



KwikRail cable tray system advantages

The KwikRail straight sections are available with welded rungs or bolted rungs to allow installers to add or remove rungs* in the field.

The straight sections and fittings feature perforations along the side rail to allow you to quickly and easily alter the system.

Plus, add-rung-kits allow you to add rung at any location along the length of the tray making cable support and adding accessories simple to achieve.

- I-beam rungs provide high strength to weight ratio
- Vibration tested
- Patented fastener holes provide maximum grip for fastener threads
- Innovative time saving accessories
- Fast, easy to modify tray in the field

Patent Information

U.S. Patent D361982; 5,580,014

Canada 2,137,879

UK Patent 2,285,343

*If your application requires removal of more than one (1) rung from a KwikRail straight section, please contact the B-Line series technical team. We do not recommend removing rungs from the welded system. Please contact us if you have any questions.

Straight Sections

see pages KR-1 – KR-3

Accessories

see pages KR-4 – KR-15

Covers

see page KR-10

Fittings

see pages KR-16 – KR-20

Specifications

see pages KR-21 – KR-22

KwikRail Straight Section Part Numbering

Prefix

Example: KR A 4 A B 09 - 12 - 144

Series	NEMA Class	Height	Material	Fabrication	Type	Width	Length
KR	A = 50 Lbs/Ft NEMA 12A (12 ft. span) B = 75 Lbs/Ft NEMA 12B (12 ft. span)	4 = 4" 6 = 6"*	A = Aluminum	Blank = Welded B = Bolted	● SB = Solid Bottom* ● 04 = 4" rung spacing* ● 06 = 6" rung spacing ● 09 = 9" rung spacing ● 12 = 12" rung spacing	06 = 6" 09 = 9" 12 = 12" 18 = 18" 24 = 24" 30 = 30" 36 = 36"	● 144 = 12 ft. ● 120 = 10 ft.

* 4" rung spacing and solid bottom only available on welded fabrication.
** Only available in NEMA 12 B class

● Green = Fastest shipped items ● Black = Normal lead-time items

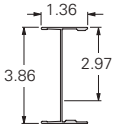
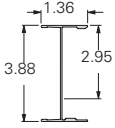
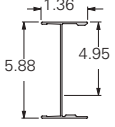
One pair of standard splice plates included with straight sections.

Ladder Type
(Specify Rung Spacing)

6" Rung Spacing

All dimensions in parentheses are millimeters unless otherwise specified.

KRA4A, KRB4A and KRB6A Straight Section Technical Data

Side Rail Dimensions	NEMA, CSA & UL Classifications	Span ft	Load lbs/ft	Deflection Multiplier	Design Factors for Two Rails	Span meters	Load kg/m	Deflection Multiplier	Design Factors for Two Rails
KRA4A 	NEMA: 12A CSA: C-3m UL Cross-Sectional Area: 0.60 in ²	6	221	0.0016	Area = 0.80 in ² Sx = 0.90 in ³ Ix = 1.79 in ⁴	1.8	328	0.028	Area = 5.16 cm ² Sx = 14.75 cm ³ Ix = 74.51 cm ⁴
		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	
KRB4A 	NEMA: 12B CSA: D-3m UL Cross-Sectional Area: 0.60 in ²	8	198	0.0040	Area = 0.99 in ² Sx = 1.07 in ³ Ix = 2.32 in ⁴	2.4	295	0.068	Area = 6.39 cm ² Sx = 17.53 cm ³ Ix = 96.57 cm ⁴
		10	127	0.0097		3.0	195	0.166	
		12	88	0.0201		3.7	131	0.343	
KRB6A 	NEMA: 12B CSA: D-3m UL Cross-Sectional Area: 1.00 in ²	8	170	0.0015	Area = 1.25 in ² Sx = 1.91 in ³ Ix = 6.16 in ⁴	2.4	266	0.026	Area = 8.06 cm ² Sx = 31.30 cm ³ Ix = 256.40 cm ⁴
		10	114	0.0037		3.0	179	0.062	
		12	79	0.0076		3.7	118	0.129	

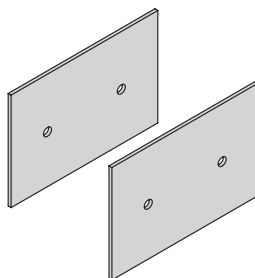
When cable trays are used in continuous spans, the deflection of the cable tray is reduced by as much as 50%.
 Design factors: Ix = Moment of Inertia, Sx = Section Modulus.

Values are based on simple beam tests per NEMA 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.

KwikRail Aluminum Cable Tray - Accessories

Standard Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified as equipment grounding conductor.
- Splice plates and hardware included with straight sections and fittings.

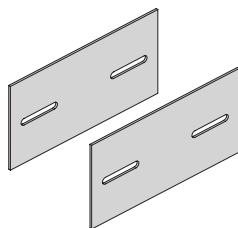


Tray Series	Catalog No.
KR_4A	KR4A-SSP
KRB6A	KR6A-SSP

— = insert A or B for class

Expansion Splice Plates

- Furnished in pairs with 1/4" hardware.
- Bonding jumpers required on each side rail.

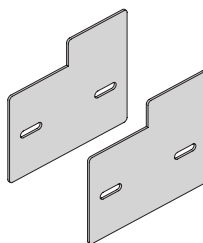


Tray Series	Catalog No.
KR_4A	KR4A-ESP
KRB6A	KR6A-ESP

— = insert A or B for class

Step Down Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified as equipment grounding conductor.

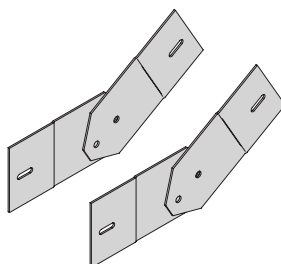


Tray Series	Catalog No.
KR_4A to KRB6A	KRA-DSP-46

— = insert A or B for class

Vertical Adjustable Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified as equipment grounding conductor.
- Bonding jumpers not required.
- Requires supports within 24" on both sides, per NEMA VE 2.

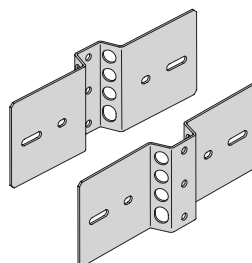


Tray Series	Catalog No.
KR_4A	KR4A-VSP
KRB6A	KR6A-VSP

— = insert A or B for class

Horizontal Adjustable Splice Plates (Flex-Mount™)

- Furnished in pairs with 1/4" hardware.
- Horizontally adjustable to 90°.
- Vertically adjustable to 15°.
- UL Classified as equipment grounding conductor.
- Requires supports within 24" on both sides, per NEMA VE 2.
- For optional rung, see page KR-14.

