



OBO Bettermann Group



Cable Tray

Ladder, Trough, Channel, Under Floor, Shielded



Ladder Style Cable Tray

Typical Installations

Ladder Tray®

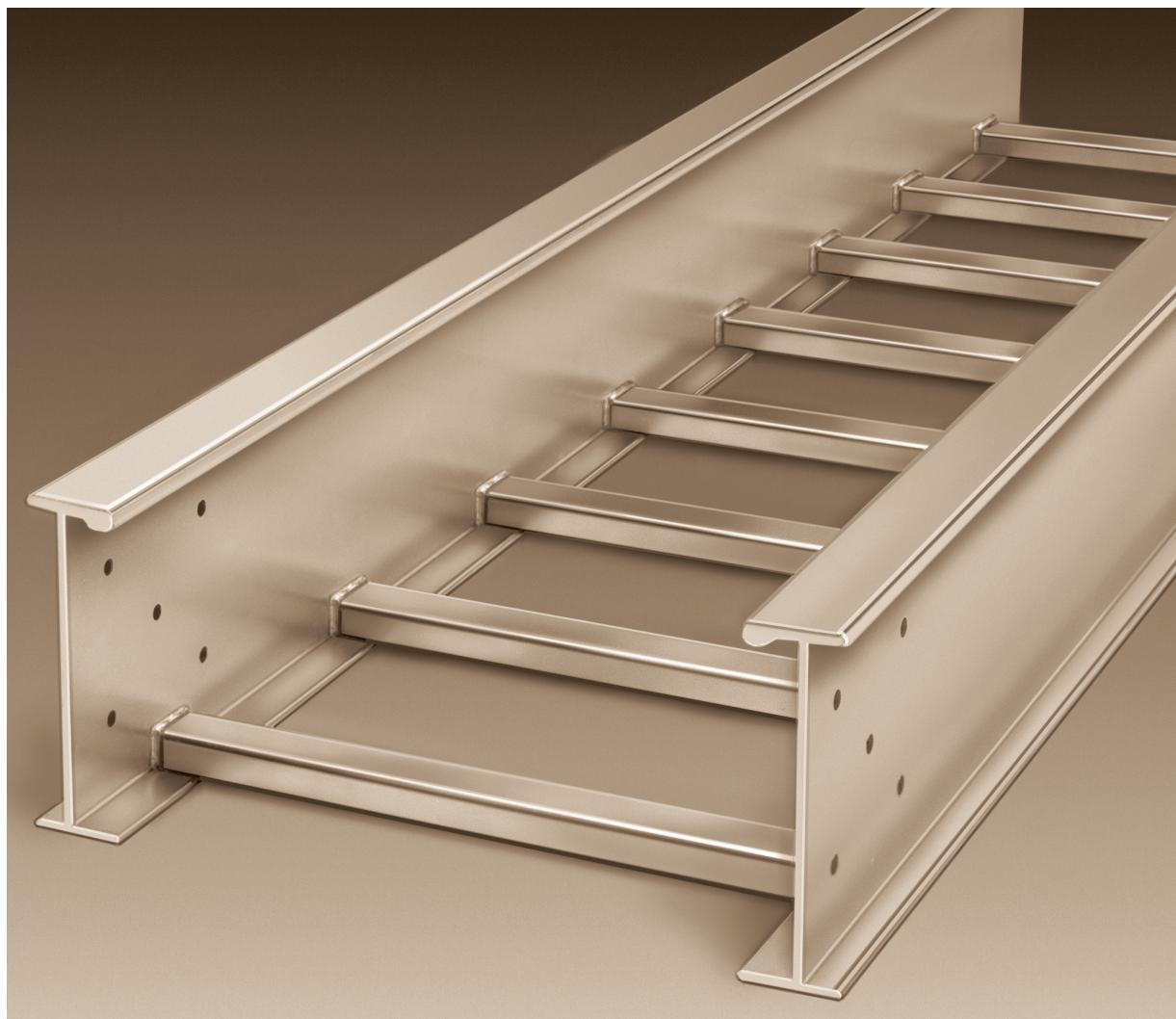
When metal ladder cable trays came of age, they were used to support the new armored shielded power cables that were permitted outside the conduit environment. Utilities and industrial companies initiated the use of expanded metal and solid trough-styled trays for supporting power and control cable.

Cable trays quickly proved their worth as a safe, dependable and cost-effective solution to routing and supporting cables. Installed cost savings of over 50% on project after project drove the market for metal cable trays to over 80 million dollars.

Cable Tray is *NOT A WIREWAY* and is viewed as a support for cables. This provides the designer and user many benefits.

- Full free air rating of cables, results in smaller conductors vs. conduit
- Greater fill volume allowed, results in less space

- Used in all locations except elevator shafts (the only prohibition on cable tray use)
- Used as an equipment grounding conductor (classified by UL)
- Less stress on cables during installation and operation
- Increased safety, no moisture condensation problems nor transmission of corrosive or explosive gases, as with conduit
- Simplified maintenance with the flexibility of adding or changing circuits
- Simplified engineering and construction. Add, change, modify more easily
- Used with other wiring methods
- Longer support spans up to 55' (Chalfant's standard systems to 40').



Quick Find Index

Cable Tray Straight Sections Pages 5-11


Aluminum

Description: Page 1-5
Selection: Pages 1-6 & 1-7

Steel/Stainless Steel

Description: Page 1-5
Selection: Pages 1-8 & 1-9

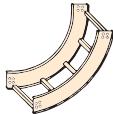
Fittings Pages 10-17

Horizontal Bends


90° Page 1-10
60° Page 1-10
45° Page 1-11
30° Page 1-11

Outside Vertical Bends


90° Page 1-12
60° Page 1-13
45° Page 1-14
30° Page 1-15

Inside Vertical Bends


90° Page 1-12
60° Page 1-13
45° Page 1-14
30° Page 1-15

Tees

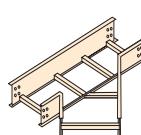

Page 1-16

Crosses

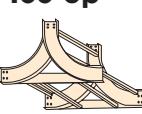

Page 1-16

Support Riser

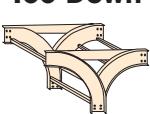

Page 1-16

Wyes


Page 1-17

Vertical Tee Up


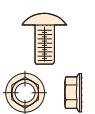
Page 1-17

Vertical Tee Down


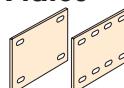
Page 1-17

Tee with Outside Tap

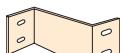

Page 1-18

Accessories Pages 18-25
Fasteners


Page 1-25

Splice Plates


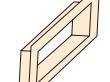
Page 1-19

Reducer Splice Plates


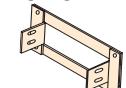
Page 1-19

Ladder Dropouts

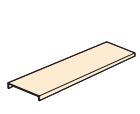

Page 1-19

Wall Frames


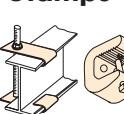
Page 1-19

Tray to Panel


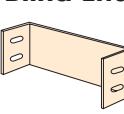
Page 1-19

Covers


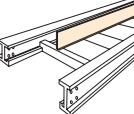
Page 1-20

Clamps


Page 1-20

Blind Ends


Page 1-21

Barriers


Page 1-22

Expansion Gap


Page 1-23

Support Equipment


Page 1-24

Selecting & Sizing Cable Tray Systems

1 The Cable to be Supported Determines the Type of Tray

Ladder type cable can support heavy power cables or small circuit size communication cables for control data and phone cables or a mix.

- Rung Spacing: Single conductor over 4/0 and MC cables should be used with 12" or 18" rung spacing. Smaller diameter cables require 6" or 9" rung spacing.
- Trough, solid or ventilated type tray offer protection and better support for small, lightweight instrument or data cables.

Hints:

- Barrier strips can be used to separate voltages or power and control cables to avoid the cost of adding a second or separate tray for each.
- Covers are not required by the NEC Code and add to the cost of the job. However, they should be considered for protection of personnel and any debris or other material that could fall into the tray.

2 Select which Metal and/or Material Finish Your Application Will Require

The job site and its' environment will determine which metal and/or material finish you use. Review where the tray is being used. Are there unusual corrosive conditions (like those found in some chemical and paper processing plants)? See page 1-4 for a list of various tray materials and finishes available.

Hints:

Aluminum - Most conditions are satisfied by aluminum tray which is also the most popular type. It's less expensive and an easier system to install. Unlike galvanized steel, its' finish is always smooth. Longer span tray systems are also available in aluminum. Aluminum tray is ideal for seacoast, offshore and most petrochemical and pulp mill applications.

Galvanized Steel (HDGAF ASTM A123 Class B2) - This hot dipped galvanized steel is used in outdoor, chlorine, acid or caustic areas. Steel trays can have a rough finish (VE 1) which could cause cable damage. It also adds two to three weeks to delivery time. Trays with mill galvanize steel finish ASTM 653A are the least expensive and only recommended for indoor applications.

Stainless Steel trays are used in special highly corrosive environments and compare favorably with fiber-glass type ladder tray.

3 Determine Type of Support

Hint: Review the various support methods and options shown in the accessories section of this catalog on pages 1-20, 1-21, 1-24, and 1-25.

The distance between each support is the support span. You can support your cable tray system:

- from walls or vertical columns with shelf or cantilevered brackets
- with trapeze or single supports using threaded rods hung directly from building steel
- on or under pipe racks, trestles or bridges
- In utility trenches, tunnels or directly on roofs
- off the ground, using pedestal supports.

Hint: You can save money by using a heavier duty tray that results in longer spans and reduces the number of costly supports and installation time. A heavier duty tray will also provide a deeper loading depth and a stronger, less deflective, long-span support.

4 Determine Cable Load to be Supported

Review the number and type of cable from the job specifications and requirements. Cable fill in a tray is calculated by using data and criteria specified in NEC 392. To determine total cable weight, add all cables on a lb/ft basis.

Hints:

▪ Data, telephone and instrument cable should be calculated to fill tray to 50% of the tray cross section fill area (40% for solid bottom tray). In reality, because of voids, overlapping and the circular shape of the cable, a 50% fill will normally completely fill the cable tray.

▪ MC cable 4/0 or larger, rated 2000 Volts or less, can only be installed in one layer (sum of cable diameters equals tray width).

▪ Single conductor 2000 Volts or less, larger than 1000 KCM can only be installed in one layer (sum of cable diameters equals tray width).

▪ Other power cables and combinations of sizes are calculated on the sum of cable areas versus allowable fill, see table NEC 392.9 to determine tray width. NEC 392 details cable types, voltages, ampacity, etc.

Other Loads to be Calculated:

Snow: Add 13.3 lbs/square feet for 20-inch deep wet snow.

(Example: For a 36-inch tray width - $3 \times 13.3 = 39.9 \text{ lbs/sq ft}$)

Ice: Add 4.7 lbs/square feet .

Concentrated Load: Add load effect (W_e) for concentrated load effect from splice boxes, heavy cable drop outs and conduit terminations supported off tray.

$W_e = 2$ times the concentrated load divided by the support span.

(Example: For a 200 lbs. concentrated load at a center span of 20 ft, $W_e = 2 \times 200/20 = 20 \text{ lbs. per ft added load.}$)

Once you have determined your worst case load, add it to your other cable load calculations. You now have the maximum load the tray must support.

Hints:

▪ It is not necessary to specify tray rung type when using Chalfant. Chalfant rung designs can handle a minimum of 350 lbs. at any width. Chalfant uses 3 rung styles to assure this standard is maintained. For example, Strut Rung #11118 is rated at 489 lbs. at 36" wide.

Review

You have now determined:

1. Tray type
2. Tray material and/or finish
3. Support type & span between supports
4. Total load in lbs/ft

5 Select Tray System

(For aluminum, use Selection Chart on pages 1-6, 1-7, 1-8 and 1-9.)

(For steel, use Selection Chart on pages 1-8 and 1-9.) Review Selection chart and the various notes in general. Start at the top of (your) support span column and work down to locate a tray system to handle your total load.

Example: You have determined you need a ladder tray (aluminum) at a 20 ft span and 100 lbs/ft load. Using Selection Chart on pages 1-6 and 1-7, go down 20 ft span column until you reach **Tray System 46A**.

This is the best tray for your application.

Note: If you use a shorter span, you must choose between a 3", 4" or 5" load depth.

Order your tray using the Part No. Code on page 1-4.

Contact your Chalfant Sales Representative or the factory if you need help sizing and selecting your tray.

Ordering Codes and Options

Part Number/Ordering Codes

Once you have determined the appropriate Chalfant tray system to meet your loading depth and load/span requirements, use the following numbering systems to order straight sections, fittings and accessories.

Cable Tray Straight Sections

(Aluminum or Steel)

Example: 2A Aluminum System— 12' long, 6" wide, with 9" rung spacing

2	A	06	010 - 09	*
Tray System Number	Type of Material See chart at right	Tray Width 6", 9", 12", 18", 24", 30", 36" & 42"	Constant for 12' & 24' straight sections	Rung Spacing 6", 9", 12" & 18" or T, S, & X*
				Length Blckn=12' L=24'
				Insert inches for special lengths: 120=10' Meters 240=20' 118=3 360=30' 236=6
*				T=Trough Style S=Solid Bottom X=Expanded Metal Trough M=Marine Rung

Cable Tray Fittings

(Aluminum or Steel)

Example: 90° Aluminum Horizontal Bend— 12" radius

2	A	06	030
Tray System Number	Type of Material	Tray Width 6", 9", 12", 18", 24", 30", 36" & 42"	Three Digit Part Number from Catalog

Accessories

Example: 4-Bolt Slotted Hole Splice Plate

2	A	SP200
Tray System Number or 9	Type of Material	Part Number from Catalog

Options

Chalfant Ladder style cable tray is available in a variety of options to satisfy your needs.

