

Strut Products & Accessories

Catalog No. 794



"The Complete Line of Strut Products & Accessories"

PHD Manufacturing, Inc.



44018 Columbiana-Waterford Road
Columbiana, Ohio 44408

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Pride

Honesty

Dedication



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YOUR LOCAL PHD REPRESENTATIVE IS:

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TERMS & CONDITION OF SALE

AGREEMENTS:

All agreements are subject to availability of material, strikes, accidents, or other causes beyond our control.

WARRANTY:

We warrant for one year from date of shipment our manufactured products to the extent that we will replace those having manufacturing defects when used for the purpose which we recommended. If goods are defective, the amount of damage is the price of the defective goods only and no allowance will be made for labor or expense of repairing defective goods or damage resulting from the same. We warrant the products we sell of other manufacturers to the extent of the warranties of their respective maker. This is the seller's sole warranty. Seller makes no other warranty of any kind, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose which exceed seller's afore stated obligation are hereby disclaimed by seller and excluded from this warranty.

For special order products made to the customer's specification, warranty is not valid and we are not responsible for load requirements or liable for damages incurred from product failure.

CLAIMS:

No claims for shortages allowed unless made in writing within ten days of receipt of goods. All goods sent out will be carefully examined, counted and packed. Claims for goods damaged or lost in transit should be made on the carrier, as our responsibility ceases on delivery to the carrier.

SPECIAL ORDERS:

Orders covering special or nonstandard goods are not subject to cancellation except on such terms as may be agreed upon.

TERMS AND DESIGN:

Subject to change without notice. Refer to current price list for terms of sale. PHD Manufacturing, Inc. reserves the right to revise product design without notification.

RETURNS:

We cannot accept return of any goods unless PHD Manufacturing, Inc.'s written permission has been first obtained, in which case same will be credited as follows:

- 1) All goods must be received in our plant in first class condition, if not, the cost of putting in salable condition will be deducted from credit.
- 2) Twenty-five percent (25%) will be deducted from credit memoranda issued for handling and restocking, less any charges allowed or paid by PHD Manufacturing, Inc.
- 3) Goods must be returned prepaid.
- 4) P.O.A. items cannot be returned.
- 5) There will be no returns of goods after one year from purchase date. Customer must provide invoice number.
- 6) There will be no return of goods under \$50.00, unless it is the result of PHD Manufacturing, Inc.'s error.

TAXES:

To the price and terms quoted, there will be added any manufacturer's or sales taxes payable on the transaction under any effective statute.

MINIMUM INVOICE:

\$50.00 plus transportation.

FREIGHT ALLOWANCE:

All prices are F.O.B. point of shipment. On shipments of 2500 lbs. or more, rail freight or motor freight at the lowest published price is allowed to all U.S. highway points listed in published tariffs (Hawaii and Alaska excluded).

TERMS:

Net 30 days. Monthly settlements on all accounts. One and-a-half percent (1½%) per month or eighteen percent (18%) per annum will be charged on all past due accounts, starting on the 31st day after the date of invoice.

DIMENSIONS & WEIGHTS:

Although PHD Manufacturing, Inc. tries to be as accurate as possible, all listed dimensions and weights are an approximation and are not guaranteed.

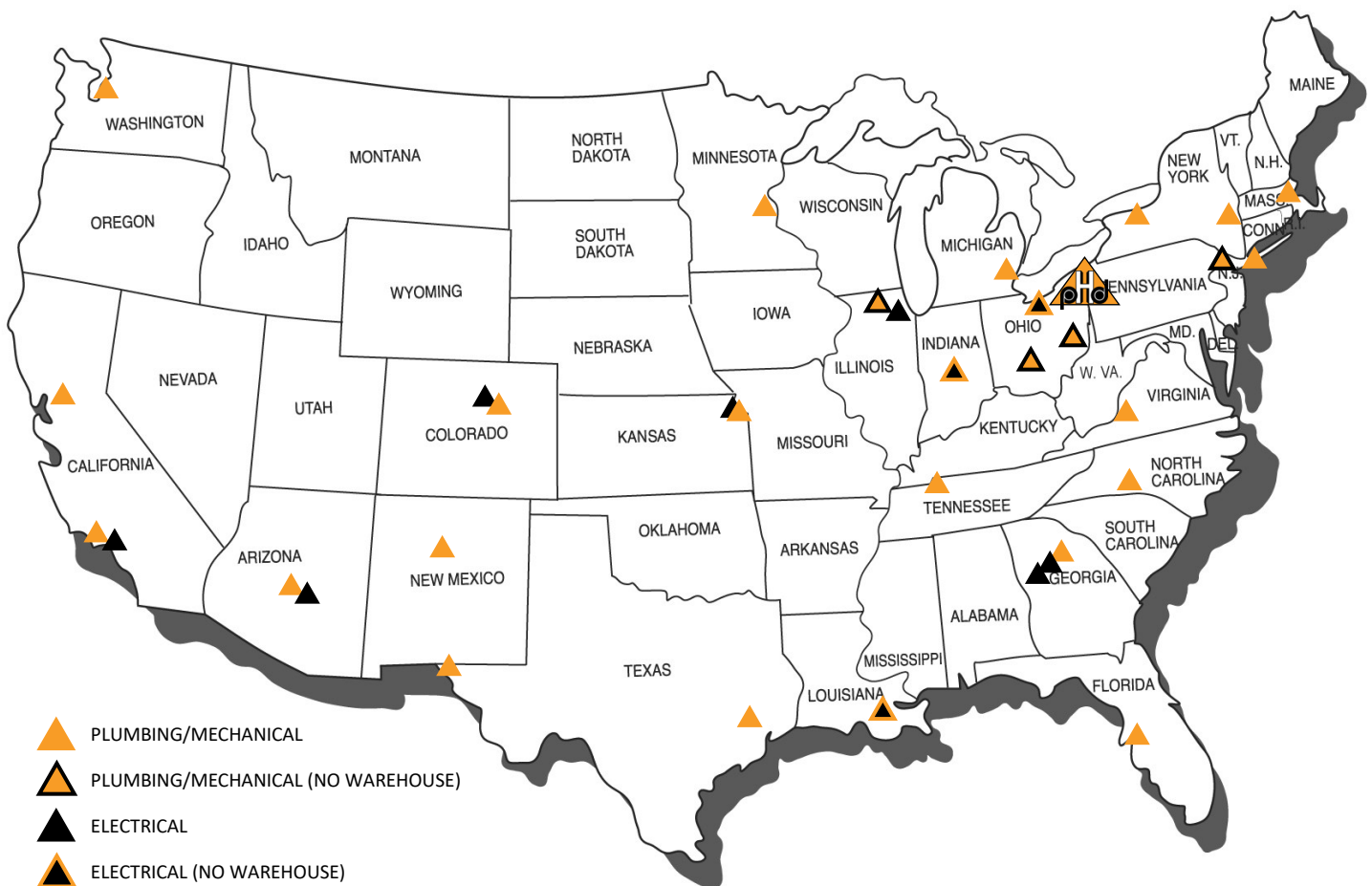
INTRODUCTION



PHD Manufacturing, Inc. was founded in 1972 by a group of industry veterans with strong management, financial, sales and manufacturing backgrounds. The entrepreneurial vision of this close group used the talents they acquired over the years to forge something special in a business that needed a different purpose. This core group continues to manage PHD Manufacturing, Inc. today, ensuring the original commitment to quality and excellence.

Our 30 professional sales representatives supporting the plumbing, mechanical and electrical industries are ready to serve your needs. Our manufacturing plant in Columbiana, Ohio, together with our 24 stocking warehouses throughout the United States, gives us one of the largest inventories in the industry.

Many of our products are Underwriter's Laboratories listed and Factory Mutual Approved. All PHD Manufacturing, Inc. products are manufactured to meet or exceed industry standards set for their design and manufacture. If you need a product not listed in this catalog, please call the factory or your local PHD Manufacturing, Inc. representative to check availability and pricing.



GENERAL SPECIFICATIONS

References:

- a. Federal, State, and Local codes.
- b. ANSI/MSS SP-58 - Manufacturers Standardization Society: Pipe Hangers and Supports - Materials, Design, and Manufacture.
- c. ANSI/MSS SP-69 - Manufacturers Standardization Society: Pipe Hangers and Supports – Selection and Application. ANSI/MSS SP-69 has been superseded by ANSI/MSS SP-58.
- d. NFPA 13 - Installation of Sprinkler Systems.
- e. ASTM - American Society for Testing and Materials.
- f. MFMA - Metal Framing Manufacturers Association.
- g. RWMA - Resistance Welding Manufacturing Alliance

Product Delivery, Handling, and Storage:

- a. All material is to be delivered in original factory packaging to avoid any damage to the product. (i.e. denting, scratching, bending)
- b. All PHD Manufacturing, Inc. products are to be stored in a sheltered area where they will be protected from the elements and construction equipment.
- c. Installation of damaged product is not recommended.

Acceptable Manufacturers:

- a. All hangers and supports to be installed shall be as manufactured by PHD Manufacturing, Inc. or engineer approved equal.

Quality Assurance:

- a. Many of our products are Underwriters Laboratories Listed, Factory Mutual Approved, comply with Federal Specification A-A-1192A and Manufacturer's Standardization Society ANSI/MSS SP-58 which supersedes ANSI/MSS SP-69.
- b. All PHD Manufacturing, Inc. products are produced to meet or exceed industry standards set for their design and manufacture.

Execution:

- Examination
 - a. The installer shall inspect the work area prior to installation. If work area conditions are unsatisfactory, installation shall not proceed until satisfactory corrections are completed.
- Installation
 - a. Installation shall be completed by a fully trained installer.
 - b. Set hangers and supports into final position in accordance with job specifications and shop drawings.
 - c. Anchor material firmly in place ensuring all connections are tightened appropriately.
- Protection
 - a. During installation, it is the installer's responsibility to protect this work from damage.
 - b. It shall become the responsibility of the end user to protect this work from damage during the remainder of construction on the project upon completion of work.
- Cleanup
 - a. Remove all protective wraps and debris upon completion of this section of work.
 - b. Repair any cosmetic damage due to installation.

Disclaimer:

- a. PHD Manufacturing, Inc. has little or no control over such factors as environmental conditions, total system design, product selection, and maintenance.
- b. The installer is responsible for the application to conform to all applicable codes, the integrity of attaching structure, and the use of proper fasteners.
- c. All load ratings are for static conditions and neglect dynamic loading of any kind.

PICTORIAL INDEX

CHANNEL STRUT



Fig. 1001 - 1042
1⁵/₈" x 1⁵/₈"
12 Ga. Channel
Page 30 - 31

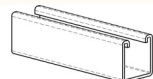


Fig. 1101 - 1142
1⁵/₈" x 1⁵/₈"
14 Ga. Channel
Page 32 - 33

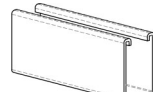


Fig. 1601 - 1642
1⁵/₈" x 2⁷/₁₆"
12 Ga. Channel
Page 42 - 43

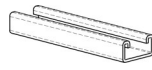


Fig. 1201 - 1242
1⁵/₈" x 1³/₁₆"
12 Ga. Channel
Page 34 - 35



Fig. 1701 - 1742
1⁵/₈" x 1³/₁₆"
12 Ga. Channel
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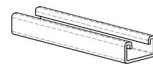


Fig. 1301 - 1342
1⁵/₈" x 1³/₁₆"
14 Ga. Channel
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Fig. 1801 - 1842
1⁵/₈" x 1³/₁₆"
16 Ga. Channel
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Fig. 1401 - 1442
1⁵/₈" x 1"
12 Ga. Channel
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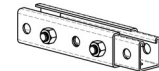


Fig. 1950 - 1960
Telescoping
12 Ga. Channel
Page 48 - 49

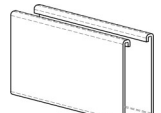


Fig. 1501 - 1542
1⁵/₈" x 3¹/₄"
12 Ga. Channel
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PIPE & CONDUIT SUPPORTS



Fig. 2001 - 2016
I.P. Pipe Clamp
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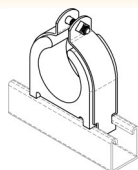


Fig. 2501 - 2588
Clamp With
Cushion
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Fig. 2600
Cushion Material
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Fig. 2701 - 2712
1-Piece
EMT/GRC Strap
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Fig. 2801 - 2811
Conduit Hanger
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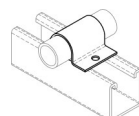


Fig. 7231 - 7238
1-Hole O.D.
Tube Clamp
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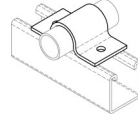


Fig. 7251 - 7265
Standard Pipe
Straps
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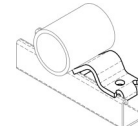


Fig. 7370
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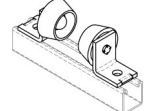


Fig. 7400
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Rollers
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Universal Pipe
Clamp For
EMT, IMC, & GRC
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Fig. 2201 - 2207
EMT Conduit Clamps
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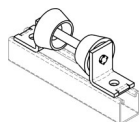


Fig. 7501 - 7506
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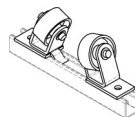


Fig. 7530
60° Separate
Rollers
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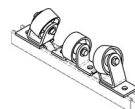


Fig. 7560
60° Separate
Rollers With
Center Roller
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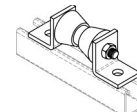


Fig. 7581 - 7585
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STRUT NUTS & HARDWARE

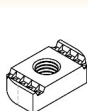


Fig. 3001 - 3011
Strut Nut Without
Spring
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Fig. 3101 - 3111
Strut Nut With
Spring
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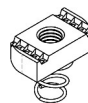


Fig. 3201 - 3210
Strut Nut With
Short Spring
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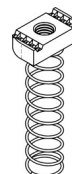


Fig. 3301 - 3311
Strut Nut With
Long Spring
Page 57



Fig. 3351 - 3353
Shallow Strut Nut
Without Spring
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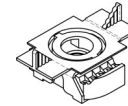


Fig. 3404 - 3408
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Fig. 3504 - 3508
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Fig. 7600
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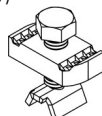


Fig. 7605
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Fig. 7610 & 7611
Female Swivel
Page 59



Fig. 7615 & 7616
Male Swivel
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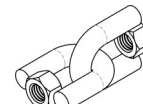


Fig. 7620 & 7621
Female/Female
Swivel
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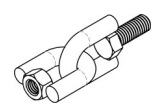


Fig. 7625 & 7626
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PICTORIAL INDEX

CONCRETE INSERT

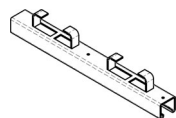


Fig. 4001 - 4002
1 5/8" x 1 3/8"
12 Ga.
Continuous
Concrete Insert
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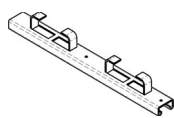


Fig. 4101 - 4102
1 5/8" x 1 3/16"
12 Ga.
Continuous
Concrete Insert
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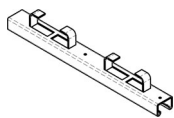


Fig. 4201 - 4202
1 5/8" x 1"
12 Ga.
Continuous
Concrete Insert
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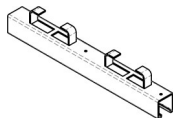


Fig. 4301 - 4302
1 5/8" x 1 5/8"
12 Ga.
Continuous
Concrete Insert
Page 63

END CAPS & CLOSURES

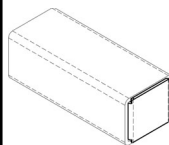


Fig. 4405 - 4420
Type A End Cap
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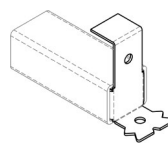


Fig. 4440 - 4470
Type B End Cap
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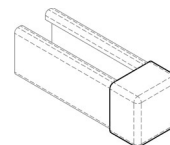


Fig. 4475 - 4489
Safety End Cap
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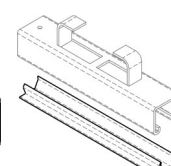


Fig. 4500 - 4506
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FLAT PLATE FITTINGS

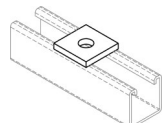


Fig. 5000 - 5004
Square Washer
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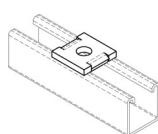


Fig. 5005 - 5009
No Turn Square
Washer
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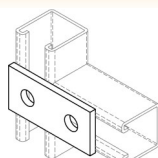


Fig. 5010
2-Hole Splice
Plate
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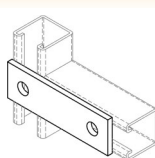


Fig. 5011
2-Hole Splice
Plate
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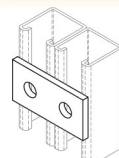


Fig. 5012
2-Hole Splice
Plate
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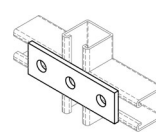


Fig. 5013
3-Hole Splice
Plate
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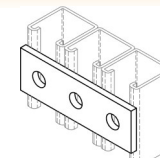


Fig. 5014
3-Hole Splice
Plate
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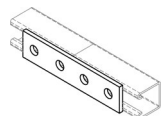


Fig. 5015
4-Hole Splice
Plate
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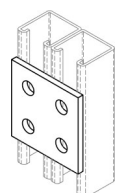


Fig. 5017
4-Hole Splice
Plate
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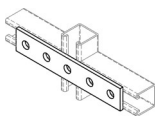


Fig. 5019
5-Hole Splice
Plate
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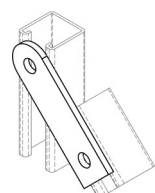


Fig. 5020
2-Hole Swivel
Plate
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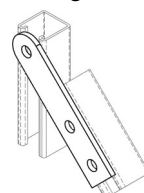


Fig. 5023
3-Hole Swivel
Plate
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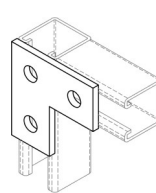


Fig. 5025
3-Hole Corner
Plate
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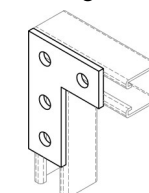


Fig. 5030
4-Hole Corner
Plate
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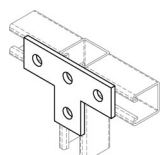


Fig. 5035
4-Hole Tee Plate
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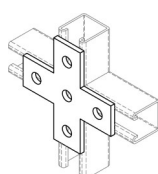


Fig. 5040
5-Hole Cross
Plate
Page 66

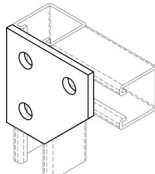


Fig. 5045
3-Hole Corner
Gusset Plate
Page 66

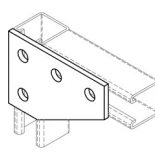


Fig. 5050
4-Hole Corner
Gusset Plate
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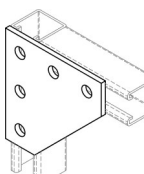


Fig. 5060
5-Hole Corner
Gusset Plate
Page 67

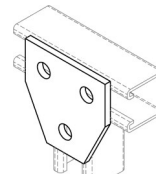


Fig. 5065
3-Hole Tee
Gusset Plate
Page 67

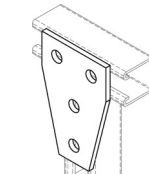


Fig. 5075
4-Hole Tee
Gusset Plate
Page 67

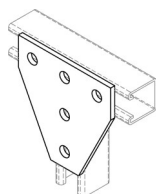


Fig. 5080
5-Hole Tee
Gusset Plate
Page 67

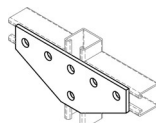


Fig. 5085
6-Hole Tee
Gusset Plate
Page 67

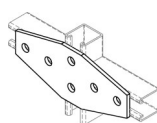


Fig. 5090
6-Hole Cross
Gusset Plate
Page 67

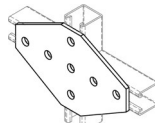


Fig. 5095
7-Hole Cross
Gusset Plate
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90° ANGLE FITTINGS

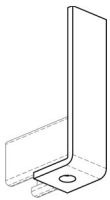


Fig. 5101 - 5107
1-Hole Angle
Page 68

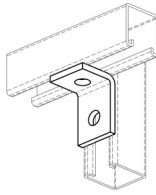


Fig. 5110
2-Hole Corner
Angle
Page 68

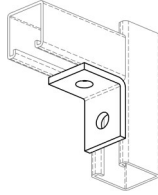


Fig. 5112
2-Hole Corner
Angle
Page 68

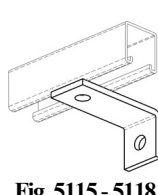


Fig. 5115 - 5118
2-Hole Corner
Angle
Page 68

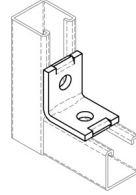


Fig. 5119
No Turn 2-Hole
Corner Angle
Page 68

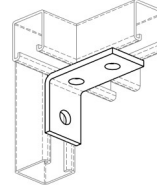


Fig. 5120
3-Hole Corner
Angle
Page 68

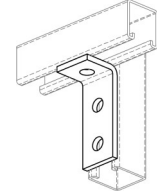


Fig. 5121
3-Hole Corner
Angle
Page 68

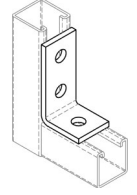


Fig. 5122
3-Hole Corner
Angle
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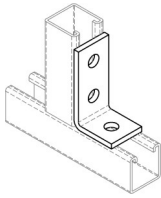


Fig. 5123
3-Hole Corner
Angle
Page 68

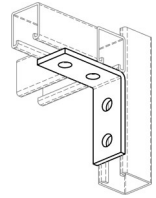


Fig. 5130
4-Hole Corner
Angle
Page 69

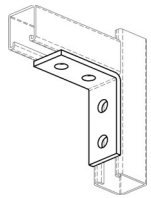


Fig. 5131
4-Hole Corner
Angle
Page 69

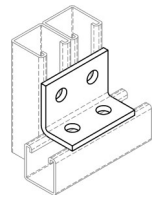


Fig. 5135
4-Hole Corner
Angle
Page 69

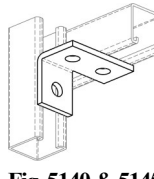


Fig. 5140 & 5145
3-Hole Offset
Bent Angle
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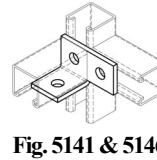


Fig. 5141 & 5146
3-Hole Offset
Bent Angle
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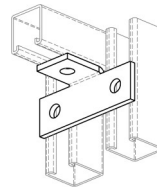


Fig. 5148
3-Hole Offset
Bent Tee
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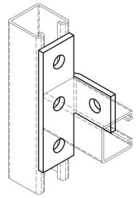


Fig. 5150
4-Hole Offset
Bent Tee
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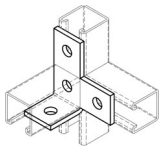


Fig. 5155 & 5156
4-Hole Offset
Bent Tee
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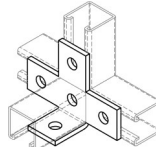


Fig. 5160
5-Hole Offset
Bent Tee
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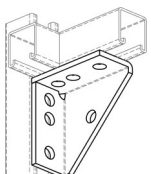


Fig. 5165
Universal Shelf
Bracket
Page 70

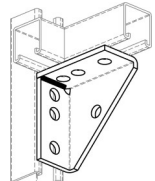


Fig. 5166
Universal Welded Shelf
Bracket
Page 70

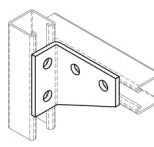


Fig. 5170 & 5175
4-Hole Corner
Gusset
Page 70

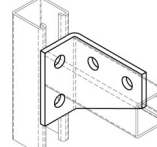


Fig. 5171 & 5176
4-Hole Corner
Gusset
Page 70

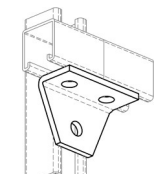


Fig. 5180
3-Hole Gussetted
Shelf Angle
Page 70

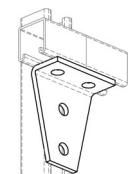


Fig. 5185
4-Hole Gussetted
Shelf Angle
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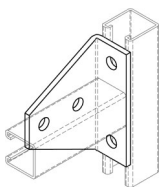


Fig. 5186
4-Hole Gussetted
Shelf Angle
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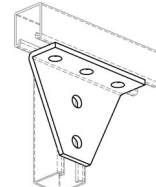


Fig. 5190
5-Hole Gussetted
Shelf Angle
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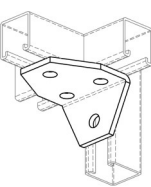


Fig. 5200
4-Hole Joint
Angle Connector
Page 70

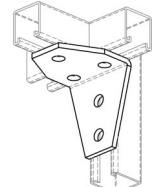


Fig. 5205
5-Hole Joint
Angle Connector
Page 70

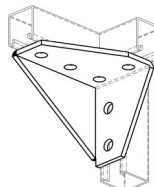


Fig. 5210 & 5211
6-Hole Gussetted
Corner Connector
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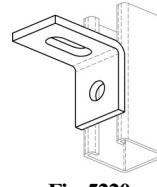


Fig. 5220
2-Hole
Adjustable
Corner Angle
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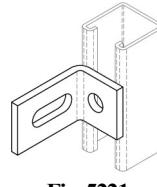


Fig. 5221
2-Hole
Adjustable
Corner Angle
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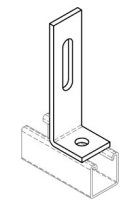


Fig. 5225 & 5226
2-Hole
Adjustable
Corner Angle
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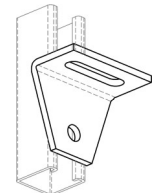


Fig. 5228
2-Hole
Adjustable
Corner Angle
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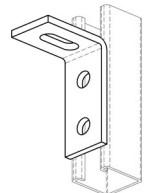


Fig. 5230
3-Hole
Adjustable
Corner Angle
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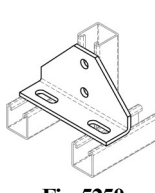


Fig. 5250
4-Hole
Adjustable
Corner Angle
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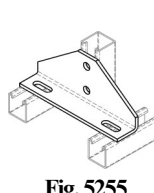


Fig. 5255
4-Hole
Adjustable
Corner Angle
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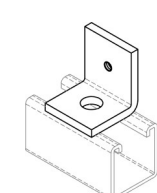


Fig. 5260
2-Hole Tapped
Corner Angle
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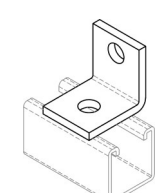


Fig. 5270
2-Hole Bus Duct
Angle
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ANGLE FITTINGS

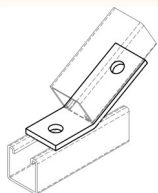


Fig. 5301 - 5315
2-Hole Open
Angle
Connectors
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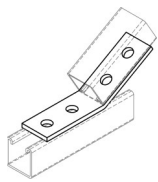


Fig. 5340 - 5350
4-Hole Open
Angle
Connectors
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Fig. 5360 - 5366
2-Hole Closed
Angle
Connectors
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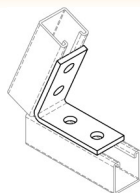


Fig. 5370 - 5376
4-Hole Closed
Angle
Connectors
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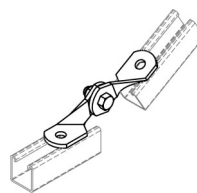


Fig. 5380
2-Hole
Adjustable Hinge
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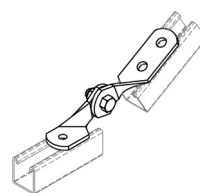


Fig. 5381 & 5382
3-Hole
Adjustable Hinge
Page 72

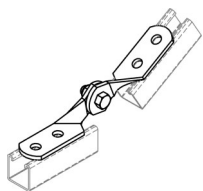


Fig. 5383
4-Hole
Adjustable Hinge
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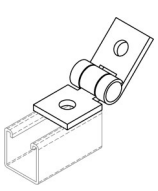


Fig. 5384
2-Hole
Adjustable Hinge
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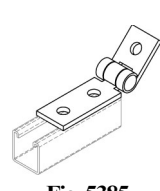


Fig. 5385
3-Hole
Adjustable Hinge
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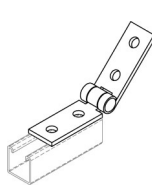


Fig. 5386
4-Hole
Adjustable Hinge
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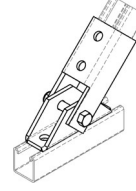


Fig. 5390
Single Adjustable
Brace For use
with 1⁵/₈" Strut
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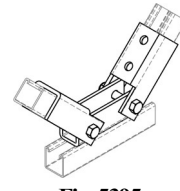


Fig. 5395
Double Adjustable
Brace For use with
1⁵/₈" Strut
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"U" SHAPE FITTINGS

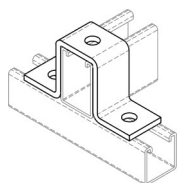


Fig. 5501 - 5511
3-Hole "U"
Support
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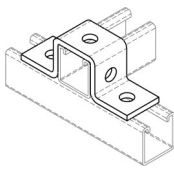


Fig. 5503
5-Hole "U"
Support
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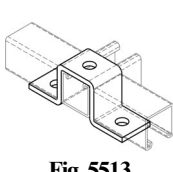


Fig. 5513
3-Hole "U"
Support
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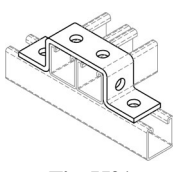


Fig. 5521
6-Hole "U"
Support
Page 74

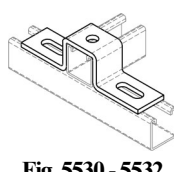


Fig. 5530 - 5532
Slotted 3-Hole
"U" Support
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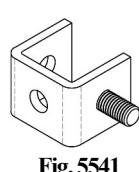


Fig. 5541
1 Stud Ring
Connector
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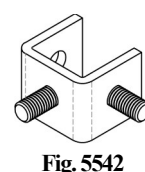


Fig. 5542
2 Stud Ring
Connector
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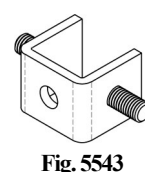


Fig. 5543
2 Stud Ring
Connector
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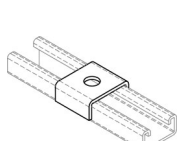


Fig. 5700 - 5704
1-Hole U Washer
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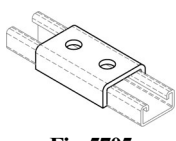


Fig. 5705
2-Hole Splice
Clevis For #1200
& #1300 Strut
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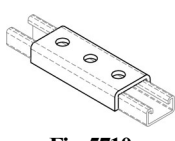


Fig. 5710
3-Hole Splice
Clevis For #1200
& #1300 Strut
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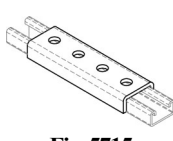


Fig. 5715
4-Hole Splice
Clevis For #1200
& #1300 Strut
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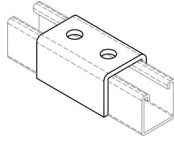


Fig. 5720
2-Hole Splice
Clevis For #1000
& #1100 Strut
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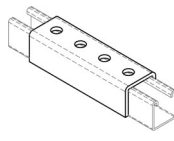


Fig. 5730 - 5732
4-Hole Splice
Clevis For Strut
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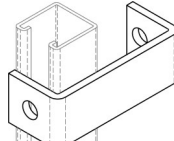


Fig. 5750 - 5764
2-Hole Clevis
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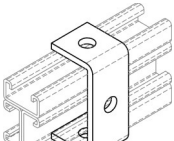


Fig. 5770
3-Hole Clevis
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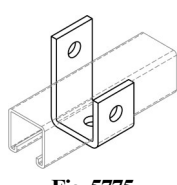


Fig. 5775
3-Hole
Suspension
Clevis
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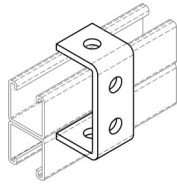


Fig. 5780
4-Hole
Suspension
Clevis
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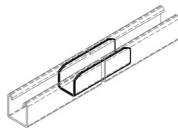


Fig. 8000 - 8001
Inside Strut Joiner
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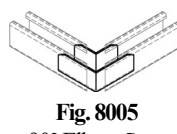


Fig. 8005
90° Elbow Strut
Joiner
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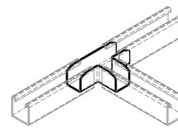


Fig. 8010
Tee Strut Joiner
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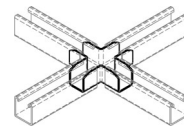
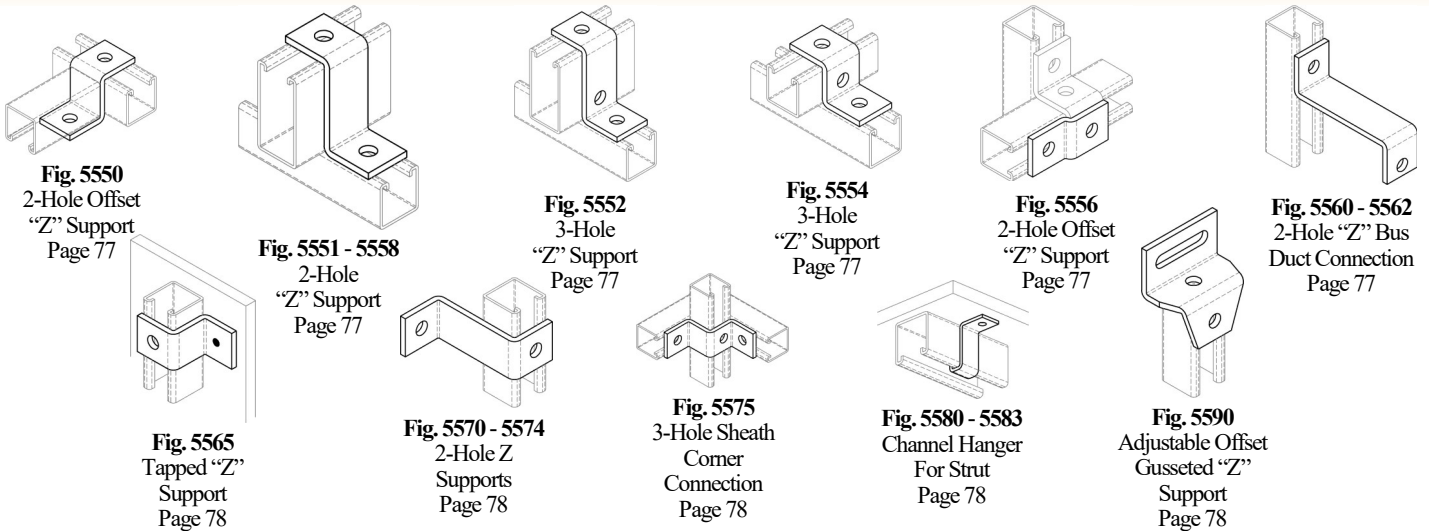


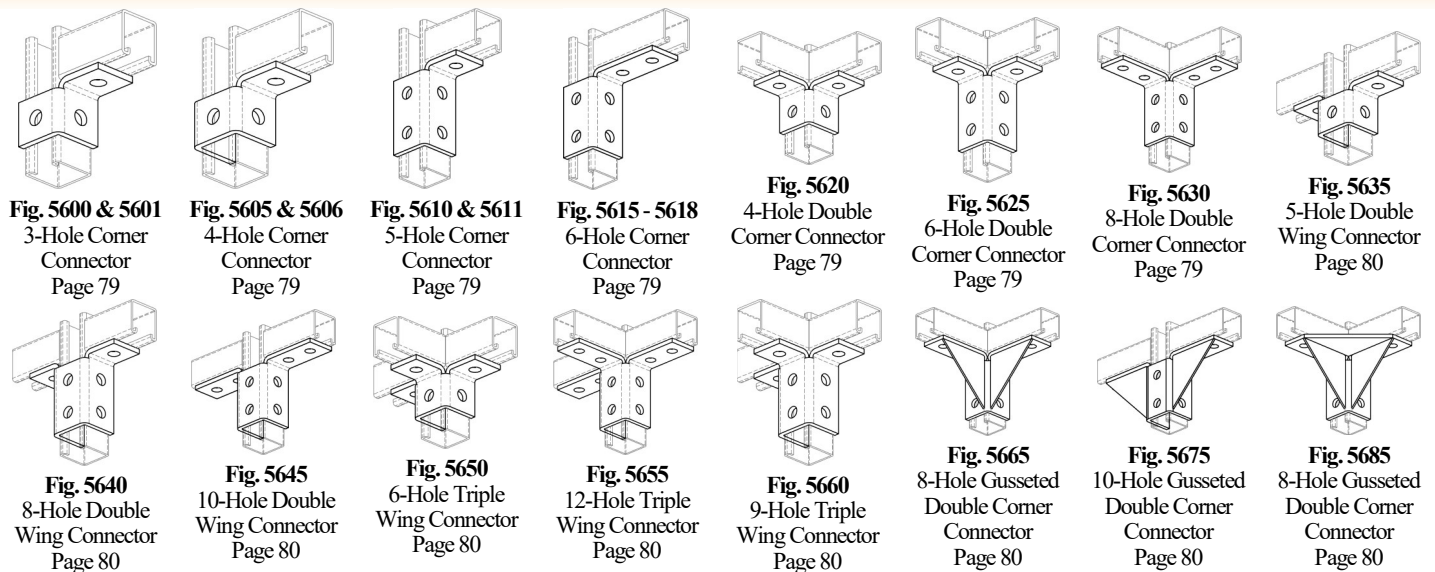
Fig. 8015
Cross Strut Joiner
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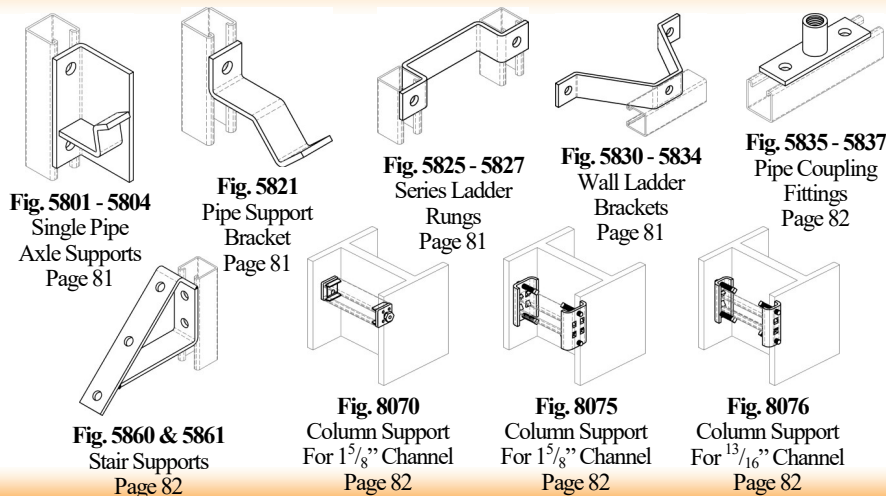
"Z" SHAPE FITTINGS



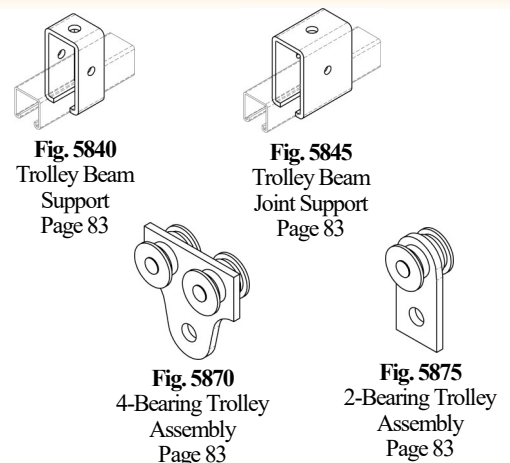
WING SHAPE FITTINGS



SPECIALTY FITTINGS



TROLLEY ASSEMBLIES



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POST BASES

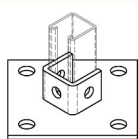


Fig. 6005
Post Base For
1 5/8" Strut
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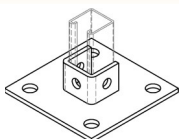


Fig. 6010
Post Base For
1 5/8" Strut
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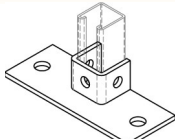


Fig. 6015
Post Base For
1 5/8" Strut
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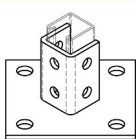


Fig. 6020
Post Base For
1 5/8" Strut
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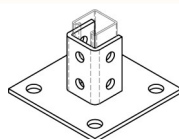


Fig. 6025
Post Base For
1 5/8" Strut
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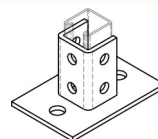


Fig. 6029
Post Base For
1 5/8" Strut
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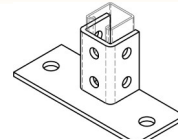


Fig. 6030
Post Base For
1 5/8" Strut
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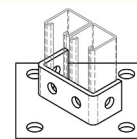


Fig. 6035
Post Base For
Double 1 5/8" Strut
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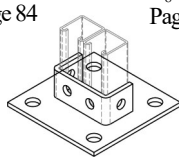


Fig. 6040
Post Base For
Double 1 5/8" Strut
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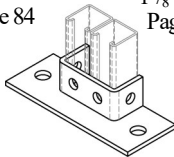


Fig. 6045
Post Base For
Double 1 5/8" Strut
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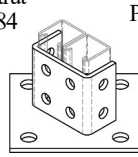


Fig. 6050
Post Base For
Double 1 5/8" Strut
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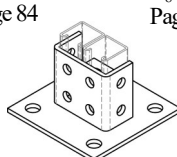


Fig. 6060
Post Base For
Double 1 5/8" Strut
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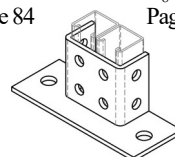


Fig. 6065
Post Base For
Double 1 5/8" Strut
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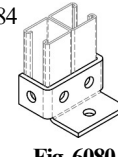


Fig. 6080
Post Base For
1 5/8" Back To
Back Strut
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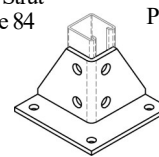


Fig. 6095
Post Base For
1 5/8" Strut
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BRACKETS AND BRACE FITTINGS

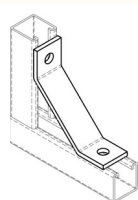


Fig. 5410 - 5412
2-Hole 45 deg.
Knee Braces
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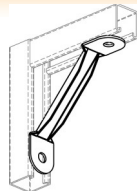


Fig. 5420 - 5427
2-Hole 45 deg.
Tubing Knee
Braces
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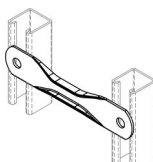


Fig. 5430 - 5440
2-Hole Straight
Tubing Braces
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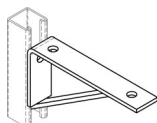


Fig. 6101 - 6122
Shelf Bracket
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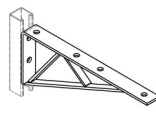


Fig. 6123 - 6125
Shelf Bracket
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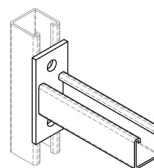


Fig. 6130 - 6135
Single Channel
Bracket
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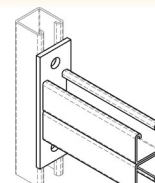


Fig. 6140 - 6144
Double Channel
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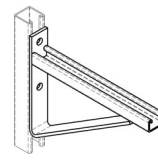


Fig. 6150 - 6152
Braced Single
Brackets
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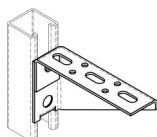


Fig. 6160 - 6172
Braced Single
Brackets
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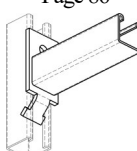


Fig. 6202 - 6208
Interlocking
Channel Brackets
(Slot Up)
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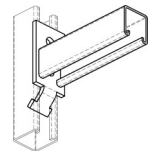


Fig. 6212 - 6218
Interlocking
Channel Brackets
(Slot Down)
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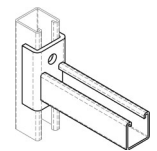


Fig. 6222 & 6224
Wrap-Around
Channel Bracket
(Slot Up)
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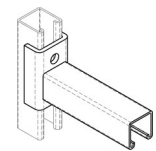


Fig. 6232 & 6234
Wrap-Around
Channel Brackets
(Slot Down)
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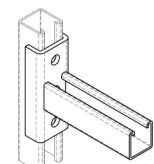


Fig. 6246 & 6248
Wrap-Around
Channel Bracket
(Slot Up)
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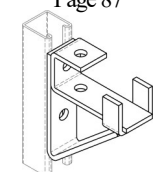


Fig. 6305
Single Channel
Bracket Support
For 1 5/8" Strut
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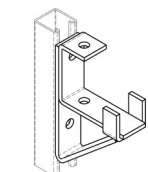


Fig. 6310
Single Channel
Bracket Support
For 3 1/4" Strut
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BEAM CLAMPS

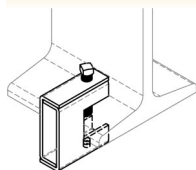


Fig. 7001 & 7002
Heavy Duty
Beam Clamps
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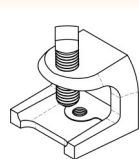


Fig. 7005 - 7007
Beam Clamps
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Fig. 7011 - 7020
I-Beam Clamp
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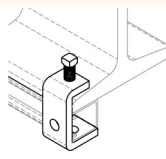


Fig. 7025
I-Beam Clamp
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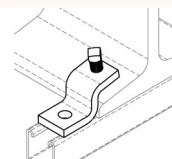


Fig. 7030
"Z" Beam Clamp
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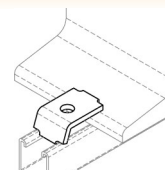


Fig. 7040
Beam Clamp
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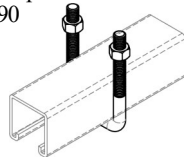


Fig. 7050 & 7051
Square U-Bolts
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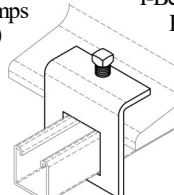


Fig. 7060
Beam Clamp For
1 5/8" Strut
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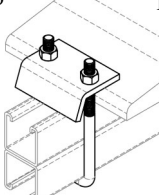


Fig. 7070 - 7076
Beam Clamp
For Strut
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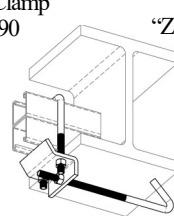


Fig. 7080 - 7089
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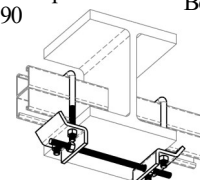


Fig. 7090 - 7099
Beam Clamp
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ROOFTOP SUPPORTS

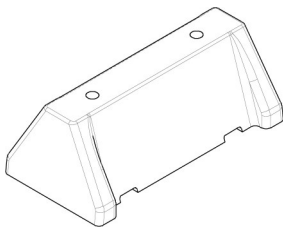


Fig. RTSB
Rooftop Support
Base
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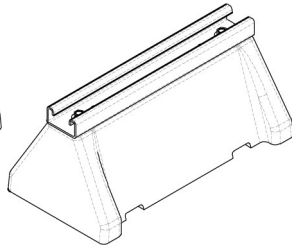


Fig. SMSB
Strut Mounted
Support Base
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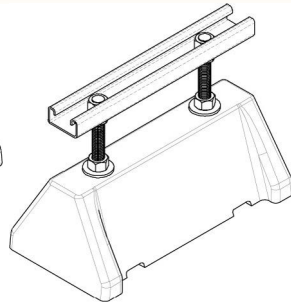


Fig. SOSB
Strut Offset
Support Base
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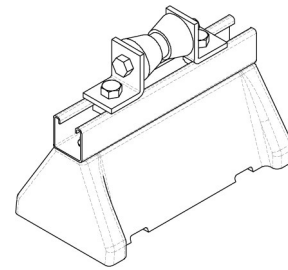


Fig. RMSB
Roller Mounted
Support Base
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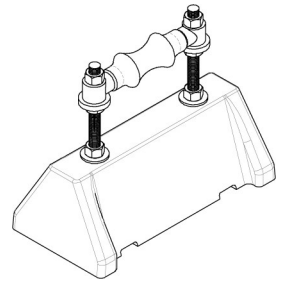


Fig. ORSB
Offset Roller
Support Base
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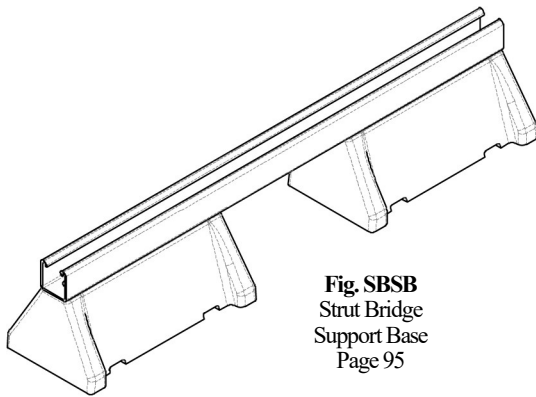


Fig. SBSB
Strut Bridge
Support Base
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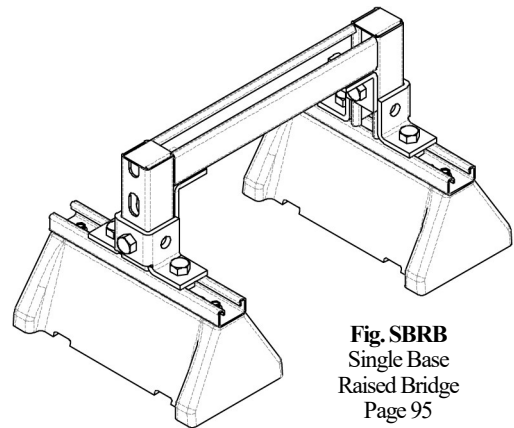


Fig. SBRB
Single Base
Raised Bridge
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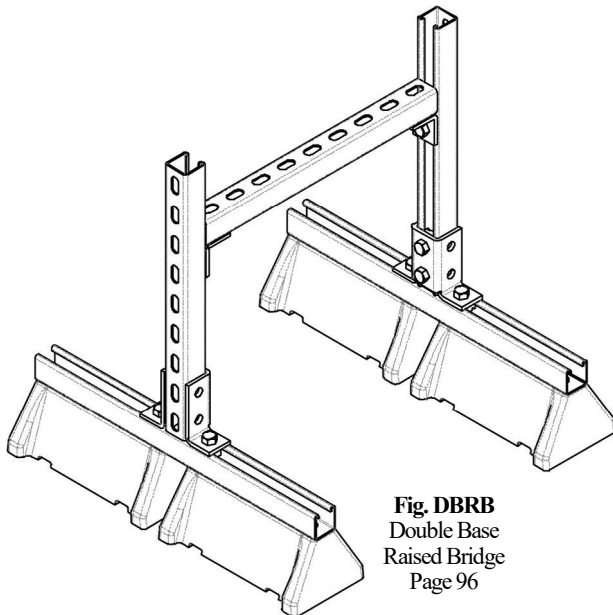


Fig. DBRB
Double Base
Raised Bridge
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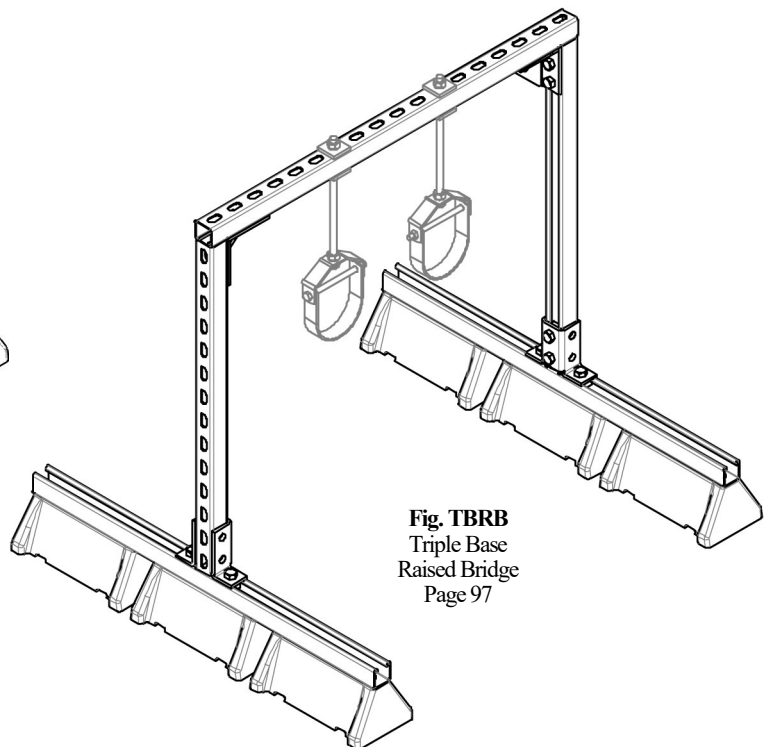


Fig. TBRB
Triple Base
Raised Bridge
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MATERIAL SPECIFICATIONS

STRUT CHANNEL & ACCESSORIES

CHANNEL

Pre-Galvanized

- ASTM A653 Grade 33 SS, Zinc Coated by Hot Dip Process

Plain, Powder Coated, or Hot Dip Galvanized

- ASTM A1011/A1011M Grade 33 SS

Stainless Steel

- ASTM A240, Type 304
- ASTM A240, Type 316

Aluminum

- Aluminum alloy 6005-T5

CHANNEL NUTS

Steel

- ASTM A576, Grade M1015, Case Hardened to RC25 min.

Stainless Steel

- ASTM A240, Type 304
- ASTM A240, Type 316
- Sintered Nuts: MIPF 35 Type 316 (Domestic only)

Aluminum

- Aluminum alloy 5052-H32

PIPE CLAMPS & ACCESSORIES

Pre-Galvanized Steel:

- ASTM A653 Grade 33 SS, Zinc Coated by Hot Dip Process

Carbon Steel: (3 Gauge Thickness and Below)

- ASTM A1011 CS Type A, B, or C

Carbon Steel: (1/4" Thickness and Above)

- ASTM A36, Structural Quality

Stainless Steel:

- ASTM A240, Type 304
- ASTM A240, Type 316

Aluminum

- Aluminum alloy 6005-T5 Structural Grade

Cast Iron:

- Grey Cast Iron, ANSI/ASTM A48, Class #20

Malleable Iron:

- ANSI/ASTM A47, Grade Number 32510

ROOFTOP SUPPORT BASE

<u>Test Name</u>	<u>Value</u>	<u>Test Method</u>
Color	<34.00	Spectrophotometer "L" Value
Durometer	87.00 A	ASTM D2240 (15 sec delay)
Specific Gravity	1.00 - 1.13	ASTM D792
Tensile Strength	1000 - 1800 psi	ASTM D638
Elongation	346%	ASTM D412
Tear	30.235 kN/m	ASTM D624

ALUMINUM

The high strength to weight ratio of PHD Manufacturing, Inc. products made of aluminum greatly reduces the overall cost of installation through ease of handling and field cutting.

Aluminum owes its excellent corrosion resistance to its ability to form an aluminum oxide film that immediately reforms when scratched or cut. In most outdoor applications, aluminum has excellent resistance to “weathering”. The resistance to chemicals, indoor or outdoor, can best be determined by tests conducted by the user with exposure to the specific conditions for which it is intended.

To determine the approximate load data for strut, multiply the load data found in this catalog by a factor of 0.38.

CARBON STEEL

PHD Manufacturing, Inc. products made from high-quality carbon steel are cold 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

Because of its corrosion resistance, stainless steel is recommended for applications where corrosion is a problem. Load data for PHD Manufacturing, Inc. products is the same as the load data in this catalog.

Stainless steel products are available in ASTM A-240, Type 304 or 316 material. Both are low-magnetic and belong to the austenitic stainless steels group, based on alloy content and crystallographic structure. Like carbon steel, stainless steel exhibits increased strength when cold worked.

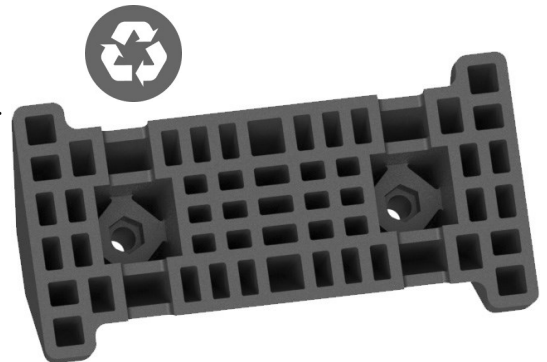
Several conditions make the use of stainless steel ideal. These include reducing long term maintenance costs, high ambient temperatures, appearance, and stable structural properties such as yield strength, and high creep strength.

Type 304 resists most organic chemicals, dyestuffs and a wide variety of inorganic chemicals at elevated or cryogenic temperatures. Type 316 contains slightly more nickel and adds molybdenum to give it better corrosion resistance in chloride and sulfuric acid environments.

SPECIAL FEATURES

PHD Manufacturing, Inc. Rooftop Support Bases are made from 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic, thus qualifying for LEED credits. This material will not deteriorate over time and dampens vibration. These bases are UV resistant and suitable for use on most types of roofing materials or other flat surfaces. Consult with the roofing manufacturer or an engineer to ensure safe loading and material compatibility. If necessary, a compatible swatch of roofing material may be placed under the base to limit movement, disperse load, and ensure compatibility. When utilized on a gravel topped roof, it is recommended that the gravel be removed from under the Rooftop Support Base.

Water channels designed into the bottom of these bases assist in water drainage and help to prevent damming. Hex recesses present under PHD Manufacturing, Inc. bases accept $\frac{1}{2}$ ” standard hex nuts or bolt heads, retaining them for ease of installation. Square pockets under these bases accept PHD Manufacturing, Inc. Fig. 5000 series square washers, which can be implemented to reduce hardware or fasteners for use with through holes. Screw fasteners can be utilized to attach pipe straps or strut directly to these bases.



FINISHES & CORROSION

PLAIN (PL)

Plain finish designation means that the product retains the oiled surface applied to the raw steel during the forming process. The fittings have the original oiled surface of the bar-stock material.

PVC COATING (PVC)

PVC coating helps reduce noise and protect the pipe or tubing from the metal surface of the hanger. Corrosion resistance protection is minimal. PVC coating is not compatible with CPVC pipe.

COPPER COLOR EPOXY FINISH (CCFEF)

Designed for use with copper tubing. This coating provides a better level of corrosion resistance than the traditional copper plated finish. It also acts as a protective barrier, avoiding contact between dissimilar metals. The copper color epoxy powder is applied by an electrostatic method, and the coated parts are baked at 180 degrees for 20 minutes.

POWDER COATING (PTD)

PHD Manufacturing, Inc. offers a polyester powder coating that utilizes powder material conforming to ASTM D3451. It is applied by means of an electrostatic spray at ambient temperature.

CHANNEL GREEN: POLYESTER

POWDER PROPERTIES

Test Method	Powder Properties	Tolerances
ASTM D3451 (18.30)	Specific Gravity	1.33 ± 0.03
ASTM D3451 (18.30)	Theoretical Coverage	144.58 ± 4.0 FT ² /Lb./Mil.
ASTM D3451 (13)	Volatile Content	Max. 2.5%
ASTM D3451 (13)	Storage Temperature Max	80°F

COATING PROPERTIES

All tests performed on substrate 0.032 CRS Pretreatment Bonderite 1000

Test Method	Coating Properties	Tolerances/Specifications
ASTM D523	Gloss 20°/60°	70-80
ASTM D2454	Over Bake Resistance Time	100%
ASTM D3363	Pencil Hardness	H - 2H
ASTM D2794 (Modified)	Direct Impact (Gardner)	80 in. Lbs.
ASTM D2794 (Modified)	Reverse Impact (Gardner)	80 in. Lbs.
ASTM D3359	Adhesion (Cross Hatch)	Pass No Adhesion Loss
ASTM D522	Flexibility (Mandrel)	1/8 Bend No Fracture
ASTM B117	Salt Spray	1000 Hrs.
ASTM D2247	Humidity	500 Hrs.

APPLICATION

Test Method	Application	Cure Schedule
Electrostatic Spray	Ambient Temperature	15' @ 375°F (190°C) Recommended Minimum Film Thickness 1.5

EPOXY E-COAT

PHD Manufacturing's epoxy E-Coat offers state of the art corrosion resistance without the use of heavy metals such as lead, chrome, and zinc. It is applied to our products by a controlled cathodic electro-deposition process. This process is accomplished by transporting the product through several cleaning, phosphatizing, rinsing, and application stages prior to being baked for 20 minutes at 375°F (190°C).

EPOXY PROPERTIES

Property	Test Method	Performance
Color	---	Various
Film Thickness	---	0.5 - 1.5 Mils
Gloss - 60 Degree	ASTM D523	65 - 85
Pencil Hardness	ASTM D3363	2H Minimum
Direct Impact	ASTM D2794	120 in-lb. Minimum
Reverse Impact	ASTM D2794	100 in-lb. Minimum
Cross-Hatch Adhesion	ASTM D3359	4B - 5B
Humidity	ASTM D1735	1000 Hours Minimum
Water Immersion	ASTM D870	250 Hours Minimum
Gravelometer	GM 9508P	6 Minimum
Throwpower	GM 9535P	12 - 15 Inches

All tests performed on Cold Rolled Steel Lab Panels, Zinc Phosphate Pretreatment, 0.6 Mil Average Film Thickness, Cure 20 Minutes @ 375°F

Property	Substrate / Pretreatment	Salt Spray* 500 hrs.	Salt Spray* 1000 hrs.	20 Cycle** Scab
Corrosion Resistance	CRS/Zinc Phos/Non-Chrome	0 in. (0 mm)	0 - 0.039 in. (0 - 1 mm)	0.039 - 0.079 in. (1 - 2 mm)

(Average Total Scribe Creep), * Salt Spray - ASTM B117

** Cycle Scab - GM9511P, Cold Rolled Steel Lab Panels

Cure 20 Minutes @ 375°F (190°C)

ZINC COATING

PHD offers 3 basic forms of zinc coating on its products:

- 1) **Electro-Galvanized** (Electro-Plated Zinc)
- 2) **Pre-Galvanized**
- 3) **Hot-Dipped Galvanized**

For best results, a zinc rich paint 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.

Note: The corrosion resistance of zinc is based on its thickness, the environment, and the coating process used. The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

Zinc offers two types of protection:

- **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment
- **Sacrificial:** The zinc coating will protect scratches, cut edges, etc... through an anodic sacrificial process.

ELECTRO-GALVANIZED “EG” (ASTM B633 SC1 & SC3)

This type of coating is recommended for use indoors in relatively dry areas. The steel is submersed in a bath of zinc salts, through the process of electrolysis, a coating of pure zinc adheres to the steel with a molecular bond. A maximum of 0.5 mils of zinc per side can be applied using this method.

SC1 (Mild) is the standard finish thickness which has a zinc coating of 0.2 mils per side. SC3 (Severe) has a zinc coating of 0.5 mils per side.

PRE-GALVANIZED “PG” (ASTM A653 COATING G90)

This type of coating is suitable for extended exposure in dry or mildly corrosive atmospheres but not generally recommended for use outdoors in industrial environments. Also known as “mill galvanized” or “hot-dipped mill galvanized” pre-galvanized zinc coatings are produced by rolling the steel coils or sheets through molten zinc, at the steel mill, the material is then cut or slit to size. Zinc near the uncoated edges or weld areas becomes a sacrificial anode which protects the bare areas.

The pre-galvanized material conforms to ASTM A653 with a G90 zinc coating. The zinc thickness per side is nominally 0.75 mils thick or 0.45 oz /sq. ft.

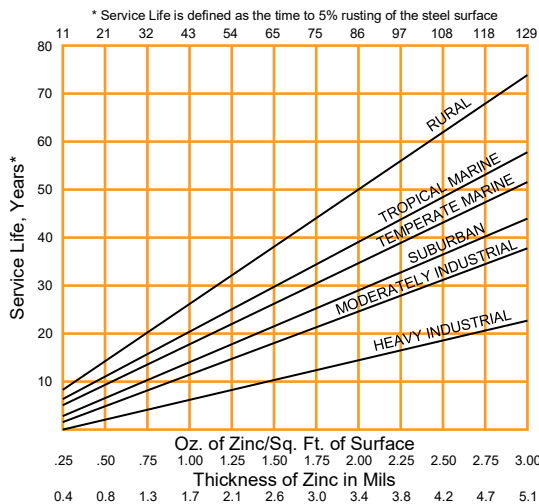
HOT-DIP GALVANIZED “HDG” (ASTM 123)

Recommended for prolonged outdoor exposure and will usually protect steel in most atmospheric environments. After fabrication the part is immersed in a bath of molten zinc. A metallurgical bond is formed resulting in a zinc coating that coats all surfaces including edges. Please note that some items cannot be hot-dipped galvanized due to design, tolerances, or threaded components. Check with the PHD factory or your local representative when questionable. Threaded components on hot dipped galvanized products will be electro-galvanized.