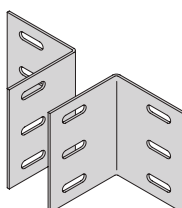


Tray Series	Catalog No.
KR_4A	KR4A-FSP
KRB6A	KR6A-FSP

— = insert A or B for class

Tray-To-Box Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified as equipment grounding conductor.



Tray Series	Catalog No.
KR_4A	KR4A-TTB
KRB6A	KR6A-TTB

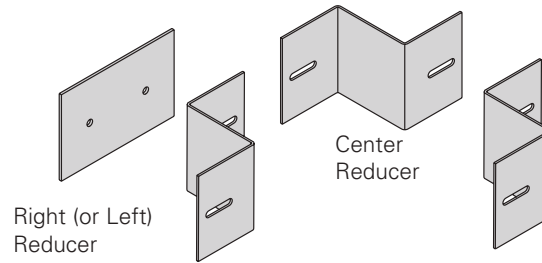
— = insert A or B for class

All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Accessories

Offset Reducing Splice Plates

- Furnished in pairs with 1/4" hardware.
- UL Classified as equipment grounding conductor.



Tray Series	Catalog No.
KR_4A	KR4A-RSP-† r
KRB6A	KR6A-RSP-† r

— = insert A or B for class

Specify the following:

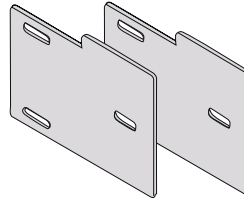
† C = center reducer

S = side reducer

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

Adapter Splice Plates

- Furnished in pairs with 1/4" hardware.
- For transitioning from Redi-Rail to KwikRail.

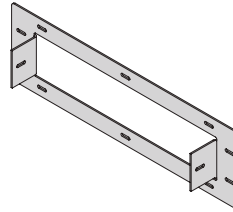


Tray Series	Catalog No.
KR_4A	KR4A-ASP
KRB6A	KR6A-ASP

— = insert A or B for class

Frame Type Box Connector

- Furnished with 1/4" hardware for tray connection.
- UL Classified as equipment grounding conductor.

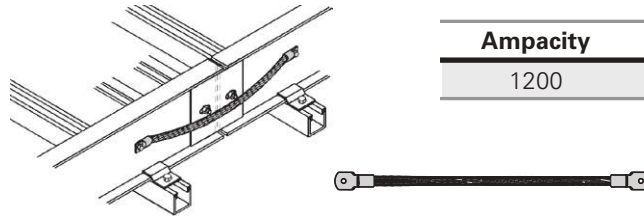


Tray Series	Catalog No.
KR_4A	KR4A-FTB-†
KRB6A	KR6A-FTB-†

† = Insert tray width

Bonding Jumper

- Sold individually with 1/4" hardware.
- UL Classified as equipment grounding conductor.
- Length: 14 1/2" (368mm)



Ampacity	Catalog No.
1200	99-30

Grounding Clamp

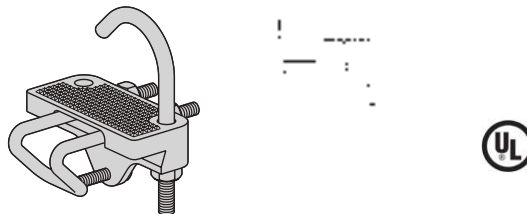
- Accepts #6 AWG to 250 MCM.
- UL Classified, suitable as equipment grounding conductor.



Material	Catalog No.
Tin plated aluminum	9A-2130

Conduit-to-Tray Adaptors

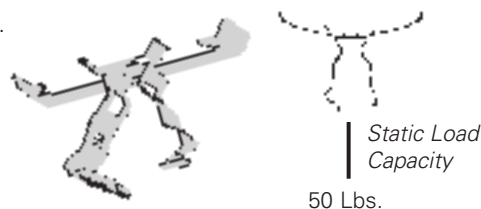
- For easy attachment of conduit terminating at a cable tray.
- Use on aluminum or steel cable trays.



Conduit Size in. (mm)	Catalog No.
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

Static Load Capacity
50 Lbs.

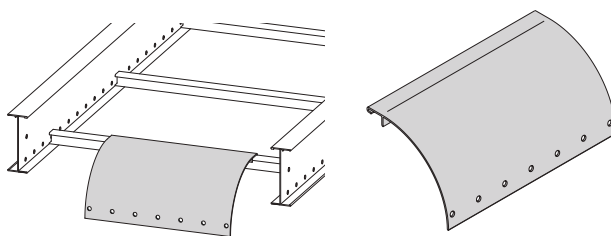
Conduit Size in. (mm)	Catalog No.
1/2, 3/4 (15, 20)	BG-8-12-W2
1, 1 1/4 (25, 32)	BG-16-W2

All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Accessories

Drop-Out

- Snaps on to both bolted and welded rung variations .
- Provides 4" (101mm) radius.
- Holes provided to secure cables.



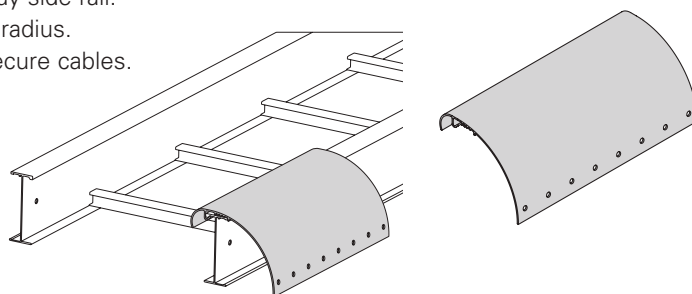
Catalog No.

KRA-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)

KRA-SDO-06 6 (152)

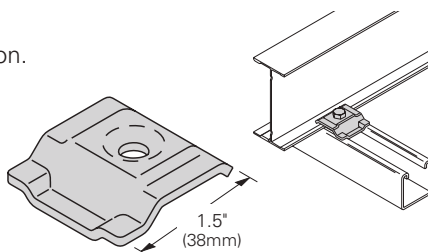
KRA-SDO-12 12 (305)

KRA-SDO-18 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



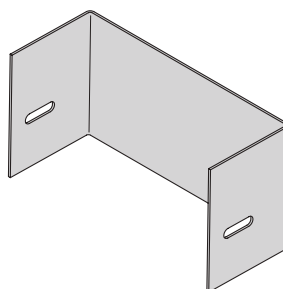
Catalog No.

9ZN-1204 (without hardware)

9ZN-1204NB (with hardware)

Blind End

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



**Tray
Series**

Catalog No.

