

# Strut Products & Accessories

Catalog No. 794



*"The Complete Line of Strut Products & Accessories"*

**PHD Manufacturing, Inc.**



44018 Columbiana-Waterford Road  
Columbiana, Ohio 44408

Phone: (800) 321-2736 • (330) 482-9256  
Fax: (330) 482-2763 • [www.phd-mfg.com](http://www.phd-mfg.com)

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 31<sup>st</sup> 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.

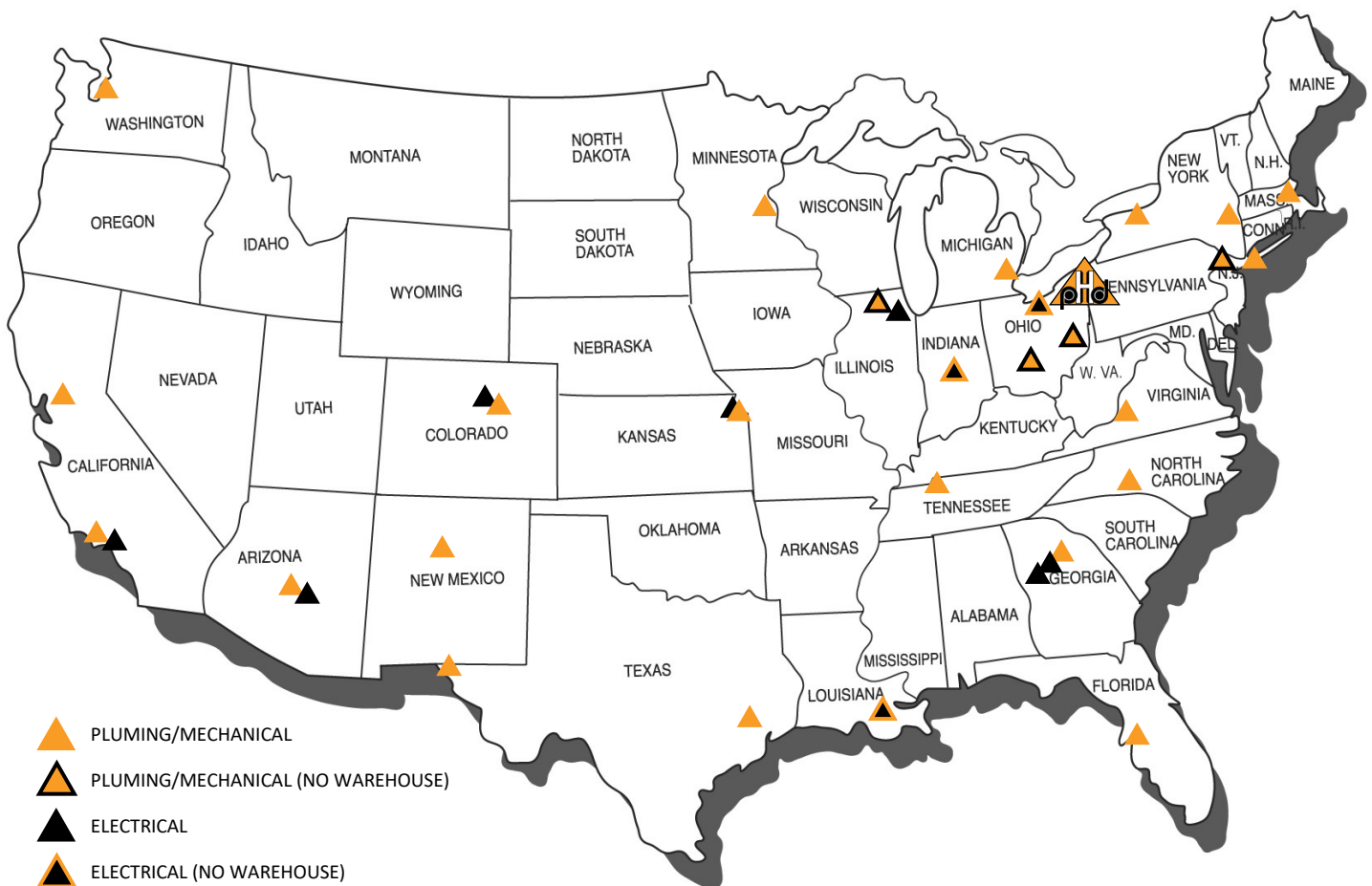
# INTRODUCTION



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.



## **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



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1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>"  
12 Ga. Channel  
Page 30 - 31



**Fig. 1101 - 1142**  
1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>"  
14 Ga. Channel  
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**Fig. 1601 - 1642**  
1<sup>5</sup>/<sub>8</sub>" x 2<sup>7</sup>/<sub>16</sub>"  
12 Ga. Channel  
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**Fig. 1201 - 1242**  
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12 Ga. Channel  
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**Fig. 1701 - 1742**  
1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>16</sub>"  
12 Ga. Channel  
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**Fig. 1301 - 1342**  
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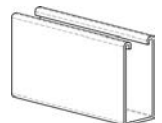
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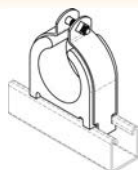


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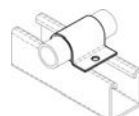
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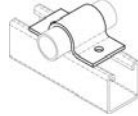
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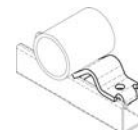
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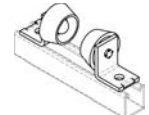
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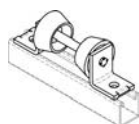


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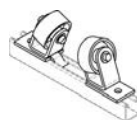
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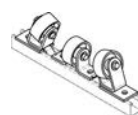
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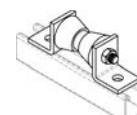
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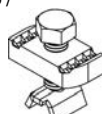
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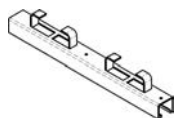
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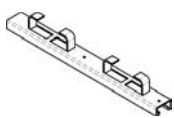
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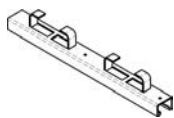
## CONCRETE INSERT



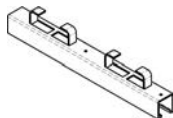
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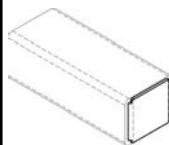


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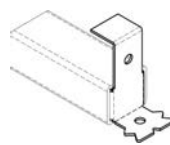


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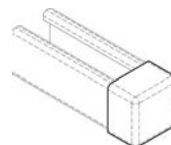
## END CAPS & CLOSURES



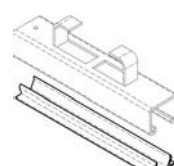
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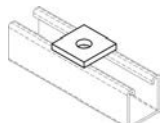


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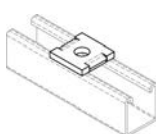


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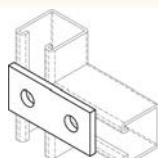
## FLAT PLATE FITTINGS



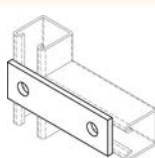
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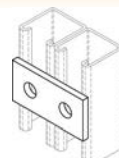
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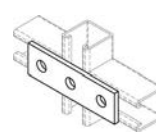
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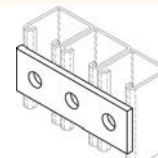
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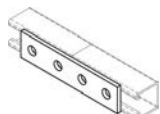
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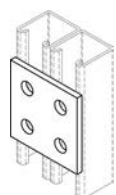
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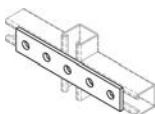
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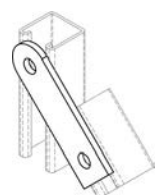
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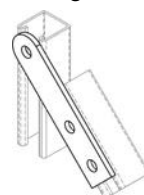
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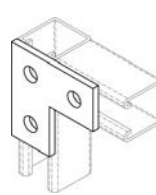
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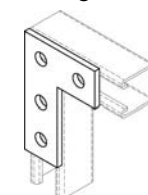
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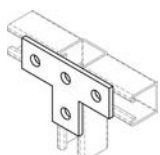
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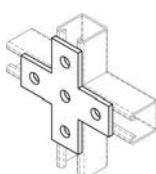
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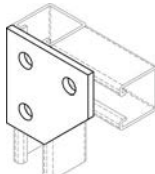
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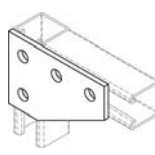
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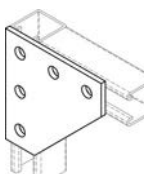
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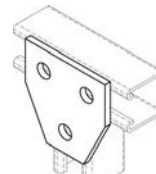
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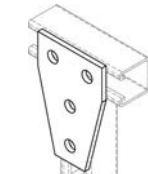
**Fig. 5050**  
4-Hole Corner  
Gusset Plate  
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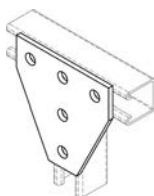
**Fig. 5060**  
5-Hole Corner  
Gusset Plate  
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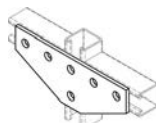
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Gusset Plate  
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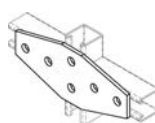
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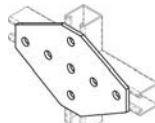
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**Fig. 5090**  
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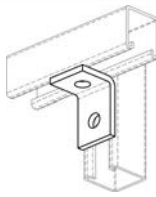
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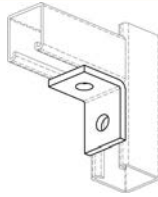
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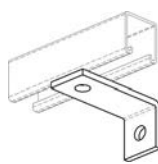
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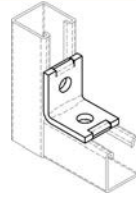
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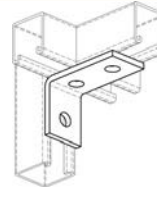
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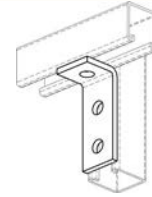
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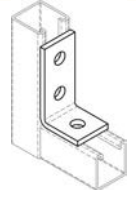
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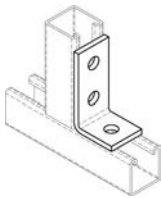
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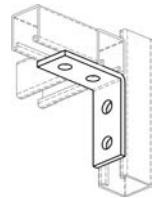
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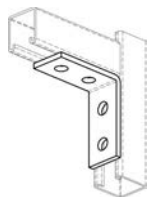
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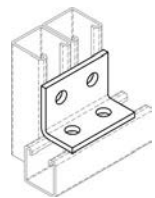
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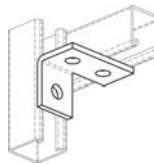
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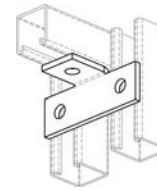
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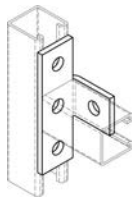
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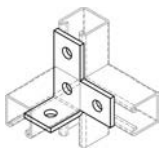
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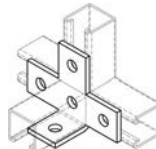
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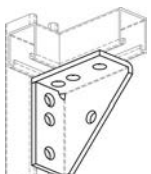
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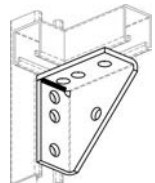
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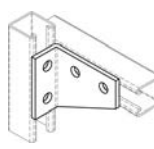
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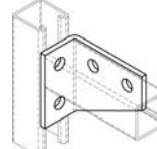
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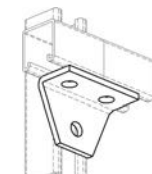
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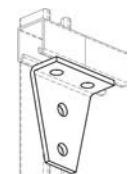
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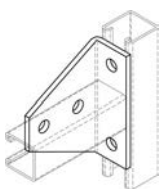
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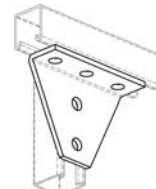
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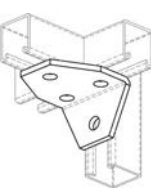
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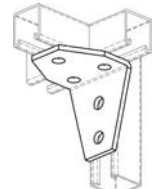
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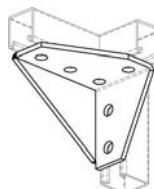
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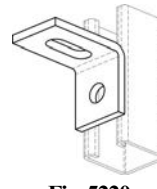
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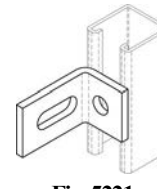
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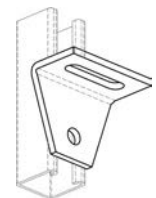
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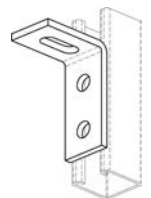
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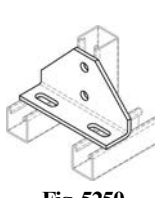
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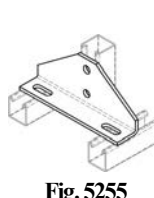
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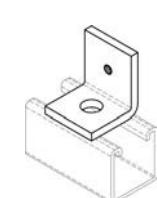
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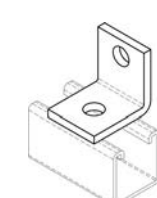
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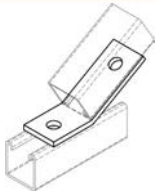
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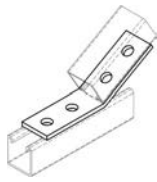
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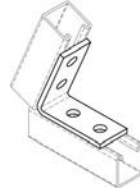
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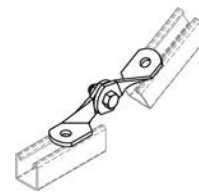
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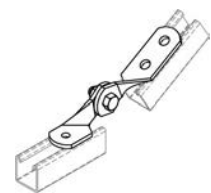
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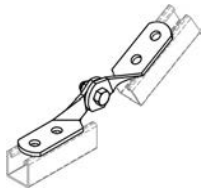
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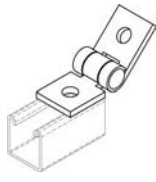
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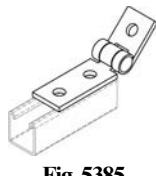
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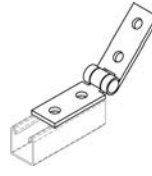
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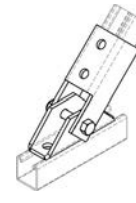
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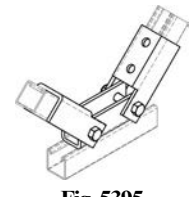
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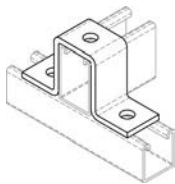


**Fig. 5390**  
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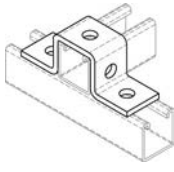


**Fig. 5395**  
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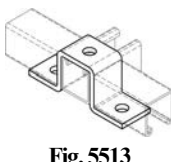
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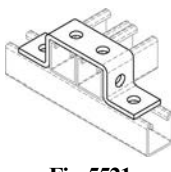
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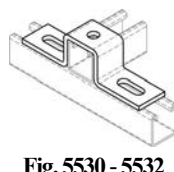
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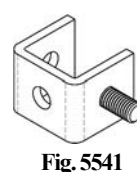
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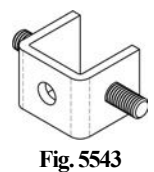
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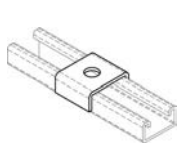
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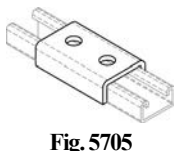
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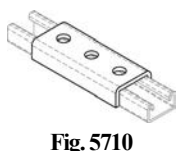
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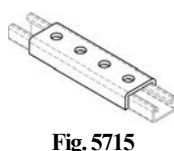
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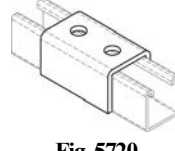
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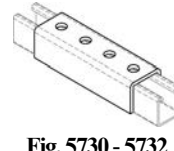
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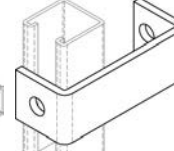
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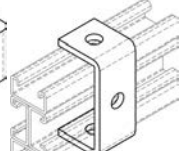
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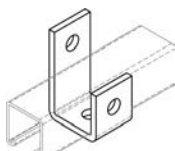
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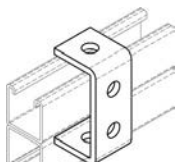
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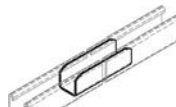
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**Fig. 5775**  
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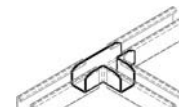
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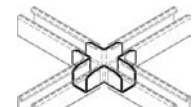
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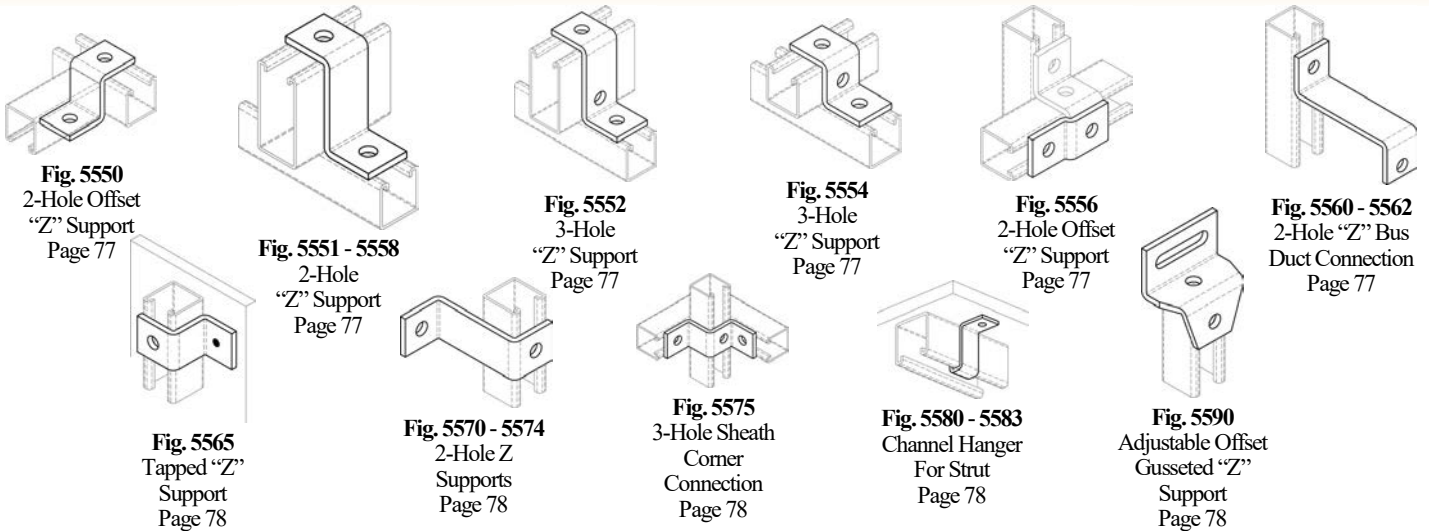
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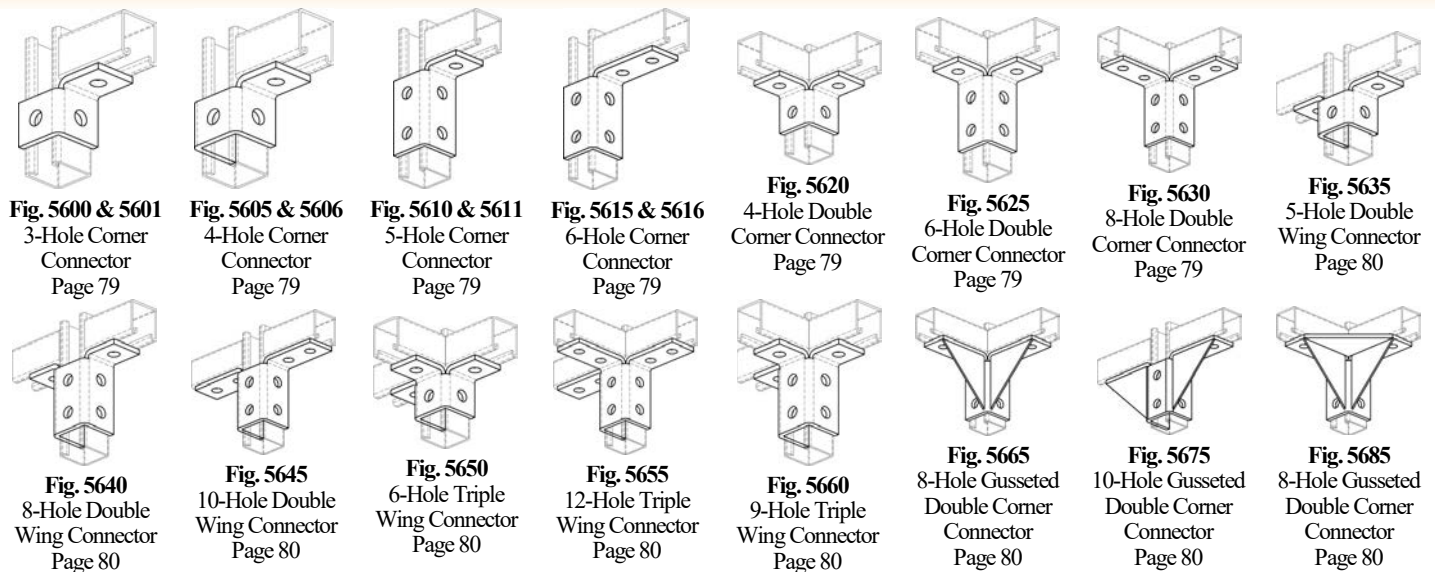
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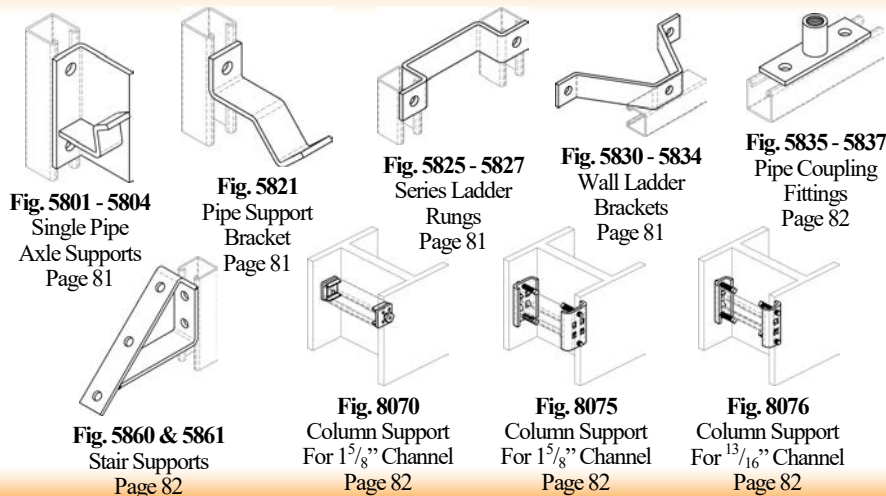
## "Z" SHAPE FITTINGS



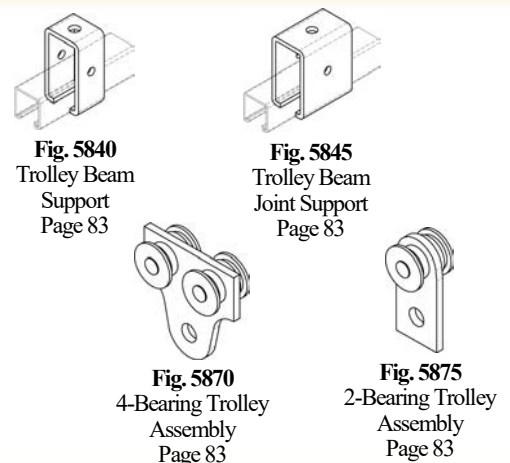
## WING SHAPE FITTINGS



## SPECIALTY FITTINGS

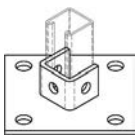


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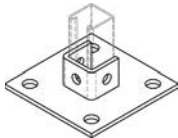


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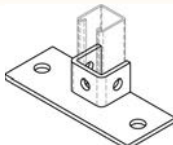
## POST BASES



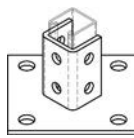
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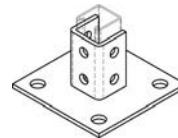
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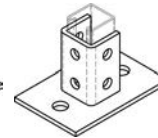
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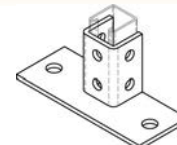
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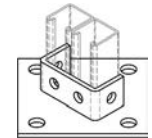
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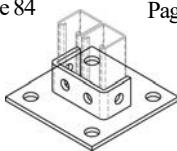
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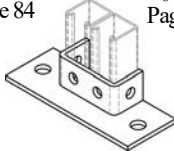
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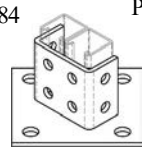
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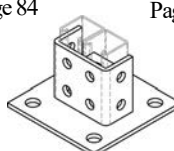
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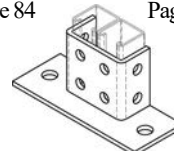
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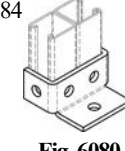
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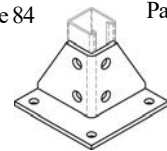
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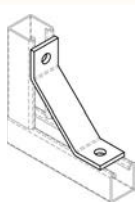


**Fig. 6080**  
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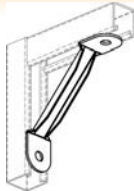


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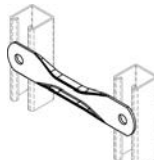
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**Fig. 5420 - 5427**  
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Tubing Knee  
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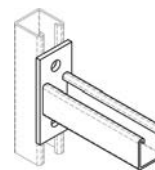
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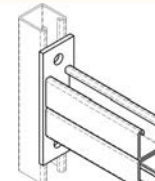
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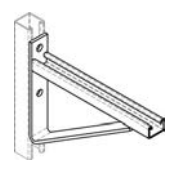
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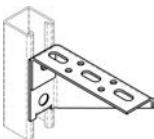
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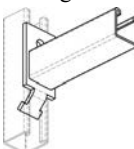
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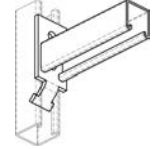
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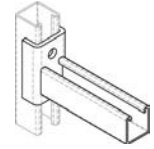
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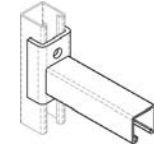
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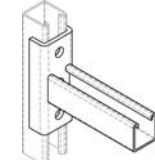
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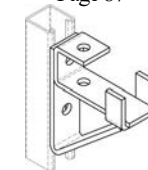
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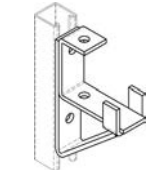
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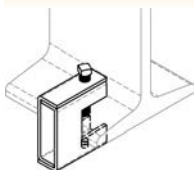


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**Fig. 6310**  
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## BEAM CLAMPS



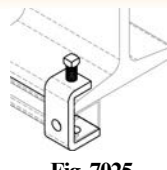
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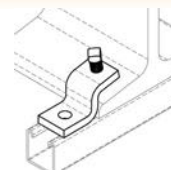
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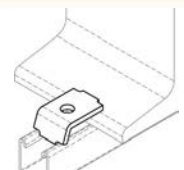
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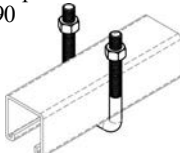
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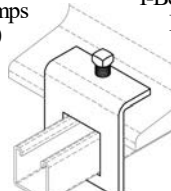
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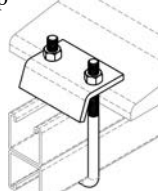
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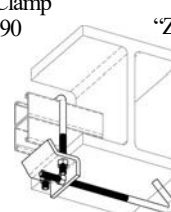
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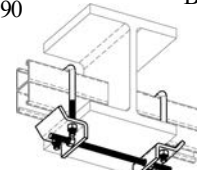
**Fig. 7060**  
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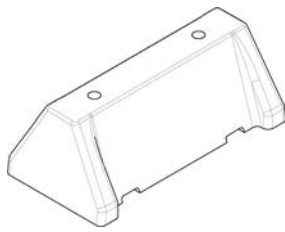
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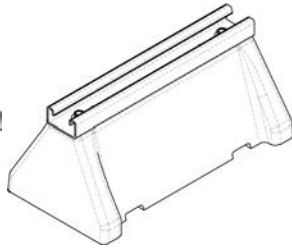
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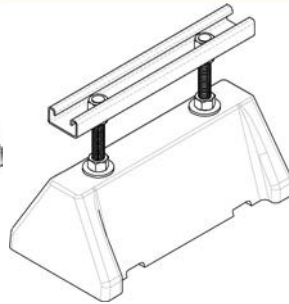
## ROOFTOP SUPPORTS



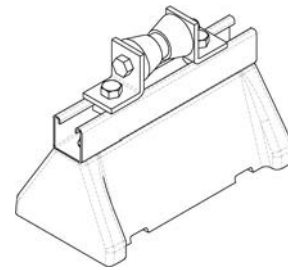
**Fig. RTSB**  
Rooftop Support  
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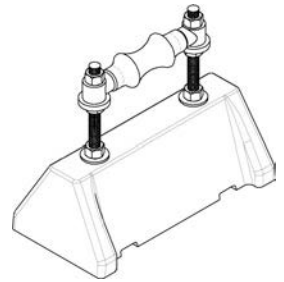
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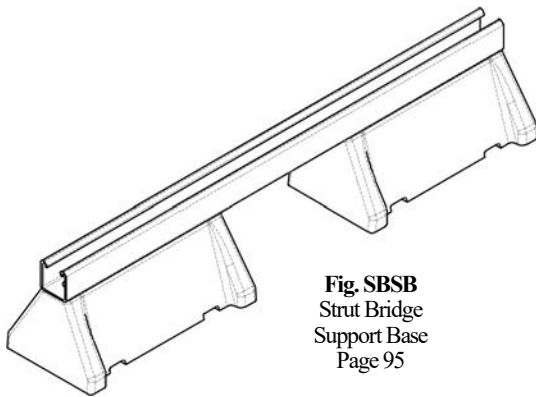
**Fig. SOSB**  
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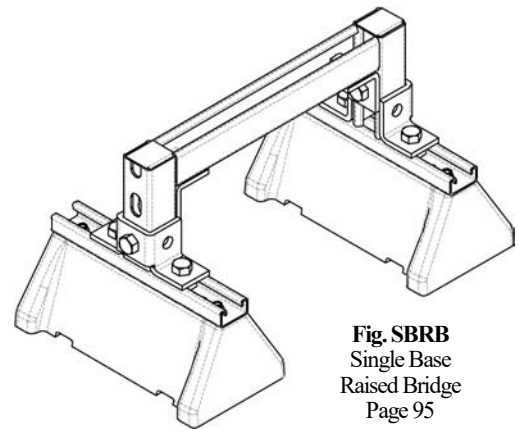
**Fig. RMSB**  
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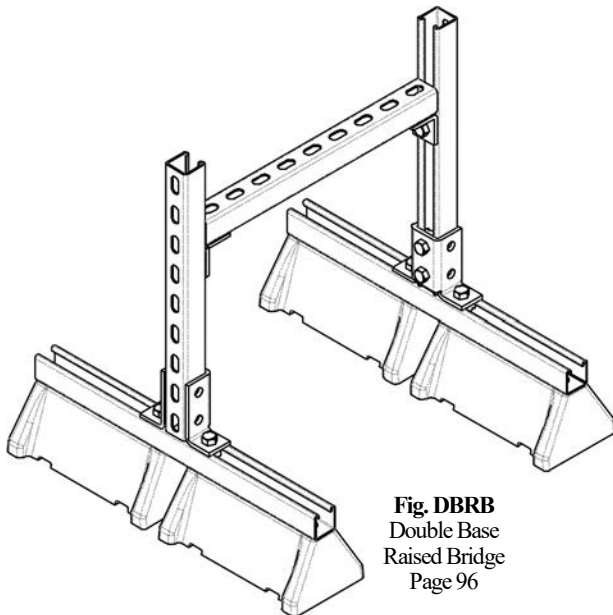
**Fig. ORSB**  
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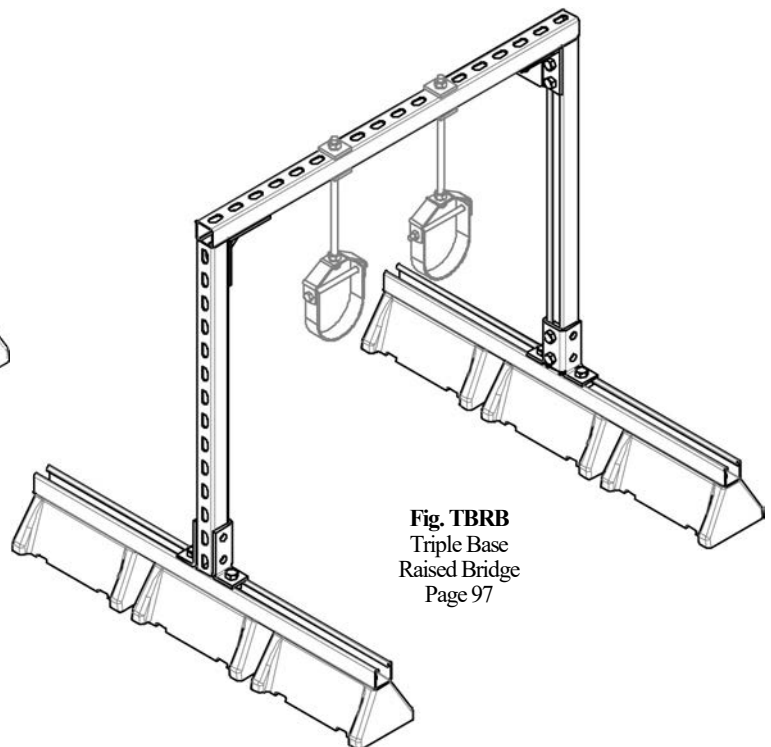
**Fig. SBSB**  
Strut Bridge  
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**Fig. SBRB**  
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**Fig. DBRB**  
Double Base  
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**Fig. TBRB**  
Triple Base  
Raised Bridge  
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# 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            | 27.29                          | Spectrophotometer "L" Value |
| Durometer        | 87.00 A                        | ASTM D2240 (15 sec delay)   |
| Specific Gravity | 1.131                          | ASTM D792-91                |
| Tensile Strength | 706 psi                        | ASTM D412                   |
| Elongation       | 346%                           | ASTM D412                   |
| Tear             | 30.235 kN/m                    | ASTM D624                   |
| Melt Flow Rate   | 14.836 g/10 min<br>230C/5.0 Kg | ASTM D624                   |
| Percent Moisture | 0.064%                         | Moisture Analyzer           |

## 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.

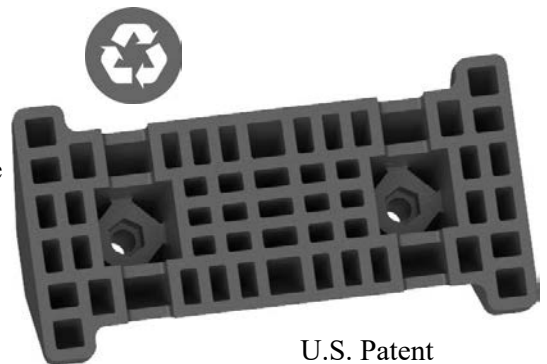
Stainless steel products are available in ASTM A-240, Type 304 or 316 material. Both are low-magnetic and belong to the austenitic stainless steels group, based on alloy content and crystallographic structure. Like carbon steel, stainless steel exhibits increased strength when cold worked.

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% post-consumer American recycled rubber and recycled 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.



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

# 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 <sup>2</sup> /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)<br>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.

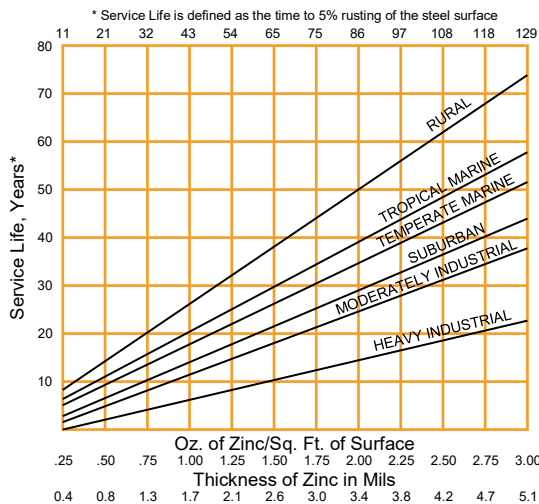
## HOT-DIP GALVANIZED “HDG” (ASTM 123)

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

#### Cathodic End

More Anodic

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.

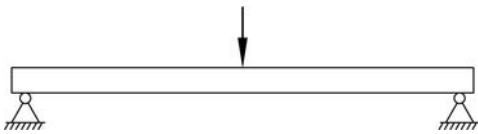
Appropriate beam and column loading information is provided with the dimensional tables accompanying each channel. In addition, the following discussion and tables are designed to assist in the proper selection and use of PHD strut products. Basic engineering information is provided to define the concepts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

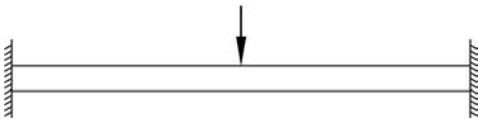
Structural members installed in a horizontal attitude and subject to vertical and/or horizontal loads are known as beams. The method by which a beam is mounted affects its load-carrying capability. Common mounting methods include:

### 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 –



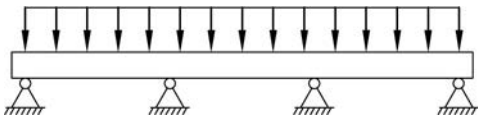
A fixed end beam is supported at both ends in such a way that motion or bending of the beam is restricted. An example of a fixed end beam is a strut welded at both ends to a very rigid structure. The result is a beam capable of carrying greater loads, but subject to large bending moments at the supports.