The hot-dip galvanized coating is typically 2.6 mils or 1.5 oz /sq. ft per side.

As shown in the graph, when the zinc coating is double, the service life is double under most conditions.

Life of Protection vs. Thickness of Zinc
And Type of Atmosphere



Comparison of Zinc Finishing	
Finish	Zinc Thickness (mils)
Hot-Dip Galvanized	2.6
Pre-Galvanized	0.75
Electro-Galvanized (SC1)	0.2
Electro-Galvanized (SC3)	0.5

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.

Galvanic Corrosion

Galvanic corrosion occurs when two or more dissimilar metals are in contact in the presence of an electrolyte (i.e. 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.

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 buildup 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

Anodic End

Magnesium
Magnesium Alloys
Zinc (Galvanized Coating)
Beryllium
Aluminum - Zinc Alloys
Aluminum - Magnesium Alloys
Aluminum
Aluminum - Magnesium Alloys
Aluminum - Magnesium - Silicon Alloys
Cadmium
Aluminum - Copper Alloys
Low Carbon Steel, Cast Iron, Wrought Iron
Austenitic Nickel Cast Iron
Type 410 Stainless Steel (active)
Type 316 Stainless Steel (active)
Type 304 Stainless Steel (active)
Naval Brass, Yellow Brass, Red Brass
Tin
Copper
Lead-Tin Solders
Admiralty Brass, Aluminum Brass
Manganese Bronze
Silicon Bronze
Tin Bronze
Type 410 Stainless Steel (passive)
Nickel - Silver
Copper Nickel Alloys
Lead
Nickel - Aluminum Bronze
Silver Solder
Nickel 200
Silver
Type 316 Stainless Steel (passive)
Type 304 Stainless Steel (passive)
Incoloy 825
Hastelloy B
Titanium
Hastelloy C
Platinum
Graphite

More Anodic

Cathodic End

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

CORROSION

The corrosion data given in this table is for general comparison only.

The presence of contaminants and the effect of temperature in chemical environments can greatly affect the corrosion of any material.

PHD Manufacturing, Inc. strongly suggests that field service tests or simulated laboratory tests using actual environmental conditions are conducted in order to determine the proper materials and finishes to be selected.

Chemical	Aluminum	Channel Green	Type 304 Stainless	Type 316 Stainless	Zinc Coated Steel
Acetic Acid 10%	R	NR	R	R	NR
Acetic Acid 2%	R	F	R	R	NR
Acetone	R	R	R	R	R
Ammonium Hydroxide-Conc.	R	R	R	R	-
Ammonium Hydroxide 10%	F	R	R	R	-
Ammonium Hydroxide 2%	R	R	R	R	-
Benzene	R	R	R	R	-
Bromine Water	NR	R	NR	NR	-
Butanol (Butyl Alcohol)	R	R	R	R	R
Carbon Disulfide	R	R	R	R	-
Carbon Tetrachloride	F	R	R	R	-
Chlorine Water	R	R	NR	F	R
Cutting Oil	-	R	-	-	-
Diethanolamine	R	R	-	-	NR
Ethanol	R	R	R	R	R
Ethyl Acetate	R	R	-	-	R
Ethylene Dichloride	F	R	-	-	R
Formaldehyde 20%	R	R	R	R	R
Gasoline	R	R	R	R	R
Glycerine	R	R	R	R	R
Household Detergent 10%	F	R	R	R	-
Hydrochloric Acid 40%	NR	NR	NR	NR	NR
Hydrochloric Acid 10%	NR	F	NR	NR	NR
Hydrochloric Acid 2%	NR	F	NR	NR	NR
Hydrogen Peroxide 30%	R	NR	R	R	-
Hydrogen Peroxide 3%	R	R	R	R	-
Hydrogen Sulfide (Gas)	R	R	F	R	-
JP-4 Jet Fuel	R	R	R	R	-
Lactic Acid 85%	F	R	NR	-	-
Latex	R	R	R	R	NR
Linseed Oil Fatty Acid	R	F	R	R	-
Methanol	R	R	R	R	R
Methyl Ethyl Ketone	R	R	-	-	R
Methyl Isobutyl Ketone	R	R	-	-	R
Mineral Spirits	R	R	-	-	-
Motor Oil - 10W	R	R	R	R	R
Naphtha, VM&P	R	R	R	R	R
Nitric Acid 2%	F	NR	R	R	-
Perchloroethylene	R	R	-	-	NR
Petroleum Ether	-	R	R	R	R
Phenol 10%	R	R	R	R	R
Phosphoric Acid 2%	F	NR	R	R	NR
Potassium Hydroxide 50%	NR	R	R	R	-
Potassium Hydroxide 10%	NR	R	R	R	-
Potassium Hydroxide 2%	NR	R	R	R	-
Sodium Chloride 25%	F	R	R	R	F
Sodium Hydroxide 50%	NR	R	R	R	NR
Sodium Hydroxide 10%	NR	R	R	R	F
Sodium Hydroxide 2%	NR	R	-	-	-
Sodium Hypochlorite-C1. 10%	F	R	-	-	-
Sodium Hypochlorite-C1. 6%	F	R	NR	R	-
Sulfuric Acid 50%	F	NR	NR	R	NR
Tall Oil Fatty Acid 50%	R	R	-	-	-
Tannic Acid 50%	F	R	R	R	-
Water-Deionized	R	R	R	R	F
Water-Sea	F	F	R	R	F
Water-Tap	R	R	F	F	R
Xyol	R	R	-	-	-

R = Recommended

F = May be used under some conditions

NR = Not Recommended

- = Information not available

DESIGN OF STRUT SYSTEMS

PHD Manufacturing, Inc. follows the guidelines of the Metal Framing Manufacturers Association (MFMA) in the manufacture and recommended use of strut systems. In all design applications using strut systems and accessories, proper engineering design practices should be applied and load limits observed. The following pages include helpful information to assist the user in the proper design of strut systems.

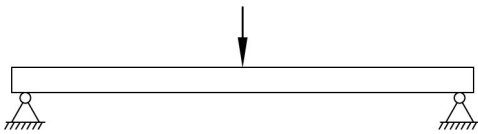
Appropriate beam and column loading information is provided with the dimensional tables accompanying each channel. In addition, the following discussion and tables are designed to assist in the proper selection and use of PHD strut products. Basic engineering information is provided to define the concepts needed to design a safe and economical strut installation.

PHD channel strut is often installed to serve either as beams or columns in structural applications. A brief discussion of these types of structural elements and their safe design follows:

BEAMS

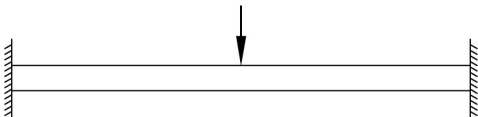
Structural members installed in a horizontal attitude and subject to vertical and/or horizontal loads are known as beams. The method by which a beam is mounted affects its load-carrying capability. Common mounting methods include:

Simple Beam –



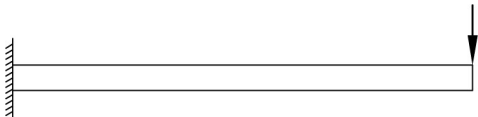
A simple beam is one that is supported at both ends without being restricted from bending or flexing. Most beams are analyzed as simply supported beams, even though they are often rigidly fixed at their supports. PHD beam load data is based upon simple beam configurations unless otherwise noted.

Fixed End Beam –



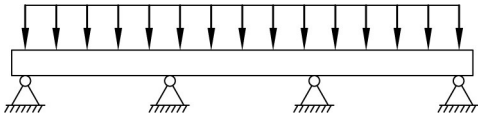
A fixed end beam is supported at both ends in such a way that motion or bending of the beam is restricted. An example of a fixed end beam is a strut welded at both ends to a very rigid structure. The result is a beam capable of carrying greater loads, but subject to large bending moments at the supports.

Cantilever Beam –



A cantilevered beam is one that is fixed at one end and completely unsupported at the other end.

Continuous Beam –



A continuous beam is supported at three or more points along its length. Continuous beams act similarly to simple beams, particularly at the end spans. However, the counter-balancing effect of adjacent spans restricts movement at the support, much like a fixed beam.

TYPES OF BEAM LOADING

Concentrated Load –

Also known as a point load, this type of load is applied at one point along the span of the beam. See Figure 1. A beam may have multiple concentrated loads along its span.

Uniform Load –

This is a load spread evenly over a length of the beam's span. See Figure 2. It may cover the entire span or only a portion.

Combined Load –

Concentrated loads and uniform loads may be carried simultaneously by a beam, arranged in any combination.

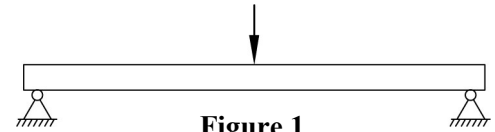


Figure 1

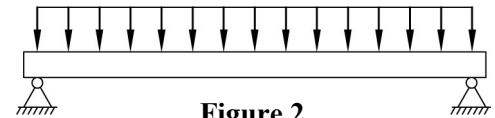


Figure 2

BEAM DEFLECTION

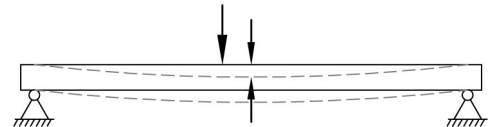
Deflection is the amount of displacement, or sag, experienced by a load-carrying beam. All loaded beams will deflect to a greater or lesser degree, depending upon:

- ♦ The size and placement of loads
- ♦ The manner of supporting the beam
- ♦ The beam material
- ♦ The stiffness of the beam

PHD provides deflection values for beams of various spans in the tables accompanying each channel shape. When determining the deflection of a strut, the rule of thumb observed by the industry is that a deflection of $\frac{1}{240}$ of the beam's span is acceptable.

The following table of beam formulas contains factors to be applied when analyzing a strut/beam in various configurations. These factors account for the difference in deflection that will be experienced by beams mounted in various configurations and subject to various types of loads.

Also included in the tables of channel information are values for the Moment of Inertia (I) and Section Modulus (S) of the channel. These values are given for both the X-X and Y-Y axis of the channel. They are measures of the stiffness of the beam's cross-sectional shape, and are used to calculate deflection. Deflection decreases as I and S increase. The Modulus of Elasticity (E), listed below I and S, is a measure of the beam material's resistance to bending. Again, as E increases, deflection decreases.



SAFETY FACTOR

The design loads given for strut beam loads are based on a simple beam condition using allowable stress of 25,000 psi. This allowable stress results in a safety factor of 1.68. This is based upon a virgin steel minimum yield strength of 33,000 psi cold worked during rolling to an average yield stress of 42,000 psi.

Aluminum typically has an elastic modulus which is $\frac{1}{3}$ 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. $\frac{1}{240}$ span deflection is typically the limit where the amount of deflection appears negligible. For example, a beam span of 240" would be allowed 1" ($\frac{240}{240}$) of deflection at the mid point. A 120" span would only be allowed $\frac{1}{2}$ " ($\frac{120}{240}$) of deflection. The maximum load for the channel must be limited in order to remain under these deflection requirements. The allowable load resulting in $\frac{1}{240}$ span deflection is posted in the beam load chart for each channel length.

TWISTING & LATERAL BRACING

For long spans and when loads are apt to cause torsion on the beam, it is a good practice to brace the beam to prevent twisting or lateral bending. PHD offers various types of braces for this purpose.

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 trays, or conduits mounted to the strut with straps and clamps prevent twisting or lateral movement.

BENDING MOMENT & STRESSES

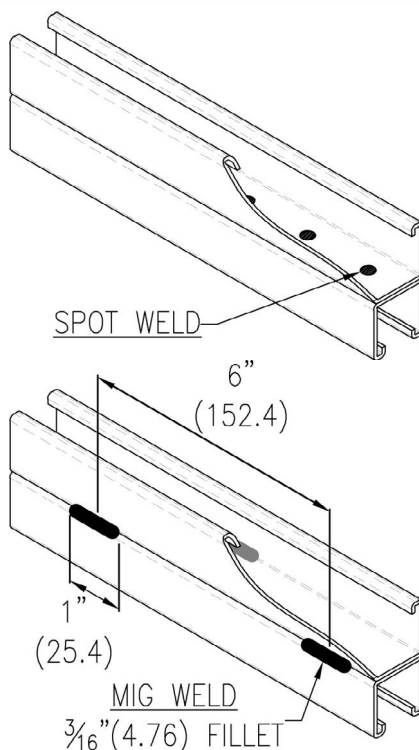
When loads are placed on a beam, the effect is to flex the beam across its unsupported span. The measure of this effect is called the bending moment. Formulas for bending moments created by various load and beam support combinations are given in the beam diagrams & common formulas section.

When the bending moment of a loaded beam is divided by the Section Modulus of the beam, the resulting value is called bending stress. It is this bending stress that is most commonly evaluated to determine whether a beam is strong enough for the loads it must support.

The maximum bending stress prescribed by structural codes is 25,000 psi (172.37 mPa), and this is the stress upon which PHD load figures are based.

Again, the method of supporting a beam affects the maximum bending moment of the beam. The following table gives modifying factors based upon types of beam supports. Users of PHD struts should take care to apply the proper load factor for the specific beam support configuration in order to determine the proper maximum load that the strut will safely support.

WELDING



Spot Welding –

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method.

Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

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.

COLUMNS

Structural members installed in a vertical attitude and subject to vertical loads are known as columns. The loads on a column have the effect of compressing the column and attempting to deflect the column laterally. As with beams, the method by which a column is mounted affects the load-carrying capability of the column. The effect of each method is quantified by the value “K”, given for each support condition shown below.

Loads on a column may be concentric (directly in line with the column’s vertical axis) or eccentric (offset horizontally from the vertical axis). PHD provides allowable column loads for concentric loading conditions. In addition, the tables accompanying the channels contain a value called the “radius of gyration”. This value can be used by a qualified structural engineer to analyze the effect of eccentric loads on strut columns.

Common mounting methods for columns include:

Fixed Top, Fixed Bottom –

Both the top and bottom of the column are rigidly mounted in such a way that rotation and displacement are prevented. The value of “K” for this configuration is .65. See Figure 1.

Pinned Top, Pinned Bottom –

Both the top and bottom of the column are mounted in such a way that rotation is permitted but displacement is prevented. The value of “K” for this configuration is 1.0. See Figure 2.

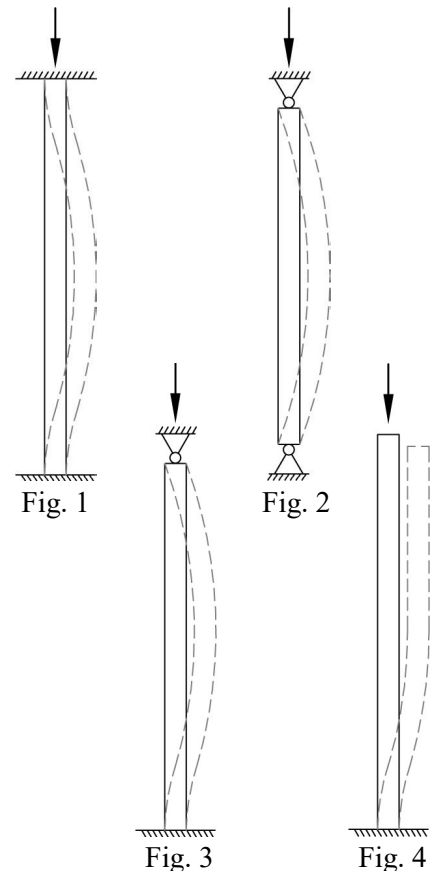
Pinned Top, Fixed Bottom –

The top of the column is pinned to allow rotation, and the bottom of the column is rigidly mounted in such a way that rotation and displacement are prevented. This is a common method. And is the “standard” for which PHD allowable column loads are listed. The value of “K” for this configuration is .80. See Figure 3.

Free Top, Fixed Bottom –

The bottom of the column is rigidly mounted. The top of the column is free to move laterally, but is restrained to prevent rotation. The value of “K” for this configuration is 1.2. See Figure 4.

As stated above, allowable column loads published in this catalog are based on the “Pinned Top, Fixed Bottom” mounting configuration, which has a “K” factor of .80. For any of the other mounting configurations, a qualified design professional can use the “K” values given to calculate the allowable column load.



BOLT TORQUE

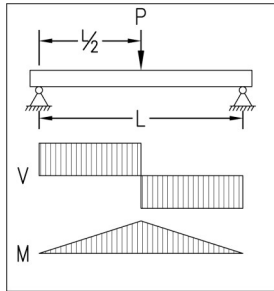
Bolt torque values are given to ensure the proper connection between PHD Metal Framing components. It is important to understand that there is a direct, but not necessarily consistent, relationship between bolt torque and tension in the bolt. Too much tension in the bolt can cause it to break or crush the component parts. Too little tension in the bolt can prevent the connection from developing its full load capacity. The torque values given have been developed over many years of experience and testing.

These are based on using a properly calibrated torque wrench with a clean dry (non-lubricated) PHD fitting, bolt and nut. A lubricated bolt or nut can cause extremely high tension in the connection and may lead to bolt failure. It must be noted that the accuracy of commercial torque wrenches varies widely and it is the responsibility of the installer to ensure that proper bolt torque has been achieved.

Recommended Bolt Torque						
Bolt Size	1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10
ft-lbs	6	11	19	50	100	125
N-m	(8)	(15)	(26)	(68)	(136)	(170)

BEAM DIAGRAMMS AND COMMON FORMULAS

Simply Supported Beams

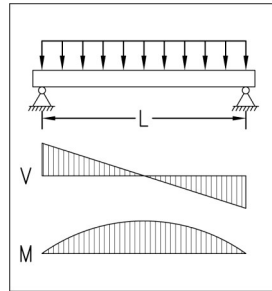


$$R = \frac{P}{2}$$

$$V_{MAX} = \frac{P}{2}$$

$$M_{MAX} = \frac{PL}{4}$$

$$\Delta_{MAX} = \frac{PL^3}{48EI}$$

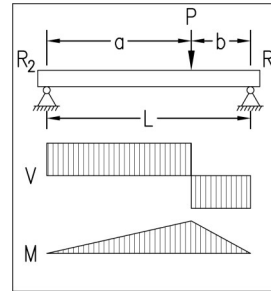


$$R = \frac{W}{2}$$

$$V_{MAX} = \frac{W}{2}$$

$$M_{MAX} = \frac{WL}{8}$$

$$\Delta_{MAX} = \frac{5WL^3}{384EI}$$



$$R_1 = \frac{Pb}{L}$$

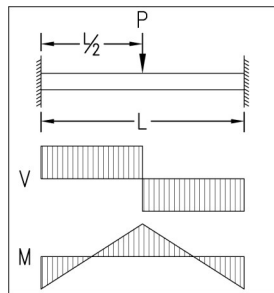
$$R_2 = \frac{Pa}{L}$$

$$V_{MAX} = \frac{Pa}{L}$$

$$M_{MAX} = \frac{Pab}{L}$$

$$\Delta_{MAX} = \frac{Pab}{27EI} (a+2b) \sqrt{3a(a+2b)}$$

Fixed End Beams

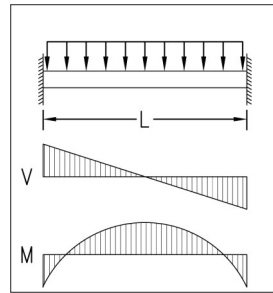


$$R = \frac{P}{2}$$

$$V_{MAX} = \frac{P}{2}$$

$$M_{MAX} = \frac{PL}{8}$$

$$\Delta_{MAX} = \frac{PL^3}{192EI}$$

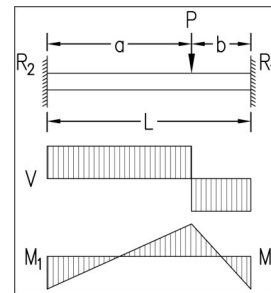


$$R = \frac{W}{2}$$

$$V_{MAX} = \frac{W}{2}$$

$$M_{MAX} = \frac{WL}{12}$$

$$\Delta_{MAX} = \frac{WL^3}{384EI}$$



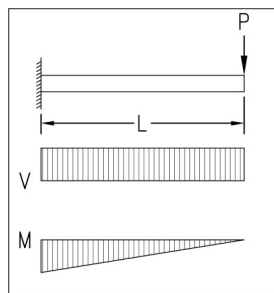
$$R_1 = \frac{Pb^2}{L^3} (3a+b)$$

$$R_2 = \frac{Pa^2}{L^3} (a+3b)$$

$$M_1 = \frac{Pab^2}{L^2}$$

$$M_2 = \frac{Pa^2b}{L^2}$$

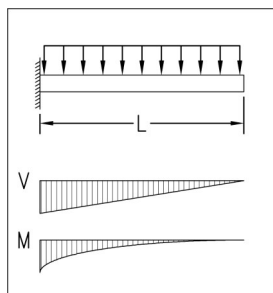
Cantilever Beams



$$V_{MAX} = P$$

$$M_{MAX} = PL$$

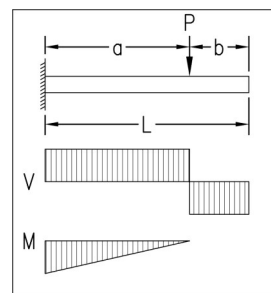
$$\Delta_{MAX} = \frac{PL^3}{3EI}$$



$$V_{MAX} = W$$

$$M_{MAX} = \frac{WL}{2}$$

$$\Delta_{MAX} = \frac{WL^3}{8EI}$$

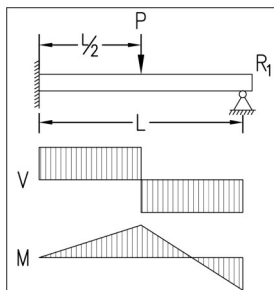


$$V_{MAX} = P$$

$$M_{MAX} = Pb$$

$$\Delta_{MAX} = \frac{Pb^2(3L-b)}{6EI}$$

Beams with one end Fixed and one end Simply Supported

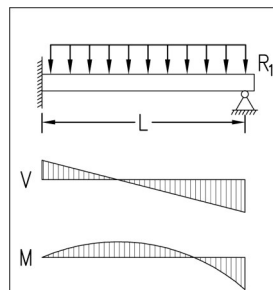


$$R_1 = \frac{5P}{16}$$

$$V_{MAX} = \frac{11P}{16}$$

$$M_{MAX} = \frac{3PL}{16}$$

$$\Delta_{MAX(at P)} = 0.447L$$

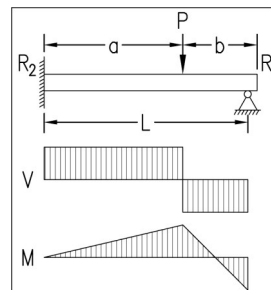


$$R_1 = \frac{3W}{8}$$

$$V_{MAX} = \frac{5W}{8}$$

$$M_{MAX} = \frac{WL}{8}$$

$$\Delta_{MAX} = \frac{WL^3}{185EI}$$



$$R_1 = \frac{Pb^2}{2L^3} (a+2L)$$

$$R_2 = \frac{Pa}{2L^3} (3L^2+a^2)$$

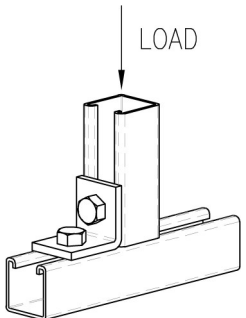
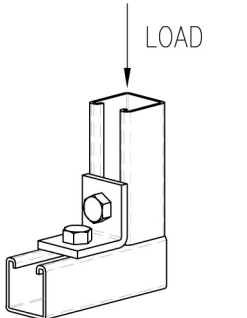
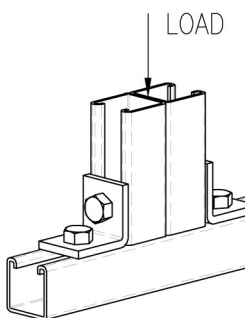
$$M_{(at P)} = R_1 a$$

$$M_{(at R_1)} = \frac{Pab}{2L^3} (a+L)$$

LATERAL BRACING LOAD REDUCTION FACTORS

Beam Span or Unbraced Length		Single Channel Series									Welded Double Channel Series								
		1000	1100	1200	1300	1400	1500	1600	1700	1800	1000	1100	1200	1300	1400	1500	1600	1700	1800
24	(609.6)	1.00	1.00	1.00	1.00	1.00	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	(914.4)	0.94	0.89	1.00	0.98	1.00	0.85	0.89	0.96	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48	(1219.2)	0.88	0.78	1.00	0.94	0.98	0.70	0.77	0.91	0.88	1.00	0.98	1.00	1.00	1.00	0.97	0.98	1.00	0.98
60	(1524.0)	0.82	0.68	1.00	0.91	0.96	0.55	0.67	0.88	0.83	0.97	0.93	1.00	0.96	1.00	0.90	0.93	0.98	0.93
72	(1828.8)	0.78	0.59	0.98	0.89	0.94	0.44	0.58	0.84	0.79	0.93	0.87	0.97	0.92	0.97	0.83	0.87	0.95	0.88
84	(2133.6)	0.75	0.52	0.97	0.86	0.92	0.38	0.51	0.82	0.75	0.89	0.82	0.95	0.89	0.95	0.76	0.81	0.92	0.83
96	(2438.4)	0.71	0.47	0.96	0.84	0.91	0.33	0.46	0.79	0.72	0.85	0.76	0.92	0.85	0.92	0.68	0.76	0.88	0.79
108	(2743.2)	0.69	0.43	0.95	0.82	0.89	0.30	0.42	0.77	0.69	0.81	0.70	0.90	0.81	0.90	0.61	0.70	0.85	0.74
120	(3048.0)	0.66	0.40	0.94	0.80	0.87	0.28	0.40	0.75	0.66	0.78	0.65	0.87	0.78	0.87	0.54	0.64	0.82	0.69
144	(3657.6)	0.61	0.36	0.91	0.76	0.84	0.24	0.36	0.70	0.60	0.70	0.54	0.83	0.71	0.82	0.43	0.53	0.76	0.60
168	(4267.2)	0.55	0.32	0.89	0.73	0.81	0.22	0.32	0.66	0.55	0.63	0.45	0.78	0.64	0.77	0.35	0.45	0.70	0.51
192	(4876.8)	0.51	0.30	0.87	0.69	0.78	0.21	0.30	0.62	0.50	0.56	0.39	0.73	0.57	0.72	0.30	0.39	0.64	0.44
216	(5486.4)	0.47	0.28	0.84	0.65	0.75	0.19	0.28	0.58	0.47	0.49	0.34	0.68	0.50	0.67	0.27	0.34	0.58	0.39
240	(6096.0)	0.44	0.26	0.82	0.61	0.72	0.18	0.26	0.54	0.43	0.44	0.31	0.63	0.45	0.62	0.24	0.30	0.52	0.35

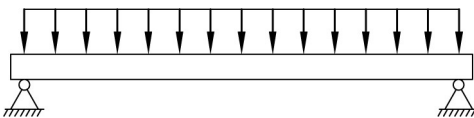
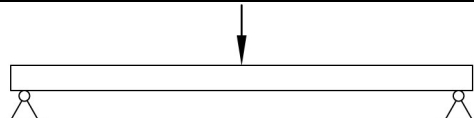
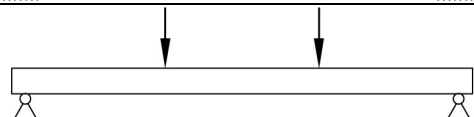
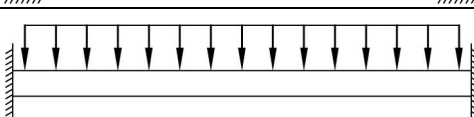
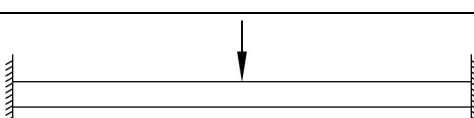
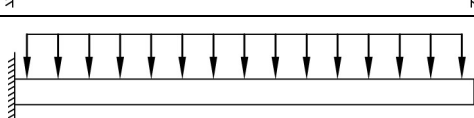
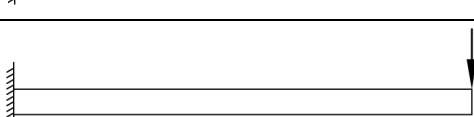
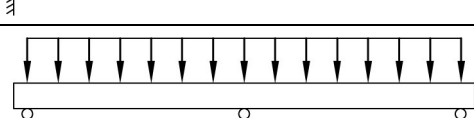
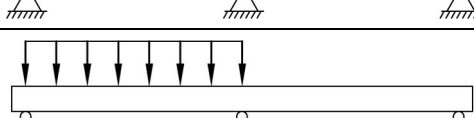
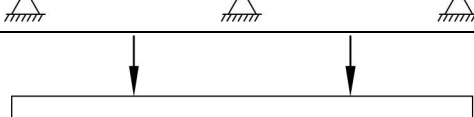
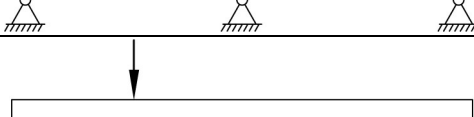
BEARING LOADS ON CHANNEL

Channel						
	Bearing Length = 1 ⁵ / ₈ (41.3) Maximum Allowable Loads		Bearing Length = 1 ⁵ / ₈ (41.3) Maximum Allowable Loads		Bearing Length = 3 ¹ / ₄ (82.6) Maximum Allowable Loads	
	Lbs.	kN	Lbs.	kN	Lbs.	kN
1000	6700	(29.8)	3100	(13.8)	7700	(34.3)
1100	3500	(15.6)	1700	(7.6)	4000	(17.8)
1200	7300	(32.5)	3400	(15.1)	8400	(37.4)
1300	3500	(15.6)	1800	(8.0)	4100	(18.2)
1400	7300	(32.5)	3400	(15.1)	8400	(37.4)
1500	6500	(28.9)	3000	(13.3)	7500	(33.4)
1600	6600	(29.4)	3100	(13.8)	7600	(33.8)
1700	6700	(29.8)	3200	(14.2)	7700	(34.3)
1800	2600	(11.6)	1200	(5.3)	3000	(13.3)

Loads are calculated based on Specification For The Design Of Cold Formed Steel Structural Members published by AISI.

BEAM LOAD & DEFLECTION CONVERSION FACTORS

The allowable beam loads listed for various spans of each channel assume that the beam is a simply supported, single span beam. Although this is the most common condition, it is not always true. For other support conditions, multiply the listed allowable load by the factors in this table to obtain the proper load for the given mounting type.

Load & Support Configuration	Diagram	Load Factor	Deflection Factor
1) Simply Supported Beam, Uniform Load		1.00	1.00
2) Simply Supported Beam, Concentrated Load at Mid-span		.50	.80
3) Simply Supported Beam, Two Equal Concentrated Loads at $\frac{1}{4}$ Points		1.00	1.10
4) Fixed End Beam, Uniform Load		1.50	.30
5) Fixed End Beam, Concentrated Load at Mid-span		1.00	.40
6) Cantilever Beam, Uniform Load		.25	2.40
7) Cantilever Beam, Concentrated Load at End		.12	3.20
8) Continuous Beam, Two Equal Spans, Uniform Load Both Spans		1.00	.42
9) Continuous Beam, Two Equal Spans, Uniform Load on One Span		1.30	.92
10) Continuous Beam, Two Equal Spans, Concentrated Load at Mid-span of Each		.62	.71
11) Continuous Beam, Two Equal Spans, Concentrated Load at Mid-span of One		.66	.48

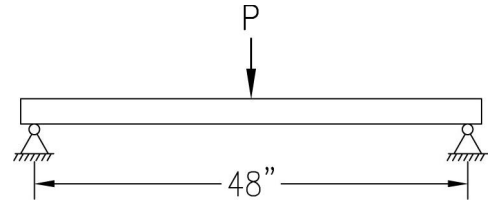
SAMPLE PROBLEMS

Problem 1 –

The beam at right is a PHD 1001 Channel, simply supported. What is the maximum allowable load P? How much will the beam deflect under that load?

Answer –

From the table of Beam and Column Loads for 1001 Channel, the load for this span is 851 lbs. and the deflection is .22". From the table of load factors, the load conversion factor is .50 and the deflection factor is .80. Therefore, the maximum load $P = 851 \times .50 = 425$ lbs., and the deflection is $.22" \times .80 = .176"$.

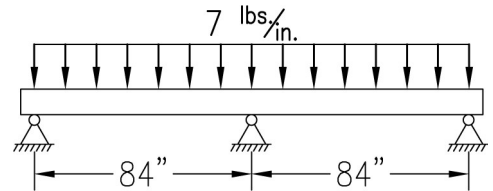


Problem 2 –

A PHD 1001 Channel is supported at 3 points as shown, making it a continuous beam with 2 spans. The required loading condition is a uniform load of 7 lbs. per inch over both spans. Is the Channel able to safely support this load?

Answer –

The entire load on one span of this beam is $7 \text{ lbs./in.} \times 84" = 588$ lbs. The allowable load is 486, and the load factor is 1.00, so the allowable load remains 486 lbs. Therefore the beam is not acceptable, since the required load exceeds the allowable load. A different PHD channel must be used, or the load must be decreased.



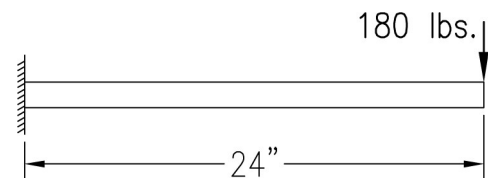
Problem 3 –

The cantilever beam shown at right carries a concentrated load of 180 lbs. at the end of the 24" PHD 1001 Channel. Is the load acceptable? Calculate the maximum bending moment and deflection.

Answer –

The maximum load is 1702 lbs., and the load factor is .12, so the maximum load is $1702 \times .12 = 204$ lbs. The desired 180 lb. load is within the allowable.

From the table of beam formulas, the maximum bending moment for this support condition is $M = PL$. For the beam shown, then, $M = 180 \text{ lb.} \times 24" = 4320$ inch-pounds. Deflection for this cantilever beam $= PL^3 / 3EI$. E = Modulus of Elasticity, which is 30×10^6 for steel. I is the Moment of Inertia, listed in the channel information as $.189 \text{ in}^4$. The deflection then, is found by the equation $[180(24)^3] / [3(30 \times 10^6)(.189)] = .146"$.

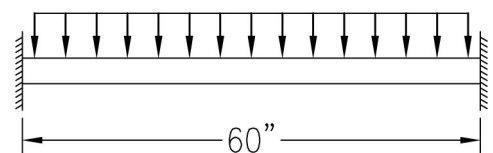


Problem 4 –

Determine the maximum load and deflection of a PHD 1001 Channel fixed at both ends and carrying a uniform load over its entire 60" span.

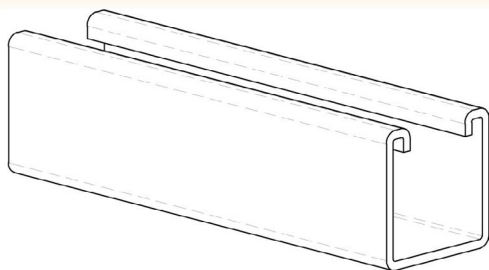
Answer –

The maximum load from the chart is 681 lbs., and the load factor is 1.50, so the maximum load for this beam is $681 \times 1.50 = 1021.5$ lbs. Similarly, the deflection for this beam is .35" and the deflection factor is .30, so the deflection $= .35 \times .30 = .105"$.



CHANNEL STRUT

SELECTION CHART



Channel

PHD's metal framing channel is cold formed on our modern rolling mills from 12 Ga., 14 Ga., and 16 Ga. low carbon steel strips. A continuous slot with inturned lips provides the ability to make attachments at any point.

Lengths

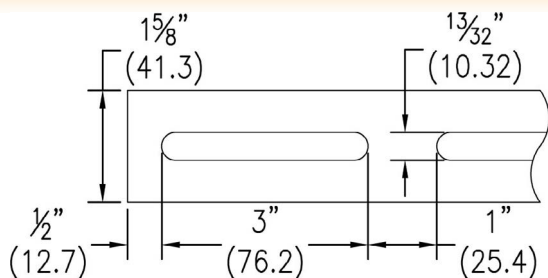
Standard lengths are 10' (3.05m) and 20' (6.09m) with length tolerance of $\pm 1/8"$ (± 3.2 mm). Custom lengths are available upon request.

Design Load (Steel & Stainless Steel)

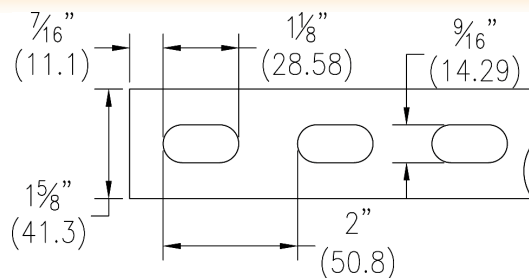
The design loads given for strut beam loads are based on a simple beam condition using an allowable stress of 25,000 psi (172.37mPa). This allowable stress results in a safety factor of 1.68. This is based upon virgin steel minimum yield strength of 33,000 psi (227.53mPa) cold worked during rolling to an average yield stress of 42,000 psi (289.58mPa). For aluminum channel loading multiple steel loading by a factor of 0.38.

Figure Number	Width		Height		Material Gauge				See Page Number
					Carbon Steel	Stainless Steel	Aluminum		
1001 – 1042	1 ⁵ / ₈	(41.28)	1 ⁵ / ₈	(41.28)	12 Ga.	12 Ga.	0.105	(2.67)	30 - 31
1101 – 1142	1 ⁵ / ₈	(41.28)	1 ⁵ / ₈	(41.28)	14 Ga.	N/A	N/A	N/A	32 - 33
1201 – 1242	1 ⁵ / ₈	(41.28)	1 ³ / ₁₆	(20.64)	12 Ga.	N/A	N/A	N/A	34 - 35
1301 – 1342	1 ⁵ / ₈	(41.28)	1 ³ / ₁₆	(20.64)	14 Ga.	14 Ga.	0.075	(1.9)	36 - 37
1401 – 1442	1 ⁵ / ₈	(41.28)	1	(25.40)	12 Ga.	N/A	N/A	N/A	38 - 39
1501 – 1542	1 ⁵ / ₈	(41.28)	3 ¹ / ₄	(82.55)	12 Ga.	12 Ga.	N/A	N/A	40 - 41
1601 – 1642	1 ⁵ / ₈	(41.28)	2 ⁷ / ₁₆	(61.91)	12 Ga.	12 Ga.	N/A	N/A	42 - 43
1701 – 1742	1 ⁵ / ₈	(41.28)	1 ³ / ₈	(34.93)	12 Ga.	N/A	N/A	N/A	44 - 45
1801 – 1842	1 ⁵ / ₈	(41.28)	1 ³ / ₁₆	(20.64)	16 Ga.	N/A	N/A	N/A	46 - 47
1950	1 ⁷ / ₈	(47.63)	1 ⁷ / ₈	(47.63)	12 Ga.	N/A	N/A	N/A	48 - 49
1960	1 ⁵ / ₈	(41.28)	1 ⁵ / ₈	(41.28)	12 Ga.	N/A	N/A	N/A	48 - 49

LONG SLOTS

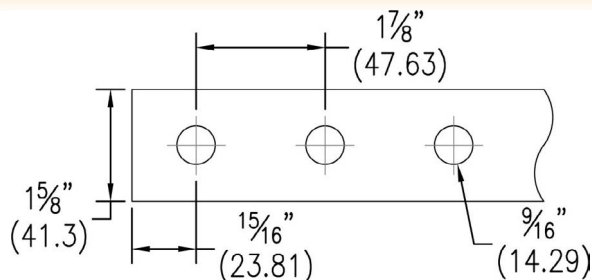


SLOTS



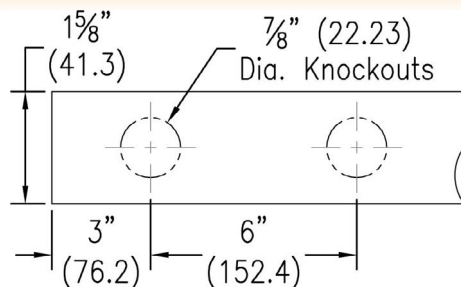
PHD's slotted series of channels offer full flexibility. A variety of pre-punched slot patterns eliminate the need for precise field measuring for hole locations. Slots offer wide adjustments in the alignment and bolt sizing.

HOLES



A pre-punched $9/16"$ (14.3mm) diameter hole pattern is available in most PHD channel. This hole pattern provides an economical alternative to costly field drilling required for many applications.

KNOCKOUTS

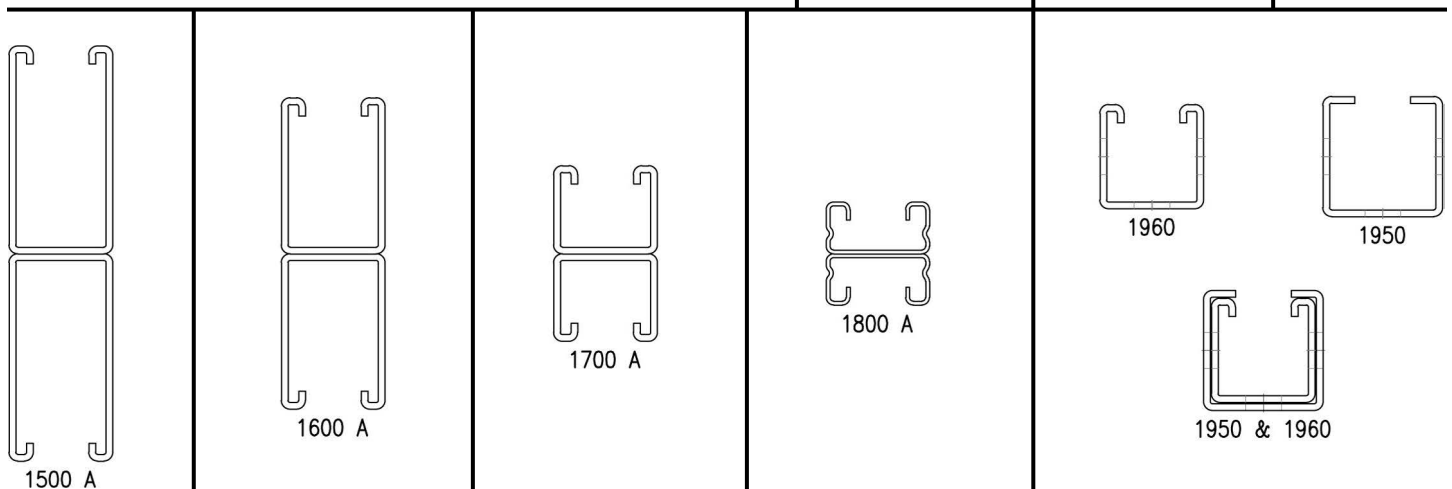
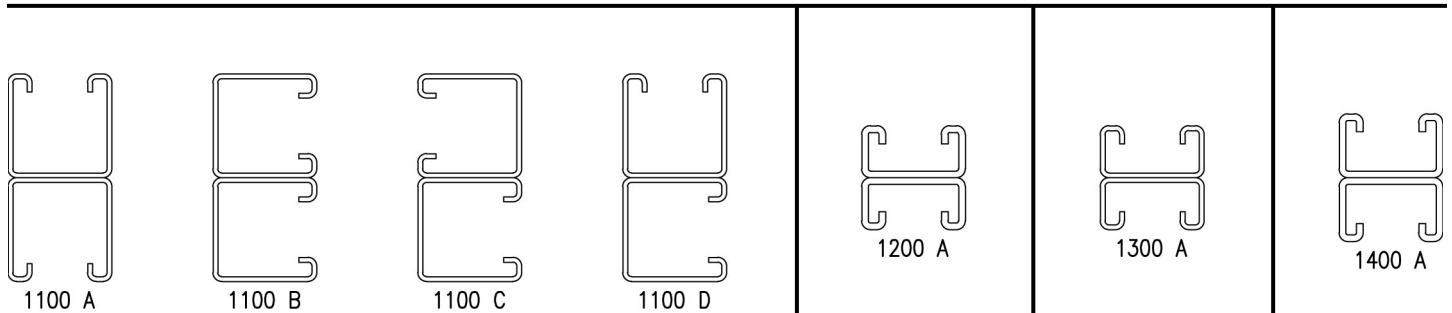
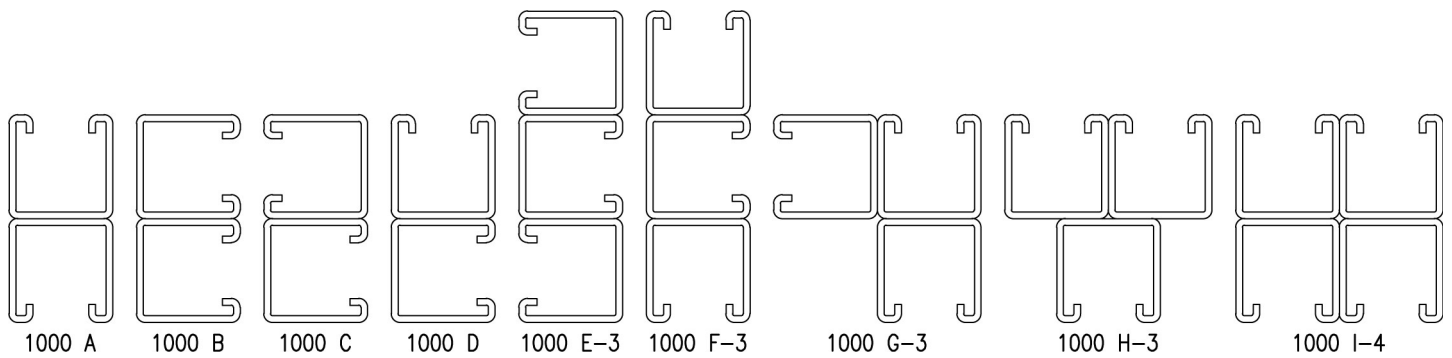
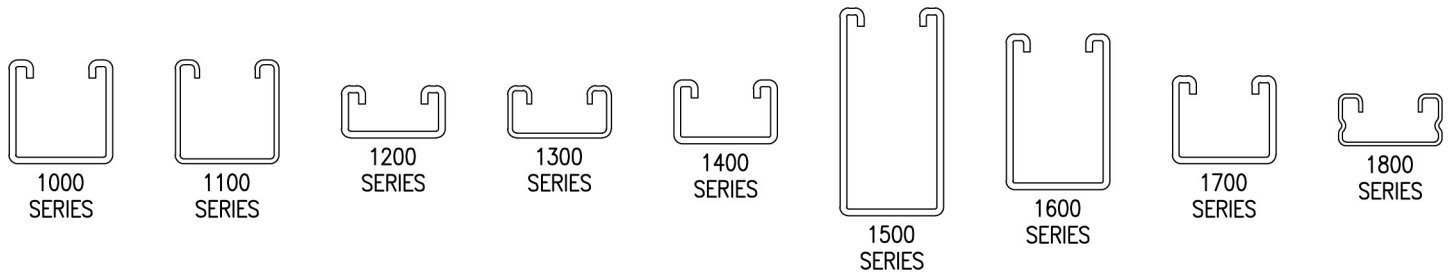


Most PHD channels can be furnished with $7/8"$ (22.2mm) knockouts on 6" (152mm) centers, allowing for perfect fixture alignment on spans up to 20' (6.09m).

CHANNEL STRUT



CHANNEL COMBINATIONS



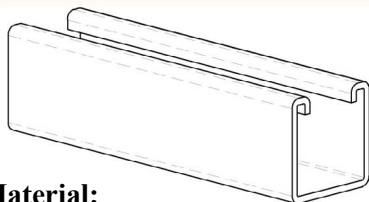
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



CHANNEL STRUT

FIG. 1001-1042

1⁵/₈" X 1⁵/₈" X 12 GAUGE



Material:

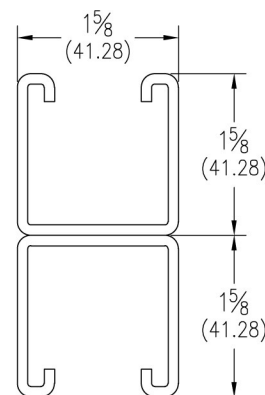
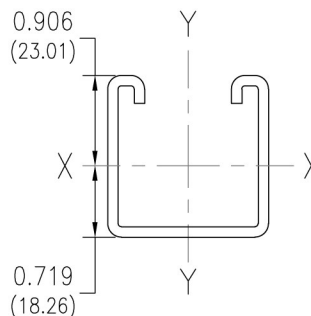
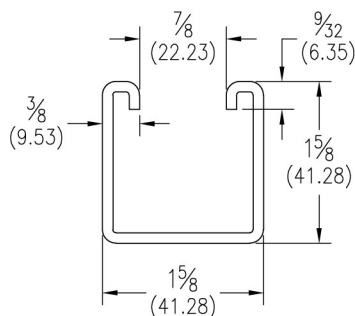
Carbon steel (*Aluminum and Type 304 or 316 Stainless Steel upon request)

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

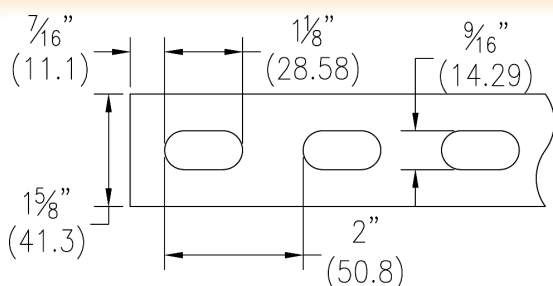
Specify figure number, material, finish, and number of feet.



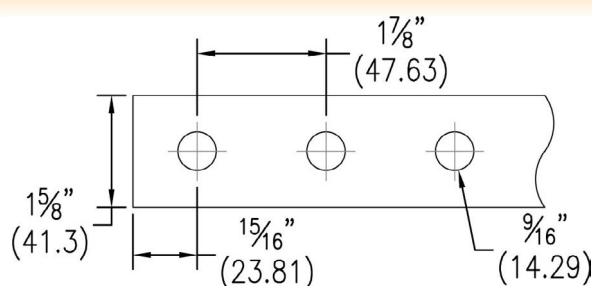
*Aluminum strut has different physical properties and performance characteristics. Multiply the load data found in this catalog by a factor of 0.38.

Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1001	1002	No Openings	1.77	(2.63)	500	(152.4)	500	(152.4)
1001A	1002A	Welded Back to Back	3.54	(5.27)	300	(91.4)	300	(91.4)
1011	1012	With 1 ¹ / ₈ " X ⁹ / ₁₆ " (28.58 X 14.29) slots on 2" (50.8) centers	1.70	(2.53)	500	(152.4)	500	(152.4)
1011A	1012A	Welded Back to Back	3.40	(5.06)	300	(91.4)	300	(91.4)
1021	1022	With ⁹ / ₁₆ " (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	1.70	(2.53)	500	(152.4)	500	(152.4)
1021A	1022A	Welded Back to Back	3.40	(5.06)	300	(91.4)	300	(91.4)
1031	1032	With 3" (76.20) slots	1.68	(2.50)	500	(152.4)	500	(152.4)
1041	1042	With 7/8" (22.23) Knockouts on 6" (152.40) centers	1.77	(2.63)	500	(152.4)	500	(152.4)

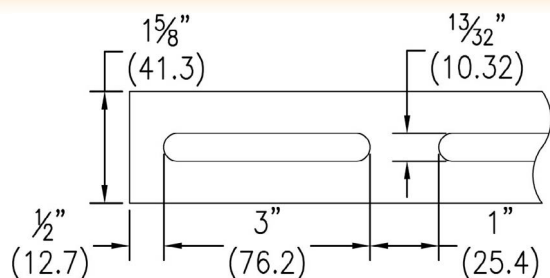
1011-1012



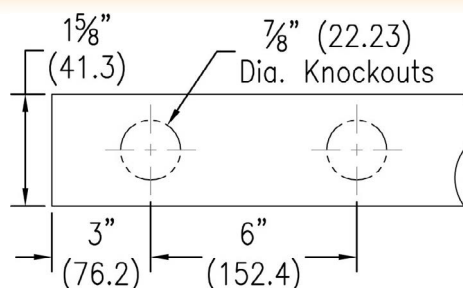
1021-1022



1031-1032



1041-1042



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1⁵/₈" X 12 GAUGE

FIG. 1001-1042

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1001	0.562	(3.626)	0.1912	(7.961)	0.2125	(3.482)	0.583	(1.481)	0.2399	(9.988)	0.2953	(4.839)	0.653	(1.659)
1001A	1.124	(7.252)	0.9732	(40.519)	0.5989	(9.814)	0.931	(2.365)	0.4798	(19.977)	0.5905	(9.677)	0.653	(1.659)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1001	12	(304.8)	10454	(46.50)	2610	(11.61)	0.01	(0.25)	2610	(11.61)
1001A			21625	(96.19)	2610*	(11.61)	0.01	(0.25)	2610*	(11.61)
1001	24	(609.6)	9311	(41.42)	1702	(7.57)	0.06	(1.52)	1702	(7.57)
1001A			21164	(94.14)	2610*	(11.61)	0.02	(0.51)	2610*	(11.61)
1001	36	(914.4)	7801	(34.70)	1135	(5.05)	0.13	(3.30)	1135	(5.05)
1001A			20397	(90.73)	2610*	(11.61)	0.06	(1.52)	2610*	(11.61)
1001	48	(1219.2)	6193	(27.55)	851	(3.79)	0.22	(5.59)	758	(3.37)
1001A			19322	(85.95)	2405	(10.70)	0.13	(3.30)	2405	(10.70)
1001	60	(1524.0)	4718	(20.99)	681	(3.03)	0.35	(8.89)	485	(2.16)
1001A			17940	(79.80)	1924	(8.56)	0.20	(5.08)	1924	(8.56)
1001	72	(1828.8)	3791	(16.86)	567	(2.52)	0.51	(12.95)	337	(1.50)
1001A			16251	(72.29)	1603	(7.13)	0.28	(7.11)	1603	(7.13)
1001	84	(2133.6)	3176	(14.13)	486	(2.16)	0.69	(17.53)	248	(1.10)
1001A			14255	(63.41)	1374	(6.11)	0.38	(9.65)	1255	(5.58)
1001	96	(2438.4)	2728	(12.13)	425	(1.89)	0.90	(22.86)	190	(0.85)
1001A			11951	(53.16)	1202	(5.35)	0.50	(12.70)	961	(4.27)
1001	108	(2743.2)	2381	(10.59)	378	(1.68)	1.13	(28.70)	150	(0.67)
1001A			9524	(42.36)	1069	(4.76)	0.63	(16.00)	759	(3.38)
1001	120	(3048.0)	2101	(9.35)	340	(1.51)	1.40	(35.56)	121	(0.54)
1001A			7715	(34.32)	962	(4.28)	0.78	(19.81)	615	(2.74)
1001	144	(3657.6)	1660	(7.38)	280	(1.25)	2.00	(50.80)	80	(0.36)
1001A			5040	(22.42)	800	(3.56)	1.14	(28.96)	420	(1.87)
1001	168	(4267.2)	-	-	240	(1.07)	2.72	(69.09)	60	(0.27)
1001A			-	-	680	(3.02)	1.53	(38.86)	310	(1.38)
1001	192	(4876.8)	-	-	210	(0.93)	3.55	(90.17)	50	(0.22)
1001A			-	-	600	(2.67)	2.02	(51.31)	240	(1.07)
1001	216	(5486.4)	-	-	190	(0.85)	4.58	(116.33)	40	(0.18)
1001A			-	-	530	(2.36)	2.54	(64.52)	190	(0.85)
1001	240	(6096.0)	-	-	170	(0.76)	5.62	(142.75)	-	-
1001A			-	-	480	(2.14)	3.16	(80.26)	150	(0.67)

For pierced Channels, reduce beam load values as follows:
 1011 & 1012 = 15%
 1021 & 1022 = 10%
 1031 & 1032 = 30%
 1041 & 1042 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

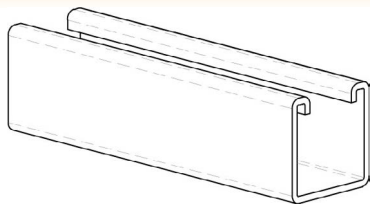
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



CHANNEL STRUT

FIG. 1101-1142

1⁵/₈" X 1⁵/₈" X 14 GAUGE



Material:

Carbon steel

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, finish, and number of feet.

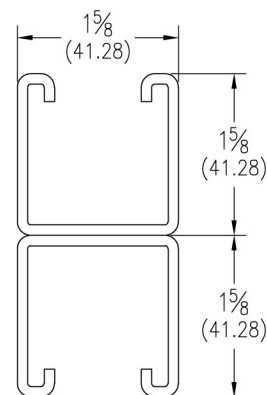
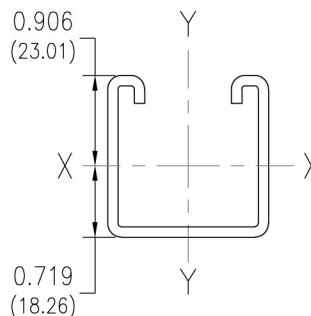
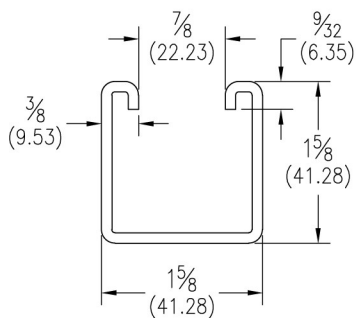
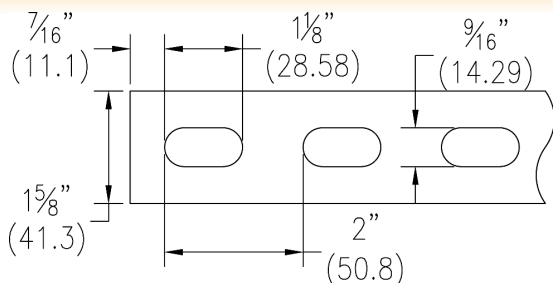
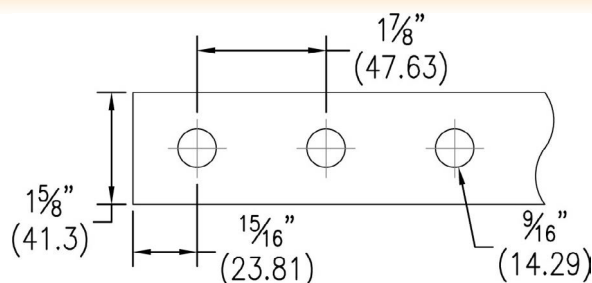


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1101	1102	No Openings	1.30	(1.93)	500	(152.4)	500	(152.4)
1101A	1102A	Welded Back to Back	2.60	(3.87)	300	(91.4)	300	(91.4)
1111	1112	With 1 ¹ / ₈ " X ⁹ / ₁₆ " (28.58 X 14.29) slots on 2" (50.8) centers	1.28	(1.90)	500	(152.4)	500	(152.4)
1111A	1112A	Welded Back to Back	2.56	(3.81)	300	(91.4)	300	(91.4)
1121	1122	With ⁹ / ₁₆ " (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	1.30	(1.93)	500	(152.4)	500	(152.4)
1121A	1122A	Welded Back to Back	2.74	(4.08)	300	(91.4)	300	(91.4)
1131	1132	With 3" (76.20) slots	1.29	(1.92)	500	(152.4)	500	(152.4)
1141	1142	With 7/8" (22.23) Knockouts on 6" (152.40) centers	1.30	(1.93)	500	(152.4)	500	(152.4)

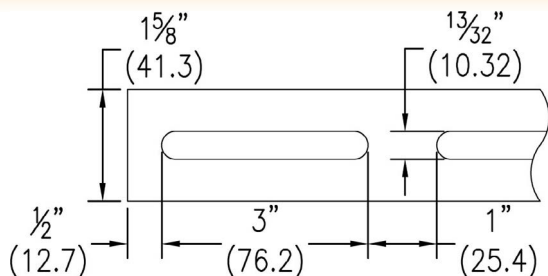
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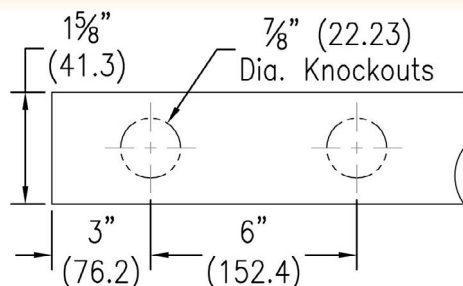
1121-1122



1131-1132



1141-1142



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1⁵/₈" X 14 GAUGE

FIG. 1101-1142

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1101	0.417	(2.690)	0.149	(6.204)	0.166	(2.720)	0.597	(1.516)	0.183	(7.619)	0.225	(3.687)	0.662	(1.681)
1101A	0.834	(5.381)	0.741	(30.852)	0.456	(7.472)	0.942	(2.393)	0.366	(15.238)	0.45	(7.374)	0.662	(1.681)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1101	12	(304.8)	6441	(28.65)	1750	(7.78)	0.01	(0.25)	1750	(7.78)
1101A			13212	(58.77)	1750*	(7.78)	0.01	(0.25)	1750*	(7.78)
1101	24	(609.6)	5874	(26.13)	1379	(6.13)	0.06	(1.52)	1379	(6.13)
1101A			12993	(57.80)	1750*	(7.78)	0.01	(0.25)	1750*	(7.78)
1101	36	(914.4)	5038	(22.41)	919	(4.09)	0.13	(3.30)	919	(4.09)
1101A			12627	(56.17)	1750*	(7.78)	0.05	(1.27)	1750*	(7.78)
1101	48	(1219.2)	4043	(17.98)	689	(3.06)	0.23	(5.84)	607	(2.70)
1101A			12115	(53.89)	1750*	(7.78)	0.12	(3.05)	1750*	(7.78)
1101	60	(1524.0)	3008	(13.38)	551	(2.45)	0.36	(9.14)	389	(1.73)
1101A			11456	(50.96)	1518	(6.75)	0.20	(5.08)	1518	(6.75)
1101	72	(1828.8)	2324	(10.34)	460	(2.05)	0.51	(12.95)	270	(1.20)
1101A			10651	(47.38)	1265	(5.63)	0.28	(7.11)	1265	(5.63)
1101	84	(2133.6)	1898	(8.44)	394	(1.75)	0.70	(17.78)	198	(0.88)
1101A			9700	(43.15)	1084	(4.82)	0.38	(9.65)	990	(4.40)
1101	96	(2438.4)	1608	(7.15)	345	(1.53)	0.91	(23.11)	152	(0.68)
1101A			8602	(38.26)	949	(4.22)	0.50	(12.70)	758	(3.37)
1101	108	(2743.2)	1397	(6.21)	306	(1.36)	1.15	(29.21)	120	(0.53)
1101A			7358	(32.73)	843	(3.75)	0.63	(16.00)	599	(2.66)
1101	120	(3048.0)	1263	(5.62)	276	(1.23)	1.42	(36.07)	97	(0.43)
1101A			6024	(26.80)	759	(3.38)	0.78	(19.81)	485	(2.16)
1101	144	(3657.6)	950	(4.23)	230	(1.02)	2.03	(51.56)	70	(0.31)
1101A			3770	(16.77)	640	(2.85)	1.14	(28.96)	340	(1.51)
1101	168	(4267.2)	-	-	200	(0.89)	2.81	(71.37)	50	(0.22)
1101A			-	-	550	(2.45)	1.55	(39.37)	250	(1.11)
1101	192	(4876.8)	-	-	170	(0.76)	3.56	(90.42)	40	(0.18)
1101A			-	-	480	(2.14)	2.02	(51.31)	190	(0.85)
1101	216	(5486.4)	-	-	150	(0.67)	4.48	(113.79)	30	(0.13)
1101A			-	-	420	(1.87)	2.52	(64.01)	150	(0.67)
1101	240	(6096.0)	-	-	140	(0.62)	5.73	(145.54)	-	-
1101A			-	-	380	(1.69)	3.13	(79.50)	120	(0.53)

For pierced Channels, reduce beam load values as follows:
 1111 & 1112 = 15%
 1121 & 1122 = 10%
 1131 & 1132 = 30%
 1141 & 1142 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

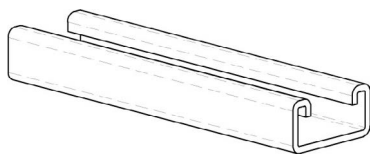
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



CHANNEL STRUT

FIG. 1201-1242

1⁵/₈" X 1³/₁₆" X 12 GAUGE



Material:

Carbon steel

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, finish, and number of feet.