Materials/Finishes

Following is a list of various materials of construction and/or finishes that can be applied to straight sections, fittings and some accessories. Use these codes when ordering.

* Material Code:

A = Aluminum, High Strength 6063T6 Extrusions (5052H34 sheet)

S = Hot Dip Mill Galvanized Steel to ASTM 653A G-90 Coating, 1.05 Mils Thick

G = Hot Dip Galvanized after Fabrication to ASTM 123-B2, 2.55 Mils Thick

T = 304L Stainless Steel

Z = 316L Stainless Steel

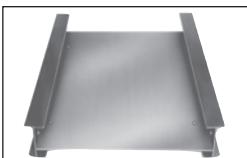
Other Options

All Ladder Tray systems are easily modified to offer:



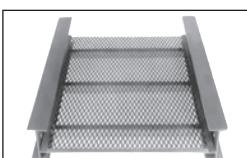
Ventilated Trough

2.5" wide rungs MIG welded on 6" centers. Also available with 9" and 12" rung spacing. To order, add letter **T**, **09T**, or **12T** instead of rung spacing in straight section part number.



Solid Trough

A solid sheet is supported by a 12" rung spaced tray. To order, add letter **S** instead of rung spacing in straight section part number. For Fittings, add suffix **S** to the part number.



Expanded Metal Trough

A .5" diamond pattern aluminum sheet is supported by a 12" rung spaced tray. To order, add letter **X** instead of rung spacing in straight section part number. For Fittings, add suffix **X** to the part number. See Page **I-20**.



Marine Strut Rung

A special rung design to accommodate stainless steel banding of cables. (USCG requirement) Rung supports 460 lbs. per rung on a 36" wide system with a 1.5 safety factor. Add suffix **M** (rung spacing) to the part number.

Consult Factory for full technical data on individual systems, corrosion resistance charts, etc.

Straight Sections

Most Chalfant cable tray system side rails are stocked in 12' and 24' lengths. You can special order 30' lengths for 875A and 8HAF trays or 40' lengths for 103A tray. All trays meet or exceed NEMA VE-1 standards and NEC Article 392. All trays (except stainless) are classified by UL as an equipment ground conductor.

See Selection Guides for allowable grounding amps for each tray system.

Lengths: Standard- 12' and 24'

Widths: Standard- 6", 9", 12", 18", 24", 30", 36" & 42"

Rung Spacing: Standard- 6", 9", 12" and 18"

Rail Height	Loading Depth	Tray Systems
4"	3"	14A, 24A, 2A, 34A, 248, 346
5"	4"	15A, 35A, 45A, 258
6.3"	5" or 6"	16A, 26A, 2A, 3A, 46A, 665A, 268, 366, 364
7.4	6.4	47A, 57A
8"	7"	875A, 8HAF
10"	8.8"	103A- (Fittings have 8" siderail)

Splice Plates

Splice plates are 1/8" thick with 4-bolt slotted holes. This flat plate design permits fast, easy fit-up in the field. 665A, 47A & 57A systems have 8 bolt/plates. 8" and 10" trays have 10 bolt/plates which are 16" long, 3/16" thick. Special "time saving" stainless steel fasteners are standard.



Aluminum Cable Tray



Aluminum cable tray is the most popular tray in use today. Chalfant has a wide offering in aluminum tray from light duty commercial/institutional systems for data and telephone support to utility/industrial grade tray and extra heavy duty long span tray to 30' spans. Ideal for most corrosive atmospheres including offshore, seacoast and petro-chemical applications. Not recommended for use in chlorine, caustic or high acid environments.

Rungs

Rungs are box construction 0.9" high with 7/8", 1" and 1-5/8" bearing surface. **All trays (except 14A) and rungs are designed to handle cable loads plus 200 lbs. of concentrated load for any tray width.** For example, strut rung #11118 can handle 489 lbs. at a 36". Low profile rungs are available in to provide a 6" load depth.

Galvanized and Stainless Steel Tray



Hot Dip Mill galvanized tray ASTM 653A G90 coating is the least expensive tray and is recommended for indoor applications only.

Hot dipped galvanized after fabrication ASTM 123 is recommended for outdoor use. It is more expensive than aluminum and requires great care in galvanizing to prevent icicles, bare patches, warpage and rough surfaces.

Stainless steel tray is available in 304L and 316L

and is often the least expensive solution for use in highly corrosive atmospheres. It also competes favorably against fiberglass systems.

Steel Rungs

Rungs are 1" high with 3/4" bearing, 18 gauge. A special gas relief hole for HDGAF is punched on both ends to assure complete galvanizing.

Cable Tray Selection Guide

Aluminum System No.	Height Side Rail	Load Depth	NEMA Load/Span Rating (@1.5 Safety Factor)1.5	Support Span (Simple Beam Data)					
				6' (1.83) m	8' (2.44) m	10' (3.05) m	12' (3.66) m		
14A		4" (102)	3.2" (81)	12A 8C	208 ① 0.37 ② .0018 ③	117 0.66 .0056	74 1.01 .0136	52 1.46 .0281	
24A		4" (102)	3" (76)	12B	304 0.43 .0014	171 0.79 .0046	109 1.22 .0112	75 1.58 .021	
2A		4" (102)	3" (76)	16A 12C ⑤	430 .43 .0010	243 0.75 .0031	153 1.17 .0076	108 1.84 .0165	
34A		4" (102)	3" (76)	20A 16B ⑤			220 1.33 .0060	152 1.91 .0124	
15A		5" (127)	4.2" (107)	12B	336 0.30 .0009	189 0.53 .0028	121 0.83 .0069	84 1.21 .0144	
35A		5" (127)	5" (127)	16A 12C			161 .083 .0052	112 1.21 .011	
45A		5" (127)	4.1" (102)	20A 16B				149 1.26 .0083	
16A		6.3" (160)	5.5" or 6" ④ (140/152)	12C	400 0.28 .0007	225 0.46 .0021	144 0.72 .0050	100 1.04 .0104	
29A		6.3" (160)	5.3 or 6" ④ (137/152)	16A 12C ⑤		264 0.37 .0014	170 0.73 .0043	121 1.08 .0089	
26A		6.3" (160)	5.3" or 6" ④ (137/152)	20A 16B		342 0.89	220 0.57 .0026	152 0.84 .0055	
3A		6.3" (160)	5.3" or 6" ④ (137/152)	20B 16C ⑤				211 0.95 .0045	
46A		6.3" (160)	5.4" or 6" ④ (137/152)	20C	It is not economical to use long span tray systems for short span installation. Move up to a lighter duty system.				288 1.09 .0038
665A		6.5" (165)	5.4" or 6" ④ (137/152)	24C ⑦				430 1.20 .0028	
47A		7.36" (187)	6.4" (163)	20C 24B				288 0.78 .0027	
57A		7.4" (188)	6.4" (163)	24C				425 0.98 .0023	

Key:

- ①= Cable Loading (lb/ft)
- ②= Mid Span Deflection (in)
- ③= K Factor (in/lb/ft)

- ④ 6" Nominal Loading Depth per VE-1 with reinforced low profile rung
- ⑤ Exceeds NEMA Loads by over 20%
- ⑥ Weight shown (lbs/ft or Kg/M) for 24" width tray with 9" rung spacing

**NEMA
Load/Span
Designations**
@1.5 Factor
of Safety
From VE-1 Table 1

Working Load (lbs/linear ft.)	Support Span			
	8 Ft	12 Ft	16 Ft	20 Ft
A=50 lbs/ft	8A	12A	16A	20A
B=75 lbs/ft	8B	12B	16B	20B
C=100 lbs/ft	8C	12C	16C	20C

Support Span (Simple Beam Data)							Data (2-Rails)				
	14' (4.27) m	16' (4.88) m	18' (5.49) m	20' (6.10) m	24' ⑦ (7.32) m	30' ⑦ (9.14) m	I _x In ⁴	S _x In ³	Area In ²	NEC 392-7(b)2 EGC AMPS	Tray ⑥ Weight Lbs Per Ft
							1.66	0.75	0.86 (555)	1000	1.79 (2.66)
							2.15	1.01	1.0 (645)	1200	1.95 (2.90)
	79 2.31 .0292	60 2.46 .0410					2.95	1.41	1.14 (735)	1200	2.15 (3.20)
	112 2.60 .0231	86 3.39 .0374	67 4.30 .0632	55 5.30 .0963			3.74	2.07	1.43 (923)	1200	2.46 (3.66)
							3.25	1.20	1.02 (658)	1200	2.00 (2.98)
	82 1.64 .020	60 2.03 .0338					4.36	1.63	1.19 (768)	1200	2.2 (3.27)
	110 1.71 .0155	84 2.23 .0264	66 2.83 .0424	53 3.49 .0646			5.57	2.29	1.46 (942)	1200	2.52 (3.75)
							4.48	1.39	1.20 (774)	1200	2.22 (3.30)
	85 1.35 .016	64 1.45 .0226					6.53	2.0	1.28 (826)	1200	2.33 (3.47)
	112 1.13 .0101	85 1.46 .0172	67 1.87 .0761	55 2.31 0.042			8.55	2.72	1.55 (1000)	1600	2.64 (3.93)
	155 1.28 .0083	119 1.67 .0141	94 2.12 .0226	76 2.62 .0345			10.4	3.81	1.84 (1187)	1600	2.98 (4.43)
	212 1.51 .0071	162 1.96 .0121	128 2.48 .0194	104 3.05 .0296	70 4.3 .0614		12.1	4.55	2.11 (1361)	2000	3.32 (4.94)
	316 1.61 .0051	242 2.11 .0087	191 2.65 .0139	155 3.29 .0212	104 4.58 .0440		16.96	6.24	2.87 (1852)	2000	4.23 (6.29)
	212 0.66 .0031	162 1.41 .0087	128 1.78 .0139	104 2.20 .0212	72 3.16 .0439		17.0	5.29	2.12 (1366)	2000	3.34 (4.96)
	312 1.31 .0042	239 1.72 .0072	188 2.19 .0116	153 2.69 .0176	106 3.89 .0366		20.4	6.7	2.62 (1690)	2000	3.82 (5.68)

Conversion to Metric
Meters = 0.3048 X feet
Kg/m = 1.488 X lb/ft
mm = 25.4 X inches

Convert Load Data
To convert into a safety factor = 2.0 multiply loading values by 0.75 (ratio of 1.5/2.0)

K x W = Deflection for other loads (inches)

⑦ NEMA does not list 24', 30' & 40' span trays.

Cable Tray Selection Guide

Aluminum		Height Side Rail	Load Depth	NEMA Load/Span Rating (@1.5 Safety Factor) 1.5	Support Span (Simple Beam Data)			
					14' (4.27) m	16' (4.88) m	18' (5.48) m	20' (6.09) m
System No.								
875A		8" (203)	7" (178)	30C ⑥ 24C ⑥			484 1.24 .0026	370 1.61 .0044
8HAF		8" (203)	7" (178)	30C ⑥				572 1.75 .0031
103A		10" (254)	8.85" (225)	40C ⑥				

Steel/Stainless		Gauge	Height Side Rail	Load Depth	NEMA Load/Span Rating (@1.5 Safety Factor)	Support Span		
						6' (1.83) m	8' (2.44) m	10' (3.05) m
Steel	248*	18 (1.3)	4" (102)	3" (76)	12B	340 0.28 .00082	191 0.50 .0026	
	346*	16" (1.6)	4" (102)	3" (76)	16A 12C		271 0.49 .0018	
	258*	18 (1.3)	5" (127)	4" (102)	16A		237 0.36 .0015	
	268*	18 (1.3)	6.3" (160)	5.2" (132)	16A 12C ④		272 0.22 .0008	
	366*	16 (1.6)	6.3" (160)	5.2" (132)	20B 16C ④			
	364*	14 (1.9)	6.3" (160)	5.3" (132)	20C 16C ④			
Stainless Steel	248*	18 (1.2)	4" (102)	3" (76)	12B	340 0.28 .00082	191 0.50 .0026	
	268*	18 (1.2)	6.3 (160)	5.2" (137)	16C 12C ④		272 0.57 .0008	
	366*	16 (1.5)	6.3" (160)	5.2" (137)	20B 16C ④			
	364*	14 (1.9)	6.3" (160)	5.3" (137)	20C 16C ④			

* Material Code: **S** = Hot Dip Mill Galvanized to ASTM 653A G = Hot Dip Galvanized after Fabrication to ASTM 123-B2
G-90 coating 1.06 Mils Thick 2.55 Mils Thick (Replaced ASTM 386)

Key:
① = Cable Loading (lb/ft)
② = Mid Span Deflection (in)
③ = K Factor (in/lb/ft)

④ Exceeds NEMA Loads by over 20%
⑤ Weight shown (lbs/ft or Kg/M) for 24" width tray with 9" rung spacing
⑥ NEMA does not list 24', 30', 35' & 40' spans

NEMA Load/Span Designations
 @1.5 Factor of Safety
 From VE-1 Table 1

Working Load (lbs/linear ft.)	Support Span			
	8 Ft	12 Ft	16 Ft	20 Ft
A=50 lbs/ft	8A	12A	16A	20A
B=75 lbs/ft	8B	12B	16B	20B
C=100 lbs/ft	8C	12C	16C	20C