### 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.

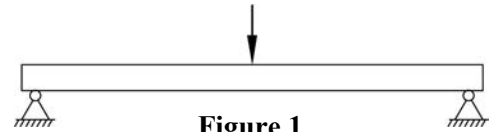


Figure 1

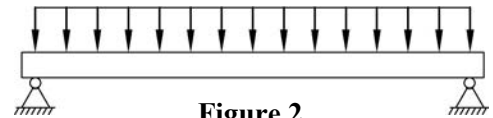
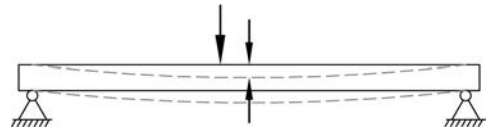


Figure 2

## 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

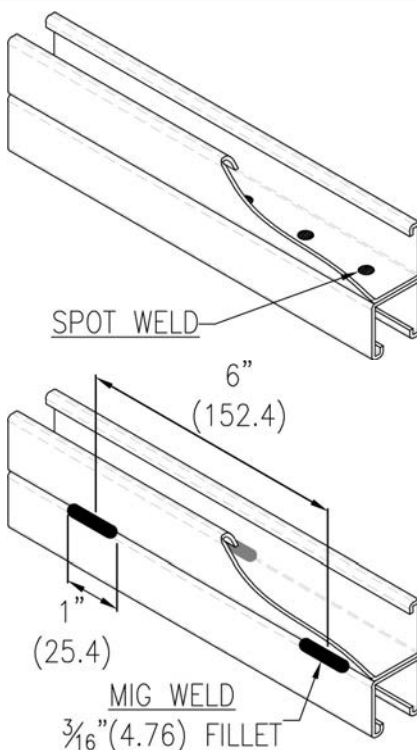
When loads are placed on a beam, the effect is to flex the beam across its unsupported span. The measure of this effect is called the bending moment. Formulas for bending moments created by various load and beam support combinations are given in the beam diagrams & common formulas section.

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.

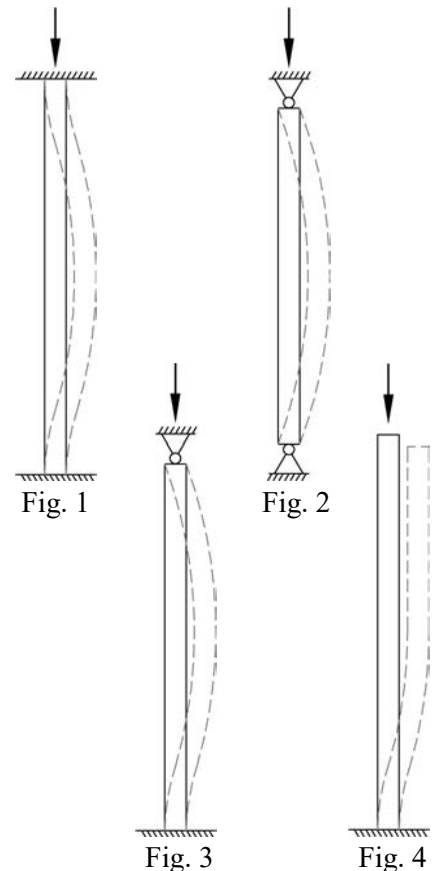
### Pinned Top, Fixed Bottom –

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

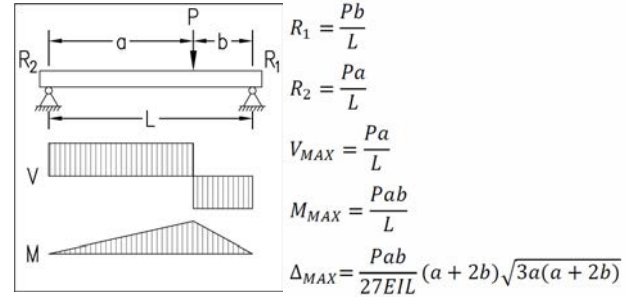
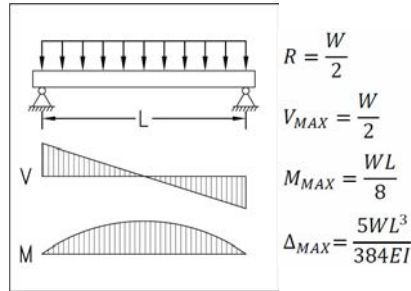
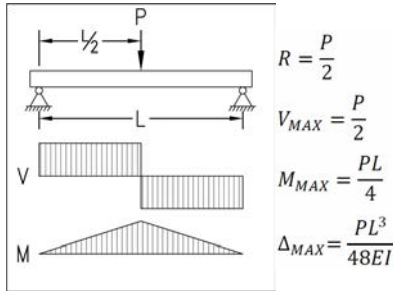
Bolt torque values are given to ensure the proper connection between PHD Metal Framing components. It is important to understand that there is a direct, but not necessarily consistent, relationship between bolt torque and tension in the bolt. Too much tension in the bolt can cause it to break or crush 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.

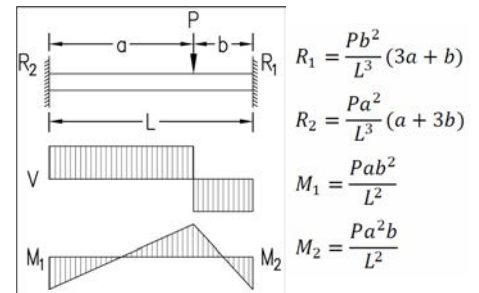
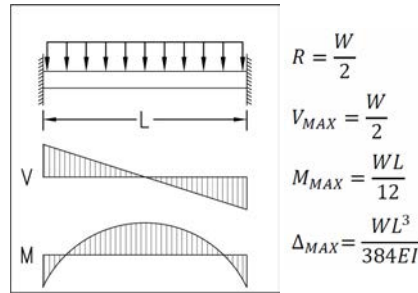
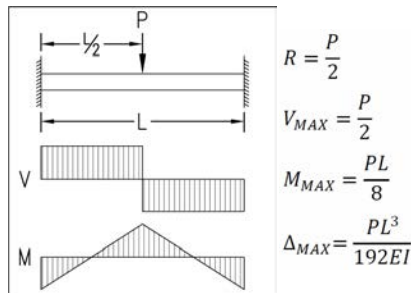
| Recommended Bolt Torque |         |          |         |         |         |         |
|-------------------------|---------|----------|---------|---------|---------|---------|
| Bolt Size               | 1/4"-20 | 5/16"-18 | 3/8"-16 | 1/2"-13 | 5/8"-11 | 3/4"-10 |
| ft-lbs                  | 6    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

## BEAM DIAGRAMS AND COMMON FORMULAS

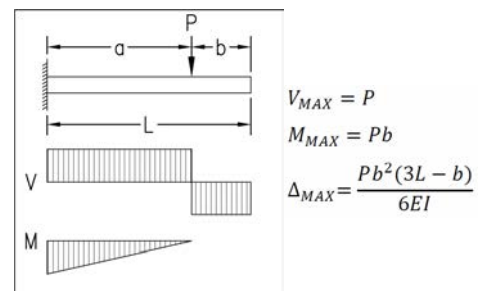
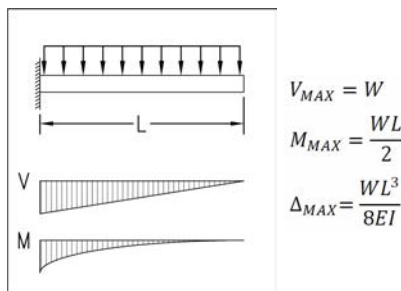
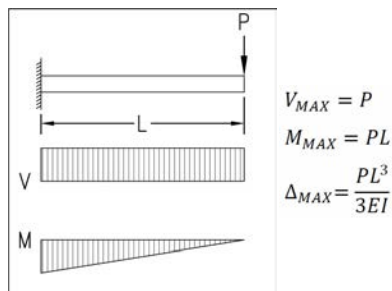
### Simply Supported Beams



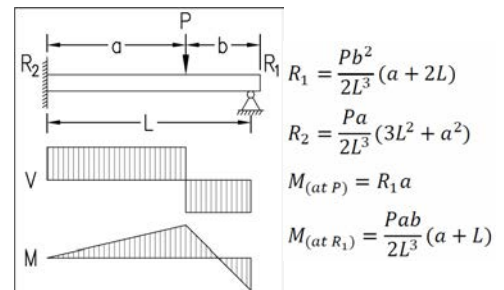
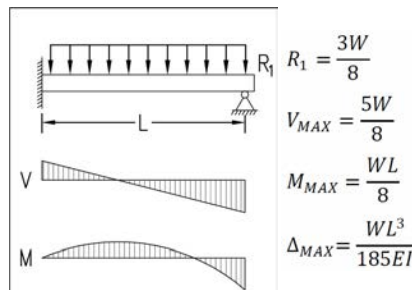
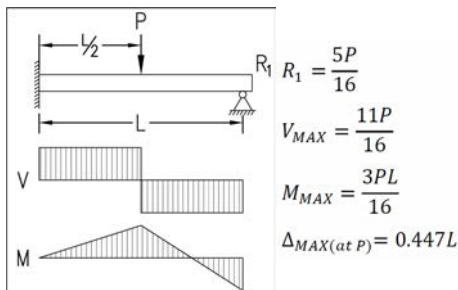
### Fixed End Beams



### Cantilever Beams



### Beams with one end Fixed and one end Simply Supported

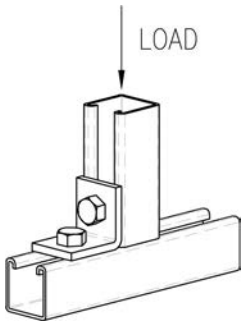
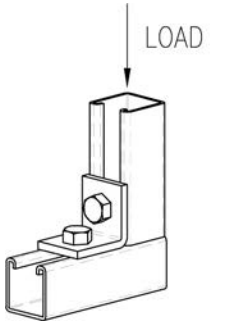
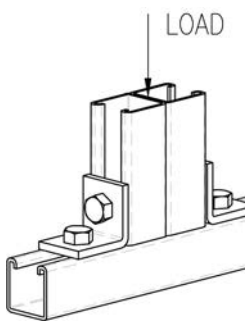


# CHANNEL STRUT TECHNICAL DATA

## 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 |

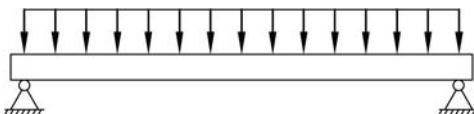
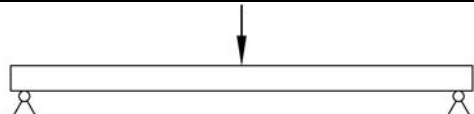
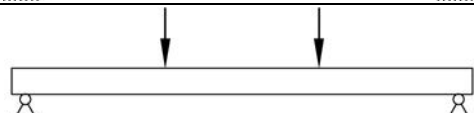
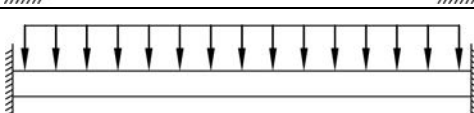
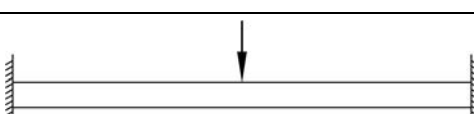
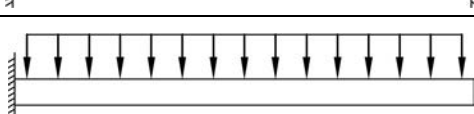
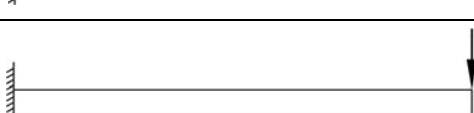
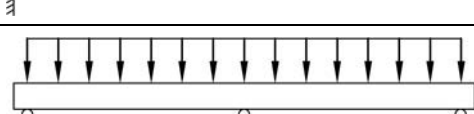
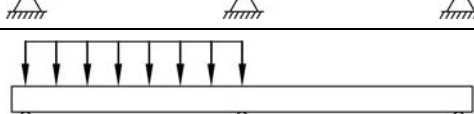
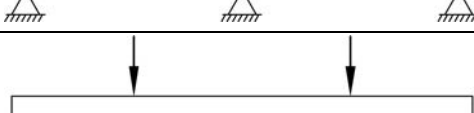
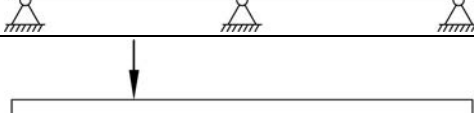
## BEARING LOADS ON CHANNEL

| Channel |  |        |  |        |  |        |
|---------|-------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|--------|
|         | Bearing Length = 1 <sup>5</sup> / <sub>8</sub> (41.3)<br>Maximum Allowable Loads    |        | Bearing Length = 1 <sup>5</sup> / <sub>8</sub> (41.3)<br>Maximum Allowable Loads     |        | Bearing Length = 3 <sup>1</sup> / <sub>4</sub> (82.6)<br>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               |

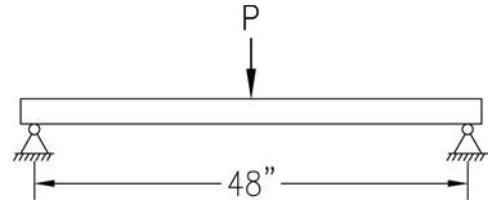
## SAMPLE PROBLEMS

### 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  $.22 \times .80 = .176$ ".

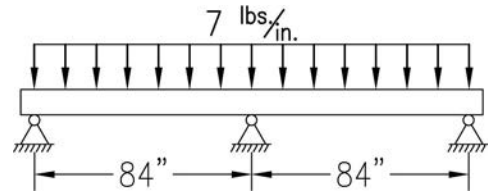


### Problem 2 –

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.



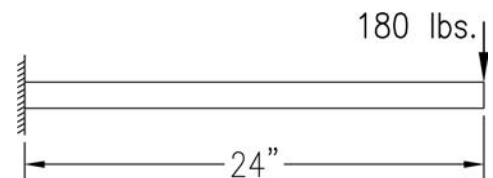
### Problem 3 –

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  $30 \times 10^6$  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  $[180(24)^3] / [3(30 \times 10^6)(.189)] = .146$ ".

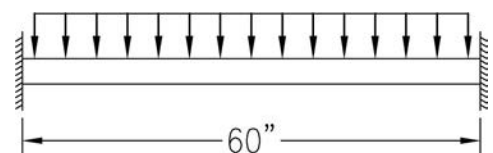


### Problem 4 –

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.

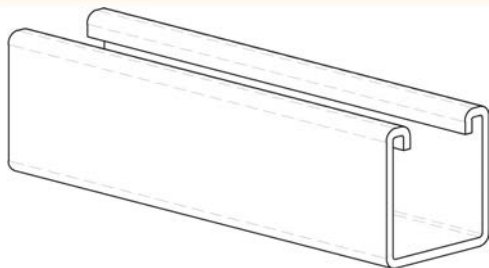
#### Answer –

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

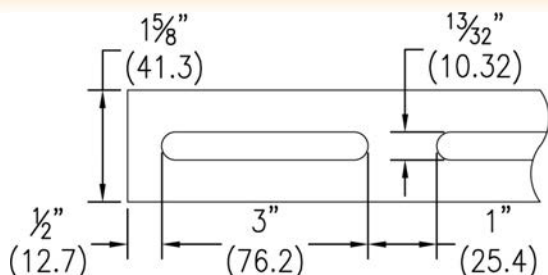
Standard lengths are 10' (3.05m) and 20' (6.09m) with length tolerance of  $\pm 1/8"$  ( $\pm 3.2$ mm). Custom lengths are available upon request.

### Design Load (Steel & Stainless Steel)

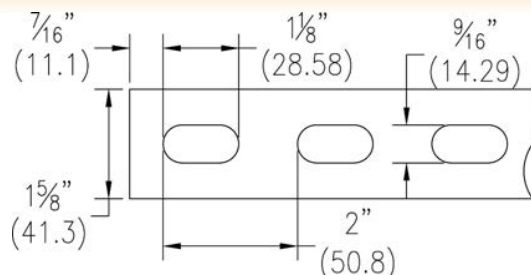
The design loads given for strut beam loads are based on a simple beam condition using an allowable stress of 25,000 psi (172.37mPa). This allowable stress results in a safety factor of 1.68. This is based upon virgin steel minimum yield strength of 33,000 psi (227.53mPa) cold worked during rolling to 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 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>5</sup> / <sub>8</sub>  | (41.28) | 12 Ga.         | 12 Ga.          | 0.105    | (2.67) | 30 - 31         |
| 1101 – 1142   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>5</sup> / <sub>8</sub>  | (41.28) | 14 Ga.         | N/A             | N/A      | N/A    | 32 - 33         |
| 1201 – 1242   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>3</sup> / <sub>16</sub> | (20.64) | 12 Ga.         | N/A             | N/A      | N/A    | 34 - 35         |
| 1301 – 1342   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>3</sup> / <sub>16</sub> | (20.64) | 14 Ga.         | 14 Ga.          | 0.075    | (1.9)  | 36 - 37         |
| 1401 – 1442   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1                              | (25.40) | 12 Ga.         | N/A             | N/A      | N/A    | 38 - 39         |
| 1501 – 1542   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 3 <sup>1</sup> / <sub>4</sub>  | (82.55) | 12 Ga.         | 12 Ga.          | N/A      | N/A    | 40 - 41         |
| 1601 – 1642   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 2 <sup>7</sup> / <sub>16</sub> | (61.91) | 12 Ga.         | 12 Ga.          | N/A      | N/A    | 42 - 43         |
| 1701 – 1742   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>3</sup> / <sub>8</sub>  | (34.93) | 12 Ga.         | N/A             | N/A      | N/A    | 44 - 45         |
| 1801 – 1842   | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>3</sup> / <sub>16</sub> | (20.64) | 16 Ga.         | N/A             | N/A      | N/A    | 46 - 47         |
| 1950          | 1 <sup>7</sup> / <sub>8</sub> | (47.63) | 1 <sup>7</sup> / <sub>8</sub>  | (47.63) | 12 Ga.         | N/A             | N/A      | N/A    | 48 - 49         |
| 1960          | 1 <sup>5</sup> / <sub>8</sub> | (41.28) | 1 <sup>5</sup> / <sub>8</sub>  | (41.28) | 12 Ga.         | N/A             | N/A      | N/A    | 48 - 49         |

## LONG SLOTS

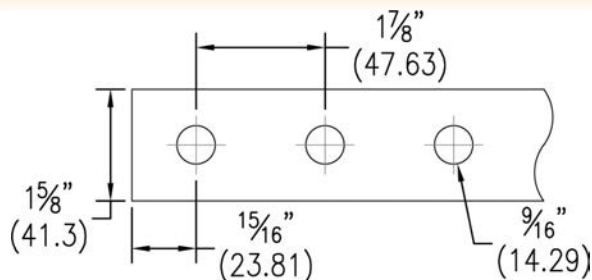


## SLOTS



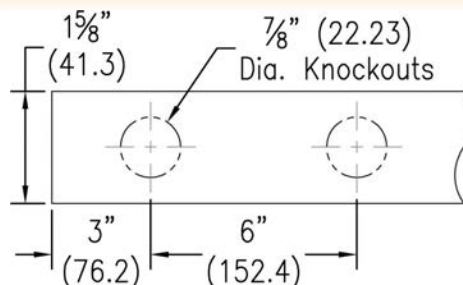
PHD's slotted series of channels offer full flexibility. A variety of pre-punched slot patterns eliminate the need for precise field measuring for hole locations. Slots offer wide adjustments in the alignment and bolt sizing.

## HOLES



A pre-punched  $\frac{9}{16}$ " (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

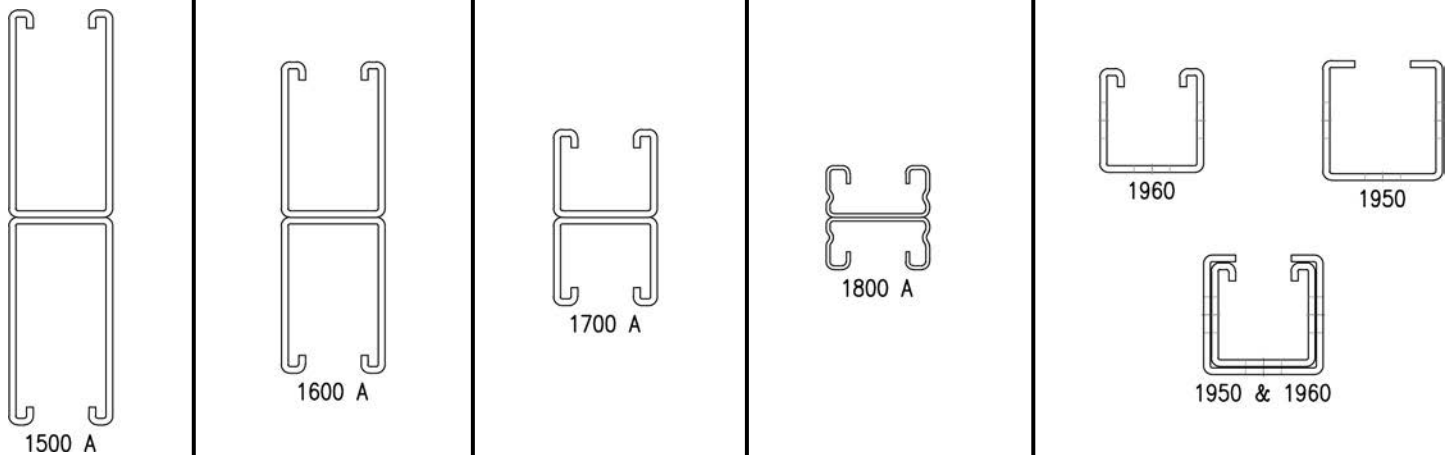
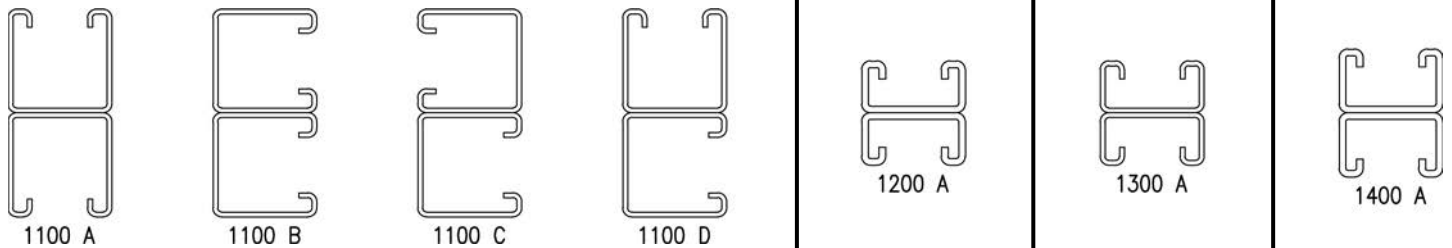
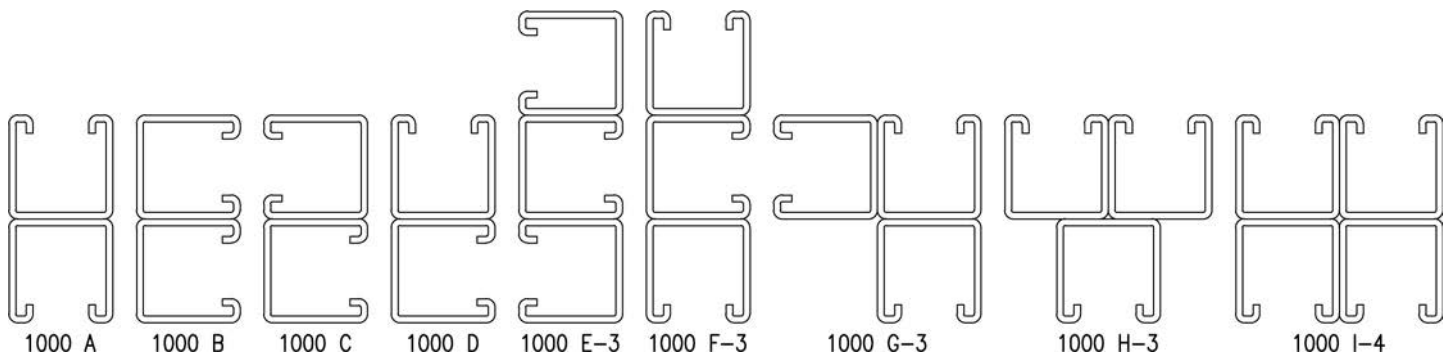
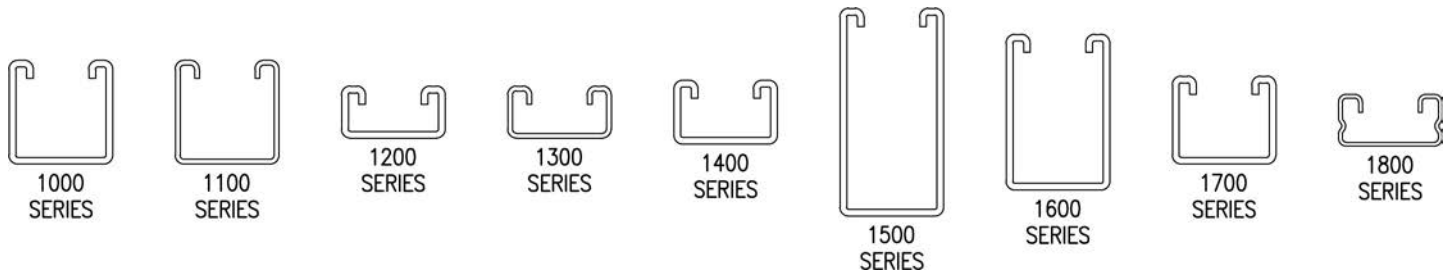


Most PHD channels can be furnished with  $\frac{7}{8}$ " (22.2mm) knockouts on 6" (152mm) centers, allowing for perfect fixture alignment on spans up to 20' (6.09m).

# CHANNEL STRUT



## CHANNEL COMBINATIONS



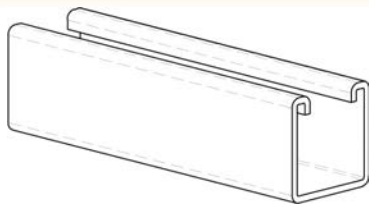
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# CHANNEL STRUT

**FIG. 1001-1042**

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>5</sup>/<sub>8</sub>" X 12 GAUGE**



**Material:**

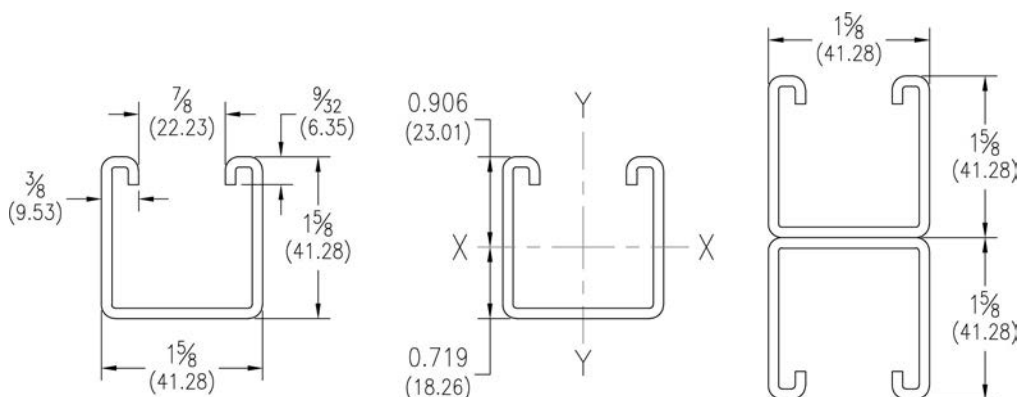
Carbon steel (Aluminum and Type 304 or 316 Stainless Steel upon request)

**Finish:**

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

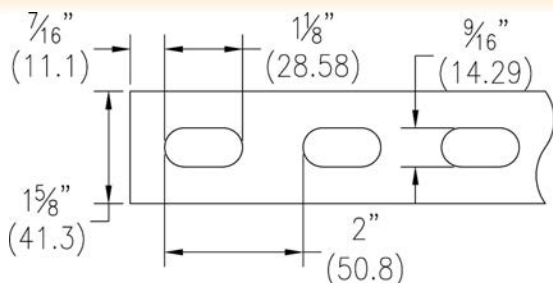
**Ordering:**

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

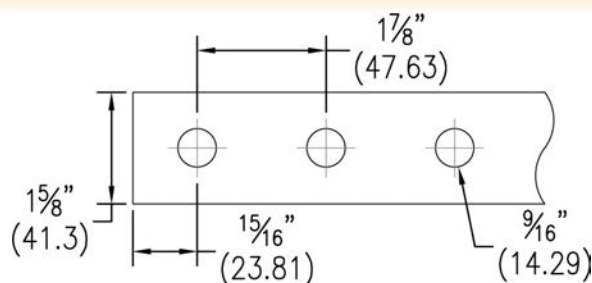


| Fig. No.      |              | Type - Description                                                                                               | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|------------------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X <sup>9</sup> / <sub>16</sub> " (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 <sup>9</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>7</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 1.77     | (2.63) | 500         | (152.4) | 500   | (152.4) |

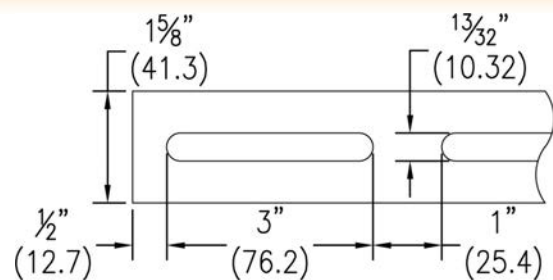
**1011-1012**



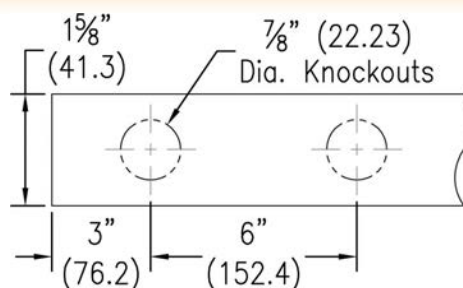
**1021-1022**



**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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>5</sup>/<sub>8</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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.

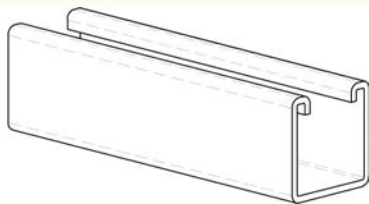
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (<sup>lbs.</sup>/<sub>ft.</sub>). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When 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**

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>5</sup>/<sub>8</sub>" X 14 GAUGE**



**Material:**

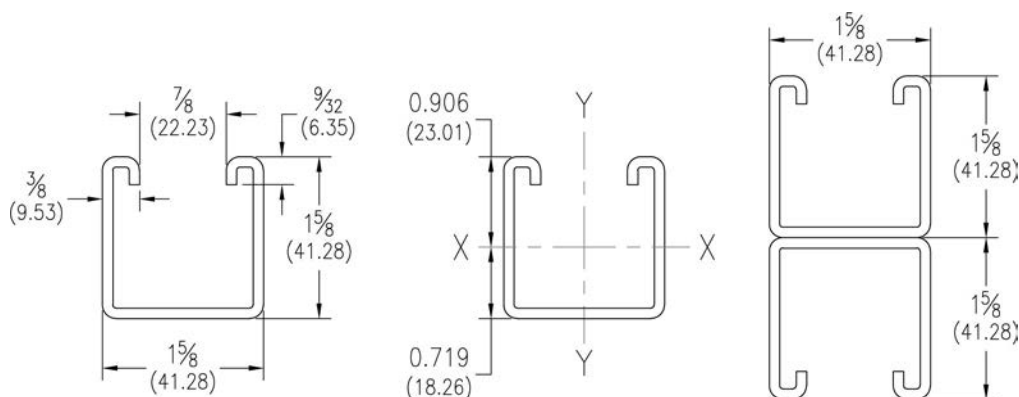
Carbon steel

**Finish:**

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

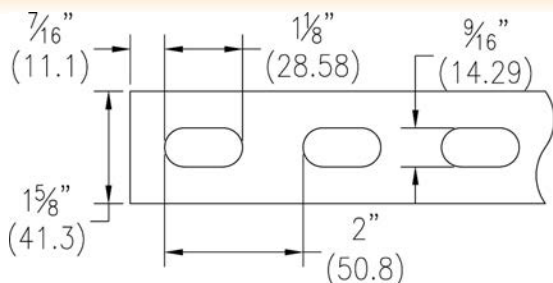
**Ordering:**

Specify figure number, finish, and number of feet.

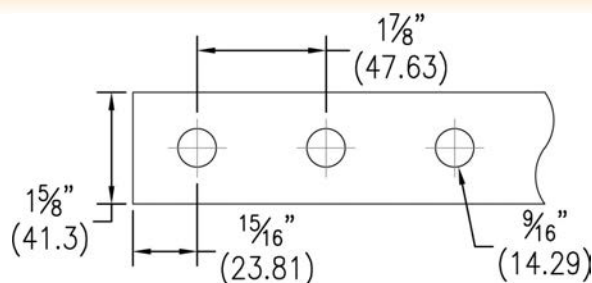


| Fig. No.      |              | Type - Description                                                                                               | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|------------------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X <sup>9</sup> / <sub>16</sub> " (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 <sup>9</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>7</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 1.30     | (1.93) | 500         | (152.4) | 500   | (152.4) |

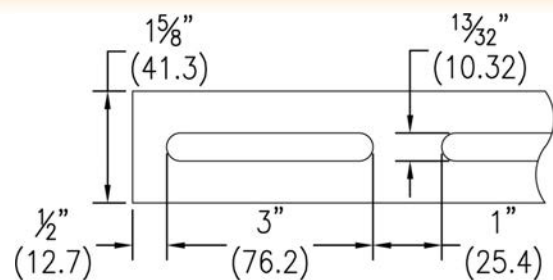
**1111-1112**



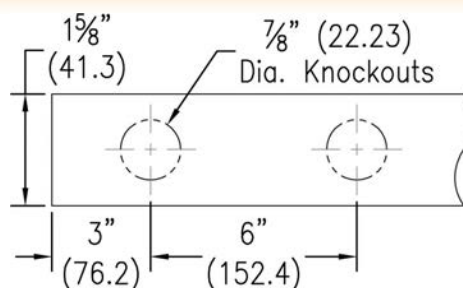
**1121-1122**



**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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>5</sup>/<sub>8</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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 (<sup>lbs.</sup>/<sub>ft.</sub>). 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.

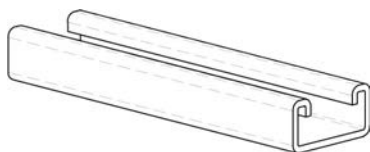
**Column Loads:** Column loadings are for allowable axial loads for the unsupported heights listed and include a K value of .80. If eccentric, loads should be reduced according to standard practice.



# CHANNEL STRUT

**FIG. 1201-1242**

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" X 12 GAUGE**



**Material:**

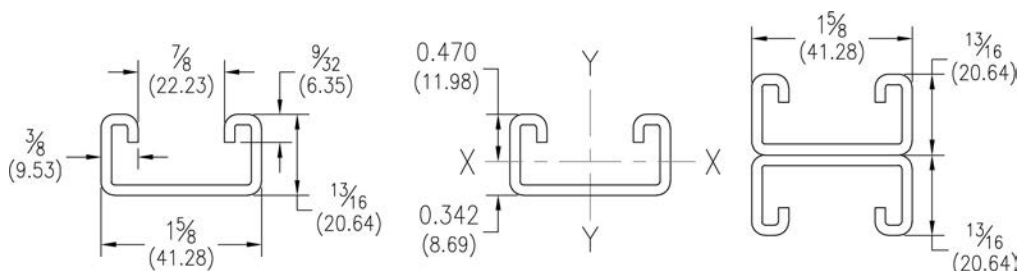
Carbon steel

**Finish:**

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

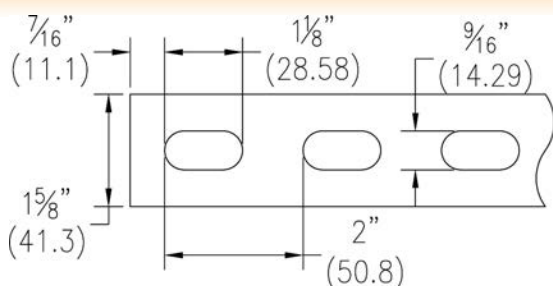
**Ordering:**

Specify figure number, finish, and number of feet.

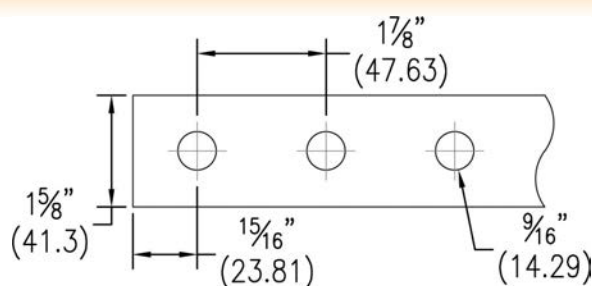


| Fig. No.      |              | Type - Description                                                                                   | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X 9/ <sub>16</sub> " (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/ <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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/ <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 1.22     | (1.82) | 500         | (152.4) | 1000  | (304.8) |

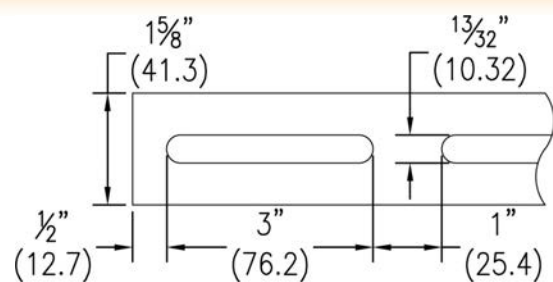
**1211-1212**



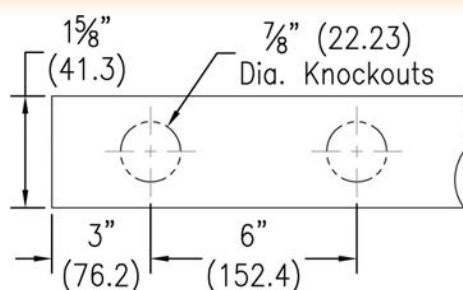
**1221-1222**



**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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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.