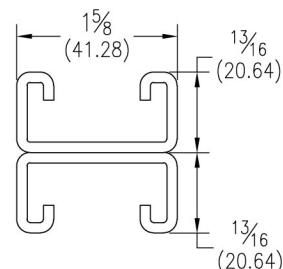
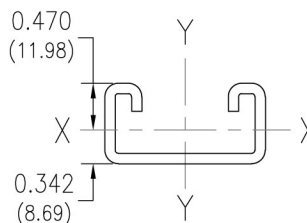
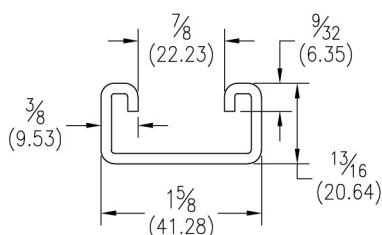
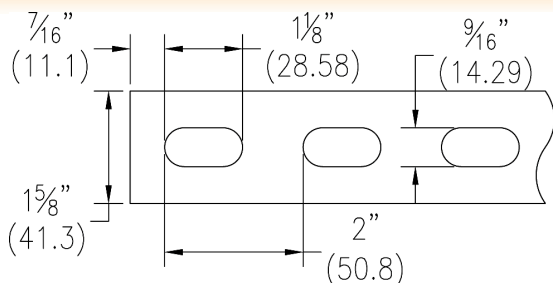
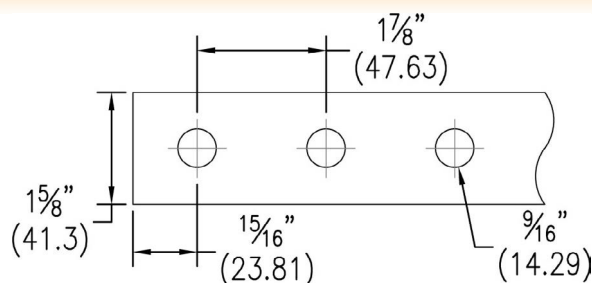


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1201	1202	No Openings	1.22	(1.82)	500	(152.4)	1000	(304.8)
1201A	1202A	Welded Back to Back	2.52	(3.75)	500	(152.4)	500	(152.4)
1211	1212	With 1 ¹ / ₈ " X 9/16" (28.58 X 14.29) slots on 2" (50.8) centers	1.15	(1.71)	500	(152.4)	1000	(304.8)
1211A	1212A	Welded Back to Back	2.36	(3.51)	500	(152.4)	500	(152.4)
1221	1222	With 9/16" (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	1.16	(1.73)	500	(152.4)	1000	(304.8)
1221A	1222A	Welded Back to Back	2.40	(3.57)	500	(152.4)	500	(152.4)
1231	1232	With 3" (76.20) slots	1.15	(1.71)	500	(152.4)	1000	(304.8)
1241	1242	With 7/8" (22.23) Knockouts on 6" (152.40) centers	1.22	(1.82)	500	(152.4)	1000	(304.8)

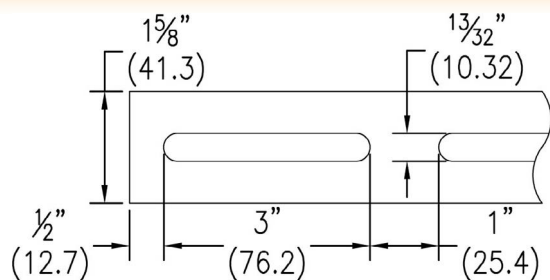
1211-1212



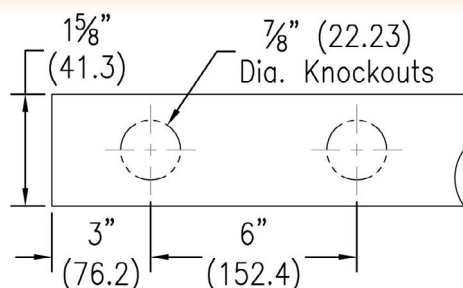
1221-1222



1231-1232



1241-1242



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1³/₁₆" X 12 GAUGE

FIG. 1201-1242

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1201	0.376	(2.426)	0.033	(1.374)	0.068	(1.114)	0.297	(0.754)	0.115	(4.788)	0.142	(2.327)	0.554	(1.407)
1201A	0.752	(4.852)	0.148	(6.162)	0.182	(2.982)	0.444	(1.128)	0.23	(9.576)	0.284	(4.654)	0.554	(1.407)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1201	12	(304.8)	8407	(37.40)	1079	(4.80)	0.02	(0.51)	1079	(4.80)
1201A			19160	(85.23)	1270*	(5.65)	0.01	(0.25)	1270*	(5.65)
1201	24	(609.6)	7519	(33.45)	539	(2.40)	0.10	(2.54)	506	(2.25)
1201A			17444	(77.59)	1270*	(5.65)	0.05	(1.27)	1270*	(5.65)
1201	36	(914.4)	5397	(24.01)	360	(1.60)	0.24	(6.10)	225	(1.00)
1201A			15275	(67.95)	1013	(4.51)	0.14	(3.56)	1013	(4.51)
1201	48	(1219.2)	3178	(14.14)	270	(1.20)	0.43	(10.92)	126	(0.56)
1201A			12692	(56.46)	759	(3.38)	0.25	(6.35)	607	(2.70)
1201	60	(1524.0)	2034	(9.05)	216	(0.96)	0.67	(17.02)	81	(0.36)
1201A			9683	(43.07)	608	(2.70)	0.39	(9.91)	388	(1.73)
1201	72	(1828.8)	-	-	180	(0.80)	0.96	(24.38)	56	(0.25)
1201A			6780	(30.16)	506	(2.25)	0.56	(14.22)	270	(1.20)
1201	84	(2133.6)	-	-	154	(0.69)	1.31	(33.27)	41	(0.18)
1201A			4981	(22.16)	434	(1.93)	0.77	(19.56)	198	(0.88)
1201	96	(2438.4)	-	-	135	(0.60)	1.71	(43.43)	32	(0.14)
1201A			3814	(16.97)	380	(1.69)	1.00	(25.40)	152	(0.68)
1201	108	(2743.2)	-	-	120	(0.53)	2.16	(54.86)	25	(0.11)
1201A			3013	(13.40)	338	(1.50)	1.27	(32.26)	120	(0.53)
1201	120	(3048.0)	-	-	108	(0.48)	2.67	(67.82)	20	(0.09)
1201A			-	-	304	(1.35)	1.56	(39.62)	97	(0.43)
1201	144	(3657.6)	-	-	90	(0.40)	3.84	(97.54)	-	-
1201A			-	-	250	(1.11)	2.25	(57.15)	70	(0.31)
1201	168	(4267.2)	-	-	-	-	-	-	-	-
1201A			-	-	220	(0.98)	3.14	(79.76)	50	(0.22)
1201	192	(4876.8)	-	-	-	-	-	-	-	-
1201A			-	-	190	(0.85)	4.05	(102.87)	-	-
1201	216	(5486.4)	-	-	-	-	-	-	-	-
1201A			-	-	170	(0.76)	5.16	(131.06)	-	-
1201	240	(6096.0)	-	-	-	-	-	-	-	-
1201A			-	-	150	(0.67)	6.24	(158.50)	-	-

For pierced Channels, reduce beam load values as follows:
 1211 & 1212 = 15%
 1221 & 1222 = 10%
 1231 & 1232 = 30%
 1241 & 1242 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

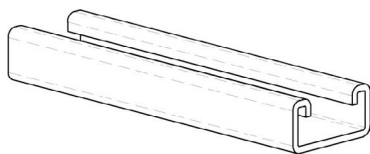
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



CHANNEL STRUT

FIG. 1301-1342

1 5/8" X 13/16" X 14 GAUGE



Material:

Carbon steel (*Aluminum and Type 304 or 316 Stainless Steel upon request)

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, material, finish, and number of feet.

*Aluminum strut has different physical properties and performance characteristics. Multiply the load data found in this catalog by a factor of 0.38.

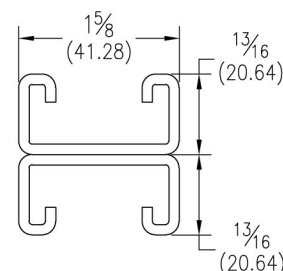
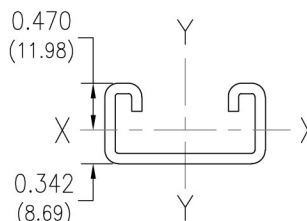
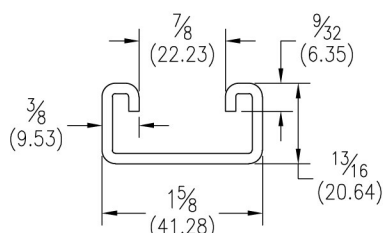
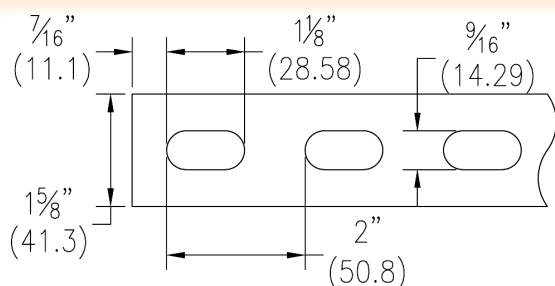
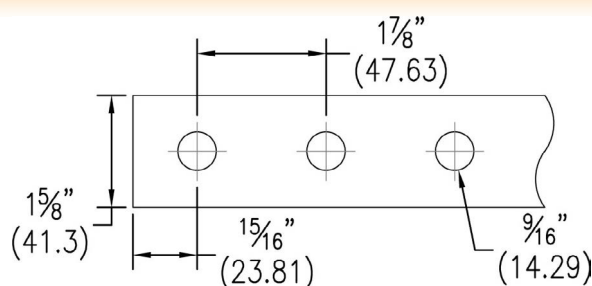


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1301	1302	No Openings	.93	(.42)	500	(152.4)	1000	(304.8)
1301A	1302A	Welded Back to Back	1.86	(.84)	500	(152.4)	500	(152.4)
1311	1312	With 1 1/8" X 9/16" (28.58 X 14.29) slots on 2" (50.8) centers	.86	(.39)	500	(152.4)	1000	(304.8)
1311A	1312A	Welded Back to Back	1.72	(.78)	500	(152.4)	500	(152.4)
1321	1322	With 9/16" (14.29) dia. holes on 1 7/8" (47.63) centers	.88	(.40)	500	(152.4)	1000	(304.8)
1321A	1322A	Welded Back to Back	1.92	(.87)	500	(152.4)	500	(152.4)
1331	1332	With 3" (76.20) slots	.87	(.39)	500	(152.4)	1000	(304.8)
1341	1342	With 7/8" (22.23) Knockouts on 6" (152.40) centers	.93	(.42)	500	(152.4)	1000	(304.8)

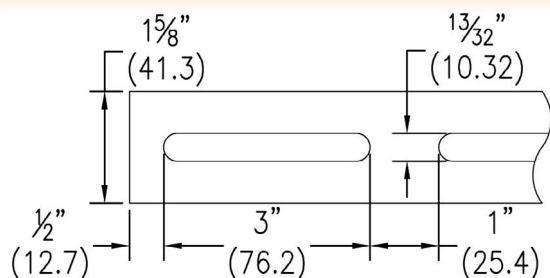
1311-1312



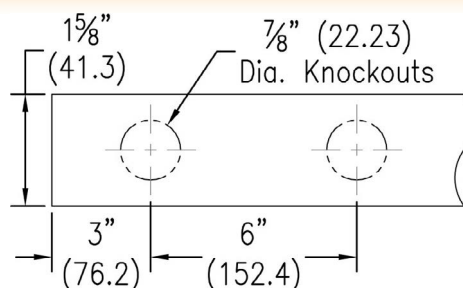
1321-1322



1331-1332



1341-1342



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1³/₁₆" X 14 GAUGE

FIG. 1301-1342

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1301	0.295	(1.903)	0.027	(1.124)	0.056	(0.918)	0.302	(0.767)	0.11	(4.580)	0.135	(2.212)	0.61	(1.549)
1301A	0.59	(3.806)	0.122	(5.079)	0.15	(2.458)	0.455	(1.156)	0.22	(9.160)	0.27	(4.425)	0.61	(1.549)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1301	12	(304.8)	6186	(27.52)	870	(3.87)	0.03	(0.76)	870	(3.87)
1301A			12763	(56.77)	870*	(3.87)	0.01	(0.25)	870*	(3.87)
1301	24	(609.6)	5464	(24.31)	465	(2.07)	0.11	(2.79)	430	(1.91)
1301A			12135	(53.98)	870*	(3.87)	0.04	(1.02)	870*	(3.87)
1301	36	(914.4)	4300	(19.13)	310	(1.38)	0.24	(6.10)	191	(0.85)
1301A			11087	(49.32)	832	(3.70)	0.14	(3.56)	832	(3.70)
1301	48	(1219.2)	2703	(12.02)	233	(1.04)	0.43	(10.92)	108	(0.48)
1301A			9620	(42.79)	624	(2.78)	0.25	(6.35)	499	(2.22)
1301	60	(1524.0)	1730	(7.70)	186	(0.83)	0.68	(17.27)	69	(0.31)
1301A			7734	(34.40)	499	(2.22)	0.39	(9.91)	319	(1.42)
1301	72	(1828.8)	1201	(5.34)	155	(0.69)	0.97	(24.64)	48	(0.21)
1301A			5571	(24.78)	416	(1.85)	0.56	(14.22)	222	(0.99)
1301	84	(2133.6)	-	-	133	(0.59)	1.32	(33.53)	35	(0.16)
1301A			4093	(18.21)	357	(1.59)	0.76	(19.30)	163	(0.73)
1301	96	(2438.4)	-	-	116	(0.52)	1.73	(43.94)	27	(0.12)
1301A			3134	(13.94)	312	(1.39)	1.00	(25.40)	125	(0.56)
1301	108	(2743.2)	-	-	103	(0.46)	2.19	(55.63)	21	(0.09)
1301A			2476	(11.01)	277	(1.23)	1.27	(32.26)	98	(0.44)
1301	120	(3048.0)	-	-	93	(0.41)	2.70	(68.58)	17	(0.08)
1301A			-	-	250	(1.11)	1.56	(39.62)	80	(0.36)
1301	144	(3657.6)	-	-	80	(0.36)	4.09	(103.89)	-	-
1301A			-	-	200	(0.89)	2.26	(57.40)	50	(0.22)
1301	168	(4267.2)	-	-	-	-	-	-	-	-
1301A			-	-	170	(0.76)	3.05	(77.47)	40	(0.18)
1301	192	(4876.8)	-	-	-	-	-	-	-	-
1301A			-	-	150	(0.67)	4.02	(102.11)	-	-
1301	216	(5486.4)	-	-	-	-	-	-	-	-
1301A			-	-	130	(0.58)	4.96	(125.98)	-	-
1301	240	(6096.0)	-	-	-	-	-	-	-	-
1301A			-	-	120	(0.53)	6.28	(159.51)	-	-

For pierced Channels, reduce beam load values as follows:
 1311 & 1312 = 15%
 1321 & 1322 = 10%
 1331 & 1332 = 30%
 1341 & 1342 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

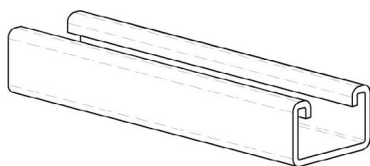
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



CHANNEL STRUT

FIG. 1401-1442

1⁵/₈" X 1" X 12 GAUGE



Material:

Carbon steel

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, finish, and number of feet.

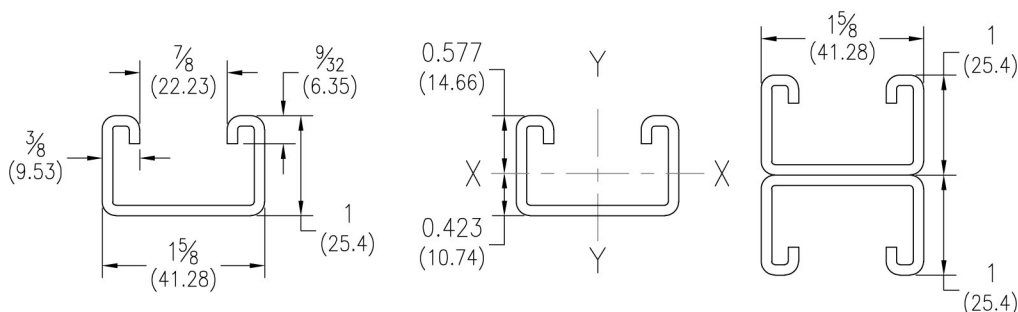
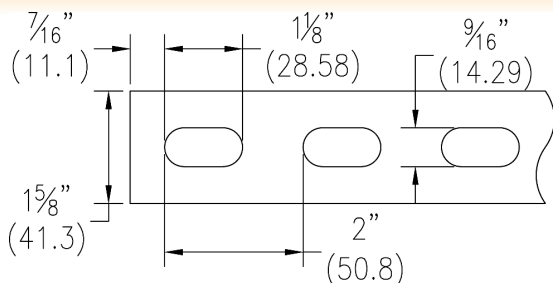
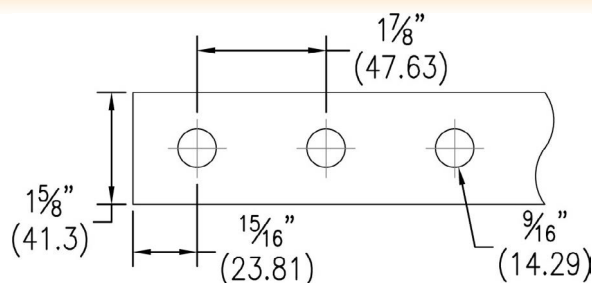


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1401	1402	No Openings	1.38	(2.05)	500	(152.4)	1000	(304.8)
1401A	1402A	Welded Back to Back	2.88	(4.29)	500	(152.4)	400	(121.92)
1411	1412	With 1 ¹ / ₈ " X ⁹ / ₁₆ " (28.58 X 14.29) slots on 2" (50.8) centers	1.34	(1.99)	500	(152.4)	1000	(304.8)
1411A	1412A	Welded Back to Back	2.72	(4.05)	500	(152.4)	400	(121.92)
1421	1422	With ⁹ / ₁₆ " (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	1.39	(2.07)	500	(152.4)	1000	(304.8)
1421A	1422A	Welded Back to Back	2.78	(4.14)	500	(152.4)	400	(121.92)
1431	1432	With 3" (76.20) slots	1.31	(1.95)	500	(152.4)	1000	(304.8)
1441	1442	With ⁷ / ₈ " (22.23) Knockouts on 6" (152.40) centers	1.38	(2.05)	500	(152.4)	1000	(304.8)

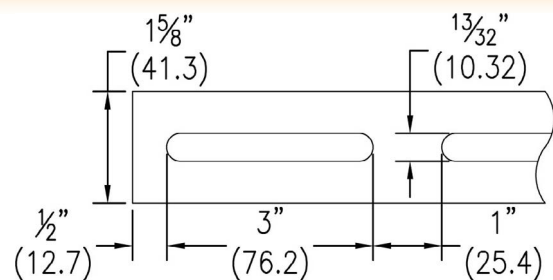
1411-1412



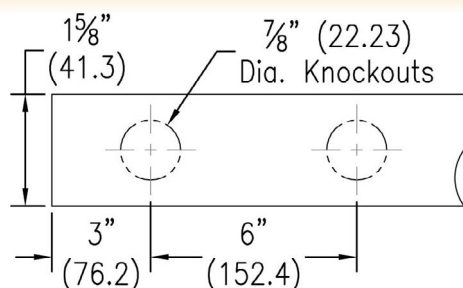
1421-1422



1431-1432



1441-1442



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1" X 12 GAUGE

FIG. 1401-1442

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1401	0.43	(2.774)	0.055	(2.290)	0.095	(1.557)	0.357	(0.907)	0.163	(6.787)	0.201	(3.294)	0.616	(1.565)
1401A	0.86	(5.548)	0.263	(10.950)	0.263	(4.310)	0.553	(1.405)	0.327	(13.615)	0.402	(6.588)	0.616	(1.565)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @ ¹ / ₂₄₀ Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1401	12	(304.8)	9138	(40.65)	1538	(6.84)	0.02	(0.51)	1538	(6.84)
1401A			21094	(93.83)	1590*	(7.07)	0.01	(0.25)	1590*	(7.07)
1401	24	(609.6)	8137	(36.20)	769	(3.42)	0.09	(2.29)	769	(3.42)
1401A			19757	(87.88)	1590*	(7.07)	0.04	(1.02)	1590*	(7.07)
1401	36	(914.4)	7050	(31.36)	513	(2.28)	0.20	(5.08)	388	(1.73)
1401A			18094	(80.49)	1428	(6.35)	0.11	(2.79)	1428	(6.35)
1401	48	(1219.2)	5405	(24.04)	384	(1.71)	0.35	(8.89)	218	(0.97)
1401A			16139	(71.79)	1071	(4.76)	0.20	(5.08)	1053	(4.68)
1401	60	(1524.0)	3512	(15.62)	308	(1.37)	0.55	(13.97)	140	(0.62)
1401A			13906	(61.86)	857	(3.81)	0.32	(8.13)	674	(3.00)
1401	72	(1828.8)	2439	(10.85)	256	(1.14)	0.79	(20.07)	97	(0.43)
1401A			11387	(50.65)	714	(3.18)	0.46	(11.68)	468	(2.08)
1401	84	(2133.6)	1792	(7.97)	220	(0.98)	1.07	(27.18)	71	(0.32)
1401A			8645	(38.45)	612	(2.72)	0.62	(15.75)	344	(1.53)
1401	96	(2438.4)	-	-	192	(0.85)	1.41	(35.81)	55	(0.24)
1401A			6619	(29.44)	535	(2.38)	0.81	(20.57)	263	(1.17)
1401	108	(2743.2)	-	-	171	(0.76)	1.78	(45.21)	43	(0.19)
1401A			5230	(23.26)	476	(2.12)	1.03	(26.16)	208	(0.93)
1401	120	(3048.0)	-	-	154	(0.69)	2.20	(55.88)	35	(0.16)
1401A			4236	(18.84)	428	(1.90)	1.27	(32.26)	168	(0.75)
1401	144	(3657.6)	-	-	130	(0.58)	3.22	(81.79)	20	(0.09)
1401A			-	-	360	(1.60)	1.86	(47.24)	120	(0.53)
1401	168	(4267.2)	-	-	-	-	-	-	-	-
1401A			-	-	310	(1.38)	2.54	(64.52)	90	(0.40)
1401	192	(4876.8)	-	-	-	-	-	-	-	-
1401A			-	-	270	(1.20)	3.31	(84.07)	70	(0.31)
1401	216	(5486.4)	-	-	-	-	-	-	-	-
1401A			-	-	240	(1.07)	4.19	(106.43)	-	-
1401	240	(6096.0)	-	-	-	-	-	-	-	-
1401A			-	-	210	(0.93)	5.03	(127.76)	-	-

For pierced Channels, reduce beam load values as follows:
 1411 & 1412 = 15%
 1421 & 1422 = 10%
 1431 & 1432 = 30%
 1441 & 1442 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

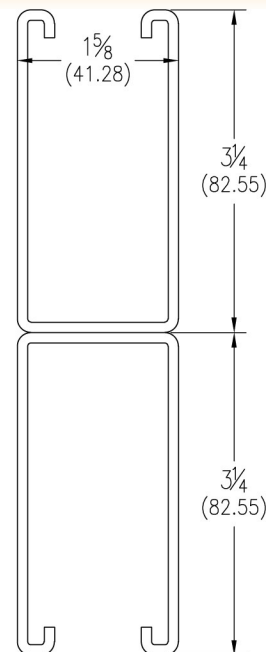
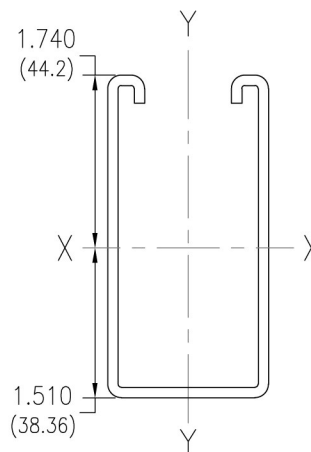
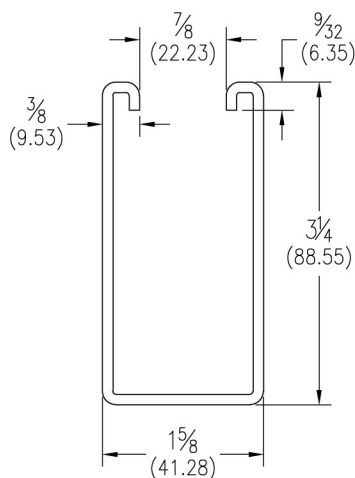
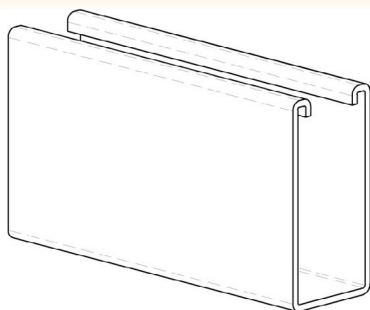
Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of ¹/₂₄₀ span. *Failure determined by weld shear.

Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.

CHANNEL STRUT

FIG. 1501-1542

1⁵/₈" X 3¹/₄" X 12 GAUGE



Material:

Carbon steel (Type 304 or 316
Stainless Steel upon request)

Finish:

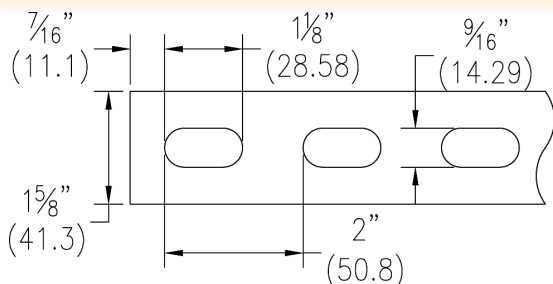
Plain, pre-galvanized, channel
green, e-coat, or hot dipped
galvanized

Ordering:

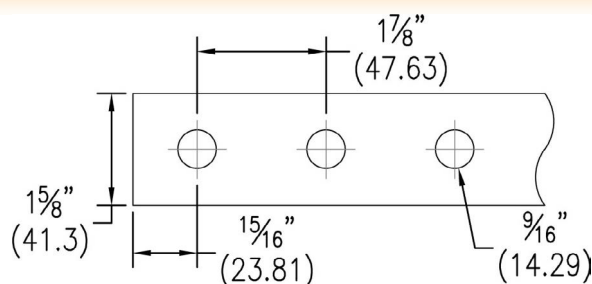
Specify figure number, material,
finish, and number of feet.

Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1501	1502	No Openings	2.99	(4.45)	300	(91.44)	300	(91.44)
1501A	1502A	Welded Back to Back	5.98	(8.90)	100	(30.48)	200	(60.96)
1511	1512	With 1 ¹ / ₈ " X 9/16" (28.58 X 14.29) slots on 2" (50.8) centers	2.90	(4.32)	300	(91.44)	300	(91.44)
1511A	1512A	Welded Back to Back	5.80	(8.63)	100	(30.48)	200	(60.96)
1521	1522	With 9/16" (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	2.91	(4.33)	300	(91.44)	300	(91.44)
1521A	1522A	Welded Back to Back	6.02	(8.96)	100	(30.48)	200	(60.96)
1531	1532	With 3" (76.20) slots	2.89	(4.30)	300	(91.44)	300	(91.44)
1541	1542	With 7/8" (22.23) Knockouts on 6" (152.40) centers	2.99	(4.45)	300	(91.44)	300	(91.44)

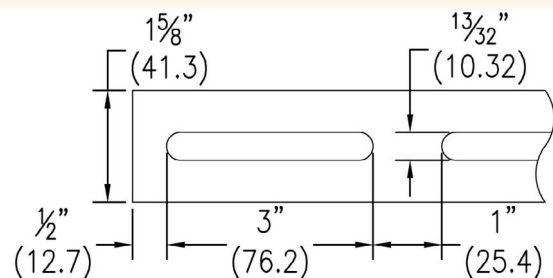
1511-1512



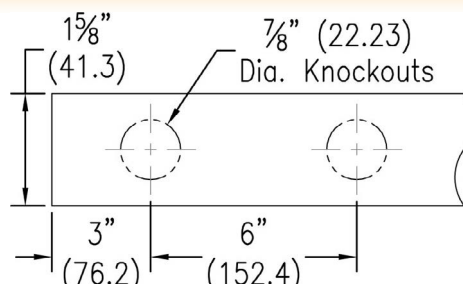
1521-1522



1531-1532



1541-1542



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 3¹/₄" X 12 GAUGE

FIG. 1501-1542

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1501	0.902	(5.819)	1.115	(46.423)	0.641	(10.504)	1.112	(2.824)	0.436	(18.153)	0.537	(8.800)	0.695	(1.765)
1501A	1.804	(11.639)	6.349	(264.341)	1.953	(32.004)	1.876	(4.765)	0.873	(36.347)	1.074	(17.600)	0.695	(1.765)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1501	24	(609.6)	8190	(36.43)	5130	(22.82)	0.03	(0.76)	5130	(22.82)
1501A			17701	(78.74)	5130*	(22.82)	0.01	(0.25)	5130*	(22.82)
1501	36	(914.4)	7311	(32.52)	3488	(15.52)	0.07	(1.78)	3488	(15.52)
1501A			17416	(77.47)	5130*	(22.82)	0.02	(0.51)	5130*	(22.82)
1501	48	(1219.2)	6214	(27.64)	2616	(11.64)	0.12	(3.05)	2616	(11.64)
1501A			17016	(75.69)	5130*	(22.82)	0.04	(1.02)	5130*	(22.82)
1501	60	(1524.0)	4988	(22.19)	2093	(9.31)	0.18	(4.57)	2093	(9.31)
1501A			16503	(73.41)	5130*	(22.82)	0.08	(2.03)	5130*	(22.82)
1501	72	(1828.8)	3816	(16.97)	1744	(7.76)	0.26	(6.60)	1744	(7.76)
1501A			15876	(70.62)	5130*	(22.82)	0.14	(3.56)	5130*	(22.82)
1501	84	(2133.6)	3063	(13.62)	1495	(6.65)	0.36	(9.14)	1460	(6.49)
1501A			15135	(67.32)	4552	(20.25)	0.19	(4.83)	4552	(20.25)
1501	96	(2438.4)	2564	(11.41)	1308	(5.82)	0.47	(11.94)	1118	(4.97)
1501A			14279	(63.52)	3983	(17.72)	0.25	(6.35)	3983	(17.72)
1501	108	(2743.2)	2213	(9.84)	1163	(5.17)	0.59	(14.99)	884	(3.93)
1501A			12210	(54.31)	3541	(15.75)	0.32	(8.13)	3541	(15.75)
1501	120	(3048.0)	1953	(8.69)	1046	(4.65)	0.73	(18.54)	716	(3.18)
1501A			12226	(54.38)	3187	(14.18)	0.39	(9.91)	3187	(14.18)
1501	144	(3657.6)	1580	(7.03)	880	(3.91)	1.06	(26.92)	500	(2.22)
1501A			9250	(41.15)	2656	(11.81)	0.56	(14.22)	2656	(11.81)
1501	168	(4267.2)	1340	(5.96)	750	(3.34)	1.43	(36.32)	370	(1.65)
1501A			6800	(30.25)	2276	(10.12)	0.77	(19.56)	2078	(9.24)
1501	192	(4876.8)	-	-	660	(2.94)	1.88	(47.75)	280	(1.25)
1501A			-	-	1992	(8.86)	1.00	(25.40)	1591	(7.08)
1501	216	(5486.4)	-	-	580	(2.58)	2.35	(59.69)	220	(0.98)
1501A			-	-	1770	(7.87)	1.27	(32.26)	1257	(5.59)
1501	240	(6096.0)	-	-	530	(2.36)	2.94	(74.68)	180	(0.80)
1501A			-	-	1593	(7.09)	1.56	(39.62)	1018	(4.53)

For pierced Channels, reduce beam load values as follows:
 1511 & 1512 = 15%
 1521 & 1522 = 10%
 1531 & 1532 = 30%
 1541 & 1542 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

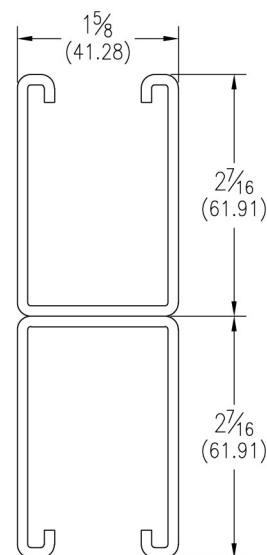
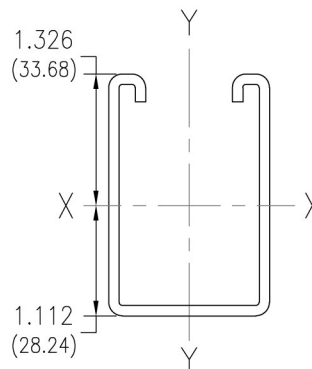
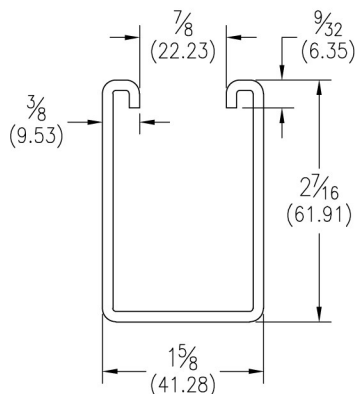
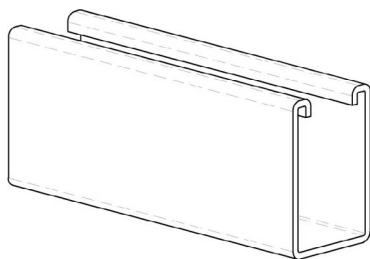
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT

FIG. 1601-1642

1⁵/₈" X 2⁷/₁₆" X 12 GAUGE



Material:

Carbon steel (Type 304 or 316
Stainless Steel upon request)

Finish:

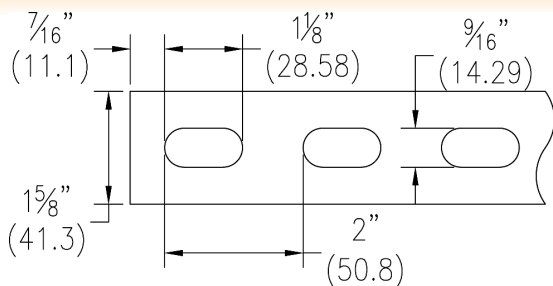
Plain, pre-galvanized, channel
green, e-coat, or hot dipped
galvanized

Ordering:

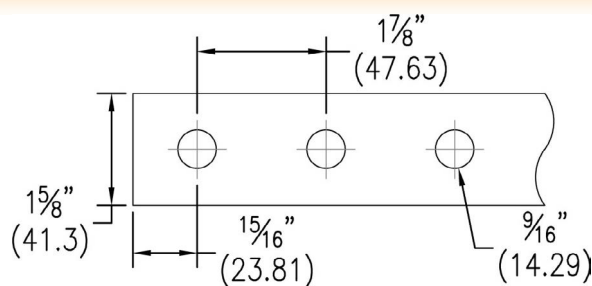
Specify figure number, material,
finish, and number of feet.

Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1601	1602	No Openings	2.30	(3.42)	300	(91.44)	400	(121.92)
1601A	1602A	Welded Back to Back	4.60	(6.85)	200	(60.96)	200	(60.96)
1611	1612	With 1 1/8" X 9/16" (28.58 X 14.29) slots on 2" (50.8) centers	2.23	(3.32)	300	(91.44)	400	(121.92)
1611A	1612A	Welded Back to Back	4.46	(6.64)	200	(60.96)	200	(60.96)
1621	1622	With 9/16" (14.29) dia. holes on 1 7/8" (47.63) centers	2.25	(3.35)	300	(91.44)	400	(121.92)
1621A	1622A	Welded Back to Back	4.86	(7.23)	200	(60.96)	200	(60.96)
1631	1632	With 3" (76.20) slots	2.21	(3.29)	300	(91.44)	400	(121.92)
1641	1642	With 7/8" (22.23) Knockouts on 6" (152.40) centers	2.30	(3.42)	300	(91.44)	400	(121.92)

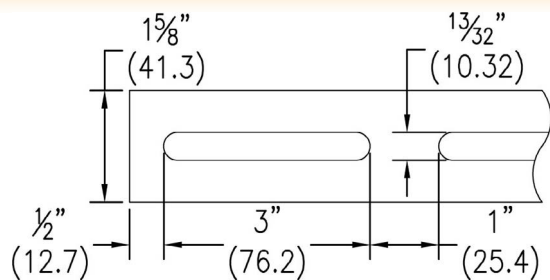
1611-1612



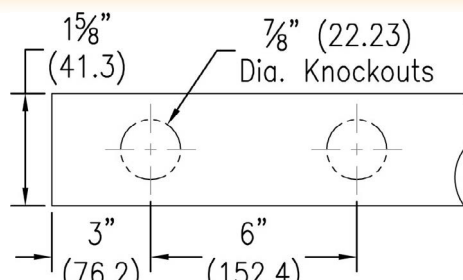
1621-1622



1631-1632



1641-1642



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 2⁷/₁₆" X 12 GAUGE

FIG. 1601-1642

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1601	0.732	(4.723)	0.531	(22.108)	0.401	(6.571)	0.852	(2.164)	0.338	(14.073)	0.416	(6.817)	0.68	(1.727)
1601A	1.464	(9.445)	2.874	(119.659)	1.179	(19.320)	1.401	(3.559)	0.676	(28.145)	0.832	(13.634)	0.68	(1.727)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1601	12	(304.8)	10140	(45.10)	3880	(17.26)	0.01	(0.25)	3880	(17.26)
1601A			20820	(92.61)	3880*	(17.26)	0.01	(0.25)	3880*	(17.26)
1601	24	(609.6)	9244	(41.12)	3273	(14.56)	0.04	(1.02)	3273	(14.56)
1601A			20519	(91.27)	3880*	(17.26)	0.01	(0.25)	3880*	(17.26)
1601	36	(914.4)	7933	(35.29)	2182	(9.71)	0.09	(2.29)	2182	(9.71)
1601A			20017	(89.04)	3880*	(17.26)	0.03	(0.76)	3880*	(17.26)
1601	48	(1219.2)	6386	(28.41)	1636	(7.28)	0.15	(3.81)	1636	(7.28)
1601A			19315	(85.92)	3880*	(17.26)	0.07	(1.78)	3880*	(17.26)
1601	60	(1524.0)	4785	(21.28)	1309	(5.82)	0.24	(6.10)	1309	(5.82)
1601A			18412	(81.90)	3847	(17.11)	0.13	(3.30)	3847	(17.11)
1601	72	(1828.8)	3717	(16.53)	1091	(4.85)	0.35	(8.89)	947	(4.21)
1601A			17309	(76.99)	3206	(14.26)	0.19	(4.83)	3206	(14.26)
1601	84	(2133.6)	3052	(13.58)	935	(4.16)	0.47	(11.94)	696	(3.10)
1601A			16005	(71.19)	2748	(12.22)	0.26	(6.60)	2748	(12.22)
1601	96	(2438.4)	2600	(11.57)	818	(3.64)	0.62	(15.75)	533	(2.37)
1601A			14500	(64.50)	2404	(10.69)	0.33	(8.38)	2404	(10.69)
1601	108	(2743.2)	2271	(10.10)	727	(3.23)	0.77	(19.56)	421	(1.87)
1601A			12795	(56.92)	2137	(9.51)	0.42	(10.67)	2137	(9.51)
1601	120	(3048.0)	2019	(8.98)	655	(2.91)	0.96	(24.38)	341	(1.52)
1601A			10889	(48.44)	1924	(8.56)	0.52	(13.21)	1844	(8.20)
1601	144	(3657.6)	1650	(7.34)	550	(2.45)	1.39	(35.31)	240	(1.07)
1601A			7150	(31.80)	1610	(7.16)	0.75	(19.05)	1280	(5.69)
1601	168	(4267.2)	1380	(6.14)	470	(2.09)	1.88	(47.75)	170	(0.76)
1601A			5250	(23.35)	1380	(6.14)	1.03	(26.16)	940	(4.18)
1601	192	(4876.8)	-	-	410	(1.82)	2.45	(62.23)	130	(0.58)
1601A			-	-	1210	(5.38)	1.34	(34.04)	720	(3.20)
1601	216	(5486.4)	-	-	360	(1.60)	3.06	(77.72)	110	(0.49)
1601A			-	-	1070	(4.76)	1.69	(42.93)	570	(2.54)
1601	240	(6096.0)	-	-	330	(1.47)	3.85	(97.79)	90	(0.40)
1601A			-	-	970	(4.31)	2.11	(53.59)	460	(2.05)

For pierced Channels, reduce beam load values as follows:
 1611 & 1612 = 15%
 1621 & 1622 = 10%
 1631 & 1632 = 30%
 1641 & 1642 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.

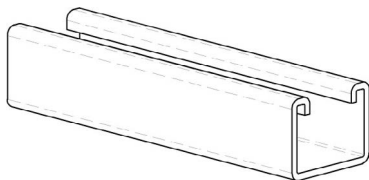
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



CHANNEL STRUT

FIG. 1701-1742

1⁵/₈" X 1³/₈" X 12 GAUGE



Material:

Carbon steel

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, material, finish, and number of feet.

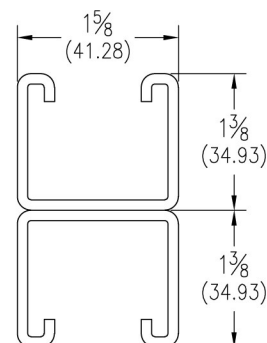
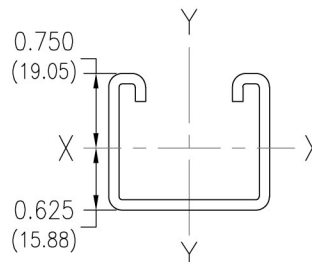
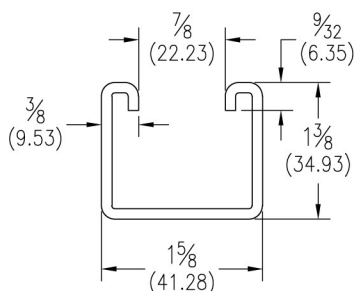
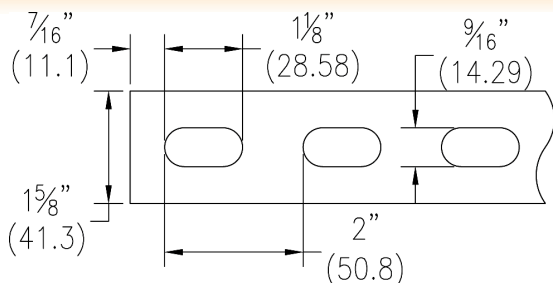
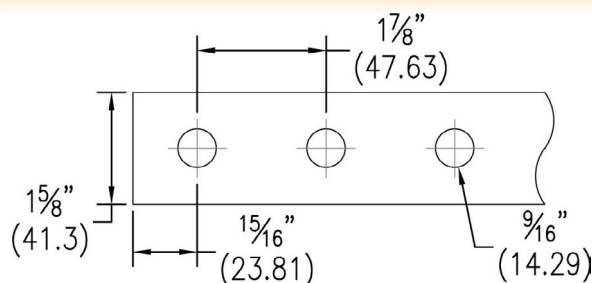


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1701	1702	No Openings	1.59	(2.37)	500	(152.4)	500	(152.4)
1701A	1702A	Welded Back to Back	3.40	(5.06)	200	(61.0)	300	(91.4)
1711	1712	With 1 ¹ / ₈ " X 9/16" (28.58 X 14.29) slots on 2" (50.8) centers	1.54	(2.29)	500	(152.4)	500	(152.4)
1711A	1712A	Welded Back to Back	3.24	(4.82)	200	(61.0)	300	(91.4)
1721	1722	With 9/16" (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	1.65	(2.46)	500	(152.4)	500	(152.4)
1721A	1722A	Welded Back to Back	3.30	(4.91)	200	(61.0)	300	(91.4)
1731	1732	With 3" (76.20) slots	1.59	(2.37)	500	(152.4)	500	(152.4)
1741	1742	With 7/8" (22.23) Knockouts on 6" (152.40) centers	1.59	(2.37)	500	(152.4)	500	(152.4)

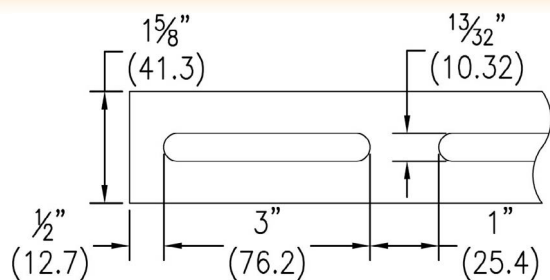
1711-1712



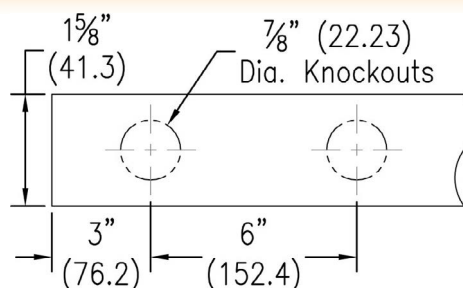
1721-1722



1731-1732



1741-1742



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1³/₈" X 12 GAUGE

FIG. 1701-1742

Section Properties

Figure Number	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1701	0.508	(3.277)	0.124	(5.163)	0.159	(2.606)	0.494	(1.255)	0.209	(8.702)	0.257	(4.211)	0.641	(1.628)
1701A	1.016	(6.555)	0.613	(25.522)	0.445	(7.292)	0.776	(1.971)	0.418	(17.403)	0.514	(8.423)	0.641	(1.628)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Figure Number	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1701	12	(304.8)	10278	(45.72)	2210	(9.83)	0.02	(0.51)	2210	(9.83)
1701A			21320	(94.84)	2210*	(9.83)	0.01	(0.25)	2210*	(9.83)
1701	24	(609.6)	9104	(40.50)	1299	(5.78)	0.07	(1.78)	1299	(5.78)
1701A			20806	(92.55)	2210*	(9.83)	0.02	(0.51)	2210*	(9.83)
1701	36	(914.4)	7640	(33.98)	866	(3.85)	0.15	(3.81)	866	(3.85)
1701A			19950	(88.74)	2210*	(9.83)	0.08	(2.03)	2210*	(9.83)
1701	48	(1219.2)	6151	(27.36)	649	(2.89)	0.26	(6.60)	495	(2.20)
1701A			18751	(83.41)	1817	(8.08)	0.15	(3.81)	1817	(8.08)
1701	60	(1524.0)	4778	(21.25)	520	(2.31)	0.41	(10.41)	317	(1.41)
1701A			17210	(76.55)	1454	(6.47)	0.23	(5.84)	1454	(6.47)
1701	72	(1828.8)	3870	(17.21)	433	(1.93)	0.59	(14.99)	220	(0.98)
1701A			15326	(68.17)	1211	(5.39)	0.33	(8.38)	1092	(4.86)
1701	84	(2133.6)	3243	(14.43)	371	(1.65)	0.80	(20.32)	162	(0.72)
1701A			13100	(58.27)	1038	(4.62)	0.45	(11.43)	802	(3.57)
1701	96	(2438.4)	2774	(12.34)	325	(1.45)	1.04	(26.42)	124	(0.55)
1701A			10525	(46.82)	909	(4.04)	0.59	(14.99)	614	(2.73)
1701	108	(2743.2)	2403	(10.69)	289	(1.29)	1.32	(33.53)	98	(0.44)
1701A			8316	(36.99)	808	(3.59)	0.75	(19.05)	485	(2.16)
1701	120	(3048.0)	1993	(8.87)	260	(1.16)	1.63	(41.40)	79	(0.35)
1701A			6736	(29.96)	727	(3.23)	0.92	(23.37)	393	(1.75)
1701	144	(3657.6)	-	-	220	(0.98)	2.04	(51.82)	90	(0.40)
1701A			4350	(19.35)	600	(2.67)	1.33	(33.78)	270	(1.20)
1701	168	(4267.2)	-	-	180	(0.80)	3.11	(78.99)	40	(0.18)
1701A			-	-	520	(2.31)	1.84	(46.74)	200	(0.89)
1701	192	(4876.8)	-	-	160	(0.71)	4.13	(104.90)	30	(0.13)
1701A			-	-	450	(2.00)	2.37	(60.20)	150	(0.67)
1701	216	(5486.4)	-	-	140	(0.62)	5.15	(130.81)	-	-
1701A			-	-	400	(1.78)	3.00	(76.20)	120	(0.53)
1701	240	(6096.0)	-	-	130	(0.58)	6.56	(166.62)	-	-
1701A			-	-	360	(1.60)	3.70	(93.98)	100	(0.44)

For pierced Channels, reduce beam load values as follows:
 1711 & 1712 = 15%
 1721 & 1722 = 10%
 1731 & 1732 = 30%
 1741 & 1742 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

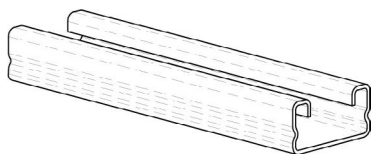
Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



CHANNEL STRUT

FIG. 1801-1842

1⁵/₈" X 1³/₁₆" X 16 GAUGE



Material:

Carbon steel

Finish:

Plain, pre-galvanized, channel green, e-coat, or hot dipped galvanized

Ordering:

Specify figure number, material, finish, and number of feet.

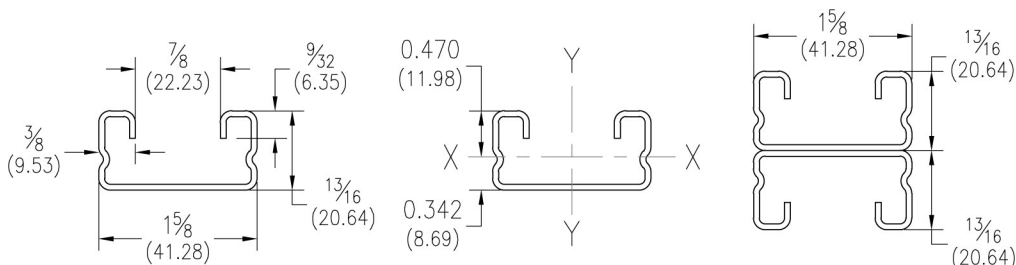
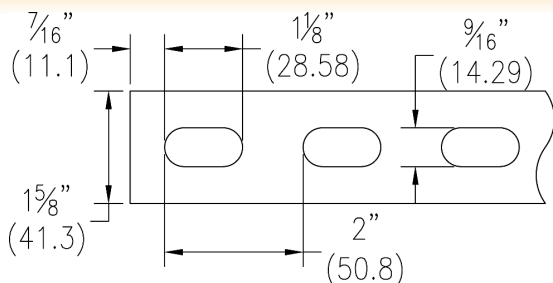
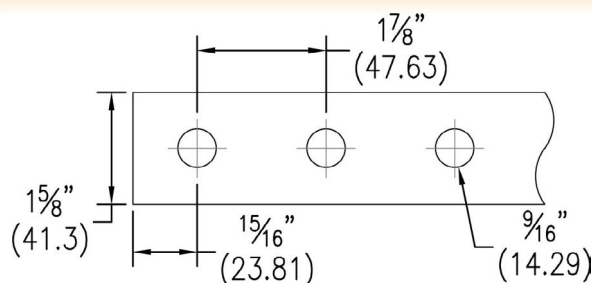


Fig. No.		Type - Description	Weight		Bundle Qty.			
10ft. (3.05m)	20ft. (6.1m)		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.1m
1801	1802	No Openings	0.86	(1.28)	500	(152.4)	1000	(304.8)
1801A	1802A	Welded Back to Back	1.72	(2.56)	500	(152.4)	500	(152.4)
1811	1812	With 1 ¹ / ₈ " X 9/ ₁₆ " (28.58 X 14.29) slots on 2" (50.8) centers	0.75	(1.12)	500	(152.4)	1000	(304.8)
1811A	1812A	Welded Back to Back	1.52	(2.26)	500	(152.4)	500	(152.4)
1821	1822	With 9/ ₁₆ " (14.29) dia. holes on 1 ⁷ / ₈ " (47.63) centers	0.77	(1.15)	500	(152.4)	1000	(304.8)
1821A	1822A	Welded Back to Back	1.56	(2.32)	500	(152.4)	500	(152.4)
1831	1832	With 3" (76.20) slots	0.75	(1.12)	500	(152.4)	1000	(304.8)
1841	1842	With 7/ ₈ " (22.23) Knockouts on 6" (152.40) centers	0.86	(1.28)	500	(152.4)	1000	(304.8)

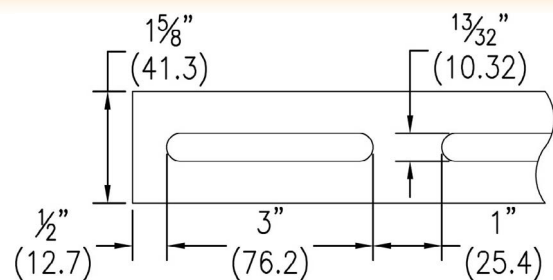
1811-1812



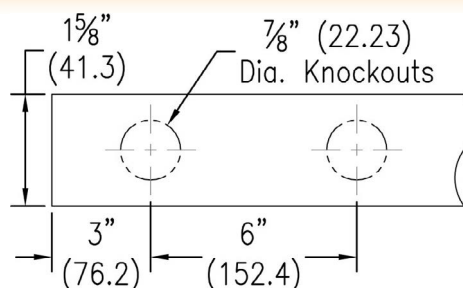
1821-1822



1831-1832



1841-1842



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT



1⁵/₈" X 1³/₁₆" X 16 GAUGE

FIG. 1801-1842

Section Properties

Fig. No.	X-X Axis								Y-Y Axis					
	Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia		Section Modulus		Radius of Gyration	
	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm
1801	.252	(1.626)	.024	(0.999)	.051	(0.836)	.306	(0.777)	.094	(3.914)	.115	(1.885)	.612	(1.554)
1801A	.502	(3.239)	.111	(4.622)	.137	(2.245)	.469	(1.191)	.188	(7.827)	.231	(3.785)	.612	(1.554)

Modules of Elasticity: 29,500,000 psi (203,395.3 mPa)

Beam & Column Load Table

Fig. No.	Beam Span or Unbraced Column Height		Maximum Column Load		Uniform Load @25,000 psi		Deflection @25,000 psi		Uniform Load @1/240 Span	
			lbs.	kN	lbs.	kN			lbs.	kN
1801	12	(304.8)	4968	(22.10)	610	(2.71)	0.03	(0.69)	610	(2.71)
1801A			10237	(45.54)	610*	(2.71)	0.00	(0.10)	610*	(2.71)
1801	24	(609.6)	4329	(19.26)	408	(1.81)	0.11	(2.79)	371	(1.65)
1801A			9881	(43.95)	610*	(2.71)	0.04	(1.09)	610*	(2.71)
1801	36	(914.4)	3441	(15.31)	270	(1.20)	0.24	(6.17)	168	(0.75)
1801A			8965	(39.88)	610*	(2.71)	0.13	(3.33)	610*	(2.71)
1801	48	(1219.2)	2263	(10.07)	201	(0.89)	0.43	(11.00)	92	(0.41)
1801A			7670	(34.12)	535	(2.38)	0.25	(6.35)	427	(1.90)
1801	60	(1524.0)	1448	(6.44)	161	(0.72)	0.68	(17.15)	60	(0.27)
1801A			6172	(27.45)	427	(1.90)	0.40	(10.06)	271	(1.21)
1801	72	(1828.8)	1005	(4.47)	138	(0.61)	1.00	(25.27)	41	(0.18)
1801A			4586	(20.40)	357	(1.59)	0.57	(14.40)	189	(0.84)
1801	84	(2133.6)	-	-	118	(0.52)	1.36	(34.47)	30	(0.13)
1801A			3368	(14.98)	307	(1.37)	0.77	(19.63)	139	(0.62)
1801	96	(2438.4)	-	-	101	(0.45)	1.73	(43.97)	22	(0.10)
1801A			2581	(11.48)	268	(1.19)	1.01	(25.68)	108	(0.48)
1801	108	(2743.2)	-	-	90	(0.40)	2.20	(55.96)	19	(0.08)
1801A			2037	(9.06)	238	(1.06)	1.28	(32.49)	82	(0.36)
1801	120	(3048.0)	-	-	81	(0.36)	2.70	(68.61)	13	(0.06)
1801A			-	-	211	(0.94)	1.55	(39.42)	69	(0.31)

For pierced Channels, reduce beam load values as follows:
 1811 & 1812 = 15%
 1821 & 1822 = 10%
 1831 & 1832 = 30%
 1841 & 1842 = 5%

SPOT WELDING

Resistance welding of back to back strut channel is accomplished by way of an AC powered press type spot welder. This equipment produces a series of spot welds from 2" (50.8) to 4" (101.6) apart continuously down the length of the channel. Consistency is maintained by the use of a highly sophisticated constant current weld control. This processor is capable of maintaining weld sequence, duration and current control along with other variables. Any deviations in the programmed parameters will issue forth an alarm or shut down fault, which is then investigated. Weld quality is tested every 300-350 welds through the use of a destructive test method. Through the use of modern technology, destructive and non-destructive testing, the quality of strut can be maintained. Spot weld strut is fabricated in accordance with the R.W.M.A. guidelines for resistance welding.

Beam Loads: Published loads are given in total uniform load (lbs.) not uniform load (^{lbs.}/_{ft.}). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a factor use stress of 25,000 PSI (172.37 mPa). When deflection is a factor use deflection of 1/240 span. *Failure determined by weld shear.

Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CHANNEL STRUT

FIG. 1950-1962

TELESCOPING CHANNEL

Material:

Carbon steel

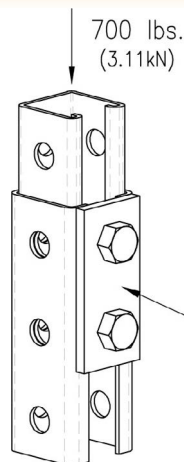
Finish:

Pre-galvanized

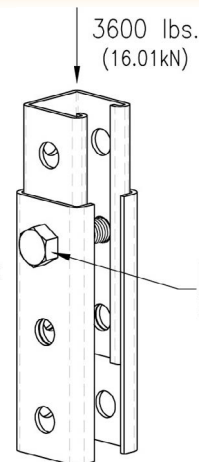
Ordering:

Specify figure number (1950 & 1960 sold separately), material, finish, and number of feet.

Fig. No.	
10ft. (3.05m)	20ft. (6.1m)
1951	1952
1961	1962



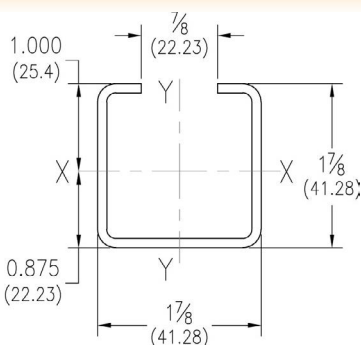
Typical 1/4" (6.35) thick
2-hole fitting with
[2] 1/2" bolts and
strut nuts.



[1] 1/2" through
bolt and nut.

FIG. 1950

TELESCOPING CHANNEL



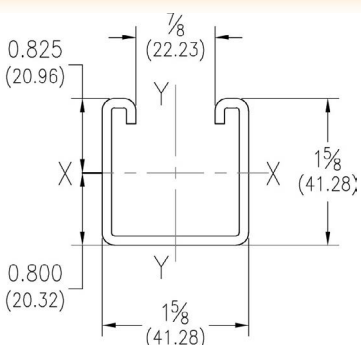
Description: Telescoping Channel (1 7/8" X 1 7/8" 12 gauge channel – fits over 1 5/8" X 1 5/8" channels 9/16" (14.29) holes on 1 7/8" (47.63) centers)

Section Properties*				X-X Axis				Y-Y Axis			
Weight		Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia	
lbs/ft	kg/m	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴
1.93	(2.87)	.458	(2.95)	.253	(10.53)	.253	(4.15)	.743	(1.89)	.276	(11.49)

*Section properties are based on nominal metal thickness and overall dimensions

FIG. 1960

3-HOLE CHANNEL



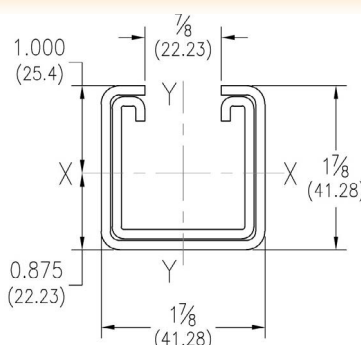
Description: 3-Hole Channel (1 5/8" X 1 5/8" 12 gauge channel with 9/16" (14.29) holes on 1 7/8" (47.63) centers on three sides)

Section Properties*				X-X Axis				Y-Y Axis			
Weight		Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia	
lbs/ft	kg/m	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴
1.66	(2.47)	.386	(2.49)	.160	(6.66)	.194	(3.18)	.640	(1.63)	.172	(7.16)

*Section properties are based on nominal metal thickness and overall dimensions

FIG. 1950 & 1960

COMBINATION TELESCOPING CHANNEL



Description: 3-Hole Channel (1 7/8" X 1 7/8" 12 gauge channel with 9/16" (14.29) holes on 1 7/8" (47.63) centers on three sides)

Section Properties*				X-X Axis				Y-Y Axis			
Weight		Area of Section		Moment Of Inertia		Section Modulus		Radius of Gyration		Moment Of Inertia	
lbs/ft	kg/m	in. ²	cm ²	in. ⁴	cm ⁴	in. ³	cm ³	in.	cm	in. ⁴	cm ⁴
3.60	(5.36)	.847	(5.46)	.413	(17.20)	.422	(6.92)	.698	(1.77)	.448	(18.65)

*Section properties are based on nominal metal thickness and overall dimensions

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

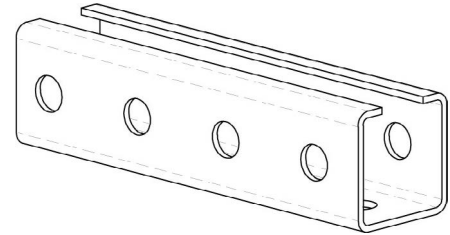
CHANNEL STRUT



TELESCOPING CHANNEL

FIG. 1950

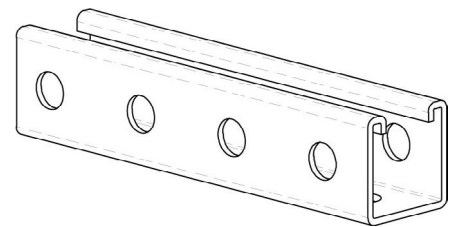
Beam Span		Allowable load		Resulting Deflection		Allowable load @ 1/240 Span	
		lbs.	kN			lbs.	kN
12	(304.8)	4203	(18.70)	0.012	(0.305)	4703	(20.92)
24	(609.6)	2099	(9.34)	0.050	(1.270)	2099	(9.34)
36	(914.4)	1396	(6.21)	0.112	(2.845)	1396	(6.21)
48	(1219.2)	1044	(4.64)	0.200	(5.080)	1044	(4.64)
60	(1524.0)	831	(3.70)	0.312	(7.925)	664	(2.95)
72	(1828.8)	689	(3.06)	0.450	(11.430)	456	(2.03)
84	(2133.6)	587	(2.61)	0.612	(15.545)	330	(1.47)
96	(2438.4)	510	(2.27)	0.799	(20.295)	248	(1.10)
108	(2743.2)	450	(2.00)	1.012	(25.705)	190	(0.85)
120	(3048.0)	401	(1.78)	1.249	(31.725)	149	(0.66)



3-HOLE CHANNEL

FIG. 1960

Beam Span		Allowable load		Resulting Deflection		Allowable load @ 1/240 Span	
		lbs.	kN			lbs.	kN
12	(304.8)	2225	(9.90)	0.015	(0.381)	2225	(9.90)
24	(609.6)	1610	(7.16)	0.061	(1.549)	1610	(7.16)
36	(914.4)	1071	(4.76)	0.136	(3.454)	1071	(4.76)
48	(1219.2)	800	(3.56)	0.243	(6.172)	658	(2.93)
60	(1524.0)	637	(2.83)	0.379	(9.627)	417	(1.85)
72	(1828.8)	528	(2.35)	0.546	(13.868)	286	(1.27)
84	(2133.6)	449	(2.00)	0.743	(18.872)	206	(0.92)
96	(2438.4)	390	(1.73)	0.970	(24.638)	153	(0.68)
108	(2743.2)	344	(1.53)	1.228	(31.191)	116	(0.52)
120	(3048.0)	306	(1.36)	1.516	(38.506)	90	(0.40)

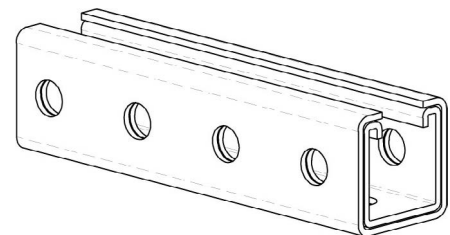


COMBINATION TELESCOPING CHANNEL

FIG. 1950 & 1960

Beam Span		Allowable load		Resulting Deflection		Allowable load @ 1/240 Span	
		lbs.	kN			lbs.	kN
12	(304.8)	7033	(31.28)	0.013	(0.330)	7033	(31.28)
24	(609.6)	3511	(15.62)	0.051	(1.295)	3511	(15.62)
36	(914.4)	2335	(10.39)	0.115	(2.921)	2335	(10.39)
48	(1219.2)	1745	(7.76)	0.205	(5.207)	1705	(7.58)
60	(1524.0)	1389	(6.18)	0.320	(8.128)	1082	(4.81)
72	(1828.8)	1151	(5.12)	0.460	(11.684)	742	(3.30)
84	(2133.6)	980	(4.36)	0.627	(15.926)	536	(2.38)
96	(2438.4)	851	(3.79)	0.819	(20.803)	401	(1.78)
108	(2743.2)	749	(3.33)	1.036	(26.314)	307	(1.37)
120	(3048.0)	668	(2.97)	1.279	(32.487)	239	(1.06)

Lloads based on telescoping members of equal length.