Support Span (Simple Beam Data)**Data (2-Rails)**

	18' (5.49) m	20' (6.10) m	24' ⑥ (7.32) m	30' ⑥ (9.14) m	35' ⑥ (10.7) m	40' ⑥ (12.2) m	I_x In⁴	S_x In³	Area In²	NEC 392-7(b)2 EGC AMPS	Tray ⑤ Weight Lbs Per Ft
	293 2.042 .007	237 2.52 .0106	158 3.43 .0217	101 5.35 .053			34.36	9.6	4.24 (2735)	2000	6.51 (9.69)
	450 2.21 .0049	363 2.72 .0075	249 3.87 .0155	155 5.87 .0379	100 8.34 .0834		48.08	14.3	5.32 (3432)	2000	7.52 (11.19)
		636 2.03	441 3.48	282 4.59	207 6.27	159 8.20	115.4	24.1	7.40 (4555)	2000	9.45 (14.06)

Support Span (Simple Beam Data)**Data (2-Rails)**

	10' (3.05) m	12' (3.66) m	14' (4.27) m	16' (4.88) m	18' (5.49) m	20' (6.10) m	I_x In⁴	S_x In³	NEC 392-7(b)2 EGC AMPS	Tray ⑤ Weight Lbs Per Ft
	122 0.77 .0063	85 1.11 .0131	62 1.51 .0243				1.26	0.65	100	3.65 (5.43)
	171 0.75 .0044	107 0.97 .0091	85 1.43 .0168	64 1.83 .0286			1.81	1.00	200	4.15 (6.18)
	150 0.54 .0036	102 0.78 .0076	74 1.04 .0140	55 1.31 .0239			2.16	0.89	100	3.80 (5.65)
	174 0.35 .0020	121 0.51 .0042	89 0.93 .0077	68 0.90 .0132			3.90	1.27	200	4.27 (6.35)
	327 0.46 .0014	225 0.68 .0030	164 0.90 .0055	125 1.18 .0094	96 1.43 .0149	78 1.79 .0229	5.46	1.88	400	5.04 (7.50)
		282 0.68 .0024	206 0.91 .0044	156 1.15 .0074	122 1.45 .0119	100 1.81 .01	6.93	2.36	400	5.93 (8.82)
	122 0.77 .0063	85 1.11 .0131	62 1.51 .0243				1.26	0.65	**	3.65 (5.43)
	174 0.35 .0020	121 0.51 .0042	89 .93 .0077	68 .090 .0132			3.90	1.27	**	4.27 (6.35)
	327 0.46 .0014	225 0.68 .0030	164 0.90 .0055	125 1.18 .0094	96 1.43 .0149	78 1.79 .0229	5.46	1.88	**	5.04 (7.50)
		282 0.68 .0024	206 0.91 .0044	156 1.15 .0074	122 1.45 .0119	100 1.81 .0181	6.93	2.36	**	5.93 (8.82)

* Material Code: T= 304L Stainless Steel Z= 316L Stainless Steel

Conversion to Metric
Meters = 0.3048 X feet
Kg/M = 1.488 X lb/ft
mm = 25.4 X inches

Convert Load Data

To convert into a safety factor = 2.0, multiply loading values by 0.75. (ratio of 1.5/2.0)

K x W = Deflection for other loads (inches)

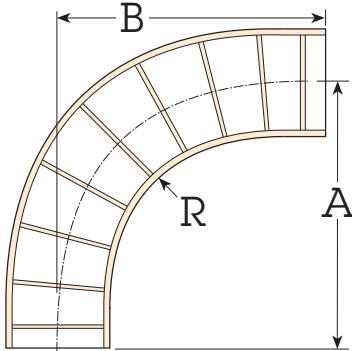
** For EGC run separate ground wire.

Fittings

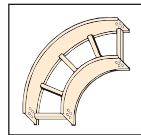
90° & 60° Horizontal Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies, with the exception of 8" & 10" trays that have 8" tangents and 10 bolt splice plates. 8" trays available in 36" & 48" radius. 7" trays in 24" radius. Consult factory for fitting dimensions.

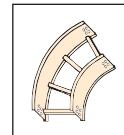
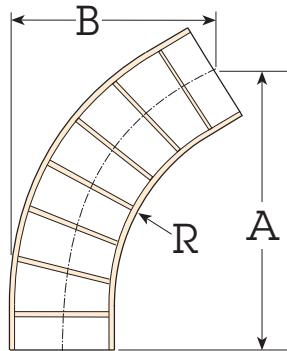
90° Horizontal Bend



Number of rungs vary depending on radius.



60° Horizontal Bend



R	W	Dimensions		Part Number
		A	B	
12" (305)	6	18 (457)	18 (457)	†† * 06030
	9	19.5 (495)	19.5 (495)	†† * 09030
	12	21 (533)	21 (533)	†† * 12030
	18	24 (610)	24 (610)	†† * 18030
	24	27 (686)	27 (686)	†† * 24030
	30	30 (762)	30 (762)	†† * 30030
	36	33 (838)	33 (838)	†† * 36030
	42	36 (914)	36 (914)	†† * 42030
	48	39 (991)	39 (991)	†† * 48030
24" (610)	6	30 (762)	30 (762)	†† * 06032
	9	31.5 (800)	31.5 (800)	†† * 09032
	12	33 (838)	33 (838)	†† * 12032
	18	36 (914)	36 (914)	†† * 18032
	24	39 (991)	39 (991)	†† * 24032
	30	42 (1067)	42 (1067)	†† * 30032
	36	45 (1143)	45 (1143)	†† * 36032
	42	48 (1219)	48 (1219)	†† * 42032
	48	51 (1295)	51 (1295)	†† * 48032
36" (914)	6	42 (1067)	42 (1067)	†† * 06033
	9	43.5 (1105)	43.5 (1105)	†† * 09033
	12	45 (1143)	45 (1143)	†† * 12033
	18	48 (1219)	48 (1219)	†† * 18033
	24	51 (1295)	51 (1295)	†† * 24033
	30	54 (1372)	54 (1372)	†† * 30033
	36	57 (1448)	57 (1448)	†† * 36033
	42	60 (1524)	60 (1524)	†† * 42033
	48	63 (1600)	63 (1600)	†† * 48033
48" (1219)	6	54 (1372)	54 (1372)	†† * 06034
	9	55.5 (1410)	55.5 (1410)	†† * 09034
	12	57 (1448)	57 (1448)	†† * 12034
	18	60 (1524)	60 (1524)	†† * 18034
	24	63 (1600)	63 (1600)	†† * 24034
	30	66 (1676)	66 (1676)	†† * 30034
	36	69 (1753)	69 (1753)	†† * 36034
	42	72 (1829)	72 (1829)	†† * 42034
	48	75 (1905)	75 (1905)	†† * 48034

W=Widths in Inches (mm)

6" (152) 30" (762)
9" (229) 36" (914)
12" (305) 42" (1067)
18" (457) 48" (1176)
24" (610)

H=Side Rail Height in Inches (mm)

4" (101) 7.3" (179) Consult Factory
5" (127) 8" (203) Consult Factory
6.3" (160)

†† Tray System *Type of Material— See Page 1-4 for Selection.

For Steel Fitting
Part Numbers Use:

4" High Tray †† = 246 *
5" High Tray †† = 256 *
6" High Tray †† = 266 *

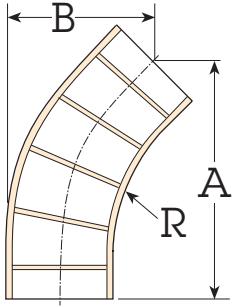
For Covers and Barriers

See Accessories Section, Pages 1-20-1-22

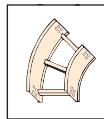
45° & 30° Horizontal Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

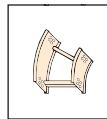
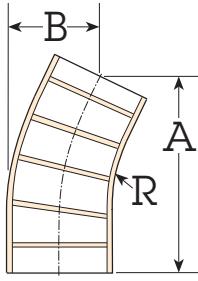
45° Horizontal Bend



Number of rungs vary depending on radius.



30° Horizontal Bend



R	W	Dimensions		Part Number
		A	B	
12" (305)	6	15.7 (400)	9.51 (242)	## * 06020
	9	16.8 (426)	11.45 (291)	## * 09020
	12	17.9 (455)	13.39 (340)	## * 12020
	18	20.0 (507)	17.27 (439)	## * 18020
	24	22.1 (561)	21.15 (537)	## * 24020
	30	24.2 (615)	25.03 (636)	## * 30020
	36	26.3 (669)	28.91 (734)	## * 36020
	42	28.5 (723)	32.79 (833)	## * 42020
	48	30.6 (777)	36.6 (9300)	## * 48020
24" (610)	6	24.2 (615)	13.0 (331)	## * 06022
	9	25.3 (642)	14.9 (380)	## * 09022
	12	26.3 (669)	16.9 (430)	## * 12022
	18	28.5 (723)	20.8 (528)	## * 18022
	24	30.6 (777)	24.7 (626)	## * 24022
	30	32.7 (831)	28.5 (725)	## * 30022
	36	34.8 (884)	32.4 (823)	## * 36022
	42	36.9 (938)	36.3 (922)	## * 42022
	48	39.1 (993)	40.2 (1021)	## * 48022
36" (914)	6	32.7 (831)	16.5 (420)	## * 06023
	9	33.8 (857)	18.5 (469)	## * 09023
	12	34.8 (884)	20.4 (519)	## * 12023
	18	36.9 (938)	24.3 (617)	## * 18023
	24	39.1 (992)	28.2 (716)	## * 24023
	30	41.2 (1046)	32.1 (814)	## * 30023
	36	43.3 (1100)	35.9 (913)	## * 36023
	42	45.4 (1154)	39.8 (1011)	## * 42023
	48	47.6 (1208)	43.7 (1110)	## * 48023
48" (1219)	6	41.2 (1046)	20.1 (510)	## * 06024
	9	42.2 (1073)	22.0 (559)	## * 09024
	12	43.3 (1100)	23.9 (608)	## * 12024
	18	45.4 (1154)	27.8 (706)	## * 18024
	24	47.6 (1208)	31.7 (805)	## * 24024
	30	49.7 (1262)	35.6 (903)	## * 30024
	36	51.8 (1315)	39.5 (1002)	## * 36024
	42	53.9 (1369)	43.3 (1100)	## * 42024
	48	56.0 (1422)	47.2 (1199)	## * 48024

R	W	Dimensions		Part Number
		A	B	
12" (305)	6	13.1 (333)	6.51 (165)	## * 06015
	9	13.9 (353)	8.21 (209)	## * 09015
	12	14.6 (371)	9.91 (252)	## * 12015
	18	16.6 (422)	13.31 (338)	## * 18015
	24	17.6 (447)	16.72 (425)	## * 24015
	30	19.1 (485)	20.12 (511)	## * 30015
	36	20.6 (523)	23.52 (597)	## * 36015
	42	22.1 (561)	26.52 (674)	## * 42015
	48	23.6 (601)	30.32 (770)	## * 48015
24" (610)	6	19.1 (485)	8.12 (206)	## * 06017
	9	19.9 (505)	8.95 (227)	## * 09017
	12	20.6 (523)	11.52 (293)	## * 12017
	18	22.1 (561)	14.92 (379)	## * 18017
	24	23.6 (599)	18.32 (465)	## * 24017
	30	25.1 (638)	21.79 (553)	## * 30017
	36	26.1 (663)	25.13 (638)	## * 36017
	42	28.1 (714)	28.53 (725)	## * 42017
	48	29.1 (739)	31.93 (811)	## * 48017
36" (914)	6	25.1 (638)	9.73 (247)	## * 06018
	9	25.9 (658)	11.43 (290)	## * 09018
	12	26.6 (676)	13.13 (334)	## * 12018
	18	28.1 (714)	16.53 (420)	## * 18018
	24	29.6 (752)	19.93 (506)	## * 24018
	30	31.1 (790)	23.33 (593)	## * 30018
	36	32.6 (828)	26.75 (679)	## * 36018
	42	34.1 (866)	30.14 (766)	## * 42018
	48	35.6 (904)	33.54 (852)	## * 48018
48" (1219)	6	31.1 (790)	11.33 (288)	## * 06019
	9	31.9 (810)	13.03 (331)	## * 09019
	12	32.6 (828)	14.74 (374)	## * 12019
	18	34.1 (866)	18.14 (461)	## * 18019
	24	35.6 (904)	21.54 (547)	## * 24019
	30	37.1 (942)	24.94 (633)	## * 30019
	36	38.6 (980)	28.34 (720)	## * 36019
	42	40.1 (1019)	31.74 (806)	## * 42019
	48	41.6 (10570)	35.15 (893)	## * 48019

For Steel Fitting Part Numbers Use:

4" High Tray ## = 246 *

5" High Tray ## = 256 *

6" High Tray ## = 266 *

For Covers and Barriers

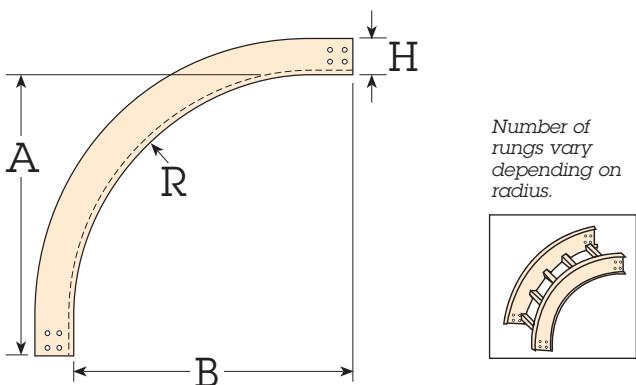
See Accessories Section, Pages 1-20-1-22

Tray System *Type of Material— See Page 1-4 for Selection.