KR_4A **KR4A-END-†**

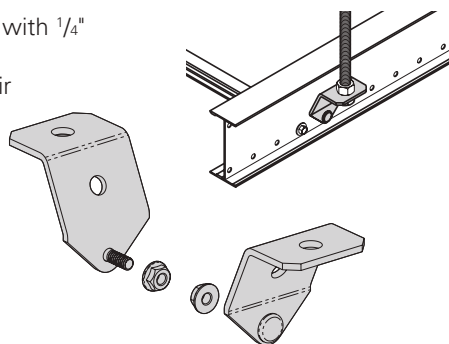
KRB6A **KR6A-END-†**

† = Insert tray width

_ = insert A or B for class

Hanger Rod Bracket

- Furnished as pair of studed clamps with 1/4" serrated flanged lock nuts.
- Loading is 1,000 lbs. (4.45kN) per pair with safety factor of 3.
- Position ATR 3" (76mm) wider than cable tray.



**Support
ATR Size**

Catalog No.

3/8" **9(*)-R238**

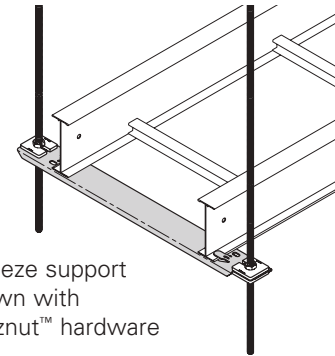
1/2" **9(*)-R250**

(*) Insert ZN option or SS4 option

All dimensions in parentheses are millimeters unless otherwise specified.

Tab and Lock Trapeze Support

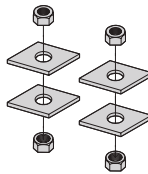
- Hardware purchased separately.
- Accepts up to $\frac{3}{8}$ " rod.
- Accepts traditional hold down clamps (9ZN-1204) if necessary.
- Ability to adjust tabs with flat head screw driver (not included).
- Tabs clamp cable tray to trapeze support.
- Load capacity: Rated for maximum load of KwikRail cable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



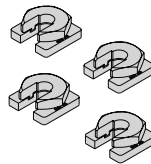
Trapeze support shown with Buzznut™ hardware

Trapeze support only

Hardware	Qty.	Catalog No.
Standard	(4)	B201
	(4)	$\frac{3}{8}$" HN
or		
Buzznut	(4)	SLWN3/8



Standard hardware



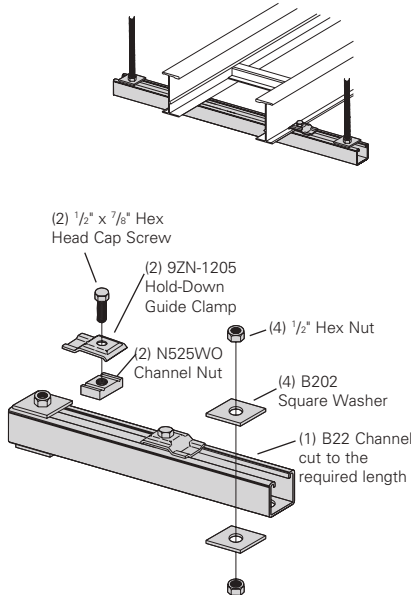
Buzznut hardware

Catalog No.	Tray Width	
	in.	(mm)
KRA-06CT	6	(152)
KRA-09CT	9	(229)
KRA-12CT	12	(305)
KRA-18CT	18	(457)
KRA-24CT	24	(610)
KRA-30CT	30	(762)
KRA-36CT	36	(914)

Trapeze Support Kit

Kit includes components for a single trapeze in one package.

- Kits available in pre-galvanized (P) or hot dip galvanized steel (G) with 316 stainless steel hardware.
- SH channel has pre-punched slots to eliminate field drilling
- Hardware is shipped in sealed plast back and boxed with pre-cut strut.
- Design for use with $\frac{1}{2}$ " all threaded rod (sold separately).
- Safety factor of 3.0 on all loads.

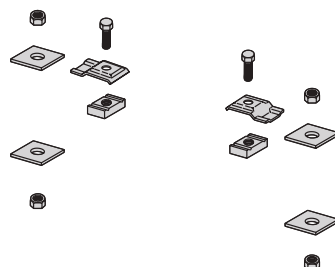


Catalog No.	Tray Width in. (mm)	Channel Length in. (mm)	Uniform Load lbs (kN)
9(*)-5506-22SH(†)	6 (152)	16 (406)	1600 (7.11)
9(*)-5509-22SH(†)	9 (229)	18 (457)	1250 (5.56)
9(*)-5512-22SH(†)	12 (305)	22 (559)	1125 (5.00)
9(*)-5518-22SH(†)	18 (457)	28 (711)	865 (3.85)
9(*)-5524-22SH(†)	24 (610)	34 (864)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

- (*) Insert **P** or **G**
- (†) Insert $\frac{3}{8}$ for $\frac{3}{8}$ " threaded rod hardware.

Trapeze Hardware Kit

- Hardware shipped in plastic bag.



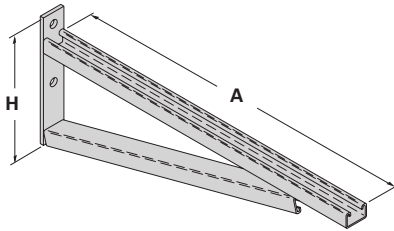
Catalog No.	
9ZN-5500- $\frac{1}{2}$	9G-5500- $\frac{1}{2}$
(1) pr. 9ZN-1205	(1) pr. 9G-1205
(2) HHC Screw $\frac{1}{2}$ x $\frac{7}{8}$ ZN	(2) HHC Screw $\frac{1}{2}$ x $\frac{7}{8}$ SS6
(2) N525 WO ZN	(2) N525 WO SS6
(4) B202 ZN $\frac{1}{2}$ " sq washer	(4) B202 HDG $\frac{1}{2}$ " sq washer
(4) HN $\frac{1}{2}$ ZN	(4) HN $\frac{1}{2}$ SS6

All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Accessories

Bracket

- Finishes available: ZN, GRN, or HDG.
- Safety Load Factor 2.5.
- Bottom brace is B42 channel on B494-24 and smaller and B22 channel on B494-30 and larger.

