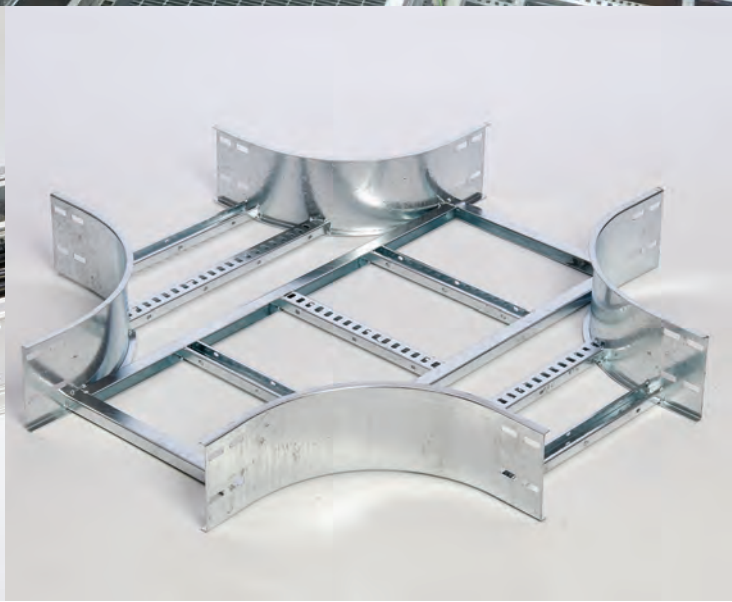
Cable support solutions

Cable ladder, tray, and supports



EATON
Powering Business Worldwide

* At Eaton, we believe that power is a fundamental part of just about everything people do. That's why we're dedicated to helping our customers find new ways to manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. To improve people's lives, the communities where we live and work, and the planet our future generations depend upon. Because this what really matters. And we're here to make sure it works.

To learn more go to: Eaton.com/whatmatters

EATON
Powering Business Worldwide

We make what matters work.

Application Photos

Application Photos

Table of Contents

NOTICE

Eaton's B-Line Division 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, Eaton is not responsible for inaccuracies resulting from undetected errors or omissions.

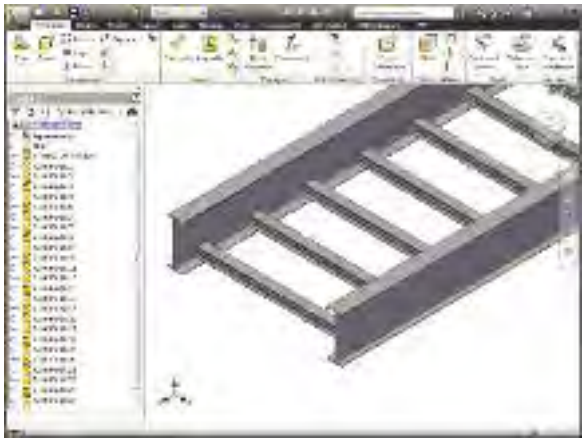
CoSPEC Specifier Center is designed to help you easily SELECT, VIEW and DOWNLOAD B-Line product design content in any one of nearly one hundred non-proprietary and proprietary CAD, BIM, PDMS, and graphics formats, which helps speed the integration of the content into your design project.

Features

- Easy integration and configuration
- Comprehensive library of 2D drawings and 3D models for CAD, BIM, PDMS, SP3D, and graphics output
- The most up to date software versions and product data information are always available
- Submittals and specification sheets in PDF format
- Proprietary file format outputs are native to the chosen software

Nearly a Hundred Download Options

- Aveva PDMS and Intergraph SmartPlant SP3D (on select products) content
- Autodesk Revit output available
- Proprietary formats from AutoCAD to SolidWorks to Catia
- Non-proprietary formats like DXF, STEP, and more
- Graphics files in a number of formats including EPS



To get started planning your next project, visit Eaton.com/cospec

Select

View

Download

About Eaton's B-Line Division

Eaton's B-Line Division is a global provider of innovative, cable management systems and support system solutions for engineered facility subsystem applications. With a full range of cable support solutions, we offer one of the lowest lifetime cost of ownership.

In addition, we offer best-in-class specification engineering services, which provide pre- and post-sale engineering and technical support. We are dedicated to servicing our global customer base with manufacturing and technical expertise.

Our manufacturing facilities are located in South Korea, China, Malaysia, Kingdom of Saudi Arabia, United States of America, and Canada.

Manufacturing Locations

Approvals for products may include (varies by product type):

Product Overview

Steel Cable Ladder

B-Line series cable ladders utilize an engineered I-Beam siderail profile, the strongest available siderail shape. The I-Beam provides more strength using less material than C-shaped siderails. The added strength means that the ladders are lighter and easier to install. Rungs for all cable ladders support a 90kg concentrated load beyond the cataloged cable load.

Eaton.com/sss

Aluminum Cable Ladder

Ideal for onshore and offshore applications, B-Line series aluminum cable ladders are manufactured from marine-grade aluminum. Similar to the steel cable ladders, aluminum cable ladders include the I-Beam siderail for added strength. Options are available to minimize the number of supports required for the ladder, including mid-span splice plates and extra-long lengths.

Eaton.com/sss

Perforated & Solid Bottom Cable Tray

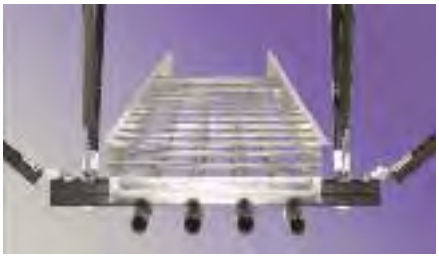
B-Line series perforated and solid bottom cable tray provides a continuous bottom surface, allowing for constant cable support with no cable sag. Radiused cable fittings allow the cables to adhere to cable manufacturer's bend recommendations. An inside or outside flange on top of the tray provides added strength. Additional flange options available.

Cable Cleats

B-Line series cable cleats are designed to support and retain your cables within your cable tray system in everyday conditions. More importantly, they help prevent damage in short circuit conditions. Cable cleats are one of the first lines of defense to help protect your personnel, your cables, and your cable ladder and tray systems.

Marine Ship Ladder

B-Line series marine ship ladder is ideal for offshore and confined space applications. A full line of galvanized and stainless steel sections and radiused fittings are available along with key accessoies.



Strut Support Systems

B-Line series strut systems is engineered to provide structural support in any environment. A wide variety of finishes, configurations, and fittings meet any construction need. B-Line series strut systems works in conjunction with B-Line series ladder tray as a preferred method of cable support. Seismic solutions also available.

Structural Steel Savings
Compliant/Exceeds NEMA VE-2 support recommendations
Eaton.com/sss

Lower total install cost solution through reduction of structural steel supports

Eaton provides solutions that de-risk by design and drive value to our end customers. With Eaton's B-Line series cable ladder, Eaton provides support recommendations that meet and exceed NEMA VE-2 requirements. These methods have been applied across the globe on multiple applications and projects, and have saved customers millions of dollars on structural steel.

This brochure provides an overview of Eaton's recommendations for structural steel supports when utilizing Eaton's B-Line series cable ladder, fittings and splice plates. For additional information, and online resources and tools, visit Eaton.com/SSS.

Cable ladder best practice

To maximize cost savings on any cable ladder project, it is essential that:

- Electrical and structural engineers and contractors communicate effectively
- Support plans and layouts are discussed early on within the project life cycle (FEED - Front End Engineering Design) to ensure proper support placement, minimize construction complexity, and reduce budget spend

Support Location	System Stress and Deflection
¼ Span	-Minimum
Mid-Span	
Over Support	-Maximum

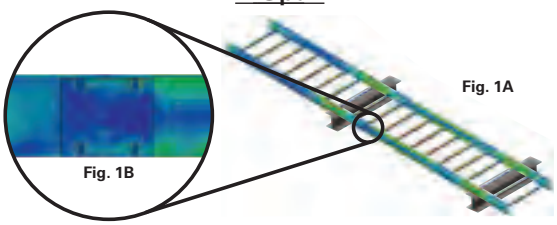
Support location best practice

For best performance

1/4 Span - The method of placing supports at 1/4 span away from a splice plate location on continuous runs.

- Recommended installation method by NEMA VE 2 and Eaton's B-Line series
- Up to 50% deflection reduction over simple beam or mid span installations
- Eliminates hold down clamp and splice hardware interference issues during thermal expansion and contraction
- See Fig. 1A and Fig. 1B for visual stress comparison

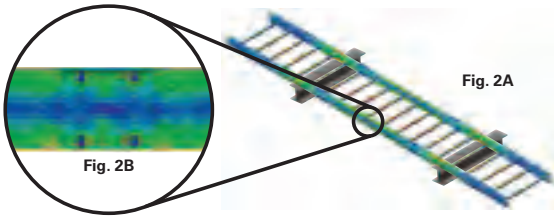
¼ Span



Mid-Span - The method of placing supports at 1/2 span away from a splice plate location on continuous runs.

- Excessive system deflection and stress experienced compared to 1/4 span support methodology
- Requires additional supports to account for proper thermal expansion and contraction
- Splice plate performance becomes more influential on deflection
- See Fig. 2A and Fig. 2B for visual stress comparison

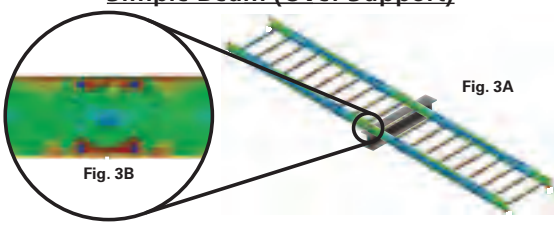
Mid-Span



Simple Beam (Over Support) - The method of placing supports directly under the splice plate locations on continuous runs.

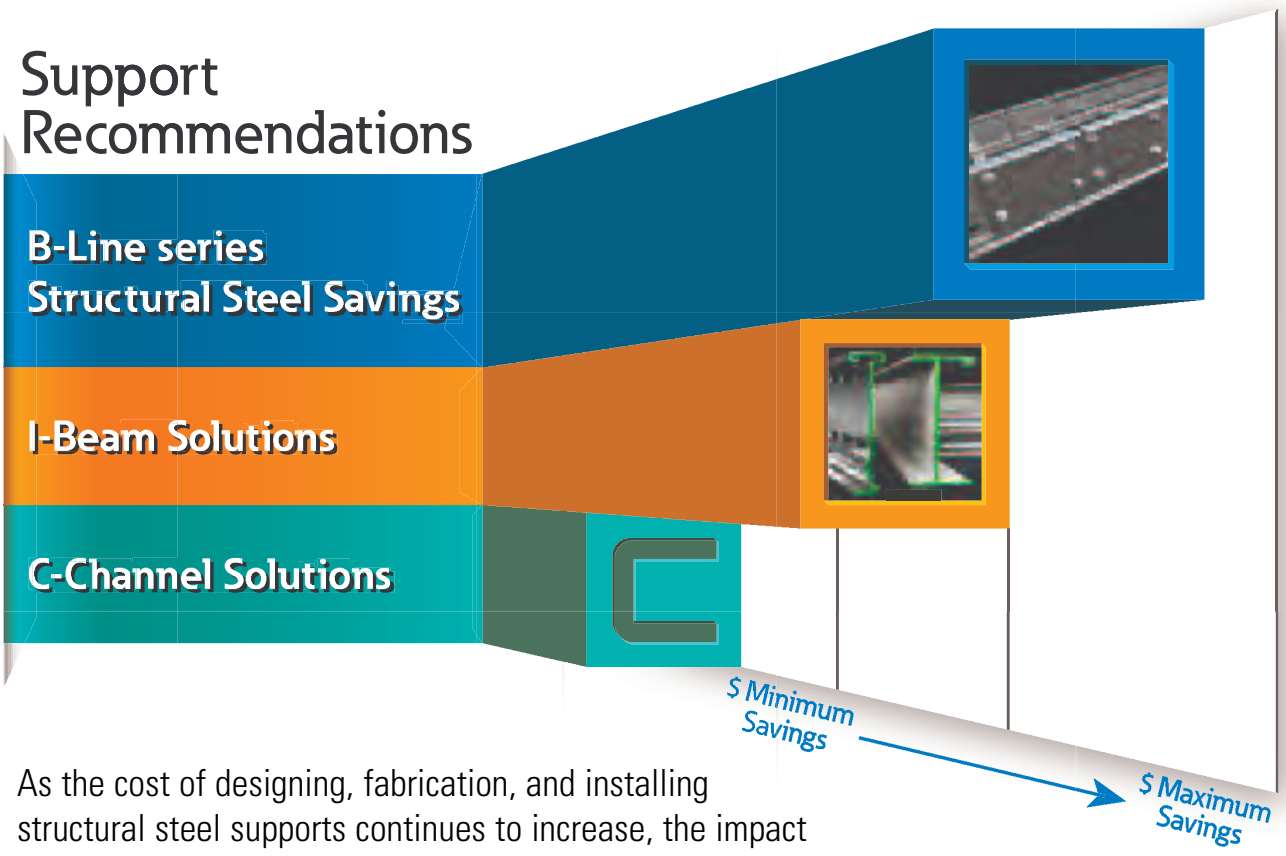
- Maximum system deflection and stress experienced
- Leads to possible installation issues not allowing for proper thermal expansion and contraction
- See Fig. 3A and Fig. 3B for visual stress comparison

Simple Beam (Over Support)

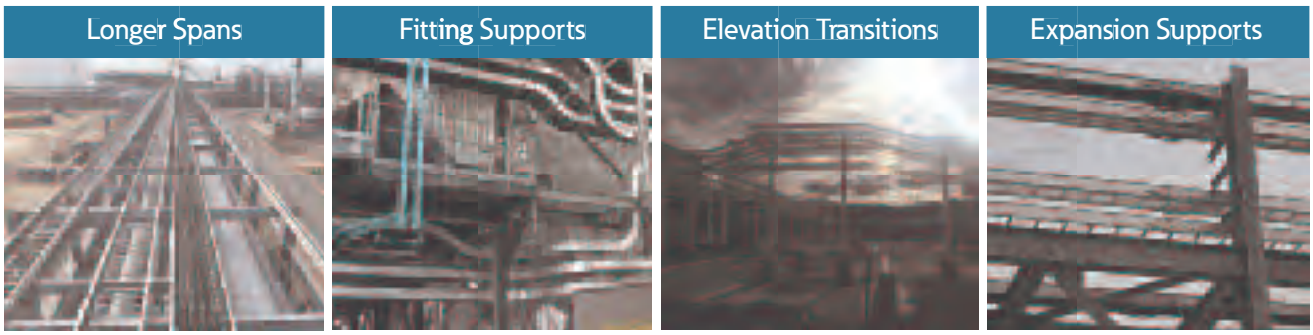


Evolution of Project Savings

Eaton's B-Line series engineered cable ladder solutions are leading the way for lower total installed cost.*

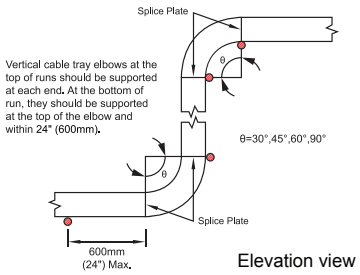


As the cost of designing, fabrication, and installing structural steel supports continues to increase, the impact of reducing the quantity of supports on a project can offset the cost of the cable ladder system all together.



*All support details will meet and exceed NEMA VE-2 requirements.

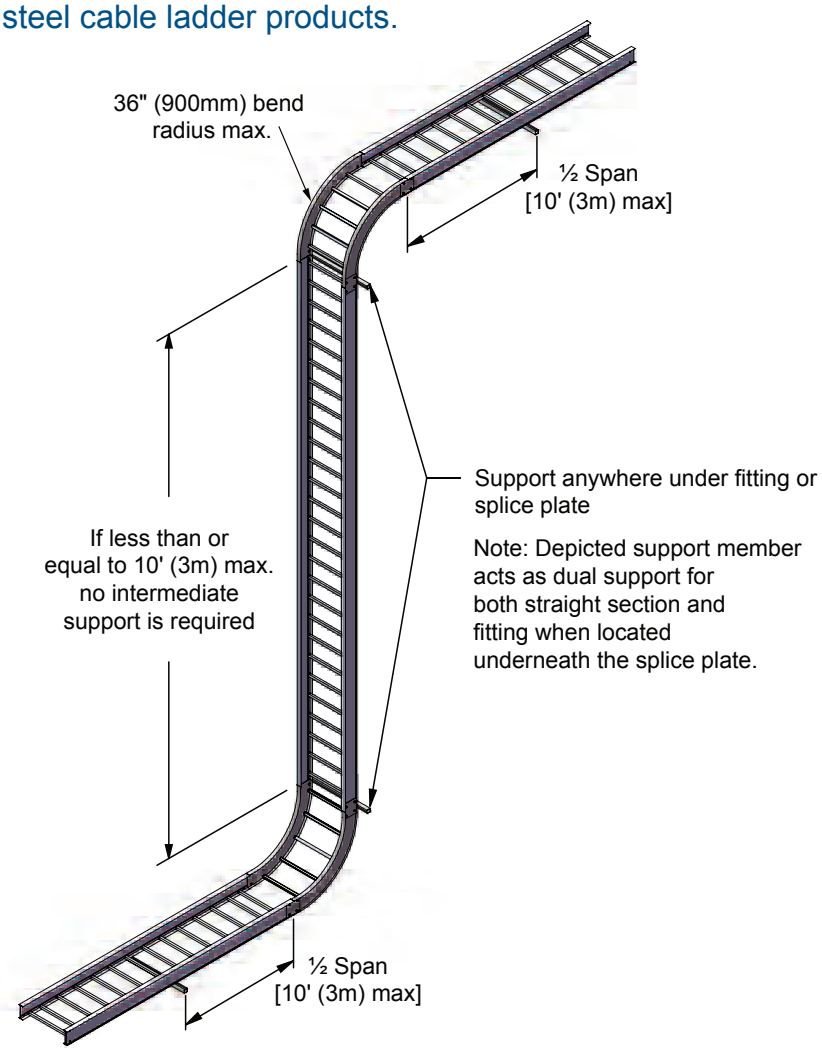
NEMA Recommendation

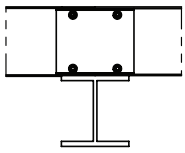


Elevation view

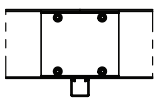
Vertical Inside / Outside Bend Support Recommendation Option 1 "½ Span"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



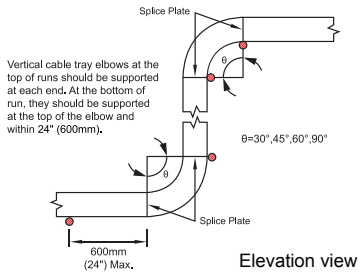
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

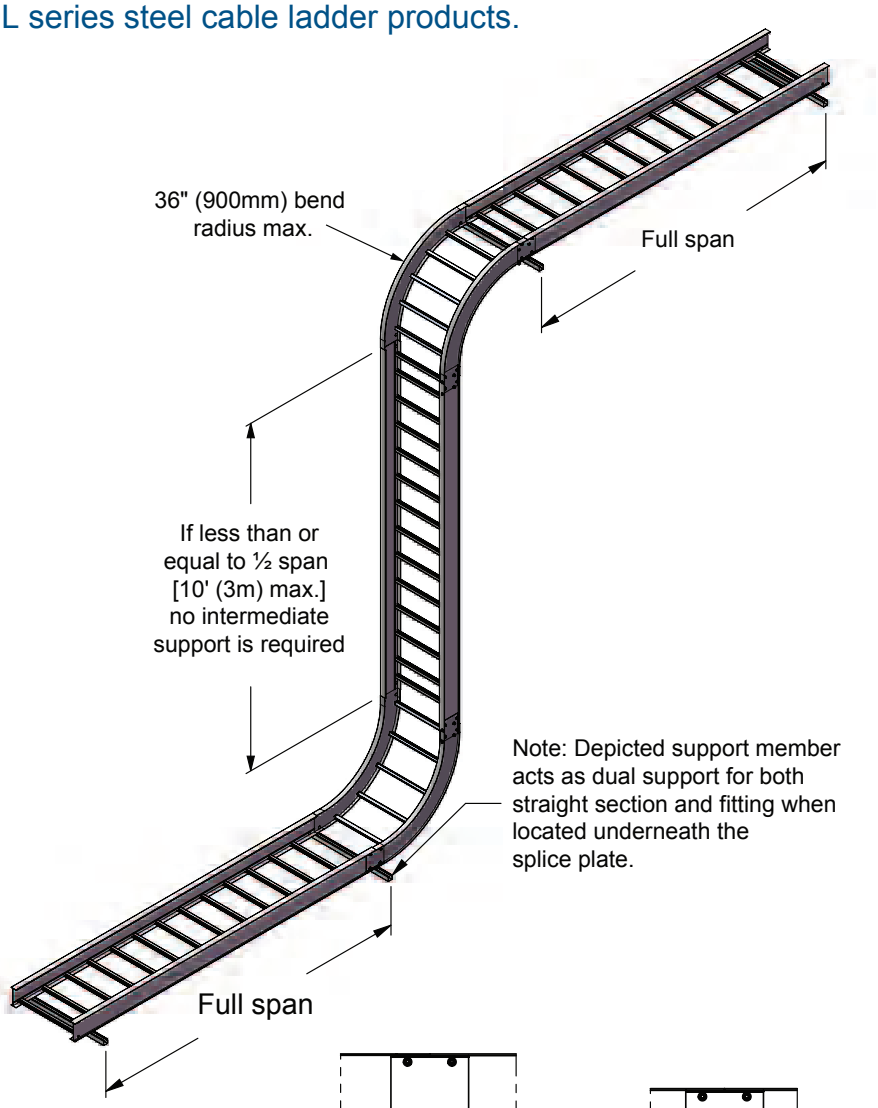
NEMA Recommendation

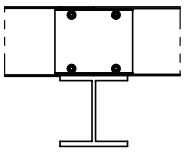


Elevation view

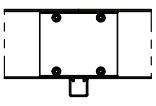
Vertical Inside / Outside Bend Support Recommendation Option 2 "Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



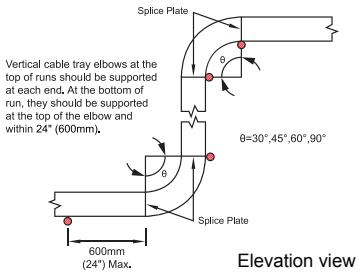
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

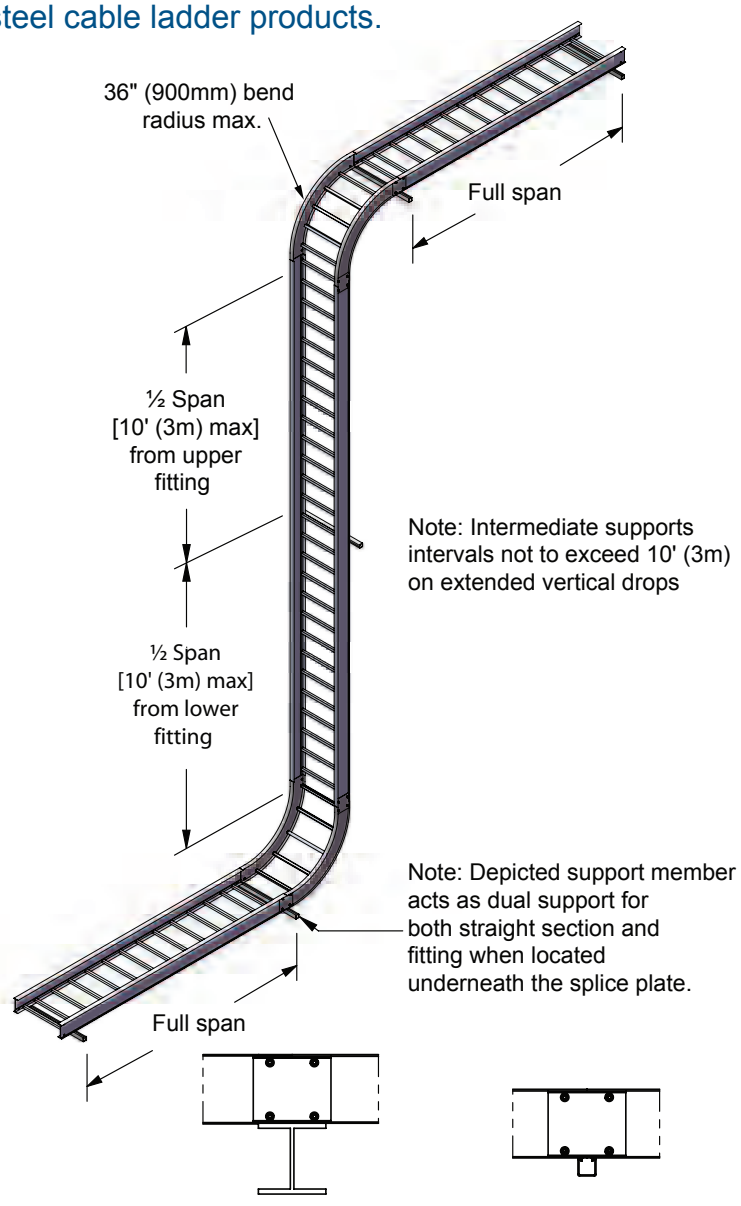
NEMA Recommendation



Elevation view

Vertical Inside / Outside Bend Support Recommendation Option 3 "Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.



I-Beam support method

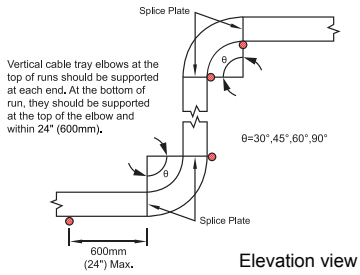
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

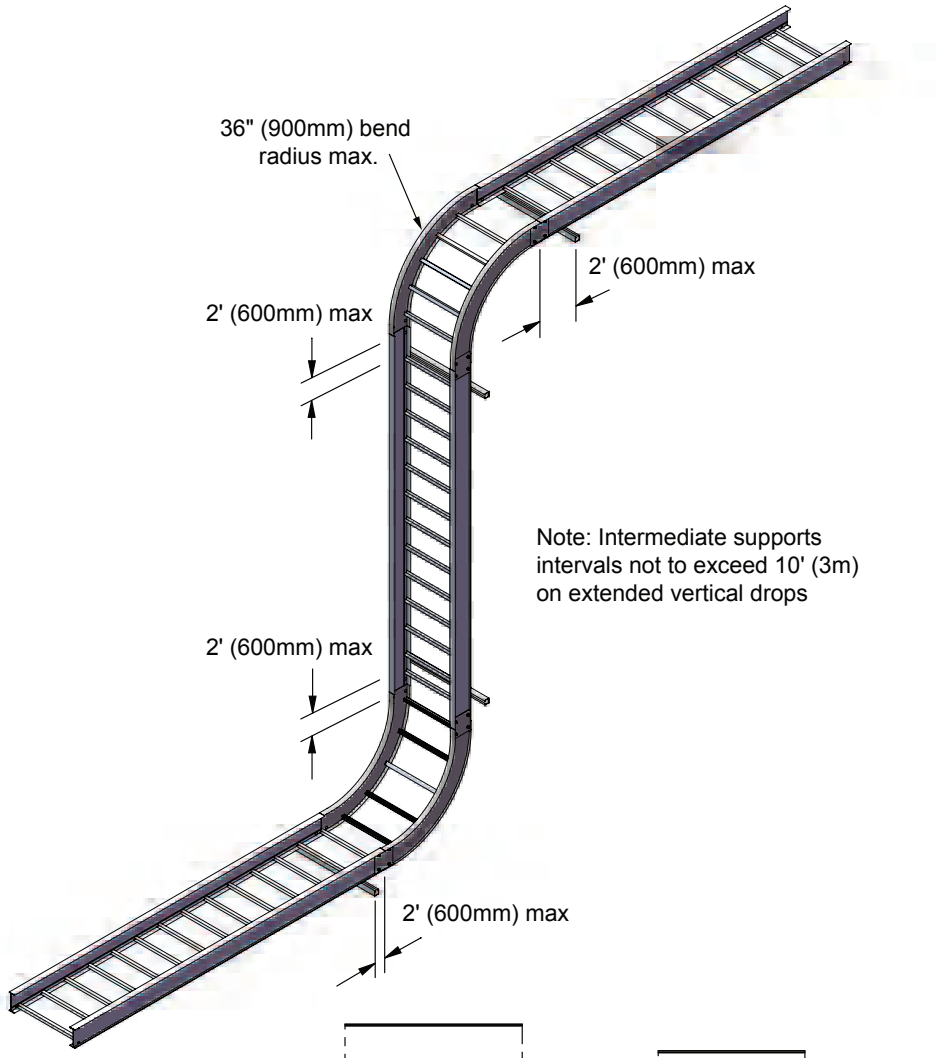
NEMA Recommendation

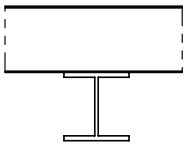


Elevation view

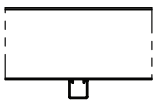
Vertical Inside / Outside Bend Support Recommendation Option 4 "Floating"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

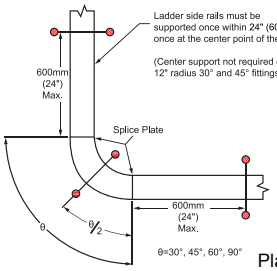


Strut support method

Isometric view

Eaton.com/sss

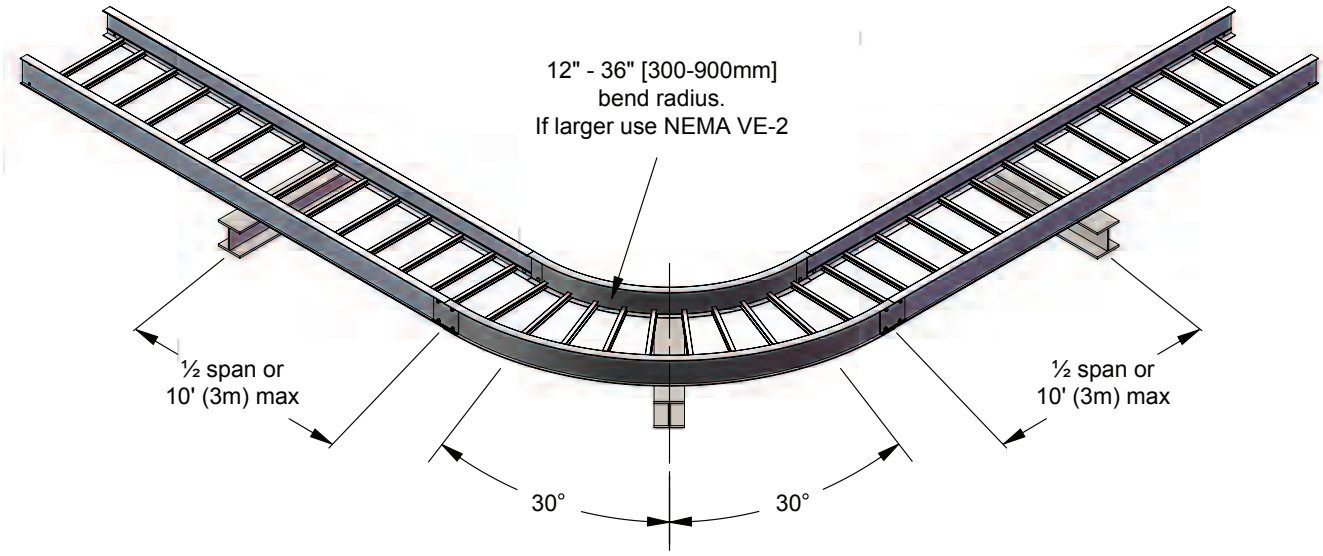
NEMA Recommendation

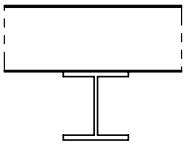


Plan view

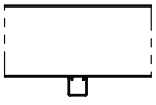
Horizontal Bend Support Recommendation Option 1 "½ Span"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

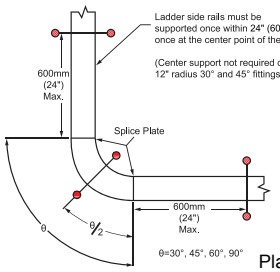


Strut support method

Isometric view

Eaton.com/sss

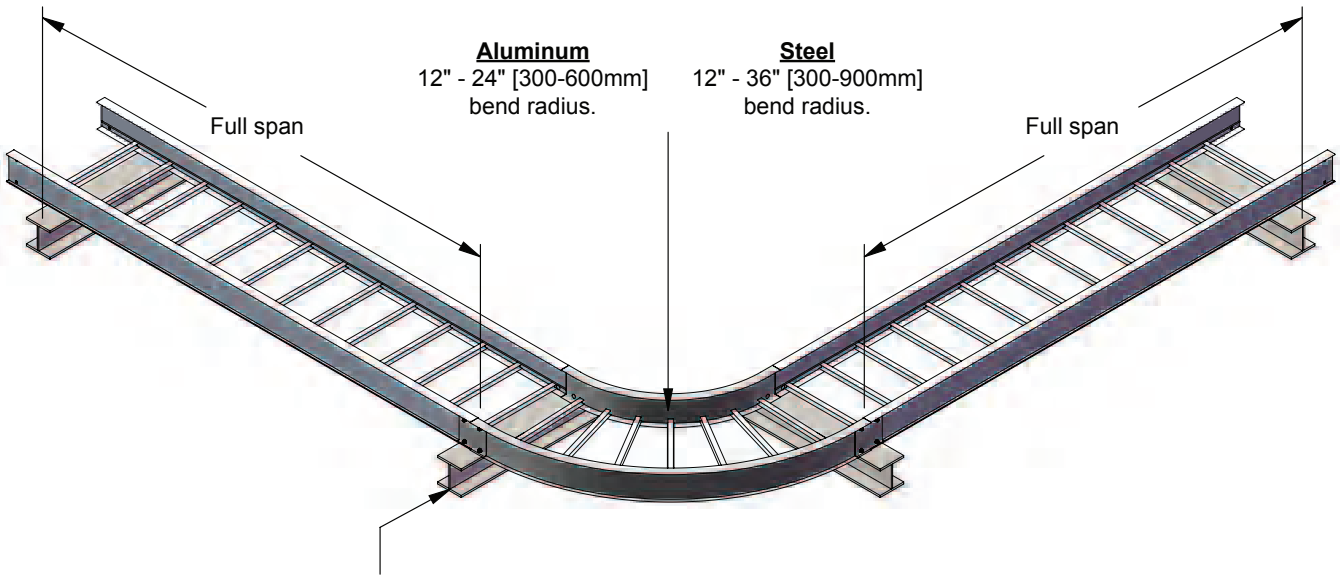
NEMA Recommendation



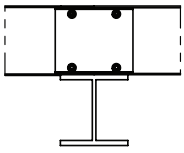
Plan view

Horizontal Bend Support Recommendation Option 2 "Dual Support"

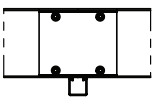
Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.



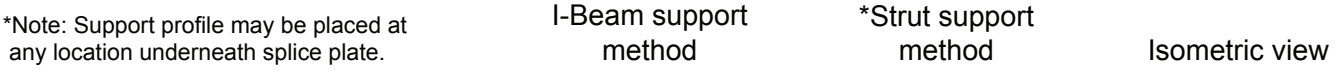
Note: Depicted support member acts as dual support for both straight section and fitting when located underneath the splice plate.



I-Beam support method



*Strut support method

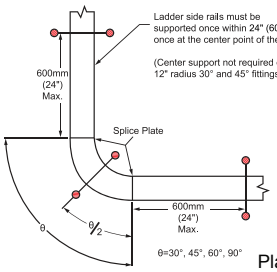


Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

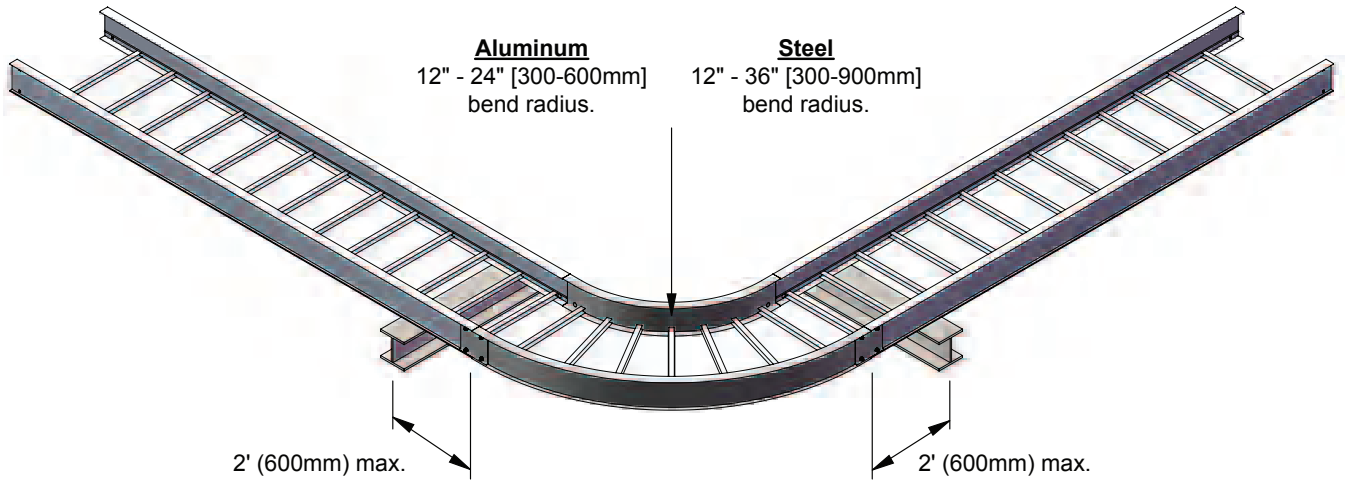
NEMA Recommendation

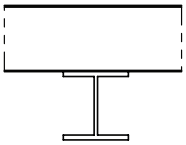


Plan view

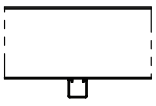
Horizontal Bend Support Recommendation Option 3 "Floating"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

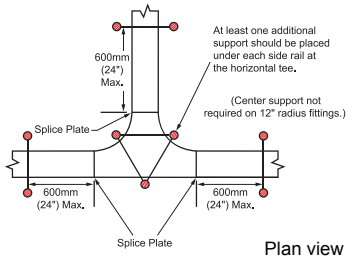


Strut support method

Isometric view

Eaton.com/sss

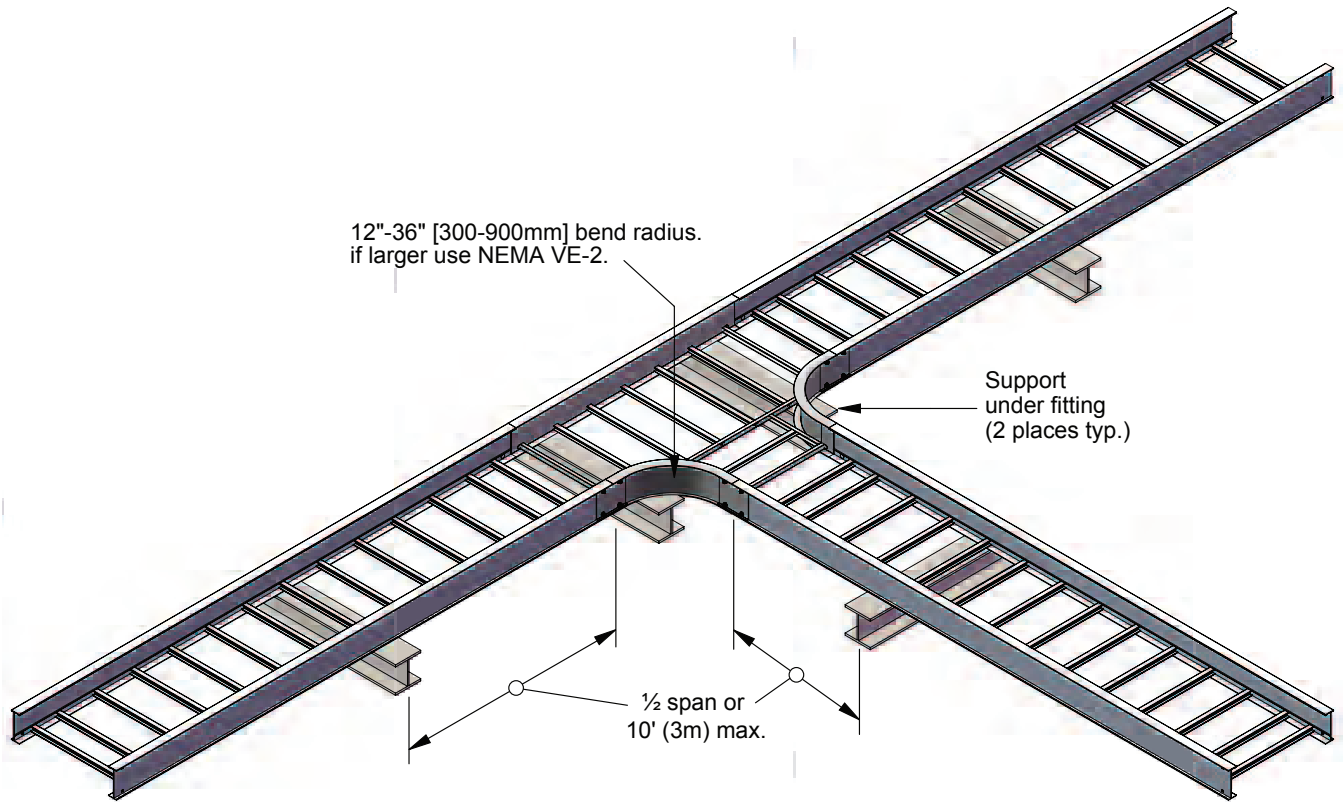
NEMA Recommendation

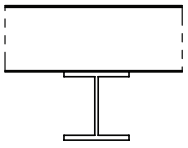


Plan view

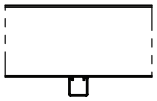
Horizontal Tee Support Recommendation Option 1 "½ Span"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

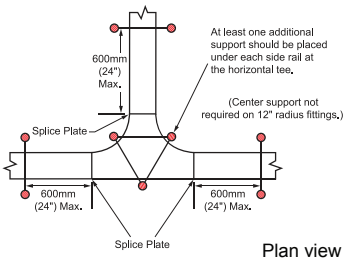


Strut support method

Isometric view

Eaton.com/sss

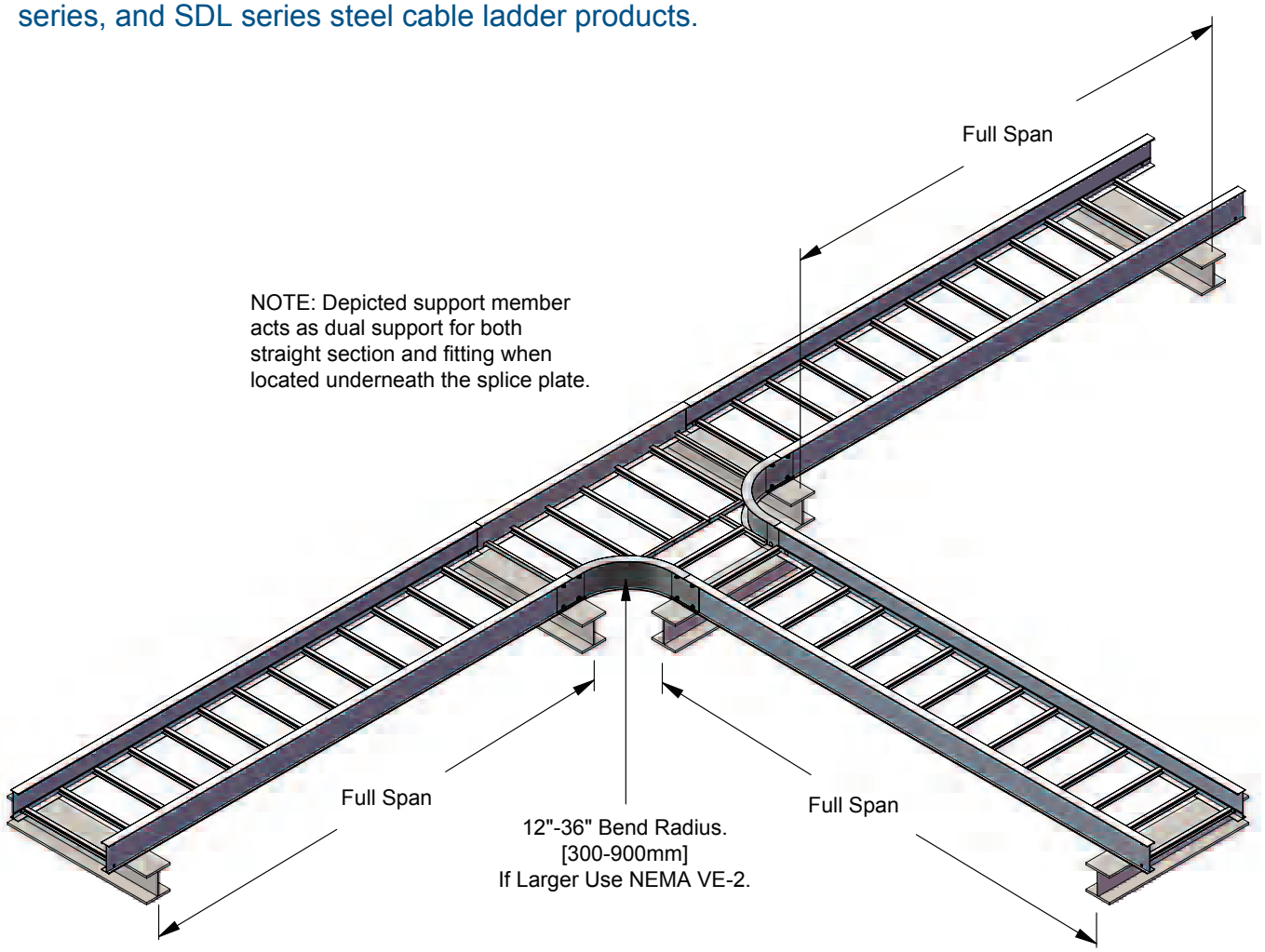
NEMA Recommendation

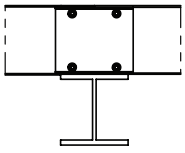


Plan view

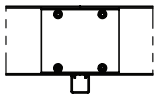
Horizontal Tee Support Recommendation Option 2 "Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



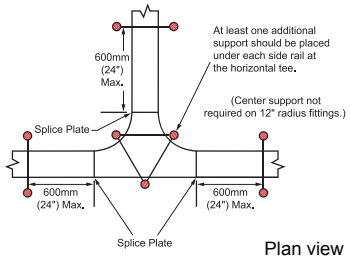
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

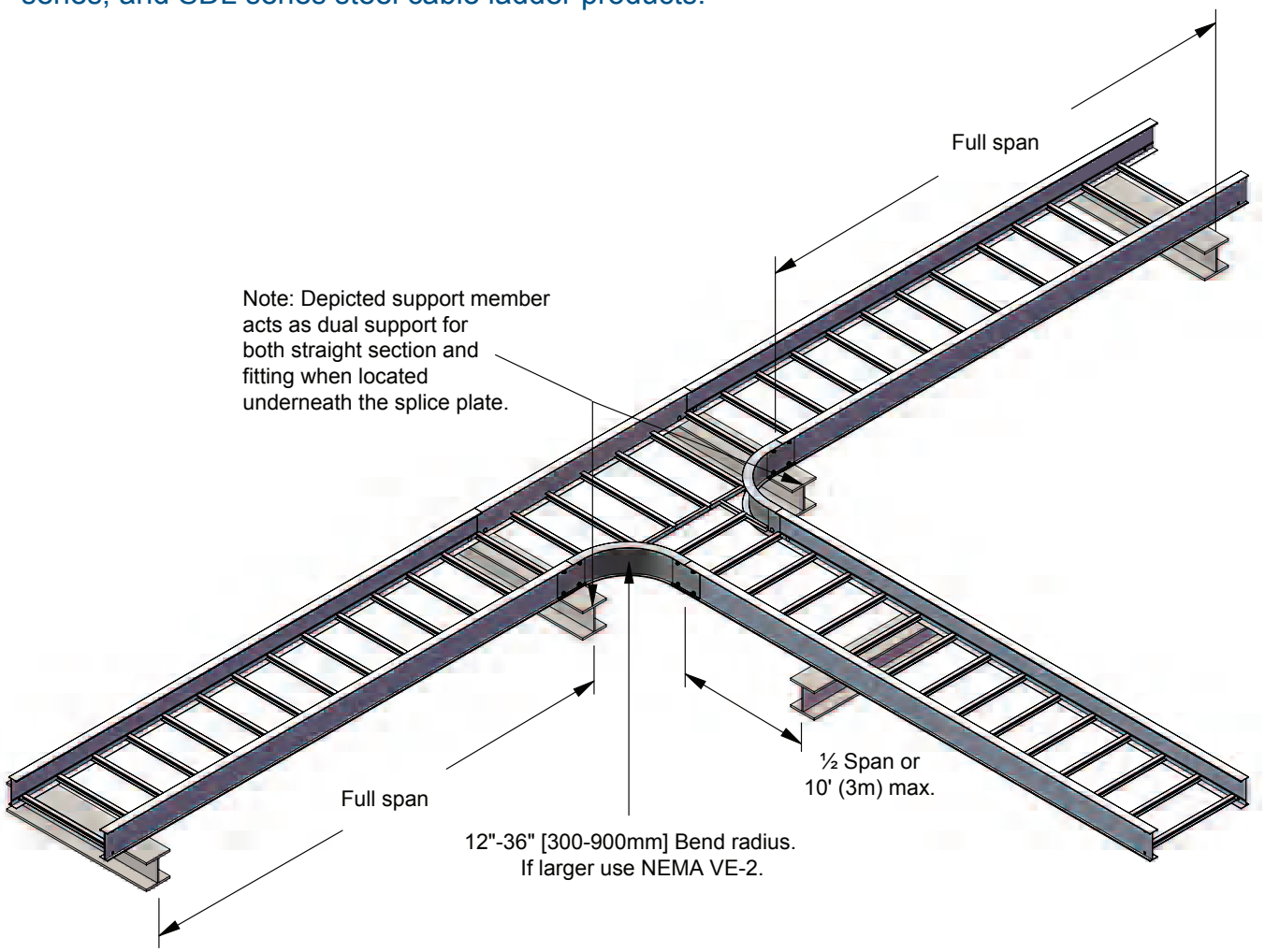
NEMA Recommendation

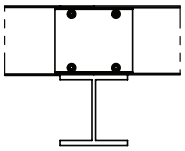


Plan view

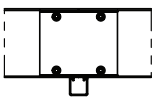
Horizontal Tee Support Recommendation Option 3 "½ Span / Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



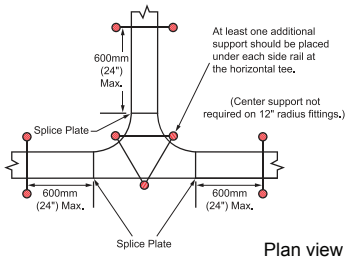
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

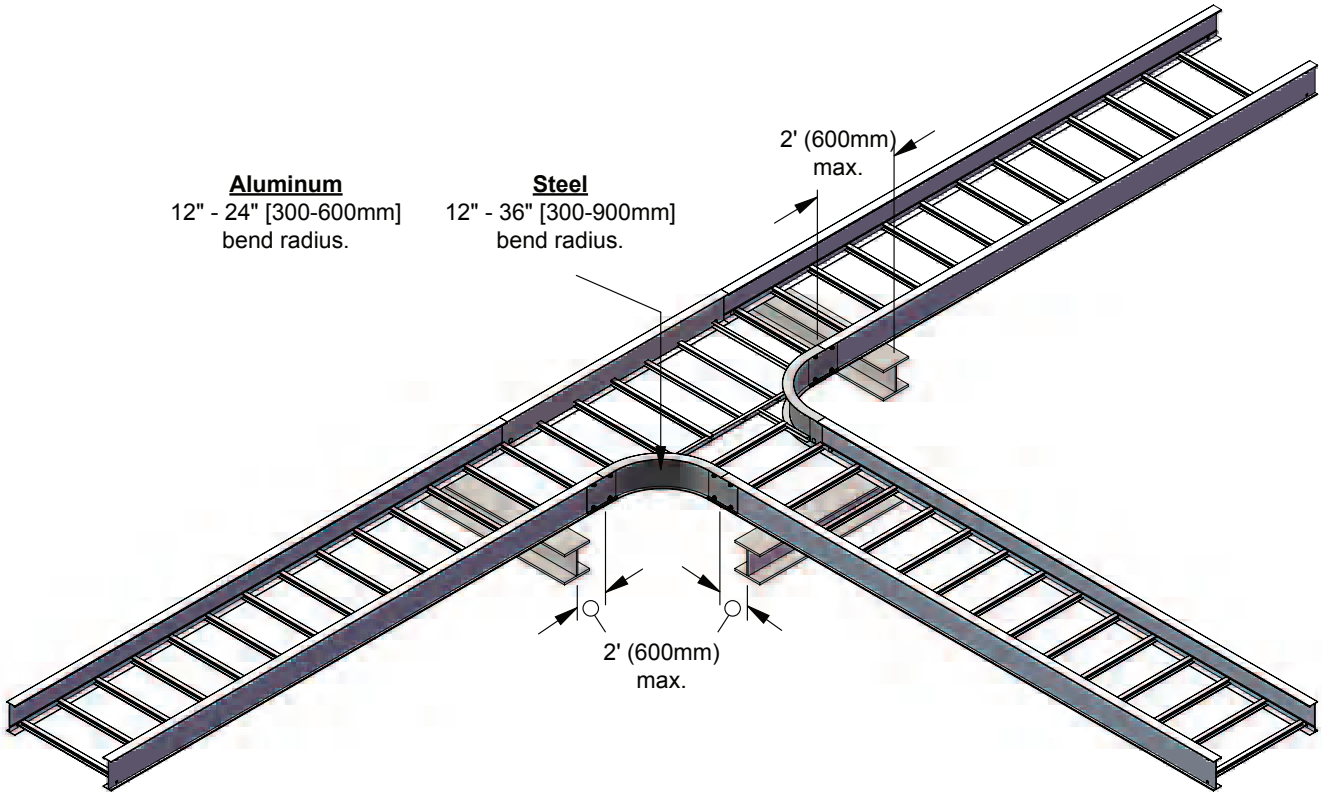
NEMA Recommendation

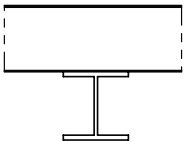


Plan view

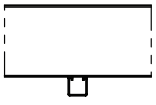
Horizontal Tee Support Recommendation Option 4 "Floating"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

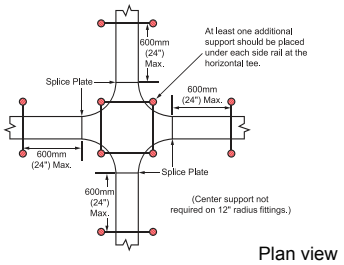


Strut support method

Isometric view

Eaton.com/sss

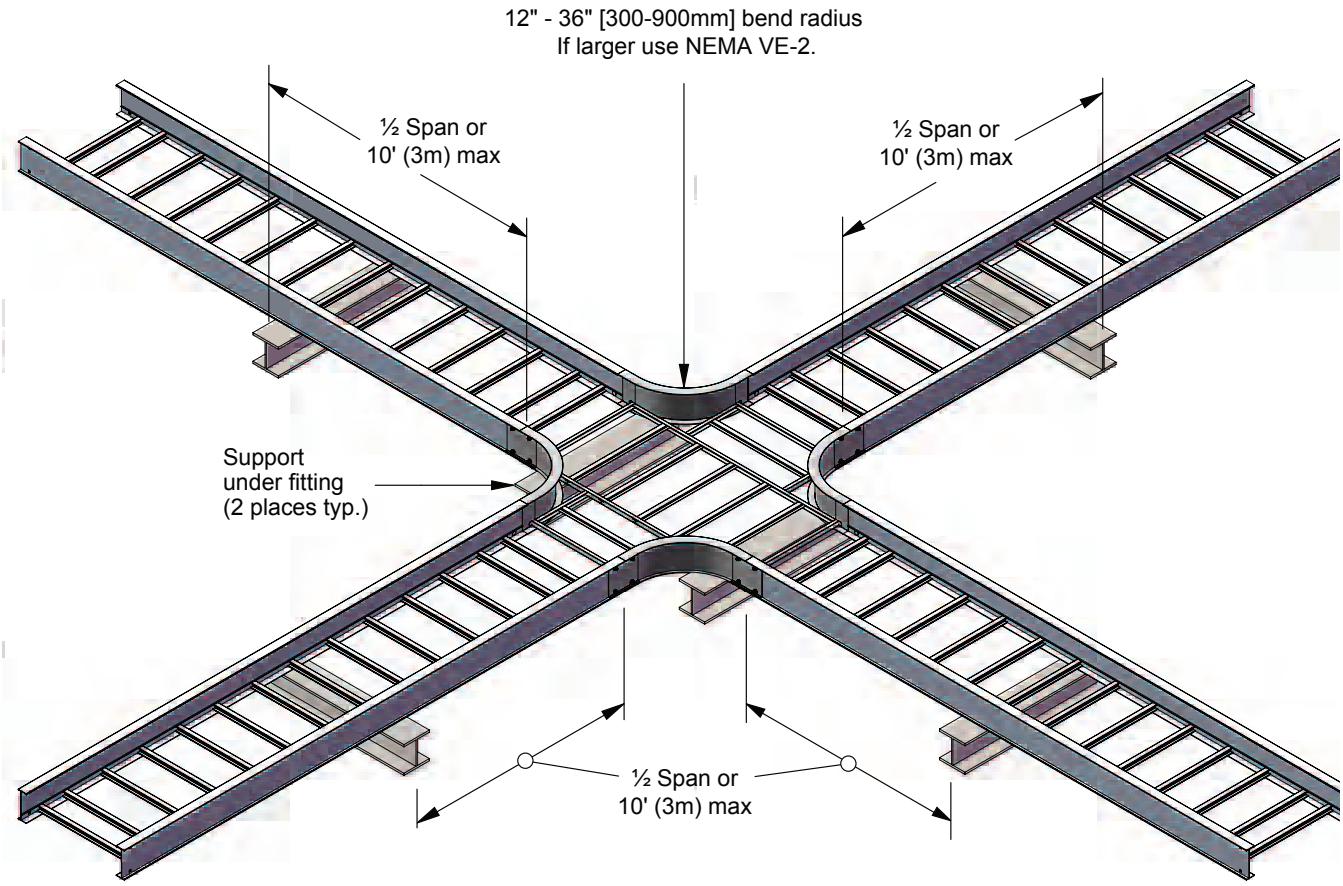
NEMA Recommendation

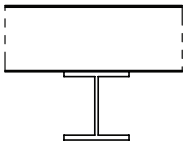


Plan view

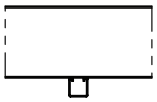
Horizontal Cross Support Recommendation Option 1 "½ Span"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

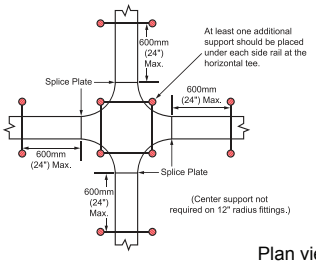


Strut support method

Isometric view

Eaton.com/sss

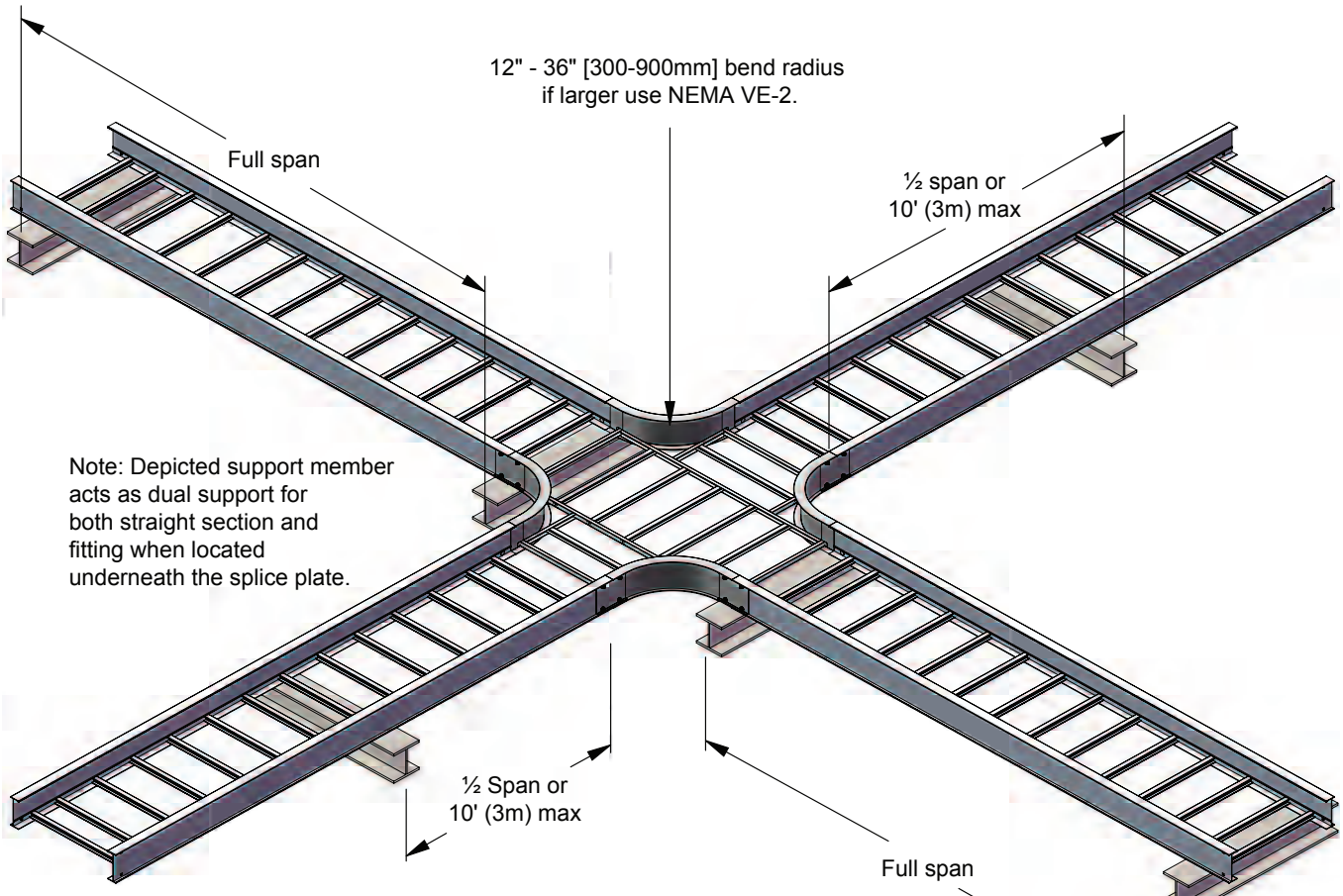
NEMA Recommendation

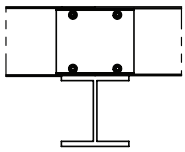


Plan view

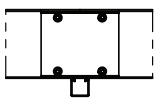
Horizontal Cross Support Recommendation Option 2 "½ Span / Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



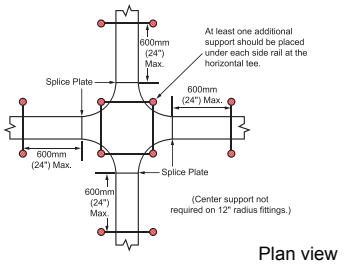
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

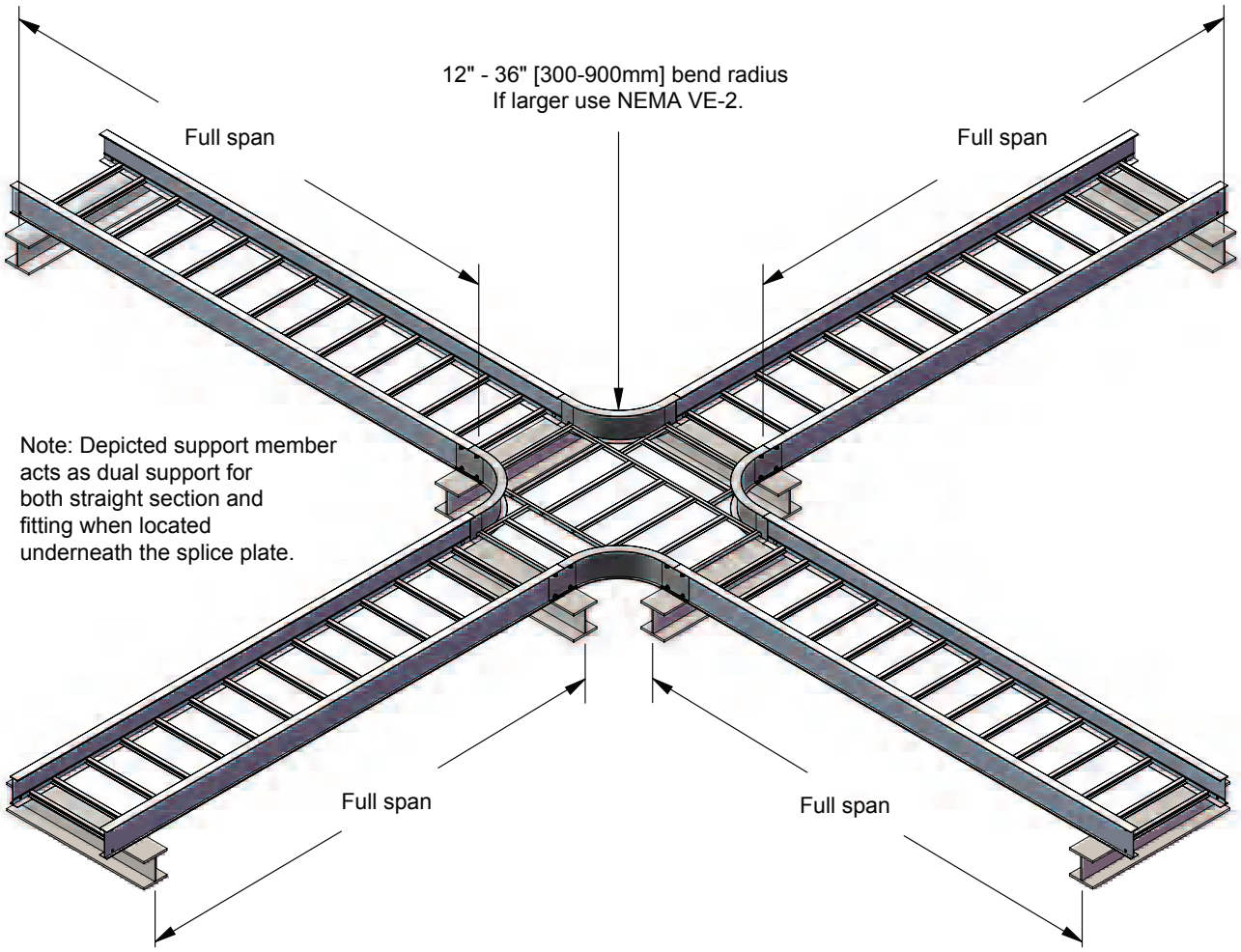
NEMA Recommendation

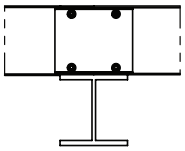


Plan view

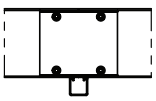
Horizontal Cross Support Recommendation Option 3 "Dual Support"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method



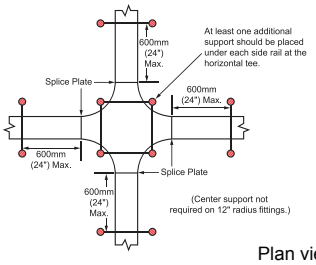
*Strut support method

Isometric view

*Note: Support profile may be placed at any location underneath splice plate.