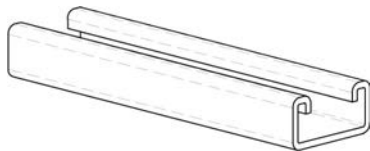
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (lbs./ft.). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When deflection is not a 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<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" X 14 GAUGE**



**Material:**

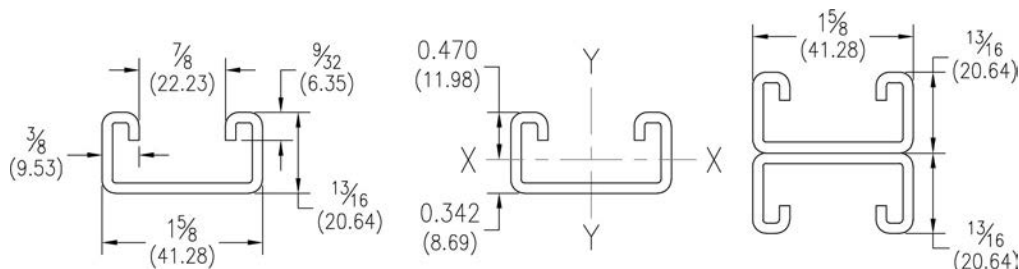
Carbon steel (Aluminum and Type 304 or 316 Stainless Steel upon request)

**Finish:**

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

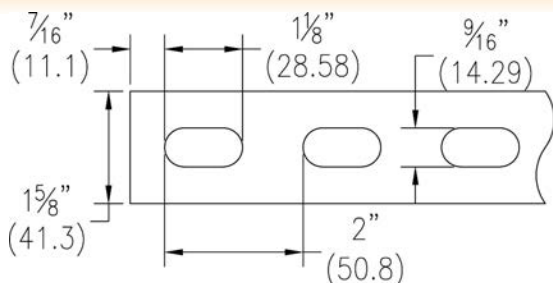
**Ordering:**

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

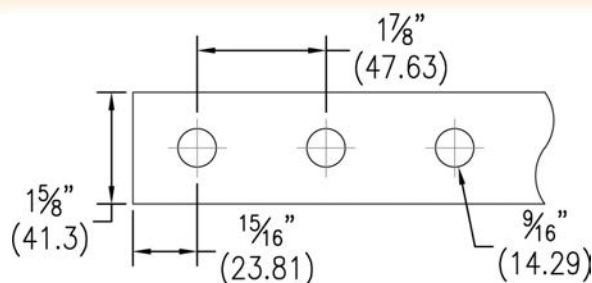


| Fig. No.      |              | Type - Description                                                                                                 | Weight   |       | Bundle Qty. |         |       |         |
|---------------|--------------|--------------------------------------------------------------------------------------------------------------------|----------|-------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X 9 <sup>1</sup> / <sub>16</sub> " (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 <sup>1</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>1</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | .93      | (.42) | 500         | (152.4) | 1000  | (304.8) |

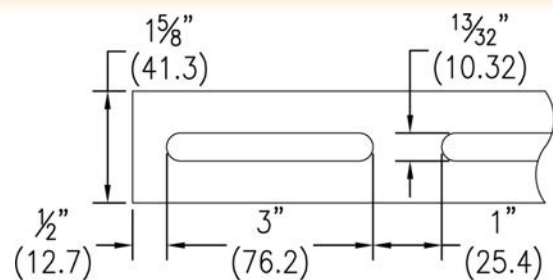
**1311-1312**



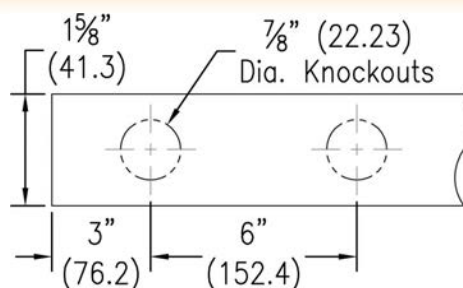
**1321-1322**



**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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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.

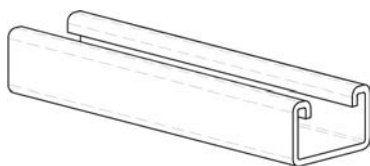
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (<sup>lbs.</sup>/<sub>ft.</sub>). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When 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**

**1<sup>5</sup>/<sub>8</sub>" X 1" X 12 GAUGE**



**Material:**

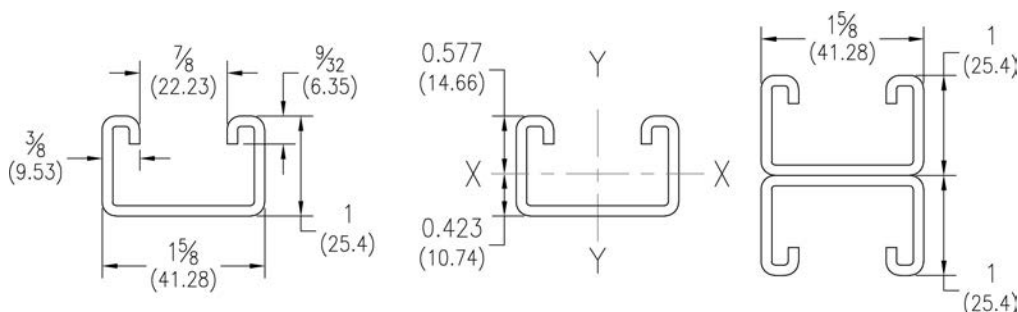
Carbon steel

**Finish:**

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

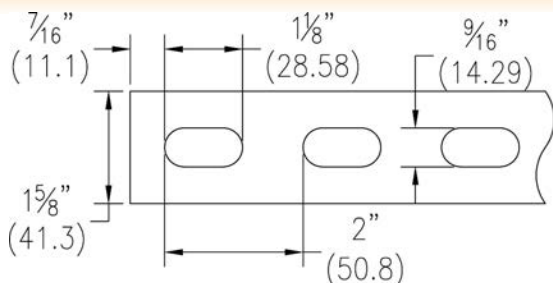
**Ordering:**

Specify figure number, finish, and number of feet.

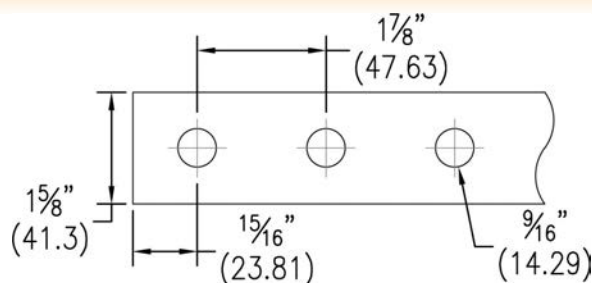


| Fig. No.      |              | Type - Description                                                                                               | Weight   |        | Bundle Qty. |         |       |          |
|---------------|--------------|------------------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|----------|
| 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 <sup>1</sup> / <sub>8</sub> " X <sup>9</sup> / <sub>16</sub> " (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 <sup>9</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>7</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 1.38     | (2.05) | 500         | (152.4) | 1000  | (304.8)  |

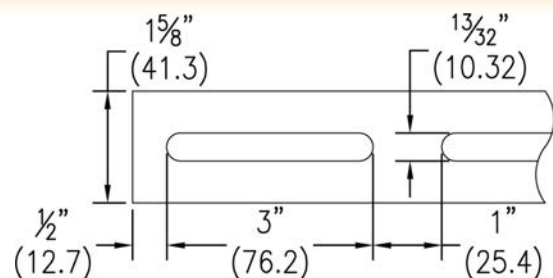
**1411-1412**



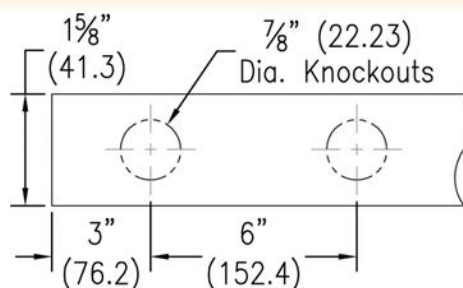
**1421-1422**



**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



1<sup>5</sup>/<sub>8</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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 @ <sup>1</sup> / <sub>240</sub> 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.

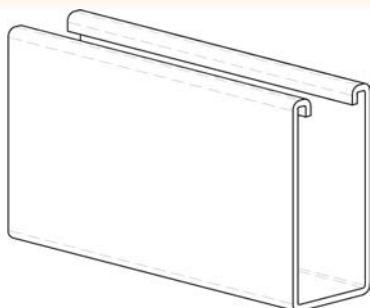
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (<sup>lbs.</sup>/<sub>ft.</sub>). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When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

**1<sup>5</sup>/<sub>8</sub>" X 3<sup>1</sup>/<sub>4</sub>" X 12 GAUGE**



**Material:**

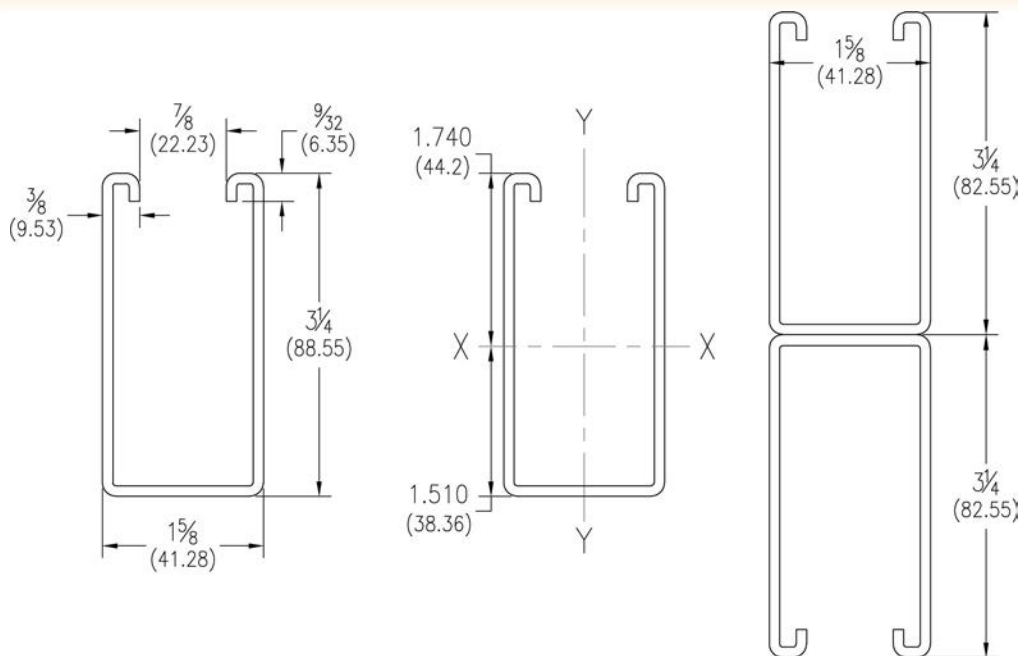
Carbon steel (Type 304 or 316  
Stainless Steel upon request)

**Finish:**

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

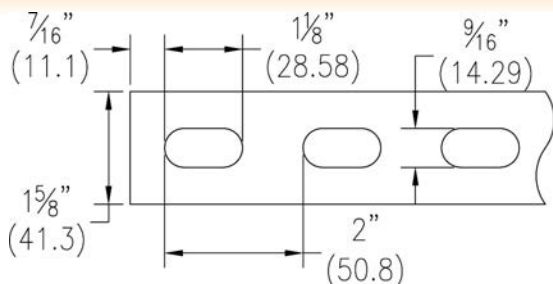
**Ordering:**

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

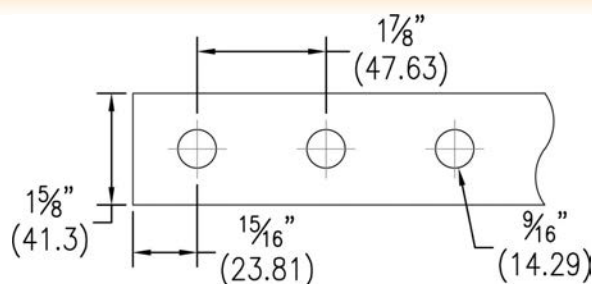


| Fig. No.      |              | Type - Description                                                                                               | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|------------------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X <sup>9</sup> / <sub>16</sub> " (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 <sup>9</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>7</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 2.99     | (4.45) | 300         | (91.44) | 300   | (91.44) |

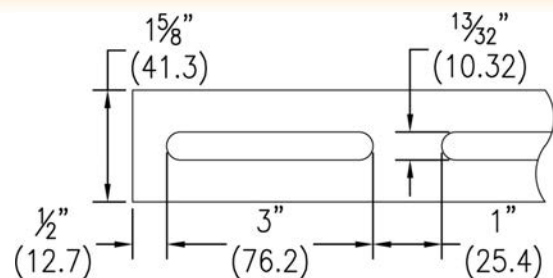
**1511-1512**



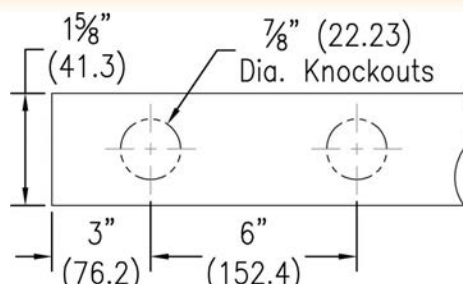
**1521-1522**



**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



**1<sup>5</sup>/<sub>8</sub>" X 3<sup>1</sup>/<sub>4</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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.

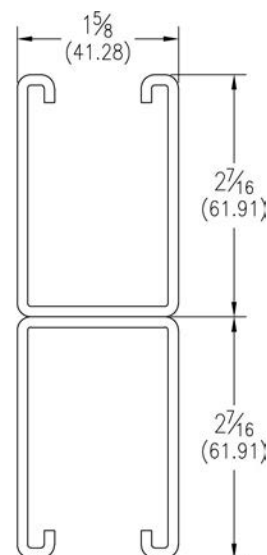
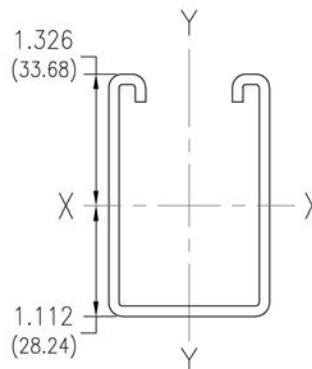
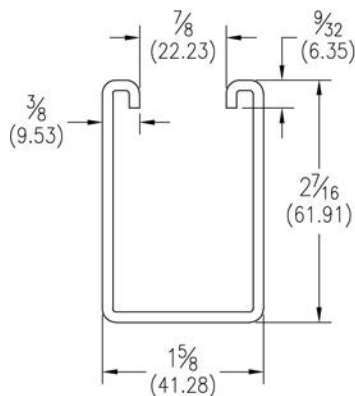
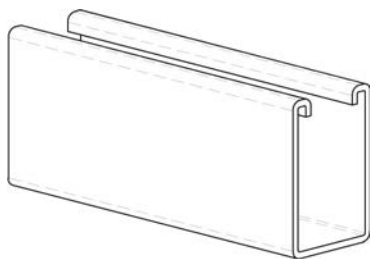
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (<sup>lbs.</sup>/<sub>ft.</sub>). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When 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. 1601-1642**

**1<sup>5</sup>/<sub>8</sub>" X 2<sup>7</sup>/<sub>16</sub>" X 12 GAUGE**



**Material:**

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

**Finish:**

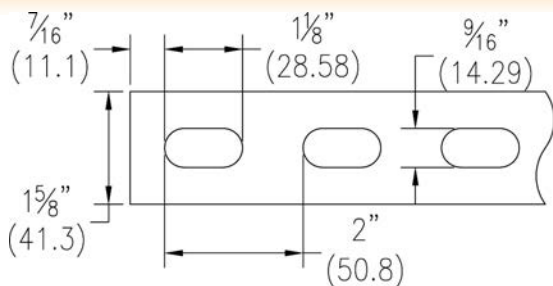
Plain, pre-galvanized, channel  
green, e-coat, or hot dipped  
galvanized

**Ordering:**

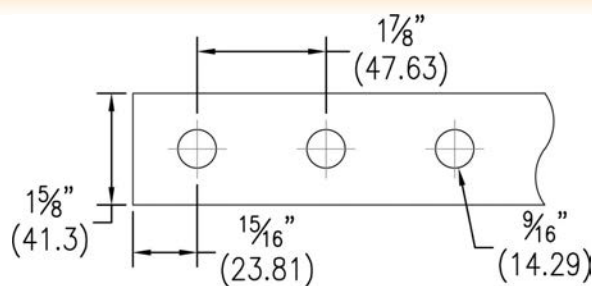
Specify figure number, material,  
finish, and number of feet.

| 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 <sup>1</sup> / <sub>8</sub> " 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 <sup>7</sup> / <sub>8</sub> " (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) |

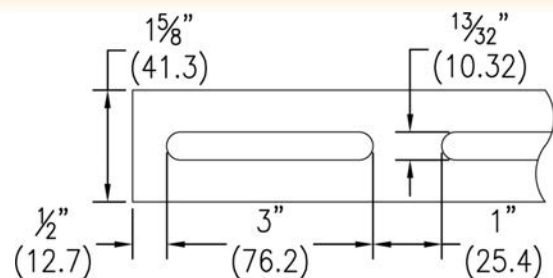
**1611-1612**



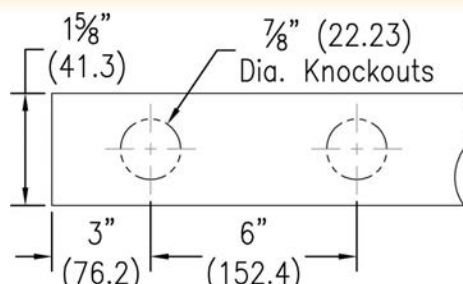
**1621-1622**



**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



**1<sup>5</sup>/<sub>8</sub>" X 2<sup>7</sup>/<sub>16</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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 (<sup>lbs.</sup>/<sub>ft.</sub>). 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.

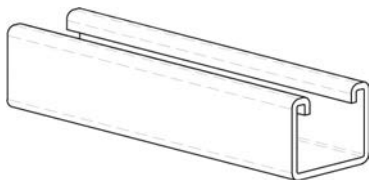
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# CHANNEL STRUT

**FIG. 1701-1742**

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>8</sub>" X 12 GAUGE**



**Material:**

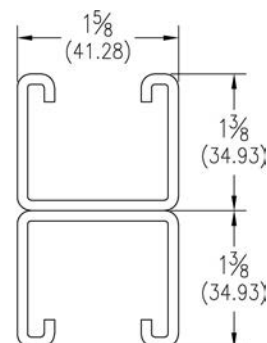
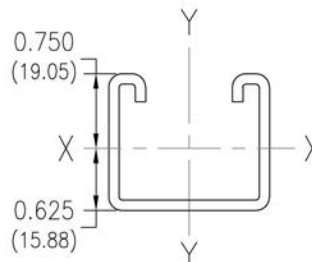
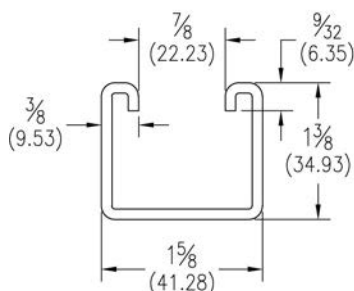
Carbon steel

**Finish:**

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

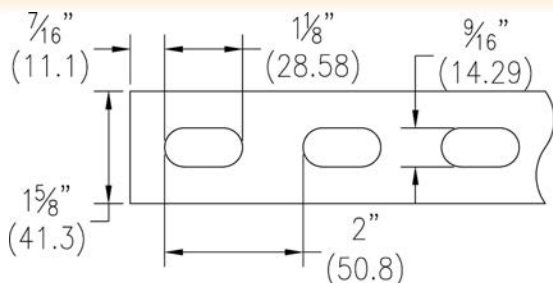
**Ordering:**

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

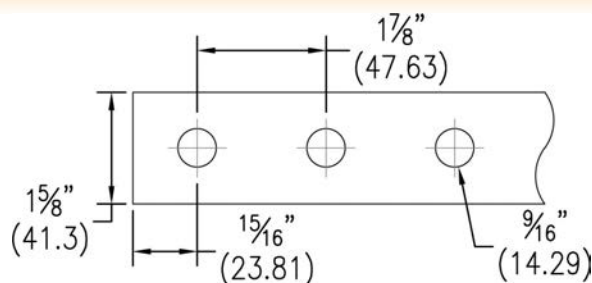


| Fig. No.      |              | Type - Description                                                                      | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|-----------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " 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 <sup>7</sup> / <sub>8</sub> " (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) |

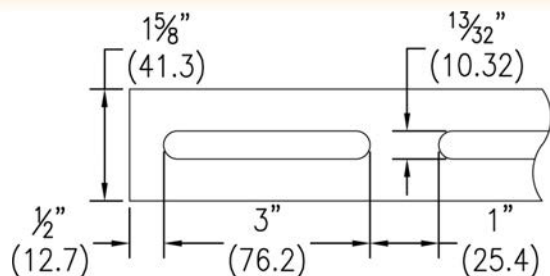
**1711-1712**



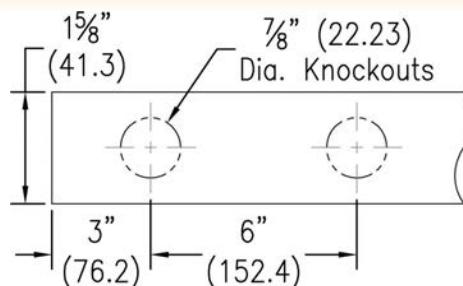
**1721-1722**



**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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>8</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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.

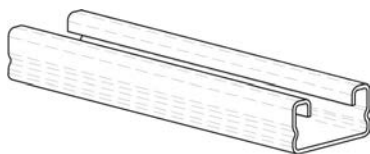
**Beam Loads:** Published loads are given in total uniform load (lbs.) not uniform load (<sup>lbs.</sup>/<sub>ft.</sub>). For loads concentrated at center of span multiply uniform load by 0.5 and multiply the deflection by 0.8 (refer to page 26 for reduction factors on other beam configurations.). When 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**

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" X 16 GAUGE**



**Material:**

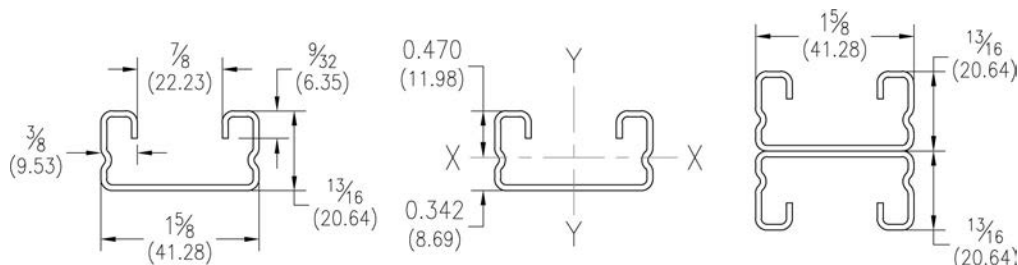
Carbon steel

**Finish:**

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

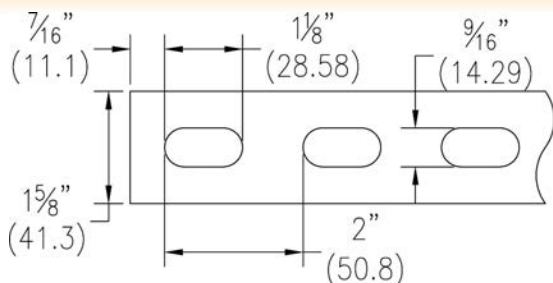
**Ordering:**

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

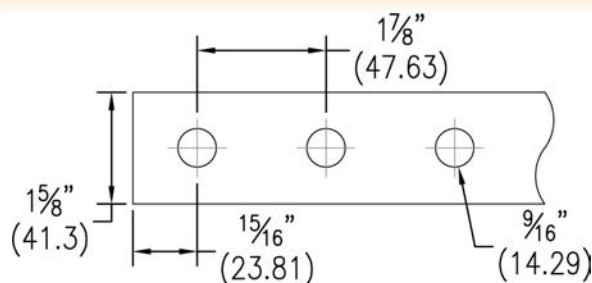


| Fig. No.      |              | Type - Description                                                                                                 | Weight   |        | Bundle Qty. |         |       |         |
|---------------|--------------|--------------------------------------------------------------------------------------------------------------------|----------|--------|-------------|---------|-------|---------|
| 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 <sup>1</sup> / <sub>8</sub> " X 9 <sup>1</sup> / <sub>16</sub> " (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 <sup>1</sup> / <sub>16</sub> " (14.29) dia. holes on 1 <sup>7</sup> / <sub>8</sub> " (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 <sup>1</sup> / <sub>8</sub> " (22.23) Knockouts on 6" (152.40) centers                                      | 0.86     | (1.28) | 500         | (152.4) | 1000  | (304.8) |

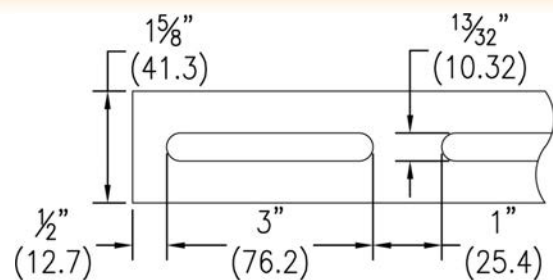
## 1811-1812



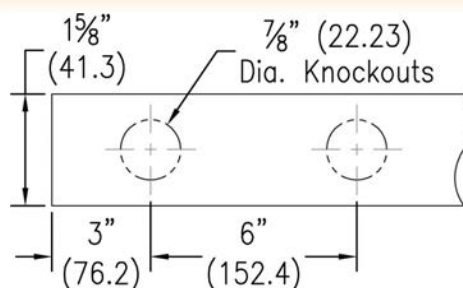
## 1821-1822



## 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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm      | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | 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 (<sup>lbs.</sup>/<sub>ft.</sub>). 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

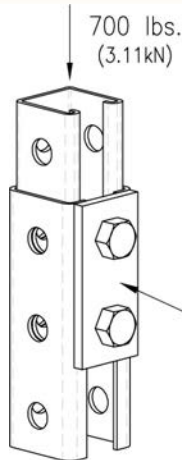
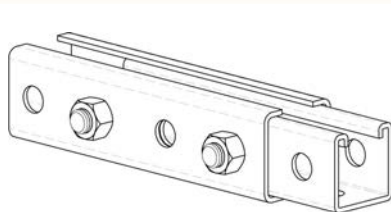
### Finish:

Pre-galvanized

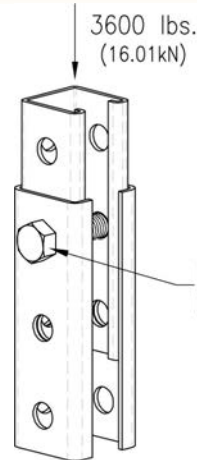
### Ordering:

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         |



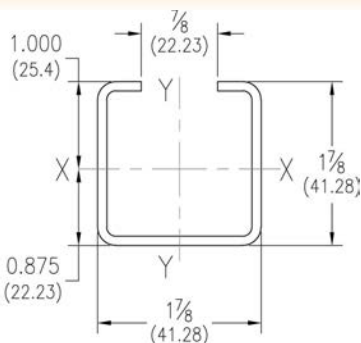
Typical 1/4" (6.35) thick 2-hole fitting with [2] 1/2" bolts and strut nuts.



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

## FIG. 1950

## TELESCOPING CHANNEL



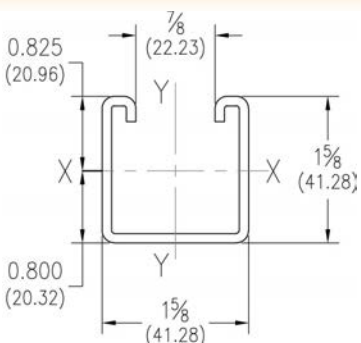
**Description:** Telescoping Channel (1 7/8" X 1 7/8" 12 gauge channel – fits over 1 5/8" X 1 5/8" channels 9/16" (14.29) holes on 1 7/8" (47.63) centers)

| 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm     | in. <sup>4</sup>  | cm <sup>4</sup> |
| 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



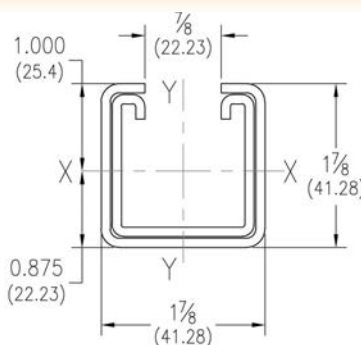
**Description:** 3-Hole Channel (1 5/8" X 1 5/8" 12 gauge channel with 9/16" (14.29) holes on 1 7/8" (47.63) centers on three sides)

| 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm     | in. <sup>4</sup>  | cm <sup>4</sup> |
| 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. <sup>2</sup> | cm <sup>2</sup> | in. <sup>4</sup>  | cm <sup>4</sup> | in. <sup>3</sup> | cm <sup>3</sup> | in.                | cm     | in. <sup>4</sup>  | cm <sup>4</sup> |
| 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.

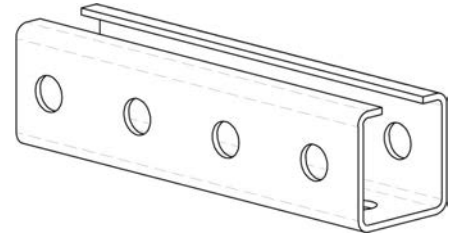
# CHANNEL STRUT



## TELESCOPING CHANNEL

**FIG. 1950**

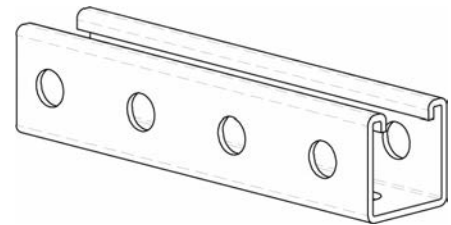
| Beam Span |          | Allowable load |         | Resulting Deflection |          | Allowable load @ 1/240 Span |         |
|-----------|----------|----------------|---------|----------------------|----------|-----------------------------|---------|
|           |          | lbs.           | kN      |                      |          | 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) |

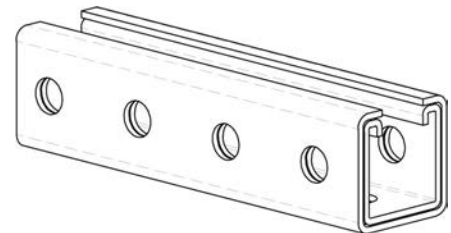


## COMBINATION TELESCOPING CHANNEL

**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.

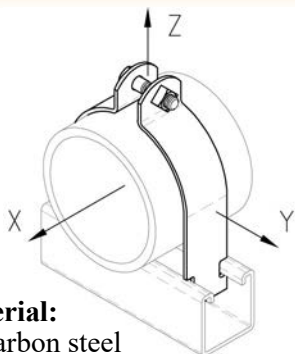


Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# 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

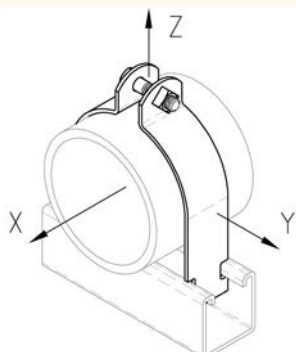
Federal Specification A-A-1192A (Type 60) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 60) which supersedes ANSI/MSS SP-69.

**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

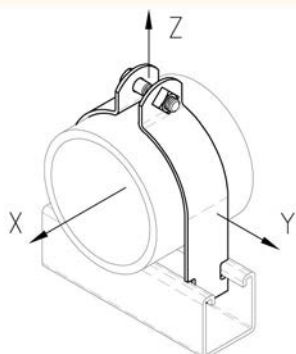
**Material:** Carbon steel**Finish:** Pre-galvanized**Ordering:** Specify figure number.

**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. 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) |

## FIG. 2201-2207

## EMT CONDUIT CLAMP

**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. 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) |

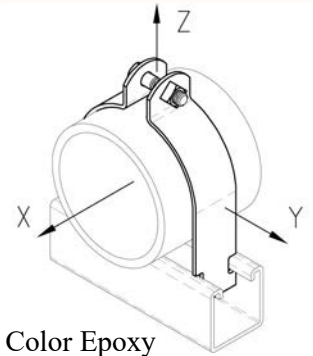
# PIPE & CONDUIT SUPPORTS



## COPPER TUBING CLAMP

## FIG. 2301-2314

| Fig.<br>No. | Pipe Size |       | Material<br>Size | Max. Rec. Loads |        |      |        |      |        | Weight<br>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

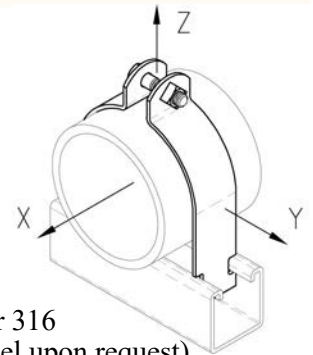
### Finish:

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.<br>No. | O.D. Size |          | Material<br>Size | Max. Rec. Loads |        |      |        |      |        | Weight<br>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

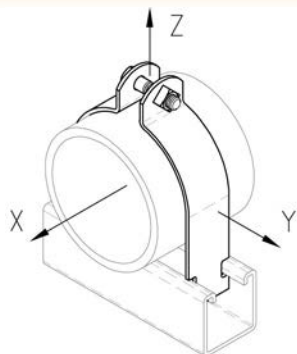
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# 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

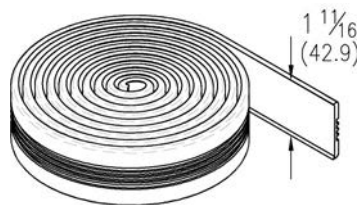
**Approvals:** Complies with  
Federal Specification A-A-  
1192A (Type 60) and  
Manufacturers'  
Standardization Society ANSI/  
MSS SP-58 (Type 60) which  
supersedes ANSI/MSS SP-69.

**Ordering:** Specify figure number  
and material.

| Fig.<br>No. | O.D. Size                      |          | Material<br>Size | Max. Rec. Loads |        |      |        |      |        | Weight<br>Each |       |
|-------------|--------------------------------|----------|------------------|-----------------|--------|------|--------|------|--------|----------------|-------|
|             |                                |          |                  | X               |        | Y    |        | Z    |        |                |       |
|             |                                |          |                  | Lbs.            | kN     | Lbs. | kN     | Lbs. | kN     | Lbs.           | kg    |
| 2433        | 4 <sup>7</sup> / <sub>8</sub>  | (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 <sup>1</sup> / <sub>8</sub>  | (130.18) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .68            | (.31) |
| 2436        | 5 <sup>1</sup> / <sub>4</sub>  | (133.35) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .70            | (.32) |
| 2437        | 5 <sup>3</sup> / <sub>8</sub>  | (136.53) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .71            | (.32) |
| 2438        | 5 <sup>1</sup> / <sub>2</sub>  | (139.70) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .72            | (.33) |
| 2439        | 5 <sup>5</sup> / <sub>8</sub>  | (142.88) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .85            | (.39) |
| 2440        | 5 <sup>3</sup> / <sub>4</sub>  | (146.05) | 11 Ga.           | 150             | (0.67) | 200  | (0.89) | 1000 | (4.45) | .87            | (.39) |
| 2441        | 5 <sup>7</sup> / <sub>8</sub>  | (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 <sup>1</sup> / <sub>8</sub>  | (155.58) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | .93            | (.42) |
| 2444        | 6 <sup>1</sup> / <sub>4</sub>  | (158.75) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | .94            | (.43) |
| 2445        | 6 <sup>3</sup> / <sub>8</sub>  | (161.93) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | .95            | (.43) |
| 2446        | 6 <sup>1</sup> / <sub>2</sub>  | (165.10) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | .98            | (.44) |
| 2447        | 6 <sup>3</sup> / <sub>4</sub>  | (171.45) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | .99            | (.45) |
| 2448        | 6 <sup>7</sup> / <sub>8</sub>  | (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 <sup>1</sup> / <sub>8</sub>  | (180.98) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.02           | (.46) |
| 2451        | 7 <sup>1</sup> / <sub>4</sub>  | (184.15) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.04           | (.47) |
| 2452        | 7 <sup>3</sup> / <sub>8</sub>  | (187.33) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.07           | (.49) |
| 2453        | 7 <sup>1</sup> / <sub>2</sub>  | (190.50) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.09           | (.49) |
| 2454        | 7 <sup>5</sup> / <sub>8</sub>  | (193.68) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.10           | (.50) |
| 2455        | 7 <sup>3</sup> / <sub>4</sub>  | (196.85) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.12           | (.51) |
| 2456        | 7 <sup>7</sup> / <sub>8</sub>  | (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 <sup>1</sup> / <sub>8</sub>  | (206.38) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.17           | (.53) |
| 2459        | 8 <sup>1</sup> / <sub>4</sub>  | (209.55) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.18           | (.54) |
| 2460        | 8 <sup>3</sup> / <sub>8</sub>  | (212.73) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.20           | (.54) |
| 2461        | 8 <sup>1</sup> / <sub>2</sub>  | (215.90) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.21           | (.55) |
| 2463        | 8 <sup>3</sup> / <sub>4</sub>  | (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 <sup>1</sup> / <sub>8</sub>  | (231.78) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.32           | (.60) |
| 2469        | 9 <sup>5</sup> / <sub>8</sub>  | (244.48) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.34           | (.61) |
| 2470        | 9 <sup>3</sup> / <sub>4</sub>  | (247.65) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.39           | (.63) |
| 2475        | 10 <sup>1</sup> / <sub>4</sub> | (260.35) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.43           | (.65) |
| 2477        | 10 <sup>1</sup> / <sub>2</sub> | (266.70) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.43           | (.65) |
| 2487        | 11 <sup>3</sup> / <sub>4</sub> | (298.45) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.50           | (.68) |
| 2488        | 11 <sup>7</sup> / <sub>8</sub> | (301.63) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.55           | (.70) |
| 2493        | 12 <sup>1</sup> / <sub>2</sub> | (317.50) | 11 Ga.           | 200             | (0.89) | 250  | (1.11) | 1000 | (4.45) | 1.74           | (.79) |
| 2496        | 12 <sup>7</sup> / <sub>8</sub> | (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:** 1<sup>1</sup>/<sub>8</sub>" (31.8)

**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



## CLAMP WITH CUSHION

## FIG. 2501-2588

**Clamp Material:** Carbon steel (Type 304 or 316 Stainless Steel upon request)

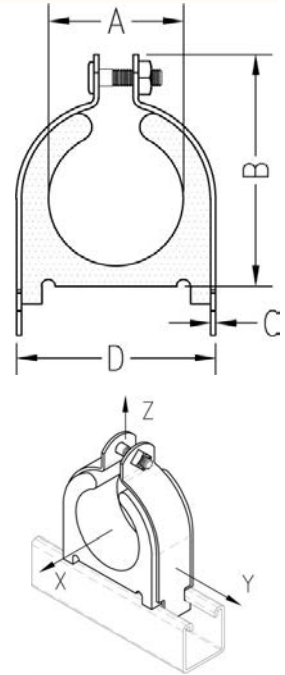
**Cushion Material:** Multi-Flex TES A9110 EV1 Black, in accordance with ASTM D4474 TES 0130 A90000. Classified 2043 ( 25/50 ) for use in plenums and air handling systems.