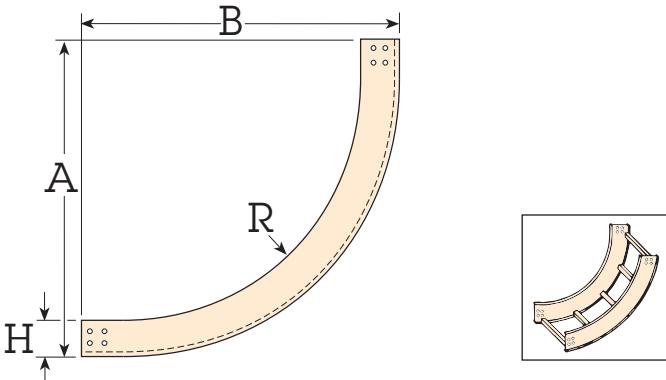
90° Outside & Inside Vertical Bend Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

90° Outside Bend



90° Inside Bend



R	W	Outside Vertical Bend Dimensions			Part Number	Inside Vertical Bend						Part
		A	B			A	B	A	B	A	B	
12" (305)	6	15 (381)	15 (381)		#* 06050	19 (483)	19 (483)	20 (508)	20 (508)	22.3 (566)	22.3 (566)	#* 06070 #* 09070 #* 12070 #* 18070 #* 24070 #* 30070 #* 36070 #* 42070 #* 48070
	9				#* 09050							
	12				#* 12050							
	18				#* 18050							
	24				#* 24050							
	30				#* 30050							
	36				#* 36050							
	42				#* 42050							
	48				#* 48050							
24" (610)	6	27 (686)	27 (686)		#* 06052	31 (787)	31 (787)	32 (813)	32 (813)	34.3 (871)	34.3 (871)	#* 06072 #* 09072 #* 12072 #* 18072 #* 24072 #* 30072 #* 36072 #* 42072 #* 48072
	9				#* 09052							
	12				#* 12052							
	18				#* 18052							
	24				#* 24052							
	30				#* 30052							
	36				#* 36052							
	42				#* 42052							
	48				#* 48052							
36" (914)	6	39 (991)	39 (991)		#* 06053	43 (1092)	43 (1092)	44 (1118)	44 (1118)	46.3 (1176)	46.3 (1176)	#* 06073 #* 09073 #* 12073 #* 18073 #* 24073 #* 30073 #* 36073 #* 42073 #* 48073
	9				#* 09053							
	12				#* 12053							
	18				#* 18053							
	24				#* 24053							
	30				#* 30053							
	36				#* 36053							
	42				#* 42053							
	48				#* 48053							
48" (1219)	6	51 (1295)	51 (1295)		#* 06054	55 (1397)	55 (1397)	56 (1422)	56 (1422)	58.3 (1481)	58.3 (1481)	#* 06074 #* 09074 #* 12074 #* 18074 #* 24074 #* 30074 #* 36074 #* 42074 #* 48074
	9				#* 09054							
	12				#* 12054							
	18				#* 18054							
	24				#* 24054							
	30				#* 30054							
	36				#* 36054							
	42				#* 42054							
	48				#* 48054							

W=Widths in Inches (mm)

6" (152) 30" (762)
9" (229) 36" (914)
12" (305) 42" (1067)
18" (457) 48" (1176)
24" (610)

H=Side Rail Height in Inches (mm)

4" (101) 7.3" (179) Consult Factory
5" (127) 8" (203) Consult Factory
6.3" (160)

Tray System *Type of Material— See Page 1-4 for Selection.

For Steel Fitting

Part Numbers Use:

4" High Tracy # = 246 *

5" High Tracy # = 256 *

6" High Tracy # = 266 *

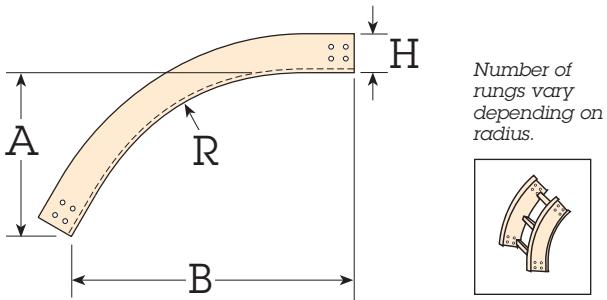
For Covers and Barriers

See Accessories Section, Pages 1-20-1-22

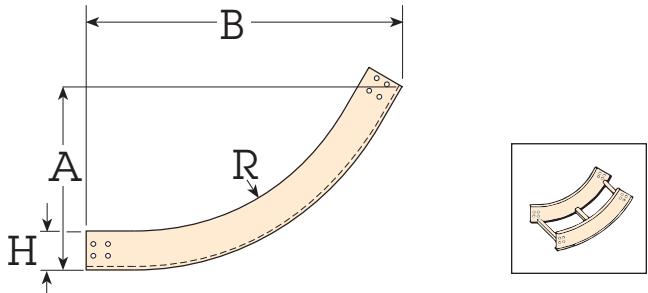
60° Outside & Inside Vertical Bend Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

60° Outside Bend



60° Inside Bend



R	W	Outside Vertical Bend Dimensions			Part Number	Inside Vertical Bend						Part Number	
		H@4"		H@5"		H@6.3"							
		A	B	A		A	B	A	B	A	B		
12" (305)	6	8.6 (218)	14.9 (378)	## * 06045	10.6 (269)	18.35 (466)	11.1 (282)	19.22 (488)	12.7 (323)	21.1 (536)	## * 06065 ## * 09065 ## * 12065 ## * 18065 ## * 24065 ## * 30065 ## * 36065 ## * 42065 ## * 48065		
	9			## * 09045									
	12			## * 12045									
	18			## * 18045									
	24			## * 24045									
	30			## * 30045									
	36			## * 36045									
	42			## * 42045									
	48			## * 48045									
	24" (610)			## * 06047									
36" (914)	6	14.6 (371)	25.3 (642)	## * 09047	16.6 (422)	28.74 (730)	17.1 (434)	29.61 (752)	18.7 (475)	31.5 (800)	## * 06067 ## * 09067 ## * 12067 ## * 18067 ## * 24067 ## * 30067 ## * 36067 ## * 42067 ## * 48067		
	9			## * 12047									
	12			## * 18047									
	18			## * 24047									
	24			## * 30047									
	30			## * 36047									
	36			## * 42047									
	42			## * 48047									
	48			## * 06048									
	24" (610)			## * 09048									
48" (1219)	6	26.6 (676)	46.1 (1170)	## * 12048	22.6 (579)	39.14 (994)	23.1 (587)	40.01 (1016)	24.7 (627)	41.9 (1064)	## * 06068 ## * 09068 ## * 12068 ## * 18068 ## * 24068 ## * 30068 ## * 36068 ## * 42068 ## * 48068		
	9			## * 18049									
	12			## * 24049									
	18			## * 30049									
	24			## * 36049									
	30			## * 42049									
	36			## * 48049									
	42			## * 06049									
	48			## * 09049									
	48" (1219)			## * 12049									

Tray System *Type of Material— See Page 1-4 for Selection.

For Steel Fitting Part Numbers Use:

4" High Tray ## = 246 *

5" High Tray ## = 256 *

6" High Tray ## = 266 *

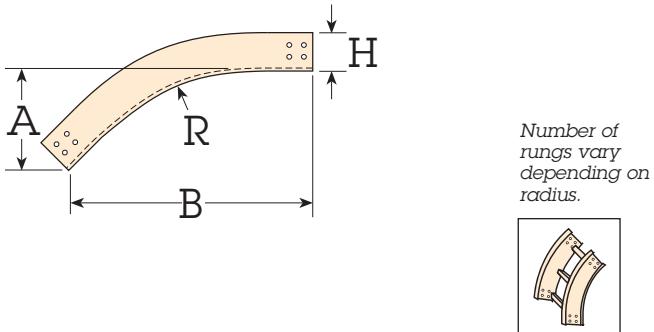
For Covers and Barriers

See Accessories Section, Pages 1-20-1-22

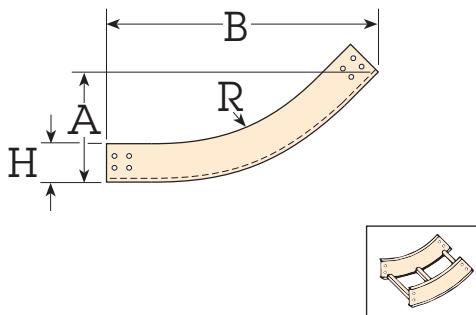
45° Outside & Inside Vertical Bend Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

45° Outside Bend



45° Inside Bend



R	W	Outside Vertical Bend			Inside Vertical Bend						Part Number
		Dimensions		Part Number	H@4"		H@5"		H@6.3"		
		A	B		A	B	A	B	A	B	
12" (305)	6	5.6 (143)	13.6 (356)	## * 06040							## * 06060
	9			## * 09040							## * 09060
	12			## * 12040							## * 12060
	18			## * 18040	6.8 (173)	16.4 (417)	7.1 (180)	17.1 (435)	7.8 (198)	18.8 (478)	## * 18060
	24			## * 24040							## * 24060
	30			## * 30040							## * 30060
	36			## * 36040							## * 36060
	42			## * 42040							## * 42060
	48			## * 48040							## * 48060
	24" (610)	9.2 (232)	22.1 (561)	## * 06042							## * 06062
	6			## * 09042							## * 09062
	9			## * 12042							## * 12062
	12			## * 18042	10.3 (262)	24.92 (633)	10.6 (270)	25.6 (651)	11.3 (287)	27.3 (693)	## * 18062
	18			## * 24042							## * 24062
	24			## * 30042							## * 30062
	30			## * 36042							## * 36062
	36			## * 42042							## * 42062
	42			## * 48042							## * 48062
36" (914)	6	12.7 (322)	30.6 (777)	## * 06043							## * 06063
	9			## * 09043							## * 09063
	12			## * 12043							## * 12063
	18			## * 18043	13.8 (351)	33.4 (849)	14.1 (359)	34.12 (867)	14.8 (376)	35.7 (907)	## * 18063
	24			## * 24043							## * 24063
	30			## * 30043							## * 30063
	36			## * 36043							## * 36063
	42			## * 42043							## * 42063
	48			## * 48043							## * 48063
48" (1219)	6	16.2 (411)	39.1 (922)	## * 06044							## * 06064
	9			## * 09044							## * 09064
	12			## * 12044							## * 12064
	18			## * 18044	17.4 (441)	41.9 (1064)	17.6 (448)	42.6 (1082)	18.03 (465)	44.2 (1123)	## * 18064
	24			## * 24044							## * 24064
	30			## * 30044							## * 30064
	36			## * 36044							## * 36064
	42			## * 42044							## * 42064
	48			## * 48044							## * 48064

W=Widths in Inches (mm)

6" (152) 30" (762)
9" (229) 36" (914)
12" (305) 42" (1067)
18" (457) 48" (1176)
24" (610)

H=Side Rail Height in Inches (mm)

4" (101) 7.3" (179) Consult Factory
5" (127) 8" (203) Consult Factory
6.3" (160)

For Steel Fitting
Part Numbers Use:

4" High Tray ## = 246 *
5" High Tray ## = 256 *
6" High Tray ## = 266 *

For Covers and Barriers

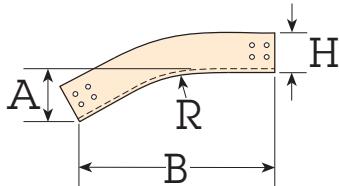
See Accessories Section, Pages 1-20-1-22

*Tray System *Type of Material— See Page 1-4 for Selection.

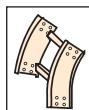
30° Outside & Inside Vertical Bend Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation. Each fitting and straight section comes with a pair (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

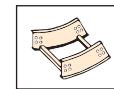
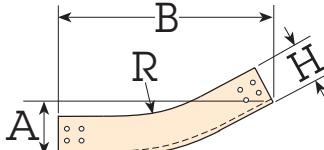
30° Outside Bend



Number of rungs vary depending on radius.



30° Inside Bend



R	W	Outside Vertical Bend						Inside Vertical Bend						Part Number	
		Dimensions		Part Number	H@4"		H@5"		H@6.3"						
		A	B		A	B	A	B	A	B	A	B			
12" (305)	6	3.2 (79)	11.6 (295)	#* 06035	3.7 (93)	13.6 (345)	3.8 (96)	14.1 (358)	3.9 (100)	14.8 (375)			#* 06055		
	9			#* 09035									#* 09055		
	12			#* 12035									#* 12055		
	18			#* 18035									#* 18055		
	24			#* 24035									#* 24055		
	30			#* 30035									#* 30055		
	36			#* 36035									#* 36055		
	42			#* 42035									#* 42055		
	48			#* 48035									#* 48055		
24" (610)	6	4.7 (120)	17.6 (447)	#* 06037	5.3 (133)	19.6 (498)	5.4 (137)	20.1 (511)	5.6 (141)	20.8 (527)			#* 06057		
	9			#* 09037									#* 09057		
	12			#* 12037									#* 12057		
	18			#* 18037									#* 18057		
	24			#* 24037									#* 24057		
	30			#* 30037									#* 30057		
	36			#* 36037									#* 36057		
	42			#* 42037									#* 42057		
	48			#* 48037									#* 48057		
36" (914)	6	6.32 (161)	23.60 (599)	#* 06038	6.9 (174)	25.6 (650)	7.0 (178)	26.1 (663)	7.2 (182)	27.1 (688)			#* 06058		
	9			#* 09038									#* 09058		
	12			#* 12038									#* 12058		
	18			#* 18038									#* 18058		
	24			#* 24038									#* 24058		
	30			#* 30038									#* 30058		
	36			#* 36038									#* 36058		
	42			#* 42038									#* 42058		
	48			#* 48038									#* 48058		
48" (1219)	6	7.93 (201)	29.60 (752)	#* 06039	8.5 (215)	31.6 (803)	8.6 (218)	32.1 (815)	8.8 (223)	32.8 (832)			#* 06059		
	9			#* 09039									#* 09059		
	12			#* 12039									#* 12059		
	18			#* 18039									#* 18059		
	24			#* 24039									#* 24059		
	30			#* 30039									#* 30059		
	36			#* 36039									#* 36059		
	42			#* 42039									#* 42059		
	48			#* 48039									#* 48059		

Tray System *Type of Material— See Page 1-4 for Selection.