Eaton.com/sss

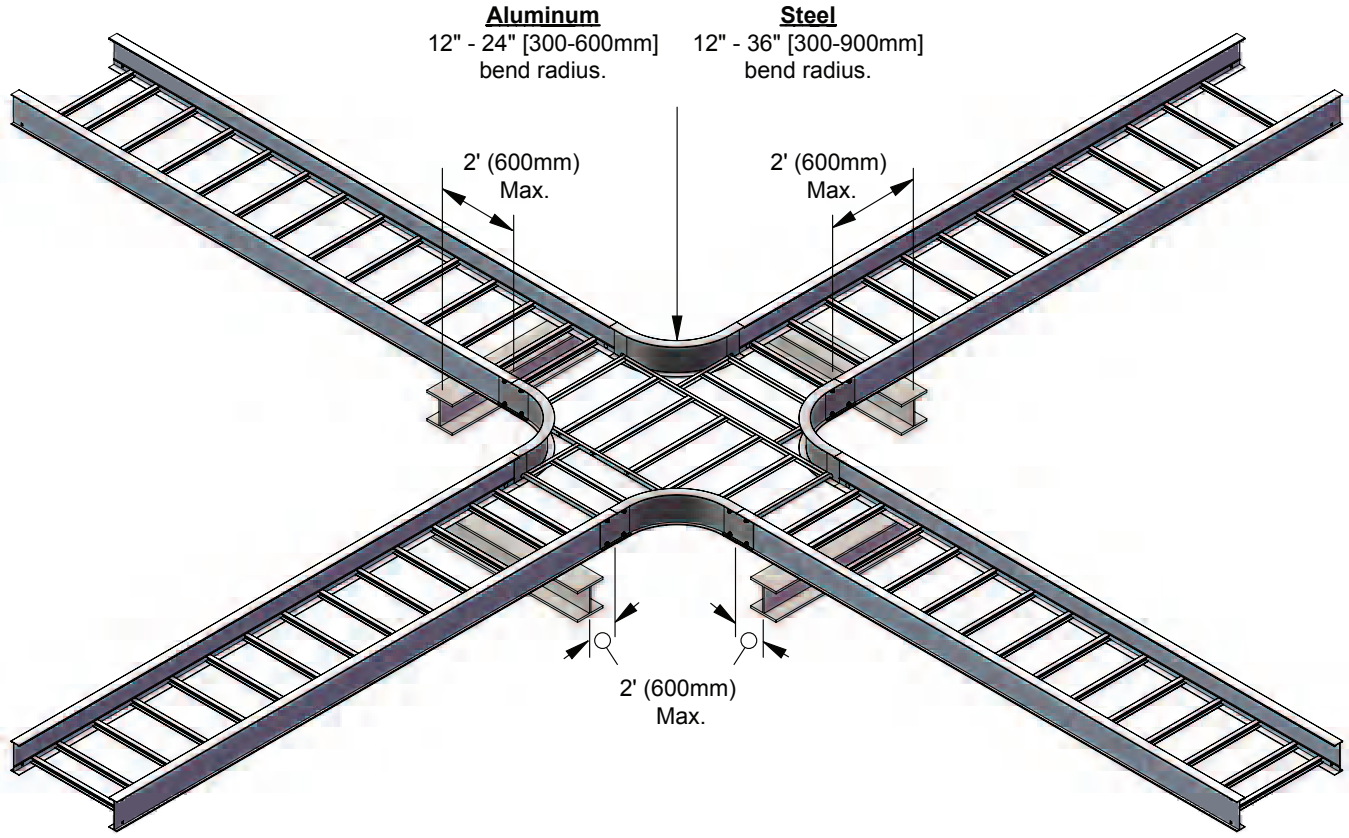
NEMA Recommendation

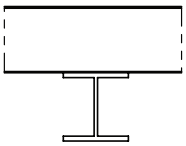


Plan view

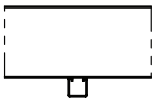
Horizontal Cross Support Recommendation Option 4 "Floating"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.





I-Beam support method

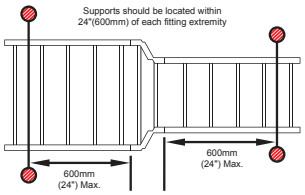


Strut support method

Isometric view

Eaton.com/sss

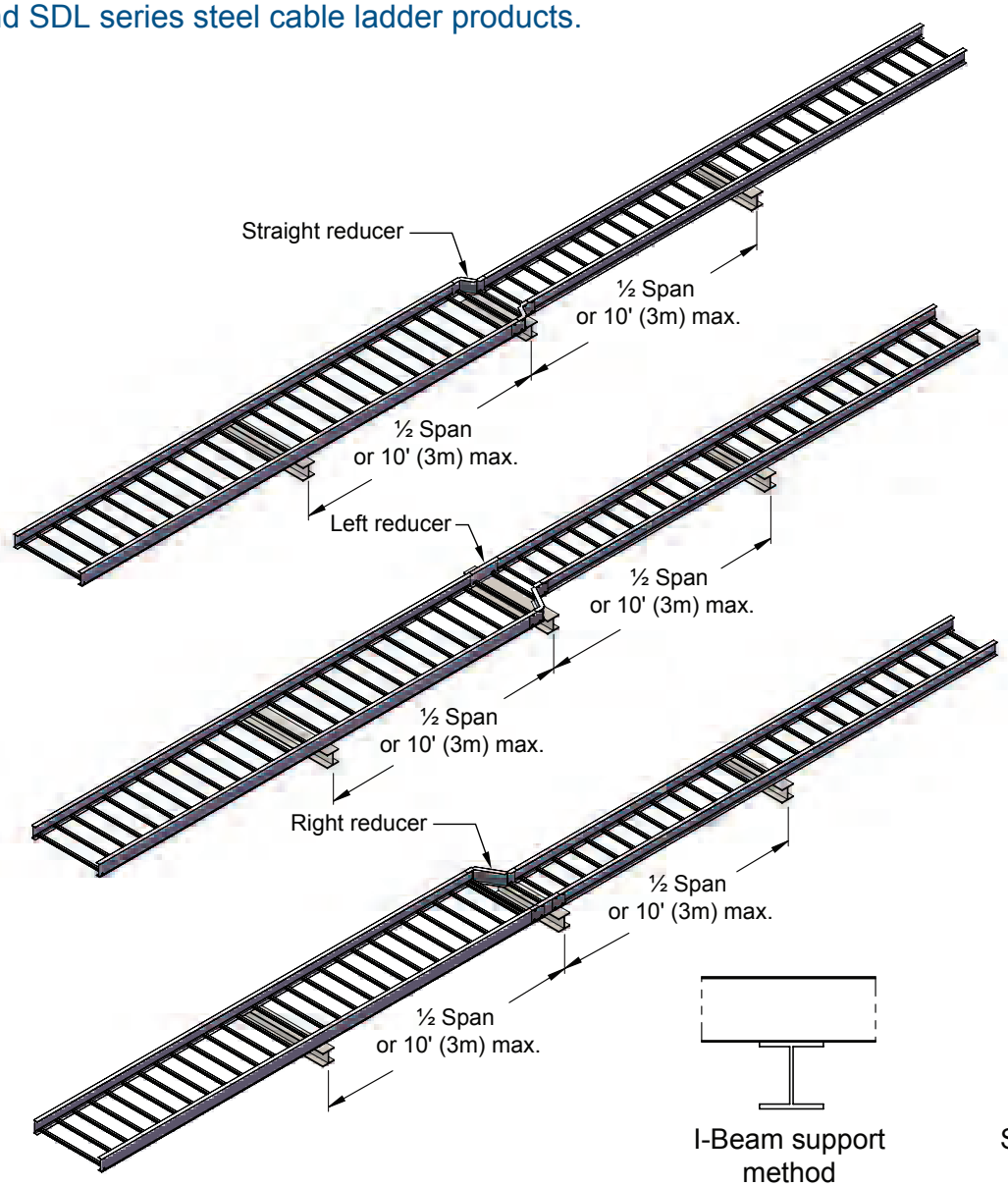
NEMA Recommendation



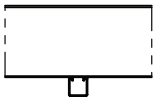
Plan view

Reducer Fitting Support Recommendation Standard Option 1 "½ Span"

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.



I-Beam support method



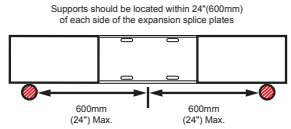
Strut support method

Isometric view

Note: Fitting support profile may be placed at any location underneath reducer or splice plate.

Eaton.com/sss

NEMA Recommendation

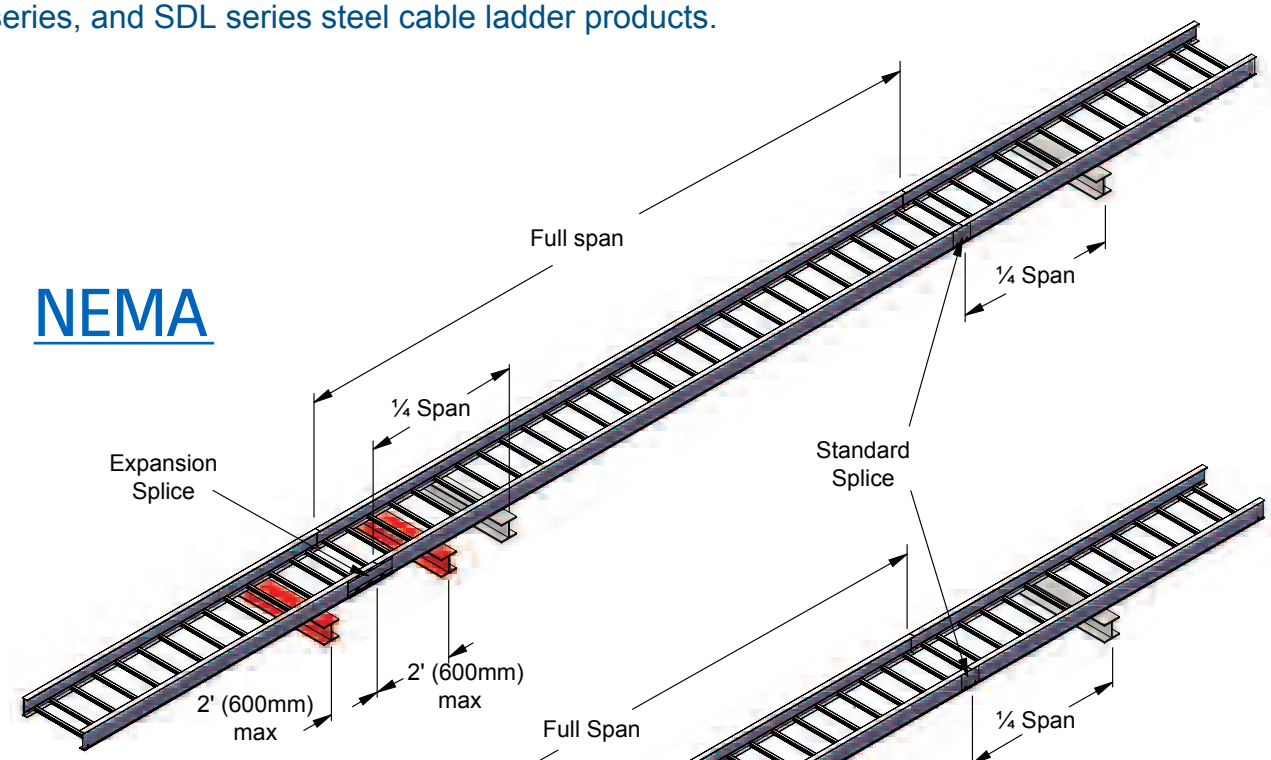


Elevation view

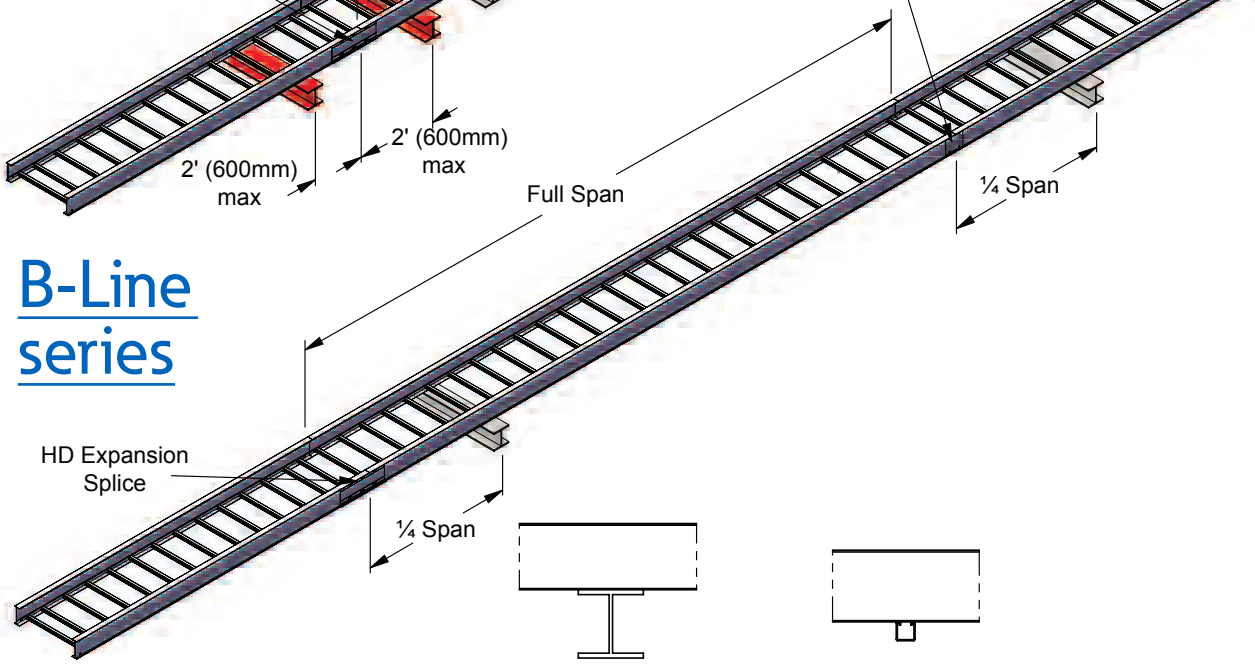
Heavy Duty Expansion Splice Support Recommendation

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.

NEMA



B-Line series



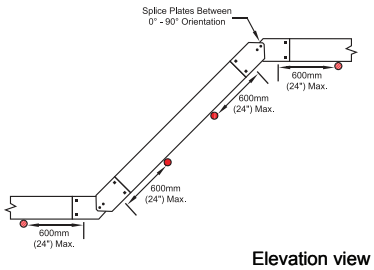
I-Beam support method

Strut support method

Isometric view

Eaton.com/sss

NEMA Recommendation

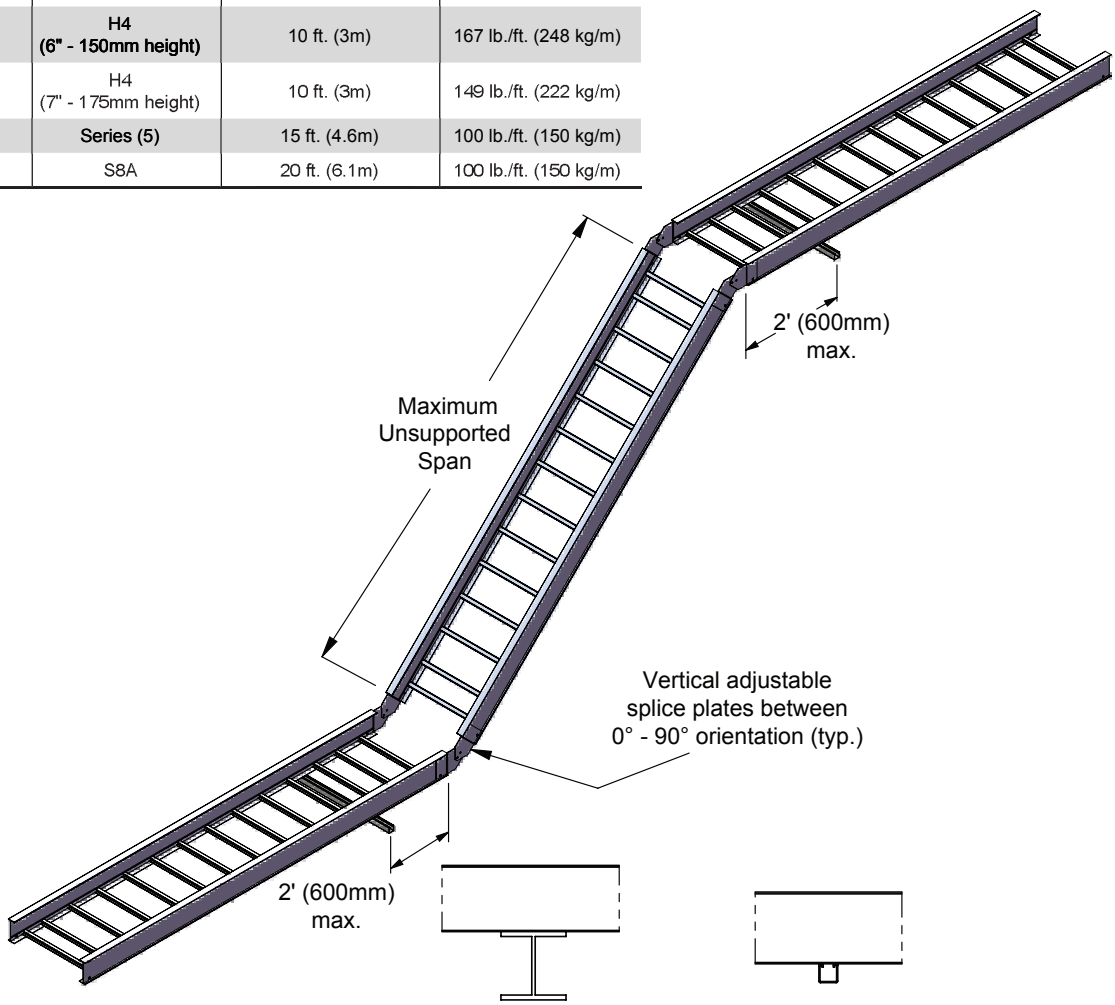


Elevation view

Vertical Adjustable Splice Plates Support Recommendation

Support recommendations apply to B-Line series 2-5 steel and aluminum cable ladder, HDL series, and SDL series steel cable ladder products.

Material	Cable Ladder Series	Maximum Unsupported Span	Load Capacity
Steel and Stainless Steel	**Series (2-5) [HPL, SDL, HDL]**	10 ft. (3m)	100 lb./ft. (150 kg/m)
Aluminum	Series (2-4)	10 ft. (3m)	100 lb./ft. (150 kg/m)
Aluminum	**H4 (6" - 150mm height)**	10 ft. (3m)	167 lb./ft. (248 kg/m)
Aluminum	H4 (7" - 175mm height)	10 ft. (3m)	149 lb./ft. (222 kg/m)
Aluminum	**Series (5)**	15 ft. (4.6m)	100 lb./ft. (150 kg/m)
Aluminum	S8A	20 ft. (6.1m)	100 lb./ft. (150 kg/m)



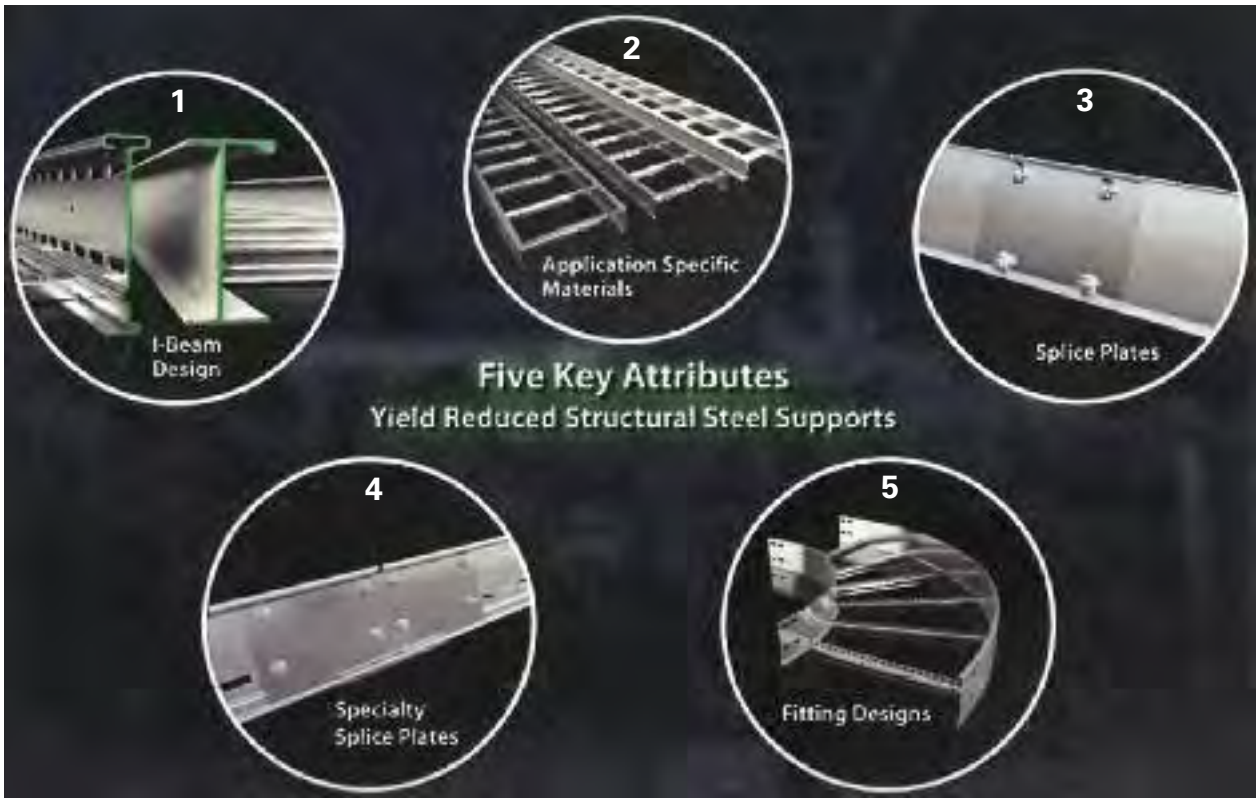
I-Beam support method

Strut support method

Isometric view

Eaton.com/sss

5 Key Product Attributes



1. I-Beam Side-Rail Design - Can Carry up to 2.3 Times More Load than C-Channel

- Maximizes stiffness
- Offers positive rung support
- Enhances clamping options
- Carries load on longer spans, reducing support requirements

2. Application Specific Materials - Maximize Options

- Hot-dip galvanized steel
- 316 Stainless Steel
- Marine-grade, copper-free aluminum
- Ensures the best material for the application to carry the load over the longest span

3. Splice Plate Design - Enhance Structural Integrity

- Enhances the structural integrity and strength of the system, reducing support requirements
- UL Classified as an equipment grounding conductor, eliminating bonding jumpers

4. Application - Specific Specialty Splice Plates - Allow Load Transfer

- Patented design
- Designed for thermal expansion and contraction
- Structural integration maintains load carrying capacity, reducing support requirements

5. Fitting Designs - 75mm or 100mm Tangents

- Industry-leading 75mm to 100mm tangents
- Maximizes strength and load carrying capacity, reducing support requirements

Metric Cable Ladder Technical Guide

The technical data contained within this guide is intended to provide the engineer with adequate information to design and specify an efficient and robust cable ladder system. Eaton recommends that the engineer considers the following subjects when designing the cable ladder system which are detailed within the corresponding sections of this guide:

1. Side Rail and Rung Design
2. Materials
3. Finish
4. Corrosion
5. Load Performance Type Tests
6. Environmental Loads
7. Impact
8. Electrical Continuity
9. Free Base Area
10. Thermal Contraction and Expansion
11. Support and Installation Recommendations
12. Cable Restraint

1. Side Rail and Rung Design

B-Line series cable ladder side rail uses a high performance extruded (aluminum) and rolled (steel) I-Beam profile. The more complex the structural profile, the higher the strength yielded by the profile. The I-Beam profile provides greater performance than standard C-section and complex C-section profiles commonly used in cable ladder designs. Due to the higher performance provided by the I-Beam it allows for a reduced material gauge thickness, reducing product weight.

The slotted steel side rail is designed to provide equally spaced slots along the entire length. These allow for the installer to field cut and modify the standard length and connect new lengths and/or fittings with a standard splice plate without the need for on-site drilling. The slots also allow the designer and installer to use the slots for the attachment of additional accessories and equipment, again without the need to drill the cable ladder. In addition, the slots result in a lighter weight ladder with increased ventilation.

Steel 150mm HDG cable ladder straight section

Aluminum 150mm cable ladder straight section

2. Materials

MATERIAL	STANDARD	GRADE
Steel	BS EN 10025-2 : 2004	S275 or equivalent
Stainless Steel	BS EN 10088-2 : 2005	1.4404 (AISI 316/316L)
Aluminum	BS EN 573-3 : 2009	6063; 5052-H32

Steel Grade S275:

B-Line series cable ladder is manufactured from continuously roll formed Grade S275 structural steel or equivalent. Use of a structural grade steel guarantees the material to meet the minimum structural and chemical properties specified in the BS EN 10025-2 : 2004 standard.

Steel Grade S275:

Typical Chemical Composition

Name	Number	Deoxidation Method	C % For thickness range			Si max	Mn max	P max	S max	N max	Cu max	Other
			≤16	>16 ≤40	>40	%	%	%	%	%	%	%
S275	1.0145	FF	0,21	0,21	0,21	-	1,6	0,035	0,035	-	0,60	-

Typical Mechanical Properties

Name	Number	ReH Minimum Yield strength (MPa) for nominal thickness(mm)									R m (MPa) for nominal thickness (mm)				
		<16	≥16 ≤40	>40 ≤63	>63 ≤80	>80 ≤100	>100 ≤150	>150 ≤200	>200 ≤250	>250 ≤400	<3	≥3 ≤100	>100 ≤150	>150 ≤250	>250 ≤400
S275	1.0145	275	265	255	245	235	225	215	205	195	430-580	410-560	400-540	380-540	380-540

Aluminum:

Aluminum cable ladders are fabricated from structural grade "copper free" (marine grade) aluminum extrusions. Aluminum's excellent corrosion resistance is due to its ability to form an aluminum oxide film that when scratched or cut reforms the original protective film. Aluminum has excellent resistance to "weathering" in most outdoor applications. Aluminum cable ladder has excellent corrosion resistance in many chemical environments and has been used for over forty years in coastal petro-chemical plants and offshore FPSO facilities located globally. Typically, aluminum cable ladders can perform indefinitely, with little or no degradation over time, making it ideal for many chemical and marine environments.

Stainless Steel Grade 1.4404 (AISI 316L):

B-Line series cable ladder is manufactured from continuously roll formed Grade 1.4404 (AISI 316L) stainless steel. Grade 1.4404 is a non-magnetic stainless steel and part of the "austenitic" group of stainless steels. It is designed to withstand corrosive atmospheres, low and high ambient and operating temperatures. Grade 1.4404 is a superior grade of stainless steel due to it containing molybdenum. This enhances its resistance to corrosion and makes it appropriate for use in marine salt laden saliferous environments. The importance of using Grade 1.4404 (AISI 316L) relates to the corrosion resistance of the steel after welding. Stainless steel resists corrosion because it forms an impervious passive oxide layer on its surface which forms when oxygen is present. When stainless steel is welded it may lead to a chromium carbide to precipitate at the grain boundaries, depleting the chromium within the austenite and preventing the passive oxide layer from forming. Due to the grain boundaries being small and highly anodic, a rapid corrosion can occur. This process can be prevented by using stainless steels with a carbon content of less than 0.03%. Grade 1.4044 typically has less than 0.03% carbon content.

There are a number of important factors that can make the use of stainless steel imperative. These factors can include long term maintenance costs, corrosion resistance, aesthetic appearance, and ambient operating temperature. Grade 1.4404 stainless steel exhibits stable structural properties such as yield strength and high creep strength at lowered and elevated ambient operating temperatures.

B-Line series cable ladder is welded using a stainless steel welding wire to ensure each weldment exhibits the same corrosion resistance as the base metal. Localized staining in the weld area/heat effected zone may occur when exposed to severe corrosive environments. The shielding gases and low carbon materials used in our welding processes minimise carbon contamination during welding to reduce staining and stress corrosion.

Stainless Steel Grade 1.4404 (AISI 316L):

Typical Chemical Composition

Name	Number	C	Si	Mn	P max.	S	N	Cr	Cu	Mo	Nb	Ni	Others
Standard Grades													
X2CrNiMo17-12-2	1.4404	≤0,030	≤1,00	≤2,00	0,045	≤0,015	≤0,11	16,5-18,5	-	2,00-2,50	-	10,0-13,0	-

Austenitic steels in solution annealed condition

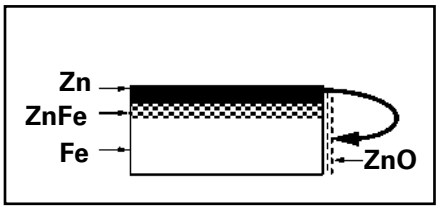
Typical Mechanical Properties

Name	Number	Product Form	Thickness max mm	$R_{p0,2}$ MPa	R_m MPa	A %
Standard Grades						
X2CrNiMo17-12-2	1.4404	C	8	240	530-680	40
		H	13,5	220	530-680	40
		P	75	220	520-670	45
		H	13,5	220	530-730	35
		P	75	220	520-720	35

3. Finish

Zinc Coatings

Zinc protects steel in two ways. First it protects the steel as a coating and second as a sacrificial anode to repair bare areas such as cut edges, scratches, and gouges. The corrosion protection of zinc is directly related to its thickness and the environment. This means a .2 mil coating will last twice as long as a .1 mil coating in the same environment.



Galvanizing also protects cut and drilled edges.

Hot Dip Galvanized After Fabrication
(Hot dip galvanized or batch hot dip galvanized)

Hot Dip Galvanized After Fabrication cable ladder products are fabricated from steel and then completely immersed in a bath of molten zinc. A metallic bond occurs resulting in a zinc coating that completely coats all surfaces, including edges and welds.

Another advantage of this method is coating thickness. Cable ladders hot dip galvanized after fabrication to provide an average minimum zinc coating thickness in accordance with BS EN ISO 1461.

The zinc thickness is controlled by the amount of time each part is immersed in the molten zinc bath as well as the speed at which it is removed. The term "double dipping" refers to parts too large to fit into the galvanizing kettle and, therefore, must be dipped one end at a time. It does not refer to extra coating thickness.

The layer of zinc which bonds to steel provides a dual protection against corrosion. It protects first as an overall barrier coating. If this coating happens to be scratched or gouged, zinc's secondary defense is called upon to protect the steel by galvanic action.

Hot dip galvanizing after fabrication is recommended for prolonged outdoor exposure and will protect steel for many years in most outdoor environments and in many aggressive industrial environments .

Articles & Its Thickness	Local Coating (minimum)		Mean Coating (minimum)	
	g/m²	µm	g/m²	µm
Steel > 6mm	505	70	610	85
Steel > 3mm to ≤ 6mm	396	55	505	70
Steel > 1.5mm to ≤ 3mm	325	45	396	55

BS EN ISO 1461 : coating minimum thickness on articles not centrifuged

4. Corrosion

IEC 61357 : 2006 section 6.5.2, Table 1 “classification for resistance against corrosion” defines the classification class of various materials and finishes used in the manufacture and supply of cable ladder systems against resistance to corrosion.

In accordance with this classification table, B-Line cable ladder can be supplied as to meet the following classifications:

Steel HDG : Class 6

Stainless Steel 1.4404 : Class 9B

Passivated Stainless Steel 1.4404 : Class 9D

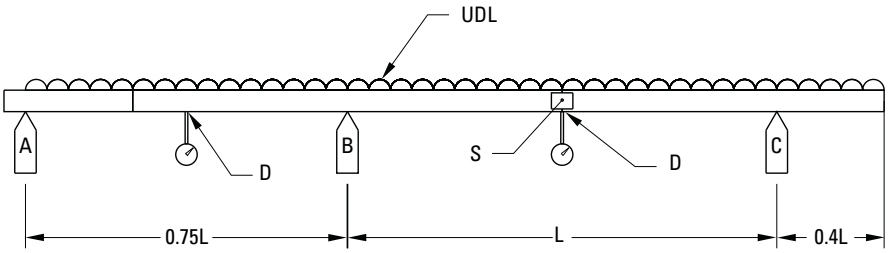
Stainless Steel

Several important conditions could make the use of stainless steel imperative. These include long term maintenance costs, corrosion resistance, appearance and locations where product contamination is undesirable. Stainless steel exhibits stable structural properties such as yield strength and high creep strength at elevated temperatures.

5. Load Performance Type Tests

B-Line series aluminum and steel cable ladder has been performance load tested in full compliance with the requirements of IEC 61537 : 2006 standard titled "Cable Management - Cable Tray Systems and Cable Ladder Systems" and load and deflection results published within this catalog are based upon these tests. Type load tests have been witnessed by DNV and BV independent third party inspectorates. We recommend that the specifying engineer insists upon independent third party certificates confirming compliance to the IEC standard and published load tables within the manufacturer's catalog.
Eaton has tested B-Line series cable ladder to the following type tests detailed within the IEC 61537 standard:

Type Test - II

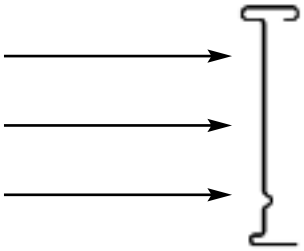


L = Intermediate Span
S = Splice Location (Mid-span)
UDL = Uniform Distributed Load
A,B,C = Support Positions
D = Deflection Measuring Point (Mid-span)

6. Environmental Loads

Wind Loads

Wind loads need to be considered for all outdoor cable ladder installations. The most severe loading to be considered is impact pressure normal to the cable ladder side rails.

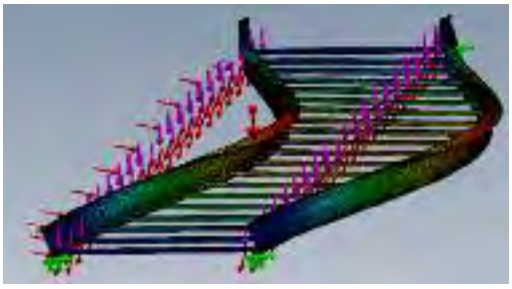


When covers are installed on outdoor cable ladders, another factor to be considered is the aerodynamic effect which can produce a lift strong enough to separate a cover from a ladder. Wind moving across a covered ladder (see detail 2) creates a positive pressure inside the ladder and a negative pressure above the cover. This pressure difference can lift the cover off the ladder.

Detail 2

Eaton recommends the use of high performance cover clamps when covered ladders are installed in an area where strong winds occur.

Eaton's engineering services can calculate direct wind forces on B-Line series cable ladder systems, the resultant forces at hold down clamp locations, cover uplift forces, and FPSO modular transportation effects.
Please reach out to a Eaton application engineer for more information.



Ice Loads

Glaze ice is the most commonly seen form of ice build-up. It is the result of rain or drizzle freezing on impact with an exposed object. Generally, only the top surface (or the cover) and the windward side of a cable ladder system is significantly coated with ice. The maximum design load to be added due to ice should be calculated as follows:

$$LI = \left(\frac{W \times TI}{1{,}000{,}000} \right) \times DI \quad \text{where;}$$

LI= Ice Load (kg/m)
W= Cable Tray Width (mm)
TI= Maximum Ice Thickness (mm)
DI= Ice Density = 913 kg/m^3

The maximum ice thickness will vary depending on location. A thickness of 12mm can be used as a conservative standard.

Snow Loads

Snow is measured by density and thickness. The density of snow varies almost as much as its thickness. The additional design load from snowfall should be determined using the building codes which apply for each installation.

7. Impact

B-Line series cable ladder conforms to an Impact Test Value of 50J based on the IEC 61537:2006, Section 10.9 at a temperature of -60°C.

8. Electrical Continuity

Electrical continuity testing of B-Line series cable ladder was conducted in accordance with IEC 61357 : 2006, section 11.1.2 and results in an electrical impedance less than 50milli ohms across the joint and 5 milli ohms per metre without a joint. No bonding jumper cables are required except for expansion splice locations and mechanically discontinuous sections.

9. Free Base Area

In accordance with IEC 61537; 2006, section 6.8, Table 5 "Free Base Area Classification", B-Line series cable ladder has a classification of 'Y' on standard 300mm rung spacing and a calculated free base area of 86%. B-Line series aluminum I-Beam style rung has a classification of "Z" on standard 300mm rung spacing and a calculated free base area of 90%.

10. Thermal Contraction and Expansion

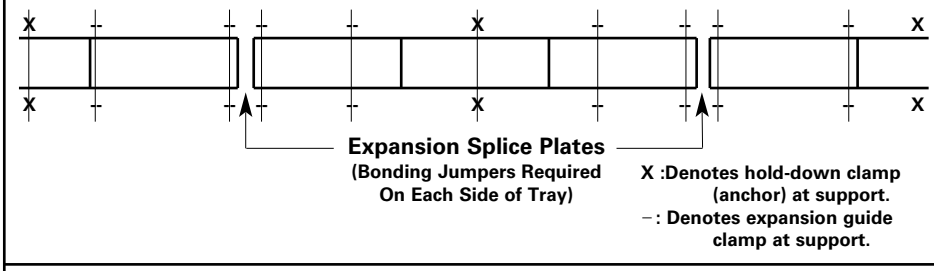
It is important that thermal contraction and expansion be considered when installing cable ladder systems. The length of the straight cable tray runs and the temperature differential govern the number of expansion splice plates required (see Table 2 below).

The cable ladder should be anchored at the support nearest to its midpoint between the expansion splice plates and secured by expansion guides at all other support locations (see Figure 1). The cable ladder should be permitted longitudinal movement in both directions from that fixed point. When used, covers should be overlapped at expansion splices.

Accurate gap settings at the time of installation are necessary for the proper operation of the expansion splice plates. The following procedure should assist the installer in determining the correct gap: (see Figure 2)

1. Plot the highest expected metal temperature on the maximum temperature line.
2. Plot the lowest expected metal temperature on the minimum temperature line.
3. Draw a line between the maximum and minimum points.
4. Plot the metal temperature at the time of installation to determine the gap setting.

Figure 1



Typical Cable Ladder Installation

Figure 2

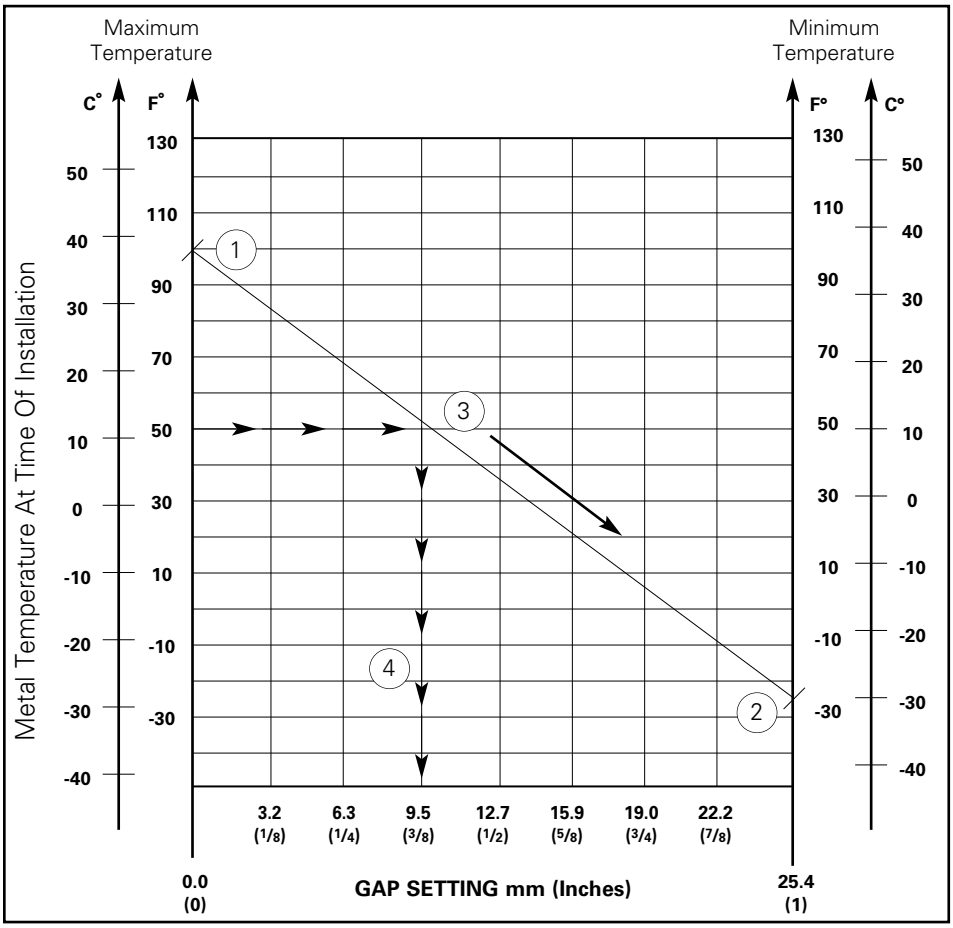


Table 2

Maximum Spacing Between Expansion Joints For 25mm Movement

Temperature Differential		Steel		Aluminum		Stainless Steel 304		Stainless Steel 316	
°C	°F	m	Feet	m	Feet	m	Feet	m	Feet
13.9	25	156.0	512	79.2	260	105.7	347	115.5	379
27.8	50	78.0	256	39.6	130	53.0	174	57.6	189
41.7	75	52.1	171	26.5	87	35.4	116	38.4	126
55.6	100	39.0	128	19.8	65	26.5	87	29.0	95
69.4	125	31.1	102	15.8	52	21.0	69	23.2	76
83.3	150	25.9	85	13.1	43	17.7	58	19.2	63
97.2	175	22.2	73	11.3	37	15.2	50	16.4	54

Note: every pair of expansion splice plates requires two earth continuity connectors for grounding continuity.

11. Support and Installation Recommendations

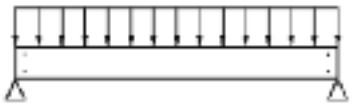
Deflection

Deflection in a cable ladder system is primarily an aesthetic consideration. When a cable ladder system is installed in a prominent location, a maximum simple beam deflection of 1/100 of support span can be used as a guideline to minimize visual deflection.

There are two typical beam configurations: simple beam and continuous beam.

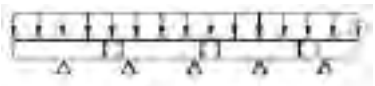
An example of a simple beam is a single straight section of cable ladder supported, but not fastened at either end. When the ladder is loaded the cable ladder is allowed to flex. Simple beam support is seldom used in field installations.

Simple Beam



Continuous beam is the beam configuration most commonly used in cable ladder installations. An example of this configuration is where cable ladders are installed across several supports to form a number of spans. The continuous beam possesses traits of both simple and fixed beams. When equal loads are applied to all spans simultaneously, the counter balancing effect of the loads on both sides of a support restricts the movement of the cable ladder at the support. The effect is similar to that of a fixed beam. The end spans behave substantially like simple beams. When cable ladders of identical design are compared, the continuous beam installation will typically have approximately half the deflection of a simple beam of the same span. The following factors should be considered when addressing cable ladder deflection:

Continuous Beam

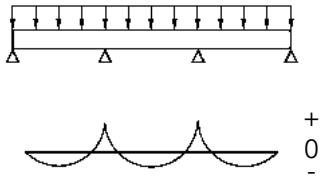


1. Deflection in a cable ladder system can be reduced by decreasing the support span, or by using a taller or stronger cable ladder.
2. Economic consideration must be given when addressing cable deflection criteria. Eliminating deflection can mean purchasing a stronger ladder at higher cost.
3. The location of splices in a continuous span will affect the deflection of the cable ladder system. The splices should be located at points of minimum stress whenever practical. Eaton recommends the following for splice installation:

   Straight section lengths should be equal to or greater than the span length to ensure not more than one splice between supports.

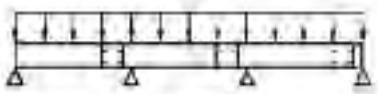
See the figures below for splicing configuration samples.

Typical Continuous Span Configuration

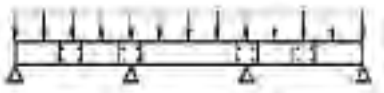


+ Maximum Positive Moment
- Maximum Negative Moment

Preferred Splice Plate Locations



Undesirable Splice Plate Locations

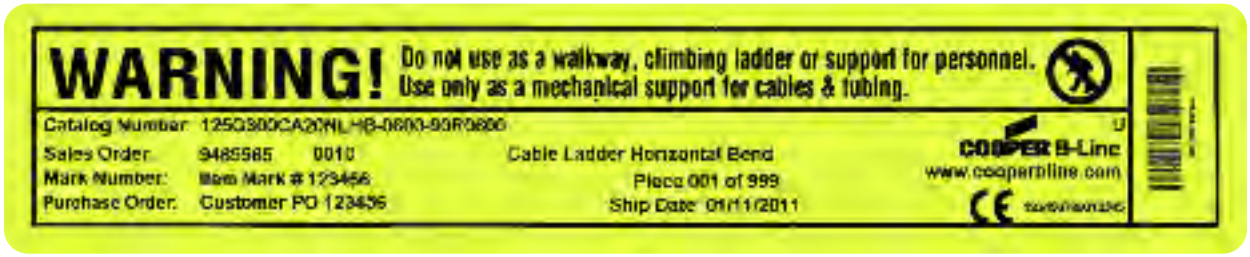


Future Expansion Requirements

One of the many features of cable ladder is the ease of adding cables to an existing system. Future expansion should always be considered when selecting a cable ladder, and allowance should be made for additional fill area and load capacity. A minimum of 50% expansion allowance is recommended.

Installation

Shorter cable ladder lengths are typically easier to maneuver on the job site during installation. Two people may be needed to manipulate longer cable ladder sections, while shorter sections might be handled by one person. Although longer cable ladder lengths are more difficult to maneuver, they can reduce installation time due to the fact that there are fewer splice connections. This trade-off should be evaluated for each set of job site restrictions.



12. Cables and Cable Restraint

Type of Cable

In general, small, highly flexible cables should be installed in cable ladders with close rung spacing of 225mm or less. Larger, less flexible cables are typically installed in cable ladders having 300mm rung spacing. Cable ladders having rung spacing greater than 300mm should be used for very large, stiff cables to reduce cost and facilitate cable drop-outs.

Cable Exposure

Many cable jackets are manufactured to withstand the environment without additional protection, favoring the use of the cable ladder. Cable jackets should be evaluated during project design for suitability in the project application.

Cable Attachment

A major advantage of cable ladder is the freedom of entry and exit of the cables. Another advantage of cable ladder is the ability to secure cables in the cable ladder. With standard rungs, the cables may be attached with either cable ties or cable clamps. Cable attachment is particularly important on vertical runs or when the ladder is installed on its side. Ladder rung spacing should be chosen to provide adequate cable attachment points while allowing the cables to exit the system.

Cable Flexibility

The proper bend radius for cable ladder fittings is usually determined by the bend radius and stiffness of the cables to be installed. Typically, the cable manufacturer will recommend a minimum bend allowance for each cable. The fitting radius should be equal to or larger than the minimum bend radius of the largest cable which may ever be installed in the system. When several cables are to be installed in the same cable ladder, a larger bend radius may be desirable to ease cable installation.

Space Limitations

The overall dimensions for a cable ladder fitting will increase as the bend radius increases. Size and cost make the smallest acceptable fitting radius most desirable. When large radius fittings are required, the system layout must be designed to allow adequate space.

The following factors should be considered when determining the appropriate cable ladder system.

Material & Finish

- Standards Available
- Corrosion
- Thermal Contraction and Expansion
- Installation Considerations and Electrical Grounding Capacity

Strength

- Environmental Loads
- Concentrated Loads
- Support Span
- Deflection
- Rung/Trough Data
- Load Capacity
- Cable Data

Width & Available Loading Depth

- Cable Diameter
- Allowable Cable Fill
- Barrier Requirements
- Future Expansion Requirements
- Space Limitations

Length

- Lengths Available
- Support Spans (Not to exceed the length of straight sections)
- Space Limitations
- Installation

Loading Possibilities

- Power Application
- Data/Communication Cabling
- Other Factors to Consider

Bottom Type

- Type of Cable
- Cost vs. Strength
- Cable Exposure
- Cable Attachment

Fitting Radius

- Cable Flexibility
- Space Limitations

B-Line series Cable Ladder Load Classes

	Series	Side Rail Height (mm)	Span Range (m)			Load Range IEC (kg/m)			Load Range NEMA (kg/m)		
			3m	6m	9m	3m	6m	9m	3m	6m	9m
Steel - HDG	SDL	100	3	6	--	381	101	--	310	77	--
		125	3	6	--	322	122	--	525	141	--
		150	3	6	--	429	125	--	525	155	--
	HDL	100	3	6	--	447	140	--	424	106	--
		125	3	6	--	512	171	--	525	204	--
		150	3	6	--	518	180	--	525	206	--
Stainless Steel - 316L	HPL	100	3	6	--	250	73	--	240	60	--
		125	3	6	--	275	89	--	246	76	--
		150	3	6	--	364	96	--	225	75	--
	SDL	100	3	6	--	386	100	--	305	76	--
		125	3	6	--	369	199	--	408	102	--
		150	3	6	--	386	127	--	444	111	--
	HDL	100	3	6	--	542	102	--	462	128	--
		125	3	6	--	525	171	--	525	167	--
		150	3	6	--	525	189	--	525	175	--
Aluminum	2	100	3	6	--	282	67	--	277	69	--
		125	3	6	--	381	91	--	268	67	--
		150	3	6	--	431	101	--	268	67	--
		175	3	6	--	431	139	--	269	67	--
	3	150	3	6	--	525	170	--	447	112	--
		175	3	6	--	525	168	--	440	110	--
	4	150	--	6	9	--	170	75	--	174	62
	H4	150	--	6	9	--	306	111	--	263	101
	5	175	--	6	9	--	394	161	--	348	155

IEC 61537

NEMA VE-I

Cable Ladder Selection Guide

B-Line series hot dip galvanized and stainless steel cable ladder, manufactured and tested to IEC standards, are considered the premier product offering for any industrial cable management application. Three cable ladder series are available to help optimize design and lower total installed cost.

High Performance Ladder (HPL) Series – Designed to reduce overall weight in weight sensitive environments while increasing strength. Ideal for offshore and modular applications where weight reduction is imperative. Visit www.Eaton.com/hpl to learn more.

- Lightweight – design optimized to exceed load requirements while keeping weight to a minimum
- Stainless steel 316 construction
- I-Beam side rail - maximizes strength
- Rolled components add strength
- Slotted side rails help reduce labor by eliminating the need to drill new splice holes after cutting
- Slotted rungs for cable and accessory attachment
- ABS Type Approved
- BV, DNV, AND CSA Certified load tests
- Must support per NEMA VE-2 recommendations

Standard Duty Ladder (SDL) Series – Designed for applications where long spans (3m to 6m) can be utilized to decrease support costs while maintaining load requirements. Ideal for any cable management application where high cable loads are required.

- Long Spans – Available in 3 meter and 6 meter lengths.
- Designed for use with 6m spans and still maintain high cable loads, while reducing support requirements.
- Structural Steel Savings support recommendations apply (see pages 5-25)
- Available in Stainless steel 316 and Hot-Dip Galvanized
- I-Beam side rail - maximizes strength over longer spans
- Rolled components add strength
- Slotted side rails help reduce labor by eliminating the need to drill new splice holes after cutting
- Slotted rungs for cable and accessory attachment
- ABS Type Approved
- BV, DNV, AND CSA Certified load tests

Eaton.com/sss

Heavy Duty Ladder (HDL) Series – Designed for extreme cable and environmental load conditions where long spans (3m to 6m) can be utilized to decrease support costs. Ideal for heavy industrial applications where environmental conditions such as wind, snow, and ice add significant load requirements.

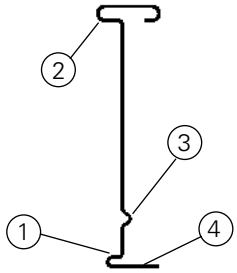
- Superior Strength – Maximized material efficiency for maximized loads
- Structural Steel Savings support recommendations apply (see page 5-25)
- Available in Stainless steel 316 and Hot-Dip Galvanized
- I-Beam side rail - maximizes strength over longer spans
- Rolled components add strength
- Slotted side rails reduce labor by eliminating the need to drill new splice holes after cutting
- Slotted rungs for cable and accessory attachment
- ABS Type Approved
- BV, DNV, AND CSA Certified load tests

Eaton.com/sss

Cable Ladder Construction - Straight Section Side Rails

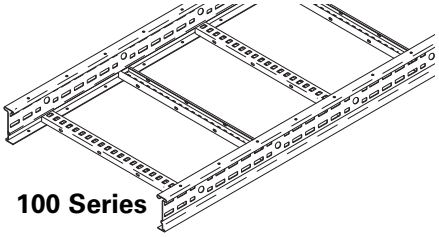
B-Line series cable ladder side rails have an engineered I-Beam shape to provide system integrity. The I-Beam is the most efficient structural shape, providing strength without increasing the weight of the side rail itself. This shape, in conjunction with the slots in the side rails, offers the optimum design.

In addition, the I-Beam shape has a number of other advantages:

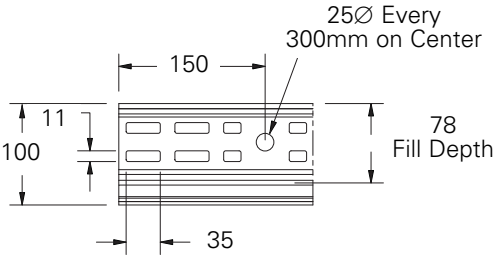


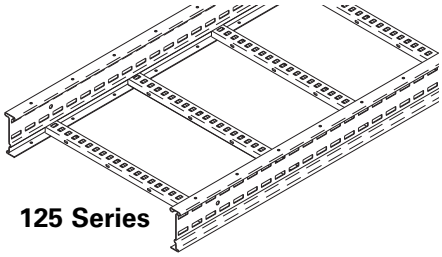
1) Roll-formed steel increases the strength of the steel itself
2) Enlarged top flange adds stiffness to the system
3) Bend in side rail to lock in rung position and provide more material for a solid weld
4) Bottom rail surface provides positive support for rungs
5) Slotted side rail design reduces installation time

Profile Dimensions

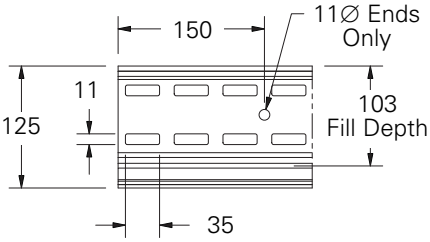


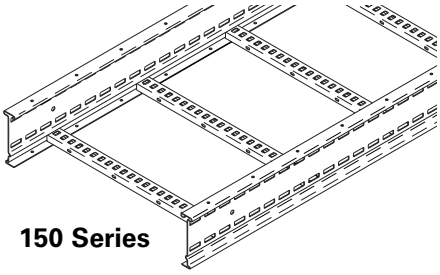
100 Series



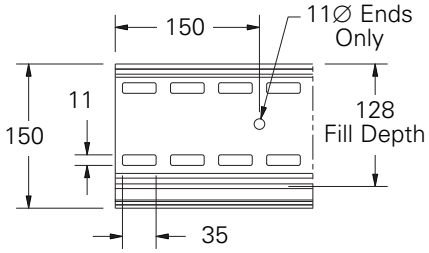


125 Series

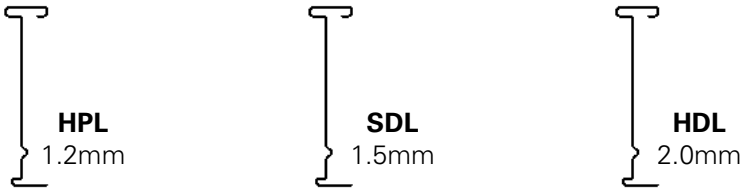




150 Series



Material Thickness



Side Rails: Strength and Safe Working Load

Side rails provide the strength of the ladder system. The load ratings for the side rails in this catalog are based on testing to IEC 61537, 2006 Edition, Test Type II. Values in the catalog load charts are based upon allowable deflection and safe working loads calculated using a 1.7 factor of safety.

Dimensions are in mm

Cable Ladder Construction - Rungs

Rungs are designed to maintain the system strength and provide a convenient place to affix cables. All rungs have slots on the upper surface, sized for M10 hardware, to allow for the attachment of banding or cleats.

Rungs

Standard rungs (C) have a profile as shown in the rung profiles below. The standard rung orientation is all rung openings down (D) with options of all rung openings up (U), or alternating rung openings up and down (A).

There are two profiles of rungs available as shown in the rung profiles dimensions below. A standard rung version (C) and a strut rung version (B).

Rung Options

- **Rung Spacing:** Rungs can be spaced at intervals other than 300mm on straight sections only. To order an alternate rung spacing, change the default "300" value for the spacing following the material type or finish. Non-standard rung spacing is not available on fittings.

  Example: *125G**200**CA15ILL-0600-3000 is a ladder with 125mm height, hot dip galvanized finish, 200mm rung spacing, SDL Series, 600mm width, and a 3m length.*

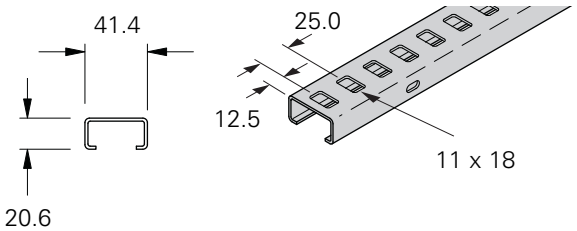
- **Strut Rung:** A strut-type profile can be ordered instead of the standard profile. To order a strut-type rung, change the default "C" value for standard rung to a "B" for strut-type rung.

  Example: *125G300**B**A15ILL-0600-3000 is a ladder with 125mm height, hot dip galvanized finish, 300mm rung spacing, strut type rung, SDL Series, 600mm width, and a 3m length.*

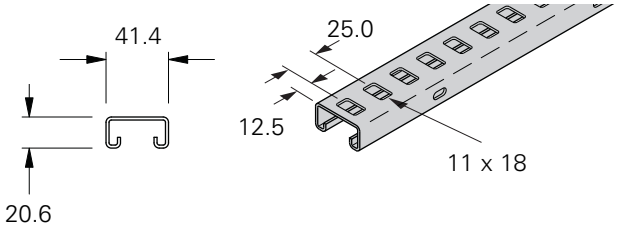
- **Rung Orientation:** Rungs can be oriented with open side up or alternating, instead of the standard down orientation. To order rungs with all up or alternating orientation, change the default "D" value for down rungs to "U" for all rungs with open side up or "A" for alternating up and down rungs.

  Example: *125G300C**U**15ILL-0600-3000 is a ladder with 125mm height, hot dip galvanized finish, 300mm rung spacing, standard rung, all rungs oriented with open side up, SDL Series, 600mm width, and a 3m length.*

Rung Profile Dimensions



C = Standard Rung



B = Strut Rung

Dimensions are in mm

Cable Ladder Construction - Fittings

B-Line series cable ladder fittings are designed to carry loads greater than the straight sections. The C-shape of the fitting side rails is designed with the same height and width for easy attachment to straight sections.

Fittings

All fittings have a straight tangent section at each end. The tangent allows the splice plate to be flush against both the straight section and the fitting when they are connected, increasing the contact surface area and the strength of the overall system.

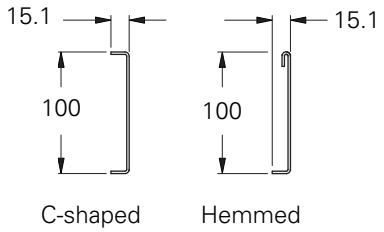
Standard rung spacing for fittings is 300mm, and the standard rung orientation is down. Different rung types and orientations are available (see "Cable Ladder Construction - Rungs" reference page 40).

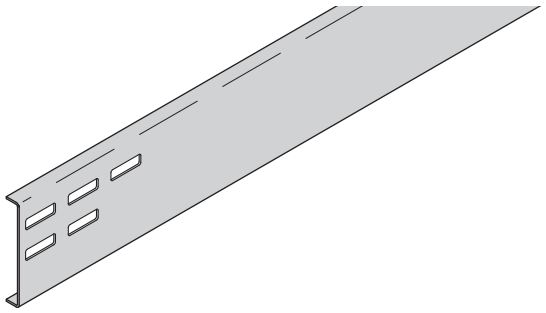
Fitting Options

- **Radius:** Alternate radiuses may be available on request. Please consult B-Line for applications where a radius other than 300mm, 600mm, 900mm, or 1200mm is required.

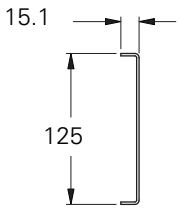
Profile Dimensions

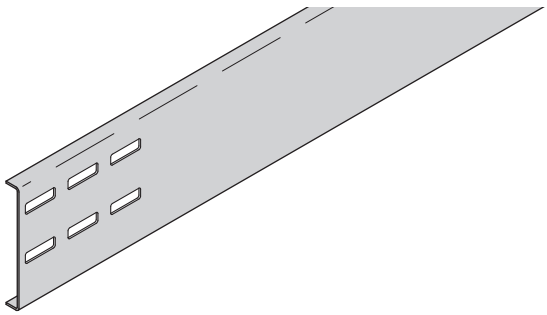
100mm Side Rail Height



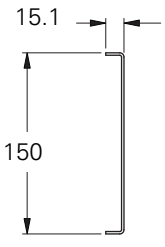


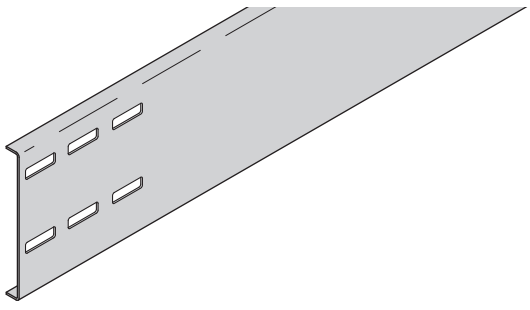
125mm Side Rail Height





150mm Side Rail Height





Dimensions are in mm

Standard Duty Ladder (SDL) Series, Heavy Duty Ladder (HDL) Series & High Performance Ladder (HPL) Series

Straight Section Part Numbering

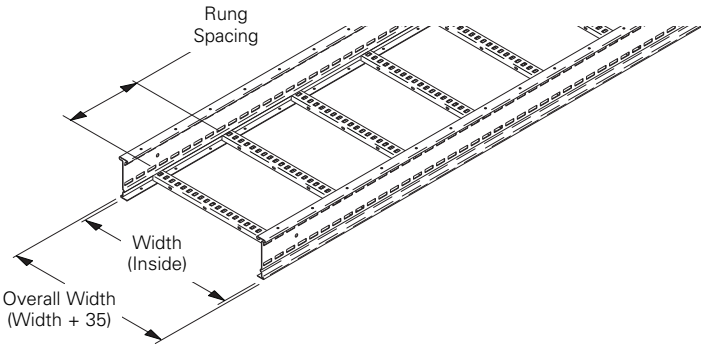
Example: **125 G 300 C D 15I LL - 0600 - 3000**

Height (mm)	Material	* Rung Spacing (mm)	* Rung Shape	* Rung Orientation	Side Rail	Ladder Straight Section	Width (mm)	Length (mm)
100	**G** = Galvanized Steel	**200**	**C** Profile	**D** = Down	**12I** ** = HPL Series		**0150**	**3000**
125	**X** = Stainless Steel 316L	**300**		**A** = Alternating	**15I** = SDL Series		**0300**	**6000**
150	**Y** = Passivated Stainless Steel 316L			**U** = Up	**20I** = HDL Series		**0450**	
							0600	
							0750	
							0900	

*** Other Options Available - See "Cable Ladder Construction"**

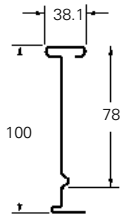
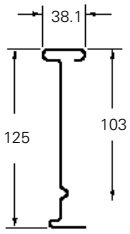
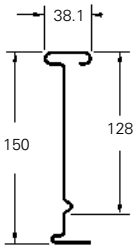
**** Available in SS6 only**

Splice plates not supplied with straight sections. One (1) pair required to connect to system. See pages 66 & 67.



Approval # 18-HS1774501-PDA

All dimensions are in millimeters unless otherwise specified.

Height	Side Rail Dimensions	Series	Material	Span (m)	IEC Loads (kg/m)	NEMA Loads (kg/m)	Material	Span (m)	IEC Loads (kg/m)	NEMA Loads (kg/m)
100mm		HPL	HDG				SS6	3	250	240
								4	191	161
								5	132	86
								6	73	60
		SDL	HDG	3	381	310	SS6	3	386	305
				4	287	232		4	290	228
				5	194	154		5	195	152
				6	101	77		6	100	76
		HDL	HDG	3	447	424	SS6	3	542	462
				4	344	318		4	395	350
				5	242	212		5	248	239
				6	140	106		6	102	128
125mm		HPL	HDG				SS6	3	275	246
								4	213	171
								5	151	109
								6	89	76
		SDL	HDG	3	322	525	SS6	3	369	408
				4	255	317		4	285	229
				5	188	203		5	202	146
				6	122	141		6	119	102
		HDL	HDG	3	512	525	SS6	3	525	525
				4	398	459		4	407	375
				5	284	293		5	289	240
				6	171	204		6	171	167
150mm		HPL	HDG				SS6	3	364	225
								4	274	169
								5	185	108
								6	96	75
		SDL	HDG	3	429	525	SS6	3	386	444
				4	327	348		4	299	249
				5	226	223		5	213	159
				6	125	155		6	127	111
		HDL	HDG	3	518	525	SS6	3	525	525
				4	405	463		4	413	373
				5	292	296		5	301	252
				6	180	206		6	189	175

NEMA VE-I

NEMA VE-I

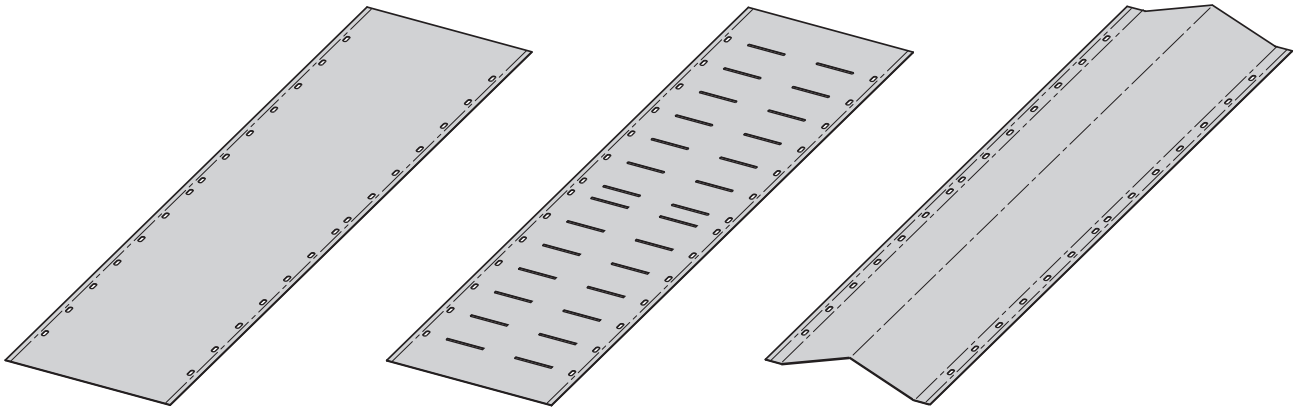
IEC 61537

IEC 61537

All tests conducted per IEC 61537 Test Type II with 900mm width, and 300mm rung spacing.

All dimensions are in millimeters unless otherwise specified.

Covers



Solid Flanged | Ventilated Flanged | Peaked Flanged

A full range of covers is 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 allow heat to escape and minimize effects of wind pressure in outdoor applications.

Eaton recommends that covers be placed on vertical cable ladder runs to a height of 1.5m to 2.5m above the floor to isolate both cables and personnel.

Cover clamps are not included with the cover and must be ordered separately.

Steel Cover Part Numbering

Prefix

Example: **CIF S G15 LL - 0600 - 3000**

Flanged Cover	Cover Type	Material	Ladder Straight Section	Width (mm)	Length *
CIF	**S** = Solid **L** = Ventilated **P** = Peaked	**G15** = Galvanized Steel **X10** = Stainless Steel 316 **Y10** = Passivated Stainless Steel 316L		**0150** = 150mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**1500** = 1.5m **3000** = 3.0m

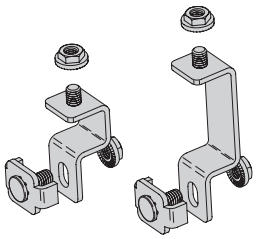
* 750 (750mm) and 900 (900mm) widths only available in 1500 (1.5m) lengths.

All dimensions are in millimeters unless otherwise specified.

High Performance Cover Clamp

- Compatible with both flat and peaked cover options
- Sold per piece with hardware
- Additional clamps may be necessary in extreme wind applications

(*) Finish: Insert MZ or X for SS6

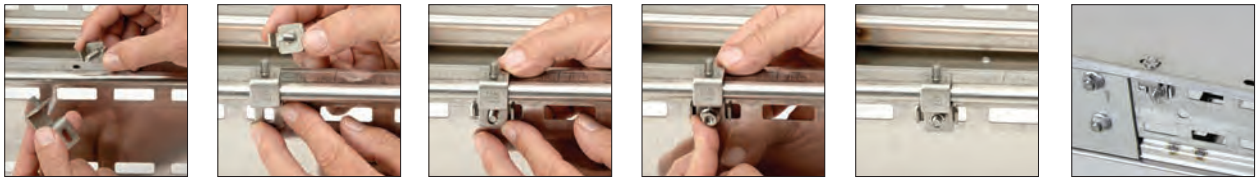


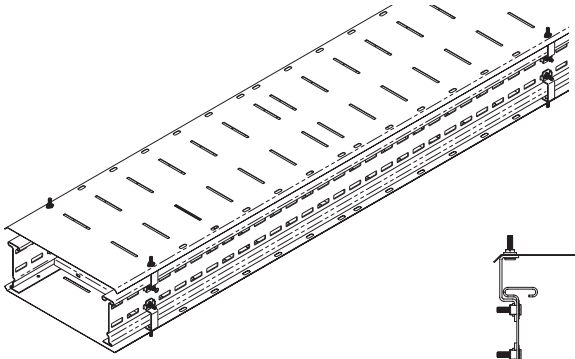
Catalog Number	Description	Raised Height mm	Raised Height In.
LCCSD(*)	Standard Clamp	–	–
LCCSDR(*)	Raised Clamp	35.5	1.4

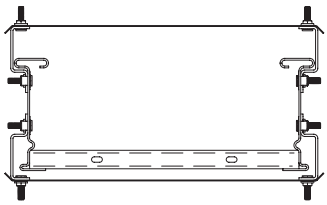
Number of clamps suggested for assemblies
(Additional clamps may be necessary in extreme wind applications. Please contact blinetechnicalsupport@Eaton.com for more information around wind restraints and project requirements.)