**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.



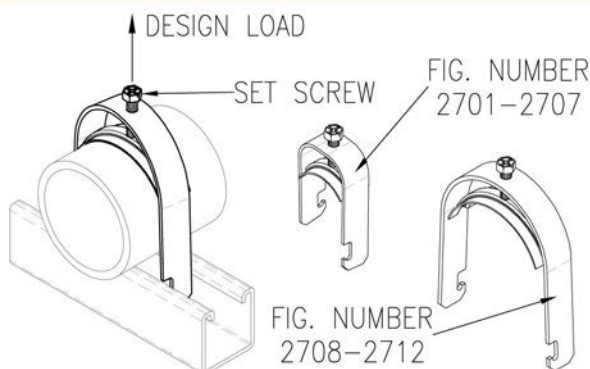
| Fig. No. | O.D. Size<br>A |          | Nom. Tube<br>Size |       | Nom. Pipe<br>Size |       | B    |          | C    |        | D    |          | Max. Rec. Load |      |      |      |      |        | Wt. Each |       |
|----------|----------------|----------|-------------------|-------|-------------------|-------|------|----------|------|--------|------|----------|----------------|------|------|------|------|--------|----------|-------|
|          |                |          |                   |       |                   |       |      |          |      |        |      |          | 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.

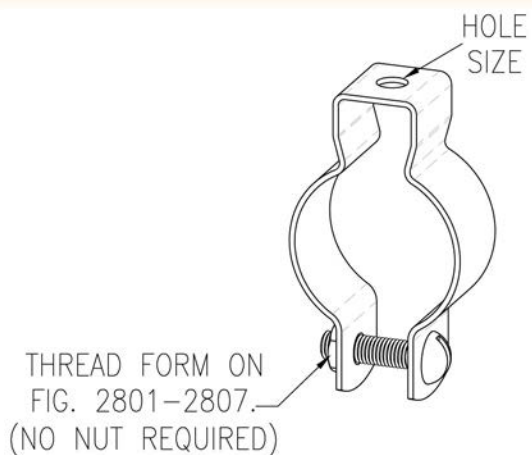
## FIG. 2801-2811

## CONDUIT HANGER

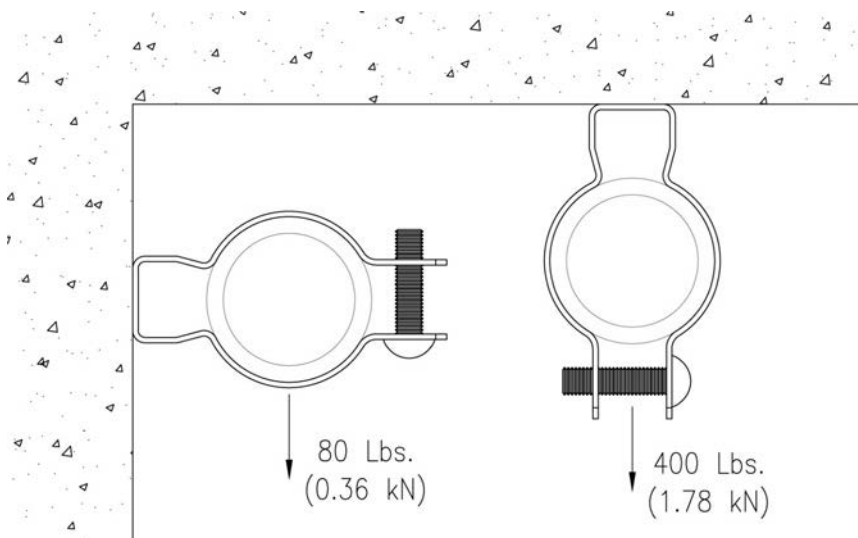
**Material:** Cold Roll, ASTM A684 Grade 1055 Spring Steel. (Type 304 or 316 Stainless Steel upon request)

**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) |



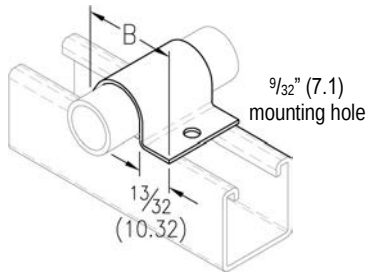
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# PIPE & CONDUIT SUPPORTS



## FIG. 7231-7238

1-HOLE CLAMP FOR O.D. TUBING

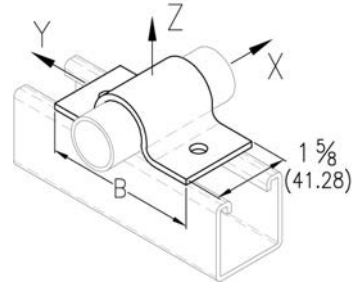


| Fig. No. | Tubing O.D. | B      |         | Wt. Each |       |
|----------|-------------|--------|---------|----------|-------|
|          |             |        |         | lbs.     | kg    |
| 7231     | 1/4 (6.35)  | 1 1/16 | (26.99) | .03      | (.01) |
| 7232     | 5/16 (7.94) | 1 1/8  | (28.58) | .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

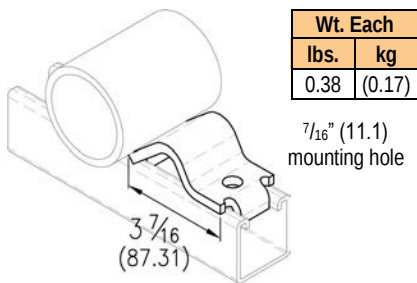
STANDARD PIPE STRAP



| 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

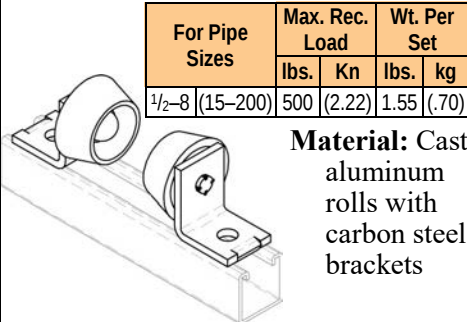
PIPE STOP



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.38     | (0.17) |

## FIG. 7400

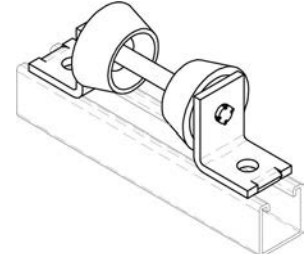
SEPARATE ROLLERS



**Material:** Cast aluminum rolls with carbon steel brackets

## FIG. 7501-7506

PIPE ROLLER WITH AXLE

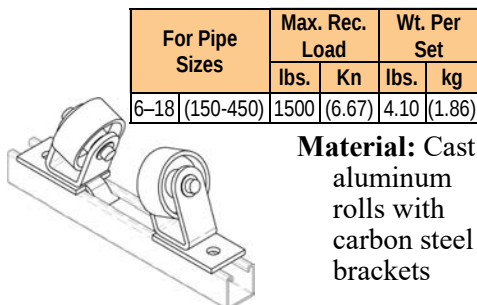


| Fig. No. | For Pipe Sizes |           | Max. Rec. Load |        | Wt. Each |       |
|----------|----------------|-----------|----------------|--------|----------|-------|
|          |                |           | lbs.           | kN     | lbs.     | kg    |
| 7501     | 1-3            | (25-80)   | 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

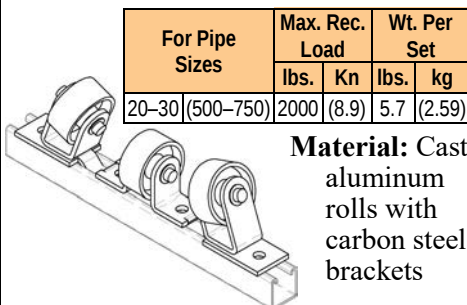
60° SEPARATE ROLLERS



**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 1/8" (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 1/8" (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.

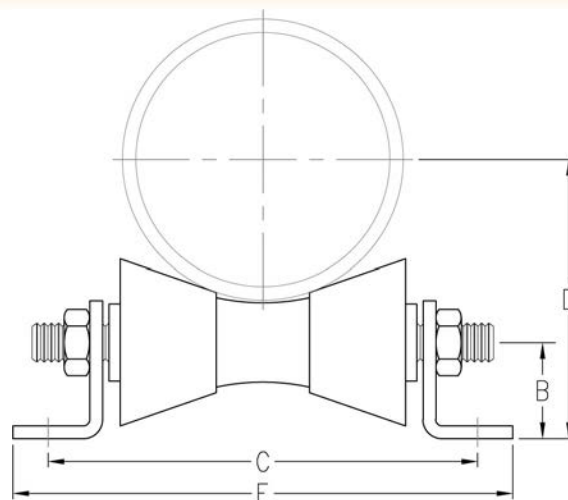
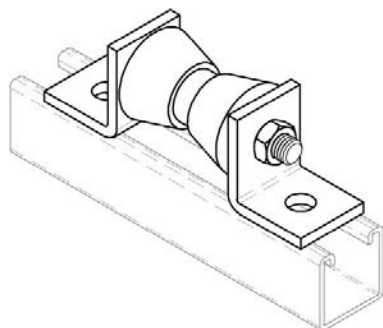
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# 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.

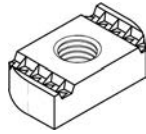
# STRUT NUTS & HARDWARE



## 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) |



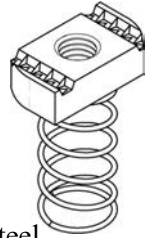
**Material:**  
Carbon steel  
(Type 304 or 316  
Stainless Steel upon  
request)  
**Finish:**  
Electro-galvanized  
**Ordering:**  
Specify figure number  
and material.

\*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    | 1/4 (6.35)    | .09      | (.04) |
| 3207     | 7/16 - 14   | 1/4 (6.35)    | .09      | (.04) |
| 3208     | 1/2 - 13    | 1/4 (6.35)    | .09      | (.04) |
| 3209     | 5/8 - 11    | 1/4 (6.35)    | .10      | (.05) |
| 3210     | 3/4 - 10    | 1/4 (6.35)    | .10      | (.05) |

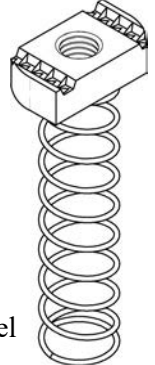


**Material:**  
Carbon steel  
**Finish:**  
Electro-galvanized  
**Ordering:**  
Specify figure number.

## 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) |

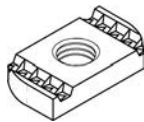


**Material:**  
Carbon steel  
**Finish:**  
Electro-galvanized  
**Ordering:**  
Specify figure number.

## FIG. 3351-3353

### SHALLOW STRUT NUT WITHOUT SPRING

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

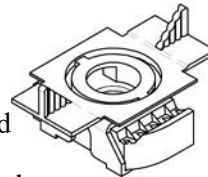


| Fig. No. | Thread Size | Nut Thickness | Wt. Each |       |
|----------|-------------|---------------|----------|-------|
|          |             |               | Lbs.     | kg    |
| 3351     | 1/2 - 13    | 3/8 (9.53)    | .09      | (.04) |
| 3352     | 5/8 - 11    | 3/8 (9.53)    | .11      |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

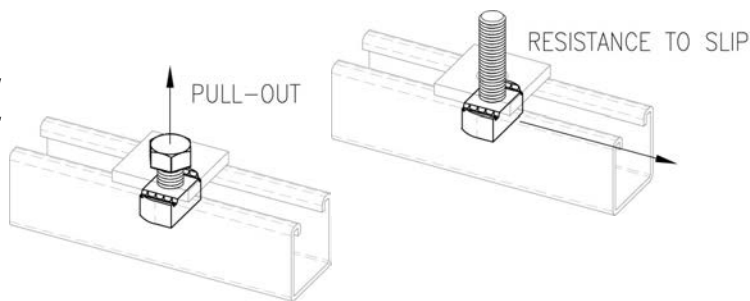
MAXIMUM ALLOWABLE PULL-OUT, SLIP LOAD AND DESIGNED TORQUE VALUES

| 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 | 750                | (3.34) | 450                | (2.00) | 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, 1200, 1500, 1600, 1700, 1960 | 2000               | (8.90) | 1500               | (6.67) |             |       |
|             | 3008, 3108, 3208, 3308, 3351 | 14            | 1100, 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, 1200, 1500, 1600, 1700, 1960 | 2000               | (8.90) | 1500               | (6.67) |             |       |
|             | 3009, 3109, 3209, 3309, 3352 | 14            | 1100, 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, 1200, 1500, 1600, 1700, 1960 | 2000               | (8.90) | 1500               | (6.67) |             |       |
|             | 3010, 3110, 3210, 3310, 3353 | 14            | 1100, 1300                         | 1400               | (6.23) | 1000               | (4.45) |             |       |
|             |                              | 16            | 1800                               | 1000               | (4.45) | 1000               | (4.45) |             |       |
| 7/8-9       | 3011, 3111, 3311             | 12            | 1000, 1200, 1500, 1600, 1700, 1960 | 1500               | (6.67) | 1500               | (6.67) | 125         | (170) |
|             |                              | 14            | 1100, 1300                         | 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:**

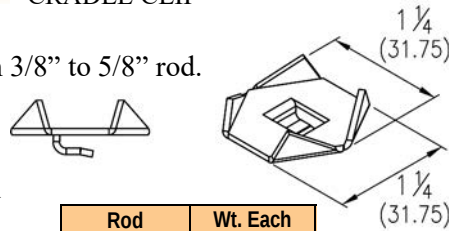
Carbon steel

**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:**

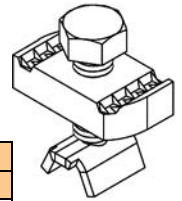
Carbon steel

**Finish:**

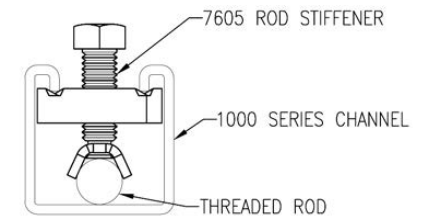
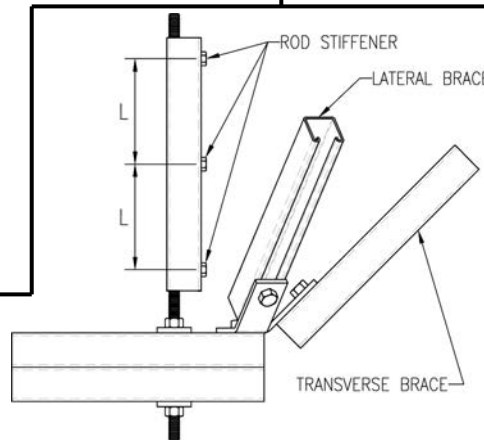
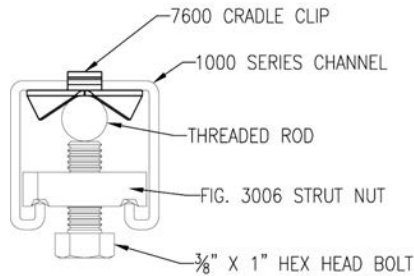
Electro-galvanized

**Ordering:**

Specify figure number.

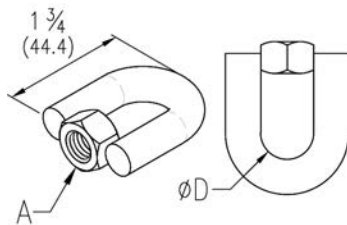


| Rod Size |      | Wt. Each |       |
|----------|------|----------|-------|
|          |      | Lbs.     | kg    |
| 3/8      | (10) | .14      | (.06) |
| 1/2      | (12) | .14      | (.06) |
| 5/8      | (16) | .14      | (.06) |

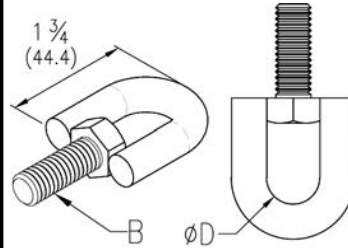


| Rod Size |      | Root Area |         | Radius of Gyration |        | Design Load |        | Rod Stiffener Clip Spacing (L)     |       |                                  |       |                                  |       |                                  |       |
|----------|------|-----------|---------|--------------------|--------|-------------|--------|------------------------------------|-------|----------------------------------|-------|----------------------------------|-------|----------------------------------|-------|
|          |      | in²       | mm²     |                    |        | Lbs.        | Kn     | Rod Stress<br>@ 100%<br>10,700 psi |       | Rod Stress<br>@ 75%<br>8,025 psi |       | Rod Stress<br>@ 50%<br>5,350 psi |       | Rod Stress<br>@ 35%<br>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) |

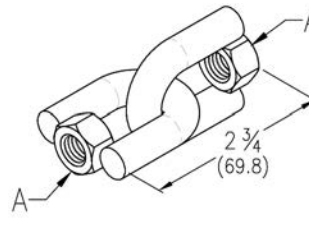
**FIG. 7610 & 7611**  
FEMALE SWIVEL



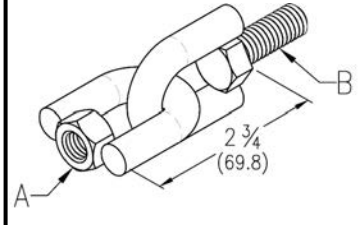
**FIG. 7615 & 7616**  
MALE SWIVEL



**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.



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# CONCRETE INSERTS

## FIG. 4001-4002

**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>8</sub>" X 12 GAUGE****Material:**

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

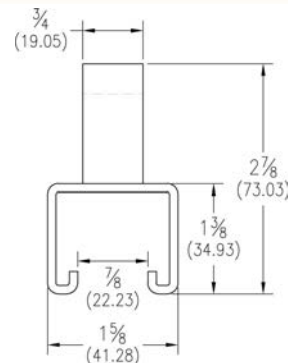
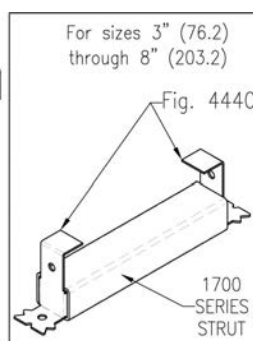
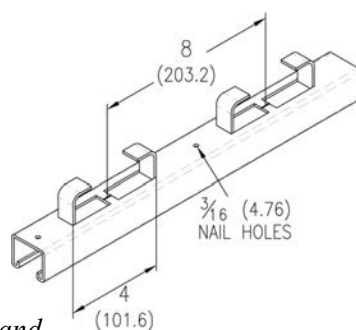
**Finish:**

Pre-galvanized

**Ordering:**

Specify figure number, material, and  
number of feet.

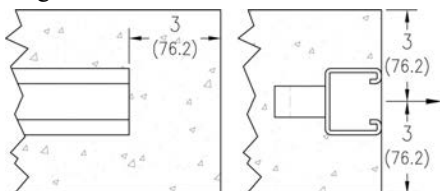
**Note:** *Furnished with end caps and  
Expanded Polyethylene filler for clean  
and easy removal. (Coined steel inserts and  
plastic closure strips available upon request.)*



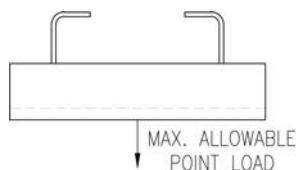
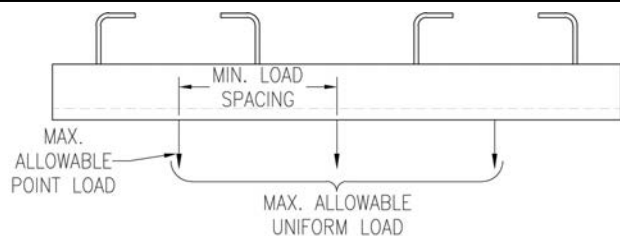
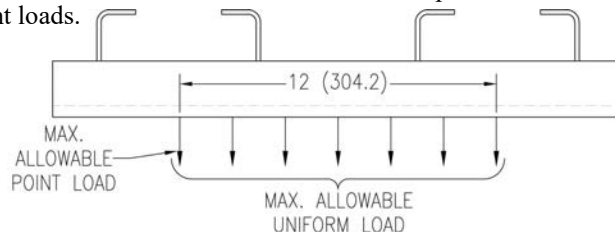
| Fig. No. |       |       |       | Type - Description        | Weight   |        | Bundle Qty. |         |       |         |
|----------|-------|-------|-------|---------------------------|----------|--------|-------------|---------|-------|---------|
| 10ft.    | 3.05m | 20ft. | 6.10m |                           | 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



**1<sup>5</sup>/<sub>8</sub>" X 1<sup>3</sup>/<sub>16</sub>" X 12 GAUGE**

**FIG. 4101-4102**

**Material:**

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

**Finish:**

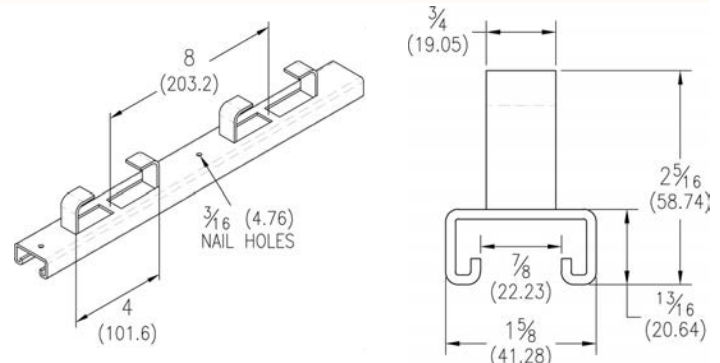
Pre-galvanized

**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.)

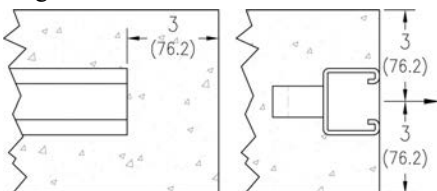


| Fig. No. |       |       |       | Type - Description        | Weight   |        | Bundle Qty. |         |       |         |
|----------|-------|-------|-------|---------------------------|----------|--------|-------------|---------|-------|---------|
| 10ft.    | 3.05m | 20ft. | 6.10m |                           | 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) |

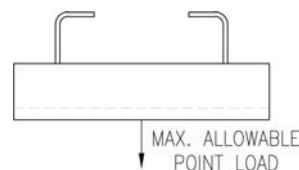
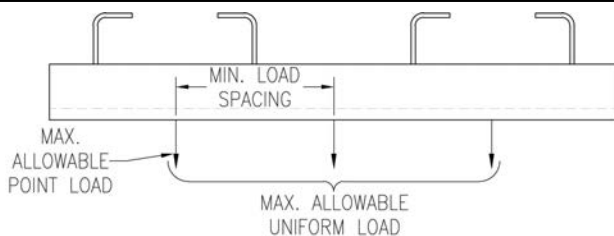
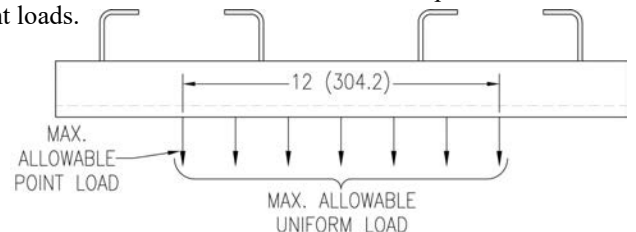
| Length |          | Max. Allowable Point Load |        | Min. Spacing of Point Loads |         | Max. Allowable Uniform Load |              | Weight Each. |         |
|--------|----------|---------------------------|--------|-----------------------------|---------|-----------------------------|--------------|--------------|---------|
| 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

## 1<sup>5</sup>/<sub>8</sub>" X 1" X 12 GAUGE

**Material:**

Carbon steel

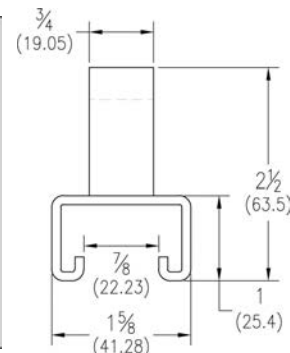
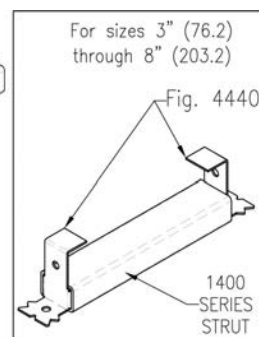
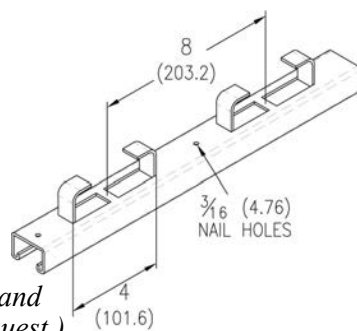
**Finish:**

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.)

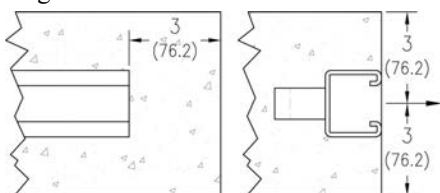


| Fig. No. |       |       |       | Type - Description        | Weight   |        | Bundle Qty. |         |       |         |
|----------|-------|-------|-------|---------------------------|----------|--------|-------------|---------|-------|---------|
| 10ft.    | 3.05m | 20ft. | 6.10m |                           | 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) |

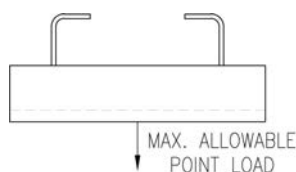
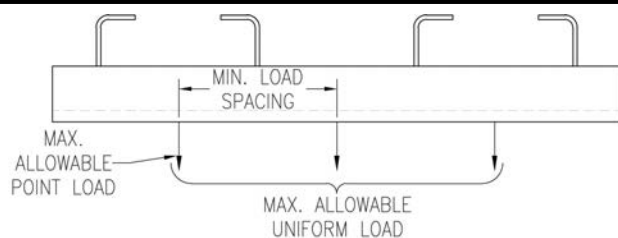
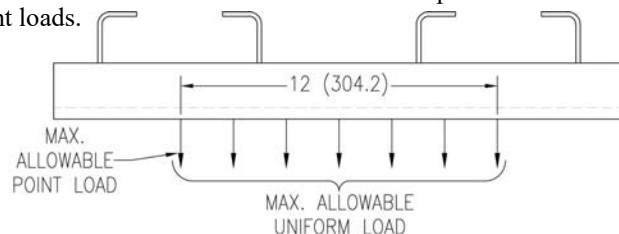
| Length |          | Max. Allowable Point Load |        | Min. Spacing of Point Loads |         | Max. Allowable Uniform Load |              | Weight Each. |         |
|--------|----------|---------------------------|--------|-----------------------------|---------|-----------------------------|--------------|--------------|---------|
| 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



## 1<sup>5</sup>/<sub>8</sub>" X 1<sup>5</sup>/<sub>8</sub>" X 12 GAUGE

## FIG. 4301-4302

### Material:

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

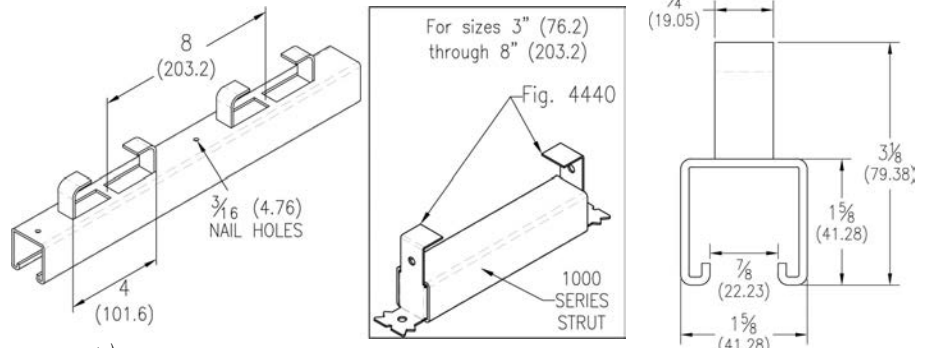
### Finish:

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.)*

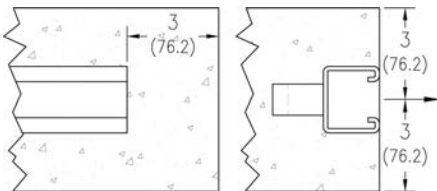


| Fig. No. |       | Type - Description        | Weight   |        | Bundle Qty. |         |       |         |
|----------|-------|---------------------------|----------|--------|-------------|---------|-------|---------|
| 10ft.    | 3.05m |                           | lbs./ft. | kg/m   | 10ft.    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

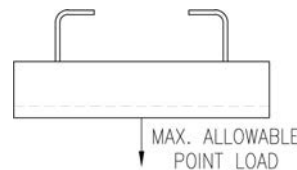
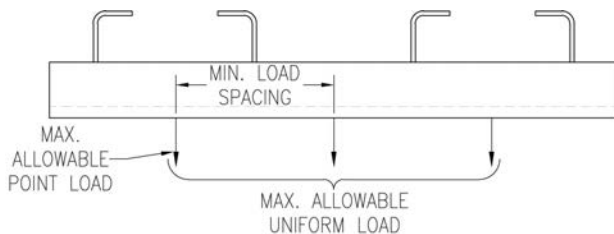
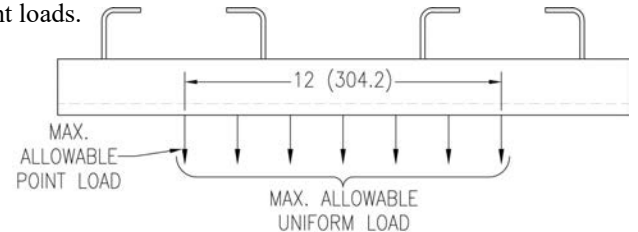
| Length |          | Max. Allowable Point Load |        | Min. Spacing of Point Loads |         | Max. Allowable Uniform Load |              | Weight Each. |         |
|--------|----------|---------------------------|--------|-----------------------------|---------|-----------------------------|--------------|--------------|---------|
| 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:

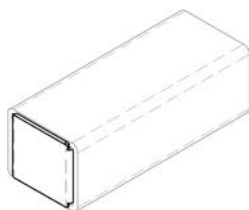
Carbon steel (Type 304 or 316)  
Stainless Steel upon request

#### 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:

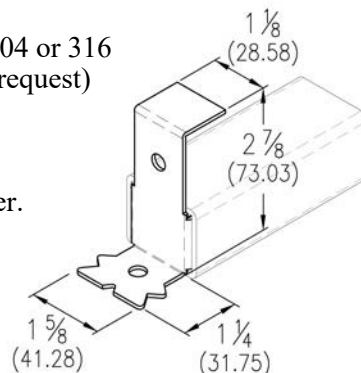
Carbon steel (Type 304 or 316)  
Stainless Steel upon request

#### 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

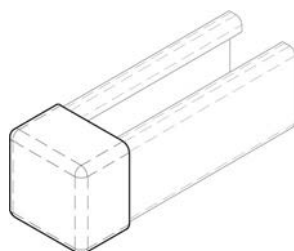
### SAFETY END CAPS

#### Material:

PVC

#### Ordering:

Specify figure number.



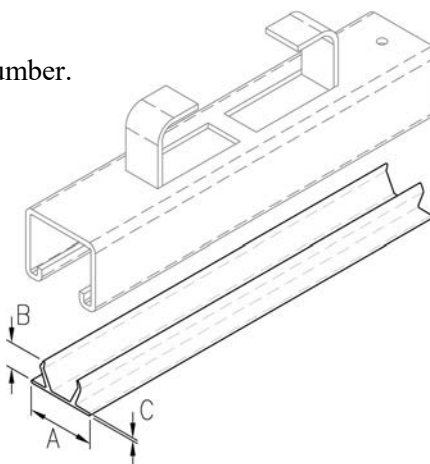
| Fig. No. | Color  | Use With Fig. Numbers | Wt. Each |       |
|----------|--------|-----------------------|----------|-------|
|          |        |                       | Lbs.     | kg    |
| 4475     | Red    | 1200 & 1300           | .03      | (.01) |
| 4476     | White  | 1200 & 1300           | .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.

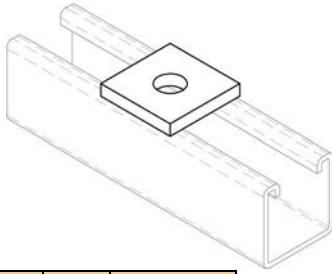


| Fig. No. | A       |        | B     |        | C     |        | Std. Length |        | Material         | Wt. Each |        |
|----------|---------|--------|-------|--------|-------|--------|-------------|--------|------------------|----------|--------|
|          |         |        |       |        |       |        | 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) |

# FLAT PLATE FITTINGS

## FIG. 5000-5004

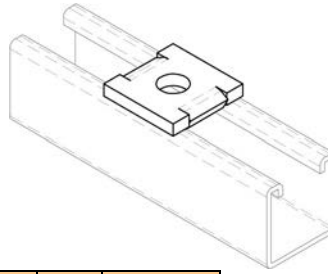
SQUARE WASHER



| 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

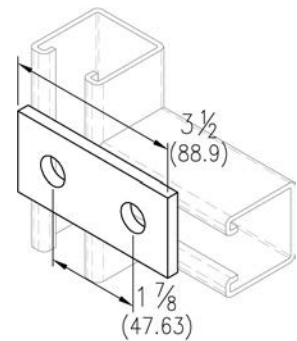
NO TURN SQUARE WASHER



| 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

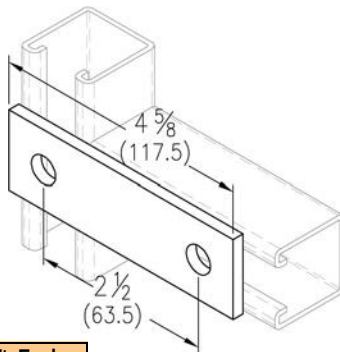
2-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.37     | (0.17) |

## FIG. 5011

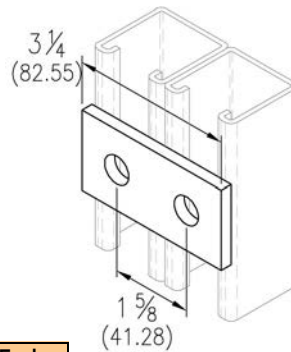
2-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.50     | (0.23) |

## FIG. 5012

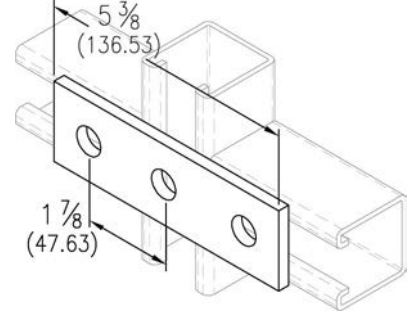
2-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.34     | (0.15) |

## FIG. 5013

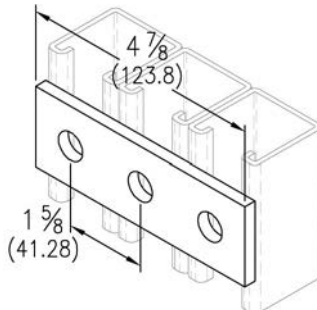
3-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.55     | (0.25) |

## FIG. 5014

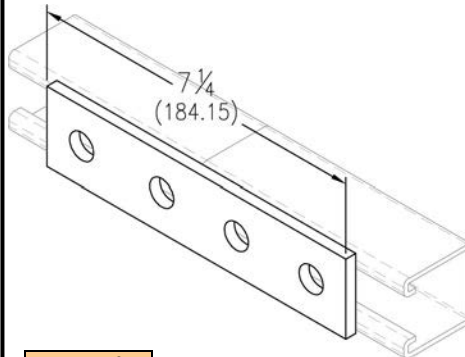
3-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.50     | (0.23) |

## FIG. 5015

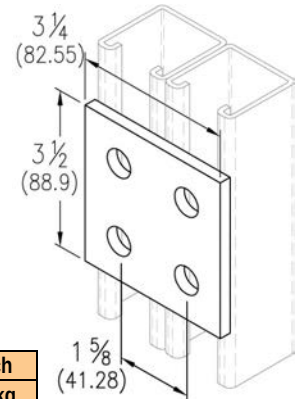
4-HOLE SPLICE PLATE



| 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)

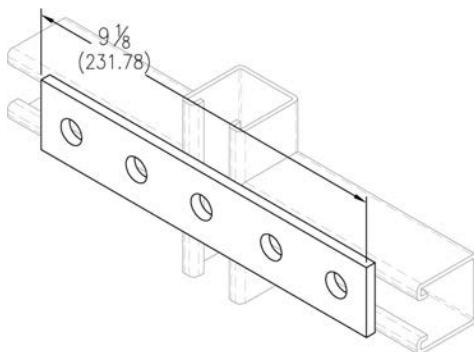
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

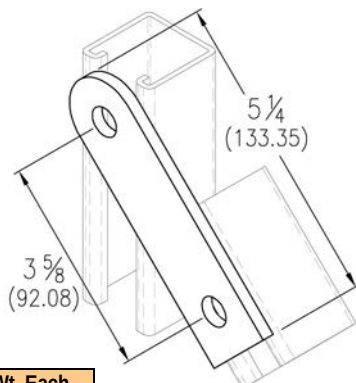
5-HOLE SPLICE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.96     | (0.44) |

**FIG. 5020**

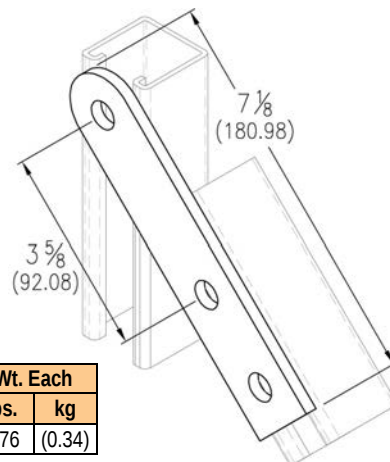
2-HOLE SWIVEL PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.56     | (0.25) |

**FIG. 5023**

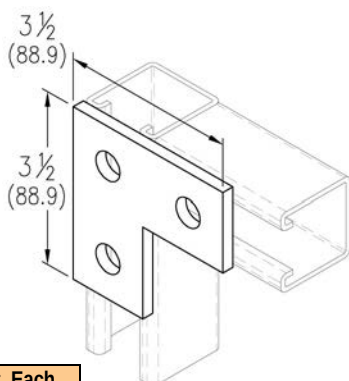
3-HOLE SWIVEL PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.76     | (0.34) |

**FIG. 5025**

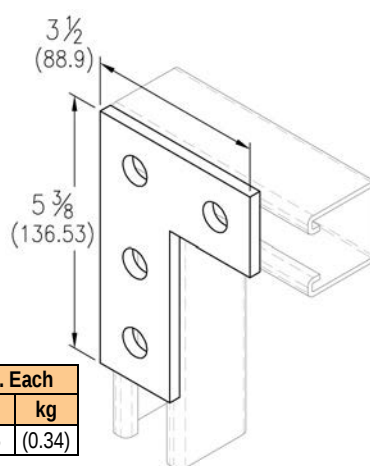
3-HOLE CORNER PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.58     | (0.26) |

**FIG. 5030**

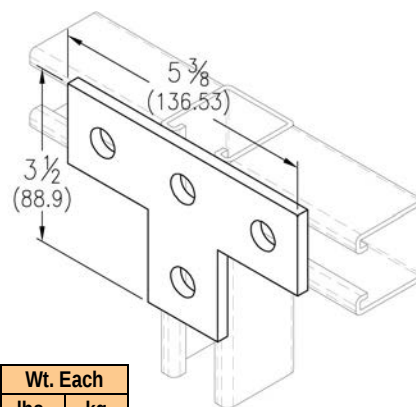
4-HOLE CORNER PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.75     | (0.34) |