For Steel Fitting Part Numbers Use:

4" High Tray #* = 246 *

5" High Tray #* = 256 *

6" High Tray #* = 266 *

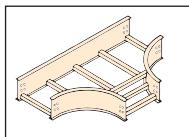
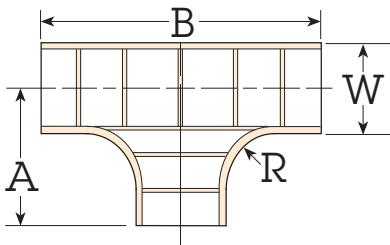
For Covers and Barriers

See Accessories Section, Pages 1-20-1-22

Fittings

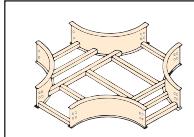
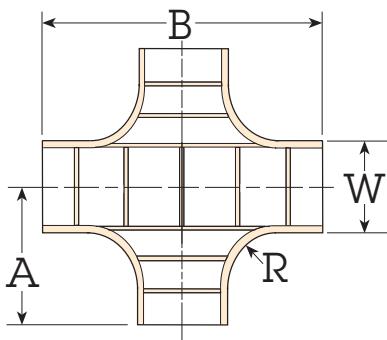
All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation.

Tee



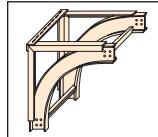
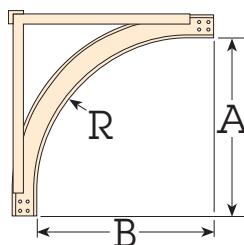
Each Tee fitting comes with two pairs (4) of splice plates and sixteen (16) 9TBN302 nut and bolt assemblies.

Cross



Each Cross fitting comes with three pairs (6) of splice plates and twenty four (24) 9TBN302 nut and bolt assemblies.

90° Vertical Support Riser



Each Riser comes with a pair of (2) splice plates and eight (8) 9TBN302 nut and bolt assemblies.

R	W	Dimensions		Part Number
		A	B	
12" (305)	6	18 (457)	36 (914)	## * 06085
	9	19.5 (495)	39 (991)	## * 09085
	12	21 (533)	42 (1067)	## * 12085
	18	24 (610)	48 (1549)	## * 18085
	24	27 (686)	54 (1372)	## * 24085
	30	30 (762)	60 (1524)	## * 30085
	36	33 (838)	66 (1676)	## * 36085
	42	36 (914)	72 (1829)	## * 42085
	48	39 (991)	78 (1981)	## * 48085
24" (610)	6	30 (762)	60 (1524)	## * 06087
	9	31.5 (800)	63 (1600)	## * 09087
	12	33 (838)	66 (1676)	## * 12087
	18	36 (914)	72 (1829)	## * 18087
	24	39 (991)	78 (1981)	## * 24087
	30	42 (1067)	84 (2134)	## * 30087
	36	45 (1143)	90 (2286)	## * 36087
	42	48 (1219)	96 (2438)	## * 42087
	48	51 (1295)	102 (2591)	## * 48087
36" (914)	6	42 (1067)	84 (2134)	## * 06088
	9	43.5 (1105)	87 (2210)	## * 09088
	12	45 (1143)	90 (2286)	## * 12088
	18	48 (1219)	96 (2438)	## * 18088
	24	51 (1295)	102 (2591)	## * 24088
	30	54 (1372)	108 (2743)	## * 30088
	36	57 (1448)	114 (2896)	## * 36088
	42	60 (1524)	120 (3048)	## * 42088
	48	63 (1600)	126 (3200)	## * 48088
48" (1219)	6	54 (1372)	108 (2743)	## * 06089
	9	55.5 (1410)	111 (2819)	## * 09089
	12	57 (1448)	114 (2896)	## * 12089
	18	60 (1524)	120 (3048)	## * 18089
	24	63 (1600)	126 (3200)	## * 24089
	30	66 (1676)	132 (3353)	## * 30089
	36	69 (1753)	138 (3505)	## * 36089
	42	72 (1829)	144 (3658)	## * 42089
	48	75 (1905)	150 (3810)	## * 48089

Expansion & Reducer Tees can be custom fabricated at standard Tee pricing. Specify various widths counter clockwise (using drawing above) starting at left.

R	W	Dimensions		Part Number
		A	B	
12" (305)	6	18 (457)	36 (914)	## * 06080
	9	19.5 (495)	39 (991)	## * 09080
	12	21 (533)	42 (1067)	## * 12080
	18	24 (610)	48 (1549)	## * 18080
	24	27 (686)	54 (1372)	## * 24080
	30	30 (762)	60 (1524)	## * 30080
	36	33 (838)	66 (1676)	## * 36080
	42	36 (914)	72 (1829)	## * 42080
	48	39 (991)	78 (1981)	## * 48080
24" (605)	6	30 (762)	60 (1524)	## * 06082
	9	31.5 (800)	63 (1600)	## * 09082
	12	33 (838)	66 (1676)	## * 12082
	18	36 (914)	72 (1829)	## * 18082
	24	39 (991)	78 (1981)	## * 24082
	30	42 (1067)	84 (2134)	## * 30082
	36	45 (1143)	90 (2286)	## * 36082
	42	48 (1219)	96 (2438)	## * 42082
	48	51 (1296)	102 (2591)	## * 48082
30" (762)	6	42 (1067)	84 (2134)	## * 06083
	9	43.5 (1105)	87 (2210)	## * 09083
	12	45 (1143)	90 (2286)	## * 12083
	18	48 (1219)	96 (2438)	## * 18083
	24	51 (1295)	102 (2591)	## * 24083
	30	54 (1372)	108 (2743)	## * 30083
	36	57 (1448)	114 (2896)	## * 36083
	42	60 (1524)	120 (3048)	## * 42083
	48	63 (1600)	126 (3200)	## * 48083
48" (1219)	6	54 (1372)	108 (2743)	## * 06084
	9	55.5 (1410)	111 (2819)	## * 09084
	12	57 (1448)	114 (2896)	## * 12084
	18	60 (1524)	120 (3048)	## * 18084
	24	63 (1600)	126 (3200)	## * 24084
	30	66 (1676)	132 (3353)	## * 30084
	36	69 (1753)	138 (3505)	## * 36084
	42	72 (1829)	144 (3658)	## * 42084
	48	75 (1905)	150 (3810)	## * 48084

Expansion & Reducer Crosses can be custom fabricated. Specify various widths counter clockwise (using drawing above) starting at left.

R	W	Dimensions		Part Number
		A	B	
(305)	6			## * 06090
	9			## * 09090
	12			## * 12090
	18	15 (381)	15 (381)	## * 18090
	24			## * 24090
	30			## * 30090
	36			## * 36090
	42			## * 42090
	48			## * 48090
(610)	6			## * 06092
	9			## * 09092
	12			## * 12092
	18	27 (686)	27 (686)	## * 18092
	24			## * 24092
	30			## * 30092
	36			## * 36092
	42			## * 42092
	48			## * 48092
(914)	6			## * 06093
	9			## * 09093
	12			## * 12093
	18	39 (991)	39 (991)	## * 18093
	24			## * 24093
	30			## * 30093
	36			## * 36093
	42			## * 42093
	48			## * 48093
(1219)	6			## * 06094
	9			## * 09094
	12			## * 12094
	18	51(1295)	51(1295)	## * 18094
	24			## * 24094
	30			## * 30094
	36			## * 36094
	42			## * 42094
	48			## * 48094

Tray System

* Type of Material— See Page 1-4 for Selection.

For Steel Fitting Part Numbers Use:

4" High Tray ## = 246 *

5" High Tray ## = 256 *

6" High Tray ## = 266 *

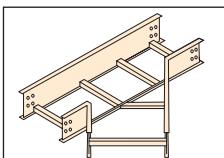
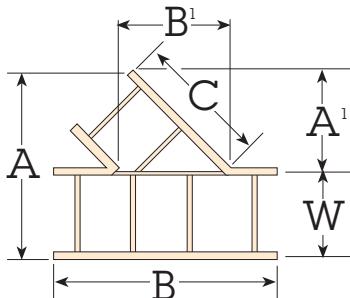
For Covers and Barriers

See Accessories Section, Pages 1-20-1-22

Fittings

All Ladder Tray Fittings have rungs on 9" centers with 3" tangents for easy fit-up during installation.

Left or Right Hand Wye



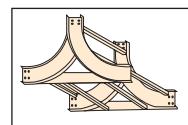
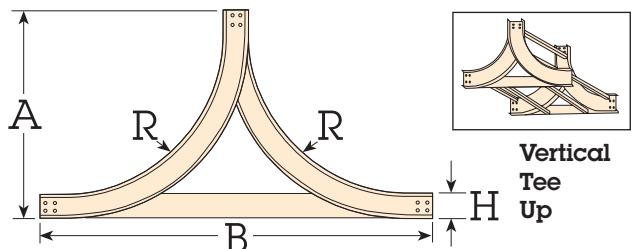
Number of rungs vary depending on tray width.

W	B ¹	B	C	A ¹	A	Part Number
6"	8.49 (216)	15.73 (400)	12 (305)	4.24 (108)	14.49 (368.0)	# * W 172 RIGHT Hand
9"	12.73 (323)	22.09 (561)	18 (457)	6.36 (162)	21.73 (551.9)	
12"	16.97 (431)	28.45 (723)	24 (610)	8.48 (215)	28.97 (735.8)	
18"	25.45 (647)	41.19 (1046)	36 (914)	12.73 (323.3)	43.46 (1103.9)	
24"	33.94 (862)	53.91 (1369)	48 (1219)	16.97 (431.0)	57.94 (1471.7)	or
30"	42.43 (1078)	66.64 (1693)	60 (1524)	21.21 (538.7)	72.43 (1839.7)	
36"	50.91 (1293)	79.37 (2016)	72 (1829)	25.46 (646.7)	86.41 (2194.8)	# * W 173 LEFT Hand
42"	59.40 (1509)	92.10 (2339)	84 (2134)	29.20 (741.7)	101.4 (2575.6)	
48"	67.90 (1725)	104.34 (2650)	96 (2438)	33.94 (862.1)	115.9 (2943.9)	

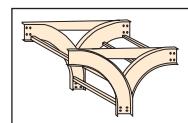
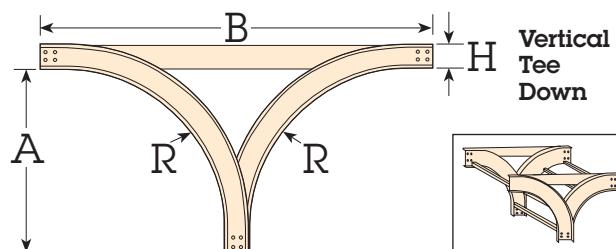
Special Wyes can be made with two different tray widths. Consult factory.

Each Wye is furnished with two pairs (4) of splice plates and eight (8) 9TBN302 nut and bolt assemblies.

Vertical Tee



Vertical Tee Up



Vertical Tee Down

R	Dimensions / Side Rail Height = H						Part Number	
	4"		5"		6"			
	A	B	A	B	A	B		
12" (305)	15 (381)	34 (864)	15 (381)	35 (889)	15 (381)	36.3 (922)	# * W 095	
	19 (483)	34 (864)	20 (508)	35 (889)	22.3 (566)	36.3 (922)	# * W 095U	
24" (610)	27 (686)	58 (1473)	27 (686)	59 (1499)	27 (686)	60.3 (1532)	# * W 097	
	31 (787)	58 (1473)	32 (813)	59 (1499)	34.3 (871)	60.3 (1532)	# * W 097U	
36" (914)	39 (991)	82 (2083)	39 (991)	83 (2108)	39 (846)	84.3 (2141)	# * W 098	
	43 (1092)	82 (2083)	44 (1118)	83 (2108)	46.3 (1176)	84.3 (2141)	# * W 098U	
48"	51 (1295)	106 (2692)	51 (1295)	107 (2718)	51 (1295)	108.3 (2751)	# * W 099	
	55 (1397)	106 (2692)	56 (1422)	107 (2718)	58.3 (1481)	108.3 (2751)	# * W 099U	

Each Vertical Tee is furnished with two (2) pairs of splice plates and sixteen (16) 9TBN302 nut and bolt assemblies.

Fitting Reducers

Fitting Reducers are available in right hand, left hand or concentric styles as a special order. Consult Factory. Chalfant strongly recommends the use of **offset splice plate reducers** which are 1/3 the cost and 1/2 the labor to install while doing the same job.

See Page 1-19 in the Accessories Section.

Fitting Covers

Covers— Available in Flanged and Flat styles only.

See page 1-20 in the Accessories Section.

To order covers substitute the "Tray System" number (#) with a **7** for the Flanged style cover or a **67** for a Flat cover style.

Example:
Tray part Number. 2 A 06050

7 67
Flanged Flat

Barriers— Available for Horizontal and Vertical fittings.

See page 1-22 in the Accessories Section.

To order Vertical Barriers substitute the "Tray System" number (#) with an **8**. and substitute "BS", as shown.

Example:

Tray part Number. 2 A 06050 + [Barrier Height]
8 BS

For Horizontal Barriers— See Page 1-22 and specify part number 8 * BS340-A.