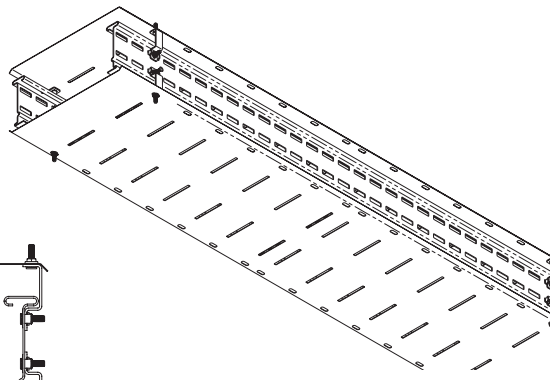
Assembly	Cover Size	# of Clamps
Straight Section	1.5m length	4
	3.0m length	6
30° - 60° Horizontal Bend	All radii	4
90° Horizontal Bend	150mm to 600mm radius	4
	900mm to 1200mm radius	6
30° - 60° Vertical Bend	All radii	4
90° Vertical Bend	150mm to 600mm radius	4
	900mm to 1200mm radius	6
Horizontal Tee	150mm to 600mm radius	6
	900mm to 1200mm radius	8
Horizontal Cross	150mm to 600mm radius	8
	900mm to 1200mm radius	12

Visit Eaton.com/ccs for installation instructions and additional clamp quantities for other fittings.





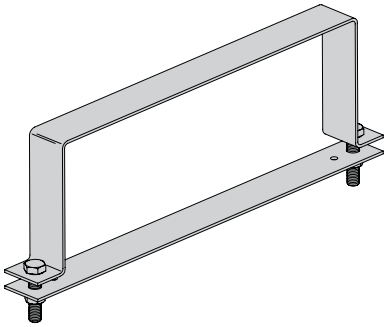


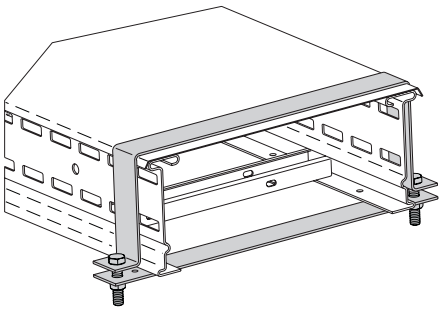


Heavy Duty Cover Clamp

- Recommended for outdoor service
- (xx) Insert tray width - 150 to 900
- Includes M10 hardware
- (*) Finishes available: G or SS6

Ladder Height mm	Catalog No.
100	LCH100(*)(xx)
125	LCH125(*)(xx)
150	LCH150(*)(xx)



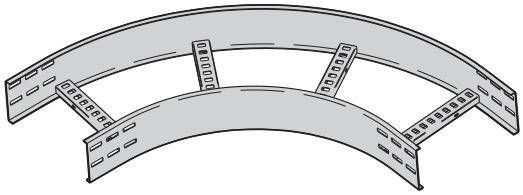


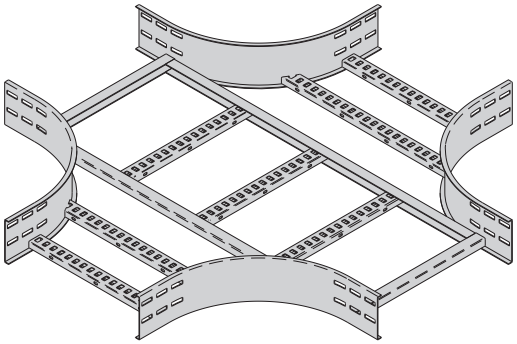
Additional clamps may be necessary in high wind conditions, please contact blinetechnicalsupport@eaton.com

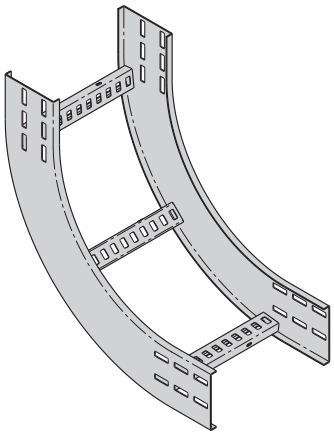
All dimensions are in millimeters unless otherwise specified.

Steel Cable Ladder - Fittings & Covers

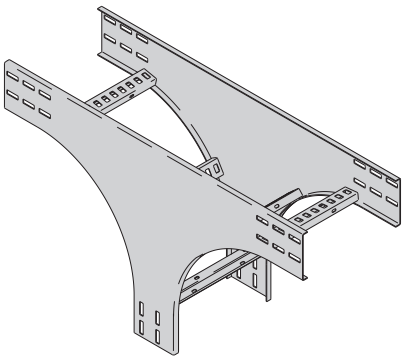
B-Line series cable ladder fittings are designed to support cables as they transition directions. Side rails are C-shaped with standard 300mm rung spacing.







Fittings engineered with 100mm tangents for splicing integrity.



Fittings Part Numbering

Prefix

Example: **125 G 300 C D 20 C LVO - 0600 - 90 R0600**

Height (mm)	Material	Rung Spacing (mm)	* Rung Shape	* Rung Orientation	Side Rail	Side Rail Type	Ladder Fitting Type	Width (mm)	Angle † (°)	Radius (mm)
100 = 100mm	** **G** = Galvanized Steel	**300** = 300mm	**C** = Standard Profile	**D** = Down	**12** = HPL Series	**C** = C-Shape	**LHB** = Horiz. Bend	**0150** = 150mm	**30**	**R0300** = 300mm
125 = 125mm	**X** = Stainless Steel 316L			**A** = Alternating	**15** = SDL Series		**LVI** = Vert.Inside Bend	**0300** = 300mm	**45**	**R0600** = 600mm
150 = 150mm	**Y** = Passivated Stainless Steel 316L			**U** = Up	**20** = HDL Series	**H** = Hemmed	**LVO** = Vert. Outside Bend	**0450** = 450mm	**60**	**R0900** = 900mm
							LHT = Horiz. Tee †	**0600** = 600mm	**90**	**R1200** = 1200mm
							LHX = Horiz. Cross †	**0750** = 750mm		
							LVTD = Vert. Tee Down †	**0900** = 900mm		
							LVTU = Vert. Tee Up †			
							LCSF = Cable Support Fitting †			
							LHYL = LEFT Hand Horiz. Wye			
							LHYR = Right Hand Horiz. Wye			
							LVR = Vert. Riser †			

*** Other Options Available**

See "Cable Ladder Construction" for more detail

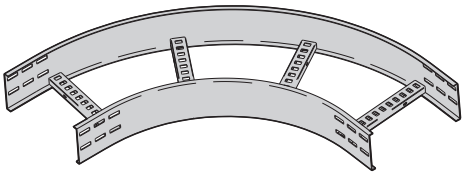
**** Not Available with HPL Series**

† No angle designation required on these fittings. See fitting page when creating part numbers.

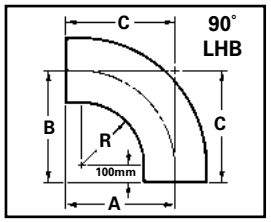
All dimensions are in millimeters unless otherwise specified.

Horizontal Bends 90° (LHB)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.



90˚ Horizontal Bend



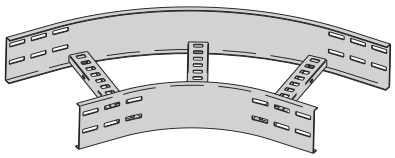
Bend Radius R mm	Ladder Width mm	90˚ Horizontal Bend Catalog No.	Dimensions A mm	B mm	C mm
300	150	**(Pre)LHB-0150-90R0300**	475	475	475
	300	**(Pre)LHB-0300-90R0300**	550	550	550
	450	**(Pre)LHB-0450-90R0300**	625	625	625
	600	**(Pre)LHB-0600-90R0300**	700	700	700
	750	**(Pre)LHB-0750-90R0300**	775	775	775
	900	**(Pre)LHB-0900-90R0300**	850	850	850
600	150	**(Pre)LHB-0150-90R0600**	775	775	775
	300	**(Pre)LHB-0300-90R0600**	850	850	850
	450	**(Pre)LHB-0450-90R0600**	925	925	925
	600	**(Pre)LHB-0600-90R0600**	1000	1000	1000
	750	**(Pre)LHB-0750-90R0600**	1075	1075	1075
	900	**(Pre)LHB-0900-90R0600**	1150	1150	1150

(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

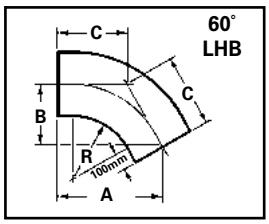
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

Horizontal Bends 60° (LHB)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.



60˚ Horizontal Bend



Bend Radius R mm	Ladder Width mm	60˚ Horizontal Bend Catalog No.	Dimensions A mm	B mm	C mm
300	150	**(Pre)LHB-0150-60R0300**	476	275	317
	300	**(Pre)LHB-0300-60R0300**	541	312	360
	450	**(Pre)LHB-0450-60R0300**	606	350	404
	600	**(Pre)LHB-0600-60R0300**	670	387	447
	750	**(Pre)LHB-0750-60R0300**	735	425	490
	900	**(Pre)LHB-0900-60R0300**	800	425	534
600	150	**(Pre)LHB-0150-60R0600**	735	425	490
	300	**(Pre)LHB-0300-60R0600**	800	462	534
	450	**(Pre)LHB-0450-60R0600**	865	500	577
	600	**(Pre)LHB-0600-60R0600**	930	537	620
	750	**(Pre)LHB-0750-60R0600**	995	575	663
	900	**(Pre)LHB-0900-60R0600**	1060	612	707

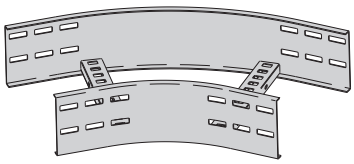
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

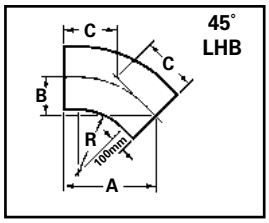
All dimensions are in millimeters unless otherwise specified.

Horizontal Bends 45° (LHB)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.



45˚ Horizontal Bend



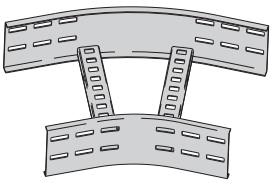
Bend Radius R mm	Ladder Width mm	45˚ Horizontal Bend Catalog No.	Dimensions A mm	B mm	C mm
300	150	(Pre)LHB-0150-45R0300	437	181	256
	300	(Pre)LHB-0300-45R0300	490	203	287
	450	(Pre)LHB-0450-45R0300	543	225	318
	600	(Pre)LHB-0600-45R0300	596	247	349
	750	(Pre)LHB-0750-45R0300	649	269	380
	900	(Pre)LHB-0900-45R0300	702	291	411
600	150	(Pre)LHB-0150-45R0600	649	269	380
	300	(Pre)LHB-0300-45R0600	702	291	411
	450	(Pre)LHB-0450-45R0600	755	313	443
	600	(Pre)LHB-0600-45R0600	809	335	474
	750	(Pre)LHB-0750-45R0600	862	357	505
	900	(Pre)LHB-0900-45R0600	915	379	536

(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

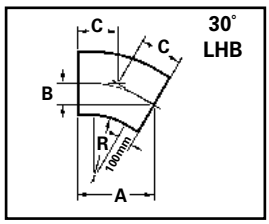
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

Horizontal Bends 30° (LHB)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.



30˚ Horizontal Bend



Bend Radius R mm	Ladder Width mm	30˚ Horizontal Bend Catalog No.	Dimensions A mm	B mm	C mm
300	150	(Pre)LHB-0150-30R0300	375	100	200
	300	(Pre)LHB-0300-30R0300	412	110	221
	450	(Pre)LHB-0450-30R0300	450	120	241
	600	(Pre)LHB-0600-30R0300	487	130	261
	750	(Pre)LHB-0750-30R0300	525	140	281
	900	(Pre)LHB-0900-30R0300	562	150	301
600	150	(Pre)LHB-0150-30R0600	525	140	281
	300	(Pre)LHB-0300-30R0600	562	150	301
	450	(Pre)LHB-0450-30R0600	600	160	321
	600	(Pre)LHB-0600-30R0600	627	170	341
	750	(Pre)LHB-0750-30R0600	675	180	361
	900	(Pre)LHB-0900-30R0600	712	190	381

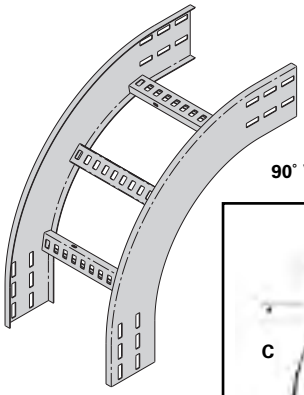
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

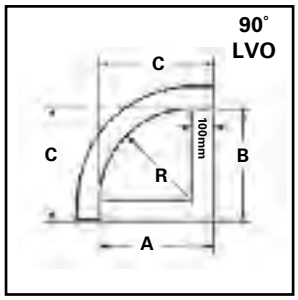
All dimensions are in millimeters unless otherwise specified.

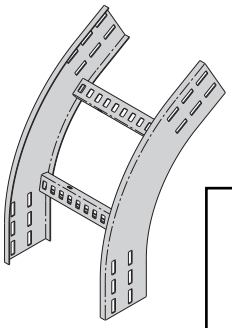
Vertical Outside Bends 90˚ & 60° (LVO)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.

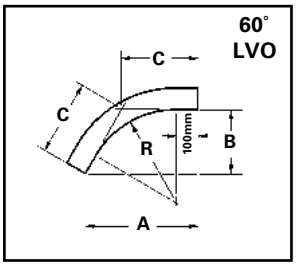


90˚ Vertical Outside





60˚ Vertical Outside



Bend Radius R	Ladder Width	Vert. Outside Bend	VO Side Rail Height		
			100mm - 150mm		
mm	mm	Catalog No.	A mm	B mm	C mm
90°					
300	150	**(Prefix)LVO-0150-90R0300**	400	400	400
	300	**(Prefix)LVO-0300-90R0300**			
	450	**(Prefix)LVO-0450-90R0300**			
	600	**(Prefix)LVO-0600-90R0300**			
	750	**(Prefix)LVO-0750-90R0300**			
	900	**(Prefix)LVO-0900-90R0300**			
600	150	**(Prefix)LVO-0150-90R0600**	700	700	700
	300	**(Prefix)LVO-0300-90R0600**			
	450	**(Prefix)LVO-0450-90R0600**			
	600	**(Prefix)LVO-0600-90R0600**			
	750	**(Prefix)LVO-0750-90R0600**			
	900	**(Prefix)LVO-0900-90R0600**			
60°					
300	150	**(Prefix)LVO-0150-60R0300**	410	237	273
	300	**(Prefix)LVO-0390-60R0300**			
	450	**(Prefix)LVO-0450-60R0300**			
	600	**(Prefix)LVO-0600-60R0300**			
	750	**(Prefix)LVO-0750-60R0300**			
	900	**(Prefix)LVO-0900-60R0300**			
600	150	**(Prefix)LVO-0150-60R0600**	670	387	446
	300	**(Prefix)L(VO-0300-60R0600**			
	450	**(Prefix)LVO-0450-60R0600**			
	600	**(Prefix)LVO-0600-60R0600**			
	750	**(Prefix)LVO-0750-60R0600**			
	900	**(Prefix)LVO-0900-60R0600**			

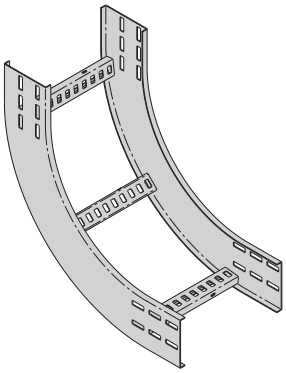
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

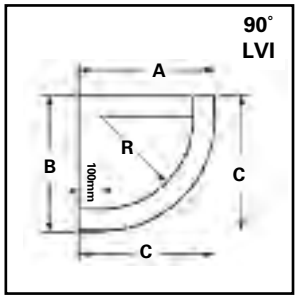
All dimensions are in millimeters unless otherwise specified.

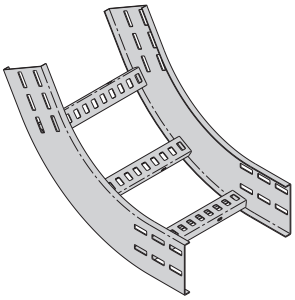
Vertical Inside Bends 90˚ & 60° (LVI)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.

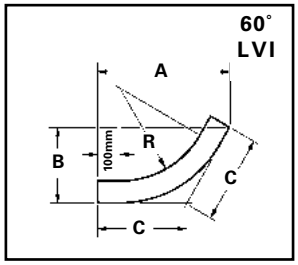


90˚ Vertical Inside





60˚ Vertical Inside



Bend Radius R mm	Ladder Width mm	Vert. Inside Bend Catalog No.	VI Side Rail Height 100mm A mm	100mm B mm	100mm C mm	125mm A mm	125mm B mm	125mm C mm	150mm A mm	150mm B mm	150mm C mm
90°											
300	150	**(Prefix)LVI-0150-90R0300**	500	500	500	525	525	525	550	550	550
	300	**(Prefix)LVI-0300-90R0300**									
	450	**(Prefix)LVI-0450-90R0300**									
	600	**(Prefix)LVI-0600-90R0300**									
	750	**(Prefix)LVI-0750-90R0300**									
	900	**(Prefix)LVI-0900-90R0300**									
600	150	**(Prefix)LVI-0150-90R0600**	800	800	800	825	825	825	850	850	850
	300	**(Prefix)LVI-0300-90R0600**									
	450	**(Prefix)LVI-0450-90R0600**									
	600	**(Prefix)LVI-0600-90R0600**									
	750	**(Prefix)LVI-0750-90R0600**									
	900	**(Prefix)LVI-0900-90R0600**									
60°											
300	150	**(Prefix)LVI-0150-60R0300**	496	287	331	518	300	345	540	312	360
	300	**(Prefix)LVI-0390-60R0300**									
	450	**(Prefix)LVI-0450-60R0300**									
	600	**(Prefix)LVI-0600-60R0300**									
	750	**(Prefix)LVI-0750-60R0300**									
	900	**(Prefix)LVI-0900-60R0300**									
600	150	**(Prefix)LVI-0150-60R0600**	756	437	504	778	449	519	800	462	533
	300	**(Prefix)LVI-0300-60R0600**									
	450	**(Prefix)LVI-0450-60R0600**									
	600	**(Prefix)LVI-0600-60R0600**									
	750	**(Prefix)LVI-0750-60R0600**									
	900	**(Prefix)LVI-0900-60R0600**									

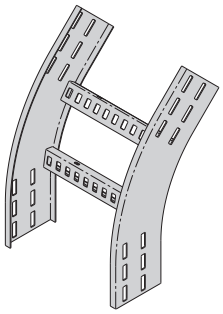
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

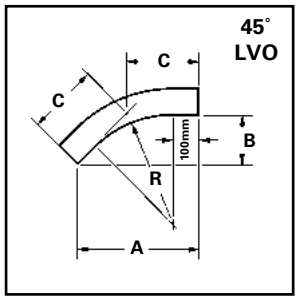
All dimensions are in millimeters unless otherwise specified.

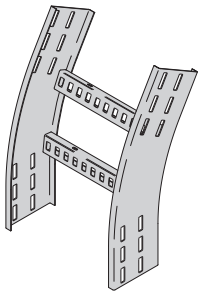
Vertical Bends 45˚ & 30° (LVO)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.

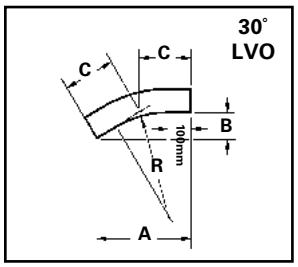


45˚ Vertical Outside





30˚ Vertical Outside



Bend Radius R mm	Ladder Width mm	Vert. Outside Bend Catalog No.	VO Side Rail Height 100mm - 150mm A mm	B mm	C mm
45°					
300	150	**(Prefix)LVO-0150-45R0300**	383	159	224
	300	**(Prefix)LVO-0300-45R0300**			
	450	**(Prefix)LVO-0450-45R0300**			
	600	**(Prefix)LVO-0600-45R0300**			
	750	**(Prefix)LVO-0750-45R0300**			
	900	**(Prefix)LVO-0900-45R0300**			
600	150	**(Prefix)LVO-0150-45R0600**	595	246	349
	300	**(Prefix)LVO-0300-45R0600**			
	450	**(Prefix)LVO-0450-45R0600**			
	600	**(Prefix)LVO-0600-45R0600**			
	750	**(Prefix)LVO-0750-45R0600**			
	900	**(Prefix)LVO-0900-45R0600**			
30°					
300	150	**(Prefix)LVO-0150-30R0300**	337	90	180
	300	**(Prefix)LVO-0390-30R0300**			
	450	**(Prefix)LVO-0450-30R0300**			
	600	**(Prefix)LVO-0600-30R0300**			
	750	**(Prefix)LVO-0750-30R0300**			
	900	**(Prefix)LVO-0900-30R0300**			
600	150	**(Prefix)LVO-0150-30R0600**	487	130	261
	300	**(Prefix)L(VO-0300-30R0600**			
	450	**(Prefix)LVO-0450-30R0600**			
	600	**(Prefix)LVO-0600-30R0600**			
	750	**(Prefix)LVO-0750-30R0600**			
	900	**(Prefix)LVO-0900-30R0600**			

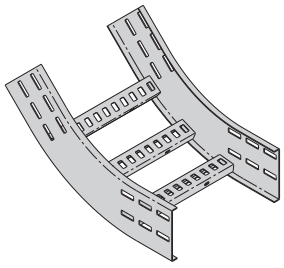
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

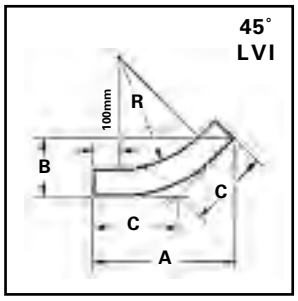
All dimensions are in millimeters unless otherwise specified.

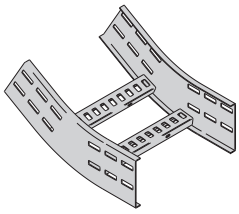
Vertical Bends 45˚ & 30° (LVI)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.

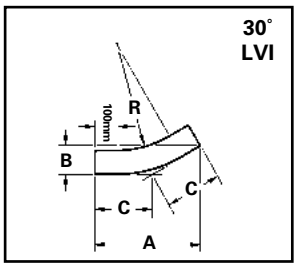


45˚ Vertical Inside





30˚ Vertical Inside



Bend Radius R mm	Ladder Width mm	Vert. Inside Bend Catalog No.	VI Side Rail Height 100mm A mm	100mm B mm	100mm C mm	125mm A mm	125mm B mm	125mm C mm	150mm A mm	150mm B mm	150mm C mm
45°											
300	150	**(Prefix)LVI-0150-45R0300**	454	188	266	471	195	276	489	203	286
	300	**(Prefix)LVI-0300-45R0300**									
	450	**(Prefix)LVI-0450-45R0300**									
	600	**(Prefix)LVI-0600-45R0300**									
	750	**(Prefix)LVI-0750-45R0300**									
	900	**(Prefix)LVI-0900-45R0300**									
600	150	**(Prefix)LVI-0150-45R0600**	666	276	390	683	283	400	701	290	411
	300	**(Prefix)LVI-0300-45R0600**									
	450	**(Prefix)LVI-0450-45R0600**									
	600	**(Prefix)LVI-0600-45R0600**									
	750	**(Prefix)LVI-0750-45R0600**									
	900	**(Prefix)LVI-0900-45R0600**									
30°											
300	150	**(Prefix)LVI-0150-30R0300**	387	104	207	399	107	214	412	110	221
	300	**(Prefix)LVI-0390-30R0300**									
	450	**(Prefix)LVI-0450-30R0300**									
	600	**(Prefix)LVI-0600-30R0300**									
	750	**(Prefix)LVI-0750-30R0300**									
	900	**(Prefix)LVI-0900-30R0300**									
600	150	**(Prefix)LVI-0150-30R0600**	539	144	288	549	147	294	562	150	301
	300	**(Prefix)LVI-0300-30R0600**									
	450	**(Prefix)LVI-0450-30R0600**									
	600	**(Prefix)LVI-0600-30R0600**									
	750	**(Prefix)LVI-0750-30R0600**									
	900	**(Prefix)LVI-0900-30R0600**									

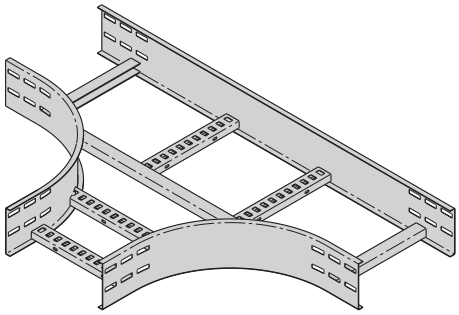
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

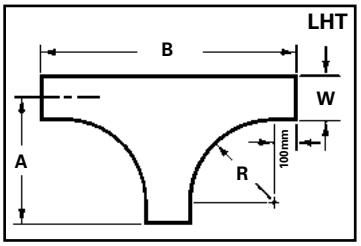
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Horizontal Tee (LHT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Two (2) pair required to connect to system.





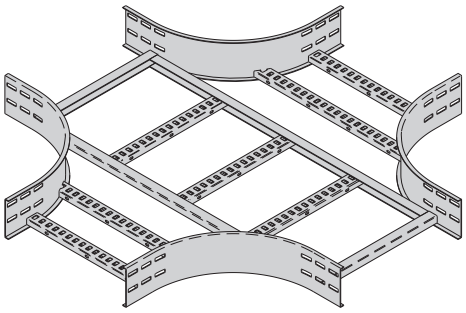
Bend Radius R mm	Ladder Width mm	Horizontal Tee Catalog Number	Dimensions A mm	Dimensions B mm
300	150	(Pre)LHT-0150-R0300	475	950
	300	(Pre)LHT-0300-R0300	550	1000
	450	(Pre)LHT-0450-R0300	625	1250
	600	(Pre)LHT-0600-R0300	700	1400
	750	(Pre)LHT-0750-R0300	775	1500
	900	(Pre)LHT-0900-R0300	850	1700
600	150	(Pre)LHT-0150-R0600	775	1550
	300	(Pre)LHT-0300-R0600	850	1700
	450	(Pre)LHT-0450-R0600	925	1850
	600	(Pre)LHT-0600-R0600	1000	2000
	750	(Pre)LHT-0750-R0600	1075	2150
	900	(Pre)LHT-0900-R0600	1150	2300

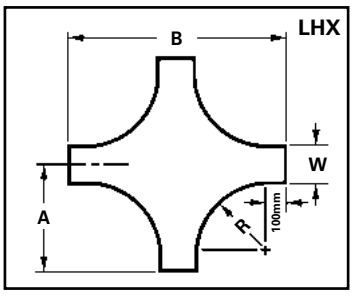
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

Horizontal Cross (LHX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Three (3) pair required to connect to system.





Bend Radius R mm	Ladder Width mm	Horizontal Cross Catalog Number	Dimensions A mm	Dimensions B mm
300	150	(Pre)LHX-0150-R0300	475	900
	300	(Pre)LHX-0300-R0300	550	1100
	450	(Pre)LHX-0450-R0300	625	1250
	600	(Pre)LHX-0600-R0300	700	1400
	750	(Pre)LHX-0750-R0300	775	1550
	900	(Pre)LHX-0900-R0300	850	1700
600	150	(Pre)LHX-0150-R0600	775	1550
	300	(Pre)LHX-0300-R0600	850	1700
	450	(Pre)LHX-0450-R0600	925	1850
	600	(Pre)LHX-0600-R0600	1000	2000
	750	(Pre)LHX-0750-R0600	1075	2150
	900	(Pre)LHX-0900-R0600	1150	2300

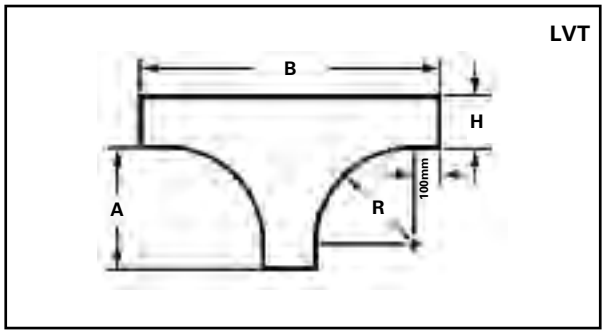
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

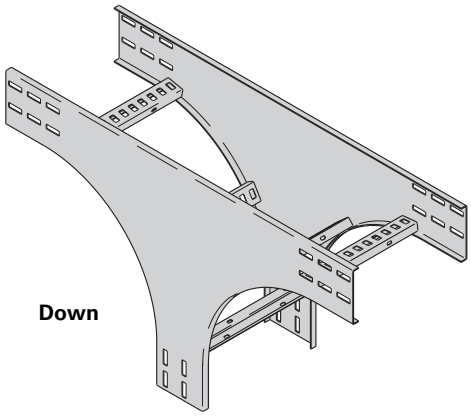
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

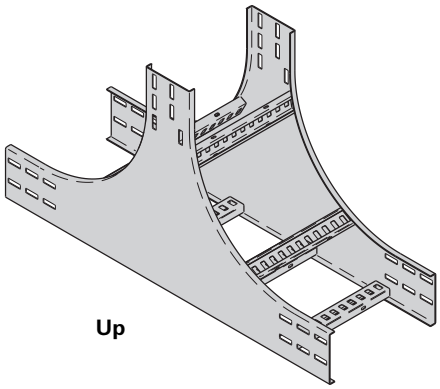
All dimensions are in millimeters unless otherwise specified.

Vertical Tee Up/Down (LVTU/LVTD)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Two (2) pair required to connect to system.







Bend Radius R mm	Ladder Width mm	Vertical Tee Down Catalog No.	Vertical Tee Up Catalog No.	Side Rail Height "H" 100mm A mm	100mm B mm	125mm A mm	125mm B mm	150mm A mm	150mm B mm
300	150	(Prefix)LVTD-0150-R0300	(Prefix)LVTU-0150-R0300	400	900	400	925	400	950
	300	(Prefix)LVTD-0300-R0300	(Prefix)LVTU-0300-R0300						
	450	(Prefix)LVTD-0450-R0300	(Prefix)LVTU-0450-R0300						
	600	(Prefix)LVTD-0600-R0300	(Prefix)LVTU-0600-R0300						
	750	(Prefix)LVTD-0750-R0300	(Prefix)LVTU-0750-R0300						
	900	(Prefix)LVTD-0900-R0300	(Prefix)LVTU-0900-R0300						
600	150	(Prefix)LVTD-0150-R0600	(Prefix)LVTU-0150-R0600	700	1500	700	1525	700	1550
	300	(Prefix)LVTD-0300-R0600	(Prefix)LVTU-0300-R0600						
	450	(Prefix)LVTD-0450-R0600	(Prefix)LVTU-0450-R0600						
	600	(Prefix)LVTD-0600-R0600	(Prefix)LVTU-0600-R0600						
	750	(Prefix)LVTD-0750-R0600	(Prefix)LVTU-0750-R0600						
	900	(Prefix)LVTD-0900-R0600	(Prefix)LVTU-0900-R0600						

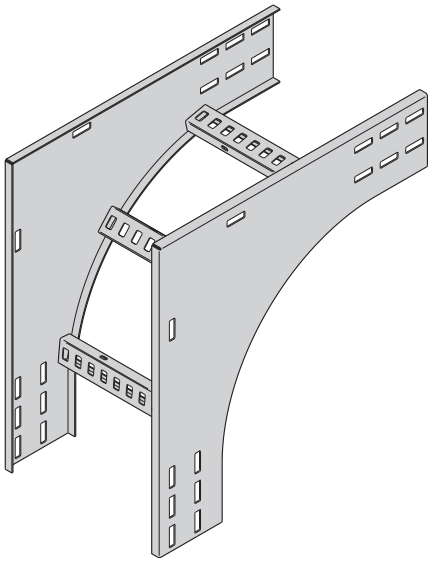
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

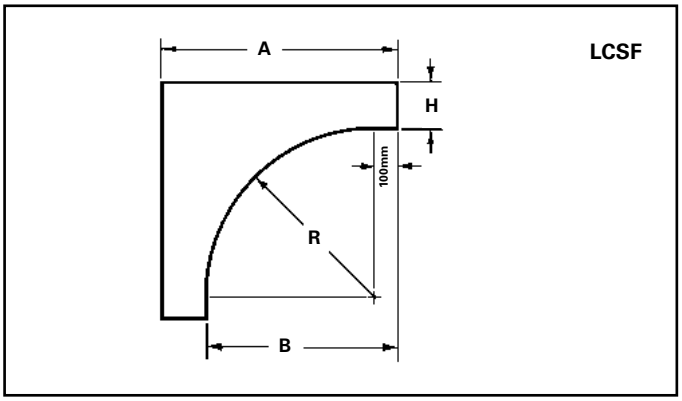
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Cable Support Fittings (LCSF)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.





This fitting is recommended for use at the top of vertical runs to support the weight of the cables. The top cross brace is drilled for installing eye bolts, ordered separately.

Bend Radius R mm	Ladder Width mm	Catalog No.	Side Rail Height "H"					
			100mm		125mm		150mm	
			A mm	B mm	A mm	B mm	A mm	B mm
300	150	(Prefix)LCSF-0150-R0300	500	400	525	400	550	400
	300	(Prefix)LCSF-0300-R0300						
	450	(Prefix)LCSF-0450-R0300						
	600	(Prefix)LCSF-0600-R0300						
	750	(Prefix)LCSF-0750-R0300						
	900	(Prefix)LCSF-0900-R0300						
600	150	(Prefix)LCSF-0150-R0600	800	700	825	700	850	700
	300	(Prefix)LCSF-0300-R0600						
	450	(Prefix)LCSF-0450-R0600						
	600	(Prefix)LCSF-0600-R0600						
	750	(Prefix)LCSF-0750-R0600						
	900	(Prefix)LCSF-0900-R0600						

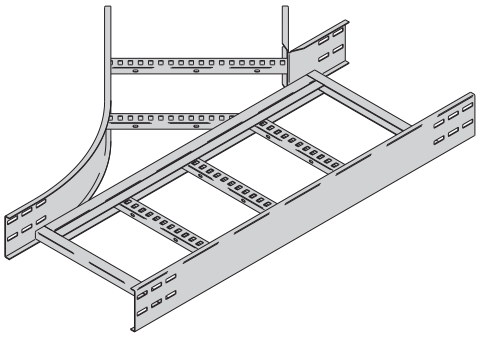
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

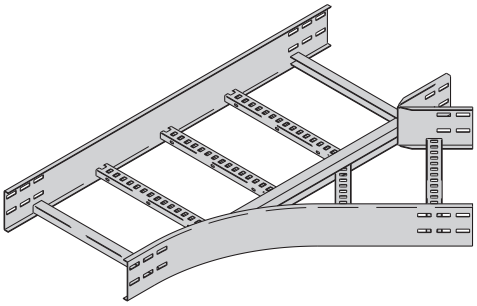
All dimensions are in millimeters unless otherwise specified.

Horizontal Wye Left Hand (LHYL) & Right Hand (LHYR)

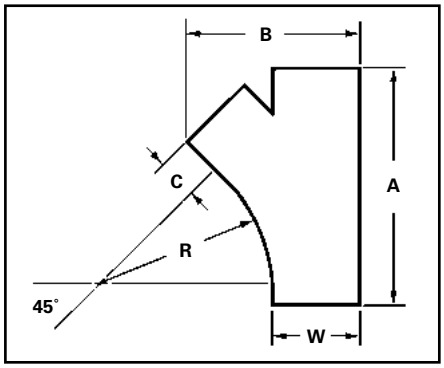
Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Two (2) pair required to connect to system.

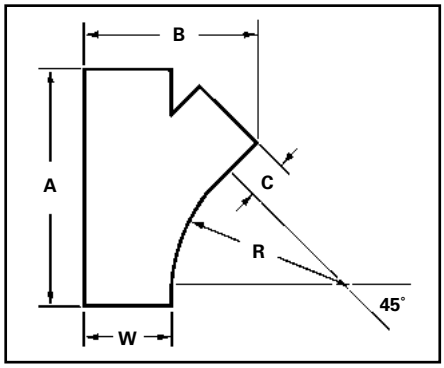


Left Hand Wye - HYL



Right Hand Wye - HYR





R = Radius

Bend Radius R mm	Ladder Width W mm	Left Hand Wye Catalog #	Right Hand Wye Catalog #	Dimensions A mm	B mm	C mm
600	150	(Prefix)-LHYL-0150	(Prefix)-LHYR-0150	761	400.9	102
	300	(Prefix)-LHYL-0300	(Prefix)-LHYR-0300	973	657	252
	450	(Prefix)-LHYL-0450	(Prefix)-LHYR-0450	1185	913	402
	600	(Prefix)-LHYL-0600	(Prefix)-LHYR-0600	1397	1169.1	552
	750	(Prefix)-LHYL-0750	(Prefix)-LHYR-0750	1609	1425.2	702
	900	(Prefix)-LHYL-0900	(Prefix)-LHYR-0900	1821	1681.2	852

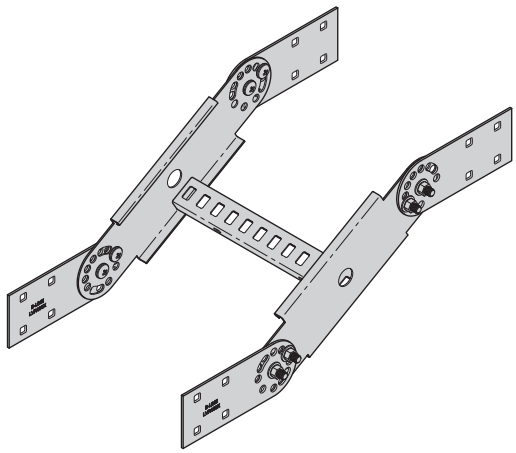
(Prefix) See page 47 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Vertical Riser Assembly

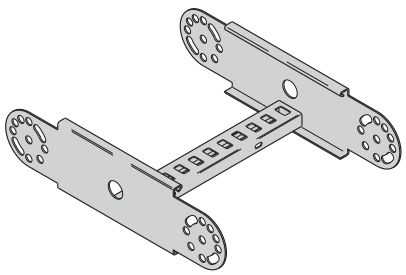
Splice plates and hardware included.
(*) Insert G or SS6



Ladder Height mm	Ladder Width mm	Catalog No.
100	150	LVR100(*)-150
	300	LVR100(*)-300
	450	LVR100(*)-450
	600	LVR100(*)-600
	750	LVR100(*)-750
	900	LVR100(*)-900
125	150	LVR125(*)-150
	300	LVR125(*)-300
	450	LVR125(*)-450
	600	LVR125(*)-600
	750	LVR125(*)-750
	900	LVR125(*)-900
150	150	LVR150(*)-150
	300	LVR150(*)-300
	450	LVR150(*)-450
	600	LVR150(*)-600
	750	LVR150(*)-750
	900	LVR150(*)-900

Vertical Riser Add-On Kit

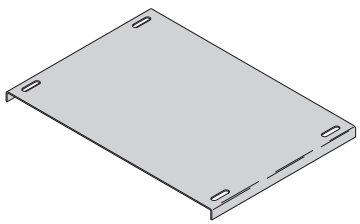
Splice plates not supplied with fitting.
(*) Insert G or SS6



Ladder Height mm	Ladder Width mm	Catalog No.
100	150	LVR100(*)-150-A
	300	LVR100(*)-300-A
	450	LVR100(*)-450-A
	600	LVR100(*)-600-A
	750	LVR100(*)-750-A
	900	LVR100(*)-900-A
125	150	LVR125(*)-150-A
	300	LVR125(*)-300-A
	450	LVR125(*)-450-A
	600	LVR125(*)-600-A
	750	LVR125(*)-750-A
	900	LVR125(*)-900-A
150	150	LVR150(*)-150-A
	300	LVR150(*)-300-A
	450	LVR150(*)-450-A
	600	LVR150(*)-600-A
	750	LVR150(*)-750-A
	900	LVR150(*)-900-A

Steel Flanged Flexible Riser Cover for Metric Cable Ladder

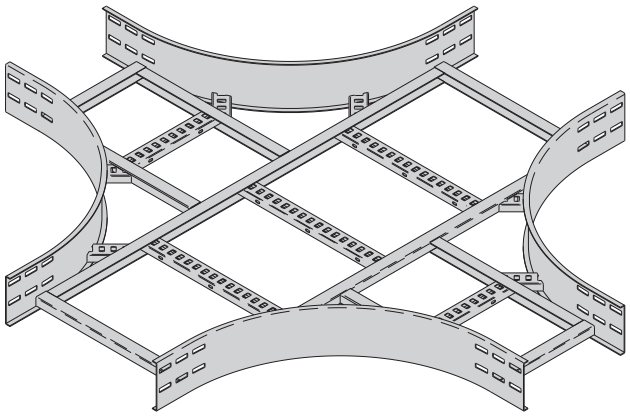
- Cover to match Flexible Riser Fitting.
- (*) Insert G or SS6

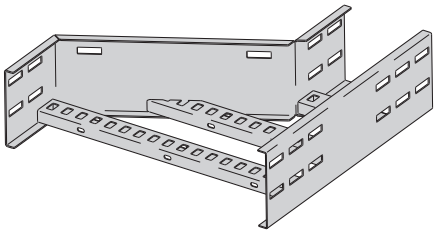


Ladder Width	Catalog No.
150	CCFS(*)LVR-0150
300	CCFS(*)LVR-0300
450	CCFS(*)LVR-0450
600	CCFS(*)LVR-0600
750	CCFS(*)LVR-0750
900	CCFS(*)LVR-9600

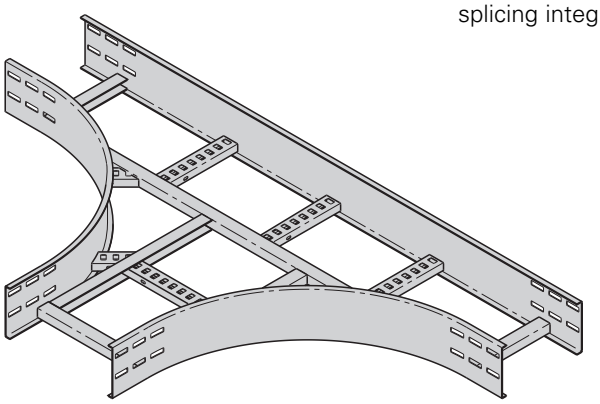
All dimensions are in millimeters unless otherwise specified.

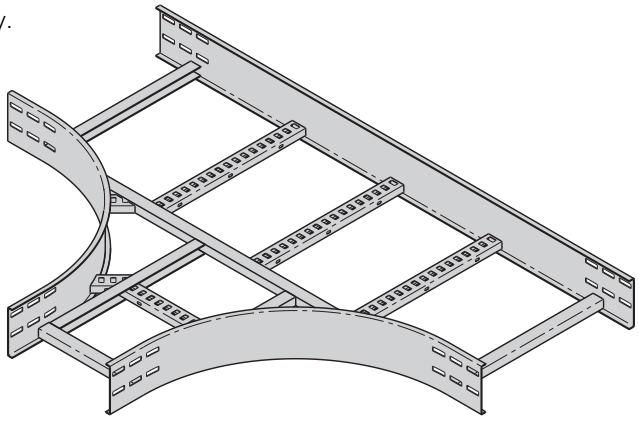
B-Line series cable ladder reducing and expanding fittings are designed to support cables as they transition directions. Side rails are C-shaped with standard 300mm rung spacing.





Fittings engineered with 100mm tangents for splicing integrity.





Reducing & Expanding Fittings Part Numbering

Prefix

Example: **125 G 300 C D 15 C LRR - 0600 - 0300 R0300**

Height	Material	Rung Spacing (mm)	* Rung Shape	* Rung Orientation	Side Rail	Side Rail Type	Ladder Fitting Type	Width 1	Width 2	Radius
100 = 100mm	** **G** = Galvanized Steel	**300** = 300mm	**C** = Standard Profile	**D** = Down	**12** HPL Series	**C** = C-Shaped	**LRR** = Right Reducer	**0150** = 150mm	**0150** = 150mm	**R0300** = 300mm
125 = 125mm	**X** = Stainless Steel 316L			**A** = Alternating	**15** SDL Series		**LLR** = Left Reducer	**0300** = 300mm	**0300** = 300mm	**R0600** = 600mm
150 = 150mm	**Y** = Passivated Stainless Steel 316L			**U** = Up	**20** HDL Series	**H** = Hemmed	**LSR** = Straight Reducer	**0450** = 450mm	**0450** = 450mm	**R0900** = 900mm
							LET = Horizontal Expanding Tee	**0600** = 600mm	**0600** = 600mm	**R1200** = 1200mm
							LRT = Horizontal Reducing Tee	**0750** = 750mm	**0750** = 750mm	
							LRX = Horizontal Expanding/Reducing Cross	**0900** = 900mm	**0900** = 900mm	

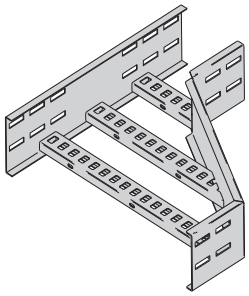
*** Other Options Available**
See "Cable Ladder Construction"

** Not available with HPL Series

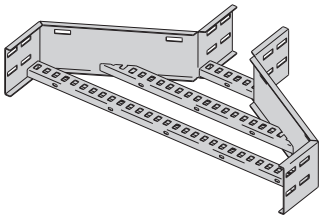
All dimensions are in millimeters unless otherwise specified.

Reducers (LLR, LSR, LRR)

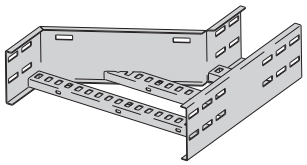
Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
One (1) pair required to connect to system.



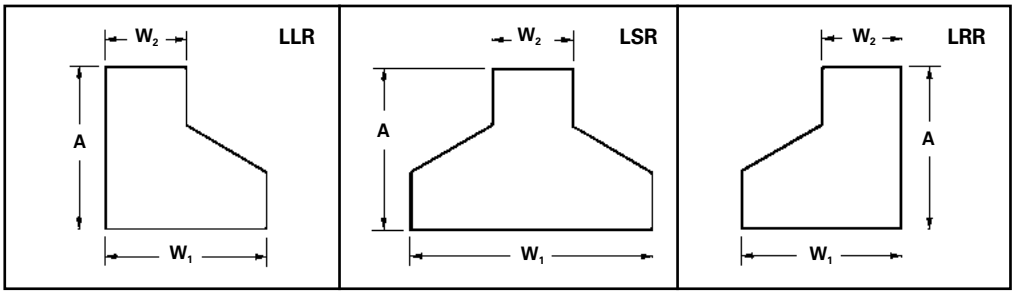
Left Reducer



Straight Reducer



Right Reducer



Ladder Width		Left Hand Reducer		Straight Reducer		Right Hand Reducer	
W_1	W_2	Catalog No.	A	Catalog No.	A	Catalog No.	A
mm	mm		mm		mm		mm
300	150	(Prefix)LLR-0300-0150	337	(Prefix)LSR-0300-0150	293	(Prefix)LRR-0300-0150	337
450	150	(Prefix)LLR-0450-0150	423	(Prefix)LSR-0450-0150	337	(Prefix)LRR-0450-0150	423
	300	(Prefix)LLR-0450-0300	337	(Prefix)LSR-0450-0300	293	(Prefix)LRR-0450-0300	337
600	150	(Prefix)LLR-0600-0150	510	(Prefix)LSR-0600-0150	380	(Prefix)LRR-0600-0150	510
	300	(Prefix)LLR-0600-0300	423	(Prefix)LSR-0600-0300	337	(Prefix)LRR-0600-0300	423
	450	(Prefix)LLR-0600-0450	337	(Prefix)LSR-0600-0450	293	(Prefix)LRR-0600-0450	337
750	150	(Prefix)LLR-0750-0150	596	(Prefix)LSR-0750-0150	423	(Prefix)LRR-0750-0150	596
	300	(Prefix)LLR-0750-0300	510	(Prefix)LSR-0750-0300	380	(Prefix)LRR-0750-0300	510
	450	(Prefix)LLR-0750-0450	423	(Prefix)LSR-0750-0450	337	(Prefix)LRR-0750-0450	423
	600	(Prefix)LLR-0750-0600	337	(Prefix)LSR-0750-0600	293	(Prefix)LRR-0750-600	337
900	150	(Prefix)LLR-0900-0150	683	(Prefix)LSR-0900-0150	467	(Prefix)LRR-0900-0150	683
	300	(Prefix)LLR-0900-0300	596	(Prefix)LSR-0900-0300	423	(Prefix)LRR-0900-0300	596
	450	(Prefix)LLR-0900-0450	510	(Prefix)LSR-0900-0450	380	(Prefix)LRR-0900-0450	510
	600	(Prefix)LLR-0900-0600	423	(Prefix)LSR-0900-0600	337	(Prefix)LRR-0900-0600	423
	750	(Prefix)LLR-0900-0750	337	(Prefix)LSR-0900-0750	293	(Prefix)LRR-0900-0750	337

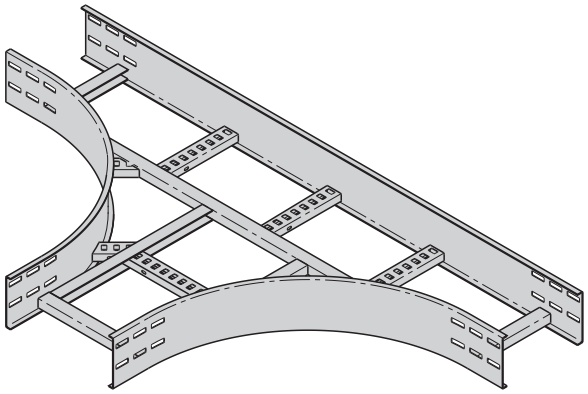
(Prefix) See page 59 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

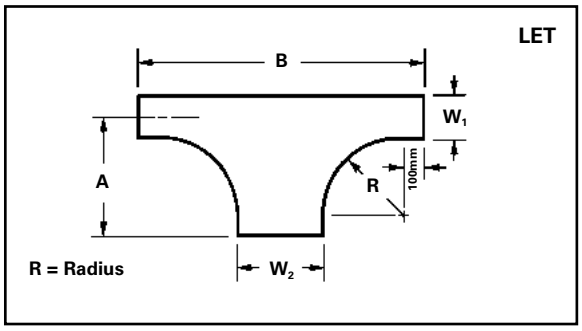
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Horizontal Expanding Tee (LET)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Two (2) pair required to connect to system.





Bend Radius	Ladder Width		Horizontal Expanding Tee		
				Dimensions	
R mm	W_1 mm	W_2 mm	Catalog Number	A mm	B mm
300	150	300	(Pre)LET-0150-0300-R0300	475	1100
		450	(Pre)LET-0150-0450-R0300	475	1250
		600	(Pre)LET-0150-0600-R0300	475	1400
		750	(Pre)LET-0150-0750-R0300	475	1550
		900	(Pre)LET-0150-0900-R0300	475	1700
	300	450	(Pre)LET-0300-0450-R0300	550	1250
		600	(Pre)LET-0300-0600-R0300	550	1400
		750	(Pre)LET-0300-0750-R0300	550	1550
		900	(Pre)LET-0300-0900-R0300	550	1700
	450	600	(Pre)LET-0450-0600-R0300	625	1400
		750	(Pre)LET-0450-0750-R0300	625	1550
		900	(Pre)LET-0450-0900-R0300	625	1700
	600	750	(Pre)LET-0600-0750-R0300	700	1550
		900	(Pre)LET-0600-0900-R0300	700	1700
	750	900	(Pre)LET-0750-0900-R0300	775	1700
600	150	300	(Pre)LET-0150-0300-R0600	775	1700
		450	(Pre)LET-0150-0450-R0600	775	1850
		600	(Pre)LET-0150-0600-R0600	775	2000
		750	(Pre)LET-0150-0750-R0600	775	2150
		900	(Pre)LET-0150-0900-R0600	775	2300
	300	450	(Pre)LET-0300-0450-R0600	850	1850
		600	(Pre)LET-0300-0600-R0600	850	2000
		750	(Pre)LET-0300-0750-R0600	850	2150
		900	(Pre)LET-0300-0900-R0600	850	2300
	450	600	(Pre)LET-0450-0600-R0600	925	2000
		750	(Pre)LET-0450-0750-R0600	925	2150
		900	(Pre)LET-0450-0900-R0600	925	2300
	600	750	(Pre)LET-0600-0750-R0600	1000	2150
		900	(Pre)LET-0600-0900-R0600	1000	2300
	750	900	(Pre)LET-0750-0900-R0600	1075	2300

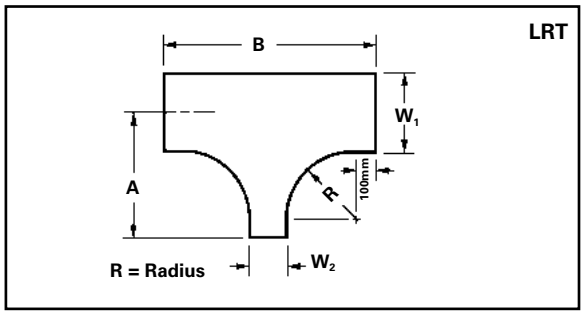
(Prefix) See page 59 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

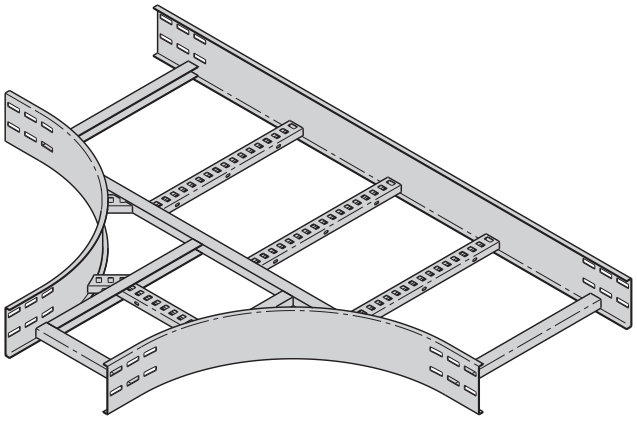
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Horizontal Reducing Tee (LRT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Two (2) pair required to connect to system.





Bend Radius	Ladder Width		Horizontal Reducing Tee		
				Dimensions	
R mm	W_1 mm	W_2 mm	Catalog Number	A mm	B mm
300	300	150	**(Pre)LRT-0300-0150-R0300**	550	950
	450	150	**(Pre)LRT-0450-0150-R0300**	625	950
		300	**(Pre)LRT-0450-0300-R0300**	625	1100
	600	150	**(Pre)LRT-0600-0150-R0300**	700	950
		300	**(Pre)LRT-0600-0300-R0300**	700	1100
		450	**(Pre)LRT-0600-0450-R0300**	700	1250
	750	150	**(Pre)LRT-0750-0150-R0300**	775	950
		300	**(Pre)LRT-0750-0300-R0300**	775	1100
		450	**(Pre)LRT-0750-0450-R0300**	775	1250
		600	**(Pre)LRT-0750-0600-R0300**	775	1400
	900	150	**(Pre)LRT-0900-0150-R0300**	850	950
		300	**(Pre)LRT-0900-0300-R0300**	850	1100
		450	**(Pre)LRT-0900-0450-R0300**	850	1250
		600	**(Pre)LRT-0900-0600-R0300**	850	1400
		750	**(Pre)LRT-0900-0750-R0300**	850	1550
600	300	150	**(Pre)LRT-0300-0150-R0600**	830	1550
	450	150	**(Pre)LRT-0450-0150-R0600**	925	1550
		300	**(Pre)LRT-0450-0300-R0600**	925	1700
	600	150	**(Pre)LRT-0600-0150-R0600**	1000	1550
		300	**(Pre)LRT-0600-0300-R0600**	1000	1700
		450	**(Pre)LRT-0600-0450-R0600**	1000	1850
	750	150	**(Pre)LRT-0750-0150-R0600**	1075	1550
		300	**(Pre)LRT-0750-0300-R0600**	1075	1700
		450	**(Pre)LRT-0750-0450-R0600**	1075	1850
		600	**(Pre)LRT-0750-0600-R0600**	1075	2000
	900	150	**(Pre)LRT-0900-0150-R0600**	1150	1550
		300	**(Pre)LRT-0900-0300-R0600**	1150	1700
		450	**(Pre)LRT-0900-0450-R0600**	1150	1850
		600	**(Pre)LRT-0900-0600-R0600**	1150	2000
		750	**(Pre)LRT-0900-0750-R0600**	1150	2150

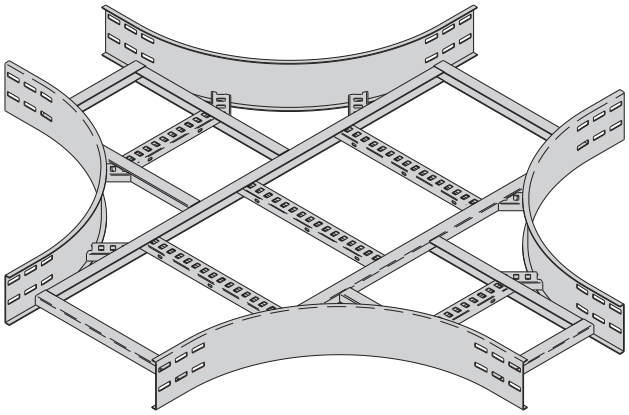
(Prefix) See page 59 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

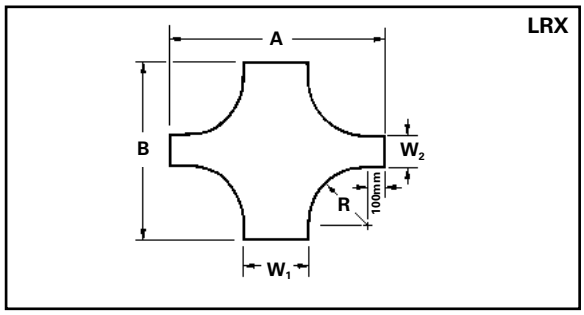
Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

All dimensions are in millimeters unless otherwise specified.

Horizontal Expanding/Reducing Cross (LRX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 66.
Three (3) pair required to connect to system.





Bend Radius	Ladder Width		Horizontal Reducing Tee		
				Dimensions	
R mm	W_1 mm	W_2 mm	Catalog Number	A mm	B mm
300	300	150	**(Pre)LRX-0300-0150-R0300**	1100	950
	450	150	**(Pre)LRX-0450-0150-R0300**	1250	950
		300	**(Pre)LRX-0450-0300-R0300**	1250	1100
	600	150	**(Pre)LRX-0600-0150-R0300**	1400	950
		300	**(Pre)LRX-0600-0300-R0300**	1400	1100
		450	**(Pre)LRX-0600-0450-R0300**	1400	1250
	750	150	**(Pre)LRX-0750-0150-R0300**	1550	950
		300	**(Pre)LRX-0750-0300-R0300**	1550	1100
		450	**(Pre)LRX-0750-0450-R0300**	1550	1250
		600	**(Pre)LRX-0750-0600-R0300**	1550	1400
	900	150	**(Pre)LRX-0900-0150-R0300**	1700	950
		300	**(Pre)LRX-0900-0300-R0300**	1700	1100
		450	**(Pre)LRX-0900-0450-R0300**	1700	1250
		600	**(Pre)LRX-0900-0600-R0300**	1700	1400
		750	**(Pre)LRX-0900-0750-R0300**	1700	1550
600	300	150	**(Pre)LRX-0300-0150-R0600**	1700	1550
	450	150	**(Pre)LRX-0450-0150-R0600**	1850	1550
		300	**(Pre)LRX-0450-0300-R0600**	1850	1700
	600	150	**(Pre)LRX-0600-0150-R0600**	2100	1550
		300	**(Pre)LRX-0600-0300-R0600**	2100	1700
		450	**(Pre)LRX-0600-0450-R0600**	2100	1850
	750	150	**(Pre)LRX-0750-0150-R0600**	2150	1550
		300	**(Pre)LRX-0750-0300-R0600**	2150	1700
		450	**(Pre)LRX-0750-0450-R0600**	2150	1850
		600	**(Pre)LRX-0750-0600-R0600**	2150	2000
	900	150	**(Pre)LRX-0900-0150-R0600**	2300	1550
		300	**(Pre)LRX-0900-0300-R0600**	2300	1700
		450	**(Pre)LRX-0900-0450-R0600**	2300	1850
		600	**(Pre)LRX-0900-0600-R0600**	2300	2000
		750	**(Pre)LRX-0900-0750-R0600**	2300	2150

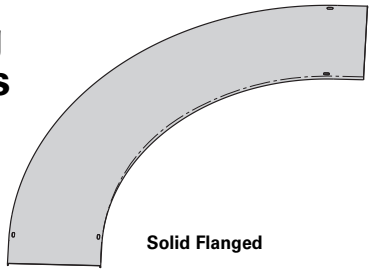
(Prefix) See page 59 for catalog number prefix.
Width dimensions are to inside wall.
Manufacturing tolerances apply to all dimensions.

Note: For alternative bend radius dimensions, download submittals at Eaton.com/iec

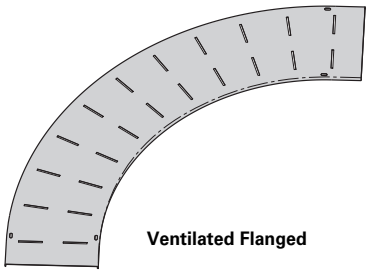
All dimensions are in millimeters unless otherwise specified.

Steel Cable Ladder - Fittings

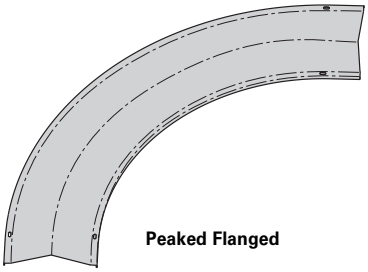
Fitting Covers



Solid Flanged



Ventilated Flanged



Peaked Flanged

A full range of covers are available for fittings.

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

Ventilated covers allow heat to escape and minimize effects of wind pressure in outdoor applications.

Eaton recommends that covers be placed on vertical cable ladder runs to a height of 1.5m to 2.5m above the floor to isolate both cables and personnel.

Peaked covers help shed debris and precipitation.

Cover clamps are not included with the cover and must be ordered separately.

All covers designed to utilize high performance cover clamps (see page 45).

Fitting Covers Part Numbering

Example: **CCF S G15 LVO - 0600 - 90 R0600 - 150*****

Flanged Cover	Cover Type	Material	Ladder Fitting Type	Width	Angle † (°)	Radius	Side Rail Height
	S = Solid	**G15** = Galvanized Steel	**LHB** = Horizontal Bend	**0150** = 150mm	**30**	**R0300** = 300mm	**100** = 100mm
	L = Ventilated	**X10** = Stainless Steel 316	**LVI** = Vertical Inside Bend	**0300** = 300mm	**45**	**R0600** = 600mm	**125** = 125mm
	P = Peaked	**Y10** = Passivated Stainless Steel 316L	**LVO** = Vertical Outside Bend	**0450** = 450mm	**60**	**R0900** = 900mm	**150** = 150mm
			LHT = Horizontal Tee †	**0600** = 600mm	**90**	**R1200** = 1200mm	*** Required for VO, VTD, CSF only
			LHX = Horizontal Cross †	**0750** = 750mm			
			LVTD = Vertical Tee Down †	**0900** = 900mm			
			LVTU = Vertical Tee Up †				
			LCSF = Cable Support Fitting †				
			LHYL = Horizontal Wye Left Hand				
			LHYR = Horizontal Wye Right Hand				
			LVR = Vertical Riser Fitting †				

† No angle designation required on these fitting covers.

Expanding & Reducing Fitting Covers Part Numbering

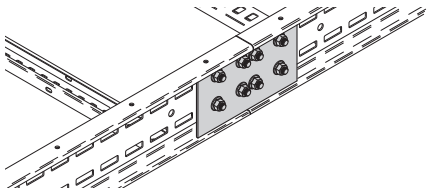
Example: **CCF S X10 LRR - 0600 - 0300 R0300**

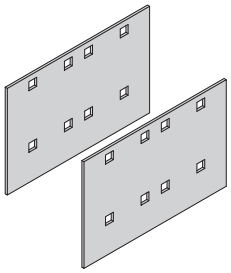
Flanged Cover	Cover Type	Material	Ladder Fitting Type	Width 1	Width 2	Radius
	S = Solid	**G15** = Galvanized Steel	**LRR** = Right Reducer	**0150** = 150mm	**0150** = 150mm	**R0300** = 300mm
	L = Ventilated	**X10** = Stainless Steel 316	**LLR** = Left Reducer	**0300** = 300mm	**0300** = 300mm	**R0600** = 600mm
	P = Peaked	**Y10** = Passivated Stainless Steel 316L	**LSR** = Straight Reducer	**0450** = 450mm	**0450** = 450mm	**R0900** = 900mm
			LRX = Expanding & Reducing Cross	**0600** = 600mm	**0600** = 600mm	**R1200** = 1200mm
			LET = Expanding Tee	**0750** = 750mm	**0750** = 750mm	
			LRT = Reducing Tee	**0900** = 900mm	**0900** = 900mm	

All dimensions are in millimeters unless otherwise specified.

Standard Splice Plates

- Not included with straight sections or fittings.
- Standard 8-slot pattern.
- Supplied in pairs with hardware.
- (*) Insert G or SS6



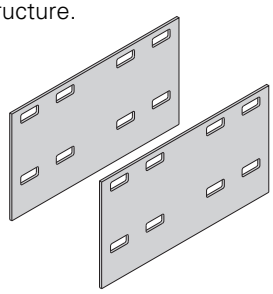


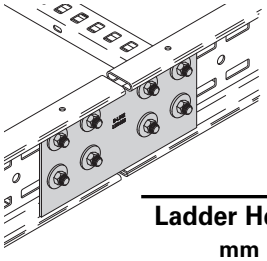
Ladder Height mm	Catalog No.
100	**LSP100(*)**
125	**LSP125(*)**
150	**LSP150(*)**

Expansion Splice Plates

- Expansion plates allow for 25mm expansion or contraction of the cable ladder, or where expansion joints occur in the supporting structure.
- Supplied in pairs with hardware.
- Bonding jumpers are required on each side rail (sold separately).
- Utilize (406mm) bonding jumper length.
- (*) Insert G or SS6

Note: Supports required within 600mm on each side of expansion joint. To remove support requirements utilize B-Line series heavy duty expansion splice (see below).





Ladder Height mm	Catalog No.
100	**LES100(*)**
125	**LES125(*)**
150	**LES150(*)**

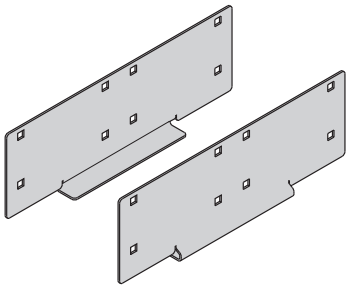
Heavy Duty Expansion Splice Plates

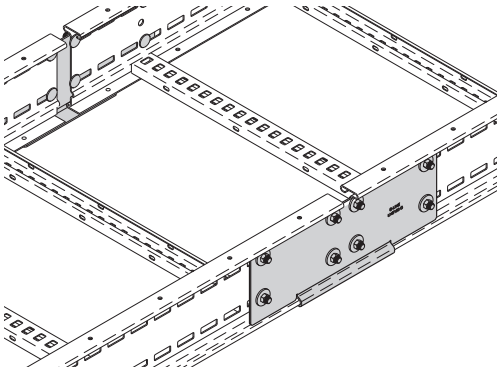
Heavy duty expansion splice plates are engineered to eliminate the recommended additional support at each expansion joint where cable ladder systems are utilized. They allow installers to support an expansion joint without additional supports versus the traditional two supports.

Expansion joints are common in long-run outdoor applications where temperature variations result in thermal expansion and contraction of the cable ladder system. The installer using the traditional expansion splice would be required to install two supports, one on either side of the expansion joint.
By utilizing the B-Line series heavy duty expansion splice plate, no additional supports are required.

- NEMA VE 2 Compliant
- Lowest total cost of installation solution
- Wrap-around design supports the side rail on bottom of each ladder section
- Available Offering:
  - Hot dip galvanized steel
  - Stainless steel 316
- Designed for easy installation in a variety of applications
- Supplied in pairs with hardware
- Utilize (600mm) bonding jumper length
- Utilize with B-Line series Cable Ladder Systems
  - HPL, SDL, & HDL

Heavy Duty Expansion Splice Plates are one of five key attributes of the B-Line series cable ladder system that combine to yield significant opportunities to reduce structural steel supports in heavy industrial applications.
To learn more, visit **Eaton.com/sss**



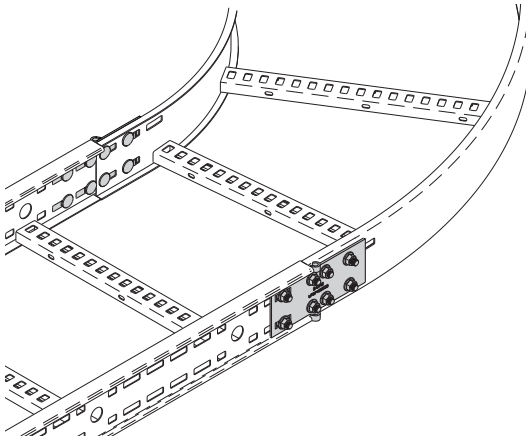


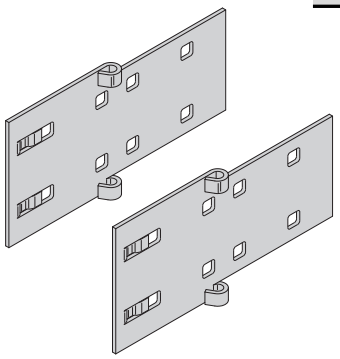
Ladder Height mm	Catalog No. HDG	SS6
125	**LHE125G**	**LHE125SS6**
150	**LHE150G**	**LHE150SS6**

All dimensions are in millimeters unless otherwise specified.