**FIG. 5035**

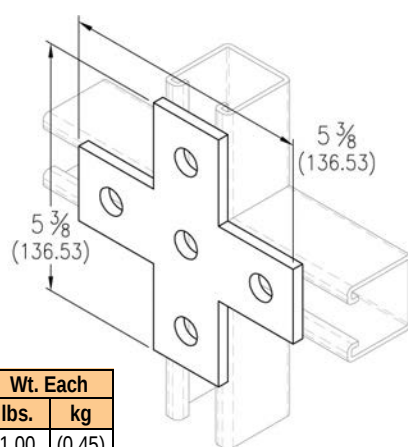
4-HOLE TEE PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 0.75     | (0.34) |

**FIG. 5040**

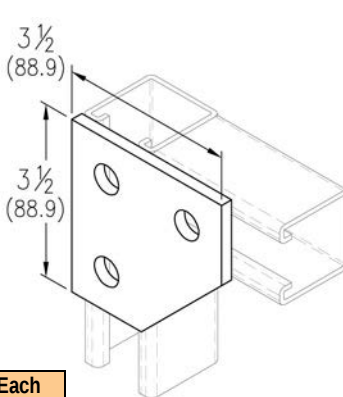
5-HOLE CROSS PLATE



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 1.00     | (0.45) |

**FIG. 5045**

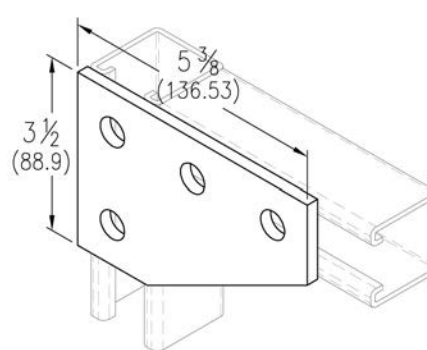
3-HOLE CORNER GUSSET PLATE



| 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 1/8" (41.3) width series channel fittings (Unless Otherwise Noted)**

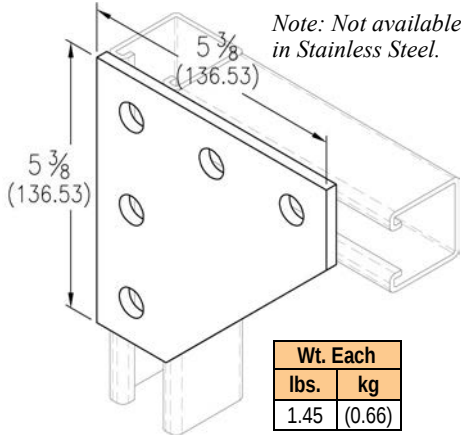
**Hole Diameter:** 3/16" (14.3); **Hole Spacing-From End:** 1/4" (20.6); **Hole Spacing-On Center:** 1 1/8" (47.6); **Width:** 1 1/2" (41.3); **Thickness:** 1/4" (6.4)  
**Material:** Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat, 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

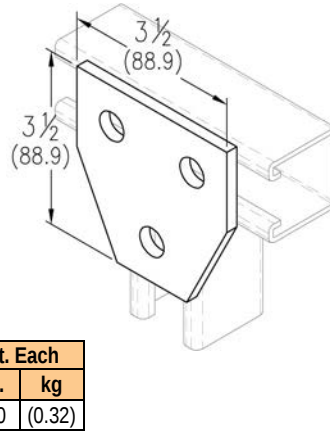
## FIG. 5060

5-HOLE CORNER GUSSET PLATE



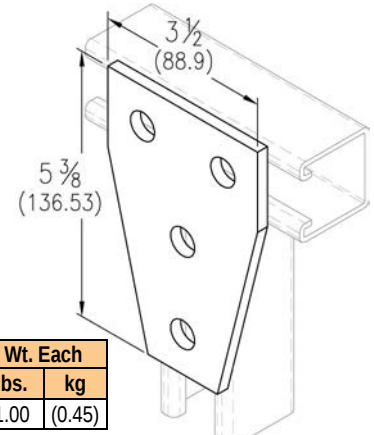
## FIG. 5065

3-HOLE TEE GUSSET PLATE



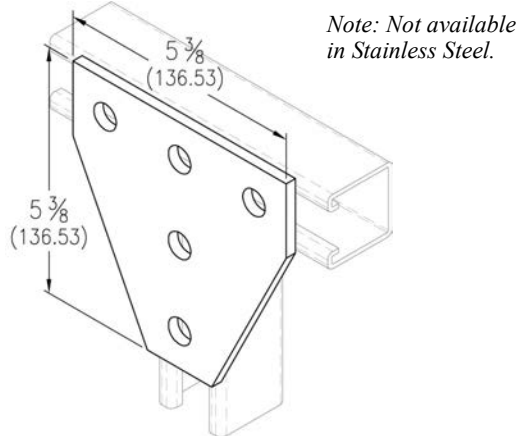
## FIG. 5075

4-HOLE TEE GUSSET PLATE



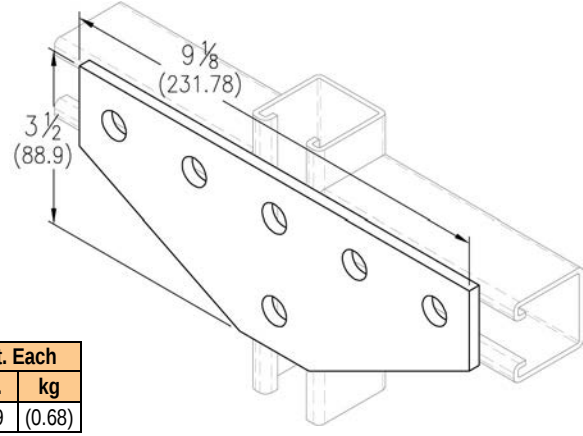
## FIG. 5080

5-HOLE TEE GUSSET PLATE



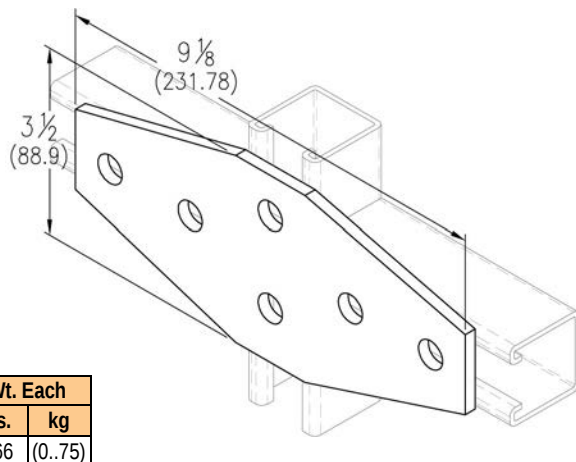
## FIG. 5085

6-HOLE TEE GUSSET PLATE



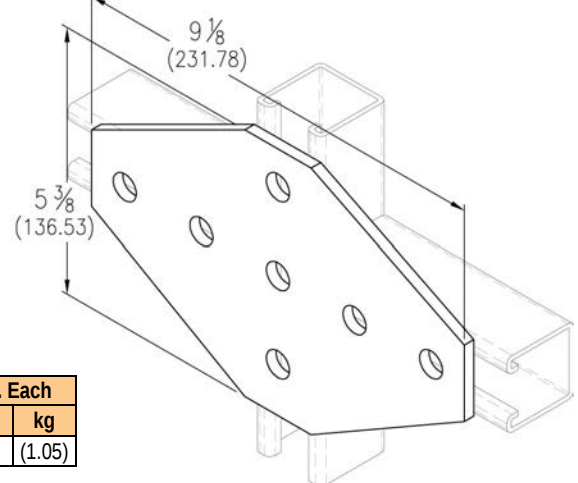
## FIG. 5090

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.

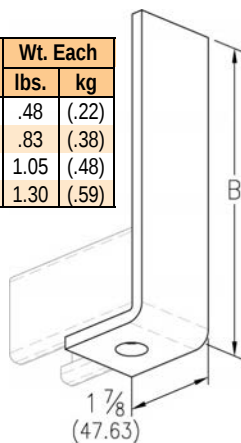
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# 90° ANGLE FITTINGS

## FIG. 5101 - 5107

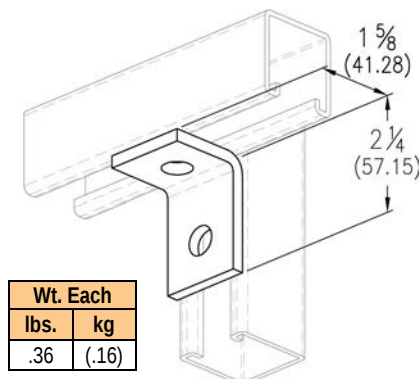
1-HOLE ANGLE

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



## FIG. 5110

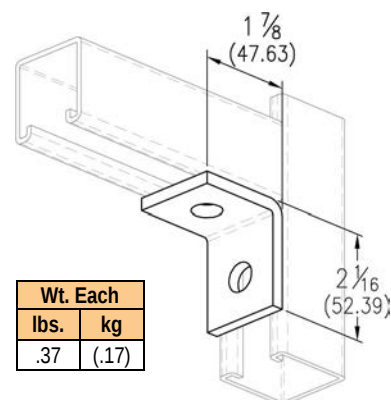
2-HOLE CORNER ANGLE



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

## FIG. 5112

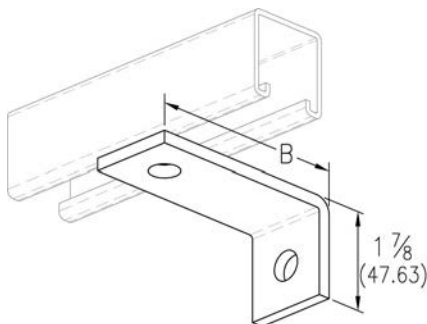
2-HOLE CORNER ANGLE



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

## FIG. 5115 - 5118

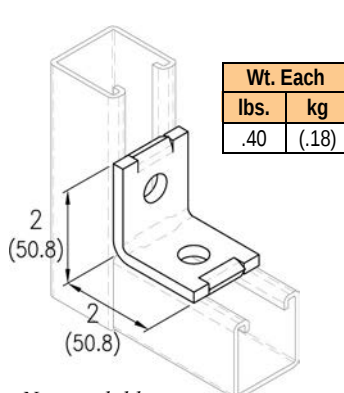
2-HOLE CORNER ANGLE



| 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

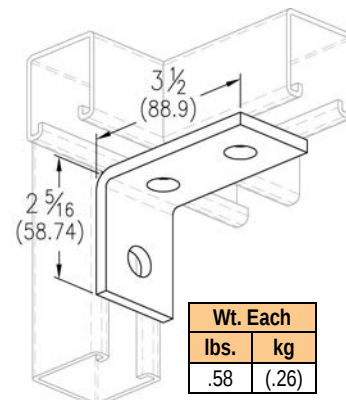


| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| .40      | (.18) |

Note: Not available in Stainless Steel.

## FIG. 5120

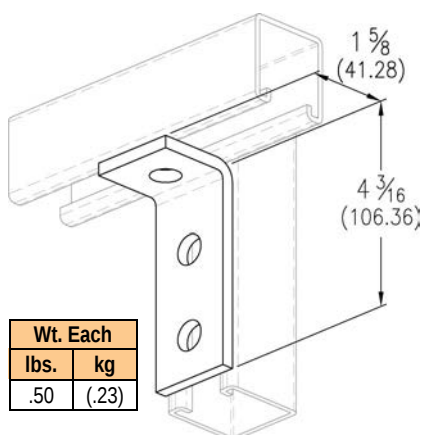
3-HOLE CORNER ANGLE



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

## FIG. 5121

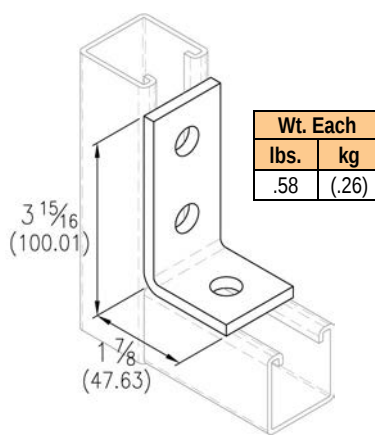
3-HOLE CORNER ANGLE



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

## FIG. 5122

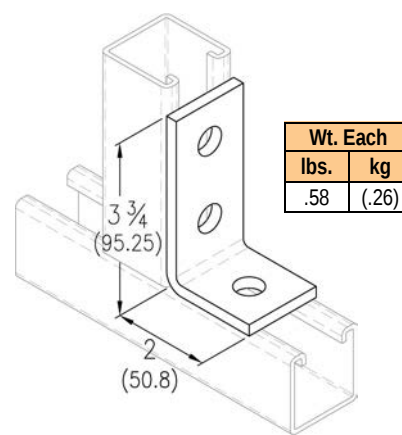
3-HOLE CORNER ANGLE



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

## FIG. 5123

3-HOLE CORNER ANGLE



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

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

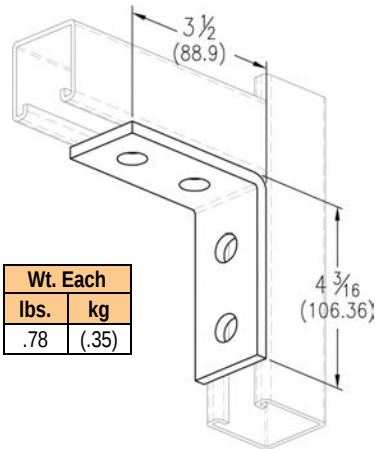
Hole Diameter: <sup>9</sup>/<sub>16</sub>" (14.3); Hole Spacing-From End: <sup>1</sup>/<sub>16</sub>" (20.6); Hole Spacing-On Center: 1<sup>7</sup>/<sub>8</sub>" (47.6); Width: 1<sup>5</sup>/<sub>8</sub>" (41.3); Thickness: <sup>1</sup>/<sub>4</sub>" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless 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

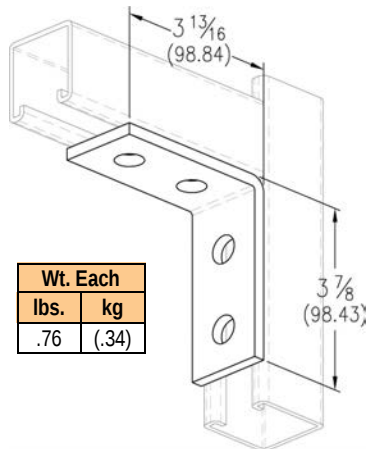
## FIG. 5130

4-HOLE CORNER ANGLE



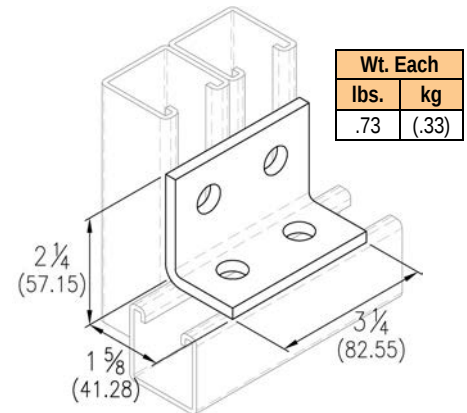
## FIG. 5131

4-HOLE CORNER ANGLE



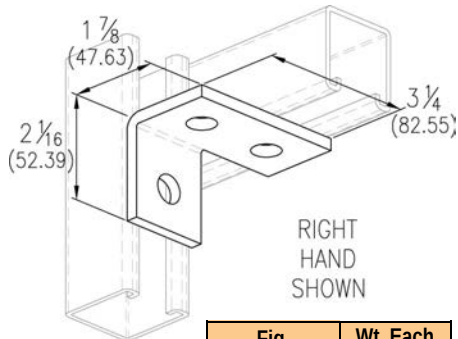
## FIG. 5135

4-HOLE CORNER ANGLE



## FIG. 5140 & 5145

3-HOLE OFFSET BENT ANGLE

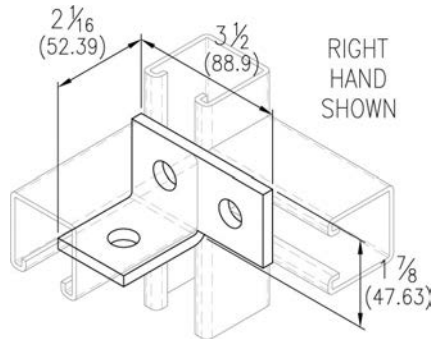


Note: Not available in Stainless Steel.

| Fig. No. |       | Wt. Each |       |
|----------|-------|----------|-------|
|          |       | lbs.     | kg    |
| 5140     | RIGHT | .53      | (.24) |
| 5145     | LEFT  | .53      | (.24) |

## FIG. 5141 & 5146

3-HOLE OFFSET BENT ANGLE

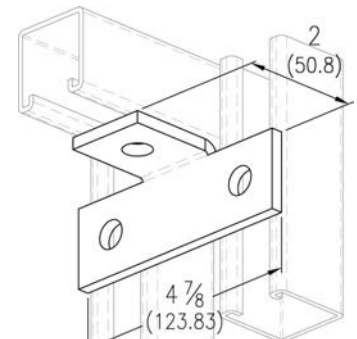


Note: Not available in Stainless Steel.

| Fig. No. |       | Wt. Each |       |
|----------|-------|----------|-------|
|          |       | lbs.     | kg    |
| 5141     | RIGHT | .53      | (.24) |
| 5146     | LEFT  | .53      | (.24) |

## FIG. 5148

3-HOLE OFFSET BENT TEE

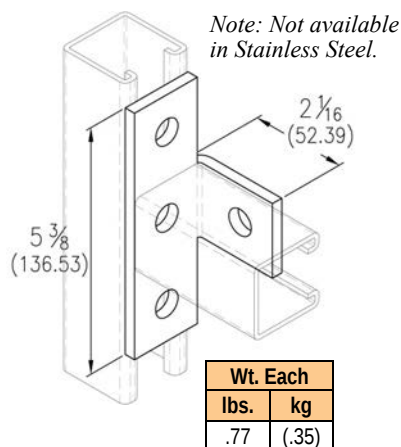


Note: Not available in Stainless Steel.

| Wt. Each |       |  |
|----------|-------|--|
| lbs.     | kg    |  |
| .71      | (.32) |  |

## FIG. 5150

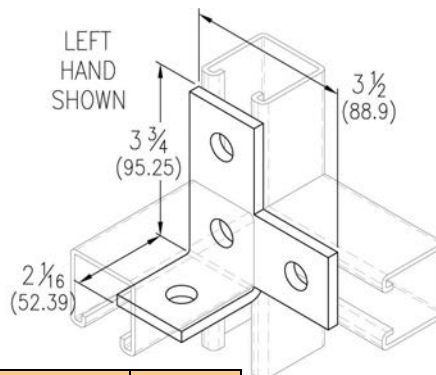
4-HOLE OFFSET BENT TEE



| Wt. Each |       |  |
|----------|-------|--|
| lbs.     | kg    |  |
| .77      | (.35) |  |

## FIG. 5155 & 5156

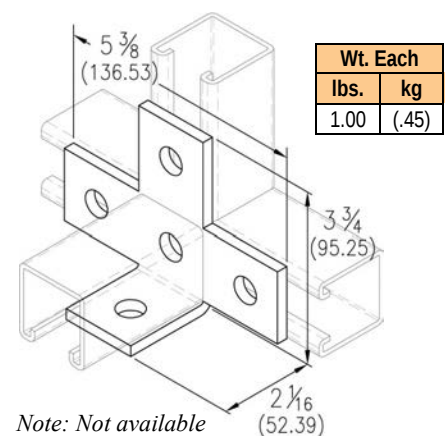
4-HOLE OFFSET BENT TEE



| Fig. No. |       | Wt. Each |       |
|----------|-------|----------|-------|
|          |       | lbs.     | kg    |
| 5155     | RIGHT | .76      | (.34) |
| 5156     | LEFT  | .76      | (.34) |

## 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

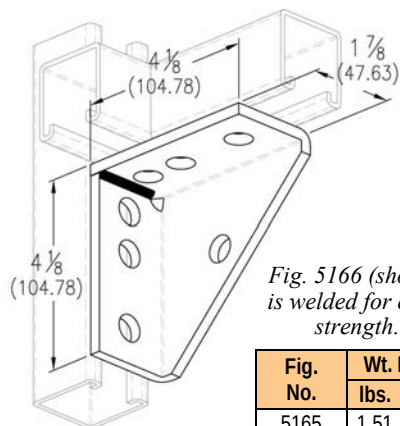
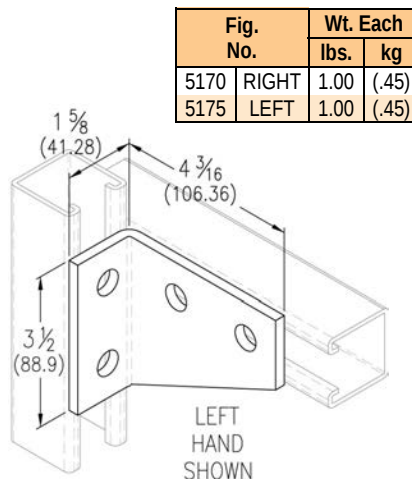


Fig. 5166 (shown)  
is welded for extra  
strength.

| Fig.<br>No. | Wt. Each |       |
|-------------|----------|-------|
|             | lbs.     | kg    |
| 5165        | 1.51     | (.68) |
| 5166        | 1.53     | (.69) |

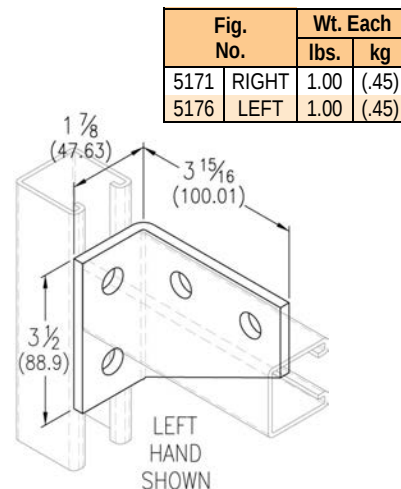
**FIG. 5170 & 5175**  
4-HOLE CORNER GUSSET



| Fig.<br>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

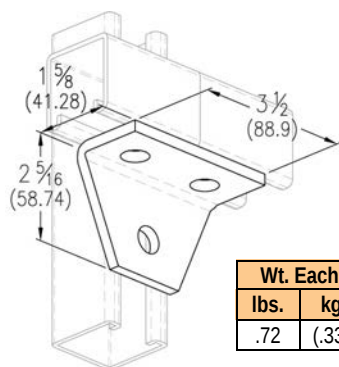


| Fig.<br>No. |       | Wt. Each |       |
|-------------|-------|----------|-------|
|             |       | lbs.     | kg    |
| 5171        | RIGHT | 1.00     | (.45) |
| 5176        | LEFT  | 1.00     | (.45) |

LEFT  
HAND  
SHOWN

**FIG. 5180**

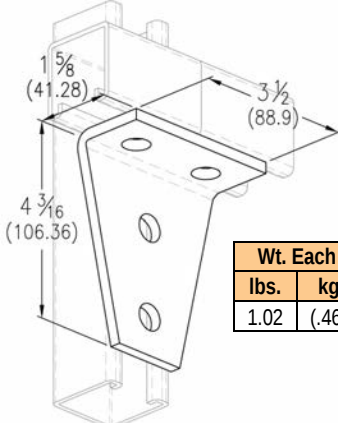
3-HOLE GUSSETED SHELF ANGLE



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

**FIG. 5185**

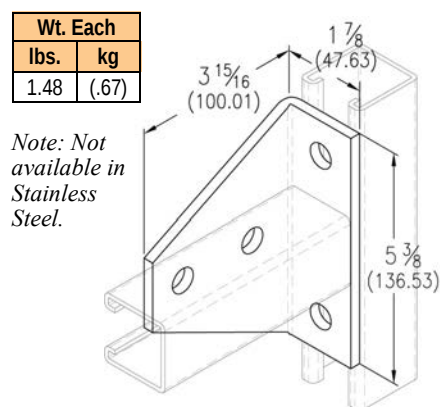
4-HOLE GUSSETED SHELF ANGLE



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.02     | (.46) |

**FIG. 5186**

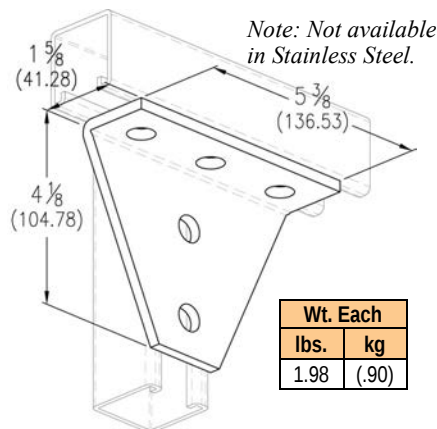
4-HOLE GUSSETED SHELF ANGLE



Note: Not  
available in  
Stainless  
Steel.

**FIG. 5190**

5-HOLE GUSSETED SHELF ANGLE

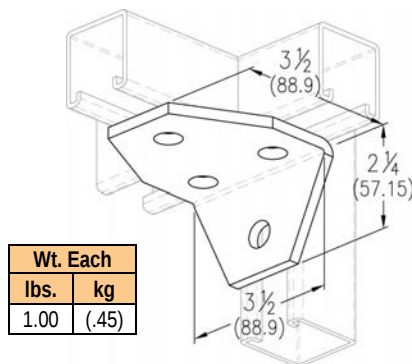


Note: Not available  
in Stainless Steel.

| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.98     | (.90) |

**FIG. 5200**

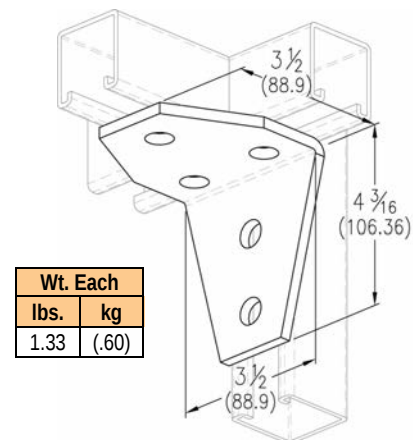
4-HOLE JOINT ANGLE CONNECTOR



| 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.

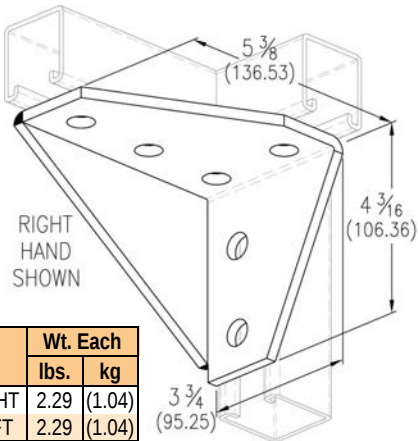
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# 90° ANGLE FITTINGS

## FIG. 5210 & 5211

6-HOLE GUSSETED CORNER CONNECTOR

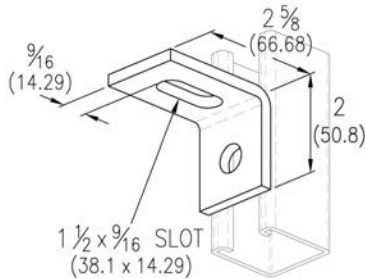
Note: Not available in Stainless Steel.



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

## FIG. 5220

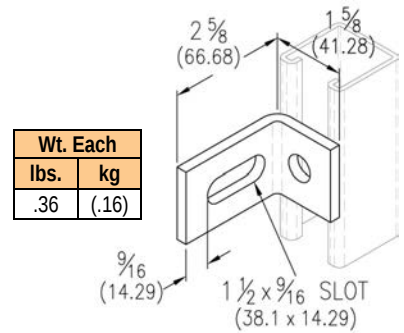
2-HOLE ADJUSTABLE CORNER ANGLE



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

## FIG. 5221

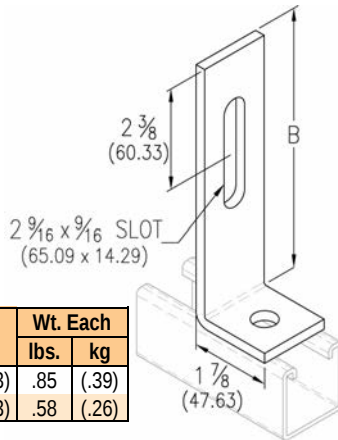
2-HOLE ADJUSTABLE CORNER ANGLE



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

## FIG. 5225 & 5226

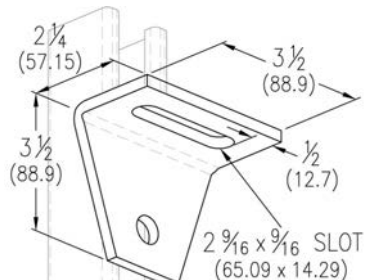
2-HOLE ADJUSTABLE CORNER ANGLE



| 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

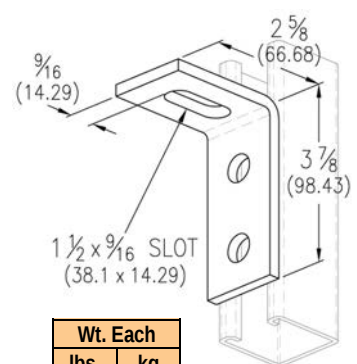


| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| .97      | (.44) |

Note: Not available in Stainless Steel.

## FIG. 5230

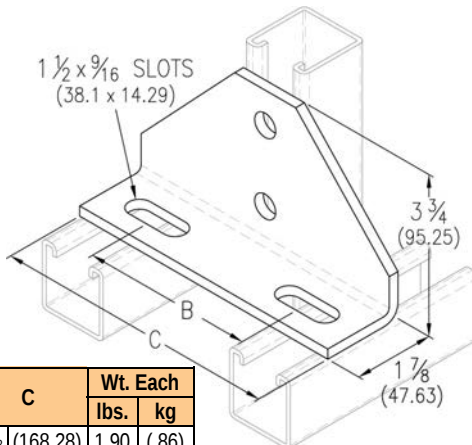
3-HOLE ADJUSTABLE CORNER ANGLE



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

## FIG. 5250 & 5255

4-HOLE ADJUSTABLE CORNER ANGLE

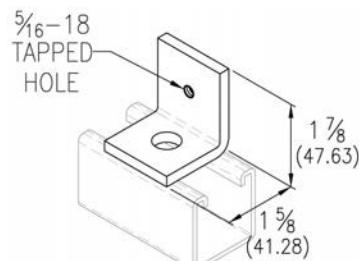


| Fig. No. | B         | C              | Wt. Each |        |
|----------|-----------|----------------|----------|--------|
|          |           |                | lbs.     | kg     |
| 5250     | 4 (101.6) | 6 5/8 (168.28) | 1.90     | (.86)  |
| *5255    | 6 (152.4) | 8 5/8 (219.08) | 2.56     |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

\* Not available in Stainless Steel.

## FIG. 5260

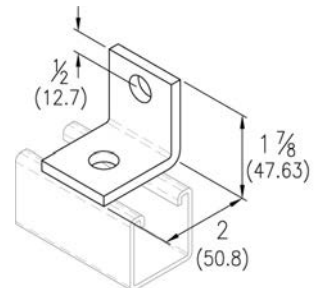
2-HOLE TAPPED CORNER ANGLE



| 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)

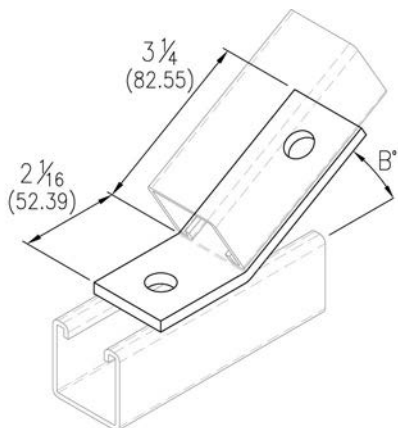
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

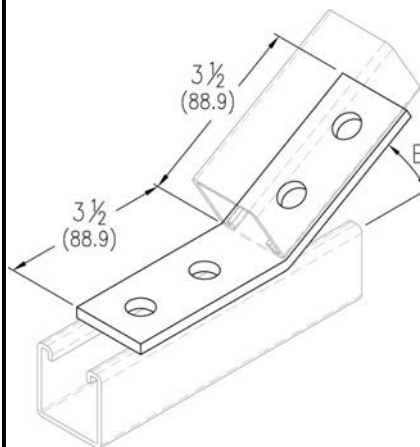
### 2-HOLE OPEN ANGLE CONNECTOR



| 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

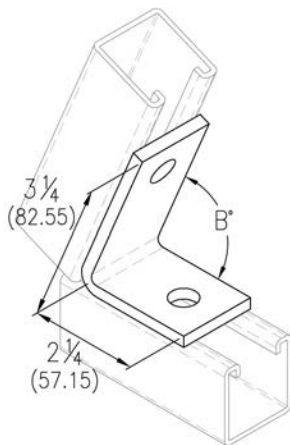
### 4-HOLE OPEN ANGLE CONNECTOR



| 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

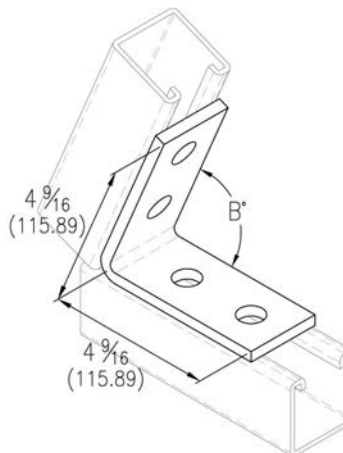
### 2-HOLE CLOSED ANGLE CONNECTOR



| 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

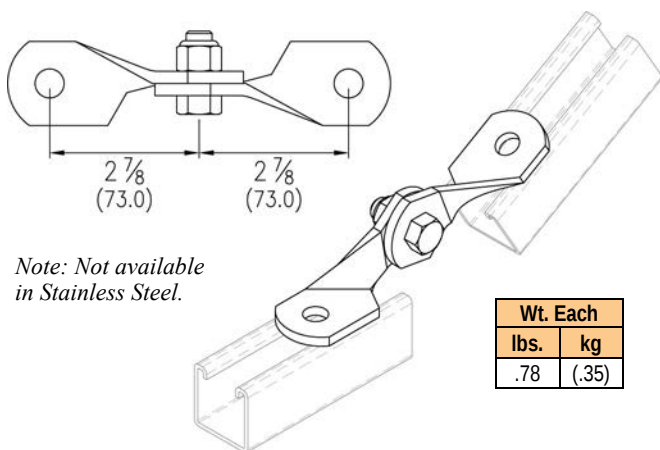
### 4-HOLE CLOSED ANGLE CONNECTOR



| 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

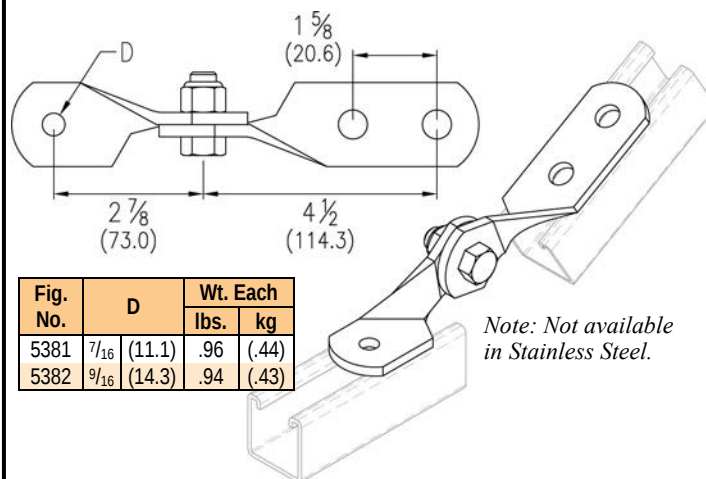


Note: Not available in Stainless Steel.

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

## FIG. 5381 & 5382

### 3-HOLE ADJUSTABLE HINGE



Note: Not available in Stainless Steel.

| 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)

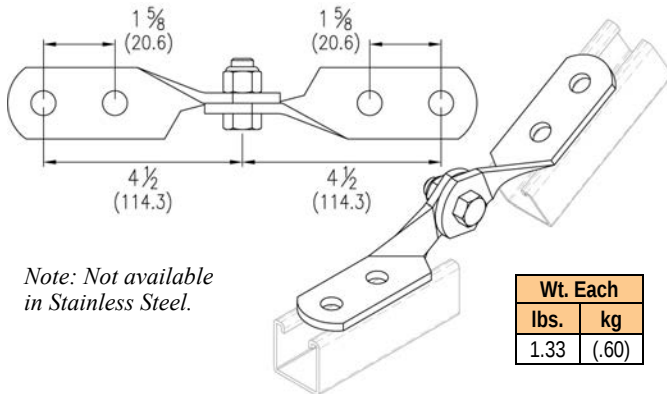
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon 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. 5383**

4-HOLE ADJUSTABLE HINGE

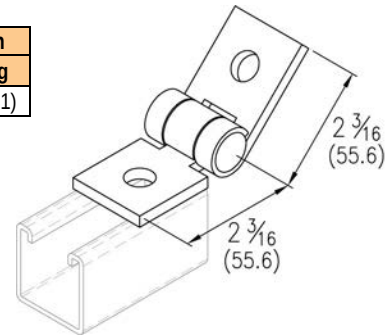


Note: Not available in Stainless Steel.

**FIG. 5384**

2-HOLE ADJUSTABLE HINGE

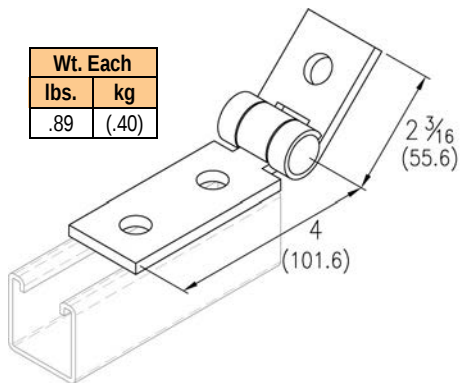
| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| .68      | (.31) |



**FIG. 5385**

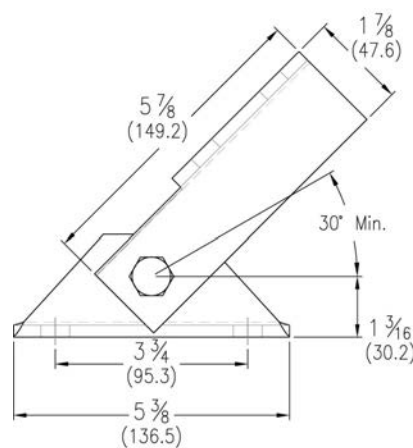
3-HOLE ADJUSTABLE HINGE

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



**FIG. 5390**

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



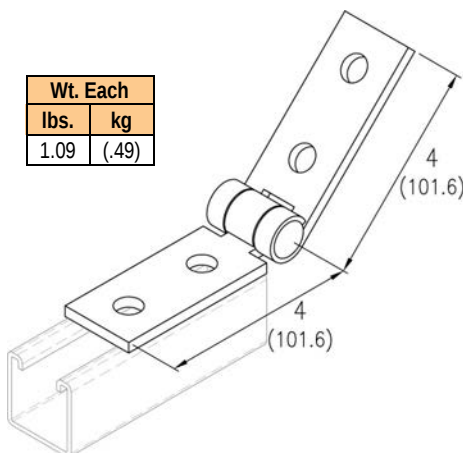
| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 3.07     | (1.40) |

Note: Not available in Stainless Steel.