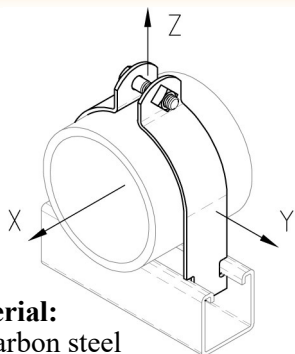


Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

PIPE & CONDUIT SUPPORTS

FIG. 2001-2016

I.P. PIPE CLAMPS



Material:

Carbon steel
(Aluminum and Type 304 or
316 Stainless Steel upon
request)

Finish:

Pre-galvanized

Approvals:

Complies with
Federal Specification A-A-1192A (Type 60) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type
60) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number and material.

Fig. No.	Pipe Size		O.D. Size		Material Size	Max. Rec. Loads						Weight Each	
						X		Y		Z			
						Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2001	3/8	(10)	--	--	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	0.10	(0.05)
2002	1/2	(15)	--	--	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	0.10	(0.05)
2003	3/4	(20)	--	--	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	0.14	(0.06)
2004	1	(25)	--	--	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	0.17	(0.08)
2005	1 1/4	(32)	--	--	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	0.21	(0.10)
2006	1 1/2	(40)	--	--	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	0.30	(0.14)
2007	2	(50)	2 3/8	(60.33)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	0.35	(0.16)
2008	2 1/2	(65)	2 7/8	(73.03)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	0.39	(0.18)
2009	3	(80)	3 1/2	(88.90)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	0.46	(0.21)
2010	3 1/2	(90)	4	(101.60)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	0.65	(0.29)
2011	4	(100)	4 1/2	(114.30)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	0.66	(0.30)
2012	5	(125)	--	--	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	0.79	(0.36)
2013	6	(150)	6 5/8	(168.28)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	1.00	(0.45)
2014	8	(200)	8 5/8	(219.08)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.14	(0.52)
2015	10	(65)	10 3/4	(273.05)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.43	(0.65)
2016	12	(80)	12 3/4	(323.85)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.74	(0.79)

FIG. 2101-2107

UNIVERSAL PIPE CLAMP FOR EMT, IMC & GRC

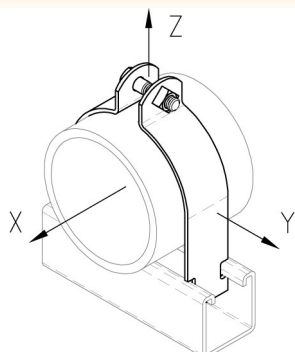


Fig. No.	Pipe Size		O.D. Size		Material Size	Max. Rec. Loads						Weight Each	
						X		Y		Z			
						Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2101	3/8	(10)	.557 to .706	(14.15 to 17.93)	16 Ga.	50	(.22)	50	(.22)	400	(1.78)	.11	(.05)
2102	1/2	(15)	.706 to .840	(17.93 to 21.34)	16 Ga.	50	(.22)	50	(.22)	400	(1.78)	.11	(.05)
2103	3/4	(20)	.922 to 1.050	(23.42 to 26.67)	14 Ga.	50	(.22)	50	(.22)	400	(1.78)	.15	(.07)
2104	1	(25)	1.163 to 1.315	(29.54 to 33.40)	14 Ga.	50	(.22)	50	(.22)	400	(1.78)	.17	(.08)
2105	1 1/4	(32)	1.510 to 1.660	(38.35 to 42.16)	14 Ga.	50	(.22)	50	(.22)	400	(1.78)	.19	(.09)
2106	1 1/2	(40)	1.740 to 1.900	(44.20 to 48.26)	12 Ga.	75	(.33)	75	(.33)	600	(2.67)	.30	(.14)
2107	2	(50)	2.197 to 2.375	(55.80 to 60.33)	12 Ga.	75	(.33)	75	(.33)	600	(2.67)	.35	(.16)

Material: Carbon steel

Finish: Pre-galvanized

Ordering: Specify figure number.

Approvals: Complies with Federal Specification A-A-1192A (Type 60) and
Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 60)
which supersedes ANSI/MSS SP-69.

FIG. 2201-2207

EMT CONDUIT CLAMP

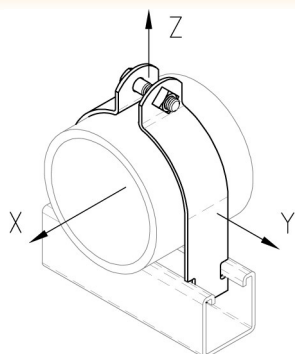


Fig. No.	EMT Size		Material Size	Max. Rec. Loads						Weight Each	
				X		Y		Z			
				Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2201	3/8	(10)	16 Ga.	50	(.22)	50	(.22)	400	(1.78)	.09	(.04)
2202	1/2	(15)	16 Ga.	50	(.22)	50	(.22)	400	(1.78)	.09	(.04)
2203	3/4	(20)	16 Ga.	50	(.22)	50	(.22)	400	(1.78)	.10	(.05)
2204	1	(25)	14 Ga.	50	(.22)	50	(.22)	600	(2.67)	.14	(.06)
2205	1 1/4	(32)	14 Ga.	50	(.22)	50	(.22)	600	(2.67)	.16	(.07)
2206	1 1/2	(40)	12 Ga.	75	(.33)	75	(.33)	800	(3.56)	.27	(.12)
2207	2	(50)	12 Ga.	75	(.33)	75	(.33)	800	(3.56)	.30	(.14)

Material: Carbon steel

Finish: Pre-galvanized

Ordering: Specify figure number.

Approvals: Complies with Federal Specification A-A-1192A (Type 60) and
Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 60)
which supersedes ANSI/MSS SP-69.

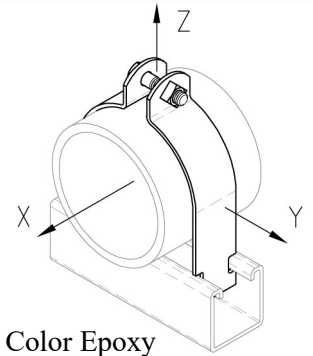
PIPE & CONDUIT SUPPORTS



COPPER TUBING CLAMP

FIG. 2301-2314

Fig. No.	Pipe Size		Material Size	Max. Rec. Loads						Weight Each	
				X		Y		Z			
				Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2301	¼	(6)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.09	(.04)
2302	⅜	(10)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.09	(.04)
2303	½	(15)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.09	(.04)
2304	¾	(20)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.10	(.05)
2305	1	(25)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.14	(.06)
2306	1¼	(32)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.16	(.07)
2307	1½	(40)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.17	(.08)
2308	2	(50)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.29	(.13)
2309	2½	(65)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.35	(.16)
2310	3	(80)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.40	(.18)
2311	3½	(90)	12 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.51	(.23)
2312	4	(100)	12 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.61	(.28)
2313	5	(125)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.74	(.34)
2314	6	(150)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.94	(.43)



Material:

Carbon steel

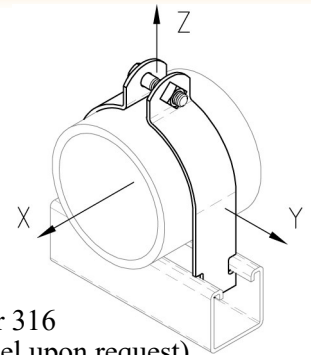
Finish:

Copper Color Epoxy
Approvals: Complies with Federal Specification A-A-1192A (Type 60) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 60) which supersedes ANSI/MSS SP-69.
Ordering: Specify figure number.

O.D. TUBING CLAMP

FIG. 2401-2432

Fig. No.	O.D. Size		Material Size	Max. Rec. Loads						Weight Each	
				X		Y		Z			
				Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2401	1/4	(6.35)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.09	(.04)
2402	3/8	(9.53)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.09	(.04)
2403	1/2	(12.70)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.10	(.05)
2404	5/8	(15.88)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.10	(.05)
2405	3/4	(19.05)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.10	(.05)
2406	7/8	(22.23)	16 Ga.	50	(0.22)	50	(0.22)	400	(1.78)	.10	(.05)
2407	1	(25.40)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.13	(.06)
2408	1 1/8	(28.58)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.14	(.06)
2409	1 1/4	(31.75)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.14	(.06)
2410	1 3/8	(34.93)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.16	(.07)
2411	1 1/2	(38.10)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.16	(.07)
2412	1 5/8	(41.28)	14 Ga.	75	(0.33)	75	(0.33)	600	(2.67)	.17	(.08)
2413	1 3/4	(44.45)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.27	(.12)
2414	1 7/8	(47.63)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.28	(.13)
2415	2	(50.80)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.28	(.13)
2416	2 1/8	(53.98)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.29	(.13)
2417	2 1/4	(57.15)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.32	(.15)
2418	2 1/2	(63.50)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.34	(.15)
2419	2 5/8	(66.68)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.35	(.16)
2420	2 3/4	(69.85)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.37	(.17)
2421	3	(76.20)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.39	(.18)
2422	3 1/8	(79.38)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.40	(.18)
2423	3 1/4	(82.55)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.42	(.19)
2424	3 3/8	(85.73)	12 Ga.	125	(0.56)	125	(0.56)	800	(3.56)	.43	(.20)
2425	3 5/8	(92.08)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.51	(.23)
2426	3 3/4	(95.25)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.53	(.24)
2427	3 7/8	(98.43)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.54	(.24)
2428	4 1/8	(104.78)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.57	(.26)
2429	4 1/4	(107.95)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.59	(.27)
2430	4 3/8	(111.13)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.60	(.27)
2431	4 5/8	(117.48)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.62	(.28)
2432	4 3/4	(120.65)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.64	(.29)



Material:

Carbon steel

(Type 304 or 316)

Stainless Steel upon request)

Finish:

Pre-galvanized
Approvals: Complies with Federal Specification A-A-1192A (Type 60) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 60) which supersedes ANSI/MSS SP-69.
Ordering: Specify figure number and material.

Fig. Number	No-Hub Cast Iron Soil Nom. Pipe Size	
2006	1 1/2	(40)
2007	2	(50)
2424	3	(80)
2430	4	(100)
2437	5	(125)
2445	6	(150)
2460	8	(200)
2477	10	(250)
2493	12	(300)

APPLICATION:

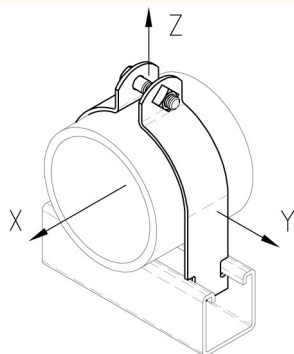
For use with No-Hub Cast Iron Soil Pipe

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

PIPE & CONDUIT SUPPORTS

FIG. 2433-2496

O.D. TUBING CLAMP (CONT'D)

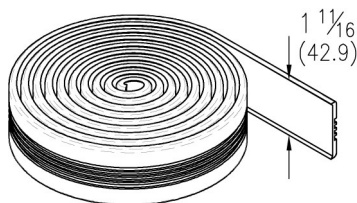


Material: Carbon steel
(Type 304 or 316 Stainless
Steel upon request)
Finish: Pre-galvanized
Approvals: Complies with
Federal Specification A-A-
1192A (Type 60) and
Manufacturers'
Standardization Society ANSI/
MSS SP-58 (Type 60) which
supersedes ANSI/MSS SP-69.
Ordering: Specify figure number
and material.

Fig. No.	O.D. Size		Material Size	Max. Rec. Loads						Weight Each	
				X		Y		Z			
				Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2433	4 ⁷ / ₈	(123.83)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.65	(.29)
2434	5	(127.00)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.67	(.30)
2435	5 ¹ / ₈	(130.18)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.68	(.31)
2436	5 ¹ / ₄	(133.35)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.70	(.32)
2437	5 ³ / ₈	(136.53)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.71	(.32)
2438	5 ¹ / ₂	(139.70)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.72	(.33)
2439	5 ⁵ / ₈	(142.88)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.85	(.39)
2440	5 ³ / ₄	(146.05)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.87	(.39)
2441	5 ⁷ / ₈	(149.23)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.88	(.40)
2442	6	(152.40)	11 Ga.	150	(0.67)	200	(0.89)	1000	(4.45)	.90	(.41)
2443	6 ¹ / ₈	(155.58)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.93	(.42)
2444	6 ¹ / ₄	(158.75)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.94	(.43)
2445	6 ³ / ₈	(161.93)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.95	(.43)
2446	6 ¹ / ₂	(165.10)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.98	(.44)
2447	6 ³ / ₄	(171.45)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	.99	(.45)
2448	6 ⁷ / ₈	(174.63)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.00	(.45)
2449	7	(177.80)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.01	(.46)
2450	7 ¹ / ₈	(180.98)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.02	(.46)
2451	7 ¹ / ₄	(184.15)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.04	(.47)
2452	7 ³ / ₈	(187.33)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.07	(.49)
2453	7 ¹ / ₂	(190.50)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.09	(.49)
2454	7 ⁵ / ₈	(193.68)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.10	(.50)
2455	7 ³ / ₄	(196.85)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.12	(.51)
2456	7 ⁷ / ₈	(200.03)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.13	(.51)
2457	8	(203.20)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.15	(.52)
2458	8 ¹ / ₈	(206.38)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.17	(.53)
2459	8 ¹ / ₄	(209.55)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.18	(.54)
2460	8 ³ / ₈	(212.73)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.20	(.54)
2461	8 ¹ / ₂	(215.90)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.21	(.55)
2463	8 ³ / ₄	(222.25)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.28	(.58)
2465	9	(228.60)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.32	(.60)
2466	9 ¹ / ₈	(231.78)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.32	(.60)
2469	9 ⁵ / ₈	(244.48)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.34	(.61)
2470	9 ³ / ₄	(247.65)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.39	(.63)
2475	10 ¹ / ₄	(260.35)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.43	(.65)
2477	10 ¹ / ₂	(266.70)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.43	(.65)
2487	11 ³ / ₄	(298.45)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.50	(.68)
2488	11 ⁷ / ₈	(301.63)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.55	(.70)
2493	12 ¹ / ₂	(317.50)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.74	(.79)
2496	12 ⁷ / ₈	(327.03)	11 Ga.	200	(0.89)	250	(1.11)	1000	(4.45)	1.65	(.75)

FIG. 2600

CUSHION MATERIAL



Material: EPDM Rubber
Stock Thickness: 1¹/₈" (3.18)
Stock Length: 25 ft. (7.62m)/box
Service Temperature: -70° – 350° F (-57° – 177° C)
Weight: 0.102 lbs/ft. (0.15 kg./m)
Ordering: Specify figure number and number of feet.

PIPE & CONDUIT SUPPORTS



FIG. 2501-2588

Clamp Material: Carbon steel (Type 304 or 316 Stainless Steel upon request)
Cushion Material: Multi-Flex TES A9110 EV1 Black, in accordance with ASTM D4474 TES 0130 A90000. Classified 2043 (25/50) for use in plenums and air handling systems.
Temperature Range: -65°F to 275°F (-54°C to 135°C)
Finish: Western gold
Approvals: Complies with Federal Specification A-A-1192A (Type 61) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 61) which supersedes ANSI/MSS SP-69.
Ordering: Specify figure number.

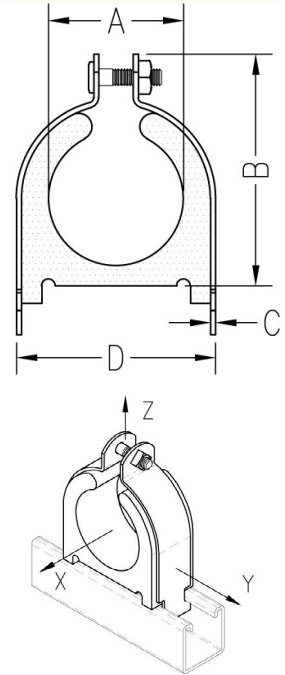


Fig. No.	O.D. Size A		Nom. Tube Size		Nom. Pipe Size		B		C		D		Max. Rec. Load						Wt. Each	
													X		Y		Z			
													Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kg
2501	.25	(6.35)	1/8	(3)	-	-	1.11	(28.19)	.075	(1.91)	.62	(15.75)	50	(22)	50	(22)	400	(1.78)	.13	(.06)
2502	.375	(9.53)	1/4	(6)	-	-	1.24	(31.50)	.075	(1.91)	.75	(19.05)	50	(22)	50	(22)	400	(1.78)	.14	(.06)
2503	.5	(12.70)	3/8	(10)	-	-	1.36	(34.54)	.075	(1.91)	.87	(22.10)	50	(22)	50	(22)	400	(1.78)	.15	(.07)
2504	.625	(15.88)	1/2	(15)	-	-	1.5	(38.10)	.075	(1.91)	1	(25.40)	50	(22)	50	(22)	400	(1.78)	.16	(.07)
2505	.75	(19.05)	5/8	(17)	-	-	1.78	(45.21)	.075	(1.91)	1.33	(33.78)	75	(33)	75	(33)	600	(2.67)	.19	(.09)
2506	.875	(22.23)	3/4	(20)	-	-	1.91	(48.51)	.075	(1.91)	1.45	(36.83)	75	(33)	75	(33)	600	(2.67)	.21	(.09)
2515	1	(25.40)	-	-	-	-	2.03	(51.56)	.075	(1.91)	1.66	(42.16)	75	(33)	75	(33)	600	(2.67)	.29	(.13)
2507	1.125	(28.58)	1	(25)	-	-	2.16	(54.86)	.075	(1.91)	1.79	(45.47)	75	(33)	75	(33)	600	(2.67)	.31	(.14)
2516	1.25	(31.75)	-	-	-	-	2.3	(58.42)	.105	(2.67)	1.92	(48.77)	75	(33)	75	(33)	600	(2.67)	.33	(.15)
2508	1.375	(34.93)	1 1/4	(32)	-	-	2.75	(69.85)	.119	(3.02)	2.22	(56.39)	75	(33)	75	(33)	600	(2.67)	.42	(.19)
2517	1.5	(38.10)	-	-	-	-	2.75	(69.85)	.119	(3.02)	2.22	(56.39)	75	(33)	75	(33)	600	(2.67)	.38	(.17)
2509	1.625	(41.28)	1 1/2	(40)	-	-	3.03	(76.96)	.119	(3.02)	2.47	(62.74)	75	(33)	75	(33)	600	(2.67)	.48	(.22)
2518	1.75	(44.45)	-	-	-	-	3.03	(76.96)	.119	(3.02)	2.47	(62.74)	125	(56)	125	(56)	800	(3.56)	.46	(.21)
2519	1.875	(47.63)	-	-	-	-	3.28	(83.31)	.119	(3.02)	2.47	(62.74)	125	(56)	125	(56)	800	(3.56)	.52	(.24)
2520	2	(50.80)	-	-	-	-	3.28	(83.31)	.119	(3.02)	2.72	(69.09)	125	(56)	125	(56)	800	(3.56)	.50	(.23)
2510	2.125	(53.98)	2	(50)	-	-	3.53	(89.66)	.119	(3.02)	2.97	(75.44)	125	(56)	125	(56)	800	(3.56)	.57	(.26)
2521	2.25	(57.15)	-	-	-	-	3.78	(96.01)	.119	(3.02)	3.22	(81.79)	125	(56)	125	(56)	800	(3.56)	.62	(.28)
2523	2.5	(63.50)	-	-	-	-	4.03	(102.36)	.119	(3.02)	3.47	(88.14)	125	(56)	125	(56)	800	(3.56)	.60	(.27)
2511	2.625	(66.68)	2 1/2	(65)	-	-	4.03	(102.36)	.119	(3.02)	3.47	(88.14)	125	(56)	125	(56)	800	(3.56)	.58	(.26)
2524	3	(76.20)	-	-	-	-	4.52	(114.81)	.119	(3.02)	3.97	(100.84)	125	(56)	125	(56)	800	(3.56)	.69	(.31)
2512	3.125	(79.38)	3	(80)	-	-	4.52	(114.81)	.119	(3.02)	3.97	(100.84)	125	(56)	125	(56)	800	(3.56)	.68	(.31)
2513	3.625	(92.08)	3 1/2	(90)	-	-	5.03	(127.76)	.119	(3.02)	4.47	(113.54)	150	(67)	200	(89)	1000	(4.45)	.76	(.34)
2514	4.125	(104.78)	4	(100)	-	-	5.66	(143.76)	.119	(3.02)	5.09	(129.29)	150	(67)	200	(89)	1000	(4.45)	.88	(.40)
2525	5.125	(130.18)	5	(125)	-	-	6.75	(171.45)	.119	(3.02)	6.25	(158.75)	150	(67)	200	(89)	1000	(4.45)	1.17	(.53)
2527	6	(152.4)	-	-	-	-	7.75	(196.85)	.119	(3.02)	7.5	(190.50)	150	(67)	200	(89)	1000	(4.45)	1.28	(.58)
2526	6.125	(155.58)	6	(150)	-	-	7.75	(196.85)	.119	(3.02)	7.5	(190.50)	150	(67)	200	(89)	1000	(4.45)	1.28	(.58)
2530	.79	(20)	Metric Pipe		-	-	1.78	(45.21)	.07	(1.78)	1.33	(33.78)	75	(33)	75	(33)	600	(2.67)	.19	(.09)
2531	.98	(25)	Metric Pipe		-	-	2.03	(51.56)	.07	(1.78)	1.66	(42.16)	75	(33)	75	(33)	600	(2.67)	.29	(.13)
2532	1.26	(32)	Metric Pipe		-	-	2.30	(58.42)	.07	(1.78)	1.92	(48.77)	75	(33)	75	(33)	600	(2.67)	.33	(.15)
2533	1.57	(40)	Metric Pipe		-	-	2.75	(69.85)	.11	(2.79)	2.22	(56.39)	75	(33)	75	(33)	600	(2.67)	.48	(.22)
2534	1.97	(50)	Metric Pipe		-	-	3.28	(83.31)	.11	(2.79)	2.72	(69.09)	125	(56)	125	(56)	800	(3.56)	.50	(.23)
2535	2.48	(63)	Metric Pipe		-	-	4.03	(102.36)	.11	(2.79)	3.47	(88.14)	125	(56)	125	(56)	800	(3.56)	.60	(.27)
2536	2.95	(75)	Metric Pipe		-	-	4.52	(114.81)	.11	(2.79)	3.97	(100.84)	125	(56)	125	(56)	800	(3.56)	.62	(.28)
2537	3.54	(90)	Metric Pipe		-	-	4.91	(124.71)	.11	(2.79)	4.36	(110.74)	150	(67)	200	(89)	1000	(4.45)	.72	(.33)
2538	4.33	(110)	Metric Pipe		-	-	5.76	(146.30)	.11	(2.79)	5.30	(134.62)	150	(67)	200	(89)	1000	(4.45)	.94	(.43)
2539	4.92	(125)	Metric Pipe		-	-	6.55	(166.37)	.11	(2.79)	6.15	(156.21)	150	(67)	200	(89)	1000	(4.45)	1.06	(.48)
2540	6.30	(160)	Metric Pipe		-	-	7.95	(201.93)	.11	(2.79)	7.70	(195.58)	150	(67)	200	(89)	1000	(4.45)	1.43	(.65)
2574	.540	(13.72)	-	-	1/4	(5)	1.41	(35.81)	.075	(1.91)	.91	(23.11)	50	(22)	50	(22)	400	(1.78)	.16	(.07)
2575	.675	(17.15)	-	-	3/8	(10)	1.59	(40.39)	.075	(1.91)	1.07	(27.18)	75	(33)	75	(33)	600	(2.67)	.17	(.08)
2576	.840	(21.34)	-	-	1/2	(15)	1.91	(48.51)	.075	(1.91)	1.45	(36.83)	75	(33)	75	(33)	600	(2.67)	.21	(.10)
2577	1.050	(26.67)	-	-	3/4	(20)	2.16	(54.86)	.075	(1.91)	1.79	(45.47)	75	(33)	75	(33)	600	(2.67)	.31	(.14)
2578	1.315	(33.40)	-	-	1	(25)	2.75	(69.85)	.119	(3.02)	2.22	(56.39)	75	(33)	75	(33)	600	(2.67)	.43	(.20)
2579	1.660	(42.16)	-	-	1 1/4	(32)	3.03	(76.96)	.119	(3.02)	2.47	(62.74)	125	(56)	125	(56)	800	(3.56)	.48	(.22)
2580	1.900	(48.26)	-	-	1 1/2	(40)	3.28	(83.31)	.119	(3.02)	2.47	(62.74)	125	(56)	125	(56)	800	(3.56)	.52	(.24)
2581	2.375	(60.33)	-	-	2	(50)	3.78	(96.01)	.119	(3.02)	3.22	(81.79)	125	(56)	125	(56)	800	(3.56)	.61	(.28)
2582	2.875	(73.03)	-	-	2 1/2	(65)	4.27	(108.46)	.119	(3.02)	3.72	(94.49)	125	(56)	125	(56)	800	(3.56)	.62	(.28)
2583	3.500	(88.90)	-	-	3	(80)	4.91	(124.71)	.119	(3.02)	4.36	(110.74)	150	(67)	200	(89)	1000	(4.45)	.72	(.33)
2584	4.000	(101.60)	-	-	3 1/2	(90)	5.53	(140.46)	.119	(3.02)	4.97	(126.24)	150	(67)	200	(89)	1000	(4.45)	.88	(.40)
2585	4.500	(114.30)	-	-	4	(100)	6.03	(153.16)	.119	(3.02)	5.47	(138.94)	150	(67)	200	(89)	1000	(4.45)	.95	(.43)
2586	5.563	(141.30)	-	-	5	(125)	7.03	(178.56)	.135	(3.43)	6.47	(164.34)	150	(67)	200	(89)	1000	(4.45)	1.22	(.55)
2587	6.625	(168.28)	-	-	6	(150)	8.03	(203.96)	.135	(3.43)	7.47	(189.74)	150	(67)	200	(89)	1000	(4.45)	1.44	(.65)
2588	8.625	(219.08)	-	-	8	(200)	10.3	(261.62)	.135	(3.43)	9.38	(238.25)	150	(67)	200	(89)	1000	(4.45)	2.00	(.90)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



PIPE & CONDUIT SUPPORTS

FIG. 2701-2712

1-PIECE EMT/GRC STRAP

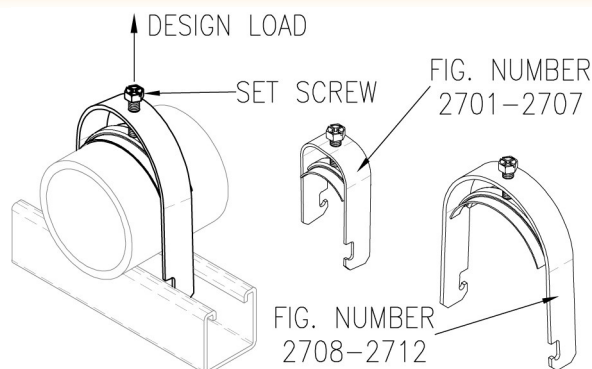


Fig. No.	EMT Size		Rigid Conduit Size		Material Size	Max. Rec. Loads		Weight Each	
						Lbs.	kN	Lbs.	kg
2701	3/8	(10)	-	-	16 Ga.	200	(0.89)	.07	(.03)
2702	1/2	(15)	3/8	(10)	16 Ga.	200	(0.89)	.07	(.03)
2703	3/4	(20)	1/2	(15)	16 Ga.	200	(0.89)	.08	(.04)
2704	1	(25)	3/4	(20)	14 Ga.	300	(1.33)	.11	(.05)
2705	1 1/4	(32)	1	(25)	14 Ga.	300	(1.33)	.13	(.06)
2706	1 1/2	(40)	1 1/4	(32)	12 Ga.	400	(1.78)	.21	(.09)
2707	2	(50)	1 1/2	(40)	12 Ga.	400	(1.78)	.22	(.10)
2708	-	-	2	(50)	12 Ga.	400	(1.78)	.23	(.10)
2709	2 1/2	(65)	2 1/2	(65)	12 Ga.	400	(1.78)	.26	(.12)
2710	3	(80)	3	(80)	12 Ga.	400	(1.78)	.30	(.14)
2711	3 1/2	(90)	3 1/2	(90)	12 Ga.	400	(1.78)	.33	(.15)
2712	4	(100)	4	(100)	12 Ga.	400	(1.78)	.37	(.17)

Material: Carbon steel

Finish: Electro-galvanized

Ordering: Specify figure number.

FIG. 2801-2811

CONDUIT HANGER

Material: Cold Roll, ASTM A684 Grade 1055 Spring Steel. (Type 304 or 316 Stainless Steel upon request)

Finish: Pre-galvanized with electro-galvanized hardware.

Ordering: Specify figure number.

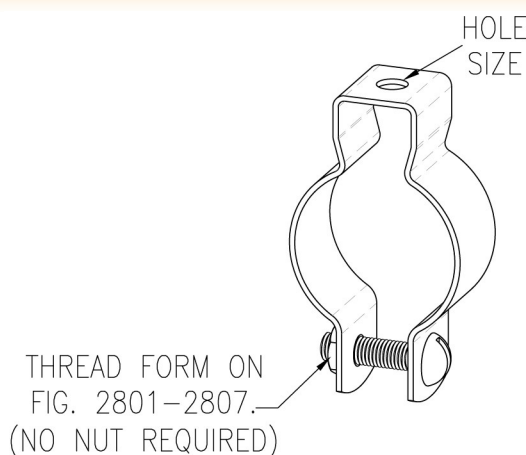
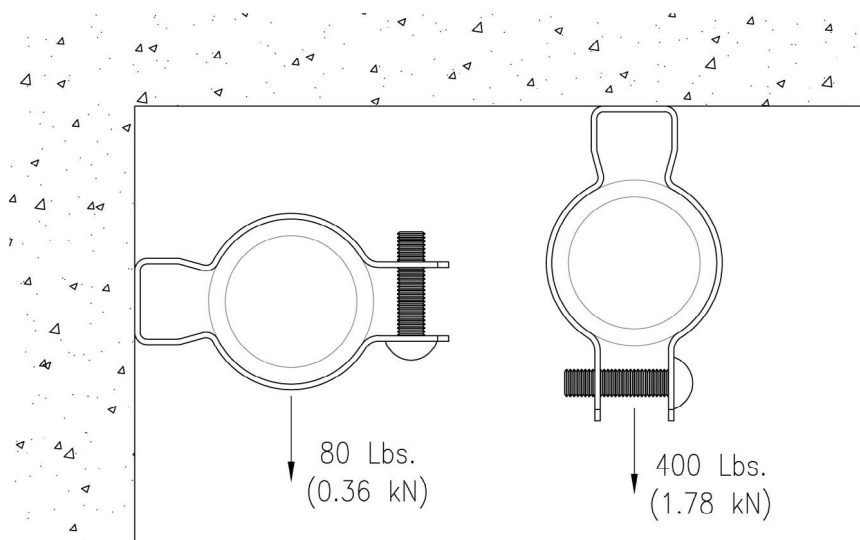


Fig. No.	Trade Size	EMT Conduit Size		Rigid Conduit Size		Hole Size	Weight Each	
							lbs.	kg
2801	0	1/2	(15)	3/8 - 1/2	(10 - 15)	1/4	.06	(.03)
2802	1	3/4	(20)	3/4	(20)	1/4	.07	(.03)
2803	2	1	(25)	1	(25)	1/4	.09	(.04)
2804	2.5	1 1/4	(32)	-	-	1/4	.10	(.04)
2805	3	1 1/2	(40)	1 1/4	(32)	1/4	.11	(.05)
2806	4	-	-	1 1/2	(40)	5/16	.14	(.07)
2807	5	2	(50)	2	(50)	5/16	.17	(.08)
2808	6	2 1/2	(65)	2 1/2	(65)	5/16	.28	(.13)
2809	7	3	(80)	3	(80)	5/16	.28	(.12)
2810	8	3 1/2	(90)	3 1/2	(90)	5/16	.34	(.15)
2811	9	4	(100)	4	(100)	5/16	.38	(.17)



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

PIPE & CONDUIT SUPPORTS

FIG. 7231-7238

1-HOLE CLAMP FOR O.D. TUBING

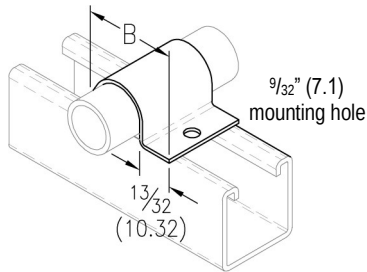


Fig. No.	Tubing O.D.	B		Wt. Each	
				lbs.	kg
7231	1/4 (6.35)	1 1/16	(26.99)	.03	(.01)
7232	5/16 (7.94)	1 1/8	(28.58)	.03	(.01)
7233	3/8 (9.53)	1 1/8	(28.58)	.04	(.02)
7234	1/2 (12.70)	1 3/16	(30.16)	.04	(.02)
7235	5/8 (15.88)	1 1/4	(31.75)	.05	(.02)
7236	3/4 (19.05)	1 5/16	(33.34)	.06	(.03)
7237	7/8 (22.23)	1 3/8	(34.93)	.06	(.03)
7238	1 (25.40)	1 7/16	(36.51)	.07	(.03)

14 Ga. Material Thickness

FIG. 7251-7265

STANDARD PIPE STRAP

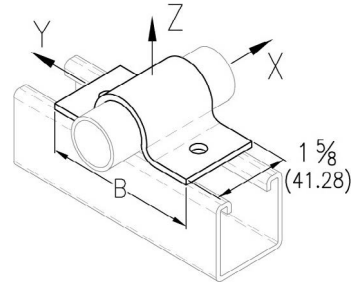
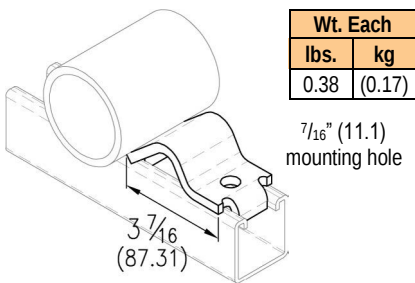


Fig. No.	Pipe Size		B		Hole Size		Material Size		Max. Rec. Load						Wt. Each	
									X		Y		Z			
									lbs.	kN	lbs.	kN	lbs.	kN	lbs.	kg
7251	1/2	(15)	2 7/8	(73.03)	5/16	(7.94)	1/8	(3.18)	105	(0.47)	150	(0.67)	600	(2.67)	.29	(.13)
7252	3/4	(20)	3 1/16	(77.79)	5/16	(7.94)	1/8	(3.18)	105	(0.47)	150	(0.67)	600	(2.67)	.32	(.15)
7253	1	(25)	3 1/2	(88.90)	5/16	(7.94)	1/8	(3.18)	120	(0.53)	150	(0.67)	600	(2.67)	.35	(.16)
7254	1 1/4	(32)	3 13/16	(96.84)	5/16	(7.94)	1/8	(3.18)	120	(0.53)	150	(0.67)	600	(2.67)	.41	(.19)
7255	1 1/2	(40)	3 15/16	(100.01)	5/16	(7.94)	1/8	(3.18)	120	(0.53)	150	(0.67)	600	(2.67)	.45	(.20)
7256	2	(50)	5 1/16	(128.59)	7/16	(11.11)	1/4	(6.35)	180	(0.80)	480	(2.14)	1200	(5.34)	1.00	(.45)
7257	2 1/2	(65)	6 3/16	(157.16)	7/16	(11.11)	1/4	(6.35)	180	(0.80)	480	(2.14)	1200	(5.34)	1.13	(.51)
7258	3	(80)	6 11/16	(169.86)	7/16	(11.11)	1/4	(6.35)	300	(1.33)	480	(2.14)	1200	(5.34)	1.32	(.60)
7259	3 1/2	(90)	7 5/16	(185.74)	7/16	(11.11)	1/4	(6.35)	300	(1.33)	480	(2.14)	1200	(5.34)	1.51	(.68)
7260	4	(100)	8	(203.20)	7/16	(11.11)	1/4	(6.35)	450	(2.00)	600	(2.67)	1500	(6.67)	1.66	(.75)
7261	5	(125)	9	(228.60)	7/16	(11.11)	1/4	(6.35)	450	(2.00)	600	(2.67)	1500	(6.67)	1.91	(.87)
7262	6	(150)	10 1/8	(257.18)	7/16	(11.11)	1/4	(6.35)	450	(2.00)	600	(2.67)	1500	(6.67)	2.23	(1.01)
7263	8	(200)	12	(304.80)	7/16	(11.11)	1/4	(6.35)	600	(2.67)	800	(3.56)	2000	(8.90)	2.97	(1.35)
7264	10	(250)	14	(355.60)	9/16	(14.29)	1/4	(6.35)	600	(2.67)	800	(3.56)	2000	(8.90)	3.67	(1.66)
7265	12	(300)	16	(406.40)	9/16	(14.29)	1/4	(6.35)	600	(2.67)	800	(3.56)	2000	(8.90)	4.30	(1.95)

FIG. 7370

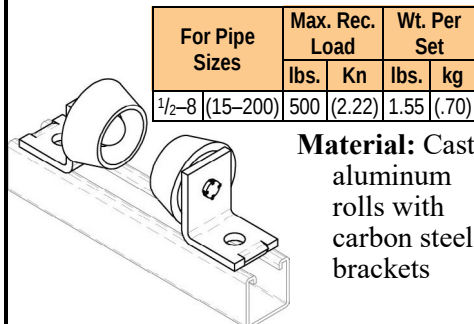
PIPE STOP



Wt. Each	
lbs.	kg
0.38	(0.17)

FIG. 7400

SEPARATE ROLLERS



Material: Cast aluminum rolls with carbon steel brackets

FIG. 7501-7506

PIPE ROLLER WITH AXLE

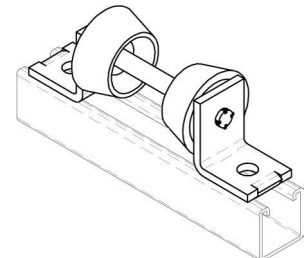
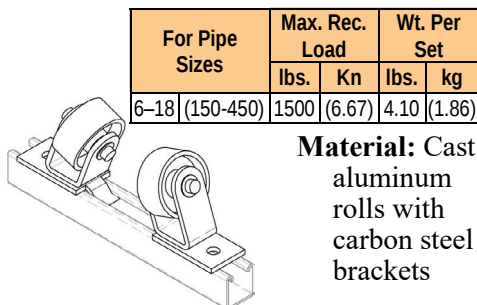


Fig. No.	For Pipe Sizes		Max. Rec. Load		Wt. Each	
			lbs.	kN	lbs.	kg
7501	1-3	(25-80)	750	(3.34)	1.59	(.72)
7502	3-4	(80-100)	750	(3.34)	1.66	(.75)
7503	4-6	(100-150)	750	(3.34)	1.79	(.81)
7504	6-8	(150-200)	750	(3.34)	1.82	(.83)
7505	10	(250)	750	(3.34)	1.90	(.86)
7506	12	(300)	750	(3.34)	1.93	(.88)

Material: Cast aluminum rolls with carbon steel brackets

FIG. 7530

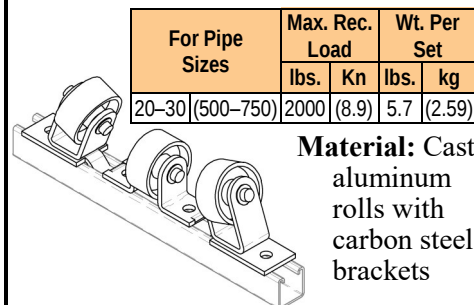
60° SEPARATE ROLLERS



Material: Cast aluminum rolls with carbon steel brackets

FIG. 7560

60° ROLLERS WITH CENTER ROLLER



Material: Cast aluminum rolls with carbon steel brackets

Standard Product Information for 1 5/8\" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16\" (14.3); Hole Spacing-From End: 1 1/16\" (20.6); Hole Spacing-On Center: 1 7/8\" (47.6); Width: 1 5/8\" (41.3); Thickness: 1/4\" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

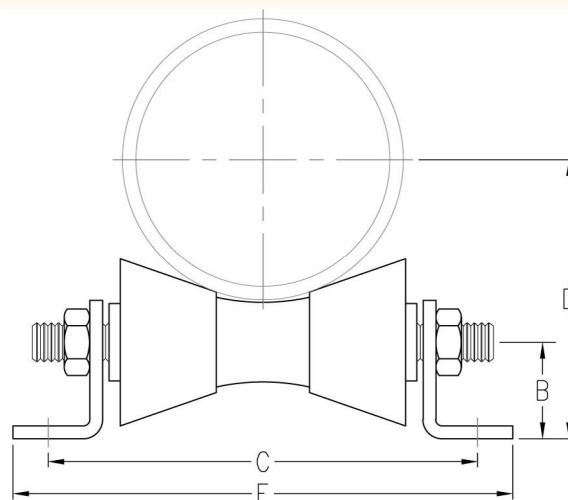
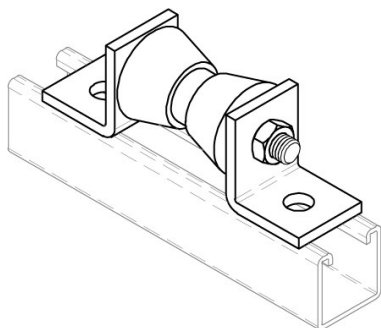
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



PIPE & CONDUIT SUPPORTS

FIG. 7581-7585

ROLLER SUPPORT



Material: Cast iron roll with carbon steel brackets

Finish: Electro-galvanized

Ordering: Specify figure number.

Fig. No.	Pipe Size		B		C		D		E		Hole Size		Material Size		Max. Rec. Load		Wt. Each	
															lbs.	kN	lbs.	kg
7581	2	(50)	1 1/4	(31.75)	5 1/8	(130.18)	3 1/8	(79.38)	6 5/8	(168.28)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	390	(1.73)	1.77	(.80)
7581	2 1/2	(65)	1 1/4	(31.75)	5 1/8	(130.18)	3 5/16	(84.14)	6 5/8	(168.28)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	390	(1.73)	1.77	(.80)
7581	3	(80)	1 1/4	(31.75)	5 1/8	(130.18)	3 5/8	(92.08)	6 5/8	(168.28)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	390	(1.73)	1.77	(.80)
7581	3 1/2	(90)	1 1/4	(31.75)	5 1/8	(130.18)	4	(101.60)	6 5/8	(168.28)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	390	(1.73)	1.77	(.80)
7582	4	(100)	1 1/4	(31.75)	6 1/8	(155.58)	4 1/16	(103.19)	7 5/8	(193.68)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	600	(2.67)	2.31	(1.05)
7582	5	(125)	1 1/4	(31.75)	6 1/8	(155.58)	4 9/16	(115.89)	7 5/8	(193.68)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	600	(2.67)	2.31	(1.05)
7582	6	(150)	1 1/4	(31.75)	6 1/8	(155.58)	5 1/16	(128.59)	7 5/8	(193.68)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	600	(2.67)	2.31	(1.05)
7583	8	(200)	1 7/8	(47.63)	8 1/4	(209.55)	7 5/16	(185.74)	9 3/4	(247.65)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	800	(3.56)	5.42	(2.46)
7583	10	(250)	1 7/8	(47.63)	8 1/4	(209.55)	8 5/8	(219.08)	9 3/4	(247.65)	9/16	(14.29)	1/4 X 1 5/8	(6.35 X 41.28)	800	(3.56)	5.42	(2.46)
7584	12	(300)	2 7/16	(61.91)	12 3/4	(323.85)	9 3/4	(247.65)	14 3/4	(374.65)	13/16	(20.64)	3/8 X 2	(9.53 X 50.8)	1300	(5.78)	10.40	(4.72)
7584	14	(350)	2 7/16	(61.91)	12 3/4	(323.85)	10 1/2	(266.70)	14 3/4	(374.65)	13/16	(20.64)	3/8 X 2	(9.53 X 50.8)	1300	(5.78)	10.40	(4.72)
7585	16	(400)	2 5/16	(74.61)	14 1/4	(361.95)	12	(304.80)	16 1/4	(412.75)	13/16	(20.64)	3/8 X 2 1/2	(9.53 X 63.5)	2300	(10.23)	15.08	(6.84)
7585	18	(450)	2 5/16	(74.61)	14 1/4	(361.95)	13 3/8	(333.38)	16 1/4	(412.75)	13/16	(20.64)	3/8 X 2 1/2	(9.53 X 63.5)	2300	(10.23)	15.08	(6.84)
7585	20	(500)	2 5/16	(74.61)	14 1/4	(361.95)	14 3/8	(365.13)	16 1/4	(412.75)	13/16	(20.64)	3/8 X 2 1/2	(9.53 X 63.5)	2300	(10.23)	15.08	(6.84)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

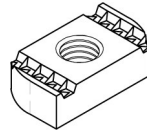
STRUT NUTS & HARDWARE



FIG. 3001-3011

STRUT NUT WITHOUT SPRING

Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3001	#8 - 32	1/4	(6.35)	.06	(.03)
3002	#10 - 24	1/4	(6.35)	.06	(.03)
3003	#10 - 32	1/4	(6.35)	.06	(.03)
3004*	1/4 - 20	1/4	(6.35)	.06	(.03)
3005	5/16 - 18	1/4	(6.35)	.07	(.03)
3006*	3/8 - 16	3/8	(9.53)	.09	(.04)
3007	7/16 - 14	3/8	(9.53)	.09	(.04)
3008*	1/2 - 13	1/2	(12.70)	.12	(.05)
3009	5/8 - 11	1/2	(12.70)	.13	(.06)
3010	3/4 - 10	1/2	(12.70)	.13	(.06)
3011	7/8 - 9	1/2	(12.70)	.13	(.06)



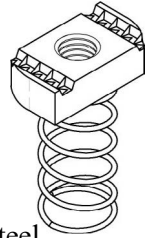
Material:
Carbon steel
(Type 304 or 316
Stainless Steel upon
request)
Finish:
Electro-galvanized
Ordering:
Specify figure number
and material.

*Available in aluminum upon request

FIG. 3101-3111

STRUT NUT WITH SPRING

Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3101	#8 - 32	1/4	(6.35)	.07	(.03)
3102	#10 - 24	1/4	(6.35)	.07	(.03)
3103	#10 - 32	1/4	(6.35)	.07	(.03)
3104*	1/4 - 20	1/4	(6.35)	.07	(.03)
3105	5/16 - 18	1/4	(6.35)	.07	(.03)
3106*	3/8 - 16	3/8	(9.53)	.10	(.05)
3107	7/16 - 14	3/8	(9.53)	.10	(.05)
3108*	1/2 - 13	1/2	(12.70)	.13	(.06)
3109	5/8 - 11	1/2	(12.70)	.15	(.07)
3110	3/4 - 10	1/2	(12.70)	.15	(.07)
3111	7/8 - 9	1/2	(12.70)	.15	(.07)



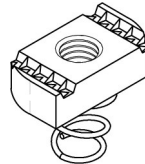
Material:
Carbon steel
(Type 304 or 316
Stainless Steel upon
request)
Finish:
Electro-galvanized
Ordering:
Specify figure number
and material.

*Available in aluminum upon request

FIG. 3201-3210

STRUT NUT WITH SHORT SPRING

Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3201	#8 - 32	1/4	(6.35)	.07	(.03)
3202	#10 - 24	1/4	(6.35)	.07	(.03)
3203	#10 - 32	1/4	(6.35)	.07	(.03)
3204	1/4 - 20	1/4	(6.35)	.07	(.03)
3205	5/16 - 18	1/4	(6.35)	.07	(.03)
3206	3/8 - 16	3/8	(9.53)	.09	(.04)
3207	7/16 - 14	3/8	(9.53)	.09	(.04)
3208	1/2 - 13	3/8	(9.53)	.09	(.04)
3209	5/8 - 11	3/8	(9.53)	.10	(.05)
3210	3/4 - 10	3/8	(9.53)	.10	(.05)

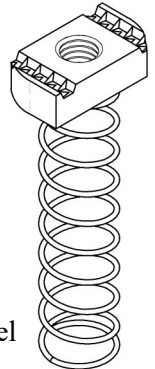


Material:
Carbon steel
Finish:
Electro-galvanized
Ordering:
Specify figure number.

FIG. 3301-3311

STRUT NUT WITH LONG SPRING

Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3301	#8 - 32	1/4	(6.35)	.07	(.03)
3302	#10 - 24	1/4	(6.35)	.07	(.03)
3303	#10 - 32	1/4	(6.35)	.07	(.03)
3304	1/4 - 20	1/4	(6.35)	.07	(.03)
3305	5/16 - 18	1/4	(6.35)	.07	(.03)
3306	3/8 - 16	3/8	(9.53)	.10	(.05)
3307	7/16 - 14	3/8	(9.53)	.09	(.04)
3308	1/2 - 13	1/2	(12.70)	.13	(.06)
3309	5/8 - 11	1/2	(12.70)	.15	(.07)
3310	3/4 - 10	1/2	(12.70)	.15	(.07)
3311	7/8 - 9	1/2	(12.70)	.14	(.06)



Material:
Carbon steel
Finish:
Electro-galvanized
Ordering:
Specify figure number.

FIG. 3351-3353

SHALLOW STRUT NUT WITHOUT SPRING

Material:
Carbon steel
Finish:
Electro-galvanized
Ordering:
Specify figure number.

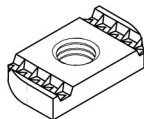


Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3351	1/2 - 13	3/8	(9.53)	.09	(.04)
3352	5/8 - 11	3/8	(9.53)	.11	(.05)
3353	3/4 - 10	3/8	(9.53)	.09	(.04)

FIG. 3404-3408

SQUEEZE NUT

Material:
Carbon steel
Finish:
Electro-galvanized
Ordering:
Specify figure number.

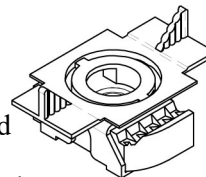


Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3404	1/4 - 20	3/8	(9.53)	.09	(.04)
3406	3/8 - 16	3/8	(9.53)	.11	(.05)
3408	1/2 - 13	3/8	(9.53)	.09	(.04)

FIG. 3504-3508

COMBO NUT WASHER

Material:
Carbon steel
Finish:
Electro-galvanized
Ordering:
Specify figure number.

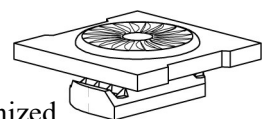


Fig. No.	Thread Size	Nut Thickness		Wt. Each	
				Lbs.	kg
3504	1/4 - 20	1/4	(6.35)	.12	(5.40)
3506	3/8 - 16	3/8	(9.53)	.14	(6.26)
3508	1/2 - 13	3/8	(9.53)	.13	(5.94)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

STRUT NUTS & HARDWARE

STRUT NUT LOAD DATA

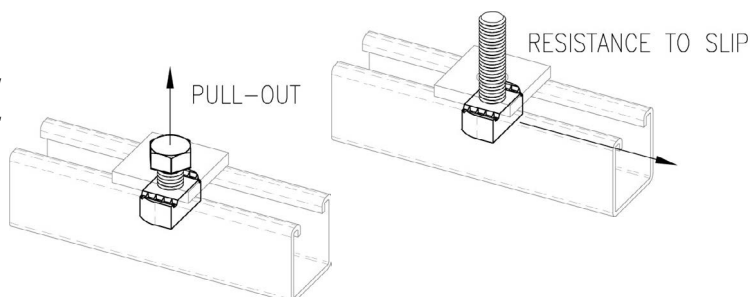
MAXIMUM ALLOWABLE PULL-OUT, SLIP LOAD AND DESIGNED TORQUE VALUES

Strut Nut		Channel Gauge	Channel Series	Allowable Pull-out		Resistance To Slip		Bolt Torque	
Thread Size	Figure Number			lbs.	kN	lbs.	kN	ft-lbs	N-m
1/4-20	3004, 3104, 3204, 3304, 3404	12	1000, 1200, 1500, 1600, 1700, 1960	450	(2.00)	300	(1.33)	6	(8)
		14	1100, 1300	450	(2.00)	300	(1.33)		
		16	1800	450	(2.00)	300	(1.33)		
5/16-18	3005, 3105, 3205, 3305	12	1000, 1200, 1500, 1600, 1700, 1960	800	(3.56)	500	(2.22)	11	(15)
		14	1100, 1300	750	(3.34)	400	(1.78)		
		16	1800	750	(3.34)	400	(1.78)		
3/8-16	3006, 3106, 3206, 3306, 3406	12	1000, 1200, 1500, 1600, 1700, 1960	1000	(4.45)	800	(3.56)	19	(26)
		14	1100, 1300	1000	(4.45)	600	(2.67)		
		16	1800	1000	(4.45)	600	(2.67)		
7/16-14	3007, 3107, 3207, 3307	12	1000, 1200, 1500, 1600, 1700, 1960	1400	(6.23)	1000	(4.45)	35	(47)
		14	1100, 1300	1200	(5.34)	800	(3.56)		
		16	1800	1000	(4.45)	800	(3.56)		
1/2-13	3408	12	1000, 1200, 1500, 1600, 1700, 1960	1000	(4.45)	800	(3.56)	50	(68)
	3208, 3351	12	1000, 1200, 1500, 1600, 1700, 1960	1500	(6.67)	1500	(6.67)		
	3008, 3108, 3308	12	1000, 1500, 1600, 1700, 1960	2000	(8.90)	1500	(6.67)		
	3008, 3108, 3208, 3308, 3351	14	1100	1400	(6.23)	1000	(4.45)		
	3208, 3351	14	1300	1400	(6.23)	1000	(4.45)		
		16	1800	1000	(4.45)	1000	(4.45)		
5/8-11	3209, 3352	12	1000, 1200, 1500, 1600, 1700, 1960	1500	(6.67)	1500	(6.67)	100	(136)
	3009, 3109, 3309	12	1000, 1500, 1600, 1700, 1960	2500	(11.12)	1500	(6.67)		
	3009, 3109, 3209, 3309, 3352	14	1100	1400	(6.23)	1000	(4.45)		
	3209, 3352	14	1300	1400	(6.23)	1000	(4.45)		
		16	1800	1000	(4.45)	1000	(4.45)		
3/4-10	3210, 3353	12	1000, 1200, 1500, 1600, 1700, 1960	1500	(6.67)	1500	(6.67)	125	(170)
	3010, 3110, 3310	12	1000, 1500, 1600, 1700, 1960	2500	(11.12)	1700	(6.67)		
	3010, 3110, 3210, 3310, 3353	14	1100	1400	(6.23)	1000	(4.45)		
	3210, 3353	14	1300	1400	(6.23)	1000	(4.45)		
		16	1800	1000	(4.45)	1000	(4.45)		
7/8-9	3011, 3111, 3311	12	1000, 1500, 1600, 1700, 1960	2500	(11.12)	1700	(6.67)	125	(170)
		14	1100	1400	(6.23)	1000	(4.45)		

Note: When used in conjunction with a Fig. 5000 series square washer.

Using stainless steel channel nuts in stainless steel channel, reduce slip loads by 50% due to hardness of material.

Using stainless steel channel nuts in aluminum channel, reduce slip loads and pull out loads by 70% due to hardness of material.



Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

STRUT NUTS & HARDWARE

FIG. 7600
CRADLE CLIP

Function:

Designed to stiffen 3/8" to 5/8" rod.

Material:

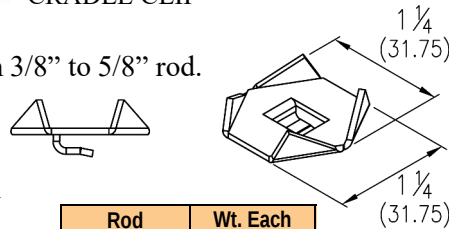
Carbon steel

Finish:

Electro-galvanized

Ordering:

Specify figure number.



Rod Size		Wt. Each	
		Lbs.	kg
3/8	(10)	.03	(.01)
1/2	(12)	.03	(.01)
5/8	(16)	.03	(.01)

FIG. 7605
ROD STIFFENER

Function:

Designed to stiffen 3/8" to 5/8" rod.

Material:

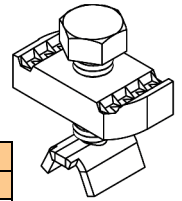
Carbon steel

Finish:

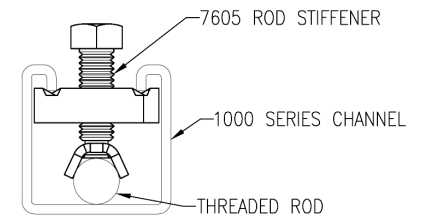
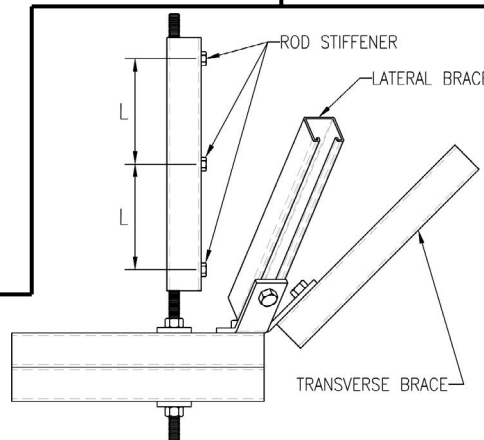
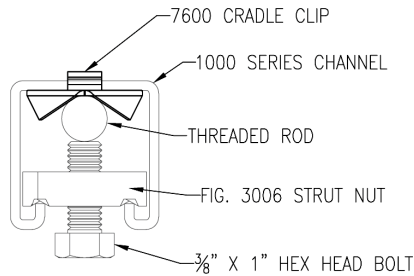
Electro-galvanized

Ordering:

Specify figure number.



Rod Size		Wt. Each	
		Lbs.	kg
3/8	(10)	.14	(.06)
1/2	(12)	.14	(.06)
5/8	(16)	.14	(.06)



Rod Size		Root Area		Radius of Gyration		Design Load		Rod Stiffener Clip Spacing (L)							
		in²	mm²			Lbs.	Kn	Rod Stress @ 100% 10,700 psi		Rod Stress @ 75% 8,025 psi		Rod Stress @ 50% 5,350 psi		Rod Stress @ 35% 3,745 psi	
3/8	(10)	0.068	(49.5)	0.074	(1.99)	730	(3.6)	9	(229)	11	(279)	13	(330)	15	(381)
1/2	(12)	0.126	(72.4)	0.10	(2.40)	1350	(5.3)	12	(305)	14	(356)	17	(432)	21	(533)
5/8	(16)	0.202	(138.3)	0.127	(3.32)	2160	(10.2)	15	(381)	18	(457)	22	(559)	26	(660)

FIG. 7610 & 7611
FEMALE SWIVEL

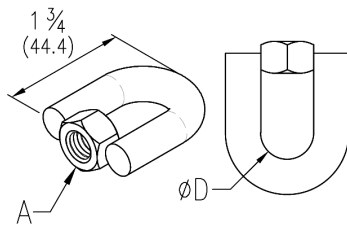


FIG. 7615 & 7616
MALE SWIVEL

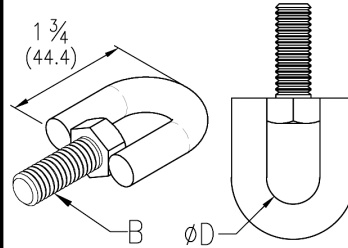


FIG. 7620 & 7621
FEMALE/FEMALE SWIVEL

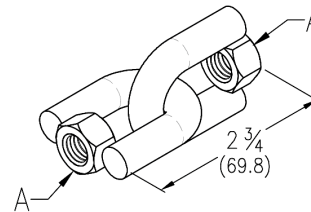
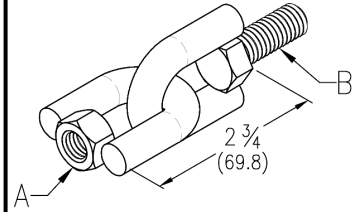


FIG. 7625 & 7626
FEMALE/MALE SWIVEL



Material:

Carbon steel

Finish:

Electro-galvanized

Ordering:

Specify figure number.

Fig. No.	A	B	D	Max. Rec. Load		Wt. Each	
				lbs.	kN	lbs.	kg
7610	3/8-16	-	9/32 (7.14)	610	(2.71)	.13	(.06)
7611	1/2-13	-	3/8 (9.53)	1130	(5.03)	.15	(.07)
7615	-	3/8-16 X 1	9/32 (7.14)	610	(2.71)	.16	(.07)
7616	-	1/2-13 X 1	3/8 (9.53)	1130	(5.03)	.20	(.09)
7620	3/8-16	-	-	610	(2.71)	.26	(.12)
7621	1/2-13	-	-	1130	(5.03)	.28	(.13)
7625	3/8-16	3/8-16 X 1	-	610	(2.71)	.26	(.12)
7626	1/2-13	1/2-13 X 1	-	1130	(5.03)	.28	(.13)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



CONCRETE INSERTS

FIG. 4001-4002

1⁵/₈" X 1³/₈" X 12 GAUGE

Material:

Carbon steel (Type 304 or 316 Stainless Steel upon request)

Finish:

Pre-galvanized

Ordering:

Specify figure number, material, and number of feet.

Note: Furnished with end caps and Expanded Polyethylene filler for clean and easy removal. (Coined steel inserts and plastic closure strips available upon request.)

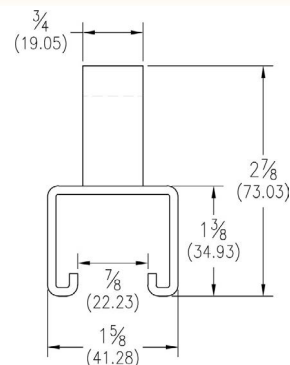
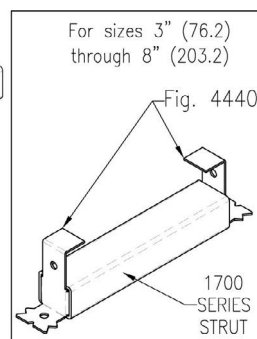
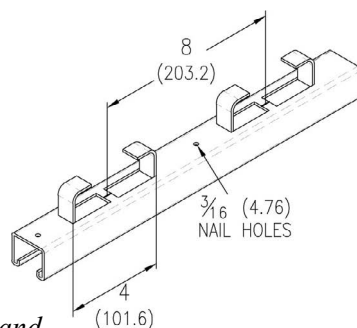
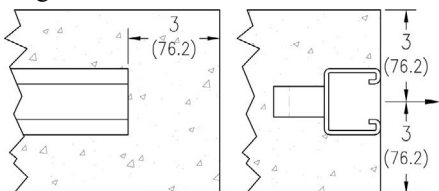


Fig. No.				Type - Description	Weight		Bundle Qty.			
10ft.	3.05m	20ft.	6.10m		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.10m
4001		4002		Continuous Concrete Strut	1.79	(2.66)	240	(73.15)	480	(146.3)

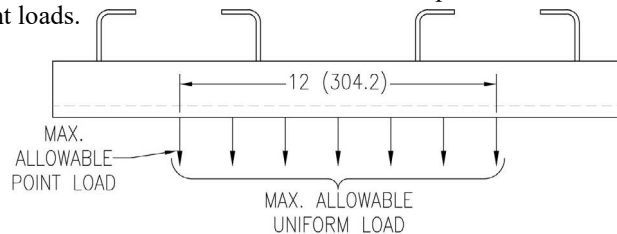
Length		Max. Allowable Point Load		Min. Spacing of Point Loads		Max. Allowable Uniform Load		Weight Each.	
in.	mm	lbs.	kN	in.	mm	lbs.	kN	lbs	kg
3	(76.2)	500	(2.22)	-	-	500	(2.22)	0.45	(0.20)
4	(101.6)	800	(3.56)	-	-	800	(3.56)	0.60	(0.27)
6	(152.4)	1000	(4.45)	-	-	1000	(4.45)	0.90	(0.41)
8	(203.2)	1200	(5.34)	-	-	1200	(5.34)	1.19	(0.54)
12	(304.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	1.79	(0.81)
16	(406.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	2.39	(1.08)
20	(508.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	2.98	(1.35)
24	(609.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	3.58	(1.62)
32	(812.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	4.77	(2.17)
36	(914.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	5.37	(2.44)
40	(1016.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	5.97	(2.71)
48	(1219.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	7.16	(3.25)
60	(1524.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	8.95	(4.06)
72	(1828.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	10.74	(4.87)
84	(2133.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	12.53	(5.68)
96	(2438.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	14.32	(6.50)
108	(2743.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	16.11	(7.31)
120	(3048.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	17.90	(8.12)
144	(3657.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	21.48	(9.74)
168	(4267.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	25.06	(11.37)
192	(4876.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	28.64	(12.99)
216	(5486.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	32.22	(14.61)
240	(6096.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	35.80	(16.24)

PHD figure numbers 4001 and 4002 have a maximum recommended load rating of 2000 lbs/ft (29.19 kN/m) section. This load rating was based upon a concrete compressive strength of 3000psi. (20.68 mPa) and a safety factor of 3. PHD figure numbers 4001 and 4002 can utilize strut nuts that were designed for use with 1700 series strut channel.