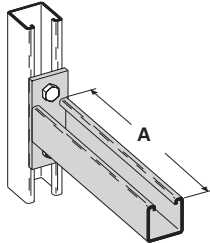


Catalog No.	Uniform Load		Tray Width		'A'		'H'	
	lbs	(kN)	in.	(mm)	in.	(mm)	in.	(mm)
B494-12	2500	(11.12)	6 & 9	(152 & 229)	12	(305)	8 ³ / ₄	(222)
B494-18	1700	(7.56)	12	(305)	18	(457)	8 ³ / ₄	(222)
B494-24	1300	(5.78)	18	(457)	24	(610)	8 ³ / ₄	(222)
B494-30	1600	(7.11)	24	(610)	30	(762)	11 ¹ / ₄	(286)
B494-36	1100	(4.89)	30	(762)	36	(914)	11 ¹ / ₄	(286)
B494-42	980	(4.36)	36	(914)	42	(1067)	16	(406)

For more dimensional data, see B-Line series Strut Systems catalog.

Cantilever Bracket

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

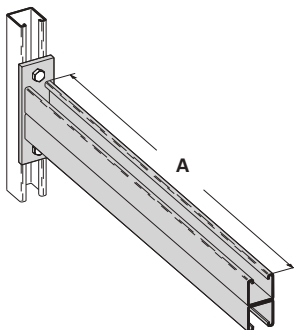


Catalog No.	Uniform Load		Tray Width		'A'	
	lbs	(kN)	in.	(mm)	in.	(mm)
B409-12	960	(4.27)	6 & 9	(152 & 229)	12	(305)
B409-18	640	(2.84)	12	(305)	18	(457)
B409-24	480	(2.13)	18	(457)	24	(610)

For more dimensional data, see B-Line series Strut Systems catalog.

Cantilever Bracket

- 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)
B297-12	1660	(7.38)	6 & 9	(152 & 229)	12	(305)
B297-18	1100	(4.89)	12	(305)	18	(457)
B297-24	835	(3.71)	18	(457)	24	(610)
B297-30	665	(2.95)	24	(610)	30	(762)
B297-36	550	(2.44)	30	(762)	36	(914)
B297-42	465	(2.06)	36	(914)	42	(1067)

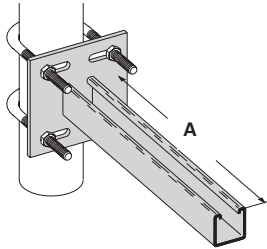
For more dimensional data, see B-Line series Strut Systems catalog.

All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Accessories

Underfloor Support (U-Bolts not included)

- Finishes available: ZN.
- Safety Load Factor 2.5.
- Order 2 properly sized U-Bolts (sold separately) for each underfloor support.

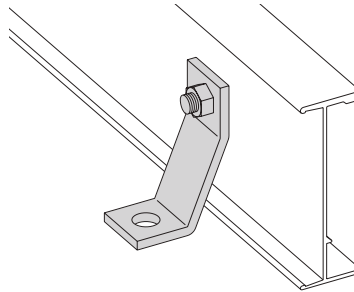


Catalog No.	Uniform Load lbs (kN)	Tray Width in. (mm)	'A' in. (mm)
B409UF-12	800 (3.55)	6 & 9 (152 & 229)	12 (305)
B409UF-21	450 (2.00)	12 & 18 (305 & 457)	21 (533)

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)

Heavy Duty Hold Down Bracket

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

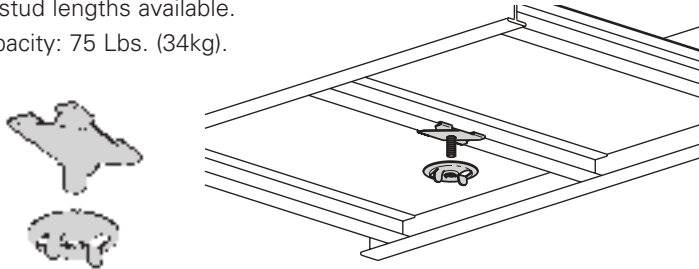


Catalog No.

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)
BAX-4-16	5/8 (16)
BAX-4-16-24	1 1/2 (38)
BAX-4-16-32	2 (51)
BAX-4-16-48	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 our cable tray clamps and guides.
- Ultimate Uniform Load Capacity: 1,000 lbs. (4.45kN).



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

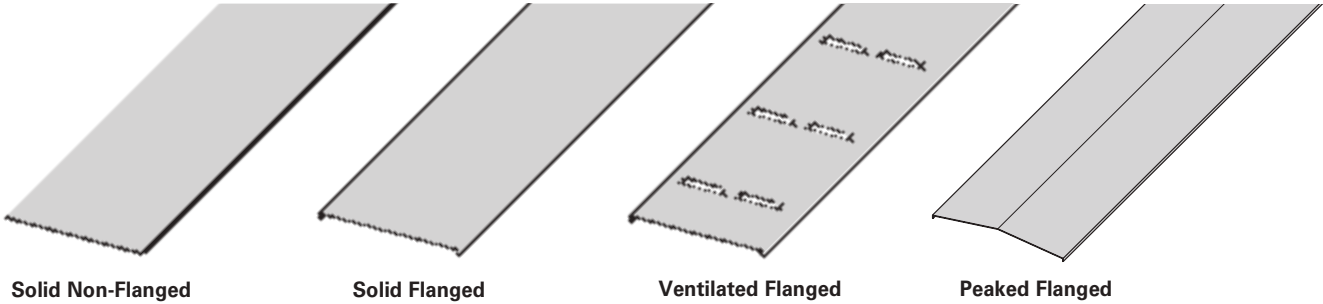
General Note: Consult roofing manufacturer or engineer for roof load capacity. The weakest point may be the insulation board beneath the rubber membrane.



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

All dimensions in parentheses are millimeters unless otherwise specified.

Covers for KRA4A, KRB4A and KRB6A



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

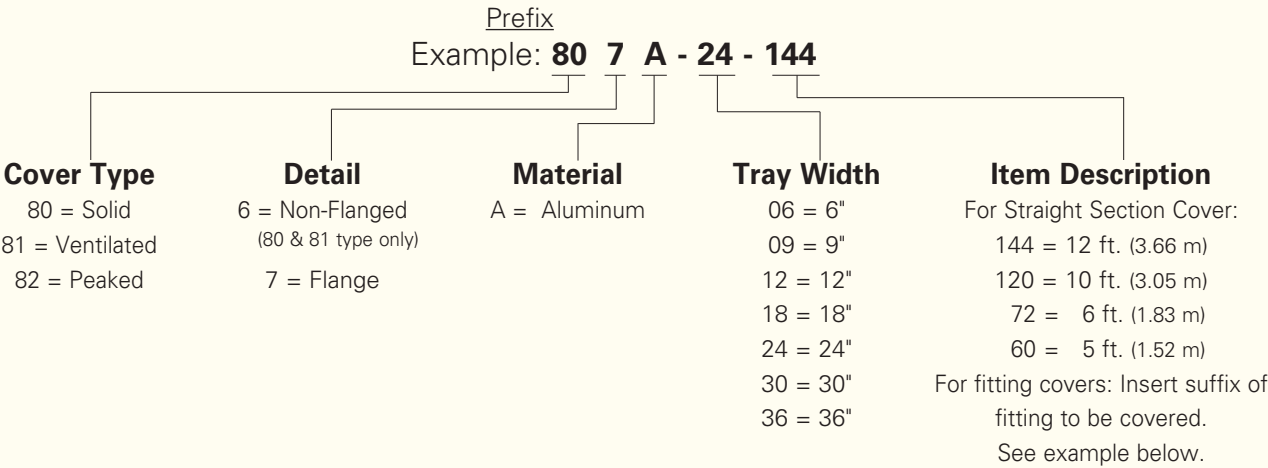
Solid covers should be used when maximum enclosure of the cable is desired and no accumulation of heat is expected.