**FIG. 5386**

4-HOLE ADJUSTABLE HINGE

| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.09     | (.49) |

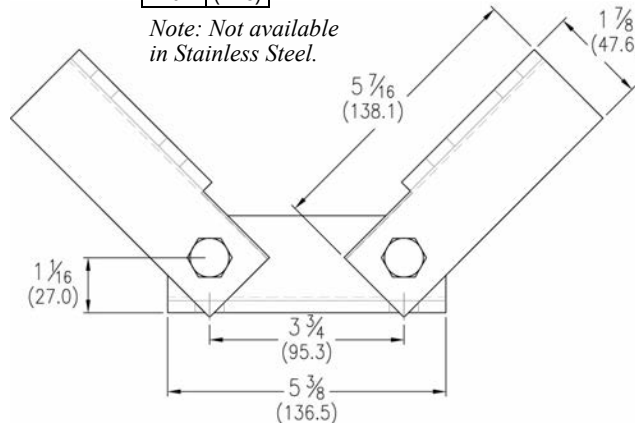


**FIG. 5395**

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)

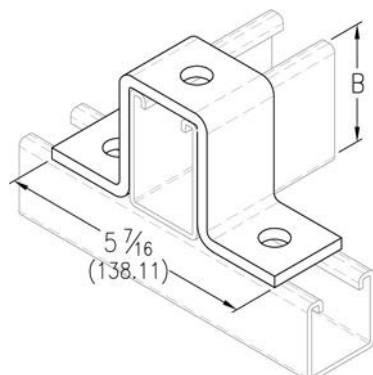
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon 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. 5501 - 5511**

3-HOLE "U" SUPPORT

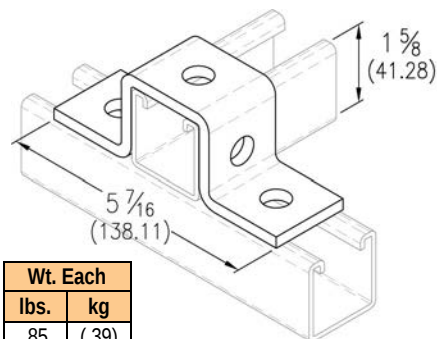


| Fig. No. | B              | Wt. Each |        |
|----------|----------------|----------|--------|
|          |                | lbs.     | kg     |
| *5501    | 13/16 (20.64)  | .66      | (.30)  |
| 5505     | 27/16 (61.91)  | 1.08     | (.49)  |
| 5507     | 3 1/4 (82.55)  | 1.25     | (.57)  |
| * 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**

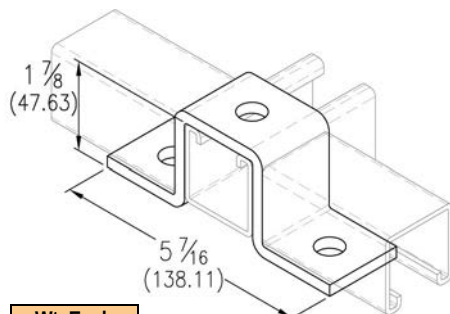
5-HOLE "U" SUPPORT



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

**FIG. 5513**

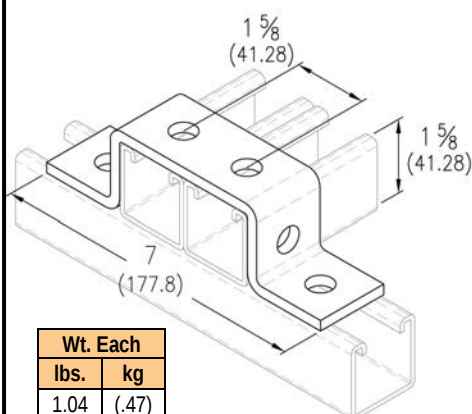
3-HOLE "U" SUPPORT



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

**FIG. 5521**

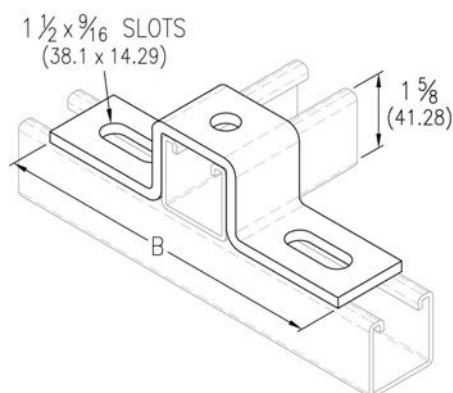
6-HOLE "U" SUPPORT



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.04     | (.47) |

**FIG. 5530 - 5532**

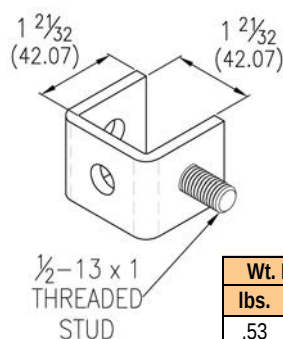
SLOTTED 3-HOLE "U" SUPPORT



| 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**

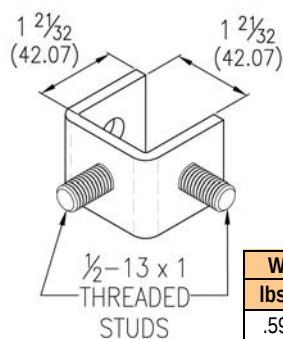
1-STUD RING CONNECTOR



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

**FIG. 5542**

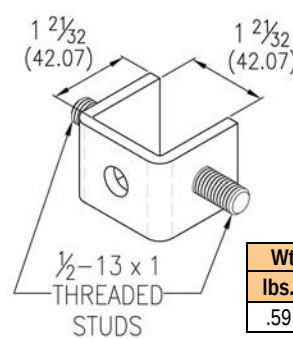
2-STUD RING CONNECTOR



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

**FIG. 5543**

2-STUD RING CONNECTOR



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

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

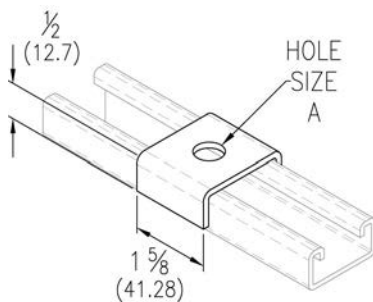
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

# "U" SHAPE FITTINGS

## FIG. 5700 - 5704

1-HOLE "U" WASHER



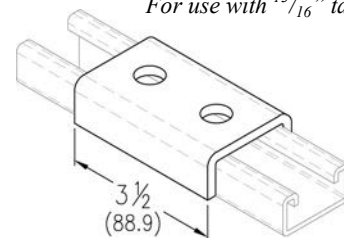
| Fig. No. | Bolt Size | Hole Size A | Wt. Each |           |
|----------|-----------|-------------|----------|-----------|
|          |           |             | lbs.     | kg        |
| 5700     | 1/4       | 5/16        | (7.94)   | .18 (.08) |
| 5701     | 3/8       | 7/16        | (11.11)  | .18 (.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

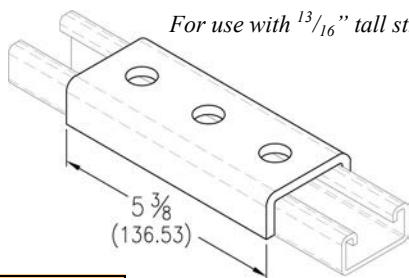


| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| .78      | (.35) |

## FIG. 5710

3-HOLE SPLICE CLEVIS

For use with 1 3/16" tall strut



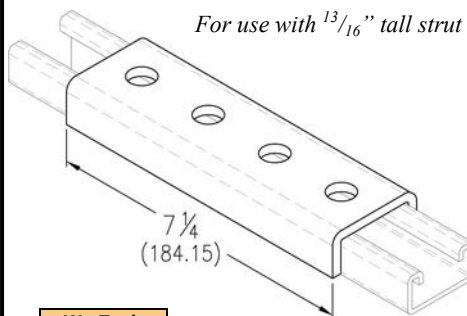
| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.25     | (.57) |

Note: Not available in Stainless Steel.

## FIG. 5715

4-HOLE SPLICE CLEVIS

For use with 1 3/16" tall strut



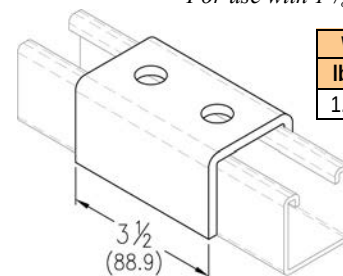
| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.75     | (.79) |

Note: Not available in Stainless Steel.

## FIG. 5720

2-HOLE SPLICE CLEVIS

For use with 1 5/8" tall strut

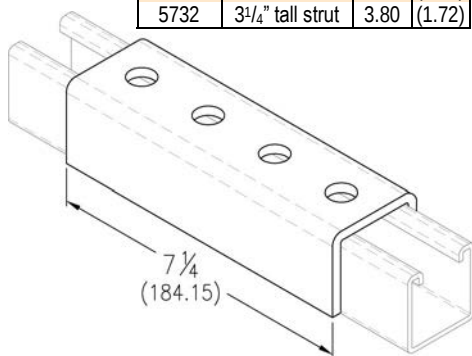


| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.19     | (.54) |

## FIG. 5730 - 5732

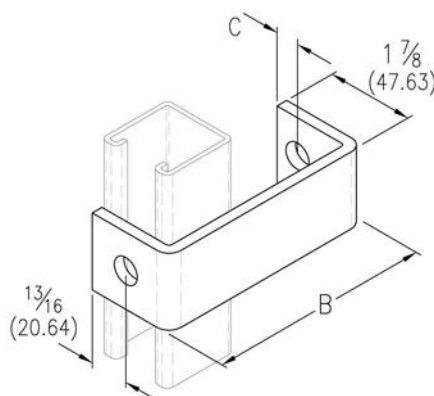
4-HOLE SPLICE CLEVIS

| 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)

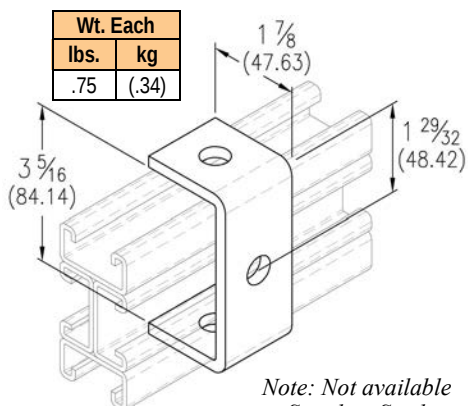
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 9/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

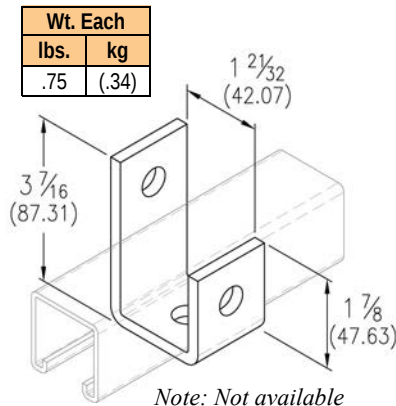
3-HOLE CLEVIS



*Note: Not available in Stainless Steel.*

**FIG. 5775**

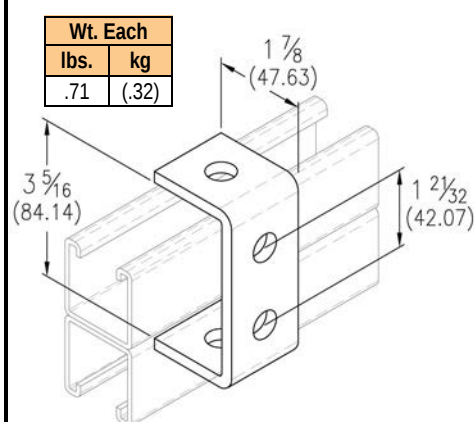
3-HOLE SUSPENSION CLEVIS



*Note: Not available in Stainless Steel.*

**FIG. 5780**

4-HOLE SUSPENSION CLEVIS



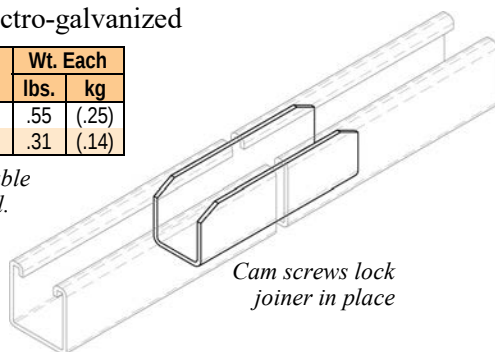
**FIG. 8000 - 8001**

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.*



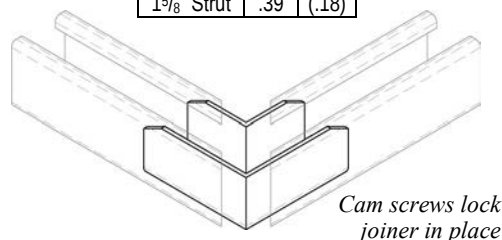
**FIG. 8005**

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) |



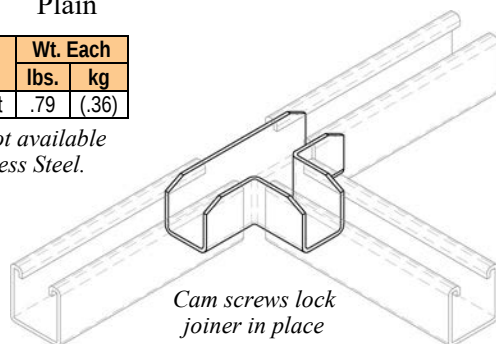
**FIG. 8010**

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.*



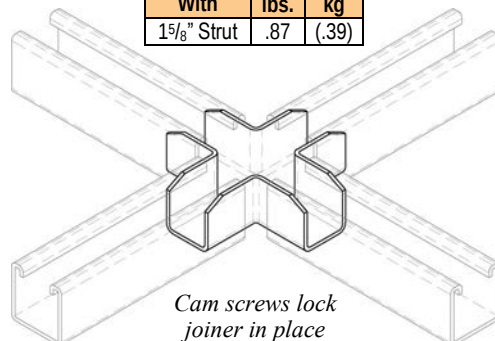
**FIG. 8015**

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)**

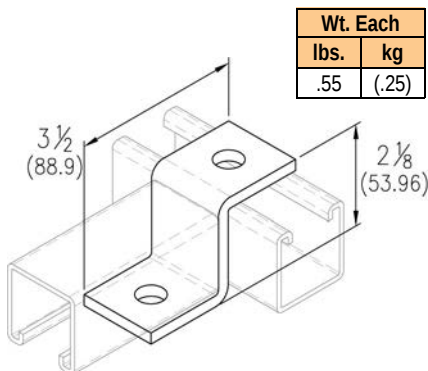
**Hole Diameter:** 9/16" (14.3); **Hole Spacing-From End:** 1 3/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)  
**Material:** Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat,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

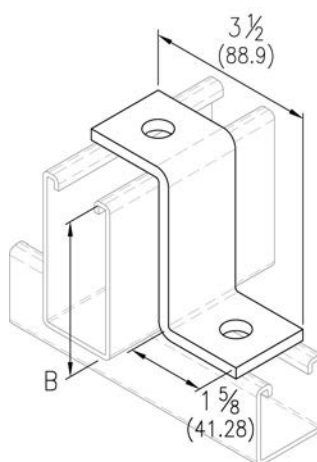
## FIG. 5550

2-HOLE OFFSET "Z" SUPPORT



## FIG. 5551 - 5558

2-HOLE "Z" SUPPORT

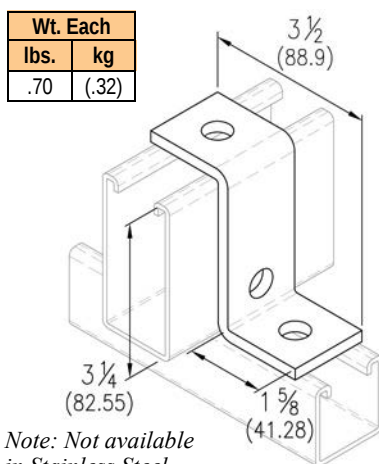


| Fig. No. | B     |          | Wt. Each |       |
|----------|-------|----------|----------|-------|
|          |       |          | lbs.     | kg    |
| *5551    | 13/16 | (20.64)  | .47      | (.21) |
| 5553     | 27/16 | (61.91)  | .67      | (.30) |
| 5558     | 47/8  | (123.83) | .90      | (.41)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

\* Not available in Stainless Steel.

## FIG. 5552

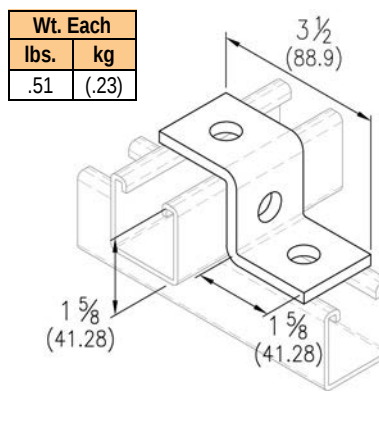
3-HOLE "Z" SUPPORT



Note: Not available in Stainless Steel.

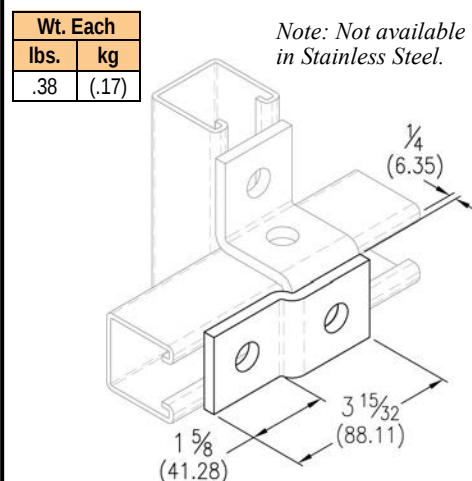
## FIG. 5554

3-HOLE "Z" SUPPORT



## FIG. 5556

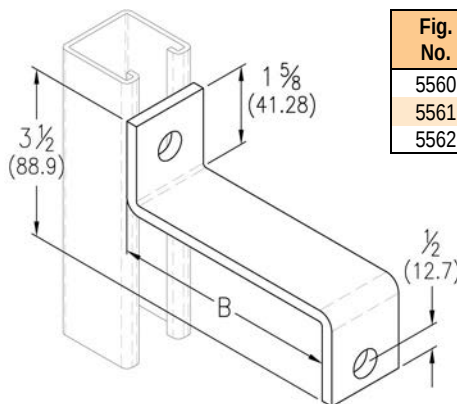
2-HOLE "Z" SUPPORT



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)

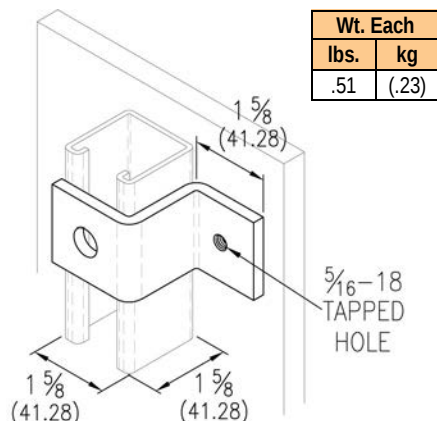
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

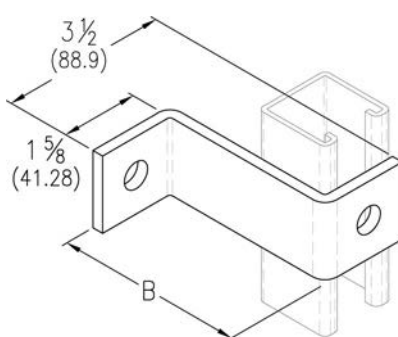
TAPPED "Z" SUPPORT



Note: Not available in Stainless Steel.

**FIG. 5570 - 5574**

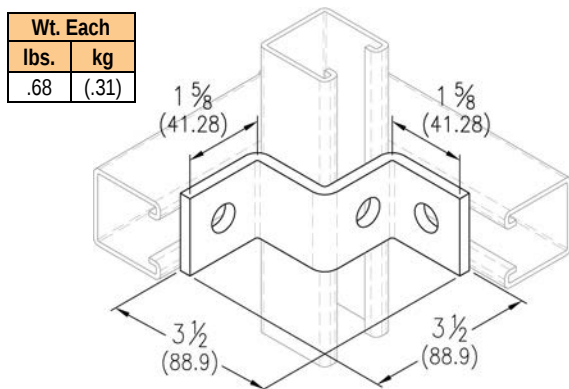
2-HOLE "Z" SUPPORT



| Fig. No. | B |          | Wt. Each |       |
|----------|---|----------|----------|-------|
|          |   |          | lbs.     | kg    |
| 5570     | 4 | (101.60) | .77      | (.35) |
| 5571     | 5 | (127.00) | .95      | (.43) |
| 5572     | 6 | (152.40) | .98      | (.44) |
| 5573     | 7 | (177.80) | 1.05     | (.48) |
| 5574     | 8 | (203.20) | 1.20     | (.54) |

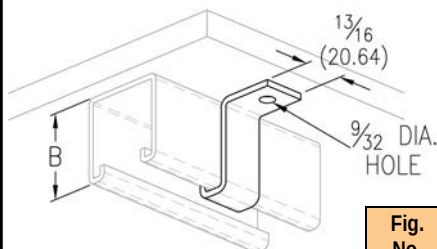
**FIG. 5575**

3-HOLE SHEATH CORNER CONNECTOR



**FIG. 5580 - 5583**

CHANNEL HANGER



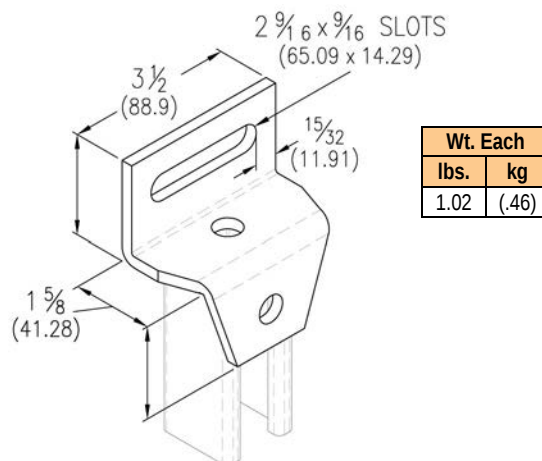
Note: Not available in Stainless Steel.

| Fig. No. | B      |         | Wt. Each |       |
|----------|--------|---------|----------|-------|
|          |        |         | lbs.     | kg    |
| 5580     | 1 5/8  | (41.28) | .09      | (.04) |
| 5581     | 1 3/16 | (20.64) | .07      | (.03) |
| 5582     | 3 1/4  | (82.55) | .13      | (.06) |
| 5583     | 2 7/16 | (61.91) | .11      | (.05) |

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)

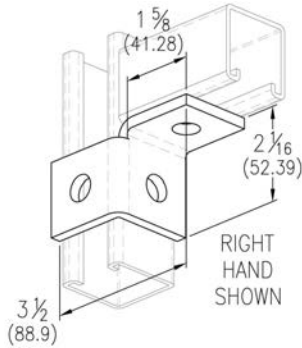
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

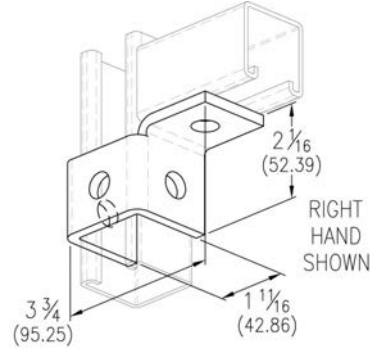
3-HOLE CORNER CONNECTOR



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

## FIG. 5605 & 5606

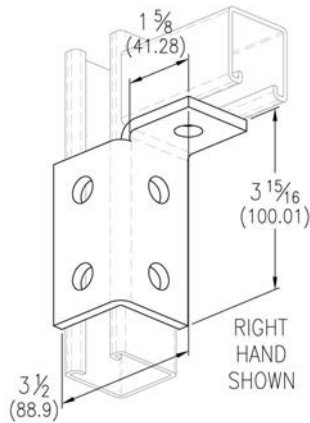
4-HOLE CORNER CONNECTOR



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

## FIG. 5610 & 5611

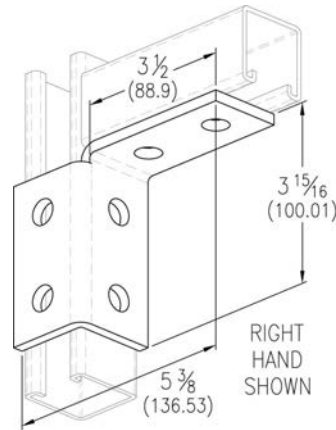
5-HOLE CORNER CONNECTOR



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

## FIG. 5615 & 5616

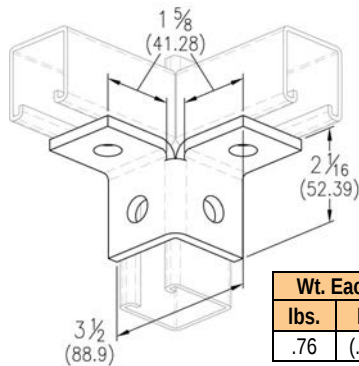
6-HOLE CORNER CONNECTOR



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

## FIG. 5620

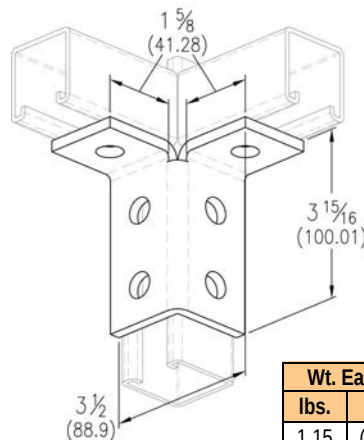
4-HOLE DOUBLE CORNER CONNECTOR



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

## FIG. 5625

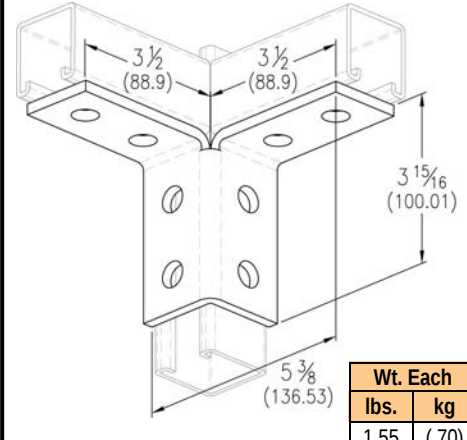
6-HOLE DOUBLE CORNER CONNECTOR



| 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 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.

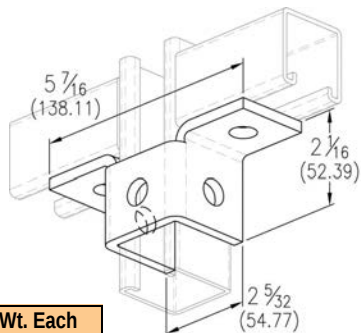
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# WING FITTINGS

## FIG. 5635

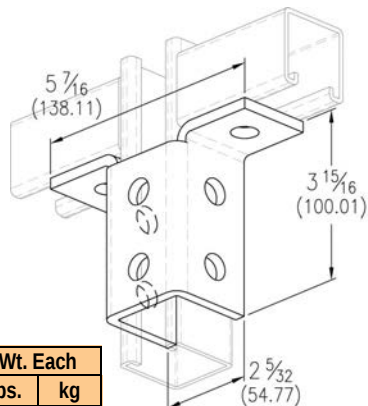
5-HOLE DOUBLE WING CONNECTOR



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

## FIG. 5640

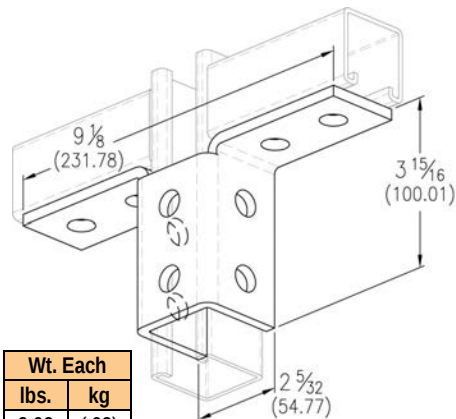
8-HOLE DOUBLE WING CONNECTOR



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.77     | (.80) |

## FIG. 5645

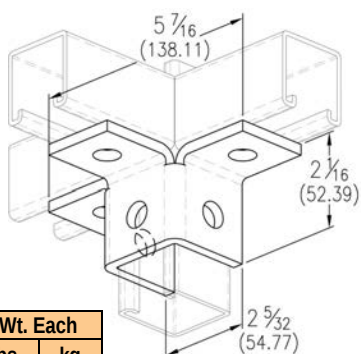
10-HOLE DOUBLE WING CONNECTOR



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 2.02     | (.92) |

## FIG. 5650

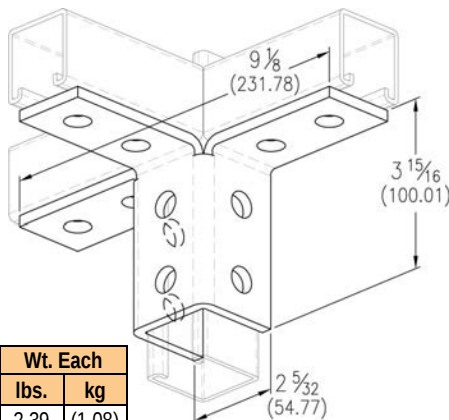
6-HOLE TRIPLE WING CONNECTOR



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.07     | (.49) |

## FIG. 5655

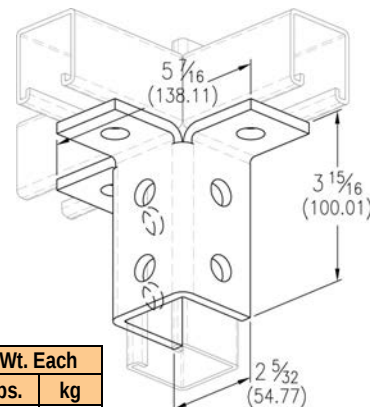
12-HOLE TRIPLE WING CONNECTOR



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 2.39     | (1.08) |

## FIG. 5660

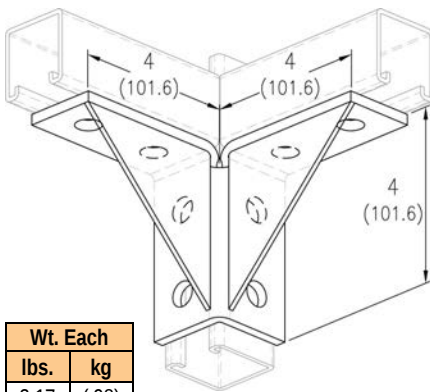
9-HOLE TRIPLE WING CONNECTOR



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.93     | (.88) |

## FIG. 5665

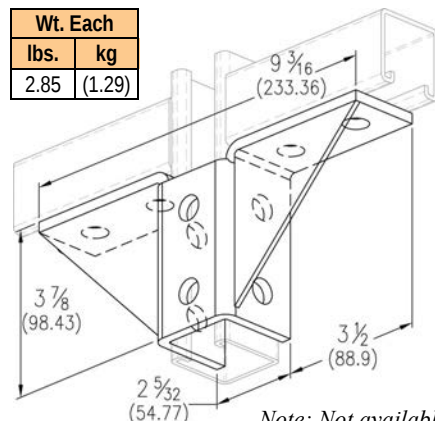
6-HOLE GUSSETED DOUBLE CORNER CONNECTOR



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 2.17     | (.98) |

## FIG. 5675

10-HOLE GUSSETED DOUBLE CORNER CONNECTOR

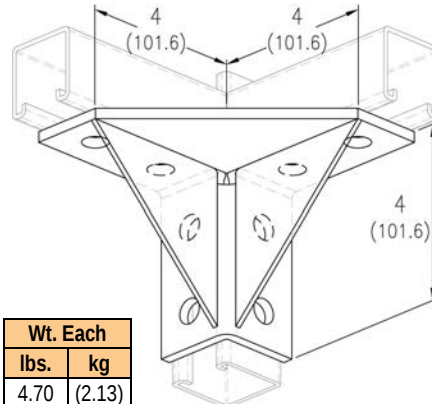


| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 2.85     | (1.29) |

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 1/2" (41.3) width series channel fittings (Unless Otherwise Noted)

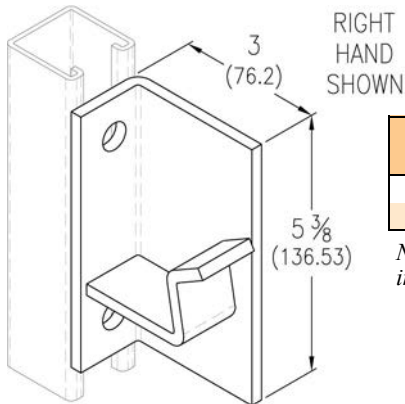
Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

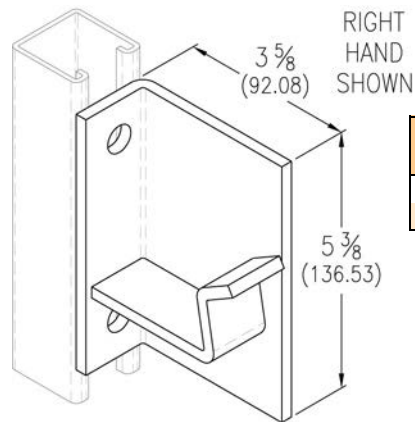


| Fig. No. |       | Wt. Each |        |
|----------|-------|----------|--------|
|          |       | lbs.     | kg     |
| 5801     | RIGHT | 2.25     | (1.02) |
| 5802     | LEFT  | 2.25     | (1.02) |

Note: Not available in Stainless Steel.

## FIG. 5803 & 5804

SINGLE PIPE AXLE SUPPORT FOR 2" PIPE

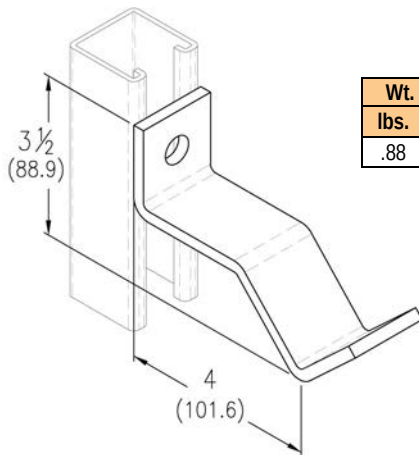


| Fig. No. |       | Wt. Each |        |
|----------|-------|----------|--------|
|          |       | lbs.     | kg     |
| 5803     | RIGHT | 2.46     | (1.12) |
| 5804     | LEFT  | 2.46     | (1.12) |

Note: Not available in Stainless Steel.

## FIG. 5821

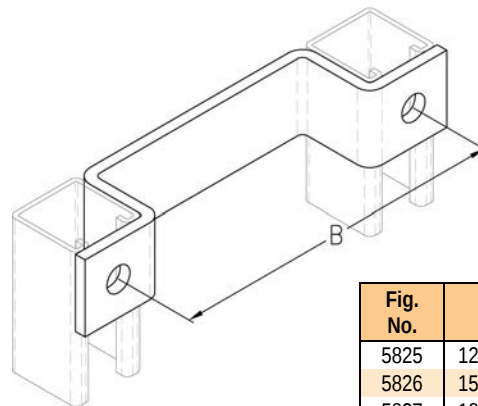
PIPE SUPPORT BRACKET



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

## FIG. 5825 - 5827

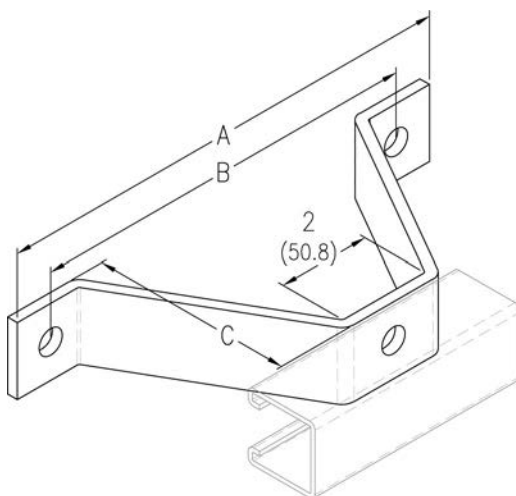
SERIES LADDER RUNG



| 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)

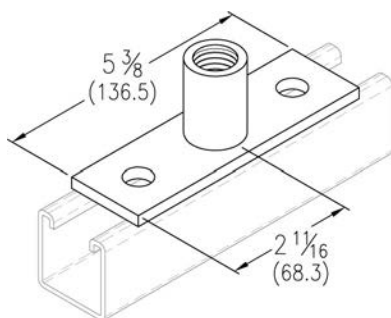
Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1 3/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
 Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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

# SPECIALTY FITTINGS

## FIG. 5835 - 5837

PIPE COUPLING FITTING

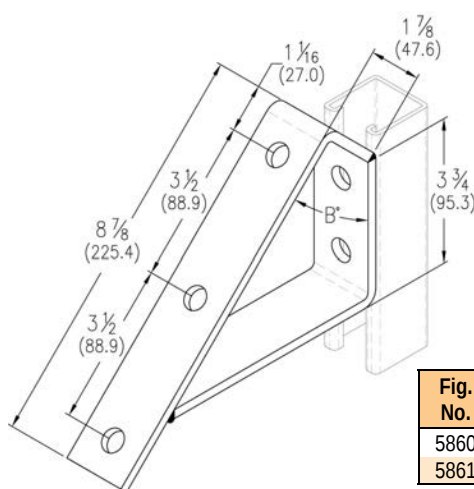


| Fig. No. | Pipe Size | Wt. Each |       |
|----------|-----------|----------|-------|
|          |           | lbs.     | kg    |
| 5835     | 1/2       | .77      | (.35) |
| 5836     | 3/4       | .84      | (.38) |
| 5837     | 1         | 1.05     | (.48) |

Note: Not available in Stainless Steel.