Splice Plate Safety Enhanced Kit for 100mm Height Metric Cable Ladder

- Incorporates additional safety features on the outside of the rail, transitioning from straight section to fitting.
- Supplied as one pair with hardware.
- (*) Insert G or SS6

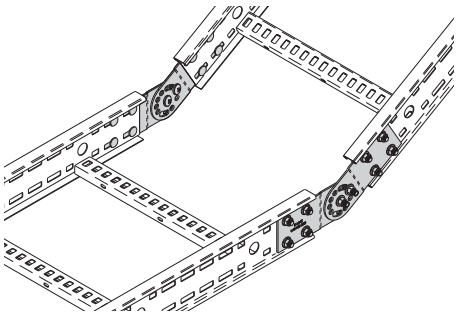


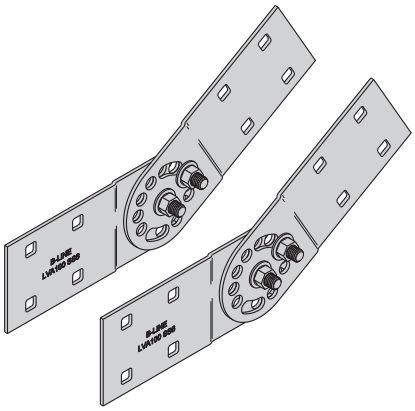


Ladder Height mm	Catalog No.
100	**LFSP100(*)**

Vertical Adjustable Splice Plates

- These plates provide for changes in elevation that do not conform to standard vertical fittings.
- Supplied in pairs with hardware.
- **Bonding Jumpers are not required.**
- (*) Insert G or SS6

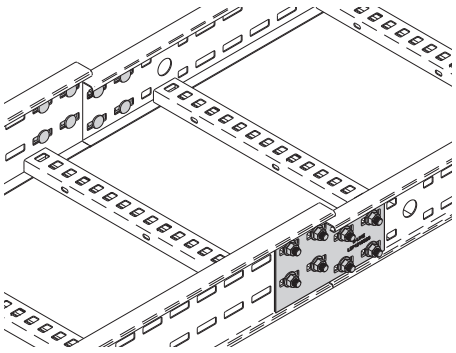


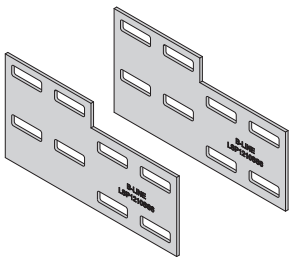


Ladder Height mm	Catalog No.
100	**LVA100(*)**
125	**LVA125(*)**
150	**LVA150(*)**

Step Down Splice Plates

- These splice plates are offered for connecting cable ladder sections having side rails of different heights.
- Furnished in pairs with hardware.
- (*) Insert G or SS6





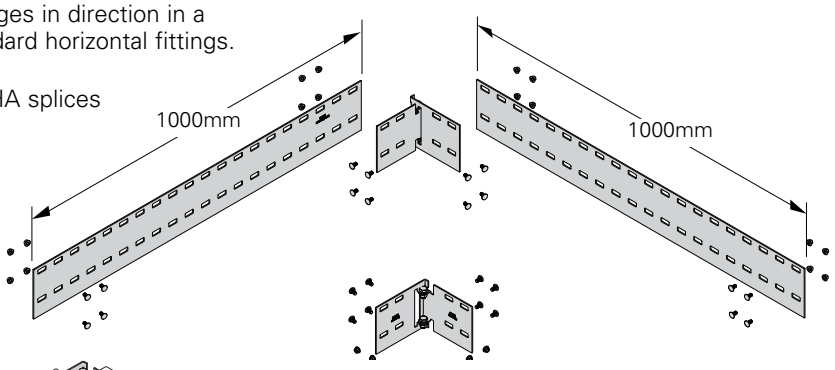
Ladder Height mm	Catalog No.
125 to 100	**LSP1210(*)**
150 to 100	**LSP1510(*)**
150 to 125	**LSP1512(*)**

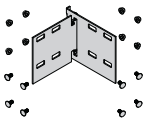
All dimensions are in millimeters unless otherwise specified.

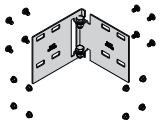
Steel Cable Ladder - Accessories

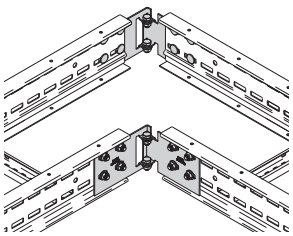
Horizontal Adjustable Splice Plates

- Offered to adjust a cable ladder run for changes in direction in a horizontal plane that do not conform to standard horizontal fittings.
- Supplied in pairs with hardware.
- Rail extensions 1000mm length standard, LHA splices included.
- Bonding jumpers are not required.
- (*) Insert G or SS6









Splice Kit

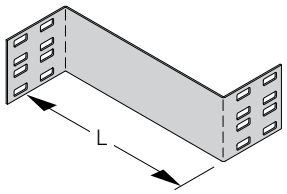
Ladder Height mm	Catalog No.
100	**LHA100(*)**
125	**LHA125(*)**
150	**LHA150(*)**

Rail Extension Kit

Ladder Height mm	Catalog No.
100	**LRE100(*)**
125	**LRE125(*)**
150	**LRE150(*)**

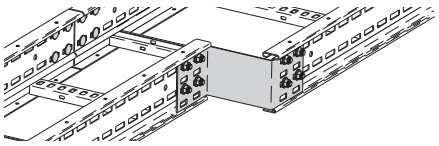
Reducing Coupler Plate

- For offset transitions.
- Supplied as one plate with hardware.
- (*) Insert G or SS6



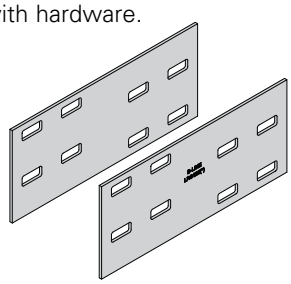
Ladder Height mm	Catalog No.	'L' mm
100	**LSR100(*)150**	150
	LSR100(*)300	300
	LSR100(*)450	450
	LSR100(*)600	600
	LSR100(*)750	750
125	**LSR125(*)150**	150
	LSR125(*)300	300
	LSR125(*)450	450
	LSR125(*)600	600
	LSR125(*)750	750

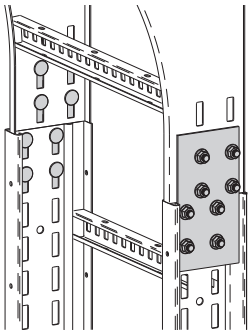
Ladder Height mm	Catalog No.	'L' mm
150	**LSR150(*)150**	150
	LSR150(*)300	300
	LSR150(*)450	450
	LSR150(*)600	600
	LSR150(*)750	750



Reversing Splice Plates

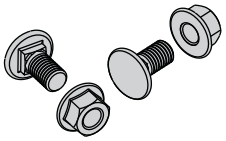
- For reversing ladder orientation.
- Supplied as one pair with hardware.
- (*) Insert G or SS6





Ladder Height mm	Catalog No.
100	**Not Applicable**
125	**LRS125(*)**
150	**LRS150(*)**

Splice Hardware



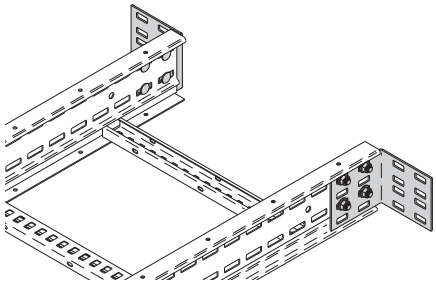
Catalog No.	Description
M10x20 SNCB(*)	Square Neck Coach Bolt
M10 SFHN(*)	Serrated Flange Hex Nut
M10 ELAS(*)	Elastic Stop Nut

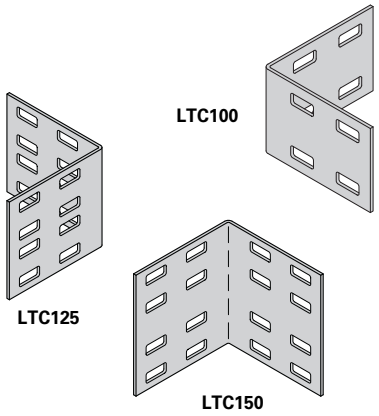
Finish (*): HDG = Galvanized
SS6 = Stainless Steel 316

All dimensions are in millimeters unless otherwise specified.

Tee/Wall Connector

- For field connecting ladder to a wall or to another ladder as a tee.
- Supplied in pairs with hardware.
- (*) Insert G or SS6



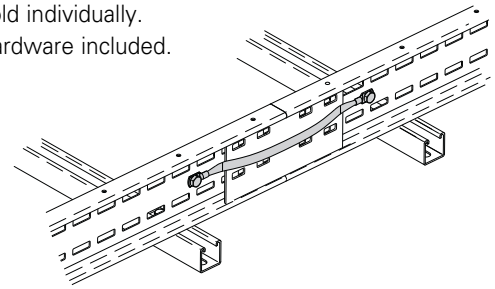


Ladder Height mm	Catalog No.
100	**LTC100(*)**
125	**LTC125(*)**
150	**LTC150(*)**

Bonding Jumper

Use at each expansion splice and where the cable ladder is not mechanically/electrically continuous to ground.

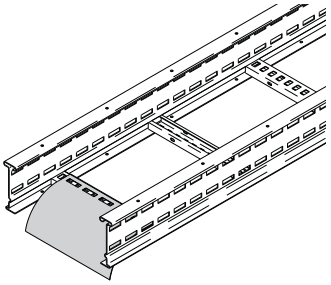
- Sold individually.
- Hardware included.

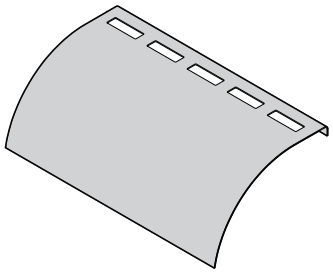


Catalog No.	Length mm	Copper Wire	Ampacity	Expansion Type
99-N1	406	9 Strands #1	600	Standard
99-N1-600	600	9 Strands #1	600	Heavy Duty

Ladder Drop-Out

- Specially-designed Ladder Drop-Outs provide a rounded surface with 100mm radius to protect cable as it exits from the cable ladder, preventing damage to insulation. The drop-out will attach to any desired rung.
- Supplied with hardware.
- (*) Insert G or SS6

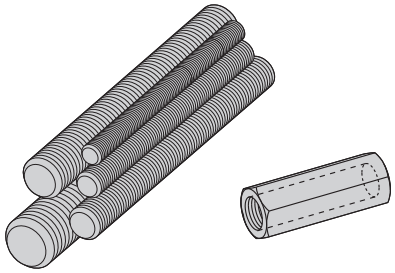




Catalog No.	Ladder Width mm
LDO(*)150	150
LDO(*)300	300
LDO(*)450	450
LDO(*)600	600
LDO(*)750	750
LDO(*)900	900

Threaded Rod (ATR) & Rod Coupling

Loading based on safety factor 5.



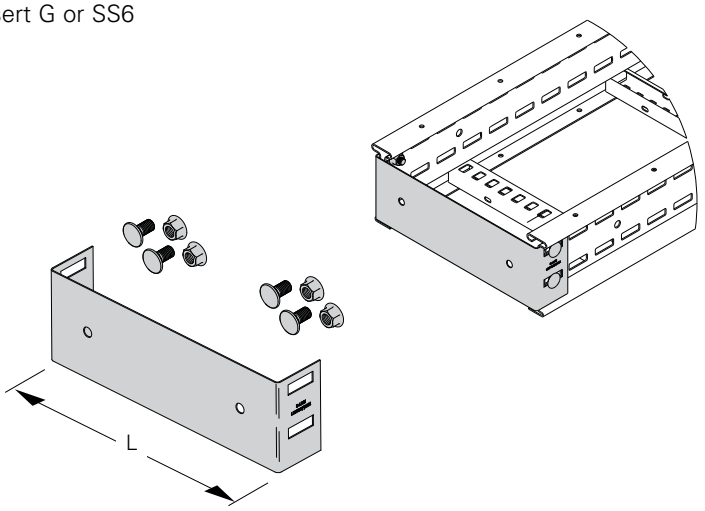
Catalog No. & Size	Threads Size	Recommended Load kN	Wt./30.5m kg
ATR M6	M6	1.32	6.1
ATR M8	M8	2.42	10.7
ATR M10	M10	3.66	15.3
ATR M12	M12	5.35	24.4

See B-Line series Strut Systems Catalog for other size and finish options.

All dimensions are in millimeters unless otherwise specified.

Blind End

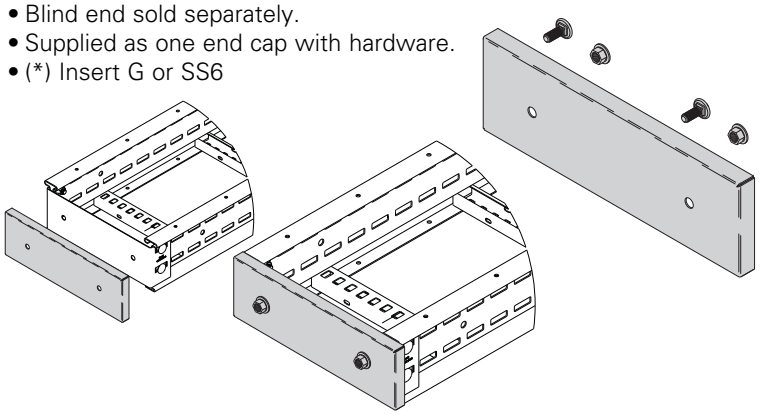
- For finished look to end of ladder.
- Supplied as one plate with hardware.
- (*) Insert G or SS6



Ladder Ht. mm	Catalog No.	'L' mm
100	**LBE100(*)150**	150
	LBE100(*)300	300
	LBE100(*)450	450
	LBE100(*)600	600
	LBE100(*)750	750
	LBE100(*)900	900
125	**LBE125(*)150**	150
	LBE125(*)300	300
	LBE125(*)450	450
	LBE125(*)600	600
	LBE125(*)750	750
	LBE125(*)900	900
150	**LBE150(*)150**	150
	LBE150(*)300	300
	LBE150(*)450	450
	LBE150(*)600	600
	LBE150(*)750	750
	LBE150(*)900	900

End Cap for Metric Cable Ladder

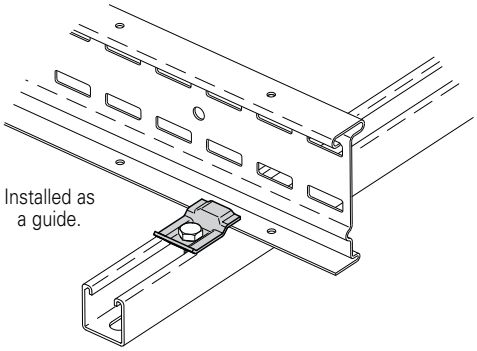
- Increased safety features for cable ladder end runs.
- Blind end sold separately.
- Supplied as one end cap with hardware.
- (*) Insert G or SS6

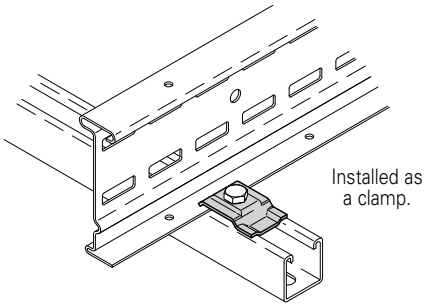


Ladder Height mm	Ladder Width mm	Catalog No.
(**) 100 125 150	150	**LEC(**)(*)150WO**
	300	**LEC(**)(*)300WO**
	450	**LEC(**)(*)450WO**
	600	**LEC(**)(*)600WO**
	750	**LEC(**)(*)750WO**
	900	**LEC(**)(*)900WO**

Cable Ladder Clamp/Guide - SDL & HDL Series

- Features a no-twist design.
- Has four times the strength of the traditional design.
- Each side is labelled to ensure proper installation.
- Supplied in pairs without hardware.
- (*) Insert G or SS6





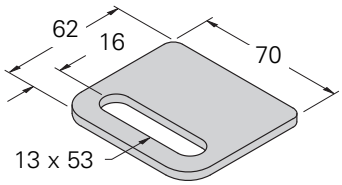
Catalog No.	Overall Length	Hardware Size
9(*)-1204	38mm	M6
9(*)-1208	57mm	M10
9(*)-1205	57mm	M12

All dimensions are in millimeters unless otherwise specified.

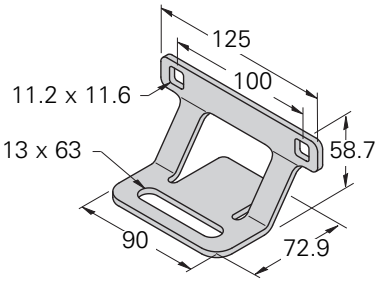
Cable Ladder Clamp/Guide - HPL Series

- Improves system performance
- Both LHD-121X and LHD-123X are sold in pairs
  LHD-121X - requires mounting hardware (not included)
  LHD-123X includes side rail attachment hardware - requires mounting hardware (not included)
- Material: SS6
- Thickness: 6mm
- Patent Pending

Catalog No.	Description	Side Rail Mtg. Hardware	Mounting Hardware	Side Rail Heights
LHD-121X	1-Hole Hold Down Plate	None Required	(1) M12 bolt	100, 125, 150



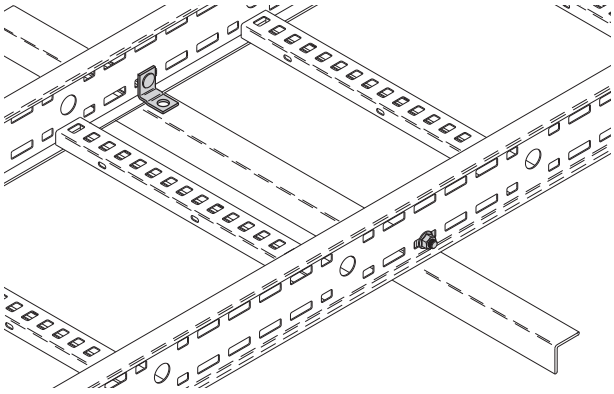
Catalog No,	Description	Side Rail Mtg. Hardware	Mounting Hardware	Side Rail Heights
LHD-123X	3-Hole Hold Down Clamp	Includes (2) M10 SNCB & SFHN	(1) M12 bolt	125, 150

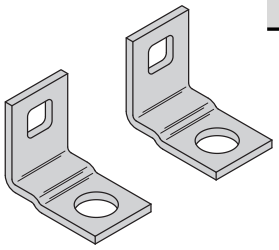


LHD-123XNS is also available which excludes bottom rail support tab.

90° Hold Down Bracket Kit for 100mm Height Metric Cable Ladder

- Supplied as one pair with side rail attachment hardware.
- Requires mounting hardware - not included.
- (*) Insert G or SS6



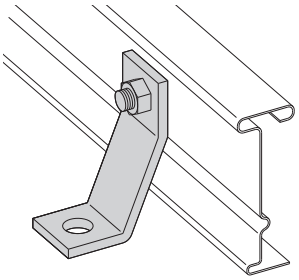


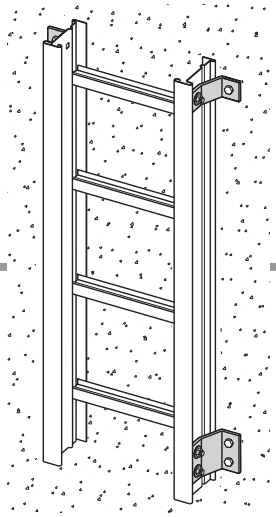
Ladder Height mm	Catalog No.
100	**LHD100(*)**

All dimensions are in millimeters unless otherwise specified.

Heavy Duty Hold Down Bracket

- Design load is 2000 lbs (8.89kN) per pair.
- Two bolt design.
- Sold in pairs.
- M10 cable tray attachment hardware provided
- M12 support attachment hardware **not** provided.
- (*) Insert ZN, SS4 or SS6
- Recommended for support of vertical trays.

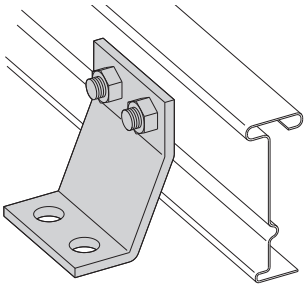




Catalog No.
LHD-1241(*)

Heavy Duty Hold Down Bracket

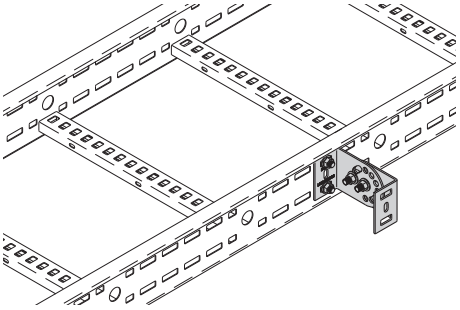
- Design load is 4000 lbs (17.79kN) per pair.
- Four bolt design.
- Sold in pairs.
- M10 cable tray attachment hardware provided
- M12 support attachment hardware **not** provided.
- (*) Insert ZN, SS4 or SS6
- Recommended for support of vertical trays.

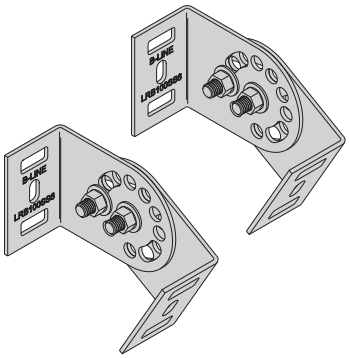


Catalog No.
LHD-1242(*)

Rotating Bracket Kit for Metric Cable Ladder

- Side rail mount bracket for accessories.
- Supplied as one pair with side rail attachment hardware.
- Requires M10 mounting hardware - not included.
- (*) Insert G or SS6

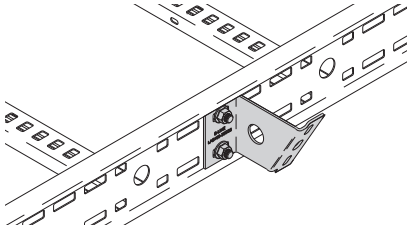


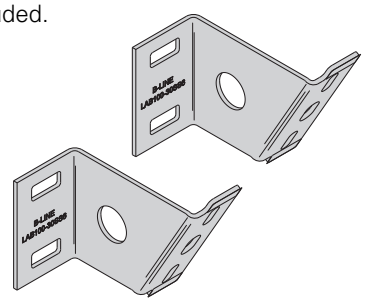


Ladder Height mm	Catalog No.
100	LBR100(*)
125	LBR125(*)
150	LBR150(*)

30° Light Bracket Kit for Metric Cable Ladder

- Supplied as one pair with side rail attachment hardware.
- Requires M10 mounting hardware - not included.
- (*) Insert G or SS6



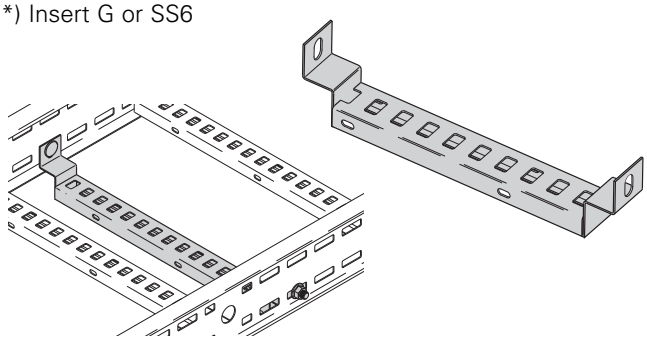


Ladder Height mm	Catalog No.
100	LAB100-30(*)
125	LAB125-30(*)
150	LAB150-30(*)

All dimensions are in millimeters unless otherwise specified.

Add-On Rung Kit for Metric Cable Ladder

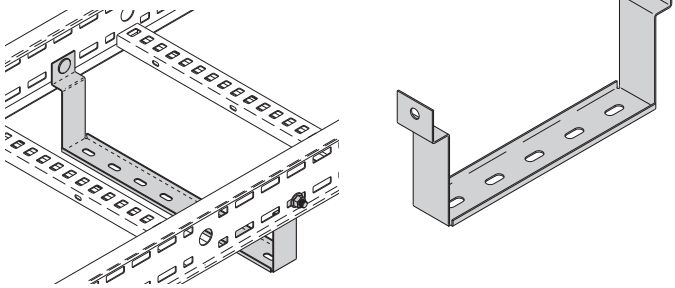
- Allows for intermediate rung support.
- Supplied as one rung kit with hardware.
- (*) Insert G or SS6



Ladder Height mm	Ladder Width mm	Catalog No.
Insert Ladder Height (††) = 100 for 100mm 125 for 125mm 150 for 150mm	150	**LAR(††)(*)-150**
	300	**LAR(††)(*)-300**
	450	**LAR(††)(*)-450**
	600	**LAR(††)(*)-600**
	750	**LAR(††)(*)-750**
	900	**LAR(††)(*)-900**

Light Bracket Kit

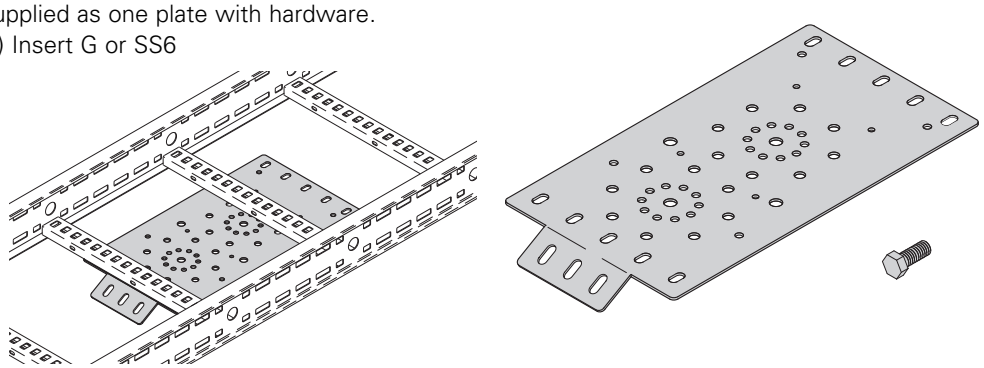
- Supports lighting units underneath ladder system.
- Supplied as one bracket with hardware.
- (*) Insert G or SS6



Ladder Height mm	Ladder Width mm	Catalog No.
(**) 100 125 150	150	**LLB(**)(*)-150**
	300	**LLB(**)(*)-300**
	450	**LLB(**)(*)-450**
	600	**LLB(**)(*)-600**
	750	**LLB(**)(*)-750**
	900	**LLB(**)(*)-900**

Universal Equipment Plate Kit

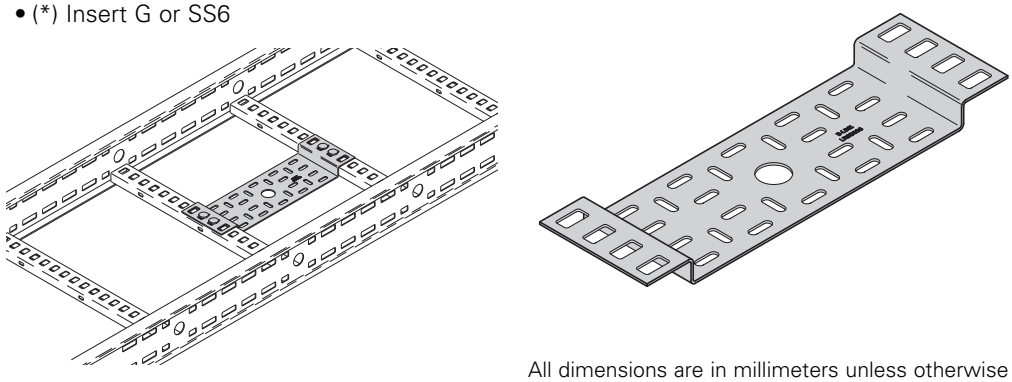
- Supports a variety of equipment off of ladder system.
- Supplied as one plate with hardware.
- (*) Insert G or SS6



Catalog No.
LUEP(*)

Rail Socket Plate Kit

- Supplied as one plate with hardware.
- Designed for 300mm rung spacing.
- (*) Insert G or SS6

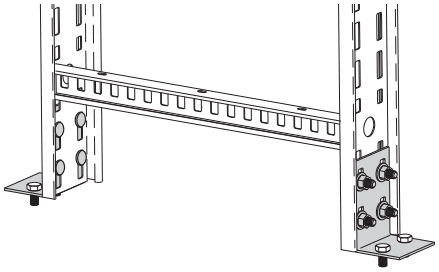


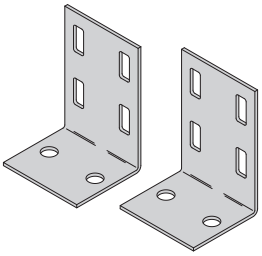
Catalog No.
LRSB(*)

All dimensions are in millimeters unless otherwise specified.

Floor Plate Kit

- Supplied as one pair with ladder connecting hardware.
- M12 floor mounting hardware not included.
- (*) Insert G or SS6

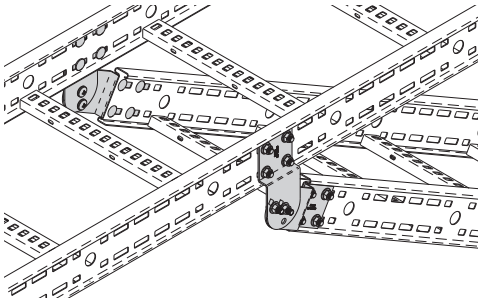


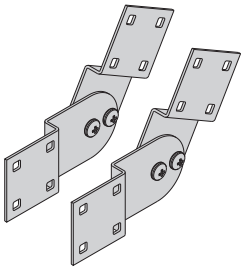


Ladder Height mm	Catalog No.
100	**LFP100(*)**
125	**LFP125(*)**
150	**LFP150(*)**

Branch Pivot Connector Assembly for Metric Cable Ladder

- Branch from existing cable ladder rungs at any point.
- Pivot to any required angle.
- Supplied as one pair with hardware.
- (*) Insert G or SS6

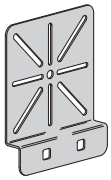




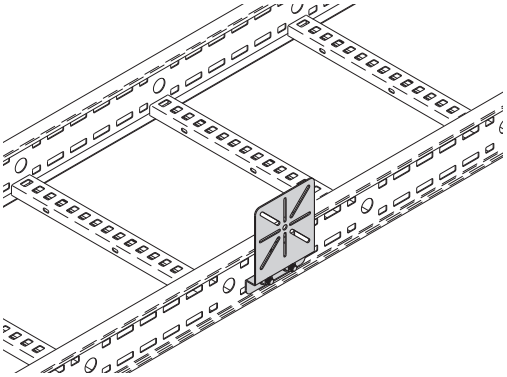
Ladder Height mm	Catalog No.
100	**LBP100(*)**
125	**LBP125(*)**
150	**LBP150(*)**

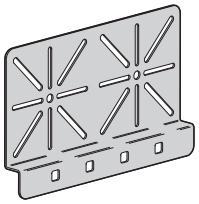
Side Rail Socket Plate Kit for Metric Cable Ladder

- Socket plate for junction box attachment.
- Supplied as one plate with hardware.
- (*) Insert G or SS6

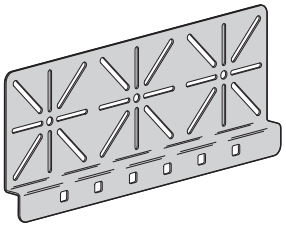


LSB-1





LSB-2



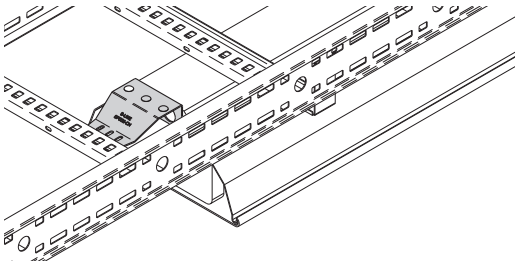
LSB-3

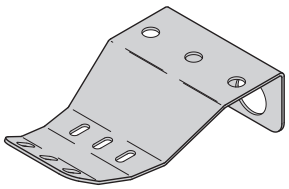
Socket Plates	Catalog No.
1	**LSB-1(*)**
2	**LSB-2(*)**
3	**LSB-3(*)**

All dimensions are in millimeters unless otherwise specified.

Stretch Preventer for Crouse Hinds Lighting

- Designed to avoid stretch damage to cables and cable sagging.
- Supplied as one piece with hardware.
- (*) Insert G or SS6

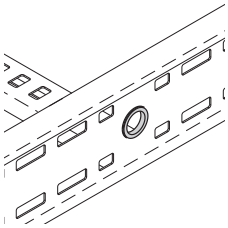


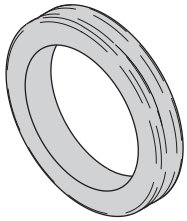


Catalog No.
SPSS6-CH

Cable Exit Grommet for 100mm Height Metric Cable Ladder

- Supplied as one grommet.
- Material: Flame Retardent Neoprene

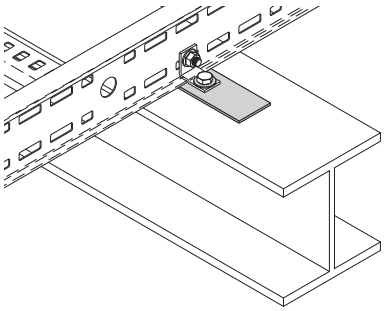


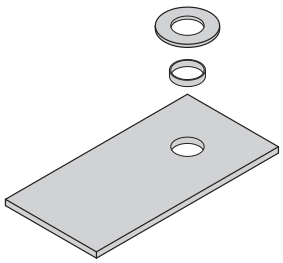


Catalog No.
99-GEP

Isolation Kit for Metric Cable Ladder

- Eliminates dissimilar metal concerns between hold down clamps, cable ladder, hardware, and supports.
- Supplied as one kit with hardware.
- Material: HDPE

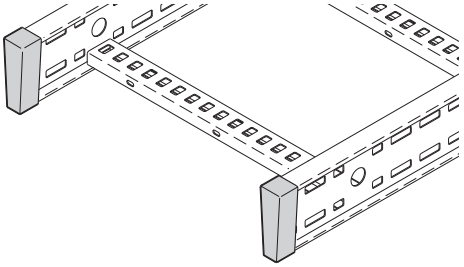


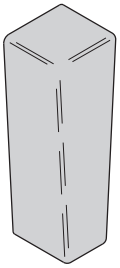


Hardware Size	Catalog No.
M6	LEIK-M6
M8	LEIK-M8
M10	LEIK-M10
M12	LEIK-M12

Plastic End Cap for Metric Cable Ladder Side Rail

- Covers exposed side rail ends and eliminates sharp edges.
- Supplied as one end cap.
- Minimum order quantities required.
- Material: Plastisol



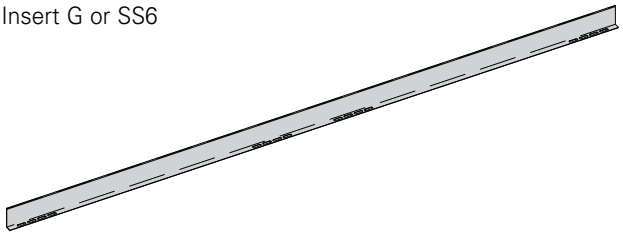


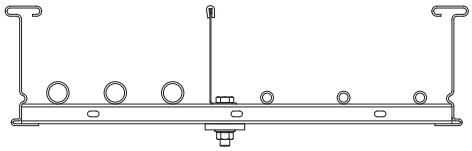
Ladder Height mm	Ladder Width mm	Catalog No.
(**)	White	99-EC-(**)W
	Yellow	99-EC-(**)Y
100	Black	99-EC-(**)BLK
125	Gray	99-EC-(**)GRY
150	Green	99-EC-(**)GRN

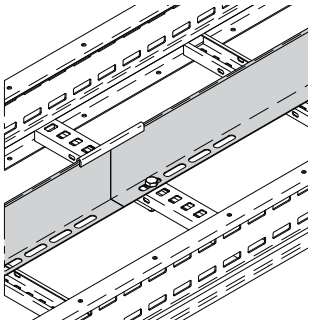
All dimensions are in millimeters unless otherwise specified.

Straight Divider

- Standard length: 3000mm (3m) or 1000mm (1m).
- Order catalog number based on loading depth.
- Supplied with mounting hardware.
- Supplied with 99-9982 divider splice.
- (*) Insert G or SS6



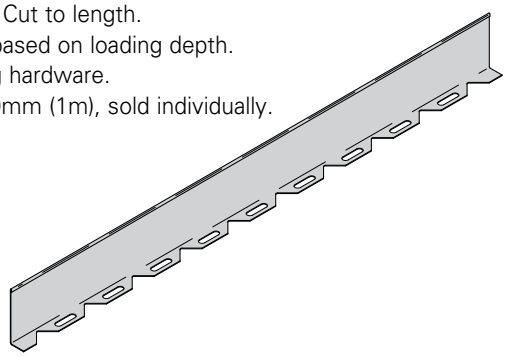




Catalog No.	Side Rail Height mm	Length mm
LSD100(*)-3000	100	3000
LSD125(*)-3000	125	3000
LSD150(*)-3000	150	3000

Bendable Divider

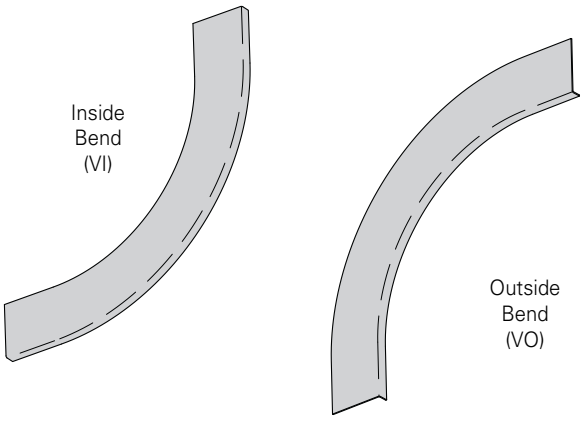
- Horizontal bend barriers are flexible in order to conform to any horizontal fitting radius. Cut to length.
- Order catalog number based on loading depth.
- Supplied with mounting hardware.
- Standard length is 1000mm (1m), sold individually.
- Supplied with 99-9982 divider splice.
- (*) Insert G or SS6



Catalog No.	Side Rail Height mm	Length mm
LBD100(*)-1000	100	1000
LBD125(*)-1000	125	1000
LBD150(*)-1000	150	1000

Vertical Dividers

- Vertical bend barriers are preformed to conform to a specific vertical fitting.
- Supplied with mounting hardware and a 99-9982 Divider Splice.
- (*) Insert G or SS6 for finish
- (**) Insert 30, 45, 60 or 90 for degrees
- (***) Insert 300 for 300mm, 600 for 600mm, 900 for 900mm, or 1200 for 1200mm for radius

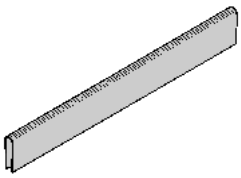


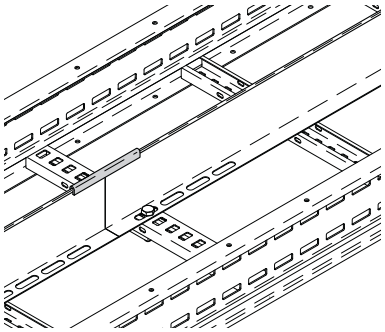
Side Rail Height	Catalog No.		Divider Height mm
	Inside Bend	Outside Bend	
100	**LID100(*)(**)(***)**	**LOD100(*)(**)(***)**	100
125	**LID125(*)(**)(***)**	**LOD125(*)(**)(***)**	100
150	**LID150(*)(**)(***)**	**LOD150(*)(**)(***)**	125

All dimensions are in millimeters unless otherwise specified.

Divider Splice

- Plastic splice holds adjoining barrier strips in straight alignment.

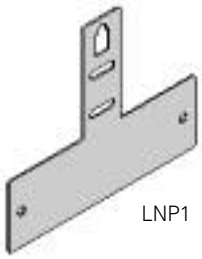




Catalog No.
99-9982

Equipment Name Plates

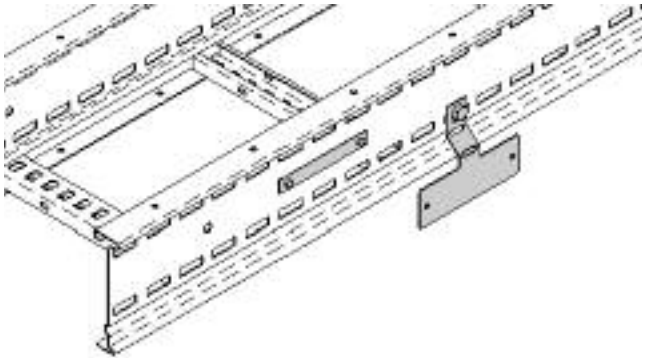
- Support plate for TAG - Number on cable ladders and cable trays.
- Furnished as one plate with hardware.
- (*) Insert A, G, or SS6



LNP1

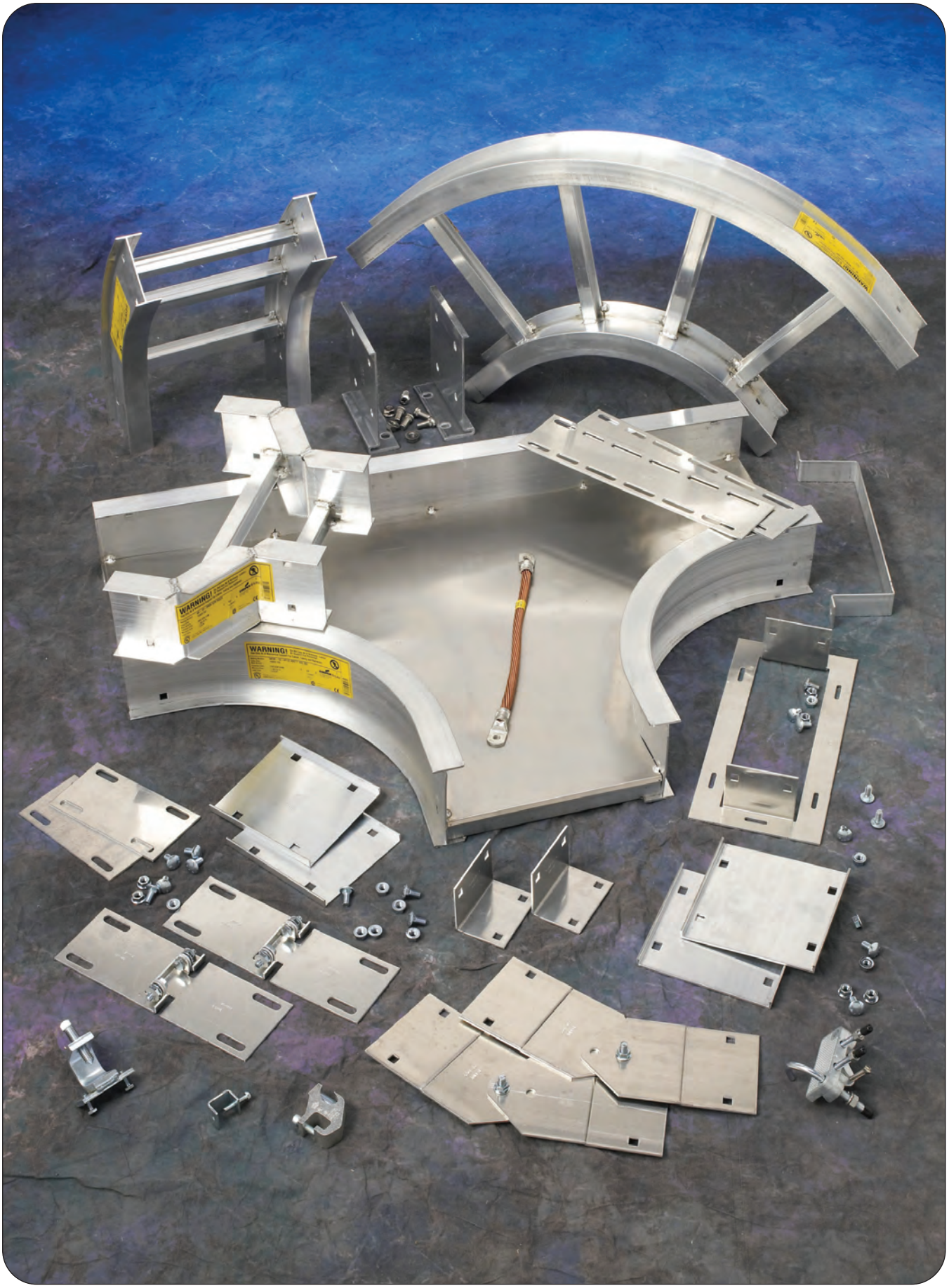
LNP2

Catalog No.
LNP1(*)
LNP2(*)



All dimensions are in millimeters unless otherwise specified.

Aluminum Metric Cable Ladder


WARNING!
WARNING!

100mm Side Rail Height • 125mm Side Rail Height

Straight Section Part Numbering

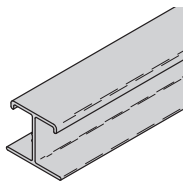
Prefix

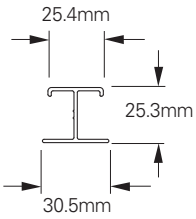
Example: **100 A 300 IA 02 ILL - 0600 - 3000**

Height	Material	Rung Spacing	Rung Type	Series	*Width	Length
100 **125**	**A** = Aluminum	**100** = 100mm **150** = 150mm **225** = 225mm **300** = 300mm **SB** = Solid Bottom	**IA** = Standard **MA** = Slotted Marine Alternating **MD** = Slotted Marine Down **MU** = Slotted Marine Up	**02**	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**3000** = 3000mm **6000** = 6000mm

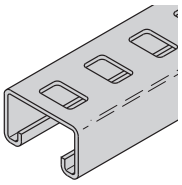
Eaton.com/sss

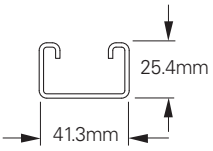
Leave Blank For Solid Bottom i.e. 100ASB02ILL-0600-3000



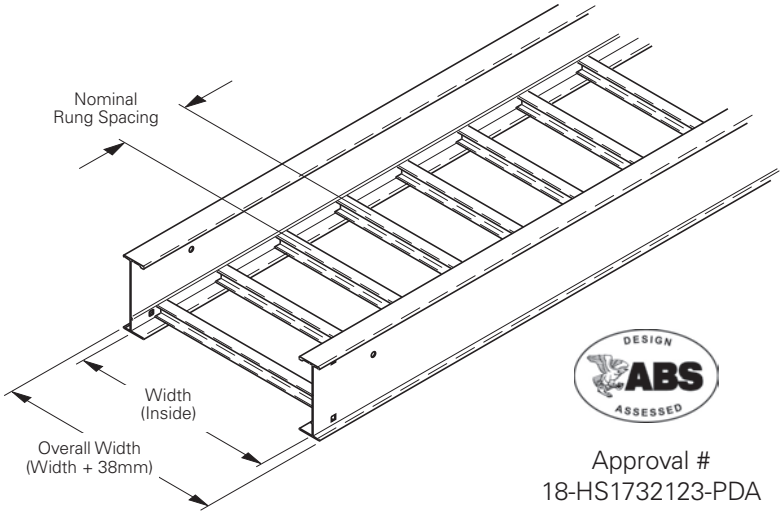


"IA" Standard Rung

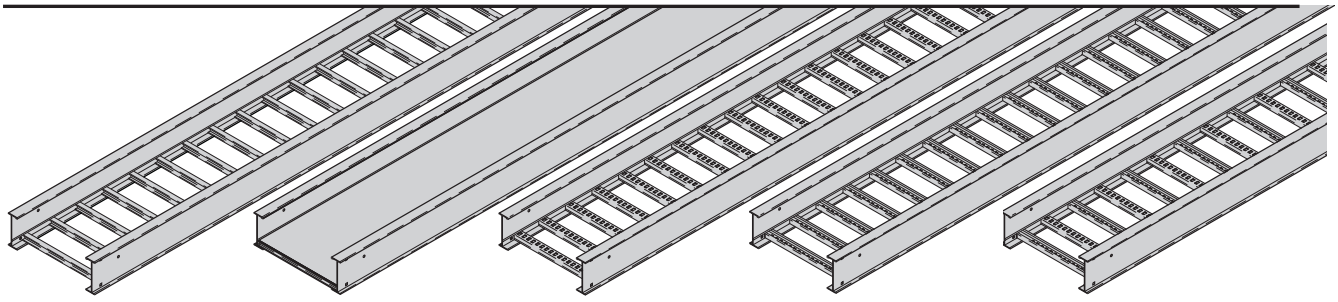




Slotted Marine Rung



Approval # 18-HS1732123-PDA

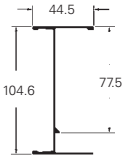


Standard Rung | Solid Bottom | Marine Rung Down | Marine Rung Up | Marine Rung Alternating

100mm Side Rail Height

NEMA values are based on simple beam tests per NEMA VE 1 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.5.
IEC values are based on continuous beam tests per IEC 61537 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.7.

Individual rungs will support without collapse a 90.7 kg (200 lb.) concentrated load applied at the mid-span of the rung, over and above the NEMA rated cable load with a 1.5 safety factor for highlighted NEMA spans and loads.

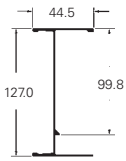
B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
02		NEMA: 16A, 12C UL Cross-Sectional Area: 1.00 in²	3.0	277	282	Area = 6.77 cm²
			4.0	155	209	
			5.0	99	138	Sx = 21.96 cm³
			6.0	69	67	Ix = 118.63 cm⁴

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

125mm Side Rail Height

NEMA values are based on simple beam tests per NEMA VE 1 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.5.
IEC values are based on continuous beam tests per IEC 61537 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.7.

Individual rungs will support without collapse a 90.7 kg (200 lb.) concentrated load applied at the mid-span of the rung, over and above the NEMA rated cable load with a 1.5 safety factor for highlighted NEMA spans and loads.

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
02		NEMA: 20A, 12C UL Cross-Sectional Area: 1.00 in²	3.0	268	381	Area = 8.00 cm²
			4.0	150	284	
			5.0	96	187	Sx = 29.50 cm³
			6.0	67	91	Ix = 192.30 cm⁴

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

150mm Side Rail Height

Straight Section Part Numbering

Prefix

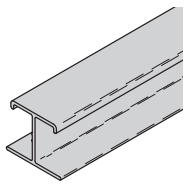
Example: **150** **A** **300** **IA** **H4** **ILL** - **0600** - **3000**

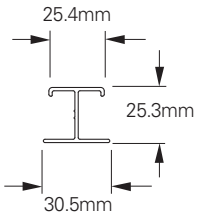
Height	Material	Rung Spacing	Rung Type	Series	*Width	Length
150	**A** = Aluminum	**100** = 100mm **150** = 150mm **225** = 225mm **300** = 300mm **SB** = Solid Bottom	**IA** = Standard **MA** = Slotted Marine Alternating **MD** = Slotted Marine Down **MU** = Slotted Marine Up	**02** **03** **04** **H4**	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**3000** = 3000mm **6000** = 6000mm

Series **02** & **03** come in **3000** & **6000** lengths
Series **04** come in **3000, 6000** & **9000** lengths
Series **H4** come in **6000** & **9000** lengths

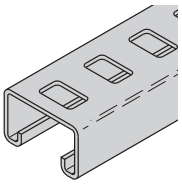
Eaton.com/sss

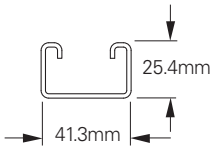
Leave Blank For Solid Bottom i.e. 100ASB02ILL-0600-3000



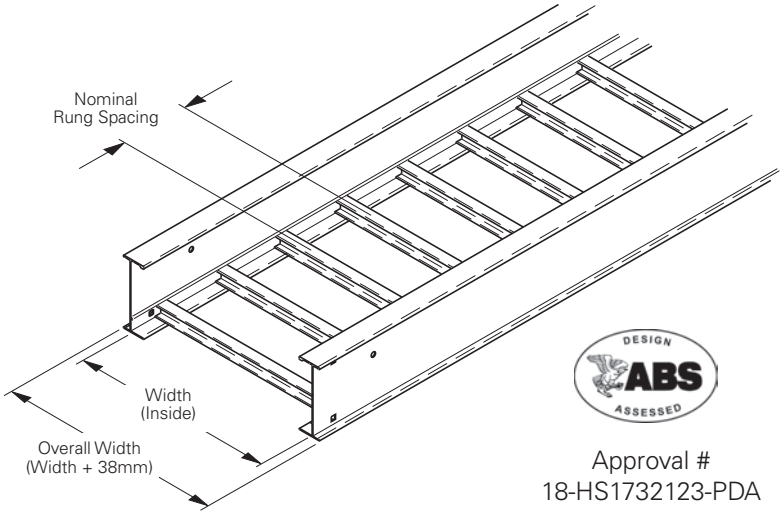


"IA" Standard Rung

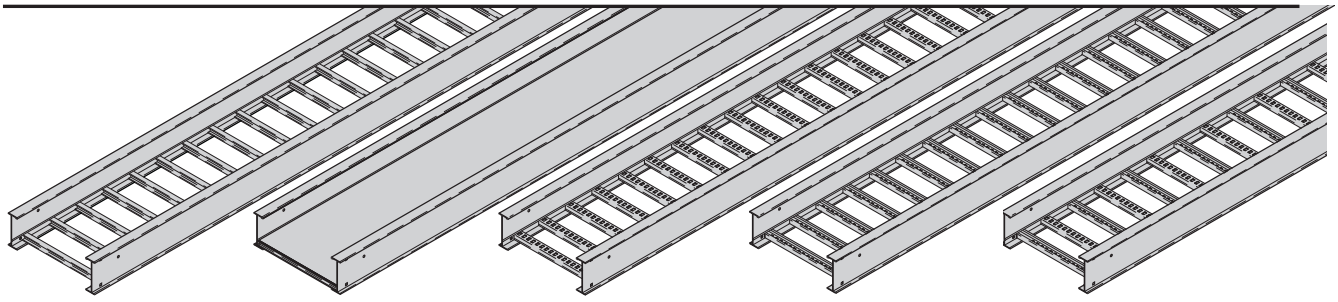




Slotted Marine Rung



Approval #
18-HS1732123-PDA

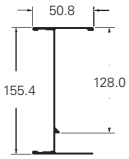


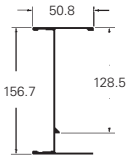
Standard Rung | Solid Bottom | Marine Rung Down | Marine Rung Up | Marine Rung Alternating

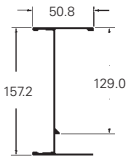
150mm Side Rail Height

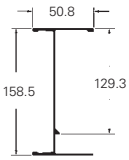
NEMA values are based on simple beam tests per NEMA VE 1 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.5.
IEC values are based on continuous beam tests per IEC 61537 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.7.

Individual rungs will support without collapse a 90.7 kg (200 lb.) concentrated load applied at the mid-span of the rung, over and above the NEMA rated cable load with a 1.5 safety factor for highlighted NEMA spans and loads.

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
02			3.0	268	431	
		NEMA: 20A, 16B	4.0	150	321	Area = 9.10 cm^2
		UL Cross-Sectional	5.0	96	211	Sx = 41.46 cm^3
		Area: 1.00 in^2	6.0	67	101	Ix = 329.45 cm^4

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
03			3.0	447	525	
		NEMA: 20B, 16C	4.0	252	406	Area = 11.68 cm^2
		UL Cross-Sectional	5.0	161	288	Sx = 55.06 cm^3
		Area: 1.50 in^2	6.0	112	170	Ix = 451.61 cm^4

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
04			6.0	174	170	
		NEMA: 20C	7.0	102	138	Area = 13.29 cm^2
		UL Cross-Sectional	8.0	78	105	Sx = 55.83 cm^3
		Area: 1.50 in^2	9.0	62	75	Ix = 506.97 cm^4

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
H4			6.0	263	306	
		NEMA: 20C+	7.0	167	241	Area = 19.03 cm^2
		UL Cross-Sectional	8.0	128	175	Sx = 87.34 cm^3
		Area: 2.00 in^2	9.0	101	111	Ix = 720.08 cm^4

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

175mm Side Rail Height

Straight Section Part Numbering

Prefix

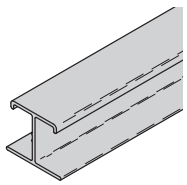
Example: **175** **A** **300** **IA** **05** **ILL** - **0750** - **3000**

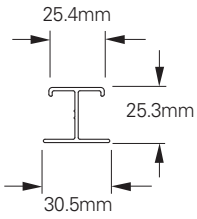
Height	Material	Rung Spacing	Rung Type	Series	*Width	Length
175	**A** = Aluminum	**100** = 100mm **150** = 150mm **225** = 225mm **300** = 300mm **SB** = Solid Bottom	**IA** = Standard **MA** = Slotted Marine Alternating **MD** = Slotted Marine Down **MU** = Slotted Marine Up	**02** **03** **05**	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**3000** = 3000mm **6000** = 6000mm **9000** = 9000mm

Series **02** & **03** come in **3000** & **6000** lengths
Series **05** come in **6000** & **9000** lengths

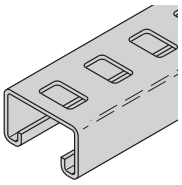
Eaton.com/sss

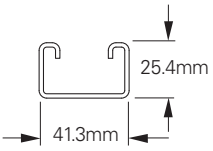
Leave Blank For Solid Bottom i.e. 100ASB02ILL-0600-3000



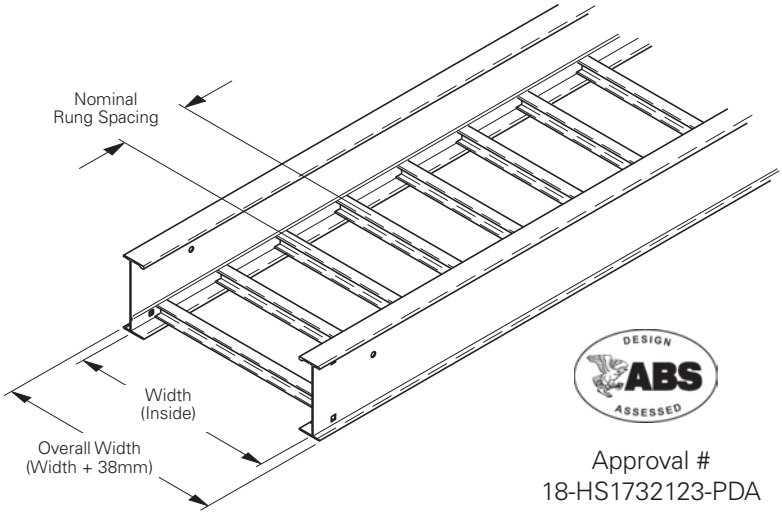


"IA" Standard Rung

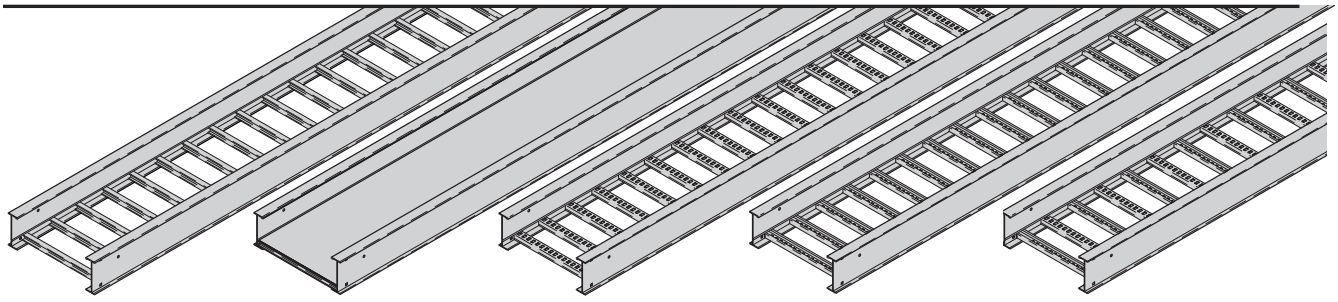




Slotted Marine Rung



Approval # 18-HS1732123-PDA

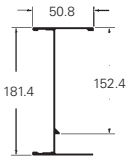


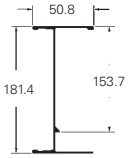
Standard Rung | Solid Bottom | Marine Rung Down | Marine Rung Up | Marine Rung Alternating

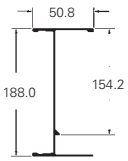
175mm Side Rail Height

NEMA values are based on simple beam tests per NEMA VE 1 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.5.
IEC values are based on continuous beam tests per IEC 61537 on 900mm wide cable tray with rungs spaced on 300mm centers. Cable trays will support without collapse a 90.7 kg (200 lb.) concentrated load over and above published loads. Published load safety factor is 1.7.

Individual rungs will support without collapse a 90.7 kg (200 lb.) concentrated load applied at the mid-span of the rung, over and above the NEMA rated cable load with a 1.5 safety factor for highlighted NEMA spans and loads.

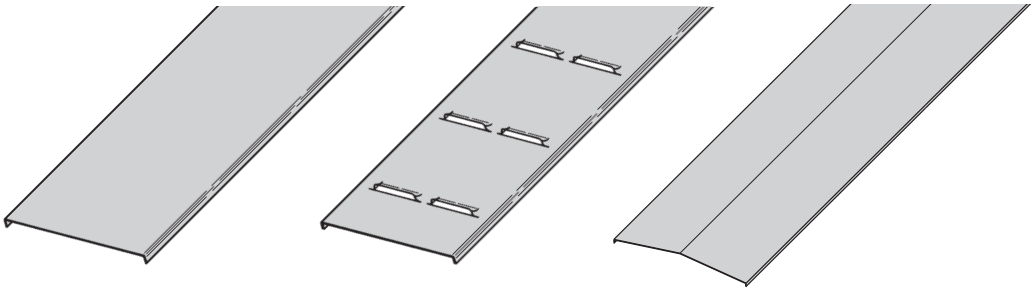
B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
02		NEMA: 12C UL Cross-Sectional Area: 1.50 in²	3.0 4.0 5.0 6.0	269 151 96 67	431 333 236 139	Area = 10.52 cm² Sx = 48.01 cm³ Ix = 469.51 cm⁴

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
03		NEMA: 20B, 16C UL Cross-Sectional Area: 1.50 in²	3.0 4.0 5.0 6.0	440 247 158 110	525 406 287 168	Area = 11.68 cm² Sx = 61.78 cm³ Ix = 561.91 cm⁴

B-Line Series	Side Rail Dimensions	NEMA, CSA & UL Classifications	Span meters	NEMA Load kg/m	IEC Load kg/m	Design Factors for Two Rails
05		NEMA: 20C+ UL Cross-Sectional Area: 2.00 in²	6.0 7.0 8.0 9.0	348 256 196 155	394 316 238 161	Area = 27.73 cm² Sx = 126.67 cm³ Ix = 1367.74 cm⁴

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

Covers



Solid Flanged | Ventilated Flanged | Peaked Flanged

A full range of covers is 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 allow heat to escape.

Eaton recommends that covers be placed on vertical cable ladder runs to a height of 1.5m to 2.5m above the floor to isolate both cables and personnel.

Cover clamps are not included with the cover and must be ordered separately.

Aluminum Cover Part Numbering

Prefix

Example: **CIF S A 15 LL - 0300 - 3000**

Flanged Cover	Cover Type	Material	Material Thickness	Ladder Straight Section	Width	Length *
	S = Solid **L** = Ventilated **P** = Peaked	**A** = Aluminum	**10** = 10mm **15** = 15mm **20** = 20mm		**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**1500** = 1500mm **3000** = 3000mm

Examples of Catalog Numbers for Fitting Covers:

Horizontal Bend Cover

Prefix — Suffix

CCF S A 15 LHB - 0600 - 90 R0300

- R0300 — Radius
- 90 — Angle
- 0600 — Width
- LHB — Fitting
- 15 — Thickness
- A — Material
- S — Cover Type
- CCF — Cover

Vertical Bend Cover

Prefix — Suffix

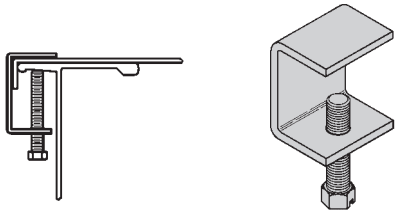
CCF S A 15 LVO - 0600 - 90 R0300 - 150*

- 150* — Side Rail* Height
- R0300 — Radius
- 90 — Angle
- 0600 — Width
- LVO — Fitting
- 15 — Thickness
- A — Material
- S — Cover Type
- CCF — Cover

* Required for VO, VTD, & CSF fittings only

Standard Cover Clamp

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

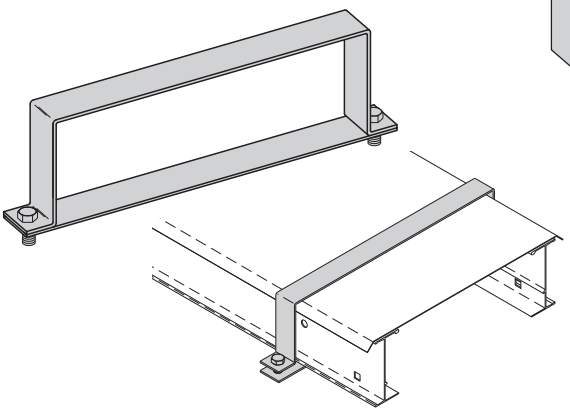


Tray Type	Catalog No.	Side Rail Height
Aluminum	9ZN-9012	All Sizes
	9A-9012	

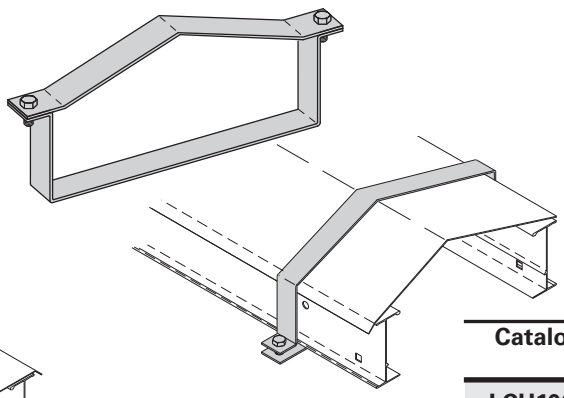
Heavy Duty Cover Clamp

- Recommended for outdoor service.
- (‡) Insert tray width

† Add P to Catalog No. for peaked cover clamp.



Peaked Cover Clamp



Catalog No.	Side Rail Height mm
LCH100A(‡)†	100
LCH125A(‡)†	125
LCH150A(‡)†	150
LCH175A(‡)†	175

Quantity of Standard Cover Clamps Required

Notes:
When using the heavy duty cover clamp, only on-half the number of clamps stated above is required.

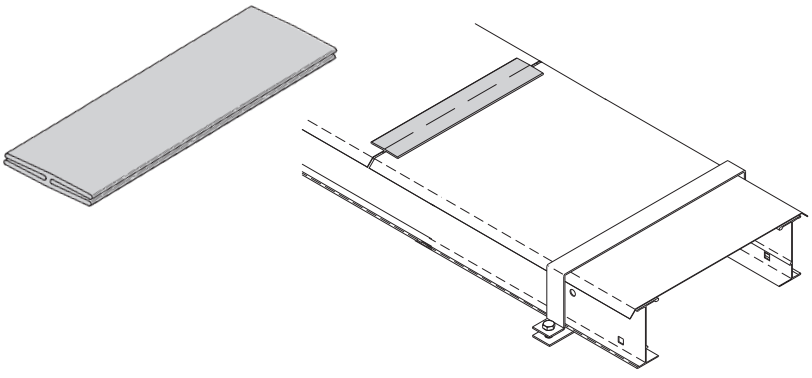
Additional clamps may be necessary in extreme wind applications.

Contact our engineering services for more information regarding high wind applications and calculations.

Straight Section 1500mm	4 pcs.
Straight Section 3000mm	6 pcs.
Horizontal/Vertical Bends	4 pcs.
Tees	6 pcs.
Crosses	8 pcs.

Cover Joint Strip

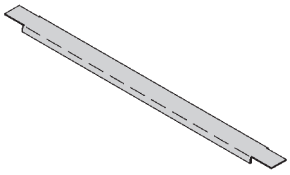
- Used to join covers
- Plastic
- (‡) Insert ladder width

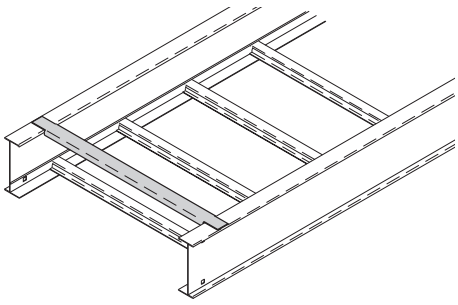


Catalog No.
99-9980-(‡)

Cover Support Bracket

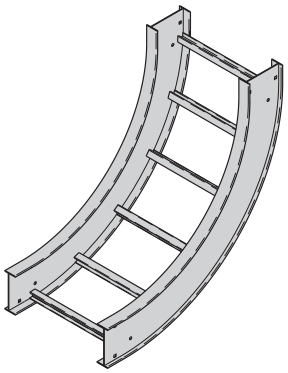
- To be utilized in conjunction with heavy duty cover clamps to eliminate sag in outdoor environment applications.
- (‡) Insert ladder width

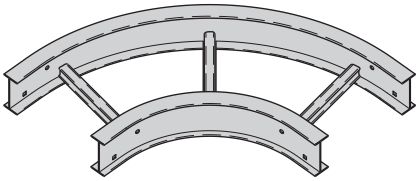




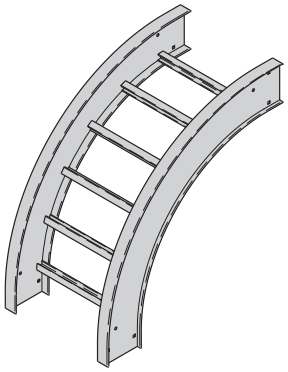
Catalog No.
9A-CS-(‡)

Aluminum Metric Cable Ladder Fittings





Fittings engineered with 75mm tangents for splicing integrity.