Tray System

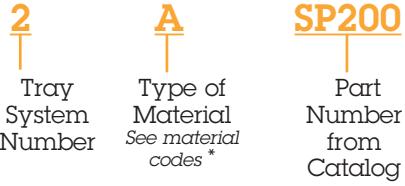
* Type of Material— See Page 1-4 for Selection.

Cable Tray Accessories

Chalfant's complete line of accessories are designed to be used with the following Cable Tray Systems:

How to Order

Example: 4-Bolt Slotted Hole Splice Plate



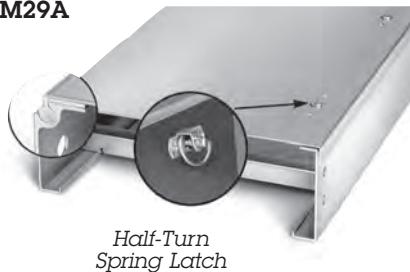
* Material Code:

- A** = Aluminum, High Strength 6063T6 Extrusions (5052H34 sheet)
- S** = Hot Dip Mill Galvanized Steel to ASTM 653A G-90 Coating, 1.05 Mils Thick
- G** = Hot Dip Galvanized after Fabrication to ASTM 123-B2 2.55 Mils Thick (replaced ASTM 386)
- T** = 304L Stainless Steel
- Z** = 316L Stainless Steel

Cable Tray Accessories

Integral Hinged Cover

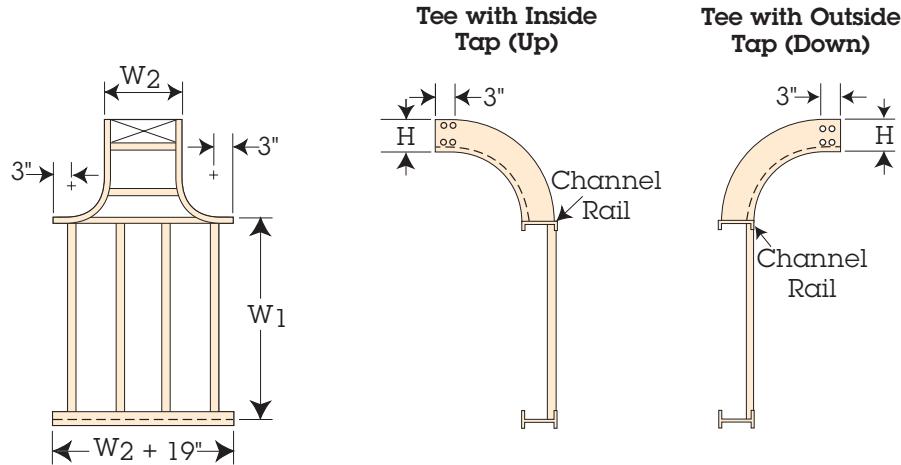
M24A
M29A



Available in 24A and 29A systems in twelve foot standard lengths. Material is 6063 Aluminum Alloy.

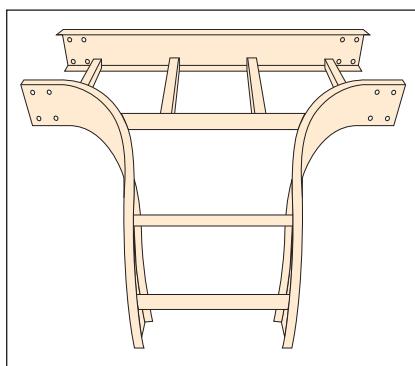
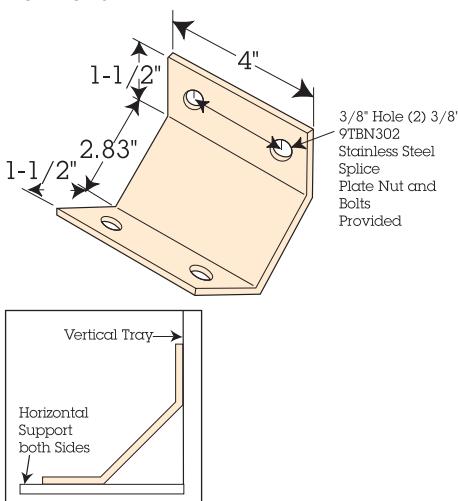
Tee with Drop-Out

24A W₁085-VOT-W₂ (vertical outside tap)
24A W₁085-VIT-W₂ (vertical inside tap)



Heavy-Duty Vertical Hold Down Bracket

9SHD590



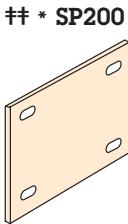
W₁ = Width of Horizontal Run
W₂ = Width of Vertical Tap

Available in any tray size in systems 2A through 665A. Material is 6063 Aluminum Alloy. See page 1-6 for selection.

Cable Tray Splice Plates and Adapters

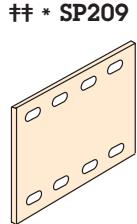
Note: All splice plates are shipped in pairs with necessary stainless steel hardware.

4 Bolt Splice Plate



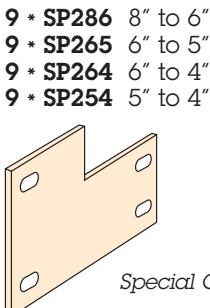
#* SP200

8 Hole Long Splice Plate



#* SP209

Adapter Splice Plate

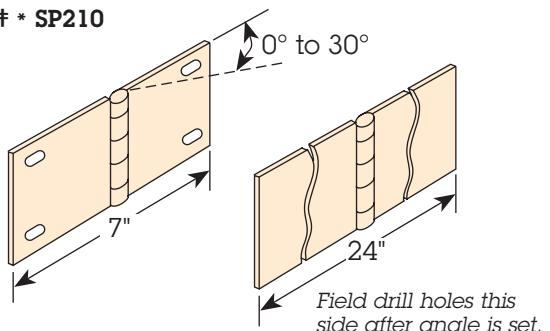


9 * SP286 8" to 6"
9 * SP265 6" to 5"
9 * SP264 6" to 4"
9 * SP254 5" to 4"

Special Order

Horizontal Adjustable Splice Plate

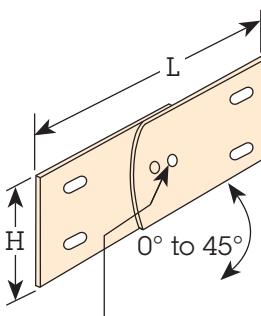
#* SP210



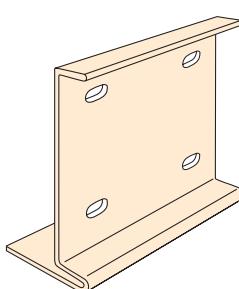
Note: Anti-oxide compound is not needed behind plates—Per NEMA VE-2.

Vertical Adjustable Splice Plate

#* SP212



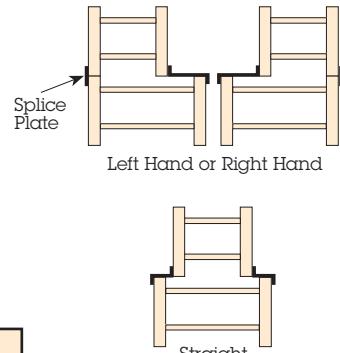
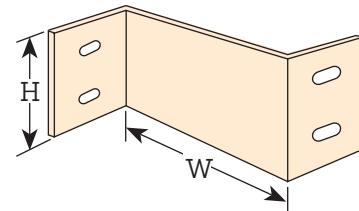
Mid-Span Splice Plate



Aluminum splice plates are shipped in pairs with stainless steel hardware.

Rail Height	Tray Series	Part Number
6"	665A	665AWASP200
7"	47A	47AWASP200
	57A	57AWASP200

Reducer Splice Plates

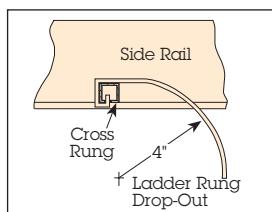
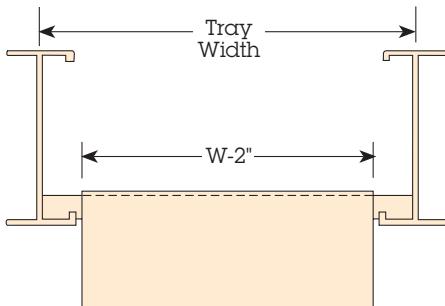


H	W	Nominal Dimensions		Part Numbers	
		Offset	Straight	Offset	Straight
"H" varies with loading depth of specified straight sections.	3"	#* 03236	#* 03237	#* 03236	#* 03237
	6"	#* 06236	#* 06237	#* 06236	#* 06237
	9"	#* 09236	#* 09237	#* 09236	#* 09237
	12"	#* 12236	#* 12237	#* 12236	#* 12237
	18"	#* 18236	#* 18237	#* 18236	#* 18237
	21"	#* 21236	#* 21237	#* 21236	#* 21237
	24"	#* 24236	#* 24237	#* 24236	#* 24237
	27"	#* 27236	#* 27237	#* 27236	#* 27237
	30"	#* 30236	#* 30237	#* 30236	#* 30237

Where application calls for a left or right hand reduction, Chalfant reducing splice plates are sold with a standard splice plate #* SP200. For a concentric straight reduction, the dimension "W" is the total reduction.

Ladder Rung Drop-Out

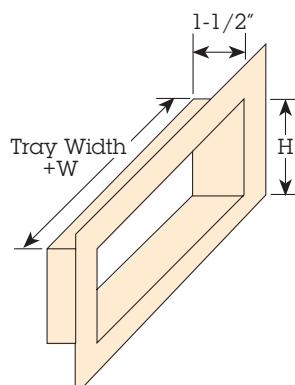
9 * W198



#* Tray System

* Type of Material— See Page 1-18 for Selection.

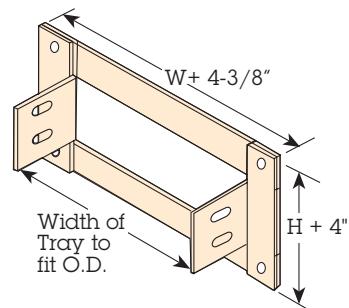
Wall Frame-- 1 Tier



Rail Height	H	W	Part Number
4"	4.0"	2.50"	94-W495
5"	5.4375	2.50"	95-W495
6"	6.875	2.50"	96-W495

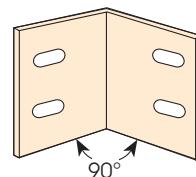
Tray to Panel Frame

9HSW244

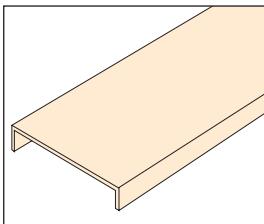
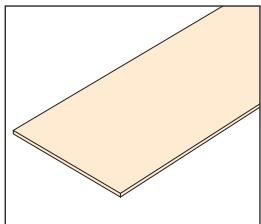
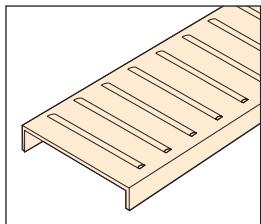
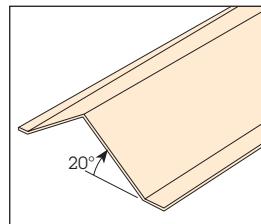
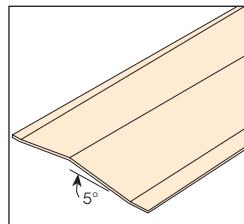


90° Alternate Tray to Box Connector

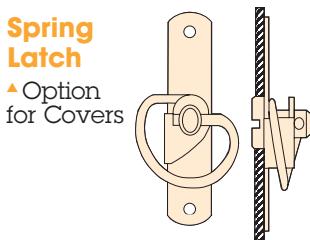
#* SP213



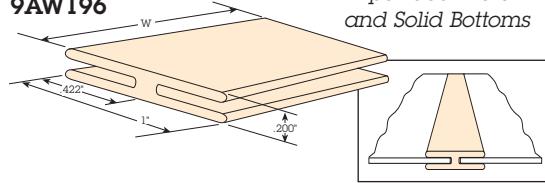
Covers and Accessories

**Standard Cover****Flat Cover[▲]**
67 * W 010**Louvered Cover[▲]**
7 * W 010-V**Peak Cover-- 20°**
7 * W 010-P**Rain Peaked Cover**
7 * W 010-RP