Minimum Edge Distance to Achieve Rated Pull-Out Capacity



The maximum allowable uniform load must be placed as a series of point loads.



The maximum allowable point load may be placed anywhere along the insert.

All loads placed less than 2" from the end of an insert must be reduced by 50%.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CONCRETE INSERTS



1⁵/₈" X 1³/₁₆" X 12 GAUGE

FIG. 4101-4102

Material:

Carbon steel (Type 304 or 316 Stainless
Steel upon request)

Finish:

Pre-galvanized

Ordering:

Specify figure number, material, and
number of feet.

Note: Spot inserts not available for this series.

*Furnished with end caps and
Expanded Polyethylene filler for clean
and easy removal. (Coined steel inserts and plastic
closure strips available upon request.)*

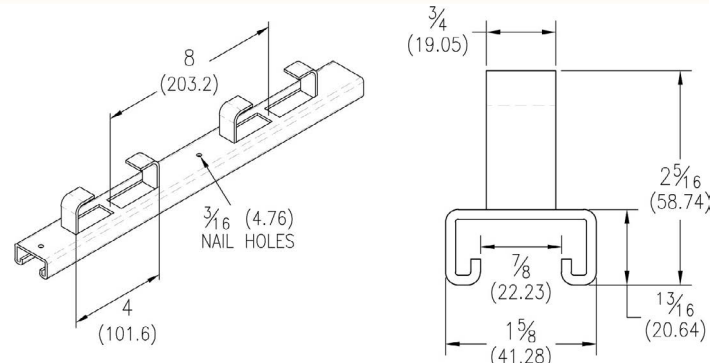
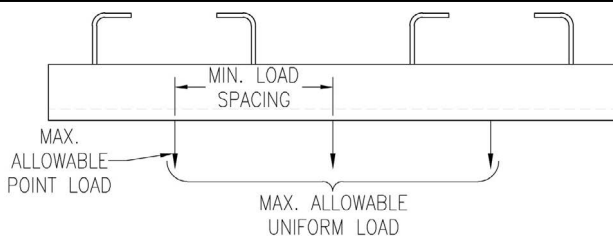
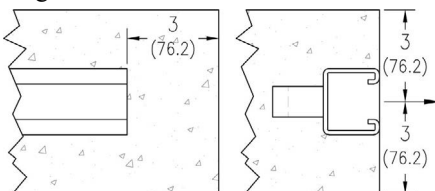


Fig. No.				Type - Description	Weight		Bundle Qty.			
10ft.	3.05m	20ft.	6.10m		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.10m
4101		4102		Continuous Concrete Strut	1.34	(1.99)	240	(73.15)	480	(146.3)

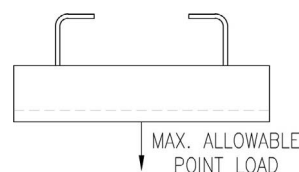
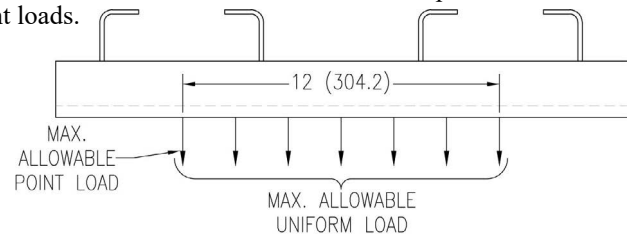
Length		Max. Allowable Point Load		Min. Spacing of Point Loads		Max. Allowable Uniform Load		Weight Each.	
in.	mm	lbs.	kN	in.	mm	lbs.	kN	lbs.	kg
12	(304.8)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	1.34	(0.61)
16	(406.4)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	1.79	(0.81)
20	(508.0)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	2.23	(1.01)
24	(609.6)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	2.68	(1.22)
32	(812.8)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	3.57	(1.62)
36	(914.4)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	4.02	(1.82)
40	(1016.0)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	4.47	(2.03)
48	(1219.2)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	5.36	(2.43)
60	(1524.0)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	6.70	(3.04)
72	(1828.8)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	8.04	(3.65)
84	(2133.6)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	9.38	(4.25)
96	(2438.4)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	10.72	(4.86)
108	(2743.2)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	12.06	(5.47)
120	(3048.0)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	13.40	(6.08)
144	(3657.6)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	16.08	(7.29)
168	(4267.2)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	18.76	(8.51)
192	(4876.8)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	21.44	(9.73)
216	(5486.4)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	24.12	(10.94)
240	(6096.0)	1500	(6.67)	12	(304.8)	1500 lbs/ft	(21.89 kN/m)	26.80	(12.16)

PHD figure numbers 4101 and 4102 have a maximum recommended load rating of 1500 lbs/ft (21.89 kN/m) section. This load rating was based upon a concrete compressive strength of 3000psi. (20.68 mPa) and a safety factor of 3. PHD figure numbers 4101 and 4102 can utilize strut nuts that were designed for use with 1200 series strut channel.

Minimum Edge Distance to Achieve Rated Pull-Out Capacity



The maximum allowable uniform load must be placed as a series of point loads.



The maximum allowable point load may be placed anywhere along the insert.

All loads placed less than 2" from the end of an insert must be reduced by 50%.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



CONCRETE INSERTS

FIG. 4201-4202

1⁵/₈" X 1" X 12 GAUGE

Material:

Carbon steel

Finish:

Pre-galvanized

Ordering:

Specify figure number, material, and number of feet.

Note: Furnished with end caps and Expanded Polyethylene filler for clean and easy removal. (Coined steel inserts and plastic closure strips available upon request.)

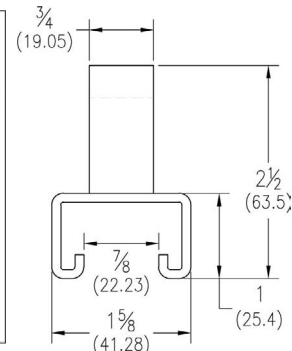
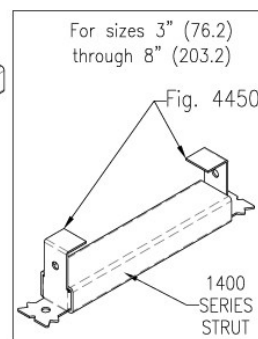
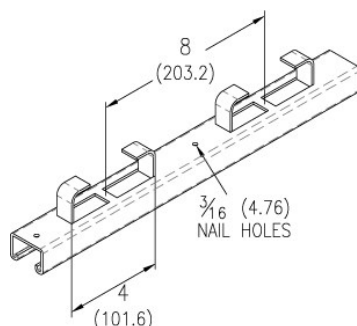
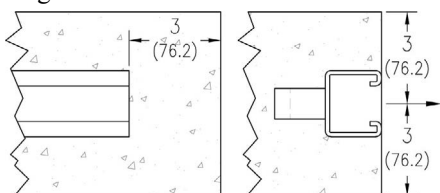


Fig. No.				Type - Description	Weight		Bundle Qty.			
10ft.	3.05m	20ft.	6.10m		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.10m
4201		4202		Continuous Concrete Strut	1.52	(2.26)	240	(73.15)	480	(146.3)

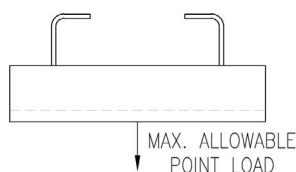
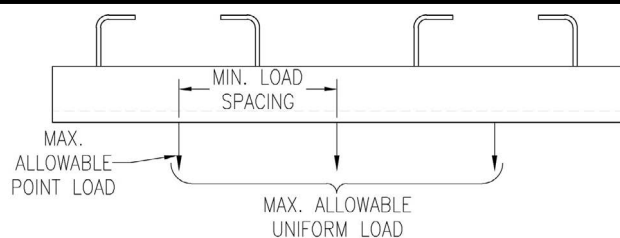
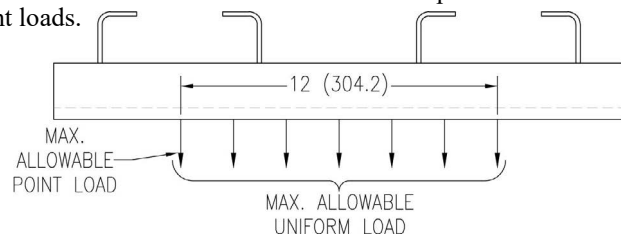
Length		Max. Allowable Point Load		Min. Spacing of Point Loads		Max. Allowable Uniform Load		Weight Each.	
in.	mm	lbs.	kN	in.	mm	lbs.	kN	lbs	kg
3	(76.2)	500	(2.22)	-	-	500	(2.22)	0.38	(0.17)
4	(101.6)	800	(3.56)	-	-	800	(3.56)	0.51	(0.23)
6	(152.4)	1000	(4.45)	-	-	1000	(4.45)	0.76	(0.34)
8	(203.2)	1200	(5.34)	-	-	1200	(5.34)	1.01	(0.46)
12	(304.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	1.52	(0.69)
16	(406.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	2.03	(0.92)
20	(508.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	2.53	(1.15)
24	(609.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	3.04	(1.38)
32	(812.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	4.05	(1.84)
36	(914.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	4.56	(2.07)
40	(1016.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	5.07	(2.30)
48	(1219.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	6.08	(2.76)
60	(1524.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	7.60	(3.45)
72	(1828.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	9.12	(4.14)
84	(2133.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	10.64	(4.83)
96	(2438.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	12.16	(5.52)
108	(2743.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	13.68	(6.21)
120	(3048.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	15.20	(6.89)
144	(3657.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	18.24	(8.27)
168	(4267.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	21.28	(9.65)
192	(4876.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	24.32	(11.03)
216	(5486.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	27.36	(12.41)
240	(6096.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	30.40	(13.79)

PHD figure numbers 4201 and 4202 have a maximum recommended load rating of 2000 lbs/ft (29.19 kN/m) section. This load rating was based upon a concrete compressive strength of 3000psi. (20.68 mPa) and a safety factor of 3. PHD figure numbers 4201 and 4202 can utilize strut nuts that were designed for use with 1400 series strut channel.

Minimum Edge Distance to Achieve Rated Pull-Out Capacity



The maximum allowable uniform load must be placed as a series of point loads.



The maximum allowable point load may be placed anywhere along the insert.

All loads placed less than 2" from the end of an insert must be reduced by 50%.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

CONCRETE INSERTS



1⁵/₈" X 1⁵/₈" X 12 GAUGE

FIG. 4301-4302

Material:

Carbon steel (Type 304 or 316 Stainless Steel upon request)

Finish:

Pre-galvanized

Ordering:

Specify figure number, material, and number of feet.

Note: *Furnished with end caps and Expanded Polyethylene filler for clean and easy removal. (Coined steel inserts and plastic closure strips available upon request.)*

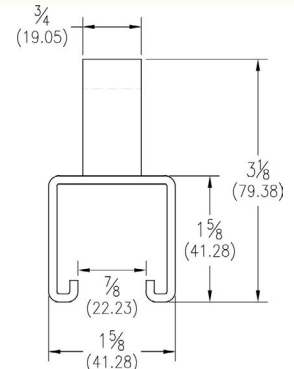
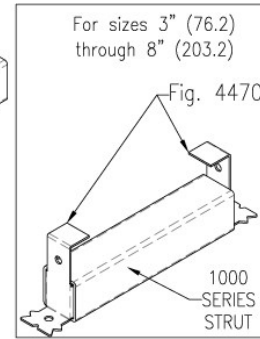
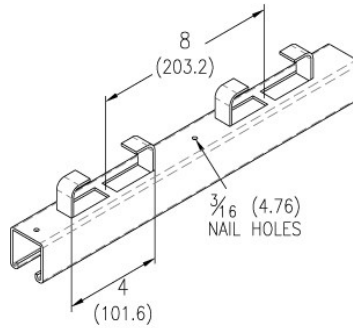
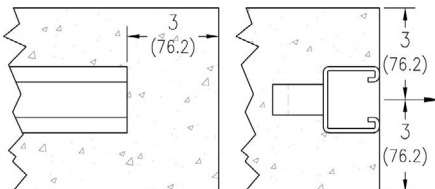


Fig. No.				Type - Description	Weight		Bundle Qty.			
10ft.	3.05m	20ft.	6.10m		lbs./ft.	kg/m	10ft.	3.05m	20ft.	6.10m
4301		4302		Continuous Concrete Strut	1.99	(2.96)	240	(73.15)	480	(146.3)

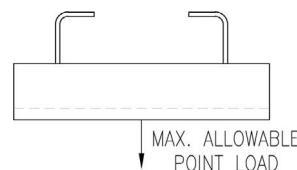
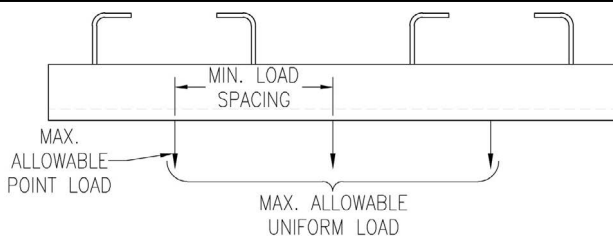
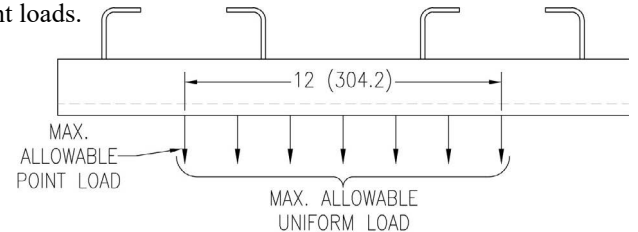
Length		Max. Allowable Point Load		Min. Spacing of Point Loads		Max. Allowable Uniform Load		Weight Each.	
in.	mm	lbs.	kN	in.	mm	lbs.	kN	lbs.	kg
3	(76.2)	500	(2.22)	-	-	500	(2.22)	0.50	(0.23)
4	(101.6)	800	(3.56)	-	-	800	(3.56)	0.66	(0.30)
6	(152.4)	1000	(4.45)	-	-	1000	(4.45)	1.00	(0.45)
8	(203.2)	1200	(5.34)	-	-	1200	(5.34)	1.33	(0.60)
12	(304.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	1.99	(0.90)
16	(406.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	2.65	(1.20)
20	(508.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	3.32	(1.50)
24	(609.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	3.98	(1.81)
32	(812.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	5.31	(2.41)
36	(914.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	5.97	(2.71)
40	(1016.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	6.63	(3.01)
48	(1219.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	7.96	(3.61)
60	(1524.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	9.95	(4.51)
72	(1828.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	11.94	(5.42)
84	(2133.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	13.93	(6.32)
96	(2438.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	15.92	(7.22)
108	(2743.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	17.91	(8.12)
120	(3048.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	19.90	(9.03)
144	(3657.6)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	23.88	(10.83)
168	(4267.2)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	27.86	(12.64)
192	(4876.8)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	31.84	(14.44)
216	(5486.4)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	35.82	(16.25)
240	(6096.0)	2000	(8.9)	12	(304.8)	2000 lbs/ft	(29.19 kN/m)	39.80	(18.05)

PHD figure numbers 4301 and 4302 have a maximum recommended load rating of 2000 lbs/ft (29.19 kN/m) section. This load rating was based upon a concrete compressive strength of 3000psi. (20.68 mPa) and a safety factor of 3. PHD figure numbers 4301 and 4302 can utilize strut nuts that were designed for use with 1000 series strut channel.

Minimum Edge Distance to Achieve Rated Pull-Out Capacity



The maximum allowable uniform load must be placed as a series of point loads.



The maximum allowable point load may be placed anywhere along the insert.

All loads placed less than 2" from the end of an insert must be reduced by 50%.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

END CAPS & CLOSURES

FIG. 4405-4420

TYPE "A" END CAPS

Material:

Carbon steel (Type 304 or 316)
Stainless Steel upon request

Finish:

Electro-galvanized

Ordering:

Specify figure number.

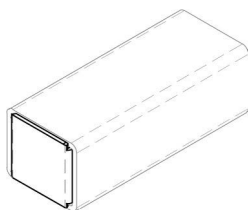


Fig. No.	For Use With Fig. No.	Wt. Each	
		Lbs.	kg
4405	1000 & 4300	.10	(.05)
4406	1300	.05	(.02)
4407	1200 & 4100	.05	(.02)
4410	1700 & 4000	.08	(.04)
4420	1400 & 4200	.08	(.04)

FIG. 4440-4470

TYPE "B" END CAPS

Material:

Carbon steel (Type 304 or 316)
Stainless Steel upon request

Finish:

Electro-galvanized

Ordering:

Specify figure number.

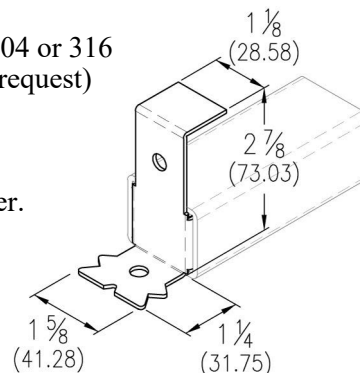


Fig. No.	For Use With Fig. No.	Wt. Each	
		Lbs.	kg
4440	1700 & 4000	.15	(.07)
4450	1400 & 4200	.15	(.07)
4460	1300	.15	(.07)
4470	1000 & 4300	.15	(.07)

FIG. 4475-4489

SAFETY END CAPS

Material:

PVC

Ordering:

Specify figure number.

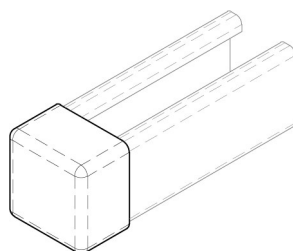


Fig. No.	Color	Use With Fig. Numbers	Wt. Each	
			Lbs.	kg
4475	Red	1200 & 1300	.03	(.01)
4476	White	1200 & 1300	.03	(.01)
4477	Yellow	1200 & 1300	.03	(.01)
4478	Gray	1200 & 1300	.03	(.01)
4479	Black	1200 & 1300	.03	(.01)
4480	Red	1000 & 1100	.04	(.02)
4481	White	1000 & 1100	.04	(.02)
4482	Yellow	1000 & 1100	.04	(.02)
4483	Gray	1000 & 1100	.04	(.02)
4484	Black	1000 & 1100	.04	(.02)
4485	Red	1500	.07	(.03)
4486	White	1500	.07	(.03)
4487	Yellow	1500	.07	(.03)
4488	Gray	1500	.07	(.03)
4489	Black	1500	.07	(.03)

FIG. 4500-4506

CLOSURE STRIPS

Ordering:

Specify figure number.

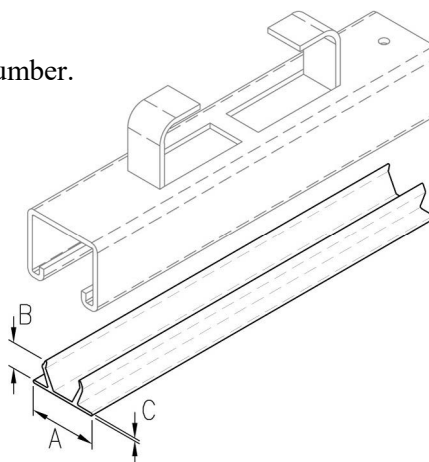


Fig. No.	A		B		C		Std. Length		Material	Wt. Each	
							ft.	m		lbs./ft.	kg/m
4500	1 1/16	(27.0)	1/2	(12.7)	19/32	(15.1)	10	(3.05)	Plastic - Black	0.08	(0.12)
4501	1 11/32	(34.1)	3/8	(9.5)	7/16	(11.1)	10	(3.05)	Plastic - Grey	0.08	(0.12)
4502	1 11/32	(34.1)	3/8	(9.5)	7/16	(11.1)	10	(3.05)	Plastic - Green	0.08	(0.12)
4503	1 1/2	(38.1)	7/16	(11.1)	17/32	(13.5)	10	(3.05)	Steel - Plain	0.42	(0.63)
4504	1 1/2	(38.1)	7/16	(11.1)	17/32	(13.5)	10	(3.05)	Steel - PG	0.42	(0.63)
4505	1 1/2	(38.1)	7/16	(11.1)	17/32	(13.5)	10	(3.05)	Steel - Green	0.42	(0.63)
4506	1 7/16	(36.5)	15/32	(11.9)	1/2	(12.7)	10	(3.05)	Aluminum - Plain	0.14	(0.21)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

FLAT PLATE FITTINGS

FIG. 5000-5004

SQUARE WASHER

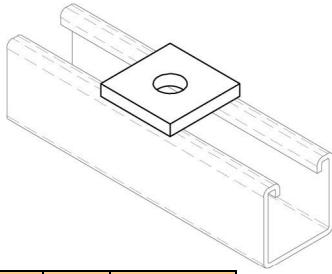


Fig. No.	Rod Size	Wt. Each	
		lbs.	kg
5000	1/4	.18	(.08)
5001	3/8	.17	(.08)
5002	1/2	.17	(.08)
5003	5/8	.16	(.07)
5004	3/4	.16	(.07)

FIG. 5005-5009

NO TURN SQUARE WASHER

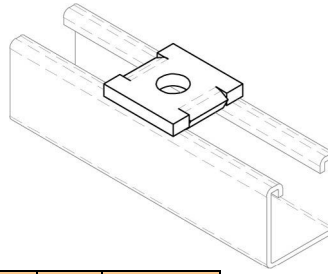
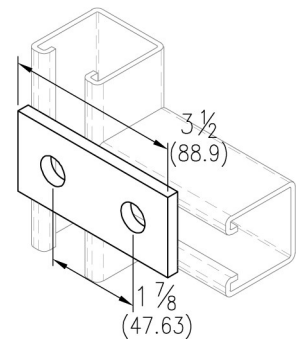


Fig. No.	Rod Size	Wt. Each	
		lbs.	kg
5005	1/4	.18	(.08)
5006	3/8	.17	(.08)
5007	1/2	.17	(.08)
5008	5/8	.16	(.07)
5009	3/4	.16	(.07)

FIG. 5010

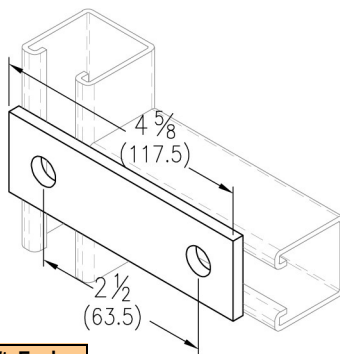
2-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.37	(0.17)

FIG. 5011

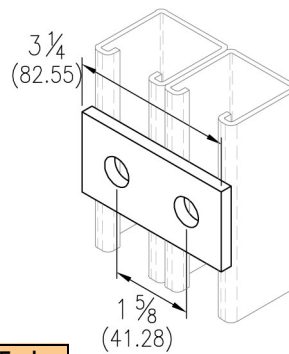
2-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.50	(0.23)

FIG. 5012

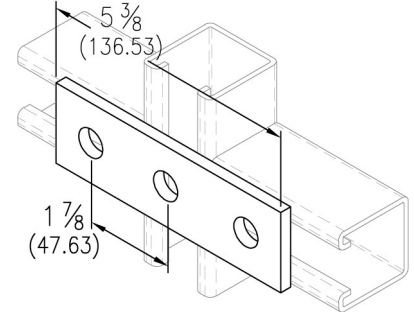
2-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.34	(0.15)

FIG. 5013

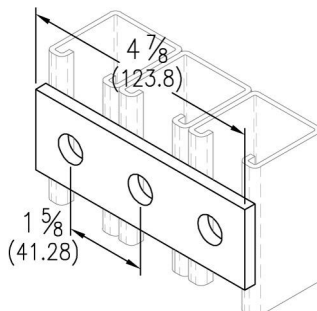
3-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.55	(0.25)

FIG. 5014

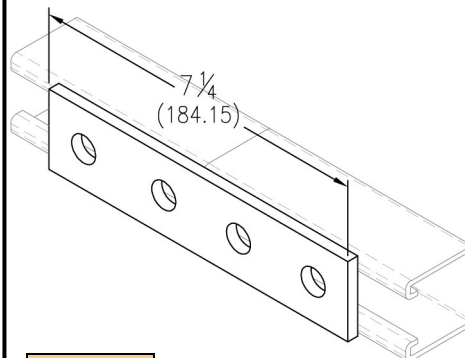
3-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.50	(0.23)

FIG. 5015

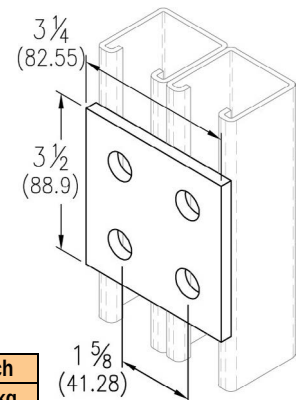
4-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.75	(0.34)

FIG. 5017

4-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.55	(0.25)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

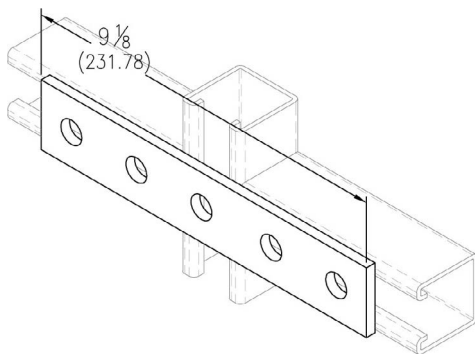
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
 Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

FLAT PLATE FITTINGS

FIG. 5019

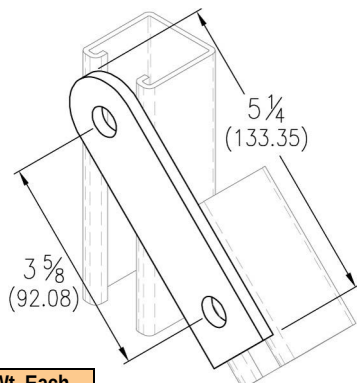
5-HOLE SPLICE PLATE



Wt. Each	
lbs.	kg
0.96	(0.44)

FIG. 5020

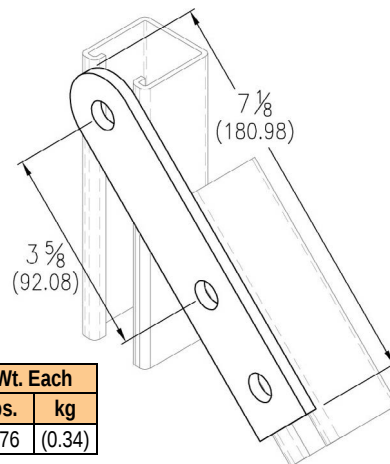
2-HOLE SWIVEL PLATE



Wt. Each	
lbs.	kg
0.56	(0.25)

FIG. 5023

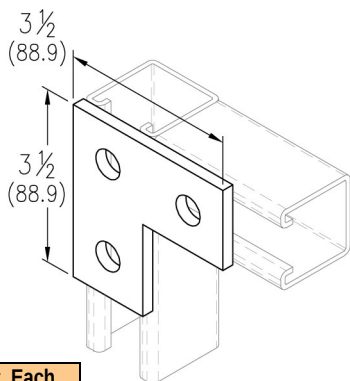
3-HOLE SWIVEL PLATE



Wt. Each	
lbs.	kg
0.76	(0.34)

FIG. 5025

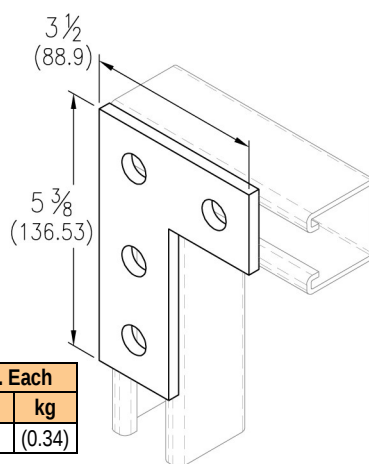
3-HOLE CORNER PLATE



Wt. Each	
lbs.	kg
0.58	(0.26)

FIG. 5030

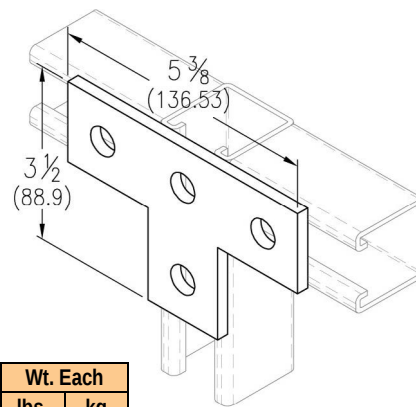
4-HOLE CORNER PLATE



Wt. Each	
lbs.	kg
0.75	(0.34)

FIG. 5035

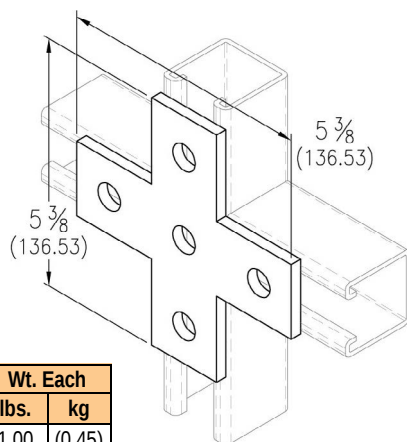
4-HOLE TEE PLATE



Wt. Each	
lbs.	kg
0.75	(0.34)

FIG. 5040

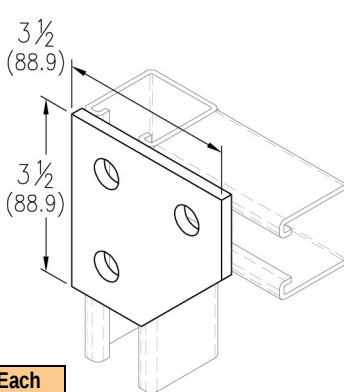
5-HOLE CROSS PLATE



Wt. Each	
lbs.	kg
1.00	(0.45)

FIG. 5045

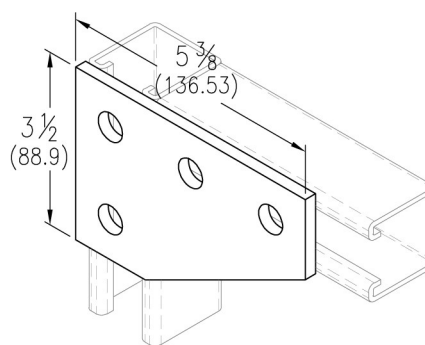
3-HOLE CORNER GUSSET PLATE



Wt. Each	
lbs.	kg
0.70	(0.32)

FIG. 5050

4-HOLE CORNER GUSSET PLATE



Wt. Each	
lbs.	kg
1.02	(0.46)

Standard Product Information for 1 1/2" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 1/2" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

FLAT PLATE FITTINGS

FIG. 5060

5-HOLE CORNER GUSSET PLATE

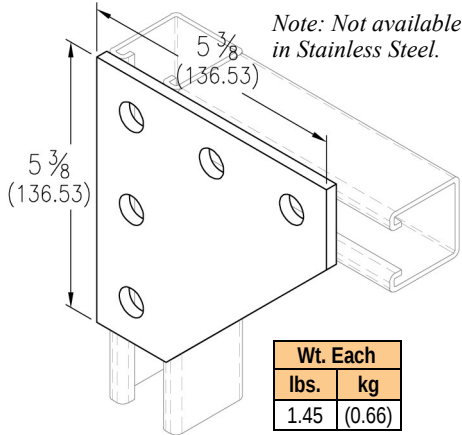


FIG. 5065

3-HOLE TEE GUSSET PLATE

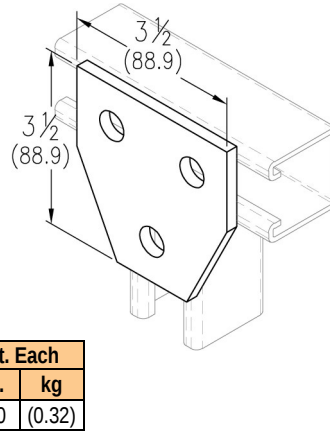


FIG. 5075

4-HOLE TEE GUSSET PLATE

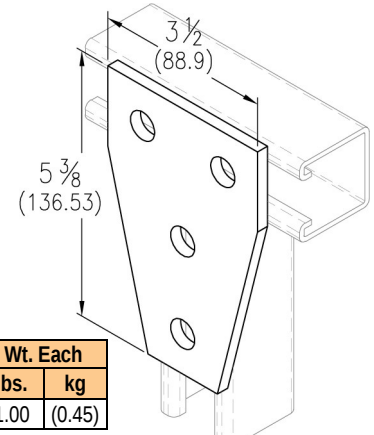


FIG. 5080

5-HOLE TEE GUSSET PLATE

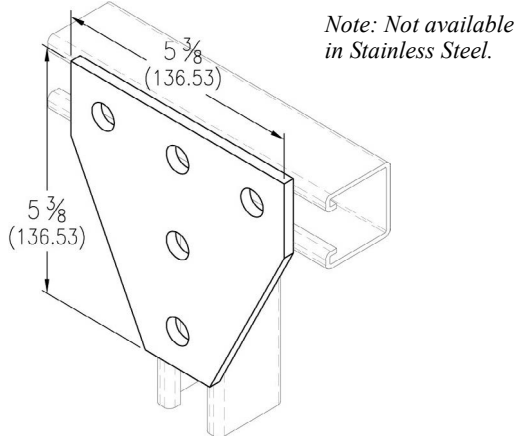


FIG. 5085

6-HOLE TEE GUSSET PLATE

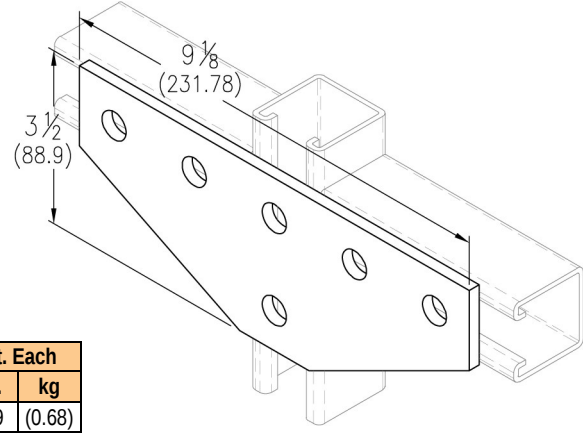


FIG. 5090

6-HOLE CROSS GUSSET PLATE

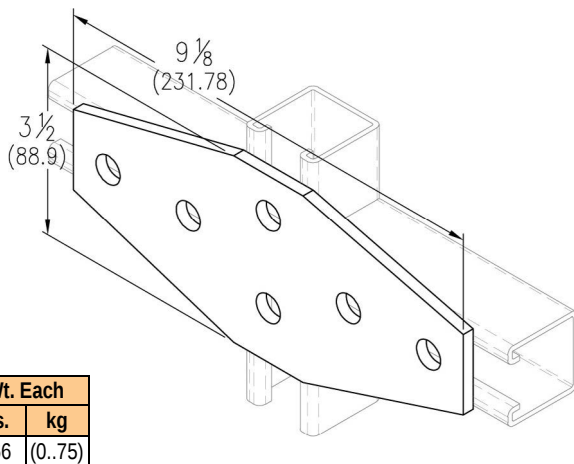
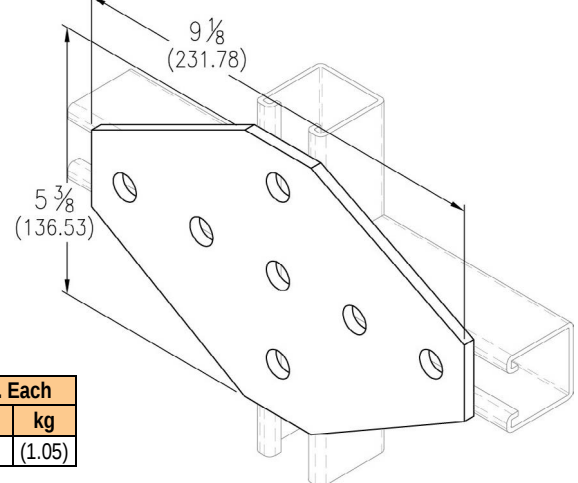


FIG. 5095

7-HOLE CROSS GUSSET PLATE



Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

90° ANGLE FITTINGS

FIG. 5101 - 5107

1-HOLE ANGLE

Fig. No.	B	Wt. Each	
		lbs.	kg
5101	3 ⁷ / ₈ (98.43)	.48	(.22)
5103	5 ⁷ / ₈ (149.23)	.83	(.38)
5105	7 ⁷ / ₈ (200.03)	1.05	(.48)
5107	9 ⁷ / ₈ (250.83)	1.30	(.59)

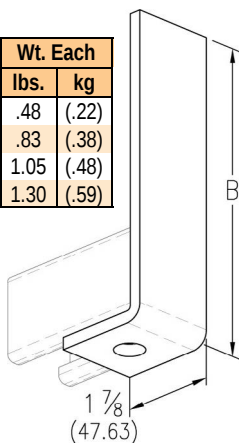
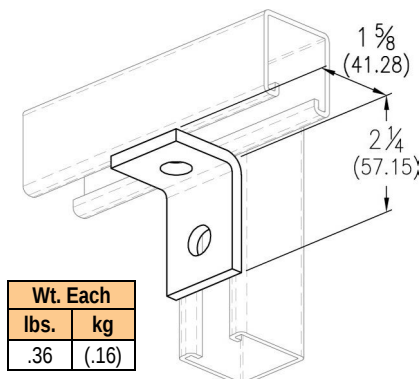


FIG. 5110

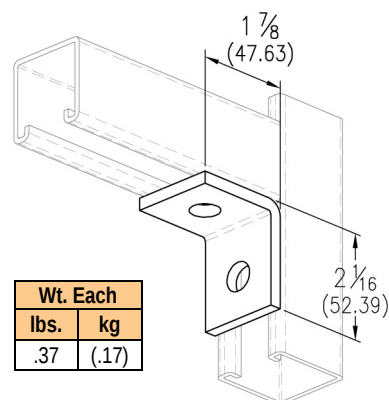
2-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.36	(.16)

FIG. 5112

2-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.37	(.17)

FIG. 5115 - 5118

2-HOLE CORNER ANGLE

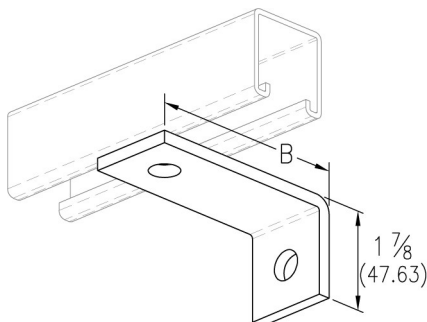
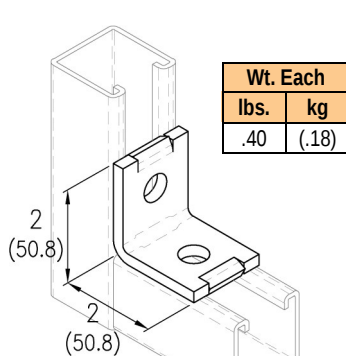


Fig. No.	B	Wt. Each	
		lbs.	kg
5115	3	.49	(.22)
5116	3 1/2	.54	(.24)
5118	4	.61	(.28)

FIG. 5119

"NO-TURN" 2-HOLE CORNER ANGLE

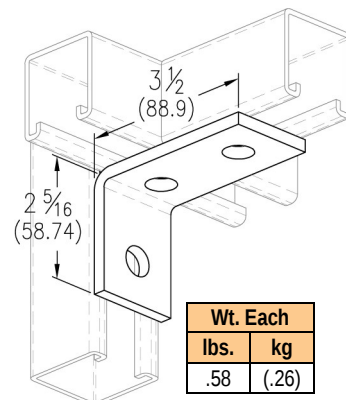


Wt. Each	
lbs.	kg
.40	(.18)

Note: Not available in Stainless Steel.

FIG. 5120

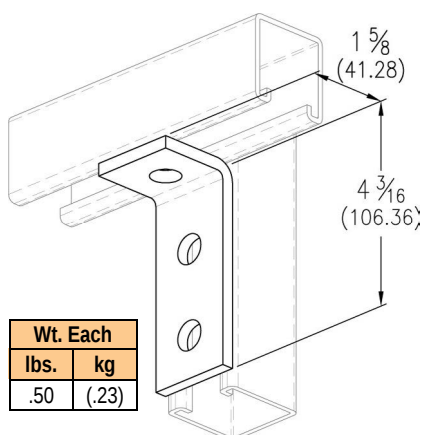
3-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.58	(.26)

FIG. 5121

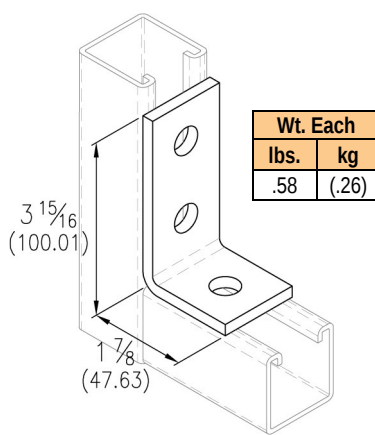
3-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.50	(.23)

FIG. 5122

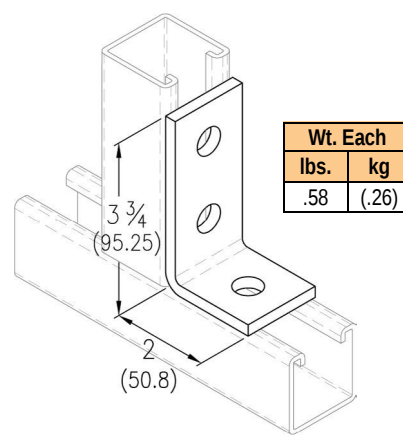
3-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.58	(.26)

FIG. 5123

3-HOLE CORNER ANGLE



Wt. Each	
lbs.	kg
.58	(.26)

Standard Product Information for 1⁵/₈" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: ⁹/₁₆" (14.3); Hole Spacing-From End: ¹/₁₆" (20.6); Hole Spacing-On Center: 1⁷/₈" (47.6); Width: 1⁵/₈" (41.3); Thickness: ¹/₄" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

90° ANGLE FITTINGS

FIG. 5130

4-HOLE CORNER ANGLE

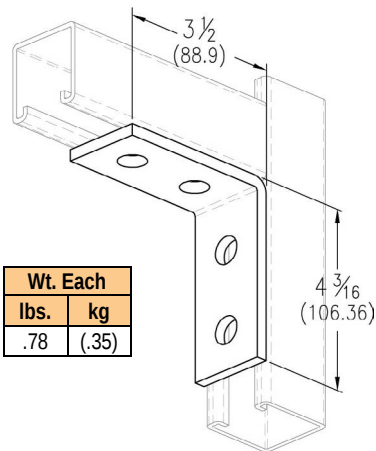


FIG. 5131

4-HOLE CORNER ANGLE

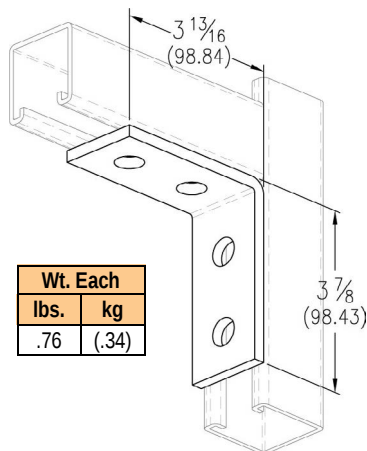


FIG. 5135

4-HOLE CORNER ANGLE

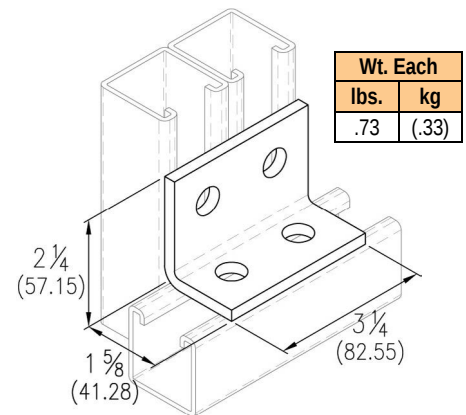
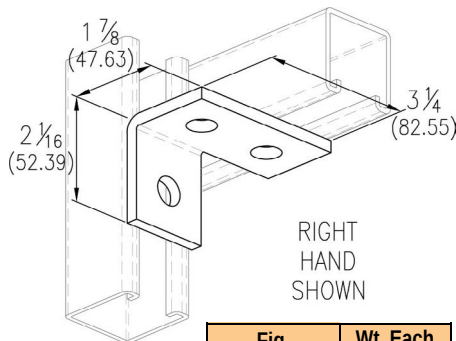


FIG. 5140 & 5145

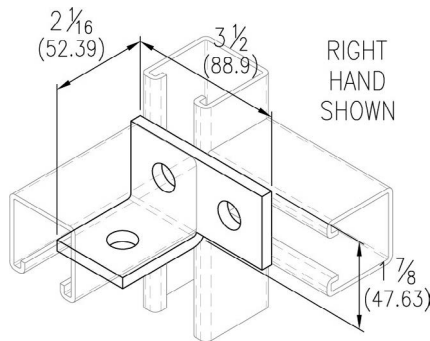
3-HOLE OFFSET BENT ANGLE



Note: Not available in Stainless Steel.

FIG. 5141 & 5146

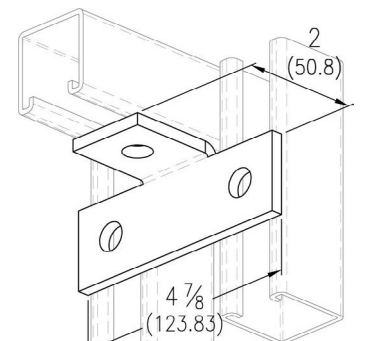
3-HOLE OFFSET BENT ANGLE



Note: Not available in Stainless Steel.

FIG. 5148

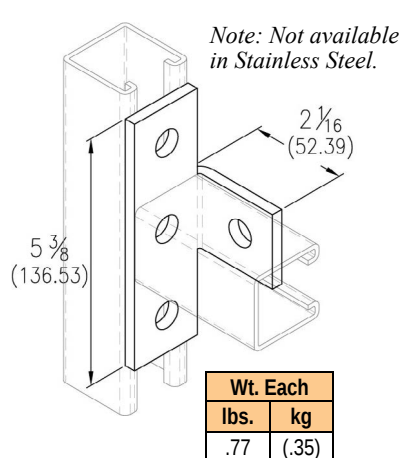
3-HOLE OFFSET BENT TEE



Note: Not available in Stainless Steel.

FIG. 5150

4-HOLE OFFSET BENT TEE



Note: Not available in Stainless Steel.

FIG. 5155 & 5156

4-HOLE OFFSET BENT TEE

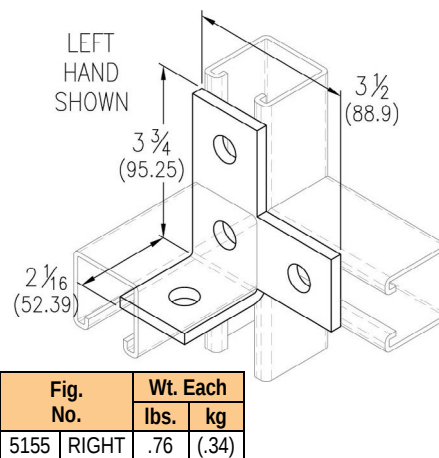
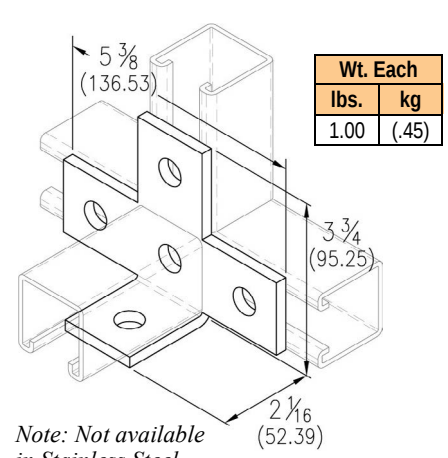


FIG. 5160

5-HOLE OFFSET BENT TEE



Note: Not available in Stainless Steel.

Standard Product Information for 1 1/2" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 1/2" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

90° ANGLE FITTINGS

FIG. 5165 & 5166
UNIVERSAL SHELF BRACKET

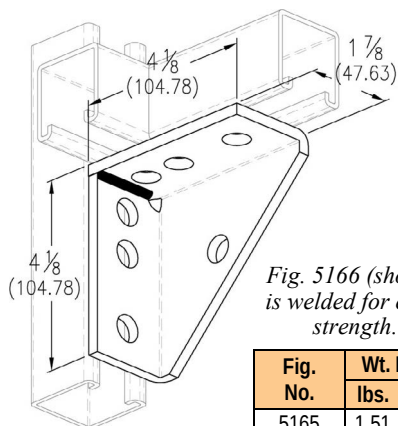


Fig. 5166 (shown)
is welded for extra
strength.

Fig. No.	Wt. Each	
	lbs.	kg
5165	1.51	(.68)
5166	1.53	(.69)

FIG. 5170 & 5175
4-HOLE CORNER GUSSET

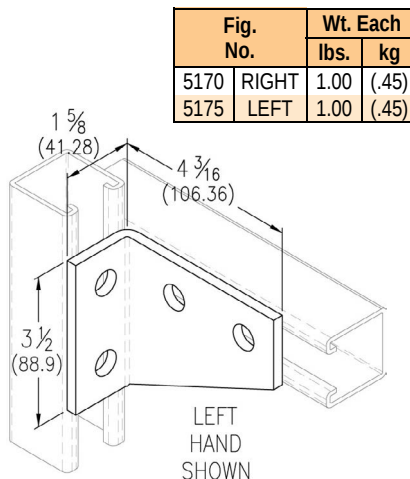


Fig. No.		Wt. Each	
		lbs.	kg
5170	RIGHT	1.00	(.45)
5175	LEFT	1.00	(.45)

LEFT
HAND
SHOWN

FIG. 5171 & 5176
4-HOLE CORNER GUSSET

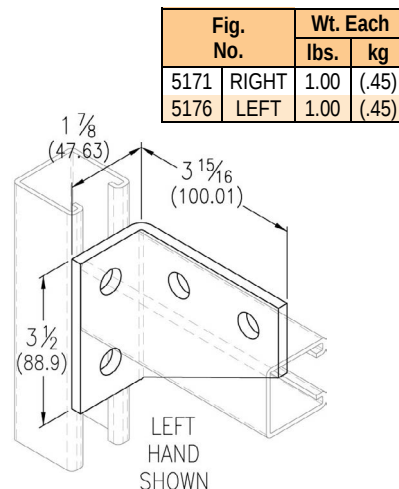
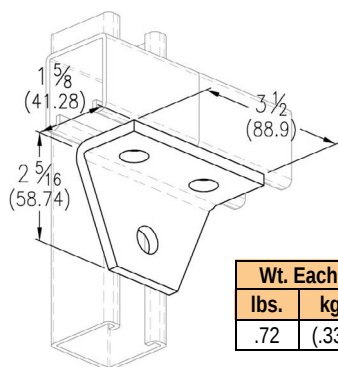


Fig. No.		Wt. Each	
		lbs.	kg
5171	RIGHT	1.00	(.45)
5176	LEFT	1.00	(.45)

LEFT
HAND
SHOWN

FIG. 5180

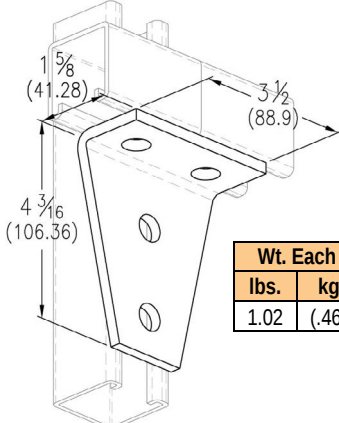
3-HOLE GUSSETED SHELF ANGLE



Wt. Each	
lbs.	kg
.72	(.33)

FIG. 5185

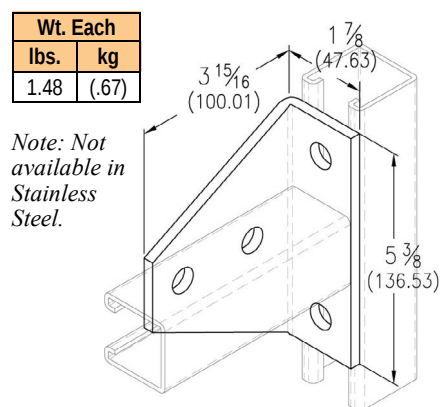
4-HOLE GUSSETED SHELF ANGLE



Wt. Each	
lbs.	kg
1.02	(.46)

FIG. 5186

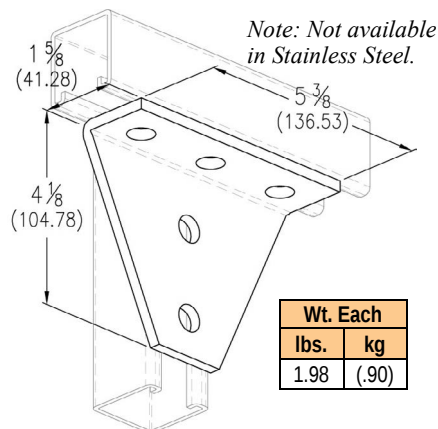
4-HOLE GUSSETED SHELF ANGLE



Note: Not
available in
Stainless
Steel.

FIG. 5190

5-HOLE GUSSETED SHELF ANGLE

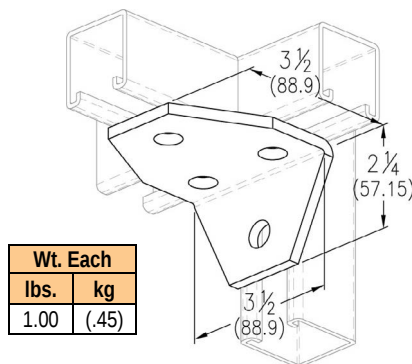


Note: Not available
in Stainless Steel.

Wt. Each	
lbs.	kg
1.98	(.90)

FIG. 5200

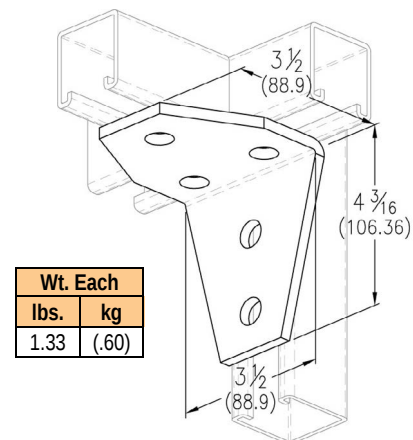
4-HOLE JOINT ANGLE CONNECTOR



Wt. Each	
lbs.	kg
1.00	(.45)

FIG. 5205

5-HOLE JOINT ANGLE CONNECTOR



Wt. Each	
lbs.	kg
1.33	(.60)

Standard Product Information for 1 1/2" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

90° ANGLE FITTINGS

FIG. 5210 & 5211

6-HOLE GUSSETED CORNER CONNECTOR

Note: Not available in Stainless Steel.

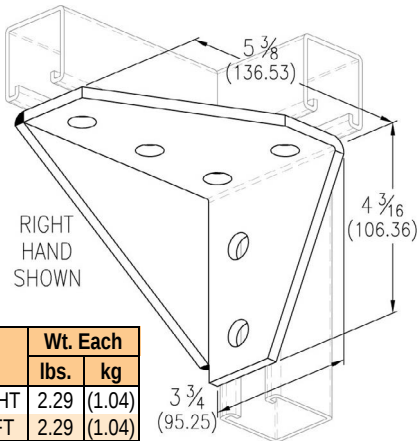
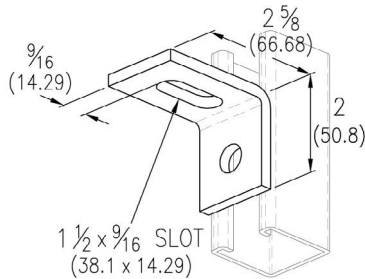


Fig. No.		Wt. Each	
		lbs.	kg
5210	RIGHT	2.29	(1.04)
5211	LEFT	2.29	(1.04)

FIG. 5220

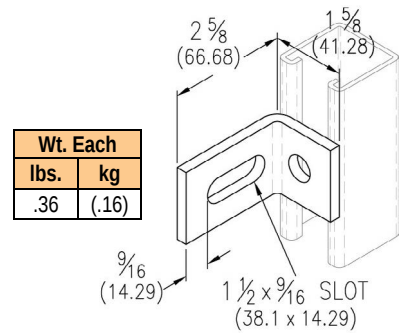
2-HOLE ADJUSTABLE CORNER ANGLE



Wt. Each	
lbs.	kg
.42	(.19)

FIG. 5221

2-HOLE ADJUSTABLE CORNER ANGLE



Wt. Each	
lbs.	kg
.36	(.16)

FIG. 5225 & 5226

2-HOLE ADJUSTABLE CORNER ANGLE

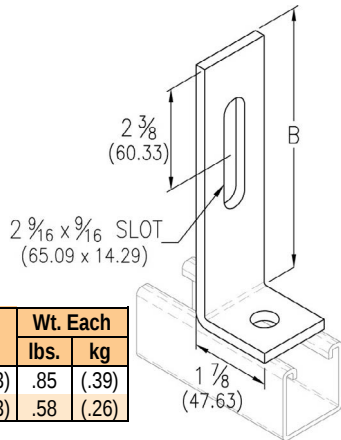
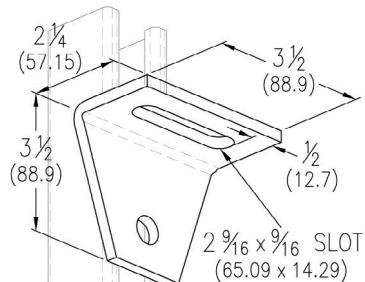


Fig. No.	B	Wt. Each	
		lbs.	kg
5225	6 7/8 (174.63)	.85	(.39)
5226	4 7/8 (123.83)	.58	(.26)

FIG. 5228

2-HOLE ADJUSTABLE CORNER ANGLE

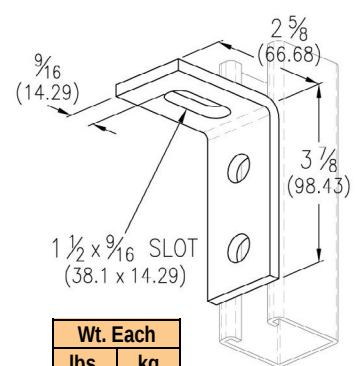


Wt. Each	
lbs.	kg
.97	(.44)

Note: Not available in Stainless Steel.

FIG. 5230

3-HOLE ADJUSTABLE CORNER ANGLE



Wt. Each	
lbs.	kg
.59	(.27)

FIG. 5250 & 5255

4-HOLE ADJUSTABLE CORNER ANGLE

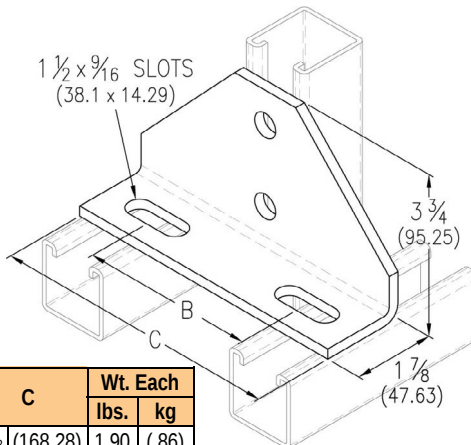
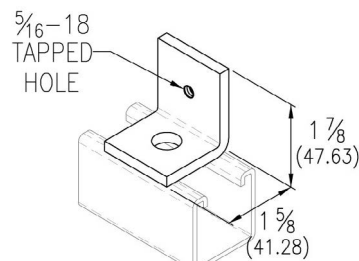


Fig. No.	B	C	Wt. Each	
			lbs.	kg
5250	4 (101.6)	6 5/8 (168.28)	1.90	(.86)
*5255	6 (152.4)	8 5/8 (219.08)	2.56	(1.16)

* Not available in Stainless Steel.

