |                                         |                                         |                                          |                                          |                                           |                                          |

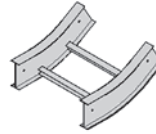
(Prefix) See page 22 for catalog number prefix.  
Manufacturing tolerances apply to all dimensions.

## Vertical Bend 30° (VO, VI)

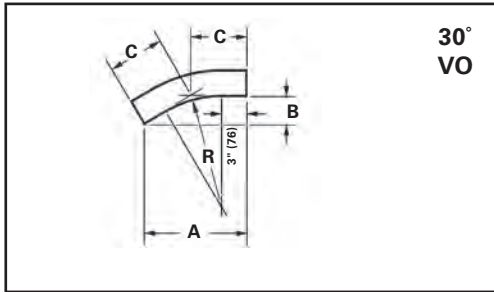
1 pair splice plates with hardware included.



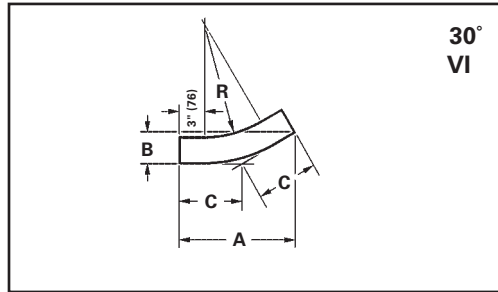
30° Vertical Outside



30° Vertical Inside



30°  
VO



30°  
VI

| Bend<br>Radius<br>R | Tray<br>Width<br>Insert | (*) Insert "VO" for<br>Vert. Outside Bend<br>"VI" for<br>Vert. Inside Bend<br>Catalog No. | VO Side Rail<br>Height                  |                                          |                                         | VI Side Rail Height                     |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|---------------------|-------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------|
|                     |                         |                                                                                           | 4" - 6" (101-152)                       |                                          |                                         | 4" (101)                                |                                        |                                         | 5" (127)                                |                                        |                                         | 6" (152)                                |                                          |                                          |
|                     |                         |                                                                                           | A                                       | B                                        | C                                       | A                                       | B                                      | C                                       | A                                       | B                                      | C                                       | A                                       | B                                        | C                                        |
| in. (mm)            | in. (mm)                |                                                                                           | in. (mm)                                | in. (mm)                                 | in. (mm)                                | in. (mm)                                | in. (mm)                               | in. (mm)                                | in. (mm)                                | in. (mm)                               | in. (mm)                                | in. (mm)                                | in. (mm)                                 | in. (mm)                                 |
| 12<br>(305)         | 6 (152)                 | (Prefix)-06-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 9 (228)                 | (Prefix)-09-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 12 (305)                | (Prefix)-12-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 18 (457)                | (Prefix)-18-30(*)12                                                                       | 11 <sup>5</sup> / <sub>8</sub><br>(296) | 3 <sup>1</sup> / <sub>8</sub><br>(79)    | 6 <sup>3</sup> / <sub>16</sub><br>(157) | 13 <sup>5</sup> / <sub>8</sub><br>(346) | 3 <sup>5</sup> / <sub>8</sub><br>(92)  | 7 <sup>5</sup> / <sub>16</sub><br>(186) | 14 <sup>1</sup> / <sub>8</sub><br>(359) | 3 <sup>3</sup> / <sub>4</sub><br>(95)  | 7 <sup>9</sup> / <sub>16</sub><br>(192) | 14 <sup>5</sup> / <sub>8</sub><br>(372) | 3 <sup>15</sup> / <sub>16</sub><br>(100) | 7 <sup>13</sup> / <sub>16</sub><br>(199) |
|                     | 24 (609)                | (Prefix)-24-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 30 (762)                | (Prefix)-30-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 36 (914)                | (Prefix)-36-30(*)12                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
| 24<br>(609)         | 6 (152)                 | (Prefix)-06-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 9 (228)                 | (Prefix)-09-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 12 (305)                | (Prefix)-12-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 18 (457)                | (Prefix)-18-30(*)24                                                                       | 17 <sup>5</sup> / <sub>8</sub><br>(448) | 4 <sup>11</sup> / <sub>16</sub><br>(120) | 9 <sup>7</sup> / <sub>16</sub><br>(240) | 19 <sup>5</sup> / <sub>8</sub><br>(499) | 5 <sup>1</sup> / <sub>4</sub><br>(133) | 10 <sup>1</sup> / <sub>2</sub><br>(267) | 20 <sup>1</sup> / <sub>8</sub><br>(511) | 5 <sup>3</sup> / <sub>8</sub><br>(137) | 10 <sup>3</sup> / <sub>4</sub><br>(273) | 20 <sup>5</sup> / <sub>8</sub><br>(524) | 5 <sup>1</sup> / <sub>2</sub><br>(140)   | 11 <sup>1</sup> / <sub>16</sub><br>(282) |
|                     | 24 (609)                | (Prefix)-24-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 30 (762)                | (Prefix)-30-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |
|                     | 36 (914)                | (Prefix)-36-30(*)24                                                                       |                                         |                                          |                                         |                                         |                                        |                                         |                                         |                                        |                                         |                                         |                                          |                                          |