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

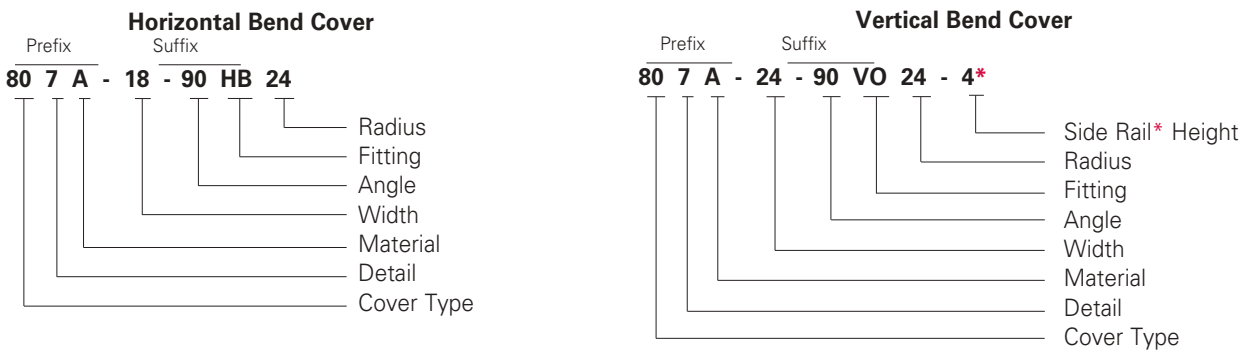
Flanged covers have a 1/2 in. (13 mm) flange. Cover clamps are not included with the cover and must be ordered separately.

We recommend 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



Examples of Catalog Numbers for Fitting Covers:

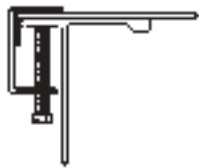


* Required for VO fittings only

All dimensions in parentheses are millimeters unless otherwise specified.

Standard Cover Clamp

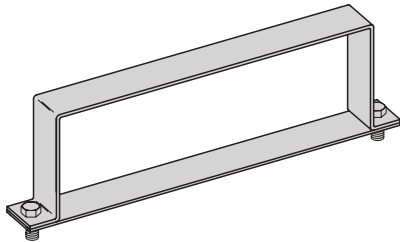
- For indoor service only.
- Setscrew included.
- Sold per piece.



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

Heavy Duty Cover Clamp

- Recommended for outdoor service.



Side Rail Height in. (mm)	Catalog No.
4 (101)	KR4A-HDCC-(+)
6 (152)	KR6A-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.

Notes:
When using the Heavy Duty Cover Clamp, only one-half the number of clamps stated above is required.
Additional clamps may be necessary in extreme wind applications.

Cover Joint Strip

- Used to join covers.
- Plastic.
- (+) Insert tray width.

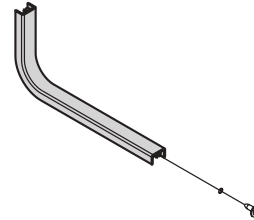
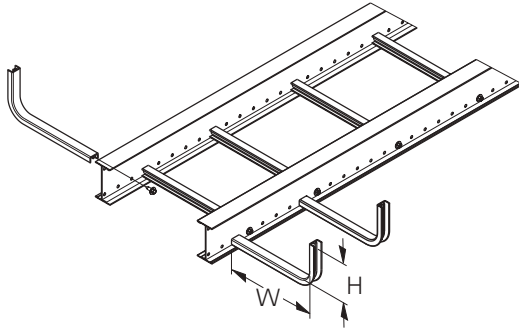
Catalog No.
99-9980-(+)



All dimensions in parentheses are millimeters unless otherwise specified.

Out Board Rungs

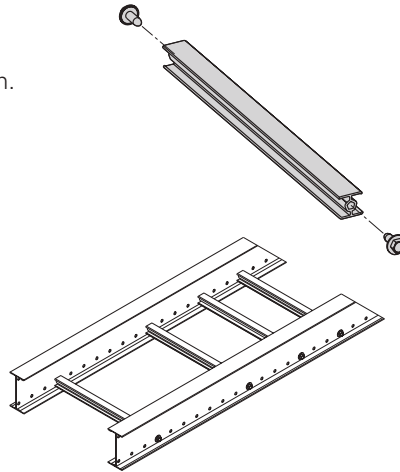
- Formed aluminum rung with attachment screw.
- Field installs as required.
- Torque rung fasteners to 6 ft•lbs.
- Uniform load capacity on rung: 10 lbs. (0.04kN)



Catalog No.	Fill Depth 'H' in (mm)	Width 'W' in (mm)
9A-SR0406	4 101	6 152
9A-SR0409	4 101	9 226
9A-SR0506	5 127	6 152
9A-SR0509	5 127	9 226

Add-A-Rung™ Kit

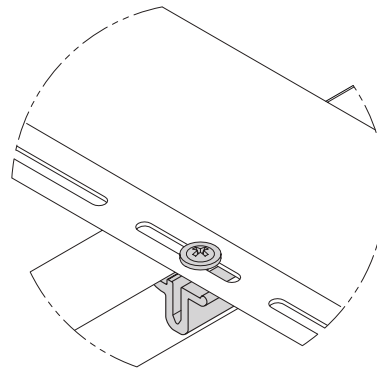
- Kit allows an additional rung to be added to a desired location throughout the tray system.
- Pre-cut rung sections supplied.
- Attachment hardware is included.
- Torque rung fasteners to 18 ft•lbs.
- Add-A-Rung kit can be added to welded or bolted versions of KwikRail.
- Add-A-Rung kit does not work on any of the KwikRail horizontal fittings.
- Add-A-Rung does work with KwikRail VI/VO fittings.