FIG. 5260

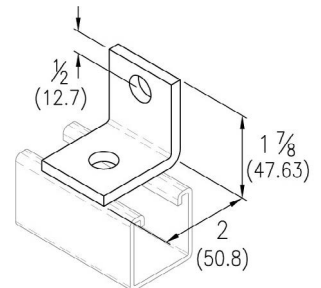
2-HOLE TAPPED CORNER ANGLE



Wt. Each	
lbs.	kg
.33	(.15)

FIG. 5270

2-HOLE BUS DUCT ANGLE



Wt. Each	
lbs.	kg
.37	(.17)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

ANGLE FITTINGS

FIG. 5301 - 5315

2-HOLE OPEN ANGLE CONNECTOR

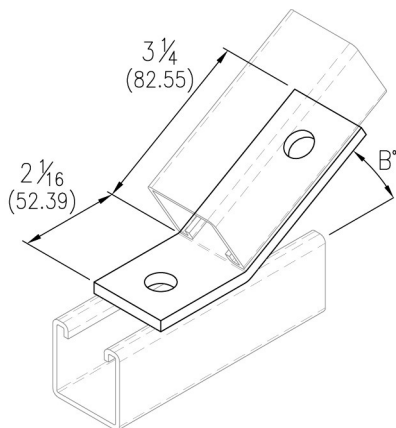


Fig. No.	Angle B°	Wt. Each	lbs.	kg
5301	7 1/2	.58	(.26)	
5302	15	.58	(.26)	
5303	22 1/2	.58	(.26)	
5304	30	.58	(.26)	
5306	37 1/2	.58	(.26)	
5307	52 1/2	.58	(.26)	
5308	60	.58	(.26)	
5309	67 1/2	.58	(.26)	
5310	75	.58	(.26)	
5311	82 1/2	.58	(.26)	
5315	45	.58	(.26)	

FIG. 5340 - 5350

4-HOLE OPEN ANGLE CONNECTOR

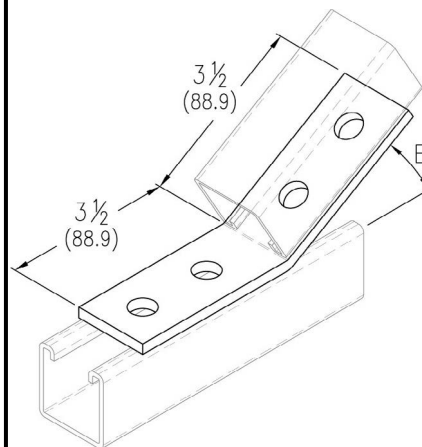


Fig. No.	Angle B°	Wt. Each	lbs.	kg
5340	7 1/2	.78	(.35)	
5341	15	.78	(.35)	
5342	22 1/2	.78	(.35)	
5343	30	.78	(.35)	
5344	37 1/2	.78	(.35)	
5345	45	.78	(.35)	
5346	52 1/2	.78	(.35)	
5347	60	.78	(.35)	
5348	67 1/2	.78	(.35)	
5349	75	.78	(.35)	
5350	82 1/2	.78	(.35)	

FIG. 5360 - 5366

2-HOLE CLOSED ANGLE CONNECTOR

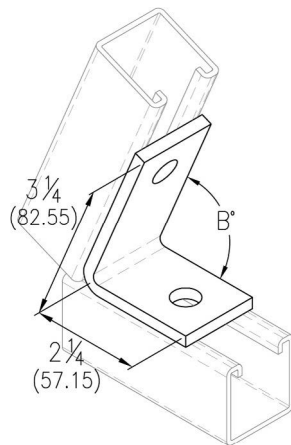


Fig. No.	Angle B°	Wt. Each	lbs.	kg
5360	37 1/2	.58	(.26)	
5361	45	.58	(.26)	
5362	52 1/2	.58	(.26)	
5363	60	.58	(.26)	
5364	67 1/2	.58	(.26)	
5365	75	.58	(.26)	
5366	82 1/2	.58	(.26)	

FIG. 5370 - 5376

4-HOLE CLOSED ANGLE CONNECTOR

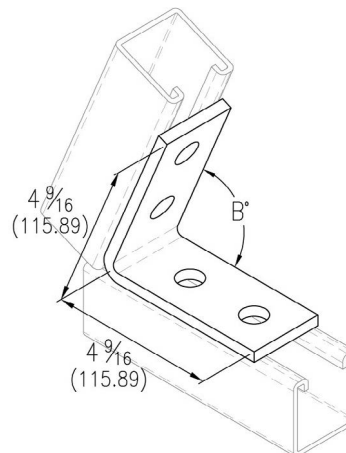
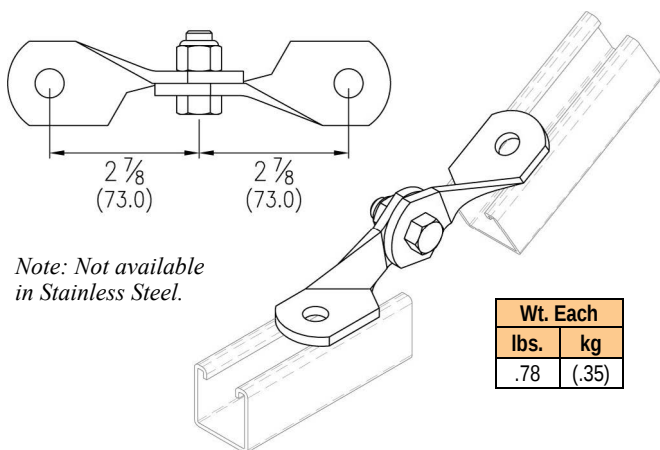


Fig. No.	Angle B°	Wt. Each	lbs.	kg
5370	37 1/2	.95	(.43)	
5371	45	.95	(.43)	
5372	52 1/2	.95	(.43)	
5373	60	.95	(.43)	
5374	67 1/2	.95	(.43)	
5375	75	.95	(.43)	
5376	82 1/2	.95	(.43)	

FIG. 5380

2-HOLE ADJUSTABLE HINGE



Wt. Each	lbs.	kg
	.78	(.35)

FIG. 5381 & 5382

3-HOLE ADJUSTABLE HINGE

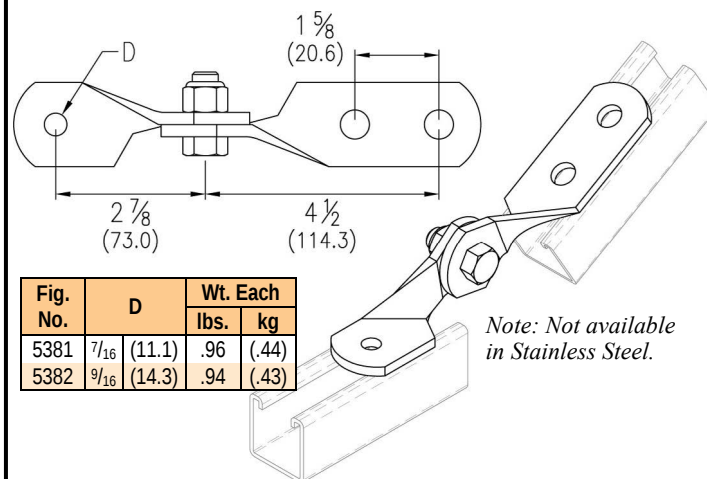


Fig. No.	D	Wt. Each	lbs.	kg
5381	7/16 (11.1)	.96	(.44)	
5382	9/16 (14.3)	.94	(.43)	

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

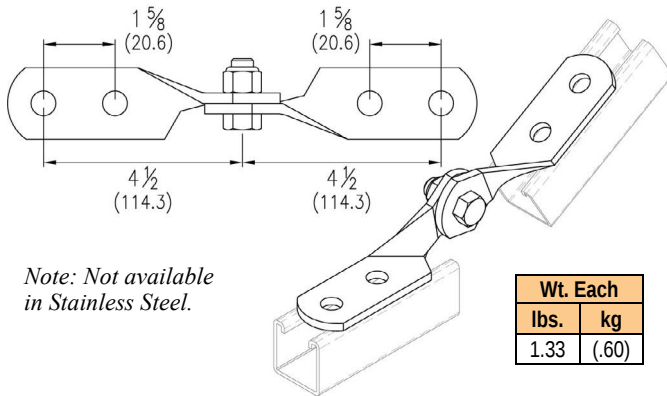
Hole Diameter: 9/16" (14.3); **Hole Spacing-From End:** 1 5/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

ANGLE FITTINGS

FIG. 5383

4-HOLE ADJUSTABLE HINGE



Note: Not available in Stainless Steel.

FIG. 5384

2-HOLE ADJUSTABLE HINGE

Wt. Each	
lbs.	kg
.68	(.31)

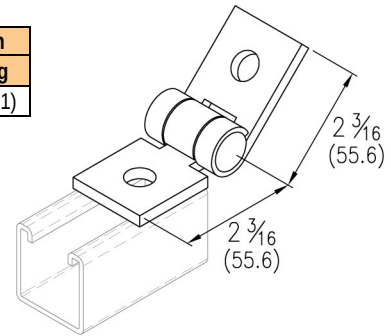


FIG. 5385

3-HOLE ADJUSTABLE HINGE

Wt. Each	
lbs.	kg
.89	(.40)

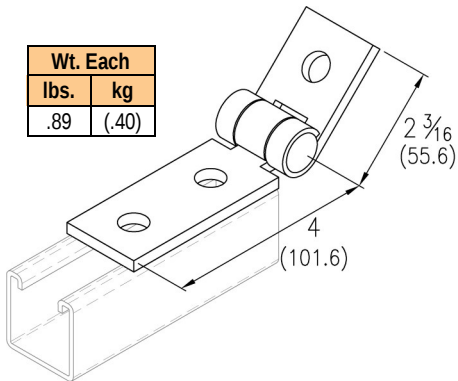
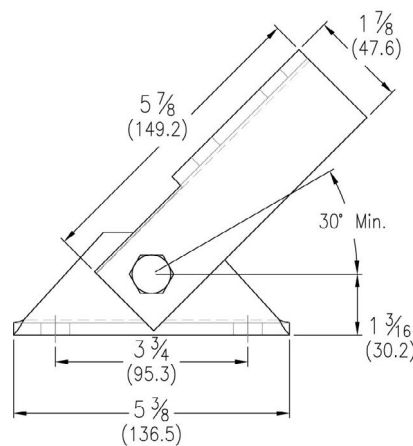


FIG. 5390

SINGLE ADJUSTABLE BRACE FOR USE WITH 1 5/8" STRUT



Wt. Each	
lbs.	kg
3.07	(1.40)

Note: Not available in Stainless Steel.

FIG. 5386

4-HOLE ADJUSTABLE HINGE

Wt. Each	
lbs.	kg
1.09	(.49)

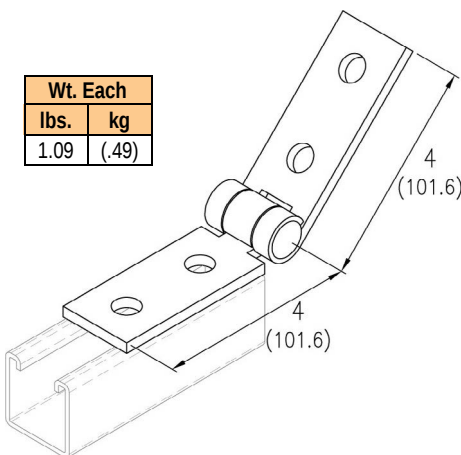
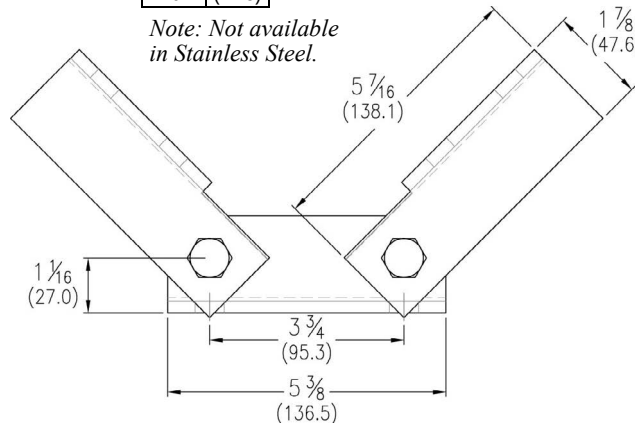


FIG. 5395

DOUBLE ADJUSTABLE BRACE FOR USE WITH 1 5/8" STRUT

Wt. Each	
lbs.	kg
4.97	(2.25)

Note: Not available in Stainless Steel.



Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

"U" SHAPE FITTINGS

FIG. 5501 - 5511

3-HOLE "U" SUPPORT

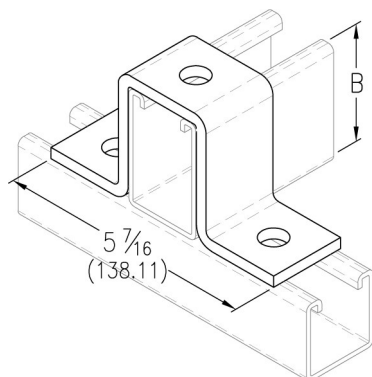
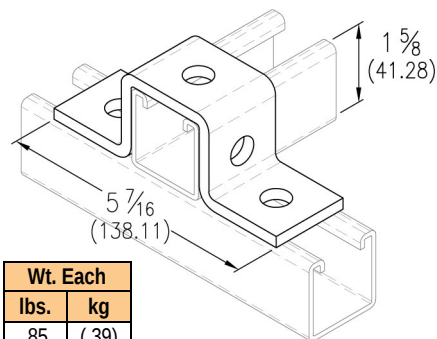


Fig. No.	B	Wt. Each	
		lbs.	kg
*5501	13/16	(20.64)	.66 (.30)
5505	27/16	(61.91)	1.08 (.49)
5507	3 1/4	(82.55)	1.25 (.57)
* 5509	4 7/8	(123.83)	1.57 (.71)
5511	6 1/2	(165.10)	2.25 (1.02)

* Not available in Stainless Steel.

FIG. 5503

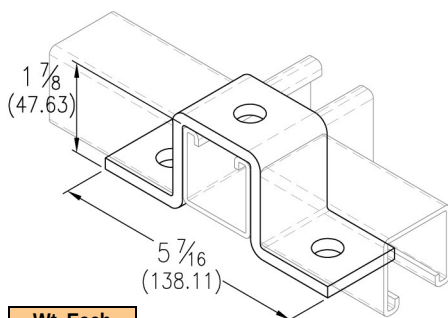
5-HOLE "U" SUPPORT



Wt. Each	
lbs.	kg
.85	(.39)

FIG. 5513

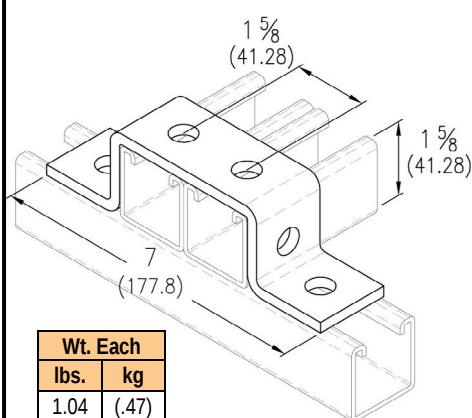
3-HOLE "U" SUPPORT



Wt. Each	
lbs.	kg
.95	(.43)

FIG. 5521

6-HOLE "U" SUPPORT



Wt. Each	
lbs.	kg
1.04	(.47)

FIG. 5530 - 5532

SLOTTED 3-HOLE "U" SUPPORT

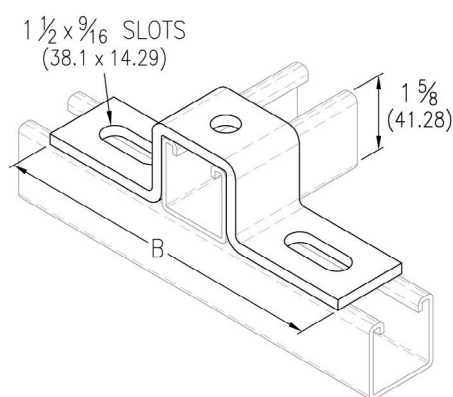
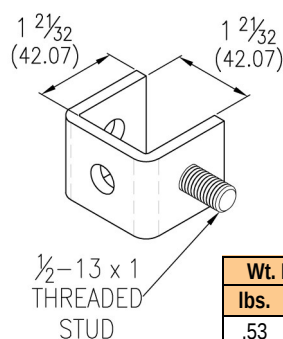


Fig. No.	B	Wt. Each	
		lbs.	kg
5530	7 1/4	(184.15)	.96 (.44)
5531	8 1/2	(215.90)	1.11 (.50)
5532	10 3/8	(263.53)	1.29 (.59)

FIG. 5541

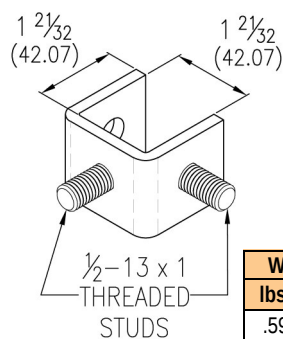
1-STUD RING CONNECTOR



Wt. Each	
lbs.	kg
.53	(.24)

FIG. 5542

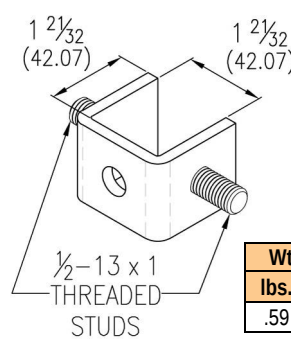
2-STUD RING CONNECTOR



Wt. Each	
lbs.	kg
.59	(.27)

FIG. 5543

2-STUD RING CONNECTOR



Wt. Each	
lbs.	kg
.59	(.27)

Standard Product Information for 1 1/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

"U" SHAPE FITTINGS

FIG. 5700 - 5704

1-HOLE "U" WASHER

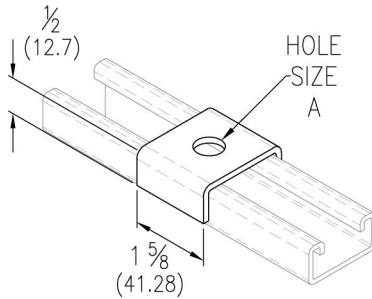


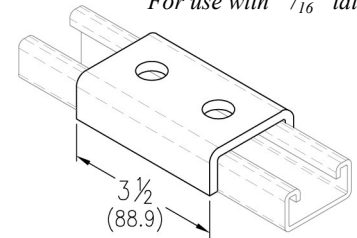
Fig. No.	Bolt Size	Hole Size A	Wt. Each	
			lbs.	kg
5700	1/4	5/16	(7.94)	.18 (.08)
5701	3/8	7/16	(11.11)	.18 (.08)
5702	1/2	9/16	(14.29)	.18 (.08)
5703	5/8	11/16	(17.46)	.18 (.08)
5704	3/4	13/16	(20.64)	.17 (.08)

11 Gauge Material Thickness

FIG. 5705

2-HOLE SPLICE CLEVIS

For use with 1 3/16" tall strut

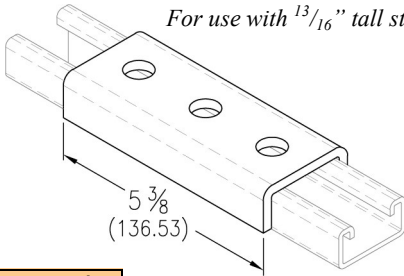


Wt. Each	
lbs.	kg
.78	(.35)

FIG. 5710

3-HOLE SPLICE CLEVIS

For use with 1 3/16" tall strut



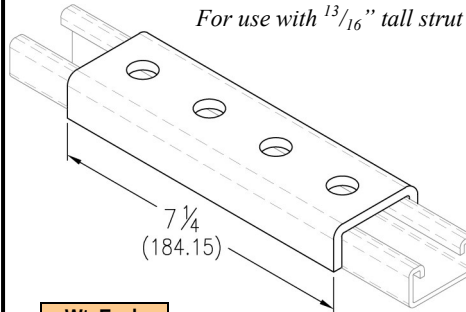
Wt. Each	
lbs.	kg
1.25	(.57)

Note: Not available in Stainless Steel.

FIG. 5715

4-HOLE SPLICE CLEVIS

For use with 1 3/16" tall strut



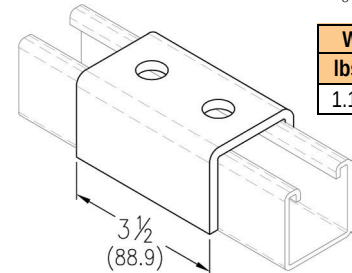
Wt. Each	
lbs.	kg
1.75	(.79)

Note: Not available in Stainless Steel.

FIG. 5720

2-HOLE SPLICE CLEVIS

For use with 1 5/8" tall strut



Wt. Each	
lbs.	kg
1.19	(.54)

FIG. 5730 - 5732

4-HOLE SPLICE CLEVIS

Fig. No.	For Use With	Wt. Each	
		lbs.	kg
5730	1 5/8" tall strut	2.68	(1.22)
5731	2 7/16" tall strut	3.15	(1.43)
5732	3 1/4" tall strut	3.80	(1.72)

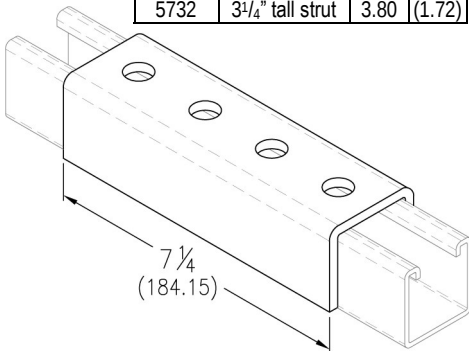


FIG. 5750 - 5764

2-HOLE CLEVIS

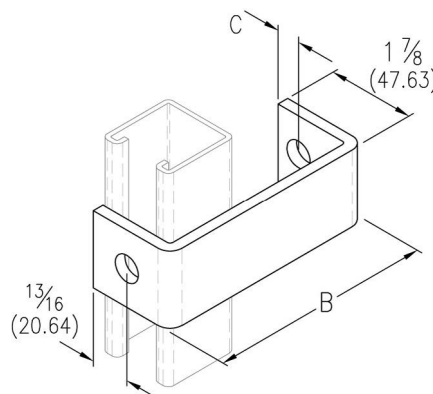


Fig. No.	B		C		Wt. Each	
					lbs.	kg
5750	3 13/32	(61.12)	1/2	(12.7)	.57	(.26)
5751	3 25/32	(96.04)	1/2	(12.7)	.73	(.33)
5752	4 3/4	(120.65)	1/2	(12.7)	.84	(.38)
5760	4	(101.60)	13/16	(20.64)	.78	(.35)
5761	5	(127.00)	13/16	(20.64)	.89	(.40)
5762	6	(152.40)	13/16	(20.64)	1.07	(.49)
5763	7	(177.80)	13/16	(20.64)	1.12	(.51)
5764	8	(203.20)	13/16	(20.64)	1.24	(.56)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

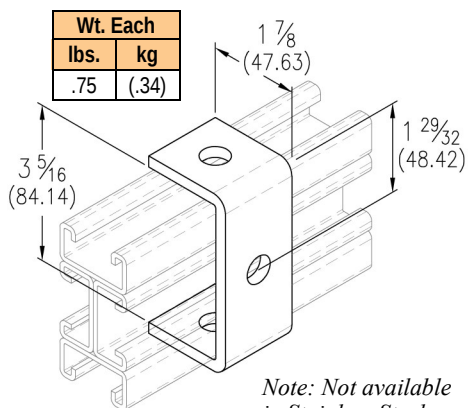
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



"U" SHAPE FITTINGS

FIG. 5770

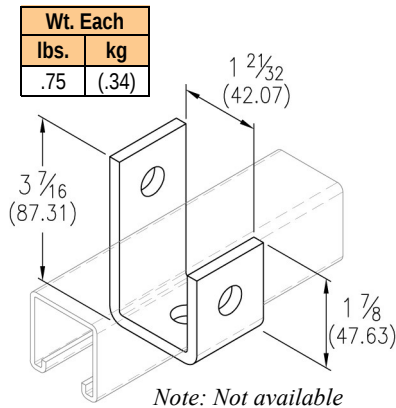
3-HOLE CLEVIS



Note: Not available in Stainless Steel.

FIG. 5775

3-HOLE SUSPENSION CLEVIS



Note: Not available in Stainless Steel.

FIG. 5780

4-HOLE SUSPENSION CLEVIS

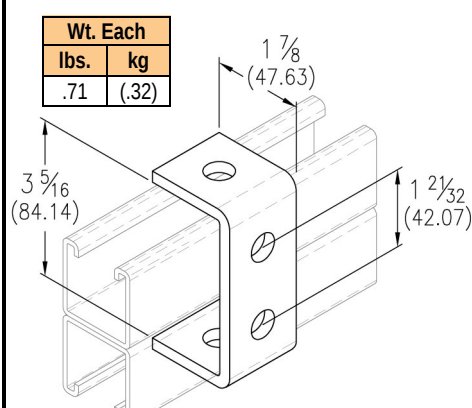


FIG. 8000 - 8001

INSIDE STRUT JOINER

Material: Carbon steel

Finish: Electro-galvanized

Fig. No.	For Use With	Wt. Each lbs.	kg
8000	1 5/8" Strut	.55	(.25)
8001	1 3/16" Strut	.31	(.14)

Note: Not available in Stainless Steel.

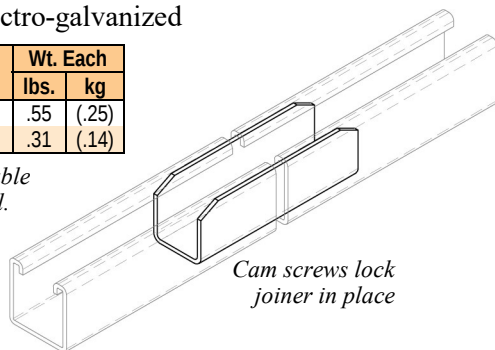


FIG. 8005

90° ELBOW STRUT JOINER

Material: Aluminum

Finish: Plain

Note: Not available in Stainless Steel.

For Use With	Wt. Each lbs.	kg
1 5/8" Strut	.39	(.18)

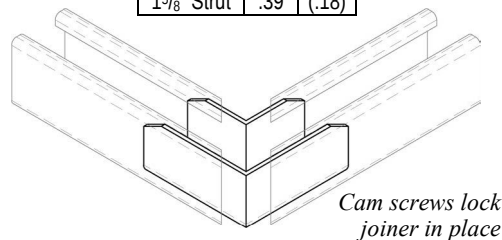


FIG. 8010

TEE STRUT JOINER

Material: Aluminum

Finish: Plain

For Use With	Wt. Each lbs.	kg
1 5/8" Strut	.79	(.36)

Note: Not available in Stainless Steel.

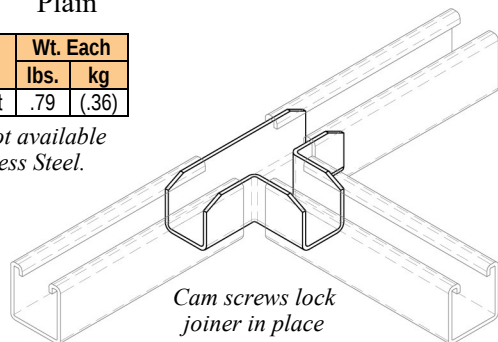


FIG. 8015

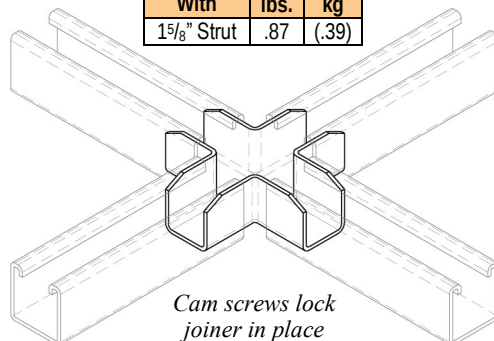
CROSS STRUT JOINER

Material: Aluminum

Finish: Plain

Note: Not available in Stainless Steel.

For Use With	Wt. Each lbs.	kg
1 5/8" Strut	.87	(.39)



Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

"Z" SHAPE FITTINGS

FIG. 5550

2-HOLE OFFSET "Z" SUPPORT

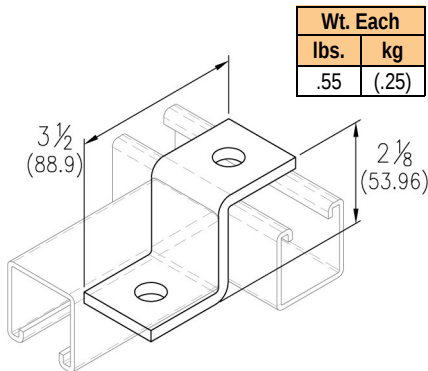


FIG. 5551 - 5558

2-HOLE "Z" SUPPORT

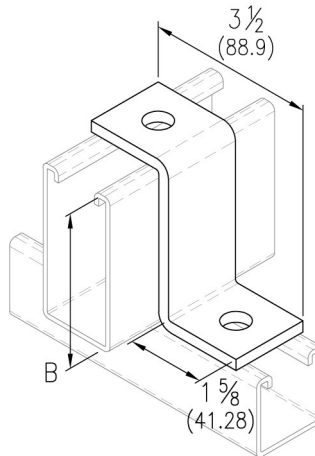
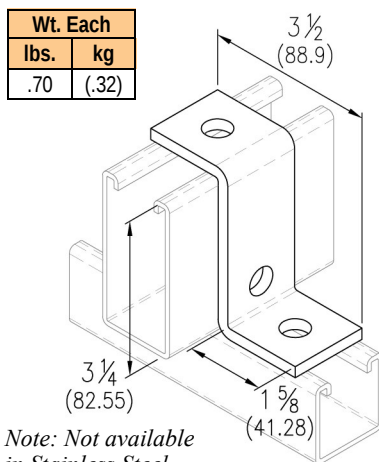


Fig. No.	B		Wt. Each	
			lbs.	kg
*5551	13/16	(20.64)	.47	(.21)
5553	27/16	(61.91)	.67	(.30)
5558	47/8	(123.83)	.90	(.41)

* Not available in Stainless Steel.

FIG. 5552

3-HOLE "Z" SUPPORT



Note: Not available in Stainless Steel.

FIG. 5554

3-HOLE "Z" SUPPORT

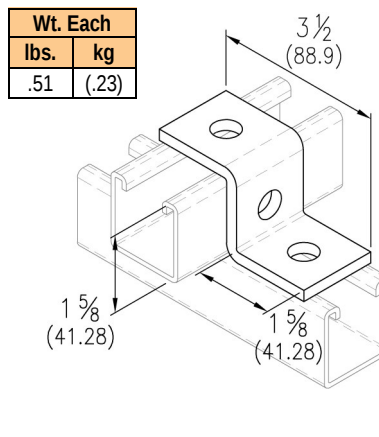
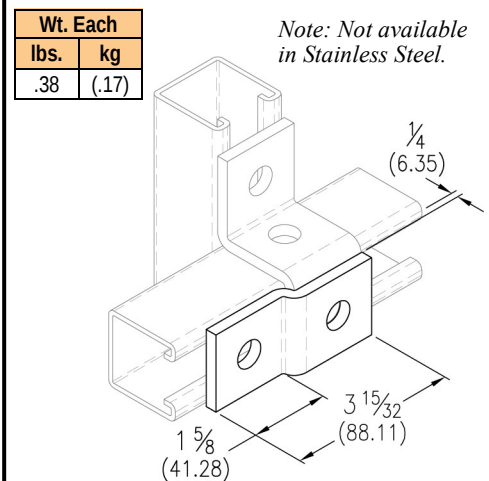


FIG. 5556

2-HOLE "Z" SUPPORT



Note: Not available in Stainless Steel.

FIG. 5560 - 5562

2-HOLE "Z" BUS DUCT CONNECTION

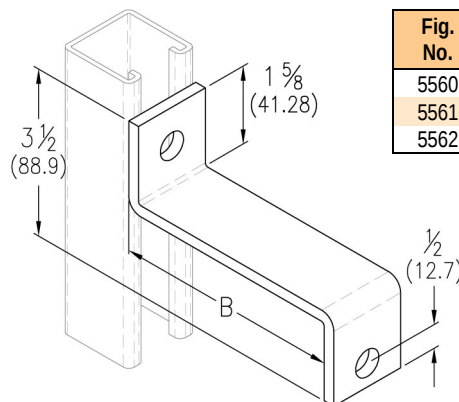


Fig. No.	B		Wt. Each	
			lbs.	kg
5560	43/4	(120.65)	.89	(.40)
5561	325/32	(96.04)	.78	(.35)
5562	213/32	(61.12)	.62	(.28)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

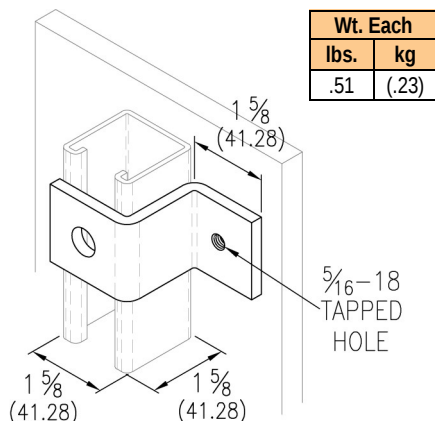
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
 Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

"Z" SHAPE FITTINGS

FIG. 5565

TAPPED "Z" SUPPORT



Note: Not available in Stainless Steel.

FIG. 5570 - 5574

2-HOLE "Z" SUPPORT

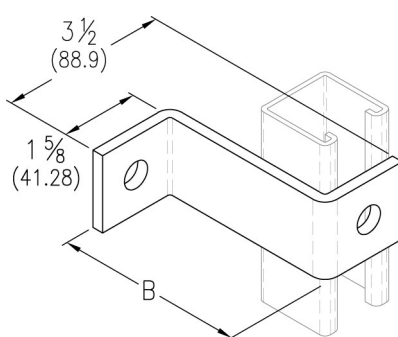


FIG. 5575

3-HOLE SHEATH CORNER CONNECTOR

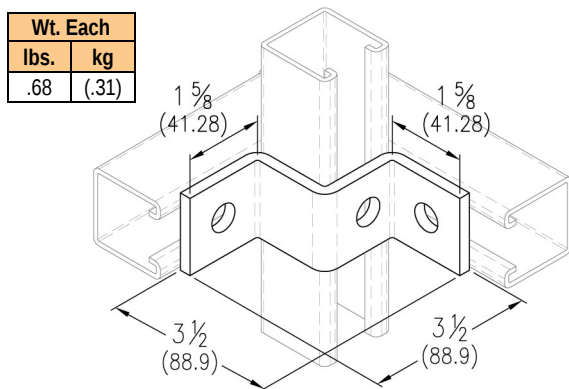
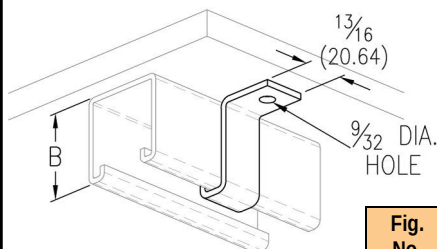


FIG. 5580 - 5583

CHANNEL HANGER

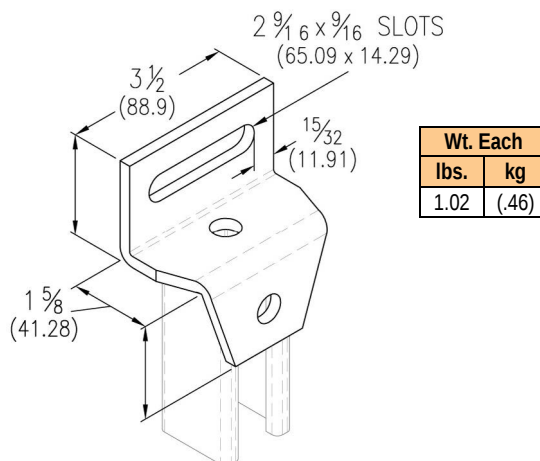


Note: Not available in Stainless Steel.

11 Gauge Material Thickness

FIG. 5590

ADJUSTABLE OFFSET GUSSETED "Z" SUPPORT



Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

WING FITTINGS

FIG. 5600 & 5601

3-HOLE CORNER CONNECTOR

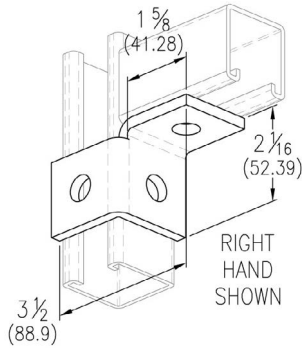


Fig. No.		Wt. Each	
		lbs.	kg
5600	RIGHT	.60	(.27)
5601	LEFT	.60	(.27)

FIG. 5605 & 5606

4-HOLE CORNER CONNECTOR

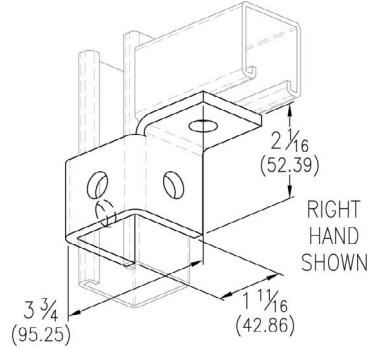


Fig. No.		Wt. Each	
		lbs.	kg
5605	RIGHT	.70	(.32)
5606	LEFT	.70	(.32)

FIG. 5610 & 5611

5-HOLE CORNER CONNECTOR

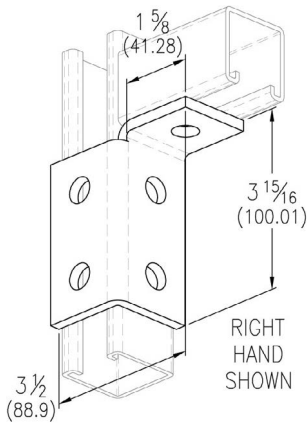


Fig. No.		Wt. Each	
		lbs.	kg
5610	RIGHT	1.00	(.45)
5611	LEFT	1.00	(.45)

FIG. 5615 & 5616

6-HOLE CORNER CONNECTOR

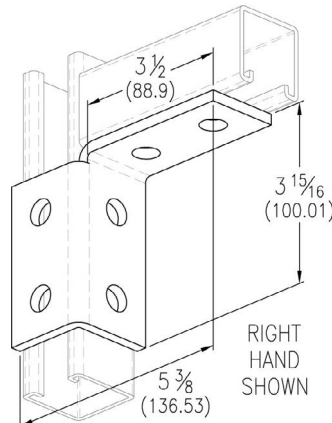


Fig. No.		Wt. Each	
		lbs.	kg
5615	RIGHT	1.20	(.54)
5616	LEFT	1.20	(.54)

FIG. 5617 & 5618

6-HOLE GUSSETED CORNER CONNECTOR

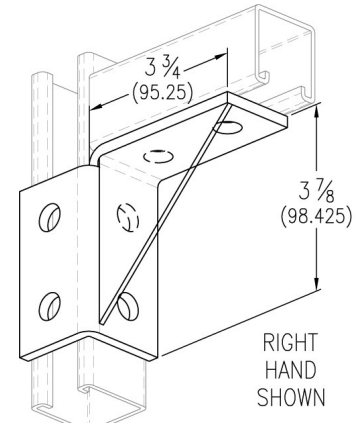
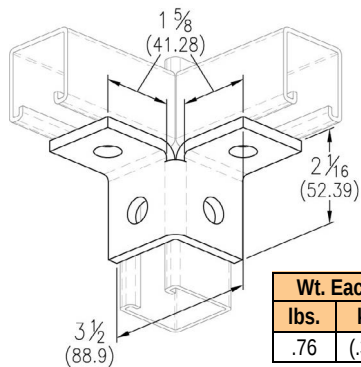


Fig. No.		Wt. Each	
		lbs.	kg
5617	RIGHT	1.76	(.8)
5618	LEFT	1.76	(.8)

FIG. 5620

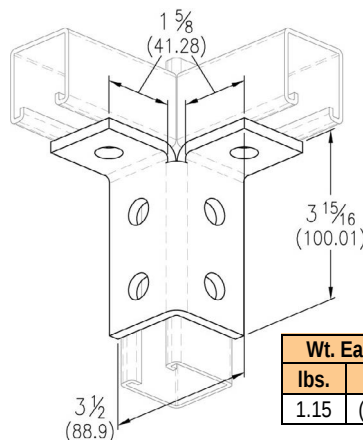
4-HOLE DOUBLE CORNER CONNECTOR



Wt. Each	
lbs.	kg
.76	(.34)

FIG. 5625

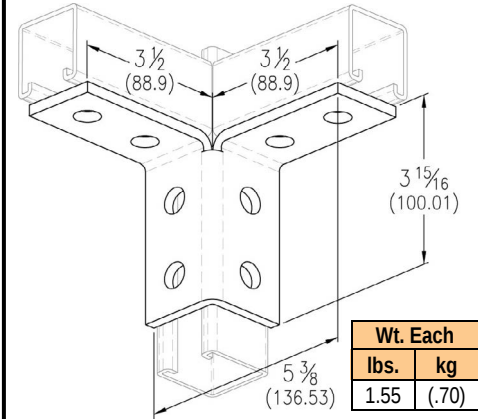
6-HOLE DOUBLE CORNER CONNECTOR



Wt. Each	
lbs.	kg
1.15	(.52)

FIG. 5630

8-HOLE DOUBLE CORNER CONNECTOR



Wt. Each	
lbs.	kg
1.55	(.70)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

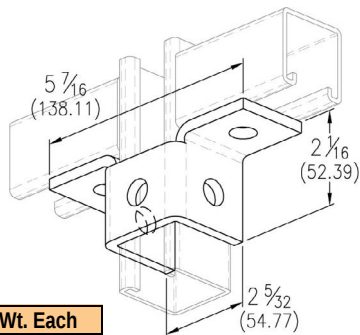
Hole Diameter: 5/16" (14.3); **Hole Spacing-From End:** 1 3/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

WING FITTINGS

FIG. 5635

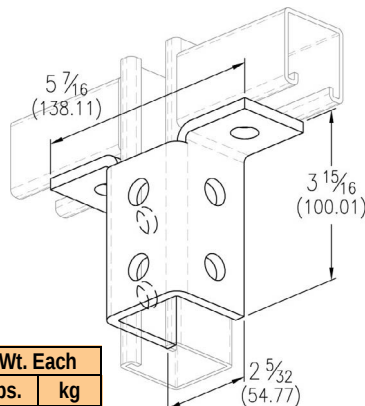
5-HOLE DOUBLE WING CONNECTOR



Wt. Each	
lbs.	kg
.93	(.42)

FIG. 5640

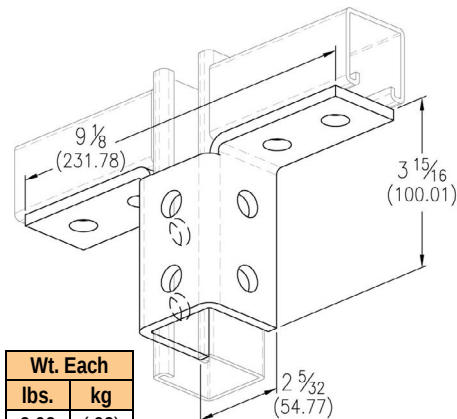
8-HOLE DOUBLE WING CONNECTOR



Wt. Each	
lbs.	kg
1.77	(.80)

FIG. 5645

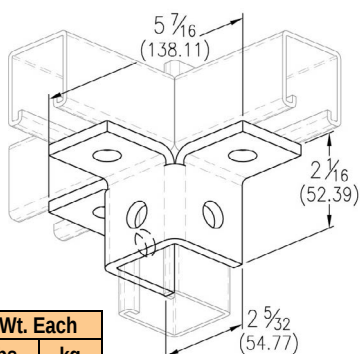
10-HOLE DOUBLE WING CONNECTOR



Wt. Each	
lbs.	kg
2.02	(.92)

FIG. 5650

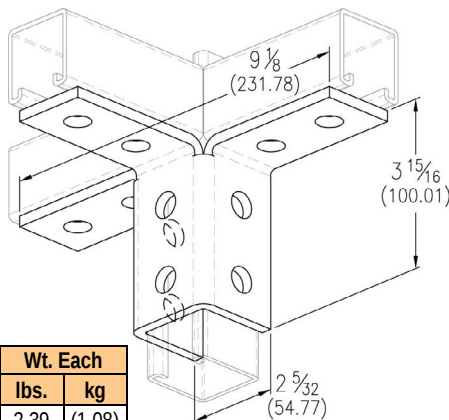
6-HOLE TRIPLE WING CONNECTOR



Wt. Each	
lbs.	kg
1.07	(.49)

FIG. 5655

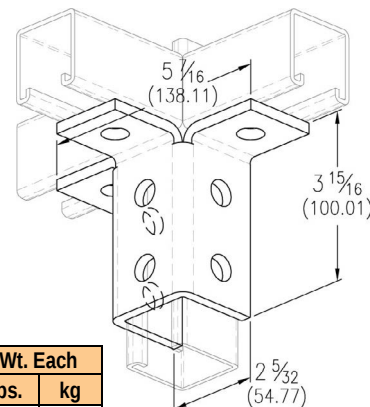
12-HOLE TRIPLE WING CONNECTOR



Wt. Each	
lbs.	kg
2.39	(1.08)

FIG. 5660

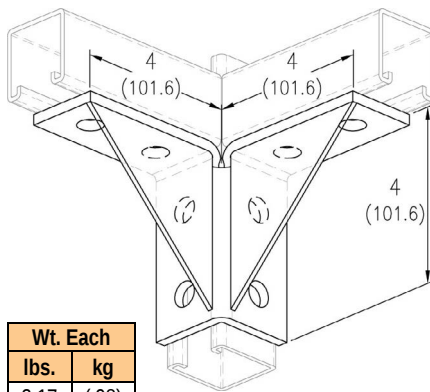
9-HOLE TRIPLE WING CONNECTOR



Wt. Each	
lbs.	kg
1.93	(.88)

FIG. 5665

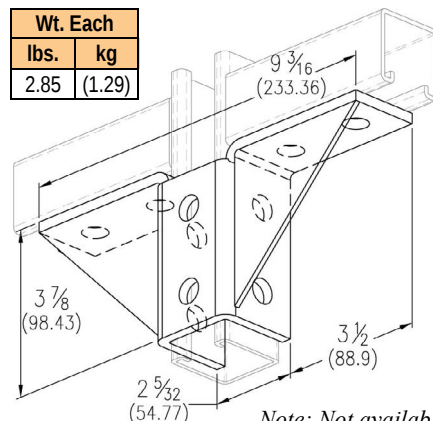
6-HOLE GUSSETED DOUBLE CORNER CONNECTOR



Wt. Each	
lbs.	kg
2.17	(.98)

FIG. 5675

10-HOLE GUSSETED DOUBLE CORNER CONNECTOR

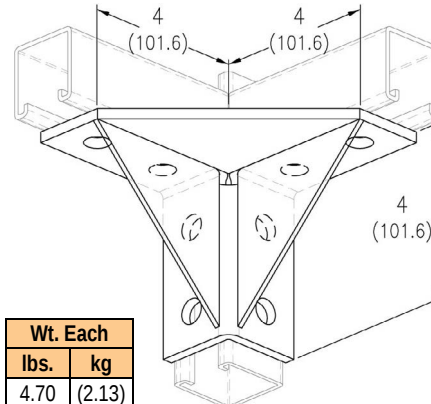


Wt. Each	
lbs.	kg
2.85	(1.29)

Note: Not available in Stainless Steel.

FIG. 5685

8-HOLE GUSSETED DOUBLE CORNER CONNECTOR



Wt. Each	
lbs.	kg
4.70	(2.13)

Note: Not available in Stainless Steel.

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); **Hole Spacing-From End:** 1 1/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

SPECIALTY FITTINGS

FIG. 5801 & 5802

SINGLE PIPE AXLE SUPPORT FOR 1 1/4" PIPE

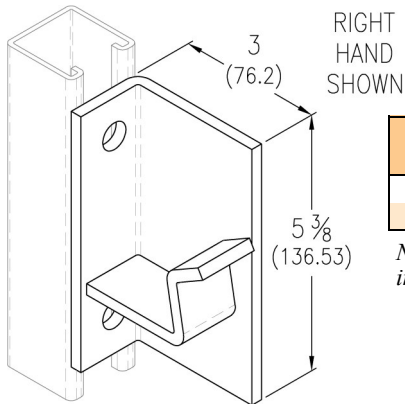


Fig. No.		Wt. Each	
		lbs.	kg
5801	RIGHT	2.25	(1.02)
5802	LEFT	2.25	(1.02)

Note: Not available in Stainless Steel.

FIG. 5803 & 5804

SINGLE PIPE AXLE SUPPORT FOR 2" PIPE

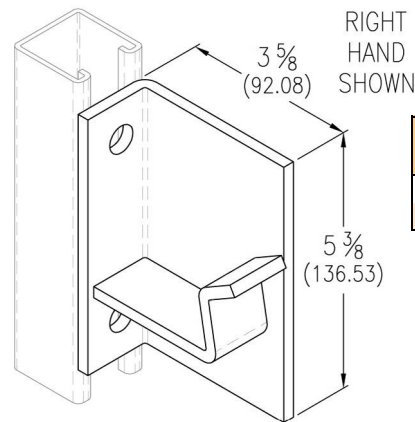
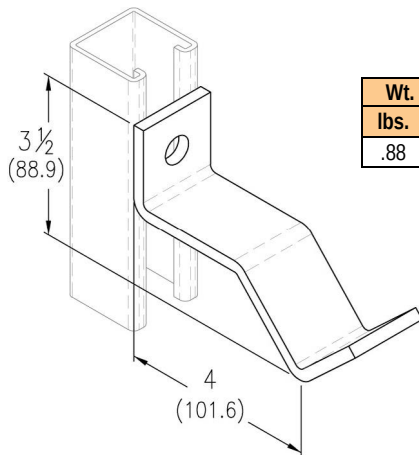


Fig. No.		Wt. Each	
		lbs.	kg
5803	RIGHT	2.46	(1.12)
5804	LEFT	2.46	(1.12)

Note: Not available in Stainless Steel.

FIG. 5821

PIPE SUPPORT BRACKET



Wt. Each	
lbs.	kg
.88	(.40)

FIG. 5825 - 5827

SERIES LADDER RUNG

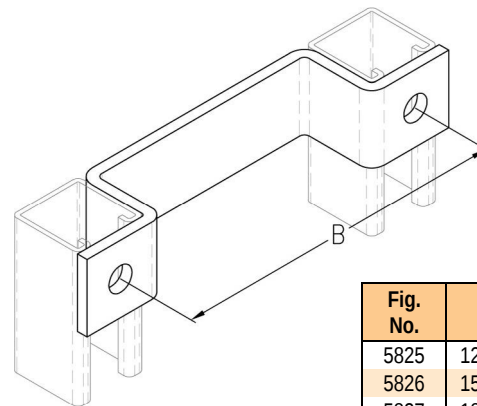


Fig. No.	B	Wt. Each	
		lbs.	kg
5825	12 (304.80)	1.76	(.80)
5826	15 (381.00)	2.02	(.92)
5827	18 (457.20)	2.34	(1.06)

FIG. 5830 - 5834

WALL LADDER BRACKET

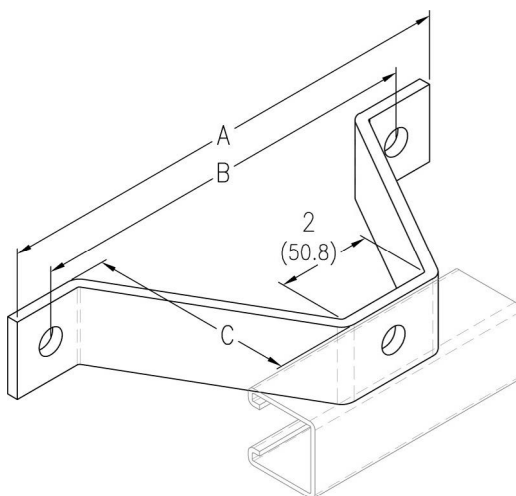


Fig. No.	A		Length B		C		Wt. Each	
							lbs.	kg
5830	7 5/8	(193.68)	6	(152.4)	2 3/8	(60.33)	1.10	(.50)
5831	9 5/8	(244.48)	8	(203.2)	4 3/8	(111.13)	1.64	(.74)
5832	11 5/8	(295.28)	10	(254.0)	6 3/8	(161.93)	2.00	(.91)
5833	13 5/8	(346.08)	12	(304.8)	8 3/8	(212.73)	2.53	(1.15)
5834	15 5/8	(396.88)	14	(355.6)	10 3/8	(263.53)	3.18	(1.44)

Note: Not available in Stainless Steel.

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
 Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

SPECIALTY FITTINGS

FIG. 5835 - 5837

PIPE COUPLING FITTING

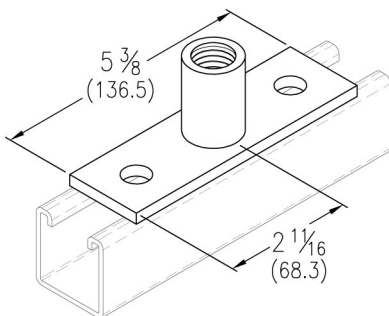


Fig. No.	Pipe Size	Wt. Each	
		lbs.	kg
5835	1/2	.77	(.35)
5836	3/4	.84	(.38)
5837	1	1.05	(.48)

Note: Not available in Stainless Steel.

FIG. 5860 & 5861

STAIR SUPPORT

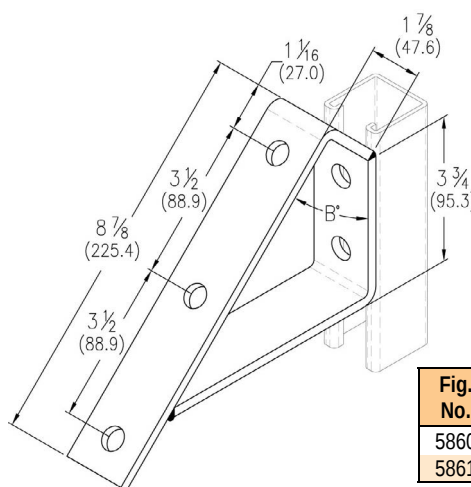
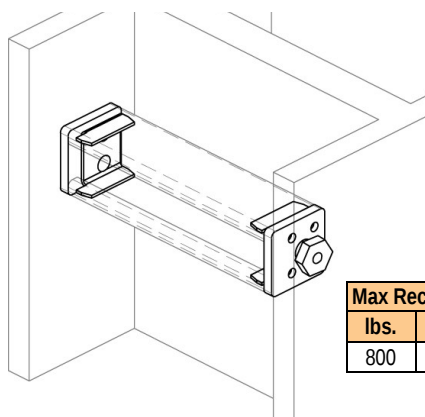


Fig. No.	Angle B	Wt. Each	
		lbs.	kg
5860	45°	2.20	(1.00)
5861	37 1/2°	2.06	(.93)

FIG. 8070

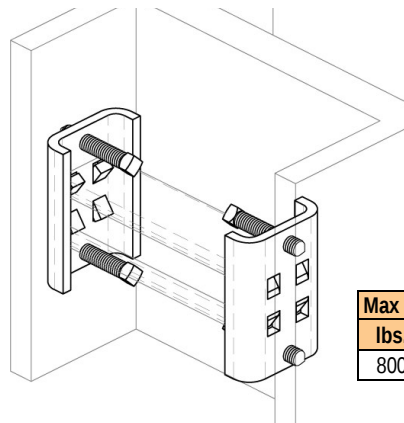
COLUMN SUPPORT FOR 1 5/8" CHANNEL



Max Rec. Load		Wt. Each	
lbs.	kN	lbs.	kg
800	(3.56)	.51	(.23)

FIG. 8075

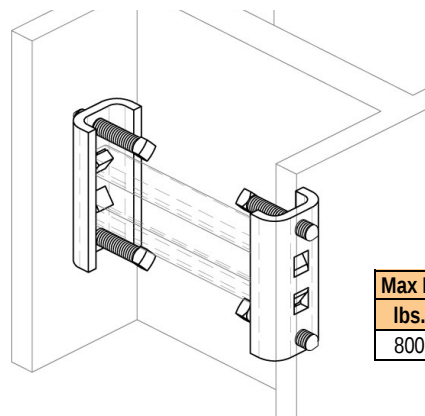
COLUMN SUPPORT FOR 1 5/8" CHANNEL



Max Rec. Load		Wt. Each	
lbs.	kN	lbs.	kg
800	(3.56)	.69	(.31)

FIG. 8076

COLUMN SUPPORT FOR 1 3/16" CHANNEL



Max Rec. Load		Wt. Each	
lbs.	kN	lbs.	kg
800	(3.56)	.69	(.31)

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

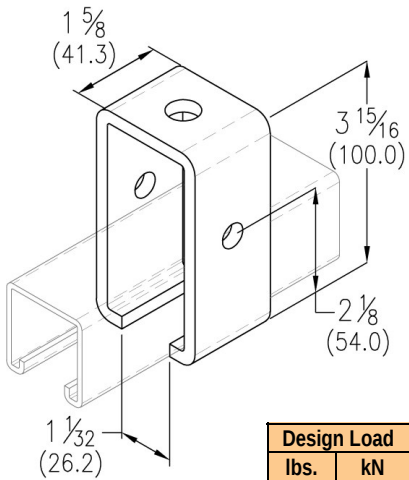
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

TROLLEY ASSEMBLIES



FIG. 5840

TROLLEY BEAM SUPPORT

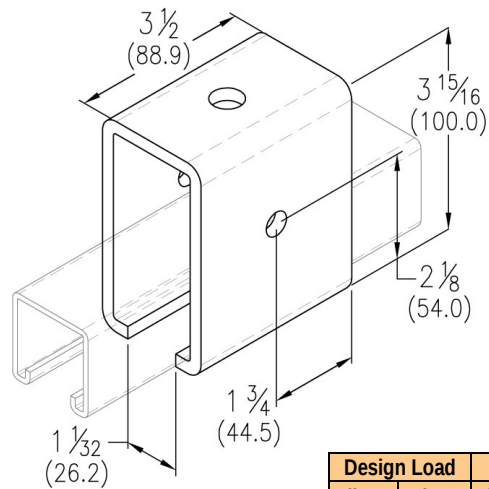


Design Load		Wt. Each	
lbs.	kN	lbs.	kg
1200	(5.34)	1.02	(.46)

Note: Not available in Stainless Steel.

FIG. 5845

TROLLEY BEAM JOINT SUPPORT

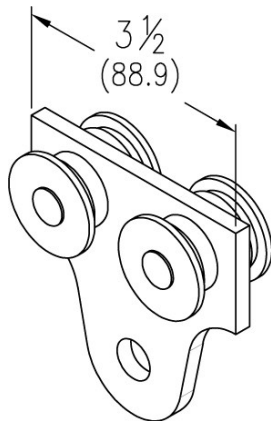


Design Load		Wt. Each	
lbs.	kN	lbs.	kg
2500	(11.12)	2.20	(1.00)

Note: Not available in Stainless Steel.

FIG. 5870

4-BEARING TROLLEY ASSEMBLY



Wt. Each	
lbs.	kg
1.10	(.50)

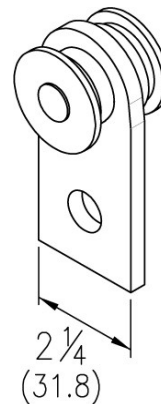
FPM	RPM	Design Load	
		lbs.	kN
180	600	300	(1.33)
90	300	450	(2.00)
30	100	600	(2.67)

Design Load based on use with PHD 1000 Series Strut Channel.

Note: Not available in Stainless Steel.

FIG. 5875

2-BEARING TROLLEY ASSEMBLY



Wt. Each	
lbs.	kg
.48	(.22)

FPM	RPM	Design Load	
		lbs.	kN
180	600	150	(0.67)
90	300	225	(1.00)
30	100	437	(1.94)

Design Load based on use with PHD 1000 Series Strut Channel.

Note: Not available in Stainless Steel.

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); **Hole Spacing-From End:** 1 1/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

POST BASES

FIG. 6005

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

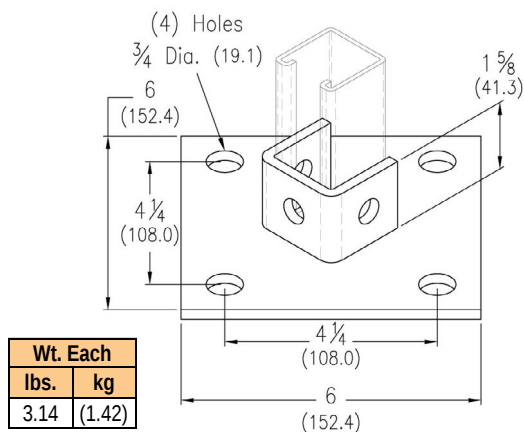


FIG. 6010

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

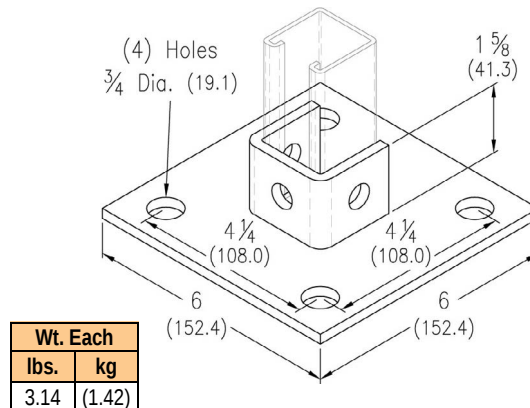


FIG. 6015

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

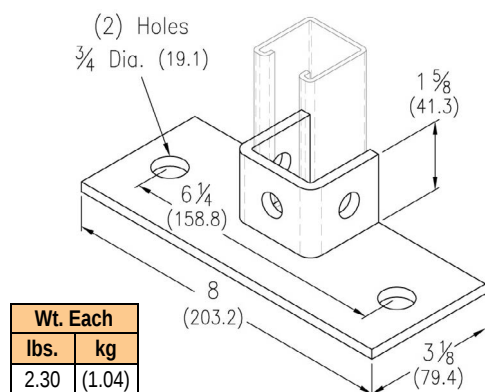


FIG. 6020

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

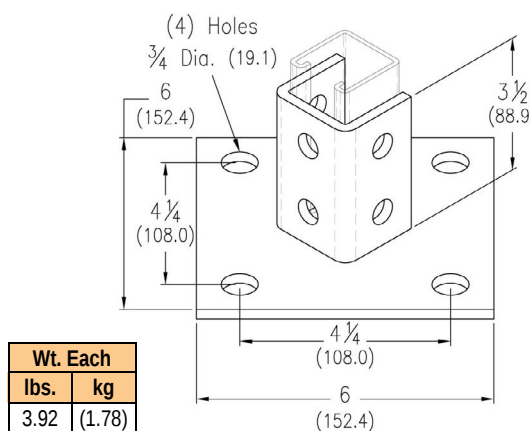


FIG. 6025

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

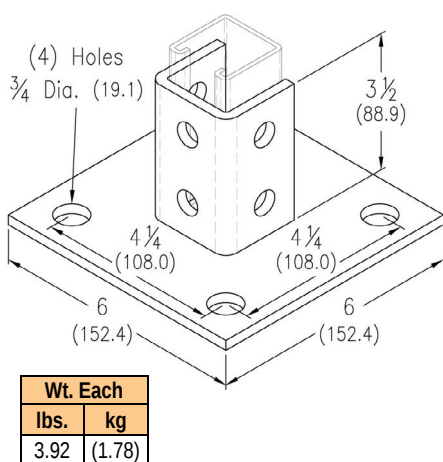


FIG. 6029

POST BASE FOR 1 $\frac{5}{8}$ " STRUT

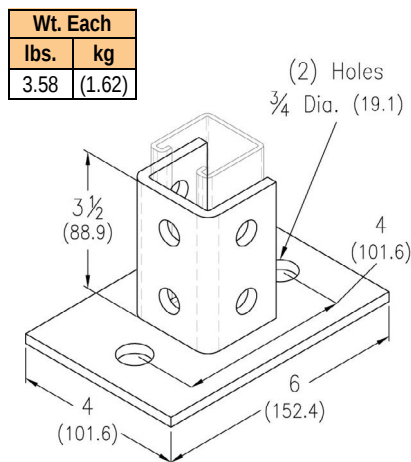
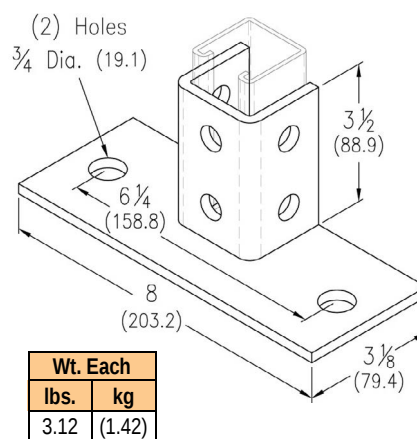


FIG. 6030

POST BASE FOR 1 $\frac{5}{8}$ " STRUT



Standard Product Information for 1 $\frac{5}{8}$ " (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: $\frac{9}{16}$ " (14.3); Hole Spacing-From End: $\frac{1}{16}$ " (20.6); Hole Spacing-On Center: $1\frac{1}{8}$ " (47.6); Width: $1\frac{5}{8}$ " (41.3); Thickness: $\frac{1}{4}$ " (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

POST BASES

FIG. 6035

POST BASE FOR DOUBLE 1⁵/₈" STRUT

Wt. Each	
lbs.	kg
3.30	(1.50)

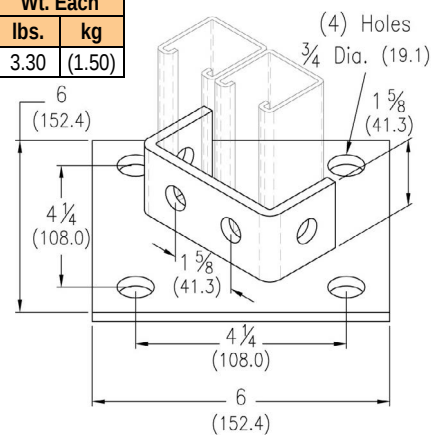


FIG. 6040

POST BASE FOR DOUBLE 1⁵/₈" STRUT

Wt. Each	
lbs.	kg
3.30	(1.50)

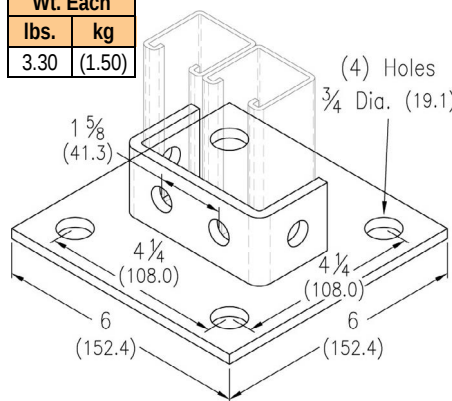


FIG. 6045

POST BASE FOR DOUBLE 1⁵/₈" STRUT

Wt. Each	
lbs.	kg
2.50	(1.13)

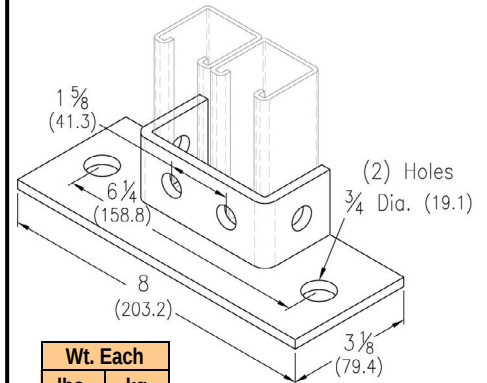


FIG. 6050

POST BASE FOR DOUBLE 1⁵/₈" STRUT

Wt. Each	
lbs.	kg
4.00	(1.81)

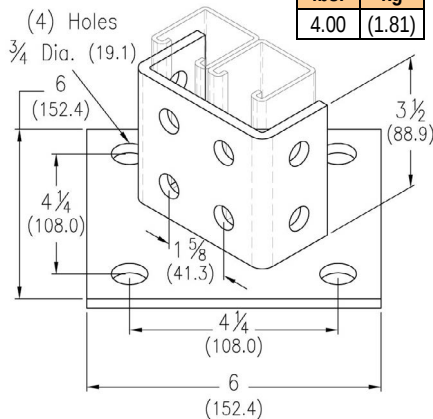


FIG. 6060

POST BASE FOR DOUBLE 1⁵/₈" STRUT

Wt. Each	
lbs.	kg
4.00	(1.81)

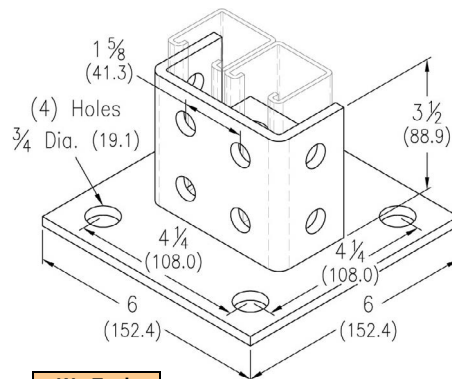


FIG. 6065

POST BASE FOR DOUBLE 1⁵/₈" STRUT

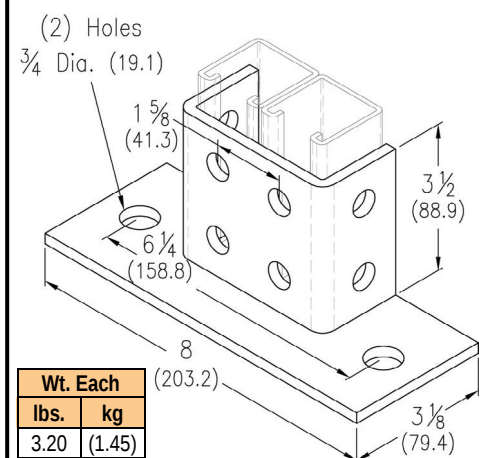
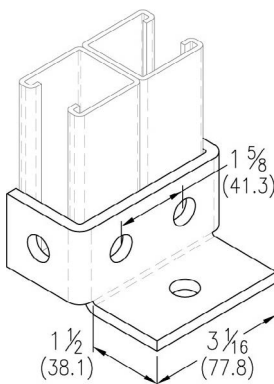


FIG. 6080

POST BASE FOR DOUBLE 1⁵/₈" STRUT

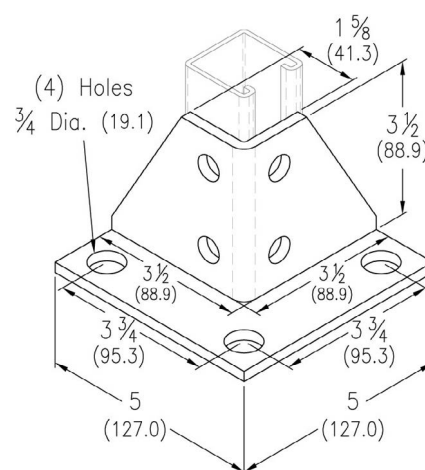


Wt. Each	
lbs.	kg
1.30	(.59)

Note: Not available in Stainless Steel.