Fittings Part Numbering (with angles)

Prefix

Example: **150 A 300 IA I HB - 0600 - 90 R0300**

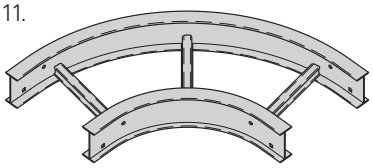
Side Rail Height	Material	Rung Spacing	Rung Type	Fitting Type	Width	Angle	Radius
100 = 100mm **125** = 125mm **150** = 150mm **175** = 175mm	**A** = Aluminum	**100** = 100mm **225** = 225mm **300** = 300mm **SB** = Solid Bottom	**IA =** Standard **MA =** Slotted Marine Alternating **MD =** Slotted Marine Down **MU =** Slotted Marine Up	**HB** = Horizontal Bend **VI** = Vertical Inside Bend **VO** = Vertical Outside Bend	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**30** = 30° **45** = 45° **60** = 60° **90** = 90°	**R0300** = 300mm **R0450** = 450mm **R0600** = 600mm **R0750** = 750mm **R0900** = 900mm **R1200** = 1200mm

For solid bottom, add **SB** as shown below.
Available in 150mm thru 900mm widths.

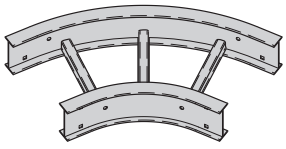
150 A SB I HB - 0600 - 90 R0300

Horizontal Bend 90° 60° (HB)

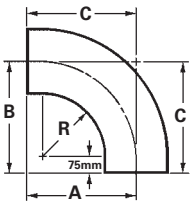
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

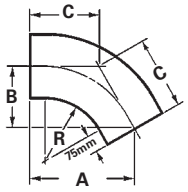


90˚ Horizontal Bend



60˚ Horizontal Bend



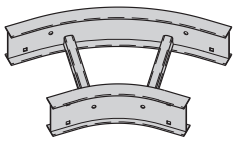


Bend Radius R	Tray Width	90˚ Horizontal Bend Dimensions				60˚ Horizontal Bend Dimensions			
		Catalog No.	A	B	C	Catalog No.	A	B	C
mm	mm		mm	mm	mm		mm	mm	mm
300	150	(Pre)HB-0150-90R0300	450	450	450	(Pre)HB-0150-60R0300	437	252	292
	225	(Pre)HB-0225-90R0300	488	488	488	(Pre)HB-0225-60R0300	470	271	313
	300	(Pre)HB-0300-90R0300	525	525	525	(Pre)HB-0300-60R0300	502	290	335
	450	(Pre)HB-0450-90R0300	600	600	600	(Pre)HB-0450-60R0300	567	327	378
	600	(Pre)HB-0600-90R0300	675	675	675	(Pre)HB-0600-60R0300	632	365	421
	750	(Pre)HB-0750-90R0300	750	750	750	(Pre)HB-0750-60R0300	697	402	465
	900	(Pre)HB-0900-90R0300	825	825	825	(Pre)HB-0900-60R0300	762	440	508
600	150	(Pre)HB-0150-90R0600	750	750	750	(Pre)HB-0150-60R0600	697	402	465
	225	(Pre)HB-0225-90R0600	788	788	788	(Pre)HB-0225-60R0600	730	421	486
	300	(Pre)HB-0300-90R0600	825	825	825	(Pre)HB-0300-60R0600	762	440	508
	450	(Pre)HB-0450-90R0600	900	900	900	(Pre)HB-0450-60R0600	827	477	551
	600	(Pre)HB-0600-90R0600	975	975	975	(Pre)HB-0600-60R0600	892	515	595
	750	(Pre)HB-0750-90R0600	1050	1050	1050	(Pre)HB-0750-60R0600	957	552	638
	900	(Pre)HB-0900-90R0600	1125	1125	1125	(Pre)HB-0900-60R0600	1022	590	681
900	150	(Pre)HB-0150-90R0900	1050	1050	1050	(Pre)HB-0150-60R0900	957	552	638
	225	(Pre)HB-0225-90R0900	1088	1088	1088	(Pre)HB-0225-60R0900	989	571	660
	300	(Pre)HB-0300-90R0900	1125	1125	1125	(Pre)HB-0300-60R0900	1022	590	681
	450	(Pre)HB-0450-90R0900	1200	1200	1200	(Pre)HB-0450-60R0900	1087	627	725
	600	(Pre)HB-0600-90R0900	1275	1275	1275	(Pre)HB-0600-60R0900	1152	665	768
	750	(Pre)HB-0750-90R0900	1350	1350	1350	(Pre)HB-0750-60R0900	1217	702	811
	900	(Pre)HB-0900-90R0900	1425	1425	1425	(Pre)HB-0900-60R0900	1282	740	854
1200	150	(Pre)HB-0150-90R1200	1350	1350	1350	(Pre)HB-0150-60R1200	1217	702	811
	225	(Pre)HB-0225-90R1200	1388	1388	1388	(Pre)HB-0225-60R1200	1249	721	833
	300	(Pre)HB-0300-90R1200	1425	1425	1425	(Pre)HB-0300-60R1200	1282	740	854
	450	(Pre)HB-0450-90R1200	1500	1500	1500	(Pre)HB-0450-60R1200	1347	777	898
	600	(Pre)HB-0600-90R1200	1575	1575	1575	(Pre)HB-0600-60R1200	1412	815	941
	750	(Pre)HB-0750-90R1200	1650	1650	1650	(Pre)HB-0750-60R1200	1476	852	984
	900	(Pre)HB-0900-90R1200	1725	1725	1725	(Pre)HB-0900-60R1200	1541	890	1028

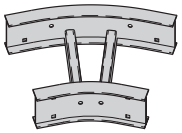
(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Horizontal Bend 45° 30° (HB)

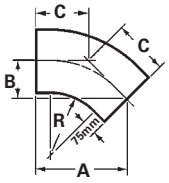
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

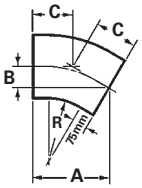


45˚ Horizontal Bend



30˚ Horizontal Bend



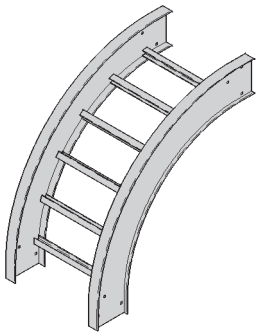


Bend Radius R	Tray Width	90˚ Horizontal Bend Dimensions				60˚ Horizontal Bend Dimensions			
		Catalog No.	A	B	C	Catalog No.	A	B	C
mm	mm		mm	mm	mm		mm	mm	mm
300	150	(Pre)HB-0150-45R0300	393	163	230	(Pre)HB-0150-30R0300	327	88	175
	225	(Pre)HB-0225-45R0300	420	174	246	(Pre)HB-0225-30R0300	346	93	186
	300	(Pre)HB-0300-45R0300	446	185	261	(Pre)HB-0300-30R0300	365	98	196
	450	(Pre)HB-0450-45R0300	499	207	292	(Pre)HB-0450-30R0300	402	108	216
	600	(Pre)HB-0600-45R0300	552	229	324	(Pre)HB-0600-30R0300	440	118	236
	750	(Pre)HB-0750-45R0300	605	251	355	(Pre)HB-0750-30R0300	477	128	256
	900	(Pre)HB-0900-45R0300	658	273	386	(Pre)HB-0900-30R0300	515	138	276
600	150	(Pre)HB-0150-45R0600	605	251	355	(Pre)HB-0150-30R0600	477	128	256
	225	(Pre)HB-0225-45R0600	632	262	370	(Pre)HB-0225-30R0600	496	133	266
	300	(Pre)HB-0300-45R0600	658	273	386	(Pre)HB-0300-30R0600	515	138	276
	450	(Pre)HB-0450-45R0600	711	295	417	(Pre)HB-0450-30R0600	552	148	296
	600	(Pre)HB-0600-45R0600	764	317	448	(Pre)HB-0600-30R0600	590	158	316
	750	(Pre)HB-0750-45R0600	817	339	479	(Pre)HB-0750-30R0600	627	168	336
	900	(Pre)HB-0900-45R0600	870	361	510	(Pre)HB-0900-30R0600	665	178	256
900	150	(Pre)HB-0150-45R0900	817	339	479	(Pre)HB-0150-30R0900	627	168	336
	225	(Pre)HB-0225-45R0900	844	350	494	(Pre)HB-0225-30R0900	646	173	346
	300	(Pre)HB-0300-45R0900	870	361	510	(Pre)HB-0300-30R0900	665	178	356
	450	(Pre)HB-0450-45R0900	924	383	541	(Pre)HB-0450-30R0900	702	188	376
	600	(Pre)HB-0600-45R0900	977	405	572	(Pre)HB-0600-30R0900	740	198	397
	750	(Pre)HB-0750-45R0900	1030	426	603	(Pre)HB-0750-30R0900	777	208	417
	900	(Pre)HB-0900-45R0900	1083	448	634	(Pre)HB-0900-30R0900	815	218	437
1200	150	(Pre)HB-0150-45R1200	1030	426	603	(Pre)HB-0150-30R1200	777	208	417
	225	(Pre)HB-0225-45R1200	1056	437	619	(Pre)HB-0225-30R1200	796	213	427
	300	(Pre)HB-0300-45R1200	1083	448	634	(Pre)HB-0300-30R1200	815	218	437
	450	(Pre)HB-0450-45R1200	1136	470	665	(Pre)HB-0450-30R1200	852	228	457
	600	(Pre)HB-0600-45R1200	1189	492	696	(Pre)HB-0600-30R1200	890	238	477
	750	(Pre)HB-0750-45R1200	1242	514	727	(Pre)HB-0750-30R1200	927	249	497
	900	(Pre)HB-0900-45R1200	1295	536	758	(Pre)HB-0900-30R1200	965	259	517

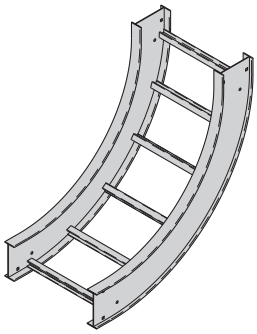
(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Vertical Bend 90˚ (VO, VI)

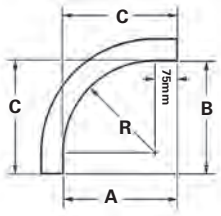
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

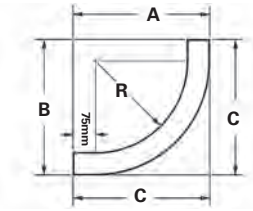


90˚ Vertical Outside - VO



90˚ Vertical Inside - VI



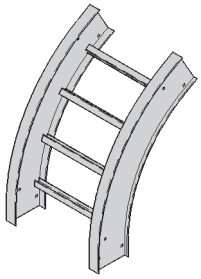


Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 100mm - 175mm			VI Side Rail Height											
						100mm			125mm			150mm			175mm		
			mm			mm			mm			mm			mm		
			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
300	152	(Pre)(*)-0150-90R0300	375	375	375	483	483	483	505	505	505	534	534	534	559	559	559
	225	(Pre)(*)-0225-90R0300															
	300	(Pre)(*)-0300-90R0300															
	450	(Pre)(*)-0450-90R0300															
	600	(Pre)(*)-0600-90R0300															
	750	(Pre)(*)-0750-90R0300															
	900	(Pre)(*)-0900-90R0300															
600	150	(Pre)(*)-0150-90R0600	675	675	675	783	783	783	805	805	805	834	834	834	859	859	859
	225	(Pre)(*)-0225-90R0600															
	300	(Pre)(*)-0300-90R0600															
	450	(Pre)(*)-0450-90R0600															
	600	(Pre)(*)-0600-90R0600															
	750	(Pre)(*)-0750-90R0600															
	900	(Pre)(*)-0900-90R0600															
900	150	(Pre)(*)-0150-90R0900	975	975	975	1083	1083	1083	1105	1105	1105	1134	1134	1134	1159	1159	1159
	225	(Pre)(*)-0225-90R0900															
	300	(Pre)(*)-0300-90R0900															
	450	(Pre)(*)-0450-90R0900															
	600	(Pre)(*)-0600-90R0900															
	750	(Pre)(*)-0750-90R0900															
	900	(Pre)(*)-0900-90R0900															
1200	150	(Pre)(*)-0150-90R1200	1275	1275	1275	1383	1383	1383	1405	1405	1405	1434	1434	1434	1459	1459	1459
	225	(Pre)(*)-0225-90R1200															
	300	(Pre)(*)-0300-90R1200															
	450	(Pre)(*)-0450-90R1200															
	600	(Pre)(*)-0600-90R1200															
	750	(Pre)(*)-0750-90R1200															
	900	(Pre)(*)-0900-90R1200															

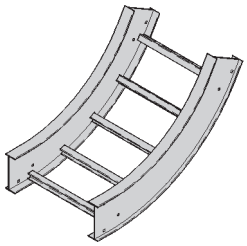
(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Vertical Bend 60˚ (VO, VI)

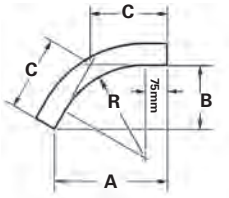
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

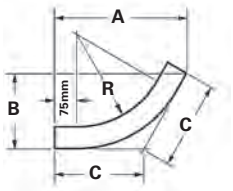


60˚ Vertical Outside - VO



60˚ Vertical Inside - VI



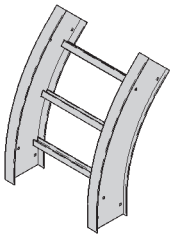


Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 100mm - 175mm			VI Side Rail Height											
						100mm			125mm			150mm			175mm		
			mm			mm			mm			mm			mm		
			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
300	150	(Pre)(*)-0150-60R0300	372	215	248	466	269	311	485	280	323	510	294	340	532	307	355
	225	(Pre)(*)-0225-60R0300															
	300	(Pre)(*)-0300-60R0300															
	450	(Pre)(*)-0450-60R0300															
	600	(Pre)(*)-0600-60R0300															
	750	(Pre)(*)-0750-60R0300															
	900	(Pre)(*)-0900-60R0300															
600	150	(Pre)(*)-0150-60R0600	632	365	421	726	419	484	745	430	497	770	444	513	792	457	528
	225	(Pre)(*)-0225-60R0600															
	300	(Pre)(*)-0300-60R0600															
	450	(Pre)(*)-0450-60R0600															
	600	(Pre)(*)-0600-60R0600															
	750	(Pre)(*)-0750-60R0600															
	900	(Pre)(*)-0900-60R0600															
900	150	(Pre)(*)-0150-60R0900	892	515	595	985	569	657	1005	580	670	1029	594	686	1051	607	701
	225	(Pre)(*)-0225-60R0900															
	300	(Pre)(*)-0300-60R0900															
	450	(Pre)(*)-0450-60R0900															
	600	(Pre)(*)-0600-60R0900															
	750	(Pre)(*)-0750-60R0900															
	900	(Pre)(*)-0900-60R0900															
1200	150	(Pre)(*)-0150-60R1200	1152	665	768	1245	719	830	1265	730	843	1289	744	860	1311	757	874
	225	(Pre)(*)-0225-60R1200															
	300	(Pre)(*)-0300-60R1200															
	450	(Pre)(*)-0450-60R1200															
	600	(Pre)(*)-0600-60R1200															
	750	(Pre)(*)-0750-60R1200															
	900	(Pre)(*)-0900-60R1200															

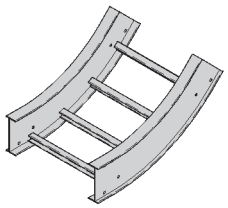
(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Vertical Bend 45˚ (VO, VI)

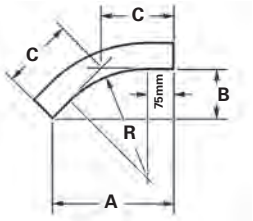
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

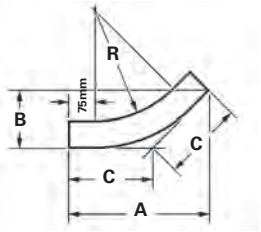


45˚ Vertical Outside -VO



45˚ Vertical Inside -VI



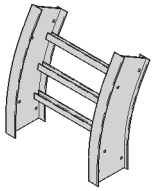


Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 100mm - 175mm			VI Side Rail Height											
						100mm			125mm			150mm			175mm		
			mm			mm			mm			mm			mm		
			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
300	150	(Pre)(*)-0150-45R0300	340	141	199	417	173	244	432	179	253	452	187	265	470	195	276
	225	(Pre)(*)-0225-45R0300															
	300	(Pre)(*)-0300-45R0300															
	450	(Pre)(*)-0450-45R0300															
	600	(Pre)(*)-0600-45R0300															
	750	(Pre)(*)-0750-45R0300															
	900	(Pre)(*)-0900-45R0300															
600	150	(Pre)(*)-0150-45R0600	552	229	324	629	260	368	644	267	378	665	275	389	683	283	400
	225	(Pre)(*)-0225-45R0600															
	300	(Pre)(*)-0300-45R0600															
	450	(Pre)(*)-0450-45R0600															
	600	(Pre)(*)-0600-45R0600															
	750	(Pre)(*)-0750-45R0600															
	900	(Pre)(*)-0900-45R0600															
900	150	(Pre)(*)-0150-45R0900	764	317	448	841	348	493	857	355	502	877	363	514	895	371	524
	225	(Pre)(*)-0225-45R0900															
	300	(Pre)(*)-0300-45R0900															
	450	(Pre)(*)-0450-45R0900															
	600	(Pre)(*)-0600-45R0900															
	750	(Pre)(*)-0750-45R0900															
	900	(Pre)(*)-0900-45R0900															
1200	150	(Pre)(*)-0150-45R1200	974	405	572	1053	436	617	1069	443	626	1089	451	638	1107	458	648
	225	(Pre)(*)-0225-45R1200															
	300	(Pre)(*)-0300-45R1200															
	450	(Pre)(*)-0450-45R1200															
	600	(Pre)(*)-0600-45R1200															
	750	(Pre)(*)-0750-45R1200															
	900	(Pre)(*)-0900-45R1200															

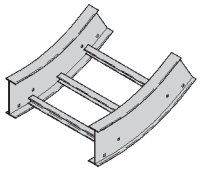
(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Vertical Bend 30˚ (VO, VI)

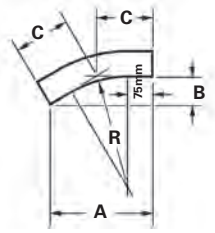
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

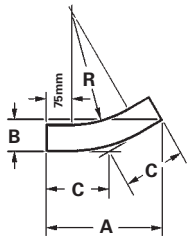


30˚ Vertical Outside -VO



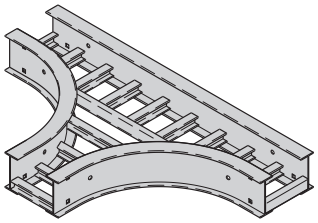
30˚ Vertical Inside -VI

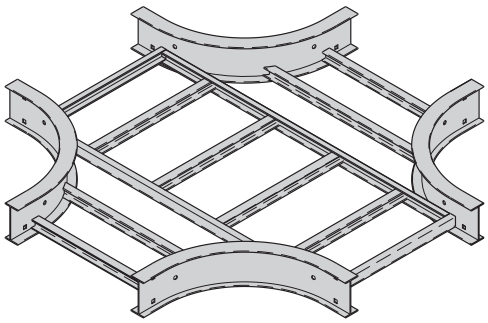




Bend Radius R	Tray Width Insert	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend Catalog No.	VO Side Rail Height 100mm - 175mm			VI Side Rail Height											
						100mm			125mm			150mm			175mm		
			mm			mm			mm			mm			mm		
			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
300	150	(Pre)(*)-0150-30R0300	290	78	155	344	92	184	355	95	190	369	99	198	382	102	205
	225	(Pre)(*)-0225-30R0300															
	300	(Pre)(*)-0300-30R0300															
	450	(Pre)(*)-0450-30R0300															
	600	(Pre)(*)-0600-30R0300															
	750	(Pre)(*)-0750-30R0300															
	900	(Pre)(*)-0900-30R0300															
600	150	(Pre)(*)-0150-30R0600	440	118	236	494	132	265	505	135	271	519	139	278	532	143	285
	225	(Pre)(*)-0225-30R0600															
	300	(Pre)(*)-0300-30R0600															
	450	(Pre)(*)-0450-30R0600															
	600	(Pre)(*)-0600-30R0600															
	750	(Pre)(*)-0750-30R0600															
	900	(Pre)(*)-0900-30R0600															
900	150	(Pre)(*)-0150-30R0900	590	158	316	644	173	345	655	176	351	669	179	359	682	183	366
	225	(Pre)(*)-0225-30R0900															
	300	(Pre)(*)-0300-30R0900															
	450	(Pre)(*)-0450-30R0900															
	600	(Pre)(*)-0600-30R0900															
	750	(Pre)(*)-0750-30R0900															
	900	(Pre)(*)-0900-30R0900															
1200	150	(Pre)(*)-0150-30R1200	740	198	397	794	213	425	805	216	431	819	220	439	832	223	446
	225	(Pre)(*)-0225-30R1200															
	300	(Pre)(*)-0300-30R1200															
	450	(Pre)(*)-0450-30R1200															
	600	(Pre)(*)-0600-30R1200															
	750	(Pre)(*)-0750-30R1200															
	900	(Pre)(*)-0900-30R1200															

(Pre) See page 88 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.





Fittings engineered with 75mm tangents for splicing integrity.

Fittings Part Numbering (without angles)

Prefix

Example: **150 A 300 IA I HT - 0600 - R0300**

Side Rail Height	Material	Rung Spacing	Rung Type	Fitting Type	Width	Radius
100 = 100mm **125** = 125mm **150** = 150mm **175** = 175mm	**A** = Aluminum	**100** = 100mm **225** = 225mm **300** = 300mm **SB** = Solid Bottom	**IA =** Standard **MA =** Slotted Marine Alternating **MD =** Slotted Marine Down **MU =** Slotted Marine Up	**HT** = Horizontal Tee **HX** = Horizontal Cross **VTU** = Vertical Tee - Up **VTD** = Vertical Tee - Down *__HYR__ = Horizontal Wye, Right *__HYL__ = Horizontal Wye, Left **CSF** = Cable Support Fitting	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm **1200** = 1200mm

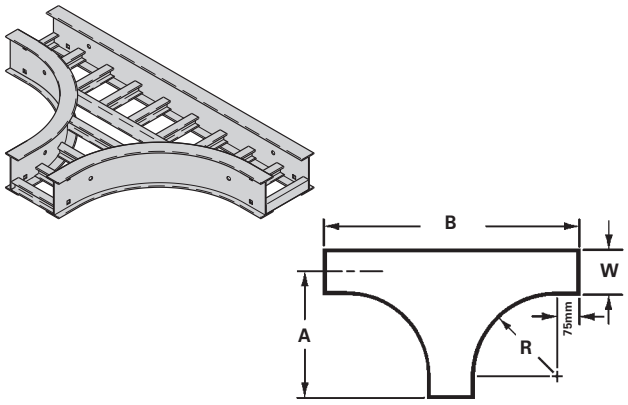
* Available only in 600mm radius

For solid bottom, add **SB** as shown below.
Available in 150mm thru 900mm widths

150 A SB I HB - 0600 - 90 R0300

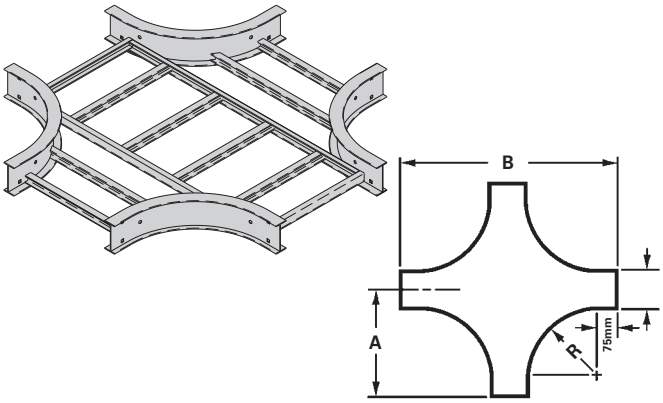
Horizontal Tee (HT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.



Horizontal Cross (HX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Three (3) pair required to connect to system.

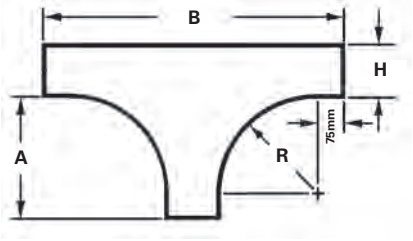


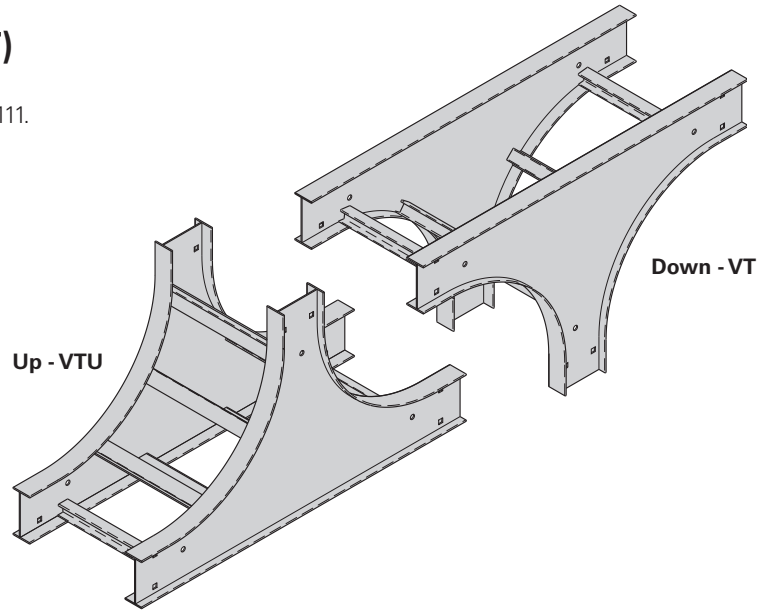
Bend Radius R mm	Tray Width mm	Horizontal Tee			Horizontal Cross		
		Catalog Number	Dimension A mm	Dimension B mm	Catalog Number	Dimensions A mm	Dimensions B mm
300	150	**(Pre)HT-0150-R0300**	450	900	**(Pre)HX-0150-R0300**	450	900
	225	**(Pre)HT-0225-R0300**	487.5	975	**(Pre)HX-0225-R0300**	487.5	975
	300	**(Pre)HT-0300-R0300**	525	1059	**(Pre)HX-0300-R0300**	525	1059
	450	**(Pre)HT-0450-R0300**	600	1200	**(Pre)HX-0450-R0300**	600	1200
	600	**(Pre)HT-0600-R0300**	675	1350	**(Pre)HX-0600-R0300**	675	1350
	750	**(Pre)HT-0750-R0300**	750	1500	**(Pre)HX-0750-R0300**	750	1500
	900	**(Pre)HT-0900-R0300**	825	1650	**(Pre)HX-0900-R0300**	825	1650
600	150	**(Pre)HT-0150-R0600**	750	1500	**(Pre)HX-0150-R0600**	750	1500
	225	**(Pre)HT-0225-R0600**	787.5	1575	**(Pre)HX-0225-R0600**	787.5	1575
	300	**(Pre)HT-0300-R0600**	825	1650	**(Pre)HX-0300-R0600**	825	1650
	450	**(Pre)HT-0450-R0600**	900	1800	**(Pre)HX-0450-R0600**	900	1800
	600	**(Pre)HT-0600-R0600**	975	1950	**(Pre)HX-0600-R0600**	975	1950
	750	**(Pre)HT-0750-R0600**	1050	2100	**(Pre)HX-0750-R0600**	1050	2100
	900	**(Pre)HT-0900-R0600**	1125	2250	**(Pre)HX-0900-R0600**	1125	2250
900	150	**(Pre)HT-0150-R0900**	1050	2100	**(Pre)HX-0150-R0900**	1050	2100
	225	**(Pre)HT-0225-R0900**	1087.5	2175	**(Pre)HX-0225-R0900**	1087.5	2175
	300	**(Pre)HT-0300-R0900**	1125	2250	**(Pre)HX-0300-R0900**	1125	2250
	450	**(Pre)HT-0450-R0900**	1200	2400	**(Pre)HX-0450-R0900**	1200	2400
	600	**(Pre)HT-0600-R0900**	1275	2550	**(Pre)HX-0600-R0900**	1275	2550
	750	**(Pre)HT-0750-R0900**	1350	2700	**(Pre)HX-0750-R0900**	1350	2700
	900	**(Pre)HT-0900-R0900**	1425	2850	**(Pre)HX-0900-R0900**	1425	2850
1200	150	**(Pre)HT-0150-R1200**	1350	2700	**(Pre)HX-0150-R1200**	1350	2700
	225	**(Pre)HT-0225-R1200**	1387.5	2775	**(Pre)HX-0225-R1200**	1387.5	2775
	300	**(Pre)HT-0300-R1200**	1425	2850	**(Pre)HX-0300-R1200**	1425	2850
	450	**(Pre)HT-0450-R1200**	1500	3000	**(Pre)HX-0450-R1200**	1500	3000
	600	**(Pre)HT-0600-R1200**	1575	3150	**(Pre)HX-0600-R1200**	1575	3150
	750	**(Pre)HT-0750-R1200**	1650	3300	**(Pre)HX-0750-R1200**	1650	3300
	900	**(Pre)HT-0900-R1200**	1725	3450	**(Pre)HX-0900-R1200**	1725	3450

(Pre) See page 95 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Vertical Tee Up/Down (VTU/VT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.



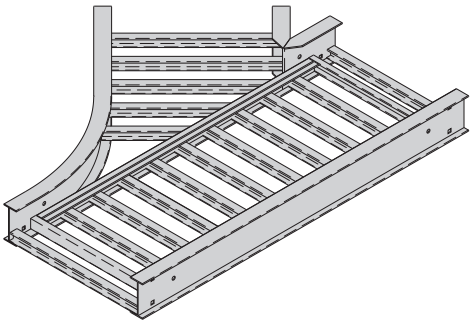


Bend Radius R mm	Tray Width mm	Vertical Tee Down Catalog No.	Vertical Tee Up Catalog No.	Side Rail Height "H" 100mm A mm	100mm B mm	125mm A mm	125mm B mm	150mm A mm	150mm B mm	175mm A mm	175mm B mm
300	150	(Pre)-VTD-0150-R0300	(Pre)-VTU-0150-R0300	372	852	372	874	372	903	372	928
	225	(Pre)-VTD-0225-R0300	(Pre)-VTU-0225-R0300								
	300	(Pre)-VTD-0300-R0300	(Pre)-VTU-0300-R0300								
	450	(Pre)-VTD-0450-R0300	(Pre)-VTU-0450-R0300								
	600	(Pre)-VTD-0600-R0300	(Pre)-VTU-0600-R0300								
	750	(Pre)-VTD-0750-R0300	(Pre)-VTU-0750-R0300								
	900	(Pre)-VTD-0900-R0300	(Pre)-VTU-0900-R0300								
600	150	(Pre)-VTD-0150-R0600	(Pre)-VTU-0150-R0600	672	1452	672	1474	672	1503	672	1528
	225	(Pre)-VTD-0225-R0600	(Pre)-VTU-0225-R0600								
	300	(Pre)-VTD-0300-R0600	(Pre)-VTU-0300-R0600								
	450	(Pre)-VTD-0450-R0600	(Pre)-VTU-0450-R0600								
	600	(Pre)-VTD-0600-R0600	(Pre)-VTU-0600-R0600								
	750	(Pre)-VTD-0750-R0600	(Pre)-VTU-0750-R0600								
	900	(Pre)-VTD-0900-R0600	(Pre)-VTU-0900-R0600								
900	150	(Pre)-VTD-0150-R0900	(Pre)-VTU-0150-R0900	972	2052	972	2074	972	2103	972	2128
	225	(Pre)-VTD-0225-R0900	(Pre)-VTU-0225-R0900								
	300	(Pre)-VTD-0300-R0900	(Pre)-VTU-0300-R0900								
	450	(Pre)-VTD-0450-R0900	(Pre)-VTU-0450-R0900								
	600	(Pre)-VTD-0600-R0900	(Pre)-VTU-0600-R0900								
	750	(Pre)-VTD-0750-R0900	(Pre)-VTU-0750-R0900								
	900	(Pre)-VTD-0900-R0900	(Pre)-VTU-0900-R0900								
1200	150	(Pre)-VTD-0150-R1200	(Pre)-VTU-0150-R1200	1272	2652	1272	2674	1272	2703	1272	2728
	225	(Pre)-VTD-0225-R1200	(Pre)-VTU-0225-R1200								
	300	(Pre)-VTD-0300-R1200	(Pre)-VTU-0300-R1200								
	450	(Pre)-VTD-0450-R1200	(Pre)-VTU-0450-R1200								
	600	(Pre)-VTD-0600-R1200	(Pre)-VTU-0600-R1200								
	750	(Pre)-VTD-0750-R1200	(Pre)-VTU-0750-R1200								
	900	(Pre)-VTD-0900-R1200	(Pre)-VTU-0900-R1200								

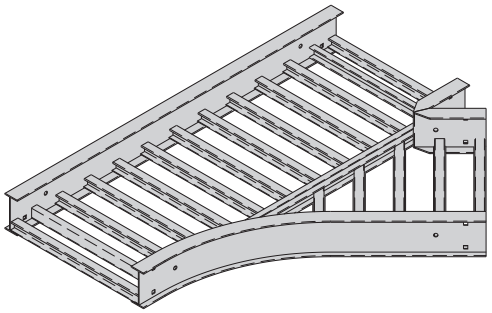
(Pre) See page 95 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Horizontal Wye (HYL, HYR)

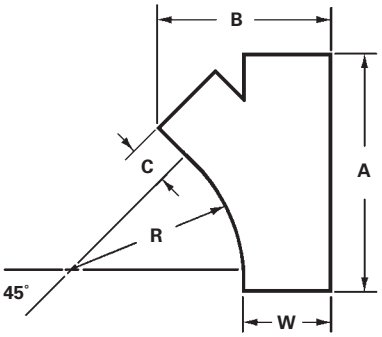
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.

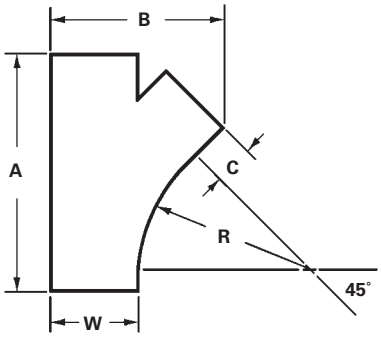


Left Hand Wye - HYL



Right Hand Wye - HYR





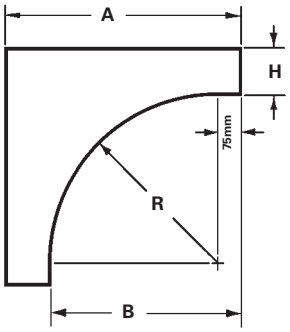
R = Radius

Bend Radius mm	Tray Width mm	Left Hand Wye Catalog No.	Right Hand Wye Catalog No.	A mm	B mm	C mm
600	150	**(Pre)-HYL-0150-R600**	**(Pre)-HYR-0150-R600**	721	419	87
	225	**(Pre)-HYL-0225-R600**	**(Pre)-HYR-0225-R600**	827	548	162
	300	**(Pre)-HYL-0300-R600**	**(Pre)-HYR-0300-R600**	933	676	237
	450	**(Pre)-HYL-0450-R600**	**(Pre)-HYR-0450-R600**	1145	932	387
	600	**(Pre)-HYL-0600-R600**	**(Pre)-HYR-0600-R600**	1357	1188	537
	750	**(Pre)-HYL-0750-R600**	**(Pre)-HYR-0750-R600**	1569	1444	687
	900	**(Pre)-HYL-0900-R600**	**(Pre)-HYR-0900-R600**	1781	1700	837

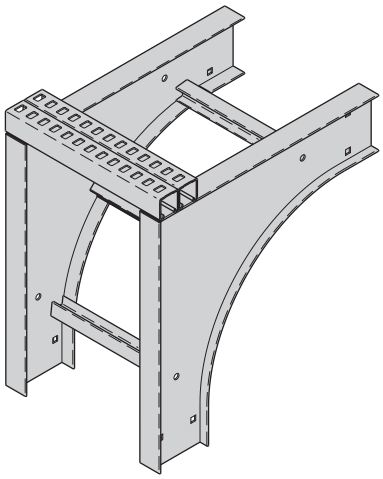
(Pre) See page 95 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Cable Support Fittings (CSF)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.



This fitting is recommended for use at the top of vertical runs to support the weight of the cables. The top cross brace is drilled for installing eyebolts, ordered separately.



Bend Radius R mm	Tray Width mm	Catalog No.	Side Rail Height "H"							
			100mm		125mm		150mm		175mm	
			A mm	B mm	A mm	B mm	A mm	B mm	A mm	B mm
300	150	(Pre)-CSF-0150-R0300	483	372	505	372	534	372	559	372
	225	(Pre)-CSF-0225-R0300								
	300	(Pre)-CSF-0300-R0300								
	450	(Pre)-CSF-0450-R0300								
	600	(Pre)-CSF-0600-R0300								
	750	(Pre)-CSF-0750-R0300								
	900	(Pre)-CSF-0900-R0300								
600	150	(Pre)-CSF-0150-R0600	783	672	805	672	34	672	859	672
	225	(Pre)-CSF-0225-R0600								
	300	(Pre)-CSF-0300-R0600								
	450	(Pre)-CSF-0450-R0600								
	600	(Pre)-CSF-0600-R0600								
	750	(Pre)-CSF-0750-R0600								
	900	(Pre)-CSF-0900-R0600								
900	150	(Pre)-CSF-0150-R0900	1083	972	1105	972	1134	972	1159	972
	225	(Pre)-CSF-0225-R0900								
	300	(Pre)-CSF-0300-R0900								
	450	(Pre)-CSF-0450-R0900								
	600	(Pre)-CSF-0600-R0900								
	750	(Pre)-CSF-0750-R0900								
	900	(Pre)-CSF-0900-R0900								
1200	150	(Pre)-CSF-0150-R1200	1383	1272	1405	1272	1434	1272	1459	1272
	225	(Pre)-CSF-0225-R1200								
	300	(Pre)-CSF-0300-R1200								
	450	(Pre)-CSF-0450-R1200								
	600	(Pre)-CSF-0600-R1200								
	750	(Pre)-CSF-0750-R1200								
	900	(Pre)-CSF-0900-R1200								

(Pre) See page 95 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Expanding/Reducing Fittings Part Numbering

Prefix

Example: **150 A 300 IA I RT - 0600 - 0450 - R0600**

Side Rail Height
100 = 100mm
125 = 125mm
150 = 150mm
175 = 175mm

Material
A
Aluminum

Rung Spacing
100 = 100mm
225 = 225mm
300 = 300mm
SB = Solid Bottom

Rung Type
IA = Standard
MA = Slotted Marine Alternating
MD = Slotted Marine Down
MU = Slotted Marine Up

Type
LR = Left Reducer Fitting
RR = Right Reducer Fitting
SR = Straight Reducer Fitting
ET = Horizontal Expanding Tee
RT = Horizontal Reducing Tee
RX = Horizontal Reducing/ Expanding Tee

Width 1
0150 = 150mm
0225 = 225mm
0300 = 300mm
0450 = 450mm
0600 = 600mm
0750 = 750mm
0900 = 900mm

Width 2
0150 = 150mm
0225 = 225mm
0300 = 300mm
0450 = 450mm
0600 = 600mm
0750 = 750mm
0900 = 900mm

Radius
R0300 = 300mm
R0450 = 450mm
R0600 = 600mm
R0750 = 750mm
R0900 = 900mm
R1200 = 1200mm

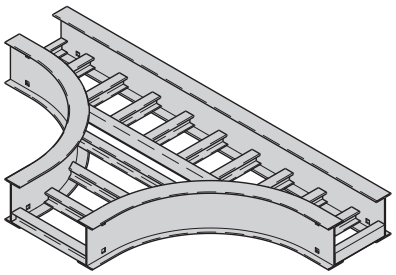
Required for ET, RT & RX

For solid bottom, add **SB** as shown below.
Available in 150mm thru 900mm widths.

150 A SB I RT - 0600 - 0450 - 0600

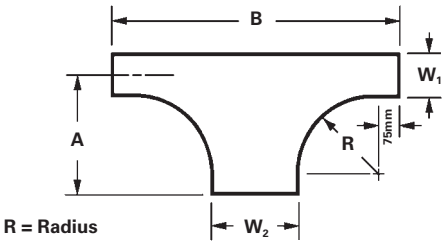
Horizontal Expanding Tee (ET)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.



Prefix - ET - 0450 - 0600 - 0600

- Radius
- Width W_2
- Width W_1
- Fitting
- To complete catalog number, insert fitting prefix.

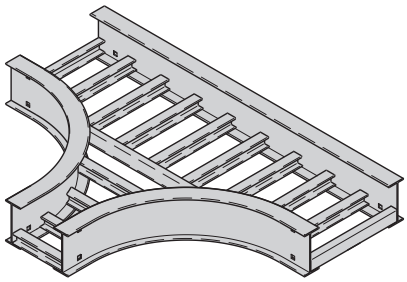


Tray Width		* Insert Radius (0300, 0600, 0900, or 1200) Catalog No.	300mm Radius		600mm Radius		900mm Radius		1200mm Radius	
W_1 mm	W_2 mm		A mm	B mm	A mm	B mm	A mm	B mm	A mm	B mm
150	225	**(Pre)-ET-0150-0225-***	450	975	750	1575	1050	2175	1350	2775
	300	**(Pre)-ET-0150-0300-***	450	1050	750	1650	1050	2250	1350	2850
	450	**(Pre)-ET-0150-0450-***	450	1200	750	1800	1050	2400	1350	3000
	600	**(Pre)-ET-0150-0600-***	450	1350	750	1950	1050	2550	1350	3150
	750	**(Pre)-ET-0150-0750-***	450	1500	750	2100	1050	2700	1350	3300
	900	**(Pre)-ET-0150-0900-***	450	1650	750	2250	1050	2850	1350	3450
225	300	**(Pre)-ET-0225-0300-***	487.5	1050	787.5	1660	1087.5	2250	1387.5	2850
	450	**(Pre)-ET-0225-0450-***	487.5	1200	787.5	1800	1087.5	2400	1387.5	3000
	600	**(Pre)-ET-0225-0600-***	487.5	1350	787.5	1950	1087.5	2550	1387.5	3150
	750	**(Pre)-ET-0225-0750-***	487.5	1500	787.5	2100	1087.5	2700	1387.5	3300
	900	**(Pre)-ET-0225-0900-***	487.5	1650	787.5	2250	1087.5	2850	1387.5	3450
300	450	**(Pre)-ET-0300-0450-***	525	1200	825	1800	1125	2400	1425	3000
	600	**(Pre)-ET-0300-0600-***	525	1350	825	1950	1125	2550	1425	3150
	750	**(Pre)-ET-0300-0750-***	525	1500	825	2100	1125	2700	1425	3300
	900	**(Pre)-ET-0300-0900-***	525	1650	825	2250	1125	2850	1425	3450
450	600	**(Pre)-ET-0450-0600-***	600	1350	900	1950	1200	2550	1500	3150
	750	**(Pre)-ET-0450-0750-***	600	1500	900	2100	1200	2700	1500	3300
	900	**(Pre)-ET-0450-0900-***	600	1650	900	2250	1200	2850	1500	3450
600	750	**(Pre)-ET-0600-0750-***	675	1500	975	2100	1275	2700	1575	3300
	900	**(Pre)-ET-0600-0900-***	675	1650	975	2250	1275	2850	1575	3450
750	900	**(Pre)-ET-0750-0900-***	750	1650	1050	2250	1350	2850	1650	3450

(Pre) See page 100 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

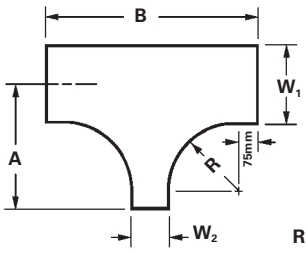
Horizontal Reducing Tee (RT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.



Prefix - RT - 0600 - 0450 - 0600

- Radius
- Width W_2
- Width W_1
- Fitting
- To complete catalog number, insert fitting prefix.



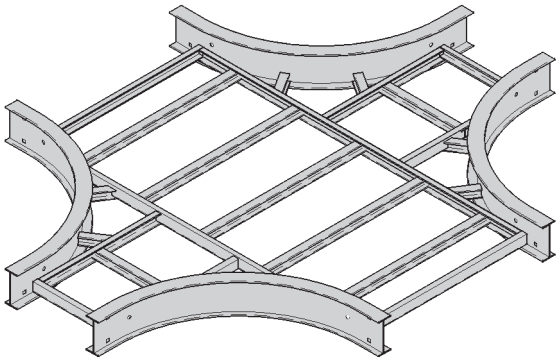
R = Radius

Tray Width		* Insert Radius (0300, 0600, 0900, or 1200)	300mm Radius		600mm Radius		900mm Radius		1200mm Radius	
W_1 mm	W_2 mm	Catalog No.	A mm	B mm	A mm	B mm	A mm	B mm	A mm	B mm
225	150	**(Pre)-RT-0225-0150-***	487.5	900	787.5	1500	1087.5	2100	1387.5	2700
300	150	**(Pre)-RT-0300-0150-***	525	900	825	1500	1125	2100	1425	2700
	225	**(Pre)-RT-0300-0225-***	525	975	825	1575	1125	2175	1425	2775
450	150	**(Pre)-RT-0450-0150-***	600	900	900	1500	1200	2100	1500	2700
	225	**(Pre)-RT-0450-0225-***	600	975	900	1575	1200	2175	1500	2775
	300	**(Pre)-RT-0450-0300-***	600	1050	900	1650	1200	2250	1500	2850
600	150	**(Pre)-RT-0600-0150-***	675	900	975	1500	1275	2100	1575	2700
	225	**(Pre)-RT-0600-0225-***	675	975	975	1575	1275	2175	1575	2775
	300	**(Pre)-RT-0600-0300-***	675	1050	975	1650	1275	2250	1575	2850
	450	**(Pre)-RT-0600-0450-***	675	1200	975	1800	1275	2400	1575	3000
750	150	**(Pre)-RT-0750-0150-***	750	900	1050	1500	1350	2100	1650	2700
	225	**(Pre)-RT-0750-0225-***	750	975	1050	1575	1350	2175	1650	2775
	300	**(Pre)-RT-0750-0300-***	750	1050	1050	1650	1350	2250	1650	2850
	450	**(Pre)-RT-0750-0450-***	750	1200	1050	1800	1350	2400	1650	3000
	600	**(Pre)-RT-0750-0600-***	750	1350	1050	1950	1350	2550	1650	3150
900	150	**(Pre)-RT-0900-0150-***	825	900	1125	1500	1425	2100	1725	2700
	225	**(Pre)-RT-0900-0225-***	825	975	1125	1575	1425	2175	1725	2775
	300	**(Pre)-RT-0900-0300-***	825	1050	1125	1650	1425	2250	1725	2850
	450	**(Pre)-RT-0900-0450-***	825	1200	1125	1800	1425	2400	1725	3000
	600	**(Pre)-RT-0900-0600-***	825	1350	1125	1950	1425	2550	1725	3150
	750	**(Pre)-RT-0900-0750-***	825	1500	1125	2100	1425	2700	1725	3300

(Pre) See page 100 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

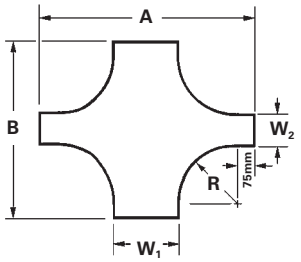
Horizontal Expanding/Reducing Cross (RX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Three (3) pair required to connect to system.



Prefix - RX - 0600 - 0450 - 0600

- Radius
- Width W_2
- Width W_1
- Fitting
- To complete catalog number, insert fitting prefix.



Tray Width		* Insert Radius (0300, 0600, 0900, or 1200)	300mm Radius		600mm Radius		900mm Radius		1200mm Radius	
W_1 mm	W_2 mm	Catalog No.	A mm	B mm	A mm	B mm	A mm	B mm	A mm	B mm
225	150	**(Pre)-RX-0225-0150-***	975	900	1575	1500	2175	2100	2775	2700
300	150	**(Pre)-RX-0300-0150-***	1050	900	1650	1500	2250	2100	2850	2700
	225	**(Pre)-RX-0300-0225-***	1050	975	1650	1575	2250	2175	2850	2775
450	150	**(Pre)-RX-0450-0150-***	1200	900	1800	1500	2400	2100	3000	2700
	225	**(Pre)-RX-0450-0225-***	1200	975	1800	1575	2400	2175	3000	2775
	300	**(Pre)-RX-0450-0300-***	1200	1050	1800	1650	2400	2250	3000	2850
600	150	**(Pre)-RX-0600-0150-***	1350	900	1950	1500	2550	2100	3150	2700
	225	**(Pre)-RX-0600-0225-***	1350	975	1950	1575	2550	2175	3150	2775
	300	**(Pre)-RX-0600-0300-***	1350	1050	1950	1650	2550	2250	3150	2850
	450	**(Pre)-RX-0600-0450-***	1350	1200	1950	1800	2550	2400	3150	3000
750	150	**(Pre)-RX-0750-0150-***	1500	900	2100	1500	2700	2100	3300	2700
	225	**(Pre)-RX-0750-0225-***	1500	975	2100	1575	2700	2175	3300	2775
	300	**(Pre)-RX-0750-0300-***	1500	1050	2100	1650	2700	2250	3300	2850
	450	**(Pre)-RX-0750-0450-***	1500	1200	2100	1800	2700	2400	3300	3000
	600	**(Pre)-RX-0750-0600-***	1500	1350	2100	1950	2700	2550	3300	3150
900	150	**(Pre)-RX-0900-0150-***	1650	900	2250	1500	2850	2100	3450	2700
	225	**(Pre)-RX-0900-0225-***	1650	975	2250	1575	2850	2175	3450	2775
	300	**(Pre)-RX-0900-0300-***	1650	1050	2250	1650	2850	2250	3450	2850
	450	**(Pre)-RX-0900-0450-***	1650	1200	2250	1800	2850	2400	3450	3000
	600	**(Pre)-RX-0900-0600-***	1650	1350	2250	1950	2850	2550	3450	3150
	750	**(Pre)-RX-0900-0750-***	1650	1500	2250	2100	2850	2700	3450	3300

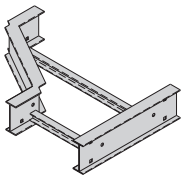
(Pre) See page 100 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Reducers (LR, SR, RR)

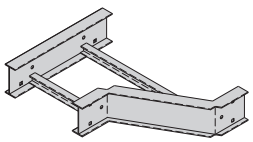
Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.

Reducer Part Numbering

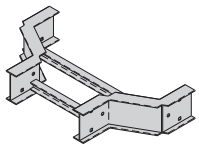
Prefix - LR - 0450 - 0300
- 0300 — $Width_2$
- 0450 — $Width_1$
- LR — Fitting
- Prefix — Prefix



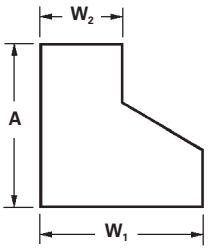
Left Reducer - LR

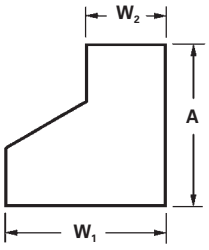


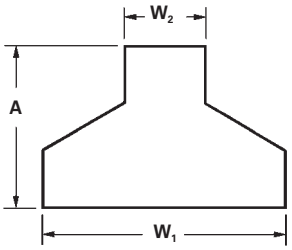
Right Reducer -RR



Straight Reducer SR







Tray Width		Left Hand Reducer		Right Hand Reducer		Straight Reducer	
W_1 mm	W_2 mm	Catalog No.	A mm	Catalog No.	A mm	Catalog No.	A mm
225	150	**(Pre)-LR-0225-0150**	295	**(Pre)-SR-0225-0150**	295	**(Pre)-RR-0225-0150**	273
300	150	**(Pre)-LR-0300-0150**	338	**(Pre)-SR-0300-0150**	338	**(Pre)-RR-0300-0150**	295
	225	**(Pre)-LR-0300-0225**	295	**(Pre)-SR-0300-0225**	295	**(Pre)-RR-0300-0225**	273
450	150	**(Pre)-LR-0450-0150**	425	**(Pre)-SR-0450-0150**	425	**(Pre)-RR-0450-0150**	338
	225	**(Pre)-LR-0450-0225**	382	**(Pre)-SR-0450-0225**	382	**(Pre)-RR-0450-0225**	317
	300	**(Pre)-LR-0450-0300**	338	**(Pre)-SR-0450-0300**	338	**(Pre)-RR-0450-0300**	295
600	150	**(Pre)-LR-0600-0150**	512	**(Pre)-SR-0600-0150**	512	**(Pre)-RR-0600-0150**	382
	225	**(Pre)-LR-0600-0225**	468	**(Pre)-SR-0600-0225**	468	**(Pre)-RR-0600-0225**	360
	300	**(Pre)-LR-0600-0300**	425	**(Pre)-SR-0600-0300**	425	**(Pre)-RR-0600-0300**	338
	450	**(Pre)-LR-0600-0450**	338	**(Pre)-SR-0600-0450**	338	**(Pre)-RR-0600-0450**	295
750	150	**(Pre)-LR-0750-0150**	598	**(Pre)-SR-0750-0150**	598	**(Pre)-RR-0750-0150**	425
	225	**(Pre)-LR-0750-0225**	555	**(Pre)-SR-0750-0225**	555	**(Pre)-RR-0750-0225**	403
	300	**(Pre)-LR-0750-0300**	512	**(Pre)-SR-0750-0300**	512	**(Pre)-RR-0750-0300**	382
	450	**(Pre)-LR-0750-0450**	425	**(Pre)-SR-0750-0450**	425	**(Pre)-RR-0750-0450**	338
	600	**(Pre)-LR-0750-0600**	338	**(Pre)-SR-0750-0600**	338	**(Pre)-RR-0750-0600**	295
900	150	**(Pre)-LR-0900-0150**	685	**(Pre)-SR-0900-0150**	685	**(Pre)-RR-0900-0150**	468
	225	**(Pre)-LR-0900-0225**	641	**(Pre)-SR-0900-0225**	641	**(Pre)-RR-0900-0225**	447
	300	**(Pre)-LR-0900-0300**	598	**(Pre)-SR-0900-0300**	598	**(Pre)-RR-0900-0300**	425
	450	**(Pre)-LR-0900-0450**	512	**(Pre)-SR-0900-0450**	512	**(Pre)-RR-0900-0450**	382
	600	**(Pre)-LR-0900-0600**	425	**(Pre)-SR-0900-0600**	425	**(Pre)-RR-0900-0600**	338
	750	**(Pre)-LR-0900-0750**	338	**(Pre)-SR-0900-0750**	338	**(Pre)-RR-0900-0750**	295

(Pre) See page 100 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Horizontal Bend, Tee, & Cross Fittings Part Numbering

See pages 106 - 107

Prefix

Example: **100 A 300 MD I SQHB - 0600**

Side Rail Height	Material	Rung Spacing	Rung Type	Fitting Type	Width
100 = 100mm **125** = 125mm **150** = 150mm **175** = 175mm	**A** = Aluminum	**300** = 300mm	**MD =** Slotted Marine Down **MU =** Slotted Marine Up **MA =** Slotted Marine Alternating **IA =** Standard	**SQHB** = Square Horizontal Bend **SQHT** = Square Horizontal Tee **SQHX** = Square Horizontal Cross	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm

Square Expanding & Reducing Horizontal Tee & Cross Fittings Part Numbering

See pages 108 - 110

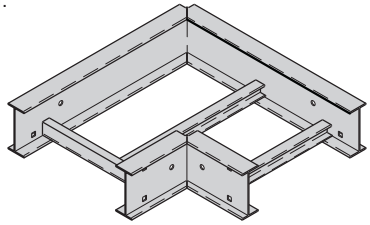
Prefix

Example: **150 A 300 MD I SQRT - 0450 - 0300**

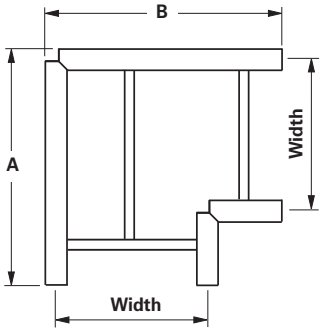
Side Rail Height	Material	Rung Spacing	Rung Type	Fitting Type	Width 1	Width 2
100 = 100mm **125** = 125mm **150** = 150mm **175** = 175mm	**A** = Aluminum	**300** = 300mm	**MD =** Slotted Marine Down **MU =** Slotted Marine Up **MA =** Slotted Marine Alternating **IA =** Standard	**SQET** = Square Expanding Horizontal Tee **SQRT** = Square Reducing Horizontal Tee **SQRX** = Square Expanding/Reducing Horizontal Cross	**0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm **0900** = 900mm	**0150** = 150mm **0225** = 225mm **0300** = 300mm **0450** = 450mm **0600** = 600mm **0750** = 750mm

Square 90° Horizontal Bend (SQHB)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
One (1) pair required to connect to system.



Tray Width mm	Catalog No.	90° Square Horizontal Bend Dimensions A mm	B mm
150	(Pre)300**ISQHB-0150	338	338
225	(Pre)300**ISQHB-0225	413	413
300	(Pre)300**ISQHB-0300	488	488
450	(Pre)300**ISQHB-0450	638	638
600	(Pre)300**ISQHB-0650	788	788
750	(Pre)300**ISQHB-0750	938	938
900	(Pre)300**ISQHB-0950	1088	1088

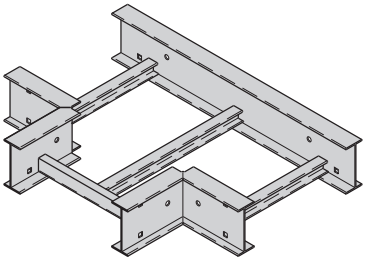


** **For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

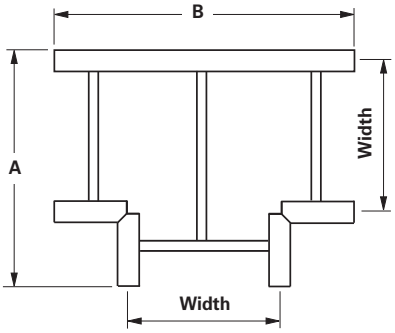
(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Horizontal Tee (SQHT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.



Tray Width mm	Catalog No.	Square Horizontal Tee Dimensions A mm	B mm
150	(Pre)300**ISQHT-0150	338	488
225	(Pre)300**ISQHT-0225	413	563
300	(Pre)300**ISQHT-0300	488	638
450	(Pre)300**ISQHT-0450	638	788
600	(Pre)300**ISQHT-0650	788	938
750	(Pre)300**ISQHT-0750	938	1088
900	(Pre)300**ISQHT-0950	1088	1238

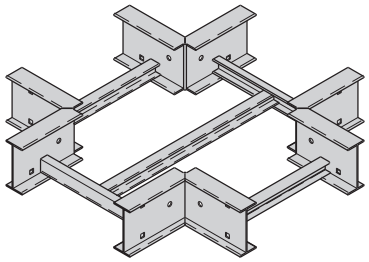


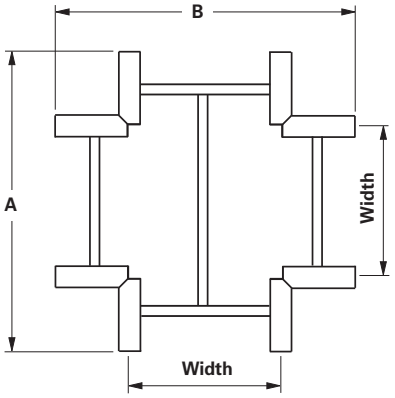
** **For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Horizontal Cross (SQHX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Three (3) pair required to connect to system.





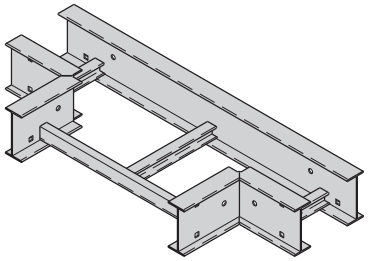
Tray Width mm	Catalog No.	Square Horizontal Cross Dimensions A mm	B mm
150	**(Pre)300**ISQHX-0150**	488	488
225	**(Pre)300**ISQHX-0225**	563	563
300	**(Pre)300**ISQHX-0300**	638	538
450	**(Pre)300**ISQHX-0450**	788	788
600	**(Pre)300**ISQHX-0650**	938	938
750	**(Pre)300**ISQHX-0750**	1088	1088
900	**(Pre)300**ISQHX-0950**	1238	1238

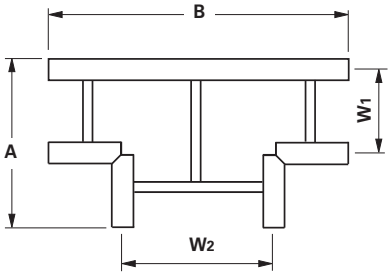
**** For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Expanding Horizontal Tee (SQET)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.





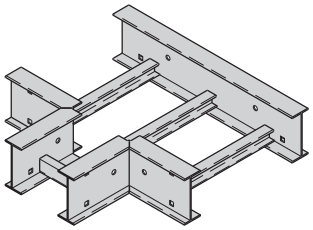
Tray Width		Catalog No.	Dimensions	
W1 mm	W2 mm		A mm	B mm
150	225	(Pre)300**ISQET-0150-0225	338	563
	300	(Pre)300**ISQET-0150-0300	338	638
	450	(Pre)300**ISQET-0150-0450	338	788
	600	(Pre)300**ISQET-0150-0600	338	938
	750	(Pre)300**ISQET-0150-0750	338	1088
	900	(Pre)300**ISQET-0150-0900	338	1238
225	300	(Pre)300**ISQET-0225-0300	413	638
	450	(Pre)300**ISQET-0225-0450	413	788
	600	(Pre)300**ISQET-0225-0600	413	938
	750	(Pre)300**ISQET-0225-0750	413	1088
	900	(Pre)300**ISQET-0225-0900	413	1238
300	450	(Pre)300**ISQET-0300-0450	488	788
	600	(Pre)300**ISQET-0300-0600	488	938
	750	(Pre)300**ISQET-0300-0750	488	1088
	900	(Pre)300**ISQET-0300-0900	488	1238
450	600	(Pre)300**ISQET-0450-0600	638	938
	750	(Pre)300**ISQET-0450-0750	638	1088
	900	(Pre)300**ISQET-0450-0900	638	1238
600	750	(Pre)300**ISQET-0600-0750	788	1088
	900	(Pre)300**ISQET-0600-0900	788	1238
750	900	(Pre)300**ISQET-0750-0900	938	1238

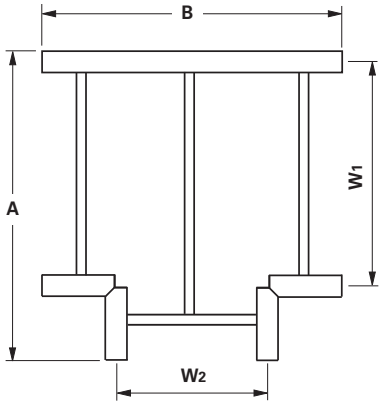
** **For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Reducing Horizontal Tee (SQRT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Two (2) pair required to connect to system.





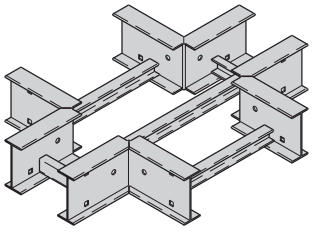
Tray Width		Catalog No.	Dimensions	
W1 mm	W2 mm		A mm	B mm
225	150	(Pre)300**ISQRT-0225-0150	413	488
300	150	(Pre)300**ISQRT-0300-0150	488	488
	225	(Pre)300**ISQRT-0300-0225	488	563
450	150	(Pre)300**ISQRT-0450-0150	638	488
	225	(Pre)300**ISQRT-0450-0225	638	563
	300	(Pre)300**ISQRT-0450-0300	638	638
600	150	(Pre)300**ISQRT-0600-0150	788	488
	225	(Pre)300**ISQRT-0600-0225	788	563
	300	(Pre)300**ISQRT-0600-0300	788	638
	450	(Pre)300**ISQRT-0600-0450	788	788
750	150	(Pre)300**ISQRT-0750-0150	938	488
	225	(Pre)300**ISQRT-0750-0225	938	563
	300	(Pre)300**ISQRT-0750-0300	938	638
	450	(Pre)300**ISQRT-0750-0450	938	788
	600	(Pre)300**ISQRT-0750-0600	938	938
900	150	(Pre)300**ISQRT-0900-0150	1088	488
	225	(Pre)300**ISQRT-0900-0225	1088	563
	300	(Pre)300**ISQRT-0900-0300	1088	638
	450	(Pre)300**ISQRT-0900-0450	1088	788
	600	(Pre)300**ISQRT-0900-0600	1088	938
	750	(Pre)300**ISQRT-0900-0750	1088	1088

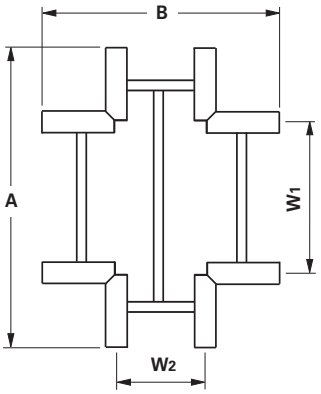
** **For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Square Expanding/Reducing Horizontal Cross (SQRX)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 111.
Three (3) pair required to connect to system.





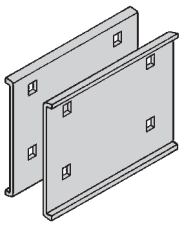
Tray Width		Catalog No.	Dimensions	
W1 mm	W2 mm		A mm	B mm
225	150	(Pre)300**ISQRX-0225-0150	563	488
300	150	(Pre)300**ISQRX-0300-0150	638	483
	225	(Pre)300**ISQRX-0300-0225	638	563
450	150	(Pre)300**ISQRX-0450-0150	788	488
	225	(Pre)300**ISQRTX-0450-0225	788	563
	300	(Pre)300**ISQRX-0450-0300	788	638
600	150	(Pre)300**ISQRX-0600-0150	938	488
	225	(Pre)300**ISQRX-0600-0225	938	563
	300	(Pre)300**ISQRX-0600-0300	938	638
	450	(Pre)300**ISQRX-0600-0450	938	788
750	150	(Pre)300**ISQRX-0750-0150	1088	488
	225	(Pre)300**ISQRX-0750-0225	1088	563
	300	(Pre)300**ISQRX-0750-0300	1088	638
	450	(Pre)300**ISQRX-0750-0450	1088	788
	600	(Pre)300**ISQRX-0750-0600	1088	938
900	150	(Pre)300**ISQRX-0900-0150	1238	488
	225	(Pre)300**ISQRX-0900-0225	1238	563
	300	(Pre)300**ISQRX-0900-0300	1238	638
	450	(Pre)300**ISQRX-0900-0450	1238	788
	600	(Pre)300**ISQRX-0900-0600	1238	938
	750	(Pre)300**ISQRX-0900-0750	1238	1088

** **For Rung Style Insert**
MD = Slotted Marine Down, **MU =** Slotted Marine Up, **MA =** Slotted Marine Alternating, **IA =** Standard

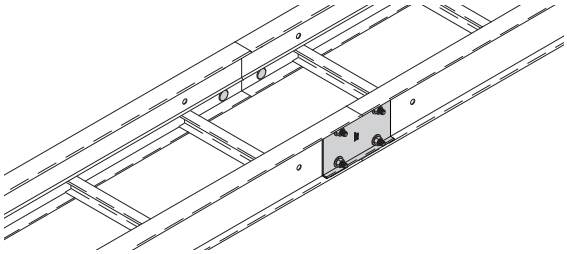
(Pre) See page 105 for catalog number prefix.
Width dimensions are to inside wall. For aluminum fittings add 38mm for total outside width.
Manufacturing tolerances apply to all dimensions.

Wedge Lock Splice Plates

- Furnished in pairs with M10 galvanized hardware.
- SS6 hardware available upon request.
- Standard 4-hole pattern.
- Boxed in pairs with hardware.

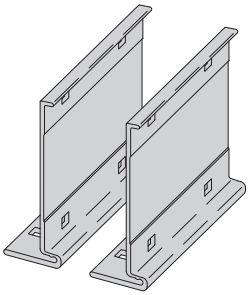


Catalog No.	Height mm
LSP100A	100
LSP125A	125
LSP150A	150
LSP175A	175

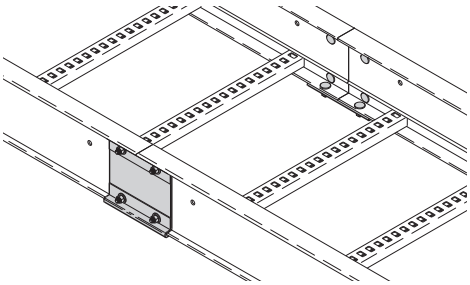


150-H4 and 175-05 Mid-Span Splice

- Furnished in pairs with M10 galvanized hardware.
- SS6 hardware available upon request.
- Standard for 150 (Series H4) and 175 (Series 05) straight sections.
- Available on ladder bottoms only with 225mm and 300mm rung spacing.