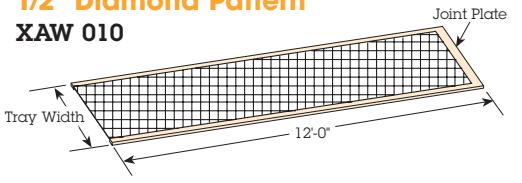
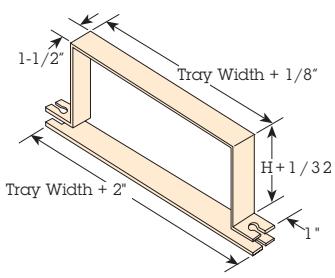
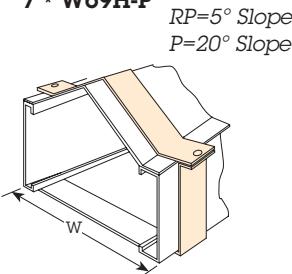
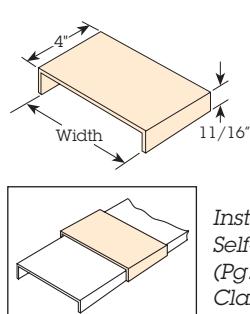
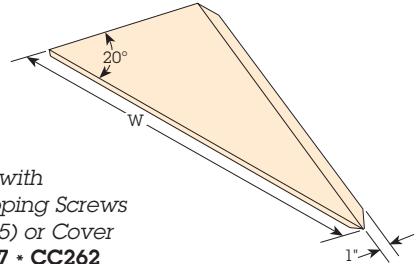
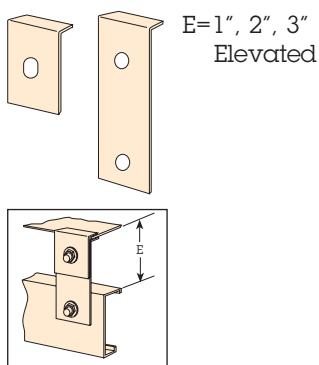
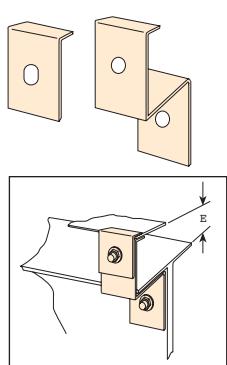
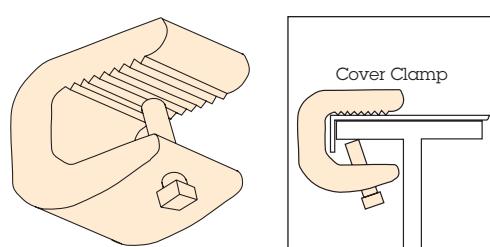
Note: Standard cover length is 12'. ▲ Also available with installed spring latches— See Below and Page 1-18. W=Width

**Spring Latch**

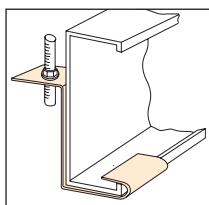
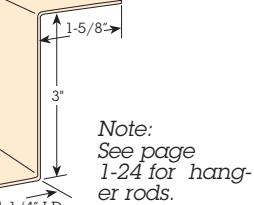
▲ Option
for Covers

H Joint
9AW196

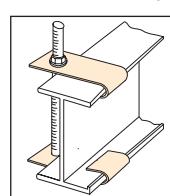
For Covers,
Expanded Metal
and Solid Bottoms

Aluminum Expanded Metal Bottom--
1/2" Diamond Pattern**XAW 010****Heavy Duty Cover Strap**
7 * W69H**Peaked Cover Heavy Duty Strap**7 * W69H-RP
7 * W69H-P**Cover Joint Strap**
7 * W196**Peaked Cover Blind End**
7 * W245**Raised Cover Clamp-- Channel**
7 * CC70C**Raised Cover Clamp-- I-Beam**
7 * CC70E**Aluminum Cover Clamp or Conduit Bracket**
7ACC262

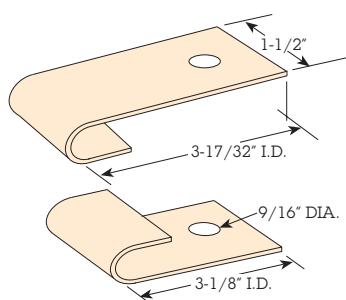
For galvanized steel
order 7SCC262

Hanger Rod Clamp
9SHC239 All Channel Tray9/16" DIA.
1-1/2"

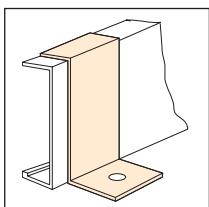
Note:
See page
1-24 for hanger rods.

Hanger Rod Clamp
9SHC257 3A, 26A & 46A Tray
9SHC249 2A, 34A & 35A Tray

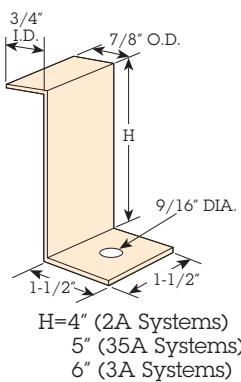
Note:
See page
1-24 for hanger rods.



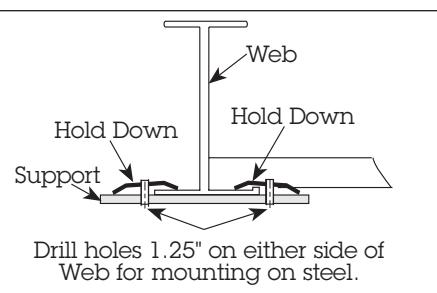
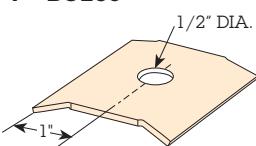
Wall Bracket Clamp-- Channel 9SOH248



For I-Beam— **9S ## A248**



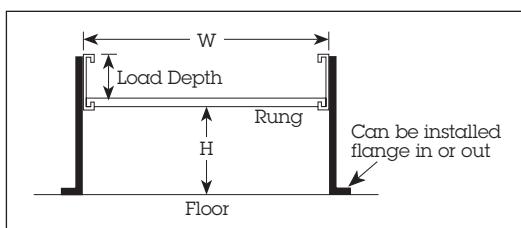
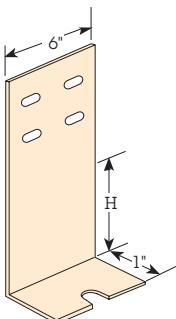
Hold Down Clamp 9 * BC250



Used on either side with aluminum I-beam.
Installs on inside of C-Channel.

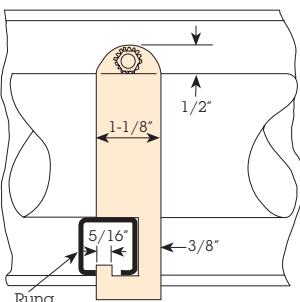
Raised Support Splice Plate

* SP200-H



Used on C-Channel side rails, only.
U.S. Patent 4,596,095

Stainless Steel Ladder Rung Cable Clamp

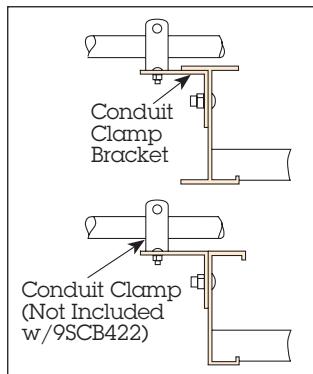
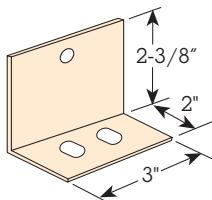


1/4" adjustment on all clamps.
20 ga. stainless steel with 1/4"-20-3/4" bolt and locknut.

O. D. of Cable	Part Numbers
1.00"-1.25"	9TLC288
1.25"-1.50"	9TLC289
1.50"-1.75"	9TLC290
1.75"-2.00"	9TLC291
2.00"-2.25"	9TLC292
2.25"-2.50"	9TLC293
2.50"-2.75"	9TLC294
2.75"-3.00"	9TLC295
3.00"-3.25"	9TLC296
3.25"-3.50"	9TLC297
3.50"-3.75"	9TLC298
3.75"-4.00"	9TLC299
4.00"-4.25"	9TLC300
4.25"-4.50"	9TLC301
4.50"-4.75"	9TLC302

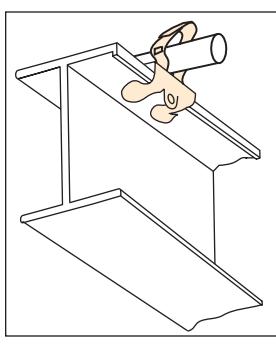
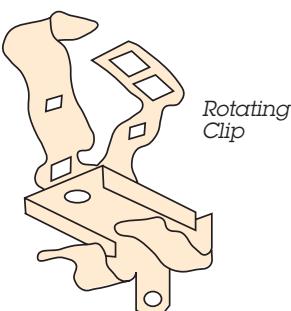
Optional Conduit Clamp Bracket

9SCB422



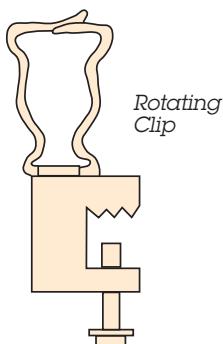
Universal Clamp & Conduit Clip

9SCB423 (1/2" to 3/4" Conduit)



Beam Clamps

9SCB424 (1/2" to 3/4" Conduit)**

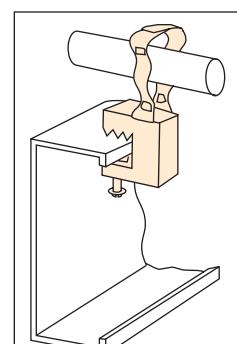


Caddy Design for C-Channel

**Call factory for other conduit sizes.

Tray System

* Type of Material— See Page 1-18 for Selection.

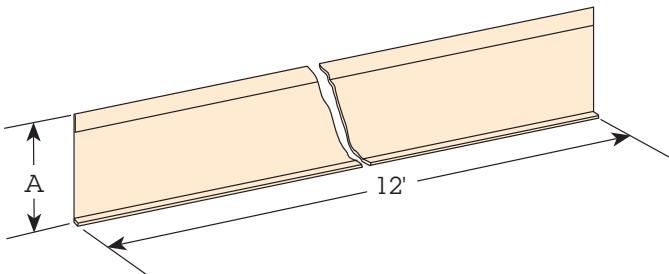


Barriers and Separators

Barrier Strip-- Straight

8 * BS010-A

(For 3 meter length order: 8 * BS118-A)



All barriers are supplied with (4) 9STK774 magnetic steel self tapping screws.

90° Inside Vertical Barrier

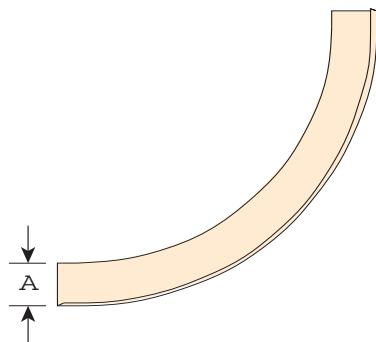
12"- 8 * BS07 † -A

24"- 8 * BS07 † -A

36"- 8 * BS07 † -A

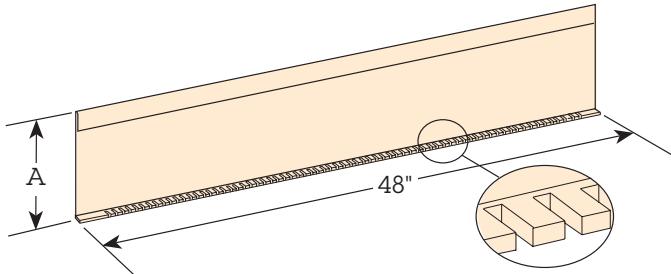
48"- 8 * BS07 † -A

0=12" Radius
2=24" Radius
3=36" Radius
4=48" Radius



Horizontal Adjustable Barrier-- Hand Formed

8 * BS340-A



A= 3 for 3" and 4" Load Depths
5 for 5" and 6" Load Depths

90° Outside Vertical Barrier

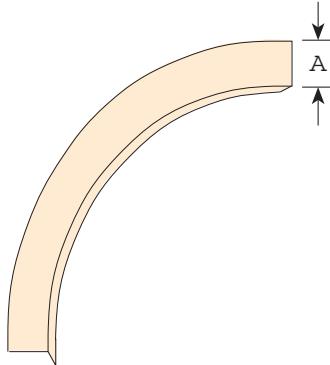
12"- 8 * BS05 † -A

24"- 8 * BS05 † -A

36"- 8 * BS05 † -A

48"- 8 * BS05 † -A

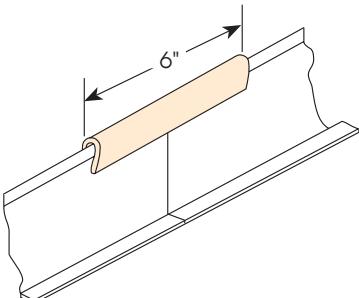
0=12" Radius
2=24" Radius
3=36" Radius
4=48" Radius



For 30°, 45° and 60° Vertical Barriers, See Page 1-17

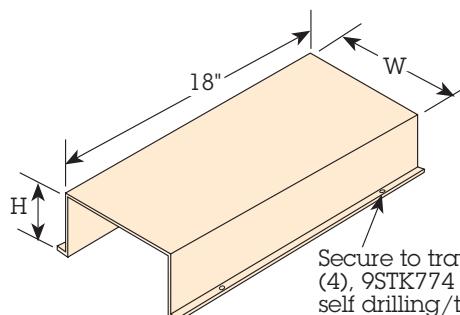
Barrier Alignment Joint Strip (Nylon)

8N06196



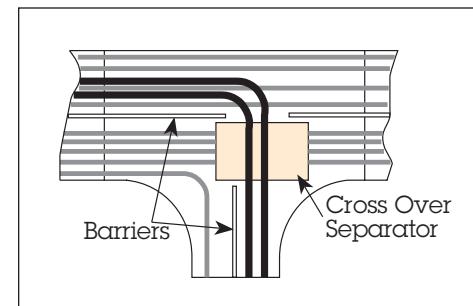
Cross Over Separator

8HSW



H=2" or 4"
S=16 Gauge Steel-ASTM-653A
W=6" or 12"

Secure to tray with supplied
(4), 9STK774 stainless steel
self drilling/tapping screws



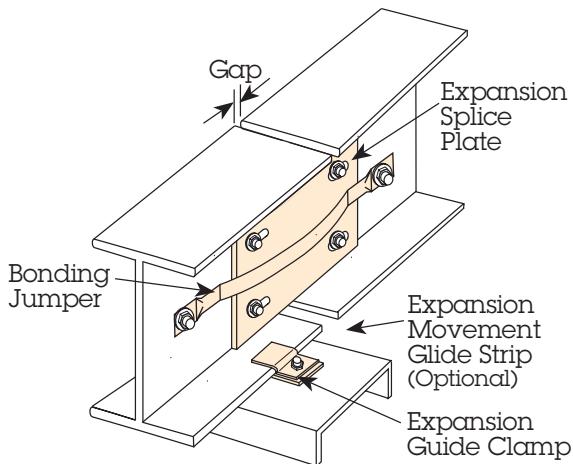
† Tray System

* Type of Material—

See Page 1-18 for Selection.