FIG. 6095

POST BASE FOR 1⁵/₈" STRUT



Wt. Each	
lbs.	kg
2.97	(1.37)

Note: Not available in Stainless Steel.

Standard Product Information for 1⁵/₈" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); **Hole Spacing-From End:** 1¹/₁₆" (20.6); **Hole Spacing-On Center:** 1⁷/₈" (47.6); **Width:** 1⁵/₈" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BRACKETS & BRACE FITTINGS

FIG. 5410 - 5412

2-HOLE 45° KNEE BRACE

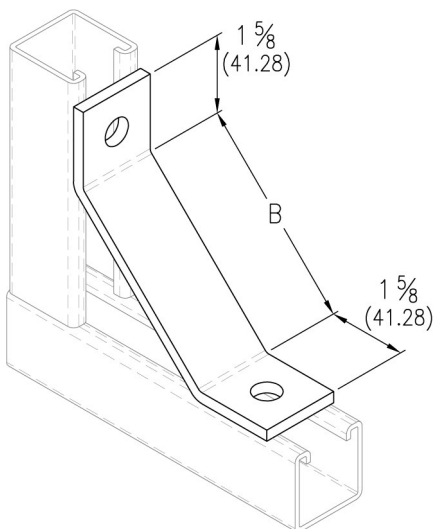


Fig. No.	B		Design Load		Wt. Each	
			lbs.	kN	lbs.	kg
5410	12	(304.80)	1020	(6.67)	1.60	(.73)
5411	16	(406.40)	530	(2.36)	2.18	(.99)
5412	18	(457.20)	450	(2.00)	2.80	(1.27)

FIG. 5420 - 5427

2-HOLE 45° TUBING KNEE BRACE



Fig. No.	B		Design Load		Wt. Each	
			lbs.	kN	lbs.	kg
5420	18	(457.20)	1500	(6.67)	1.45	(.66)
5421	24	(609.60)	1500	(6.67)	1.86	(.84)
5422	30	(762.00)	1500	(6.67)	2.25	(1.02)
5423	36	(914.40)	1500	(6.67)	2.66	(1.21)
5424	42	(1066.80)	1230	(5.47)	3.07	(1.39)
5425	48	(1219.20)	940	(4.18)	3.48	(1.58)
5426	54	(1371.60)	740	(3.29)	3.89	(1.76)
5427	60	(1524.00)	600	(2.67)	4.30	(1.95)

FIG. 5430 - 5440

2-HOLE STRAIGHT TUBING BRACE

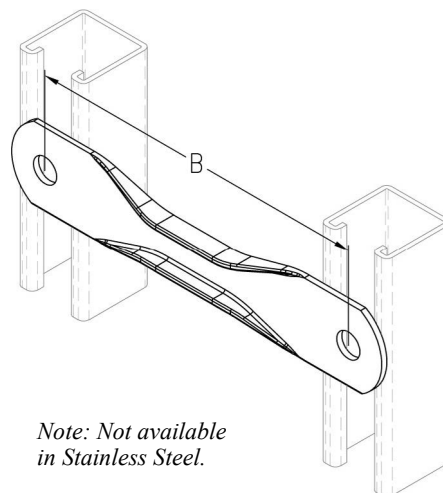


Fig. No.	B		Wt. Each	
			lbs.	kg
5430	18	(457.20)	1.33	(.60)
5431	24	(609.60)	1.74	(.79)
5432	30	(762.00)	2.15	(.98)
5433	36	(914.40)	2.56	(1.16)
5434	42	(1066.80)	2.95	(1.34)
5435	48	(1219.20)	3.35	(1.52)
5436	54	(1371.60)	3.80	(1.72)
5437	60	(1524.00)	4.20	(1.91)
5438	72	(1828.80)	5.00	(2.27)
5439	84	(2133.60)	5.85	(2.65)
5440	96	(2438.40)	6.70	(3.04)

FIG. 6101 - 6122

SHELF BRACKET

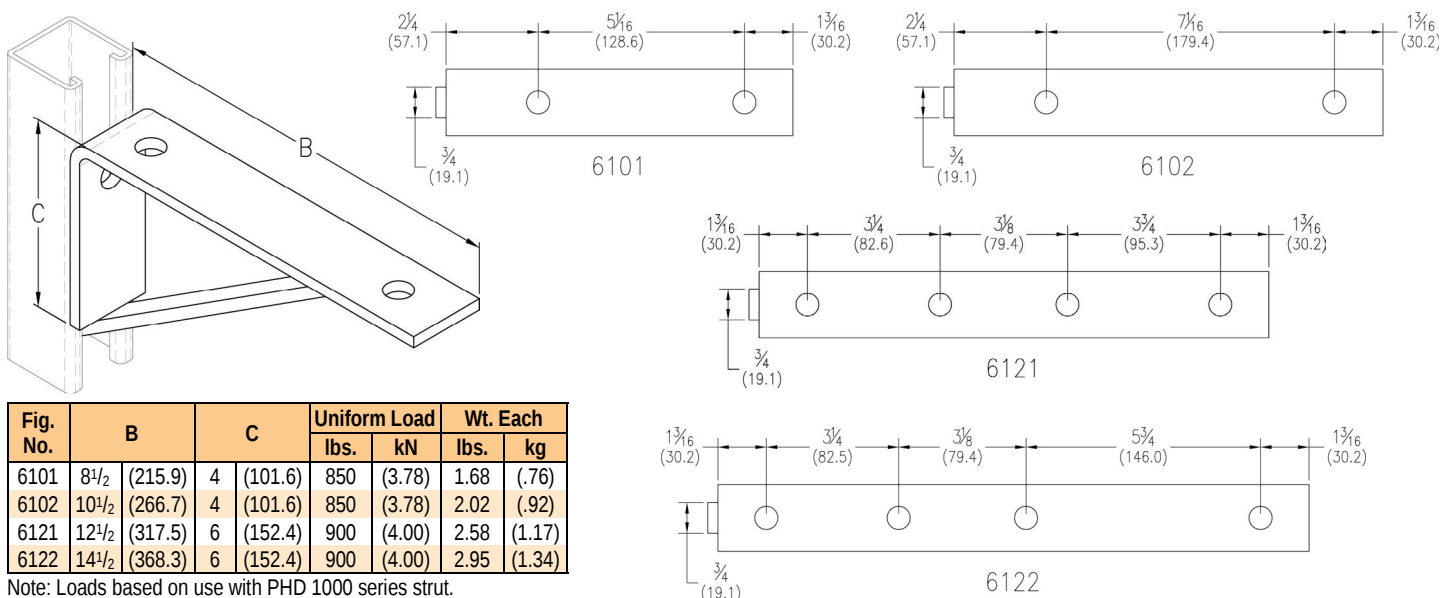


Fig. No.	B		C		Uniform Load		Wt. Each	
					lbs.	kN	lbs.	kg
6101	8 1/2	(215.9)	4	(101.6)	850	(3.78)	1.68	(.76)
6102	10 1/2	(266.7)	4	(101.6)	850	(3.78)	2.02	(.92)
6121	12 1/2	(317.5)	6	(152.4)	900	(4.00)	2.58	(1.17)
6122	14 1/2	(368.3)	6	(152.4)	900	(4.00)	2.95	(1.34)

Note: Loads based on use with PHD 1000 series strut.

Standard Product Information for 1 3/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 3/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 3/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BRACKETS & BRACE FITTINGS



FIG. 6123 - 6125

SHELF BRACKET

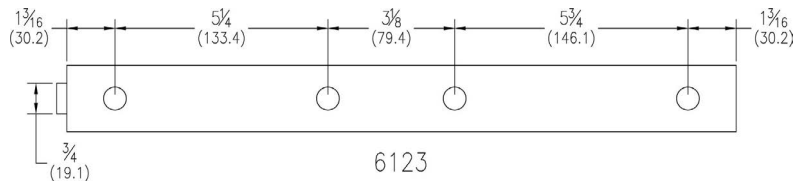
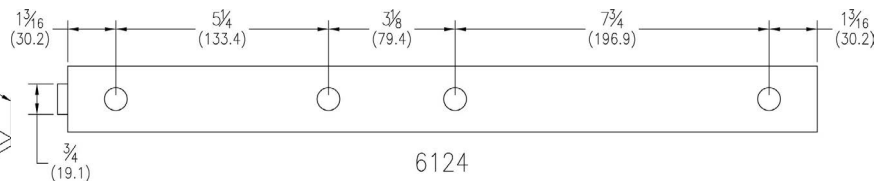
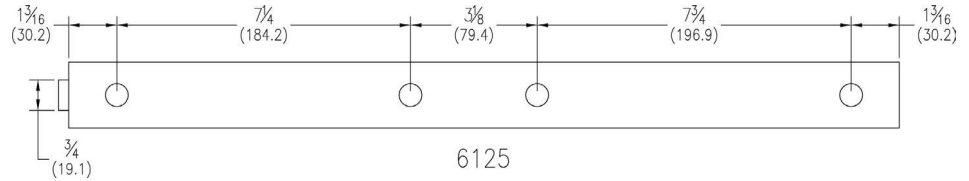
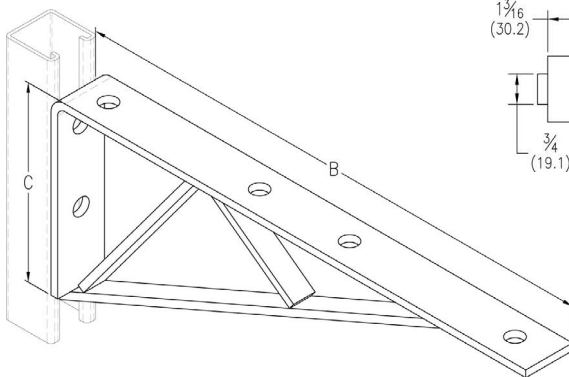


Fig. No.	B	C	Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6123	16 1/2 (419.1)	6 (152.4)	1200 (5.34)	4.05 (1.84)		
6124	18 1/2 (469.9)	6 (152.4)	1070 (4.76)	4.68 (2.12)		
6125	20 1/2 (520.7)	6 (152.4)	600 (2.67)	4.90 (2.22)		

Note: Loads based on use with PHD 1000 series strut.

FIG. 6130 - 6135

SINGLE CHANNEL BRACKET

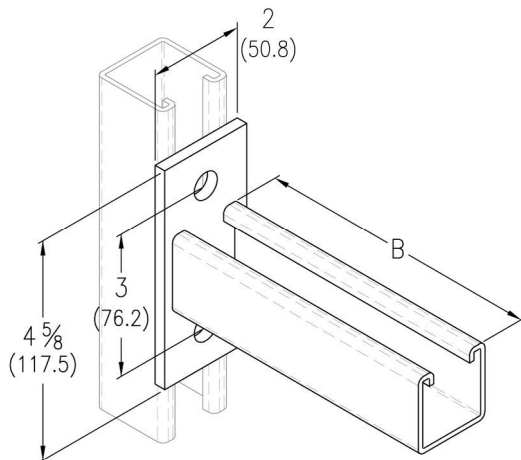


Fig. No.	B	Uniform Load		Wt. Each	
		lbs.	kN	lbs.	kg
6130	6 (152.40)	1200 (5.34)	1.85 (.84)		
6131	9 (228.60)	900 (4.00)	1.95 (.88)		
6132	12 (304.80)	600 (2.67)	2.93 (1.33)		
6133	14 (355.60)	500 (2.22)	3.20 (1.45)		
6134	18 (457.20)	400 (1.78)	4.01 (1.82)		
6135	24 (609.60)	300 (1.33)	5.09 (2.31)		

Note: Loads based on use with PHD 1000 series strut.

FIG. 6140 - 6144

DOUBLE CHANNEL BRACKET

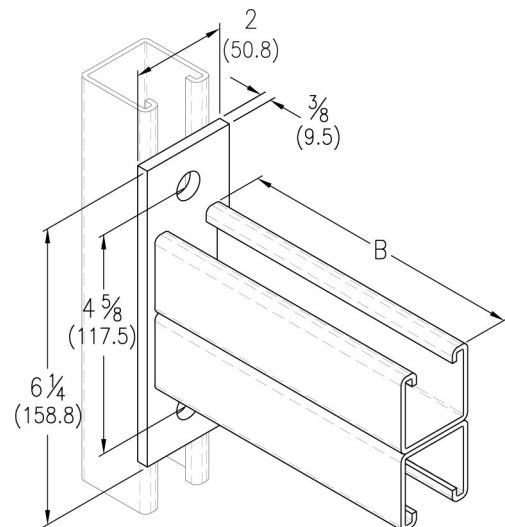


Fig. No.	B	Uniform Load		Wt. Each	
		lbs.	kN	lbs.	kg
6140	12 (304.80)	2000 (8.90)	5.05 (2.29)		
6141	18 (457.20)	1300 (5.78)	7.10 (3.22)		
6142	24 (609.60)	1000 (4.45)	9.15 (4.15)		
6143	30 (762.00)	800 (3.56)	11.20 (5.08)		
6144	36 (914.40)	650 (2.89)	13.25 (6.01)		

Note: Loads based on use with PHD 1000 series strut.

Standard Product Information for 1 5/16" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 5/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
 Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BRACKETS & BRACE FITTINGS

FIG. 6150 - 6152
BRACED SINGLE BRACKET

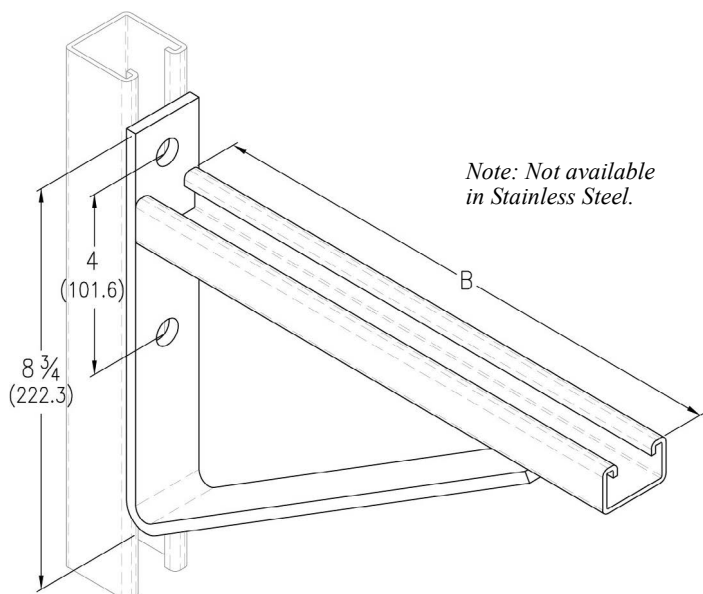
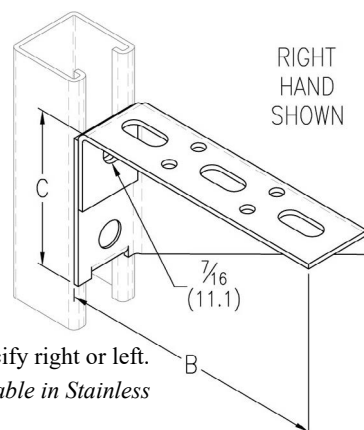


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6150	12	(304.80)	1600	(7.12)	3.88	(1.76)
6151	18	(457.20)	850	(3.78)	5.06	(2.30)
6152	24	(609.60)	850	(3.78)	7.20	(3.27)

Note: Loads based on use with PHD 1400 series strut.

FIG. 6160 - 6172
BRACED SINGLE BRACKET



Ordering: Specify right or left.
Note: Not available in Stainless Steel.

Fig. No.	B		C		Uniform Load		Wt. Each	
					lbs.	kN	lbs.	kg
6160	24	(609.6)	6 7/16	(163.51)	225	(1.00)	3.70	(1.68)
6161	26	(660.4)	6 15/16	(176.21)	225	(1.00)	4.25	(1.93)
6162	28	(711.2)	7 7/16	(188.91)	225	(1.00)	4.80	(2.18)
6163	30	(762.0)	7 15/16	(201.61)	225	(1.00)	5.20	(2.36)
6164	12	(304.8)	3 7/16	(87.31)	275	(1.22)	1.43	(.65)
6165	14	(355.6)	3 15/16	(100.01)	275	(1.22)	1.62	(.73)
6166	16	(406.4)	4 7/16	(112.71)	275	(1.22)	2.04	(.93)
6167	18	(457.2)	4 15/16	(125.41)	275	(1.22)	2.32	(1.05)
6168	20	(508.0)	5 7/16	(138.11)	250	(1.11)	2.75	(1.25)
6169	22	(558.8)	5 15/16	(150.81)	250	(1.11)	3.17	(1.44)
6170	6	(152.4)	2 15/16	(74.61)	275	(1.22)	.58	(.26)
6171	8	(203.2)	2 15/16	(74.61)	275	(1.22)	.82	(.37)
6172	10	(254.0)	2 15/16	(74.61)	275	(1.22)	1.03	(.47)

Note: Loads based on use with PHD 1000 series strut.

FIG. 6202 - 6208

INTERLOCKING CHANNEL BRACKET
(SLOT UP)

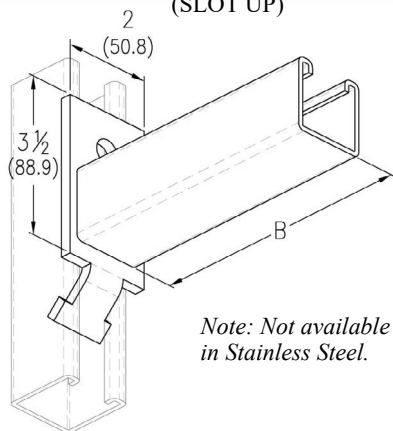


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6202	6	(152.40)	1200	(5.34)	1.50	(.68)
6204	12	(304.80)	600	(2.67)	2.50	(1.13)
6206	18	(457.20)	400	(1.78)	3.50	(1.59)
6208	24	(609.60)	300	(1.33)	4.50	(2.04)

Note: Loads based on use with PHD 1000 series strut.

FIG. 6212 - 6218

INTERLOCKING CHANNEL BRACKET
(SLOT DOWN)

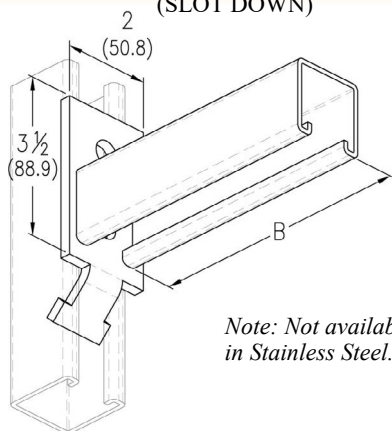


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6212	6	(152.40)	1200	(5.34)	1.50	(.68)
6214	12	(304.80)	600	(2.67)	2.50	(1.13)
6216	18	(457.20)	400	(1.78)	3.50	(1.59)
6218	24	(609.60)	300	(1.33)	4.50	(2.04)

Note: Loads based on use with PHD 1000 series strut.

FIG. 6222 & 6224

WRAP-AROUND CHANNEL BRACKET
(SLOT UP)

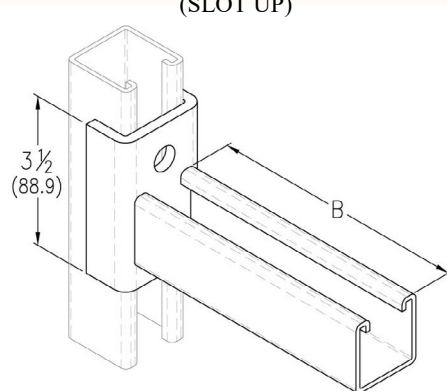


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6222	6	(152.4)	1600	(7.12)	1.90	(.86)
6224	12	(304.8)	800	(3.56)	2.75	(1.25)

Note: Loads based on use with PHD 1000 series strut.

Standard Product Information for 1 1/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); **Hole Spacing-From End:** 1 1/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BRACKETS & BRACE FITTINGS



CHANNEL

PIPE & CONDUIT
SUPPORTS

STRUT NUTS
& HARDWARE

CONCRETE
INSERTS

END CAPS &
CLOSURES

FLAT PLATE
FITTINGS

90° ANGLE
FITTINGS

ANGLE
FITTINGS

"U" FITTINGS

"Z" FITTINGS

WING
FITTINGS

SPECIALTY
FITTINGS

TROLLEY
ASSEMBLIES

POST
BASES

BRACKETS &
BRACE FITTINGS

BEAM
CLAMPS

ROOFTOP
SUPPORTS

FIG. 6232 & 6234

WRAP-AROUND CHANNEL BRACKET (SLOT DOWN)

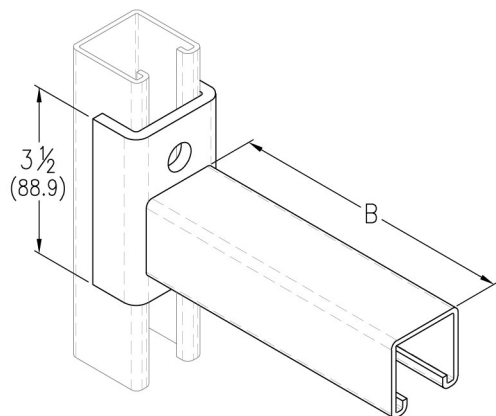


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6232	6	(152.4)	1600	(7.12)	1.90	(.86)
6234	12	(304.8)	800	(3.56)	2.75	(1.25)

Note: Loads based on use with PHD 1000 series strut.

FIG. 6246 & 6248

WRAP-AROUND CHANNEL BRACKET (SLOT UP)

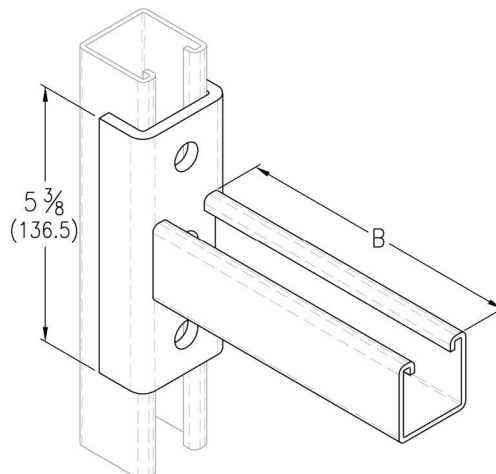
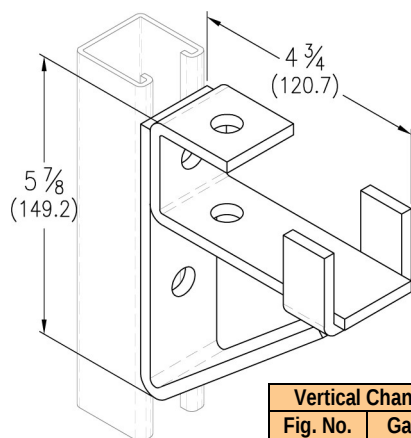


Fig. No.	B		Uniform Load		Wt. Each	
			lbs.	kN	lbs.	kg
6246	18	(457.2)	600	(2.67)	4.30	(1.95)
6248	24	(609.6)	450	(2.00)	5.10	(2.31)

Note: Loads based on use with PHD 1000 series strut.

FIG. 6305

SINGLE CHANNEL BRACKET SUPPORT FOR
1⁵/₈" TALL STRUT



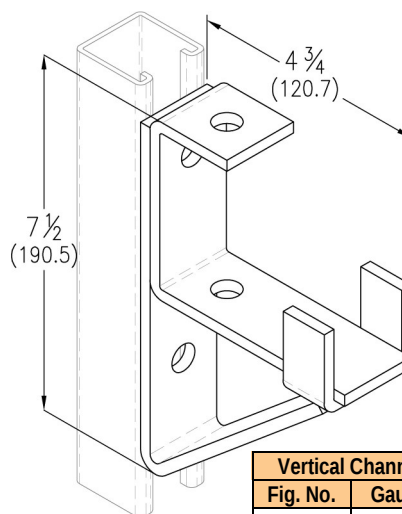
Wt. Each	
lbs.	kg
2.10	(.95)

Vertical Channel		Allowable Moment	
Fig. No.	Gauge	In. - lbs.	N•m
1001	12	6300	(711.8)
1101	14	4400	(497.1)

Note: Allowable moment for fitting only. Channel may determine overall capacity.

FIG. 6310

DOUBLE CHANNEL BRACKET SUPPORT FOR
3¹/₄" TALL STRUT



Wt. Each	
lbs.	kg
2.10	(.95)

Vertical Channel		Allowable Moment	
Fig. No.	Gauge	In. - lbs.	N•m
1001	12	13000	(1468.8)
1101	14	9100	(1028.2)

Note: Allowable moment for fitting only. Channel may determine overall capacity.

Standard Product Information for 1⁵/₈" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: $\frac{9}{16}$ " (14.3); Hole Spacing-From End: $\frac{19}{16}$ " (20.6); Hole Spacing-On Center: $1\frac{7}{8}$ " (47.6); Width: $1\frac{5}{8}$ " (41.3); Thickness: $\frac{1}{4}$ " (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BEAM CLAMPS

FIG. 7001 & 7002

HEAVY DUTY BEAM CLAMP

Note: Set screw included.

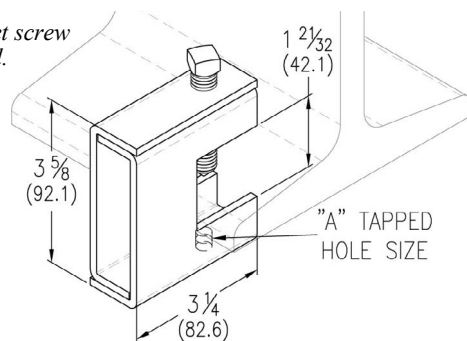


Fig. No.	A	Material Thickness	Set Screw	Max. Rec. Load		Wt. Each	
				lbs.	kN	lbs.	kg
7001	3/8-16	3/16 (4.76)	1/2 X 2	1300	(5.78)	1.56	(.71)
7002	1/2-13	1/4 (6.35)	1/2 X 2	1900	(8.45)	2.01	(.91)

For beam flanges between 3/4" (19.05) & 1 5/8" (41.28) thick

FIG. 7005 - 7007

BEAM CLAMP

Material: Malleable iron.

Note: Not available in Stainless Steel. Set screw included.

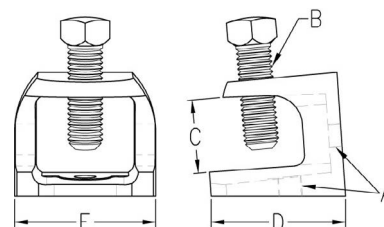


Fig. No.	A	B	C	D	E
7005	1/4-20	5/16-18	7/8	(22.23)	1 3/8 (34.93)
7006	3/8-16	1/2-13	1 1/8	(28.58)	1 13/16 (46.04)
7007	1/2-13	1/2-13	1 1/4	(31.75)	2 5/16 (58.74)

Fig. No.	Max. Flange Thickness	Max. Rec. Load		Wt. Each	
		lbs.	kN	lbs.	kg
7005	3/4	(19.05)	150	(0.67)	.20 (.09)
7006	3/4	(19.05)	350	(1.56)	.60 (.27)
7007	1	(25.4)	1000	(4.45)	1.05 (.48)

FIG. 7011 - 7020

"I" BEAM CLAMP

Note: Set screw included.

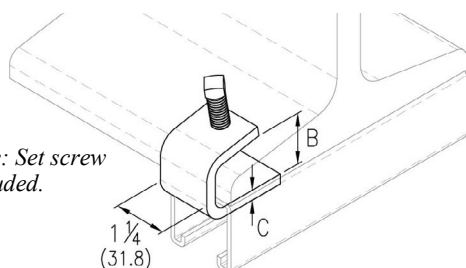


Fig. No.	Set Screw	B	C	Max. Rec. Load		Wt. Each	
				lbs.	kN	lbs.	kg
7011	3/8-16	1 1/8 (28.58)	1/4 (6.35)	900*	(4.00)	.26 (.12)	
7012	1/2-13	1 1/8 (28.58)	3/8 (9.53)	1800*	(8.00)	.64 (.29)	
7020	1/2-13	2 (50.8)	3/8 (9.53)	900*	(4.00)	.72 (.33)	

* Max loads when used in pairs.

FIG. 7025

"I" BEAM CLAMP

Note: Set screw included.

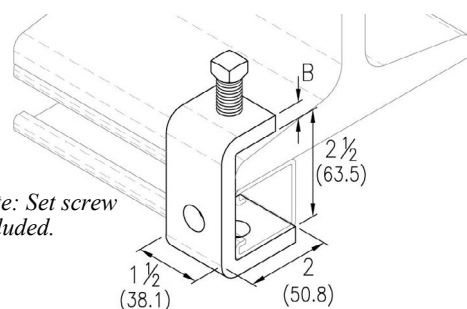


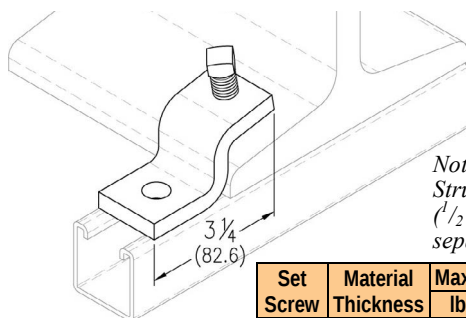
Fig. No.	Set Screw	Material Thickness	Max. Rec. Load		Wt. Each	
			lbs.	kN	lbs.	kg
7025	1/2-13	3/8 (9.53)	1000*	(4.45)	.94 (.43)	

* Max loads when used in pairs.

FIG. 7030

"Z" BEAM CLAMP

Note: Set screw included. Strut nut and hex bolt (1/2"-13 x 1 3/4") sold separately.



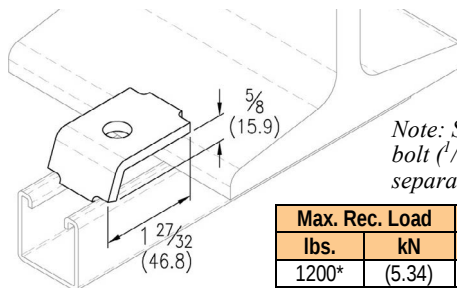
Set Screw	Material Thickness	Max. Rec. Load		Wt. Each	
		lbs.	kN	lbs.	kg
1/2-13	3/8 (9.53)	900*	(4.00)	.63 (.29)	

* Max loads when used in pairs.

FIG. 7040

BEAM CLAMP

Note: Strut nut and hex bolt (1/2"-13 x 1 3/4") sold separately.



Max. Rec. Load		Wt. Each	
lbs.	kN	lbs.	kg
1200*	(5.34)	.26	(.12)

* Max loads when used in pairs.

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

BEAM CLAMPS



FIG. 7050 & 7051

SQUARE U-BOLT

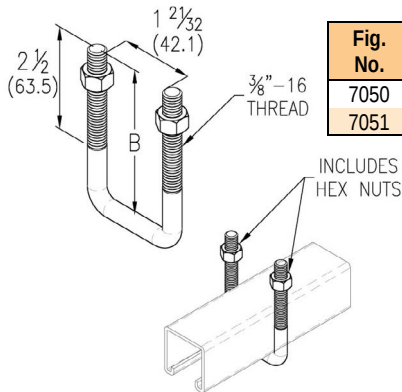
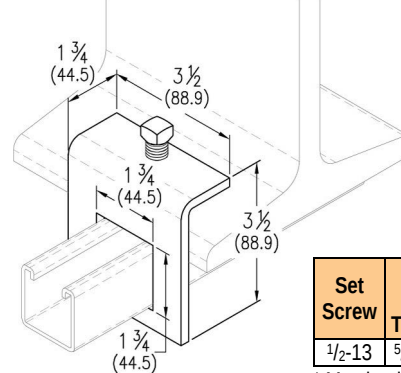


Fig. No.	B		Wt. Each	
			lbs.	kg
7050	3 3/8	(85.73)	.25	(.11)
7051	5	(127.00)	.33	(.15)

Note: Not available in Stainless Steel.

FIG. 7060

BEAM CLAMP FOR USE WITH 1 5/8" STRUT



Note: Not available in Stainless Steel.

Set Screw	Max. Flange Thickness	Max. Rec. Load		Wt. Each	
		lbs.	kN	lbs.	kg
1/2-13	5/8 (15.88)	900*	(4.00)	1.07	(.49)

* Max loads when used in pairs.

FIG. 7070 - 7076

BEAM CLAMP

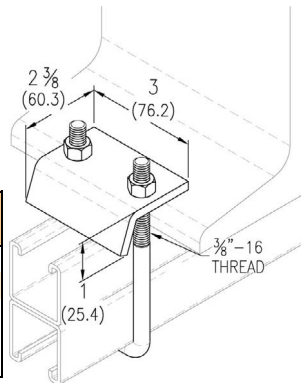


Fig. No.	For Use With
7070	1 5/8" Strut
7075	3 1/4" Strut
7076	1500A or 1600A Series Strut

Fig. No.	Max. Flange Thickness	Max. Rec. Load	Wt. Each	
			lbs.	kg
7070	3/4 (19.05)	2000*	(8.90)	.80 (.36)
7075	3/4 (19.05)	2000*	(8.90)	.88 (.40)
7076	3/4 (19.05)	2000*	(8.90)	1.12 (.51)

* Max loads when used in pairs.

FIG. 7080 - 7089

BEAM CLAMP

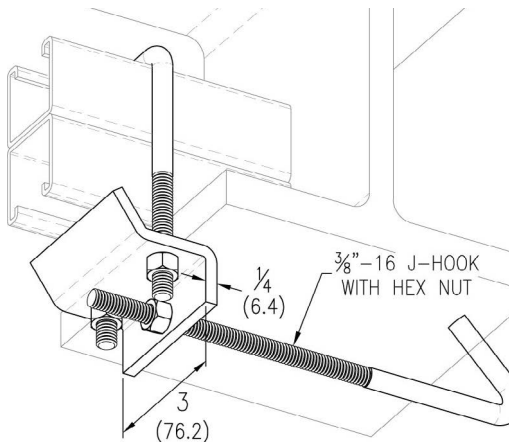


Fig. No.	For Flange Width		Wt. Each	
			lbs.	kg
7080	4" - 5 7/8"	(101.6 - 149.2)	1.42	(0.64)
7081	6" - 8 7/8"	(152.4 - 225.4)	1.51	(0.69)
7082	9" - 11 7/8"	(228.6 - 301.6)	1.60	(0.73)
7083	12" - 14 7/8"	(304.8 - 377.8)	1.70	(0.77)
7084	15" - 17 7/8"	(381.0 - 454.0)	1.79	(0.81)
7085	4" - 5 7/8"	(101.6 - 149.2)	1.51	(0.69)
7086	6" - 8 7/8"	(152.4 - 225.4)	1.57	(0.71)
7087	9" - 11 7/8"	(228.6 - 301.6)	1.66	(0.75)
7088	12" - 14 7/8"	(304.8 - 377.8)	1.76	(0.80)
7089	15" - 17 7/8"	(381.0 - 454.0)	1.85	(0.84)

Note: 1" (25.4) Max. Flange Thickness
Torque J-Hook nut to 60 in./lbs.
Torque U-Bolt nuts to 150 in./lbs.

Fig. No.	For Use With
7080 - 7084	1 5/8" Strut
7085 - 7089	3 1/4" Strut

FIG. 7090 - 7099

BEAM CLAMP

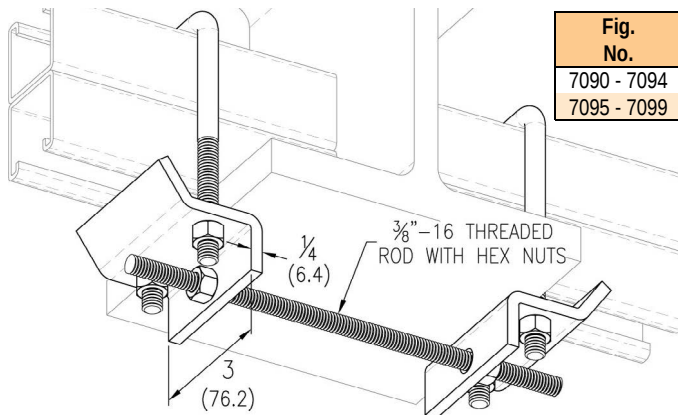


Fig. No.	For Use With
7090 - 7094	1 5/8" Strut
7095 - 7099	3 1/4" Strut

Fig. No.	For Flange Width		Wt. Each	
			lbs.	kg
7090	4" - 5 7/8"	(101.6 - 149.2)	2.82	(1.28)
7091	6" - 8 7/8"	(152.4 - 225.4)	2.89	(1.31)
7092	9" - 11 7/8"	(228.6 - 301.6)	2.96	(1.34)
7093	12" - 14 7/8"	(304.8 - 377.8)	3.04	(1.38)
7094	15" - 17 7/8"	(381.0 - 454.0)	3.11	(1.41)
7095	4" - 5 7/8"	(101.6 - 149.2)	3.00	(1.36)
7096	6" - 8 7/8"	(152.4 - 225.4)	3.07	(1.39)
7097	9" - 11 7/8"	(228.6 - 301.6)	3.14	(1.42)
7098	12" - 14 7/8"	(304.8 - 377.8)	3.22	(1.46)
7099	15" - 17 7/8"	(381.0 - 454.0)	3.29	(1.49)

Note: 1" (25.4) Max. Flange Thickness
Torque U-Bolt nuts to 150 in./lbs.
Torque all-thread rod connector nuts to 60 in./lbs.

Standard Product Information for 1 5/8" (41.3) width series channel fittings (Unless Otherwise Noted)

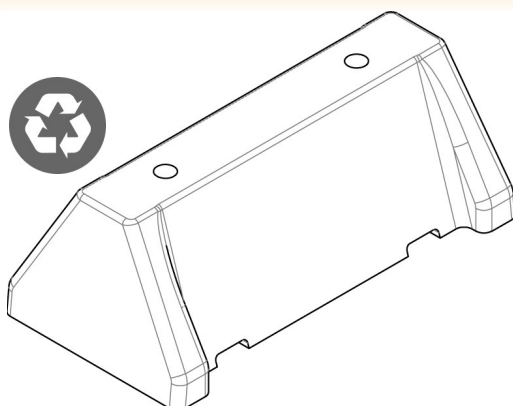
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon request)
Ordering: Specify figure number, material, and finish.

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

ROOFTOP SUPPORTS

FIG. RTSB

ROOFTOP SUPPORT BASE



Function: For installation on most types of roofing material or other flat surfaces. Screw type fasteners can be used to attach strut or other applicable devices such as pipe straps. Can be used to dampen vibration without reducing the life of the roof. Water channels in base prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic.

Approvals: Complies with Federal Specification A-A-1192A (Type 62) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 62) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

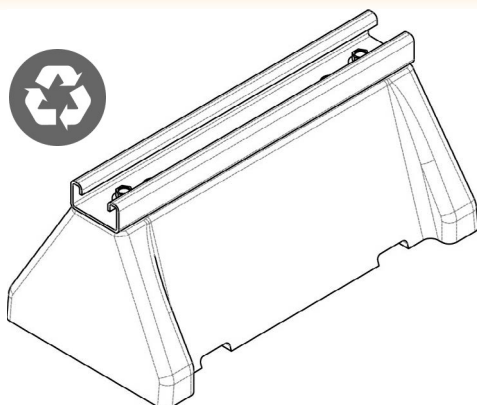
NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

Height		Length		Width		Holes Size		Max. Rec. Uniform Load		Wt. Each		Safety Factor
								lbs.	kN	lbs.	kg	
4	(101.60)	10 ³ / ₄	(273.05)	5 ¹ / ₂	(139.70)	1/2	(12.70)	1700	(7.56)	3.10	(1.41)	3.5

Base area = 23.1 in.² for use in bearing calculations.

FIG. SMSB

STRUT MOUNTED SUPPORT BASE



Function: For installation on most types of roofing material or other flat surfaces. Pre-assembled roof top support base with mounted 1301 or 1101 series channel strut. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Approvals: Complies with Federal Specification A-A-1192A (Type 62) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 62) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity. Pipe rollers are not recommended for use with 1300 series channel.

Figure Number	Channel Figure Number	Channel Length		Total Height		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each		Safety Factor
										lbs.	kN	lbs.	kg	
SMSB13	1301	10	(254.00)	4 ¹³ / ₁₆	(122.24)	5 ¹ / ₂	(139.70)	10 ³ / ₄	(273.05)	1700	(7.56)	3.88	(1.76)	3.5
SMSB11	1101	10	(254.00)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	10 ³ / ₄	(273.05)	1700	(7.56)	4.18	(1.90)	3.5

ROOFTOP SUPPORTS



STRUT OFFSET SUPPORT BASE

FIG. SOSB

Function: For installation on most types of roofing material or other flat surfaces. Pre-assembled roof top support bases with mounted 1301 or 1101 series channel strut. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Approvals: Complies with Federal Specification A-A-1192A (Type 62) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 62) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied.

Please consult the roofing manufacturer or an engineer for roof load capacity. Not recommended for use with pipe rollers. When attaching channel to base by means of base through holes, the maximum recommended torque is 3 ft.-lbs.

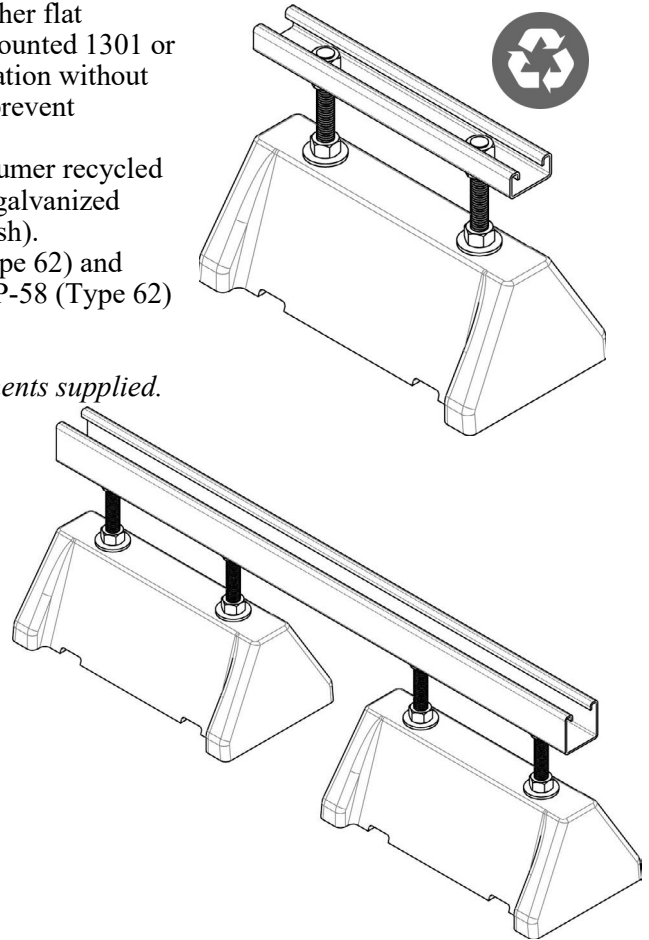
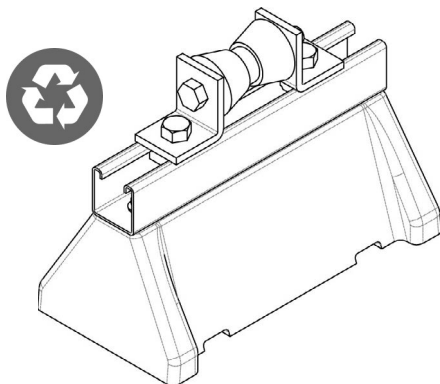


Figure Number	Channel Figure Number	Channel Length		Number of Bases	Total Height		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each		Safety Factor
											lbs.	kN	lbs.	kg	
SOSB1308	1301	10	(254.00)	1	8	(203.2)	5 1/2	(139.70)	10 3/4	(273.05)	1000	(4.45)	4.76	(2.16)	3.5
SOSB1312	1301	10	(254.00)	1	12	(304.8)	5 1/2	(139.70)	10 3/4	(273.05)	1000	(4.45)	5.08	(2.30)	3.5
SOSB1116	1101	24	(609.60)	2	16	(406.4)	5 1/2	(139.70)	24 3/4	(628.65)	1400	(6.23)	10.32	(4.68)	3.5

ROOFTOP SUPPORTS

FIG. RMSB



ROLLER MOUNTED SUPPORT BASE

Function: For installation on most types of roofing material or other flat surfaces. Pre-assembled roof top support base with mounted 1100 series channel strut and Fig. 7580 series roller. Can be used to dampen vibration without reducing the life of the roof. Water channels in base prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish). Cast Iron Rolls w/steel bracket and axle (electro-galvanized finish).

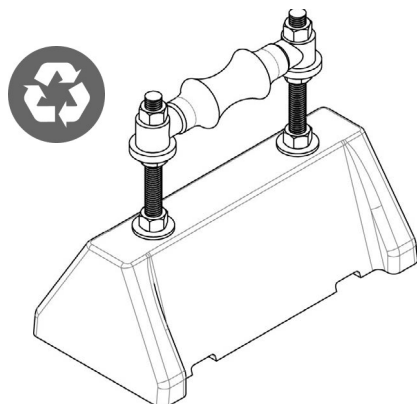
Approvals: Complies with Federal Specification A-A-1192A (Type 63) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 63) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

Figure Number	Pipe Size		Channel Figure Number	Channel Length		Roller Figure Number	Total Height (Axle Center)		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each	
													lbs.	kN	lbs.	kg
RMSB035	1 to 3½	(25 to 90)	1101	10	(254.00)	7581	6⅞	(174.63)	5½	(139.70)	10¾	(273.05)	390	(1.73)	6.43	(2.92)
RMSB060	4 to 6	(100 to 150)	1101	10	(254.00)	7582	6⅞	(174.63)	5½	(139.70)	10¾	(273.05)	600	(2.67)	6.97	(3.16)
RMSB100	8 to 10	(200 to 250)	1101	10	(254.00)	7583	7½	(190.50)	5½	(139.70)	10¾	(273.05)	800	(3.56)	10.08	(4.57)

FIG. ORSB



OFFSET ROLLER SUPPORT BASE

Function: For installation on most types of roofing material or other flat surfaces. Pre-assembled roof top support bases with mounted Fig. 490 Pipe Roller With Sockets. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Cast iron pipe roller and sockets (electro-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Approvals: Complies with Federal Specification A-A-1192A (Type 63) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 63) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

Figure Number	Total Height (Axle Center)		Base Width		Base Length		Max. Pipe Size		Max. Rec. Uniform Load		Wt. Each	
									lbs.	kN	lbs.	kg
ORSB08	8	(203.2)	5½	(139.70)	10¾	(273.05)	3½	(90)	200	(0.89)	5.26	(2.39)
ORSB12	12	(304.8)	5½	(139.70)	10¾	(273.05)	3½	(90)	200	(0.89)	5.58	(2.53)

ROOFTOP SUPPORTS



STRUT BRIDGE SUPPORT BASE

FIG. SBSB

Function: For installation on most types of roofing material or other flat surfaces. Pre-assembled dual roof top support bases with mounted 1001 series channel strut. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Approvals: Complies with Federal Specification A-A-1192A (Type 62) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 62) which supersedes ANSI/MSS SP-69.

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity. When attaching channel to base by means of base through holes, the maximum recommended torque is 3 ft.-lbs.

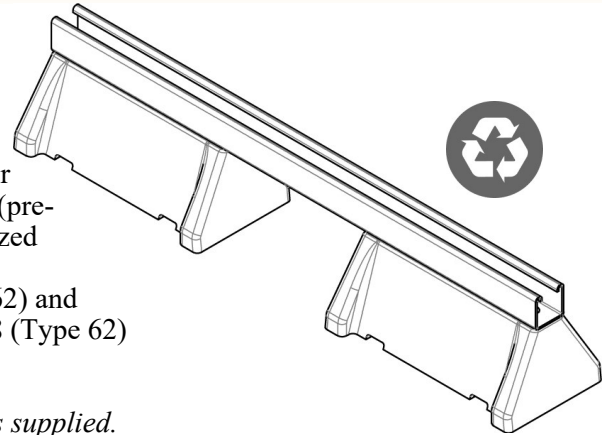


Figure Number	Channel Figure Number	Channel Length	Number of Bases	Bridged Gap		Total Height		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each		Safety Factor
												lbs.	kN	lbs.	kg	
SBSB1321	1301	20 ³ / ₄ (527.05)	2	3 ³ / ₄	(19.05)	4 ¹³ / ₁₆	(122.23)	5 ¹ / ₂	(139.70)	21 ¹ / ₂	(546.10)	1300	(5.78)	7.81	(3.54)	3.5
SBSB1021	1001	20 ³ / ₄ (527.05)	2	3 ³ / ₄	(19.05)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	21 ¹ / ₂	(546.10)	1300	(5.78)	9.26	(4.20)	3.5
SBSB1028	1001	28 (711.20)	2	8	(203.20)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	28.75	(730.25)	1200	(5.34)	10.33	(4.69)	3.5
SBSB1036	1001	36 (914.40)	2	16	(406.40)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	36.75	(933.45)	900	(4.00)	11.51	(5.22)	3.5
SBSB1042	1001	42 (1066.80)	2	22	(558.80)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	42.75	(1085.85)	800	(3.56)	12.40	(5.62)	3.5
SBSB1050	1001	50 (1270.00)	2	30	(762.00)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	50.75	(1289.05)	700	(3.11)	13.58	(6.16)	3.5
SBSB1060	1001	60 (1524.00)	2	40	(1016.00)	5 ⁵ / ₈	(142.88)	5 ¹ / ₂	(139.70)	60.75	(1543.05)	500	(2.22)	15.05	(6.83)	3.5

SINGLE BASE RAISED BRIDGE

FIG. SBRB

Function: For installation on most types of roofing material or other flat surfaces. Single side base roof top support kit with 1011 or 1011A series channel strut top cross member. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

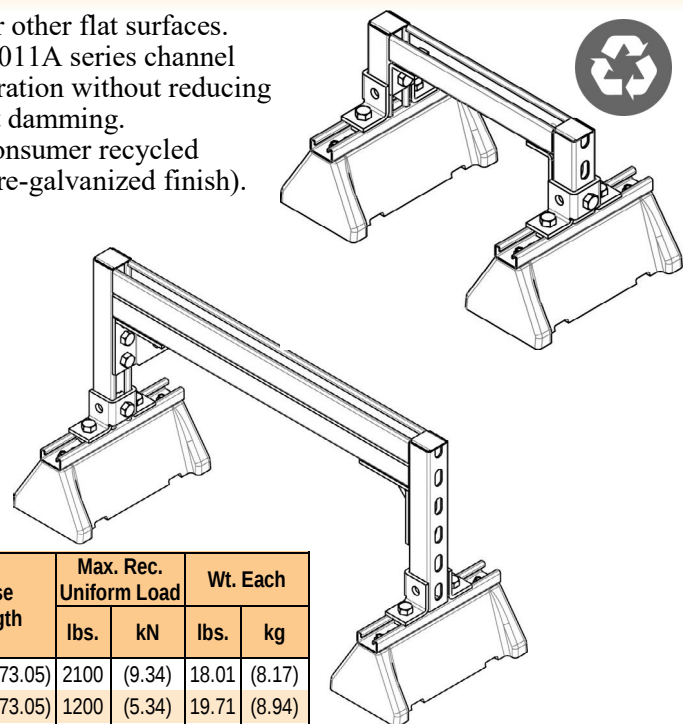


Figure Number	Top Channel Figure Number	Top Channel Length	Number of Bases	Total Height		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each	
										lbs.	kN	lbs.	kg
SBRB1012	1011	12 (304.80)	2	10	(254.00)	19 ¹ / ₈	(485.78)	10 ³ / ₄	(273.05)	2100	(9.34)	18.01	(8.17)
SBRB1024	1011	24 (609.60)	2	10	(254.00)	31 ¹ / ₈	(790.58)	10 ³ / ₄	(273.05)	1200	(5.34)	19.71	(8.94)
SBRB1024A	1011A	24 (609.60)	2	16	(406.40)	31 ¹ / ₈	(790.58)	10 ³ / ₄	(273.05)	2100	(9.34)	29.28	(13.28)
SBRB1036A	1011A	36 (914.4)	2	16	(406.40)	43 ¹ / ₈	(1095.38)	10 ³ / ₄	(273.05)	2100	(9.34)	31.62	(14.34)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

ROOFTOP SUPPORTS

FIG. DBRB

DOUBLE BASE RAISED BRIDGE

Function: For installation on most types of roofing material or other flat surfaces. Double side base roof top support kit with 1011 series channel strut top cross member. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

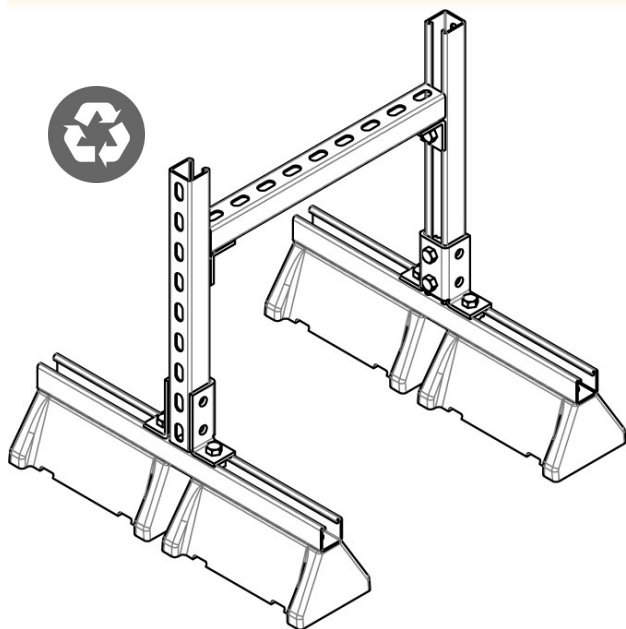


Figure Number	Top Channel Figure Number	Top Channel Length		Number of Bases	Total Height		Base Width		Base Length		Max. Rec. Uniform Load		Wt. Each	
											lbs.	kN	lbs.	kg
DBRB102318	1011	18	(457.20)	4	23 ⁵ / ₈	(600.08)	25 ¹ / ₈	(638.18)	22 ¹ / ₂	(571.50)	1700	(7.56)	37.12	(16.84)
DBRB102324	1011	24	(609.60)	4	23 ⁵ / ₈	(600.08)	31 ¹ / ₈	(790.58)	22 ¹ / ₂	(571.50)	1200	(5.34)	38.00	(17.24)
DBRB102336	1011	36	(914.40)	4	23 ⁵ / ₈	(600.08)	43 ¹ / ₈	(1095.38)	22 ¹ / ₂	(571.50)	800	(3.56)	39.65	(17.98)
DBRB102348	1011	48	(1219.20)	4	23 ⁵ / ₈	(600.08)	55 ¹ / ₈	(1400.18)	22 ¹ / ₂	(571.50)	600	(2.67)	41.31	(18.74)
DBRB102918	1011	18	(457.20)	4	29 ⁵ / ₈	(752.48)	25 ¹ / ₈	(638.18)	22 ¹ / ₂	(571.50)	1700	(7.56)	38.90	(17.64)
DBRB102924	1011	24	(609.60)	4	29 ⁵ / ₈	(752.48)	31 ¹ / ₈	(790.58)	22 ¹ / ₂	(571.50)	1200	(5.34)	39.73	(18.02)
DBRB102936	1011	36	(914.40)	4	29 ⁵ / ₈	(752.48)	43 ¹ / ₈	(1095.38)	22 ¹ / ₂	(571.50)	800	(3.56)	41.40	(18.78)
DBRB102948	1011	48	(1219.20)	4	29 ⁵ / ₈	(752.48)	55 ¹ / ₈	(1400.18)	22 ¹ / ₂	(571.50)	600	(2.67)	43.06	(19.53)
DBRB104118	1011	18	(457.20)	4	41 ⁵ / ₈	(1057.28)	25 ¹ / ₈	(638.18)	22 ¹ / ₂	(571.50)	1700	(7.56)	42.39	(19.23)
DBRB104124	1011	24	(609.60)	4	41 ⁵ / ₈	(1057.28)	31 ¹ / ₈	(790.58)	22 ¹ / ₂	(571.50)	1200	(5.34)	43.22	(19.60)
DBRB104136	1011	36	(914.40)	4	41 ⁵ / ₈	(1057.28)	43 ¹ / ₈	(1095.38)	22 ¹ / ₂	(571.50)	800	(3.56)	44.88	(20.36)
DBRB104148	1011	48	(1219.20)	4	41 ⁵ / ₈	(1057.28)	55 ¹ / ₈	(1400.18)	22 ¹ / ₂	(571.50)	600	(2.67)	46.54	(21.11)
DBRB105318	1011	18	(457.20)	4	53 ⁵ / ₈	(1362.08)	25 ¹ / ₈	(638.18)	22 ¹ / ₂	(571.50)	1700	(7.56)	59.55	(27.01)
DBRB105324	1011	24	(609.60)	4	53 ⁵ / ₈	(1362.08)	31 ¹ / ₈	(790.58)	22 ¹ / ₂	(571.50)	1200	(5.34)	60.38	(27.39)
DBRB105336	1011	36	(914.40)	4	53 ⁵ / ₈	(1362.08)	43 ¹ / ₈	(1095.38)	22 ¹ / ₂	(571.50)	800	(3.56)	62.04	(28.14)
DBRB105348	1011	48	(1219.20)	4	53 ⁵ / ₈	(1362.08)	55 ¹ / ₈	(1400.18)	22 ¹ / ₂	(571.50)	600	(2.67)	63.70	(28.89)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

ROOFTOP SUPPORTS



TRIPLE BASE RAISED BRIDGE

FIG. TBRB

Function: For installation on most types of roofing material or other flat surfaces. Triple side base roof top support kit with 1000, 1500, 1500A, 1600, or 1600A series channel strut top cross member. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

Material: 100% American sourced post-industrial and post-consumer recycled composite, thermal plastic. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

Ordering: Specify figure number.

NOTE: Maximum Recommended Loads are specific to the components supplied and with pipe hangers positioned 1/4 of the top channel length from each end of the top channel. Please consult the roofing manufacturer or an engineer for roof load capacity.