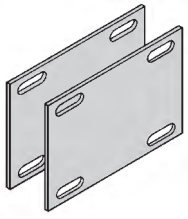


Catalog No.	Tray Height
LHSP150A	150
LHSP175A	175

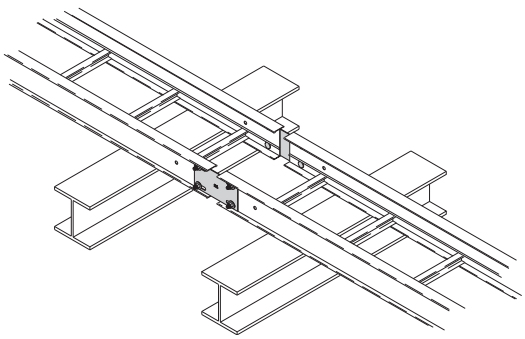


Expansion Splice Plates

- Expansion plates allow for 25mm expansion or contraction of the cable ladder, or where expansion joints occur in the supporting structure.
- Supplied in pairs with hardware.
- Bonding jumpers are required on each side rail (sold separately).
- Utilize (406mm) bonding jumper length.



Catalog No.	Height mm
LES100A	100
LES125A	125
LES150A	150
LES175A	175



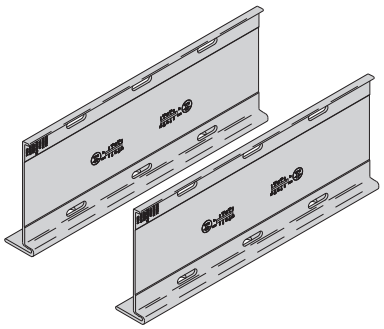
Note: Supports required within 600mm of each side of expansion joint.
To remove support requirements, utilize B-Line series heavy duty expansion splice (page 112)

Aluminum Metric Cable Ladder Square Fittings

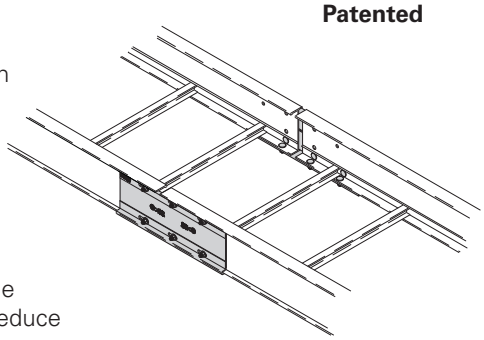
Heavy Duty Expansion Splice Plates

Heavy Duty Expansion Splice Plates are engineered to eliminate the recommended additional support at each expansion joint where cable ladder systems are utilized. They allow installers to support an expansion joint without additional supports versus the traditional two supports.

Expansion joints are common in long-run outdoor applications where temperature variations result in thermal expansion and contraction of the cable ladder system. The installer using the traditional expansion splice would be required to install two supports, one on either side of the expansion joint. By utilizing the B-Line series Heavy Duty Expansion Splice Plate, no additional supports are required.



Patented



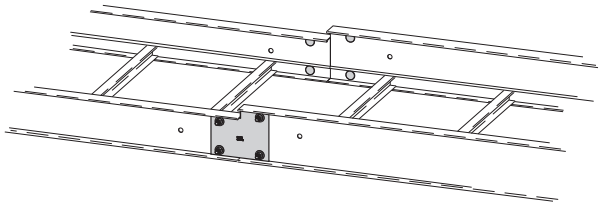
- NEMA VE 2 Compliant
- Lowest total cost of installation solution
- Wrap-around design supports the side rail on bottom of each ladder section
- Available Offering: Aluminum
- Designed for easy installation in a variety of applications
- Supplied in pairs with hardware
- Utilize (600mm) bonding jumper length
- Utilize with B-Line series Aluminum Cable Ladder Systems
  - 150A04, 150AH4, & 175A05

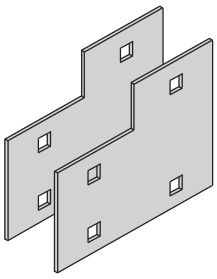
Heavy Duty Expansion Splice Plates are one of five key attributes of the B-Line series cable ladder system that combine to yield significant opportunities to reduce structural steel supports in heavy industrial applications.
To learn more, visit **Eaton.com/sss**.

Catalog No.	Height mm
LHE150A	150
LHE175A	175

Step Down Splice Plates

- These splice plates are offered for connecting cable ladder sections having side rails of different heights.
- Furnished in pairs with hardware.





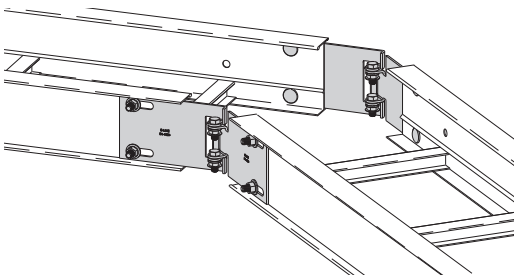
Catalog No.	Height mm
LSDP1210A	125 to 100
LSDP1510A	150 to 100
LSDP1710A	175 to 100
LSDP1512A	150 to 125
LSDP1712A	175 to 125
LSDP1715A	175 to 150

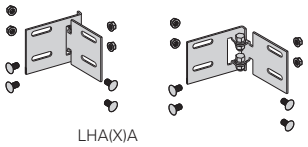
Requires supports within 600mm on both sides, per NEMA VE 2.

Horizontal Adjustable Splice Plates

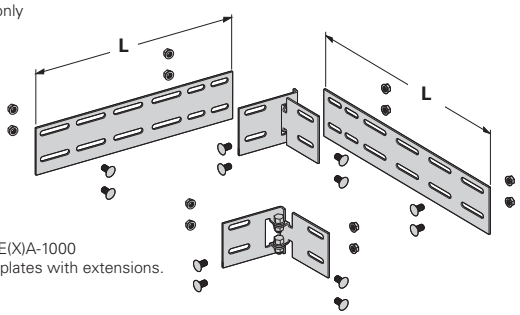
- Offered to adjust a cable ladder run for changes in direction in a horizontal plane that do not conform to standard horizontal fittings.
- Furnished in pairs with hardware.
- Bonding jumpers **not** required.
- (X) Insert 100, 125, 150 or 175 for side rail height.

Requires supports within 600mm on both sides, per NEMA VE 2.





LHA(X)A
On pair splice plates only

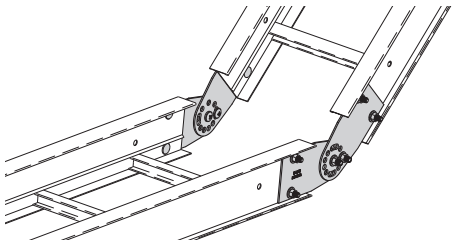


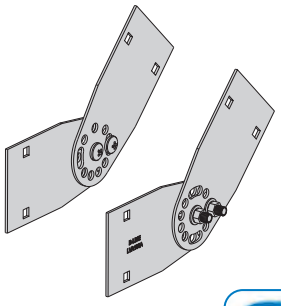
LRE(X)A-1000
One pair splice plates with extensions.

Catalog No.	Cable Tray End Cut	Thru Tray Width mm	'L' mm
LHA(X)A	Mitered	900	NA
LRE(X)A-1000	Not mitered	900	1041

Vertical Adjustable Splice Plates

- These plates provide for changes in elevation that do not conform to standard vertical fittings.
- Furnished in pairs with hardware.
- Bonding jumpers **not** required.



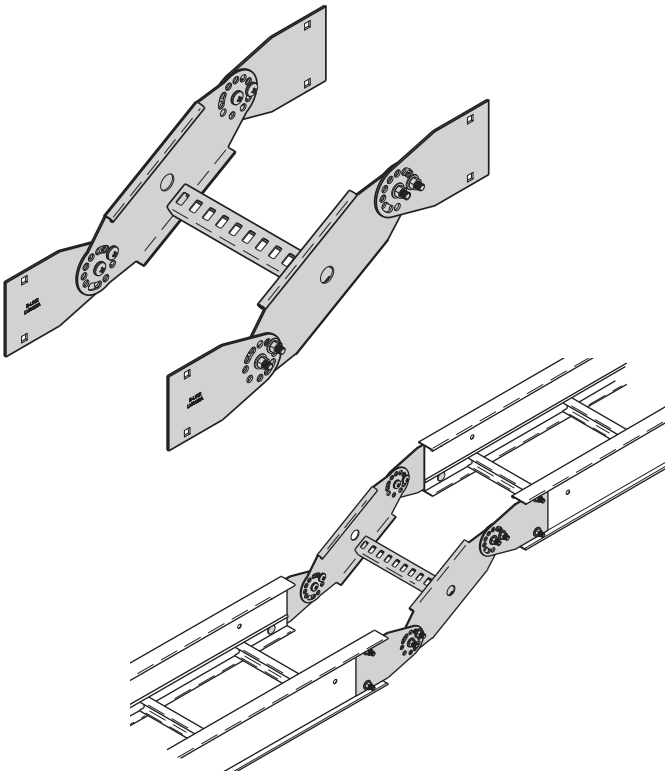


Catalog No.	Height mm
LVA100A	100
LVA125A	125
LVA150A	150
LVA175A	175

Eaton.com/sss

Vertical Riser Assembly

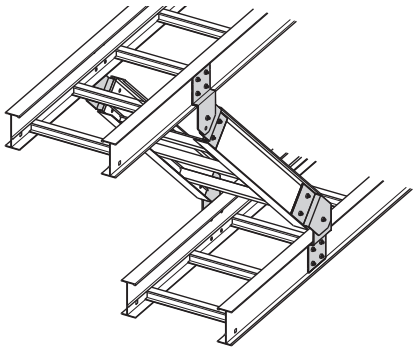
- Splice plates, riser, and hardware included.
- Packaged unassembled.

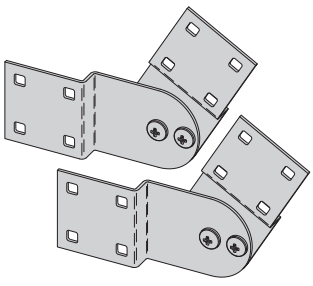


Ladder Height mm	Ladder Width mm	Catalog No.
100	150	LVR100A-150
	225	LVR100A-225
	300	LVR100A-300
	450	LVR100A-450
	600	LVR100A-600
	750	LVR100A-750
	900	LVR100A-900
125	150	LVR125A-150
	225	LVR125A-225
	300	LVR125A-300
	450	LVR125A-450
	600	LVR125A-600
	750	LVR125A-750
	900	LVR125A-900
150	150	LVR150A-150
	225	LVR150A-225
	300	LVR150A-300
	450	LVR150A-450
	600	LVR150A-600
	750	LVR150A-750
	900	LVR150A-900
175	150	LVR175A-150
	225	LVR1175A-225
	300	LVR1175A-300
	450	LVR1175A-450
	600	LVR1175A-600
	750	LVR1175A-750
	900	LVR1175A-900

Branch Pivot Connectors

- Branch from existing cable ladder runs at any point.
- Pivot to any required angle.
- UL Classified for grounding (bonding jumpers not required).
- Furnished in pairs with hardware.



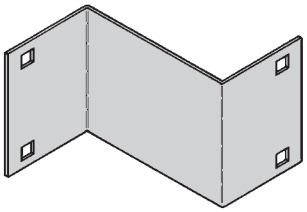


Catalog No.	Height mm
LBP100A	100
LBP125A	125
LBP150A	150
LBP175A	175

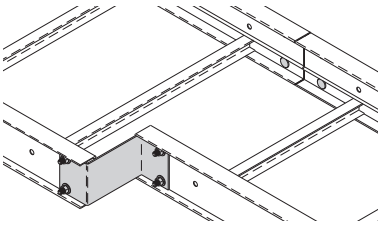
Aluminum Metric Cable Ladder Accessories

Offset Reducing Splice Plate

- This plate is used for joining cable ladders having different widths. When used in pairs they form a straight reduction; when used singularly with a standard splice plate, they form an offset reduction.
- Furnished as one plate with hardware.
- (‡) Insert reduction



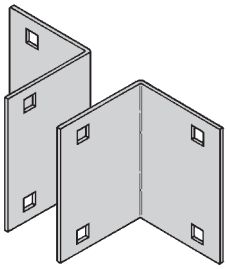
Offset Options

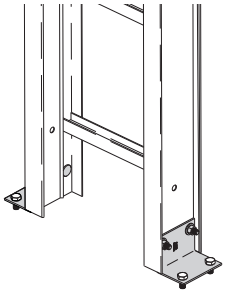


Catalog No.	Height mm
LSR100A(‡)	100
LSR125A(‡)	125
LSR150A(‡)	150
LSR175A(‡)	175

Tee / Wall / Floor Plate Connector

- Used to attach the end of a ladder tray run to a distribution box or control panel.
- Furnished in pairs with connecting hardware
- M10 anchor hardware not included

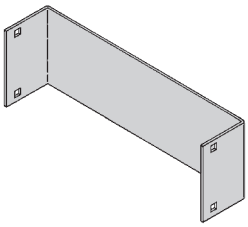


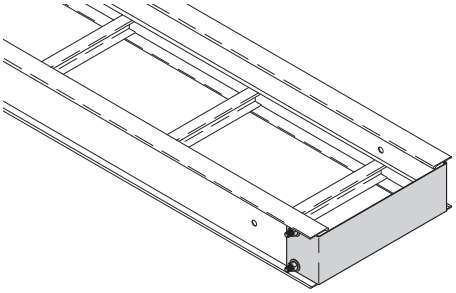


Catalog No.	Height mm
LTC100A	100
LTC125A	125
LTC150A	150
LTC175A	175

Blind End

- This plate forms a closure for a dead end cable ladder.
- Furnished as one plate with hardware.
- (‡) Insert ladder width

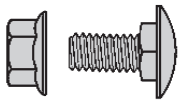




Catalog No.	Height mm
LBE100A(‡)	100
LBE125A(‡)	125
LBE150A(‡)	150
LBE175A(‡)	175

Cable Ladder Hardware

- 316 stainless steel hardware

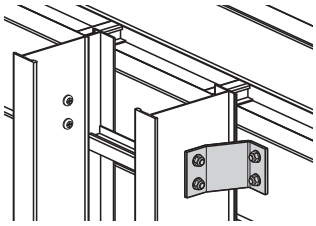


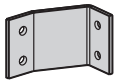
Catalog No.	Description
M10x20 SNCB (*)	Square Neck Coach Bolt - 316 Stainless Steel
M10 SFHN (*)	Serrated Flange Hex Nut - 316 Stainless Steel

(*) Insert ZN for galvanized or SS6 for 316 Stainless Steel

Cross Connector Bracket

- For field connecting crossing section.
- Furnished in pairs with M10 hardware.
- Field drilling required.

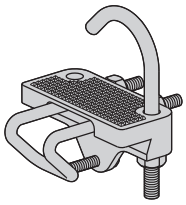


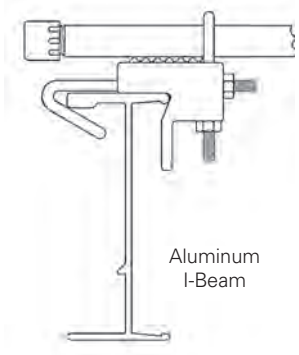


Catalog No.
9A-1240

Conduit to Cable Tray Adaptor

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

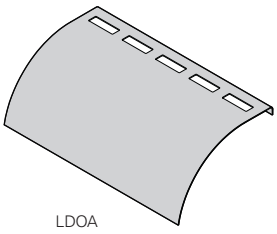


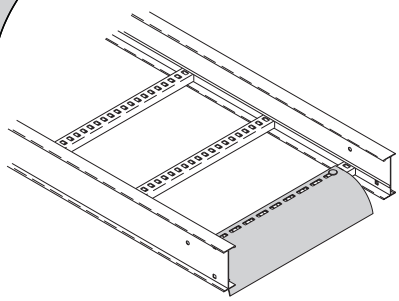


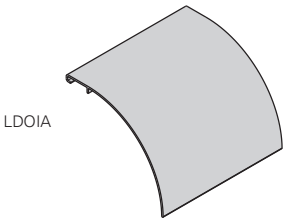
Catalog No.	Conduit Size mm
9G-1158-1/2, 3/4	15, 20
9G-1158-1, 1 1/4	25, 32
9G-1158-1 1/2, 2	40, 50
9G-1158-2 1/2, 3	65, 80
9G-1158-3 1/2, 4	90, 100

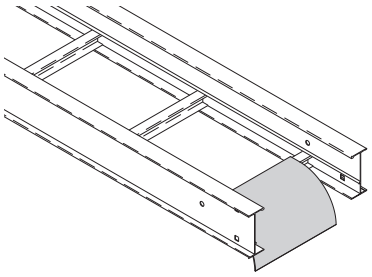
Ladder Drop-Out

- Specially-designed ladder drop-outs provide a rounded surface with 100mm radius to protect cable as it exits from the ladder ladder, preventing damage to insulation.
- Furnished with necessary connecting hardware.
- (‡) Insert ladder width









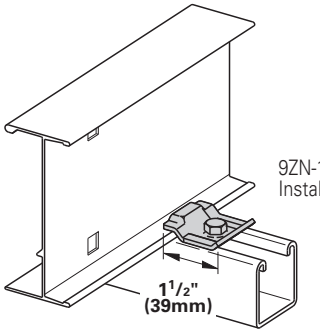
Catalog No.	Used On
LDOA(‡)	Marine Rung Cable Ladder
LDOIA(‡)	I-Beam Rung Cable Ladder

Aluminum Metric Cable Ladder Accessories

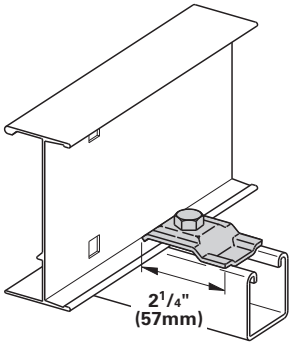
Cable Tray Clamp/Guide

- Features a no-twist design.
- Has four times the strength of the traditional design.
- Each side is labeled to ensure proper installation.
- Furnished in pairs, with or without hardware.
- Not recommended for vertical support.

Patent # RE35479



9ZN-1204 shown.
Installed as a guide.



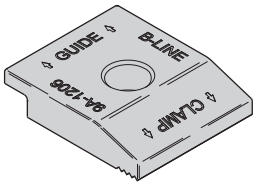
9ZN-1208 shown.
Installed as a clamp.

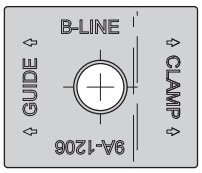
Note: For heavy duty or vertical applications see LHD-1241 or LHD-1242 page 119

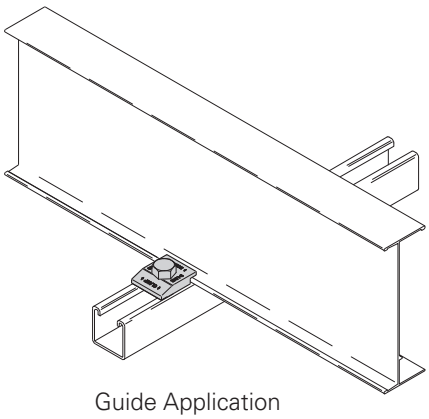
Catalog No.		Overall Length mm	Hardware Size	Finish
Without Hardware	With Hardware			
9ZN-1204	**9ZN-1204NB**	38	M8	G90
9ZN-1208	**9ZN-1208NB**	57	M10	G90
9A-1205	**--**	57	M12	Alum.
9G-1205	**--**	57	M12	HDGAF
9SS6-1205	**--**	57	M12	316SS
9ZN-1205	**--**	57	M12	G90

Combination Hold Down Guide Clamp

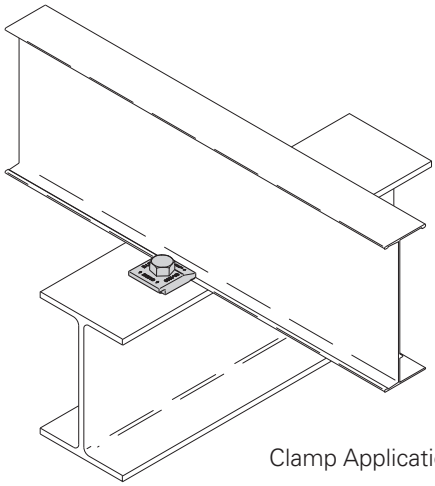
- Concentric hole location for ease of application.
- Material: 6063-T6 copper free aluminum
- Compatible with aluminum and steel side rails
- Allows for predrilled I-Beam locations
- Designed for multiple support methods
- No twist feature compatible with strut profile
- Visual indicators for proper assembly
- Hardware sold separately







Guide Application

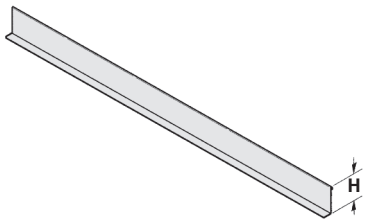


Clamp Application

Catalog No.
9A-1206

Barrier - Straight Section

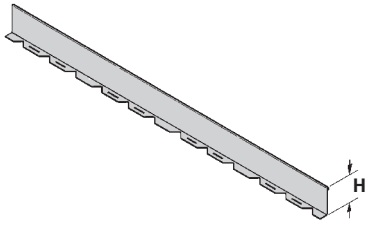
- (†) Insert Length: 3000 for [3000mm] or 3050 for [3050mm]
- Furnished with mounting hardware and a 99-9982 Barrier Strip Splice.



Catalog No.	Side Rail Height mm	Loading Depth 'H' mm
LSD100A-(†)	100	75
LSD125A-(†)	125	100
LSD150A-(†)	150	125
LSD175A-(†)	175	150

Barrier - Horizontal Bend

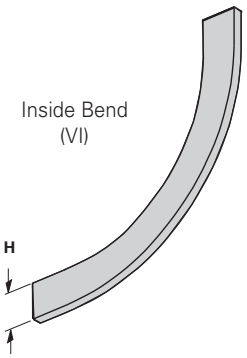
- Horizontal Bend Barriers are flexible in order to conform to any horizontal fitting radius. Can be cut to desired length.
- Standard length is 1000mm - sold individually
- Order catalog number based on loading depth.
- Furnished with mounting hardware and a 99-9982 Barrier Strip Splice.

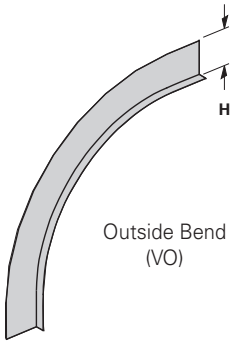


Catalog No.	Side Rail Height mm	Loading Depth 'H' mm
LBD100A-1000	100	75
LBD125A-1000	125	100
LBD150A-1000	150	125
LBD175A-1000	175	150

Barrier - Vertical Outside & Inside Bends

- Vertical Outside and Inside Bend Barriers are preformed to conform to a specific vertical outside or inside bend fitting.
- Furnished with mounting hardware and a 99-9982 Barrier Strip Splice.
- (*) Insert 30, 45, 60 or 90 for degrees
- (**) Insert 300, 600, 900 or 1200 for radius

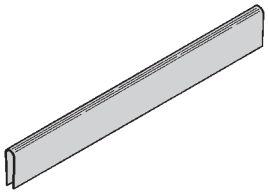


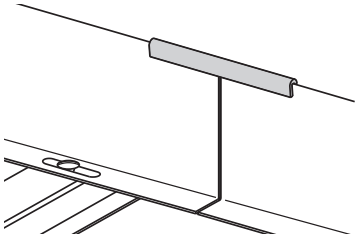


Catalog No. Inside Bend	Catalog No. Outside Bend	Side Rail Height mm	Loading Depth 'H' mm
LID100A(*)(**)	LOD100A(*)(**)	100	75
LID125A(*)(**)	LOD125A(*)(**)	125	100
LID150A(*)(**)	LOD150A(*)(**)	150	125
LID175A(*)(**)	LOD175A(*)(**)	175	150

Barrier Strip Splice

- Plastic splice holds adjoining barrier strips in straight alignment.
- 76mm long.





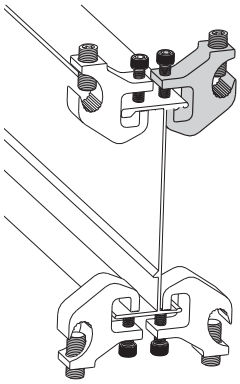
Catalog No.
99-9982

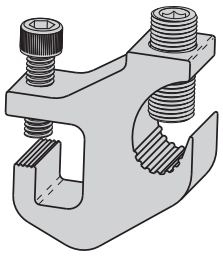
Aluminum Metric Cable Ladder Accessories

Grounding Clamp

Eaton's B-Line series cable ladder is UL® classified as to its suitability as an equipment grounding conductor. If a separate conductor for additional grounding capability is desired, B-Line offers this clamp for bolting the conductor at least once to each cable tray section.

- Accepts #6 AWG to 250 MCM. (3mm - 14.5mm diameter)

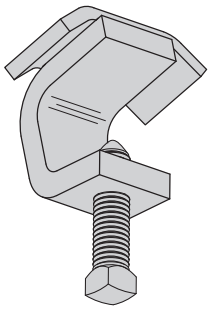


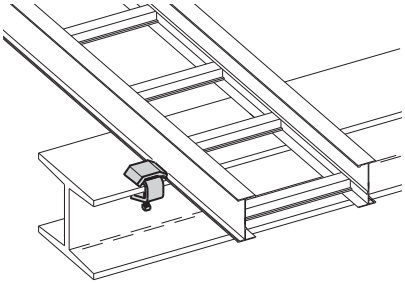


Catalog No.	Material
9A-2130	Tin Plated Aluminum

Cable Tray Clamp

- Hold-down clamps for single or double ladder tray runs.
- No drilling of support I-beam or channel is required.
- Sold in pieces - two clamps are required per ladder.
- Maximum beam flange thickness 28.58 mm.

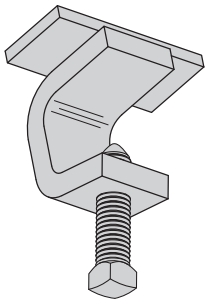


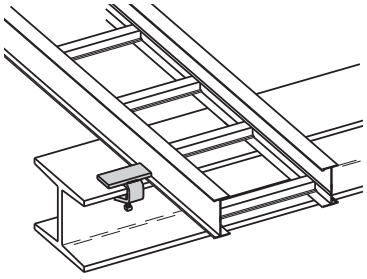


Catalog No.	Finish
9G-1249HD	HDGAF
9SS6-1249HD	316 Stainless

Cable Tray Guide

- Expansion guide for single or double cable ladder runs.
- Guide allows for longitudinal movement of the cable ladder.
- No field drilling of support I-beam or channel is required.
- Guides are required on both sides of cable ladder to prevent lateral movement - can be placed on either the inside or outside flange of cable ladder.
- Guides are sold in pieces - two guides are required per ladder.
- Maximum flange thickness 28.58 mm.

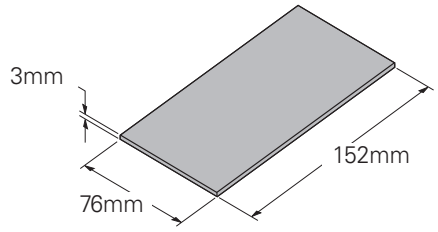


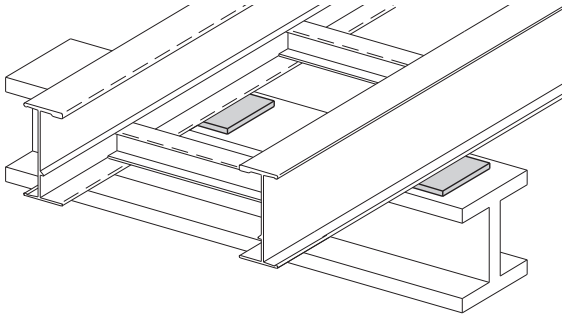


Catalog No.	Finish
9ZN-1249	Znplt
9G-1249	HDGAF
9SS6-1249	316 Stainless

Nylon Pad

- Use for friction reduction.
- Hardness: Shore D80.
- Low friction coefficient.
- UV resistant.
- Excellent weatherability.
- UL - 94HB.

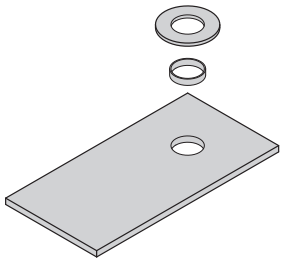




Catalog No.
99-PE36

Isolation Kit for Metric Cable Ladder

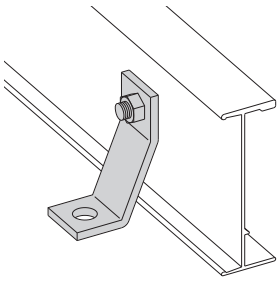
- Supplied as one kit with hardware.
- Material: HDPE

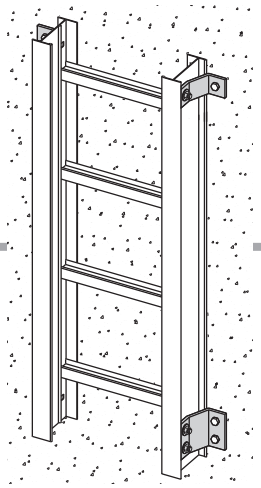


Hardware Size	Catalog No.
M6	LEIK-M6
M8	LEIK-M8
M10	LEIK-M10
M12	LEIK-M12

Heavy Duty Hold Down Bracket

- Design load is 2000 lbs (8.89kN) per pair.
- Two bolt design.
- Sold in pairs.
- M8 cable tray attachment hardware provided
- M12 support attachment hardware **not** provided.
- (*) Insert G or SS6
- Recommended for support of vertical ladders.

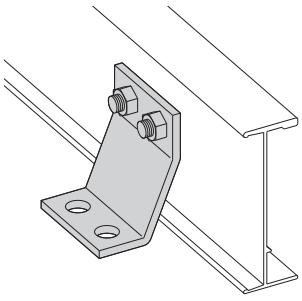




Catalog No.
LHD-1241(*)

Heavy Duty Hold Down Bracket

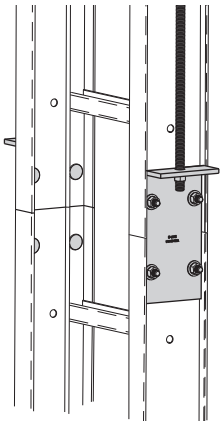
- Design load is 4000 lbs (17.79kN) per pair.
- Four bolt design.
- Sold in pairs.
- M8 cable tray attachment hardware provided
- M12 support attachment hardware **not** provided.
- (*) Insert G or SS6
- Recommended for support of vertical ladders.

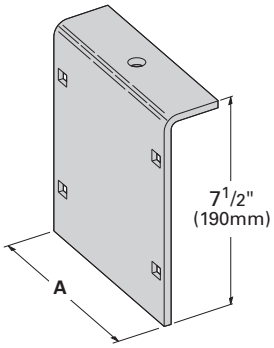


Catalog No.
LHD-1242(*)

Vertical Hanger Splice Plates

- Design load is 1500 lbs (6.67kN) per pair.
- Safety Factor of 2.5
- Furnished in pairs.
- Hole size: 14mm for M12 threaded rod.

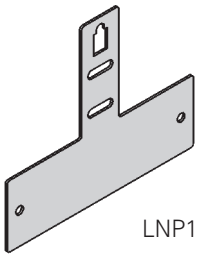




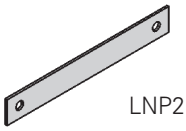
Catalog No.	Outside Cable Tray Ht.	'A' mm
LVHS100A	100	97.54
LVHS125A	125	120.14
LVHS150A	150	148.34
LVHS175A	175	173.74

Equipment Name Plates

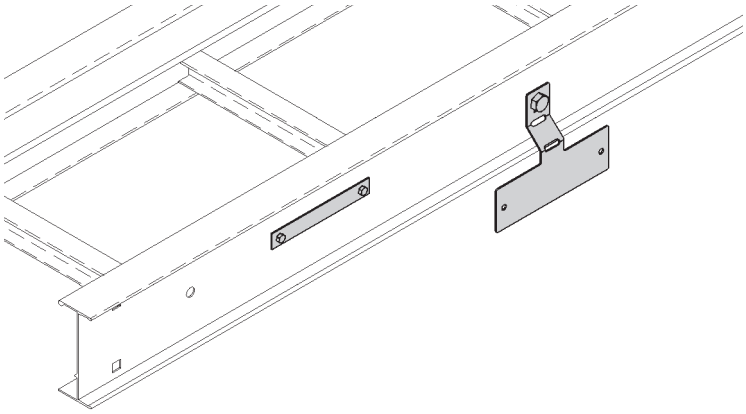
- Support plate for TAG - Number on cable ladders and cable trays.
- Furnished as one plate with hardware.
- (*) Insert A, G, or SS6



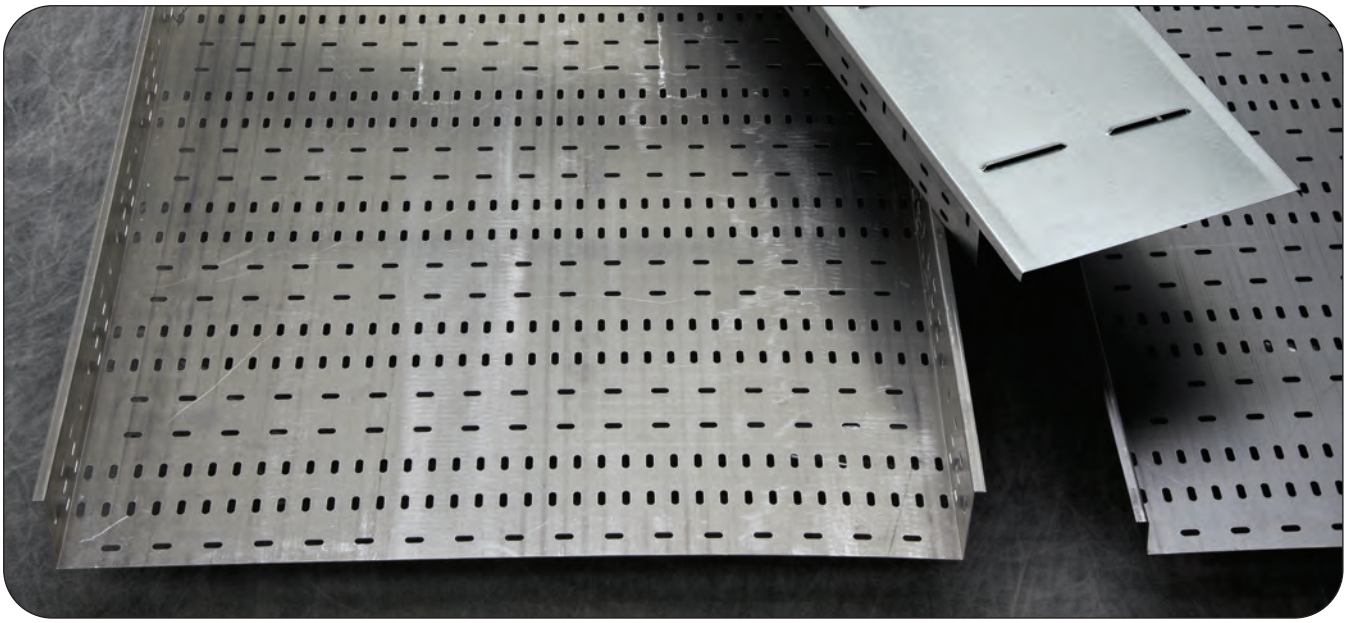
LNP1

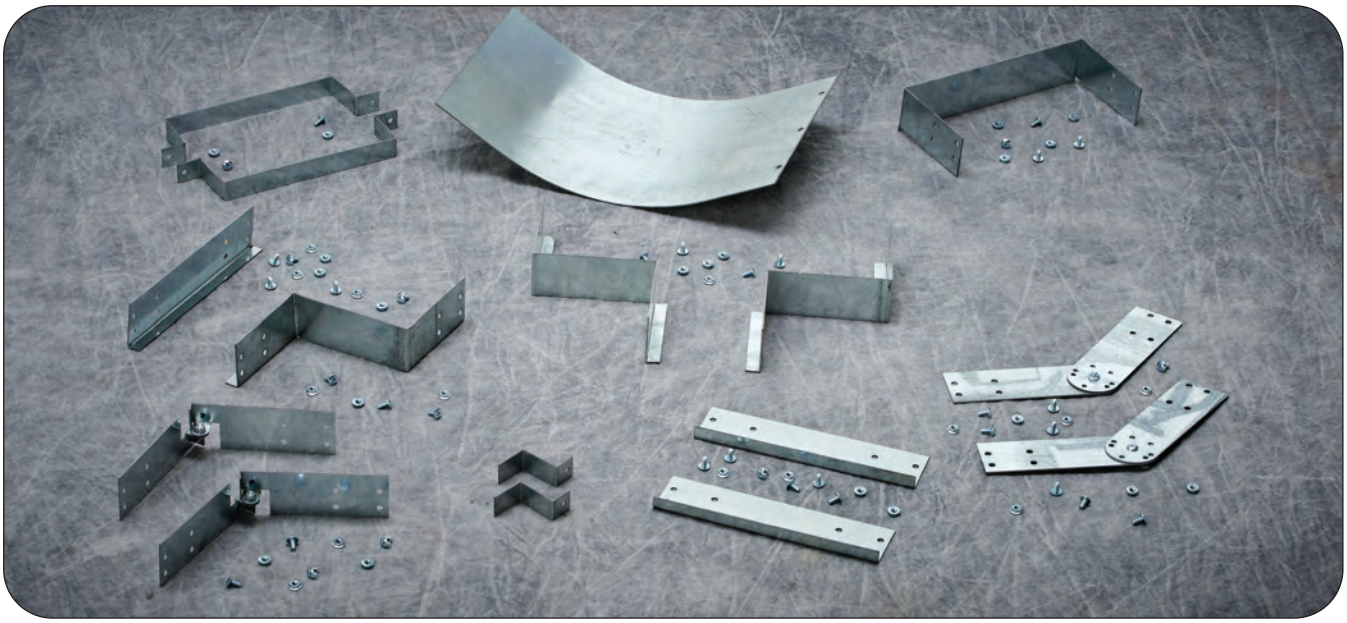


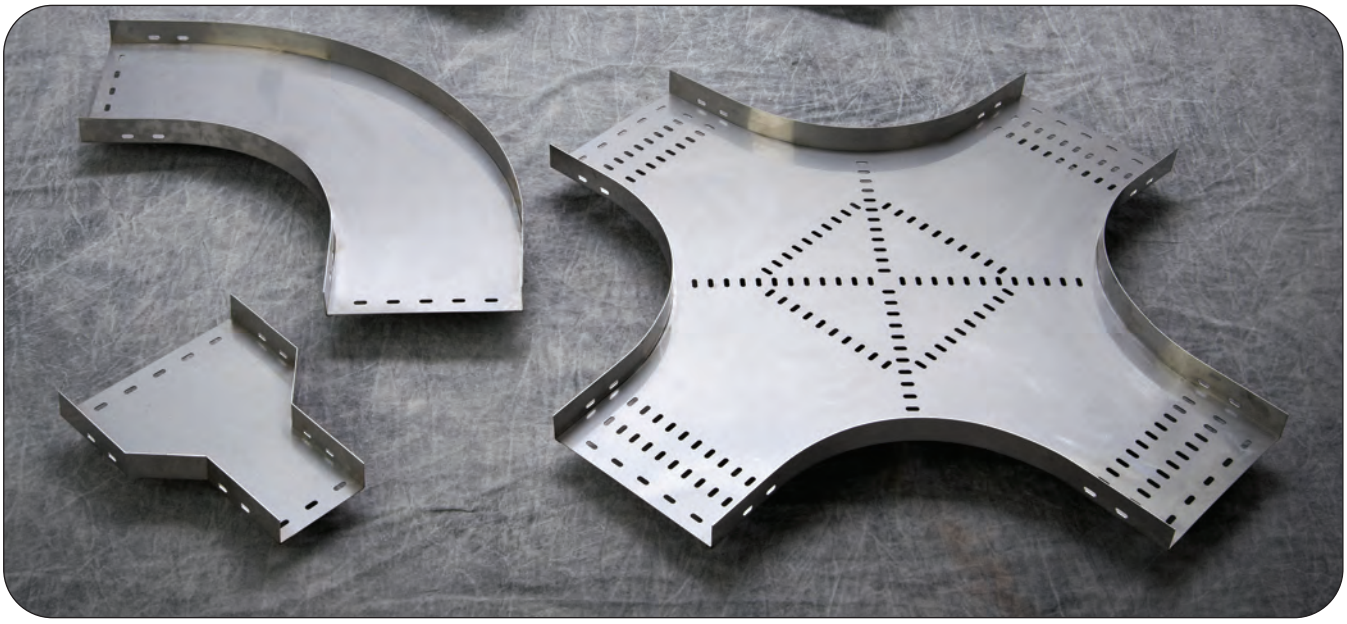
LNP2



Catalog No.
LNP1(*)
LNP2(*)







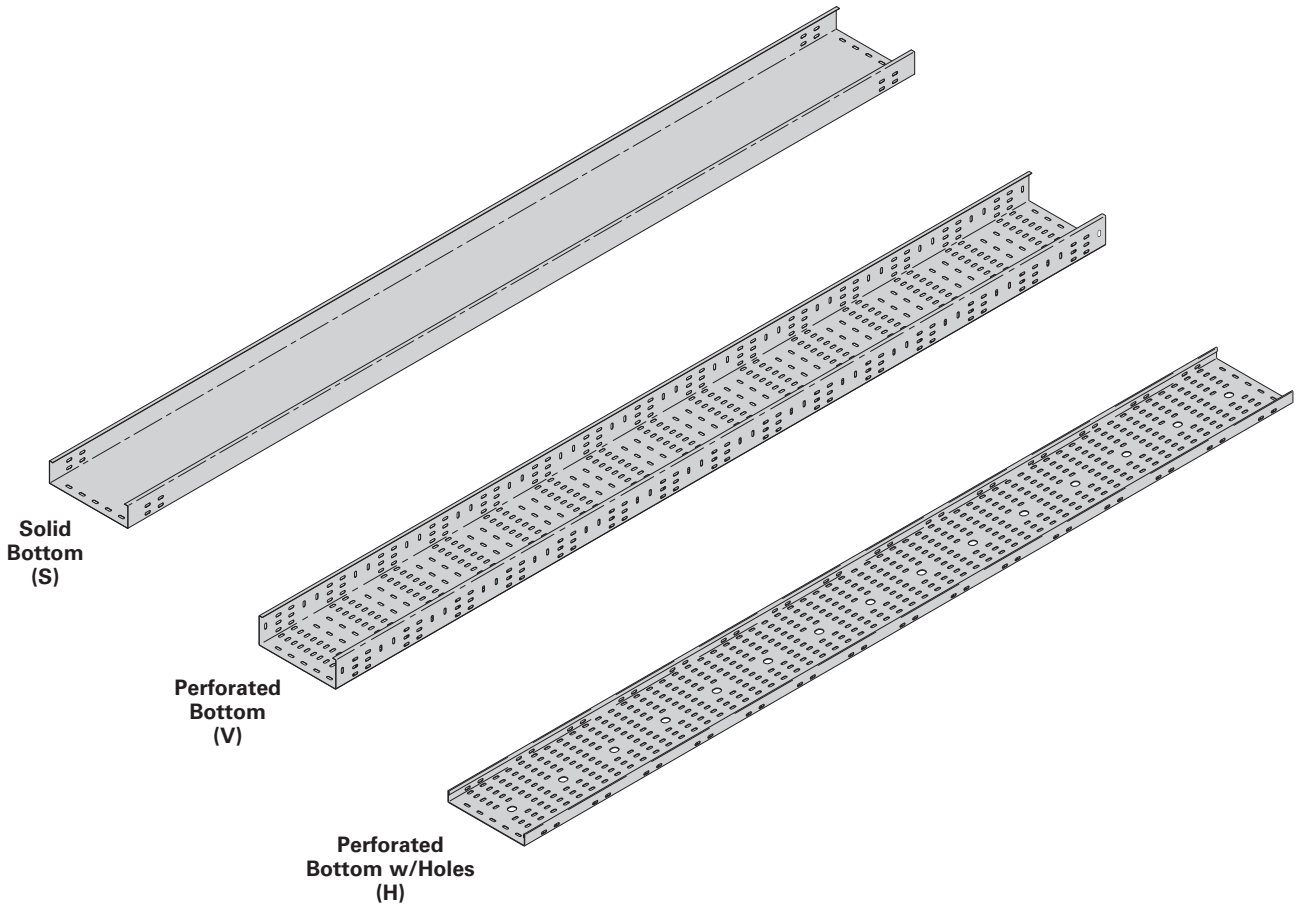
Straight Section Part Numbering

Example: **P 025 V C P 15 SS - 200 - 3000**

Tray Type	Height	Bottom Type	Return Flange Type	Material	Thickness	Type	Width	Length
P = (Perforated & Solid Cable Tray)	**025** = 25mm **035** = 35mm **040** = 40mm **050** = 50mm **075** = 75mm **100** = 100mm	**S** = Solid **V** = Perforated **H** = Perforated with holes	**A** = 135° Outside Flange **B** = 90° Outside Flange **C** = 90° Inside Flange **D** = 135° Inside Flange **N** = No Flange **R** = 180° Inside Return **U** = 180° Outside Return	**P** = Pre-Galv **G** = HDGAF **A** = Aluminum **SS6** = Stainless Type 316	**10** * = 1.0mm **12** = 1.2mm **15** = 1.5mm **20** = 2.0mm	**SS =** Straight Section	**050** = 50mm **100** = 100mm **150** = 150mm **200** = 200mm **300** = 300mm **400** = 400mm **500** = 500mm **600** = 600mm **900** = 900mm	**3000** = 3000mm

* 1.0mm thickness is only available in widths up to and including 300 (300mm).

Splice plates not supplied with straight sections. Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

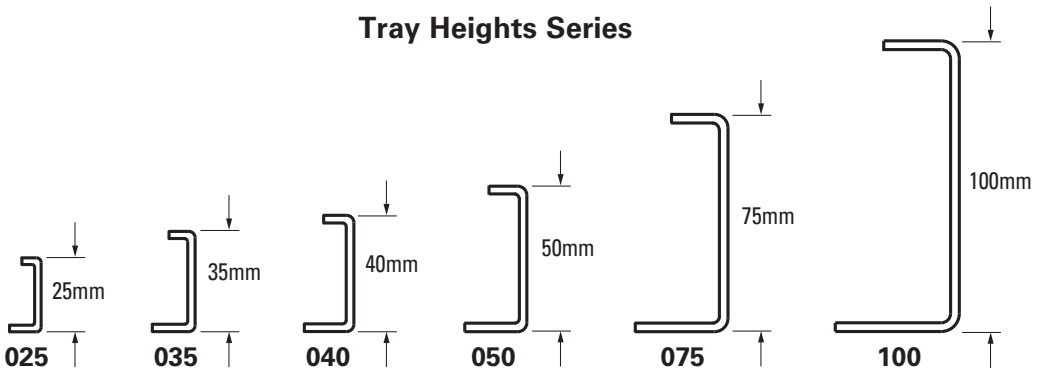


All dimensions are in millimeters unless otherwise specified.

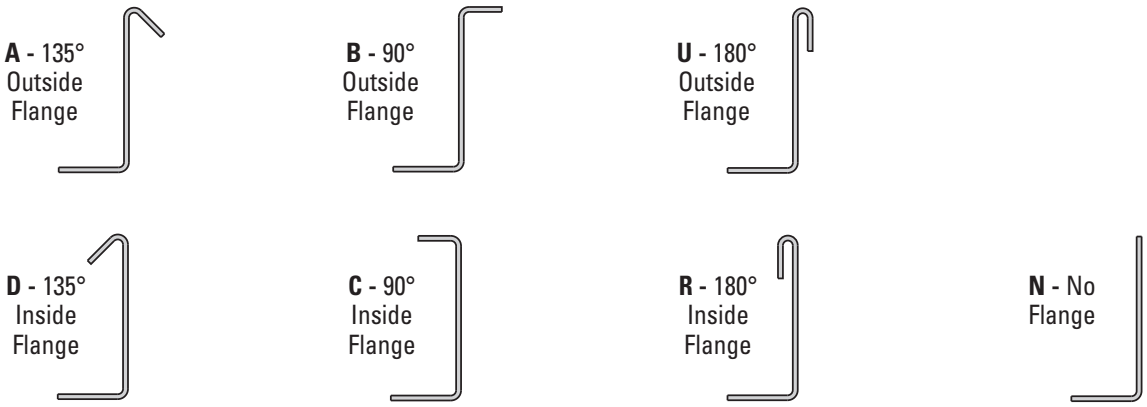
Tray Height	Thickness mm	Span m	Material	Load kg/m	Material	Load kg/m
25	1.0	3	Steel & Stainless Steel	NA		
35				NA		
40				NA		
50				54.9		
75				71.7		
100				80.4		
25	1.5	3	Steel & Stainless Steel	NA	Aluminum	NA
35				NA		NA
40				NA		NA
50				103.6		33.5
75				158.5		52.6
100				182.9		73.4
25	2.0	3	Steel & Stainless Steel	NA	Aluminum	NA
35				NA		NA
40				NA		NA
50				79.2		46.8
75				201.2		101.5
100				219.4		115.8

All tests per NEMA VE-1. 1.0mm thickness to maximum width of 300mm. All others tested to 900mm width.
Published load safety factor is 1.5.
NA = Not available

Tray Heights Series



Straight Section Flange Types



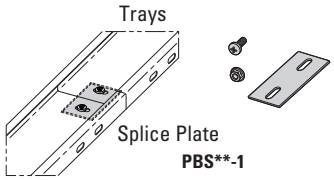
All dimensions are in millimeters unless otherwise specified.

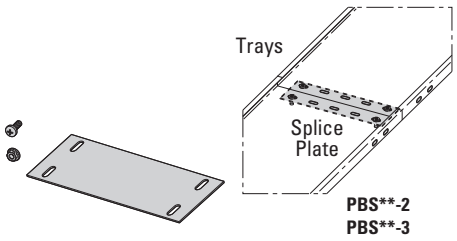
Cable Tray - Splice Plates

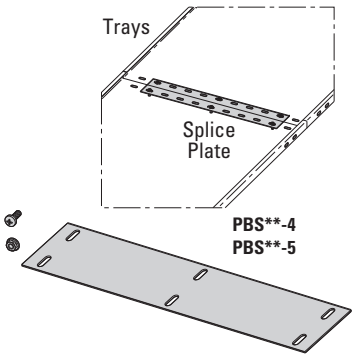
Bottom Splice Plates

(Mounted on bottom of 025 height trays as splice plates and can also be used to stabilize tray connections on other heights)
(Sold individually with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS4 for Stainless Steel 304, SS6 for Stainless Steel 316, A for Aluminum







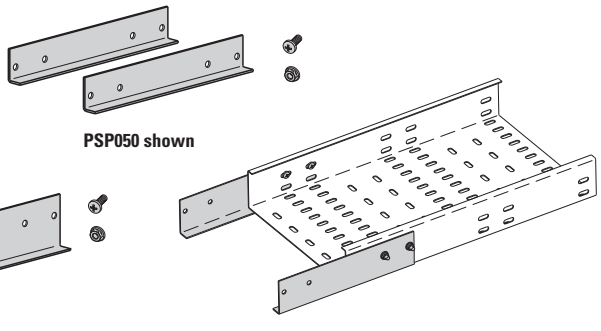
Part Number	Tray Widths	Plate Width	Number of Holes
PBS ** -1	50 - 100	44	2
PBS ** -2	150 - 200	144	4
PBS ** -3	250 - 400	244	4
PBS ** -4	450 - 600	444	6
PBS ** -5	900	644	6

Side Splice Plates (Mounted outside of tray)

(Sold in pairs with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

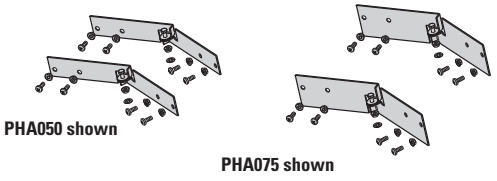
Part Number	Tray Height
PSP025**	25, 35, 40
PSP050**	50
PSP075**	75
PSP100**	100



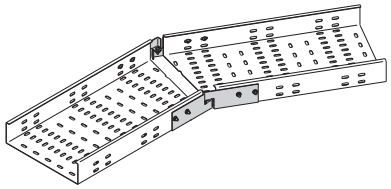
Horizontal Adjustable Splice Plates (Mounted outside of tray)

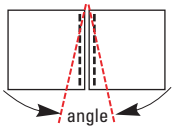
(Sold in pairs with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- Requires mitering of trays and drilling new splice plate holes on inside angle



Part Number	Tray Height
PHA025**	25, 35, 40
PHA050**	50
PHA075**	75
PHA100**	100





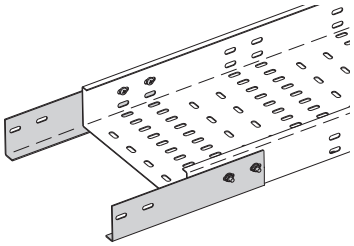
Example:
40° bend requires
20° miter each end

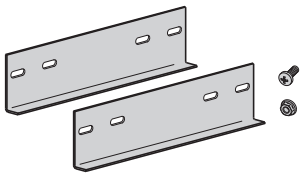
Expansion Splice Plates (Mounted outside of tray)

(Sold in pairs with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

Part Number	Tray Height
PES025**	25, 35, 40
PES050**	50
PES075**	75
PES100**	100





Note: Supports are required within 600mm on each side of expansion joint.

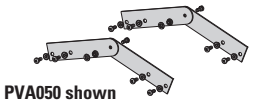
All dimensions are in millimeters unless otherwise specified.

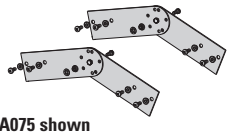
Vertical Adjustable Splice Plates (Mounted outside of tray)

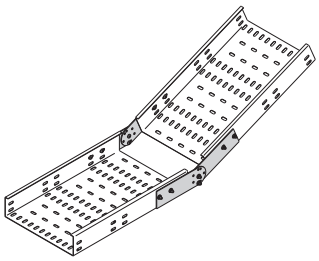
(Sold in pairs with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

Part Number	Tray Height
PVA025**	25, 35, 40
PVA050**	50
PVA075**	75
PVA100**	100


PVA050 shown


PVA075 shown

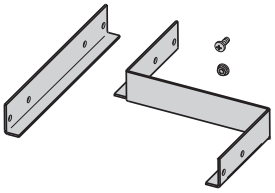


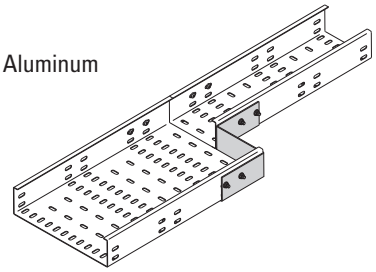
Right/Left Reducer Splice Plates (Mounted outside of tray)

(Sold as a set with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- __ Width: Insert width difference between the two trays

Part Number	Tray Height
PLR025**__	25, 35, 40
PLR050**__	50
PLR075**__	75
PLR100**__	100



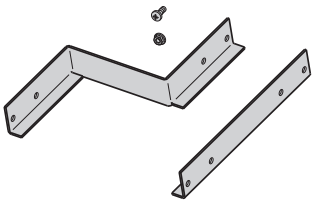


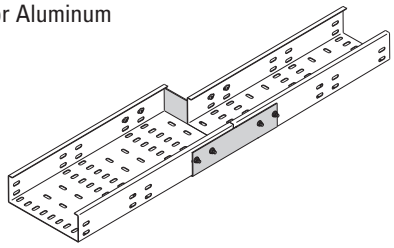
Right/Left Reducer Splice Plates (Mounted outside of tray)

(Sold as a set with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- __ Width: Insert width difference between the two trays

Part Number	Tray Height
PRR025**__	25, 35, 40
PRR050**__	50
PRR075**__	75
PRR100**__	100



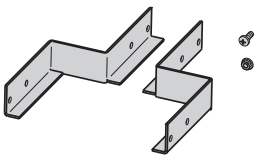


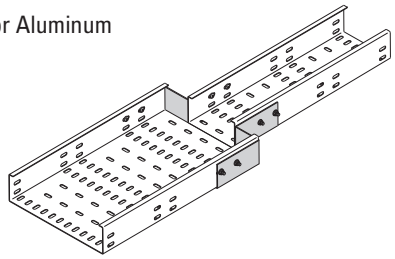
Straight Reducer Splice Plates (Mounted outside of tray)

(Sold as a set with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- __ Width: Insert width difference between the two trays

Part Number	Tray Height
PSR025**	25, 35, 40
PSR050**	50
PSR075**	75
PSR100**	100



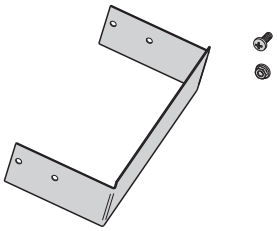


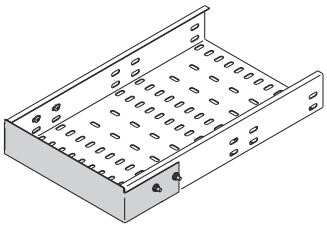
Blind End (Mounted outside of tray)

(Sold individually with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- __ Tray Width

Part Number	Tray Height
PBE025**-__	25
PBE035**-__	35
PBE040**-__	40
PBE050**-__	50
PBE075**-__	75
PBE100**-__	100





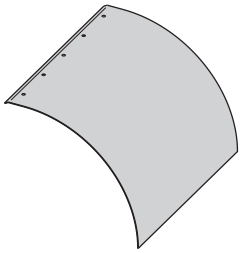
All dimensions are in millimeters unless otherwise specified.

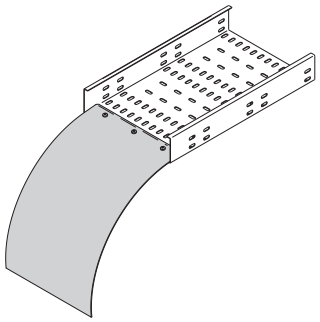
Drop-Out

(Sold individually with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

Part Number	Tray Width
PDO**-050	50
PDO**-100	100
PDO**-150	150
PDO**-200	200
PDO**-300	300
PDO**-400	400
PDO**-500	500
PDO**-600	600
PDO**-900	900





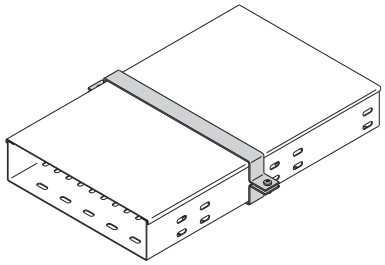
Wrap-Around Cover Clamps

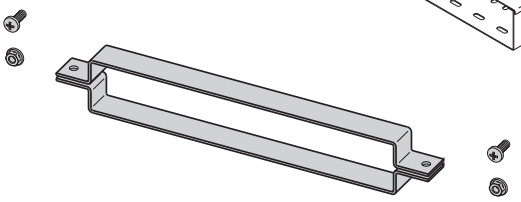
(Sold individually with hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- __ Insert Tray Width of
  050 = 50mm, 100 = 100mm, 150 = 150mm, 200 = 200mm, 300 = 300mm, 400 = 400mm,
  500 = 500mm, 600 = 600mm, 900 = 900mm

Part Number	Tray Height
PWCC025**__	25 *
PWCC035**__	35
PWCC040**__	40
PWCC050**__	50
PWCC075**__	75
PWCC100**__	100

* Is not available in 900mm wide tray



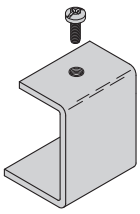


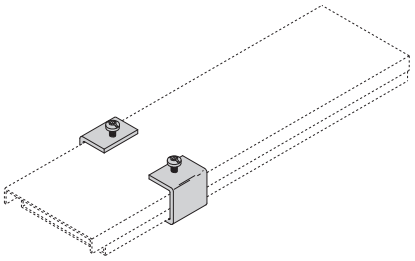
C-Shape Cover Clamps

(Sold individually with hardware)

- ** Insert G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

Part Number	Tray Height
PCCC025**	25
PCCC035**	35
PCCC040**	40
PCCC050**	50
PCCC075**	75
PCCC100**	100





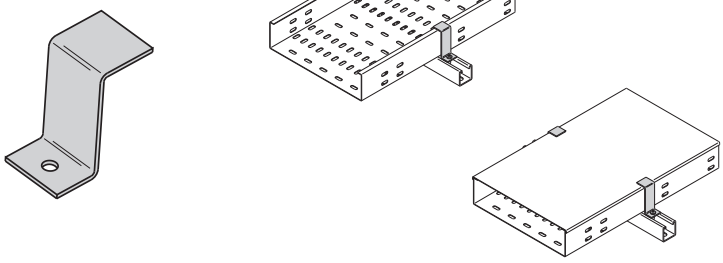
All dimensions are in millimeters unless otherwise specified.

Hold Downs - For (R) & (C) Flanges

(Sold individually without hardware)

- ** Insert P for Pre-Galvanized, G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum
- Not recommended for use with covers in outdoor applications.

Part Number	Tray Height
PHD025**	25
PHD035**	35
PHD040**	40
PHD050**	50
PHD075**	75
PHD100**	100

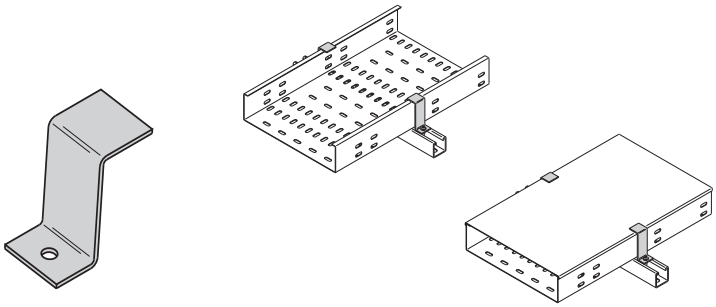


Expansion Guide - For (R) & (C) Flanges

(Sold individually without hardware)

- ** Insert G for Hot Dip Galvanized, SS6 for Stainless Steel 316, A for Aluminum

Part Number	Tray Height
PHD025**	25
PHD035**	35
PHD040**	40
PHD050**	50
PHD075**	75
PHD100**	100



Accessory Hardware

- (*) Insert HDG for Hot Dip Galvanized, SS6 for Stainless Steel 316, or N for Nylon

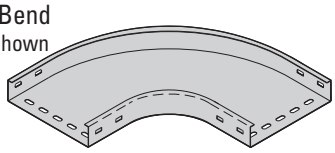
Part Number	Item
M6 x 16 PHS (*)	Phillips Head Screw
M6 SFHN (*)	Serrated Flange Hex Nut

All dimensions are in millimeters unless otherwise specified.

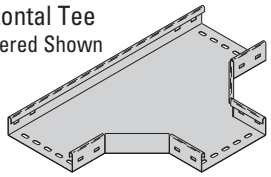
Cable Tray Fittings are designed to support cables as they transition directions.

Note: Perforated slot dimensions and patterns may vary depending on tray size and type.
All fitting bottom are shown as solid bottoms. Perforated bottoms are available.

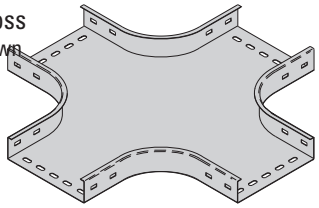
HB
Horizontal Bend
(C) Formed Shown

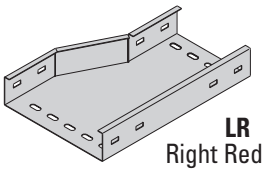


HT
Horizontal Tee
(R) Mitered Shown

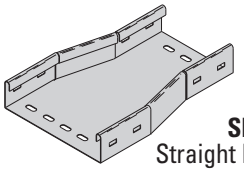


HX
Horizontal Cross
(C) Formed Shown

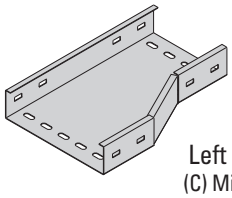




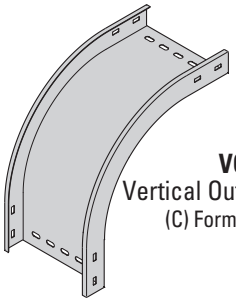
LR
Right Reducer
(C) Mitered Only



SR
Straight Reducer
(R) Mitered Only

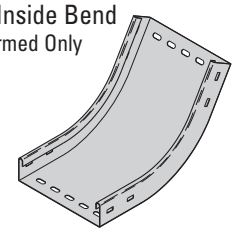


RR
Left Reducer
(C) Mitered Only



VO
Vertical Outside Bend
(C) Formed Only

VI
Vertical Inside Bend
(R) Formed Only



Fittings Part Numbering

Example: **P F 050 V N SS6 10 HB - 200 - 60 R600**

Prefix: **P F 050 V N SS6 10**
Suffix: **HB - 200 - 60 R600**

Tray Type	Radius Detail	Height	Bottom Type	Return Flange Type	Material	Thickness	Type	Width	Angle † (°)	Radius
P = (Perforated & Solid Cable Tray)	**F =** Formed	**025** = 25mm	**S** = Solid	**N** = No Flange	**P** = Pre-Galv	**10** * = 1.0mm	**HB**	**050** = 50mm	**30**	**R300** = 300mm
	M = Mitered	**035** = 35mm	**V** = Perforated	**R** = 180° Return	**G** = HDGAF	**15** = 1.5mm	**HT** †	**100** = 100mm	**45**	**R600** = 600mm
		040 = 40mm		**C** = 90° Inside	**SS6** = Stainless Type 316	**20** = 2.0mm	**HX** †	**150** = 150mm	**60**	**R900** = 900mm
		050 = 50mm			**A** = Aluminum		**VO** ***	**200** = 200mm	**90**	
		075 = 75mm					**VI** ***	**300** = 300mm		
		100 = 100mm					**RR** † Δ	**400** = 400mm		
							LR † Δ	**500** = 500mm		
							SR † Δ	**600** = 600mm		
								900 = 900mm		

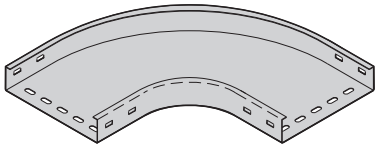
* 1.0mm thickness is only available in widths up to and including 300 (300mm).
† No angle designation required on these fittings. See fitting page when creating part numbers.
*** Not available in mitered style
Δ Available in mitered style only

All dimensions are in millimeters unless otherwise specified.

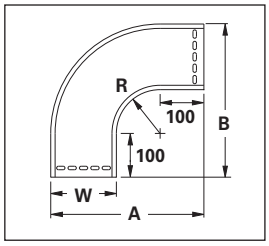
Horizontal Bends 90° (HB)

Splice plates not supplied with fittings.

Note:
Perforated slot dimensions and patterns may vary depending on tray size and type.
(R) 180° return flange not available on 025 tray heights.

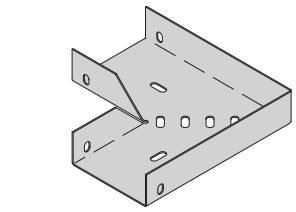


90˚ Horizontal Bend
Formed (C) Rail Shown

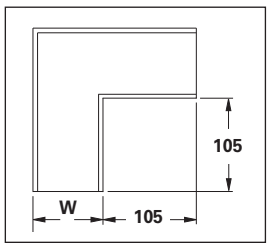


Bend Radius R mm	Tray Width W mm	90˚ Horizontal Bend Dimensions Formed Radius Fittings Catalog No.	A mm	B mm
300	50	PF(Prefix)HB-050-90R300	490	490
	100	PF(Prefix)HB-100-90R300	540	540
	150	PF(Prefix)HB-150-90R300	590	590
	200	PF(Prefix)HB-200-90R300	640	640
	300	PF(Prefix)HB-300-90R300	740	740
	400	PF(Prefix)HB-400-90R300	840	840
	500	PF(Prefix)HB-500-90R300	940	940
	600	PF(Prefix)HB-600-90R300	1040	1040
	900	PF(Prefix)HB-900-90R300	1340	1340
600	50	PF(Prefix)HB-050-90R600	790	790
	100	PF(Prefix)HB-100-90R600	840	840
	150	PF(Prefix)HB-150-90R600	890	890
	200	PF(Prefix)HB-200-90R600	940	940
	300	PF(Prefix)HB-300-90R600	1040	1040
	400	PF(Prefix)HB-400-90R600	1140	1140
	500	PF(Prefix)HB-500-90R600	1240	1240
	600	PF(Prefix)HB-600-90R600	1340	1340
	900	PF(Prefix)HB-900-90R600	1640	1640

Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

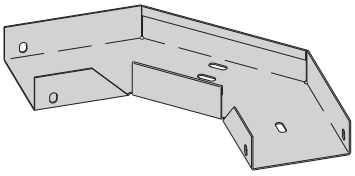


90˚ Horizontal Bend
Mitered Square (R) Rail Shown

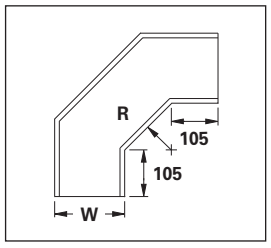


Bend Radius R mm	Tray Width W mm	90˚ Horizontal Bend Dimensions Square Radius Fittings Catalog No.
Square	50	PM(Prefix)HB-050-90SQ
	100	PM(Prefix)HB-100-90SQ
	150	PM(Prefix)HB-150-90SQ
	200	PM(Prefix)HB-200-90SQ
	300	PM(Prefix)HB-300-90SQ
	400	PM(Prefix)HB-400-90SQ
	500	PM(Prefix)HB-500-90SQ
	600	PM(Prefix)HB-600-90SQ
	900	PM(Prefix)HB-900-90SQ

Attaches to outside of straight section.
No splice plates required. Available in no flange only.