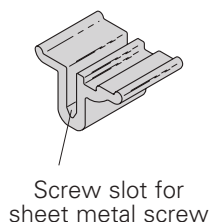
Tray Width in (mm)	Catalog No.
6 (152)	9A-R06RK
9 (226)	9A-R09RK
12 (305)	9A-R12RK
18 (452)	9A-R18RK
24 (609)	9A-R24RK
30 (762)	9A-R30RK
36 (914)	9A-R36RK

Barrier Strip Clip

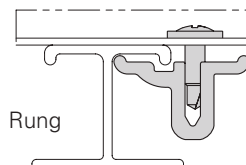
- Provides attachment to bolted or welded KwikRail rungs.
- Allows for installed barrier adjustment.
- Asymmetrical clip provides a wide range for screw location.
- Barrier strip clips and hardware are included with all barriers.



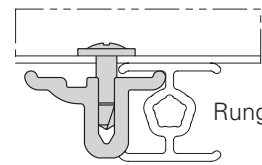
Catalog No.
9A-RBC



Barrier Flange



Welded rung assembly



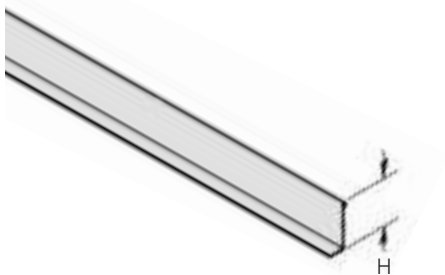
Bolted rung assembly

Barrier Flange

All dimensions in parentheses are millimeters unless otherwise specified.

Straight Section Barrier Strip

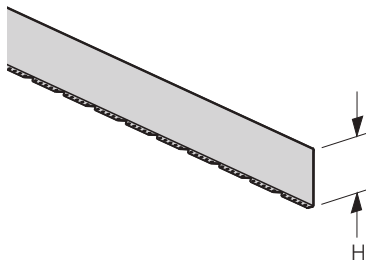
- Furnished with four (4) barrier strip clips, mounting hardware and splice.
- Standard lengths are 144" or 12 ft (3.7m) & 120" or 10 ft (3.0m).
- Order catalog number based on loading depth 'H'.



Tray Series	Catalog No.	H	
		in.	(mm)
KR_4A	KR4A-DSL-Length	3	(76)
KRB6A	KR6A-DSL-Length	5	(127)

Horizontal Bend Barrier Strip

- Furnished with three (3) barrier strip clips, mounting hardware and splice.
- Standard length is 72" or 6 ft (1.8m).
- Flexible to fit desired angles.
- Order catalog number based on loading depth 'H'.



Tray Series	Catalog No.	H	
		in.	(mm)
KR_4A	KR4A-DHB	3	(76)
KRB6A	KR6A-DHB	5	(127)

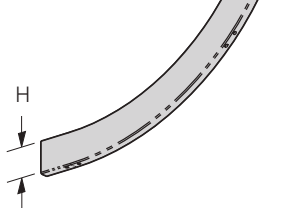
Vertical Bend Barrier Strip

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

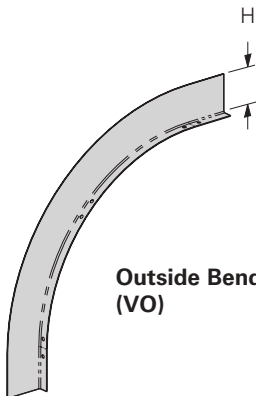
Tray Series	Catalog No.		H	
	Inside Bend	Outside Bend	in.	(mm)
KR_4A	KR4A-DVI-(**)(†)	KR4A-DVO-(**)(†)	3	(76)
KRB6A	KR6A-DVI-(**)(†)	KR6A-DVO-(**)(†)	5	(127)

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

Inside Bend (VI)



Outside Bend (VO)



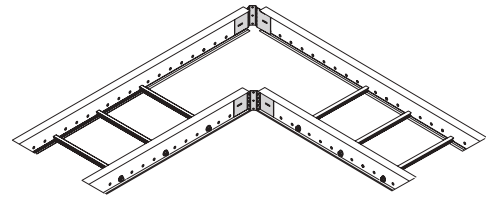
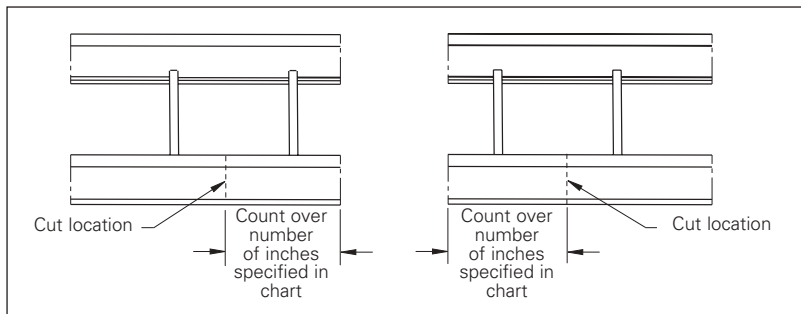
All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Accessories

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

- 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 KwikRail 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 $\frac{3}{8}$ " (9.5mm) from the end of tray.

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



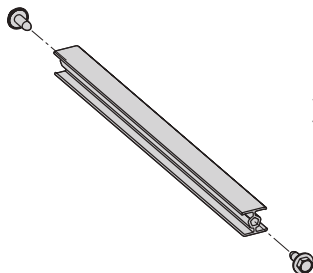
KRA5A09-12-144 Straight Section shown with required side rail removed to form 90° fitting.

Example: For a 12" (305mm) wide 90° bend, the cuts must be made 12 $\frac{5}{8}$ " (320.7mm) from the end.

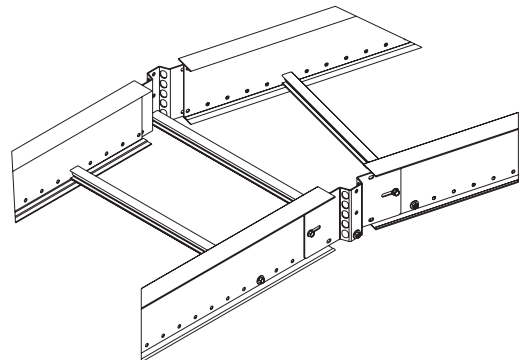
Flex-Mount Splice Rung Kit

- Kit allows a support rung to be added to flex-mount 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 Flex-Mount™ splices are used to make a bend up to 90°.
- Once the Flex-Mount 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.