## FIG. 5860 & 5861

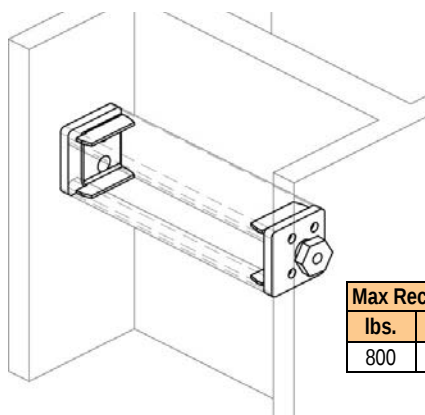
STAIR SUPPORT



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

## FIG. 8070

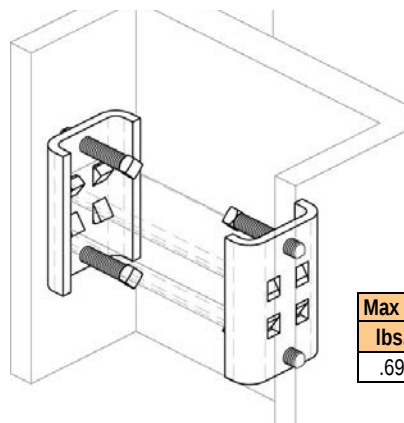
COLUMN SUPPORT FOR 1 5/8" CHANNEL



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

## FIG. 8075

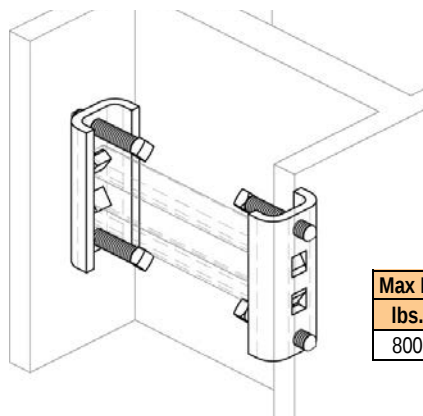
COLUMN SUPPORT FOR 1 5/8" CHANNEL



| Max Rec. Load |       | Wt. Each |       |
|---------------|-------|----------|-------|
| lbs.          | kN    | lbs.     | kg    |
| .69           | (.31) | .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.

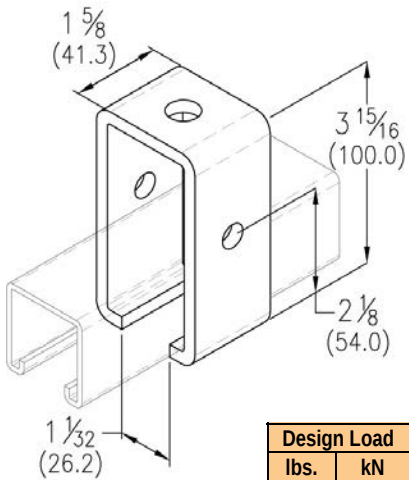
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# TROLLEY ASSEMBLIES



**FIG. 5840**

TROLLEY BEAM SUPPORT

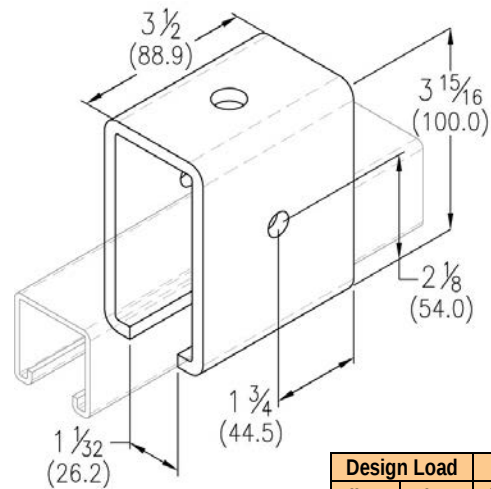


| Design Load |        | Wt. Each |       |
|-------------|--------|----------|-------|
| lbs.        | kN     | lbs.     | kg    |
| 1200        | (5.34) | 1.02     | (.46) |

Note: Not available in Stainless Steel.

**FIG. 5845**

TROLLEY BEAM JOINT SUPPORT

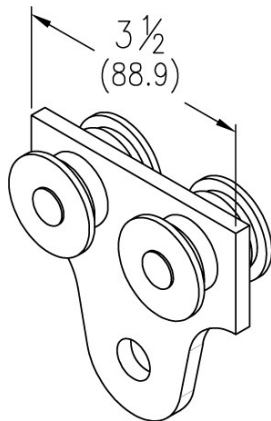


| Design Load |         | Wt. Each |        |
|-------------|---------|----------|--------|
| lbs.        | kN      | lbs.     | kg     |
| 2500        | (11.12) | 2.20     | (1.00) |

Note: Not available in Stainless Steel.

**FIG. 5870**

4-BEARING TROLLEY ASSEMBLY



| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.10     | (.50) |

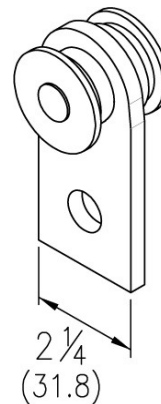
| FPM | RPM | Design Load |        |
|-----|-----|-------------|--------|
|     |     | lbs.        | kN     |
| 180 | 600 | 300         | (1.33) |
| 90  | 300 | 450         | (2.00) |
| 30  | 100 | 600         | (2.67) |

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.

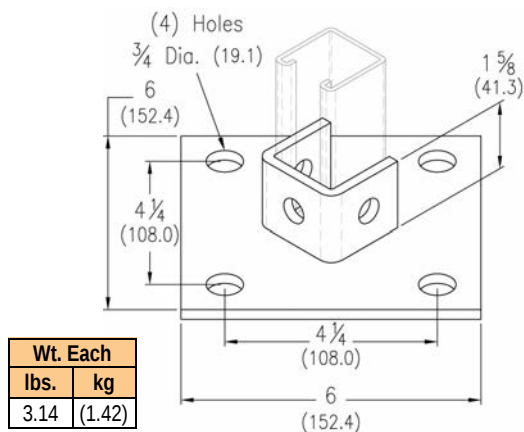
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



# POST BASES

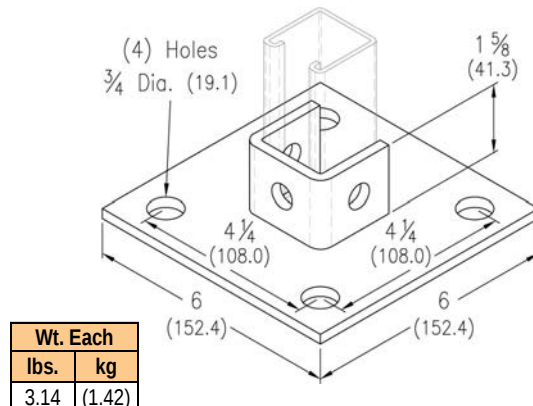
## FIG. 6005

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



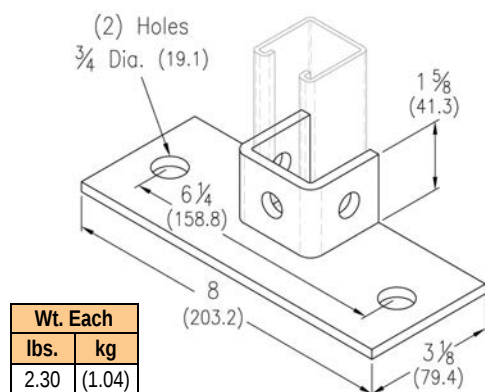
## FIG. 6010

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



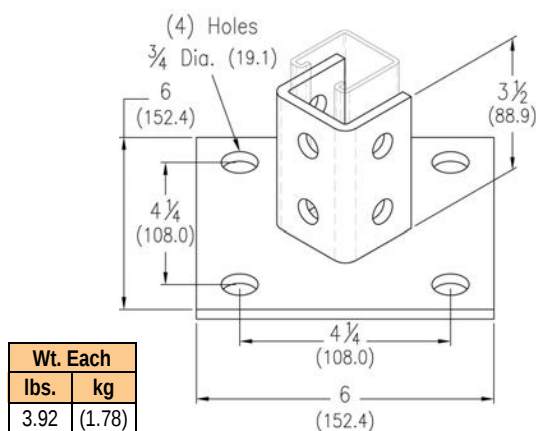
## FIG. 6015

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



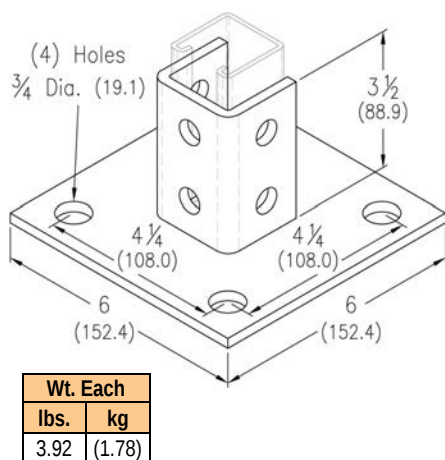
## FIG. 6020

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



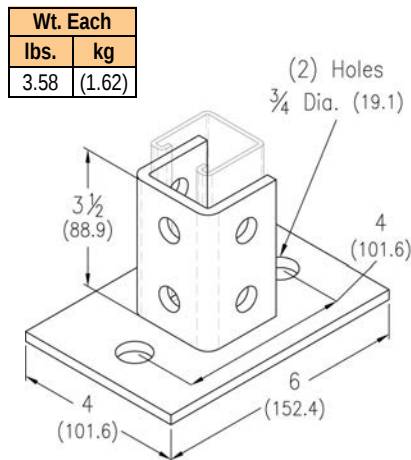
## FIG. 6025

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



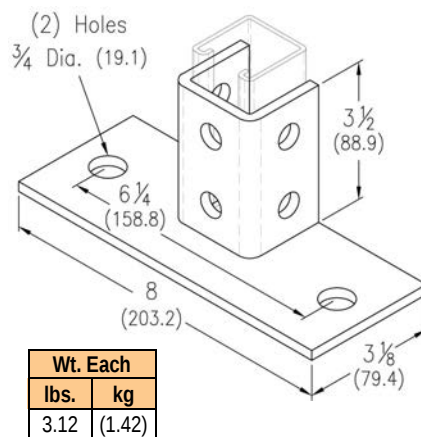
## FIG. 6029

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:  $\frac{3}{16}$ " (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.

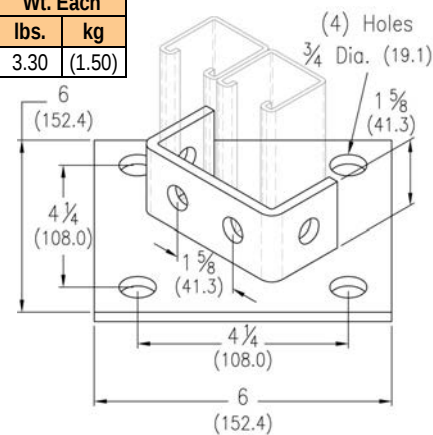
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# POST BASES

## FIG. 6035

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

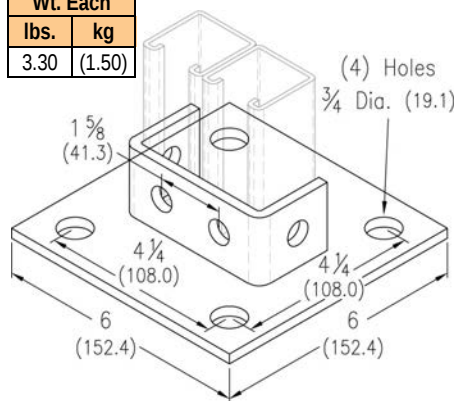
| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 3.30     | (1.50) |



## FIG. 6040

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

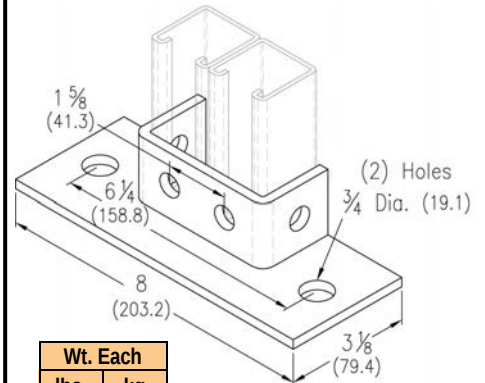
| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 3.30     | (1.50) |



## FIG. 6045

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

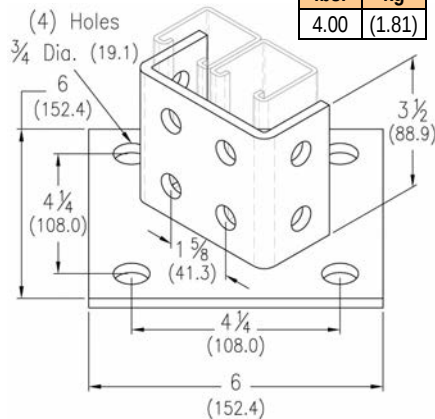
| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 2.50     | (1.13) |



## FIG. 6050

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

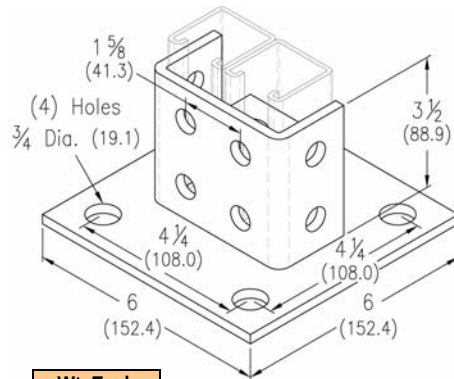
| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 4.00     | (1.81) |



## FIG. 6060

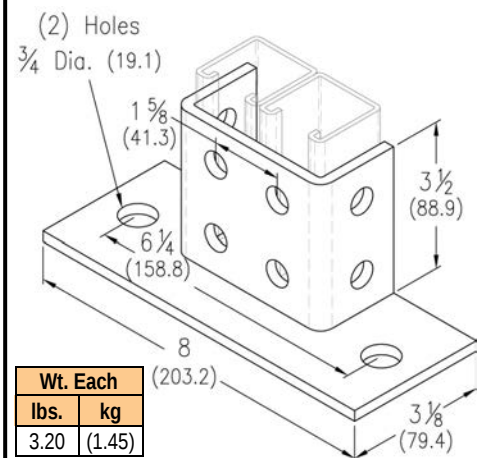
POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 4.00     | (1.81) |



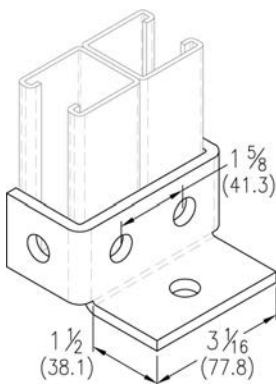
## FIG. 6065

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT



## FIG. 6080

POST BASE FOR DOUBLE 1<sup>5</sup>/<sub>8</sub>" STRUT

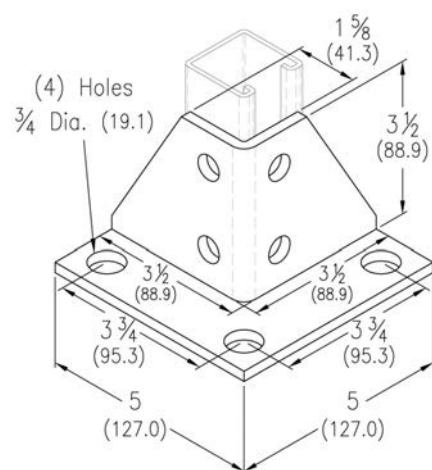


| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 1.30     | (.59) |

Note: Not available in Stainless Steel.

## FIG. 6095

POST BASE FOR 1<sup>5</sup>/<sub>8</sub>" STRUT



| Wt. Each |        |
|----------|--------|
| lbs.     | kg     |
| 2.97     | (1.37) |

Note: Not available in Stainless Steel.

**Standard Product Information for 1<sup>5</sup>/<sub>8</sub>" (41.3) width series channel fittings (Unless Otherwise Noted)**

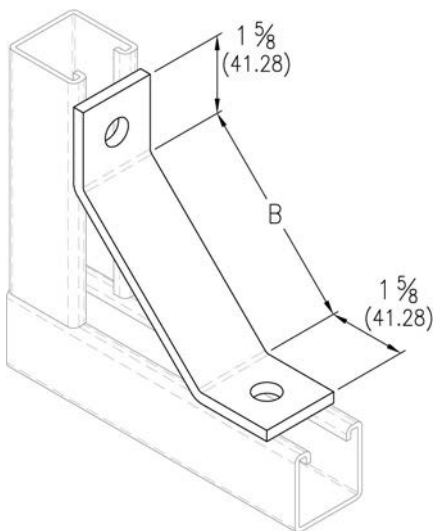
**Hole Diameter:** 3/16" (14.3); **Hole Spacing-From End:** 1 1/16" (20.6); **Hole Spacing-On Center:** 1 7/8" (47.6); **Width:** 1 5/8" (41.3); **Thickness:** 1/4" (6.4)  
**Material:** Carbon steel (Type 304 or 316 Stainless Steel upon request); **Finish:** Electro-galvanized (hot-dip galvanized, e-coat,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

## 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

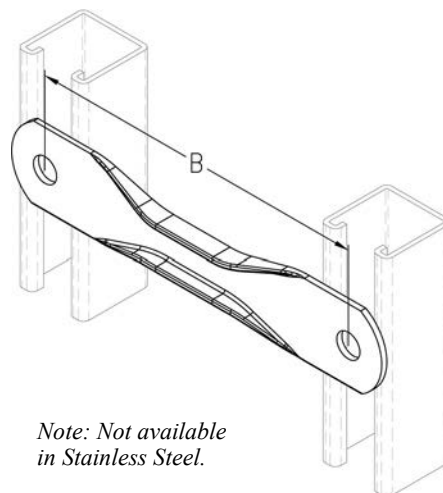
2-HOLE 45° TUBING KNEE BRACE



| 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

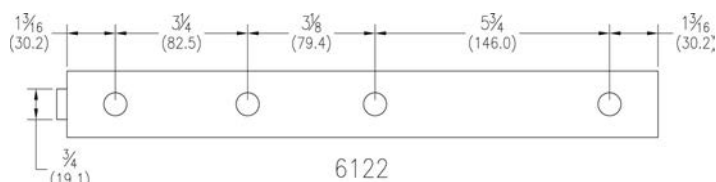
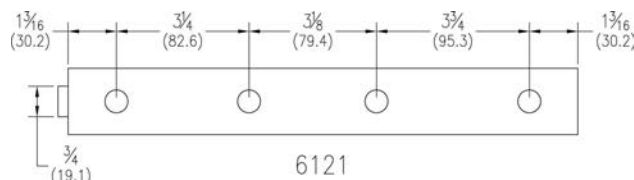
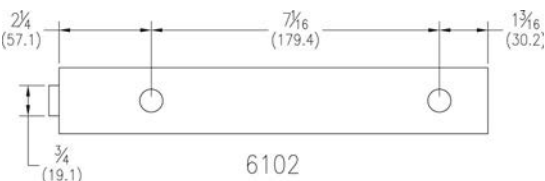
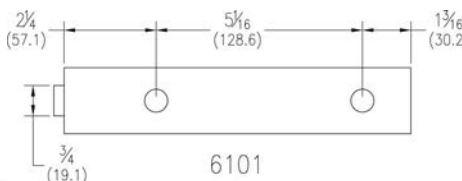
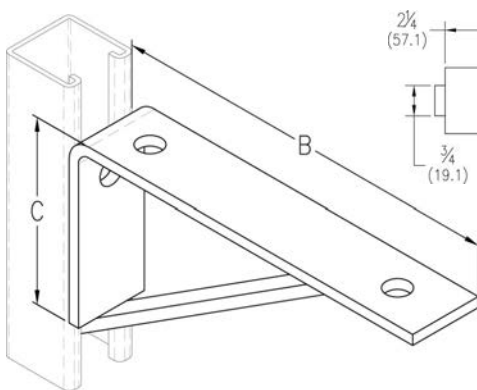
2-HOLE STRAIGHT TUBING BRACE



| 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 1/8" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 3/16" (14.3); Hole Spacing-From End: 1 1/8" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 1/8" (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.

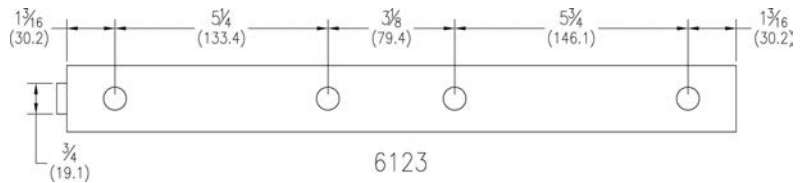
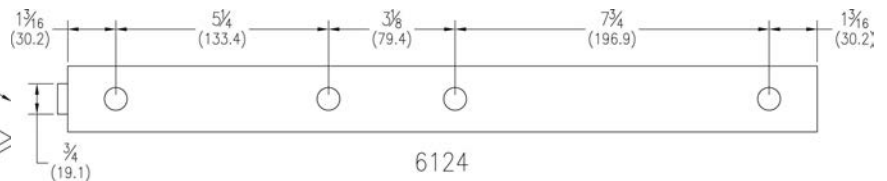
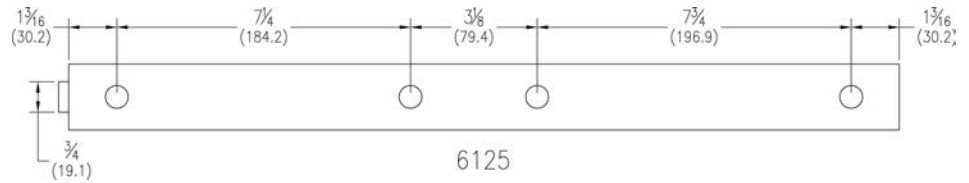
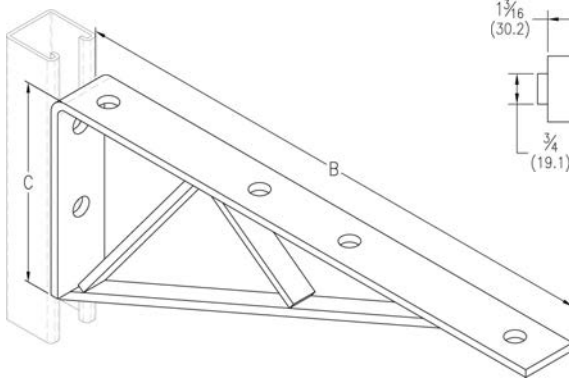
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# BRACKETS & BRACE FITTINGS



## FIG. 6123 - 6125

### SHELF BRACKET

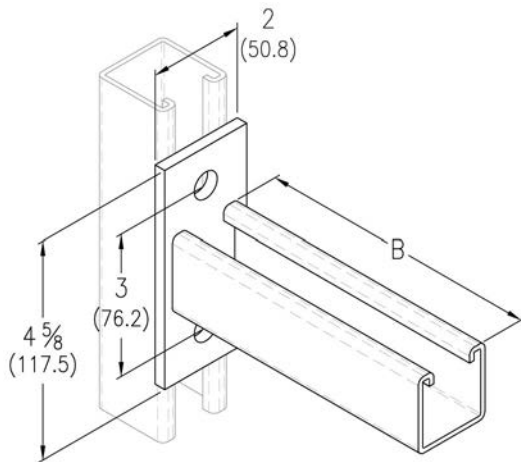


| Fig. No. | B              | C         | Uniform Load |             | Wt. Each |    |
|----------|----------------|-----------|--------------|-------------|----------|----|
|          |                |           | lbs.         | kN          | lbs.     | kg |
| 6123     | 16 1/2 (419.1) | 6 (152.4) | 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

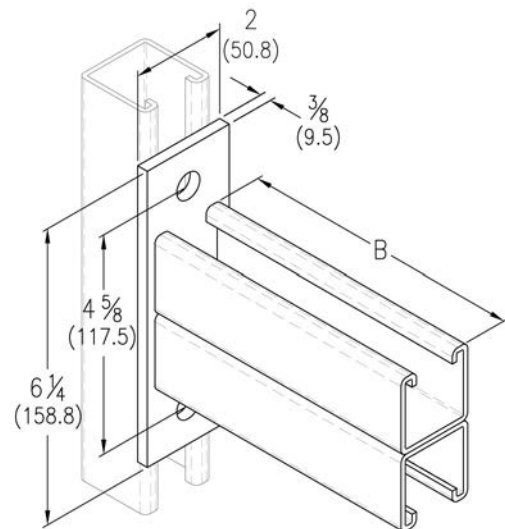


| Fig. No. | B           | Uniform Load |             | Wt. Each |    |
|----------|-------------|--------------|-------------|----------|----|
|          |             | lbs.         | kN          | lbs.     | kg |
| 6130     | 6 (152.40)  | 1200 (5.34)  | 1.85 (.84)  |          |    |
| 6131     | 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.

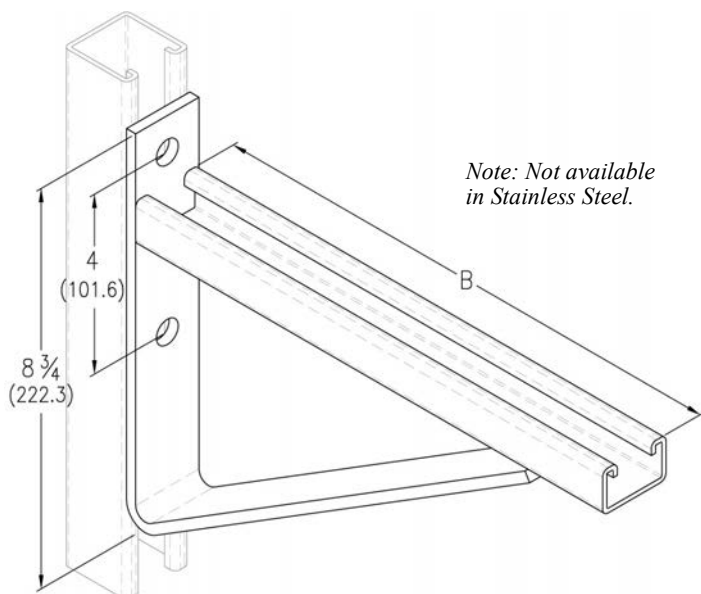
### Standard Product Information for 1 5/16" (41.3) width series channel fittings (Unless Otherwise Noted)

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

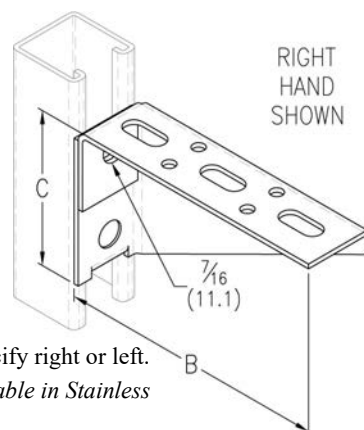
**FIG. 6150 - 6152**  
BRACED SINGLE BRACKET



| 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.

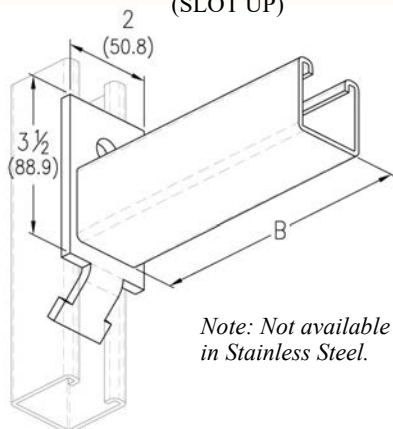
Note: Not available in Stainless Steel.

| 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) | 1 15/16 | (49.21)  | 275          | (1.22) | .58      | (.26)  |
| 6171     | 8  | (203.2) | 2 7/16  | (61.91)  | 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)

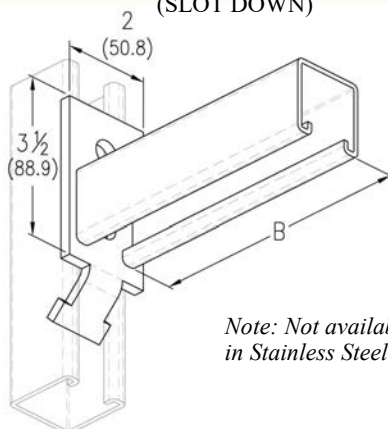


| Fig. No. | B  |          | Uniform Load |        | Wt. Each |        |
|----------|----|----------|--------------|--------|----------|--------|
|          |    |          | lbs.         | kN     | lbs.     | kg     |
| 6202     | 6  | (152.40) | 1200         | (5.34) | 1.50     | (.68)  |
| 6204     | 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)

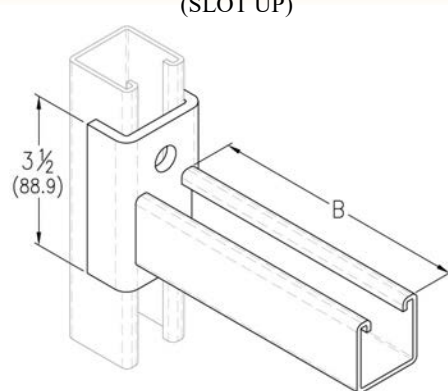


| Fig. No. | B  |          | Uniform Load |        | Wt. Each |        |
|----------|----|----------|--------------|--------|----------|--------|
|          |    |          | lbs.         | kN     | lbs.     | kg     |
| 6212     | 6  | (152.40) | 1200         | (5.34) | 1.50     | (.68)  |
| 6214     | 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:** 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.

# 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

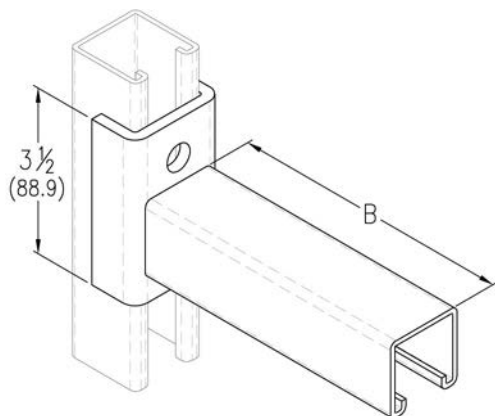
BRACKETS &  
BRACE FITTINGS

BEAM  
CLAMPS

ROOFTOP  
SUPPORTS

## FIG. 6232 & 6234

WRAP-AROUND CHANNEL BRACKET (SLOT DOWN)

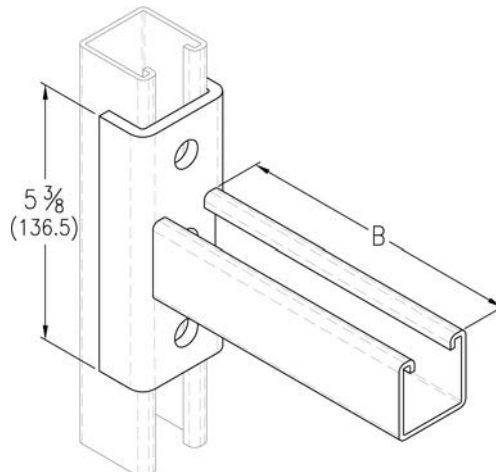


| Fig. No. | B  |         | Uniform Load |        | Wt. Each |        |
|----------|----|---------|--------------|--------|----------|--------|
|          |    |         | lbs.         | kN     | lbs.     | kg     |
| 6232     | 6  | (152.4) | 1600         | (7.12) | 1.90     | (.86)  |
| 6234     | 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)

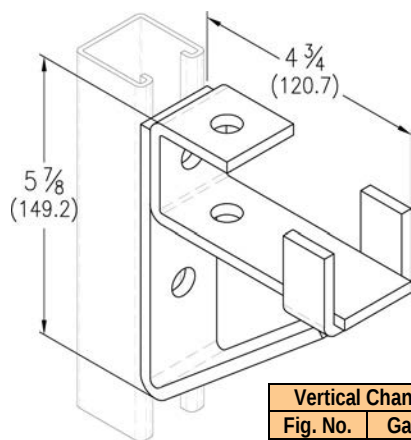


| Fig. No. | B  |         | Uniform Load |        | Wt. Each |        |
|----------|----|---------|--------------|--------|----------|--------|
|          |    |         | lbs.         | kN     | lbs.     | kg     |
| 6246     | 18 | (457.2) | 600          | (2.67) | 4.30     | (1.95) |
| 6248     | 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  
1<sup>5</sup>/<sub>8</sub>" TALL STRUT



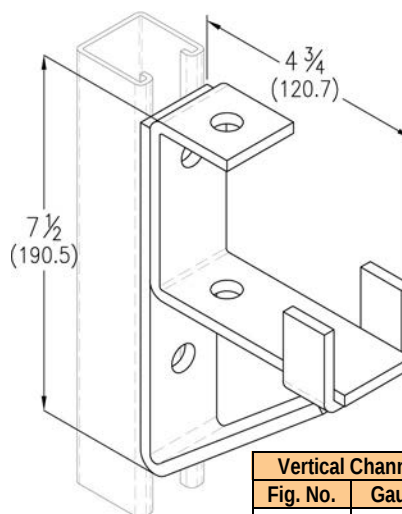
| Wt. Each |       |
|----------|-------|
| lbs.     | kg    |
| 2.10     | (.95) |

| 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  
3<sup>1</sup>/<sub>4</sub>" 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 1<sup>5</sup>/<sub>8</sub>" (41.3) width series channel fittings (Unless Otherwise Noted)

Hole Diameter: 5/16" (14.3); Hole Spacing-From End: 1<sup>1</sup>/<sub>16</sub>" (20.6); Hole Spacing-On Center: 1<sup>7</sup>/<sub>8</sub>" (47.6); Width: 1<sup>5</sup>/<sub>8</sub>" (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.

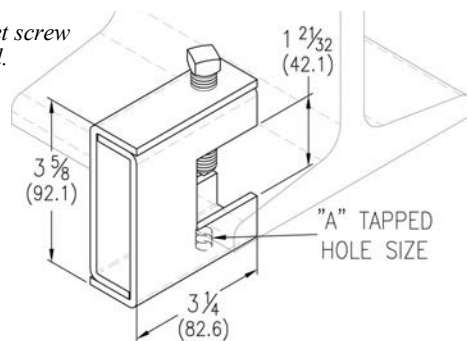
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# BEAM CLAMPS

## FIG. 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) |

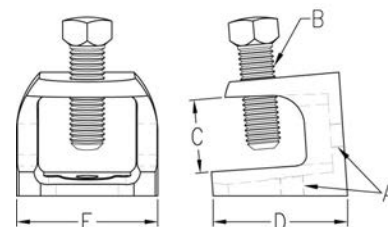
For beam flanges between 3/4" (19.05) & 1 5/8" (41.28) thick

## FIG. 7005 - 7007

### BEAM CLAMP

Material: Malleable iron.

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



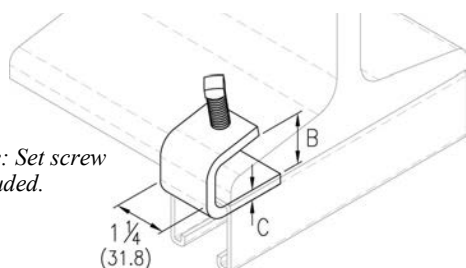
| Fig. No. | A      | B       | C             | D               | E              |
|----------|--------|---------|---------------|-----------------|----------------|
| 7005     | 1/4-20 | 5/16-18 | 7/8 (22.23)   | 1 3/8 (34.93)   | 1 1/8 (28.58)  |
| 7006     | 3/8-16 | 1/2-13  | 1 1/8 (28.58) | 1 13/16 (46.04) | 2 (50.80)      |
| 7007     | 1/2-13 | 1/2-13  | 1 1/4 (31.75) | 2 5/16 (58.74)  | 2 7/16 (61.91) |

| 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.



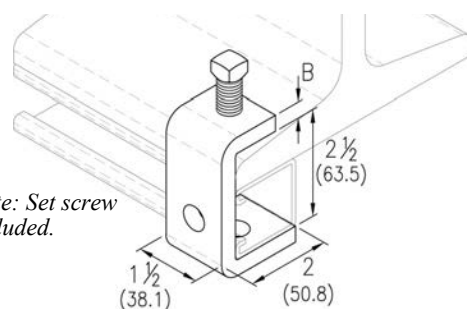
| Fig. No. | Set Screw | B             | C          | Max. Rec. Load |        | Wt. Each |       |
|----------|-----------|---------------|------------|----------------|--------|----------|-------|
|          |           |               |            | lbs.           | kN     | lbs.     | kg    |
| 7011     | 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.



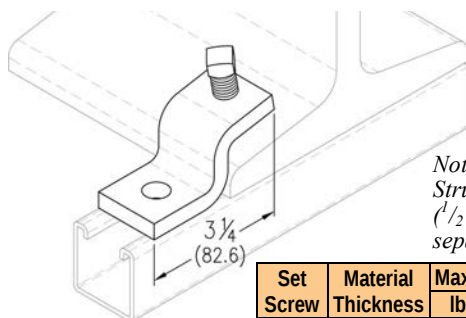
| Fig. No. | Set Screw | Material Thickness | Max. Rec. Load |        | Wt. Each |       |
|----------|-----------|--------------------|----------------|--------|----------|-------|
|          |           |                    | lbs.           | kN     | lbs.     | kg    |
| 7025     | 1/2-13    | 3/8 (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.



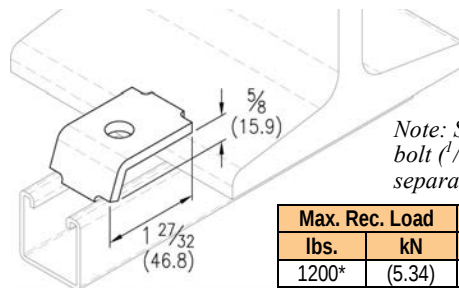
| Set Screw | Material Thickness | Max. Rec. Load |        | Wt. Each |       |
|-----------|--------------------|----------------|--------|----------|-------|
|           |                    | lbs.           | kN     | lbs.     | kg    |
| 1/2-13    | 3/8 (9.53)         | 900*           | (4.00) |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

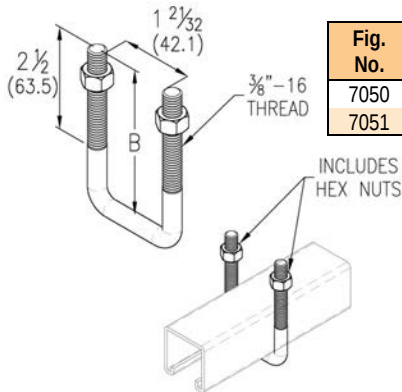
Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.