90˚ Horizontal Bend
Mitered 75mm Radius (R) Rail Shown



Bend Radius R mm	Tray Width W mm	90˚ Horizontal Bend Dimensions 75mm Radius Fittings Catalog No.
75	50	PM(Prefix)HB-050-90R075
	100	PM(Prefix)HB-100-90R075
	150	PM(Prefix)HB-150-90R075
	200	PM(Prefix)HB-200-90R075
	300	PM(Prefix)HB-300-90R075
	400	PM(Prefix)HB-400-90R075
	500	PM(Prefix)HB-500-90R075
	600	PM(Prefix)HB-600-90R075
	900	PM(Prefix)HB-900-90R075

Attaches to outside of straight section.
No splice plates required. Available in no flange only.

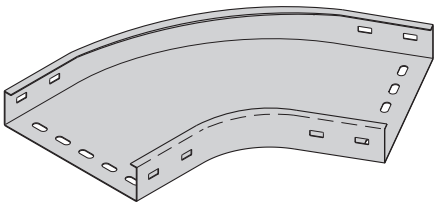
(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

All dimensions are in millimeters unless otherwise specified.

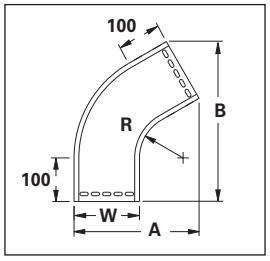
Horizontal Bends 60° (HB)

Splice plates not supplied with fittings.

Note:
Perforated slot dimensions and patterns
may vary depending on tray size and type.
(R) 180° return flange not available on 025 tray heights.



60° Horizontal Bend
Formed (C) Shown



Bend Radius R mm	Tray Width W mm	60° Horizontal Bend Dimensions Formed Radius Fittings		
		Catalog No.	A mm	B mm
300	50	**PF(Prefix)HB-050-60R300**	321	513
	100	**PF(Prefix)HB-100-60R300**	371	556
	150	**PF(Prefix)HB-150-60R300**	421	600
	200	**PF(Prefix)HB-200-60R300**	471	643
	300	**PF(Prefix)HB-300-60R300**	571	730
	400	**PF(Prefix)HB-400-60R300**	671	816
	500	**PF(Prefix)HB-500-60R300**	771	903
	600	**PF(Prefix)HB-600-60R300**	871	989
	900	**PF(Prefix)HB-900-60R300**	1171	1249
600	50	**PF(Prefix)HB-050-60R600**	471	773
	100	**PF(Prefix)HB-100-60R600**	521	816
	150	**PF(Prefix)HB-150-60R600**	571	850
	200	**PF(Prefix)HB-200-60R600**	621	903
	300	**PF(Prefix)HB-300-60R600**	721	989
	400	**PF(Prefix)HB-400-60R600**	821	1076
	500	**PF(Prefix)HB-500-60R600**	921	1163
	600	**PF(Prefix)HB-600-60R600**	1021	1249
	900	**PF(Prefix)HB-900-60R600**	1321	1509

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

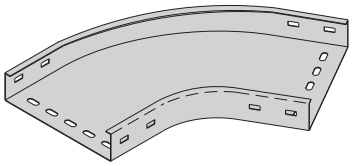
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

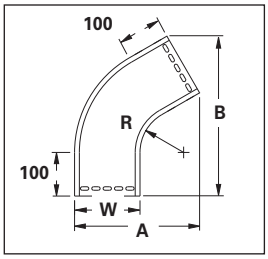
Note:
Perforated slot dimensions and patterns
may vary depending on tray size and type.
(R) 180° return flange not available on 025 tray heights.

Horizontal Bends 45° (HB)

Splice plates not supplied with fittings.

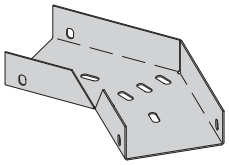


45˚ Horizontal Bend
Formed (C) Shown

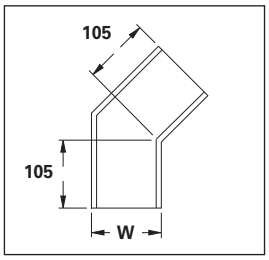


Bend Radius R mm	Tray Width W mm	45˚ Horizontal Bend Dimensions Formed Radius Fittings Catalog No.	A mm	B mm
300	50	PF(Prefix)HB-050-45R300	237	486
	100	PF(Prefix)HB-100-45R300	287	522
	150	PF(Prefix)HB-150-45R300	337	557
	200	PF(Prefix)HB-200-45R300	387	593
	300	PF(Prefix)HB-300-45R300	487	663
	400	PF(Prefix)HB-400-45R300	587	734
	500	PF(Prefix)HB-500-45R300	687	805
	600	PF(Prefix)HB-600-45R300	787	875
	900	PF(Prefix)HB-900-45R300	1087	1088
600	50	PF(Prefix)HB-050-45R600	325	699
	100	PF(Prefix)HB-100-45R600	375	734
	150	PF(Prefix)HB-150-45R600	425	769
	200	PF(Prefix)HB-200-45R600	475	805
	300	PF(Prefix)HB-300-45R600	575	875
	400	PF(Prefix)HB-400-45R600	675	946
	500	PF(Prefix)HB-500-45R600	775	1017
	600	PF(Prefix)HB-600-45R600	875	1088
	900	PF(Prefix)HB-900-45R600	1175	1300

Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

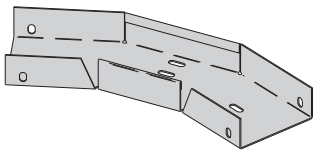


45˚ Horizontal Bend
Mitered Square (R) Shown

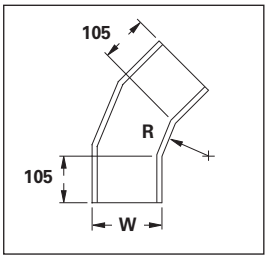


Bend Radius R mm	Tray Width W mm	45˚ Horizontal Bend Dimensions Square Radius Fittings Catalog No.
Square	50	PM(Prefix)HB-050-45SQ
	100	PM(Prefix)HB-100-45SQ
	150	PM(Prefix)HB-150-45SQ
	200	PM(Prefix)HB-200-45SQ
	300	PM(Prefix)HB-300-45SQ
	400	PM(Prefix)HB-400-45SQ
	500	PM(Prefix)HB-500-45SQ
	600	PM(Prefix)HB-600-45SQ
	900	PM(Prefix)HB-900-45SQ

Attaches to outside of straight section.
No splice plates required. Available in no flange only.



45˚ Horizontal Bend
Mitered 75mm Radius (R) Rail Shown



Bend Radius R mm	Tray Width W mm	45˚ Horizontal Bend Dimensions 75mm Radius Fittings Catalog No.
75	50	PM(Prefix)HB-050-45R075
	100	PM(Prefix)HB-100-45R075
	150	PM(Prefix)HB-150-45R075
	200	PM(Prefix)HB-200-45R075
	300	PM(Prefix)HB-300-45R075
	400	PM(Prefix)HB-400-45R075
	500	PM(Prefix)HB-500-45R075
	600	PM(Prefix)HB-600-45R075
	900	PM(Prefix)HB-900-45R075

Attaches to outside of straight section.
No splice plates required. Available in no flange only.

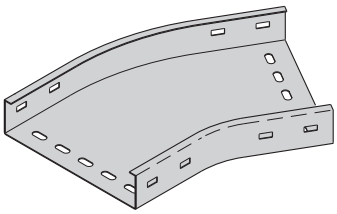
(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

All dimensions are in millimeters unless otherwise specified.

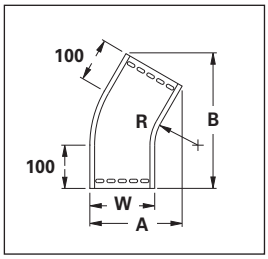
Horizontal Bends 30° (HB)

Splice plates not supplied with fittings.

Note:
Perforated slot dimensions and patterns
may vary depending on tray size and type.
(R) 180° return flange not available on 025 tray heights.



30˚ Horizontal Bend
Formed (C) Shown



Bend Radius R mm	Tray Width W mm	30˚ Horizontal Bend Dimensions Formed Radius Fittings		
		Catalog No.	A mm	B mm
300	50	**PF(Prefix)HB-050-30R300**	160	436
	100	**PF(Prefix)HB-100-30R300**	210	461
	150	**PF(Prefix)HB-150-30R300**	260	486
	200	**PF(Prefix)HB-200-30R300**	310	511
	300	**PF(Prefix)HB-300-30R300**	410	561
	400	**PF(Prefix)HB-400-30R300**	510	611
	500	**PF(Prefix)HB-500-30R300**	610	661
	600	**PF(Prefix)HB-600-30R300**	710	711
	900	**PF(Prefix)HB-900-30R300**	1010	861
600	50	**PF(Prefix)HB-050-30R600**	200	586
	100	**PF(Prefix)HB-100-30R600**	250	611
	150	**PF(Prefix)HB-150-30R600**	300	636
	200	**PF(Prefix)HB-200-30R600**	350	661
	300	**PF(Prefix)HB-300-30R600**	450	711
	400	**PF(Prefix)HB-400-30R600**	550	761
	500	**PF(Prefix)HB-500-30R600**	650	811
	600	**PF(Prefix)HB-600-30R600**	750	861
	900	**PF(Prefix)HB-900-30R600**	1050	1011

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

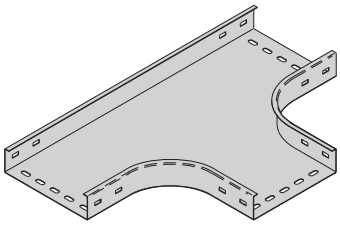
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

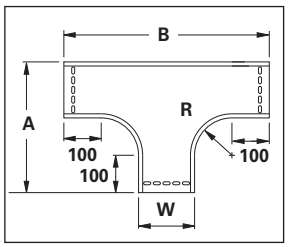
Horizontal Tee (HT)

Splice plates not supplied with fittings.

Note:
Perforated slot dimensions and patterns
may vary depending on tray size and type.
(R) 180° return flange not available on 025 tray heights.



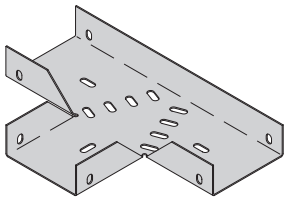
Horizontal Tee
Formed (C) Shown



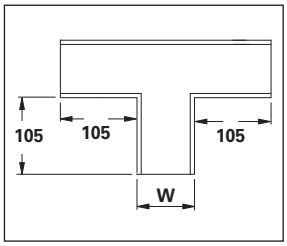
Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions Formed Radius Fittings Catalog No.	A mm	B mm
300	50	PF(Prefix)HT-050-R300	490	930
	100	PF(Prefix)HT-100-R300	540	980
	150	PF(Prefix)HT-150-R300	590	1030
	200	PF(Prefix)HT-200-R300	640	1080
	300	PF(Prefix)HT-300-R300	740	1180
	400	PF(Prefix)HT-400-R300	840	1280
	500	PF(Prefix)HT-500-R300	940	1380
	600	PF(Prefix)HT-600-R300	1040	1480
	900	PF(Prefix)HT-900-R300	1340	1760
600	50	PF(Prefix)HT-050-R600	790	1530
	100	PF(Prefix)HT-100-R600	840	1580
	150	PF(Prefix)HT-150-R600	890	1530
	200	PF(Prefix)HT-200-R600	940	1680
	300	PF(Prefix)HT-300-R600	1040	1780
	400	PF(Prefix)HT-400-R600	1140	1880
	500	PF(Prefix)HT-500-R600	1240	1980
	600	PF(Prefix)HT-600-R600	1340	2080
	900	PF(Prefix)HT-900-R600	1640	2380

Order standard splice plates separately from page 124.
Two (2) pair required to connect to system.

For information on expanding and reducing horizontal tees, see pages 140 & 141.

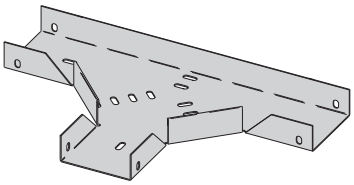


Horizontal Tee
Mitered Square Perforated
(C) Rail Shown

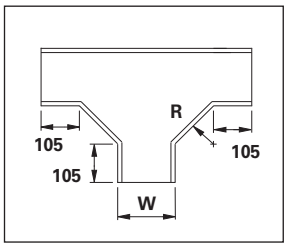


Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions Square Radius Fittings Catalog No.
Square	50	PM(Prefix)HT-050-SQ
	100	PM(Prefix)HT-100-SQ
	150	PM(Prefix)HT-150-SQ
	200	PM(Prefix)HT-200-SQ
	300	PM(Prefix)HT-300-SQ
	400	PM(Prefix)HT-400-SQ
	500	PM(Prefix)HT-500-SQ
	600	PM(Prefix)HT-600-SQ
	900	PM(Prefix)HT-900-SQ

Attaches to outside of straight section.
No splice plates required. Available in no flange only.



Horizontal Tee
Mitered 75mm Radius Perforated
(C) Rail Shown



Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions 75mm Radius Fittings Catalog No.
75	50	PM(Prefix)HT-050-R075
	100	PM(Prefix)HT-100-R075
	150	PM(Prefix)HT-150-R075
	200	PM(Prefix)HT-200-R075
	300	PM(Prefix)HT-300-R075
	400	PM(Prefix)HT-400-R075
	500	PM(Prefix)HT-500-R075
	600	PM(Prefix)HT-600-R075
	900	PM(Prefix)HT-900-R075

Attaches to outside of straight section.
No splice plates required. Available in no flange only.

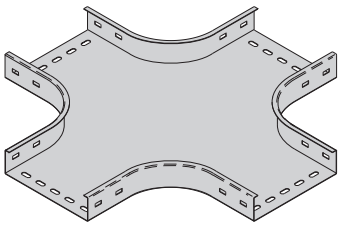
(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

All dimensions are in millimeters unless otherwise specified.

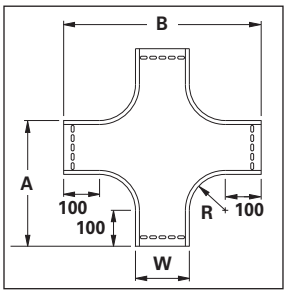
Horizontal Cross (HX)

Splice plates not supplied with fittings.

Note:
Perforated slot dimensions and patterns may vary depending on tray size and type.



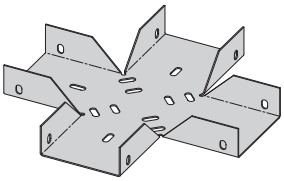
Horizontal Tee
Formed (C) Shown



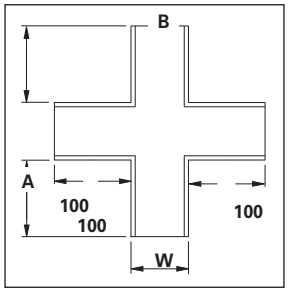
Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions Formed Radius Fittings Catalog No.	A mm	B mm
300	50	PF(Prefix)HX-050-R300	490	930
	100	PF(Prefix)HX-100-R300	540	980
	150	PF(Prefix)HX-150-R300	590	1030
	200	PF(Prefix)HX-200-R300	640	1080
	300	PF(Prefix)HX-300-R300	740	1180
	400	PF(Prefix)HX-400-R300	840	1280
	500	PF(Prefix)HX-500-R300	940	1380
	600	PF(Prefix)HX-600-R300	1040	1480
	900	PF(Prefix)HX-900-R300	1340	1760
600	50	PF(Prefix)HX-050-R600	790	1530
	100	PF(Prefix)HX-100-R600	840	1580
	150	PF(Prefix)HX-150-R600	890	1530
	200	PF(Prefix)HX-200-R600	940	1680
	300	PF(Prefix)HX-300-R600	1040	1780
	400	PF(Prefix)HX-400-R600	1140	1880
	500	PF(Prefix)HX-500-R600	1240	1980
	600	PF(Prefix)HX-600-R600	1340	2080
	900	PF(Prefix)HX-900-R600	1640	2380

Order standard splice plates separately from page 124.
Three (3) pair required to connect to system.

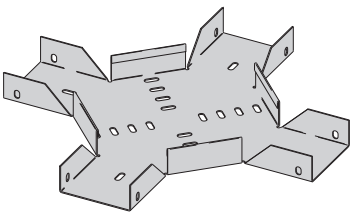
For information on expanding / reducing horizontal crosses, see pages 140 & 141.



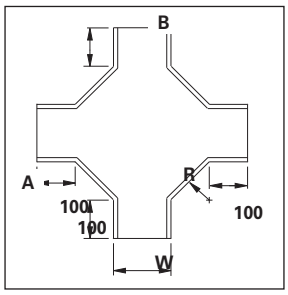
Horizontal Tee
Mitered Square Perforated
(C) Rail Shown



Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions Square Radius Fittings Catalog No.
Square	50	PM(Prefix)HT-050-SQ
	100	PM(Prefix)HT-100-SQ
	150	PM(Prefix)HT-150-SQ
	200	PM(Prefix)HT-200-SQ
	300	PM(Prefix)HT-300-SQ
	400	PM(Prefix)HT-400-SQ
	500	PM(Prefix)HT-500-SQ
	600	PM(Prefix)HT-600-SQ
	900	PM(Prefix)HT-900-SQ



Horizontal Tee
Mitered 75mm Radius Perforated
(C) Rail Shown



Bend Radius R mm	Tray Width W mm	Horizontal Tee Dimensions 75mm Radius Fittings Catalog No.
75	50	PM(Prefix)HT-050-R075
	100	PM(Prefix)HT-100-R075
	150	PM(Prefix)HT-150-R075
	200	PM(Prefix)HT-200-R075
	300	PM(Prefix)HT-300-R075
	400	PM(Prefix)HT-400-R075
	500	PM(Prefix)HT-500-R075
	600	PM(Prefix)HT-600-R075
	900	PM(Prefix)HT-900-R075

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

All dimensions are in millimeters unless otherwise specified.

Reducer Part Numbering

PF (Prefix) RR - 300 - 150

- 150 — $Width_2$
- 300 — $Width_1$
- RR — Fitting
- PF — Prefix

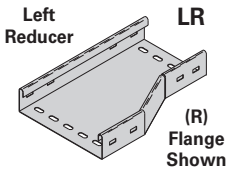
Note:
Perforated slot dimensions and patterns may vary depending on tray size and type.

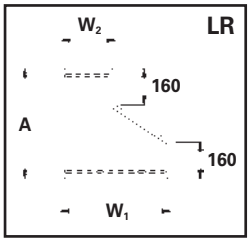
Left Reducer (LR)
Straight Reducer (SR)
Right Reducer (RR)

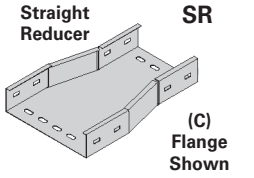
Splice plates not supplied with fittings.

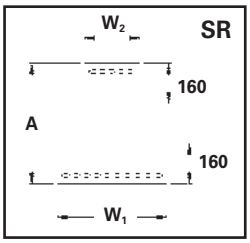
Mitered **

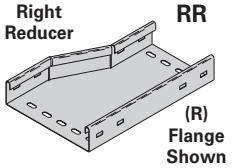
Tray Width		Left Hand Reducer		Straight Reducer		Right Hand Reducer	
W_1	W_2	Catalog No.	A	Catalog No.	A	Catalog No.	A
mm	mm		mm		mm		mm
100	50	PF(Prefix)-LR-100-050	400	PF(Prefix)-SR-100-050	400	PF(Prefix)-RR-100-050	400
150	50	PF(Prefix)-LR-150-050	400	PF(Prefix)-SR-150-050	400	PF(Prefix)-RR-150-050	400
	100	PF(Prefix)-LR-150-100	400	PF(Prefix)-SR-150-100	400	PF(Prefix)-RR-150-100	400
200	50	PF(Prefix)-LR-200-050	400	PF(Prefix)-SR-200-050	400	PF(Prefix)-RR-200-050	400
	100	PF(Prefix)-LR-200-100	400	PF(Prefix)-SR-200-100	400	PF(Prefix)-RR-200-100	400
	150	PF(Prefix)-LR-200-150	400	PF(Prefix)-SR-200-150	400	PF(Prefix)-RR-200-150	400
300	50	PF(Prefix)-LR-300-050	400	PF(Prefix)-SR-300-050	400	PF(Prefix)-RR-300-050	400
	100	PF(Prefix)-LR-300-100	400	PF(Prefix)-SR-300-100	400	PF(Prefix)-RR-300-100	400
	150	PF(Prefix)-LR-300-150	400	PF(Prefix)-SR-300-150	400	PF(Prefix)-RR-300-150	400
	200	PF(Prefix)-LR-300-200	400	PF(Prefix)-SR-300-200	400	PF(Prefix)-RR-300-200	400
400	50	PF(Prefix)-LR-400-050	400	PF(Prefix)-SR-400-050	400	PF(Prefix)-RR-400-050	400
	100	PF(Prefix)-LR-400-100	400	PF(Prefix)-SR-400-100	400	PF(Prefix)-RR-400-100	400
	150	PF(Prefix)-LR-400-150	400	PF(Prefix)-SR-400-150	400	PF(Prefix)-RR-400-150	400
	200	PF(Prefix)-LR-400-200	400	PF(Prefix)-SR-400-200	400	PF(Prefix)-RR-400-200	400
	300	PF(Prefix)-LR-400-300	400	PF(Prefix)-SR-400-300	400	PF(Prefix)-RR-400-300	400
500	50	PF(Prefix)-LR-500-050	400	PF(Prefix)-SR-500-050	400	PF(Prefix)-RR-500-050	400
	100	PF(Prefix)-LR-500-100	400	PF(Prefix)-SR-500-100	400	PF(Prefix)-RR-500-100	400
	150	PF(Prefix)-LR-500-150	400	PF(Prefix)-SR-500-150	400	PF(Prefix)-RR-500-150	400
	200	PF(Prefix)-LR-500-200	400	PF(Prefix)-SR-500-200	400	PF(Prefix)-RR-500-200	400
	300	PF(Prefix)-LR-500-300	400	PF(Prefix)-SR-500-300	400	PF(Prefix)-RR-500-300	400
	400	PF(Prefix)-LR-500-400	400	PF(Prefix)-SR-500-400	400	PF(Prefix)-RR-500-400	400
600	50	PF(Prefix)-LR-600-050	400	PF(Prefix)-SR-600-050	400	PF(Prefix)-RR-600-050	400
	100	PF(Prefix)-LR-600-100	400	PF(Prefix)-SR-600-100	400	PF(Prefix)-RR-600-100	400
	150	PF(Prefix)-LR-600-150	400	PF(Prefix)-SR-600-150	400	PF(Prefix)-RR-600-150	400
	200	PF(Prefix)-LR-600-200	400	PF(Prefix)-SR-600-200	400	PF(Prefix)-RR-600-200	400
	300	PF(Prefix)-LR-600-300	400	PF(Prefix)-SR-600-300	400	PF(Prefix)-RR-600-300	400
	400	PF(Prefix)-LR-600-400	400	PF(Prefix)-SR-600-400	400	PF(Prefix)-RR-600-400	400
	500	PF(Prefix)-LR-600-500	400	PF(Prefix)-SR-600-500	400	PF(Prefix)-RR-600-500	400
900	50	PF(Prefix)-LR-900-050	400	PF(Prefix)-SR-900-050	400	PF(Prefix)-RR-900-050	400
	100	PF(Prefix)-LR-900-100	400	PF(Prefix)-SR-900-100	400	PF(Prefix)-RR-900-100	400
	150	PF(Prefix)-LR-900-150	400	PF(Prefix)-SR-900-150	400	PF(Prefix)-RR-900-150	400
	200	PF(Prefix)-LR-900-200	400	PF(Prefix)-SR-900-200	400	PF(Prefix)-RR-900-200	400
	300	PF(Prefix)-LR-900-300	400	PF(Prefix)-SR-900-300	400	PF(Prefix)-RR-900-300	400
	400	PF(Prefix)-LR-900-400	400	PF(Prefix)-SR-900-400	400	PF(Prefix)-RR-900-400	400
	500	PF(Prefix)-LR-900-500	400	PF(Prefix)-SR-900-500	400	PF(Prefix)-RR-900-500	400
	600	PF(Prefix)-LR-900-600	400	PF(Prefix)-SR-900-600	400	PF(Prefix)-RR-900-600	400

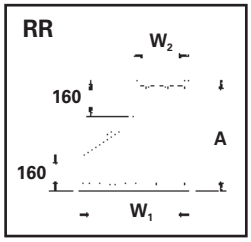












(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

****** Reducers are made only in the mitered style as shown

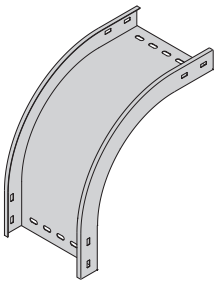
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

Vertical Bends 90˚ (VO, VI) Formed

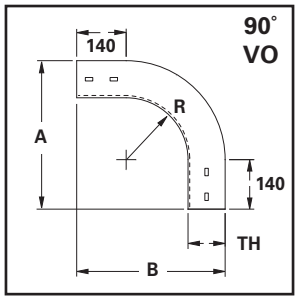
Splice plates not supplied with fittings.

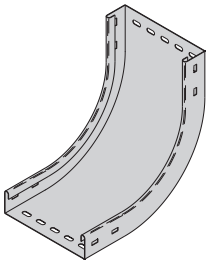
Note: Perforated slot dimensions and patterns may vary depending on tray size and type.



Solid Bottom
(C) Flange Shown

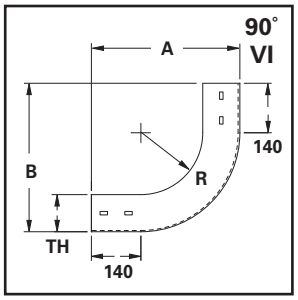
90˚ Vertical Outside





Solid Bottom
(R) Flange Shown

90˚ Vertical Inside



Bend Radius R	Tray Width	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend	90° Formed *** VO & VI Tray Height (TH)											
			25mm		35mm		40mm		50mm		75mm		100mm	
			A	B	A	B	A	B	A	B	A	B	A	B
mm	mm	Catalog No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
300	50	PF(Prefix)(*)-050-90R300	465	465	475	475	480	480	490	490	NA	NA	NA	NA
	100	PF(Prefix)(*)-100-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	150	PF(Prefix)(*)-150-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	200	PF(Prefix)(*)-200-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	300	PF(Prefix)(*)-300-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	400	PF(Prefix)(*)-400-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	500	PF(Prefix)(*)-500-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	600	PF(Prefix)(*)-600-90R300	465	465	475	475	480	480	490	490	515	515	540	540
	900	PF(Prefix)(*)-900-90R300	465	465	475	475	480	480	490	490	515	515	540	540
600	50	PF(Prefix)(*)-050-90R600	765	765	775	775	780	780	790	790	NA	NA	NA	NA
	100	PF(Prefix)(*)-100-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	150	PF(Prefix)(*)-150-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	200	PF(Prefix)(*)-200-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	300	PF(Prefix)(*)-300-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	400	PF(Prefix)(*)-400-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	500	PF(Prefix)(*)-500-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	600	PF(Prefix)(*)-600-90R600	765	765	775	775	780	780	790	790	815	815	840	840
	900	PF(Prefix)(*)-900-90R600	765	765	775	775	780	780	790	790	815	815	840	840

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

*** Vertical inside and outside bends are made only in the formed style as shown

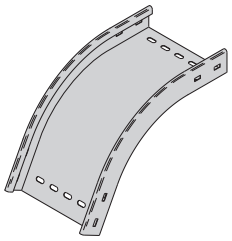
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

Vertical Bends 60˚ (VO, VI) Formed

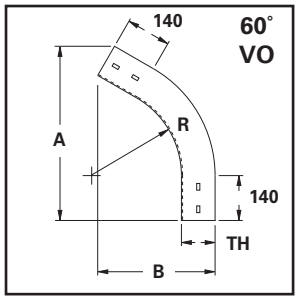
Splice plates not supplied with fittings.

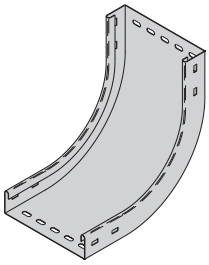
Note: Perforated slot dimensions and patterns may vary depending on tray size and type.



Solid Bottom
(R) Flange Shown

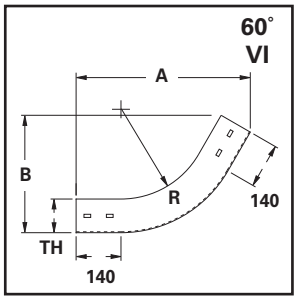
60˚ Vertical Outside





Solid Bottom
(R) Flange Shown

60˚ Vertical Inside



Bend Radius R	Tray Width	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend	60° Formed *** VO & VI Tray Height (TH)											
			25mm		35mm		40mm		50mm		75mm		100mm	
			A	B	A	B	A	B	A	B	A	B	A	B
mm	mm	Catalog No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
300	50	PF(Prefix)(*)-050-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	100	PF(Prefix)(*)-100-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	150	PF(Prefix)(*)-150-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	200	PF(Prefix)(*)-200-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	300	PF(Prefix)(*)-300-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	400	PF(Prefix)(*)-400-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	500	PF(Prefix)(*)-500-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	600	PF(Prefix)(*)-600-60R300	491	296	500	306	504	311	513	321	535	346	556	371
	900	PF(Prefix)(*)-900-60R300	491	296	500	306	504	311	513	321	535	346	556	371
600	50	PF(Prefix)(*)-050-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	100	PF(Prefix)(*)-100-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	150	PF(Prefix)(*)-150-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	200	PF(Prefix)(*)-200-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	300	PF(Prefix)(*)-300-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	400	PF(Prefix)(*)-400-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	500	PF(Prefix)(*)-500-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	600	PF(Prefix)(*)-600-60R600	751	446	759	456	764	461	773	471	795	496	816	521
	900	PF(Prefix)(*)-900-60R600	751	446	759	456	764	461	773	471	795	496	816	521

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

*** Vertical inside and outside bends are made only in the formed style as shown

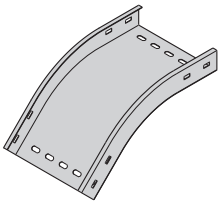
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

Vertical Bends 45˚ (VO, VI) Formed

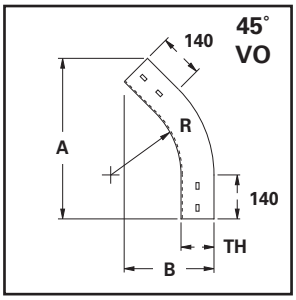
Splice plates not supplied with fittings.

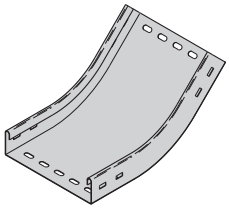
Note: Perforated slot dimensions and patterns may vary depending on tray size and type.



Solid Bottom
(C) Flange Shown

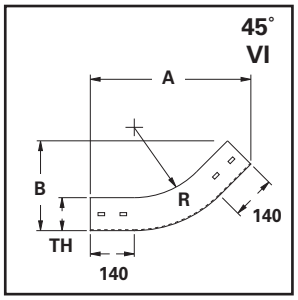
45˚ Vertical Outside





Solid Bottom
(R) Flange Shown

45˚ Vertical Inside



Bend Radius R	Tray Width	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend	45° Formed *** VO & VI Tray Height (TH)											
			25mm		35mm		40mm		50mm		75mm		100mm	
			A	B	A	B	A	B	A	B	A	B	A	B
mm	mm	Catalog No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	50	PF(Prefix)(*)-050-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	100	PF(Prefix)(*)-100-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	150	PF(Prefix)(*)-150-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	200	PF(Prefix)(*)-200-45R300	469	212	475	222	479	227	486	237	504	262	522	287
300	300	PF(Prefix)(*)-300-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	400	PF(Prefix)(*)-400-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	500	PF(Prefix)(*)-500-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	600	PF(Prefix)(*)-600-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	900	PF(Prefix)(*)-900-45R300	469	212	475	222	479	227	486	237	504	262	522	287
	50	PF(Prefix)(*)-050-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	100	PF(Prefix)(*)-100-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	150	PF(Prefix)(*)-150-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	200	PF(Prefix)(*)-200-45R600	681	300	688	310	692	315	699	325	716	350	734	375
600	300	PF(Prefix)(*)-300-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	400	PF(Prefix)(*)-400-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	500	PF(Prefix)(*)-500-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	600	PF(Prefix)(*)-600-45R600	681	300	688	310	692	315	699	325	716	350	734	375
	900	PF(Prefix)(*)-900-45R600	681	300	688	310	692	315	699	325	716	350	734	375

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

*** Vertical inside and outside bends are made only in the formed style as shown

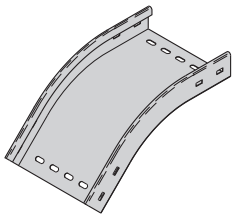
Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

Splice plates not supplied with fittings.

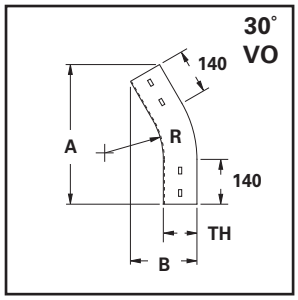
Vertical Bends 30˚ (VO, VI) Formed

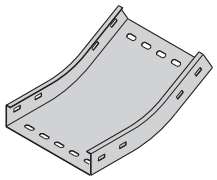
Note: Perforated slot dimensions and patterns may vary depending on tray size and type.



Solid Bottom
(R) Flange Shown

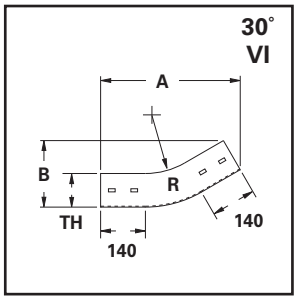
30˚ Vertical Outside





Solid Bottom
(R) Flange Shown

30˚ Vertical Inside



Bend Radius R	Tray Width	(*) Insert "VO" for Vert. Outside Bend "VI" for Vert. Inside Bend	30° Formed *** VO & VI Tray Height (TH)											
			25mm		35mm		40mm		50mm		75mm		100mm	
			A	B	A	B	A	B	A	B	A	B	A	B
mm	mm	Catalog No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
	50	PF(Prefix)(*)-050-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	100	PF(Prefix)(*)-100-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	150	PF(Prefix)(*)-150-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	200	PF(Prefix)(*)-200-30R300	424	135	429	145	431	150	436	160	449	185	461	210
300	300	PF(Prefix)(*)-300-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	400	PF(Prefix)(*)-400-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	500	PF(Prefix)(*)-500-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	600	PF(Prefix)(*)-600-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	900	PF(Prefix)(*)-900-30R300	424	135	429	145	431	150	436	160	449	185	461	210
	50	PF(Prefix)(*)-050-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	100	PF(Prefix)(*)-100-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	150	PF(Prefix)(*)-150-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	200	PF(Prefix)(*)-200-30R600	574	175	579	185	581	190	586	200	599	225	611	250
600	300	PF(Prefix)(*)-300-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	400	PF(Prefix)(*)-400-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	500	PF(Prefix)(*)-500-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	600	PF(Prefix)(*)-600-30R600	574	175	579	185	581	190	586	200	599	225	611	250
	900	PF(Prefix)(*)-900-30R600	574	175	579	185	581	190	586	200	599	225	611	250

(Prefix) See page 128 for catalog number prefix and splice plate hole information.
Width dimensions are to inside wall. Manufacturing tolerances apply to all dimensions.

*** Vertical inside and outside bends are made only in the formed style as shown

Order standard splice plates separately from page 124.
One (1) pair required to connect to system.

All dimensions are in millimeters unless otherwise specified.

Expanding Horizontal Tee (ET)
Reducing Horizontal Tee (RT)
Expanding/Reducing Horizontal Cross (RX)

Splice plates not supplied with fittings.

Note: Perforated slot dimensions and patterns may vary depending on tray size and type.

Expanding/Reducing Fittings Part Numbering

Prefix | Suffix

Example: **P F 050 V N SS6 10 ET - 100 - 200 - R600**

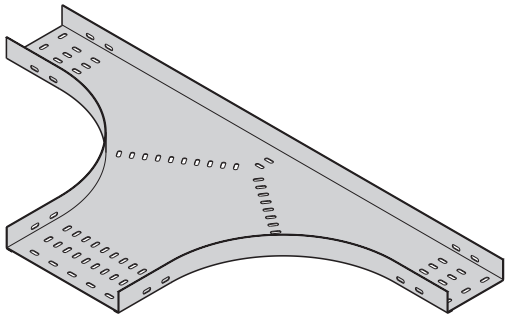
Tray Type	Radius Detail	Height	Bottom Type	Return Flange Type	Material	Thickness	Type	Width 1	Width 2	Radius
P = (Perforated & Solid Cable Tray)	**F =** Formed	**025** = 25mm	**S** = Solid	**N** = No Flange	**P** = Pre-Galv	**10** * = 1.0mm	**ET**	**050** = 50mm	**050** = 50mm	**R300** = 300mm
		035 = 35mm	**V** = Perforated	**R** = 180° Return	**G** = HDGAF	**15** = 1.5mm	**RT**	**100** = 100mm	**100** = 100mm	**R600** = 600mm
		040 = 40mm		**C** = 90° Inside	**SS6** = Stainless Type 316	**20** = 2.0mm	**RX**	**150** = 150mm	**150** = 150mm	
		050 = 50mm			**A** = Aluminum			**200** = 200mm	**200** = 200mm	
		075 = 75mm						**300** = 200mm	**300** = 300mm	
		100 = 100mm						**400** = 400mm	**400** = 400mm	
								500 = 500mm	**500** = 500mm	
								600 = 600mm	**600** = 600mm	
								900 = 900mm	**900** = 900mm	

* 1.0mm thickness is only available in widths up to and including 300 (300mm).
Not available in mitered style

All dimensions are in millimeters unless otherwise specified.

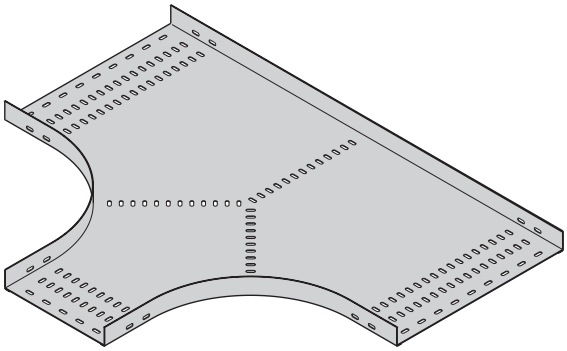
Expanding Horizontal Tee (ET)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 124.
Two (2) pair required to connect to system.
Contact Eaton B-Line Engineering Department for more information.



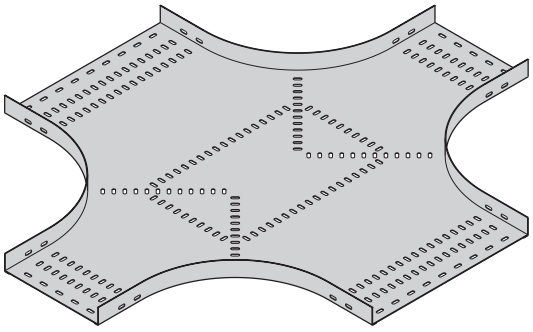
Reducing Horizontal Tee (RT)

Splice plates not supplied with fittings.
Order standard splice plates separately from page 124.
Two (2) pair required to connect to system.
Contact Eaton B-Line Engineering Department for more information.



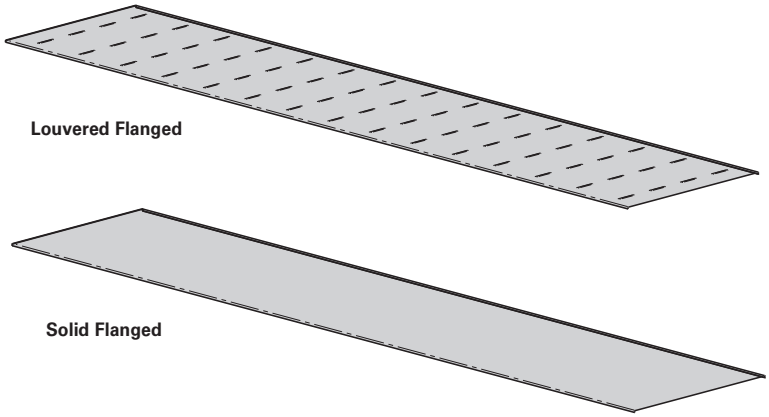
Expanding/Reducing Horizontal Cross (RX)

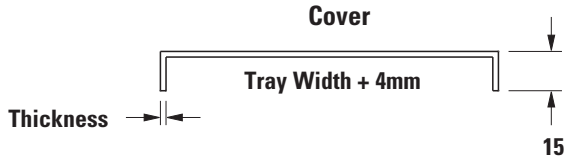
Splice plates not supplied with fittings.
Order standard splice plates separately from page 124.
Three (3) pair required to connect to system.
Contact Eaton B-Line Engineering Department for more information.



All dimensions are in millimeters unless otherwise specified.

Straight Section Covers





A full range of covers is available for straight sections.

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

Flanged covers have a 15mm flange.
Cover clamps are not included with the cover and must be ordered separately.

Straight Section Cover Part Numbering

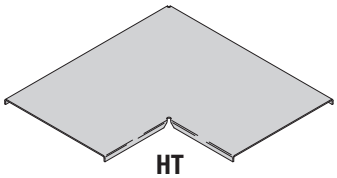
Example: **PCF S C P15 SS - 300 - 3000**

Cover Type	Cover Style	Top Style	Material & Thickness	Type	Width	Length **
PCF = (Flanged Tray Cover)	**S** = Solid **L** = Louvered	**C** = Inside Flange **B** = Outside Flange	**P15** = Pre-Galv, 1.5mm **G12** = HDGAF, 1.2mm **G15** = HDGAF, 1.5mm **SS6** = Stainless, 1.5mm Type 316 **A10** = Aluminum, 1.0mm	**SS** = Straight Section	**050** = 50mm **100** = 100mm **150** = 150mm **200** = 200mm **300** = 300mm **400** = 400mm **500** = 500mm **600** = 600mm **900** = 900mm	**1500** = 1.5m **3000** = 3.0m

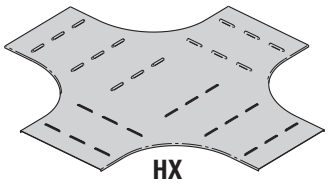
** All G (galvanized steel) covers only available in 1500 (1.5m) lengths.
All 900 (900mm) widths only available in 1500 (1.5m) lengths.

All dimensions are in millimeters unless otherwise specified.

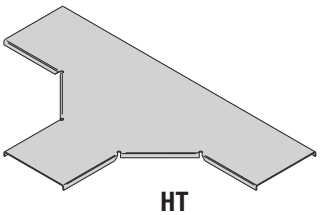
Fitting Covers



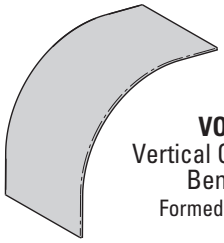
HT
Horizontal Bend
Square Shown



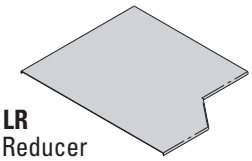
HX
Horizontal Cross
Louvered Formed Shown



HT
Horizontal Tee
75mm Radius Shown

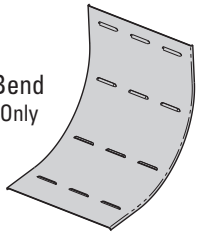


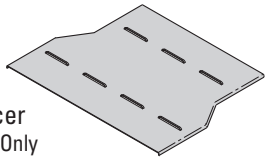
VO
Vertical Outside Bend
Formed Only



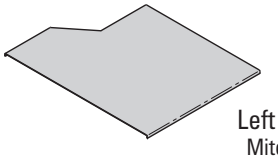
LR
Right Reducer
Mitered Only

VI
Vertical Inside Bend
Louvered Formed Only





SR
Straight Reducer
Louvered Mitered Only



RR
Left Reducer
Mitered Only

A full range of covers are available for fittings.

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

Flanged covers have a 15mm flange. Cover clamps are not included with the cover and must be ordered separately.

Fitting Cover Part Numbering

Example: **PC F S P15 HB - 500 - 60 R600 - 040**

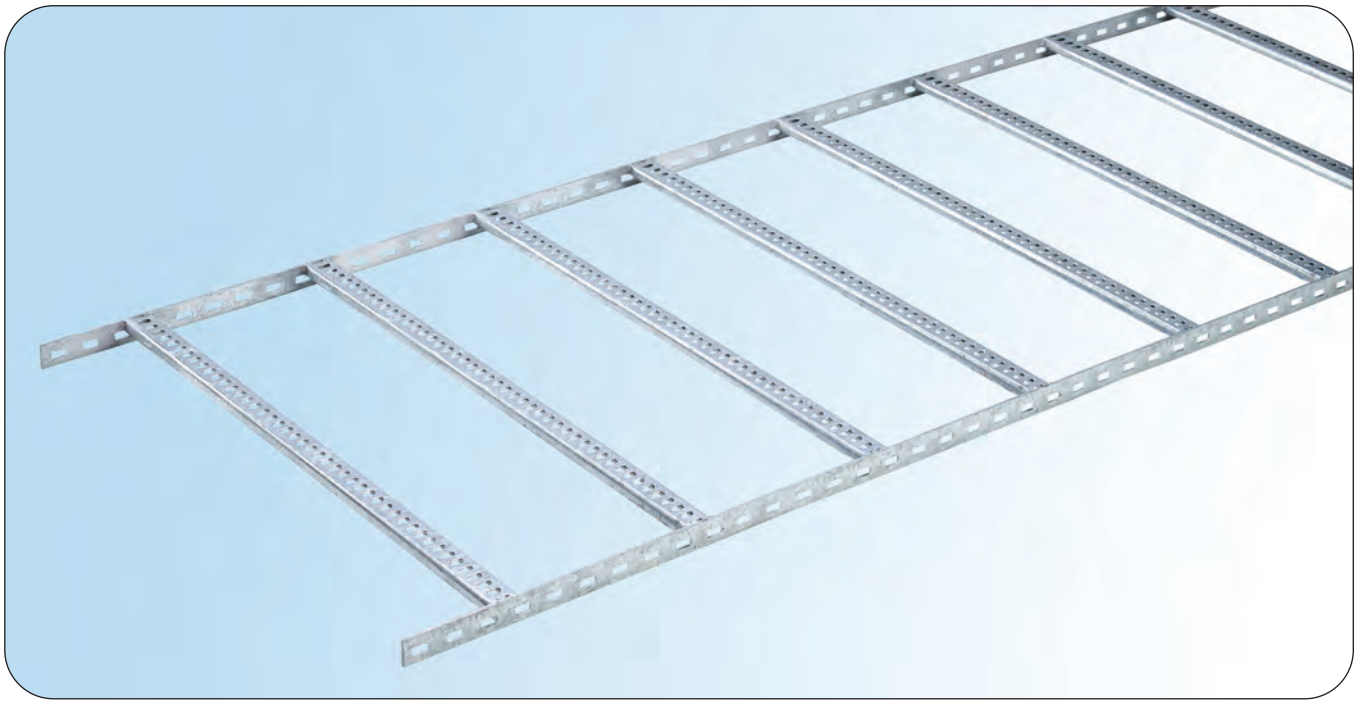
Cover Type	Cover Style	Top Style	Material & Thickness	Fitting Suffix	Tray Height †††
PC = (Perforated & Solid Tray Fitting Cover)	**F =** Formed	**S** = Solid	**P15** = Pre-Galv, 1.5mm	HB - **Insert HB Suffix from pages 129 - 132**	**025** = 25mm
	M = Mitered	**L** = Louvered	**G12** = HDGAF, 1.2mm	HT - **Insert HT Suffix from page 133**	**035** = 35mm
			G15 = HDGAF, 1.5mm	HX - **Insert HX Suffix from page 134**	**040** = 40mm
			SS610 = Stainless, 1.0mm Type 316	LR - **Insert LR Suffix from page 135**	**050 =** 50mm
			SS615 = Stainless, 1.5mm Type 316	SR - **Insert SR Suffix from page 135**	**050 =** 50mm
			A = Aluminum, 1.0mm	RR - **Insert RR Suffix from page 135**	**100** = 100mm
				VI - **Insert VI Suffix from pages 136 - 139**	
				VO - **Insert VO Suffix from pages 136 - 139** †††	

* 1.0mm thickness is only available in widths up to and including 300 (300mm).

††† Required on VO part numbers only.

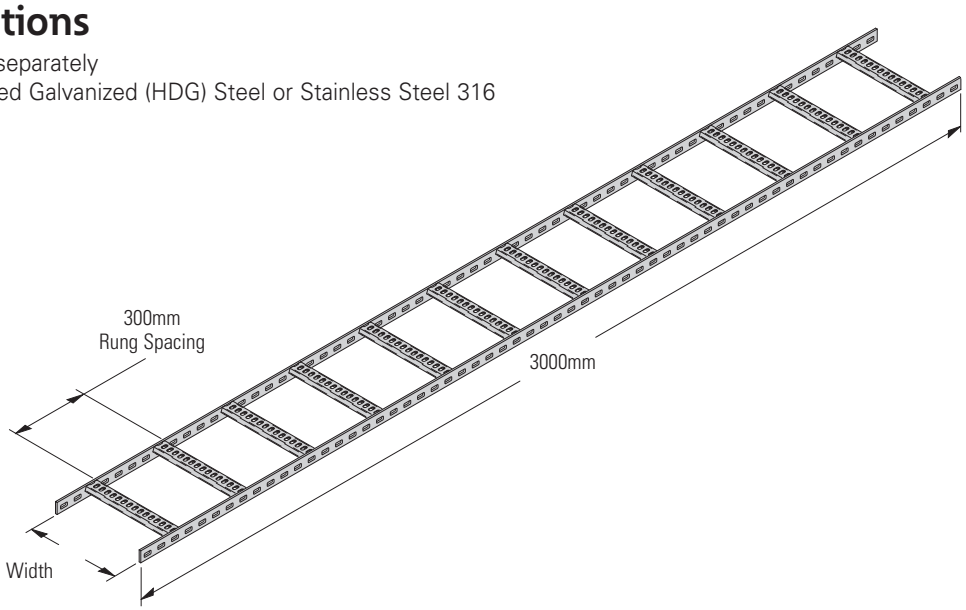
All dimensions are in millimeters unless otherwise specified.

Steel Ship Ladder - Straight Sections, Fittings, & Accessories



Straight Sections

- Splice plates sold separately
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316



MR40ST 0100 - 3000 (*)

- MR40ST: Marine Rung Nominal 40mm Height
- 0100: Width
- 3000: Length
- (*): Material

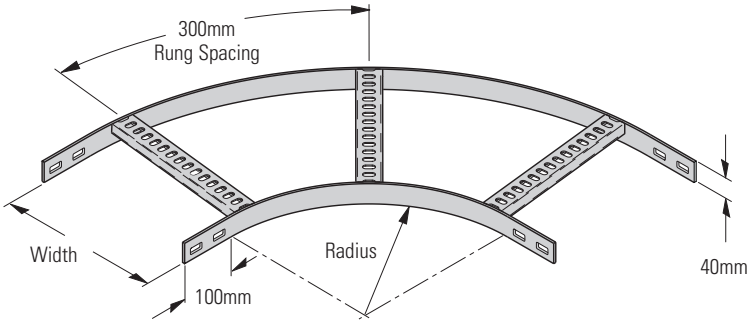
Catalog No.	Width mm	Thickness G mm	Thickness X mm
MR40ST0100-3000(*)	100	4.5	6.0
MR40ST0150-3000(*)	150	4.5	6.0
MR40ST0200-3000(*)	200	4.5	6.0
MR40ST0300-3000(*)	300	4.5	6.0
MR40ST0400-3000(*)	400	4.5	6.0
MR40ST0500-3000(*)	500	4.5	6.0
MR40ST0600-3000(*)	600	4.5	6.0
MR40ST0700-3000(*)	700	4.5	6.0
MR40ST0800-3000(*)	800	4.5	6.0
MR40ST0900-3000(*)	900	4.5	6.0

(*) Insert **G** for Hot Dipped Galvanized Steel or **X** for Stainless Steel 316

All dimensions are in millimeters unless otherwise specified.

90° Horizontal Bends

- Splice plates sold separately
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316



MR40HB 0100 - 90 R200 (*)

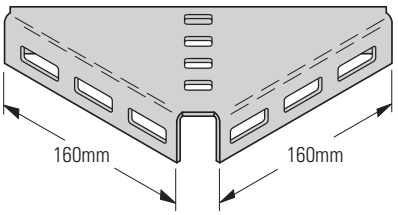
- MR40HB — Marine Rung Nominal 40mm Height Horizontal Bend
- 0100 — Width
- 90 — Angle
- R200 — Radius
- (*) — Material

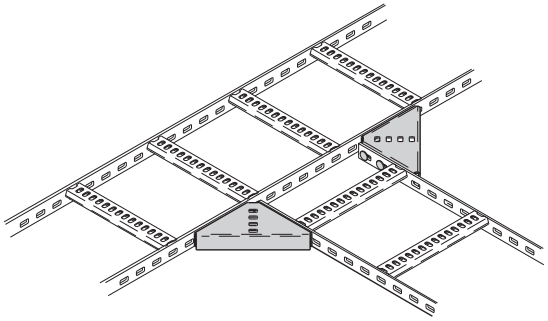
Catalog No.	Width	Thickness G	Thickness X
	mm	mm	mm
MR40HB0100-90R(xxx)(*)	100	4.5	6.0
MR40HB0150-90R(xxx)(*)	150	4.5	6.0
MR40HB0200-90R(xxx)(*)	200	4.5	6.0
MR40HB0300-90R(xxx)(*)	300	4.5	6.0
MR40HB0400-90R(xxx)(*)	400	4.5	6.0
MR40HB0500-90R(xxx)(*)	500	4.5	6.0
MR40HB0600-90R(xxx)(*)	600	4.5	6.0
MR40HB0700-90R(xxx)(*)	700	4.5	6.0
MR40HB0800-90R(xxx)(*)	800	4.5	6.0
MR40HB0900-90R(xxx)(*)	900	4.5	6.0

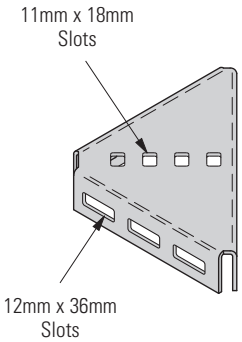
(xxx) Radius - Insert **200** for 200mm, **300** for 300mm, **450** for 450mm, or **600** for 600mm
(*) Material & Finish - Insert **G** for Hot Dipped Galvanized Steel or **X** for Stainless Steel 316

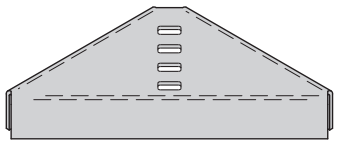
Tee and Cross Bracket

- Used to make horizontal ship ladder tees or crosses
- Sold per bracket with (4) M10 x 25 coach screws & serrated flange nuts
- Requires two (2) brackets for a horizontal tee
- Requires four (4) brackets for a horizontal tee
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316









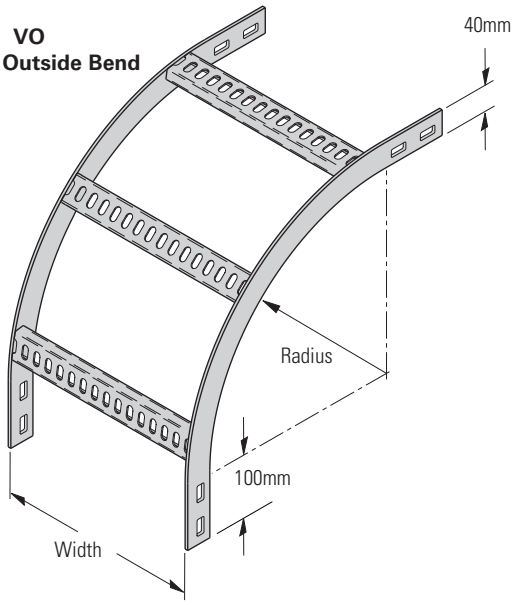
Catalog No.
MTX(*)

All dimensions are in millimeters unless otherwise specified.

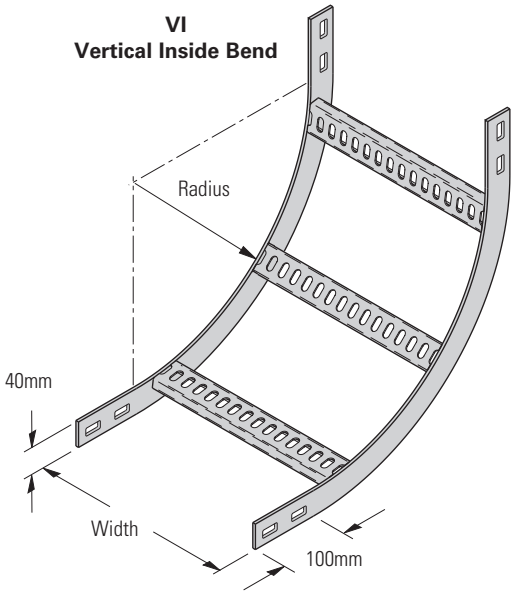
90° Vertical Bends

- Splice plates sold separately
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316

VO
Vertical Outside Bend



VI
Vertical Inside Bend



MR40VO 0100 - 90 R200 (*)

Marine Rung Nominal 40mm Height Vertical Outside Bend	Width	Angle	Radius	Material/ Finish

MR40VI 0100 - 90 R200 (*)

Marine Rung Nominal 40mm Height Vertical Inside Bend	Width	Angle	Radius	Material/ Finish

Catalog No.	Width	Thickness G	Thickness X
	mm	mm	mm
MR40VO0100-90R(xxx)(*)	100	4.5	6.0
MR40VO0150-90R(xxx)(*)	150	4.5	6.0
MR40VO0200-90R(xxx)(*)	200	4.5	6.0
MR40VO0300-90R(xxx)(*)	300	4.5	6.0
MR40VO0400-90R(xxx)(*)	400	4.5	6.0
MR40VO0500-90R(xxx)(*)	500	4.5	6.0
MR40VO0600-90R(xxx)(*)	600	4.5	6.0
MR40VO0700-90R(xxx)(*)	700	4.5	6.0
MR40VO0800-90R(xxx)(*)	800	4.5	6.0
MR40VO0900-90R(xxx)(*)	900	4.5	6.0

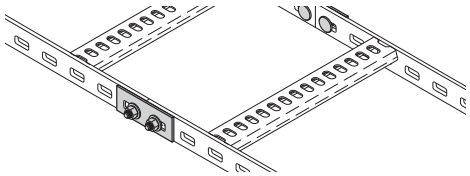
Catalog No.	Width	Thickness G	Thickness X
	mm	mm	mm
MR40VI0100-90R(xxx)(*)	100	4.5	6.0
MR40VI0150-90R(xxx)(*)	150	4.5	6.0
MR40VI0200-90R(xxx)(*)	200	4.5	6.0
MR40VI0300-90R(xxx)(*)	300	4.5	6.0
MR40VI0400-90R(xxx)(*)	400	4.5	6.0
MR40VI0500-90R(xxx)(*)	500	4.5	6.0
MR40VI0600-90R(xxx)(*)	600	4.5	6.0
MR40VI0700-90R(xxx)(*)	700	4.5	6.0
MR40VI0800-90R(xxx)(*)	800	4.5	6.0
MR40VI0900-90R(xxx)(*)	900	4.5	6.0

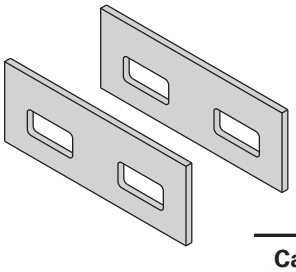
(xxx) Radius - Insert **200** for 200mm, **300** for 300mm, **450** for 450mm, or **600** for 600mm
(*) Material & Finish - Insert **G** for Hot Dipped Galvanized Steel or **X** for Stainless Steel 316

All dimensions are in millimeters unless otherwise specified.

Standard Splice Plate

- Used to splice ship ladders and fittings
- Sold in pairs with connecting hardware
- 40mm high x 100mm long x 3.2mm thick with 12mm x 25mm slots
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316

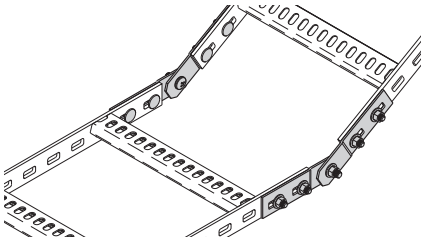


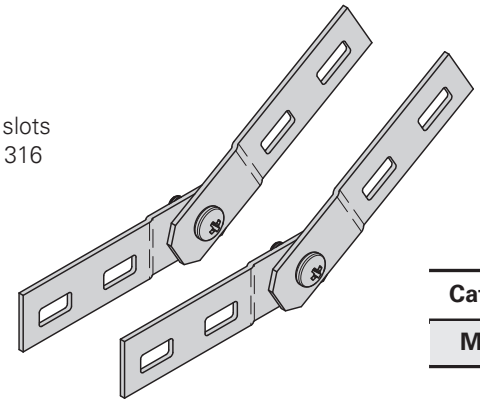


Catalog No.
MSP40(*)

Vertical Adjustable Splice Plate

- Used to splice ship ladders in changes of elevation
- Sold in pairs with connecting hardware
- 40mm high x 280mm long x 3.2mm thick with 12mm x 25mm slots
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316

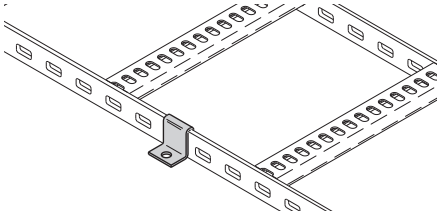


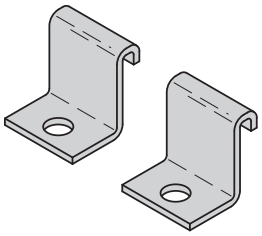


Catalog No.
MVA40(*)

Standard Hold Down Clamp

- Used to clamp ladders and fittings to supports
- Sold in pairs
- 40mm wide x 40mm inside height x 3.2mm thick with 12mm hole
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316

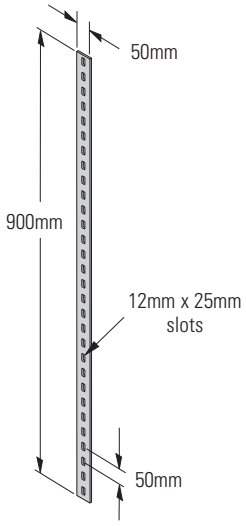




Catalog No.
MHB40(*)

Hanger Bar

- Used to hang/support ship ladder runs.
- Material: Hot Dipped Galvanized (HDG) Steel or Stainless Steel 316



Catalog No.
MHB(*)

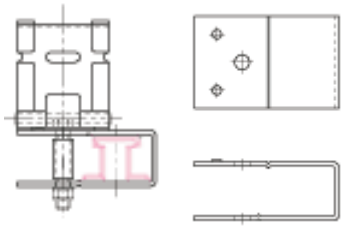
(*) Material & Finish - Insert **G** for Hot Dipped Galvanized Steel or **X** for Stainless Steel 316

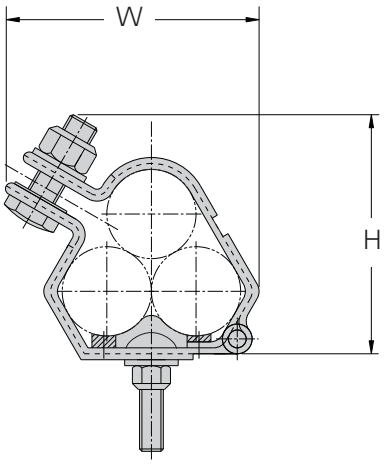
All dimensions are in millimeters unless otherwise specified.

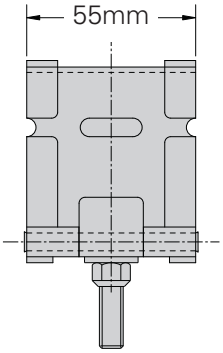
Trefoil Cable Cleat with LSF Pad

1. Recommended for installations where the highest levels of short circuit protection is required.
2. Short circuit current tested in accordance with BS EN 50368:2003 standard.
3. LSF-pad incorporates an integral low smoke, low fume, zero halogen pad.
4. Hardware to attach cleat to rung is included with cleat. Aluminum I-Beam style rung requires attachment bracket (9SS6-CCB-C) sold separately.

9SS6-CCB-C







BS EN 50368:2003 (Cable Cleats for Electric Installations) Classification	
Cleat Type	Composite
Resistance to Electromechanical Force	130 kA peak / 50 kA RMS 600 mm spacing
Lateral Load Test	3.439 kg average
Axial Load Test	Pass
Operating Temperature Range	-40°C to +60°C
Impact Resistance	Very Heavy
Needle Flame Test	30 seconds

Technical Specifications	
Frame	50mm x 2mm Marine grade, Non-magnetic 316L
Closure Hardware	Captive 316 Stainless Steel M8 or M10 (M12 available) bolt and nylon-lock nut (Optional Hex Flange Lock Nut available)
Integral Pad	Low Smoke, Low Fume, Zero Halogen
Tools Required	Impact Wrench
Mounting Bolt	Provided with Cable Cleat

	Cable Range (mm)		Dimensions (mm)	
Part No.	Min. Dia.	Max. Dia.	H	W
9SS6-CCT1323	13	22	74	66
9SS6-CCT2125	21	25	77	70
9SS6-CCT2329	23	29	81	78
9SS6-CCT2531	25	31	84	81
9SS6-CCT2733	27	33	86	83
9SS6-CCT2935	29	35	90	89
9SS6-CCT3238	32	38	94	95
9SS6-CCT3541	35	41.5	98	100
9SS6-CCT3844	38	44.5	101	104
9SS6-CCT4248	42	48	105	111
9SS6-CCT4551	45	51	109	117
9SS6-CCT4753	47	53	111	120
9SS6-CCT4955	49	55	114	124
9SS6-CCT5157	51	57	116	127
9SS6-CCT5359	53	59	119	133
9SS6-CCT5561	55	61	127	137
9SS6-CCT5763	57	63	126	140
9SS6-CCT5965	59	65	128	144
9SS6-CCT6167	61	67	132	147
9SS6-CCT6369	63	69	136	150

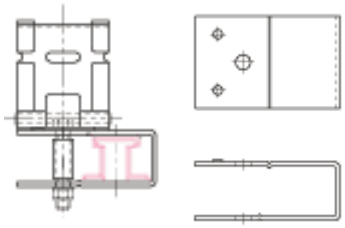
	Cable Range (mm)		Dimensions (mm)	
Part No.	Min. Dia.	Max. Dia.	H	W
9SS6-CCT6571	65	71	140	153
9SS6-CCT6773	67	73	143	156
9SS6-CCT6975	69	75	147	160
9SS6-CCT7177	71	77	151	163
9SS6-CCT7379	73	79	154	166
9SS6-CCT7581	75	81	158	169
9SS6-CCT7783	77	83	161	173
9SS6-CCT7985	79	85	164	176
9SS6-CCT8187	81	87	169	179
9SS6-CCT8389	83	89	173	182
9SS6-CCT8692	86	92	177	187
9SS6-CCT8896	88	96	181	192
9SS6-CCT9199	91	99	185	196
9SS6-CCT96103	96	103	190	201
9SS6-CCT99107	99	107	194	202
9SS6-CCT103111	103	111	199	204
9SS6-CCT107115	107	115	203	208
9SS6-CCT111119	111	119	208	213
9SS6-CCT115123	115	123	213	217
9SS6-CCT119128	119	128	217	221

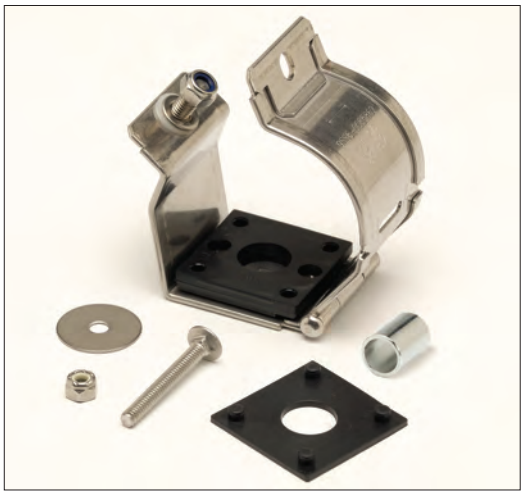
All dimensions are in millimeters unless otherwise specified.

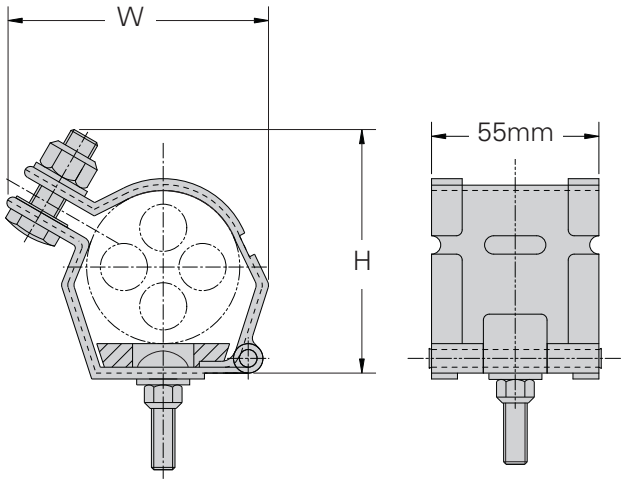
Single Cable Cleat with LSF Pad

1. Recommended for installations where the highest levels of short circuit protection is required.
2. Short circuit current tested in accordance with BS EN 50368:2003 standard.
3. LSF-pad incorporates an integral low smoke, low fume, zero halogen pad.
4. Hardware to attach cleat to rung is included with cleat. Aluminum I-Beam style rung requires attachment bracket (9SS6-CCB-C) sold separately.