For Tray Width in. (mm)	Catalog No.	Actual Rung Length in. (mm)
Up to 12 (Up to 305)	9A-RFM-12RK	20" (508)
18 & 24 (453 to 609)	9A-RFM-24RK	37" (940)
30 & 36 (762 to 914)	9A-RFM-36RK	54" (1448)



Example: Flex connectors are installed on an 18" (452mm) wide tray with approximately a 45° bend. The correct support rung kit is 9A-RFM-24RK. The tray width is 24" (609mm) or less and the angle is less than 90°.



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 in (mm)	Tray Width													
	6" (152mm)		9" (228mm)		12" (305mm)		18" (457mm)		24" (609mm)		30" (762mm)		36" (914mm)	
	Cables	lbs/ft	Cables	lbs/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
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.



Note: All fittings are only offered in welded assembly Fittings engineered with 3" tangents for splicing integrity.

Fitting Part Numbering

Prefix

Example: **KR 4 A 09 - 12 - 90 HB 24**

Series	Height	Material	Type	Width	Angle*	Fitting Type	Radius
KR = KwikRail	4 = 4" 6 = 6"	A = Aluminum	Ladder 09 = 9" rung spacing	06 = 6" 09 = 9" 12 = 12" 18 = 18" 24 = 24"	45 = 45° 90 = 90°	*HB = Horizontal Bend HT = Horizontal Tee HX = Horizontal Cross *VI = Vertical Inside Bend *VO = Vertical Outside Bend	12 = 12" 24 = 24"
			Other 04 = 4" rung spacing SB = Solid Bottom	30 = 30" 36 = 36"			

* Angle only required for HB, VI and VO fittings.

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

Prefix

KR6A04 - 24 - 90HB24

4" Rung Spacing Bottom

Prefix

KR6ASB - 24 - 90HB24

Solid Bottom

All dimensions in parentheses are millimeters unless otherwise specified.

Horizontal Bend 90° 45° (HB)

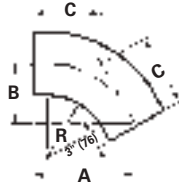
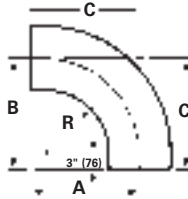
1 pair splice plates with hardware included.



90° Horizontal Bend



45° Horizontal Bend



Bottoms manufactured:

Ladder = 9" Rung Spacing

04 = 4" Rung Spacing

SB = Flat sheet over 9" Rung Spacing

Bend Radius R in. (mm)	Tray Width in. (mm)	90° Horizontal Bend Dimensions				45° Horizontal Bend Dimensions			
		Catalog No.	A in. (mm)	B in. (mm)	C in. (mm)	Catalog No.	A in. (mm)	B in. (mm)	C in. (mm)
12 (305)	6 (152)	(Pre)-06-90HB12	18 (457)	18 (457)	18 (457)	(Pre)-06-45HB12	15 ³ / ₄ (400)	6 ¹ / ₂ (165)	9 ³ / ₁₆ (233)
	9 (228)	(Pre)-09-90HB12	19 ¹ / ₂ (495)	19 ¹ / ₂ (495)	19 ¹ / ₂ (495)	(Pre)-09-45HB12	16 ¹³ / ₁₆ (427)	6 ¹⁵ / ₁₆ (176)	9 ¹³ / ₁₆ (249)
	12 (305)	(Pre)-12-90HB12	21 (533)	21 (533)	21 (533)	(Pre)-12-45HB12	17 ⁷ / ₈ (454)	7 ³ / ₈ (187)	10 ⁷ / ₁₆ (265)
	18 (457)	(Pre)-18-90HB12	24 (610)	24 (610)	24 (610)	(Pre)-18-45HB12	20 (508)	8 ¹ / ₄ (210)	11 ¹¹ / ₁₆ (297)
	24 (610)	(Pre)-24-90HB12	27 (686)	27 (686)	27 (686)	(Pre)-24-45HB12	22 ¹ / ₁₆ (560)	9 ¹ / ₈ (232)	12 ¹⁵ / ₁₆ (329)
	30 (762)	(Pre)-30-90HB12	30 (762)	30 (762)	30 (762)	(Pre)-30-45HB12	22 ¹ / ₁₆ (560)	9 ¹ / ₈ (232)	12 ¹⁵ / ₁₆ (329)
	36 (914)	(Pre)-36-90HB12	33 (838)	33 (838)	33 (838)	(Pre)-36-45HB12	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)-06-45HB24	24 ³ / ₁₆ (614)	10 (254)	14 ³ / ₁₆ (360)
	9 (228)	(Pre)-09-90HB24	31 ¹ / ₂ (800)	31 ¹ / ₂ (800)	31 ¹ / ₂ (800)	(Pre)-09-45HB24	25 ¹ / ₄ (641)	10 ¹ / ₂ (267)	14 ¹³ / ₁₆ (376)
	12 (305)	(Pre)-12-90HB24	33 (838)	33 (838)	33 (838)	(Pre)-12-45HB24	26 ⁵ / ₁₆ (668)	10 ¹⁵ / ₁₆ (278)	15 ⁷ / ₁₆ (392)
	18 (457)	(Pre)-18-90HB24	36 (914)	36 (914)	36 (914)	(Pre)-18-45HB24	28 ⁷ / ₁₆ (722)	11 ¹³ / ₁₆ (300)	16 ¹¹ / ₁₆ (424)
	24 (610)	(Pre)-24-90HB24	39 (991)	39 (991)	39 (991)	(Pre)-24-45HB24	30 ⁹ / ₁₆ (766)	12 ¹ / ₁₆ (322)	17 ¹⁵ / ₁₆ (456)
	30 (762)	(Pre)-30-90HB24	42 (1067)	42 (1067)	42 (1067)	(Pre)-30-45HB24	32 ¹¹ / ₁₆ (830)	13 ⁹ / ₁₆ (344)	19 ¹ / ₈ (486)
	36 (914)	(Pre)-36-90HB24	45 (1143)	45 (1143)	45 (1143)	(Pre)-36-45HB24	34 ¹³ / ₁₆ (884)	14 ⁷ / ₁₆ (367)	20 ³ / ₈ (518)

(Pre) = prefix. See page KR-16 for catalog number prefix.