# BEAM CLAMPS



## FIG. 7050 & 7051

SQUARE U-BOLT



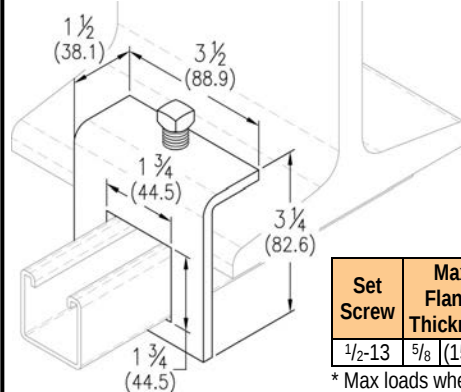
| Fig. No. | B     |          | Wt. Each |       |
|----------|-------|----------|----------|-------|
|          |       |          | lbs.     | kg    |
| 7050     | 3 3/8 | (85.73)  | .25      | (.11) |
| 7051     | 5     | (127.00) | .33      | (.15) |

Note: Not available in Stainless Steel.

INCLUDES HEX NUTS

## FIG. 7060

BEAM CLAMP FOR USE WITH 1 5/8" STRUT



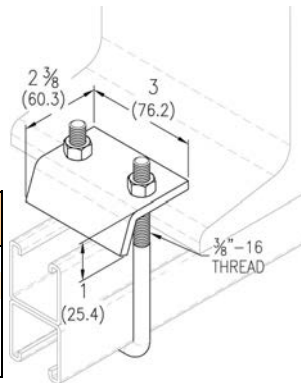
Note: Not available in Stainless Steel.

| 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



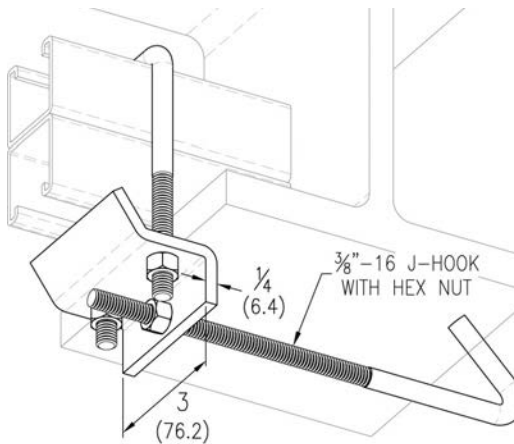
| Fig. No. | For Use With                |
|----------|-----------------------------|
| 7070     | 1 5/8" Strut                |
| 7075     | 3 1/4" Strut                |
| 7076     | 1500A or 1600A Series Strut |

| Fig. No. | Max. Flange Thickness | Max. Rec. Load |        | Wt. Each |       |
|----------|-----------------------|----------------|--------|----------|-------|
|          |                       | lbs.           | kN     | lbs.     | kg    |
| 7070     | 3/4 (19.05)           | 1200*          | (5.34) | .80      | (.36) |
| 7075     | 3/4 (19.05)           | 1200*          | (5.34) | .88      | (.40) |
| 7076     | 3/4 (19.05)           | 1200*          | (5.34) | 1.12     | (.51) |

\* Max loads when used in pairs.

## FIG. 7080 - 7089

BEAM CLAMP



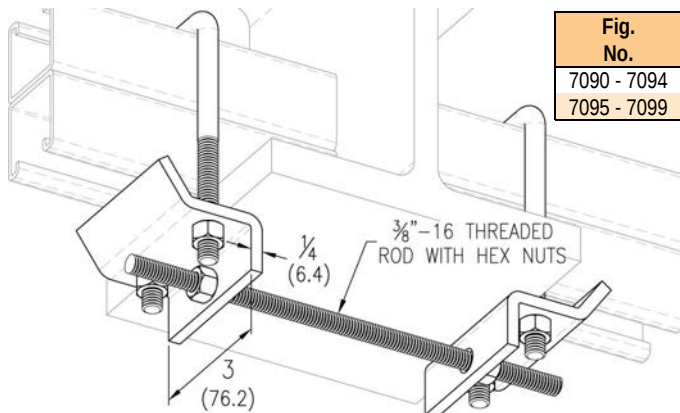
| Fig. No. | For Flange Width |                 | Wt. Each |        |
|----------|------------------|-----------------|----------|--------|
|          |                  |                 | lbs.     | kg     |
| 7080     | 4" - 5 7/8"      | (101.6 - 149.2) | 1.42     | (0.64) |
| 7081     | 6" - 8 7/8"      | (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)

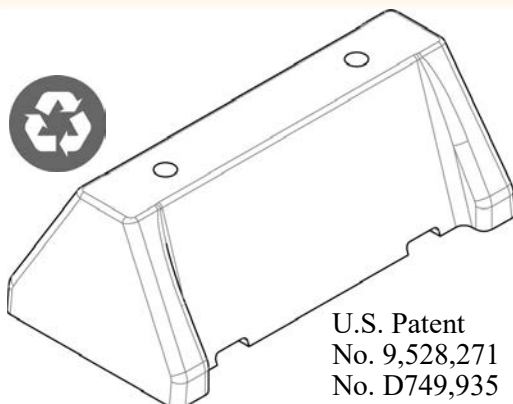
Hole Diameter: 9/16" (14.3); Hole Spacing-From End: 1 1/16" (20.6); Hole Spacing-On Center: 1 7/8" (47.6); Width: 1 5/8" (41.3); Thickness: 1/4" (6.4)  
Material: Carbon steel (Type 304 or 316 Stainless Steel upon request); Finish: Electro-galvanized (hot-dip galvanized, e-coat, and powder coated upon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



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

**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% Post-consumer, American recycled rubber and recycled 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.

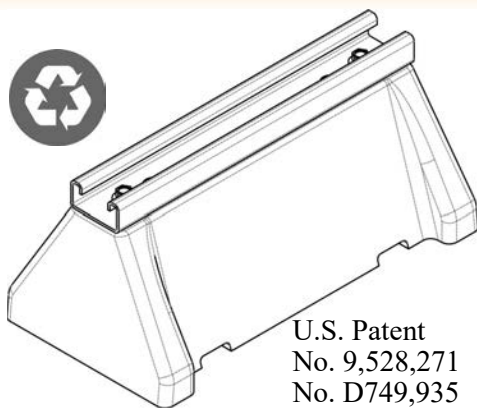
**NOTE:** Maximum Recommended Loads are specific to the components supplied. Please consult the roofing manufacturer or an engineer for roof load capacity.

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

Base area = 23.1 in.<sup>2</sup> for use in bearing calculations.

## FIG. SMSB

## STRUT MOUNTED SUPPORT BASE



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

**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% Post-consumer, American recycled rubber and recycled plastic base. 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<br>Number | Channel<br>Figure<br>Number | Channel<br>Length | Total<br>Height                          | Base<br>Width                          | Base<br>Length                          | Max. Rec.<br>Uniform Load |        | Wt. Each    |    | Safety<br>Factor |
|------------------|-----------------------------|-------------------|------------------------------------------|----------------------------------------|-----------------------------------------|---------------------------|--------|-------------|----|------------------|
|                  |                             |                   |                                          |                                        |                                         | lbs.                      | kN     | lbs.        | kg |                  |
| SMSB13           | 1301                        | 10 (254.00)       | 4 <sup>13</sup> / <sub>16</sub> (122.24) | 5 <sup>1</sup> / <sub>2</sub> (139.70) | 10 <sup>3</sup> / <sub>4</sub> (273.05) | 1700                      | (7.56) | 3.88 (1.76) |    | 3.5              |
| SMSB11           | 1101                        | 10 (254.00)       | 5 <sup>5</sup> / <sub>8</sub> (142.88)   | 5 <sup>1</sup> / <sub>2</sub> (139.70) | 10 <sup>3</sup> / <sub>4</sub> (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.

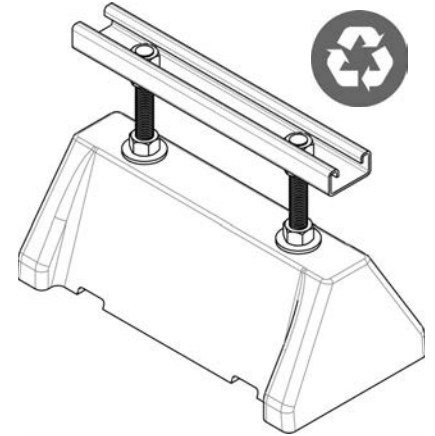
**Material:** 100% Post-consumer, American recycled rubber and recycled plastic base. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish).

**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.

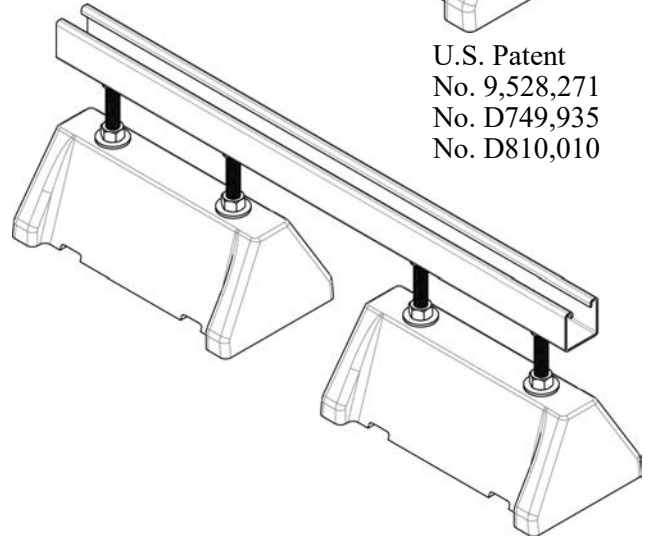
**Ordering:** Specify figure number.

**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.*



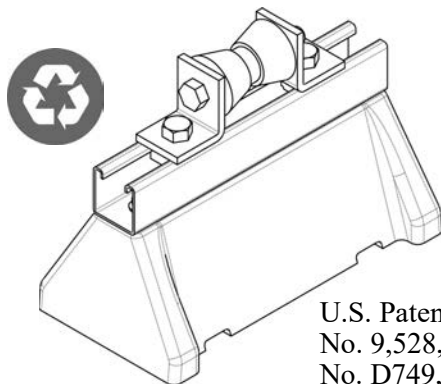
U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010



| 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



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

## 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% Post-consumer, American recycled rubber and recycled plastic base. Carbon steel channel (pre-galvanized finish). Carbon steel hardware (electro-galvanized finish). Cast Iron Rolls w/steel bracket and axle (electro-galvanized finish).

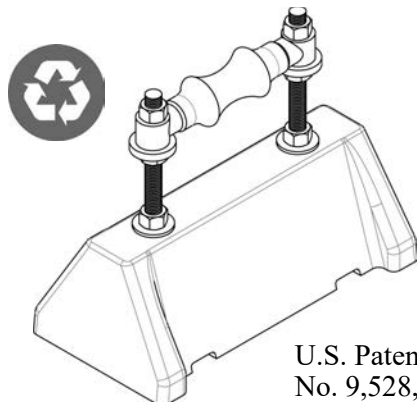
**Approvals:** Complies with Federal Specification A-A-1192A (Type 63) and Manufacturers' Standardization Society ANSI/MSS SP-58 (Type 63) which supersedes ANSI/MSS SP-69.

**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 3 1/2 | (25 to 90)   | 1101                  | 10             | (254.00) | 7581                 | 6 7/8                      | (174.63) | 5 1/2      | (139.70) | 10 3/4      | (273.05) | 390                    | (1.73) | 6.43     | (2.92) |
| RMSB060       | 4 to 6     | (100 to 150) | 1101                  | 10             | (254.00) | 7582                 | 6 7/8                      | (174.63) | 5 1/2      | (139.70) | 10 3/4      | (273.05) | 600                    | (2.67) | 6.97     | (3.16) |
| RMSB100       | 8 to 10    | (200 to 250) | 1101                  | 10             | (254.00) | 7583                 | 7 1/2                      | (190.50) | 5 1/2      | (139.70) | 10 3/4      | (273.05) | 800                    | (3.56) | 10.08    | (4.57) |

## FIG. ORSB



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

## 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% Post-consumer, American recycled rubber and recycled plastic base. 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) | 5 1/2      | (139.70) | 10 3/4      | (273.05) | 3 1/2          | (90) | 200                    | (0.89) | 5.26     | (2.39) |
| ORSB12        | 12                         | (304.8) | 5 1/2      | (139.70) | 10 3/4      | (273.05) | 3 1/2          | (90) | 200                    | (0.89) | 5.58     | (2.53) |

# ROOFTOP SUPPORTS



## STRUT BRIDGE SUPPORT BASE

## FIG. SBSB

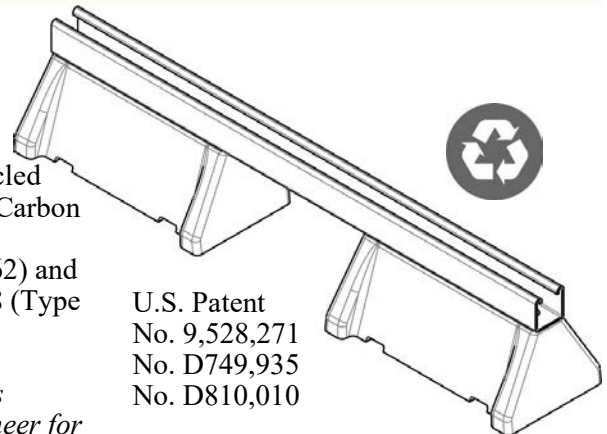
**Function:** For installation on most types of roofing material or other flat surfaces. Pre-assembled dual roof top support bases with mounted 1001 series channel strut. Can be used to dampen vibration without reducing the life of the roof. Water channels in bases prevent damming.

**Material:** 100% Post-consumer, American recycled rubber and recycled plastic base. 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.



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

| 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                  | 20¾            | (527.05)  | 2               | ¾           | (19.05)   | 4 <sup>13</sup> / <sub>16</sub> | (122.23) | 5½         | (139.70) | 21½         | (546.10)  | 1300                   | (5.78) | 7.81     | (3.54) | 3.5           |
| SBSB1021      | 1001                  | 20¾            | (527.05)  | 2               | ¾           | (19.05)   | 5⅞                              | (142.88) | 5½         | (139.70) | 21½         | (546.10)  | 1300                   | (5.78) | 9.26     | (4.20) | 3.5           |
| SBSB1028      | 1001                  | 28             | (711.20)  | 2               | 8           | (203.20)  | 5⅞                              | (142.88) | 5½         | (139.70) | 28.75       | (730.25)  | 1200                   | (5.34) | 10.33    | (4.69) | 3.5           |
| SBSB1036      | 1001                  | 36             | (914.40)  | 2               | 16          | (406.40)  | 5⅞                              | (142.88) | 5½         | (139.70) | 36.75       | (933.45)  | 900                    | (4.00) | 11.51    | (5.22) | 3.5           |
| SBSB1042      | 1001                  | 42             | (1066.80) | 2               | 22          | (558.80)  | 5⅞                              | (142.88) | 5½         | (139.70) | 42.75       | (1085.85) | 800                    | (3.56) | 12.40    | (5.62) | 3.5           |
| SBSB1050      | 1001                  | 50             | (1270.00) | 2               | 30          | (762.00)  | 5⅞                              | (142.88) | 5½         | (139.70) | 50.75       | (1289.05) | 700                    | (3.11) | 13.58    | (6.16) | 3.5           |
| SBSB1060      | 1001                  | 60             | (1524.00) | 2               | 40          | (1016.00) | 5⅞                              | (142.88) | 5½         | (139.70) | 60.75       | (1543.05) | 500                    | (2.22) | 15.05    | (6.83) | 3.5           |

## SINGLE BASE RAISED BRIDGE

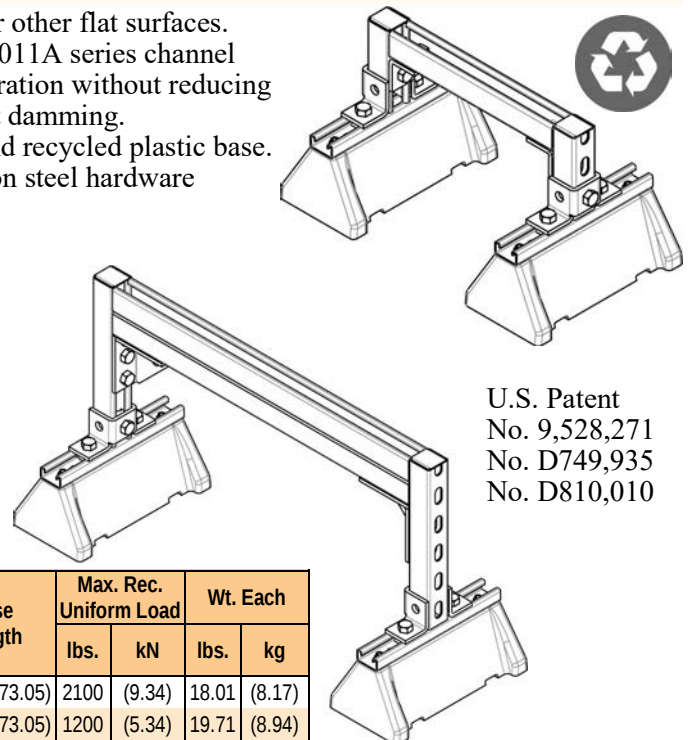
## FIG. SBRB

**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% Post-consumer, American recycled rubber and recycled plastic base. 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.



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

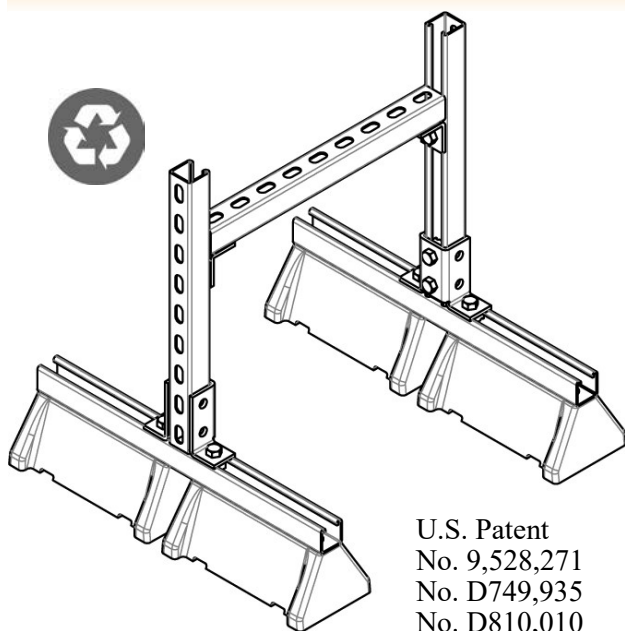
| Figure Number | Top Channel Figure Number | Top Channel Length | Number of Bases | Total Height |          | Base Width                     |           | Base Length                    |          | Max. Rec. Uniform Load |        | Wt. Each |         |
|---------------|---------------------------|--------------------|-----------------|--------------|----------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



U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

**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% Post-consumer, American recycled rubber and recycled plastic base. 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 <sup>5</sup> / <sub>8</sub> | (600.08)  | 25 <sup>1</sup> / <sub>8</sub> | (638.18)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1700                   | (7.56) | 37.12    | (16.84) |
| DBRB102324    | 1011                      | 24                 | (609.60)  | 4               | 23 <sup>5</sup> / <sub>8</sub> | (600.08)  | 31 <sup>1</sup> / <sub>8</sub> | (790.58)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1200                   | (5.34) | 38.00    | (17.24) |
| DBRB102336    | 1011                      | 36                 | (914.40)  | 4               | 23 <sup>5</sup> / <sub>8</sub> | (600.08)  | 43 <sup>1</sup> / <sub>8</sub> | (1095.38) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 800                    | (3.56) | 39.65    | (17.98) |
| DBRB102348    | 1011                      | 48                 | (1219.20) | 4               | 23 <sup>5</sup> / <sub>8</sub> | (600.08)  | 55 <sup>1</sup> / <sub>8</sub> | (1400.18) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 600                    | (2.67) | 41.31    | (18.74) |
| DBRB102918    | 1011                      | 18                 | (457.20)  | 4               | 29 <sup>5</sup> / <sub>8</sub> | (752.48)  | 25 <sup>1</sup> / <sub>8</sub> | (638.18)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1700                   | (7.56) | 38.90    | (17.64) |
| DBRB102924    | 1011                      | 24                 | (609.60)  | 4               | 29 <sup>5</sup> / <sub>8</sub> | (752.48)  | 31 <sup>1</sup> / <sub>8</sub> | (790.58)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1200                   | (5.34) | 39.73    | (18.02) |
| DBRB102936    | 1011                      | 36                 | (914.40)  | 4               | 29 <sup>5</sup> / <sub>8</sub> | (752.48)  | 43 <sup>1</sup> / <sub>8</sub> | (1095.38) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 800                    | (3.56) | 41.40    | (18.78) |
| DBRB102948    | 1011                      | 48                 | (1219.20) | 4               | 29 <sup>5</sup> / <sub>8</sub> | (752.48)  | 55 <sup>1</sup> / <sub>8</sub> | (1400.18) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 600                    | (2.67) | 43.06    | (19.53) |
| DBRB104118    | 1011                      | 18                 | (457.20)  | 4               | 41 <sup>5</sup> / <sub>8</sub> | (1057.28) | 25 <sup>1</sup> / <sub>8</sub> | (638.18)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1700                   | (7.56) | 42.39    | (19.23) |
| DBRB104124    | 1011                      | 24                 | (609.60)  | 4               | 41 <sup>5</sup> / <sub>8</sub> | (1057.28) | 31 <sup>1</sup> / <sub>8</sub> | (790.58)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1200                   | (5.34) | 43.22    | (19.60) |
| DBRB104136    | 1011                      | 36                 | (914.40)  | 4               | 41 <sup>5</sup> / <sub>8</sub> | (1057.28) | 43 <sup>1</sup> / <sub>8</sub> | (1095.38) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 800                    | (3.56) | 44.88    | (20.36) |
| DBRB104148    | 1011                      | 48                 | (1219.20) | 4               | 41 <sup>5</sup> / <sub>8</sub> | (1057.28) | 55 <sup>1</sup> / <sub>8</sub> | (1400.18) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 600                    | (2.67) | 46.54    | (21.11) |
| DBRB105318    | 1011                      | 18                 | (457.20)  | 4               | 53 <sup>5</sup> / <sub>8</sub> | (1362.08) | 25 <sup>1</sup> / <sub>8</sub> | (638.18)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1700                   | (7.56) | 59.55    | (27.01) |
| DBRB105324    | 1011                      | 24                 | (609.60)  | 4               | 53 <sup>5</sup> / <sub>8</sub> | (1362.08) | 31 <sup>1</sup> / <sub>8</sub> | (790.58)  | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 1200                   | (5.34) | 60.38    | (27.39) |
| DBRB105336    | 1011                      | 36                 | (914.40)  | 4               | 53 <sup>5</sup> / <sub>8</sub> | (1362.08) | 43 <sup>1</sup> / <sub>8</sub> | (1095.38) | 22 <sup>1</sup> / <sub>2</sub> | (571.50) | 800                    | (3.56) | 62.04    | (28.14) |
| DBRB105348    | 1011                      | 48                 | (1219.20) | 4               | 53 <sup>5</sup> / <sub>8</sub> | (1362.08) | 55 <sup>1</sup> / <sub>8</sub> | (1400.18) | 22 <sup>1</sup> / <sub>2</sub> | (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

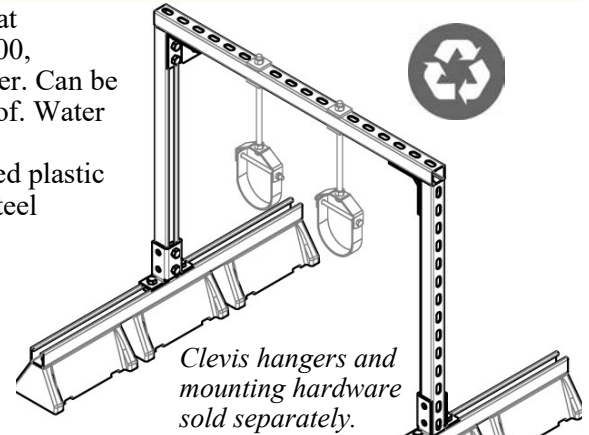
## FIG. TBRB

**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% Post-consumer, American recycled rubber and recycled plastic base. 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.



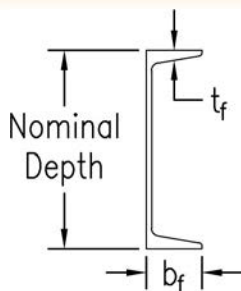
U.S. Patent  
No. 9,528,271  
No. D749,935  
No. D810,010

| 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.

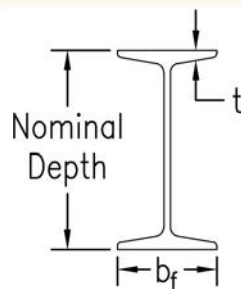
# TECHNICAL DATA

## STANDARD BEAM INFORMATION



AMERICAN STANDARD 'C' SHAPE CHANNELS

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



AMERICAN STANDARD 'S' SHAPE I-BEAMS

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

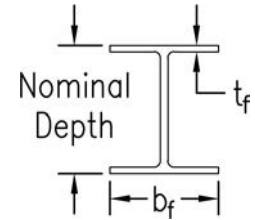
**Note:** All standard beam information is taken from ASTM A6-86

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



WIDE FLANGE I-BEAMS

| Designation<br>Nom. Depth & Weight |              | Flange<br>Width<br>b <sub>f</sub> |       | Flange<br>Thickness<br>t <sub>f</sub> |        |
|------------------------------------|--------------|-----------------------------------|-------|---------------------------------------|--------|
| in. X lbs./ft                      | mm X kg/m    |                                   |       |                                       |        |
| W16 X 67                           | (W410 X 100) | 10 <sup>1</sup> / <sub>4</sub>    | (260) | .665                                  | (16.9) |
| W16 X 77                           | (W410 X 114) | 10 <sup>5</sup> / <sub>16</sub>   | (262) | .760                                  | (19.3) |
| W16 X 89                           | (W410 X 132) | 10 <sup>3</sup> / <sub>8</sub>    | (264) | .875                                  | (22.2) |
| W16 X 100                          | (W410 X 149) | 10 <sup>7</sup> / <sub>16</sub>   | (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 <sup>1</sup> / <sub>16</sub>    | (154) | .605                                  | (15.4) |
| W18 X 50                           | (W460 X 74)  | 7 <sup>1</sup> / <sub>2</sub>     | (191) | .570                                  | (14.5) |
| W18 X 55                           | (W460 X 82)  | 7 <sup>1</sup> / <sub>2</sub>     | (191) | .630                                  | (16.0) |
| W18 X 60                           | (W460 X 89)  | 7 <sup>3</sup> / <sub>16</sub>    | (192) | .695                                  | (17.7) |
| W18 X 65                           | (W460 X 97)  | 7 <sup>1</sup> / <sub>16</sub>    | (192) | .750                                  | (19.1) |
| W18 X 71                           | (W460 X 106) | 7 <sup>5</sup> / <sub>8</sub>     | (194) | .810                                  | (20.6) |
| W18 X 76                           | (W460 X 113) | 11                                | (279) | .680                                  | (17.3) |
| W18 X 86                           | (W460 X 128) | 11 <sup>1</sup> / <sub>16</sub>   | (281) | .770                                  | (19.6) |
| W18 X 97                           | (W460 X 144) | 11 <sup>3</sup> / <sub>8</sub>    | (283) | .870                                  | (22.1) |
| W18 X 106                          | (W460 X 158) | 11 <sup>3</sup> / <sub>16</sub>   | (284) | .940                                  | (23.9) |
| W18 X 119                          | (W460 X 177) | 11 <sup>1</sup> / <sub>4</sub>    | (286) | 1.060                                 | (26.9) |
| W21 X 44                           | (W530 X 66)  | 6 <sup>1</sup> / <sub>2</sub>     | (165) | .450                                  | (11.4) |
| W21 X 50                           | (W530 X 74)  | 6 <sup>1</sup> / <sub>2</sub>     | (165) | .535                                  | (13.6) |
| W21 X 57                           | (W530 X 85)  | 6 <sup>3</sup> / <sub>16</sub>    | (167) | .650                                  | (16.5) |
| W21 X 62                           | (W530 X 92)  | 8 <sup>1</sup> / <sub>4</sub>     | (210) | .615                                  | (15.6) |
| W21 X 68                           | (W530 X 101) | 8 <sup>1</sup> / <sub>4</sub>     | (210) | .685                                  | (17.4) |
| W21 X 73                           | (W530 X 109) | 8 <sup>1</sup> / <sub>4</sub>     | (210) | .740                                  | (18.8) |
| W21 X 83                           | (W530 X 123) | 8 <sup>3</sup> / <sub>8</sub>     | (225) | .835                                  | (21.2) |
| W21 X 93                           | (W530 X 138) | 8 <sup>7</sup> / <sub>16</sub>    | (214) | .930                                  | (23.6) |
| W21 X 101                          | (W530 X 150) | 12 <sup>1</sup> / <sub>4</sub>    | (311) | .800                                  | (20.3) |
| W21 X 111                          | (W530 X 165) | 12 <sup>3</sup> / <sub>8</sub>    | (314) | .875                                  | (22.2) |
| W21 X 122                          | (W530 X 182) | 12 <sup>5</sup> / <sub>8</sub>    | (316) | 1.035                                 | (26.3) |
| W21 X 132                          | (W530 X 196) | 12 <sup>7</sup> / <sub>16</sub>   | (318) | 1.150                                 | (29.2) |
| W21 X 147                          | (W530 X 219) | 12 <sup>1</sup> / <sub>2</sub>    | (318) | 1.150                                 | (29.2) |
| W24 X 55                           | (W610 X 82)  | 7                                 | (178) | .505                                  | (12.8) |
| W24 X 62                           | (W610 X 92)  | 7 <sup>1</sup> / <sub>16</sub>    | (179) | .590                                  | (15.0) |
| W24 X 68                           | (W610 X 101) | 8 <sup>3</sup> / <sub>16</sub>    | (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 <sup>1</sup> / <sub>16</sub>    | (230) | .875                                  | (22.2) |
| W24 X 104                          | (W610 X 155) | 12 <sup>1</sup> / <sub>4</sub>    | (324) | .750                                  | (19.1) |
| W24 X 117                          | (W610 X 174) | 12 <sup>3</sup> / <sub>4</sub>    | (324) | .850                                  | (21.6) |
| W24 X 131                          | (W610 X 195) | 12 <sup>7</sup> / <sub>8</sub>    | (327) | .960                                  | (24.4) |
| W24 X 146                          | (W610 X 217) | 12 <sup>7</sup> / <sub>8</sub>    | (327) | 1.090                                 | (27.7) |
| W24 X 162                          | (W610 X 241) | 12 <sup>5</sup> / <sub>16</sub>   | (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)        | 40   | 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)  |           |              |      |       |                | 8.67  | (12.91) | 14.62  | (21.76)  |       |          |
|           |       | 80           |       |          | .126           | (3.20) | 0.061   | (0.09) | 0.738   | (1.10)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.28  | (7.11)  | 12.52  | (18.64)  | 18.97 | (28.23)  |
|           |       | 80           |       |          | .147           | (3.73) | 0.102   | (0.15) | 1.087   | (1.62)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.322 | (8.18)  | 21.69  | (32.28)  | 28.55 | (42.49)  |
|           |       | 80           |       |          | .154           | (3.91) | 0.187   | (0.28) | 1.473   | (2.19)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.365 | (9.27)  | 34.19  | (50.87)  | 40.48 | (60.24)  |
|           |       | 80           |       |          | .179           | (4.55) | 0.312   | (0.46) | 2.171   | (3.23)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.406 | (10.31) | 48.53  | (72.21)  | 53.6  | (79.77)  |
|           |       | 80           |       |          | .191           | (4.85) | 0.556   | (0.83) | 2.996   | (4.46)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.437 | (11.10) | 58.66  | (87.30)  | 63    | (93.75)  |
|           |       | 80           |       |          | .2             | (5.08) | 0.766   | (1.14) | 3.631   | (5.40)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.5   | (12.70) | 76.61  | (114.01) | 83    | (123.52) |
|           |       | 80           |       |          | .218           | (5.54) | 1.280   | (1.91) | 5.022   | (7.47)  |           |              |      |       |                | 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)        | 40   | 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)  |           |              |      |       |                | 0.563 | (14.30) | 96.95  | (144.27) | 105   | (156.26) |
|           |       | 80           |       |          | .276           | (7.01) | 1.837   | (2.73) | 7.66    | (11.40) |           |              |      |       |                | 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)        | 40   | 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) |           |              |      |       |                | 0.593 | (15.06) | 120.52 | (179.36) | 123   | (183.04) |
|           |       | 80           |       |          | .3             | (7.62) | 2.864   | (4.26) | 10.25   | (15.25) |           |              |      |       |                | 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)        | 40   | 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) |           |              |      |       |                | 0.687 | (17.45) | 174.31 | (259.40) | 171   | (254.48) |
|           |       | 80           |       |          | .318           | (8.08) | 3.853   | (5.73) | 12.51   | (18.62) |           |              |      |       |                | 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)        | 20   | 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) |           |              |      |       |                | .5    | (12.70) | 417.00 | (620.56) | 190   | (282.75) |
|           |       | 80           |       |          | .337           | (8.56) | 4.984   | (7.42) | 14.98   | (22.29) |           |              |      |       |                |       |         |        |          |       |          |

## SPACING OF HANGERS FOR STEEL PIPE

| Nominal<br>Pipe 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     | 14     | 16     | 18         | 20     | 24     |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|
|                                   | (15)   | (20)   | (25)   | (32)   | (40)   | (50)   | (65)   | (80)   | (90)   | (100)  | (125)  | (150)  | (200)  | (250)  | (300)  | (350)  | (400)  | (450)      | (500)  | (600)  |
| Max. Span                         | 7      | 7      | 7      | 7      | 9      | 10     | 11     | 12     | 13     | 14     | 16     | 17     | 19     | 22     | 23     | 25     | 27     | 28         | 30     | 32     |
|                                   | (2.13) | (2.13) | (2.13) | (2.13) | (2.74) | (3.05) | (3.35) | (3.66) | (3.96) | (4.27) | (4.88) | (5.18) | (5.79) | (6.71) | (7.01) | (7.62) | (8.23) | (8.53)     | (9.14) | (9.75) |
| Recommended<br>Hanger Rod<br>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) | (5.5) |

**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<br>Pipe<br>Size |        | Class | O.D.<br>D.I. Pipe |           | Wall<br>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)  |
|           |      | .095     |       |         | (2.41)         | .016   | (.024)  | .055    | (.082)  | .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)  |
|           |      | .119     |       |         | (3.02)         | .031   | (.046)  | .094    | (.140)  | .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)  |
|           |      | .126     |       |         | (3.20)         | .061   | (.091)  | .129    | (.192)  | .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)  |
|           |      | .147     |       |         | (3.73)         | .101   | (.150)  | .200    | (.298)  | .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)  |
|           |      | .154     |       |         | (3.91)         | .186   | (.277)  | .259    | (.385)  | .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)  |
|           |      | .179     |       |         | (4.55)         | .311   | (.463)  | .382    | (.568)  | .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)  |
|           |      | .191     |       |         | (4.85)         | .555   | (.826)  | .527    | (.784)  | .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) |
|           |      | .200     |       |         | (5.08)         | .765   | (1.138) | .639    | (.951)  | .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) |
|           |      | .218     |       |         | (5.54)         | 1.279  | (1.903) | .884    | (1.316) | .687   |           |       | (17.45)  |       |          | 44.00          | (65.48) | 16.365  | (24.354) |         |          |

## SPACING OF HANGERS FOR PVC PLASTIC PIPE

| Schedule<br>40<br>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<br>80<br>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 |      |
|----------------------|----------------|-------------------------|---------------|-------------------------------------------|------|
|                      |                | lbs./ft                 | kg/m          | Not Lead Covered                          |      |
|                      |                |                         |               | 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 |      |                  |      |
|----------------------|----------------|----------------|---------------|-------------------------|---------------|-------------------------------------------|------|------------------|------|
|                      |                | lbs./ft        | kg/m          | lbs./ft                 | kg/m          | 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 |      |                  |      |
|----------------------|----------------|----------------|--------------|-------------------------|---------------|-------------------------------------------|------|------------------|------|
|                      |                | lbs./ft        | kg/m         | lbs./ft                 | kg/m          | 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 |          |               |          |
|------------------|------------------|-----------------|----------------|----------|---------------|----------|
|                  | in. <sup>2</sup> | mm <sup>2</sup> | 650°F (343°C)  |          | 750°F (399°C) |          |
|                  |                  |                 | 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<br>Pipe Size |       | O.D. of<br>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<br>Pipe Size |       | O.D. of<br>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<br>Pipe Size |       | O.D. of<br>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                  |
|---------------------------------|-------------------|------------------------------|
| <b>Length</b>                   |                   |                              |
| Inch                            | Millimeter        | 25.4                         |
| Feet                            | Meter             | 0.3048                       |
| Yard                            | Meter             | 0.9144                       |
| Mile                            | Kilometer         | 1.6093                       |
| <b>Area</b>                     |                   |                              |
| Square Inch                     | Square Millimeter | 645.16                       |
| Square Feet                     | Square Meter      | 0.0929                       |
| Square Yard                     | Square Meter      | 0.8361                       |
| Square Mile                     | Square Kilometer  | 2.5899                       |
| <b>Volume</b>                   |                   |                              |
| 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                      |
| <b>Mass</b>                     |                   |                              |
| Ounce                           | Gram              | 28.3495                      |
| Pound                           | Kilogram          | 0.45359                      |
| Short Ton                       | Kilogram          | 907.185                      |
| <b>Force</b>                    |                   |                              |
| Ounce-Force                     | Newton            | 0.278014                     |
| Pound-Force                     | Newton            | 4.44822                      |
| <b>Pressure</b>                 |                   |                              |
| Pound - Force / Square Inch     | Kilopascal        | 6.894757                     |
| Foot of Water (39.2°F)          | Kilopascal        | 2.98898                      |
| Inch of Mercury (32°F)          | Kilopascal        | 3.38638                      |
| <b>Bending Moment</b>           |                   |                              |
| Pound - Force - Inch            | Newton - Meter    | 0.112985                     |
| Pound - Force - Foot            | Newton - Meter    | 1.355818                     |
| <b>Energy, Work, &amp; Heat</b> |                   |                              |
| Foot - Pound - Force            | Joule             | 1.355818                     |
| British Thermal Unit (BTU)      | Joule             | 1,055.056                    |
| Calorie                         | Joule             | 4.1868                       |
| Kilowatt Hour                   | Joule             | 3,600,000                    |
| <b>Power</b>                    |                   |                              |
| Foot - Pound - Force / Second   | Watt              | 1.355818                     |
| British Thermal Unit / Hour     | Watt              | 0.29307                      |
| Horsepower                      | Kilowatt          | 0.7457                       |
| <b>Temperature</b>              |                   |                              |
| Degree Fahrenheit               | Degree Celsius    | $\frac{(F^{\circ}-32)}{1.8}$ |

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

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

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