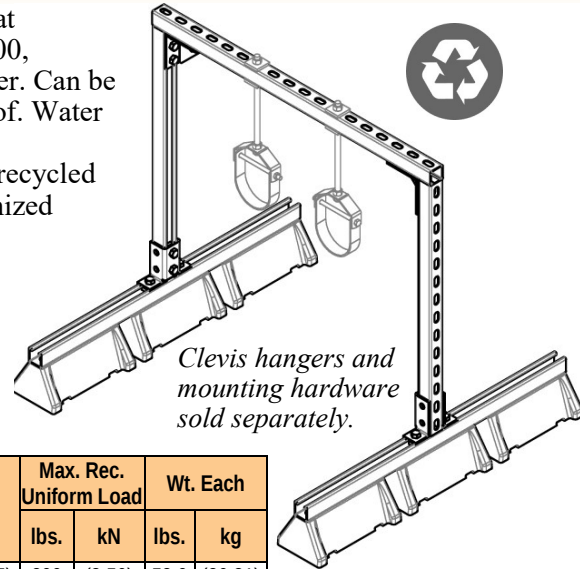
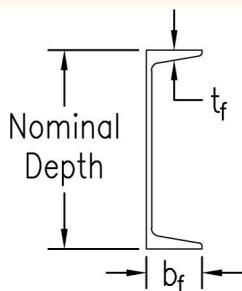


Figure Number	Top Channel Figure Number	Top Channel Length	Number of Bases	Total Height	Base Width	Base Length	Max. Rec. Uniform Load		Wt. Each	
							lbs.	kN	lbs.	kg
TBRB103636	1011	36 (914.40)	6	35 1/4 (895.35)	39 7/8 (1012.83)	34 1/4 (869.95)	800	(3.56)	58.0	(26.31)
TBRB103648	1011	48 (1219.20)	6	35 1/4 (895.35)	51 7/8 (1317.63)	34 1/4 (869.95)	600	(2.67)	60.0	(27.22)
TBRB103660	1011	60 (1524.00)	6	35 1/4 (895.35)	63 7/8 (1622.43)	34 1/4 (869.95)	400	(1.78)	62.0	(28.12)
TBRB103672	1011	72 (1828.80)	6	35 1/4 (895.35)	75 7/8 (1927.23)	34 1/4 (869.95)	300	(1.33)	64.0	(29.03)
TBRB104836	1011	36 (914.40)	6	47 1/4 (1200.2)	39 7/8 (1012.83)	34 1/4 (869.95)	800	(3.56)	62.0	(28.12)
TBRB104848	1011	48 (1219.20)	6	47 1/4 (1200.2)	51 7/8 (1317.63)	34 1/4 (869.95)	600	(2.67)	64.0	(29.03)
TBRB104860	1011	60 (1524.00)	6	47 1/4 (1200.2)	63 7/8 (1622.43)	34 1/4 (869.95)	400	(1.78)	66.0	(29.94)
TBRB104872	1011	72 (1828.80)	6	47 1/4 (1200.2)	75 7/8 (1927.23)	34 1/4 (869.95)	300	(1.33)	68.0	(30.84)
TBRB153636	1511	36 (914.40)	6	35 1/4 (895.35)	39 7/8 (1012.83)	34 1/4 (869.95)	2800	(12.46)	61.0	(27.67)
TBRB153648	1511	48 (1219.20)	6	35 1/4 (895.35)	51 7/8 (1317.63)	34 1/4 (869.95)	2000	(8.90)	64.0	(29.03)
TBRB153660	1511	60 (1524.00)	6	35 1/4 (895.35)	63 7/8 (1622.43)	34 1/4 (869.95)	1600	(7.12)	67.0	(30.39)
TBRB153672	1511	72 (1828.80)	6	35 1/4 (895.35)	75 7/8 (1927.23)	34 1/4 (869.95)	1400	(6.23)	70.0	(31.75)
TBRB154836	1511	36 (914.40)	6	47 1/4 (1200.2)	39 7/8 (1012.83)	34 1/4 (869.95)	2800	(12.46)	65.0	(29.48)
TBRB154848	1511	48 (1219.20)	6	47 1/4 (1200.2)	51 7/8 (1317.63)	34 1/4 (869.95)	2000	(8.90)	68.0	(30.84)
TBRB154860	1511	60 (1524.00)	6	47 1/4 (1200.2)	63 7/8 (1622.43)	34 1/4 (869.95)	1600	(7.12)	71.0	(32.21)
TBRB154872	1511	72 (1828.80)	6	47 1/4 (1200.2)	75 7/8 (1927.23)	34 1/4 (869.95)	1400	(6.23)	74.0	(33.57)
TBRB153636A	1511A	36 (914.40)	6	35 1/4 (895.35)	39 7/8 (1012.83)	34 1/4 (869.95)	4100	(18.24)	69.0	(31.30)
TBRB153648A	1511A	48 (1219.20)	6	35 1/4 (895.35)	51 7/8 (1317.63)	34 1/4 (869.95)	4100	(18.24)	75.0	(34.02)
TBRB153660A	1511A	60 (1524.00)	6	35 1/4 (895.35)	63 7/8 (1622.43)	34 1/4 (869.95)	4100	(18.24)	81.0	(36.74)
TBRB153672A	1511A	72 (1828.80)	6	35 1/4 (895.35)	75 7/8 (1927.23)	34 1/4 (869.95)	4100	(18.24)	87.0	(39.46)
TBRB154836A	1511A	36 (914.40)	6	47 1/4 (1200.2)	39 7/8 (1012.83)	34 1/4 (869.95)	4100	(18.24)	73.0	(33.11)
TBRB154848A	1511A	48 (1219.20)	6	47 1/4 (1200.2)	51 7/8 (1317.63)	34 1/4 (869.95)	4100	(18.24)	78.0	(35.38)
TBRB154860A	1511A	60 (1524.00)	6	47 1/4 (1200.2)	63 7/8 (1622.43)	34 1/4 (869.95)	4100	(18.24)	84.0	(38.10)
TBRB154872A	1511A	72 (1828.80)	6	47 1/4 (1200.2)	75 7/8 (1927.23)	34 1/4 (869.95)	4100	(18.24)	90.0	(40.82)
TBRB163636	1611	36 (914.40)	6	35 1/4 (895.35)	39 7/8 (1012.83)	34 1/4 (869.95)	1600	(7.12)	59.0	(26.76)
TBRB163648	1611	48 (1219.20)	6	35 1/4 (895.35)	51 7/8 (1317.63)	34 1/4 (869.95)	1200	(5.34)	62.0	(28.12)
TBRB163660	1611	60 (1524.00)	6	35 1/4 (895.35)	63 7/8 (1622.43)	34 1/4 (869.95)	1000	(4.45)	64.0	(29.03)
TBRB163672	1611	72 (1828.80)	6	35 1/4 (895.35)	75 7/8 (1927.23)	34 1/4 (869.95)	800	(3.56)	67.0	(30.39)
TBRB164836	1611	36 (914.40)	6	47 1/4 (1200.2)	39 7/8 (1012.83)	34 1/4 (869.95)	1600	(7.12)	63.0	(28.58)
TBRB164848	1611	48 (1219.20)	6	47 1/4 (1200.2)	51 7/8 (1317.63)	34 1/4 (869.95)	1200	(5.34)	66.0	(29.94)
TBRB164860	1611	60 (1524.00)	6	47 1/4 (1200.2)	63 7/8 (1622.43)	34 1/4 (869.95)	1000	(4.45)	68.0	(30.84)
TBRB164872	1611	72 (1828.80)	6	47 1/4 (1200.2)	75 7/8 (1927.23)	34 1/4 (869.95)	800	(3.56)	71.0	(32.21)
TBRB163636A	1611A	36 (914.40)	6	35 1/4 (895.35)	39 7/8 (1012.83)	34 1/4 (869.95)	3000	(13.35)	66.0	(29.94)
TBRB163648A	1611A	48 (1219.20)	6	35 1/4 (895.35)	51 7/8 (1317.63)	34 1/4 (869.95)	3000	(13.35)	71.0	(32.21)
TBRB163660A	1611A	60 (1524.00)	6	35 1/4 (895.35)	63 7/8 (1622.43)	34 1/4 (869.95)	3000	(13.35)	76.0	(34.47)
TBRB163672A	1611A	72 (1828.80)	6	35 1/4 (895.35)	75 7/8 (1927.23)	34 1/4 (869.95)	2500	(11.12)	80.0	(36.29)
TBRB164836A	1611A	36 (914.40)	6	47 1/4 (1200.2)	39 7/8 (1012.83)	34 1/4 (869.95)	3000	(13.35)	70.0	(31.75)
TBRB164848A	1611A	48 (1219.20)	6	47 1/4 (1200.2)	51 7/8 (1317.63)	34 1/4 (869.95)	3000	(13.35)	75.0	(34.02)
TBRB164860A	1611A	60 (1524.00)	6	47 1/4 (1200.2)	63 7/8 (1622.43)	34 1/4 (869.95)	3000	(13.35)	79.0	(35.83)
TBRB164872A	1611A	72 (1828.80)	6	47 1/4 (1200.2)	75 7/8 (1927.23)	34 1/4 (869.95)	2500	(11.12)	84.0	(38.10)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

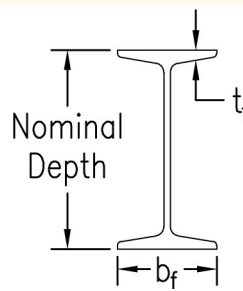
TECHNICAL DATA

STANDARD BEAM INFORMATION



AMERICAN STANDARD 'C' SHAPE CHANNELS

Designation Nom. Depth & Weight		Flange Width b _f		Flange Thickness t _f	
in. X lbs./ft	mm X kg/m				
C3 X 4.1	(C75 X 6.1)	1 ³ / ₈	(35)	.273	(6.9)
C3 X 5	(C75 X 7.4)	1 ¹ / ₂	(37)	.273	(6.9)
C3 X 6	(C75 X 8.9)	1 ⁵ / ₈	(40)	.273	(6.9)
C4 X 5.4	(C100 X 8)	1 ⁹ / ₁₆	(40)	.296	(7.5)
C4 X 7.25	(C100 X 10.8)	1 ³ / ₄	(44)	.296	(7.5)
C5 X 6.7	(C130 X 10)	1 ³ / ₄	(44)	.320	(8.1)
C5 X 9	(C130 X 13.4)	1 ⁷ / ₈	(47)	.320	(8.1)
C6 X 8.2	(C150 X 12.2)	1 ¹⁵ / ₁₆	(48)	.343	(8.7)
C6 X 10.5	(C150 X 15.6)	2	(51)	.343	(8.7)
C6 X 13	(C150 X 19.3)	2 ¹ / ₈	(54)	.343	(8.7)
C7 X 9.8	(C180 X 14.6)	2 ¹ / ₁₆	(53)	.366	(9.3)
C7 X 12.25	(C180 X 18.2)	2 ³ / ₁₆	(55)	.366	(9.3)
C7 X 14.75	(C180 X 22)	2 ¹ / ₄	(57)	.366	(9.3)
C8 X 11.5	(C200 X 17.1)	2 ¹ / ₄	(57)	.390	(9.9)
C8 X 13.75	(C200 X 20.5)	2 ³ / ₈	(59)	.390	(9.9)
C8 X 18.75	(C200 X 27.9)	2 ¹ / ₂	(63)	.390	(9.9)
C9 X 13.4	(C230 X 19.9)	2 ⁷ / ₁₆	(61)	.413	(10.5)
C9 X 15	(C230 X 22)	2 ¹ / ₂	(63)	.413	(10.5)
C9 X 20	(C230 X 30)	2 ⁵ / ₈	(67)	.413	(10.5)
C10 X 15.3	(C250 X 22.8)	2 ⁵ / ₈	(67)	.436	(11.1)
C10 X 20	(C250 X 30)	2 ³ / ₄	(69)	.436	(11.1)
C10 X 25	(C250 X 37)	2 ⁷ / ₈	(73)	.436	(11.1)
C10 X 30	(C250 X 45)	3	(76)	.436	(11.1)
C12 X 20.7	(C310 X 30.8)	2 ¹⁵ / ₁₆	(74)	.501	(12.7)
C12 X 25	(C310 X 37)	3	(76)	.501	(12.7)
C12 X 30	(C310 X 45)	3 ¹ / ₈	(80)	.501	(12.7)
C15 X 33.9	(C380 X 50.4)	3 ³ / ₈	(86)	.650	(16.5)
C15 X 40	(C380 X 60)	3 ¹ / ₂	(89)	.650	(16.5)
C15 X 50	(C380 X 74)	3 ³ / ₄	(94)	.650	(16.5)
C18 X 42.7	(C460 X 63.5)	4	(102)	.625	(15.9)
C18 X 45.8	(C460 X 68.1)	4	(102)	.625	(15.9)
C18 X 51.9	(C460 X 77.2)	4 ¹ / ₈	(106)	.625	(15.9)
C18 X 58	(C460 X 86.3)	4 ¹ / ₄	(112)	.625	(15.9)



AMERICAN STANDARD 'S' SHAPE I-BEAMS

Designation Nom. Depth & Weight		Flange Width b _f		Flange Thickness t _f	
in. X lbs./ft	mm X kg/m				
S3 X 5.7	(S75 X 8.5)	2 ³ / ₈	(59)	.260	(6.6)
S3 X 7.5	(S75 X 11.2)	2 ¹ / ₂	(63)	.260	(6.6)
S4 X 7.7	(S100 X 11.5)	2 ⁵ / ₈	(68)	.293	(7.4)
S4 X 9.5	(S100 X 14.1)	2 ³ / ₄	(71)	.293	(7.4)
S5 X 10	(S130 X 15)	3	(76)	.326	(8.3)
S5 X 14.75	(S130 X 22)	3 ¹ / ₄	(83)	.326	(8.3)
S6 X 12.5	(S150 X 18.6)	3 ³ / ₈	(85)	.359	(9.1)
S6 X 17.25	(S150 X 25.7)	3 ¹¹ / ₁₆	(91)	.359	(9.1)
S7 X 15.3	(S180 X 22.8)	3 ⁵ / ₈	(93)	.392	(10.0)
S7 X 20	(S180 X 29.8)	3 ⁷ / ₈	(98)	.392	(10.0)
S8 X 18.4	(S200 X 27.4)	4	(102)	.425	(10.8)
S8 X 23	(S200 X 34)	4 ¹ / ₈	(106)	.425	(10.8)
S10 X 25.4	(S250 X 37.8)	4 ⁵ / ₈	(118)	.491	(12.5)
S10 X 35	(S250 X 52)	4 ¹⁵ / ₁₆	(126)	.491	(12.5)
S12 X 31.8	(S310 X 47.3)	5	(127)	.544	(13.8)
S12 X 35	(S310 X 52)	5 ¹ / ₁₆	(129)	.544	(13.8)
S12 X 40.8	(S310 X 60.7)	5 ¹ / ₄	(133)	.659	(16.7)
S12 X 50	(S310 X 74)	5 ¹ / ₂	(139)	.659	(16.7)
S15 X 42.9	(S380 X 64)	5 ¹ / ₂	(140)	.622	(15.8)
S15 X 50	(S380 X 74)	5 ⁵ / ₈	(143)	.622	(15.8)
S18 X 54.7	(S460 X 81.4)	6	(152)	.691	(17.6)
S18 X 70	(S460 X 104)	6 ¹ / ₄	(159)	.691	(17.6)
S20 X 66	(S510 X 98.2)	6 ¹ / ₄	(159)	.795	(20.2)
S20 X 75	(S510 X 112)	6 ³ / ₈	(162)	.795	(20.2)
S20 X 86	(S510 X 128)	7 ¹ / ₁₆	(179)	.920	(23.4)
S20 X 96	(S510 X 143)	7 ³ / ₁₆	(183)	.920	(23.4)
S24 X 80	(S610 X 119)	7	(178)	.870	(22.1)
S24 X 90	(S610 X 134)	7 ¹ / ₈	(181)	.870	(22.1)
S24 X 100	(S610 X 149)	7 ¹ / ₄	(184)	.870	(22.1)
S24 X 106	(S610 X 158)	7 ⁷ / ₈	(200)	1.090	(27.7)
S24 X 121	(S610 X 180)	8 ¹ / ₁₆	(204)	1.090	(27.7)

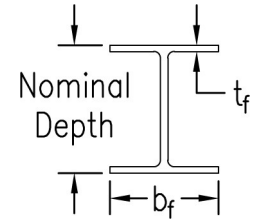
Note: All standard beam information is taken from ASTM A6-86

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

TECHNICAL DATA

STANDARD BEAM INFORMATION

Designation Nom. Depth & Weight		Flange Width b _f		Flange Thickness t _f		Designation Nom. Depth & Weight		Flange Width b _f		Flange Thickness t _f	
in. X lbs./ft	mm X kg/m					in. X lbs./ft	mm X kg/m				
W4 X 13	(W100 X 19.3)	4 ¹ / ₁₆	(103)	.345	(8.8)	W12 X 65	(W310 X 97)	12	(305)	.605	(15.4)
W5 X 16	(W130 X 23.8)	5	(127)	.360	(9.1)	W12 X 72	(W310 X 107)	12	(305)	.670	(17.0)
W5 X 19	(W130 X 28.1)	5	(127)	.430	(10.9)	W12 X 79	(W310 X 117)	12 ¹ / ₁₆	(306)	.735	(18.7)
W6 X 9	(W150 X 13.5)	3 ⁵ / ₁₆	(100)	.215	(5.5)	W12 X 87	(W310 X 129)	12 ¹ / ₈	(308)	.810	(20.6)
W6 X 12	(W150 X 18.)	4	(102)	.280	(7.1)	W12 X 96	(W310 X 143)	12 ¹ / ₈	(308)	.900	(22.9)
W6 X 16	(W150 X 24.)	4	(102)	.405	(10.3)	W12 X 106	(W310 X 158)	12 ¹ / ₄	(311)	.990	(25.1)
W6 X 20	(W150 X 29.8)	6	(152)	.365	(9.3)	W12 X 120	(W310 X 179)	12 ³ / ₁₆	(313)	1.105	(28.1)
W6 X 25	(W150 X 37.1)	6 ¹ / ₁₆	(154)	.455	(11.6)	W12 X 136	(W310 X 202)	12 ³ / ₈	(314)	1.250	(31.8)
W8 X 10	(W200 X 15.0)	3 ⁵ / ₁₆	(100)	.205	(5.2)	W12 X 152	(W310 X 226)	12 ¹ / ₂	(318)	1.400	(35.6)
W8 X 13	(W200 X 19.3)	4	(102)	.255	(6.5)	W12 X 170	(W310 X 253)	12 ³ / ₁₆	(319)	1.560	(39.6)
W8 X 15	(W200 X 22.5)	4	(102)	.315	(8.0)	W12 X 190	(W310 X 283)	12 ¹ / ₁₆	(322)	1.735	(44.1)
W8 X 18	(W200 X 26.6)	5 ¹ / ₄	(133)	.330	(8.4)	W12 X 210	(W310 X 313)	12 ³ / ₄	(324)	1.900	(48.3)
W8 X 21	(W200 X 31.3)	5 ¹ / ₄	(133)	.400	(10.2)	W12 X 230	(W310 X 342)	12 ⁷ / ₈	(327)	2.070	(52.6)
W8 X 24	(W200 X 35.9)	6 ¹ / ₂	(165)	.400	(10.2)	W12 X 252	(W310 X 375)	13	(330)	2.250	(57.2)
W8 X 28	(W200 X 41.7)	6 ¹ / ₂	(165)	.465	(11.8)	W14 X 22	(W360 X 32.9)	5	(127)	.335	(8.5)
W8 X 31	(W200 X 46.1)	8	(203)	.435	(11.0)	W14 X 26	(W360 X 39)	5	(127)	.420	(10.7)
W8 X 35	(W200 X 52)	8	(203)	.495	(12.6)	W14 X 30	(W360 X 44.8)	6 ¹ / ₄	(171)	.385	(9.8)
W8 X 40	(W200 X 59)	8 ¹ / ₁₆	(205)	.560	(14.2)	W14 X 34	(W360 X 51)	6 ¹ / ₄	(171)	.455	(11.6)
W8 X 48	(W200 X 71)	8 ³ / ₈	(206)	.685	(17.4)	W14 X 38	(W360 X 57)	6 ¹ / ₄	(171)	.515	(13.1)
W8 X 58	(W200 X 86)	8 ³ / ₄	(210)	.810	(20.6)	W14 X 43	(W360 X 64)	8	(203)	.530	(13.5)
W8 X 67	(W200 X 100)	8 ³ / ₄	(210)	.935	(23.7)	W14 X 48	(W360 X 72)	8	(203)	.595	(15.1)
W10 X 12	(W250 X 17.9)	4	(102)	.210	(5.3)	W14 X 53	(W360 X 79)	8 ¹ / ₁₆	(205)	.660	(16.8)
W10 X 15	(W250 X 22.3)	4	(102)	.270	(6.9)	W14 X 61	(W360 X 91)	10	(254)	.645	(16.4)
W10 X 17	(W250 X 25.3)	4	(102)	.330	(8.4)	W14 X 68	(W360 X 101)	10	(254)	.720	(18.3)
W10 X 19	(W250 X 28.4)	4	(102)	.395	(10.0)	W14 X 74	(W360 X 110)	10 ¹ / ₁₆	(256)	.785	(19.9)
W10 X 22	(W250 X 32.7)	5 ¹ / ₄	(146)	.360	(9.1)	W14 X 82	(W360 X 122)	10 ³ / ₈	(257)	.855	(21.7)
W10 X 26	(W250 X 38.5)	5 ¹ / ₄	(146)	.440	(11.2)	W14 X 90	(W360 X 134)	14 ¹ / ₂	(368)	.710	(18.0)
W10 X 30	(W250 X 44.8)	5 ³ / ₁₆	(148)	.510	(13.0)	W14 X 99	(W360 X 147)	14 ³ / ₁₆	(370)	.780	(19.8)
W10 X 33	(W250 X 49.1)	7 ⁵ / ₁₆	(202)	.435	(11.0)	W14 X 109	(W360 X 162)	14 ⁵ / ₈	(371)	.860	(21.8)
W10 X 39	(W250 X 58)	8	(203)	.530	(13.5)	W14 X 120	(W360 X 179)	14 ¹ / ₁₆	(373)	.940	(23.9)
W10 X 45	(W250 X 57)	8	(203)	.620	(15.7)	W14 X 132	(W360 X 196)	14 ³ / ₄	(375)	1.030	(26.2)
W10 X 49	(W250 X 73)	10	(254)	.560	(14.2)	W14 X 145	(W360 X 216)	15 ¹ / ₂	(394)	1.090	(27.7)
W10 X 54	(W250 X 80)	10 ¹ / ₁₆	(256)	.615	(15.6)	W14 X 159	(W360 X 237)	15 ³ / ₁₆	(395)	1.190	(30.2)
W10 X 60	(W250 X 89)	10 ¹ / ₁₆	(256)	.680	(17.3)	W14 X 176	(W360 X 262)	15 ⁵ / ₈	(397)	1.310	(33.3)
W10 X 68	(W250 X 101)	10 ³ / ₈	(257)	.770	(19.6)	W14 X 193	(W360 X 287)	15 ⁷ / ₄	(400)	1.440	(36.6)
W10 X 77	(W250 X 115)	10 ¹ / ₁₆	(259)	.870	(22.1)	W14 X 211	(W360 X 314)	15 ³ / ₄	(400)	1.560	(39.6)
W10 X 88	(W250 X 131)	10 ¹ / ₄	(260)	.990	(25.1)	W14 X 233	(W360 X 347)	15 ⁵ / ₈	(403)	1.720	(43.7)
W10 X 100	(W250 X 149)	10 ³ / ₈	(264)	1.120	(28.4)	W14 X 257	(W360 X 382)	16	(406)	1.890	(48.0)
W10 X 112	(W250 X 167)	10 ⁷ / ₁₆	(265)	1.250	(31.8)	W14 X 283	(W360 X 421)	16 ¹ / ₈	(410)	2.070	(52.6)
W12 X 14	(W310 X 21)	4	(102)	.225	(5.7)	W14 X 311	(W360 X 463)	16 ¹ / ₄	(413)	2.260	(57.4)
W12 X 16	(W310 X 23.8)	4	(102)	.265	(6.7)	W14 X 342	(W360 X 509)	16 ³ / ₈	(416)	2.470	(62.7)
W12 X 19	(W310 X 28.3)	4	(102)	.350	(8.9)	W14 X 370	(W360 X 551)	16 ¹ / ₂	(419)	2.660	(67.6)
W12 X 22	(W310 X 32.7)	4	(102)	.425	(10.8)	W14 X 398	(W360 X 592)	16 ³ / ₁₆	(421)	2.845	(72.3)
W12 X 26	(W310 X 38.7)	6 ¹ / ₂	(165)	.380	(9.7)	W14 X 426	(W360 X 634)	16 ¹ / ₁₆	(424)	3.035	(77.1)
W12 X 30	(W310 X 44.5)	6 ¹ / ₂	(165)	.440	(11.2)	W16 X 26	(W410 X 38.8)	5 ¹ / ₂	(140)	.345	(8.8)
W12 X 35	(W310 X 52)	6 ³ / ₁₆	(167)	.520	(13.2)	W16 X 31	(W410 X 46.1)	5 ¹ / ₂	(140)	.440	(11.2)
W12 X 40	(W310 X 60)	8	(203)	.515	(13.1)	W16 X 36	(W410 X 53)	7	(178)	.430	(10.9)
W12 X 45	(W310 X 67)	8 ¹ / ₁₆	(205)	.575	(14.6)	W16 X 40	(W410 X 60)	7	(178)	.505	(12.8)
W12 X 50	(W310 X 74)	8 ¹ / ₁₆	(205)	.640	(16.3)	W16 X 45	(W410 X 67)	7	(178)	.565	(14.4)
W12 X 53	(W310 X 79)	10	(254)	.575	(14.6)	W16 X 50	(W410 X 75)	7 ¹ / ₁₆	(179)	.630	(16.0)
W12 X 58	(W310 X 86)	10	(254)	.640	(16.3)	W16 X 57	(W410 X 85)	7 ³ / ₈	(181)	.715	(18.2)



WIDE FLANGE I-BEAMS

Designation Nom. Depth & Weight		Flange Width b _f		Flange Thickness t _f	
in. X lbs./ft	mm X kg/m				
W16 X 67	(W410 X 100)	10 ¹ / ₄	(260)	.665	(16.9)
W16 X 77	(W410 X 114)	10 ⁵ / ₁₆	(262)	.760	(19.3)
W16 X 89	(W410 X 132)	10 ³ / ₈	(264)	.875	(22.2)
W16 X 100	(W410 X 149)	10 ⁷ / ₁₆	(265)	.985	(25.0)
W18 X 35	(W460 X 52)	6	(152)	.425	(10.8)
W18 X 40	(W460 X 60)	6	(152)	.525	(13.3)
W18 X 46	(W460 X 68)	6 ¹ / ₁₆	(154)	.605	(15.4)
W18 X 50	(W460 X 74)	7 ¹ / ₂	(191)	.570	(14.5)
W18 X 55	(W460 X 82)	7 ¹ / ₂	(191)	.630	(16.0)
W18 X 60	(W460 X 89)	7 ³ / ₁₆	(192)	.695	(17.7)
W18 X 65	(W460 X 97)	7 ³ / ₁₆	(192)	.750	(19.1)
W18 X 71	(W460 X 106)	7 ⁵ / ₈	(194)	.810	(20.6)
W18 X 76	(W460 X 113)	11	(279)	.680	(17.3)
W18 X 86	(W460 X 128)	11 ¹ / ₁₆	(281)	.770	(19.6)
W18 X 97	(W460 X 144)	11 ¹ / ₈	(283)	.870	(22.1)
W18 X 106	(W460 X 158)	11 ³ / ₁₆	(284)	.940	(23.9)
W18 X 119	(W460 X 177)	11 ¹ / ₄	(286)	1.060	(26.9)
W21 X 44	(W530 X 66)	6 ¹ / ₂	(165)	.450	(11.4)
W21 X 50	(W530 X 74)	6 ¹ / ₂	(165)	.535	(13.6)
W21 X 57	(W530 X 85)	6 ³ / ₁₆	(167)	.650	(16.5)
W21 X 62	(W530 X 92)	8 ¹ / ₄	(210)	.615	(15.6)
W21 X 68	(W530 X 101)	8 ¹ / ₄	(210)	.685	(17.4)
W21 X 73	(W530 X 109)	8 ¹ / ₄	(210)	.740	(18.8)
W21 X 83	(W530 X 123)	8 ³ / ₈	(225)	.835	(21.2)
W21 X 93	(W530 X 138)	8 ⁷ / ₁₆	(214)	.930	(23.6)
W21 X 101	(W530 X 150)	12 ¹ / ₄	(311)	.800	(20.3)
W21 X 111	(W530 X 165)	12 ³ / ₈	(314)	.875	(22.2)
W21 X 122	(W530 X 182)	12 ⁵ / ₈	(316)	1.035	(26.3)
W21 X 137	(W530 X 196)	12 ¹ / ₂	(318)	1.150	(29.2)
W24 X 55	(W610 X 82)	7	(178)	.505	(12.8)
W24 X 62	(W610 X 92)	7 ¹ / ₁₆	(179)	.590	(15.0)
W24 X 68	(W610 X 101)	8 ³ / ₁₆	(227)	.585	(14.9)
W24 X 76	(W610 X 113)	9	(229)	.680	(17.3)
W24 X 84	(W610 X 125)	9	(229)	.770	(19.6)
W24 X 94	(W610 X 140)	9 ¹ / ₁₆	(230)	.875	(22.2)
W24 X 104	(W610 X 155)	12 ³ / ₄	(324)	.750	(19.1)
W24 X 117	(W610 X 174)	12 ³ / ₄	(324)	.850	(21.6)
W24 X 131	(W610 X 195)	12 ⁷ / ₈	(327)	.960	(24.4)
W24 X 146	(W610 X 217)	12 ⁷ / ₈	(327)	1.090	(27.7)
W24 X 162	(W610 X 241)	12 ⁵ / ₁₆	(329)	1.220	(31.0)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

TECHNICAL DATA

STEEL PIPE DATA

Pipe Size		Schedule No.	O.D.		Wall Thickness		Weight				Pipe Size	Schedule No.	O.D.		Wall Thickness		Weight			
							Water		Pipe								Water		Pipe	
							lbs./ft	kg/m	lbs./ft	kg/m							lbs./ft	kg/m	lbs./ft	kg/m
3/8 (10)	10	0.675 (17.15)	.066 (1.68)	0.100 (0.15)	0.4325 (0.64)	5 (125)	10	5.563 (141.30)	0.134 (3.40)	9.55 (14.21)	7.77 (11.56)									
	40		.091 (2.31)	0.083 (0.12)	0.567 (0.84)		40		0.258 (6.55)	8.67 (12.91)	14.62 (21.76)									
	80		.126 (3.20)	0.061 (0.09)	0.738 (1.10)		80		0.375 (9.53)	7.89 (11.74)	20.78 (30.92)									
1/2 (15)	10	0.84 (21.34)	.083 (2.11)	0.155 (0.23)	0.671 (1.00)	6 (150)	10	6.625 (168.28)	0.134 (3.40)	13.76 (20.48)	9.289 (13.82)									
	40		.109 (2.77)	0.132 (0.20)	0.85 (1.26)		40		0.28 (7.11)	12.52 (18.64)	18.97 (28.23)									
	80		.147 (3.73)	0.102 (0.15)	1.087 (1.62)		80		0.432 (10.97)	11.30 (16.82)	28.57 (42.52)									
3/4 (20)	10	1.05 (26.67)	.083 (2.11)	0.266 (0.40)	0.8572 (1.28)	8 (200)	10	8.625 (219.08)	0.148 (3.76)	23.62 (35.15)	13.4 (19.94)									
	40		.113 (2.87)	0.231 (0.34)	1.13 (1.68)		40		0.322 (8.18)	21.69 (32.28)	28.55 (42.49)									
	80		.154 (3.91)	0.187 (0.28)	1.473 (2.19)		80		0.5 (12.70)	19.80 (29.46)	43.39 (64.57)									
1 (25)	10	1.315 (33.40)	.109 (2.77)	0.410 (0.61)	1.404 (2.09)	10 (250)	10	10.75 (273.05)	0.165 (4.19)	36.97 (55.02)	18.7 (27.83)									
	40		.133 (3.38)	0.375 (0.56)	1.678 (2.50)		40		0.365 (9.27)	34.19 (50.87)	40.48 (60.24)									
	80		.179 (4.55)	0.312 (0.46)	2.171 (3.23)		80		0.593 (15.06)	31.14 (46.35)	64.4 (95.84)									
1 1/4 (32)	10	1.66 (42.16)	.109 (2.77)	0.708 (1.05)	1.806 (2.69)	12 (300)	10	12.75 (323.85)	0.18 (4.57)	52.27 (77.79)	24.2 (36.01)									
	40		.14 (3.56)	0.648 (0.96)	2.272 (3.38)		40		0.406 (10.31)	48.53 (72.21)	53.6 (79.77)									
	80		.191 (4.85)	0.556 (0.83)	2.996 (4.46)		80		0.687 (17.45)	44.06 (65.57)	88.6 (131.85)									
1 1/2 (40)	10	1.9 (48.26)	.109 (2.77)	0.963 (1.43)	2.085 (3.10)	14 (350)	10	14 (355.60)	0.25 (6.35)	62.05 (92.35)	36.71 (54.63)									
	40		.145 (3.68)	0.883 (1.31)	2.717 (4.04)		40		0.437 (11.10)	58.66 (87.30)	63 (93.75)									
	80		.2 (5.08)	0.766 (1.14)	3.631 (5.40)		80		0.75 (19.05)	53.20 (79.17)	107 (159.23)									
2 (50)	10	2.375 (60.33)	.109 (2.77)	1.584 (2.36)	2.638 (3.93)	16 (400)	10	16 (406.40)	0.25 (6.35)	81.80 (121.74)	42.05 (62.58)									
	40		.154 (3.91)	1.455 (2.16)	3.652 (5.43)		40		0.5 (12.70)	76.61 (114.01)	83 (123.52)									
	80		.218 (5.54)	1.280 (1.91)	5.022 (7.47)		80		0.843 (21.41)	69.76 (103.82)	137 (203.88)									
2 1/2 (65)	10	2.875 (73.03)	.12 (3.05)	2.364 (3.52)	3.531 (5.25)	18 (450)	10	18 (457.20)	0.25 (6.35)	104.27 (155.18)	47.39 (70.52)									
	40		.203 (5.16)	2.076 (3.09)	5.79 (8.62)		40		0.563 (14.30)	96.95 (144.27)	105 (156.26)									
	80		.276 (7.01)	1.837 (2.73)	7.66 (11.40)		80		0.937 (23.80)	88.54 (131.77)	171 (254.48)									
3 (80)	10	3.5 (88.90)	.12 (3.05)	3.619 (5.39)	4.332 (6.45)	20 (500)	10	20 (508.00)	0.25 (6.35)	129.47 (192.67)	62.73 (93.35)									
	40		.216 (5.49)	3.205 (4.77)	7.57 (11.27)		40		0.593 (15.06)	120.52 (179.36)	123 (183.04)									
	80		.3 (7.62)	2.864 (4.26)	10.25 (15.25)		80		1.031 (26.19)	109.56 (163.04)	209 (311.03)									
3 1/2 (90)	10	4 (101.60)	.12 (3.05)	4.814 (7.16)	4.973 (7.40)	24 (600)	10	24 (609.60)	0.25 (6.35)	188.04 (279.83)	63.41 (94.36)									
	40		.226 (5.74)	4.286 (6.38)	9.11 (13.56)		40		0.687 (17.45)	174.31 (259.40)	171 (254.48)									
	80		.318 (8.08)	3.853 (5.73)	12.51 (18.62)		80		1.218 (30.94)	158.33 (235.62)	297 (441.98)									
4 (100)	10	4.5 (114.30)	.12 (3.05)	6.179 (9.20)	5.613 (8.35)	30 (750)	10	30 (762.00)	.5 (12.70)	286.00 (425.61)	158 (235.13)									
	40		.237 (6.02)	5.519 (8.21)	10.79 (16.06)		40		.5 (12.70)	417.00 (620.56)	190 (282.75)									
	80		.337 (8.56)	4.984 (7.42)	14.98 (22.29)		80		.5 (12.70)	417.00 (620.56)	190 (282.75)									

SPACING OF HANGERS FOR STEEL PIPE

Nominal Pipe Size	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (65)	3 (80)	3 1/2 (90)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
Max. Span	7 (2.13)	7 (2.13)	7 (2.13)	7 (2.13)	9 (2.74)	10 (3.05)	11 (3.35)	12 (3.66)	13 (3.96)	14 (4.27)	16 (4.88)	17 (5.18)	19 (5.79)	22 (6.71)	23 (7.01)	25 (7.62)	27 (8.23)	28 (8.53)	30 (9.14)	32 (9.75)
Recommended Hanger Rod Size	3/8	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1	1 1/4	1 1/4
OR TRAPEZE																				

Note: Spacing and capacities are based on pipe filled with water. Additional valves and fittings increase the load and therefore closer hanger spacing is required. Taken from ANSI/MSS SP-58.

***Many Codes and specifications require pipe hangers to be spaced every 10 ft (3.05m) regardless of size. Check local codes.**

TECHNICAL DATA



COPPER TUBE DATA

TYPE L

Tube Size		Tubing O.D.		Wall Thickness		Weight			
						Water		Pipe	
						lbs./ft	kg/m	lbs./ft	kg/m
1/4	(6)	.375	(9.53)	.030	(0.76)	.034	(.051)	.126	(.188)
3/8	(10)	.500	(12.70)	.035	(0.89)	.062	(.092)	.198	(.295)
1/2	(15)	.625	(15.88)	.040	(1.02)	.100	(.149)	.285	(.424)
5/8	(17)	.750	(19.05)	.042	(1.07)	.151	(.225)	.362	(.539)
3/4	(20)	.875	(22.23)	.045	(1.14)	.209	(.311)	.455	(.677)
1	(25)	1.125	(28.58)	.050	(1.27)	.357	(.531)	.655	(.975)
1 1/4	(32)	1.375	(34.93)	.055	(1.40)	.546	(.813)	.884	(1.316)
1 1/2	(40)	1.625	(41.28)	.060	(1.52)	.767	(1.141)	1.140	(1.697)
2	(50)	2.125	(53.98)	.070	(1.78)	1.341	(1.996)	1.750	(2.604)
2 1/2	(65)	2.625	(66.68)	.080	(2.03)	2.064	(3.072)	2.480	(3.691)
3	(80)	3.125	(79.38)	.090	(2.29)	2.949	(4.389)	3.330	(4.956)
3 1/2	(90)	3.625	(92.08)	.100	(2.54)	3.989	(5.936)	4.290	(6.384)
4	(100)	4.125	(104.78)	.110	(2.79)	5.188	(7.721)	5.380	(8.006)
5	(125)	5.125	(130.18)	.125	(3.18)	8.081	(12.026)	7.610	(11.325)
6	(150)	6.125	(155.58)	.140	(3.56)	11.616	(17.287)	10.200	(15.179)
8	(200)	8.125	(206.38)	.200	(5.08)	20.289	(30.193)	19.260	(28.662)
10	(250)	10.125	(257.18)	.250	(6.35)	31.590	(47.011)	30.100	(44.794)
12	(300)	12.125	(307.98)	.280	(7.11)	45.426	(67.601)	40.400	(60.122)

TYPE K

Tube Size		Tubing O.D.		Wall Thickness		Weight			
						Water		Pipe	
						lbs./ft	kg/m	lbs./ft	kg/m
1/4	(6)	.375	(9.53)	.035	(0.89)	.032	(.048)	.145	(.216)
3/8	(10)	.500	(12.70)	.049	(1.24)	.055	(.082)	.269	(.400)
1/2	(15)	.625	(15.88)	.049	(1.24)	.094	(.140)	.344	(.512)
5/8	(17)	.750	(19.05)	.049	(1.24)	.144	(.214)	.418	(.622)
3/4	(20)	.875	(22.23)	.065	(1.65)	.188	(.280)	.641	(.954)
1	(25)	1.125	(28.58)	.065	(1.65)	.337	(.502)	.839	(1.249)
1 1/4	(32)	1.375	(34.93)	.065	(1.65)	.527	(.784)	1.040	(1.548)
1 1/2	(40)	1.625	(41.28)	.072	(1.83)	.743	(1.106)	1.360	(2.024)
2	(50)	2.125	(53.98)	.083	(2.11)	1.310	(1.949)	2.060	(3.066)
2 1/2	(65)	2.625	(66.68)	.095	(2.41)	2.000	(2.976)	2.920	(4.345)
3	(80)	3.125	(79.38)	.109	(2.77)	2.960	(4.405)	4.000	(5.953)
3 1/2	(90)	3.625	(92.08)	.120	(3.05)	3.900	(5.804)	5.120	(7.619)
4	(100)	4.125	(104.78)	.134	(3.40)	5.060	(7.530)	6.510	(9.688)
5	(125)	5.125	(130.18)	.160	(4.06)	8.000	(11.905)	9.670	(14.391)
6	(150)	6.125	(155.58)	.192	(4.88)	11.200	(16.667)	13.870	(20.641)
8	(200)	8.125	(206.38)	.271	(6.88)	19.500	(29.019)	25.900	(38.543)
10	(250)	10.125	(257.18)	.338	(8.59)	30.423	(45.274)	40.300	(59.973)
12	(300)	12.125	(307.98)	.405	(10.29)	43.675	(64.996)	57.800	(86.016)

SPACING OF HANGERS FOR COPPER TUBING

Tubing Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12
	(15)	(20)	(25)	(32)	(40)	(50)	(65)	(80)	(90)	(100)	(125)	(150)	(200)	(250)	(300)
Span	ft	5	5	6	7	8	8	9	10	11	12	13	14	16	18
	m	(1.5)	(1.5)	(1.8)	(2.1)	(2.4)	(2.4)	(2.7)	(3.0)	(3.4)	(3.7)	(4.0)	(4.3)	(4.9)	(5.8)

Note: Spacing and capacities are based on pipe filled with water. Additional valves and fittings increase the load and therefore closer hanger spacing is required. Taken from ANSI/MSS SP-58.

AWWA DUCTILE IRON PIPE DATA

Nominal Pipe Size		Class	O.D. D.I. Pipe		Wall Thick		Weight			
							Pipe		Water	
							lbs./ft	kg/m	lbs./ft	kg/m
3	(80)	53	3.96	(100.58)	.31	(7.87)	11.2	(16.67)	3.8	(5.66)
4	(100)	53	4.80	(121.92)	.32	(8.13)	14.2	(21.13)	5.9	(8.78)
6	(150)	53	6.90	(175.26)	.34	(8.64)	22.0	(32.74)	13.1	(19.49)
8	(200)	53	9.05	(229.87)	.36	(9.14)	31.0	(46.13)	23.0	(34.23)
10	(250)	53	11.1	(281.94)	.38	(9.65)	40.4	(60.12)	36.4	(54.17)
12	(300)	53	13.2	(335.28)	.40	(10.16)	50.7	(75.45)	52.3	(77.83)
14	(350)	53	15.3	(388.62)	.42	(10.67)	62.4	(92.86)	71.1	(105.81)
16	(400)	53	17.4	(441.96)	.43	(10.92)	72.8	(108.34)	93.1	(138.55)
18	(450)	53	19.5	(495.30)	.44	(11.18)	83.6	(124.41)	117.9	(175.45)
20	(500)	53	21.6	(548.64)	.45	(11.43)	95.2	(141.67)	145.8	(216.97)
24	(600)	53	25.8	(655.32)	.47	(11.94)	119.2	(177.39)	210.2	(312.81)
30	(750)	53	32.0	(812.80)	.51	(12.95)	161.3	(240.04)	326.5	(485.89)
36	(900)	53	38.3	(972.82)	.58	(14.73)	219.5	(326.65)	469.3	(698.40)
42	(1050)	53	44.5	(1130.30)	.65	(16.51)	285.2	(424.42)	634.9	(944.84)
48	(1200)	53	50.8	(1290.32)	.72	(18.29)	360.3	(536.19)	828.9	(1233.54)

Based on AWWA C108-70, Table 8.2.

Add flange weight for flanged cast iron pipe.

GLASS PIPE DATA

REGULAR SCHEDULE

Nominal Pipe Size		O.D. D.I. Pipe		Wall Thick		Weight			
						Pipe		Water	
						lbs./ft	kg/m	lbs./ft	kg/m
1 1/2	(40)	1.84	(46.74)	.12	(3.05)	.64	(.95)	.89	(1.32)
2	(50)	2.34	(59.44)	.14	(3.56)	.94	(1.40)	1.45	(2.16)
3	(80)	3.41	(86.61)	.17	(4.32)	1.60	(2.38)	3.19	(4.75)
4	(100)	4.53	(115.06)	.20	(5.08)	2.60	(3.87)	5.79	(8.62)
6	(150)	6.66	(169.16)	.24	(6.10)	4.70	(6.99)	12.78	(19.02)

HEAVY SCHEDULE

1	(25)	1.31	(33.27)	.16	(4.06)	.60	(.89)	.35	(.52)
1 1/2	(40)	1.84	(46.74)	.17	(4.32)	.87	(1.29)	.76	(1.13)
2	(50)	2.34	(59.44)	.17	(4.32)	1.10	(1.64)	1.36	(2.02)
3	(80)	3.41	(86.61)	.20	(5.08)	2.00	(2.98)	3.06	(4.55)
4	(100)	4.53	(115.06)	.26	(6.60)	3.40	(5.06)	5.44	(8.10)
6	(150)	6.66	(169.16)	.33	(8.38)	6.30	(9.38)	12.42	(18.48)

Spacing of Hangers for glass pipe support every 8-10 ft (2.44 - 3.05 m). Pad all hangers. Use only clevis or trapeze, do not tie down pipe.

TECHNICAL DATA

PVC PLASTIC PIPE DATA

Pipe Size		Sch. No.	O.D.		Wall Thickness		Weight				Pipe Size		Sch. No.	O.D.		Wall Thickness		Weight			
							Water		Pipe									Water		Pipe	
							lbs./ft	kg/m	lbs./ft	kg/m								lbs./ft	kg/m	lbs./ft	kg/m
1/8	(3)	40	.405	(10.3)	.068	(1.73)	.025	(.037)	.043	(.064)	2 1/2	(65)	40	2.875	(73.03)	.203	(5.16)	2.072	(3.08)	1.020	(1.518)
		80			.095	(2.41)	.016	(.024)	.055	(.082)			80			.276	(7.01)	1.834	(2.73)	1.350	(2.009)
1/4	(6)	40	.540	(13.7)	.088	(2.24)	.045	(.067)	.074	(.110)	3	(80)	40	3.500	(88.9)	.216	(5.49)	3.20	(4.76)	1.333	(1.984)
		80			.119	(3.02)	.031	(.046)	.094	(.140)			80			.300	(7.62)	2.86	(4.26)	1.804	(2.685)
3/8	(10)	40	.675	(17.15)	.091	(2.31)	.083	(.124)	.100	(.149)	3 1/2	(90)	40	4.000	(101.6)	.226	(5.74)	4.28	(6.37)	1.598	(2.378)
		80			.126	(3.20)	.061	(.091)	.129	(.192)			80			.318	(8.08)	3.85	(5.73)	2.195	(3.267)
1/2	(15)	40	.840	(21.34)	.109	(2.77)	.132	(.196)	.150	(.223)	4	(100)	40	4.500	(114.3)	.237	(6.02)	5.51	(8.20)	1.899	(2.826)
		80			.147	(3.73)	.101	(.150)	.200	(.298)			80			.337	(8.56)	4.98	(7.41)	2.636	(3.923)
3/4	(20)	40	1.050	(26.67)	.113	(2.87)	.230	(.342)	.199	(.296)	5	(125)	40	5.563	(141.30)	.258	(6.55)	8.66	(12.89)	2.770	(4.122)
		80			.154	(3.91)	.186	(.277)	.259	(.385)			80			.375	(9.53)	7.87	(11.71)	4.126	(6.140)
1	(25)	40	1.315	(33.40)	.133	(3.38)	.374	(.557)	.295	(.439)	6	(150)	40	6.625	(168.28)	.280	(7.11)	12.51	(18.62)	3.339	(4.969)
		80			.179	(4.55)	.311	(.463)	.382	(.568)			80			.432	(10.97)	11.92	(17.74)	5.028	(7.482)
1 1/4	(32)	40	1.660	(42.16)	.140	(3.56)	.647	(.963)	.400	(.595)	8	(200)	40	8.625	(219.08)	.322	(8.18)	21.60	(32.14)	5.280	(7.858)
		80			.191	(4.85)	.555	(.826)	.527	(.784)			80			.500	(12.70)	19.80	(29.47)	8.023	(11.940)
1 1/2	(40)	40	1.900	(48.26)	.145	(3.68)	.882	(1.313)	.479	(.713)	10	(250)	40	10.75	(273.05)	.365	(9.27)	34.10	(50.75)	7.505	(11.169)
		80			.200	(5.08)	.765	(1.138)	.639	(.951)			80			.593	(15.06)	31.10	(46.28)	11.894	(17.700)
2	(50)	40	2.375	(60.33)	.154	(3.91)	1.452	(2.161)	.643	(.957)	12	(300)	40	12.75	(323.85)	.406	(10.31)	48.50	(72.18)	10.023	(14.916)
		80			.218	(5.54)	1.279	(1.903)	.884	(1.316)			80			.687	(17.45)	44.00	(65.48)	16.365	(24.354)

SPACING OF HANGERS FOR PVC PLASTIC PIPE

Schedule 40 Pipe Size	Support Spacing																			
	Temperature																			
	20°F (-6.6°C)		40°F (4.4°C)		60°F (15.6°C)		80°F (26.7°C)		100°F (37.8°C)		110°F (43.3°C)		120°F (48.9°C)		130°F (54.4°C)		140°F (60°C)		150°F (65.6°C)	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
1/2 - 3/4 (15-20)	5.00 (1.52)	4.75 (1.45)	4.50 (1.37)	4.25 (1.30)	4.00 (1.22)	3.75 (1.14)	3.33 (1.01)	3.00 (.91)	2.66 (.81)	2.00 (.61)										
1 - 1 1/4 (25-32)	5.50 (1.68)	5.25 (1.60)	5.00 (1.52)	4.66 (1.42)	4.33 (1.32)	4.00 (1.22)	3.75 (1.14)	3.33 (1.01)	2.80 (.85)	2.25 (.69)										
1 1/2 - 2 (40-50)	5.80 (1.77)	5.50 (1.68)	5.25 (1.60)	5.00 (1.52)	4.66 (1.42)	4.33 (1.32)	3.80 (1.16)	3.50 (1.07)	3.00 (.91)	2.50 (.76)										
2 1/2 (65)	6.66 (2.03)	6.33 (1.93)	6.00 (1.83)	5.50 (1.68)	5.25 (1.60)	4.80 (1.46)	4.50 (1.37)	4.00 (1.22)	3.50 (1.07)	2.80 (.85)										
3 (80)	6.80 (2.07)	6.50 (1.98)	6.25 (1.91)	5.80 (1.77)	5.50 (1.68)	5.25 (1.60)	4.75 (1.45)	4.25 (1.30)	3.66 (1.12)	3.00 (.91)										
4 (100)	7.33 (2.23)	7.00 (2.13)	6.50 (1.98)	6.25 (1.91)	5.80 (1.77)	5.50 (1.68)	5.00 (1.52)	4.50 (1.37)	3.80 (1.16)	3.25 (.99)										
6 (150)	7.80 (2.38)	7.50 (2.29)	7.00 (2.13)	6.80 (2.07)	6.33 (1.93)	5.80 (1.77)	5.33 (1.62)	4.80 (1.46)	4.25 (1.30)	3.50 (1.07)										

Schedule 80 Pipe Size	Support Spacing																			
	Temperature																			
	20°F (-6.6°C)		40°F (4.4°C)		60°F (15.6°C)		80°F (26.7°C)		100°F (37.8°C)		110°F (43.3°C)		120°F (48.9°C)		130°F (54.4°C)		140°F (60°C)		150°F (65.6°C)	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
1/2 - 3/4 (15-20)	5.75 (1.75)	5.50 (1.68)	5.25 (1.60)	4.80 (1.46)	4.50 (1.37)	4.33 (1.32)	3.80 (1.16)	3.50 (1.07)	3.00 (.91)	2.50 (.76)										
1 (25)	6.33 (1.93)	6.00 (1.83)	5.75 (1.75)	5.33 (1.62)	5.00 (1.52)	4.60 (1.40)	4.33 (1.32)	3.80 (1.16)	3.33 (1.01)	2.75 (.84)										
1 1/4 - 1 1/2 (32-40)	6.66 (2.03)	6.33 (1.93)	6.00 (1.83)	5.66 (1.73)	5.25 (1.60)	4.80 (1.46)	4.50 (1.37)	4.00 (1.22)	3.50 (1.07)	3.00 (.91)										
2 (50)	7.00 (2.13)	6.50 (1.98)	6.25 (1.91)	6.00 (1.83)	5.50 (1.68)	5.12 (1.56)	4.75 (1.45)	4.33 (1.32)	3.66 (1.12)	3.12 (.95)										
2 1/2 (65)	7.80 (2.38)	7.50 (2.29)	7.00 (2.13)	6.66 (2.03)	6.33 (1.93)	5.80 (1.77)	5.33 (1.62)	4.75 (1.45)	4.25 (1.30)	3.33 (1.01)										
3 (80)	8.20 (2.50)	7.75 (2.36)	7.33 (2.23)	7.00 (2.13)	6.50 (1.98)	6.00 (1.83)	5.50 (1.68)	5.00 (1.52)	4.33 (1.32)	3.50 (1.07)										
4 (100)	8.66 (2.64)	8.25 (2.51)	7.80 (2.38)	7.33 (2.23)	6.80 (2.07)	6.33 (1.93)	5.80 (1.77)	5.25 (1.60)	4.66 (1.42)	3.75 (1.14)										
6 (150)	9.80 (2.99)	9.33 (2.84)	8.80 (2.68)	8.33 (2.54)	7.80 (2.38)	7.33 (2.23)	6.50 (1.98)	6.00 (1.83)	5.12 (1.56)	4.25 (1.30)										

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

TECHNICAL DATA



CONDUIT DATA

ELECTRICAL METALLIC TUBING DATA

Nominal Conduit Size	O.D. Conduit	Weight Conduit W/C Plg.		Approx. Max. Weight Conduit And Conductor	
				Not Lead Covered	
		lbs./ft	kg/m	lbs./ft	kg/m
1/2 (15)	.706 (17.93)	.29 (0.43)	.54 (0.80)		
3/4 (20)	.922 (23.42)	.45 (0.67)	1.16 (1.73)		
1 (25)	1.163 (29.54)	.65 (0.97)	1.83 (2.72)		
1 1/4 (32)	1.510 (38.35)	.96 (1.43)	2.96 (4.40)		
1 1/2 (40)	1.740 (44.20)	1.11 (1.65)	3.68 (5.48)		
2 (50)	2.197 (55.80)	1.41 (2.10)	4.45 (6.62)		
2 1/2 (65)	2.875 (73.03)	2.15 (3.20)	6.41 (9.54)		
3 (80)	3.500 (88.90)	2.60 (3.87)	9.30 (13.84)		
3 1/2 (90)	4.000 (101.60)	3.25 (4.84)	12.15 (18.08)		
4 (100)	4.500 (114.30)	3.90 (5.80)	15.40 (22.92)		

Note: 2 1/2" through 4" EMT is the same as steel rigid conduit

STEEL RIGID CONDUIT DATA

Nominal Conduit Size	O.D. Conduit	O.D. Coupling		Weight Conduit W/C Plg.		Approx. Max. Weight Conduit And Conductor			
						Lead Covered		Not Lead Covered	
						lbs./ft	kg/m	lbs./ft	kg/m
1/2 (15)	.840 (21.34)	1.010 (25.65)	.80 (1.19)	1.17 (1.74)	1.04 (1.55)				
3/4 (20)	1.050 (26.67)	1.250 (31.75)	1.09 (1.62)	1.75 (2.60)	1.40 (2.08)				
1 (25)	1.315 (33.40)	1.525 (38.74)	1.65 (2.46)	2.62 (3.90)	2.35 (3.50)				
1 1/4 (32)	1.660 (42.16)	1.869 (47.47)	2.15 (3.20)	4.31 (6.41)	3.58 (5.33)				
1 1/2 (40)	1.900 (48.26)	2.155 (54.74)	2.58 (3.84)	5.89 (8.77)	4.55 (6.77)				
2 (50)	2.375 (60.33)	2.650 (67.31)	3.52 (5.24)	8.53 (12.69)	7.21 (10.73)				
2 1/2 (65)	2.875 (73.03)	3.250 (82.55)	5.67 (8.44)	11.51 (17.13)	10.22 (15.21)				
3 (80)	3.500 (88.90)	3.870 (98.30)	7.14 (10.63)	16.51 (24.57)	14.51 (21.59)				
3 1/2 (90)	4.000 (101.60)	4.500 (114.30)	8.60 (12.80)	19.05 (28.35)	17.49 (26.03)				
4 (100)	4.500 (114.30)	4.875 (123.83)	10.00 (14.88)	24.75 (36.83)	21.48 (31.97)				
5 (125)	5.563 (141.30)	6.000 (152.40)	13.20 (19.64)	35.87 (53.38)	30.83 (45.88)				
6 (150)	6.625 (168.28)	7.200 (182.88)	17.85 (26.56)	50.69 (75.44)	43.43 (64.63)				

INTERMEDIATE METAL CONDUIT DATA

Nominal Conduit Size	O.D. Conduit	O.D. Coupling		Weight Conduit W/C Plg.	Approx. Max. Weight Conduit And Conductor			
					Lead Covered		Not Lead Covered	
					lbs./ft	kg/m	lbs./ft	kg/m
1/2 (15)	.815 (20.70)	1.010 (25.65)	.60 (0.89)	.97 (1.44)	.84 (1.25)			
3/4 (20)	1.029 (26.14)	1.250 (31.75)	.82 (1.22)	1.48 (2.20)	1.13 (1.68)			
1 (25)	1.290 (32.77)	1.525 (38.74)	1.16 (1.73)	2.13 (3.17)	1.86 (2.77)			
1 1/4 (32)	1.638 (41.61)	1.869 (47.47)	1.50 (2.23)	3.66 (5.45)	2.93 (4.36)			
1 1/2 (40)	1.883 (47.83)	2.155 (54.74)	1.82 (2.71)	5.13 (7.63)	3.79 (5.64)			
2 (50)	2.360 (59.94)	2.650 (67.31)	2.42 (3.60)	7.43 (11.06)	6.11 (9.09)			
2 1/2 (65)	2.857 (72.57)	3.250 (82.55)	4.28 (6.37)	10.12 (15.06)	8.83 (13.14)			
3 (80)	3.476 (88.29)	3.870 (98.30)	5.26 (7.83)	14.63 (21.77)	12.63 (18.80)			
3 1/2 (90)	3.971 (100.86)	4.500 (114.30)	6.12 (9.11)	16.57 (24.66)	15.01 (22.34)			
4 (100)	4.466 (113.44)	4.875 (123.83)	6.82 (10.15)	21.57 (32.10)	18.30 (27.23)			

THREADED ROD DATA

Nominal Rod Dia.	Root Area Thread		Max. Rec. Load			
			650°F (343°C)		750°F (399°C)	
	in. ²	mm ²	lbs.	kN	lbs.	kN
1/4	.027	(17.42)	240	(1.07)	210	(0.93)
3/8	.068	(43.87)	730	(3.25)	572	(2.54)
1/2	.126	(81.29)	1350	(6.01)	1057	(4.70)
5/8	.202	(130.32)	2160	(9.61)	1692	(7.53)
3/4	.302	(194.84)	3230	(14.37)	2530	(11.25)
7/8	.419	(270.32)	4480	(19.93)	3508	(15.60)
1	.552	(356.13)	5900	(26.24)	4620	(20.55)
1 1/8	.693	(447.10)	7450	(33.14)	5830	(25.93)
1 1/4	.889	(573.55)	9500	(42.26)	7440	(33.09)
1 1/2	1.293	(834.19)	13800	(61.39)	10807	(48.07)
1 3/4	1.744	(1125.16)	18600	(82.74)	14566	(64.79)
2	2.300	(1483.87)	24600	(109.43)	19625	(87.30)
2 1/4	3.023	(1950.32)	32300	(143.68)	25295	(112.52)
2 1/2	3.719	(2399.35)	39800	(177.04)	31169	(138.65)

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

TECHNICAL DATA

CAST IRON PIPE DATA

SERVICE WEIGHT CAST IRON SOIL PIPE DATA (BELL & SPIGOT TYPE)

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight			
						Pipe		Water	
						lbs./ft	kg/m	lbs./ft	kg/m
2	(50)	2.25	(57.15)	.17	(4.32)	4.00	(5.95)	1.24	(1.85)
3	(80)	3.25	(82.55)	.17	(4.32)	6.00	(8.93)	2.88	(4.29)
4	(100)	4.25	(107.95)	.18	(4.57)	8.00	(11.91)	5.15	(7.66)
5	(125)	5.25	(133.35)	.18	(4.57)	10.40	(15.48)	8.14	(12.11)
6	(150)	6.25	(158.75)	.18	(4.57)	13.00	(19.35)	11.80	(17.57)
8	(200)	8.38	(212.85)	.23	(5.84)	20.00	(29.76)	21.34	(31.76)
10	(250)	10.50	(266.70)	.28	(7.11)	29.00	(43.16)	33.62	(50.03)
12	(300)	12.50	(317.50)	.28	(7.11)	38.00	(56.55)	48.51	(72.18)
15	(380)	15.62	(396.75)	.31	(7.87)	51.00	(75.90)	76.55	(113.92)

EXTRA WEIGHT CAST IRON SOIL PIPE DATA (BELL & SPIGOT TYPE)

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight			
						Pipe		Water	
						lbs./ft	kg/m	lbs./ft	kg/m
2	(50)	2.38	(60.45)	.190	(4.83)	5.00	(7.44)	1.36	(2.03)
3	(80)	3.50	(88.90)	.250	(6.35)	9.00	(13.39)	3.06	(4.56)
4	(100)	4.50	(114.30)	.250	(6.35)	12.00	(17.86)	5.44	(8.10)
5	(125)	5.50	(139.70)	.250	(6.35)	15.00	(22.32)	8.51	(12.66)
6	(150)	6.50	(165.10)	.250	(6.35)	19.00	(28.28)	12.25	(18.23)
8	(200)	8.62	(218.95)	.310	(7.87)	30.00	(44.64)	21.78	(32.40)
10	(250)	10.75	(273.05)	.375	(9.53)	43.00	(63.99)	34.02	(50.63)
12	(300)	12.75	(323.85)	.375	(9.53)	54.00	(80.36)	48.99	(72.91)
15	(380)	15.88	(403.35)	.440	(11.18)	75.00	(111.61)	76.55	(113.92)

NO HUB CAST IRON SOIL PIPE DATA

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight			
						Pipe		Water	
						lbs./ft	kg/m	lbs./ft	kg/m
1½	(40)	1.90	(48.26)	.16	(4.06)	2.70	(4.02)	0.85	(1.26)
2	(50)	2.35	(59.69)	.16	(4.06)	3.60	(5.36)	1.40	(2.09)
3	(80)	3.35	(85.09)	.16	(4.06)	5.20	(7.74)	3.12	(4.65)
4	(100)	4.38	(111.25)	.19	(4.83)	7.40	(11.01)	5.44	(8.10)
5	(125)	5.30	(134.62)	.19	(4.83)	9.60	(14.29)	8.24	(12.26)
6	(150)	6.30	(160.02)	.19	(4.83)	11.00	(16.37)	11.92	(17.74)
8	(200)	8.38	(212.85)	.23	(5.84)	18.00	(26.79)	21.34	(31.76)
10	(250)	10.50	(266.70)	.28	(7.11)	26.20	(38.99)	33.62	(50.03)
12	(300)	12.50	(317.50)	.28	(7.11)	35.50	(52.83)	48.51	(72.18)

TECHNICAL DATA



CONVERSION FACTORS FOR UNITS OF MEASUREMENT

To Convert From	To	Multiply By
Length		
Inch	Millimeter	25.4
Feet	Meter	0.3048
Yard	Meter	0.9144
Mile	Kilometer	1.6093
Area		
Square Inch	Square Millimeter	645.16
Square Feet	Square Meter	0.0929
Square Yard	Square Meter	0.8361
Square Mile	Square Kilometer	2.5899
Volume		
Gallon	Liter	3.7854
Quart	Liter	0.9463
Cubic Inch	Cubic Millimeter	16,387.06
Cubic Feet	Cubic Meter	0.0283
Cubic Yard	Cubic Meter	0.76455
Mass		
Ounce	Gram	28.3495
Pound	Kilogram	0.45359
Short Ton	Kilogram	907.185
Force		
Ounce-Force	Newton	0.278014
Pound-Force	Newton	4.44822
Pressure		
Pound - Force / Square Inch	Kilopascal	6.894757
Foot of Water (39.2°F)	Kilopascal	2.98898
Inch of Mercury (32°F)	Kilopascal	3.38638
Bending Moment		
Pound - Force - Inch	Newton - Meter	0.112985
Pound - Force - Foot	Newton - Meter	1.355818
Energy, Work, & Heat		
Foot - Pound - Force	Joule	1.355818
British Thermal Unit (BTU)	Joule	1,055.056
Calorie	Joule	4.1868
Kilowatt Hour	Joule	3,600,000
Power		
Foot - Pound - Force / Second	Watt	1.355818
British Thermal Unit / Hour	Watt	0.29307
Horsepower	Kilowatt	0.7457
Temperature		
Degree Fahrenheit	Degree Celsius	$\frac{(F^{\circ}-32)}{1.8}$

To Convert From	To	Multiply By
Length		
Millimeter	Inch	0.03937
Meter	Feet	3.28084
Meter	Yard	1.09361
Kilometer	Mile	0.62137
Area		
Square Millimeter	Square Inch	0.001550
Square Meter	Square Feet	10.7639
Square Meter	Square Yard	1.19599
Square Kilometer	Square Mile	0.3861
Volume		
Liter	Gallon	0.26417
Liter	Quart	1.05669
Cubic Millimeter	Cubic Inch	0.000061
Cubic Meter	Cubic Feet	35.31466
Cubic Meter	Cubic Yard	1.30795
Mass		
Gram	Ounce	0.035274
Kilogram	Pound	2.20462
Kilogram	Short Ton	0.0011
Force		
Newton	Ounce-Force	3.59694
Newton	Pound-Force	0.22481
Pressure		
Kilopascal	Pound - Force / Square Inch	0.145038
Kilopascal	Foot of Water (39.2°F)	0.334562
Kilopascal	Inch of Mercury (32°F)	0.295301
Bending Moment		
Newton - Meter	Pound - Force - Inch	8.85073
Newton - Meter	Pound - Force - Foot	0.73756
Energy, Work, & Heat		
Joule	Foot - Pound - Force	0.73756
Joule	British Thermal Unit (BTU)	0.000948
Joule	Calorie	0.23884
Joule	Kilowatt Hour	2.78e-7
Power		
Watt	Foot - Pound - Force / Second	0.73756
Watt	British Thermal Unit / Hour	3.41214
Kilowatt	Horsepower	1.341022
Temperature		
Degree Celsius	Degree Fahrenheit	1.8°C + 32

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