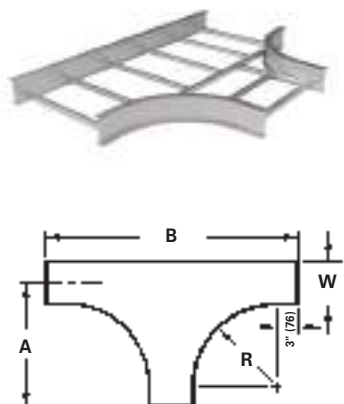
Width dimensions are to inside wall. For aluminum fittings add 1.5 inches for total outside width.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

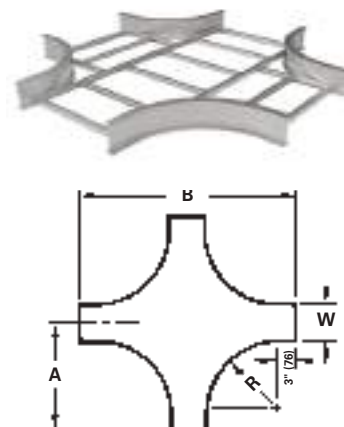
Horizontal Tee (HT)

2 pair splice plates with hardware included.



Horizontal Cross (HX)

3 pair splice plates with hardware included.



Bend Radius R in. (mm)	Tray Width in. (mm)	Horizontal Tee Dimensions			Horizontal Cross Dimensions		
		Catalog Number	A in. (mm)	B in. (mm)	Catalog Number	A in. (mm)	B 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	19½ (496)	39 (991)	(Prefix)-09-HX12	19½ (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 (1524)	(Prefix)-06-HX24	30 (762)	60 (1524)
	9 (229)	(Prefix)-09-HT24	31½ (800)	63 (1600)	(Prefix)-09-HX24	31½ (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 KR-16 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.

KwikRail Aluminum Cable Tray - Fittings

Vertical Bend 90° (VO, VI)

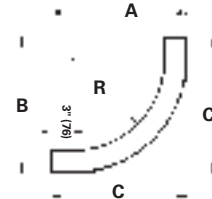
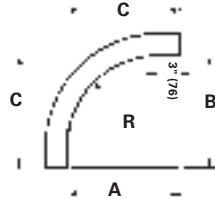
1 pair splice plates with hardware included.



90° Vertical Outside



90° Vertical Inside



Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 4" - 6" (101-152)			VI Side Rail Height					
			4" - 6" (101-152)			4" (101)			6" (152)		
			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)
12 (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	15	15	19	19	19	21	21	21
	24 (609)	(Prefix)-24-90(*)12	(381)	(381)	(381)	(483)	(483)	(483)	((533)	(533)	(533)
	30 (762)	(Prefix)-30-90(*)12									
	36 (914)	(Prefix)-36-90(*)12									
24 (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	27	27	31	31	31	33	33	33
	24 (609)	(Prefix)-24-90(*)24	(686)	(686)	(686)	(787)	(787)	(787)	(838)	(838)	(838)
	30 (762)	(Prefix)-30-90(*)24									
	36 (914)	(Prefix)-36-90(*)24									

(Prefix) See page KR-16 for catalog number prefix.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

KwikRail Aluminum Cable Tray - Fittings

Vertical Bend 45° (VO, VI)

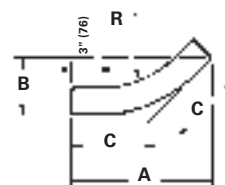
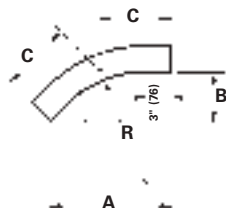
1 pair splice plates with hardware included.



45° Vertical Outside



45° Vertical Inside



Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 4" - 6" (101-152)			VI Side Rail Height					
			4" - 6" (101-152)			4" (101)			6" (127)		
			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)
12 (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 ⁵ / ₈ (346)	5 ⁵ / ₈ (143)	8 (203)	16 ⁷ / ₁₆ (417)	6 ¹³ / ₁₆ (173)	9 ⁵ / ₈ (245)	17 ⁷ / ₈ (454)	7 ³ / ₈ (188)	10 ⁷ / ₁₆ (265)
	24 (609)	(Prefix)-24-45(*)12									
	30 (762)	(Prefix)-30-45(*)12									
	36 (914)	(Prefix)-36-45(*)12									
24 (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 ¹ / ₁₆ (561)	9 ¹ / ₈ (232)	12 ¹⁵ / ₁₆ (329)	24 ¹⁵ / ₁₆ (634)	10 ⁵ / ₁₆ (262)	14 ⁵ / ₈ (372)	26 ⁵ / ₁₆ (668)	10 ¹⁵ / ₁₆ (278)	15 ⁷ / ₁₆ (392)
	24 (609)	(Prefix)-24-45(*)24									
	30 (762)	(Prefix)-30-45(*)24									
	36 (914)	(Prefix)-36-45(*)24									

(Prefix) See page KR-16 for catalog number prefix.

Manufacturing tolerances apply to all dimensions.

All dimensions in parentheses are millimeters unless otherwise specified.

Section 161xx - KwikRail Cable Tray

PART 1 GENERAL

1.01 Section Includes

- 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 of [ladder type] [vented bottom type] [solid bottom type] cable trays, bends, tees, elbows, drop-outs, supports, and accessories.

1.02 References

- A. ANSI/NFPA 70 - National Electrical Code
- B. NEMA VE 1-2009 - Metallic Cable Tray Systems
- C. NEMA VE 2-2013 - Cable Tray installation Guidelines

1.03 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.

1.04 Submittals

- A. Submittal Drawings: Submit drawings of cable tray and accessories including clamps, brackets, hanger rods, splice plate connectors, expansion joint assemblies, and fittings, showing accurately scaled components.
- B. Product Data: Submit manufacturer's data on cable tray including, but not limited to, types, materials, finishes, rung spacings, inside depths and fitting radii. For side rails and rungs, submit cross sectional properties including Section Modulus (Sx) and Moment of Inertia (Ix).

1.05 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 VE 1, "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.

1.06 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.

PART 2 PRODUCTS

2.01 Acceptable Manufacturers

- A. Subject to compliance with these specifications, B-Line series cable tray systems shall be as manufactured by Eaton.

2.02 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 sections, 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.

(continued on page KR-22)

(continued from page KRA-21)

2.03 Type of Tray System

- A. Ladder Cable Trays shall consist of two longitudinal members (side rails) with transverse members (rungs) either mechanically fastened or welded to the side rails with the option to add mechanically fastened rungs at any point along the longitudinal members. Rungs shall be spaced [6] [9] [12] inches apart. Rung spacing in radiused fittings shall be industry standard 9" maximum and measured at the center of the tray's width. Mechanically fastened rungs shall be capable of easy removal, reinstallation, or replacement if necessary.
- B. Ventilated Bottom Cable Trays shall consist of two longitudinal members (side rails) with rungs spaced 6" apart.
- 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 (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.
- H. All fittings must have an inside radius of [12] [24] inches.

2.04 Loading Capacities

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

PART 3 EXECUTION

3.01 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 VE-2 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.

3.02 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-1-2002/CSA C22.2 No. 126.1-02.

END OF SECTION