9SS6-CCB-C







BS EN 50368:2003 (Cable Cleats for Electric Installations) Classification	
Cleat Type	Composite
Resistance to Electromechanical Force	130 kA peak / 50 kA RMS 600 mm spacing
Lateral Load Test	3.439 kg average
Axial Load Test	Pass
Operating Temperature Range	-40°C to +60°C
Impact Resistance	Very Heavy
Needle Flame Test	30 seconds

Technical Specifications	
Frame	50mm x 2mm Marine grade, Non-magnetic 316L
Closure Hardware	Captive 316 Stainless Steel M8 or M10 (M12 available) bolt and nylon-lock nut (Optional Hex Flange Lock Nut available)
Integral Pad	Low Smoke, Low Fume, Zero Halogen
Tools Required	Impact Wrench
Mounting Bolt	Provided with Cable Cleat

Part No.	Cable Range (mm)		Dimensions (mm)	
	Min. Dia.	Max. Dia.	H	W
9SS6-CCS2832	28	32	61	55
9SS6-CCS3034	30	34	63	57
9SS6-CCS3236	32	36	65	59
9SS6-CCS3438	34	38	67	61
9SS6-CCS3640	36	40	71	63
9SS6-CCS3842	38	42	69	65
9SS6-CCS4044	40	44	71	67
9SS6-CCS4246	42	46	72	69
9SS6-CCS4448	44	48	74	71
9SS6-CCS4650	46	50	75	73
9SS6-CCS4852	48	52	77	75
9SS6-CCS5054	50	54	79	77
9SS6-CCS5256	52	56	80	79
9SS6-CCS5458	54	58	81	81
9SS6-CCS5660	56	60	83	83
9SS6-CCS5862	58	62	85	85
9SS6-CCS6064	60	64	86	87
9SS6-CCS6266	62	66	88	89
9SS6-CCS6468	64	68	90	91
9SS6-CCS6670	66	70	91	93

Part No.	Cable Range (mm)		Dimensions (mm)	
	Min. Dia.	Max. Dia.	H	W
9SS6-CCS6872	68	72	93	95
9SS6-CCS7074	70	74	95	97
9SS6-CCS7276	72	76	97	99
9SS6-CCS7478	74	78	99	101
9SS6-CCS7680	76	80	101	103
9SS6-CCS7682	76	82	103	105
9SS6-CCS8084	80	84	105	107
9SS6-CCS8286	82	86	107	109
9SS6-CCS8488	84	88	109	111
9SS6-CCS8690	86	90	110	113
9SS6-CCS88192	88	192	113	117
9SS6-CCS9094	90	94	116	120
9SS6-CCS9296	92	96	126	127
9SS6-CCS94106	94	106	135	133
9SS6-CCS100112	100	112	140	139
9SS6-CCS106118	106	118	145	145
9SS6-CCS112124	112	124	153	155
9SS6-CCS118130	118	130	162	165
9SS6-CCS127139	127	139	161	167
9SS6-CCS132144	132	144	165	173
9SS6-CCS138150	138	150	170	179

All dimensions are in millimeters unless otherwise specified.

Step 1: Know Your Cables

- What type of cable is being used? Single or Multi-conductor
- What is the outside diameter of the cable(s)?
- What is the cable arrangement (single conductor cables only)? Flat or Trefoil
- If a ground wire will be installed within the cleat, you will need the ground wire outside diameter.

Step 2: Know Your System

- What is the available short circuit current (RMS or i_p (peak))?
- What type of B-Line cable ladder is installed?

Step 3: Select Your Cable Cleats

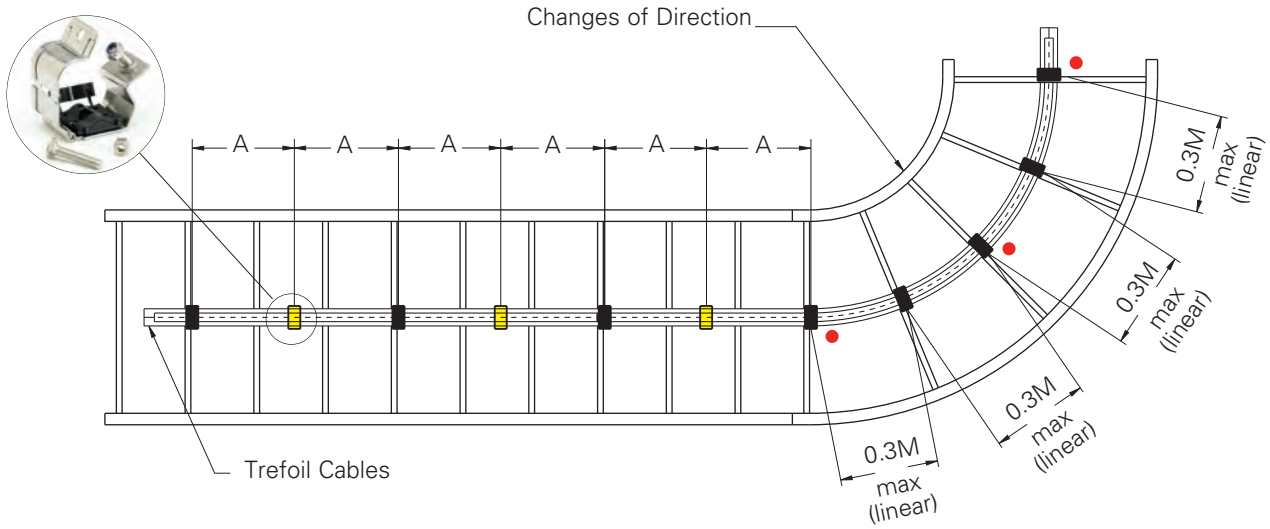
- See Pages 149 & 150

Step 4: Determine Cleat Spacing for Installation

Your cable diameter is equal to the spacing between conductor centers shown below. Find your cable diameter at the top of the table and look down at the column below it. Find the value equal to or greater than the available short circuit for your system.

Single Conductor Short Circuit Withstand Table

Max. Cable Cleat Spacing (A)		Spacing Between Conductor Centers (mm)											
		23	25	27	29	31	33	35	37	39	41	43	45
mm	In.	**i_p peak (kA)**											
225	9	179	187	194	203	209	216	220	229	234	240	246	250
300	12	155	163	168	174	181	187	192	198	203	209	214	215
450	18	128	133	137	144	148	152	157	161	165	170	174	178
600	24	110	115	119	124	128	132	135	139	143	148	150	153
675	27	104	108	113	117	121	124	128	132	135	139	143	147
900	36	89	93	97	102	104	108	110	115	117	121	124	127

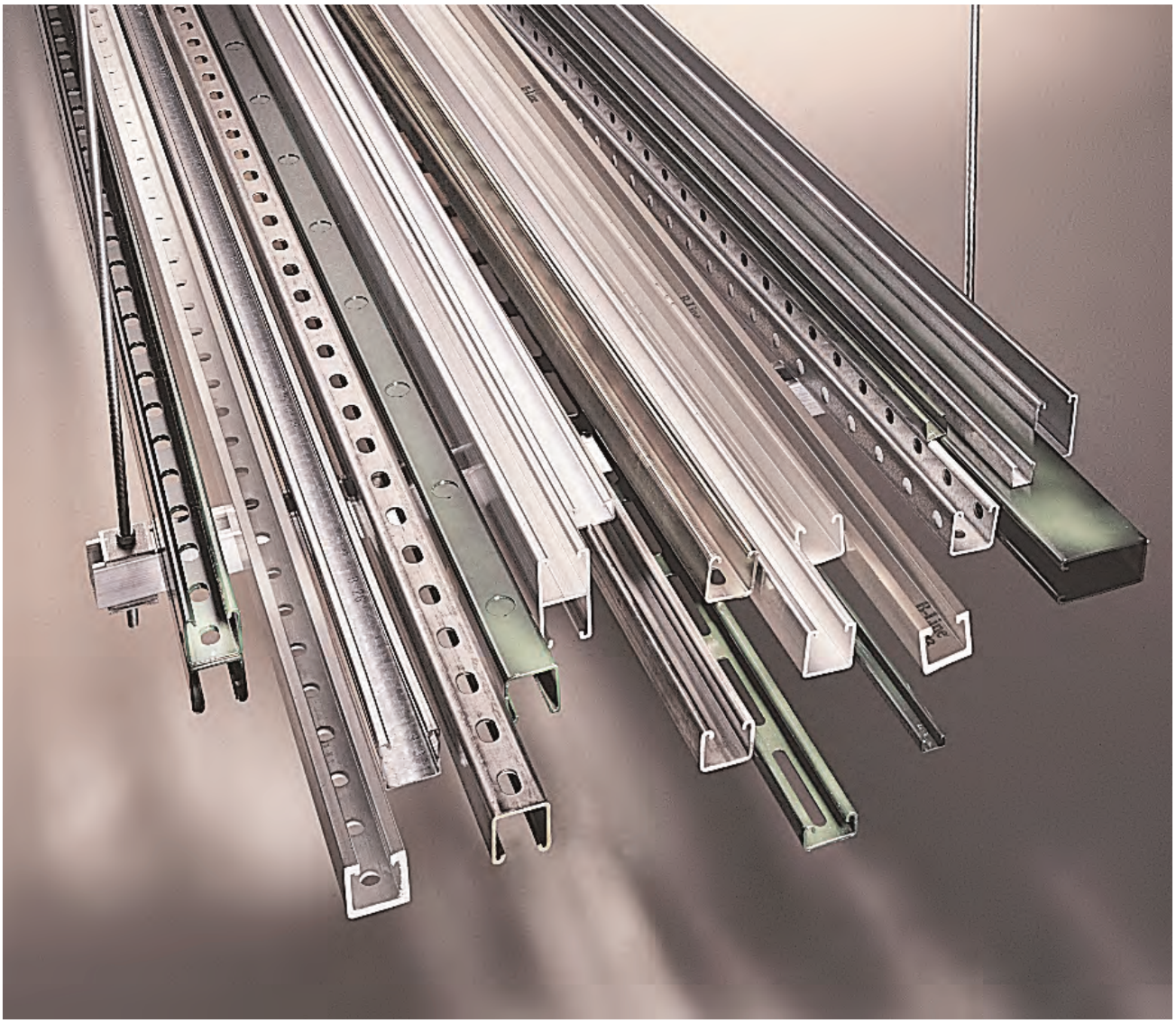


IMPORTANT: Recommended Installation Procedures

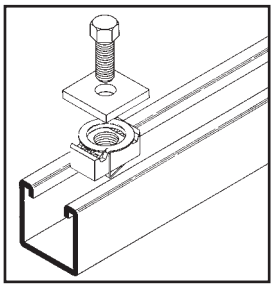
It is important that the cleats are installed properly to secure your cables:

- It is not necessary for every cleat to be attached to the ladder. Every other cleat (▮) must be attached to the ladder system to secure cable. Unattached cleats (▯) provide additional restraint to keep cables bundled.
- The bend radius should be 8 to 12 times the cable diameter.
- Cable cleats should always be installed at the beginning, middle and end of a bend (●), and at no time should the distance between cleats on a bend be more than 0.3M center to center.

All dimensions are in millimeters unless otherwise specified.

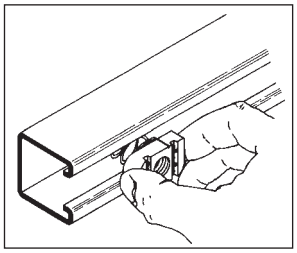


B-Line series strut support systems are designed with many time-saving features. They are fully adjustable and reusable, with a complete line of channels, fittings and accessories for multi-purpose applications.

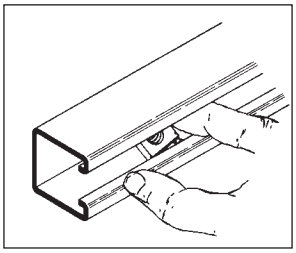


No Welding - No Drilling - Multiple Applications

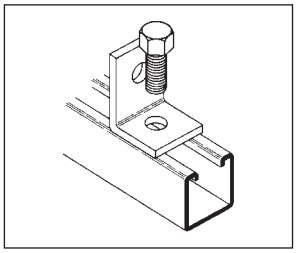
- Installs quickly
- No special tools required
- Use wrench and hacksaws
- Can be taken apart and re-used
- Provides the strength of a welded system
- Saves time by eliminating welding and drilling



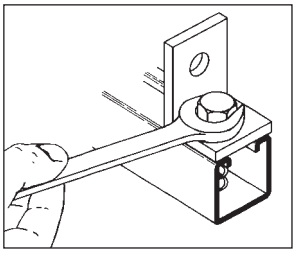
1. Channel nut may be inserted anywhere along continuous slot. Designed for easy insertion and self-alignment.



2. A 90° turn aligns channel nut grooves with inturned lips of the channel.



3. Position fitting over channel nut and insert bolt to start any connection.



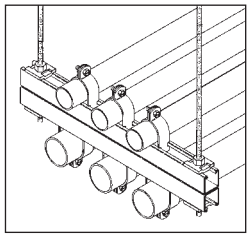
4. With the twist of a wrench, channel nut locks its teeth firmly against inturned lips.

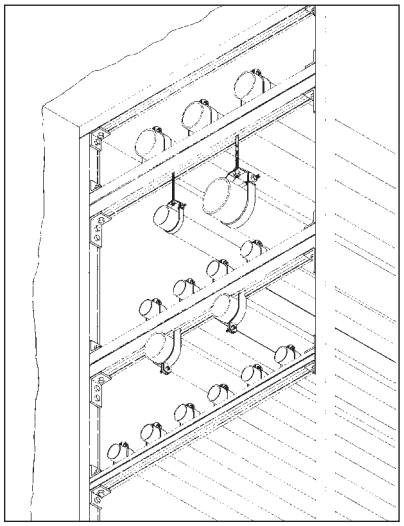
B-Line series strut system provides an economical solution for electrical, mechanical and industrial supports with an unlimited variety of applications in the construction industry.

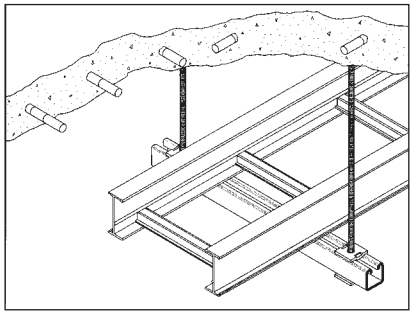
Electrical Applications
- Lighting Fixture Supports
- Raceway Systems
- Trapeze Hangers
- Pipe & Conduit Supports
- Cable Tray Supports
- Beam Adjustments

Mechanical Applications
- Piping Racks
- Tunnel Pipe Stanchions
- Concrete Inserts
- Beam Attachments
- Pipe Risers

Industrial Applications
- Racks and Shelving
- Partitions
- Production Line Supports
- Trolley Systems
- Wall Framing







MATERIALS

Carbon Steel

Channels made from high-quality carbon steel are continuously roll formed to precise dimensions. By cold working the steel mechanical properties are increased, allowing lightweight structures to carry the required load. Corrosion resistance of carbon steel varies widely with coating and alloy. See "Finishes" for more detailed information.

Stainless Steel

Stainless steel channel is available in AISI Type 316 material. Type 316 is non-magnetic and belongs to the austenitic stainless steels group, based on alloy content and crystallographic structure. Like carbon steel, stainless steel exhibits increased strength when cold worked by roll-forming.

Several conditions make the use of stainless steel ideal. These include reducing long term maintenance costs, high ambient temperatures, appearance, and stable structural properties such as yield strength, and high creep strength.

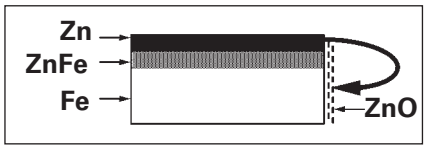
Type 316 resists most organic chemicals, dye stuffs and a wide variety of inorganic chemicals at elevated or cryogenic temperatures. Type 316 contains nickel and molybdenum to give it better corrosion resistance in chloride and sulfuric acid environments. More specific information concerning Type 316 is available from B-Line.

FINISHES

Zinc Coatings

Zinc protects steel in two ways. First it protects the steel as a coating and second as a sacrificial anode to repair bare areas such as cut edges, scratches, and gouges. The corrosion protection of zinc is directly related to its thickness and the environment. This means a 5µm coating will last twice as long as a 2.5µm coating in the same environment.

Galvanizing also protects cut and drilled edges.



Electrogalvanized Zinc

Electrogalvanized Zinc (also known as zinc plated or electroplated) is the process by which a coating of zinc is deposited on the steel by electrolysis from a bath of zinc salts.

A rating of Fe/ZN 5 also known as SC1, B-Line hardware standard, provides a minimum zinc coating thickness of 5µm.

When exposed to air and moisture, zinc forms a tough, adherent, protective film consisting of a mixture of zinc oxides, hydroxides, and carbonates. This film is in itself a barrier coating which slows subsequent corrosive attack on the zinc. This coating is usually recommended for indoor use in relatively dry areas, as it provides ninety-six hours protection in salt spray testing per AS 2331.3.1 / ASTM B117.

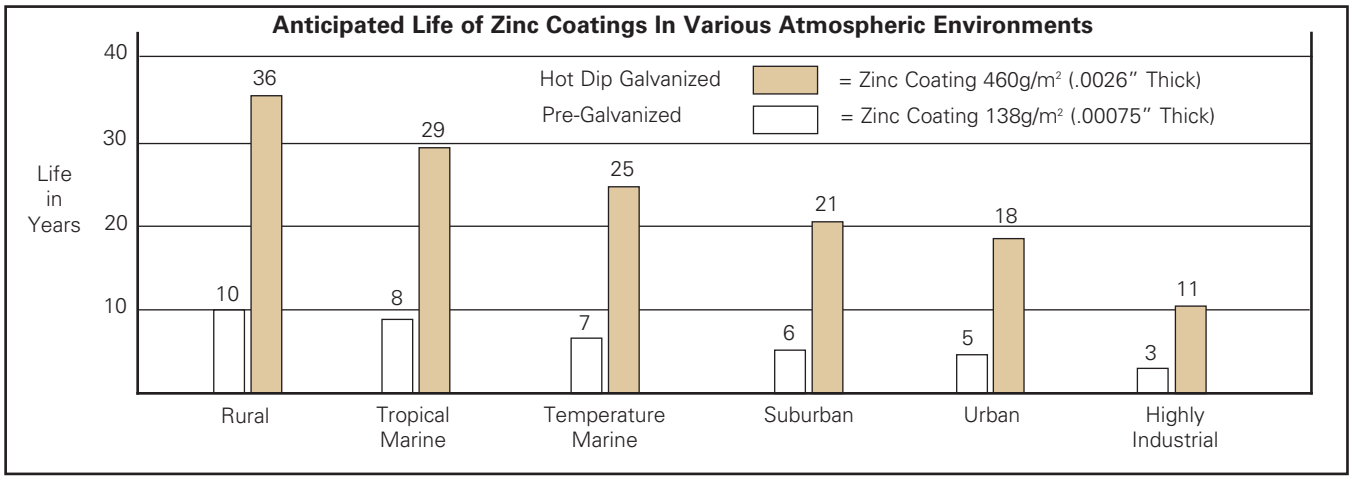
Hot Dip Galvanized After Fabrication (Hot dip galvanized or batch hot dip galvanized)
Hot dip galvanized strut products are fabricated from steel and then completely immersed in a bath of molten zinc. A metallic bond occurs resulting in a zinc coating that completely coats all surfaces, including edges and welds.

Another advantage of this method is coating thickness. Strut products that are hot dip galvanized after fabrication have a minimum thickness of 460g/m^2 on each side, or a total 920g/m^2, according to AS/NZS 4680 / ASTM A123.

The zinc thickness is controlled by the amount of time each part is immersed in the molten zinc bath as well as the speed at which it is removed. The term "double dipping" refers to parts too large to fit into the galvanizing kettle; therefore, must be dipped one end at a time. It does not refer to extra coating thickness.

The layer of zinc which bonds to steel provides a dual protection against corrosion. It protects first as an overall barrier coating. If this coating happens to be scratched or gouged, zinc's secondary defense is called upon to protect the steel by galvanic action.

Hot-Dip Galvanized After Fabrication is recommended for prolonged outdoor exposure and will usually protect steel for 20 years or more in most atmospheric environments and in many industrial environments. For best results, a zinc rich paint (available from B-Line) should be applied to field cuts. The zinc rich paint will provide immediate protection for these areas and eliminate the short time period for galvanic action to "heal" the damaged coating.

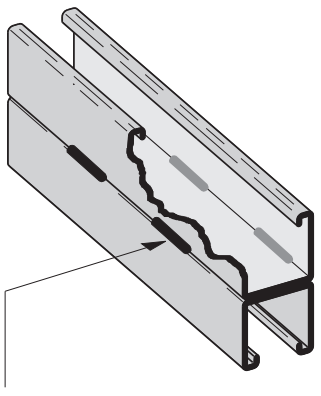


WELDING

The welding procedures used in the fabrication of B-Line steel products are in accordance with recognized industry standards. To achieve the highest quality in our manufacturing processes, our welders are 3rd party certified.

MIG Welding
MIG welded, more properly called gas metal arc welded (GMAW) combination channels and fittings, are produced when physical dimensions or certain combinations require a weld process other than automatic spot welding. The same quality control requirements are imposed on MIG welded and spot welded products.

Quality Assurance
Our Quality Assurance Program has been developed and implemented for compliance with ISO 9001:2008. B-Line also complies with various industry standards and specifications.



MIG Weld

CORROSION

All metal surfaces are affected by corrosion. Depending on the physical properties of the metal and the environment to which it is exposed, chemical or electromechanical corrosion may occur.

Atmospheric Corrosion

Atmospheric corrosion occurs when metal is exposed to airborne liquids, solids or gases. Some sources of atmospheric corrosion are moisture, salt, dirt and sulphuric acid. This form of corrosion is typically more severe outdoors, especially near marine environments.

Chemical Corrosion

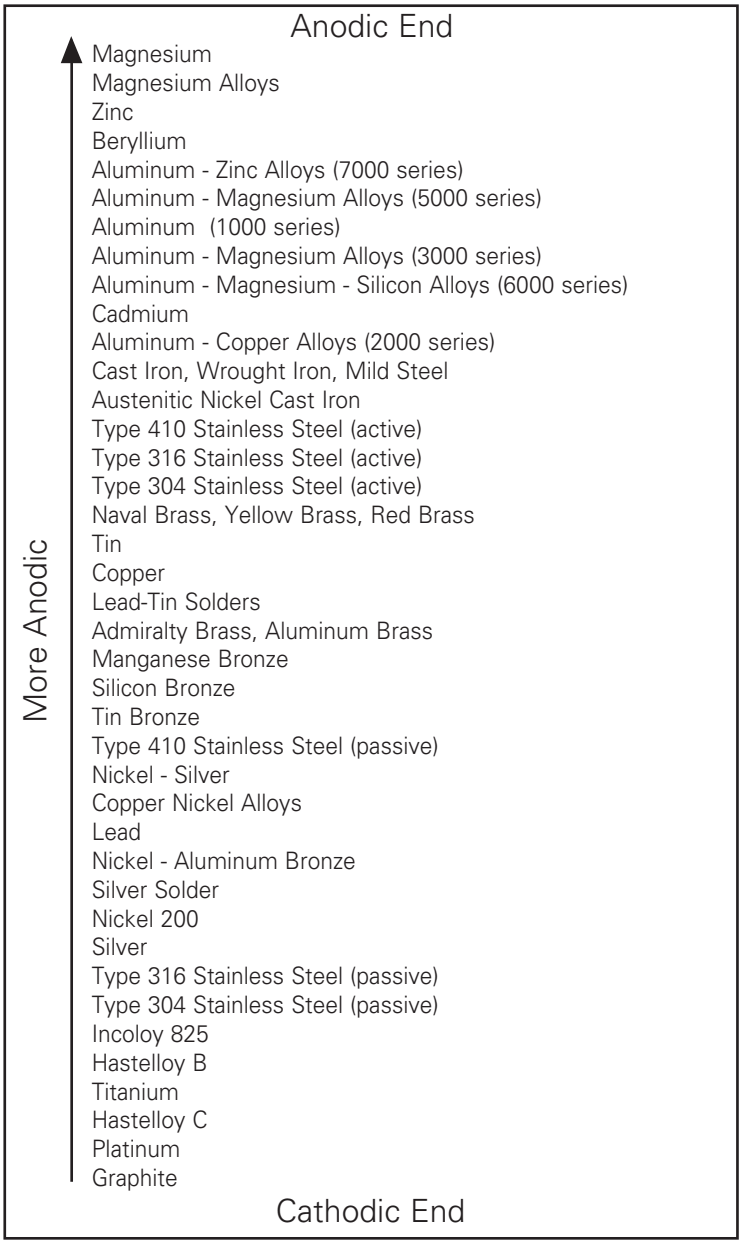
Chemical corrosion takes place when metal comes in direct contact with a corrosive solution. Some factors which affect the severity of chemical corrosion include: chemical concentration level, duration of contact, frequency of washing, and operating temperature.

Storage Corrosion

Wet storage stain (white rust) is caused by the entrapment of moisture between surfaces of closely packed and poorly ventilated material for an extended period. Wet storage stain is usually superficial, having no affect on the properties of the metal.

Light staining normally disappears with weathering. Medium to heavy build up should be removed in order to allow the formation of normal protective film. Proper handling and storage will help to assure stain-free material. If product arrives wet, it should be unpacked and dried before storage. Dry material should be stored in a well ventilated "low moisture" environment to avoid condensation formation. Outdoor storage is undesirable, and should be avoided whenever possible.

GALVANIC SERIES IN SEA WATER



Metals in descending order of activity in the presence of an electrolyte.

Galvanic Corrosion

Galvanic corrosion occurs when two or more dissimilar metals are in contact in the presence of an electrolyte (ie. moisture). An electrolytic cell is created and the metals form an anode or a cathode depending on their relative position on the Galvanic Series Table. The anodic material will be the one to corrode. Anodic or cathodic characteristics of two dissimilar metals will depend on the type of each material. For example: If zinc and steel are in contact, the zinc acts as the anode and will corrode; the steel acts as the cathode, and will be protected. If steel and copper are in contact, the steel is now the anode and will corrode.
The rate at which galvanic corrosion occurs depends on several factors:

1. The relative position on the Galvanic Series Table - the further apart materials are in the Galvanic Series Table, the greater the potential for corrosion of the anodic material.

2. The amount and concentration of electrolyte present - an indoor, dry environment will have little or no galvanic corrosion compared to a wet atmosphere.

3. The relative size of the materials - a small amount of anodic material in contact with a large cathodic material will result in greater corrosion. Likewise, a large anode in contact with a small cathode will decrease the rate of attack.

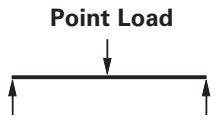
Design of Strut Systems

Beams

Beams are usually defined as horizontal members which are subjected to vertical loads such as shelves, platforms or supports for pipes, conduits or cable ladders. The following is a brief overview of common beam configurations:

Simple Beam

An example of a simple beam is a length of channel placed across two cylinders. When a load is applied, the channel will support the load because of its stiffness. The cylinders serve to support the channel, but do not interfere with its natural tendency to flex or bend. Simple beam analysis is used almost universally for beam comparisons, even though it is seldom practical in field installations.



A cable ladder or conduit trapeze hanger closely resembles a simple beam.

Fixed Beam

This type of fixed support restricts the movement of the ends of the channel when a load is applied. Because of this, the stiffness of the channel at the ends and center is employed to resist the load. The result is a load capability which is greater than that of an identical simple beam.

The fixed beam can be approximated by bolting or welding a length of channel to rigid supports.

Cantilever Beam

Cantilever beams are often viewed as variations of a fixed beam, but they have special characteristics of their own. One end of the channel is firmly attached to a rigid support while the other end remains completely free.

A shelf bracket is an example of a cantilever beam.

Continuous Beam

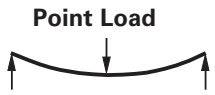
This beam configuration is commonly used in lighting installations. The continuous beam possesses traits of both the simple and fixed beams. When equal loads are applied to all spans simultaneously, the counter-balancing effect of the loads on both sides of a support restricts the movement of the channel at the support, similar to that of the fixed beam. The end spans behave substantially like simple beams.

Continuous beam installations can typically support 20% more load than a simple beam of the same span with approximately half the deflection.

Therefore, simple beam data should be used for a general comparison only. An example of this configuration is found in a long run of channel when installed across several supports to form a number of spans.

Deflection

Deflection, commonly referred to as "sag", is inherent in applying a load to a beam and cannot be avoided. Any and all beams will deflect when loaded. The amount of deflection will vary depending upon the material and the stiffness or moment of inertia. The deflection equations in this section show that increasing the stiffness can be increased by a variety of methods. Increasing the depth of the channel is the most direct method.



The material used affects deflection in a manner which is significantly different from the way in which it affects load capacity. The deflection under load is inversely proportional to a material property known as the "modulus of elasticity" designated by "E".

The modulus of elasticity is dependent upon the basic composition of the material and is not necessarily related to the material's strength.

Safety Factor

The design loads given for strut beam loads are based on a simple beam condition using allowable stress of 172 MPa. This allowable stress results in a safety factor of 1.68. This is based upon a virgin steel minimum yield strength of 227 MPa cold worked during rolling to an average yield stress of 289 MPa.

Aluminum typically has an elastic modulus which is 1/3 that of steel even though they may have identical strength. As a result, the deflection of aluminum channel will be three times that of steel channel under equal loading. In areas where structures will be subject to general viewing, deflection can produce a displeasing effect. To the untrained eye, a sagging channel may appear to be a result of poor design or excessive loading. This is not usually the case. Many properly designed channel installations will show a noticeable deflection at their designed loads. In areas where cosmetics are not important, deflection should not be a factor. Designing an entire installation based on minimal deflection could result in an over designed structure. This translates into increased material and installation cost. Where cosmetics are important, it may be necessary to limit the deflection to an aesthetically pleasing amount. This "acceptable deflection" amount is typically given as a fraction of the span. **1/240 span** deflection is typically the limit where the amount of deflection appears negligible. For example, a beam span of 6000mm would be allowed 25mm (6000/240) of deflection at the mid point. A 3000mm span would only be allowed 12.5mm (3000/240) of deflection. The maximum load for the channel must be limited in order to remain under these deflection requirements. The allowable load resulting in 1/240 span deflection is posted in the beam load chart for each channel size.

For even more stringent deflection requirements, an allowable load is listed in the beam load charts which results in **1/360** span deflection. This amount of deflection is sometimes used for beams in finished ceilings that are to be plastered.

Twisting & Lateral Bracing

Loading of strut on long spans can cause torsional stress, resulting in the tendency of the strut to twist or bend laterally. This phenomenon reduces the allowable beam loads as shown in the beam loading charts. It is recommended that long spans be supported in a manner to prevent twisting (fixed ends), and that the channel have adequate lateral bracing. Many typical strut applications provide this support and bracing inherently. Piping, tubing, cable ladders, or conduits mounted to the strut with straps and clamps prevent twisting or lateral movement. If no such lateral support exists, contact the factory for loading recommendations.

Columns

Columns are vertical members which carry loads in compression. One common example of a channel column is the vertical members of a storage rack.
In theory, a column will carry a load equal to its cross sectional area multiplied by the ultimate compressive stress of the material of which the column is made. In reality, there are many factors affecting the load capacity of a column, such as the tendency to buckle or twist laterally (torsional-flexural buckling), the type of connection at the top or bottom, the eccentricity of the load application, and material imperfections. Several of these failure modes have been considered in the allowable column load tables shown in the "Channel" section of this catalog.

B-Line strongly recommends that the engineer perform a detailed study of the many variable conditions before the selection process begins.

Design Factors to be Considered

The loading capacity of channel depends primarily on the material, its cross-sectional design, and the beam or column loading configuration. It should be noted that if two lengths of channel have identical designs and configurations, the one made of the stronger base material will support a larger load. Therefore, any comparison of channel should begin by determining whether the materials are approximately equal in strength.

The column loading chart for each channel lists the allowable load for each channel in compression. This load varies depending on the support condition or "K-factor".
Several "K-factors" are listed, which correspond to the following support conditions:

K = .8 pinned top - fixed bottom
K = .65 fixed top - fixed bottom
K = 1.0 pinned top - pinned bottom
K = 1.2 free top - fixed bottom

There are a number of physical properties which are important to the complete design of a channel member; the "section modulus" designated as "Sx" or "Sy", "moment of inertia" designated by "Ix" or "Iy", and the "radius of gyration" which is given as "rx" or "ry".

Every structural material has its own maximum or ultimate stress, which is usually expressed in pascals. Any load which causes a member to fail is referred to as its "ultimate" load. In order to prevent channel from being accidentally loaded up to or beyond its ultimate load, a safety factor is included into the design. The ultimate load is divided by the safety factor to obtain the "recommended" or "allowable" working load.

When evaluating channel under various beam conditions, it is often more convenient to compare in terms of the ultimate or recommended "bending moment". Simple equations show the stress is directly proportional to the bending moment.

Therefore, comparing bending moments can save time in repeated calculations. The chart containing Formulas on Common Beam Loadings (following page) shows how to calculate the bending moment for various configurations and load conditions. It should be noted that the bending moment is usually not constant, but varies along the length of the span. However, the channel must be designed for a single point, which is the point of maximum bending moment.

For information regarding dynamic or seismic design, contact B-Line's Home Office.

General Information

Torque

The torque values given throughout the catalog are to be used as a guide only. The relationship between the applied torque or torque wrench reading and the actual tension created in the bolt may be substantially different. For example, a dry non-lubricated bolt with a heavy plating may rate 50% as efficient as a bolt which is lubricated with a mixture of heavy oil and graphite. Other important factors affecting torque-tension relationships include friction under the bolt head or nut, hole tolerances, and torque wrench tolerances. Accuracy of many commercial torque wrenches may vary as much as plus or minus 25%.

Charts and Tables

Charts and tables in this section are compiled from information published by nationally recognized organizations and are intended for use as a guide only. B-Line recommends that users of this information determine the validity of such information as applied to their own application.

RECOMMENDED STRUT SYSTEM SPECIFICATION

Brackets [ ] indicate alternative specifications which may be substituted by the project engineer.

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Continuous slot, bolted metal framing channels and all associated fittings and hardware.

B. Trapeze type supports for cable ladder, conduit, pipe and other similar systems.

C. Use of bolted metal framing as a surface metal raceway.

1.02 REFERENCES

A. AS/NZS 4680 / ASTM A123 - Specification for Zinc (hot-dip galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips.

B. AS/NZS 1594 / ASTM A1011 - Specification for Steel, Sheet and Strip, Carbon, Hot-Rolled, Structural Quality.

C. AS 1789 / ASTM B633 - Specification for Electrodeposited Coatings of Zinc on Iron and Steel.

D. AS/NZS 1594 / ASTM A1018 - Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Carbon, Hot-Rolled, Structural Quality.

E. MFMA - Metal Framing Standards Publication, MFMA-4.

1.03 QUALITY ASSURANCE

A. Manufacturers : Firms regularly engaged in the manufacture of bolted metal framing of the types required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. For stainless steel items, the part number shall contain a material designator (EXAMPLE: B-Line B22SS6 for type 316 or B22SS4 for type 304), or a separate stamp shall be included to reference the type of material used.

C. MFMA Compliance: comply with the latest revision of MFMA Standard Publication Number MFMA-4, “Metal Framing”.

D. NEC Compliance: Comply with the latest revision NFPA 70 - Article 352 “Surface Metal Raceways and Surface Nonmetallic Raceways”.

1.04 SUBMITTALS

A. Submit drawings of strut and accessories including clamps, brackets, hanger rods and fittings.

B. Submit manufacturer’s product data on strut channels including, but not limited to, types, materials, finishes, gauge thickness and hole patterns. For each different strut cross section, submit cross sectional properties including Section Modulus (S_x) and Moment of Inertia (I_x).

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver strut systems and components carefully to avoid breakage, denting, and scoring finishes. Do not install damaged equipment.

B. Store strut systems and components in original cartons and in clean dry space; protect from weather and construction traffic.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with these specifications, strut systems to be installed shall be as manufactured by B-Line, Inc. [or engineer approved equal.]

2.02 STRUT CHANNELS AND COMPONENTS

A. General: Strut shall be 41mm wide in varying heights and welded combinations as required to meet load capacities and designs indicated on the drawings.

B. Material and Finish: Material and finish specifications for each strut type are as follows:

1. Hot-Dip Galvanized Steel: Strut shall be made from structural quality steel meeting the minimum mechanical properties of AS/NZS 1594 / ASTM A1011 and shall be hot-dip galvanized after fabrication in accordance with AS/NZS 4680 / ASTM A123. Fittings shall be manufactured from steel meeting the minimum requirements of AS/NZS 1594 / ASTM A1018, and hot-dip galvanized after fabrication in accordance with AS/NZS 4680 / ASTM A123.
   All hardware shall be stainless steel Type 316 or hot-dip galvanized AS 1214 / ASTM A153.
2. Stainless Steel: All strut, fittings and hardware shall be made of stainless steel Type 316 as indicated. Channels must be identified as required in previous section 1.03 Quality Assurance.

PART 3 - EXECUTION

3.01 INSTALLATION

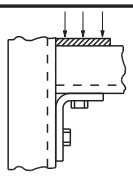
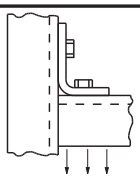
A. Install strut as indicated; in accordance with equipment manufacturer’s recommendations, and with recognized industry practices.

B. All nuts and bolts shall be tightened to the following values.

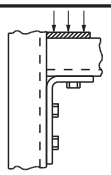
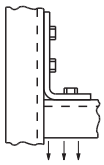
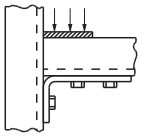
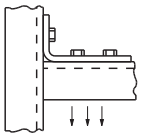
Bolt Size	Torque (Nm)
M6	12
M8	17
M10	36
M12	62

DESIGN LOAD DATA (For typical channel-fitting connections when used in pairs)

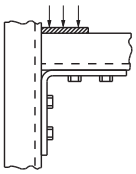
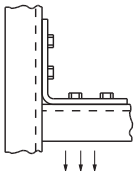
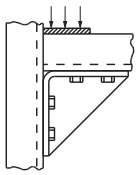
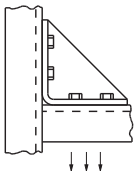
2-Hole 90° Fittings

Channel Thickness		
	kN	kN
2.6mm	6.67	4.45

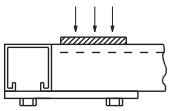
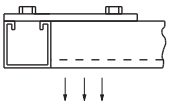
3-Hole 90° Fittings

Channel Thickness				
	kN	kN	kN	kN
2.6mm	8.90	6.67	6.67	4.45

4-Hole 90° Fittings

Channel Thickness				
	kN	kN	kN	kN
2.6mm	11.12	8.90	13.34	11.12

Flat Fittings

Channel Thickness		
	kN	kN
2.6mm	4.45	4.45

Design load data includes a safety factor of 2.5 (safety factor = ratio of ultimate load to design load).

Channel
B-Line series channel is cold formed on our modern rolling mills from 2.6mm low carbon steel strips. A continuous slot with inturned lips provides the ability to make attachments at any point.

Lengths & Tolerances
All channels excluding 'SH' style
± 3.2mm on 3m and
± 4.76mm on 6m
All 'SH' channels only
± 6.35mm on 3m and
± 12.70mm on 6m
Custom lengths are available upon request.

Slots
B-Line slotted series of channels offer full flexibility. A pre-punched slot pattern eliminates the need for precise field measuring for hole locations.

Materials & Finishes (Unless otherwise noted)
2.6mm thick

Finish Code	Finish	Specification
HDG	Hot-Dipped Galvanized	AS/NZS 4680 ASTM A123
SS6	Stainless Steel	Type 316

Note: A minimum order may apply on special material and finishes.

Design Load (Steel & Stainless Steel)
The design loads given for strut beam loads are based on a simple beam condition using an allowable stress of 172 MPa. This allowable stress results in a safety factor of 1.68. This is based upon virgin steel minimum yield strength of 227 MPa cold worked during rolling to an average yield stress of 289 MPa.
For aluminum channel loading multiple steel loading by a factor of 0.38.

Welding
Weld spacing is maintained at 76mm on center. Through high quality control testing of welded channels and continuous monitoring of welding equipment, B-Line provides one of the most consistent combination channels available today.

Metric
Unless noted, all metric dimensions are in millimeters.

Channel Part Numbering

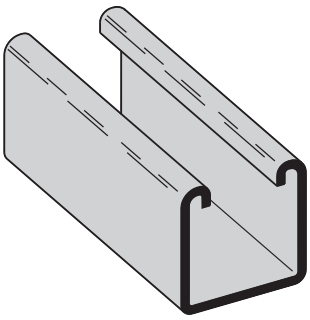
B22 SH - 3000MM HDG

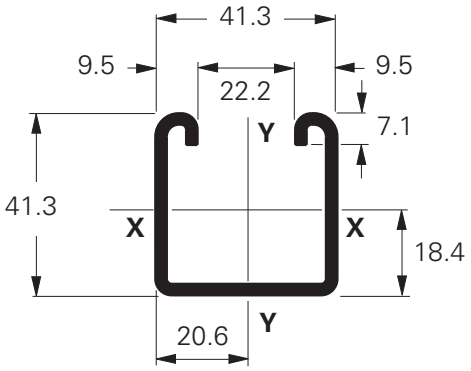
Channel Type	Slots	Length	Material/Finish
B22 **B22A** **B52** **B52A**	Blank = Solid Back **SH** = Slotted Holes	**3000MM** = 3M **6000MM** = 6M	**HDG** = Hot Dip Galvanized **SS6** = Type 316 Stainless Steel

All dimensions are in millimeters unless otherwise specified.

B22

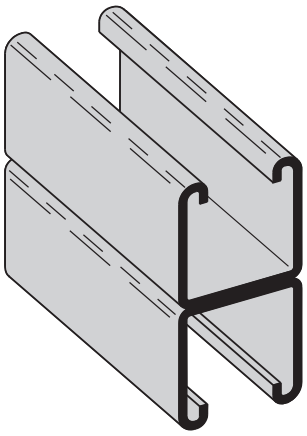
- Thickness: 2.6mm
- Standard lengths: 3m & 6m
- Standard finishes: Hot-Dipped Galvanized, Stainless Steel Type 316
- Weight: 2.83kg/m



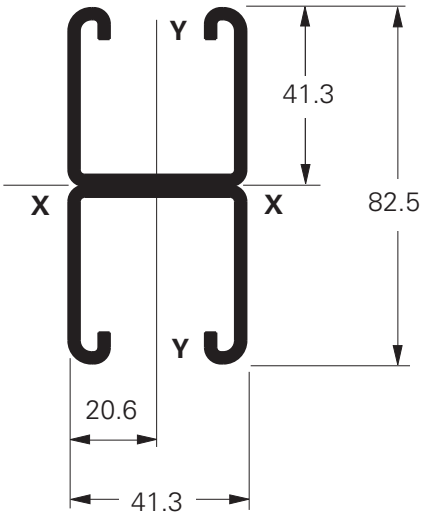


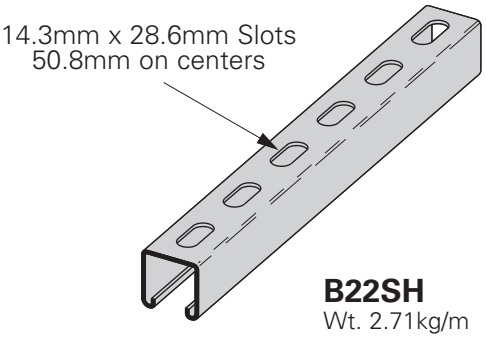
Section Properties			X - X Axis			Y - Y Axis		
Channel	Weight kg/m	Areas of Section cm^2	Moment of Inertia (I) cm^4	Section Modulus (S) cm^3	Radius of Gyration (r) cm	Moment of Inertia (I) cm^4	Section Modulus (S) cm^3	Radius of Gyration (r) cm
B22	2.83	3.62	7.96	3.48	1.48	9.99	4.84	1.66
B22A	5.69	7.25	40.51	9.81	2.36	19.97	9.68	1.66

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



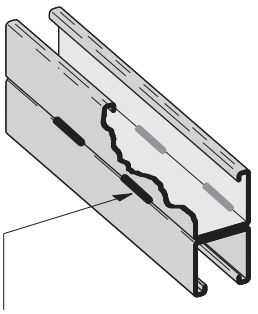
B22A
Wt. 5.69kg/m





B22SH
Wt. 2.71kg/m

For beam loads use 90% of Beam Loading charts



MIG Weld

All dimensions are in millimeters unless otherwise specified.

Beam Loading

Beam Span mm	Channel Style	Uniform Load and Deflection kN	Uniform Load and Deflection mm	Uniform Load @ Deflection = 1/240 Span kN	Uniform Load @ Deflection = 1/360 Span N
305	**B22**	11.61	.35	11.61	11.61
	B22A	11.61*	.05	11.61*	11.61*
609	**B22**	7.57	1.42	7.57	7.57
	B22A	11.61*	.43	11.61*	11.61*
914	**B22**	5.05	3.20	5.05	4.00
	B22A	11.61*	1.45	11.61*	11.61*
1219	**B22**	3.78	5.69	3.37	2.24
	B22A	10.70	3.17	10.70	10.70
1524	**B22**	3.03	8.91	2.16	1.44
	B22A	8.56	4.95	8.56	7.29
1829	**B22**	2.52	12.83	1.50	1.00
	B22A	7.13	7.14	7.13	5.06
2133	**B22**	2.16	17.45	1.10	0.73
	B22A	6.11	9.73	5.58	3.72
2438	**B22**	1.89	22.81	0.84	0.56
	B22A	5.35	12.70	4.27	2.85
2743	**B22**	1.68	28.85	0.67	0.44
	B22A	4.75	16.08	3.37	2.25
3048	**B22**	1.51	35.63	0.54	0.36
	B22A	4.28	19.86	2.73	1.82

Based on simple beam condition using an allowable design stress of 172 MPa in accordance with MFMA, with adequate lateral bracing. Actual yield point of cold rolled steel is 289 MPa. To determine concentrated load capacity at mid span, multiply uniform load by 0.5 and corresponding deflection by 0.8. *Failure determined by weld shear.

Column Loading

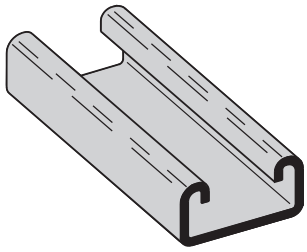
Unbraced Height mm	Channel Style	Max. Column Loading K = .80 Loaded@ C.G. kN	Max. Column Loading K = .80 Loaded@ Slot Face kN	Max. Column Loading (Loaded @ C.G.) K = .65 kN	K = 1.0 kN	K = 1.2 kN
305	**B22**	46.50	19.12	47.14	45.47	44.26
	B22A	96.19	31.14	96.42	95.81	95.34
609	**B22**	41.42	17.76	43.60	38.17	34.70
	B22A	94.14	30.68	95.07	92.61	90.73
914	**B22**	34.70	15.96	38.59	28.33	23.98
	B22A	90.73	29.93	92.81	87.27	83.04
1219	**B22**	27.55	13.87	32.92	20.99	16.86
	B22A	85.95	28.89	89.66	79.80	72.29
1524	**B22**	20.99	11.70	27.10	16.08	13.06
	B22A	79.80	23.75	85.60	70.20	58.45
1829	**B22**	16.86	10.07	21.66	13.06	10.59
	B22A	72.29	17.65	80.64	58.45	42.36
2133	**B22**	14.13	8.82	17.96	10.95	8.81
	B22A	63.41	13.47	74.78	44.82	31.23
2438	**B22**	16.58	7.83	15.37	9.34	7.43
	B22A	53.16	10.49	68.02	34.32	23.83
2743	**B22**	10.59	7.00	13.44	8.08	68.60**
	B22A	42.36	8.30	60.35	27.11	18.83
3048	**B22**	9.34	6.31	11.92	7.04**	5.46**
	B22A	34.32	6.72	51.78	21.96	15.25**

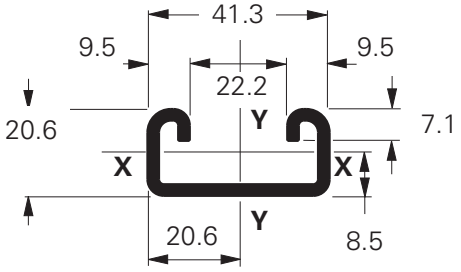
**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

All dimensions are in millimeters unless otherwise specified.

B52

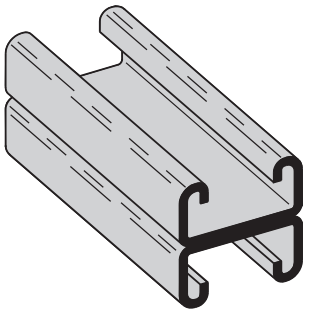
- Thickness: 2.6mm
- Standard lengths: 3m & 6m
- Standard finishes: Hot-Dipped Galvanized, Stainless Steel Type 316
- Weight: 1.89kg/m

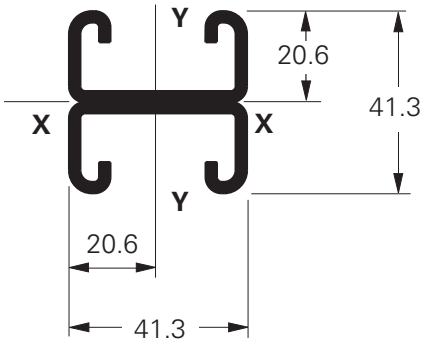




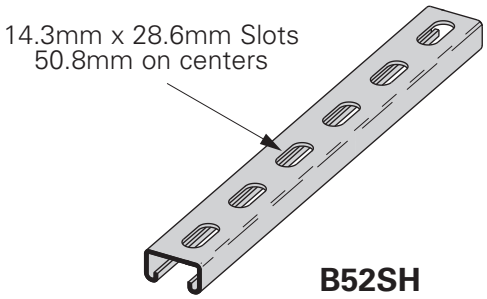
Section Properties			X - X Axis			Y - Y Axis		
Channel	Weight kg/m	Areas of Section cm^2	Moment of Inertia (I) cm^4	Section Modulus (S) cm^3	Radius of Gyration (r) cm	Moment of Inertia (I) cm^4	Section Modulus (S) cm^3	Radius of Gyration (r) cm
B52	1.89	2.49	1.33	1.10	.73	5.84	2.83	1.53
B52A	3.78	4.99	6.31	3.06	1.13	11.69	5.67	1.53

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



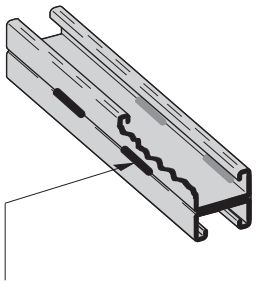


52A
Wt. 3,78kg/m



B52SH
Wt. 1.77kg/m

For beam loads use 90% of Beam Loading charts



MIG Weld

All dimensions are in millimeters unless otherwise specified.

Beam Loading

Beam Span mm	Channel Style	Uniform Load and Deflection kN	Uniform Load and Deflection mm	Uniform Load @ Deflection = 1/240 Span kN	Uniform Load @ Deflection = 1/360 Span N
305	**B52**	4.80	0.66	4.80	4.80
	B52A	5.65*	0.15	5.65*	5.65*
609	**B52**	2.40	2.69	2.26	1.50
	B52A	5.65*	1.32	5.65*	5.65*
914	**B52**	1.60	6.09	1.00	0.67
	B52A	4.50	3.58	4.50	3.20
1219	**B52**	1.20	10.84	0.56	0.37
	B52A	3.37	6.35	2.70	1.80
1524	**B52**	0.96	16.94	0.36	0.24
	B52A	2.70	9.93	1.72	1.15
1829	**B52**	0.80	24.38	0.25	0.16
	B52A	2.25	14.30	1.20	0.80
2133	**B52**	0.68	33.20	0.18	.012
	B52A	1.93	19.45	0.88	0.59
2438	**B52**	0.60	43.36	0.14	0.09
	B52A	1.69	25.42	0.67	0.45
2743	**B52**	0.53	54.86	0.11	0.07
	B52A	1.50	32.18	0.53	0.35
3048	**B52**	0.48	67.74	0.09	0.06
	B52A	1.35	39.72	0.43	0.03

Based on simple beam condition using an allowable design stress of 172 MPa in accordance with MFMA, with adequate lateral bracing. Actual yield point of cold rolled steel is 289 MPa. To determine concentrated load capacity at mid span, multiply uniform load by 0.5 and corresponding deflection by 0.8. *Failure determined by weld shear.

Column Loading

Unbraced Height mm	Channel Style	Max. Column Loading K = .80 Loaded@ C.G. kN	Max. Column Loading K = .80 Loaded@ Slot Face kN	Max. Column Loading (Loaded @ C.G.) K = .65 kN	K = 1.0 kN	K = 1.2 kN
305	**B52**	37.36	14.06	38.00	36.50	35.54
	B52A	85.23	23.53	86.41	83.52	81.68
609	**B52**	33.44	12.25	35.05	29.01	24.01
	B52A	77.59	22.04	80.71	73.00	67.94
914	**B52**	24.01	9.57	29.59	16.08	11.17
	B52A	67.94	20.00	73.60	59.50	50.01
1219	**B52**	31.78	6.94	21.28	9.05	6.28**
	B52A	56.46	17.63	65.24	43.07	30.16
1524	**B52**	9.05	5.15	13.70	5.79**	4.02**
	B52A	43.07	15.05	55.67	27.79	19.30
1829	**B52**	6.28**	3.96	9.51	4.02**	-
	B52A	30.16	12.45	44.85	19.30	13.42
2133	**B52**	4.62**	3.13	6.99	2.95**	-
	B52A	22.15	10.39	33.56	14.18	9.85
2438	**B52**	3.53**	2.53	5.35**	-	-
	B52A	16.96	8.77	25.70	10.86**	7.54**
2743	**B52**	-	2.09	4.23**	-	-
	B52A	13.40	7.49	20.30	8.57**	5.95**
3048	**B52**	-	1.75	3.42**	-	-
	B52A	10.86**	6.46	16.44	6.95**	-

**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

All dimensions are in millimeters unless otherwise specified.

Hardware

Channel Nuts

The B-Line series channel nut is one of the main components of our bolted metal framing system. It is designed to provide essential gripping power and ease during installation. Channel nuts are press formed, machined and hardened from steel.

Recommended Torque

Bolt Size	M6	M10	M12
Nm	12	36	62

Materials & Finishes*

Finish Code	Finish	Specification
HDG	Hot-Dipped Galvanized	AS 1214 / ASTM A153
SS6	Stainless Steel	Type 316

*Unless otherwise noted.
Note: Channel nuts are not available in HDG.

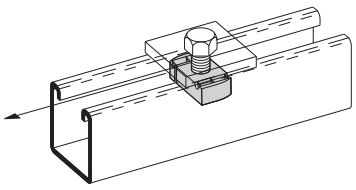
Metric

Unless noted, all metric dimensions are in millimeters.

Resistance To Slip

• With Safety Factor of 3

Thread Size	Nut Part Numbers	Resistance to Slip kN 2.6mm Channel HDG	SS6
M6 x 1	**BMS-6**	1.33	0.65
M10 x 1.50	**BMS-10**	3.56	1.78
M12 x 1.75	**BMS-12**	6.67	3.33



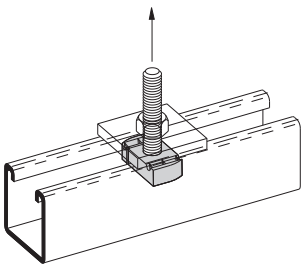
Resistance to Slip of Channel Nut

Pull-Out Strength

• With Safety Factor of 3

Thread Size	Nut Part Numbers	Pull-Out Strength kN 2.6mm Channel HDG	SS6
M6 x 1	**BMS-6**	2.00	2.00
M10 x 1.50	**BMS-10**	4.89	4.89
M12 x 1.75	**BMS-12**	6.67	6.67

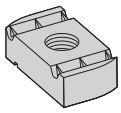
Pull-Out Strength of Channel Nut



All dimensions are in millimeters unless otherwise specified.

Note: See below for resistance to slip and pull-out strength.

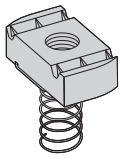
- Finish: HDG, SS6



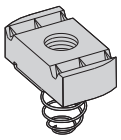
BMS-_ Series

Nut Without Spring

Part No.	Thread Size	Fits Channel Sizes	Nut Thickness mm	Wt./C kg
BMS-6	M6 x 1	All Sizes	6.3	3.13
BMS-10	M10 x 1.5	All Sizes	9.5	4.35
BMS-12	M12 x 1.75	All Sizes	9.5	4.17



BMS-_M Series



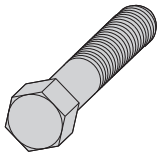
BMS-_S Series

Spring Nut

Part No.	Thread Size	Fits Channel Sizes	Nut Thickness mm	Wt./C kg
BMS-6M	M6 x 1	B22	6.3	3.13
BMS-6S	M6 x 1	B52	6.3	3.13
BMS-10M	M10 x 1.5	B22	9.5	4.35
BMS-10S	M10 x 1.5	B52	9.5	4.35
BMS-12M	M12 x 1.75	B22	9.5	4.17
BMS-12M	M12 x 1.75	B52	9.5	4.17

HHCS
Hex Head Cap Screws

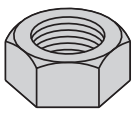
- Standard finish:
  HDG, Stainless Steel Type 316



Part No.	Wt./C kg
M6x20 HHCS	0.63
M16x25 HHCS	0.77
M10x25 HHCS	1.90
M12x20 HHCS	3.48
M12x25 HHCS	3.81
M12x30 HHCS	4.17

HN
Hex Nuts

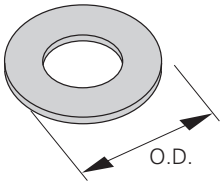
- Standard finish:
  HDG, Stainless Steel Type 316



Part No.	Wt./C kg
M6 HN	0.32
M10 HN	0.68
M12 HN	1.63

FW
Flat Washers

- Standard finish:
  HDG, Stainless Steel Type 316



Part No.	O.D. Outside Dia. mm	Wt./C kg
M6 FW	18.7	0.32
M10 FW	25.4	0.77
M12 FW	34.9	1.77

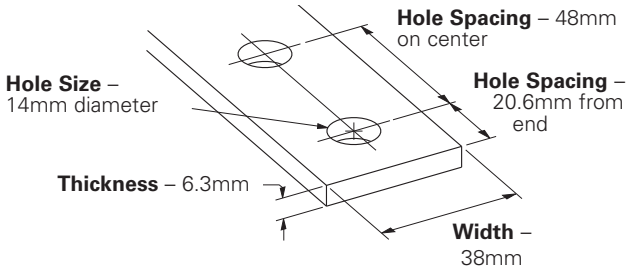
All dimensions are in millimeters unless otherwise specified.

Fittings

A selection of fittings and accessories are available to complete the B-Line series bolted strut system.

Dimensions

The following dimensions apply to all fittings except as noted.



Materials & Finishes (Unless otherwise noted)

Finish Code	Finish	Specification
HDG	Hot-Dipped Galvanized	AS/NZS 4680 / ASTM A123
SS6	Stainless Steel	Type 316

Note: A minimum order may apply on special material and finishes.

Load Data

The load data published includes safety factor of 2.5 when used with 2.6mm channel (safety factor = ratio of ultimate load to the design load).

Use M12 x 20 hex head cap screws and BMS-12 channel nuts for the rated results.

Recommended Bolt Torque

Metric

All dimensions are in millimeters unless noted otherwise.

Bolt Size	M6	M10	M12
Nm	12	36	62

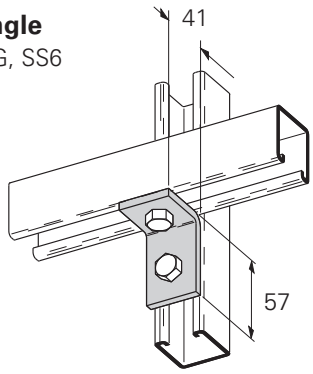
Hardware

Nuts and bolts are not included with the fittings and must be ordered separately, unless noted.

All dimensions are in millimeters unless otherwise specified.

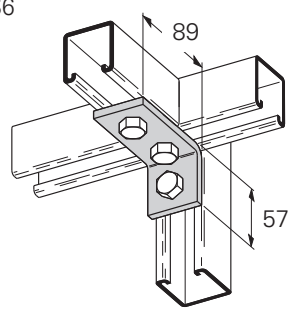
B101
Two-Hole Corner Angle

- Standard finishes: HDG, SS6
- Wt./C: 16.8kg



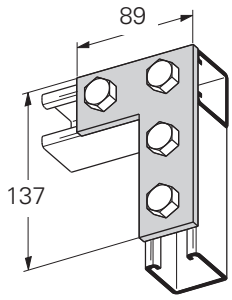
B102
Three Hole Corner Angle

- Standard finishes: HDG, SS6
- Wt./C: 25.4kg



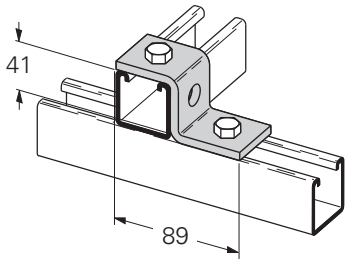
B143
Four-Hole Corner Angle

- Standard finishes: HDG, SS6
- Wt./C: 34.0kg



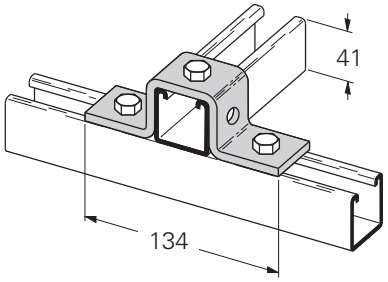
B105
Three Hole Offset Z-Support for B24

- Standard finishes: HDG, SS6
- Wt./C: 23.1kg



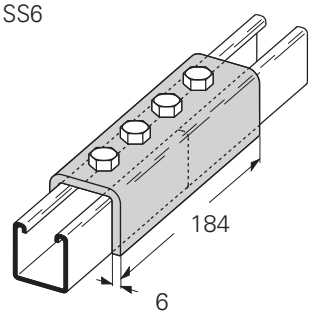
B107
Five Hole U-Support

- Standard finishes: HDG, SS6
- Wt./C: 38.5kg



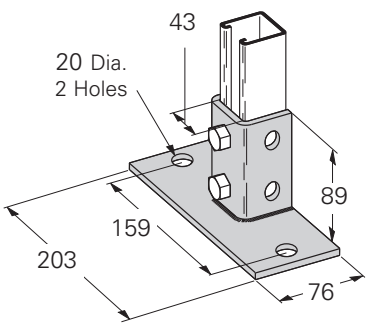
B172
Four Hole Splice Clevis For B24

- Standard finishes: HDG, SS6
- Wt./C: 120.6kg



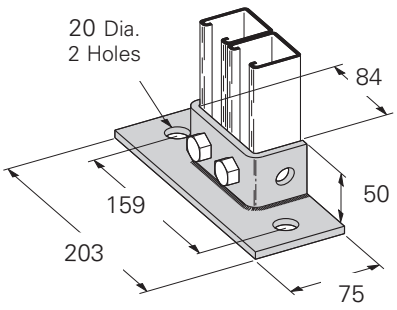
B280FL
Post Base For B24

- Standard finishes: HDG, SS6
- Wt./C: 141.5kg



B281FL
Post Base For B24A

- Standard finishes: HDG, SS6
- Wt./C: 113.4kg

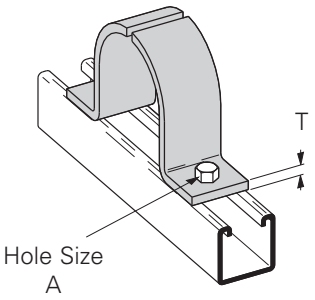


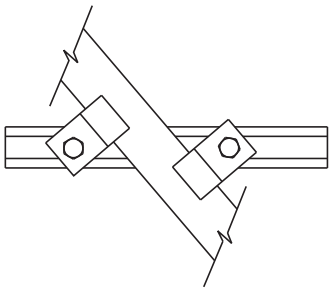
All dimensions are in millimeters unless otherwise specified.

B437 Series
Two Piece Pipe Clamp

- Clamp halves can turn allowing pipe to be fastened to channel at any direction
- Order hardware separately
- Standard finish: HDG, SS6

Part No.	Pipe Size mm	A mm	T mm	Wt./C kg
B437-1/2	15	7.9	3.4	10.0
B437-3/4	20	7.9	3.4	11.8
B437-1	25	7.9	3.4	13.6
B437-1 1/4	32	7.9	3.4	15.9
B437-1 1/2	40	7.9	3.4	17.2
B437-2	50	11.1	6.3	41.3
B437-2 1/2	65	11.1	6.3	47.2
B437-3	80	11.1	6.3	58.9
B437-3 1/2	90	11.1	6.3	67.6
B437-4	100	11.1	6.3	71.6
B437-5	125	11.1	6.3	86.2
B437-6	150	11.1	6.3	98.4
B437-8	200	11.1	6.3	133.8

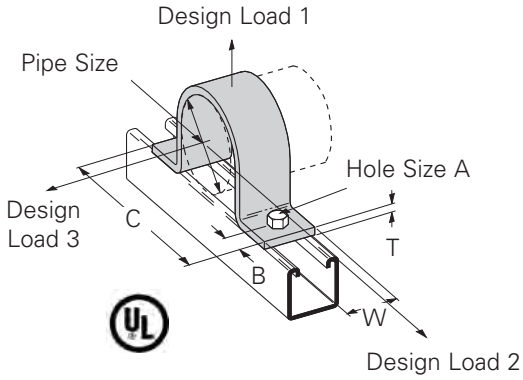




All dimensions are in millimeters unless otherwise specified.

B2400 Series
Standard Pipe Clamp

- Safety Factor of 5
- B2400-3/4 thru B2400-8 are UL listed
- Order hardware separately
- Other sizes available upon request
- Material: Sizes - 1/2" - 1 1/2", ASTM A1011 33,000 PSI min. yield; 2" - 12", ASTM A1018 33,000 PSI min. yield; 14"-Larger, ASTM A36
- Standard finish: HDG, SS6
- Ductile Iron Sizes Available
- Meets requirements of MSS SP-58 & SP-69 Type 26



Part No.	Pipe Size mm	A mm	B mm	C mm	T mm	W mm
B2400-1/2	15	7.9	11.1	71.4	3.4	41.3
B2400-3/4	20	7.9	11.1	76.2	3.4	41.3
B2400-1	25	7.9	11.1	89.7	3.4	41.3
B2400-1 1/4	32	7.9	11.1	95.2	3.4	41.3
B2400-1 1/2	40	7.9	11.1	103.2	3.4	41.3
B2400-2	50	11.1	17.4	143.6	6.3	41.3
B2400-2 1/2	65	11.1	17.4	156.3	6.3	41.3
B2400-3	80	11.1	17.4	172.2	6.3	41.3
B2400-3 1/2	90	11.1	17.4	184.9	6.3	41.3
B2400-4	100	14.3	17.4	197.6	6.3	41.3
B2400-5	125	14.3	17.4	225.4	6.3	41.3
B2400-6	150	14.3	17.4	252.4	6.3	41.3
B2400-8	200	14.3	17.4	304.0	6.3	41.3
B2400-10	250	14.3	17.4	355.6	6.3	41.3
B2400-12	300	14.3	17.4	406.4	6.3	41.3

Part No.	Design Load 1 kN	Design Load 2 kN	Design Load 3 kN	Wt./C kg
B2400-1/2	2.67	0.67	0.47	10.4
B2400-3/4	2.67	0.67	0.47	11.8
B2400-1	2.67	0.67	0.53	14.0
B2400-1 1/4	2.67	0.67	0.53	16.3
B2400-1 1/2	2.67	0.67	0.53	17.7
B2400-2	5.34	2.14	.80	42.2
B2400-2 1/2	5.34	2.14	.80	48.1
B2400-3	5.34	2.14	1.33	59.9
B2400-3 1/2	5.34	2.14	1.33	68.5
B2400-4	6.67	2.67	2.00	72.6
B2400-5	6.67	2.67	2.00	87.1
B2400-6	6.67	2.67	2.00	99.3
B2400-8	8.90	3.56	2.67	134.7
B2400-10	8.90	3.56	2.67	210.9
B2400-12	8.90	3.56	2.67	254.0

All dimensions are in millimeters unless otherwise specified.

Notes

For more information, visit
Eaton.com/b-lineseries

Eaton
United States
509 West Monroe Street
Highland, IL 62249
United States
Phone: 800-851-7415

Eaton
Canada
5925 McLaughlin Road
Mississauga, ON L5R 1B8
Canada
Phone: 800-569-3660

Eaton
Europe
Building 2, Argosy Court
Whitley Business Park, Scimitar Way
Coventry, CV3 4GA
United Kingdom
Phone: 0 1278 773265

Eaton
Saudi Arabia
PO Box 70160 - Al Khobar - 31952
Kingdom of Saudi Arabia
Phone: 00966 3 812 2236

Eaton's Cooper Singapore
No. 2 Serangoon North Ave. 5
#06-01 Fu Yu Building, 554911
Singapore
Phone: +65 (0) 62974849

Eaton's Cooper Korea Co., Ltd.
5th Fl. Parkland Building, 601 EonJu-ro,
Gangnam-gu
Seoul, 06109
Korea
Phone: +82-2-6380-4057

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

B-Line Business
509 West Monroe Street
Highland, IL 62249
Phone: 800-851-7415
Fax: 618-654-1917
www.cooperbline.com

Printed in USA
Publication No. CA302005EN
CSS-19 February 2019

Powering Business Worldwide