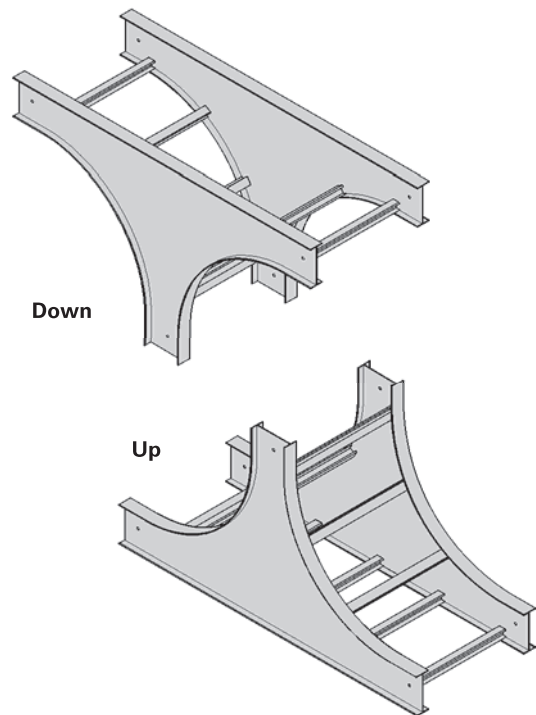
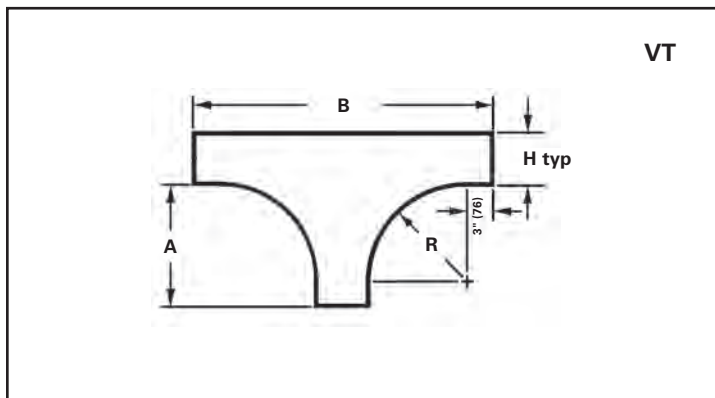
(Prefix) See page 22 for catalog number prefix.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

## Vertical Tee Up/Down (VTU/VT)

2 pair splice plates with hardware included.



| Bend<br>Radius<br>R<br>in. (mm) | Tray<br>Width<br>in. (mm) | Vertical Tee Down<br>Catalog No. | Vertical Tee Up<br>Catalog No. | Side Rail Height "H" |               |               |               |               |               |
|---------------------------------|---------------------------|----------------------------------|--------------------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
|                                 |                           |                                  |                                | 4" (101)             |               | 5" (127)      |               | 6" (152)      |               |
|                                 |                           |                                  |                                | A<br>in. (mm)        | B<br>in. (mm) | A<br>in. (mm) | B<br>in. (mm) | A<br>in. (mm) | B<br>in. (mm) |
| 12<br>(305)                     | 6 (152)                   | (Prefix)-06-VT12                 | (Prefix)-06-VTU12              | 15<br>(381)          | 34<br>(846)   | 15<br>(381)   | 35<br>(889)   | 15<br>(381)   | 36<br>(914)   |
|                                 | 9 (228)                   | (Prefix)-09-VT12                 | (Prefix)-09-VTU12              |                      |               |               |               |               |               |
|                                 | 12 (305)                  | (Prefix)-12-VT12                 | (Prefix)-12-VTU12              |                      |               |               |               |               |               |
|                                 | 18 (457)                  | (Prefix)-18-VT12                 | (Prefix)-18-VTU12              |                      |               |               |               |               |               |
|                                 | 24 (609)                  | (Prefix)-24-VT12                 | (Prefix)-24-VTU12              |                      |               |               |               |               |               |
|                                 | 30 (762)                  | (Prefix)-30-VT12                 | (Prefix)-30-VTU12              |                      |               |               |               |               |               |
|                                 | 36 (914)                  | (Prefix)-36-VT12                 | (Prefix)-36-VTU12              |                      |               |               |               |               |               |
| 24<br>(609)                     | 6 (152)                   | (Prefix)-06-VT24                 | (Prefix)-06-VTU24              | 27<br>(686)          | 58<br>(1473)  | 27<br>(686)   | 59<br>(1498)  | 27<br>(686)   | 60<br>(1524)  |
|                                 | 9 (228)                   | (Prefix)-09-VT24                 | (Prefix)-09-VTU24              |                      |               |               |               |               |               |
|                                 | 12 (305)                  | (Prefix)-12-VT24                 | (Prefix)-12-VTU24              |                      |               |               |               |               |               |
|                                 | 18 (457)                  | (Prefix)-18-VT24                 | (Prefix)-18-VTU24              |                      |               |               |               |               |               |
|                                 | 24 (609)                  | (Prefix)-24-VT24                 | (Prefix)-24-VTU24              |                      |               |               |               |               |               |
|                                 | 30 (762)                  | (Prefix)-30-VT24                 | (Prefix)-30-VTU24              |                      |               |               |               |               |               |
|                                 | 36 (914)                  | (Prefix)-36-VT24                 | (Prefix)-36-VTU24              |                      |               |               |               |               |               |

(Prefix) See page 22 for catalog number prefix.  
Manufacturing tolerances apply to all dimensions.





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