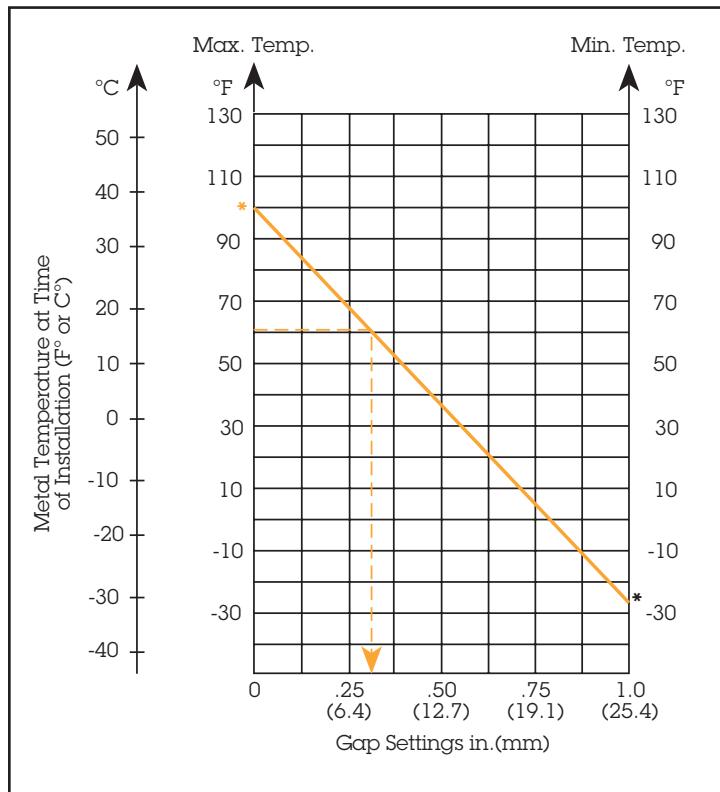
Expansion Joint Components/Gap Setting

Tray Expansion Gap Setting



Maximum Spacing Between Expansion Joints that Provide for One Inch (25.4) Movement

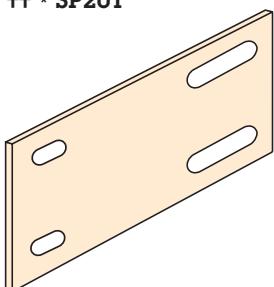
Temperature Differential	Steel		Aluminum			
	F°	C°	Ft.	m	Ft.	m
25	(-4)	512	(156)	260	(79.2)	
50	(10)	256	(78)	130	(39.6)	
75	(24)	171	(52.1)	87	(26.5)	
100	(38)	128	(39.0)	65	(19.8)	
125	(51)	102	(31.1)	52	(15.8)	
150	(65)	85	(25.9)	43	(13.1)	
175	(79)	73	(22.2)	37	(11.3)	



* Input temperature Max/Min for your location.

Expansion Splice Plate

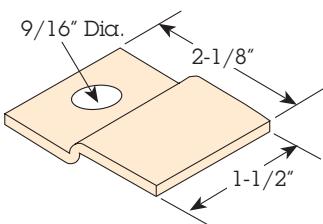
#* SP201



Furnished in pairs (2) with (4) 9TBN302 nut & bolt assemblies and (4) 9SEB519 shoulder bolts, washers and nyloc hex nuts.

Expansion Guide Clamp

9 * EX253

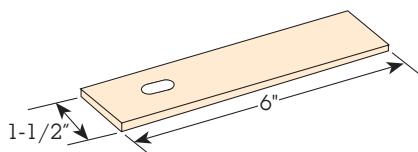


Tray System

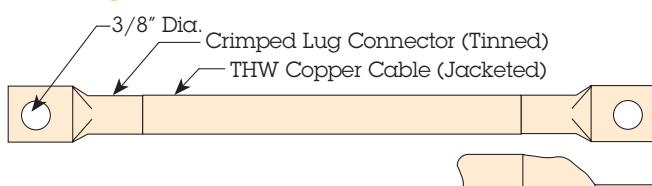
* Type of Material— See Page 1-18 for Selection.

Expansion Movement Glide Strip--Isolation Pad

9NPG259



Bonding Jumper

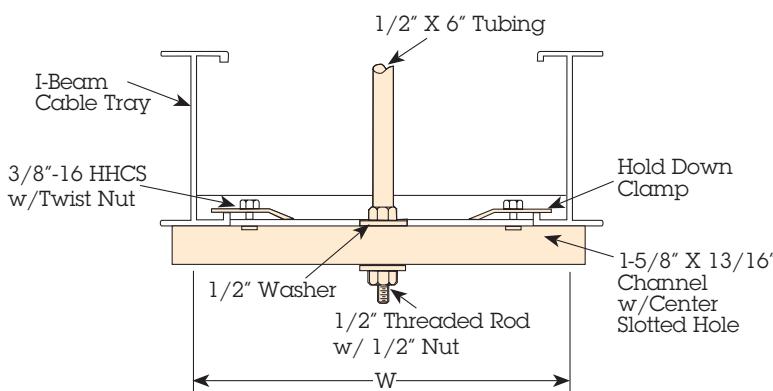


Cable Size	Rated Amps	Part Number
#6	200	9CBJ200
#1	600	9CBJ600
2/0	1000	9CBJ1000
4/0	1600	9CBJ1600

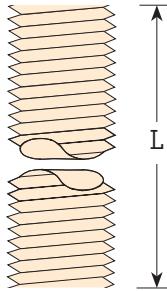
Furnished with (2) 3/8" fasteners. Field drill mounting holes. Allow for 1" expansion.

Support Equipment

Single Center Support for Ladder Tray 9SW263



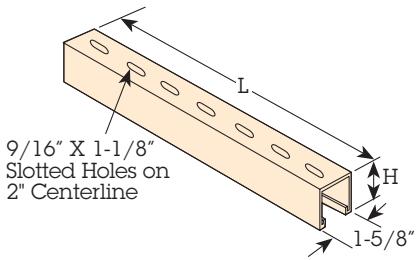
Hanger Rods



L	Part Number	
	3/8"-16	1/2"-13
12"	9S12310	9S12312
24"	9S24310	9S24312
36"	9S36310	9S36312
48"	9S48310	9S48312
72"	9S72310	9S72312
120"	9S120310	9S120312

Note: All items are supplied except for 1/2" threaded rod.

Trapeze Support Bracket

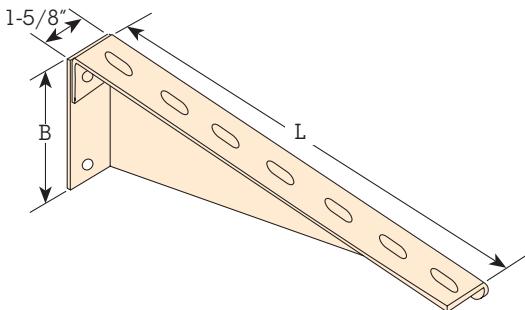


Tray Width	L	H	Usable Load (lbs.)	Part* Number
6	12"	0.8125	985	9S12323
9	15"	0.8125	830	9S15323
12	18"	0.8125	680	9S18323
18	24"	0.8125	495	9S24323
24	30"	1.625	1050	9S30323
30	36"	1.625	880	9S36323
36	42"	1.625	600	9S42323

Note: Hanger rods and hardware not included.

Standard Channel Strut		Part* Number
Length	Single Double	
10'	Single	9S10570
	Double	9S10572
20'	Single	9S20570
	Double	9S20572

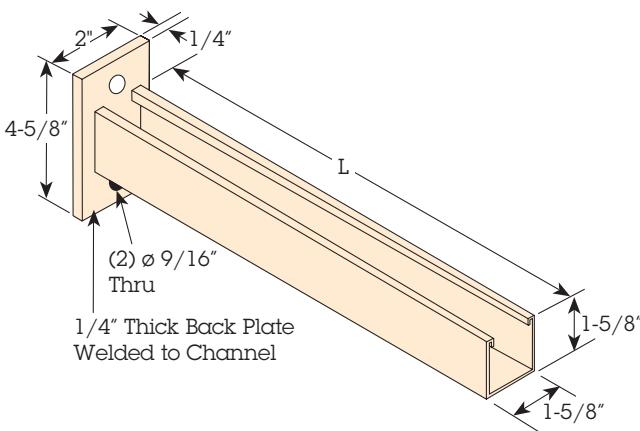
Shelf Style Wall Bracket



Tray Width	L	B	Uniform Load (lbs.)	Part* Number
6 & 9	10"	3.00	300	9S10322
12	16"	4.50	300	9S16322
18	22"	6.00	300	9S22322
24	28"	7.50	300	9S28322

Important: Allowance must be made for expansion if temperature extremes exist.

Medium Duty Strut Channel Bracket



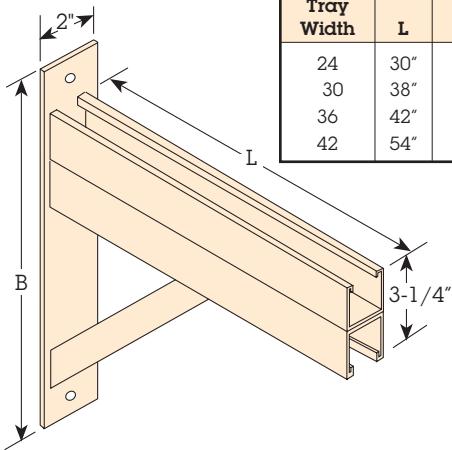
Tray Width	L	Uniform Load (lbs.)	Ga	Part* Number
6 & 9	12"	1500	12	9S12580
12	18"	750	12	9S18580
18	24"	500	12	9S24580
24	30"	250	12	9S30580

F.O.S. = 2.5

Securely mounted to wall with proper hardware.

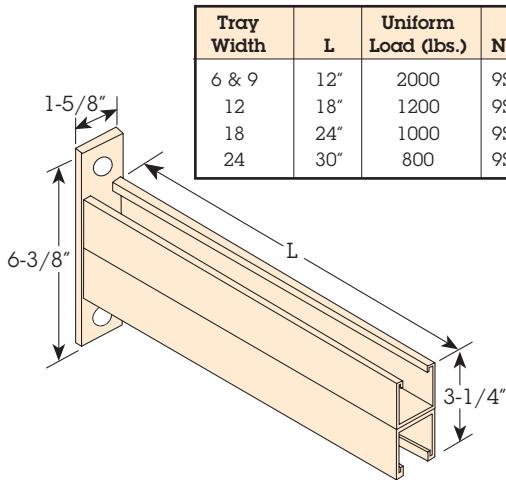
* For hot dipped ASTM 123 galvanized steel after fabrication: specify "G" for material designation.

Heavy Duty Wall Bracket



Tray Width	L	B	Uniform Load (lbs.)	Part Number
24	30"	27.25	3000	9S30321
30	38"	35.25	2800	9S38321
36	42"	39.25	2500	9S42321
42	54"	49.25	2000	9S54321

Double Channel Bracket



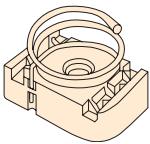
Tray Width	L	Uniform Load (lbs.)	Part Number
6 & 9	12"	2000	9S12582
12	18"	1200	9S18582
18	24"	1000	9S24582
24	30"	800	9S30582

Other Accessories

Flanged Washer/Hex Nut
9S38309 3/8" - 16
9S12309 1/2" - 13



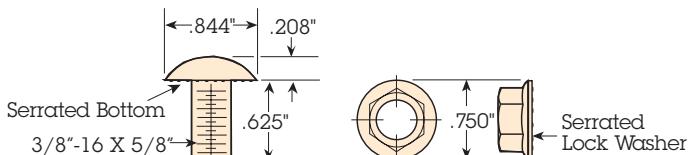
Twist Nut
9S38575 - 3/8" - 16
9S12575 - 1/2" - 13



Splice Plate Nut & Bolt Assembly

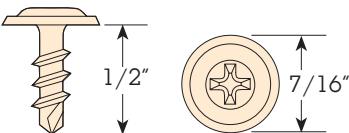
9TBN302 304SS

This is Chalfant's exclusive standard splice plate nut and bolt assembly. Made from 304SS, it has a round truss head— serrated and integral flanged serrated lock washer hex nut. Bolt is torqued properly at 20 ft. lbs.



Self-Drilling/Tapping Screw

9STK774 Special Dorri Tech™ Coating, Steel (Magnetic)



For Covers, Barriers and Solid Bottom Installations

Misc. Accessories

9S38574	3/8"	16 X 1" Hex Head Machine Bolt
9S12574	1/2"	13 X 1" Hex Head Machine Bolt
9S12576	1-5/8"	Square Washer for Strut
9S38307	3/8"	Washer
9S12307	1/2"	Washer
9S38318	3/8"	16 Beam Clamp - Malleable Iron Plated
9S12318	1/2"	13 Beam Clamp - Malleable Iron Plated
9SVB227	"L"	Vertical Tray Bracket



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